# Contents

# 1 Hardware safety guidelines

## Introduction

This guide contains general safety guidelines about avoiding potentially hazardous situations that can cause bodily injury, device or card damage, device or card exceptions, or service anomalies. Only trained and qualified personnel are allowed to perform the operations described in this guide.

Before working on your device, review the safety guidelines in this document carefully.

## Fixed-port switches

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| Moving | Do not hold the handle of a power supply or fan tray, ejector levers of an interface module, an unused slot, or air vents of the chassis to move the device. | Device damage. |
| | The ports on some device models extend from the front panel. Avoid injuries from any metal edges when moving the device. | Bodily injury. |
| Rack-mounting | Do not place the device on an unstable case or desk. | Severe damage of the device in case of a fall. |
| | Before mounting the device in a rack, make sure the rack is sturdy enough to support the weight of the device and installation accessories. | Bodily injury or severe device damage. |
| | Determine the installation method before mounting the device in a rack. For device models that do not support using only one pair of front mounting brackets, you must also use rear mounting brackets, slide rails, chassis rails, or rack shelves to support the weight of the device. | Device deformation, or device damage or even bodily injury in case of a fall. |
| | For wall mounting, locate electrical wires before drilling a hole in the wall. | Electric shock. |
| | After rack-mounting the device, make sure the operating environment meets the heat dissipation requirements. | Device damage. |
| Installing or removing removable components | Always wear an ESD wrist strap when installing or removing a removable component. | Static electricity can damage the electronic components inside the device and affect the operation of the device. |
| | Verify correct orientation of a removable component before installation based on the marks on the component. | Removable component or device damage. |
| | When holding a removable component, do not touch the electronic components or PCB directly. | Removable component damage or malfunction caused by static electricity. |

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| | Put a removable component into an antistatic bag when it is not inside the chassis. | Removable component damage or malfunction caused by static electricity. |
| Handling interface modules | Do not install or remove an interface module when the device is starting. | Incorrect operation of the interface module or device. |
| | Do not touch the connectors on an interface module when installing or removing the interface module. | Interface module or device damage. |
| | Make sure an interface module supports hot swapping before hot swapping the interface module. | Incorrect operation of the interface module or the device. |
| Handling transceiver modules | Do not stare into any open apertures of operating transceiver modules or optical fiber connectors. | Disconnected optical fibers or transceiver modules might emit invisible laser light. Staring into any fiber port or viewing directly with non-attenuating optical instruments when the device has power might hurt your eyes. |
| | When removing a transceiver module, do not touch the golden plating of the transceiver module. | Transceiver module damage. |
| Handling cables | Network cables are used for the communication between the device and the maintenance terminal. Network cable connection or disconnection can be performed only by qualified maintenance personnel for service adjustment as scheduled and they must be aware of the impact on the network. | Login failure from a maintenance endpoint to the device. |
| | Do not route interface cables outdoors. | Signal port damage by overvoltage or overcurrent from lightning strikes. |
| | Use the grounding cable provided with the device to connect the device to the grounding strip in the equipment room. | If you use other grounding cables, the grounding effect cannot be guaranteed and the device might be damaged. |
| Handling fan trays | Do not install fan trays of different models on the same device. | Device damage because of insufficient heat dissipation. |
| | Do not power on the device when the device is not installed with all fan trays. | Device damage because of insufficient heat dissipation. |
| | Do not start the device when no fan trays are present. Before hot swapping a fan tray, make sure the remaining fan trays can provide sufficient cooling for the device. | Device damage because of insufficient heat dissipation. |
| | If multiple fan trays fail, do not remove the fan trays at the same time. Replace the fan trays one after another and finish replacing a fan tray within 3 minutes. | Device damage because of insufficient heat dissipation. |
| | Do not touch the rotating fans when replacing a fan tray. | Fan tray damage or bodily injury. |

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| Handling power supplies | Do not install a power supply when the device is powered on. You must first install the power supply in the slot, connect a power cord to the power supply, and then turn on the circuit breaker. | Device damage or bodily injury. |
| | Do not remove a power supply when the device is powered on. You must first turn off the circuit breaker, disconnect the power cord from the power supply, and then remove the power supply. | Device damage or bodily injury. |
| | Do not touch any rotating power supply fans. | Power supply damage or bodily injury. |
| | Make sure the power supply range of the power supply system meet the device requirements.<br><br>Do not operate the device under incorrect or unstable voltage. | Device damage. |
| | Operate the power switches on the PDUs in the cabinet only when upgrading or expanding the device, replacing the components in the device, or when a severe system failure occurs. | Device shutdown or service interruption. |
| Maintenance | Do not clean the device with liquid or wipe the device with wet cloth. | Device damage caused by water or moisture. |
| | Do not open the chassis while the device is operating or when the device is just powered off. | Bodily injury caused by electric shock or device damage |
| | When the ambient temperature exceeds 55°C (131°F), do not handle the device attached with a high-temperature warning label directly without any protective measures. | Burns. |

# Modular switches

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| Moving | Do not hold the handle of a fan tray or power supply, air vents of the chassis, or ejector levers of a module to move the device. | Device damage. |
| | Do not use excessive force to move the device. Even if the packaging materials are not removed from the device, do not push the device down or throw the device directly from a high place. | Device damage. |
| | Do not step on top of the chassis or stack other heavy objects on top of the chassis. | Chassis damage. |

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| Handling modules | Do not install or remove a module if you do not wear an ESD wrist strap. | Static electricity can damage the electronic components on the module, causing module damage or unstable operation. |
| | Fasten the captive screws in a module or filler panel. | Chassis damage, especially high unibody chassis. |
| | When holding a module, do not touch the electronic components or PCB directly. | Module damage or unstable operation caused by static electricity. |
| | Put a module into an antistatic bag when it is not inside the chassis. | Module damage or unstable operation caused by static electricity. |
| | When the device is operating, remove the active MPU only when both MPUs are operating stably. To view system stability and status information, execute the `display system stable state` command. | Service interruption. |
| | Pressing the RESET button on an MPU will reset the MPU forcibly. This operation can be performed only by qualified maintenance personnel when a severe system failure occurs. | Service interruption. |
| | Pressing the OFL button on a fabric module will isolate the services on the module. This operation can be performed only by qualified maintenance personnel before powering off a fabric module. | Service isolation on the fabric module. |
| | When a module is loading and downloading the software, do not power off the device or hot swap the module. You can determine whether the module is loading software by viewing the RUN LED on the module. | Module damage. |
| | Do not touch the connectors on a module when installing or removing the module. | Module damage. |
| | Before installing a module in a slot, make sure the module is compatible with the slot and the device. | Module or connector damage. |
| | Before installing a service module or fabric module in a slot, make sure the service module is compatible with the fabric module. | Connector damage. |
| | Keep a filler panel in the unused slot. | If you do not install a filler panel in the unused slot, the ventilation and heat dissipation of the device will be affected. Thus, the operating temperature of the device will increase and the device might even enter overtemperature protection state. |

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|---|---|---|
| | Use both hands to grasp the MPU filler panel by its two sides during filler panel installation and removal on an operating switch. | The filler panel might be drawn into the chassis when the fan speed is high. |
| | Do not hot swap a CF card when the CF card is reading or writing data. | MPU anomaly. |
| Handling transceiver modules | Do not stare into any open apertures of operating transceiver modules or optical fiber connectors. | Disconnected optical fibers or transceiver modules might emit invisible laser light. Staring into any fiber port or viewing directly with non-attenuating optical instruments when the device has power might hurt your eyes. |
| | When removing a transceiver module, do not touch the golden plating of the transceiver module. | Transceiver module damage. |
| Handling cables | Network cables are used for the communication between the device and the maintenance terminal. Network cable connection or disconnection can be performed only by qualified maintenance personnel for service adjustment as scheduled and they must be aware of the impact on the network. | Login failure from a maintenance endpoint to the device. |
| | Use the grounding cable provided with the device to connect the device to the grounding strip in the equipment room. | If you use other grounding cables, the grounding effect cannot be guaranteed and the device might be damaged. |
| Handling fan trays | Do not power on the device when the device is not installed with all fan trays. | Device damage because of insufficient heat dissipation. |
| | Do not start the device when no fan trays are present. Before hot swapping a fan tray, make sure the remaining fan trays can provide sufficient cooling for the device. | Device damage because of insufficient heat dissipation. |
| | Do not touch the rotating fans when replacing a fan tray. | Fan tray damage or bodily injury. |
| Handling power supplies | Before removing a power supply, turn off the circuit breaker. | Device damage or bodily injury. |
| | Before hot swapping a power supply, make sure the remaining power supplies can provide sufficient power for the device. | Service interruption caused by insufficient power supply. |
| | Do not touch any rotating power supply fans. | Power supply damage or bodily injury. |
| | Operate the power switches on the PDUs in the cabinet only when upgrading or expanding the device, replacing the components in the device, or when a severe system failure occurs. | Device shutdown or service interruption. |

| Category | Guidelines | Consequences of misoperation |
|---|---|---|
| | To power off the device for maintenance, make sure the two power switches are both turned off. | Device damage. |