AGS8200
AI Server

Hardware Installation Guide

www.edge-core.com

Hardware Installation Guide

AGS8200

AI Server

E072024-CS-R01

How to Use This Guide

This guide includes detailed information on the AI Server, including how to install components and maintain the system. To deploy this device effectively and ensure trouble-free operation, you should first read the relevant sections in this guide so that you are familiar with all the features.

Who Should Read this Guide?

This guide is for system technicians who are responsible for installing, maintaining, and troubleshooting this device. The guide assumes a basic working knowledge of the device hardware, LANs (Local Area Networks), and the Internet Protocol (IP).

How this Guide is Organized

The organization of this guide is based on hardware installation and maintenance of the device.

The guide includes these sections:

- Chapter 1 "System Overview" — Includes an introduction to the device's hardware features.
- Chapter 2 "Device Installation" — Includes information on how to install the device hardware.
- Chapter 3 "Device Connections" — Includes information on how to make network connections to the device.
- Chapter 4 "Troubleshooting" — Includes information on troubleshooting device problems.
- Chapter 5 "Safety and Regulatory Information" — Includes device safety and regulatory statements.

Conventions

The following conventions are used throughout this guide to show information:

Note: Emphasizes important information or calls your attention to related features or instructions.

Caution: Alerts you to a potential hazard that could cause loss of data, or damage the system or equipment.

Warning: Alerts you to a potential hazard that could cause personal injury.

Revision History

This section summarizes the changes in each revision of this guide.

July 2024 Revision

This is the first revision of this guide.

Contents

Figures

Tables

1 System Overview

This chapter includes the following sections:

System Specifications

The AGS8200 system is designed with eight Intel® Gaudi® 2 AI Accelerators and dual Xeon® Sapphire-Rapids processors. The Gaudi® 2 AI Accelerator integrates 96GB HBM2E memory and 24 NICs of 100 Gbps RoCEv2 RDMA. The 24 x 100 Gbps NICs offer all-to-all connectivity and scale-out internally and externally for training, fine-tuning, and other deep learning processing.

Each AGS8200 supports 6 QSFP-DD ports for scale-out. The 400 Gbps ports can be connected to 400 Gbps switches, or 100 Gbps switches via breakout cables, in racks and clusters of Intel® Gaudi® 2-based nodes.

Figure 1: System Overview

Table 1: Hardware Specifications

Item	Specification
Form Factor	8 RU rackmount
Dimensions (W x D x H)	447 x 900 x 352 mm (17.6 x 35.43 x 13.86 inches)
Weight	150 kg (330.7 lb)
GPUs	8 x Intel® Gaudi® 2 Mezzanine Cards (HL-225H)
CPUs	Sapphire Rapids, 2 Sockets Intel Xeon Gold 6448H, 32c, 64 threads, 60MB, 250W PCH: Emmitsburg
Operating System	Ubuntu 20.04
Memory	Up to 2TB 16x DDR5 memory slots per CPU BIOS: 32MB Flash
Scale-Out Interface	RDMA (ROCE v2) 24 x 100Gbps 6 x QSFP-DD

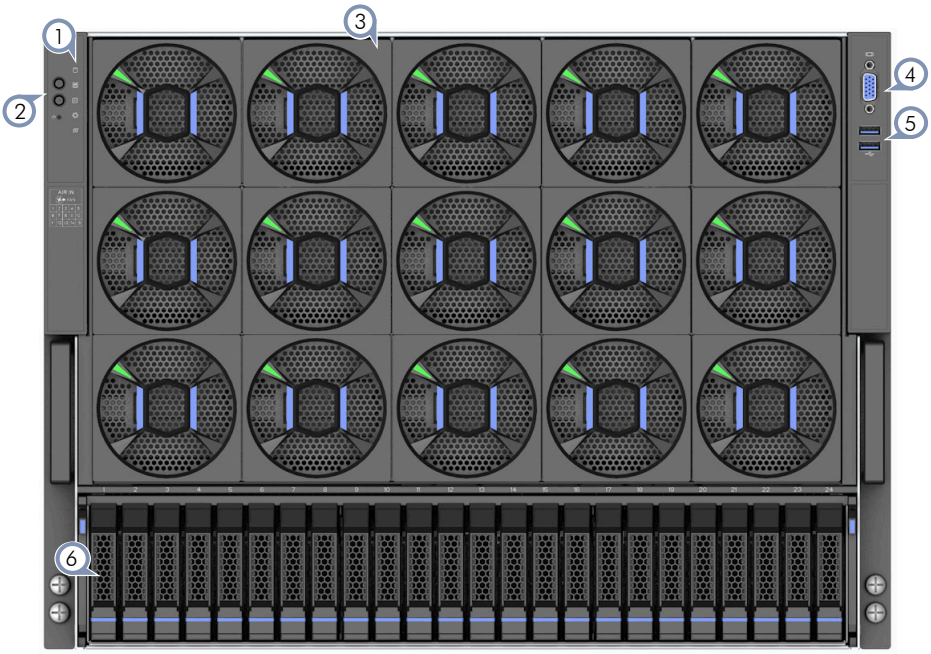
Table 1: Hardware Specifications (Continued)

Item	Specification
Storage	Internal: 2 x M.2 SATA SSD 480 GB (total 960 GB) Front: 16x 960GB 2.5" SATA SSD + 8x 1920GB 2.5" NVMe
Management I/O	BMC Chip: AST2600 Front: 2 x USB 2.0, 1 x VGA, 1 x UID, 1 x PWR Rear: 2 x USB 3.0, 1 x VGA, 1 x RJ-45, 1 x UID
Expansion Slots	1 x OCP 3.0 8 x PCIe slots
Power Supply Unit	System: 1+1 CRPS 2700 W redundant/hot-swappable AC/DC GPU: 3+3 CRPS 3000 W redundant/hot-swappable AC/DC
System Cooling	14+1 hot-swappable redundant fan modules
Temperature	Operating: 5 °C to 35°C (41 °F to 95 °F) Storage: -20 °C to 70 °C (-4 °F to 158 °F)
Humidity	Operating: 20% to 90% (non-condensing) Storage: 5% to 90% (non-condensing)
Compliances	CE FCC RoHS 2.0

Front Panel of the AGS8200

The front panel of the AGS8200 provides system LEDs and buttons, as well as access to fan trays and HDD/SSD drive bays.

Figure 2: Front Panel Features

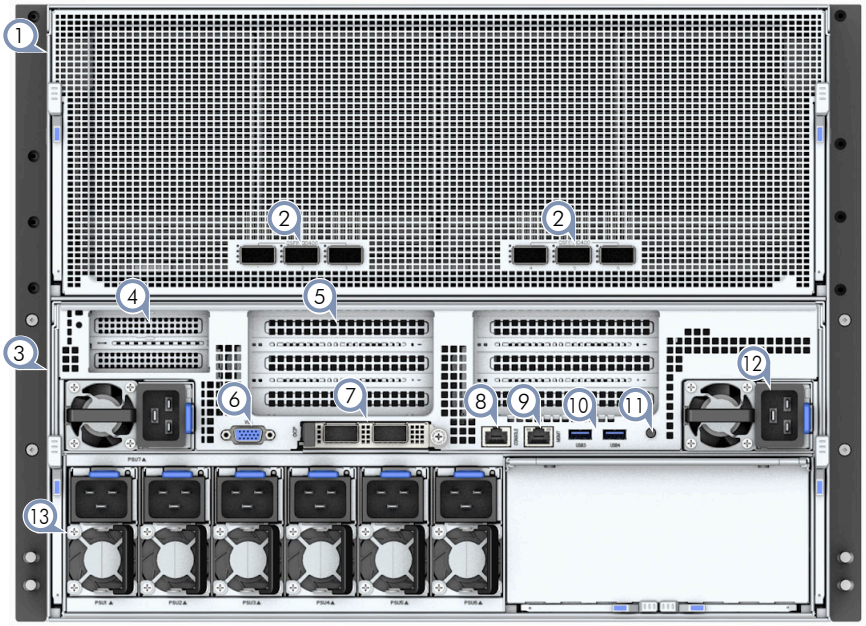


1. System LEDs
2. Reset button, UID button
3. 14+1 redundant fan modules
4. VGA port
5. 2x USB slots
6. 24 x HDD/SSD drive bays

Rear Panel of the AGS8200

The rear panel of the AGS8200 provides access to the GPU QSFP-DD ports, all the server ports, and system PSUs.

Figure 3: Rear Panel Features

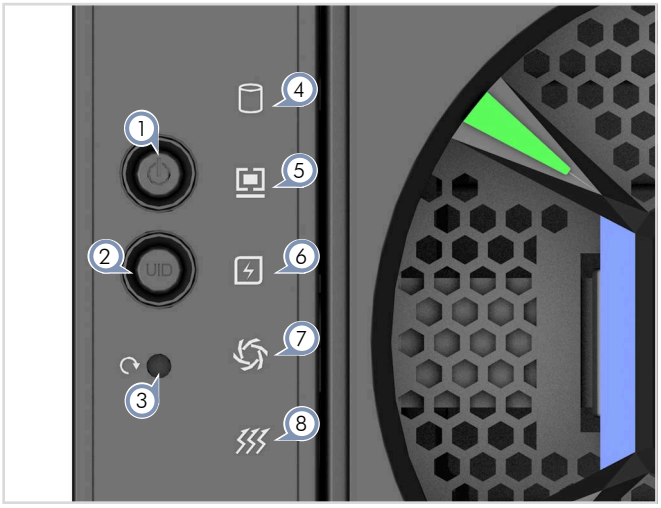


1. GPU module
2. 6 x 400GbE QSFP-DD ports
3. CPU module
4. 2 x half-height PCIe slots
5. 6 x full-height PCIe slots
6. VGA port
7. OCP 3.0 module
8. RJ-45 console port
9. RJ-45 management/BMC port
10. 2x USB slots
11. UID button/LED
12. 2 x CPU module PSUs
13. 6 x GPU module PSUs

System Status LEDs and Buttons

The top-left side of the front panel includes the system LEDs and buttons.

Figure 4: System LEDs and Buttons



1. Power button/LED
2. UID button/LED
3. Reset button
4. HDD LED
5. System Fault LED
6. Power Fault LED
7. System Fan LED
8. Thermal LED

Table 2: System Buttons/LEDs

LED	Condition	Status
Power Button/LED	Solid Green	CPU system on.
	Blinking Green	CPU system performing power on sequence.
	Fast Blinking Green	CPU system boot failure.
	Solid Yellow	BMC boot complete.
	Blinking Yellow	Performing BMC power on sequence.
	Fast Blinking Yellow	BMC boot failure.
	Off	Power off.
UID Button/LED	Solid Blue	Unit located by pressing the button.
	Blinking Blue	Unit located by software
	Off	Unit ID locator deactivated.
Reset Button	—	Reset the system after pressing
HDD LED	Blinking Red	Indicates M.2 drive activity.
	Off	No M.2 drive activity.

Table 2: System Buttons/LEDs (Continued)

LED	Condition	Status
System LED	Solid Red	Critical system error detected.
	Off	Normal operation.
Power LED	Solid Red	System power failure detected.
	Off	Normal operation.
System Fan LED	Solid Red	Fan fault detected.
	Off	Normal operation.
Thermal LED	Solid Red	High CPU or GPU temperature detected.
	Off	Normal operation.

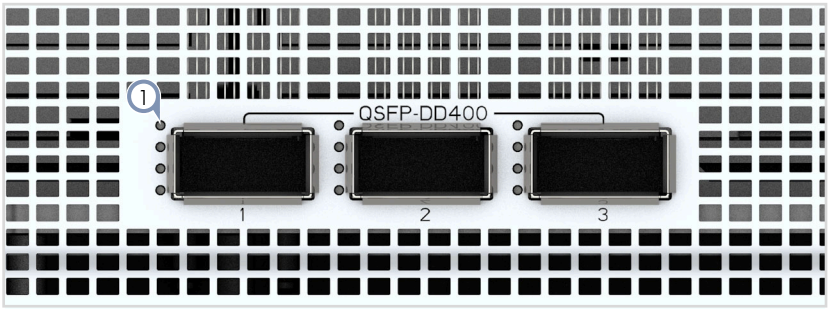
GPU Module

The GPU module contains eight Intel® Gaudi® 2 AI Accelerators with six 400G (4 x 100G PAM4) QSFP-DD ports on the panel for a total 2.4 Tbps of external scale-out bandwidth.

QSFP-DD Port LEDs

Each QSFP-DD port includes four status LEDs, each LED indicates the status of each 100G connection.

Figure 5: QSFP-DD Port LEDs



1. Status LEDs

Table 3: QSFP-DD Port Status LEDs

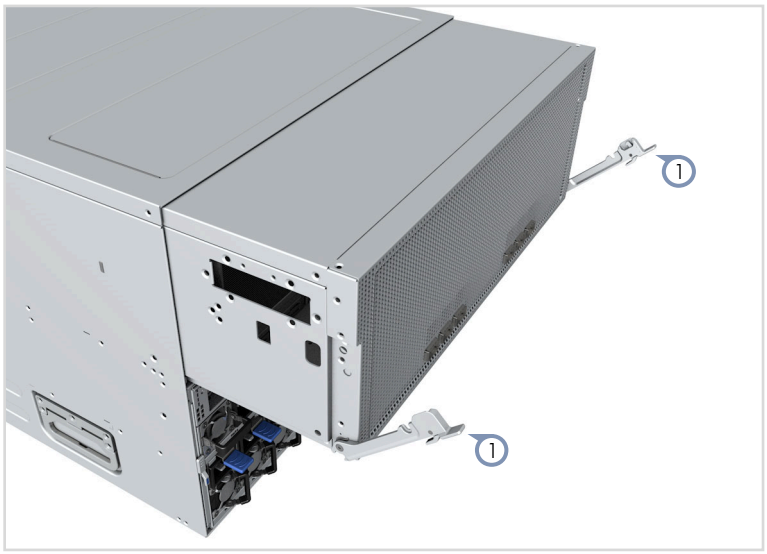
LED	Condition	Status
Link	Solid Green	Gaudi® 2 OAM card link is up.
	Solid Yellow	Gaudi® 2 OAM card is present.

Removing the GPU Module

To remove the GPU module from the chassis, follow these steps:

1. Disconnect all network connections to the GPU module.
2. Power off the device and remove all PSU power cords.
3. Pull down the two release levers to disengage the module from the chassis.
4. Slide the module out of the chassis.

Figure 6: Removing the GPU Module



1. GPU module release levers

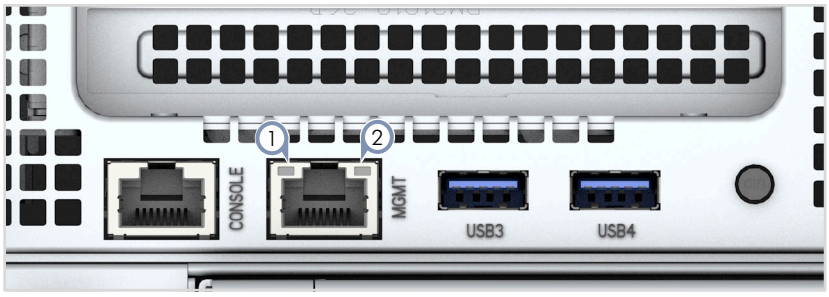
CPU Module

The CPU module includes PSUs for the CPU and GPU modules, VGA, console, management, and USB ports, plus eight PCIe slots and an OCP module slot for expansion.

MGMT Port LEDs

The RJ-45 management port includes two status LEDs.

Figure 7: MGMT Port LEDs



1. Link LED
2. Activity LED

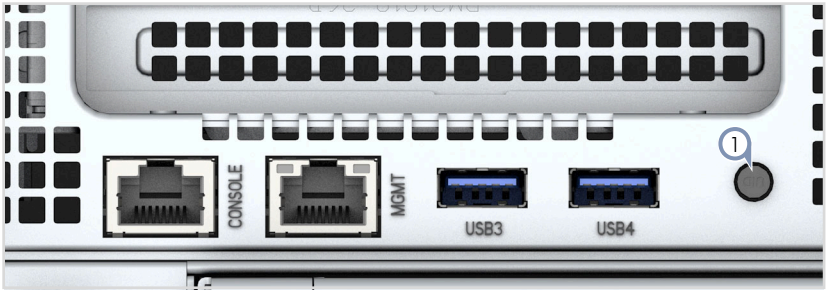
Table 4: MGMT Port Status LED

LED	Condition	Status
Link LED	Solid Green	1000M link up.
	Solid Amber	10/100M link up.
	Off	No network link.
Activity LED	Blinking Green	Network activity.
	Off	No network activity.

UID Button/LED

The UID (Unit ID) button on the CPU module is duplicated on the system front panel (see "System Status LEDs and Buttons" on page 14).

Figure 8: UID Button/LED



1. UID Button/LED

Table 5: UID Button/LED

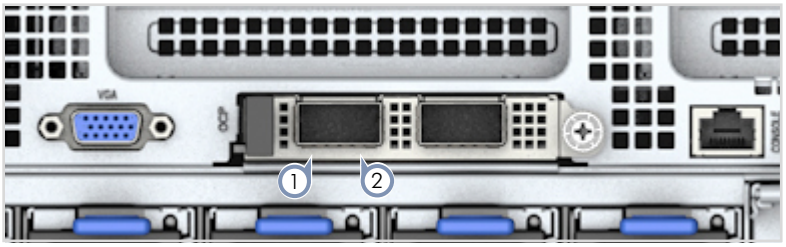
LED	Condition	Status
UID Button/LED	Solid Blue	Unit located by pressing the button.
	Blinking Blue	Unit located by software
	Off	Unit ID locator deactivated.

OCP Module Port LEDs

The OCP module include two 100G QSFP28 ports.

Each 100G QSFP28 port includes two status LEDs.

Figure 9: OCP Module Port LEDs



1. Link LED
2. Activity LED

Table 6: OCP Module Port Status LEDs

LED	Condition	Status
Link LED	Solid Green	100G link up.
	Solid Yellow	<100G link up.
	Off	No network link.
Activity LED	Blinking Green	Network activity.
	Off	No network activity.

Removing the CPU Module

To remove the CPU module from the chassis, follow these steps:

1. Disconnect all network connections to the CPU module.
2. Power off the device and remove all PSU power cords.
3. Pull down the two release levers to disengage the module from the chassis.
4. Slide the module out of the chassis.

Figure 10: Removing the CPU Module

1. Module release levers

HDD Module

The HDD Module includes 24 drive bays for 2.5-inch HDD/SSD or NVMe drives in the following configurations:

- 16 x HDD/SSD + 8 x NVMe
- 8 x HDD/SSD + 16 x NVMe

HDD/SSD Drive Bay LEDs

Each drive bay includes two status LEDs.

Figure 11: HDD/SSD Drive Bay LEDs

1. HDD/SSD Fault/Locate LED
2. HDD/SSD Activity LED

Table 7: HDD/SSD Drive Bay LEDs

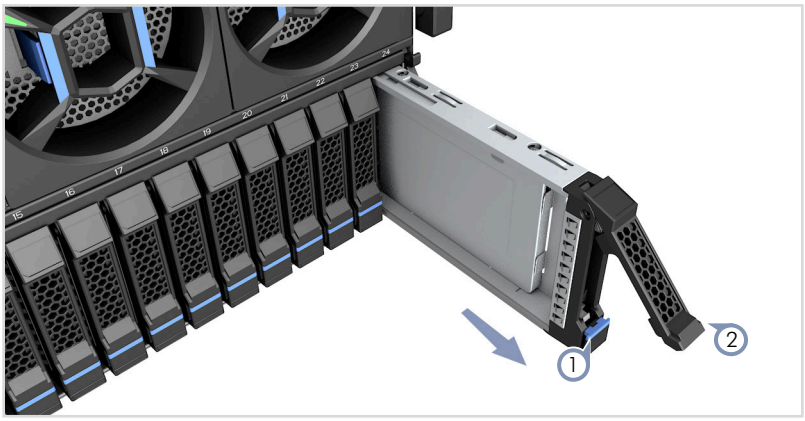
LED	Condition	Status
Fault LED	Blinking Red	A drive error has occured.
	Off	The drive is operating normally.
Locate LED	Solid Blue	Drive locator is active.
	Off	Drive locator is not active.
Activity LED	Solid Green	An NVMe drive is present.
	Blinking Green	Drive activity.
	Off	No drive present or no SATA drive activity.

Removing an HDD/ SSD Drive

To remove an HDD/SSD drive from a drive bay, follow these steps:

1. Press the latch at the bottom of the drive bay release lever.
2. Lift the release lever to disengage the drive from the slot.
3. Slide the HDD/SSD mounting bracket out of the drive bay.

Figure 12: Removing an HDD/SSD Drive



1. Drive bay release latch
2. Drive bay release lever

Removing the HDD Module

To remove the HDD module from the chassis, follow these steps:

1. Power off the device and remove all PSU power cords.
2. Pull down the two release levers to disengage the module from the chassis.
3. Slide the module out of the chassis.

Figure 13: Removing the HDD Module

1. Module release levers

Power Supplies

The AGS8200 includes two system 2700 W AC power supply units (PSUs), and the GPU module six 3000 W AC PSUs.

System PSUs

The CPU module has dual 1+1 redundant, hot-swappable PSUs that include a single status LED.

Figure 14: System PSU Status LED

1. Status LED
2. PSU release latch
3. PSU handle

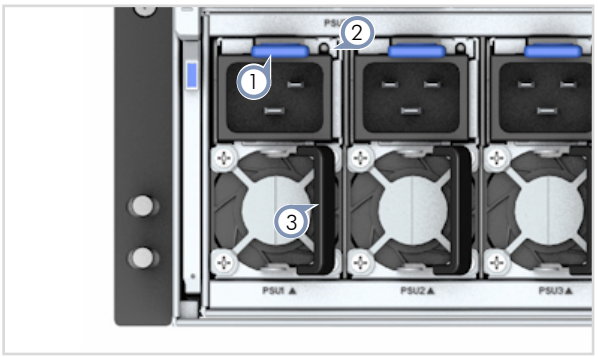
Table 8: System PSU Status LED

LED	Condition	Status
PSU LED	Solid Green	The PSU is operating normally.
	1Hz Blinking Green	AC present. Only 12V standby on (power supply off) or PSU in Smart standby mode.
	2Hz Blinking Green	PSU firmware updating.
	Solid Amber	■ AC power cord unplugged or AC power lost. The second PSU still has AC power. ■ PSU critical event has caused a shutdown; OTP, OCP, UVP, OVP, fan failure.
	1Hz Blinking Amber	PSU warning (PSU continues to operate); high temp, high power, high current, slow fan.
	Off	No external power connected to all PSUs.

GPU Module PSUs

The GPU module has six 3+3 redundant, hot-swappable PSUs that include a single status LED.

Figure 15: GPU Module PSU Status LED



1. PSU release latch
2. Status LED
3. PSU handle

Table 9: GPU Module PSU Status LED

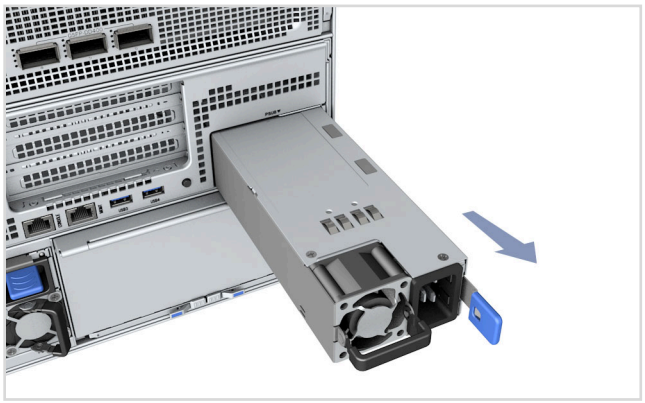
LED	Condition	Status
PSU LED	Solid Green	The PSU is operating normally.
	1Hz Blinking Green	AC present only (54V off). PSU in standby mode.
	2Hz Blinking Green	PSU firmware updating.
	Solid Amber	■ AC power cord unplugged or AC power lost. The second PSU still has AC power. ■ PSU critical event has caused a shutdown; OTP, OCP, UVP, OVP, fan failure.
	1Hz Blinking Amber	PSU warning (PSU continues to operate); high temp, high power, high current, slow fan.
	Off	No external power connected to all PSUs.

Replacing Power Supplies

The CPU module has dual 1+1 redundant, hot-swappable 2700 W PSUs and the GPU module has six 3+3 redundant, hot-swappable 3000 W PSUs. The procedure for replacing a PSU is the same for both PSU types.

The device does not need to be powered off before replacing a PSU.

Figure 16: Power Supply Replacement



Removing a PSU

1. Remover the AC power cord from the PSU's AC socket.
2. Grasp the PSU handle and press the release latch.
3. Remove the PSU from the chassis.

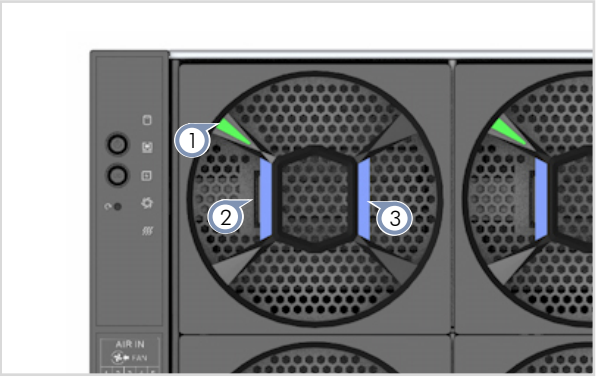
Installing a PSU

1. Slide the PSU into the slot.
2. Firmly push the PSU until it engages with the connector and the release latch clicks into place.
3. Plug the AC power cord into the PSU's AC socket.

Fan Trays

The AGS8200 includes 15 hot-swappable fan trays for system cooling. At least 14 fan trays must be installed at all times. If a fan should fail, the fan tray should be replaced as soon as possible.

Figure 17: Fan Tray



1. Status LED
2. Fan tray latch
3. Fan tray handle

Table 10: Fan Tray Status LED

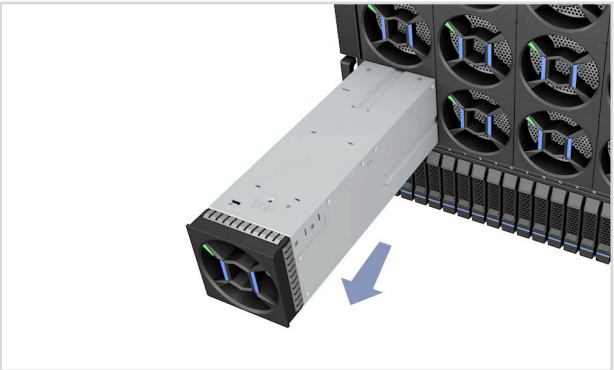
LED	Condition	Status
Fan Tray LED	On Green	The fan tray is operating normally.
	On Amber	The fan tray is not functioning properly.
	Off	The fan tray is not powered on.

Replacing System Fan Trays

The system is shipped with 15 fan trays installed. If a fan failure is detected, the defective fan tray should be replaced as soon as possible.

Note: Fan trays are hot-swappable, you do not need to power off the device to replace a fan tray.

Figure 18: Replacing Fan Trays



Follow this procedure to replace a fan tray:

1. Press the latch on the fan tray.
2. Using the fan tray handle, pull firmly until the fan tray disengages from the connector. The fan tray LED will turn off and the fan stop operating.
3. Slide the fan tray out of the device.
4. Insert the replacement fan tray into the slot.
5. Push firmly until the fan tray clicks into place. The LED should turn on and the fan immediately start to operate.

2 Device Installation

This chapter includes the following sections:

Installation Precautions

Warning: This device uses transceivers with lasers to transmit signals over fiber optic cable. The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly into the laser light emitted by a transceiver.

Warning: When selecting a fiber transceiver, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser Class 1 transceiver.

Rack Mount Guidelines

When rack mounting the device, pay particular attention to the following factors:

- **Rack Types:** You can use any standard EIA 19-inch equipment rack with four posts. The bracket hole pattern should be spaced 1U (1.75 in. or 4.45 cm) apart.
- **Rack Stability:** Whenever possible, secure the rack to the building ceiling or floor, particularly if you are located in a region where earthquakes are common.
- **Rack Planning:** When installing equipment in a rack, first plan how units can be best arranged. Try to always mount the heaviest equipment at the bottom of the rack.
- **Temperature:** Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range. See "Device Cooling Requirements" on page 30.
- **Mechanical Loading:** Do not place any equipment on top of a rack-mounted unit.
- **Circuit Overloading:** Be sure that the supply circuit to the rack assembly is not overloaded.
- **Grounding:** Rack-mounted equipment should be properly grounded.

Rack Cooling

When mounting the device in an enclosed rack or cabinet, be sure to check the following guidelines to prevent overheating:

- Make sure that enough cool air can flow into the enclosure for the equipment it contains.
- Check that the rack or cabinet allows the hot air to exit the enclosure (normally from the top) without circulating back into equipment.
- If the enclosure has sides or doors with ventilation holes, make sure they are not blocked by cables or other obstructions.
- Route cables within the rack or cabinet to maximize the airflow.
- When possible, do not completely fill the rack or cabinet with equipment, allow some unused space within the enclosure for better airflow.

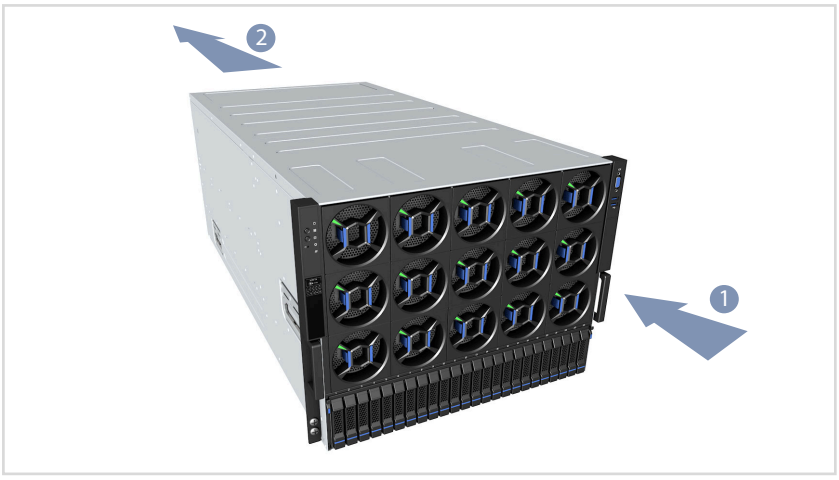
Device Cooling Requirements

Wherever the device is located, be sure to pay close attention to the device's cooling requirements. The location should be well ventilated and provide unrestricted airflow at the front, back, and sides of the device. If the airflow is insufficient, it may cause the device to overheat and possibly fail.

The installation environment must be able to maintain its temperature within the range 5 °C to 35°C (41 °F to 95 °F), and its humidity within the range 20% to 90%, non-condensing.

The following figure shows the airflow through the device.

Figure 19: Device Cooling



1. Cool air
2. Warm air

Package Contents

After unpacking the device, check the package contents to be sure you have received all the items.

- AGS8200 AI Server
- Rack Mounting Kit—contains two (left and right) mounting brackets
- 18 x M6x12 rack screws
- 14 x M6 rack cage nuts
- 8 x AC power cord type IEC C19

Installing the Device in a Rack

Before you start to rack-mount the device, be sure to have the following items available:

- 16 mounting screws for each device you plan to install in a rack—these are not included. Be sure to use rack mounting screws that are supplied with the rack.
- A screwdriver (Phillips or flathead, depending on the type of screws used).

Warning: Stability hazard. The rack may tip over causing serious personal injury.

Before extending the rack to the installation position, read the installation instructions.

Do not put any load on the slide-rail mounted equipment in the installation position.

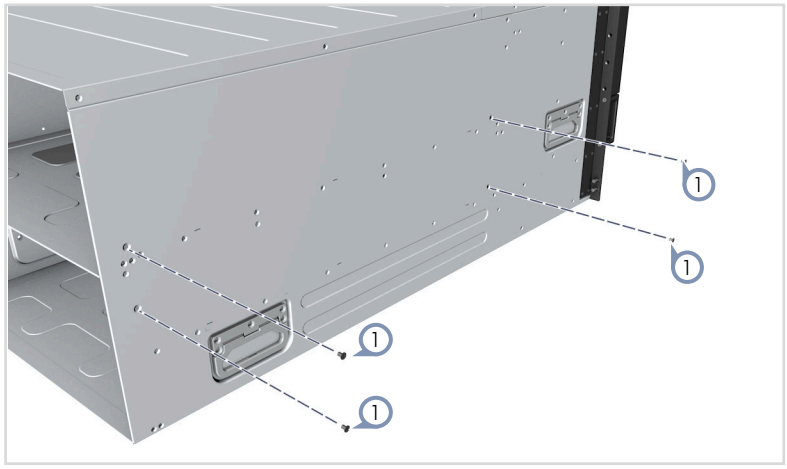
Do not leave the slide-rail mounted equipment in the installation position.

Note: If not using a server lift, it is recommended to remove all modules to reduce the weight of the chassis before installing in a rack. The modules can then be re-installed after the chassis is mounted in the rack.

To rack mount the device, follow these steps:

1. Before installation, be sure to remove the four transport screws from each side of the device.

Figure 20: Removing the Transport Screws

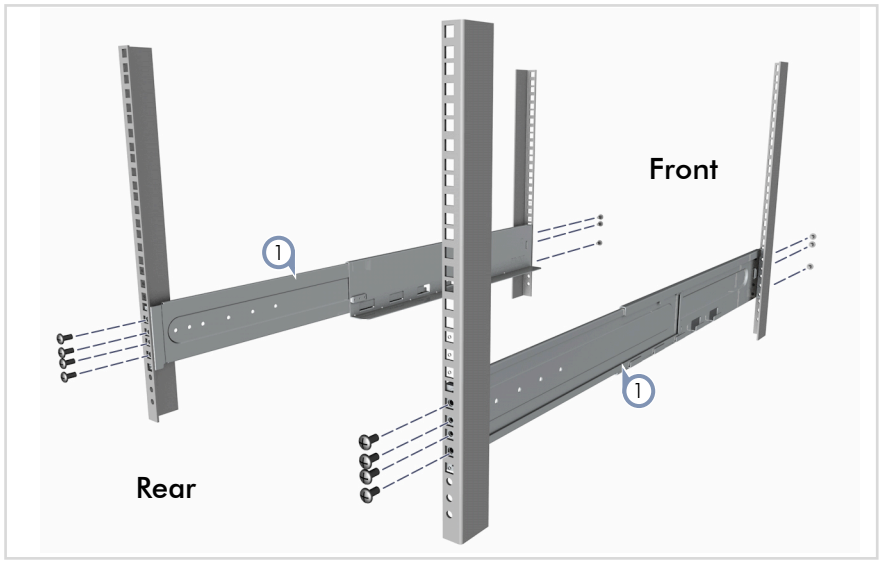


1. Transport screws

2. Following your rack plan, mark the holes in the rack where the device will be installed.

3. Install the device's rack-mounting brackets in the rack and secure each bracket using four rack screws at the back and three at the front.

Figure 21: Installing the Rack-Mounting Brackets



1. Rack mount brackets

4. Lift the device into the rack and slide it onto the installed brackets.

5. Secure the device to the rack front posts using four screws.

Figure 22: Installing the Device in a Rack

1. Rack screws

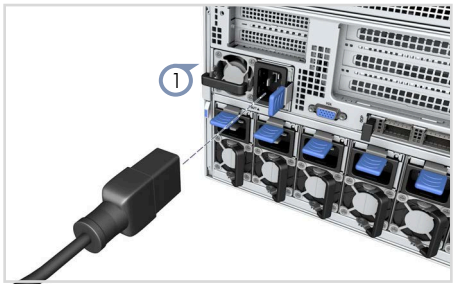
Connecting Power

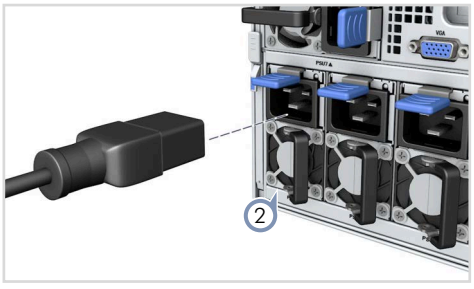
To supply AC power to the device, first verify that the external AC power supply can provide 90 to 264 VAC, 50/60 Hz. The device requires two 2700 W AC PSUs to be installed for the CPU module and six 3000 W AC PSUs for the GPU module.

To connect the device to a power source:

1. Install AC PSUs in the device. (See "Replacing Power Supplies" on page 24.)

Figure 23: Connecting Power to the Device





1. CPU PSU
2. GPU PSU

2. Plug the power cord into a grounded, 3-pin, AC power source.

Note: For international use, you may need to change the AC power cord. You must use a cord set that has been approved for the socket type in your country.

3. Insert the plug on the other end of the power cord directly into the socket on the AC PSU.

4. Check the LED indicator on the PSU to verify that power is being received. If not, recheck the PSU and power cord connections at the AC supply source and PSU.

3 Device Connections

This chapter includes the following sections:

Connecting to QSFP-DD/QSFP28 Ports

The device includes 6 QSFP-DD slots for 400 Gbps QSFP-DD transceivers.

The supported transceiver types are listed below:

- 400GBASE DAC, AOC, SR8, DR4, and FR4

The OCP module includes 2 QSFP28 slots for 100 Gbps QSFP28 transceivers.

The supported transceiver types are listed below:

- 100GBASE CR4, AOC, SR4, LR4, and PSM4
- 40GBASE CR4, SR4, and LR4

Inserting Transceivers

Follow these steps to install a QSFP-DD/QSFP28 transceiver:

Warning: When selecting a fiber transceiver, consider safety and make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser Class 1 transceiver.

Note: QSFP-DD/QSFP28 transceivers are hot-swappable. The device does not need to be powered off before installing or removing a transceiver.

Note: QSFP-DD/QSFP28 transceivers are not provided in the device package.

1. Consider network and cabling requirements to select an appropriate transceiver type that is also compatible with the device transceiver support.
2. If the QSFP-DD/QSFP28 slot is covered with a rubber protective cap, remove the cap and keep it for later replacement.
3. Insert the transceiver with the optical connector facing outward and the slot connector facing down. Note that QSFP-DD/QSFP28 transceivers are keyed so they can only be installed in the correct orientation.
4. Slide the transceiver into the slot until it clicks into place. If you do not immediately connect a cable to the port, use a rubber protective cap to keep the transceiver optics clean.

Note: To uninstall a transceiver: First disconnect the network cable, then pull the tab to remove the transceiver from the slot.

Connecting to Fiber Optic Ports

Follow these steps to connect cables to QSFP-DD/QSFP28 transceiver ports.

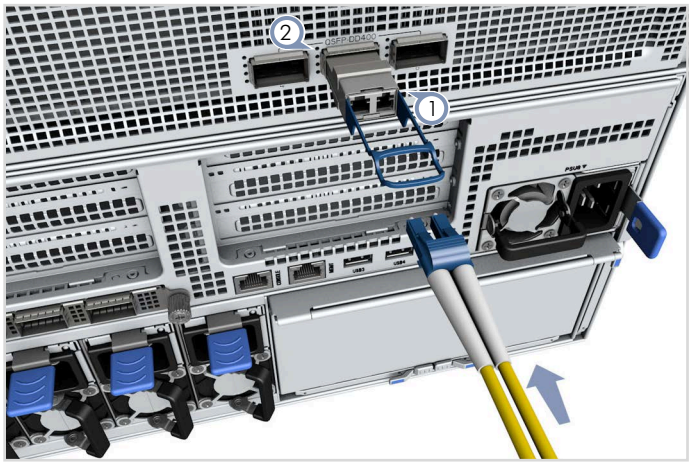
Warning: This device uses transceivers with lasers to transmit signals over fiber optic cable. The transceivers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly into the laser light emitted by a transceiver.

1. Remove and keep the port's protective cover. When not connected to a fiber cable, the cover should be replaced to protect the optics.

2. Check that the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber cables will impair the quality of the light transmitted through the cable and lead to degraded performance on the port.

3. Connect one end of the cable to the QSFP-DD/QSFP28 port on the transceiver and the other end to the QSFP-DD/QSFP28 port on the other device. Since QSFP-DD/QSFP28 connectors are keyed, the cable can only be attached in the correct orientation.

Figure 24: Connecting to an QSFP-DD Transceiver



1. QSFP-DD fiber transceiver
2. Status LEDs

4. As a connection is made, check the status LEDs on the device to be sure that the connection is valid. See "QSFP-DD Port LEDs" on page 16 or "OCP Module Port LEDs" on page 19.

Connecting to the VGA Ports

The DE-15 VGA ports on the CPU module's panel and on the device front panel are for connecting a VGA monitor to the system. The USB ports can also be used for keyboard and mouse connections to the server.

Figure 25: Connecting to the VGA Port

1. Rear-panel VGA DE-15 connector
2. Front-panel VGA DE-15 connector
3. USB ports for keyboard and mouse.

Connecting to the Console Port

An RJ-45 serial console port is on the CPU module's panel. The console device can be any PC or workstation running VT-100 terminal emulator software. A RJ-45 to DE-9-male console cable must be used for connecting to a PC's RS-232 serial DE-9 DTE (COM) port.

Note: To connect to notebooks or other PCs that do not have a DE-9 COM port, you can use a USB-to-male DE-9 adapter cable (not included with the device).

The following table describes the pin assignments used in the console cable.

Table 11: Console Cable Wiring

Device's 9-Pin DTE Console Port	Null Modem	PC's 9-Pin DTE Port
6 RXD (receive data)	<----------	3 TXD (transmit data)
3 TXD (transmit data)	---------->	2 RXD (receive data)
4,5 SGND (signal ground)	----------	5 SGND (signal ground)

No other pins are used.

The serial port's configuration requirements are as follows:

- Default Baud rate—115200 bps
- Character Size—8 Characters

- Parity—None
- Stop bit—One
- Data bits—8
- Flow control—none

Follow these steps to connect to the console port:

1. Attach one end of the console cable to the DE-9 COM port connector on a management PC.
2. Attach the other end of the console cable to the console port on the CPU module.

Figure 26: Connecting to the Console Port

1. RJ-45 Console port

3. Configure the PC's COM port required settings using VT-100 terminal emulator software running on the management PC.
4. Press the Enter key on the management PC to start a console session.

Connecting to the 1000BASE-T MGMT Port

The RJ-45 10/100/1000BASE-T MGMT port on the CPU module supports an out-of-band (OOB) network connection to any other network device. The connection requires unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cables with RJ-45 connectors at both ends.

Table 12: Maximum Twisted-Pair Copper Cable Lengths

Cable Type	Maximum Cable Length	Connector
1000BASE-T		
Category 5, 5e, 6 or better 100-ohm UTP or STP	100 m (328 ft)	RJ-45
100BASE-TX		
Category 5 or better 100-ohm UTP or STP	100 m (328 ft)	RJ-45
10BASE-T		
Category 3 or better 100-ohm UTP	100 m (328 ft)	RJ-45

Follow these steps to connect network cable an RJ-45 port:

1. Attach one end of a twisted-pair cable to the network device's RJ-45 port.

Figure 27: Connecting to the RJ-45 MGMT Port

1. RJ-45 MGMT port

2. Attach the other end to the RJ-45 MGMT port on the CPU module.

3. As a connection is made, the status LEDs on the server port will turn on to indicate that the connection is valid. See "MGMT Port LEDs" on page 17.

4 Troubleshooting

When possible, before checking specific troubleshooting options, always look for POST messages by first rebooting the device using one of these methods:

- Reset the system through OS software.
- Power down by pressing the power on/off button.
- Remove power to the unit.

Power Supply

If the device does not power on, check these items:

- Make sure power is available at the source outlet.
- Look for loose power cord connections.
- Remove and reinstall the PSUs in the chassis.

Note: If you cannot isolate the power problem, a PSU may be defective. Replace the PSU and check all items again.

POST and Boot Problems

If the device does not complete the POST or boot the OS, check these items:

- Check the POST messages for errors.
- Check installed HDD/SSD devices are properly installed.
- Check the boot settings in the BIOS.
- OS software is not installed or corrupted. Reinstall the OS.

Cooling and Fans

If the system is running hot, check these items:

- Check to be sure the ambient temperature is not too high.
- Make sure all fans are running properly.
- Check the fan settings in the BIOS. The fans might need to run at a higher speed.
- Make sure that airflow at the front and rear of the device is not obstructed.

Network Connections

If there are problems with network connections, check these items:

- Verify that the unit and attached devices are powered on.
- Be sure the cable is plugged into both the device port and corresponding device.
- Verify that the proper cable type is used and its length does not exceed specified limits.
- Check the attached device and cable connections for possible defects. Replace the defective cable if necessary.

5 Safety and Regulatory Information

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or better for 10 Mbps connections, Category 5 or better for 100 Mbps connections, Category 5, 5e, or 6 for 1000 Mbps connections. For fiber optic connections, you may use 50/125 or 62.5/125 micron multimode fiber or 9/125 micron single-mode fiber.

CE Mark

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This information technology equipment complies with the requirements of the Council Directive 2014/30/EU on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 2014/35/EU for electrical equipment used within certain voltage limits. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:

- Limit according to 55032, Class A
- Limit for harmonic current emission according to EN IEC 61000-3-2, Class A
- Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3

Immunity:

- Product family standard according to EN 55035
- Electrostatic Discharge according to IEC 61000-4-2
- Radio-frequency electromagnetic field according to IEC 61000-4-3
- Electrical fast transient/burst according to IEC 61000-4-4
- Surge immunity test according to IEC 61000-4-5

- Immunity to conducted disturbances, Induced by radio-frequency fields: IEC 61000-4-6
- Power frequency magnetic field immunity test according to IEC 61000-4-8
- Voltage dips, short interruptions and voltage variations immunity test according to IEC 61000-4-11

LVD:
- EN 62368-1:2014/A11: 2017

CE

The Declaration of Conformity (DoC) can be obtained from www.accton.com.

UKCA

UKCA

Mayflex UK Ltd
Junction Six Industrial Park, Electric Avenue,
Birmingham B6 7JJ United Kingdom

Vesper Technologies Limited
Unit 5/6 Rugby Park, Bletchley Road, Heaton Mersey,
Stockport SK4 3EJ United Kingdom

Japan - VCCI Class A

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI — A

Safety Compliance

Warning: Fiber Optic Port Safety:

CLASS 1
LASER PRODUCT

The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly into the laser light emitted by a transceiver.

Avertissment: Ports pour fibres optiques - sécurité sur le plan optique:

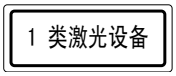
PRODUIT LASER
DE CLASSE 1

Les lasers sont conformes aux exigences d'un produit laser de classe 1 et sont intrinsèquement sans danger pour les yeux en fonctionnement normal. Cependant, vous ne devez jamais regarder directement la lumière laser émise par un émetteur-récepteur.

Warnhinweis: Faseroptikanschlüsse - Optische Sicherheit:

Die Laser entsprechen den Anforderungen eines Laserprodukts der Klasse 1 und sind im Normalbetrieb grundsätzlich augensicher. Allerdings sollten Sie niemals direkt in das von einem Transceiver ausgesendete Laserlicht blicken.

警告：光纤端口安全：



这些激光器符合 1 类激光产品的要求，并且在正常操作中本质上对眼睛安全。但是，切勿直视收发器发出的激光。

Power and Battery Safety

Warning: If your device uses a lithium battery, do not attempt to replace the battery yourself. Return the device to the manufacturer for battery replacement.
Avertissement: Si votre appareil utilise une batterie au lithium, n'essayez pas de la remplacer vous-même. Renvoyez l'appareil au fabricant pour le remplacement de la batterie.

If the device contains lithium batteries that are encased in a sealed chassis, do not attempt to open the sealed chassis under any circumstances.
Si l'appareil contient des batteries au lithium enfermées dans un châssis scellé, n'essayez en aucun cas d'ouvrir le châssis scellé.

Risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
Risque d'explosion si la batterie est remplacée par un type incorrect. Éliminez les piles usagées conformément aux instructions.

Caution - Risk of Electrical Shock: To disconnect power, remove all power cords from the unit.

Attention - Risque de Choc Électrique: Pour débrancher, l'alimentation électrique, veuillez assurer tous les cables d'alimentation sont retires de l'unite.

注意 – 感電の危 ： 電源を切る場合は 、電源コ－トを本装置から抜いてください 。
注意 - 有觸電的危險：如要切斷電源 ， 請將全部電源線都從機器上拔掉
注意 - 有触电的危险：如要切断电源 ， 请将全部电源线都从机器上拔掉

PSE Alarm

本製品に同梱いたしております電源コードセットは、本製品専用です。本電源コードセットは、本製品以外の製品並びに他の用途でご使用いただくことは出来ません。製品本体に同梱された電源コードセットを利用し、他製品の電源コードセットを使用しないで下さい。

Power Cord Safety

Please read the following safety information carefully before installing the device:

Warning: Installation and removal of the unit must be carried out by qualified personnel only.

- The unit must be connected to an earthed (grounded) outlet to comply with international safety standards.
- Do not connect the unit to an A.C. outlet (power supply) without an earth (ground) connection.

- The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN 60320/IEC 320 appliance inlet.
- The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.
- This unit operates under SELV (Safety Extra Low Voltage) conditions according to IEC 60950-1 and/or 62368-1. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.

France and Peru only

This unit cannot be powered from IT† supplies. If your supplies are of IT type, this unit must be powered by 230 V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labelled Neutral, connected directly to earth (ground).

† Impédance à la terre

Important! Before making connections, make sure you have the correct cord set. Check it (read the label on the cable) against the following:

Power Cord Set	
U.S.A. and Canada	The cord set must be UL-approved and CSA certified. The minimum specifications for the flexible cord are: - No. 14 AWG - length between 1.5 meters and 4.5 meters, type SJE, SJT, ST or SJTO - No. 14 AWG - length between 1.5 meters and 2.4 meters, type SVT or SPT-2 - 3-conductor The cord set must have a rated current capacity of at least 16 A The attachment plug must be an earth-grounding type with NEMA 6-20P (250 Vac, 20 A) configuration.
Denmark	The supply plug must comply with Section 107-2-D1, Standard DK2-1a or DK2-5a.
Switzerland	The supply plug must comply with SEV/ASE 1011.
U.K.	The supply plug must comply with BS1363 (3-pin 13 A) and be fitted with a 5 A fuse which complies with BS1362. The mains cord must comply with IEC 60227 (designation 60227 IEC 52).
Europe	The supply plug must comply with CEE7/7 (“SCHUKO”). The mains cord must comply with IEC 60227 (designation 60227 IEC 52). IEC-320 receptacle.

Veuillez lire à fond l'information de la sécurité suivante avant d'installer l’appareil:

Avertissement: L'installation et la dépose de ce groupe doivent être confiés à un personnel qualifié.

- Ne branchez pas votre appareil sur une prise secteur (alimentation électrique) lorsqu'il n'y a pas de connexion de mise à la terre (mise à la masse).
- Vous devez raccorder ce groupe à une sortie mise à la terre (mise à la masse) afin de respecter les normes internationales de sécurité.
- Le coupleur d'appareil (le connecteur du groupe et non pas la prise murale) doit respecter une configuration qui permet un branchement sur une entrée d'appareil EN 60320/IEC 320.
- La prise secteur doit se trouver à proximité de l'appareil et son accès doit être facile. Vous ne pouvez mettre l'appareil hors circuit qu'en débranchant son cordon électrique au niveau de cette prise.
- L'appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme IEC 60950-1 et/ou 62368-1. Ces conditions ne sont maintenues que si l'équipement auquel il est raccordé fonctionne dans les mêmes conditions.

France et Pérou uniquement:

Ce groupe ne peut pas être alimenté par un dispositif à impédance à la terre. Si vos alimentations sont du type impédance à la terre, ce groupe doit être alimenté par une tension de 230 V (2 P+T) par le biais d'un transformateur d'isolement à rapport 1:1, avec un point secondaire de connexion portant l'appellation Neutre et avec raccordement direct à la terre (masse).

Cordon électrique - Il doit être agréé dans le pays d'utilisation	
Etats-Unis et Canada:	Le cordon doit avoir reçu l'homologation des UL et un certificat de la CSA. Les spécifications minimales pour un cable flexible sont: - N° 14 AWG - longueur comprise entre 1,5 mètres et 4,5 mètres, type SJE, SJT, ST ou SJTO - N° 14 AWG - longueur comprise entre 1,5 mètres et 2,4 mètres, type SVT ou SPT-2 - 3 conducteurs Le cordon doit être en mesure d'acheminer un courant nominal d'au moins 16 A. La prise femelle de branchement doit être du type à mise à la terre (mise à la masse) et respecter la configuration NEMA 6-20P (250 Vac, 20 A).
Danemark:	La prise mâle d'alimentation doit respecter la section 107-2 D1 de la norme DK2 1a ou DK2 5a.
Suisse:	La prise mâle d'alimentation doit respecter la norme SEV/ASE 1011.
Europe	La prise secteur doit être conforme aux normes CEE 7/7 ("SCHUKO") Le cordon d'alimentation doit être conforme à la norme IEC 60227 (IEC 60227 désignation 52)

Bitte unbedingt vor dem Einbauen das Gerät die folgenden Sicherheitsanweisungen durchlesen:

Warnung: Die Installation und der Ausbau des Geräts darf nur durch Fachpersonal erfolgen.

- Das Gerät sollte nicht an eine ungeerdete Wechselstromsteckdose angeschlossen werden.
- Das Gerät muß an eine geerdete Steckdose angeschlossen werden, welche die internationalen Sicherheitsnormen erfüllt.
- Der Gerätestecker (der Anschluß an das Gerät, nicht der Wandsteckdosenstecker) muß einen gemäß EN 60320/IEC 320 konfigurierten Geräteeingang haben.
- Die Netzsteckdose muß in der Nähe des Geräts und leicht zugänglich sein. Die Stromversorgung des Geräts kann nur durch Herausziehen des Gerätenetzkabels aus der Netzsteckdose unterbrochen werden.
- Der Betrieb dieses Geräts erfolgt unter den SELV-Bedingungen (Sicherheitskleinstspannung) gemäß IEC 60950-1 und/oder 62368-1. Diese Bedingungen sind nur gegeben, wenn auch die an das Gerät angeschlossenen Geräte unter SELV-Bedingungen betrieben werden.

Stromkabel. Dies muss von dem Land, in dem es benutzt wird geprüft werden:	
Schweiz	Dieser Stromstecker muß die SEV/ASE 1011Bestimmungen einhalten.
Europe	Das Netzkabel muss mit IEC 60227 (IEC 60227 entsprechen Bezeichnung 52) Der Netzstecker muß die Norm CEE 7/7 erfüllen ("SCHUKO").

Warnings and Cautionary Messages

Warning: This product does not contain any serviceable user parts.

Warning: Installation and removal of the unit must be carried out by qualified personnel only.

Warning: When connecting this device to a power outlet, connect the field ground lead on the tri-pole power plug to a valid earth ground line to prevent electrical hazards.

Warning: This device uses lasers to transmit signals over fiber optic cable. The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly at a transmit port when it is powered on.

Warning: When selecting a fiber QSFP28/QSFP-DD device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser Class 1 QSFP28/QSFP-DD transceiver.

Caution: Wear an anti-static wrist strap or take other suitable measures to prevent electrostatic discharge when handling this equipment.

Caution: Do not plug a phone jack connector in the RJ-45 port. This may damage this device.

Caution: Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

Caution: This device includes plug-in power supply and fan tray modules that are installed into its chassis. All installed modules must have a matching airflow direction. That is, all modules must have a front-to-back (F2B) airflow direction, or all modules must have a back-to-front (B2F) airflow direction.

Caution: This device must be installed in a telecommunications room or a server room where only qualified personnel have access.

Avertissement: Ce produit ne contient aucun composant susceptible d'être réparé par l'utilisateur.

Avertissement: L'installation et la dépose de l'unité ne doivent être réalisées que par du personnel qualifié.

Avertissement: Lorsque vous branchez cet appareil sur une prise électrique, la terre de la fiche à trois pôles doit être branchée sur une ligne mise à la terre pour écarter tout danger électrique.

Avertissement: Cet appareil utilise des lasers pour transmettre des signaux via un câble de fibre optique. Ces lasers répondent aux exigences des produits laser de classe 1 et sont sans danger intrinsèque pour les yeux, sous réserve de leur utilisation normale. Vous ne devrez cependant jamais regarder directement un port de transmission lorsque ce dernier est sous tension.

Avertissement: Lorsque vous utilisez un dispositif fibre de type QSFP28/QSFP-DD, en ce qui concerne la sécurité, assurez-vous qu'il puisse fonctionner à une température inférieure à la température maximale de fonctionnement recommandée du produit. Utilisez également un émetteur-récepteur laser QSFP28/QSFP-DD de classe 1 agrée.

Attention: La manipulation de cet équipement requiert le port d'un bracelet antistatique ou l'utilisation d'autres mesures pour éviter toute décharge électrostatique.

Attention: Ne branchez pas un connecteur téléphonique dans le port RJ-45. Vous risqueriez d'endommager l'appareil.

Attention: Ne branchez que des fils torsadés par paires conformes aux normes FCC sur les connecteurs RJ-45.

Attention: L'appareil comprend des modules d'alimentation et de bac de ventilateurs installés sur son châssis. Tous les modules installés doivent avoir une direction de circulation d'air correspondante. C'est-à-dire que tous les modules doivent avoir la même direction de circulation d'air : avant vers arrière (F2B), ou arrière vers avant (B2F).

Attention: Cet appareil doit être installé dans une salle de télécommunications ou une salle de serveurs où seul le personnel qualifié a accès.