



NVIDIA Spectrum-4 SN5000 2U Switch Systems Hardware User Manual

Rev. 1.0

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1 About this Manual

This manual is relevant for the following models: SN5400, SN5600, SN5600D and SN5610. It describes the installation and basic use of NVIDIA Ethernet switches based on the NVIDIA Spectrum-4 ASIC. Its intended audience is IT managers and system administrators. Refer to [Ordering Information](#) for product descriptions and part numbers.

2 Related Documentation

- [Cumulus Linux User Guide](#) and [training course](#)
- SONiC User Manual and release notes: log in to the NVIDIA Enterprise Support Portal → Downloads → Switches and Gateways → Switch Software → SONiC → Documentation
- [Open Network Install Environment \(ONIE\) Quick Start Guide](#)
- [NetQ User Guide](#)
- [NVIDIA Air User Guide](#)

For assistance, contact nbu-services-sales@nvidia.com

3 Revision History

A list of the changes made to this document can be found in the [Document Revision History](#).

4 Ordering Information

Pay special attention to [air flow direction](#) when ordering your system.

4.1 SN5400 Part Numbers

| NVIDIA SKU | Product Description | Lifecycle Phase |
|--------------------|---|-----------------|
| 920-9N42C-0ORB-7C0 | NVIDIA Spectrum-4 based 400GbE 2U Open Ethernet switch with Cumulus Linux authentication, 64 QSFP56-DD ports and 1 2xSFP28 port, 2 power supplies (AC), x86 CPU, Secure Boot, standard depth, C2P airflow, tool-less rail kit | P-Rel |
| 920-9N42C-00FB-7C0 | NVIDIA Spectrum-4 based 400GbE 2U Open Ethernet switch with Cumulus Linux Authentication, 64 QSFP56-DD ports and 2 SFP28 ports, 2 power supplies (AC), x86 CPU, Secure-boot, standard depth, Power-to-Connector airflow, Tool-less Rail Kit | P-Rel |

4.2 SN5600 Part Numbers

| NVIDIA SKU | Product Description | Lifecycle Phase |
|--------------------|--|-------------------|
| 920-9N42F-0ORI-7C0 | NVIDIA Spectrum-4 based 800GbE 2U Open Ethernet switch with Cumulus Linux authentication, 64 OSFP ports and 1 SFP28 port, 2 power supplies (AC), x86 CPU, Secure Boot, standard depth, C2P airflow, tool-less rail kit | EoL (End of Life) |

4.3 SN5600D Part Numbers

| NVIDIA SKU | Product Description | Lifecycle Phase |
|--------------------|--|-----------------|
| 920-9N42F-0ORI-KC0 | NVIDIA Spectrum-4 based 800GbE 2U Open Ethernet switch with Cumulus Linux Authentication, 64 OSFP ports and 1 SFP28 port, 48VDC Busbar, x86 CPU, Secure-boot, standard depth, Connector-to-Power Airflow, MGX Mount, Mounting Rail-Kit | P-Rel |

4.4 SN5610 Part Numbers

| NVIDIA SKU | Product Description | Lifecycle Phase |
|--------------------|---|-----------------|
| 920-9N42F-00RI-3C1 | NVIDIA Spectrum-4 based 800GbE 2U Open Ethernet switch with Cumulus Linux Authentication, 64 OSFP ports and 2 SFP28 ports, 4 AC PSUs, Secure-boot, standard depth, Connector-to-Power Airflow, Tool-less Rail Kit | P-Rel |

5 Introduction

The NVIDIA Spectrum SN5000 series switches are the 5th generation of Spectrum switches, purpose-built to accelerate data center fabrics. The SN5000 series provides port speeds spanning from 10GbE to 800GbE, and delivers accelerated Ethernet to every data center. The SN5000 series is ideal for enabling cloud-scale infrastructure for data centers of any size. The SN5000 switch systems provide high performance and consistent low latency along with support for advanced software defined networking features, making them the ideal choice for AI, cloud, data analytics, and simulation applications.

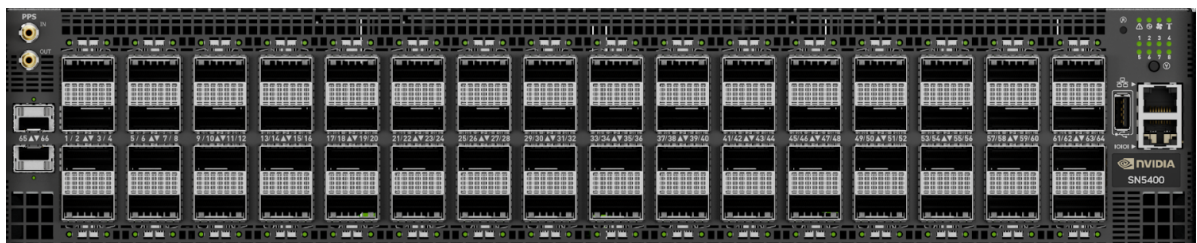
Powered by NVIDIA Spectrum-4 ASICs, the SN5000 series features dynamic, flexible shared buffers and predictable wire speed performance. The SN5000 is built to accelerate NVIDIA platforms, including NVIDIA EGXTM, NVIDIA DGX PODTM, and NVIDIA OVXTM SuperPODs, and NVIDIA's Accelerated AI Solution Spectrum-X. As part of the Spectrum platform, the SN5000 systems are pre-tested and pre-validated with NVIDIA's full portfolio of Ethernet networking technology, including BlueField DPUs, ConnectX SmartNICs, and LinkX interconnects. This end-to-end switch to host solution is critical to powering accelerated workloads, and delivers the high performance and innovative feature set needed to supercharge cloud-native applications at scale.

SN5000 switch systems are based on the high-performance Spectrum-4 ASIC with a bidirectional switching capacity of up to 51.2 Tbps. SN5000 platforms are available in a range of configurations, each delivering high performance combined with feature-rich layer 2 and layer 3 forwarding, ideally suited for both top-of-rack leaf and fixed configuration spines. The SN5000 series provides full wire speed, cut through-mode latency, on-chip fully-shared 128MB packet buffering, and flexible port use in addition to advanced capabilities. Combining a wide range of innovations in the areas of programmability, telemetry, and tunneling with industry-leading performance, NVIDIA SN5000 series is capable of addressing the complex networking requirements of today's data centers.

- The SN5400 smart spine/super-spine offers 64 ports of 400GbE in a dense 2U form factor, fully splittable to up to 128 ports of 200GbE/400GbE, and up to 256 ports of 10/25/50/100GbE when used with splitter cables.
- The SN5600/SN5600D smart spine/super-spine offers 64 ports of 800GbE in a dense 2U form factor, fully splittable to up to 128 ports of 400GbE, and up to 256 ports of 10/25/50/100/200GbE when used with splitter cables.
- The SN5610 smart spine/super-spine offers 64 ports of 800GbE in a dense 2U form factor, fully splittable to up to 128 ports of 200GbE/400GbE, and up to 256 ports of 50/100/200GbE when used with splitter cables.

For a complete list of available ordering options, see [Ordering Information](#).

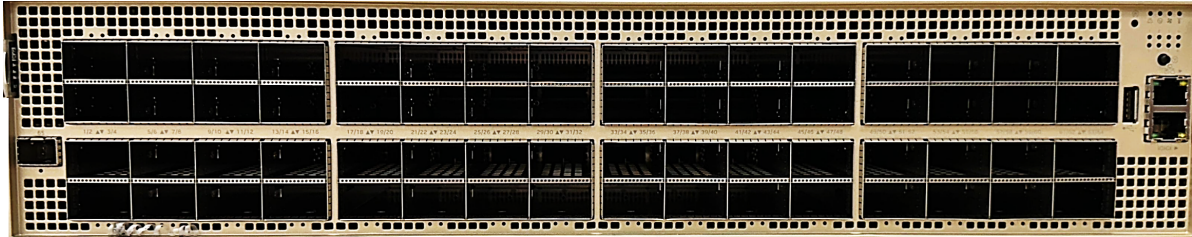
SN5400 Front View



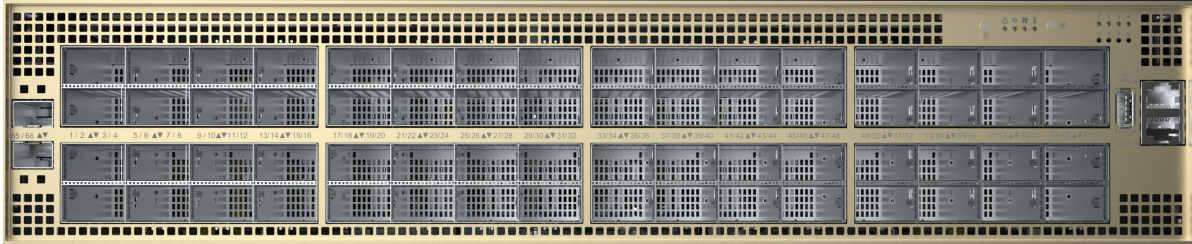
SN5600 Front View



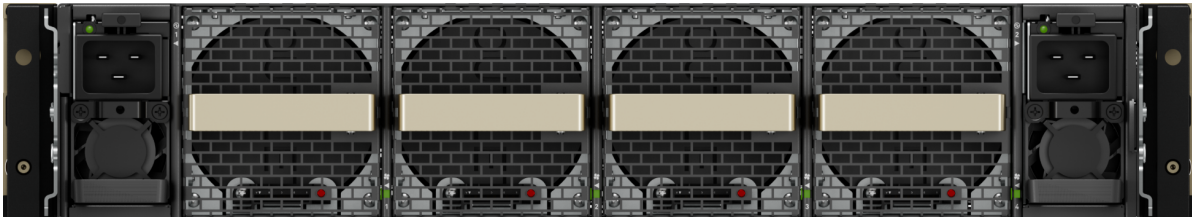
SN5600D Front View



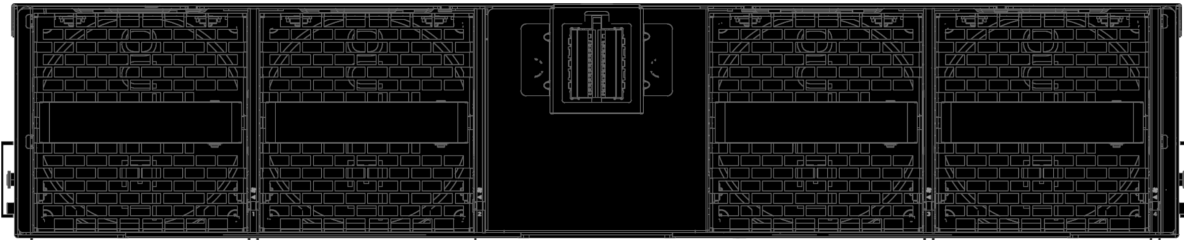
SN5610 Front View



SN5400 and SN5600 Rear View



SN5600D Rear View




SN5610 Rear View



5.1 Speed and Switching Capabilities

The following table describes maximum throughput and interface speed per system model. The systems support different interfaces and speed rates using QSFP/QSDP-DD/OSFP to SFP adapters or breakout cables. For further information, see [Splitter \(Breakout\) Cables and Adapters](#).

| System Model | Interfaces | Supported Rates | Max Throughput |
|--------------------|------------------------------------|--|----------------|
| SN5400 | 64 QSFP-DD 400GbE 2xSFP28 25GbE | 64 × 400GbE 128 × 200GbE 256 × 10/25/50/100GbE ⚠ 1GbE is supported only in SFP28 ports #65 and #66. | 25.6 Tbps |
| SN5600/ SN5600D | 64 OSFP 800GbE 1xSFP28 25GbE | 64 × 800GbE 128 × 400GbE 256 × 10/25/50/100/200GbE ⚠ 1GbE is supported only in SFP28 port #65. | 51.2 Tbps |

| System Model | Interfaces | Supported Rates | Max Throughput |
|--------------|---------------------------------|--|----------------|
| SN5610 | 64 OSFP 800GbE 2xSFP28 25GbE | 64 × 800GbE 128 × 400GbE 256 × 10/25/50/100/200GbE <div style="border: 1px solid orange; padding: 5px; display: inline-block;">  1GbE is supported in SFP28 ports #65 and #66 only. </div> | 51.2 Tbps |

5.2 Management Interfaces, PSUs, and Fans

The following table lists the various management interfaces, PSUs, and fans per system model.

| System Model | USB-A | RJ45 MGT (Management) | RJ45 Console | PSU | Fan |
|--------------|-------|-----------------------|--------------|--------|--------|
| SN5400 | Front | Front | Front | Yes, 2 | Yes, 4 |
| SN5600 | Front | Front | Front | Yes, 2 | Yes, 4 |
| SN5600D | Front | Front | Front | No* | Yes, 4 |
| SN5610 | Front | Front | Front | Yes, 4 | Yes, 5 |

*The SN5600D system is powered by a DC busbar assembly.

5.3 Features

For a full feature list, refer to the [SN5000 product brief](#).


5.4 Certifications


For a list of certifications (such as EMC, safety, and others), contact your NVIDIA representative.

6 Installation

6.1 System Installation and Initialization

Pay close attention to the mechanical, power, and thermal precautions for rack-mounted equipment during the installation and initialization processes.

 The rack mounting holes conform to the EIA-310 standard for 19-inch racks. Take precautions to guarantee proper ventilation so that the system maintains sufficient airflow at ambient temperature.

 Unless otherwise specified, NVIDIA products are designed to work in an environmentally controlled data center with low levels of gaseous and dust (particulate) contamination. The operation environment should meet severity level G1 as per ISA 71.04 for gaseous contamination and ISO 14644-1 class 8 for cleanliness level.

The installation procedure for the system involves the following steps:

1. Review the [Safety Warnings](#).
2. Review the [airflow directions](#) for the system and rack.
3. Make sure that the [package contents](#) are not missing or damaged.
4. [Mount the system](#) into a rack enclosure.
5. [Power on the system](#).
6. Perform a [system bring-up](#).
7. (Optional) [FRU replacements](#).

6.2 Airflow

The airflow direction for SN56xx systems is connector-side inlet to power-side outlet. SN5400 systems are offered with either connector-side inlet to power-side outlet airflow or power-side inlet to connector-side outlet airflow. The images below illustrate the different airflow systems. The designs may vary depending on the system.

Power (rear) side inlet to connector side outlet: marked with blue dots that are placed on the power inlet side.

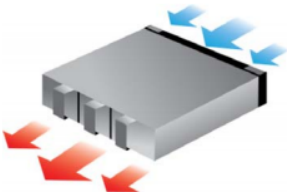


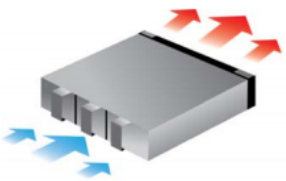
Connector (front) side inlet to power side outlet: marked with red dots that are placed on the power inlet side.



⊗ All servers and systems in the same rack should have the same airflow direction. Likewise, all FRU components must also have the same airflow direction. A mismatch in the airflow will affect the heat dissipation.

The table below provides an airflow color legend and respective OPN designation.

| Direction | Description and OPN Designation |
|---|--|
|  | Connector side inlet to power side outlet. The arrows indicate the flow of air from the connector-side inlet to the power-side outlet. |

| Direction | Description and OPN Designation |
|---|---|
|  | <p>Power side inlet to connector side outlet. The arrows indicate the flow of air from the power-side inlet to the connector-side outlet.</p> |

6.3 Package Contents

Before installing your new system, unpack it and make sure all parts are included and undamaged. If anything is missing or damaged, contact networking-support@nvidia.com.

The packages include:

| SN5400/SN5600 | SN5600D | SN5610 |
|--|---|---|
| <ul style="list-style-type: none"> • 1x System • 1x Rail kit • 2x Power cables for each power supply unit (Type C20 to C19) • 1x Harness: HAR000028 - Harness RS232 2M cable (DB9 to RJ-45) • 2x Cable retainers for each power supply unit | <ul style="list-style-type: none"> • 1x System • 1x Rail kit • 1x Harness: HAR000028 - Harness RS232 2M cable (DB9 to RJ-45) | <ul style="list-style-type: none"> • 1x System • 1x Rail kit • 4x US-certified power cables for each power supply unit (Type C14 TO C15) • 1x Harness: HAR000028 - Harness RS232 2M cable (DB9 to RJ-45) • 4x Cable retainers for each power supply unit |



If the product is supplied with dust caps, do not remove them until installation is required. Keep dust caps installed on all unused ports to prevent foreign object contamination of the cage and to avoid thermal air-pressure leakage.

6.4 Mounting Options

By default, the systems are sold with fixed rail kits. Telescopic rail kits are available for some systems, and should be purchased separately. For installation instructions, refer to the following table:

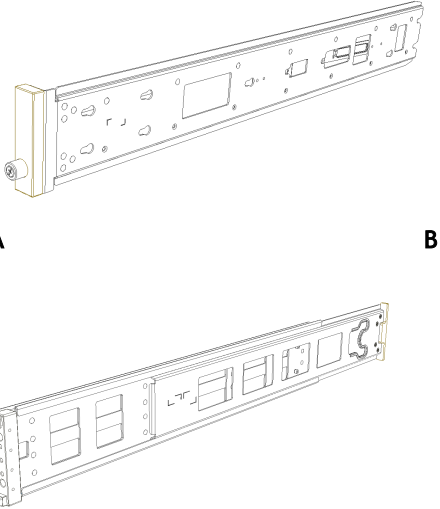
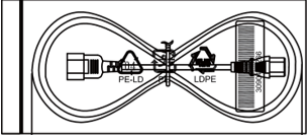
| System Model | Rail Kit |
|----------------------|----------------------------------|
| SN5400/SN5600/SN5610 | SN5xxx Rail Kit |
| SN5600D | SN5600D Rail Kit |

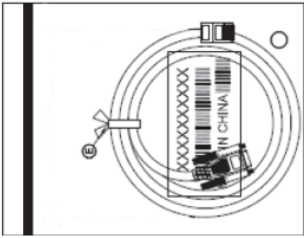
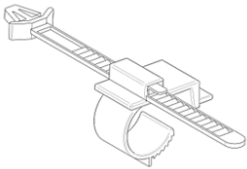

6.5 SN5xxx Rail Kit

| Kit Part Number | Rack Size and Rack Depth Range |
|--------------------|---|
| 930-9SKIT-00L0-00A | NVIDIA 600mm to 800mm tool-less rail kit for 64x400G and 64x800G switch |

⚠ The illustrations in this section depict the SN5400 system. You can follow the same installation steps for other systems, but the physical design may vary slightly.

6.5.1 Rail Kit Parts

| Item | Quantity | Item |
|---|-------------------|--|
| Rail kit for 23.6-31.5” (600-800mm) racks | 2x (of each part) |  |
| Power cables - Type C20-C19 | 4x |  |

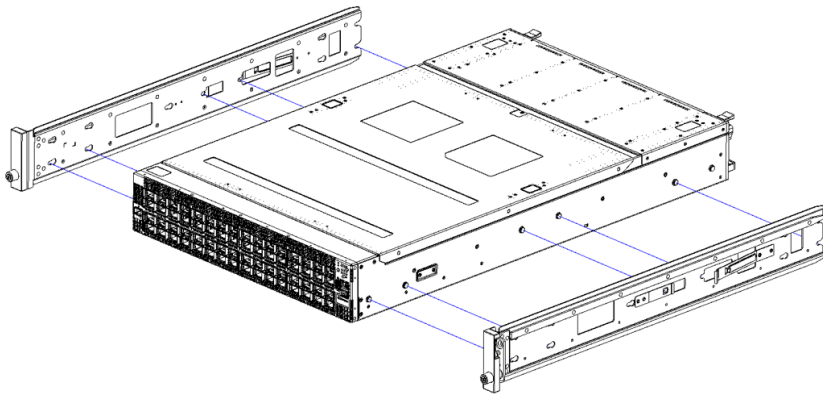
| Item | Quantity | Item |
|--|----------|--|
| Harness: RS232 2M cable - DB9 to RJ-45 | 1× |  |
| Cable retainers | 2× |  |
| OSFP thermal caps | 32× |  |

6.5.2 Installation Instructions

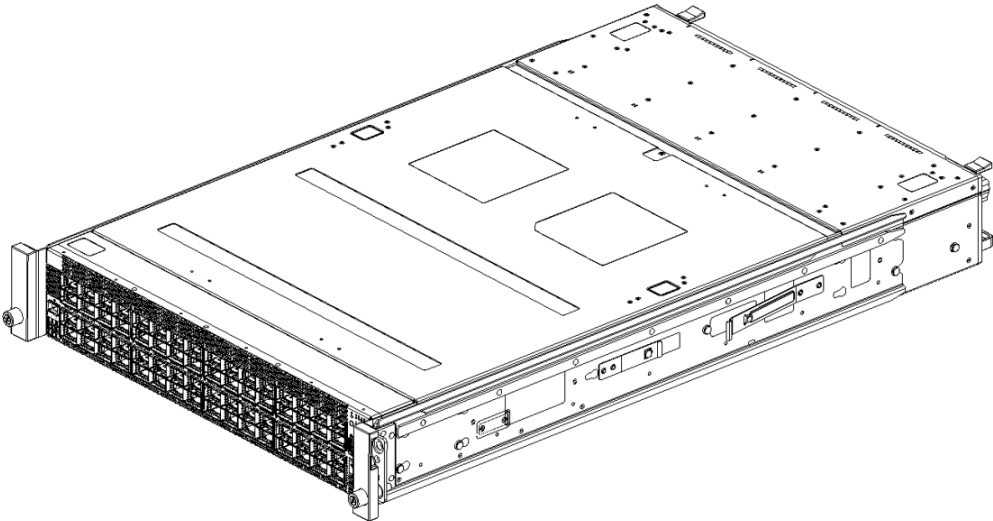


- The following steps include illustrations that show front side (ports) installation, yet all instructions apply to all installation options.
- The illustrations show the SN5400 system, yet the installation procedures apply to SN5600 systems as well.

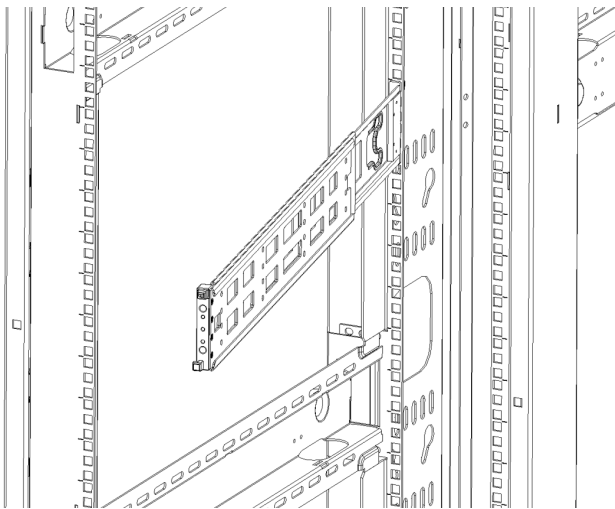
1. Attach the left and right system rails (A) to the switch.



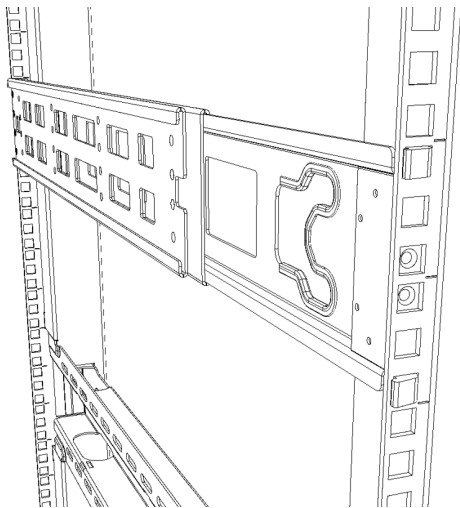
2. Secure the assembly by gently pushing the system chassis' pins through the slider key holes, until locking occurs.



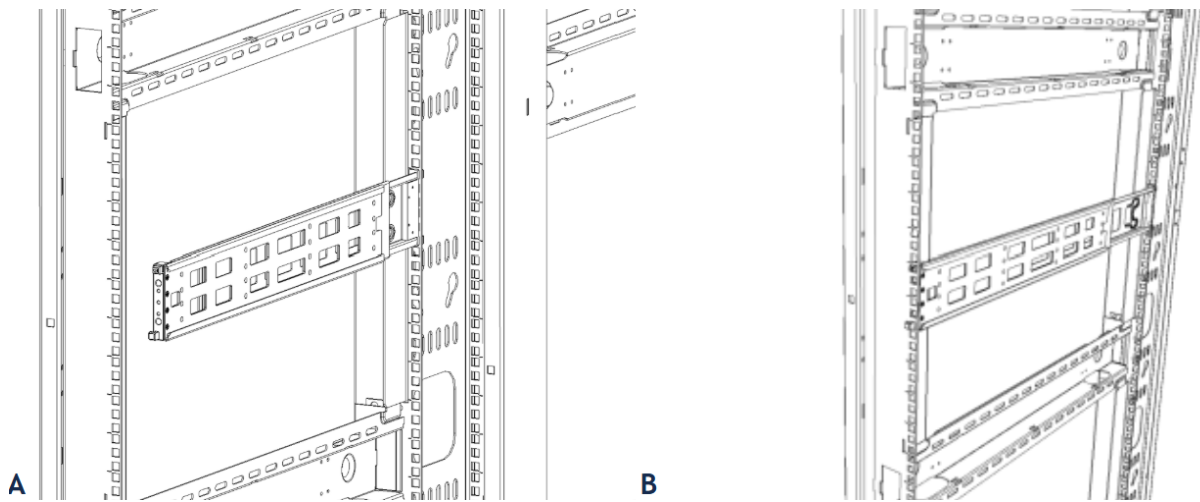
3. Mount both of the rack rails (B) into the rack by angularly inserting the brakes located at the rails edges into the designated slots in the rack unit, as shown in the following figure:



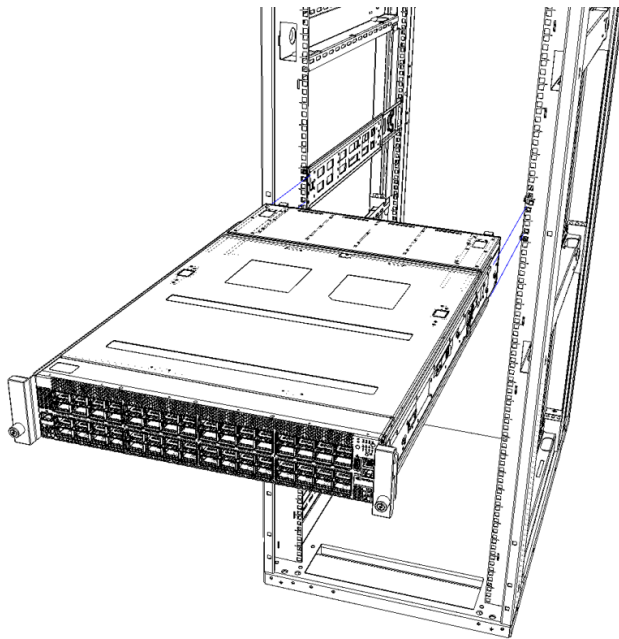
4. Align both rack rails (B) to sit horizontally in parallel to the rack assembly. By straightening the rails' angular position, their breaks will be caught and locked in the rack's slots.



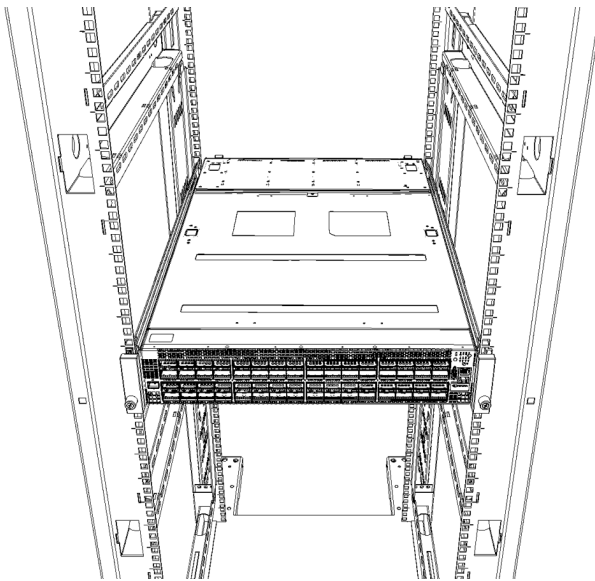
5. Pull the rack rails' telescopic extensions all the way to the rack's opposite side, and insert the latches at the rails' free edges to the rack's slots. A click should be heard as the spring latches are fully inserted and locking occurs.



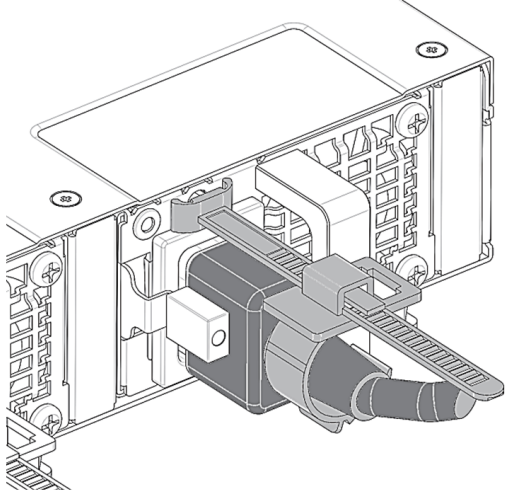
6. While your installation partner is supporting the system's weight, slide the rails installed on the system into the channels in the rack rails, and push them forward until the locking mechanism is activated on both sides and a click is heard.



7. Tighten the captive screws on both sides to further secure the system to the rack's posts.



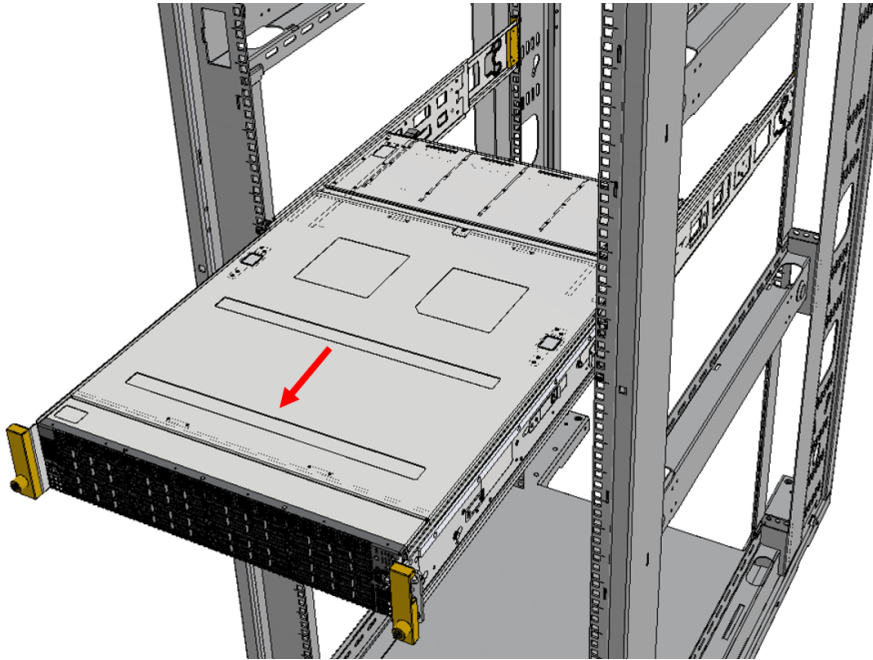
8. A cable retainer should be used to secure the power cord when plugging it into each power socket (located on the rear side of the switch). To secure the power cord inside the retainer, press the small tab on the retainer strip to loosen the loop and pull. (The following diagram is for general illustration; the rear view does not necessarily match that of the actual system).



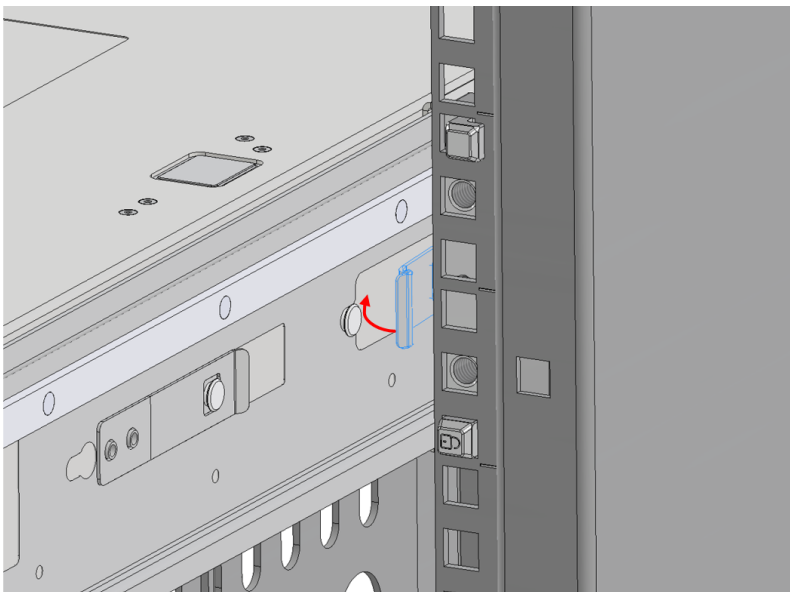
6.5.2.1 Removing the Device from the Rack

To remove the system from the rack:

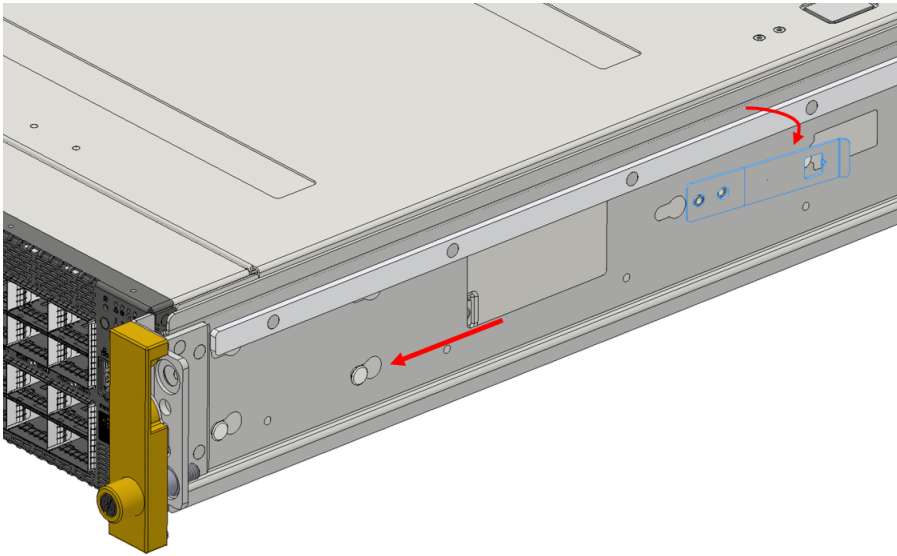
1. Turn off the system and disconnect it from peripherals and from the electrical outlet.
2. While your installation partner is supporting the system's weight, loosen the captive screws attaching the system's rails to the rack's posts.
3. Use two hands to pull the system out until it is caught by the rails.



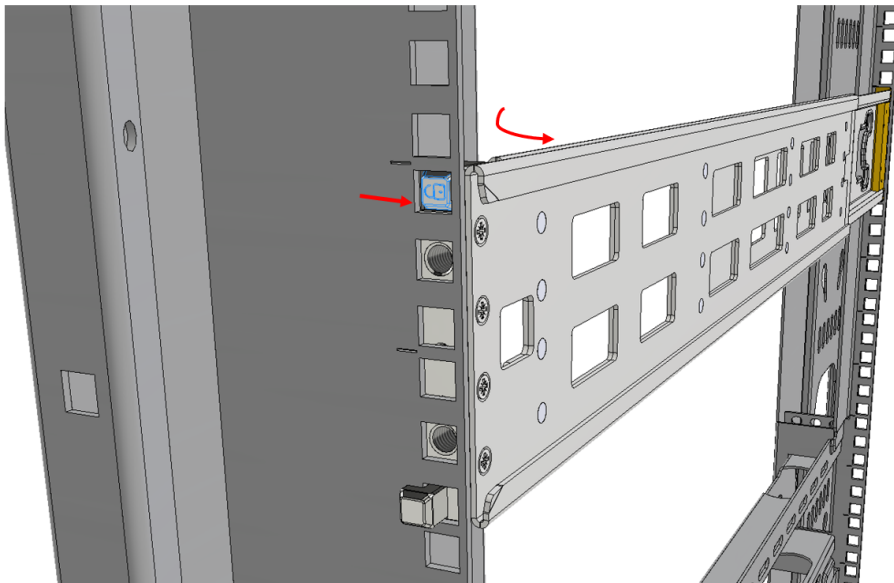
4. Press the spring latches on both sides of the rack and continue to pull the system out until the rack rails are clear of the system's rails.



5. Remove the rails from the system. Release the metal latches and pull out the rails, so the system's pins will be removed out of the oval slots.



6. Remove the rails from the rack by pressing the lock button, and pull the rails outside of the rack assembly.







6.6 SN5600D Rail Kit

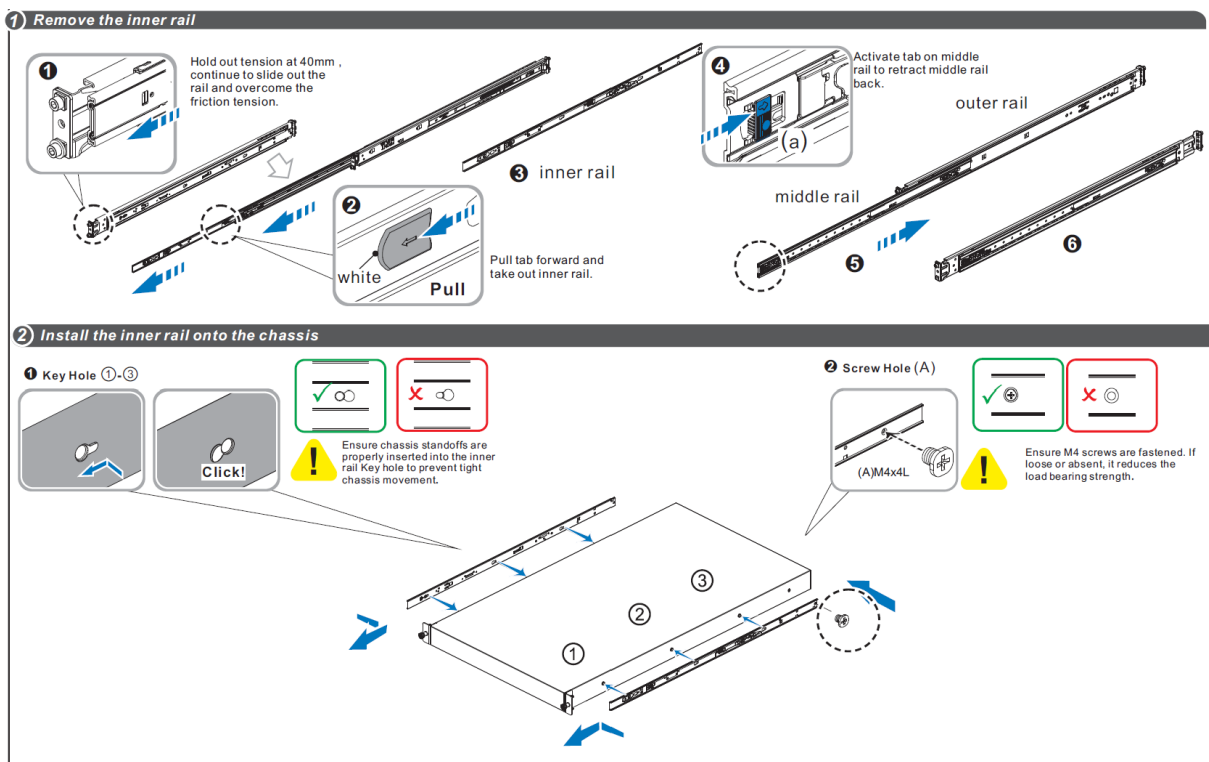
The following instructions have been prepared and provided with permission from King Slide.

⚠ To install the SN5600D in an OCP 21" rack, the designated adapter tray is required. See SN5600D 21" to 19" Adapter Tray Installation Instructions under [Appendixes](#) for details.

6.6.1 Package Contents

| SCREW PACK | | | | | | | |
|----------------------|---|----------|-----------------|-----------------------|---|----------|-----------------|
| Name | Image | Quantity | Torque(kgf. cm) | Name | Image | Quantity | Torque(kgf. cm) |
| (A)M4x4L(P0.7) |  | 2 | 15~20 | (C)SPACER |  | 2 | |
| (B)SHC-M5x10.0L-P0.8 |  | 2 | 20~25 | (D)TORX-M5x10.0L-P0.8 |  | 2 | 20~25 |

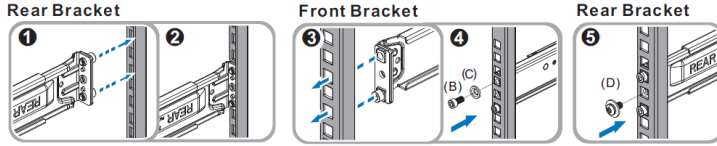
6.6.2 Installation Instructions



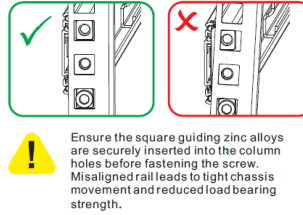
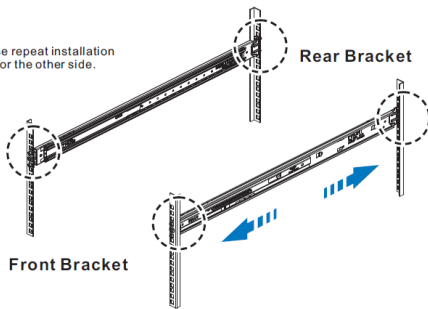
3 Fix the outer rail/bracket assembly to the frame

Front and rear brackets must be securely fastened onto the rack post before proceeding with chassis installation. Failure to do so risks rail detachment from rack post and subsequent chassis fall-off.

1 → 2 → 3 → 4 → 5

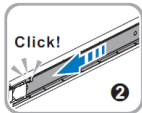
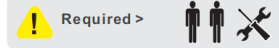


Note:
Please repeat installation step for the other side.

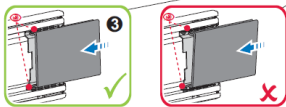


4 Insert the chassis to complete the installation

- 1 Pull the middle rail fully extended in lock position, ensure ball bearing retainer is located at the front of the middle rail.
- 2 Insert the chassis into middle-outer rails.
- 3 When hit a stop, please pull/push the blue release tab on the inner rails.
- 4 Tighten chassis with shipping screws.

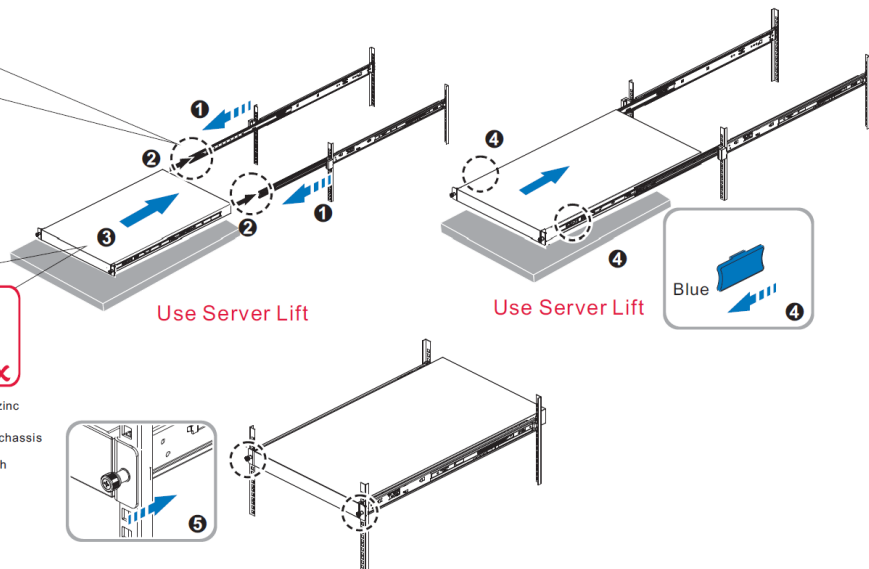


Ball bearing retainer must be securely locked onto the retainer latch before proceeding with inner rail installation. Failure to do so may result in inner rail derailment upon insertion.



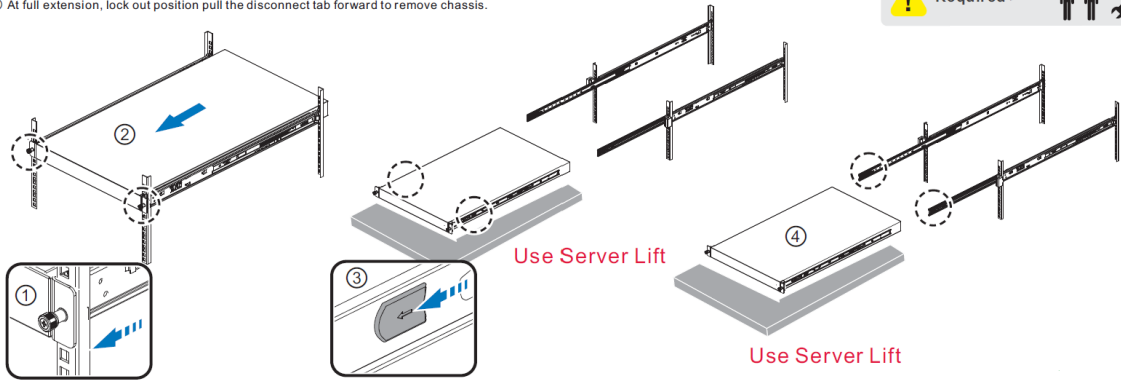
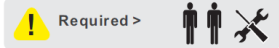
Inner rail must be inserted into the guiding zinc alloy mounted on the middle rail. Improper insertion results in derailment and possible chassis

! Avoid pushing to the stop position with excessive force, as this can cause irreversible damage to the stopper.



1 Remove the chassis in limited space

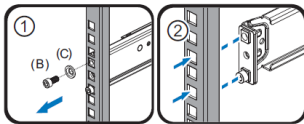
- ① ② Loosen shipping screw, rotate and pull the cantilever handle to unlatch and pull out the chassis.
- ③ ④ At full extension, lock out position pull the disconnect tab forward to remove chassis.



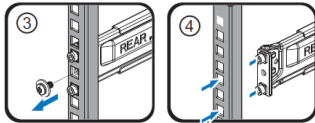
2 Detach Front / Rear Bracket from Rack Post

- ① → ② → ③ → ④

Detach Front Bracket from Rack Post

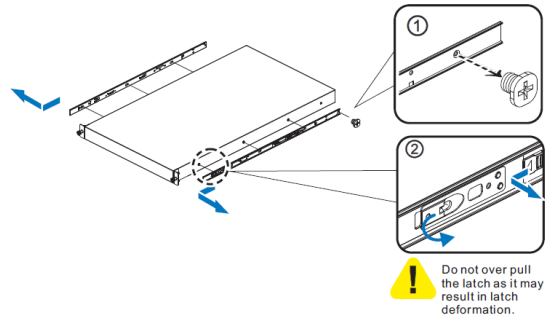


Detach Rear Bracket from Rack Post



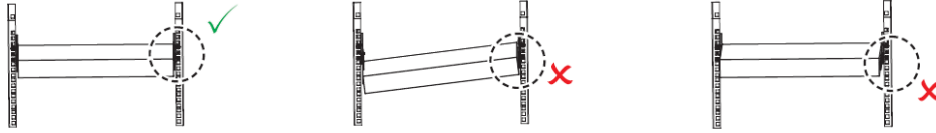
3 Detach Front / Rear Bracket from Rack Post

- ① Loosen screw.
- ② Slide inner rail back to remove inner rail.



6.6.3 Troubleshooting

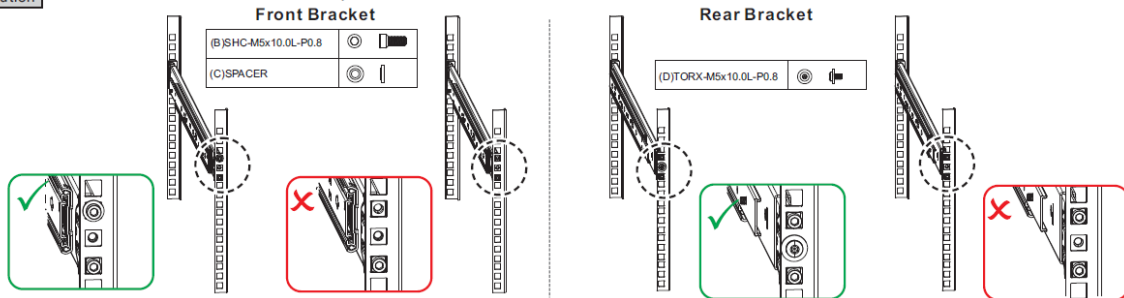
Failure Mode : Chassis falling-off or tilting after installation



Possible causes and solutions:

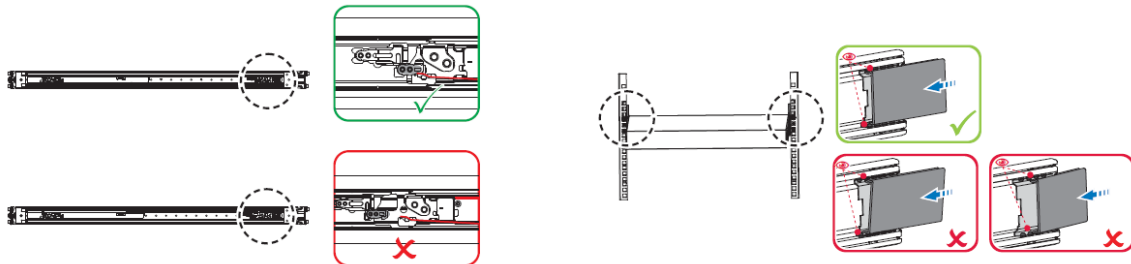
Cause1 Operator installed without fastening screw on to the front and rear bracket, or screw loosely fastened leading to screws detaching.

Solution Make sure the correct screw is chosen and securely fastened.



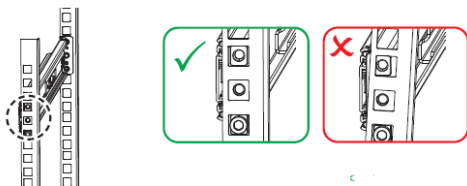
Cause2 Inner rail derailed from the middle rail during installation, and is likely due to the ball bearing retainer not being locked by the retainer latch during inner rail installation, or the inner rail not being inserted properly into the guiding zinc alloy mounted on the middle rail.

Solution Ensure that the ball bearing retainer is securely locked onto the retainer latch before proceeding with chassis/inner rail installation. Additionally, verify that the inner rail is properly slotted into the guiding zinc alloy during installation.



Cause3 The square guide on the front bracket has been improperly inserted into the holes of the rack column.

Solution Ensure the square guiding block on the front bracket is securely inserted into the column holes before fastening the screw.



Failure Mode : Tight Chassis movement

Possible causes and solutions:

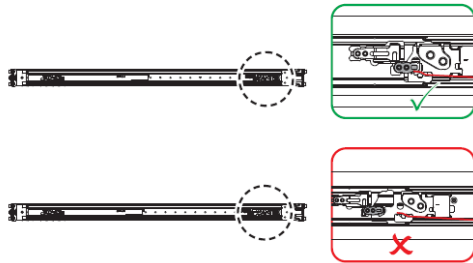
Cause1 Chassis standoffs were incorrectly slotted into the key holes, resulted in a distorted rail profile.

Solution Ensure that all standoffs are properly inserted into their respective keyholes.



Cause2 The ball bearing retainer was not locked onto the retainer latch during inner rail insertion, resulting in the inner rail detaching from the ball bearing retainer.

Solution Ensure that the ball bearing retainer is securely locked onto the retainer latch before inserting the inner rail.

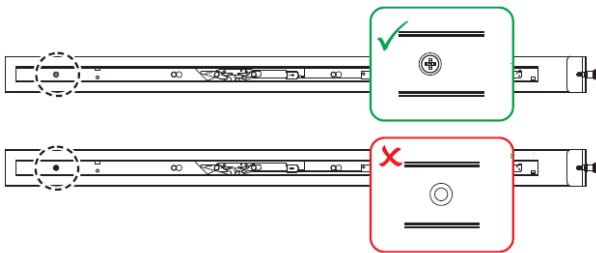


Failure Mode : Abnormal load-bearing strength

Possible causes and solutions:

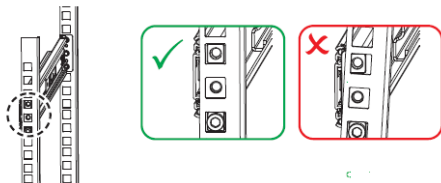
Cause1 The attachment of the inner rail and chassis was done without securing the screws.

Solution Ensure that the M4 screws are securely fastened.



Cause2 The square guide on the front bracket has been incorrectly inserted into the holes of the rack column.

Solution Ensure the square guiding block on the front bracket is securely inserted into the column holes before fastening the screw.



6.7 Cable Installation

All cables can be inserted or removed with the unit powered on.

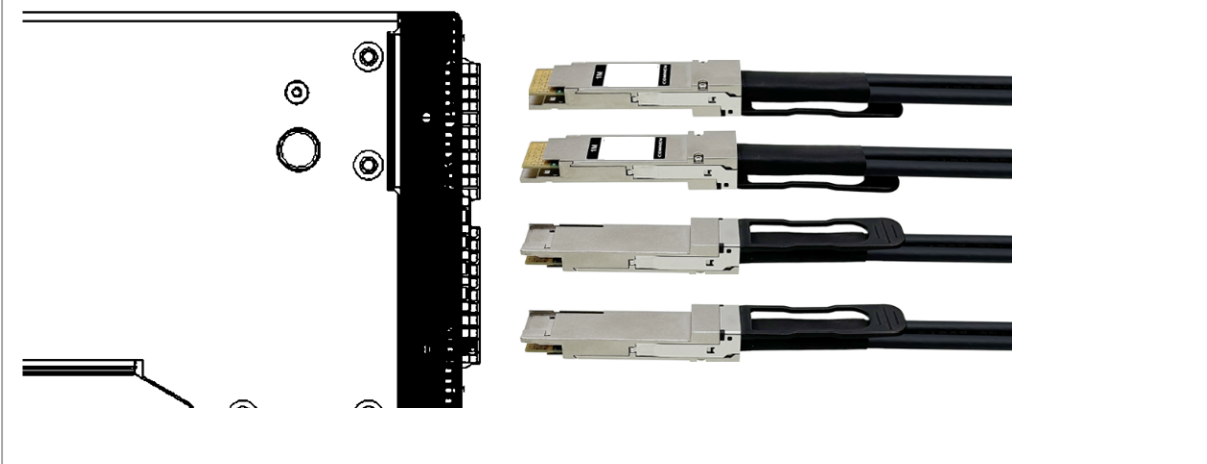
To insert a cable, press the connector into the port receptacle until the connector is firmly seated. The LED indicator that corresponds to its respective data port will turn orange when the physical connection is established. When a logical connection is made, the LED will turn green.

To remove a cable, disengage the locks and slowly pull the connector away from the port receptacle. The LED indicator for that port will turn off when the cable is unseated.

- For a list of supported cables and transceivers, refer to the [Interconnect Product Specifications](#).
- For full cabling guidelines, refer to [Cable Management Guidelines and FAQs](#).
- For more information about port LEDs, refer to [Port LEDs](#).

✘ Do not push the cable connector into the receptacle using excessive force; this may damage the cable or the cage.

QSFP Cable Orientation



6.7.1 Splitter (Breakout) Cables and Adapters

When using an NVIDIA splitter cable, the following splitting options are available:

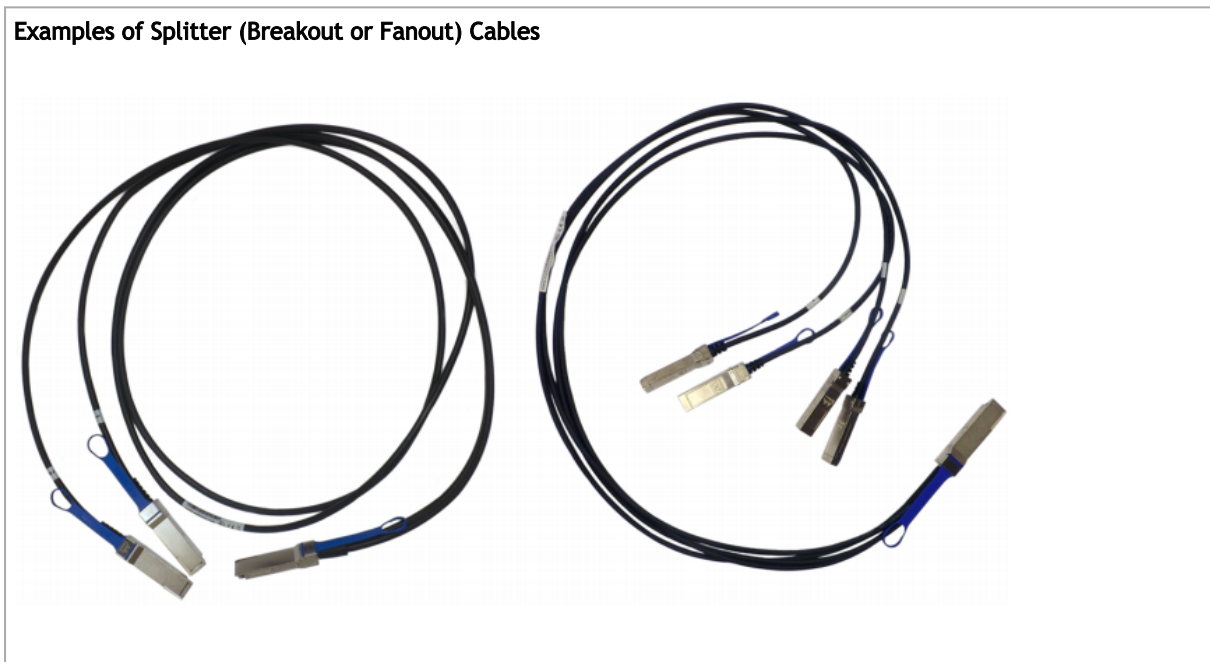
- SN5400 (see [Splitting Options](#)):
 - When running at a 50GbE per lane, each 400GbE port can be split to 2 ports of 200GbE or 4 ports of 100GbE without any limitation, or 8 ports of 50GbE while disabling (unmapping) the 50GbE port above or below it.
 - When running at a 25GbE per lane, each 200GbE port can be split to 2 ports of 100GbE or 4 ports of 50GbE without any limitation.
- SN5600, SN5600D and SN5610 Splitting Options

- When running at 100GbE per lane, each 800GbE port can be split to 2x 400GbE, 4 ports of 200GbE without any limitation, Split to 8x 100GbE of an odd port will block its adjacent even port.
- When running at a 50GbE per lane, each 400GbE port can be split to 2 ports of 200GbE or 4 ports of 100GbE without any limitation, split to 8x 50GbE of an odd port will block its adjacent even port
- When running at 25GbE per lane, each port can be split to 2 ports of 100GbE (4x), split to 8x 25GbE of an odd port will block its adjacent even port.

6.7.1.1 Using Splitter (Breakout) Cables with Cumulus Linux

If you are using splitter cables, edit the `/etc/cumulus/ports.conf` file to enable support for these cables, and restart the `switchd` service using the `sudo systemctl restart switchd` command. For additional information, see [Switch Port Attributes](#).

Examples of Splitter (Breakout or Fanout) Cables



6.7.1.2 Splitting Options

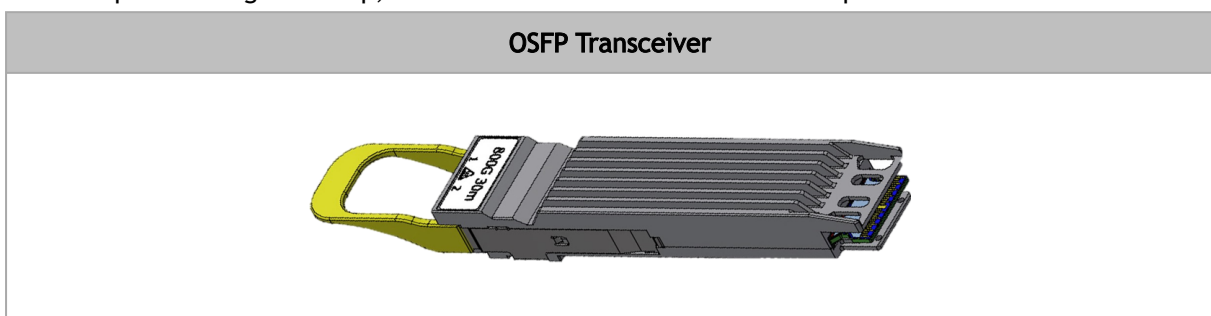
The following diagram shows the systems' ports non-blocking splitting capability to 2 and 4 ports respectively. In addition, each of the ports can be split to 8, while disabling the adjacent port. For example, when splitting port no. 1, port no. 2 will be blocked; when splitting port no. 6, port no. 5 will be blocked, and so on.



6.7.2 Connector Numbering in a Belly-to-Belly Configuration

The SN56xx systems use OSFP cages, which support speeds of 800G, 2x400G or 4x200G, as well as 8x100G when using a split fiber.

The OSFP-based optical transceivers have two distinctive ports that can be used as OSFP transceivers inserted to the switch in a "belly-to-belly" configuration, meaning that the transceiver on the top will be right side up, and the transceiver below it will be upside down.

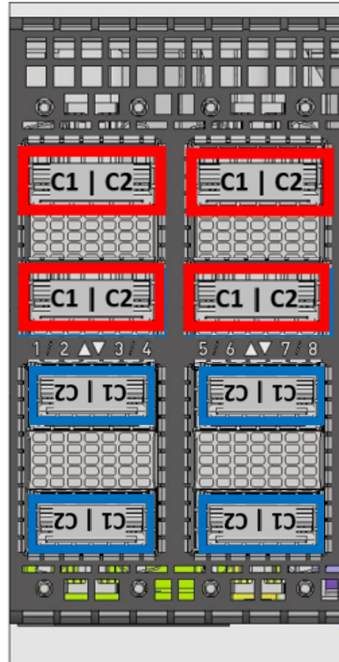


The following illustration depicts the numbering of the ports in 2x400G and 4x200G modes.

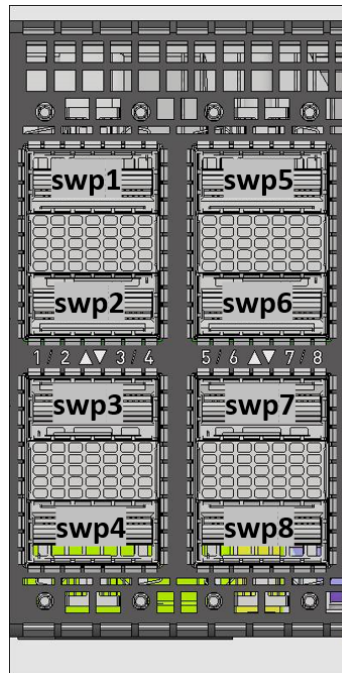
**OSPF is
Right Side Up**

**OSPF is
Upside Down**

Connector:



800G Port:

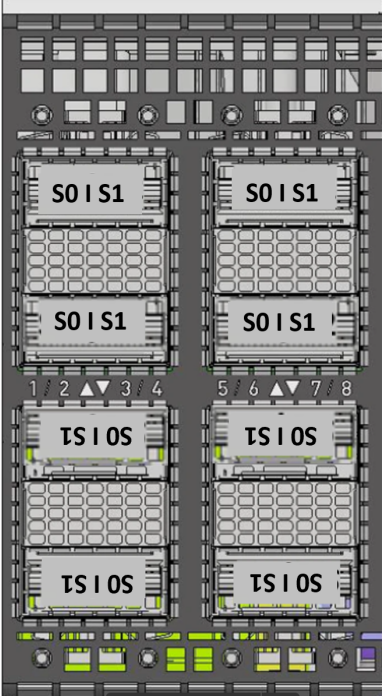



| Port Configuration | Physical Connector | NOS Description ❗ Broken macro | Examples ❗ Broken macro |
|--------------------|--------------------|-----------------------------------|----------------------------|
| 800G | C1 | swp | swp1, swp2 |

We don't have a way to export this macro.

6.7.2.1 Breakout Ports Reflection in NOS

The illustration below shows the first two rows of the system's OSFP carriers: the image on the left identifies the OSFP cage number as it is presented by the OS; the image on the right identifies the corresponding subinterfaces.

| Connector # 2×400G | Connector # 4×200G |
|--|---|
|  |  |

| Port Configuration | Physical Connector | Subinterface | Examples |
|--------------------|--------------------|--------------|-----------------|
| 2×400G | C1 | S0 | swp1s0, swp24s0 |
| | C2 | S1 | swp1s1, swp64s1 |
| 4×200G | C1 | S0, S1 | swp2s0, swp2s1 |
| | C2 | S2, S3 | swp8s2, swp8s3 |

| Port Configuration | Physical Connector | Subinterface | Examples |
|--------------------|--------------------|----------------|------------------------------------|
| 8×100G | C1 | S0, S1, S2, S3 | swp60s0, swp60s1, swp60s2, swp60s3 |
| | C2 | S4, S5, S6, S7 | swp55s4, swp55s5, swp55s6, swp55s7 |

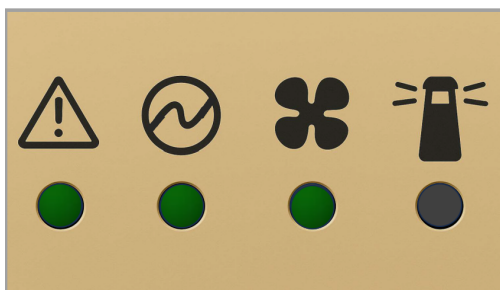
6.8 Initial Power On

Each system's input voltage is specified in the [Specifications](#) chapter. The power cords should be standard 3-wire AC power cords including a safety ground and rated for 16A or higher.

i The system platform will automatically power on when AC power is applied. The system has no power switch. Check all power supplies and fan tray modules for proper insertion before plugging in a power cable.

⚠ For the SN5610 system to operate, at least two out of the four PSUs must be active.

1. Plug in the first power cable.
2. Plug in the second power cable.
3. Wait for the System Status LED to turn green. If after five minutes the System Status LED is still amber, unplug the system and contact your NVIDIA representative for assistance.
4. Check the System Status LEDs and confirm that all of the LEDs show status lights consistent with normal operation as shown in the figure below. For more information, refer to [LED Notifications](#).



*Exact LED location and shape may vary.

✘ After inserting a power cable and confirming the green System Status LED light is on, make sure that the Fan Status LED is also green. If the Fan Status LED is not green, unplug the power connection and make sure that the fan module is inserted properly and that the mating connector of the fan unit is free of any dirt or particles. If the problem persists, contact your NVIDIA representative.

✘ Risk of electric shock and energy hazard. Disconnect all power supplies to ensure the switch platform is powered down.

6.9 System Bring-Up

6.9.1 Operating Systems Support

Consult the following table to learn which operating systems are supported by each of the platforms.

| Platform | Cumulus | SONiC |
|----------|---------|-------|
| SN5400 | V | X |
| SN5600 | V | V |
| SN5600D | V | X |
| SN5610 | V | X |

6.9.1.1 Configuring Network Attributes Using Cumulus Linux

For Cumulus Linux configuration instructions, see the [Cumulus Linux Quick Start Guide](#). Cumulus Linux uses the OpenSSH package to provide access to the system using the Secure Shell (SSH) protocol. To securely access a Cumulus Linux switch remotely, see [SSH for Remote Access](#).


6.9.1.2 Configuring Network Attributes Using SONiC

For SONiC configuration instructions, see *Configuring the Switch for the First Time* in the SONiC User Manual, available from the [NVIDIA Enterprise Support Portal](#).


6.10 FRU Replacements


 For a complete list of field-replaceable units, see [Accessory and Replacement Parts](#).

6.10.1 Power Supplies

 This section does not apply to the SN5600D system which is powered by a DC busbar.

NVIDIA systems with replaceable power supply units work in a redundant configuration. Either unit may be extracted without bringing down the system.

 If you are replacing one of the PSUs, make sure that the power supply unit LED for the unit you are NOT replacing displays a green status while the system is up and running.

 Power supply units have directional airflows similar to the fan module. The fan module airflow direction must be the same as the airflow direction for

all power supply units (there are different power supply part numbers to indicate the different airflow types).

If the power supply unit airflow direction is different from the fan module airflow direction, cooling is suboptimal for the switch, rack, and even the entire data center. For power supply unit airflow direction, refer to [Air Flow](#).

To extract a power supply unit:

✘ The SN5400 and SN5600 switch models do not support hot swapping power supply units (PSUs) of revision S3 or below. Note that the revision of each PSU is printed on its label. If one or two PSUs of revision S3 or below are plugged into the switch system, shut down the system before replacing the faulty PSU.

1. Remove the power cord from the power supply unit.
2. Grasp the handle and push the latch release with your thumb while pulling the handle outward. As the power supply unit unseats, the power supply unit status LEDs will turn off.
3. Remove the power supply unit.

To insert a power supply unit:

1. Make sure the new unit's mating connector is free of dirt or debris.

✘ Do not attempt to insert a power supply unit with a power cord connected to it.

2. Make sure that the board connector is located on the right (looking from the system's rear side forward), and insert the unit by sliding it into the opening until you feel a slight resistance.
3. Continue pressing the power supply unit until it seats completely. The latch will snap into place, indicating that it is properly installed.
4. Insert the power cord into the supply connector.
5. Insert the other end of the power cord into the AC outlet/PDU of the correct voltage. The power supply unit LED should display a green status, indicating that the unit is successfully installed and operational. If the power supply unit LED indicates a different status, repeat the extraction steps, then follow the insertion steps again.

6.10.2 Fans

Each system contains an additional fan module for redundancy:

- The SN5400 and SN5600 and SN5600D systems have 3+1 fan module redundancy. Full operation requires 3 total fan modules.
- The SN5610 system has 4+1 fan module redundancy. Full operation requires 4 total fan modules.

Each fan module contains 2 individual rotors. If one fan module becomes faulty or defective, NVIDIA recommends replacing it immediately to ensure continued redundancy. This is particularly important when the system is operating at 35°C ambient temperature at full capacity with all ports occupied. Use your network operating system to monitor switch hardware elements, including fans.

- ✘ Make sure that all fan configurations match their respective model numbers. If the fans are not configured properly, the unit might overheat and shut down automatically to prevent damage. For power supply unit airflow directions, refer to [Air Flow](#).

To remove a fan unit:

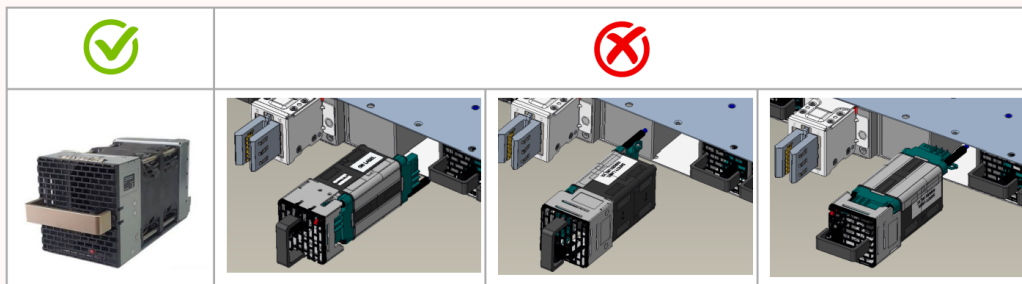
- ⚠ When replacing a faulty fan unit in an operational switch system, do not leave the slot unpopulated for more than 60 seconds.

1. Grasp the handle and pull the unit towards yourself. As the fan unit unseats, the fan unit status LEDs will turn off.
2. Remove the fan unit.

To insert a fan unit:

1. Make sure the mating connector of the new unit is free of any dirt or debris.
2. Insert the fan unit by sliding it into the opening until you feel slight resistance. Continue pressing the fan unit until it seats completely.

- ✘ Do not attempt to insert the fan unit rotated in a 90° / 180° / 270° angle.



- ✘ Upon initial installation, the fan status LED should display a green status, indicating it is operational. If the fan status LED displays any other status, extract the fan unit and reinsert it. After two unsuccessful attempts to install the fan unit, power off the system before attempting any system debug.

7 Interfaces

The systems support the following interfaces:

- 10/100/1000Mb Ethernet management interface (RJ45)
- USB port (Type A)
- RS232 console port (RJ45)
- Reset button
- Status and port LEDs
- Lane select LEDs and power button

Refer to [Management Interfaces, PSUs, and Fans](#) for full configuration options.

Speed

Ethernet speed must be set manually. The system's ports can be manually configured to run at a wide range of speeds (for more details, see [Specifications](#)). To change the port speed configuration, refer to [Switch Port Attributes](#).

7.1 RS232 (Console)



IOIOI

The RS232 serial “Console” port is labeled

The console port is an RS232 serial port on the front side of the chassis that is used for initial configuration and debugging. When you install the system, you must connect a PC to this interface and configure network parameters for remote connections. For complete instructions, refer to [Interface Configuration and Management](#).

7.2 Management



The RJ45 management port is labeled

The management port provides access for remote management. The management port is configured with auto-negotiation capabilities by default (full-duplex, 100MbE and 1GbE). The management ports' network attributes (such as IP address) need to be pre-configured via the RS232 serial console port or by DHCP before use. For complete instructions, refer to [Interface Configuration and Management](#).





Use only FCC-compliant Ethernet cables.

7.3 USB

The USB interface is USB 3.0-compliant and can be used by the operating system to connect to an external disk for software upgrade or file management. The connector complies with the USB 3.0 type A standard.


To view the full matrix of the USB configuration options, refer to [Management Interfaces, PSUs, and Fans](#).

 USB 1.0 is not supported.

 Do not use excessive force when inserting or extracting the USB.

7.4 Reset Button

The reset button is located on the front side of the system and requires a tool to be pressed.

 Do not use a sharp, pointed object such as a needle or a push pin to press the reset button. Use a flat object instead.

For Cumulus Linux password reset instructions, refer to the [Password Recovery](#).

7.5 Status and Port LEDs

See [LED Notifications](#)

7.6 Data Interfaces and High Power Transceivers Support

7.6.1 Data Interfaces

The data interfaces can be used with QSFP-DD/OSFP modules or transceivers. For a complete list of interfaces per system, refer to [Speed and Switching Capabilities](#).

As detailed in the following table, for additional data interfaces, each QSFP-DD/OSFP port can be connected with a QSFP-DD/OSFP cable or module to SFP (Dynamix QSA™) adapters, hybrid, or splitter cables.

| Model Family | Ports | Maximum Speed |
|--------------|-------|----------------------|
| SN5400 | 64 | 400GbE (50Gbps/lane) |
| | 128 | 200GbE |
| | | 40GbE |

| Model Family | Ports | Maximum Speed |
|-----------------------|-------|-----------------------|
| | 256 | 100GbE |
| | | 50GbE |
| | | 25GbE |
| | | 10GbE |
| SN5600/SN5600D/SN5610 | 64 | 800GbE (100Gbps/lane) |
| | 128 | 400GbE |
| | 256 | 200GbE |
| | | 100GbE |
| | | 50GbE |
| | | 25GbE |
| | | 10GbE |

7.6.2 High Power Transceivers Support



The systems offer several high-power ports for optical transceivers that require such support. The following table specifies each system's ports max power capabilities:



| Model Family | Ports | Maximum High Power Support |
|--------------|----------------------|----------------------------|
| SN5400 | All 64 QSFP-DD ports | 12W |
| SN56xxx | All 64 OSFP Ports | 18W |

7.7 LED Notifications

The system's LEDs are an important tool for hardware event notification and troubleshooting. All figures depicted on this page are for illustration purposes only; the designs may vary slightly between systems.

LED Symbols

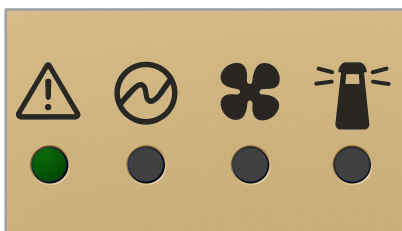
| Symbol | Name | Description | Normal Conditions |
|---|-----------------------------------|---------------------------------|--------------------------------------|
|  | System Status LED | Shows the health of the system. | Green or flashing green when booting |
|  | Fan Status LED | Shows the health of the fans. | Green |

| Symbol | Name | Description | Normal Conditions |
|---|---|---|--|
|  | Power Supply Units LEDs | Shows the health of the power supply units. | Green |
|  | Unit Identifier LED | Lights up on command through the CLI. | Off or blue when activated by the user |

7.7.1 System Status LED

The LED illuminated green in the figure below indicates the system's status

Front (Ports Side):



It can take up to five minutes for the booting process to complete. If the System Status LED displays amber after five minutes, unplug the system and contact your NVIDIA representative for assistance.

System Status LED Descriptions

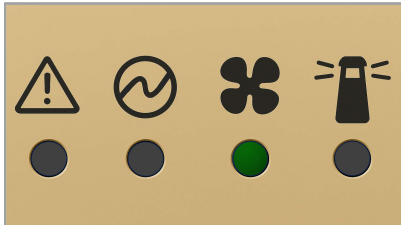
| LED | Description | Action Required |
|----------------|--|--|
| Solid green | The system is up and running normally. | N/A |
| Flashing green | The system is booting up. | Wait up to five minutes for the booting process to complete. |
| Solid amber | An error has occurred. For example, corrupted firmware, system is overheated, etc. | If the System Status LED displays amber five minutes after starting the system, refer to Troubleshooting for further instructions. |

7.7.2 Fan Status LED

Fan Status LED (Front and Rear Sides)

Both of the LEDs circled below indicate the fans' status.

Front Panel LED:



Rear Panel LED:



Fan Status Front LED Assignments

| LED | Description | Action Required |
|-------------|---|-------------------------|
| Solid green | All fans are up and running | N/A |
| Solid amber | One or more fans are not operating properly | Replace the faulty FRUs |

Fan Status Rear LED Assignments (One LED per Fan)

| LED | Description | Action Required |
|-------------|--|----------------------|
| Solid green | A specific fan unit is fully operational | N/A |
| Solid amber | A specific fan unit is missing or not operating properly | Replace the fan unit |

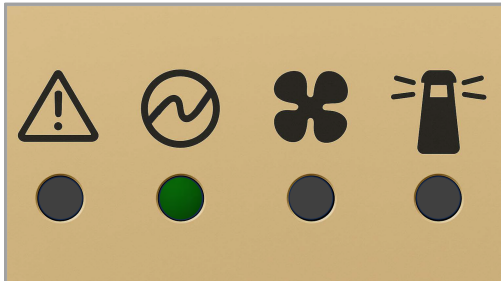


Risk of Electric Shock! Do not insert objects into the fan module cavity.

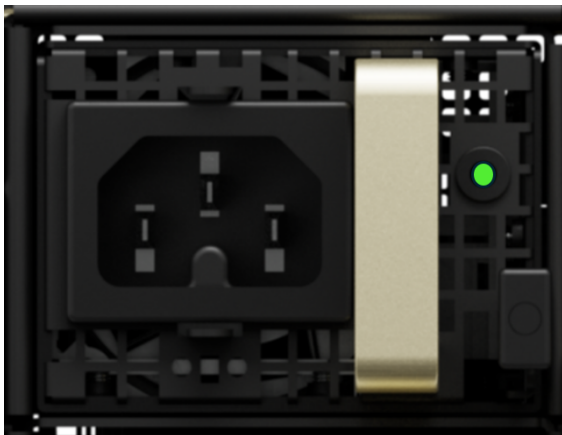
7.7.3 Power Supply Status LEDs

The LEDs circled below show the power supply status.

Front Panel LED:



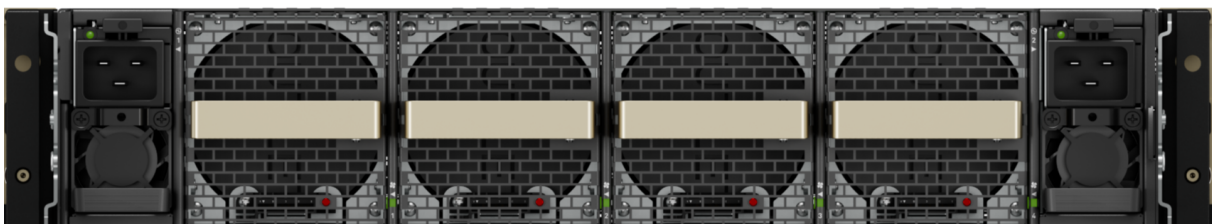
Rear Panel LED:



- The SN5400 and SN5600/SN5600D switch models have two power supply inlets each. Each system can operate with only one power supply connected.
- The SN5610 switch model has four power supply inlets for redundancy. The system can operate when at least two power supplies are connected.

Each power supply unit has two single-color LEDs on the right side of the unit that indicate the status of the unit. When viewing the switch from the FRU side, the first power supply (PS) unit is located on the left side of the system, and the second unit is located on the right side.

SN5xxx Rear Side Panel



SN5610 Rear Side Panel



Power Supply Unit Status Front LED Assignments

| LED Behavior | Description | Action Required |
|--------------|--|---|
| Solid green | All power supply units are connected and running normally. | N/A |
| Solid amber | One or both of the power supplies are not operational or not powered up; the power cord is disconnected. | Make sure the power cord is plugged in and operational. If the problem persists, refer to Troubleshooting . |

Power Supply Unit Status Rear LED Assignments

| LED Behavior | Description | Action Required |
|--------------------|---|--|
| Solid green | The PSU is running normally. | N/A |
| Flashing green 1Hz | AC Present, Standby (On), Main Output (Off) | Refer to Troubleshooting . For further assistance, contact your NVIDIA representative. |
| Flashing amber 1Hz | PSU warning - events where the PSU continues to operate | |
| Solid amber | PSU failure (voltage, current, temperature, or fan issue) | |
| Off | No AC power to all power supplies. | Plug in the AC cord |

7.7.4 Unit Identification LED

You can activate the blue unit identification LED to locate a particular system within a cluster.

To activate the UID LED on a switch system, run:

```
switch (config) # led MGMT uid on
```

To verify the LED status, run:

```
switch (config) # show leds
Module LED Status
-----
MGMT UID Blues
```

To deactivate the UID LED on a switch system, run:

```
switch (config) # led MGMT uid off
```

7.7.5 ETH Management Status LEDs

There are two ETH Management LEDs per system. Their behavior indicates link status or activity as follows:

| LED Position | LED Behavior | Description |
|--------------|--------------------|---|
| Right LED | Yellow (Steady) | Link Up: A physical connection is established. |
| | Off | Link Down: No physical connection detected. |
| Left LED | Green (Blinking) | Activity: Indicates data traffic on the port. |
| | Green (Slow Blink) | Low Traffic: Blinks approximately once per second. |
| | Green (Fast Blink) | High Traffic: Blinks regularly several times per second. |
| | Off | No Activity: No data is currently being transmitted/received. |

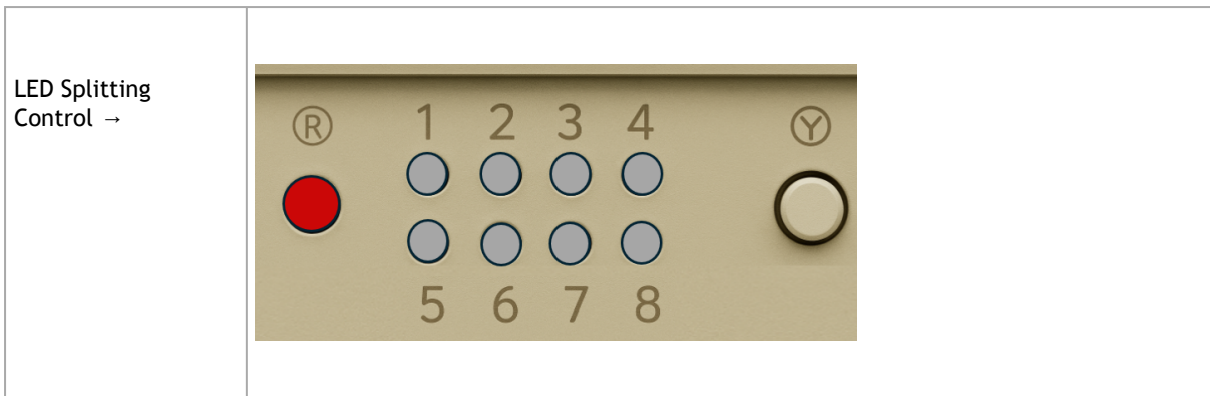
7.7.6 Port LEDs

The LEDs marked with an arrow in the figure below indicate the ports' status. The exact location and shape of the ports and their LEDs may vary between systems.

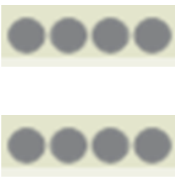
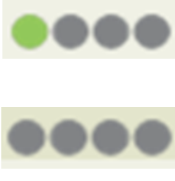




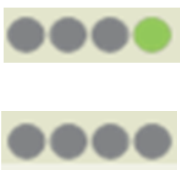



Each QSFP-DD/OSFP module can be used as two 4× ports or four 2× ports; some modules can be split into eight 1× ports. Each QSFP-DD/OSFP module has one dedicated bi-color LED. The LED splitting control button can be used to display link information for more than one port using only one LED. The lane select button lets you choose between 8 indication states: press the button to cycle through all 8 states. The current state can be identified by the LED splitting state indication LEDs. The states and their indications are detailed in the table below.


| | |
|--|------------------|
| | Lane Select LEDs |
|--|------------------|



LED Splitting Options

| State | State Indication LEDs [/1 /2 /3 /4] | OSFP/QSFP-DD Module LED Indication | Comments |
|-------|---|--|--|
| 0 |  | Any link is up | See details in the Port LEDs Indications table below, state 0 |
| 1 |  | $8 \times /4 \times A / 2 \times A / 1 \times A$ | <ul style="list-style-type: none"> • See details in the Port LEDs Indications table below, states 1-8. • Only one of the link types can be up at a given time. |
| 2 |  | $8 \times /4 \times B / 2 \times B / 1 \times B$ | |

| State | State Indication LEDs [1 / 2 / 3 / 4] | OSFP/QSFP-DD Module LED Indication | Comments |
|-------|---|------------------------------------|----------|
| 3 |  | 8×/2×C/1×C | |
| 4 |  | 8×/2×D/1×D | |
| 5 |  | 8×/1×E | |
| 6 |  | 8×/1×F | |
| 7 |  | 8×/1×G | |

| State | State Indication LEDs [1 / 2 / 3 / 4] | OSFP/QSFP-DD Module LED Indication | Comments |
|-------|---|------------------------------------|----------|
| 8 |  | 8×/1×H | |

Port LED Indications

| State | LED Behavior | Description | Action Required |
|-------|----------------|--|--|
| 0 | Off | No 8×/4×/2×/1× link was established on this OSFP/QSFP-DD module | N/A |
| | Solid green | At least one link was established: 8×/4×/2×A/2×B/1×A/1×B/1×C/1×D/1×E/1×F/1×G/1×H | |
| | Flashing green | Traffic is running in linked ports | |
| | Flashing amber | N/A | |
| 1-8 | Off | Link is down | Refer to Troubleshooting |
| | Solid green | Link is up with no traffic | |
| | Flashing green | Link is up with traffic | |
| | Flashing amber | A problem with the link | |

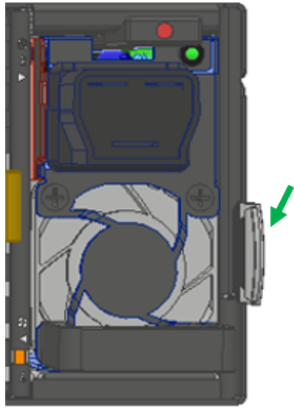
7.8 Inventory Information

The system's inventory information (such as serial number, part number, and GUID address) can be extracted from the inventory pull-out tab on the right side of the rear panel.



The pull-out tab shown here is for illustration purposes only. The system's specifications on it and its design may slightly vary.

Pull-Out Tab



Switch-Eth SN5600 64P 800GbE

S/N: MTYYWWSZZZZZ

YYYY-MM-DD



P/N: XXXXXXX-XXXXX

Rev: XX

Made in Israel

以色列制造



8 Software Management

SN5000 series switches are available with the following software options:

- Pre-installed with [NVIDIA Cumulus Linux](#).
- Bare metal including ONIE image, installable with any ONIE-mounted OS.

8.1 Software Upgrades

- For Cumulus Linux upgrade instructions, see [Upgrading Cumulus Linux](#).
- For SONiC upgrade instructions, log in to the [NVIDIA Enterprise Support Portal](#), and go to Downloads → Switches and Gateways → Switch Software → SONiC → Documentation.

8.2 Switch Firmware Update

The switch systems do not require firmware updates. Firmware updates are handled through the management software.

9 Troubleshooting

| Problem Indicator | Symptoms | Cause and Solution |
|---|---|---|
| LEDs | System Status LED is blinking for more than 5 minutes | <p>Cause: The operating system did not boot properly, and only firmware is running.</p> <p>Solution: Connect to the system via the console port, and check the software status. For Cumulus Linux instructions, see Monitoring and Troubleshooting.</p> |
| | System Status LED is amber | <p>Cause:</p> <ul style="list-style-type: none"> • Critical system fault (CPU error, bad firmware) • High temperature <p>Solution:</p> <ul style="list-style-type: none"> • Check environmental conditions (room temperature) |
| | Fan Status LED is amber | <p>Cause: Possible fan issue</p> <p>Solution:</p> <ul style="list-style-type: none"> • Check that the fan is fully inserted and nothing is blocking the airflow • Replace the fan FRU if needed |
| | PSU Status LED is amber | <p>Cause: Possible PSU issue</p> <p>Solution:</p> <ul style="list-style-type: none"> • Check/replace the power cable • Replace the PSU if needed |
| System boot failure while using Cumulus Linux | Software upgrade failed on x86 based systems | See Monitoring and Troubleshooting . |

10 Specifications

SN5400 Specifications

| | Feature | Value |
|---------------|---------------------------|---|
| Mechanical | Size: | 3.46" (H) × 17.2" (W) × 28.3"/29.3" (D) with fan levers 88mm (H) × 438mm (W) × 720mm (D) / 745mm with fan levers |
| | Mounting: | 19" rack mount |
| | Weight: | 23.5 kg |
| | Speed: | Ports #1-64: 10/25/50/100/200/400GbE Port #65-66: 1/10/25GbE |
| | Connector Cage: | Ports #1-64: QSFP56-DD Port #65-66: SFP28 |
| Environmental | Temperature: | Operational: 0° to 40° C Non-Operational: -40° to 70° C |
| | Humidity: | Operational: 10% to 85% non-condensing Non-Operational: 10% to 90% non-condensing |
| | Altitude: | 3050 m |
| Regulatory | Safety/EMC: | CB, cTUVus, CE, CU, S_Mark, FCC, VCCI, ICES, RCM, BSMI, KCC, CCC |
| | RoHS: | RoHS compliant |
| Power | Input Voltage: | 1x/2x, High Line, Rated Vac 220V-240V Vac Minimum 200 Vac Maximum 264 AC current rating 16A 50/60Hz |
| | Global Power Consumption: | Typical power with passive cables (ATIS): 670W |
| Main Devices | CPU: | Intel x86 Xeon, Hexa-core Coffee Lake E-2276ME w/secured-boot |
| | PCIe: | Gen3 x4 |
| | Switch: | NVIDIA Spectrum®-4 |
| | Memory: | 32GB RAM DDR4, 160GB SSD |
| Throughput | | 25.6 Tbps |

10.1 SN5600 Specifications

| | Feature | Value |
|------------|-----------|---|
| Mechanical | Size: | 3.46" (H) × 17.2" (W) × 28.3"/29.3" (D) with fan levers 88mm (H) × 438mm (W) × 720mm (D) / 745mm with fan levers |
| | Mounting: | 19" rack mount |
| | Weight: | 23.5 kg |
| | Speed: | Ports #1-64: 10/25/50/100/200/400/800G Port #65: 1G/10G/25G |

| Feature | | Value |
|---------------|---------------------------|--|
| | Connector Cage: | Ports #1-64: OSFP Port #65: SFP28 |
| Environmental | Temperature: | Operational: 0° to 35° C Non-Operational: -40° to 70° C |
| | Humidity: | Operational: 10% to 85% non-condensing Non-Operational: 10% to 90% non-condensing |
| | Altitude: | 3050m |
| Regulatory | Safety/EMC: | CB, cTUVus, CE, CU, S_Mark, FCC, VCCI, ICES, RCM, BSMI, KCC, CCC |
| | RoHS: | RoHS compliant |
| Power | Input Voltage: | 1x/2x, High Line, Rated VAC 220V-240V VAC Minimum 200 VAC Maximum 264 AC current rating 16A 210-300 VDC, 14A (Chinese model only) 50/60Hz |
| | Global Power Consumption: | Typical power with passive cables (ATIS): 940W |
| Main Devices | CPU: | Intel x86 Xeon, Hexa-core Coffee Lake E-2276ME w/secured-boot |
| | PCIe: | Gen3 x4 |
| | Switch: | NVIDIA Spectrum®-4 |
| | Memory: | 32GB RAM DDR4, 160GB SSD |
| Throughput | | 51.2 Tbps |

10.2 SN5600D Specifications

| Feature | | Value |
|---------------|-----------------|---|
| Mechanical | Size: | 3.46" (H) × 17.2" (W) × 30.7"/33.5" (D) with busbar plug 88mm (H) × 438mm (W) × 781mm (D) / 853mm with busbar plug |
| | Mounting: | 19" MGX rack mount |
| | Weight: | 18.5 kg |
| | Speed: | Ports #1-64: 10/25/50/100/200/400/800G Port #65: 1G/10G/25G |
| | Connector Cage: | Ports #1-64: OSFP Port #65: SFP28 |
| Environmental | Temperature: | Operational: 0° to 35° C Non-Operational: -40° to 70° C |
| | Humidity: | Operational: 10% to 85% non-condensing Non-Operational: 10% to 90% non-condensing |
| | Altitude: | 3050m |
| Regulatory | Safety/EMC: | CB, cTUVus, CE, CU, S_Mark, FCC, VCCI, ICES, RCM, BSMI, KCC, CCC |
| | RoHS: | RoHS compliant |

| Feature | | Value |
|--------------|---------------------------|---|
| Power | Input Voltage: | 48VDC (range 40VDC to 60VDC) |
| | Global Power Consumption: | Typical power with passive cables (ATIS): 940W |
| Main Devices | CPU: | Intel x86 Xeon, Hexa-core Coffee Lake E-2276ME w/secured-boot |
| | PCIe: | Gen3 x4 |
| | Switch: | NVIDIA Spectrum®-4 |
| | Memory: | 32GB RAM DDR4, 160GB SSD |
| Throughput | | 51.2 Tbps |

10.3 SN5610 Specifications

| Feature | | Value |
|---------------|---------------------------|---|
| Mechanical | Size: | 3.46" (H) × 17.2" (W) × 30.5"/31.3" (D) with fan levers 88mm (H) × 438mm (W) × 775mm (D) / 796mm with fan levers |
| | Mounting: | 19" rack mount |
| | Weight: | 26.9 kg |
| | Speed: | Ports #1-64: 10/25/50/100/200/400/800G Ports #65-66: 1G/10G/25G |
| | Connector Cage: | Ports #1-64: OSFP Ports #65-66: SFP28 |
| Environmental | Temperature: | Operational: 0° to 40° C Non-Operational: -40° to 70° C |
| | Humidity: | Operational: 10% to 85% non-condensing Non-Operational: 10% to 90% non-condensing |
| | Altitude: | 3050m |
| Regulatory | Safety/EMC: | CB, cTUVus, CE, CU, S_Mark, FCC, VCCI, ICES, RCM, BSMI, KCC, CCC |
| | RoHS: | RoHS compliant |
| Power | Input Voltage: | High-Line, Rated VAC 200-240VAC |
| | Global Power Consumption: | Typical power with passive cables (ATIS) 900W Typical power with 64 optical modules: 2.08KW |
| Main Devices | CPU: | AMD EPYC 3251, 8-Cores, Secured boot |
| | PCIe: | Gen3 x4 |
| | Switch: | NVIDIA Spectrum®-4 |
| | Memory: | 32GB RAM DDR4, 80GB NVMe |
| Throughput | | 51.2 Tbps |

11 Appendixes

This document contains the following appendixes:

- [Accessory and Replacement Parts](#)
- [Thermal Threshold Definitions](#)
- [Interface Specifications](#)
- [Disassembly and Disposal](#)
- [SN5600D OCP 21" Adapter Tray Installation Instructions](#)
- [Safety Warnings](#)

11.1 Accessory and Replacement Parts

Ordering Part Numbers for Replacement Parts

| Part Type | Part Number | Description | Supported Systems |
|------------------------------|--------------------|--|------------------------|
| Rack installation kit | 930-9SKIT-00LO-00A | NVIDIA tool-less rail kit for 64×400G and 64×800G switch | SN5400, SN5600 |
| | 930-9SKIT-00LO-00E | NVIDIA Tool-Less Rail-Kit for SN5610 | SN5610 |
| Fan modules | 930-9SFAN-00RM-00A | NVIDIA fan unit, C2P airflow, for 64×400G and 64×800G switch | SN5400, SN5600 |
| | 930-9SFAN-00RM-00E | NVIDIA fan unit, C2P airflow, SN5600D, 800G switch | SN5600D |
| | 930-9SFAN-00FM-00A | NVIDIA fan unit, P2C airflow, for 64×400G and 64×800G switch | SN5400 |
| | 930-9SFAN-00RM-00F | NVIDIA fan unit, C2P airflow | SN5610 |
| Power supplies | 930-9SPSU-00RA-00B | NVIDIA power supply unit, 3KW AC, C2P airflow, for 64×800G switch, power cord included | SN5400, SN5600 |
| | 930-9SPSU-00FA-00B | NVIDIA power supply unit, 3KW AC, P2C airflow, for 64×800G switch, power cord included | SN5400 |
| | 930-9SPSU-00RA-00C | VIDIA AC PSU, 2KW, Connector-to-Power Airflow for SN5610 | SN5610 |
| Cables and harnesses | HAR000631 | RS-232 cable, DB9 to RJ45 2M harness 2M for SX67X0 and SB78X0 | SN5400, SN5600, SN5610 |
| | ACC000734 | Power cord black 250V, 16A 2000MM C19 to C20 | SN5400, SN5600 |
| | 930-9BPWE-00NA-000 | Power cord black 250V 10A 1830MM C14 TO C15 EUR + China | SN5610 |
| | 930-9BPWA-00NA-000 | Power cord black 250V, 110V 15A 1830MM C14 TO C15 UL (For US only) | |

11.2 Thermal Threshold Definitions

Three thermal threshold definitions are measured by the Spectrum-4 ASICs. They impact the overall switch system's operational state as follows:

- **Warning (105°C):** On managed systems only, when the ASIC device crosses the 100°C threshold, a warning message will be issued by the management software indicating that the ASIC has crossed the warning threshold. Note that this temperature threshold does not require nor lead to any action, such as switch shutdown.
- **Critical (120°C):** When the ASIC device crosses the critical temperature threshold, the switch firmware will automatically shut down the device.
- **Emergency (130°C):** In case the firmware fails to shut down the ASIC device upon crossing the critical threshold, the device will automatically shut down upon crossing the emergency threshold.

11.3 Interface Specifications

11.3.1 Small Form Factors Specifications

NVIDIA switch systems come in a flexible range of form factors, including SFP/QSFP, SFP28/QSFP28, SFP56/QSFP56, SFP-DD/QSFP-DD, and OSFP.

All form factor specification documents are available from the [Storage Networking Industry Association \(SNIA\)](#).

11.3.2 USB Standard Specifications

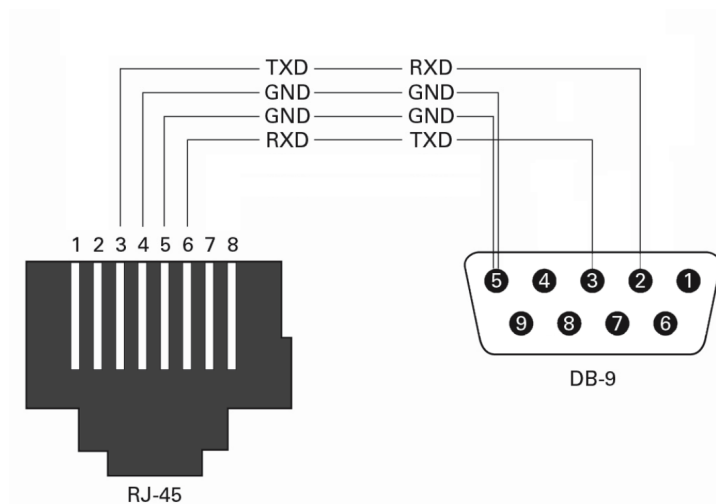
For USB specification documents, refer to the [USB Document Library](#).

11.3.3 RJ-45 to DB-9 Harness Pinout

NVIDIA supplies an RS232 harness cable (DB-9 to RJ-45) to connect a host PC to the console RJ-45 system port.



The RS-232 default baud rate is 115200 bps with an 8N1 configuration.



11.4 Disassembly and Disposal

11.4.1 Disassembly Procedure

To disassemble the system from the rack:

1. Unplug and remove all connectors.
2. Unplug all power cords.
3. Remove the ground wire.
4. Unscrew the center bolts from the side of the system with the bracket.



Support the weight of the system when you remove the screws so that the system does not fall.

5. Slide the system from the rack.
6. Remove the rail slides from the rack.
7. Remove the caged nuts.

11.4.2 Disposal

According to the WEEE Directive 2002/96/EC, all waste electrical and electronic equipment (EEE) should be collected separately and not disposed of with regular household waste. Dispose of this product and all of its parts in a responsible and environmentally friendly way.

11.4.2.1 Lithium Battery

The product's real-time clock includes a lithium coin battery (CR2032) that contains perchlorate. When replacing the battery, use only a replacement battery that is recommended by the equipment manufacturer.

✘ The battery can explode if not properly used, replaced, or disposed of. Dispose of the battery according to your local regulations. Do not attempt to recharge the battery, disassemble, puncture, or otherwise damage it.

11.5 SN5600D OCP 21" Adapter Tray Installation Instructions

The following instructions describe how to install the OCP 21" adapter tray, and how to mount the SN5600D switch system in the adapter tray.

11.5.1 Safety & Prerequisites

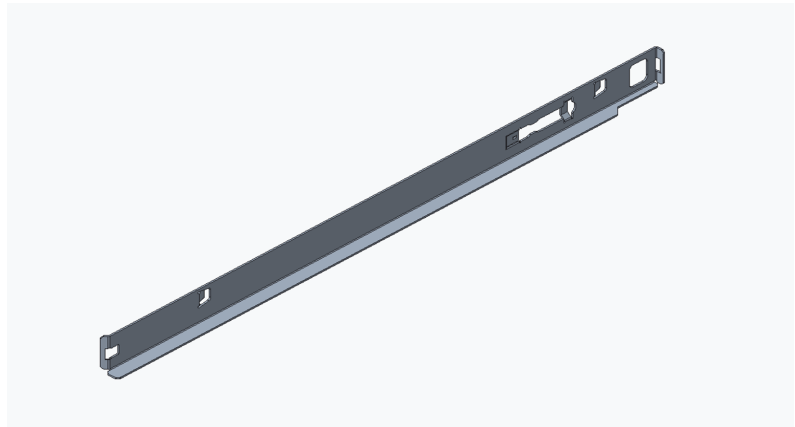
11.5.1.1 Rack Preparation:

- Ensure the OCP rack is properly leveled and secured to the floor according to the site's standards.
- The rack must be equipped with L-shaped support brackets at the target installation height.

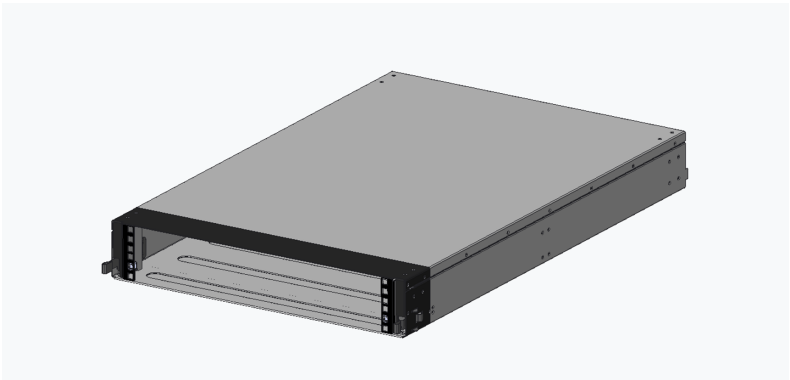
✘ Heavy Equipment: Always use a server lift or two people when handling the switch and the adapter tray.

11.5.1.2 Required Components:

2 x L-shaped support brackets (left and right)



1 x Adapter tray



1 x SN5600D Switch Rail-kit



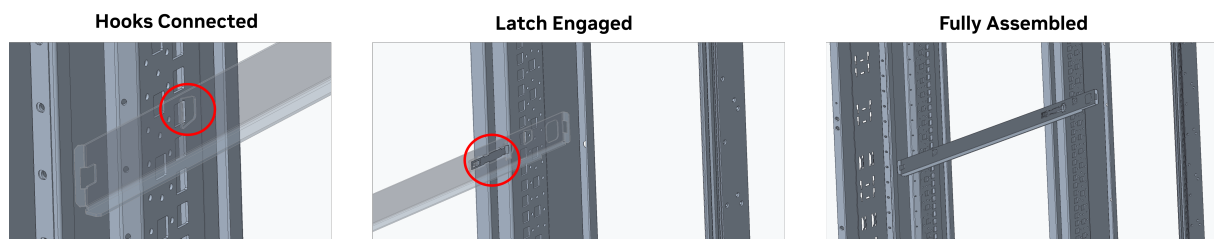
1 x SN5600D Switch system



11.5.2 Installation Process

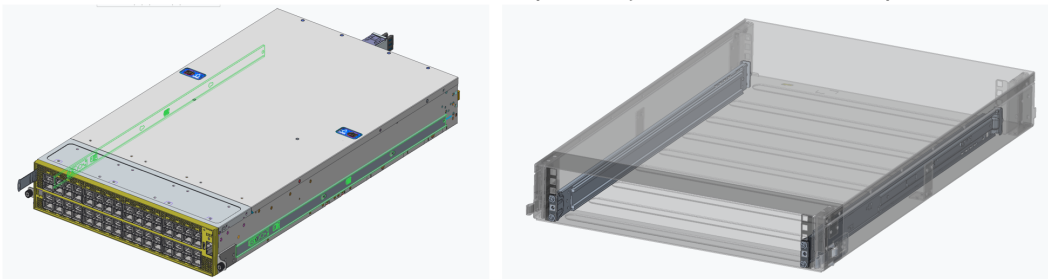
11.5.2.1 Step 1: Installing the L-Shaped Brackets into the OCP Rack

- Define the height: Select the desired OU height within the 21" OCP rack.
- Mount the Brackets: Align the brackets with the rack's pre-punched holes.
- Engagement: Angle the rail in to seat the hooks into the corresponding locations. Make sure that the latch side of the brackets faces the rear of the rack.
- Verification: Confirm that the latches are fully engaged and there is no interference with other rack parts.

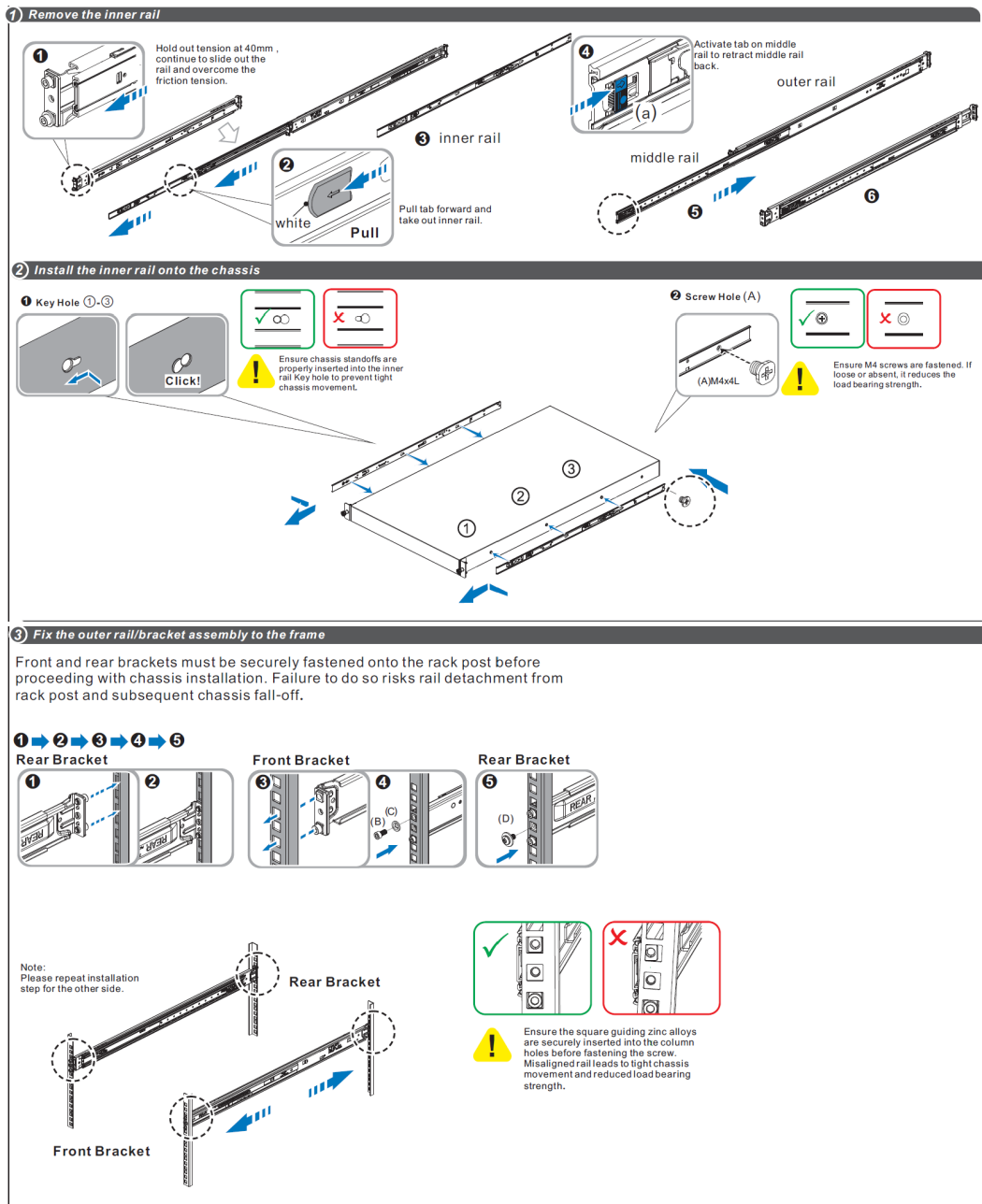


11.5.2.2 Step 2: Install the Rail-Kit onto the Adapter Tray

- Install the standard 19" Rail-Kit onto the adapter tray's front and rear EIA posts.



- Follow assembly steps 1-3, as detailed in the [SN5600D Rail-Kit](#) Section:



11.5.2.3 Step 3: Mount the Adapter Tray into the OCP Rack

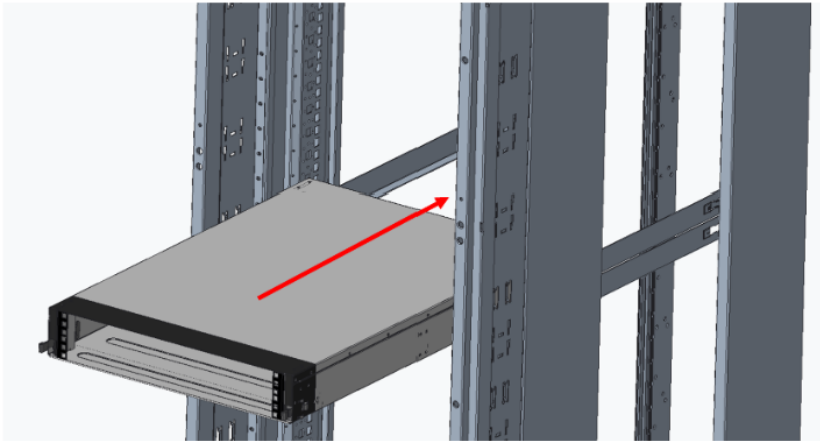
a. Select the RU position

- Choose the 2U window (e.g, RU 20-21) where the switch system will be located, and confirm that the L-shape support brackets (or shelf rails) are installed at that height.

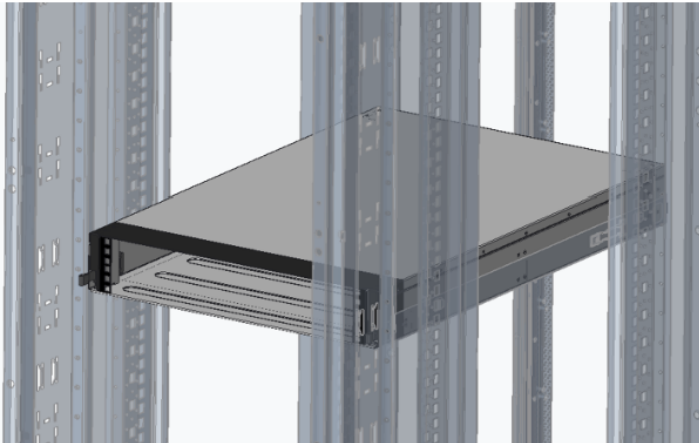
b. Placement: Rest the bottom flanges of the adapter tray onto the two L-shaped support brackets previously installed in the rack.

c. Securing: Slide the tray along the brackets until it latches securely into position.

Adapter Rests on L-Shaped Brackets

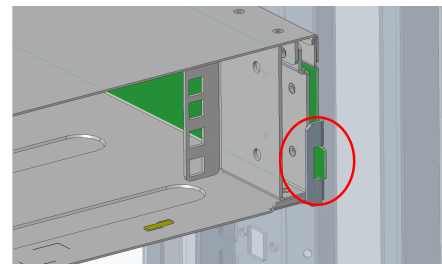
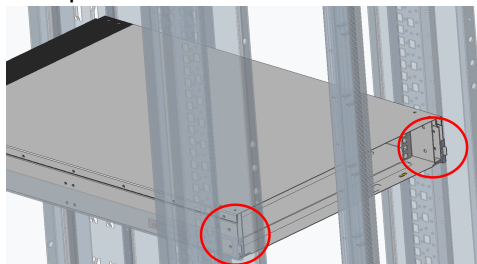


Adapter Fully Assembled

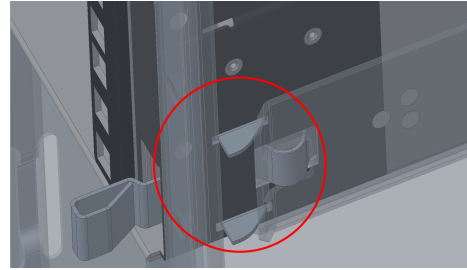
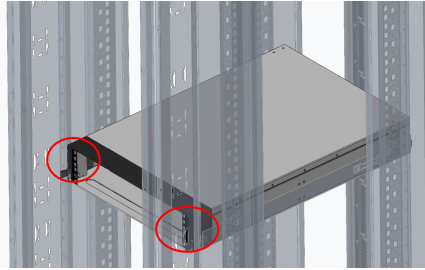


Final Checks:

- Ensure that the tray is correctly seated and does not obstruct doors or busbars.
- Verify the tray's rear extenders are properly inserted into the rear flanges of the L-shaped brackets on both sides.

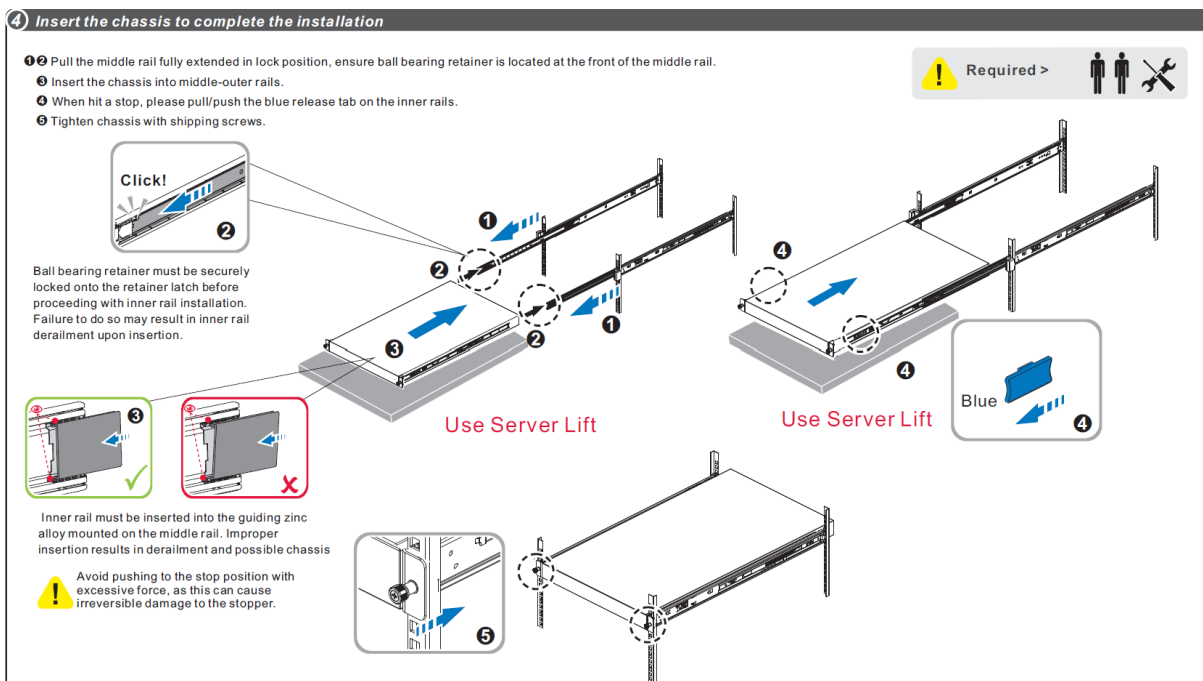


- Confirm that the front hooks of the adapter tray are latched to the rack's front posts.

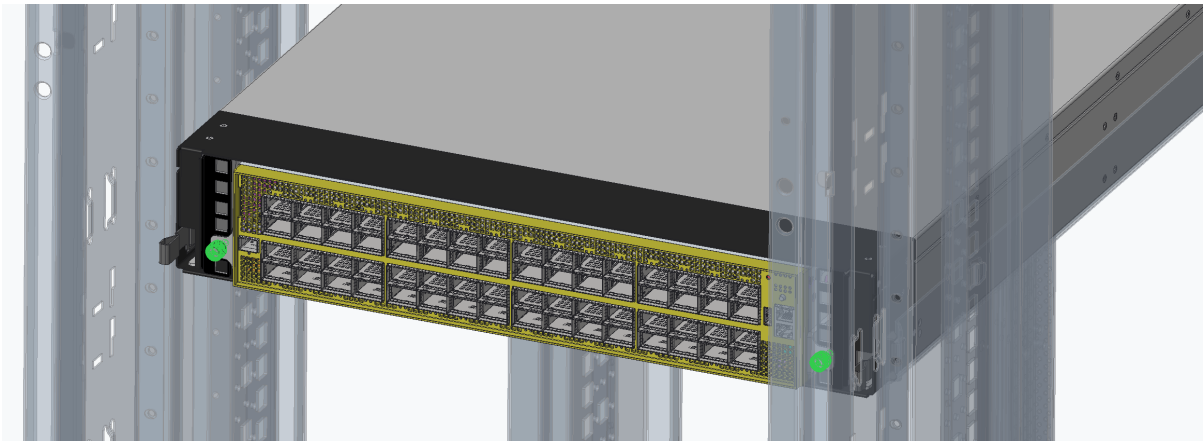


11.5.2.4 Step 4: Assemble the Switch Rail-Kit

Follow assembly step 4, as detailed in the [SN5600D Rail-Kit](#) Section:



Make sure to secure the chassis in the rack by tightening the designated screws.




11.5.2.5 Step 5: Install the Switch System in the Adapter Tray




- a. Using the pre-installed rail-kit, slide the switch system into the adapter tray until it is fully engaged.
- b. Secure the chassis by tightening the designated screws.
- c. Perform a final inspection of both the front and rear of the rack to ensure the system is properly seated and the busbar connection is fully plugged.











11.6 Safety Warnings










Safety warnings are provided in multiple languages for your convenience:





 Note that not all warnings may apply to all models.

11.6.1 Switch Safety Warnings (English)

| | | | | | |
|---|--|-----------------------------|----------------------------|-----------------------------|---------------------|
|  | <p>Installation Instructions Read all installation instructions before connecting the equipment to the power source.</p> | | | | |
|  | <p>Bodily Injury Due to Weight Use enough people to lift this product safely.</p> <div style="text-align: center;">  </div> <table style="width: 100%; text-align: center; margin-top: 10px;"> <tr> <td style="width: 25%;"><40 lbs <18 kgs</td> <td style="width: 25%;">40 - 70 lbs 18 - 32 kgs</td> <td style="width: 25%;">70 - 121 lbs 32 - 55 kgs</td> <td style="width: 25%;">>121 lbs >55 kgs</td> </tr> </table> | <40 lbs <18 kgs | 40 - 70 lbs 18 - 32 kgs | 70 - 121 lbs 32 - 55 kgs | >121 lbs >55 kgs |
| <40 lbs <18 kgs | 40 - 70 lbs 18 - 32 kgs | 70 - 121 lbs 32 - 55 kgs | >121 lbs >55 kgs | | |

| | |
|---|--|
|  | <p>Heavy Equipment This heavy equipment should be moved using a mechanical lift to avoid injuries.</p> |
|  | <p>Risk of Electric Shock!</p> <ul style="list-style-type: none"> • With the fan module removed power pins are accessible within the module cavity. Do not insert tools or body parts into the fan module cavity. • For AC powered switch systems: Disconnecting one power supply only disconnects one module. To isolate the unit completely, all connected power supplies must be disconnected.  <p>In QM97X0/HGX H100 switch systems: for 200-240Vac use only</p> |
|  | <p>Over-temperature This equipment should not be operated in an area with an ambient temperature exceeding the maximum value listed in the product specifications. Moreover, to guarantee proper ventilation, allow at least 8 cm (3 inches) of clearance around the ventilation openings.</p> |
|  | <p>Stacking the Chassis The chassis should not be stacked on any other equipment. If the chassis falls, it can cause bodily injury and equipment damage.</p> |
|  | <p>Redundant Power Supply Connection (OPTIONAL)—Electrical Hazard This product includes a redundant power or a blank in its place. In case of a blank power supply, do not operate the product with the blank cover removed or not securely fastened.</p> |
|  | <p>Double Pole/Neutral Fusing This system has double pole/neutral fusing. Remove all power cords before opening the cover of this product or touching any internal parts.</p> |
|  | <p>Multiple Power Inlets Risk of electric shock and energy hazard. The PSUs are all independent. Disconnect all power supplies to ensure a powered down state inside of the switch platform.</p> |
|  | <p>During Lightning—Electrical Hazard During periods of lightning activity, do not work on the equipment or connect or disconnect cables.</p> |
|  | <p>Copper Cable Connecting/Disconnecting Copper cables are heavy and not flexible, as such they should be carefully attached to or detached from the connectors. Refer to the cable manufacturer for special warnings/instructions.</p> |

| | |
|---|--|
|  | <p>Rack Mounting and Servicing When this product is mounted or serviced in a rack, special precautions must be taken to ensure that the system remains stable. In general, the rack should be filled with equipment starting from the bottom to the top.</p> |
|  | <p>Equipment Installation This equipment should be installed, replaced, and/or serviced only by trained and qualified personnel.</p> |
|  | <p>Equipment Disposal Disposal of this equipment should be in accordance to all national laws and regulations.</p> |
|  | <p>Local and National Electrical Codes This equipment should be installed in compliance with local and national electrical codes.</p> |
|  | <p>Installation Codes This device must be installed according to the latest version of the country national electrical codes. For North America, equipment must be installed in accordance to the applicable requirements in the US National Electrical Code and the Canadian Electrical Code.</p> |
|  | <p>Battery Replacement Warning: Replace only with UL Recognized battery, certified for maximum abnormal charging current not less than 4mA. There is a risk of explosion should the battery be replaced with a battery of an incorrect type. Dispose of used batteries according to the instructions.</p> |
|  | <p>UL Listed and CSA Certified Power Supply Cord For North American power connection, select a power supply cord that is UL Listed and CSA Certified, 3 - conductor, [16 AWG], terminated with a molded plug rated at 125 V, [13 A], with a minimum length of 1.5m [six feet] but no longer than 4.5m. For European connection, select a power supply cord that is internationally harmonized and marked "<HAR>", 3 - conductor, minimum 1.0 mm² wire, rated at 300 V, with a PVC insulated jacket. The cord must have a molded plug rated at 250 V, 10 A.</p> |
|  | <p>Installation Codes This device must be installed according to the latest version of the country's national electrical codes. For North America, equipment must be installed in accordance to the applicable requirements in the US National Electrical Code and the Canadian Electrical Code.</p> |
|  | <p>Interconnection of Units Cables for connecting to the unit RS232 and Ethernet Interfaces must be UL certified type DP-1 or DP-2. (Note: when residing in non LPS circuit.)</p> |

| | |
|---|---|
|  | <p>Overcurrent Protection A readily accessible Listed branch circuit overcurrent protective device rated 20 A must be incorporated in the building wiring.</p> <p>Acoustic Level Warning The acoustic level listed in Specifications section represents product noise measured in accordance with ISO 7779 under nominal conditions. The actual noise level can vary depending on the installation conditions, including but not limited to the number of racks in the installation, the overall installation size, rack and other equipment material and noise levels, fan faults, room temperature, room configuration, and employee location in relation to the equipment. The data-center owner should manage effective hearing conservation as per the OSHA standard to protect employees against over and extended exposure to noise.</p> |
|  | <p>Do Not Use the Switch as a Shelf or Work Space Caution: Slide/rail mounted equipment is not to be used as a shelf or a work space. The rails are not intended for sliding the unit away from the rack. It is for permanent installation at final resting place only, not used for service and maintenance.</p> |
|  | <p>WEEE Directive According to the WEEE Directive 2002/96/EC, all waste electrical and electronic equipment (EEE) should be collected separately and not disposed of with regular household waste. Dispose of this product and all of its parts in a responsible and environmentally-friendly way.</p> |
|  | <p>Country of Norway Power Restrictions This unit is intended for connection to a TN power system and an IT power system of Norway only.</p> |

11.6.1.1 Taiwan RoHS Declaration - Switch Systems

11.6.1.1.1 Restricted Substances Presence Condition (Declaration Table)

Equipment Name (設備名稱): 伺服器 (Server)

| Unit (單元) | Lead (Pb) (鉛) | Mercury (Hg) (汞) | Cadmium (Cd) (鎘) | Hexavalent chromium (Cr+6) (六價鉻) | Polybrominated biphenyls (PBB) (多溴聯苯) | Polybrominated diphenyl ethers (PBDE) (多溴二苯醚) |
|---------------------------------------|------------------|---------------------|---------------------|-------------------------------------|---------------------------------------|--|
| 印刷電路板 (Printed Circuit Board) | — | ○ | ○ | ○ | ○ | ○ |
| 金屬外殼 (Metal Enclosure) | ○ | ○ | ○ | ○ | ○ | ○ |
| 塑膠件 (Plastic Parts) | ○ | ○ | ○ | ○ | ○ | ○ |
| PCB 板電子零件 (PCB Electronic Components) | — | ○ | ○ | ○ | ○ | ○ |

| Unit (單元) | Lead (Pb) (鉛) | Mercury (Hg) (汞) | Cadmium (Cd) (鎘) | Hexavalent chromium (Cr+6) (六價鉻) | Polybrominated biphenyls (PBB) (多溴聯苯) | Polybrominated diphenyl ethers (PBDE) (多溴二苯醚) |
|---|---------------|------------------|------------------|----------------------------------|---------------------------------------|---|
| Notes | | | | | | |
| <ul style="list-style-type: none"> • Note 1 (備考1): “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition. • Note 2 (備考2): “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence. • Note 3 (備考3): “—” indicates that the restricted substance corresponds to the exemption. | | | | | | |

11.6.1.2 Taiwan RoHS Declaration - Gateway Systems


11.6.1.2.1 設備名稱 (Equipment Name)：閘道器 (Gateway)



| 單元 Unit | 鉛 Lead (Pb) | 汞 Mercury (Hg) | 鎘 Cadmium (Cd) | 六價鉻 Hexavalent chromium (Cr+6) | 多溴聯苯 Polybrominated biphenyls (PBB) | 多溴二苯醚 Polybrominated diphenyl ethers (PBDE) |
|---|-------------|----------------|----------------|--------------------------------|-------------------------------------|---|
| 印刷電路板 (Printed Circuit Board) | — | ○ | ○ | ○ | ○ | ○ |
| 金屬外殼 (Metal Housing) | ○ | ○ | ○ | ○ | ○ | ○ |
| 塑膠件 (Plastic Parts) | ○ | ○ | ○ | ○ | ○ | ○ |
| PCB 板電子零件 (PCB Electronic Components) | — | ○ | ○ | ○ | ○ | ○ |
| 備考 (Notes): | | | | | | |
| <ol style="list-style-type: none"> 1. “超出 0.1 wt %” 及 “超出 0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。 2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。 3. “—” 係指該項限用物質為排除項目。 | | | | | | |

11.6.1.3 Taiwan BSMI Class A Statement - Warning to the User!

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

11.6.2 Nordic Countries Notices

| | |
|---|---|
|  | In Finland: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan" |
|---|---|




| | |
|---|--|
|  | <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> |
|  | <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> |

11.6.3 安裝安全性警告 (Simplified Chinese)

| | |
|---|---|
|  | <p>安装指示 本设备附有备援电源供应器或在适当位置配有空白盖板</p> |
|  | <p>因重量导致的人身受伤 为了安全起见，请安排足够的人员以合力抬起本产品。</p>  |
|  | <p>重设备 本设备极重，应使用机械式起重机来搬移，以避免人员受伤。</p> |
|  | <p>有触电的危险 有触电的危险！拆除风扇模组后，即可接触到机箱内模组空缺处的电源针脚。请勿将工具或机身零件放入机箱内风扇模组空缺处。</p> |

| | |
|---|---|
|  | <p>温度过高 本设备不应在超过所建议的最高环境温度（45°C (113°F)）的区域中运作。此外，为了保证气流的流通正常，请在通风口旁保留至少 8 公分 (3 英寸) 的间距。</p> |
|  | <p>堆叠机箱 机箱不应堆叠在任何其他设备上。如果机箱掉落，可能造成人员受伤与设备损坏。</p> |
|  | <p>备用电源供应器连接时的电击危险 本设备附有备援电源供应器或在适当位置配有空白盖板。有关电源供应器，在空白盖板已取下或未牢固固定的情况下，请勿操作本产品</p> |
|  | <p>双极 / 中性保险丝 本系统具有双极 / 中性保险丝。请拔掉所有电源线后，再打开本产品的盖板或碰触任何内部零件。</p> |
|  | <p>多电源输入座 电击与能源危害的危险。所有 PSU 均各自独立。请将所有电源供应器断电，以确保交换器设备内部的电源为关闭状态。</p> |
|  | <p>閃電時的電擊危險 在閃電期間，不要使用本設備或連接或拔下纜線。</p> |
|  | <p>机架安装与维修 此产品已安装在机架中或在机架中维修时，必须采取特定预防措施以确保系统维持稳定。一般您应该将设备从底部到顶端放满机架。</p> |
|  | <p>设备安装 本设备仅限由经过训练与 / 或合格的人员安装、更换或维修。</p> |

| | |
|---|--|
|  | <p>设备弃置 弃置本设备应遵照所有国内法规。</p> |
|  | <p>当地与国家电气法规 请遵照当地与国家电气法规安装本设备。</p> |
|  | <p>安装法规 请务必遵循最新版的国家电气法规，安装本设备。在北美地区，请务必遵循美国国家电工法规和加拿大电工法规中的适用规定，安装本设备。</p> |
|  | <p>更换电池 警告：只能以 UL 认可电池，且取得最大异常充电电流低于 4mA 认证的电池进行更换。若更换错误类型的电池，会有爆炸的危险。请依据指示弃置废电池。</p> |
|  | <p>UL 列名和 CSA 认证电源线 北美地区在接上电源时，请选用获得UL 列名和CSA 认证3- 导体[16AWG] 附成型插头，额定值为125 V、[13 A]，长度至少1.5 公尺[六英尺]，但不超过4.5 公尺的电源线。 欧洲地区在接上电源时，请选用国际协调式且标示有 <HAR> -3字样、导体标示截面 至少 1.0 平方公厘，额定值为 300 V，采用 PVC 绝缘的电源线。电源线需有成型插头，额定值为 250 V, 10 A。</p> |
|  | <p>高漏电流 警告：高漏电流；必须执行地线连接，然后再连接电源供应器。</p> |
|  | <p>安装法规 请务必遵循最新版的国家电气法规，安装本设备。在北美地区，请务必遵循美国国家电工法规和加拿大电工法规中的适用规定，安装本设备。</p> |
|  | <p>互连设备 连接至 RS232 设备和以太网路介面的缆线必须是 UL 认证类型 DP-1 或 DP-2。(请注意- 若放置于无 LPS 电路时)</p> |

| | |
|---|---|
|  | <p>请勿将交换机作为机架与工作空间使用 小心：具有滑轨 / 导轨设备不可用作机架或工作空间。导轨不适用于将设备滑出机架使用。仅限永久安装在最后安置区域时使用，不可用于维修和保养。</p> |
|  | <p>WEEE 指令 根据 WEEE 指令 2002/96/EC，所有废弃的电气与电子设备 (EEE)，应分开集中，而且不应与一般家庭废弃物一起弃置。请以负责和环保的方式弃置本产品及其所有零件。</p> |
|  | <p>挪威国家电源限制 本设备仅限连接至挪威的 TN 电源系统和 IT 电源系统。</p> |

11.6.3.1 China CCC Warning Statement

在维修的时候一定要断开所有电源 (English translation “disconnect all power sources before service”)

| | |
|----|---|
| 汉文 | 仅适用于非热带气候条件下安全使用。 |
| 藏文 | དང་གནས་ཤི་གནས་སྐབས་ཀྱི་དབྱིངས་དང་མི་མཐུན་པའི་སྐབས་ནས་བདེ་སྲུང་བྱ་དགོས། |
| 壮文 | Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenx ancienz sawjyungh. |
| 维文 | ئەينى تېخنىكىلىق تاماملانمىش شەرتىدە بىخەتەر ئىشلىتىش كېرەك. |

11.6.3.1.1 For altitude 2000 meter and below:

| | |
|----|--|
| 汉文 | 仅适用于海拔2000m以下地区安全使用。 |
| 藏文 | མཐོ་ཚད་ 2000 མར་ཡིན་པའི་གནས་སའོངས་ནས་བདེ་སྲུང་བྱ་དགོས། |
| 壮文 | Dan hab yungh youq gij digih hajibaz 2000m doxrongz haenx ancienz sawjyungh. |
| 维文 | 2000 مېتىر يۇقىرى بولمىغان يېرىلرىدە بىخەتەر ئىشلىتىش كېرەك. |

11.6.3.1.2 Warning for Class A:

声明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

English translation of above statement

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

11.6.3.2 Taiwan RoHS Declaration

| 設備名稱: 伺服器 | | 型號 (型式) : MUA960 / MUA960B / MUA970 | | | | |
|-----------|-------------|-------------------------------------|----------------|---|-------------------------------------|---|
| 單元 Unit | 鉛 Lead (Pb) | 汞 Mercury (Hg) | 鎘 Cadmium (Cd) | 六價鉻 Hexavalent chromium (Cr ⁶⁺) | 多溴聯苯 Polybrominated biphenyls (PBB) | 多溴二苯醚 Polybrominated diphenyl ethers (PBDE) |
| 印刷電路板 | — | ○ | ○ | ○ | ○ | ○ |
| 金屬外殼 | ○ | ○ | ○ | ○ | ○ | ○ |
| 塑膠件 | ○ | ○ | ○ | ○ | ○ | ○ |
| PCB 板電子零件 | — | ○ | ○ | ○ | ○ | ○ |

備考

1. “超出 0.1 wt %” 及 “超出 0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。
2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。
3. “—” 係指該項限用物質為排除項目。

11.6.3.3 Taiwan BSMI Class A Statement - Warning to the User!

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

11.6.4 安裝安全性警告 (Traditional Chinese)


| | |
|---|---|
|  | <p>安裝指示 本設備附有備援電源供應器或在適當位置配有空白蓋板。</p> |
|  | <p>因重量導致的人身受傷 為了安全起見，請安排足夠的人員以合力抬起本產品。</p> <div style="text-align: center;">  <p>~40 lbs ~18 kgs 40 - 70 lbs 18 - 32 kgs 70 - 121 lbs 32 - 55 kgs >121 lbs >55 kgs</p> </div> |


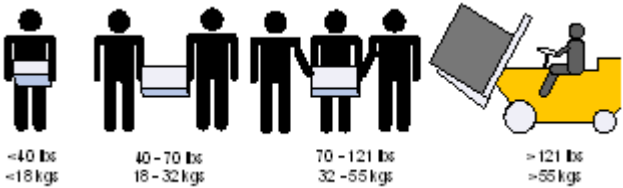








| | |
|---|---|
|  | <p>重設備 本設備極重，應使用機械式起重機來搬移，以避免人員受傷。</p> |
|  | <p>有觸電的危險 有觸電的危險！拆除風扇模組後，即可接觸到機箱內模組空缺處的電源針腳。請勿將工具或機身零件放入機箱內風扇模組空缺處。</p> |
|  | <p>溫度過高 本設備不應在超過所建議的最高環境溫度的區域中運作：45 °C (113 °F)。此外，為了保證氣流的流通正常，請在通風口旁保留至少 8 公分 (3 英吋) 的間距。</p> |
|  | <p>堆疊機箱 機箱不應堆疊在任何其他設備上。如果機箱掉落，可能造成人員受傷與設備損壞。</p> |
|  | <p>備用電源供應器連接時的電擊危險 本設備附有備用電源供應器或在適當位置配有空白蓋板。有關電源供應器，在空白蓋板已取下或未牢牢固定的情況下，請勿操作本產品</p> |
|  | <p>雙極 / 中性保險絲 本系統具有雙極 / 中性保險絲。請拔掉所有電源線後，再打開本產品的蓋板或觸碰任何內部零件。</p> |
|  | <p>多電源輸入座 電擊與能源危害的危險。所有 PSU 均各自獨立。請將所有電源供應器斷電，以確保交換器設備內部的電源為關閉狀態。</p> |
|  | <p>銅纜線的連接與移除 銅電纜重且不易彎折，因此應仔細連接或從連接器端口分。請參閱電纜製造商了解特殊警告 / 說明。</p> |











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|  | <p>機架安裝與維修 此產品已安裝在機架中或在機架中維修時，必須採取特定預防措施以確保系統維持穩定。一般您應該將設備從底部到頂端放滿機架。</p> |
|  | <p>設備安裝 本設備僅限由經訓練與 / 或合格的人員安裝、更換或維修。</p> |
|  | <p>設備棄置 棄置本設備應遵照所有國內法規。</p> |
|  | <p>當地與國家電氣法規 請遵照當地與國家電氣法規安裝本設備。</p> |
|  | <p>安裝法規 請務必遵循最新版的國家電氣法規，安裝本設備。在北美地區，請務必遵循美國國家電工法規和加拿大電工法規中的適用規定，安裝本設備。</p> |
|  | <p>更換電池 警告：只能以 UL 認可電池，且取得最大異常充電電流低於 4mA 認證的電池進行更換。若更換錯誤類型的電池，會有爆炸的危險。請依據指示棄置廢電池。</p> |
|  | <p>UL 列名和 CSA 認證電源線 北美地區在接上電源時，請選用獲得 UL 列名和 CSA 認證 3- 導體 [16AWG] 附成型 插頭，額定值為 125V、[13 A]，長度至少 1.5 公尺 [六英尺]，但不超過 4.5 公尺的電源線。歐洲地區在接上電源時，請選用國際協調式且標示有 <HAR> -3 字樣、導體標示截面至少 1.0 平方公厘，額定值為 300 V，採用 PVC 絕緣的電源線。電源線須有成行插頭，額定值為 250V、10A。</p> |
|  | <p>高漏電流 警告：高漏電流；必須執行地線連接，然後再連接電源供應器。</p> |





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|  | <p>安裝法規 請務必遵循最新版的國家電氣法規，安裝本設備。在北美地區，請務必遵循美國國家電工法規和加拿大電工法規中的適用規定，安裝本設備。</p> |
|  | <p>互連設備 連接至 RS232 設備和乙太網路介面的纜線必須是 UL 認證類型 DP-1 或 DP-2。（請注意 - 若放置於無 LPS 電路時）。</p> |
|  | <p>切換開關不可用作機架或工作空間 小心：滑軌/導軌安裝設備不可用作機架或工作空間。導軌不適用於將設備滑出機架使用。僅限永久安裝在最後安置區域時使用，不可用於維修和保養。</p> |
|  | <p>WEEE 指令 根據 WEEE 指令 2002/96/EC，所有廢棄的電氣與電子設備 (EEE)，應分開集中，而且不應與一般家庭廢棄物一起棄置。請以負責和環保的方式棄置本產品及其所有零件。</p> |
|  | <p>挪威國家電源限制 本設備僅限連接至挪威的 TN 電源系統和 IT 電源系統。</p> |

11.6.5 Avertissements de sécurité pour l'installation (French)







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|  | <p>Instructions d'installation Veuillez lire la totalité des instructions d'installation avant de relier l'équipement au secteur.</p> |
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|  | <p>Blessures à cause du poids Prévoyez assez de personnel pour soulever ce produit en toute sécurité.</p>  |
|  | <p>Équipement lourd Cet équipement est lourd et doit être déplacé avec un système de levage mécanique pour éviter les blessures.</p> |
|  | <p>Danger d'électrocution Danger d'électrocution ! Lorsque le module de ventilation est retiré, les broches d'alimentation sont exposées dans l'emplacement du module. NE PAS insérer d'outils ou la main dans l'emplacement du module.</p> |
|  | <p>Surchauffe Cet équipement ne doit pas être en service dans un local dont la température dépasse le maximum recommandé de 45°C (113°F). En outre et pour garantir une circulation d'air correcte, laisser un espace d'au moins 8 cm (3") autour des orifices de ventilation.</p> |
|  | <p>Châssis empilé sur d'autres équipements Le châssis ne doit pas être empilé sur d'autres équipements. S'il tombe, il peut endommager l'équipement ou entraîner des blessures.</p> |
|  | <p>Connexion de l'alimentation redondante : danger d'électrocution Ce produit est équipé d'une alimentation redondante ou d'un cache si elle est absente. Dans ce dernier cas, ne pas faire fonctionner le produit si le cache est retiré ou mal fixé.</p> |
|  | <p>Fusibles phase/neutre Ce système dispose de fusibles phase/neutre. Débranchez tous les cordons d'alimentation avant d'ouvrir le capot ou de toucher tout élément à l'intérieur.</p> |
|  | <p>Plusieurs prises d'alimentation Risque et danger d'électrocution. Les alimentations sont toutes indépendantes. Pour s'assurer que le commutateur est bien hors tension, débranchez toutes les alimentations.</p> |
|  | <p>En cas d'orage, danger d'électrocution Pendant un orage, ne pas travailler sur l'équipement ni brancher ou débrancher des câbles.</p> |






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|  | <p>Connexion et déconnexion du câble en cuivre Les câbles en cuivre sont lourds et peu flexibles. Par conséquent, il faut procéder avec soin pour les brancher ou les débrancher des connecteurs. Consulter le fabricant du câble pour obtenir des instructions ou des avertissements spécifiques.</p> |
|  | <p>Montage en rack et maintenance Lors du montage ou de la maintenance de ce produit dans un rack, il faut faire spécialement attention pour s'assurer que l'ensemble reste stable. En règle générale, le rack doit être rempli en commençant par le bas.</p> |
|  | <p>Installation de l'équipement Cet équipement ne doit être installé, remplacé et maintenu que par un personnel formé et qualifié.</p> |
|  | <p>Mise au rebut de l'équipement La mise au rebut de cet équipement doit se faire conformément à toutes les lois et réglementations nationales.</p> |
|  | <p>Codes électriques locaux et nationaux Cet équipement doit être installé conformément aux codes électriques locaux et nationaux.</p> |
|  | <p>Codes d'installation Cet appareil doit être installé conformément à la version la plus récente des codes électrique nationaux. En Amérique du Nord, l'équipement doit être installé en respectant les exigences de l'US National Electrical Code et du Code canadien de l'électricité.</p> |
|  | <p>Remplacement de la batterie Avertissement: ne remplacer qu'avec une batterie UL, certifiée pour accepter un courant de charge anormal maximal supérieur ou égal à 4 mA. Si la batterie n'est pas remplacée par un type correct, il y a un risque d'explosion. Les batteries usagées doivent être mises au rebut conformément aux instructions.</p> |
|  | <p>Cordon d'alimentation UL Listed et certifié CSA Pour le branchement électrique en Amérique du Nord, utiliser un cordon d'alimentation UL Listed et CSA Certified, à 3 conducteurs [calibre 16 AWG], avec une prise moulée 125 V [13 A], faisant au moins 1,5 m de long [six pieds] et au plus 4,5 m. Pour le branchement électrique en Europe, utiliser un cordon d'alimentation au format international harmonisé (marqué <HAR>), à 3 conducteurs d'au moins 1 mm² de section, 300 V, avec une gaine isolante en PVC. Le cordon doit avoir une prise moulée 250 V 10 A.</p> |
|  | <p>Courant de fuite élevé Avertissement: courant de fuite élevé, une connexion à la terre est indispensable avant de brancher l'alimentation.</p> |
|  | <p>Codes d'installation Cet appareil doit être installé conformément à la version la plus récente des codes électrique nationaux. En Amérique du Nord, l'équipement doit être installé en respectant les exigences de l'US National Electrical Code et du Code canadien de l'électricité.</p> |

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|  | <p>Interconnexion des unités Les câbles de connexion aux interfaces RS232 et Ethernet de l'appareil doivent être certifié UL de type DP-1 ou DP-2. (Note : en cas d'installation sur un circuit dont la puissance n'est pas limitée) Protection contre les surintensités : le câblage de l'immeuble doit intégrer un dispositif certifié de protection contre les surintensités, calibré à 20 A et aisément accessible.</p> |
|  | <p>Ne pas utiliser comme étagère ou plan de travail Attention: un équipement coulissant ou monté sur rail ne doit pas servir d'étagère ni de plan de travail. Les rails ne sont pas destinés à faire coulisser l'unité hors du rack. Ils sont destinés à une installation permanente à l'emplacement final, pas pour l'entretien ni la maintenance.</p> |
|  | <p>Directive DEEE Selon la Directive 2002/96/CE (DEEE), tous les déchets d'équipements électriques et électroniques (EEE) doivent être collectés séparément et ne pas être mis au rebut avec les déchets ménagers habituels. Ce produit et toutes ses pièces doivent être mis au rebut d'une manière responsable, respectant l'environnement.</p> |
|  | <p>Restrictions concernant l'alimentation pour la Norvège Cet appareil est prévu pour être relié à un système d'alimentation TN et un système d'alimentation informatique de Norvège uniquement.</p> |



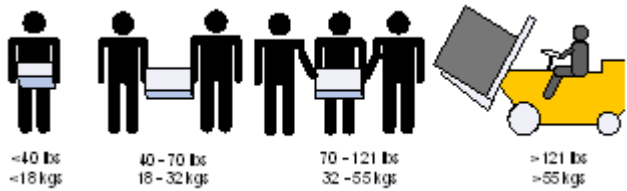

11.6.6 Installation Sicherheitshinweise (German)











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|  | <p>Installationsanleitungen Lesen Sie alle Installationsanleitungen, bevor Sie das Gerät an die Stromversorgung anschließen.</p> |
|  | <p>Verletzungsgefahr wegen des Gewichts Um das Produkt sicher anzuheben, genügend Personen einsetzen.</p> |
|  | <p>Schweres Gerät Dieses Gerät ist schwer und muss mit einem mechanischen Hebegerät verschoben werden, um Verletzungen zu vermeiden.</p> |
|  | <p>Stromschlagrisiko Stromschlagrisiko! Bei abgenommenem Ventilatormodul sind die Stromkontakte in der Modulvertiefung zugänglich. Es dürfen KEINE Werkzeuge oder Körperteile in die Vertiefung des Ventilatormoduls gelangen.</p> |
|  | <p>Übertemperatur Dieses Gerät sollte nicht in einem Bereich mit einer Umgebungstemperatur über der maximal empfohlenen Temperatur von 45°C (113°F) betrieben werden. Es ist ein Luftstrom von 200 LFM bei maximaler Umgebungstemperatur erforderlich. Außerdem sollten mindestens 8 cm (3 in.) Freiraum um die Belüftungsöffnungen sein, um einen einwandfreien Luftstrom zu gewährleisten.</p> |
|  | <p>Stapeln des Chassis Das Chassis sollte nicht auf andere Geräte gestapelt werden. Wenn das Chassis herunterfällt, kann es zu Verletzungen und Beschädigungen an Geräten führen.</p> |











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|  | <p>Zweipolig/Neutrale Sicherung Achtung: Zweipolige bzw. Neutralleiter-Sicherung im Netzteil. Netzstecker ziehen, um sicherzustellen, daß keine Spannung am Gerät anliegt. Entfernen Sie alle Netzkabel vor dem Öffnen der Abdeckung dieses Produkts oder dem Berühren der Innenteile.</p> |
|  | <p>Mehrere Stromeingänge Risiko eines Stromschlags und Stomgefahr. Alle Stromversorgungseinheiten sind unabhängig. Trennen Sie alle Stomversorgungen, um einen abgeschalteten Zustand im Inneren der Switch-Plattform sicherzustellen.</p> |
|  | <p>Bei Gewitter - Elektrische Gefahr Arbeiten Sie während eines Gewitters und Blitzschlag nicht am Gerät, schließen Sie keine Kabel an oder ab.</p> |
|  | <p>Anschließen/Trennen von Kupferkabel Kupferkabel sind schwer und nicht flexible. Deshalb müssen sie vorsichtig an die Anschlüsse angebracht bzw. davon getrennt werden. Lesen Sie die speziellen Warnungen und Anleitungen des Kabelherstellers.</p> |
|  | <p>Rack-Montage und Wartung Wenn dieses Produkt in einem Rack montiert oder gewartet wird, sind besondere Vorsichtsmaßnahmen zu ergreifen, um die Stabilität des Systems zu gewährleisten. Im Allgemeinen sollten Sie das Gestell von unten nach oben mit Geräten füllen.</p> |
|  | <p>Geräteinstallation Diese Gerät sollte nur von geschultem und qualifiziertem Personal installiert, ausgetauscht oder gewartet werden.</p> |
|  | <p>Geräteentsorgung Die Entsorgung dieses Geräts sollte unter Beachtung aller nationalen Gesetze Bestimmungen erfolgen.</p> |
|  | <p>Regionale und nationale elektrische Bestimmungen Dieses Gerät sollte unter Beachtung der regionalen und nationalen elektrischen Bestimmungen installiert werden.</p> |
|  | <p>Installationscodes Dieses Gerät muss entsprechend der aktuellsten Version des National Electrical Code installiert weden. In Nodamerika muss das Gerät gemäß den geltenden Anforderungen des US National Electrical Code und des Canadian Electrical Code installiert werden.</p> |
|  | <p>Akkuaustausch Warnung: Nur durch von UL anerkannten Akkus ersetzen, die für maximalen anormalen Ladestrom von nicht weniger als 4mA zertifiziert sind. Es besteht Explosiionsgefahr, wenn der Akku durch einen Akku eines falschen Typs ersetzt wird. Akkus gemäß den Anweisungen entsorgen.</p> |
|  | <p>UL- und CSA-zertifiziertes Netzkabel Für Nordamerika Stromanschluss, wählen Sie ein Netzkabel, das UL-und CSA Certified 3 - Leiter, [18 AWG], mit einem angespritztem Stecker bewertet bei 125 V, [15], mit einer Mindestlänge von 1,5 m [Six Feet] aber nicht mehr als 4,5 m. Für die europäischen Zusammenhang, wählen Sie ein Netzkabel, das international harmonisiert und der Aufschrift "<HAR>", 3 - Leiter, mindestens 0,75 mm2 Draht, bewertet mit 300 V, mit einem PVC-Mantel isoliert. Das Kabel muss eine angespritztem Stecker bewertet bei 250 V, 10 A.</p> |

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|  | <p>Hoher Ableitstrom WARNUNG: Hohe Ableitstrom; Earth Verbindung, bevor Sie die Verbindung von wesentlicher Bedeutung werden</p> |
|  | <p>Installationscodes Dieses Gerät muss installiert sein, entsprechend auf die neueste Version des Landes National Electrical Code. Für Nordamerika, müssen in Übereinstimmung mit den geltenden Vorschriften in der US-amerikanischen National Electrical Code und dem Canadian Electrical Code.</p> |
|  | <p>Verbindung der Geräte untereinander Kabel für den Anschluss an das Gerät RS232-und Ethernet-Schnittstellen müssen UL zertifiziert Typ DP-1 oder DP-2. (Hinweis-, wenn nicht mit Wohnsitz in LPS-Schaltung) Überstromschutz: Eine leicht zugängliche Auflistung Abzwegleitung Überstrom-Schutzeinrichtung 20 A bewertet werden müssen in dem Gebäude Verkabelung.</p> |
|  | <p>Switch nicht als Regal oder Arbeitsplatz nutzen Achtung: Auf Schieber/Schienen montiertes Gerät ist nicht als Regal oder Arbeitsbereich zu nutzen. Die Schienen sind nicht dafür bestimmt, die Einheit aus dem Gestell weg zu ziehen. Sie sind nur für die permanente Installation an einem endgültigen Standort gedacht, nicht für Instandhaltung und Wartung.</p> |
|  | <p>WEEE-Direktive Gemäß WEEE Directive 2002/96/EC müssen alle elektrischen und elektronischen Abfallgeräte (EEE) separat gesammelt und nicht mit normalem Haushaltsmüll entsorgt werden. Dieses Produkt und alle seine Teile in verantwortungsvoller und umweltfreundlicher Art und Weise entsorgen.</p> |










11.6.7 Advertencias de seguridad de instalación (Spanish)











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|  | <p>Instrucciones de instalación Antes de conectar el equipo a la fuente de alimentación, leer todas las instrucciones de instalación.</p> |
|  | <p>Lesión corporal a causa de peso Recurra a suficientes personas para levantar este producto sin.</p>  <p> <=40 lbs <18 kgs 40 - 70 lbs 18 - 32 kgs 70 - 121 lbs 32 - 55 kgs >121 lbs >55 kgs </p> |
|  | <p>Equipos pesados Dado que el equipo es pesado, se debe mover únicamente mediante un elevador mecánico, para evitar lesiones.</p> |







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|  | <p>Riesgo de descarga eléctrica Con el módulo del ventilador quitado, se obtiene acceso a las clavijas de alimentación desde dentro de la cavidad del módulo. NO introducir herramientas ni partes del cuerpo en la cavidad del módulo del ventilador.</p> |
|  | <p>Sobretensión No se debe utilizar el equipo en un área con una temperatura ambiente superior a la máxima recomendada: 45°C. Además, para garantizar una circulación de aire adecuada, se debe dejar como mínimo un espacio de 8 cm (3 pulgadas) alrededor de las aberturas de ventilación.</p> |
|  | <p>Apilamiento del chasis Los chasis no se deben apilar sobre otros equipos. La caída del chasis podría causar lesiones corporales, así como daños al equipo.</p> |
|  | <p>Conexión redundante de fuente de alimentación: peligro de descarga Este producto incluye una fuente de alimentación redundante o, en su lugar, una vacía. Si se dispone de una fuente de alimentación vacía, no utilizar el producto si su tapa está quitada o no está bien cerrada.</p> |
|  | <p>Fusible neutro o de polo doble Dos fusibles, uno en el polo y otro en el neutro. Quitar los cables de corriente antes de abrir la tapa de este producto o tocar cualquier componente interno.</p> |
|  | <p>Tomas de alimentación múltiples Riesgo de descarga eléctrica y peligro de corriente. Todas las fuentes de alimentación son independientes. Desconecte todas las fuentes de alimentación, para asegurar que no haya corriente alguna dentro de la plataforma de conmutación.</p> |
|  | <p>Al haber rayos: peligro de descarga No utilizar el equipo ni conectar o desconectar cables durante períodos de actividad de rayos.</p> |
|  | <p>La conexión y desconexión de cables de cobre Dado que los cables de cobre son pesados y no son flexibles, su conexión a los conectores y su desconexión se deben efectuar con mucho cuidado. Para ver advertencias o instrucciones especiales, consultar al fabricante del cable.</p> |
|  | <p>Montaje y mantenimiento del bastidor Al instalar o realizar el mantenimiento de este aparato en un bastidor, es preciso adoptar precauciones especiales para garantizar que el sistema se mantenga estable. En general, en un bastidor, los equipos se deben instalar comenzando desde abajo hacia arriba.</p> |
|  | <p>Instalación del equipo La instalación, el reemplazo y el mantenimiento de este equipo estarán a cargo únicamente de personal capacitado y competente.</p> |

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|  | <p>Eliminación del equipo La eliminación definitiva de este equipo se debe efectuar conforme a todas las leyes y reglamentaciones nacionales.</p> |
|  | <p>Códigos eléctricos locales y nacionales Este equipo se debe instalar conforme a los códigos eléctricos locales y nacionales.</p> |
|  | <p>Códigos de instalación Este dispositivo se debe instalar conforme a la versión más reciente de los códigos eléctricos nacionales del país en cuestión. En América del Norte, el equipo se debe instalar de acuerdo con las disposiciones vigentes del Código Eléctrico Nacional de los EE.UU. y del Código Eléctrico de Canadá.</p> |
|  | <p>Cambio de batería Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.</p> |
|  | <p>Cable de alimentación homologado por UL y con certificación CSA En conexiones de América del Norte, seleccionar un cable de alimentación homologado por UL y con certificación CSA de tres conductores, [16 AWG], terminado en un enchufe moldeado con capuchón de 125 voltios nominal, [13 A], con una longitud mínima de 1,5 metros, pero no más de 4,5 metros. En conexiones europeas, seleccionar un cable de alimentación armonizado internacionalmente y marcado "<HAR>", de tres conductores, hilo de 1,0 mm² como mínimo, 300 voltios nominal, con cobertura protectora aislante de PVC. El cable debe tener un enchufe moldeado con capuchón de 250 voltios nominal, 10 A.</p> |
|  | <p>Alta corriente de fuga ADVERTENCIA: Alta corriente de fuga. Es esencial efectuar la conexión a tierra antes de conectar la alimentación.</p> |
|  | <p>Códigos de instalación Este dispositivo se debe instalar conforme a la versión más reciente de los códigos eléctricos nacionales del país en cuestión. En América del Norte, el equipo se debe instalar de acuerdo con las disposiciones vigentes del Código Eléctrico Nacional de los EE.UU. y del Código Eléctrico de Canadá.</p> |
|  | <p>Interconexión de unidades Los cables para la conexión con las interfaces RS232 y Ethernet de la unidad deben estar homologados por UL tipo DP-1 o DP-2. (Nota: cuando residen en circuito no de tipo LPS) Protección contra sobrecargas: Al cableado del edificio se debe incorporar un dispositivo de protección contra sobrecargas de circuito derivado, de fácil acceso, con una corriente nominal de 20 A.</p> |
|  | <p>No utilizar el conmutador como estante ni como espacio de trabajo Cuidado: Equipos montados en deslizadores o rieles no se deben utilizar como estantes ni como espacio de trabajo. La finalidad de los rieles no es deslizar la unidad hacia afuera del bastidor. Sirven solo para la instalación permanente en el lugar de destino final, no para fines de servicio o mantenimiento</p> |
|  | <p>Directiva WEEE Conforme a la Directiva 2002/96/CE sobre RAEE, todos los residuos de equipos eléctricos y electrónicos (EEE) se deben recolectar por separado y no se deben eliminar junto con residuos domésticos. Al deshacerse de este producto y de todas sus partes, hágalo de una manera responsable y respetuosa con el medio ambiente.</p> |



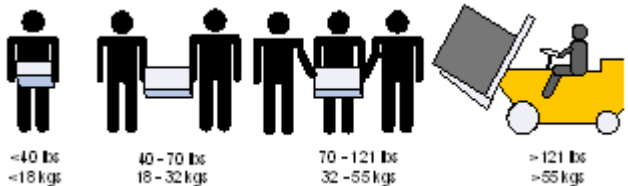
11.6.8 Предупреждения по технике безопасности при установке (Russian)











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|  | <p>Инструкция по установке Перед подключением оборудования к источнику питания следует ознакомиться с инструкцией по установке.</p> |
|  | <p>Травмы при переносе тяжелых предметов Для поднятия этого изделия следует задействовать достаточное количество людей.</p>  |
|  | <p>Тяжелое оборудование Это тяжелое оборудование, поэтому его следует перемещать с помощью механического подъемника во избежание травм.</p> |
|  | <p>Опасность поражения электрическим током Опасность поражения электрическим током! Когда снят вентиляторный модуль, существует возможность повреждения контактов питания в его углублении. НЕ вставлять инструменты или части тела в углубление вентиляторного модуля.</p> |
|  | <p>Перегрев Не эксплуатировать это оборудование в помещении с температурой окружающей среды, превышающей максимально рекомендуемое значение: 45 °C (113 °F). Более того, для надлежащей вентиляции следует обеспечить зазор вокруг вентиляционных отверстий не менее 8 см (3 дюйма).</p> |
|  | <p>Установка шасси поверх другого оборудования Не устанавливать шасси поверх другого оборудования. Падение шасси может привести к травмам и повреждению оборудования.</p> |
|  | <p>Опасность поражения электрическим током резервного источника питания В этом изделии установлен резервный источник питания или модуль-заглушка. Если установлен модуль-заглушка, не эксплуатировать изделие со снятой или ненадежно закрепленной крышкой модуля-заглушки.</p> |
|  | <p>Двухполюсный предохранитель на фазном и нейтральном проводах В этой системе установлен двухполюсный предохранитель на фазном и нейтральном проводах. Открывать кожух этого изделия или касаться внутренних деталей можно только после отсоединения всех шнуров питания.</p> |











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|  | <p>Несколько источников питания Опасность поражения электрическим током и опасные энергетические воздействия. Блоки питания независимы друг от друга. Чтобы обесточить все компоненты внутри платформы коммутации, следует отсоединить все блоки питания.</p> |
|  | <p>Опасность поражения электрическим током во время грозы Во время грозы запрещается работать с оборудованием и подключать или отключать кабели.</p> |
|  | <p>Подсоединение и отсоединение медных кабелей Медные кабели тяжелые и негибкие, поэтому следует осторожно их подсоединять и отсоединять. За особыми предупреждениями и указаниями следует обратиться к производителю кабеля.</p> |
|  | <p>Установка или обслуживание в стойке При установке или обслуживании этого изделия в стойке следует обеспечить устойчивость системы. Как правило, стойка заполняется оборудованием снизу вверх.</p> |
|  | <p>Установка оборудования Устанавливать, заменять и/или обслуживать это оборудование должен только подготовленный и квалифицированный персонал.</p> |
|  | <p>Утилизация оборудования Это оборудование утилизируется в соответствии с национальными законами и постановлениями.</p> |
|  | <p>Местные и национальные правила установки электрооборудования Это оборудование устанавливается в соответствии с местными и национальными правилами установки электрооборудования.</p> |
|  | <p>Правила установки электрооборудования Это устройство устанавливается в соответствии с последним изданием национальных правил установки электрооборудования. В Северной Америке оборудование устанавливается в соответствии с действующими требованиями Национальных правил эксплуатации и обслуживания электрических установок США и Канады.</p> |
|  | <p>Замена аккумулятора Осторожно! Заменять только аккумулятором, одобренным организацией UL и рассчитанным на максимальный аномальный зарядный ток не менее 4 мА. Существует риск взрыва при замене аккумулятора другим аккумулятором неправильного типа. Отработавшие аккумуляторы утилизируются в соответствии с указаниями.</p> |
|  | <p>Шнур питания, включенный в номенклатуру UL и сертифицированный Канадской ассоциацией стандартизации (CSA) Подключение к электропитанию в Северной Америке выполняется с помощью шнура питания, включенного в номенклатуру UL и сертифицированного Канадской ассоциацией стандартизации (CSA), 3-жильного, [16 AWG], длиной от 1,5 м [6 футов] до 4,5 м, с литой вилкой, рассчитанной на 125 В [13 А]. Подключение к электропитанию в Европе выполняется с помощью гармонизированного шнура питания с маркировкой <HAR>, 3-жильного, с сечением жилы не менее 1,0 мм², рассчитанного на номинальное напряжение 300 В, с ПВХ оболочкой. Шнур должен иметь литую вилку, рассчитанную на 250 В, 10 А.</p> |



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|  | <p>Высокий ток утечки Осторожно! Высокий ток утечки. Заземлить перед подключением к электропитанию.</p> |
|  | <p>Правила установки электрооборудования Это устройство устанавливается в соответствии с последним изданием национальных правил установки электрооборудования. В Северной Америке оборудование устанавливается в соответствии с действующими требованиями Национальных правил эксплуатации и обслуживания электрических установок США и Канады.</p> |
|  | <p>Защита от перегрузки по току Цепь подвода питания должна быть оборудована устройством защитного отключения от сети на ток 20А, которое находится в легкодоступном месте.</p> |
|  | <p>Подсоединение устройств Для подключения к разъемам RS232 и Ethernet используются кабели типа DP-1 или DP-2, сертифицированные организацией UL. (Примечание. При подключении к сети без ограниченного источника электропитания) Максимальная токовая защита. В проводку здания в легкодоступном месте следует включить устройство защиты от перегрузки по току номиналом 20 А.</p> |
|  | <p>Не использовать коммутатор как полку или рабочую поверхность Внимание! Оборудование, установленное на направляющих, не должно использоваться как полка или рабочая поверхность. Направляющие не предназначены для удерживания устройства, выдвинутого из стойки. Они предназначены для стационарной установки только в конечном положении и не используются для обслуживания устройства.</p> |
|  | <p>Директива WEEE В соответствии с Директивой 2002/96/EC (WEEE) отходы электрического и электронного оборудования должны собираться и утилизироваться отдельно от обычных бытовых отходов. Следует утилизировать это изделие и все его части ответственным и экологически безопасным способом.</p> |

11.6.9 Avertismente privind siguranța la instalare (Romanian)



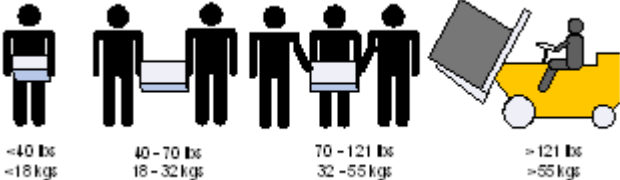




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|  | <p>Instrucțiuni de instalare Citiți toate instrucțiunile de instalare înainte de a conecta.</p> |
|  | <p>Accidentare cauzată de greutate Apelați la un număr suficient de persoane pentru a ridica în siguranță acest produs.</p>  |

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|  | <p>Echipament greu Acest echipament este greu și trebuie să fie mutat folosind un dispozitiv mecanic de ridicare pentru a evita producerea de leziuni.</p> |
|  | <p>Risc de șoc electric Odată ce modulul ventilator este îndepărtat, pinii electrici sunt accesibili în cavitatea modulului. NU introduceți instrumente sau părți din corp în cavitatea modulului ventilator.</p> |
|  | <p>Temperatură în exces Acest echipament nu trebuie să fie acționat într-o zonă unde temperatura ambiantă depășește valoarea maximă recomandată: 45°C (113°F). În plus, pentru a asigura un flux de aer adecvat, lăsați un spațiu liber de cel puțin 8 cm (3 inchi) în jurul fanțelor de ventilare.</p> |
|  | <p>Suprapunerea cadrului Cadrul nu trebuie să fie suprapus peste niciun alt echipament. În cazul în care cadrul cade, poate cauza leziuni corporale și deteriorări ale echipamentului.</p> |
|  | <p>Conexiunea la o sursă de alimentare electrică suplimentară - pericol electric Acest produs include o sursă de alimentare suplimentară sau un spațiu gol în locul acesteia. În cazul în care spațiul pentru sursa de alimentare este gol, nu operați produsul când capacul orb este îndepărtat sau nu este fixat în mod sigur.</p> |
|  | <p>Siguranță fuzibilă bipolară/neutră Acest sistem este prevăzut cu siguranță fuzibilă bipolară/neutră. Îndepărtați toate cabloanele de alimentare înainte de a deschide capacul acestui produs sau înainte de a atinge orice componente interne.</p> |
|  | <p>Multiple mufe electrice Risc de șoc electric și pericol electric. Toate aparatele cu alimentare de la rețea sunt independente. Deconectați toate sursele de alimentare cu energie pentru a asigura decuplarea în interiorul platformei de comutare.</p> |
|  | <p>În timpul descărcărilor electrice - pericol electric În timpul perioadelor cu descărcări electrice luminoase, nu lucrați cu echipamentul sau nu conectați sau deconectați cablurile.</p> |
|  | <p>Conectarea/deconectarea cablului din cupru Cablurile din cupru sunt grele și inflexibile, de aceea trebuie să fie atașate sau detașate de conectori cu grijă. Consultați producătorul de cabluri pentru avertismente/instrucțiuni speciale.</p> |
|  | <p>Montarea sau depanarea într-un rack Când acest produs este montat sau depanat într-un rack, trebuie să fie luate măsuri de precauție speciale pentru a se asigura că sistemul rămâne stabil. În general, trebuie să umpleți rack-ul cu echipamente începând de jos în sus.</p> |









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|  | <p>Instalarea echipamentului Acest echipament trebuie să fie instalat, înlocuit și/sau depanat numai de către personal instruit și calificat.</p> |
|  | <p>Eliminarea echipamentului Eliminarea acestui echipament trebuie să se realizeze în conformitate cu toate legile și regulamentele naționale.</p> |
|  | <p>Codurile electrice locale și naționale Acest echipament trebuie să fie instalat conform codurilor electrice locale și naționale.</p> |
|  | <p>Codurile ed instalare Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naționale ale țării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerințelor aplicabile din Codul electric național al SUA și Codul electric canadian.</p> |
|  | <p>Înlocuirea bateriei Avertisment: Înlocuiți numai cu o baterie recunoscută UL, certificată pentru curent de încărcare anormal maxim de minimum 4 mA Există risc de explozie în cazul în care bateria este înlocuită cu o baterie necorespunzătoare. Eliminați bateriile folosite în conformitate cu instrucțiunile.</p> |
|  | <p>Cordon de alimentare electrică înregistrat UL și certificat CSA Pentru conectarea la o sursă de alimentare pentru America de Nord, selectați un cordon de alimentare care este înregistrat UL și certificat CSA, cu 3 conductoare, [16 AWG], terminat cu o fișă turnată, cu putere nominală egală cu 125 V, [13 A], cu o lungime de minimum 1,5 m [șase picioare], dar nu mai lung de 4,5 m. Pentru conectarea la o sursă de alimentare în Europa, selectați un cordon de alimentare care este armonizat la nivel internațional și marcat „<HAR>”, cu 3 conductoare, cu minimum 2 fire de 1,0 mm, cu putere nominală egală cu 300 V și cu o manta izolantă din PVC. Cordonul de alimentare trebuie să fie prevăzut cu o fișă turnată cu putere nominală egală cu 250 V, 10 A.</p> |
|  | <p>Curent de scurgere de înaltă frecvență Avertisment: Curent de scurgere de înaltă frecvență; Împământarea este esențială înainte de a conecta sursa de alimentare.</p> |
|  | <p>Codurile de instalare Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naționale ale țării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerințelor aplicabile din Codul electric național al SUA și Codul electric canadian</p> |
|  | <p>Interconectarea unităților Cablurile pentru conectarea la unitatea RS232 și la interfețele Ethernet trebuie să fie de tipul DP-1 sau DP-2 certificate UL. (Notă- când se regăsesc într-un circuit non-LPS) Protecție la supracurent: Un dispozitiv de protecție la supracurent, înregistrat în circuitul de ramificare, ușor accesibil și cu o putere nominală egală cu 20 A trebuie să fie integrat în cablajul clădirii.</p> |
|  | <p>Nu utilizați comutatorul ca raft sau spațiu de lucru Atenție: Echipamentul montat pe o linie de alunecare/șină nu va fi utilizat ca raft sau spațiu de lucru. Scopul șinelor nu este de a glisa unitatea de pe rack. Acestea sunt destinate instalării permanente numai la punctul final de oprire și nu vor fi folosite pentru depanare și întreținere</p> |

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|  | <p>Directiva DEEE În conformitate cu Directiva DEEE 2002/96/CE, toate deșeurile de echipamente electrice și electronice (EEE) trebuie colectate separat și nu trebuie eliminate împreună cu deșeurile menajere obișnuite. Eliminați acest produs și toate componentele sale în mod responsabil și ecologic.</p> |
|  | <p>Restricții electrice pentru Norvegia This unit is intended for connection to a TN power system and an IT power system of Norway only.</p> |


11.6.10 Sigurnosna upozorenja za instaliranje (Croatian)


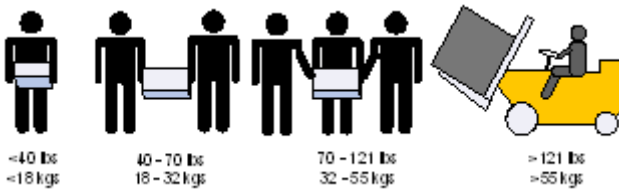








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|  | <p>Upute za instaliranje Pažljivo pročitajte upute za instaliranje prije spajanja opreme na izvor električne energije.</p> |
|  | <p>Tjelesne ozljede uslijed težine Kako biste sigurno podignuli ovaj proizvod, koristite dovoljan broj ljudi.</p>  <p>~40 lbs ~18 kgs</p> <p>40 - 70 lbs 18 - 32 kgs</p> <p>70 - 121 lbs 32 - 55 kgs</p> <p>> 121 lbs > 55 kgs</p> |
|  | <p>Teška oprema Ova oprema je vrlo teška i treba se premještati pomoću mehaničkog dizala kako bi se izbjegle ozljede.</p> |
|  | <p>Rizik od strujnog udara! Rizik od strujnog udara! S uklonjenim modulom ventilatora, perima napajanja se može pristupiti u otvoru modula. NEMOJTE umetati alat ili dijelove tijela u otvor modula ventilatora.</p> |
|  | <p>Pregrijavanje Ovom se opremom ne bi trebalo rukovati u područjima s temperaturom okoline koja premašuje najviše preporučene vrijednosti: 45 °C (113 °F). Osim toga, kako bi se osigurao odgovarajući protok zraka, omogućite najmanje 8 cm (3 inča) razmaka oko otvora ventilatora.</p> |
|  | <p>Slaganje kućišta Kućište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.</p> |











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|  | <p>Redundantno napajanje - Opasnost od električne energije Ovaj proizvod uključuje redundantno napajanje ili prazan prostor na njegovu mjestu. U slučaju praznog prostora za napajanje, nemojte rukovati proizvodom ako je poklopac uklonjen ili ako nije dobro pričvršćen.</p> |
|  | <p>Dvopolni/neutralni osigurači Ovaj sustav raspolaže dvopolnim/neutralnim osiguračima. Uklonite sve kabele napajanja prije otvaranja poklopca proizvoda ili dodirivanja unutarnjih dijelova.</p> |
|  | <p>Višestruki ulazi za napajanje Rizik od strujnog udara i opasnost od električne energije. PSU jedinice su neovisne. Odspojite sva napajanja kako biste osigurali stanje bez napajanja unutar platforme preklopnika.</p> |
|  | <p>Tijekom udara munje - Opasnost od električne energije Tijekom djelovanja munja, nemojte raditi na opremi ili spajati ili odspajati kabele.</p> |
|  | <p>Spajanje/Odspajanje bakrenog kabela Bakreni kabele su teški i nesavjetljivi i kao takvi se moraju pažljivo priključiti na ili isključiti iz konektora. Obratite se proizvođaču kabela za posebna upozorenja/upute.</p> |
|  | <p>Montaža ormarića i servisiranje Kad se proizvod montira ili se servisira u ormariću, moraju se poduzeti posebne mjere opreza kako bi se osiguralo da sustav ostane stabilan. Općenito, trebali biste ispunjavati ormarić s opremom počevši od dna prema vrhu.</p> |
|  | <p>Instaliranje opreme Ovu bi opremu trebalo instalirati, zamjenjivati i/ili servisirati samo obučeno i kvalificirano osoblje.</p> |
|  | <p>Odlaganje opreme Odlaganje opreme trebalo bi se vršiti sukladno nacionalnim zakonima i propisima.</p> |
|  | <p>Lokalni i nacionalni električni kodovi Ova oprema trebala bi se instalirati u skladu s lokalnim i nacionalnim električnim kodovima.</p> |
|  | <p>Instalacijski kodovi Ovaj se uređaj mora instalirati sukladno najnovijoj verziji nacionalnih električnih kodova države. U Sjevernoj Americi oprema se mora instalirati sukladno važećim zahtjevima navedenim u US National Electrical Code i Canadian Electrical Code.</p> |





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|  | <p>Zamjena baterije Upozorenje: Bateriju zamijenite samo baterijom iz serije UL koja je certificirana za maksimalnu nepravilnu struju punjenja ne manju od 4 mA Postoji rizik od eksplozije ako se baterija zamijeni neodgovarajućom vrstom. Odložite prazne baterije sukladno uputama.</p> |
|  | <p>UL CSA kabel napajanja Za sjevernoameričku mrežu odaberite kabel napajanja koji je na UL listi i sa CSA certifikatom, 3 - žilni, [16 AWG] (16 AWG) koji završava lijevanim utikačem nazivnog napona od 125 V, [13 A], minimalne duljine od 1,5 m [six feet] (šest stopa), ali ne dulji od 4,5 m. Za europsku mrežu odaberite kabel napajanja koji je međunarodno usklađen i označen “<HAR>”, 3 - žilni, s najmanje 1,0 mm² žice, nazivnog napona od 300 V, s PVC izolacijom. Kabel mora imati lijevani utikač nazivnog napona od 250 V, nazivne struje od 10 A.</p> |
|  | <p>Veliko curenje struje Upozorenje: Veliko curenje struje; Prije spajanja napajanja nužno je spojiti uzemljenje.</p> |
|  | <p>Instalacijski kodovi Ovaj se uređaj mora instalirati sukladno najnovijoj verziji nacionalnih električnih kodova države. U Sjevernoj Americi oprema se mora instalirati sukladno važećim zahtjevima navedenim u US National Electrical Code i Canadian Electrical Code.</p> |
|  | <p>Interkonekcija uređaja Kabeli za spajanje na jedinicu RS232 i Ethernet sučelja moraju biti s UL certifikatom vrste DP-1 ili DP-2. (Napomena - kad se nalazi u krugu bez LPS vodiča) Zaštita od strujnog preopterećenja: Uvijek dostupni odobreni zaštitni uređaji od strujnog preopterećenja nazivne struje od 20 A moraju se ugraditi u ožičenje zgrade.</p> |
|  | <p>Nemojte koristiti preklopnik kao policu ili radnu površinu Pozor: Oprema montirana na klizače/vodilice ne bi se trebala koristiti kao polica ili radna površina. Vodilice nisu namijenjene za povlačenje uređaja iz ormarića. Služe samo za trajnu instalaciju na konačnom položaju, a ne za servisiranje i održavanje.</p> |
|  | <p>WEEE direktiva Sukladno WEEE direktivi 2002/96/EZ, sav električni i elektronički otpad (EEE) trebao bi se prikupljati zasebno i ne bi se trebao odlagati kao običan kućanski otpad. Odlaganje ovog proizvoda i svih njegovih dijelova vršite na odgovoran i ekološki način</p> |
|  | <p>Električna ograničenja države Norveške Ovaj je uređaj namijenjen samo za spajanje na električni sustav s TN uzemljenjem i na električni sustav s IT uzemljenjem države Norveške.</p> |

11.6.11 Avvertenze di sicurezza per l'installazione (Italian)



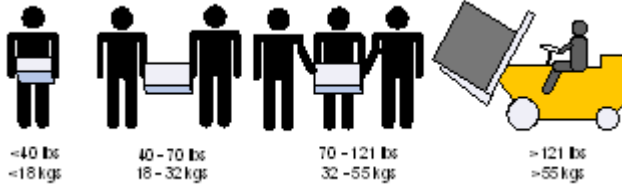


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|  | <p>Istruzioni di installazione Leggere tutte le istruzioni di installazione prima di collegare l'apparecchiatura all'alimentazione.</p> |
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|  | <p>Lesioni a causa del peso Usare un numero di persone sufficiente per sollevare in sicurezza questo prodotto.</p>  |
|  | <p>Apparecchiatura pesante Questa apparecchiatura è molto pesante e va spostata mediante un sollevatore meccanico, per evitare lesioni.</p> |
|  | <p>Rischio di scosse elettriche! Con il modulo ventola rimosso, i pin di alimentazione sono accessibili all'interno della cavità del modulo. NON inserire strumenti o parti del corpo nella cavità del modulo della ventola.</p> |
|  | <p>Temperatura eccessiva Questa apparecchiatura non va utilizzata in un'area con una temperatura ambiente superiore a quella massima consigliata: $45\text{ }^{\circ}\text{C}$ ($113\text{ }^{\circ}\text{F}$). Inoltre, per assicurare un flusso d'aria adeguato, lasciare almeno 8 cm (3 pollici) di spazio attorno alle aperture di ventilazione.</p> |
|  | <p>Impilare lo chassis Kučište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.</p> |
|  | <p>Collegamento di alimentazione ridondante - Pericoli elettrici Questo prodotto è dotato di un alimentatore ridondante o, qualora esso non sia installato, di uno spazio vuoto. Qualora l'alimentatore non sia installato, non utilizzare il prodotto con il coperchio rimosso o non fissato correttamente.</p> |
|  | <p>Fusibili fase/neutro Questo sistema dispone di fusibili fase/neutro. Rimuovere tutti i cavi di alimentazione prima di aprire il coperchio di questo prodotto o di toccare parti interne.</p> |
|  | <p>Prese di alimentazione multiple Rischio e pericolo di scosse elettriche. Gli alimentatori sono tutti indipendenti. Scollegare tutti gli alimentatori per assicurarsi che il commutatore non sia sotto tensione</p> |
|  | <p>Durante i temporali, pericolo di scosse elettriche Durante i temporali, non effettuare interventi sull'apparecchiatura e non collegare o scollegare i cavi.</p> |









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|  | <p>Collegamento/scollegamento del cavo di rame I cavi di rame sono pesanti e non flessibili. Di conseguenza, vanno collegati o scollegati con cura dai connettori. Per avvertenze/istruzioni speciali, rivolgersi al produttore di cavi.</p> |
|  | <p>Montaggio su rack e manutenzione Quando questo prodotto viene montato o sottoposto a manutenzione su un rack, è necessario adottare delle precauzioni speciali per assicurarsi che il sistema resti stabile. In generale, il rack va riempito con apparecchiature, procedendo dal basso verso l'alto.</p> |
|  | <p>Installazione dell'apparecchiatura Questa apparecchiatura va installata, sostituita e/o sottoposta a manutenzione solo da personale addestrato e qualificato.</p> |
|  | <p>Smaltimento dell'apparecchiatura Lo smaltimento di questa apparecchiatura va effettuato in conformità con tutte le leggi e le normative nazionali.</p> |
|  | <p>Codici elettrici locali e nazionali Questa apparecchiatura va installata in conformità con le norme elettriche locali e nazionali.</p> |
|  | <p>Codici di installazione Questo dispositivo va installato in conformità con l'ultima versione dei codici elettrici nazionali del Paese. Per il Nord America, l'apparecchiatura va installata in conformità con i requisiti applicabili del "codice elettrico nazionale USA" e del "codice elettrico canadese".</p> |
|  | <p>Sostituzione della batteria Avvertenza: Sostituire solo con una batteria UL, certificata per accettare una corrente di ricarica anomala massima non inferiore a 4 mA. Se la batteria non viene sostituita con una batteria di tipo corretto, vi è il rischio di esplosione. Smaltire le batterie usate in conformità con le istruzioni.</p> |
|  | <p>Cavo di alimentazione UL e munito di certificazione CSA Per una connessione di alimentazione nordamericana, selezionare un cavo di alimentazione di tipo UL e munito di certificazione CSA, a 3 conduttori, [16 AWG], terminato con una spina stampata con tensione nominale pari a 125 V, [13 A], di lunghezza minima pari a 1,5 m [sei piedi] ma non più lunga di 4,5 m. Per una connessione europea, selezionare un cavo di alimentazione armonizzato a livello internazionale e contrassegnato da "<HAR>", a 3 conduttori, minimo 1,0 mm² fili, con guaina isolante in PVC. Il cavo deve disporre di una spina stampata di potenza nominale pari a 250 V, 10 A.</p> |
|  | <p>Corrente di dispersione elevata Avvertenza: corrente di dispersione elevata; il collegamento a terra è essenziale prima di collegare l'alimentazione.</p> |
|  | <p>Codici di installazione Questo dispositivo va installato in conformità con l'ultima versione dei codici elettrici nazionali del Paese. Per il Nord America, l'apparecchiatura va installata in conformità con i requisiti applicabili del "codice elettrico nazionale USA" e del "codice elettrico canadese".</p> |

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|  | <p>Interconnessione delle unità I cavi per il collegamento all'unità RS232 e alle interfacce Ethernet devono disporre della certificazione UL ed essere del tipo DP-1 o DP-2. (Nota: in caso di installazione su un circuito la cui potenza non è limitata) Protezione contro le sovracorrenti: la cablatura dell'edificio deve integrare un dispositivo di protezione contro le sovracorrenti di potenza nominale pari a 20.</p> |
|  | <p>Non utilizzare lo switch come scaffale o piano di lavoro Attenzione: un'apparecchiatura scorrevole o montata su binari non va utilizzata come scaffale o piano di lavoro. I binari non sono progettati per far scorrere e allontanare l'unità dal rack. Essi sono destinati all'installazione permanente solo nel luogo di lavoro e non vengono utilizzati per assistenza e manutenzione</p> |
|  | <p>Direttiva RAEE Secondo la direttiva RAEE 2002/96/EC, tutti i rifiuti da apparecchiature elettriche ed elettroniche (RAEE) vanno raccolti separatamente e non smaltiti nei normali rifiuti domestici. Smaltire questo prodotto e tutte le sue parti in modo responsabile e rispettoso dell'ambiente</p> |
|  | <p>Limitazioni relative all'alimentazione per la Norvegia Questa apparecchiatura è progettata esclusivamente per il collegamento a un sistema di alimentazione TN e a un sistema di alimentazione IT.</p> |

11.6.12 Montaj Güvenlik Uyarıları (Turkish)

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|  | <p>Montaj Talimatları Ekipmanı güç kaynağına bağlamadan önce tüm montaj talimatlarını okuyun.</p> |
|  | <p>Ağırlık Nedeniyle Fiziksel Yaralanma Bu ürünü güvenli bir şekilde kaldırmak için yeterli sayıda insandan yardım alın.</p>  |
|  | <p>Ağır Ekipman Bu ekipman çok ağırdır ve yaralanmaları önlemek için ekipmanın mekanik asansör kullanılarak taşınması gerekir.</p> |
|  | <p>Elektrik Çarpması Riski! Fan modülüyle çıkarılan güç pimlerine modül boşluğu içinde erişilebilir. Fan modülü boşluğuna alet veya gövde parçaları yerleştirmeyin.</p> |





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|  | <p>Aşırı ısınma Bu ekipman, önerilen maksimum ortam sıcaklığını aşan alanlarda çalıştırılmamalıdır: 45 °C (113 °F). Ayrıca, düzgün hava akışı sağlamak için havalandırma deliklerinin etrafında en az 8 cm (3 inç) açıklık bırakılmalıdır.</p> |
|  | <p>Şasi İstif Şasinin diğer herhangi bir ekipmanın üzerine istiflenmemesi gerekir. Şasi düşerse, fiziksel yaralanmalara ve ekipmanda hasara neden olabilir.</p> |
|  | <p>Yedekli Güç Kaynağı Bağlantısı -Elektrik Çarpma Tehlikesi Bu ürün, yedekli güç kaynağı veya onun yerine boş elektrik kutusu içerir. Güç kaynağı için boş elektrik kutusu varsa, kutunun kapağı açıkken veya tam olarak kapatılmamışken ürünü çalıştırmayın.</p> |
|  | <p>Çift Kutuplu/Nötr Kesmeli Sigorta Bu sistemde çift kutuplu/nötr kesmeli sigorta kullanılmaktadır. Ürünün kapağını açmadan veya herhangi bir iç parçaya dokunmadan önce bütün güç kablolarını çıkartın.</p> |
|  | <p>Çoklu Güç Girişleri Elektrik çarpması riski ve enerji tehlikesi. Bütün PSU'lar (Güç Kaynağı Üniteleri) ayrıdır. Anahtar platformundaki gücü kapatmak için tüm güç kaynaklarının bağlantılarını kesin.</p> |
|  | <p>Şimşek - Elektrik Çarpma Tehlikesi Gökyüzünde şimşek çaktığı zamanlarda, ekipman üzerinde çalışmayın veya kablo bağlamayın ya da kablo bağlantısı kesmeyin.</p> |
|  | <p>İskele Montajı ve Bakım Bu ürün bir iskelede monte edildiyse veya bir iskele ile sunulduysa, sistemin sabit kalması için özel önlemler alınmalıdır. Genelde, ekipmanları iskeleye aşağıdan yukarı doğru doldurmanız gerekir.</p> |
|  | <p>Ekipman Montajı Ekipmanın yalnızca eğitimli ve nitelikli personel tarafından monte edilmesi, değiştirilmesi ve/veya bakımının yapılması gerekir.</p> |
|  | <p>Ekipmanın Atılması Bu ekipmanın imhasında tüm ulusal yasalara ve düzenlemelere uyulması gerekir.</p> |
|  | <p>Yerel ve Ulusal Elektrik Kodları Bu ekipmanın montajında yerel ve ulusal elektrik kodlarına uyulması gerekir.</p> |
|  | <p>Montaj Kodları Bu cihazın, ülke ulusal elektrik kodlarının son sürümüne göre monte edilmesi gerekir. Kuzey Amerika için, ekipmanın ABD Ulusal Elektrik Kodu ve Kanada Elektrik Kodu'nun uygulama koşullarına göre monte edilmesi gerekir.</p> |









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|  | <p>Pilin Değiştirilmesi Uyarı: Yalnızca, maksimum düzgüsz şarj akımı 4mA'dan az olmayan, UL Onaylı pillerle değiştirin. Yanlış pil türü ile değiştirildiğinde patlama tehlikesi bulunmaktadır. Kullanılmış pillerden talimatlara uygun bir şekilde kurtulun.</p> |
|  | <p>UL Kayıtlı ve CSA Onaylı Güç Kaynağı Kablosu Kuzey Amerika'da güç bağlantısı için, UL Kayıtlı ve CSA Onaylı bir güç kaynağı kablosu seçin, 3 - iletken, [16 AWG], 125 V değerinde, kalıplanmış bir fişle biten, [13 A], en az 1,5 m (altı fit) uzunluğunda fakat 4,5 m'den uzun olmayan bir kablo. Avrupa'da güç bağlantısı için, uluslararası uyumlu ve "<HAR>" işaretli, 3 - iletken, en az 1,0 mm² tel, 300 V değerinde ve PVC yalıtımlı bir güç kaynağı kablosu seçin. Kablonun 250 V, 10 A değerinde bir kalıplanmış fişi olması gerekmektedir.</p> |
|  | <p>Yüksek Kaçak Akım Yüksek kaçak akım varsa; güç kaynağına bağlanmadan önce mutlaka topraklama bağlantısı yapılmalıdır.</p> |
|  | <p>Montaj Kodları Bu cihazın, ülke ulusal elektrik kodlarının son sürümüne göre monte edilmesi gerekir. Kuzey Amerika için, ekipmanın ABD Ulusal Elektrik Kodu ve Kanada Elektrik Kodu'nun uygulama koşullarına göre monte edilmesi gerekir.</p> |
|  | <p>Ünitelerin Ara Bağlantısı RS232 ünitesini ve Ethernet Arabirimlerini bağlayacak olan kabloların UL onaylı DP-1 veya DP-2 tipi olması gerekir. (Not- LPS olmayan devreye aitse) Aşırı Akım Koruması: Kolayca erişilebilecek 20 V Kayıtlı devre parçası aşırı akım koruma cihazının bina elektrik şebekesinde kurulu olması gerekir.</p> |
|  | <p>Anahtar Raf veya Çalışma Alanı olarak kullanmayın! Dikkat: Sürgülü/raylı ekipman raf veya çalışma alanı olarak kullanılamaz. Raylar üniteyi iskeleden uzağa kaydırmak için yapılmamıştır. Sadece, ekipmanın son olarak duracağı yerdeki kalıcı montaj içindir, servis veya bakım için kullanılamaz.</p> |
|  | <p>WEEE Yönergesi WEEE Yönergesi 2002/96/EC uyarınca, tüm elektrikli ve elektronik ekipman atıkları (EEE) ayrı olarak toplanmalı ve evsel atıklarla birlikte çöpe atılmamalıdır. Bu ürün ve tüm parçaları çevreye dost ve sorumlu bir şekilde imha edilmelidir.</p> |
|  | <p>Norveç Güç Kısıtlamaları Bu ünite, bir TN güç sistemine ve sadece Norveç'in IT güç sistemine bağlanmak içindir.</p> |

11.6.13 Japan VCCI Statement

この装置は、クラスA情報技術装置です。この装置を家庭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










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| <p>הוראות התקנה</p> <p>קרא היטב את כל הוראות ההתקנה לפני חיבור המוצר לחשמל.</p> |  |
| <p>תקן ישראלי</p> <p>יש להתקין את המוצר תוך הקפדה על תקנות החשמל הנהוגות בישראל, ולעשות שימוש ביחידת חלוקת כוח העומדת בתקן ישראלי (תיי 32).</p> |  |
| <p>חבלת גוף כתוצאה מנשיאת משקל יתר</p> <p>נדרשת נוכחותם של מספר מתקינים כדי להרים את המוצר בבטחה.</p> |  |
| <p>ציוד כבד</p> <p>המוצר כבד, ויש לשנעו באמצעות מעלית מכאנית כדי למנוע חבלה.</p> |  |
| <p>סכנת התחשמלות</p> <p>בעת שיחידת המאוורר מפורקת, רכיבי חשמל נחשפים בחלל הריק. אין להחדיר כלים או איברי גוף לחלל המיועד להרכבת היחידה.</p> |  |
| <p>התחממות יתר</p> <p>אין להפעיל את המוצר באזור שבו טמפרטורת החדר עולה על הטמפרטורה המקסימלית המומלצת: 45°C (113°F). בנוסף, כדי להבטיח כניסת אוויר תקינה, יש לוודא כי קיים שטח פנוי של לפחות 8 ס"מ (3 אינץ') סביב פתחי האוורור.</p> |  |
| <p>ערימת המערכת</p> <p>אין לערום את המערכת על גבי ציוד אחר. במקרה של נפילה עשויים להיגרם נזקי גוף ורכוש.</p> |  |
| <p>חיבור ספק כוח נוסף – סכנת התחשמלות</p> <p>המערכת מכילה ספק כוח נוסף לאיבוי או חלל ריק המאפשר הרכבת ספק כזה. אין להשתמש במערכת כאשר המכסה החוסם את החלל הריק אינו סגור כהלכה.</p> |  |
| <p>מספר שקעים חשמליים</p> <p>כל אחד מספקי הכוח פועל באופן עצמאי. יש לנתק את כל ספקי הכוח כדי להבטיח ניתוק מוחלט של המערכת מזרם חשמלי.</p> |  |
| <p>בעת סופות ברקים</p> <p>בעת סופות ברקים אין להפעיל את המערכת או לחבר/לנתק כבלים.</p> |  |
| <p>חיבור או ניתוק של כבלי נחושת</p> <p>כבלי נחושת הם כבדים וקשיחים. יש לחברם ולנתקם מהמחברים בהירות רבה. לאזהרות נוספות יש לעיין בעלון לצרכן מטעם יצרן הכבלים.</p> |  |
| <p>הרכבה על גבי מדף בארון</p> <p>בעת התקנת המוצר על מדף בארון יש לנקוט באמצעי זהירות מיוחדים כדי להבטיח יציבות. יש להתחיל למלא את הארון מהמדף התחתון ולהתקדם כלפי מעלה.</p> |  |
| <p>התקנת המוצר</p> <p>כל התקנה, החלפה או טיפול במוצר חייבים להתבצע על ידי איש צוות מיומן ומוסמך בלבד.</p> |  |
| <p>השלכה לאשפה בתום השימוש</p> <p>השלכת המוצר בתום השימוש חייבת להיעשות בהתאם לכל התקנות והחוקים המקומיים.</p> |  |
| <p>תקנות חשמל מקומיות</p> <p>יש להתקין מערכת זו בהתאם לתקנות החשמל המקומיות.</p> |  |

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| <p>כבל אספקת חשמל – צפון אמריקה</p> <p>יש לבחור כבל חשמלי בעל הסמכת CSA עם 3 מוליכים [16 AWG] ובקצהו תקע מובנה 13A, 125V. אורך מינימלי 1.5 מ' ואורך מקסימלי 4.5 מ'.</p> |  |
| <p>כבל אספקת חשמל – אירופה</p> <p>יש לבחור כבל חשמלי בעל התאמה בינלאומית וסימון עם 3 מוליכים ושטח חתך מינימלי של 1.0 מ"מ². ביודוד PVC למתח 300V ותקע מובנה 10A, 250V.</p> |  |
| <p>תקנות התקנה</p> <p>יש להתקין מערכת זו על פי הגרסה האחרונה של תקנות החשמל המקומיות. בצפון אמריקה יש לפעול בהתאם לתקנות החשמל הלאומיות של ארה"ב וקנדה.</p> |  |
| <p>חיבור בין מערכות</p> <p>על כבלים לחיבור היחידה לממשקי RS232 Ethernet-ו מסוג DP-1 או DP-2 להיות בעלי הסמכת UL כאשר הם נמצאים במעגל שאינו מקור כוח מוגבל.</p> |  |
| <p>הגנה מפני מתח גבוה</p> <p>יש להקפיד על הימצאותם וזמינותם של אמצעים להגנה מפני מתח גבוה בתקן 20A בבניין.</p> |  |
| <p>אין להשתמש במערכת כמדף או כשטח עבודה</p> <p>המסילות אינן מיועדות לשליפת המערכת מהארון אלא להתקנתה במיקומה הקבוע.</p> |  |
| <p>תקנת WEEE</p> <p>בהתאם לתקנות WEEE 2002/96/EC יש להשליך פסולת ציוד חשמלי ואלקטרוני בנפרד מפסולת ביתית. בתום השימוש יש להשליך מוצר זה ואת חלקיו באופן אחראי וידידותי לסביבה.</p> |  |
| <p>מגבלות חשמליות בנורבגיה</p> <p>בנורבגיה בלבד, יחידה זו מיועדת לחיבור למערכת אספקת חשמל מסוג TN ולמערכת אספקת חשמל מסוג IT.</p> |  |

11.6.15

تعليمات التركيب والسلامة

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| ⚠ | <p>تعليمات عامة</p> <p>يجب قراءة جميع تعليمات التركيب بعناية قبل توصيل الجهاز بمصدر الطاقة الكهربائية. يجب تنفيذ جميع أعمال التركيب والصيانة من قبل فنيين مؤهلين ومدربين فقط. ملاحظة: التعليمات مكتوبة بصيغة المذكر لكنها صالحة للجنسين.</p> |
| ⚠ | <p>إصابات محتملة نتيجة الوزن</p> <p>هذا المنتج ثقيل الوزن. ينبغي أن يقوم عدة أشخاص برفعه لضمان رفعه بطريقة آمنة. يوصى باستخدام رافعة ميكانيكية مناسبة أثناء النقل لتجنب الإصابات.</p> |
| ⚠ | <p>خطر الصعق الكهربائي</p> <p>عند إزالة المروحة، تصبح أطراف التوصيل الكهربائية مكشوفة داخل الجهاز. يُمنع إدخال أدوات أو أجزاء من الجسم داخل تجويف المروحة. في الأنظمة التي تعمل بتيار متردد (AC):</p> <ul style="list-style-type: none"> فصل مزود طاقة واحد لا يعزل الجهاز بالكامل. لعزل الجهاز بشكل كامل، يجب فصل جميع مزودات الطاقة المتصلة. |
| ⚠ | <p>ارتفاع درجة الحرارة</p> <p>لا يجوز تشغيل هذا الجهاز في بيئة تتجاوز فيها درجة الحرارة المحيطة الحد الأقصى المحدد في مواصفات المنتج. ولضمان التهوية المناسبة، يجب ترك مسافة لا تقل عن 8 سم (3 بوصات) حول فتحات التهوية.</p> |
| ⚠ | <p>تكديس الهيكل (الشاسيه)</p> <p>لا يجوز تكديس الهيكل فوق أي معدات أخرى. في حال سقوطه، قد يتسبب ذلك في إصابات جسدية وأضرار بالمعدات.</p> |
| ⚠ | <p>توصيل مزود طاقة احتياطي (اختياري) - خطر كهربائي</p> <p>يضمن هذا المنتج مزود طاقة احتياطيًا أو غطاءً بديلاً في مكانه. في حال وجود غطاء بديل، يُمنع تشغيل المنتج إذا كان الغطاء مُزالاً أو غير مثبت.</p> |
| ⚠ | <p>مصدر نثالي القطب/المعايد</p> <p>يحتوي هذا النظام على مصدر نثالي القطب/المعايد. يجب فصل جميع كابلات الطاقة قبل فتح غطاء هذا المنتج أو لمس أي مكونات داخلية.</p> |
| ⚠ | <p>مداخل طاقة متعددة</p> <p>هناك خطر الصعق الكهربائي وخطر طاقة. تعمل جميع وحدات تزويد الطاقة (PSUs) بشكل مستقل. يجب فصل جميع مزودات الطاقة لضمان إيقاف التشغيل الكامل داخل منصة المحول.</p> |
| ⚠ | <p>أثناء العواصف الرعدية — خطر كهربائي</p> <p>أثناء نشاط البرق، يُمنع تشغيل الجهاز. توصيل أو فصل الكابلات.</p> |
| ⚠ | <p>توصيل وفصل كابلات النحاس</p> <p>كابلات النحاس ثقيلة وغير مرنة. لذلك يجب توصيلها وفصلها من الموصلات بحذر. يُرجى قراءة تعليمات الشركة المصنعة للحصول على التحذيرات والإرشادات الخاصة بالكابلات.</p> |
| ⚠ | <p>التركيب والصيانة داخل الرف (Rack)</p> <p>عند تركيب هذا المنتج أو صيانته داخل رف، يجب اتخاذ احتياطات خاصة لضمان استقرار النظام. بشكل عام، يجب تعبئة الرف بالمعدات بدءًا من الأسفل إلى الأعلى.</p> |
| ⚠ | <p>تركيب الجهاز</p> <p>يجب أن يتم تركيب هذا الجهاز أو استبداله و/أو صيانته فقط بواسطة أفراد مدربين ومؤهلين.</p> |
| ⚠ | <p>التخلص من الجهاز</p> <p>يجب التخلص من هذا الجهاز وفقًا لجميع القوانين واللوائح الوطنية المعمول بها.</p> |
| ⚠ | <p>القوانين الكهربائية المحلية والوطنية</p> <p>يجب تركيب هذا الجهاز بما يتوافق مع القوانين الكهربائية المحلية والوطنية.</p> |
| ⚠ | <p>معايير التركيب</p> <p>يجب تركيب هذا الجهاز وفقًا لأحدث إصدار من القوانين الكهربائية الوطنية في البلد. في أمريكا الشمالية، يجب تركيب الجهاز وفقًا لمتطلبات القانون الكهربائي الوطني الأمريكي (NEC) والقانون الكهربائي الكندي (CEC) المعمول بهما.</p> |

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|---|---|
|  | <p>استبدال البطارية تحذير: يجب الاستبدال فقط ببطارية معترف بها من UL ومصنفة لتحمل تيار شحن غير طبيعي لا يقل عن mA4. تحذير: يجب الاستبدال فقط ببطارية معترف بها من ومصنفة لتحمل تيار شحن غير طبيعي لا يقل عن. هناك خطر حدوث انفجار في حال استبدال البطارية بنوع غير صحيح. يجب التخلص من البطاريات المستعملة وفقاً للتعليمات.</p> |
|  | <p>كابل طاقة معتمد من UL ومصنق من CSA للتوصيل في أمريكا الشمالية: يجب اختيار كابل طاقة معتمد من UL ومصنق من CSA، بثلاثة موصلات (AWG 16)، مزود بقياس مصبوب بقوة 125 فولت / 13 أمبير، بطول لا يقل عن 1.5 متر (6 أقدام) ولا يزيد عن 4.5 متر. للتوصيل الأوروبي: يجب اختيار كابل طاقة متوافق دوليًا وموسوم بعلامة "HAR" ، بثلاثة موصلات، له مساحة مقطع لا تقل عن 1.0 مم² بجهد مقتن 300 فولت، مع غلاف عازل PVC. يجب أن يحتوي الكابل على قابس مصبوب بقوة 250 فولت / 10 أمبير.</p> |
|  | <p>معايير التركيب يجب تركيب هذا الجهاز وفقاً لأحدث إصدار من القوانين الكهربائية الوطنية في الدولة. في أمريكا الشمالية، يجب الامتثال لمتطلبات القانون الكهربائي الوطني الأمريكي (NEC) والقانون الكهربائي الكندي (CEC).</p> |
|  | <p>الربط بين الوحدات يجب أن تكون الكابلات المستخدمة للاتصال بواجهات الوحدة RS232 و Ethernet من نوع DP-1 أو DP-2 ومعتمدة من UL ملاحظة: عند وجودها في دائرة غير (LPS).</p> |
|  | <p>الحماية من التيار الرائد يجب تضمين جهاز حماية من التيار الرائد بقوة 20 أمبير، معتمد وسهل الوصول إليه، ضمن التمديدات الكهربائية للمبنى.</p> |
|  | <p>تحذير مستوى الضوضاء يشير مستوى الضوضاء المذكور في قسم المواصفات إلى ضوضاء المنتج المقاسة وفقاً لمعيار ISO 7779 تحت الظروف الاسمية. قد يختلف مستوى الضوضاء الفعلي حسب ظروف التركيب، بما في ذلك، على سبيل المثال لا الحصر: عدد الرفوف في التركيب، حجم التركيب الكلي، مادة الرفوف والمعدات الأخرى ومستويات الضوضاء الخاصة بها، أعطال المروحة، درجة حرارة الغرفة، تكوين الغرفة، وموقع الموظفين بالنسبة للمعدات. يجب على مالك مركز البيانات إدارة إجراءات فعالة للحفاظ على السمع وفقاً لمعيار OSHA لحماية الموظفين من التعرض المفرط والمطول للضوضاء.</p> |
|  | <p>عدم استخدام المحول كرف أو مساحة عمل تحذير: لا يجوز استخدام المحول المثبت كرف أو مساحة عمل. الشرائح غير مخصصة لتحريك الوحدة بعيداً عن الرف؛ فهي مخصصة للتركيب الدائم في مكانها النهائي فقط، وليست للاستخدام أثناء الصيانة والخدمة.</p> |
|  | <p>توجيه WEEE وفقاً لتوجيه WEEE 2002/96/EC، يجب جمع جميع المعدات الكهربائية والإلكترونية التالفة (EEE) بشكل منفصل، وعدم التخلص منها مع النفايات المنزلية العادية. يجب التخلص من هذا المنتج وجميع أجزائه بطريقة مسؤولة وصديقة للبيئة.</p> |
|  | <p>قيود الطاقة في التوزيع هذه الوحدة مخصصة للتوصيل بنظام طاقة من نوع TN ونظام IT في التوزيع فقط.</p> |

12 Document Revision History

| Date | Revision | Description |
|----------------|----------|--|
| March 2026 | 1.6 | Updated "Safety Warnings" |
| April 2025 | 1.5 | <ul style="list-style-type: none">• Added the SN5610 system• Added the SN5600D system |
| December 2024 | 1.4 | <ul style="list-style-type: none">• Added new airflow option for the SN5400 switch• Replaced fan module image• Made editorial and stylistic revisions |
| November 2024 | 1.3 | <ul style="list-style-type: none">• Updated pointers to interconnect collateral under Cable Installation section• Replaced SN5600 belly-to-belly port mapping diagrams under Cable Installation section |
| September 2024 | 1.2 | <ul style="list-style-type: none">• Fixed broken cross-references and added missing image under Interfaces → LED Notifications• Updated Lifecycle Phase for 920-9N42C-00RB-7C0 under Ordering Information |
| May 2023 | 1.1 | Updated ordering information |
| April 2023 | 1.0 | Initial release |

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