

Important Safety Information

For Server, Storage, Power, Networking, and Rack Products Read Before Installing Product

Retain and follow all product safety and operating instructions. Always refer to the documentation supplied with your equipment (printed or electronic documentation). In the event of a conflict between this guide and the equipment documentation, the equipment documentation takes precedence. Observe all warnings on the product and in the operating instructions.

To reduce the risk of bodily injury, electric shock, fire, and damage to the equipment, observe all precautions included in this guide.

Symbols on Equipment

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



This symbol in conjunction with any of the following symbols indicates the presence of a potential hazard. The potential for injury exists if warnings are not observed. Consult your documentation for specific details.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce risk of injury from electric shock hazards, do not open this enclosure.



This symbol on an RJ-45 receptacle indicates a Network Interface Connection.

WARNING: To reduce risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



These symbols on power supplies or systems indicate the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system



Weight in kg.

Weight in 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.

General Precautions

- If the product sustains damage requiring service, disconnect the product from the AC electrical outlet and refer servicing to an HP authorized service provider. Examples of damage requiring service include:
 - The power cord, extension cord or plug has been damaged.
 - Liquid has been spilled on the product or an object has fallen into the product.
 - The product has been exposed to rain or water.
 - The product has been dropped or damaged.
 - The product does not operate normally when you follow the operating instructions.
- To reduce the risk of personal injury or damage to the equipment:
 - Place the product away from radiators, heat registers, stoves, amplifiers, or other products that produce heat.
 - Never use the product in a wet location.
 - Avoid inserting foreign objects through openings in the product.
 - Move products with casters carefully. Avoid quick stops and uneven surfaces.
 - Use the product only with the HP equipment identified as suitable.
 - Turn down the volume before using headphones or other audio devices.

Precautions for Maintaining and Servicing Enterprise Products

To reduce the risk of electric shock or damage to the equipment when installing, maintaining, or servicing Enterprise products, observe the following precautions:

- Some Enterprise products contain power supplies that are capable of producing hazardous energy levels. Refer to the documentation included with your product to determine whether it contains these power supplies. The installation of internal options and routine maintenance and service of this product should be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with equipment containing hazardous energy levels.
- Allow the product to cool before removing covers and touching internal components.
- Do not use conductive tools that could bridge live parts.
- Remove all watches, rings, or loose jewelry when working in hot-plug areas of an energized server and storage products.
- Do not attempt to defeat safety interlocks (where provided).
- The PCI Hot Plug access doors provide access to hazardous energy circuits.
 - The doors should remain locked during normal operation
- or-
- The server should be installed in a controlled access location where only qualified personnel have access to the server.
- Power down the equipment and disconnect all AC power cords before removing any access covers for non-hot plug areas.
- Do not replace non-hot plug components while power is applied to the product. First, shut down the product and disconnect all AC power cords.

- Do not exceed the level of repair specified in the procedures in the product documentation. All troubleshooting and repair procedures are detailed to allow only subassembly or module-level repair. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.
- For floor-standing products, install and extend bottom stabilizers before installing options and boards.
- Verify that the AC power supply branch circuit that provides power to the rack is not overloaded. This will reduce the risk of personal injury, fire, or damage to the equipment. The total rack load should not exceed 80 percent of the branch circuit rating. Consult the electrical authority having jurisdiction over your facility wiring and installation requirements.

Precautions for Power Products

Power Cords

To reduce the risk of electric shock or damage to the equipment:

- Use an approved power cord.
- If you have not been provided with a power cord for your computer or for any AC-powered option intended for your product, purchase a power cord that is approved for use in your country.
- You must use a power cord rated for your product and for the voltage and current marked on the electrical ratings label of the product. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
- If you have questions about the type of power cord to use, contact your HP authorized service provider.
- Do not place objects on AC power cords or cables. Arrange them so that no one may accidentally step on or trip over them.
- Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.
- Make sure that the total ampere rating of all products plugged into an extension cord or power strip does not exceed 80 percent of the ampere ratings limit for the extension cord or power strip.
- 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.

Power Supplies

- Hot-plug power supplies are not designed to be removed or installed with AC power connected to the power supply. To reduce the risk of electric shock or damage to the equipment when handling hot-plug power supplies:
 - Install the power supply before connecting the power cord to the power supply.
 - Unplug the power cord before removing the power supply from the product.
 - If the system has multiple sources of power, you must unplug all AC power cords from the power supplies to completely disconnect power from the system.
- Verify that the external power source connected to your product matches the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your HP authorized service provider or local power company.

Uninterruptible Power Supply (UPS) Products

- To reduce the risk of electric shock and/or equipment damage when installing or servicing UPS products:
 - The installation of options and routine maintenance and service of UPS products must be performed by trained service technicians who are knowledgeable about the procedures, precautions, and hazards associated with AC power products.
 - Hardwired UPS products require a direct connection to a dedicated AC branch circuit (AC mains). Connection should only be performed by a licensed electrician in accordance with National Electrical Code (NFPA70) Article 310 in North America or the equivalent local and national wiring regulations.

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- Use a Lockout/Tagout procedure to isolate hardwired UPS products from AC power before servicing the product or replacing a non-hot plug component.
 - Do not operate a UPS that is disconnected from AC Power. Use the TEST/ALARM RESET button to test the batteries. Disconnect all protected loads before disconnecting the UPS from AC Power.
 - Pluggable UPS products must be disconnected and unplugged from AC power before servicing the product or replacing a non-hot plug component.
 - Do not overload the output of the UPS. The total connected load should not exceed 80 percent of the rated output.
 - Do not exceed the leakage current limit for the type of UPS in your system. See the “Earth Leakage Current” section later in this document for limits.
 - For rack installations, do not exceed the maximum number of UPS products in any single equipment rack.
 - For rack installations, install the UPS only at the bottom of a rack.
- To reduce the risk of personal injury or damage to equipment when installing a Remote Emergency Power Off (REPO) port:
 - The REPO port must be wired by a licensed electrician.
 - Verify that the main AC power disconnect device for the UPS is locked and/or tagged in the OFF position before wiring the REPO port.
 - In North America, the REPO circuit must comply with the NEC (NFPA 70, Article 725) for a Class 2 circuit. In other geographical regions or countries, the REPO port wiring must comply with the national and local standards in the area in which the product is installed.
- To reduce the risk of personal injury from electric shock or damage to equipment when installing or servicing batteries:
 - Make sure that only trained service personnel handle or connect the batteries.
 - Remove watches, rings, or other metal objects prior to working with the equipment.
 - Use tools with insulated handles.
 - On products with remote external batteries, do not attempt to replace batteries unless all battery circuit breakers are in the OFF (down) position. These are hazardous voltage batteries.
- This product may contain sealed lead-acid batteries. To reduce the risk of fire or chemical burns:
 - Do not attempt to recharge batteries after they have been removed from the equipment.
 - Do not disassemble, crush, or puncture the batteries.
 - Do not short the external contacts of the batteries.
 - Do not immerse the batteries in water.
 - Do not expose the batteries to temperatures higher than 60°C or dispose of in fire.
 - Use only the HP spare battery designated for this equipment.

Power Distribution Units (PDUs)

To reduce the risk of electric shock and/or equipment damage when installing or servicing PDUs:

- The installation and routine maintenance and service of PDUs must be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with AC power products (trained service technicians).
- Hardwired PDUs require a direct connection to a dedicated AC branch circuit (AC mains). Connection should only be performed by a licensed electrician in accordance with National Electrical Code (NFPA70 Article 310) in North America, or in other regions or countries, in accordance with the equivalent local and national wiring regulations.
- Use a Lockout/Tagout procedure to isolate hardwired PDUs from AC power before servicing or replacing the product.
- Pluggable PDUs must be disconnected from the product and unplugged from the AC electrical outlet before servicing or replacing the product.
- Do not overload the output of the PDU. The total connected load should not exceed rated input power.
- Do not exceed the leakage current limit for the type of PDU in your system. See the “Earth Leakage Current” section later in this document for limit.

Earth Leakage Current

To reduce the risk of electric shock due to high leakage currents, a reliable grounded (earthed) connection is essential before connecting power distribution products to AC power. Observe the following limits when connecting the product to AC power distribution devices:

- For UPS products and PDUs that have attached AC power cords or are directly wired to the building power, the total combined leakage current should not exceed 5 percent of the rated input current for the device.
- For UPS products and PDUs that have detachable AC power cords, the total combined leakage current should not exceed 3.5mA.

Voltage Selection

- On products that have voltage select switches, make sure that the switch is set for the type of voltage you use (115 VAC or 230 VAC).
- Do not attempt to power the product with voltage converter kits sold for appliances.

Batteries

Some HP products may contain internal lithium manganese dioxide batteries or vanadium pentoxide batteries. There is risk of fire and burns if the battery pack is not handled properly. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- Do not disassemble, crush, puncture, short external contacts, or dispose of the battery in fire or water.
- Replace the battery only with the HP spare battery designated for this product.



Do not dispose of batteries with the general household waste. To forward them to recycling or proper disposal, use the public collection system or return them to HP, your authorized HP Partners, or their agents.

Precautions for Products Installed in Racks

Stability

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.
- You are careful when pressing the component rail release latches and sliding the component into the rack. The slide rails could pinch your fingertips.
- You load the rack from the bottom up and load the heaviest item into the rack first.
- You do not attempt to move equipment racks without adequate assistance, due to their height and weight.
- You do not attempt to move an equipment rack on an incline that is greater than 10 degrees from horizontal.
- You do not attempt to move a fully loaded equipment rack. Remove equipment from the rack before moving the rack.

Manual Material Handling

To reduce the risk of personal injury or damage to the equipment:

- Observe local occupational health and safety requirements and guidelines for manual materials handling.
- Obtain adequate assistance to lift and stabilize the product during installation or removal.
- Remove all pluggable power supplies and modules to reduce the weight of the product.
- Make sure that the product is properly mated with the rails. Products that are improperly mated with the rails may be unstable.

Precautions for Modems, Telecommunications, or Local Area Network Options

To reduce the risk of exposure to shock hazard from telephone ringing voltages:

- Do not connect or use a modem or telephone (other than a cordless type) during a lightning storm.
- Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.
- Do not connect or use a modem or telephone cable in a wet location.
- Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.
- Do not plug telecommunications or telephone connectors into the Network Interface Card (NIC) receptacles.

Precautions for Products with Laser Devices

To reduce the risk of exposure to hazardous radiation:

- Do not try to open the laser device enclosure. There are no user-serviceable components inside.
- Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
- Allow only HP authorized service technicians to repair the laser device.