



NVIDIA Q32xx and Q34xx XDR 800Gb/s InfiniBand Switch Systems User Manual

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Relevant for Models: Q3200-RA, Q3400-RA, Q3401-RD and Q3450-LD

1 Overview

This manual describes the installation and basic use of the NVIDIA XDR InfiniBand switch systems based on the NVIDIA Quantum™-3 switch ASIC. This manual is intended for IT managers and system administrators.

1.1 Ordering Information

System Model	NVIDIA SKU	Description	Lifecycle Phase
Q3200-RA	920-9B34F-00 RX-FS0	Quantum-3 based Two-Adjoining XDR InfiniBand Switches, Q3200-RA, 2U, with 36 XDR Ports over 18 OSFP cages per Switch, 4 Power Supplies (Power Cords Not Included), Standard Depth, Managed, C2P Airflow, Rail Kit	P-Rel
Q3400-RA	920-9B36F-00 RX-8S0	NVIDIA Quantum-3 based XDR InfiniBand Switch, , Q3400-RA, 4U, 144 XDR Ports over 72 OSFP Cages, 8 Power Supplies (Power Cords Not Included), Standard Depth, Managed, C2P Airflow, Rail Kit	P-Rel
Q3401-RD	920-9B36P-00 RX-8S0	NVIDIA Quantum-3 based XDR InfiniBand Switch, Q3401-RD, 4U, 144 XDR Ports over 72 OSFP Cages, 48VDC Busbar, Standard Depth, Managed, C2P, Rail Kit	P-Rel
Q3450-LD	920-9B36M-00 MX-8ES	NVIDIA Quantum-3 based XDR InfiniBand CPO Switch, Q3450-LD, 4U, 144 XDR Ports over 144 MPOs Connectors, 48VDC, Managed, C2P Liquid-cooled, Rail Kit, ES	Prototype

1.2 Related Documentation

Document	Description
<i>InfiniBand Architecture Specification</i> Volume 1 Release 1.5	The InfiniBand Trade Association (IBTA) InfiniBand® Specification at https://www.infinibandta.org .
NVIDIA NVOS User Manual for InfiniBand Switches	This document contains information regarding the configuration and management of the NVOS® software - https://docs.nvidia.com/networking/software/switch-software/index.html#infiniband-nvos
Hands-on workshops	Visit https://academy.nvidia.com/en/infiniband-customized-training/ .
On-site/remote services	For any tailor-made service, contact: nbu-services-sales@nvidia.com .

1.3 Revision History

A list of the changes made to this document are provided in [Document Revision History](#).

2 Introduction

The NVIDIA Quantum-3 family of fixed-configuration switches revolutionizes the performance, scalability, and efficiency of high-performance computing and AI infrastructures, enabling faster and more effective AI processing and computation. These switches are available in both 4U and 2U systems.

The NVIDIA Quantum-X800 Q3400-RA/Q3401-RD 4U switches, the first to leverage 200Gb/s-per-lane serializer/deserializer (SerDes) technology, significantly enhance network performance and bandwidth. They feature 144 ports at 800Gb/s distributed across 72 octal small form-factor pluggable (OSFP) cages. The switches' high radix supports a two-level, fat-tree topology capable of connecting up to 10,368 network interface cards (NICs) with minimal latency and optimal job locality, as well as other topologies providing connectivity to tens of thousands of GPUs.

The Q3400-RA is an air-cooled system designed for standard 19-inch rack cabinets, while the Q3401-RD offers the same air-cooled design with support for rack cabinets utilizing DC power. For smaller-scale platforms or integration with existing infrastructures, the NVIDIA Quantum-X800 Q3200 2U air-cooled configuration switch is ideal. This system houses two independent switches within a single enclosure, each providing 36 ports at 800Gb/s. The Q3200 fixed-configuration switches are well-suited for connecting new compute clusters to previous-generation Quantum and Quantum-2 InfiniBand storage infrastructure.

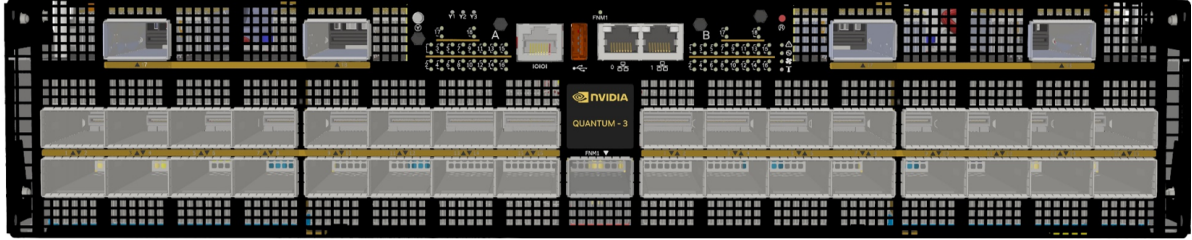
All NVIDIA Quantum-X800 switches include a dedicated OSFP InfiniBand in-band management port specifically for NVIDIA UFM® (Unified Fabric Manager), separated on the front panel from the other ports. This separation allows the full set of standard ports to be used for data network connectivity, simplifying port allocation and streamlining topology design. Additionally, NVIDIA Quantum-X800 switches feature optional router capabilities, facilitating the expansion of InfiniBand clusters to support a large scale of nodes located across multiple sites.

NVIDIA is advancing data center networking into the agentic AI era with co-packaged optics (CPO). By integrating silicon photonics directly with the InfiniBand switch ASIC, the Q3450-LD eliminates the need for pluggable optical transceivers—reducing electrical loss, enhancing signal integrity, and improving overall power and thermal efficiency.

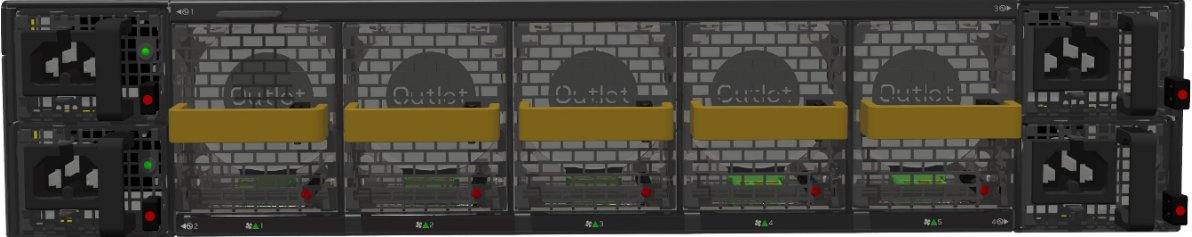
With 144 800Gb/s ports connected via direct MPO connectors, the Q3450-LD delivers unmatched port density and radix—ideal for building high-performance AI fabrics at scale. CPO technology reduces the high-speed electrical path to just a few millimeters within the substrate, slashing insertion loss to ~4 dB—compared to 22 dB in traditional pluggable designs. This results in 63× better signal integrity, enabling higher data rates with lower DSP complexity and reduced power per bit.

As part of the NVIDIA Quantum-X800 InfiniBand platform, the Q3450-LD is purpose-built for AI workloads that require ultra-low latency, high bandwidth, and deterministic performance across multiple thousands of GPUs. It also simplifies thermal design and cable management, accelerating the deployment and scaling of power-efficient InfiniBand-based AI Factories.

Q3200-RA Front View



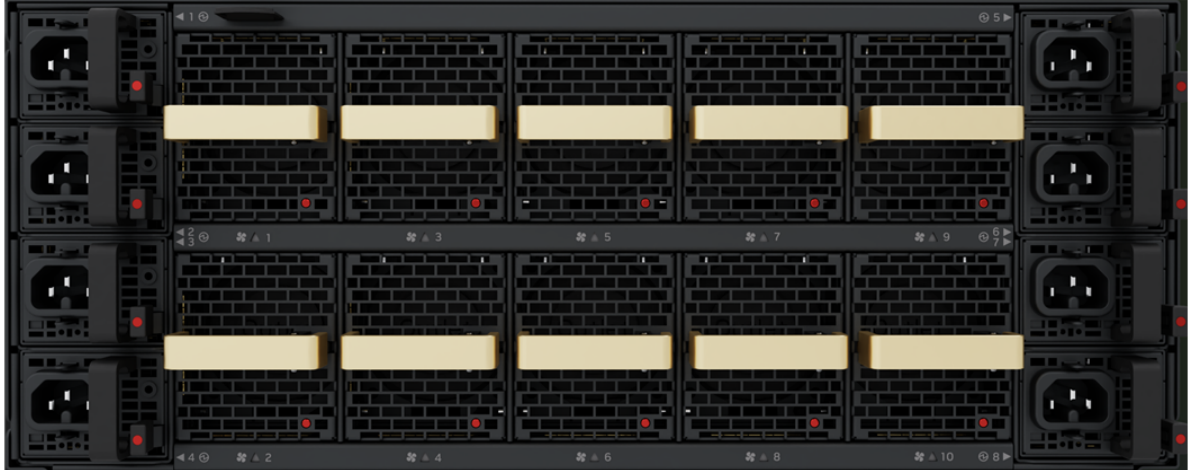
Q3200-RA Rear View



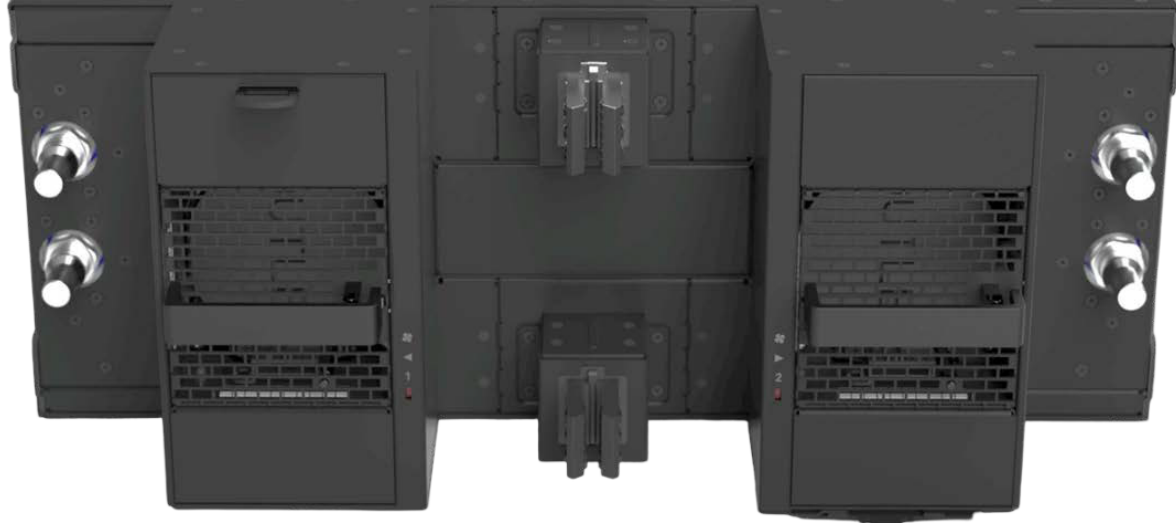
Q3400-RA Front View



Q3400-RA Rear View



Q3450-LD Rear View



2.1 Speed and Switching Capabilities

The table below describes maximum throughput and interface speed per system model.

The 4U switches offer a radix of 144 ports of 800Gb/s on 72 physical octal small form-factor pluggable (OSFP) connectors

The 2U systems come with 72 (2 x 36) ports of 800 Gb/s and are ideal for small-scale platforms.

System Model	XDR 800Gb/s OSFP Interfaces	Max Throughput
Q3200-RA	72 XDR ports over 36 OSFP cages	57.6 Tb/s
Q3400-RA	144 XDR ports over 72 OSFP cages	115.2 Tb/s
Q3401-RD	144 XDR ports over 72 OSFP cages	115.2 Tb/s
Q3450-LD	144 XDR ports over MPO connectors	115.2 Tb/s

2.2 Management Interfaces, PSUs and Fans

The table below lists the various management interfaces and available replacement parts per system model.

System Model	USB and I ² C	MGT	FNM - Fabric Management Port	Console	Replaceable PSU	Replaceable Fan
Q3200-RA	Front (USB 2.0 type A)	Front (2 ports)	Front	Front	Yes, 4	Yes, 5
Q3400-RA	Front (USB 2.0 type A)	Front (2 ports)	Front	Front	Yes, 8	Yes, 10

System Model	USB and I ² C	MGT	FNM - Fabric Management Port	Console	Replaceable PSU	Replaceable Fan
Q3401-RD	Front (USB 2.0 type A)	Front (2 ports)	Front	Front	No, Busbar powered	Yes, 8
Q3450-LD	Front (USB 2.0 type A)	Front (2 ports)	Front	Front	No, Busbar powered	Yes, 2

2.3 Features

For a full feature list, please refer to the system's product brief. Go to <https://www.nvidia.com/en-us/networking/>. In the main menu, click on Products > InfiniBand > Switch Systems, and select the desired product page.

2.4 Certifications

The list of certifications (such as EMC, Safety and others) per system for different regions of the world is located on the NVIDIA website at <https://www.nvidia.com/en-us/networking/environmental-and-regulatory-compliance/>.

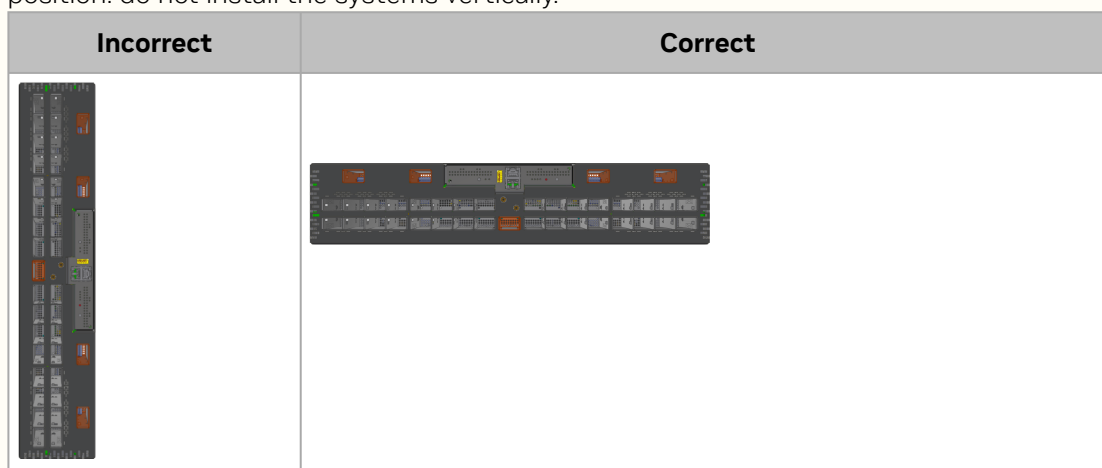
3 Installation

3.1 System Installation and Initialization

Installation and initialization of the system require attention to the normal mechanical, power, and thermal precautions for rack-mounted equipment.

-  The rack mounting holes conform to the EIA-310 standard for 19-inch racks. Take precautions to guarantee proper ventilation in order to maintain good airflow at ambient temperature.

-  Due to thermal considerations, the switch systems must be installed in a horizontal position. do not install the systems vertically.



- 
- 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 phases:

Step	Procedure	See
1	Follow the safety warnings	Safety Warnings
2	Pay attention to the air flow consideration within the system and rack	Air Flow
3	Make sure that none of the package contents is missing or damaged	Package Contents
4	Mount the system into a rack enclosure	19" System Mounting Options
5	Power on the system	Initial Power On

Step	Procedure	See
6	Perform system bring-up	System Bring-Up of Managed Systems
7	[Optional] FRU replacements	FRU Replacements

3.2 Safety Warnings

Prior to the installation, please review the [Safety Warnings](#). Note that some warnings may not apply to all models.

3.3 Air Flow

Currently, the NVIDIA XDR systems are offered with one air flow pattern - Connector (front) side inlet to power side outlet, marked with red dots that are placed on the power inlet side.

Air Flow Direction Marking - Connector Side Inlet to Power Side Outlet



The following example is provided for illustration only. The appearance and location of the dots may vary across systems.



- All servers and systems in the same rack should be planned with the same airflow direction.
- All FRU components need to have the same air flow direction. A mismatch in the air flow will affect the heat dissipation.

3.4 Package Contents

Before installing your new system, unpack it and check against the parts list below that all the parts have been sent. Check the parts for visible damage that may have occurred during shipping.

The Q3200-RA and Q3400-RA/Q3401-RD package content is as follows:

- 1 – System
- 1 – Rail kit
- OSFP thermal caps:
 - 37 caps in Q3200-RA
 - 73 caps in Q3400-RA/Q3401-RD

The Q3450-LD package content is as follows:

- 1 – System
- 1 – Rail kit
- 2 - Ejector bars
- 1 - Dust cap (pre-installed)



Power cords are not included in the system's package.



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.



For a list of the required transceivers and cables for Q3450 CPO topology, see [Cable Installation](#).



If anything is damaged or missing, contact your sales representative at Networking-support@nvidia.com.

3.5 19" System Mounting Options

By default, the systems are shipped with the rail kits described in the following sections:

System Model	Rail Kit Installation Chapter
Q3200-RA	Q3200-RA Rail Kit
Q3400-RA	Q3400-RA Rail Kit
Q3401-RD	Q3401-RD Rail Kit
Q3450-LD	Q3450-LD Rail Kit

3.6 Q3200-RA Rail Kit

Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00LO-00C	Rail kit for NVIDIA Quantum-3 2U switch 600-800mm

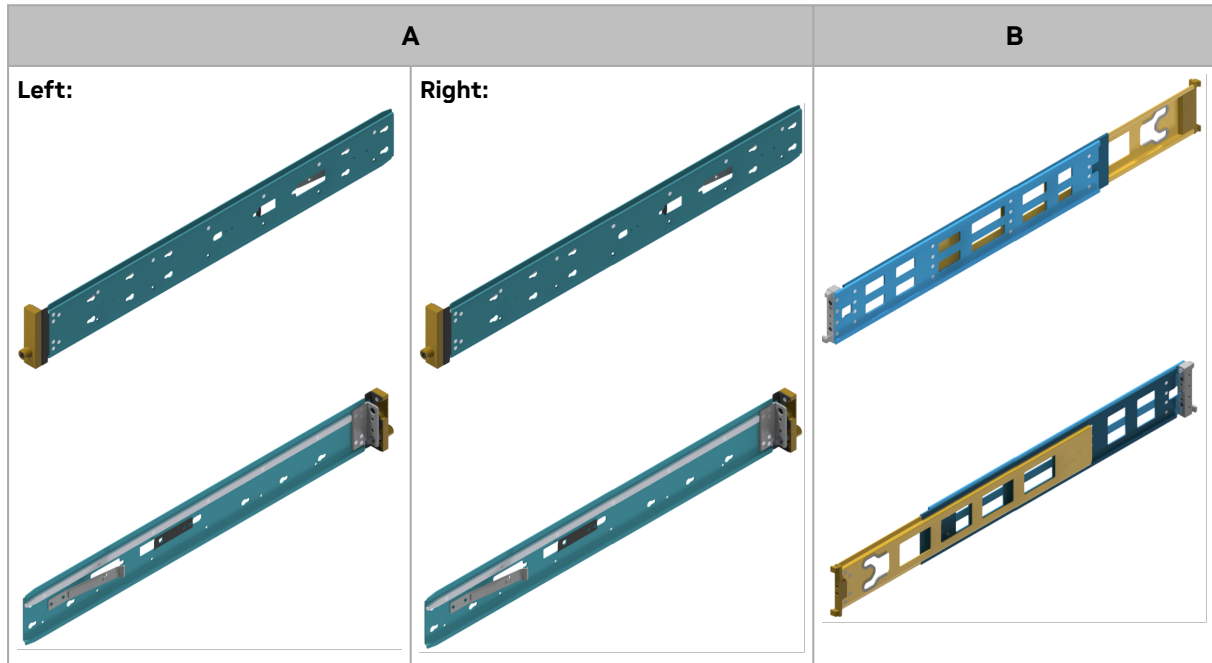


Prior to the installation procedure, inspect all rail-kit components and make sure none of them is missing or damaged. If anything is missing or damaged, contact your NVIDIA representative at Networking-support@nvidia.com.

The following parts are included in the tool-less rail kit (see figure below):

- 2x System Rails (A)
- 2x Rack Rails (B)

Rail Kit Parts



Prerequisites:

Before mounting the system to the rack, select the way you wish to place the system. Pay attention to the airflow within the rack cooling, connector and cabling options.

While planning how to place the system, review the two installation options shown in the table below, and consider the following points:

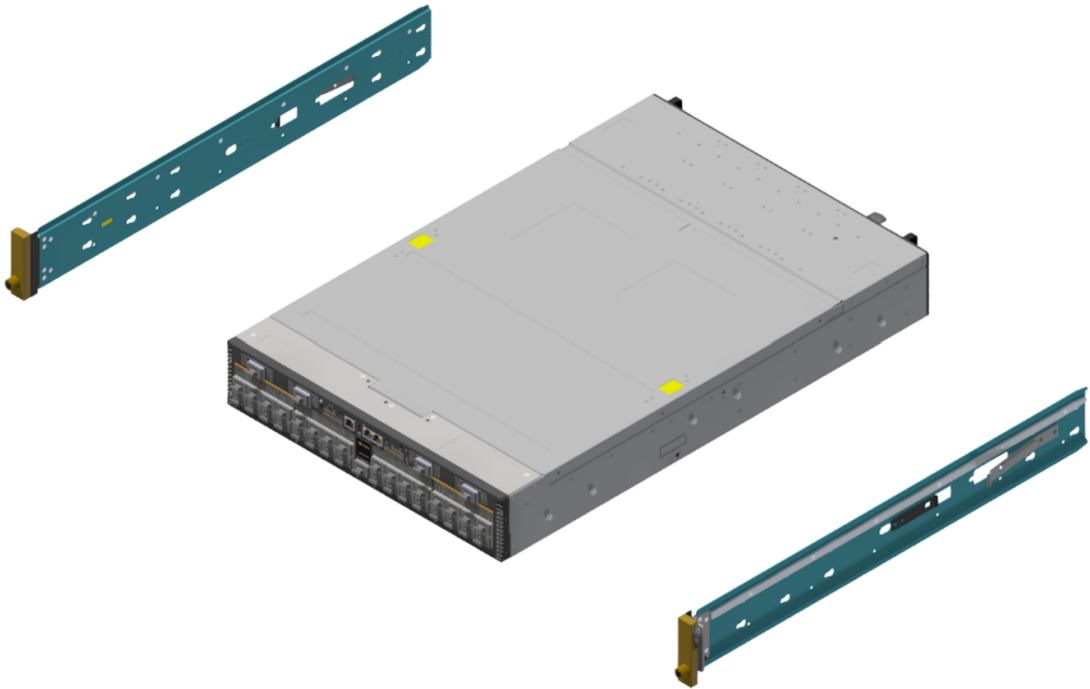
- Make sure the system air flow is compatible with your installation selection. It is important to keep the airflow within the rack in the same direction.
- Note that the part of the system to which you choose to attach the rails (the front panel direction, as demonstrated in Option 1 or the FRUs direction, as demonstrated in Option 2) will determine the system's adjustable side. The system's part to which the brackets are attached will be adjacent to the cabinet.
- The FRUs, as well as high-speed and MNG cables, must be extracted for replacement as part of the switch service. Consider this when planning the switch installation.]



The following steps include illustrations that show front side (ports) installation, yet all instructions apply to all installation options.

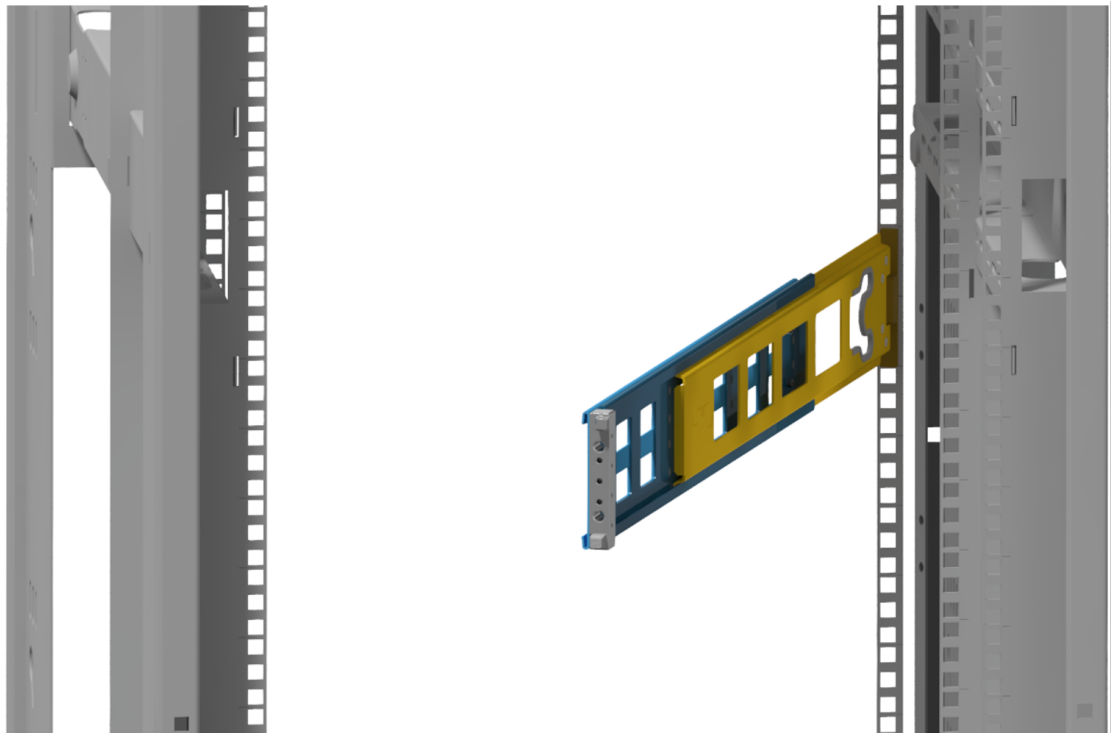
1. Attach the system's rails (A) to the switch chassis. Secure the assembly by gently pushing the rails' pins through the slider key holes, until locking occurs.

Attaching the System's Rails to the Switch Chassis



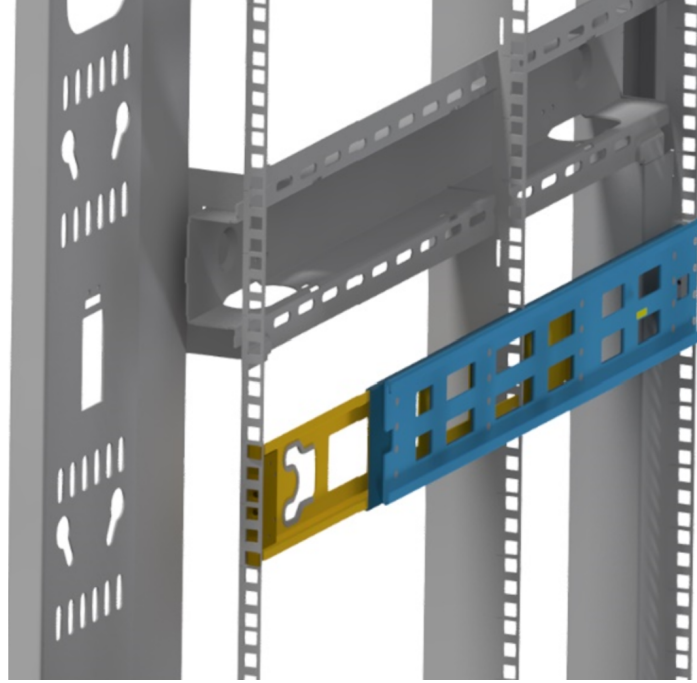
2. Mount both of the rack rails (B) into the rack by angularly inserting the brakes located at the rails edges into the designated slots in the rack unit, as shown in the following figure:

Angularly Inserting the Brakes Located at the Rails Edges into the Designated Slots in the Rack Unit



3. 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.
4. 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.

Aligning Both Rack Rails to Sit Horizontally in Parallel to the Rack Assembly



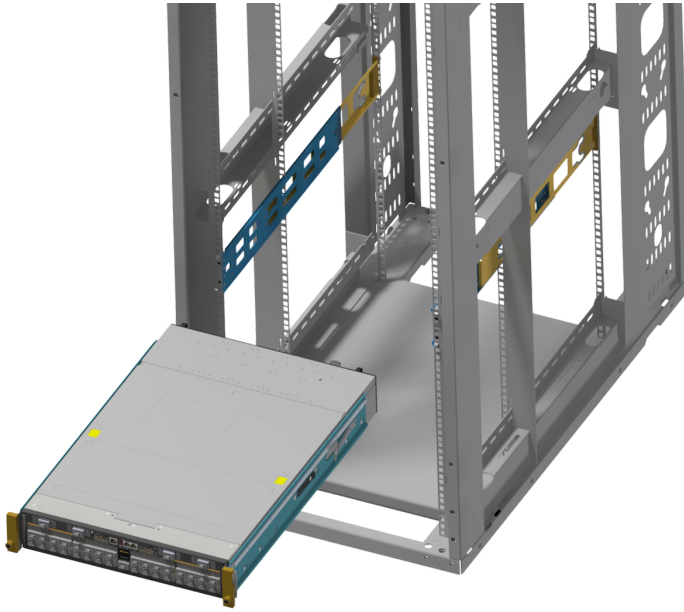
To mount the system into the rack:



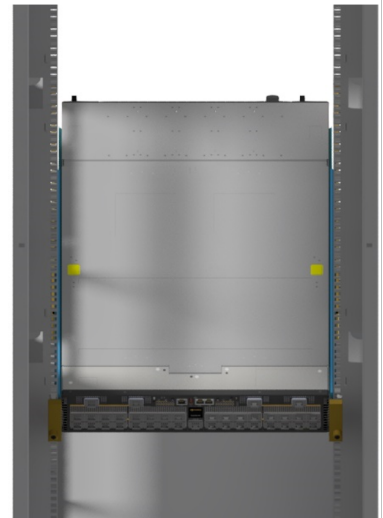
At least two people are required to safely mount the system in the rack.

5. 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.
6. Tighten the captive screws on both sides to further secure the system to the rack's posts.

Sliding the System Rails into the Rack Rails



Tightening the Captive Screws



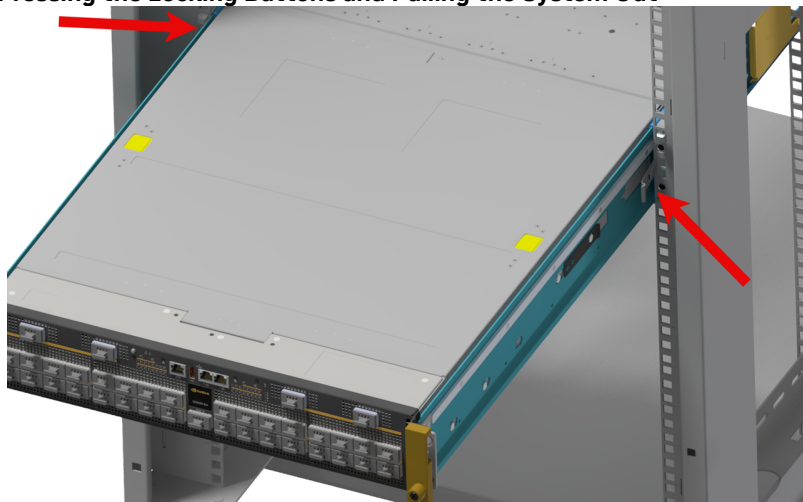
To remove the system from the rack:

1. Turn off the system and disconnect it from peripherals and from the electrical outlet.

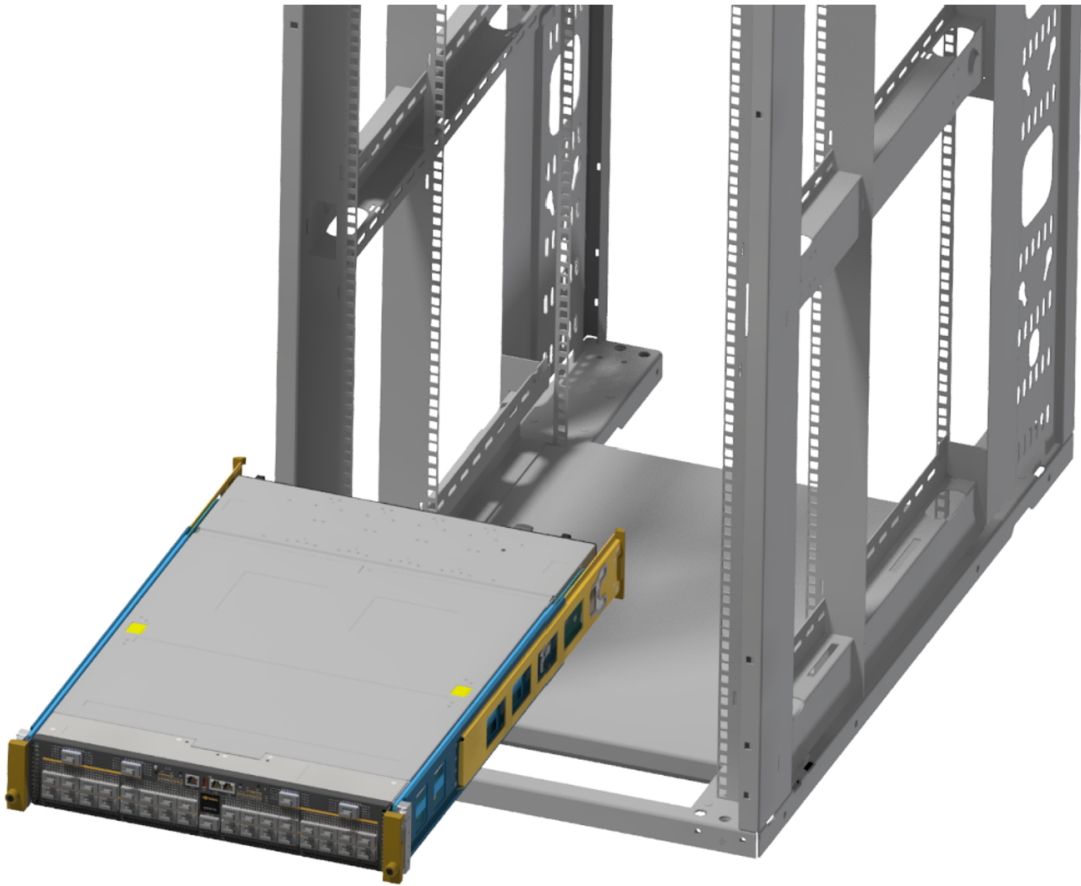
While your installation partner is supporting the system's weight:

1. Loosen the captive screws attaching the system's rails to the rack's posts.
2. Use two hands to pull the system out until the rails are stopped.
3. Press the locking buttons on both sides of the rack, and continue to pull the system out until the rack rails are clear of the system's rails.
4. 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 designated slots.

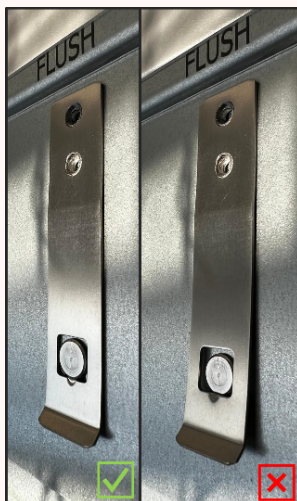
Pressing the Locking Buttons and Pulling the System Out



Removing the Rails from the System



Make sure the system rails latch is fully locked onto the system mushroom pin (see below image).



3.7 Q3400-RA Rail Kit

Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00LO-00B	Rail kit for NVIDIA Quantum-3 4U switch 700-800mm



1. Square post's mounting holes only.
2. Front to rear post supported range: 700-800mm.

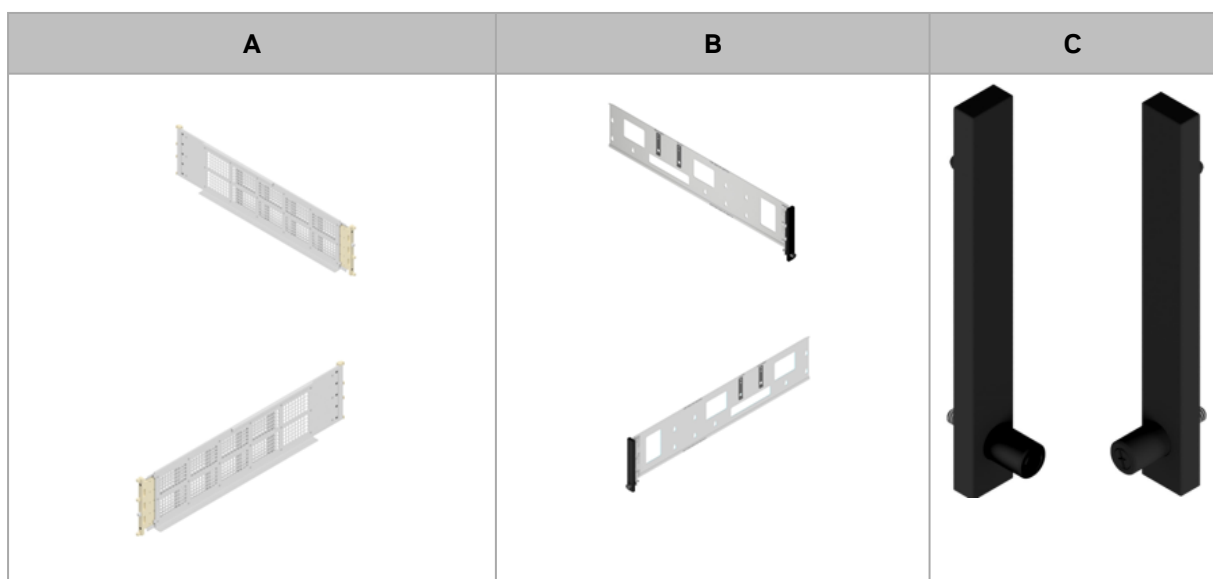


Prior to the installation procedure, inspect all rail-kit components and make sure none of them is missing or damaged. If anything is missing or damaged, contact your NVIDIA representative at Networking-support@nvidia.com.

The following parts are included in the tool-less rail kit (see figure below):

- 2x Rack Rails (A)
- 2x System Rails (B)
- 2x Black Cubes (C)

Rail Kit Parts



Prerequisites:

Before mounting the system to the rack, select the way you wish to place the system. Pay attention to the airflow within the rack cooling, connector and cabling options.

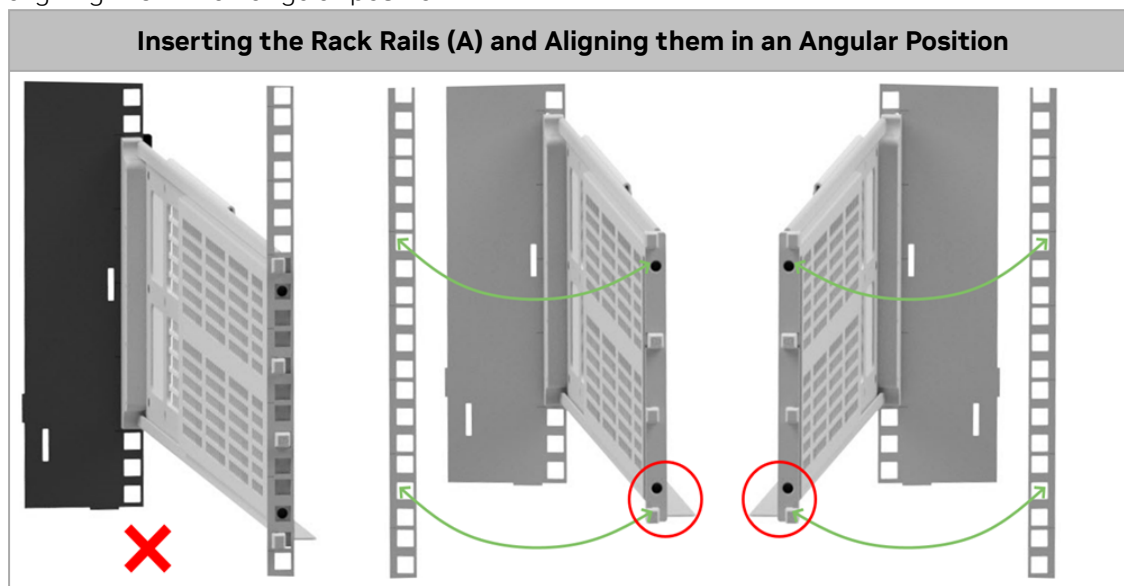
While planning how to place the system, review the two installation options shown in the table below, and consider the following points:

- Make sure the system air flow is compatible with your installation selection. It is important to keep the airflow within the rack in the same direction and avoid blocking the air flow.

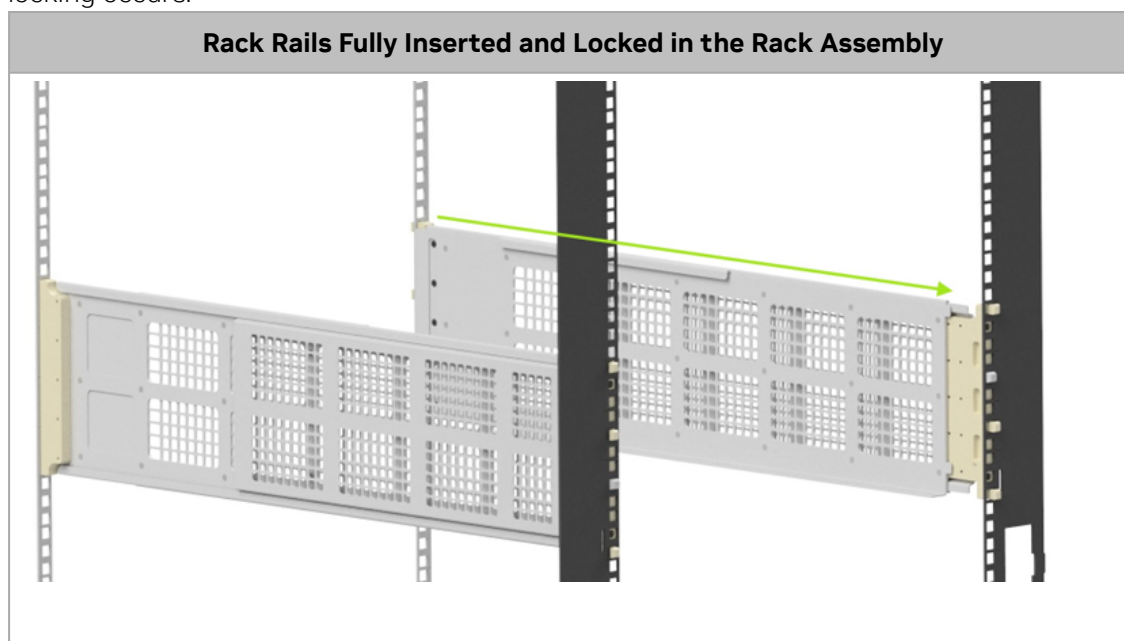
- The FRUs, as well as high-speed and MNG cables, must be extracted for replacement as part of the switch service. Consider this when planning the switch installation.]

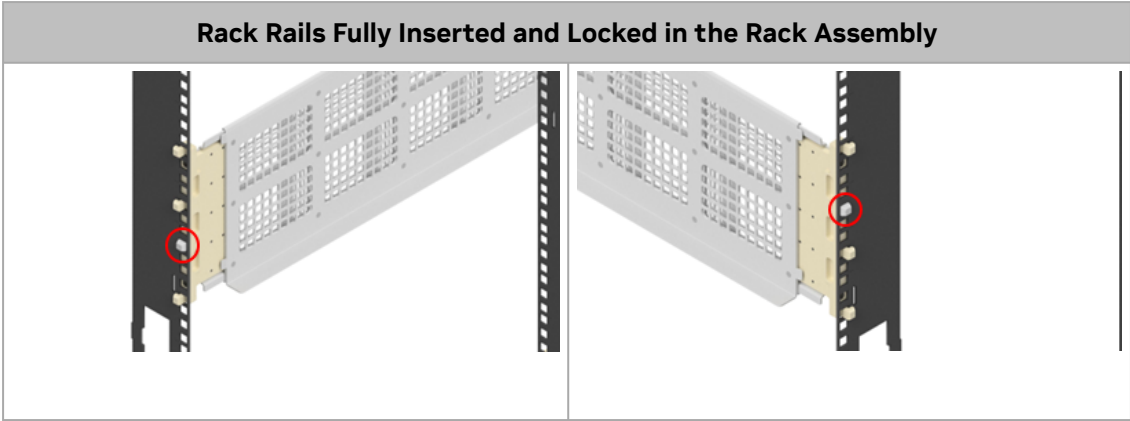
The following steps details the installation process:

1. Install both rack rails (A) by inserting their pins to the designated key holes in the rack, and aligning them in an angular position.

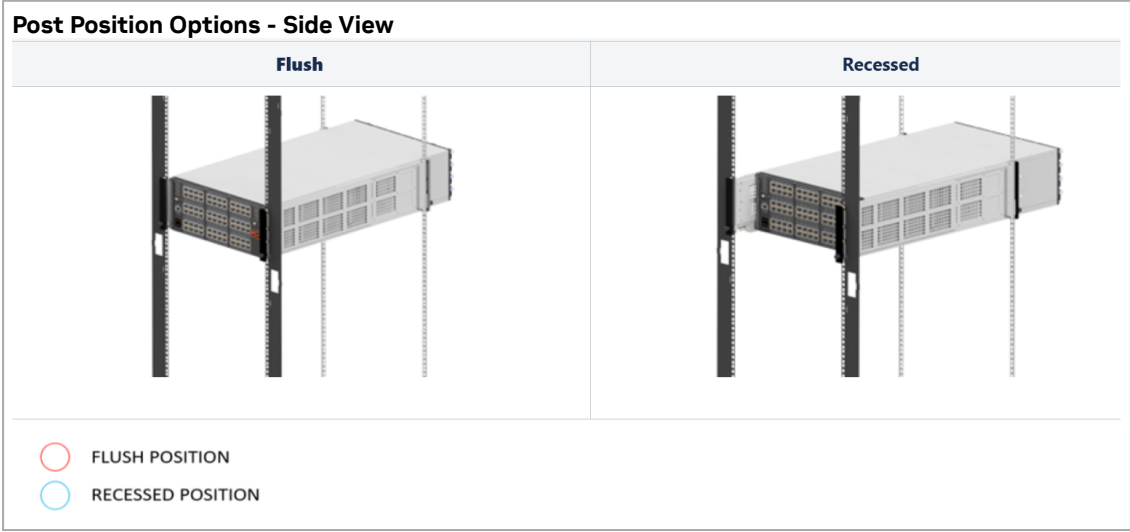


2. Secure the assembly by gently pushing the rails' pins through the slider key holes, until locking occurs.

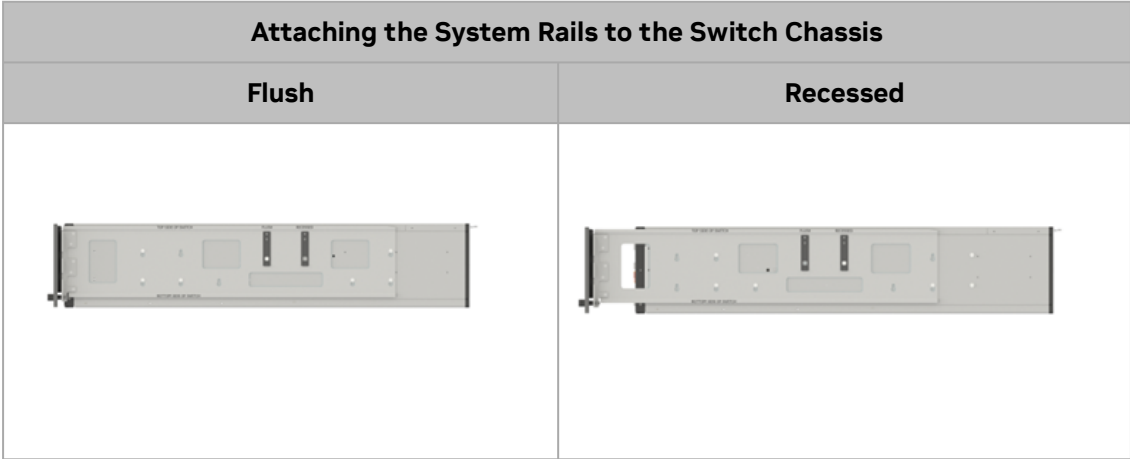


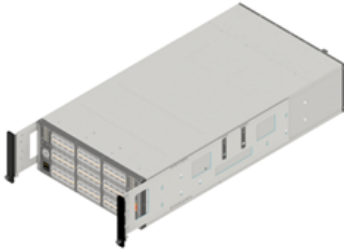


3. Choose one of the installation options, and attach the system's rails B to the switch chassis.



4. Attach the system rails (B) to the system. Align the central mushroom pin circled below with your selection.



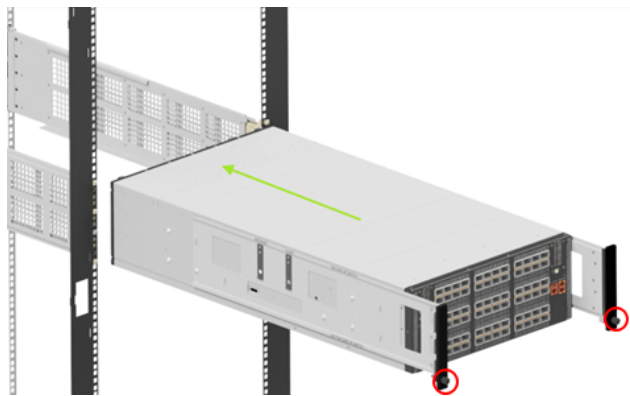
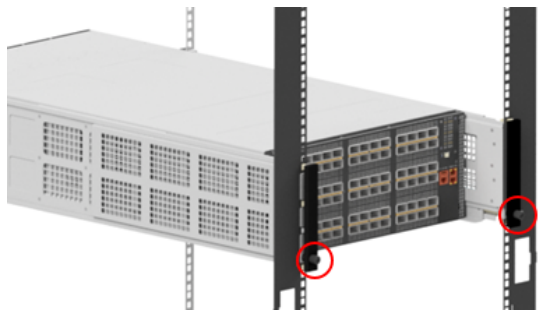
Attaching the System Rails to the Switch Chassis	
Flush	Recessed
	

To mount the system into the rack:

- ✗ At least two people and server lift are required to safely mount the system in the rack.

While the server lift is supporting the system's weight, perform the following steps::

1. Slide the system into the rails, until the black cubes which adjacent to the front panel, touching the rack.
2. Tighten the captive screws on both sides to fully secure the system to the rack's posts.

Sliding the System into the Rack Rails (A)	Tightening the Captive Screws
	

Once the system is fully secured in the rack, install the two Black Cubes (C) on the back of the rack rail as shown, and tighten the two captive screws:



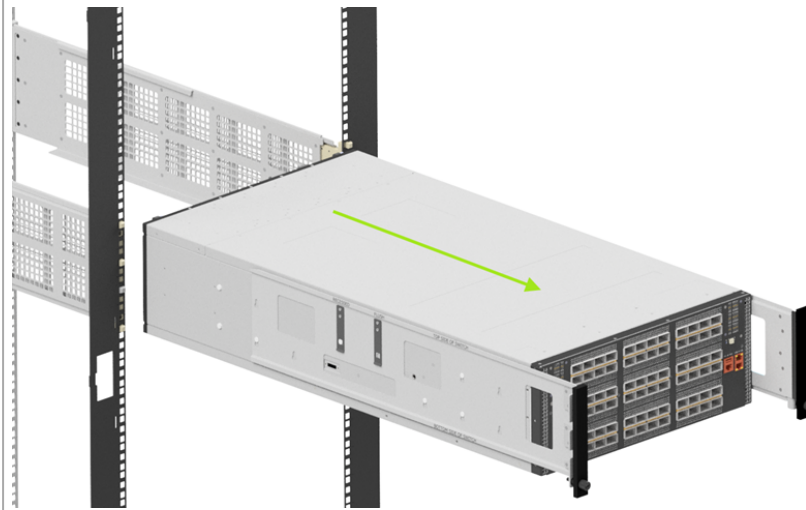
To remove the system from the rack:

1. Turn off the system and disconnect it from peripherals and from the electrical outlet.
While server lift is supporting the system's weight:
2. Loosen back captive screws and remove Black cubes (C).
3. Loosen front captive screws and pull the system out.



This is a heavy system. Server lift is required to support the system weight safely.

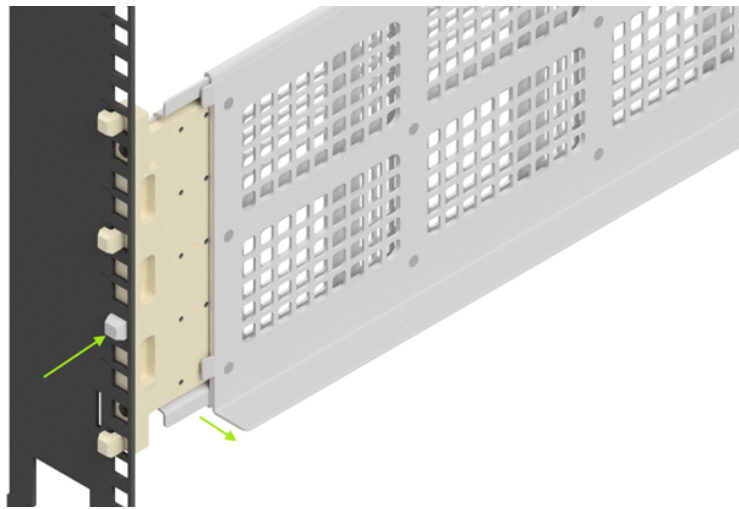
Pulling the System Out



4. Release the rack rails and system rails:

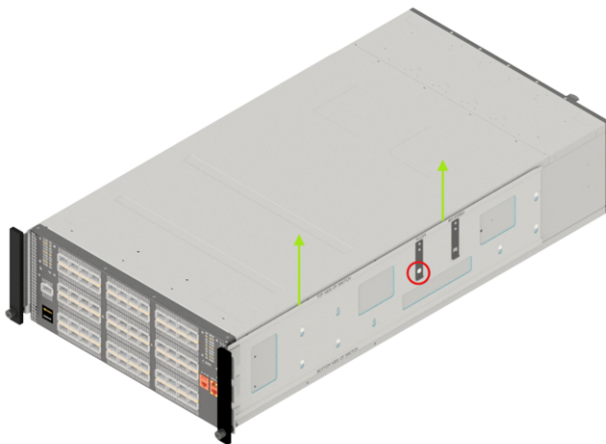
To release the rack rails, press the locking buttons on both sides and slightly push the rail towards the inside of the cabinet until the the rail pins removed out from the rack post holes.

Pressing the Locking Buttons on Both Sides

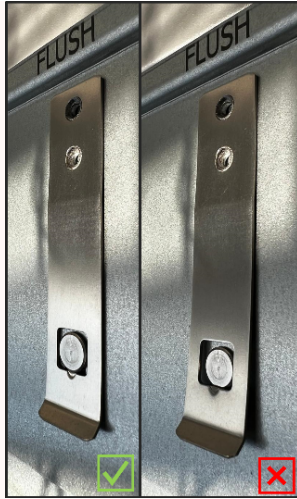


5. To Remove the rails from the system, release the metal latches and slide up the rails so the system's pins will be removed out of the designated key holes.

Removing the Rails from the System



Make sure the system rails latch is fully locked onto the system mushroom pin (see below image).

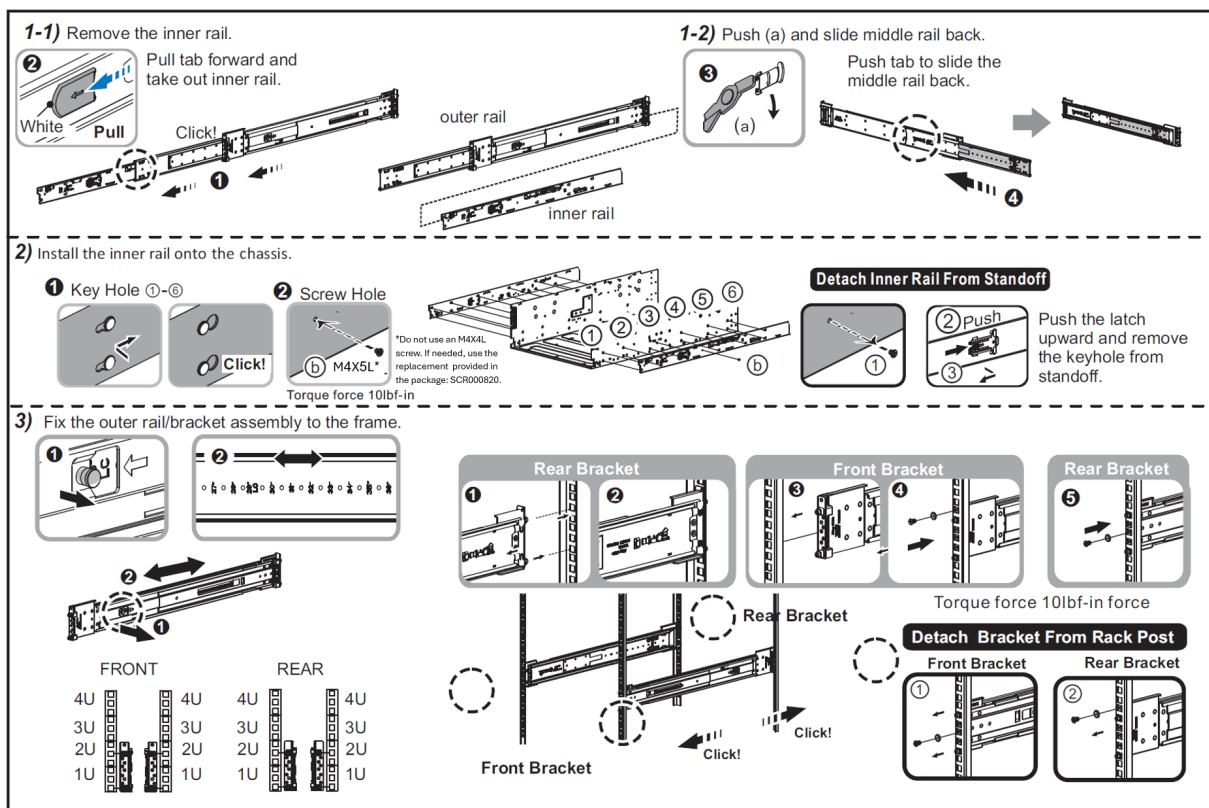


3.8 Q3401-RD Rail Kit

Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00LO-00C	Rail kit for NVIDIA Quantum-3 2U switch 600-800mm

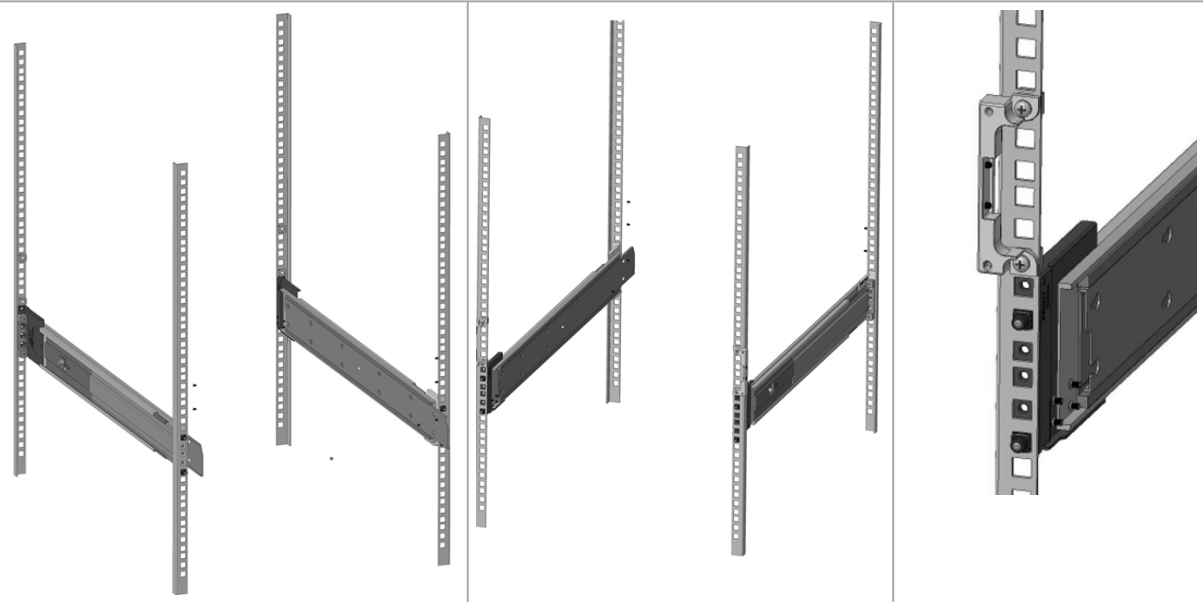
3.8.1 Installation Instructions

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

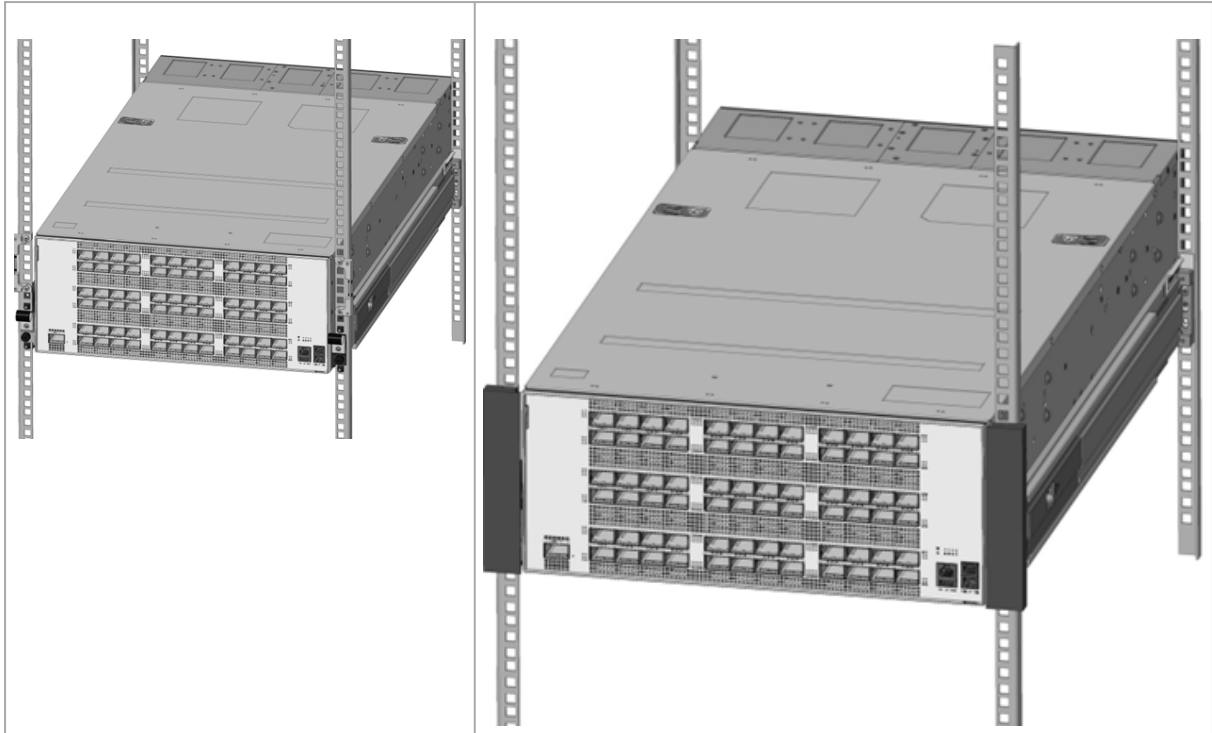


3a. Optional: Brackets Cover Panels Installation

1. Install 8 cage nuts in the designated holes on the front and rear sides of the rack.
2. Attach the two snap brackets to the rack, ensuring a firm and stable connection.



3. Mount the switch system: position the system in the rack, and fasten it to the rail-kit with two thumb screws, applying a torque of 1.8 Nm.
4. Cover the snap brackets with the two designated panels. Secure the panels by snapping them onto the snap brackets.



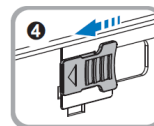
4) Insert the chassis to complete the installation.

- 1 2 Pull the middle rail fully extended in lock position, ensure ball bearing retainer is located at the front of the middle rail.
- 3 Align inner rail to middle-outer rail, keep chassis horizontally when insert.
- 4 5 Insert chassis carefully, when hit the stop, pull the blue release tab on inner rail to release lock and continue to slide in chassis.
- 6 Push the chassis back to the rack.

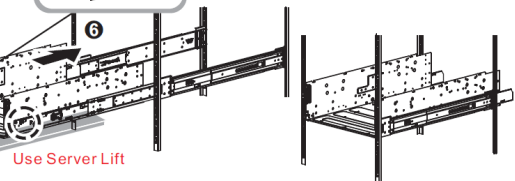
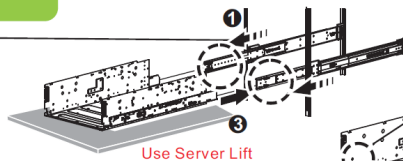
! Check bearing track is located in front of middle rail before insert inner rail.



! Check to ensure inner rail is aligned, and properly glide into ball bearing track.

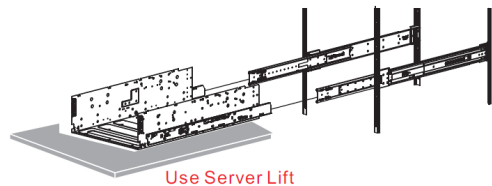
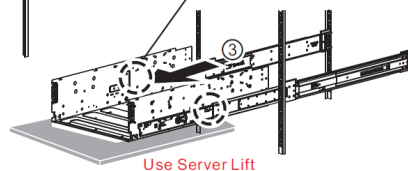
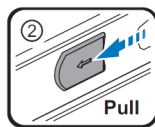
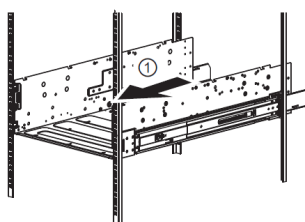


! Required >



Remove the chassis from rack

! Required >

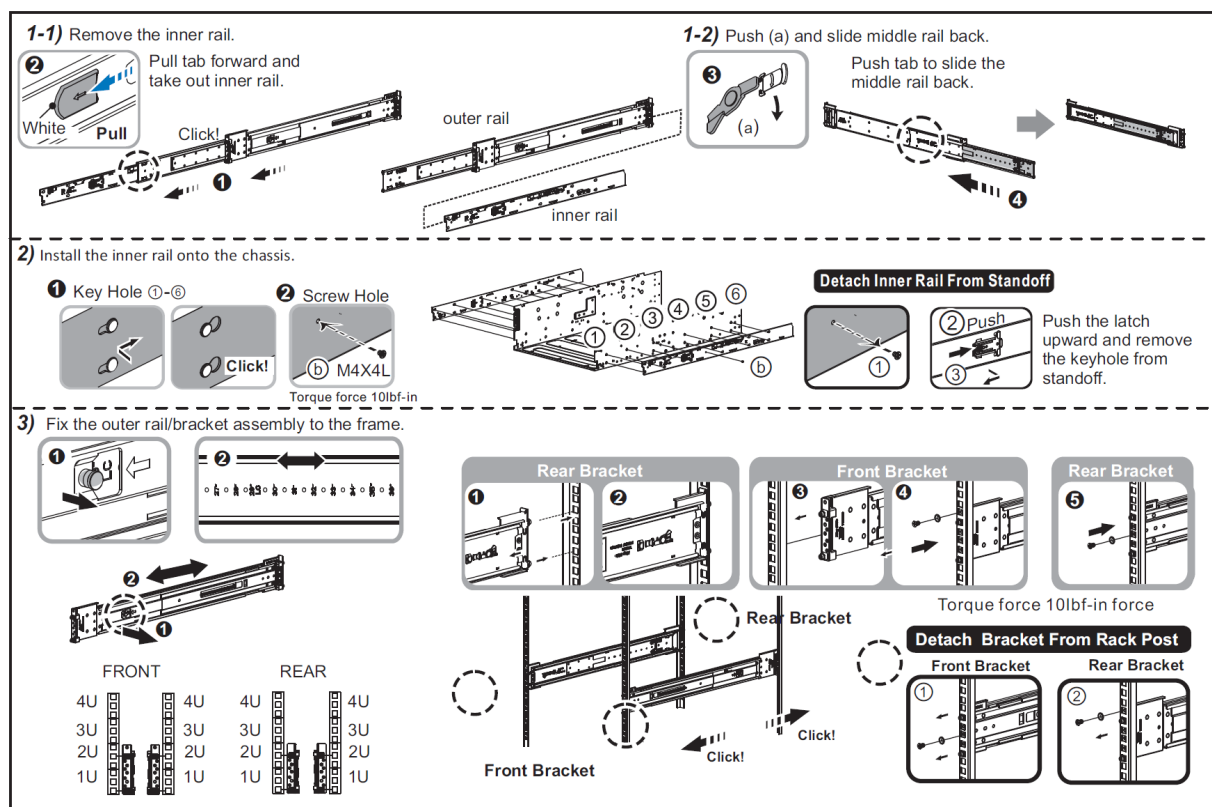


3.9 Q3450-LD Rail Kit

Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00LO-00C	Rail kit for NVIDIA Quantum-3 2U switch 600-800mm

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

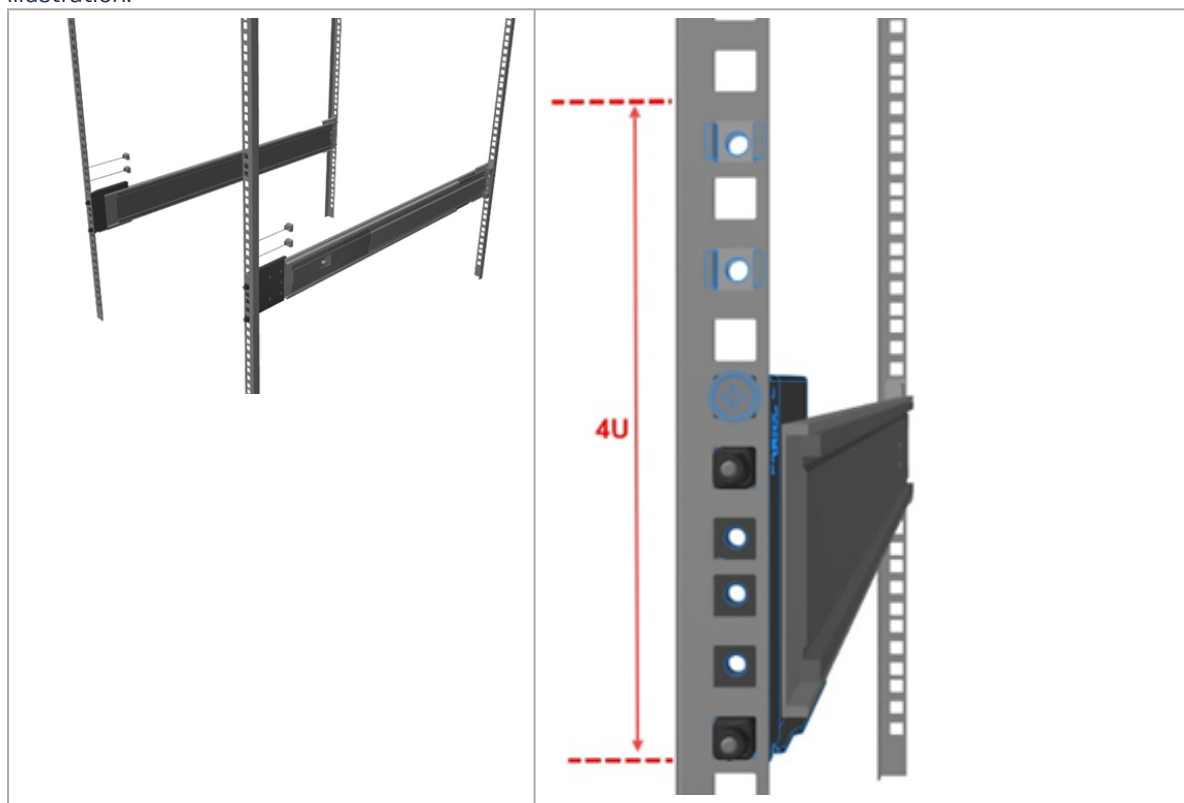
3.9.1 Installation Instructions



3b. Attach the DGX eject bars to the rack posts:

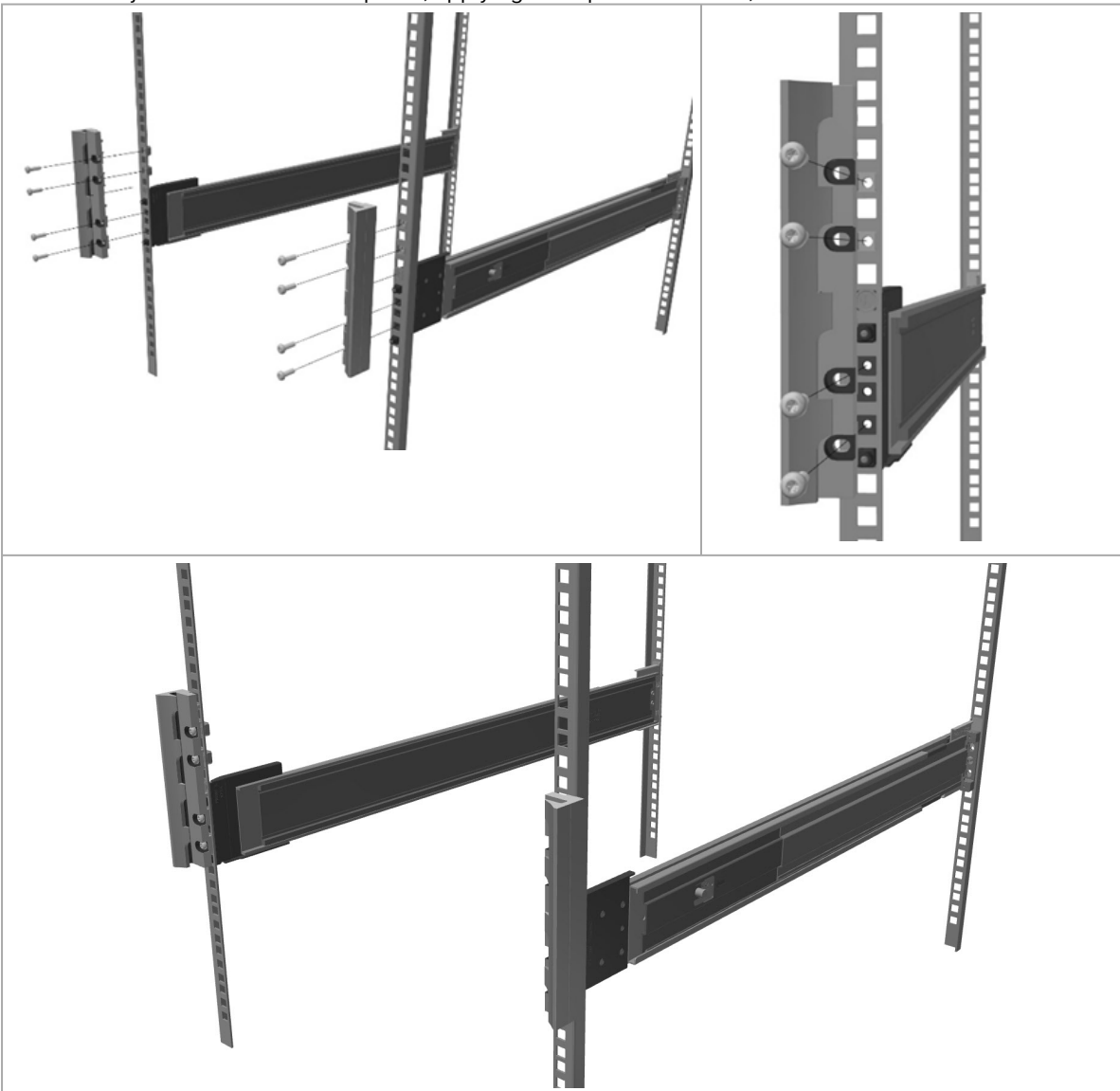
Step 1

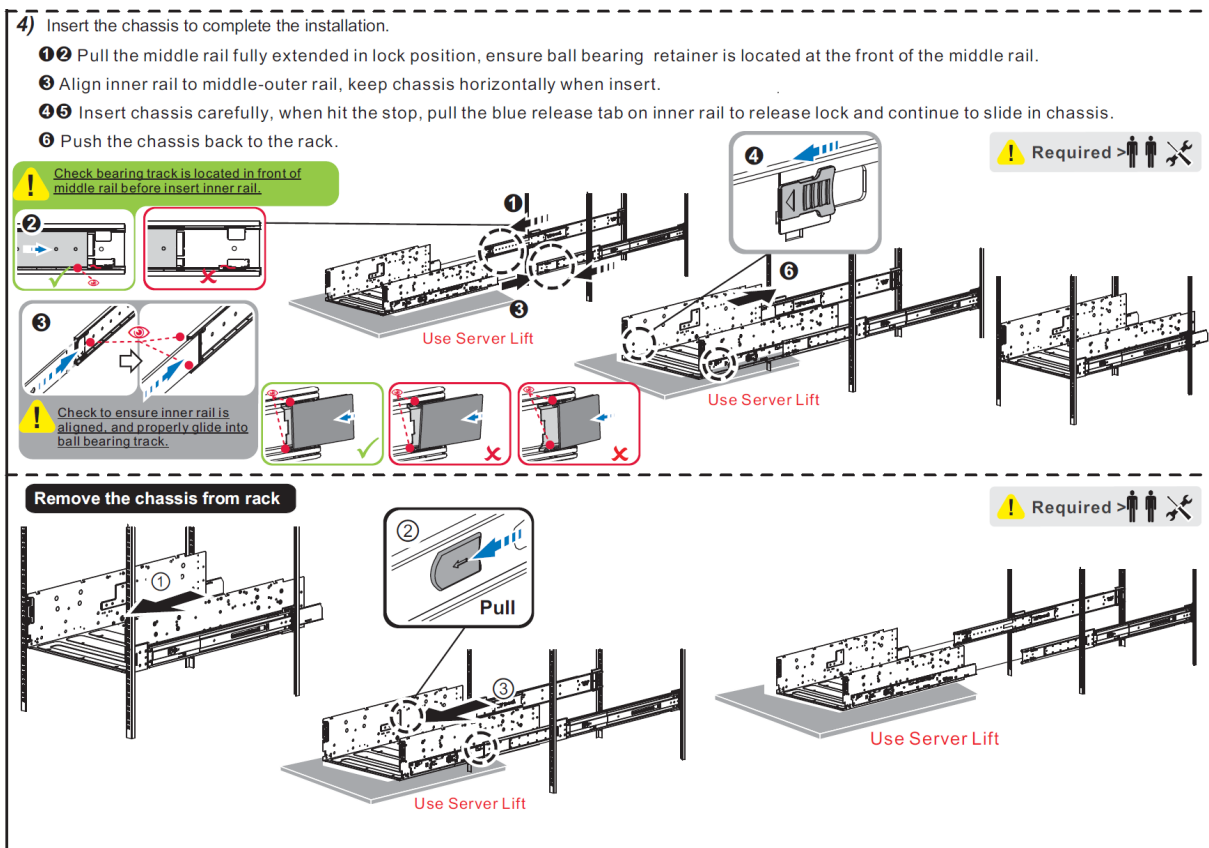
Insert four M5 cage nuts in the desired slots of the rack above the rear brackets. Make sure to secure the nuts in the correct location within the 4U enclosure, as shown in the following illustration:



Step 2

Attach the left and right eject bars to the rack by screwing four screws in each bar. Tighten the screws to secure the eject bars in the rack's posts, applying a torque of 10 lbf-in.,





3.10 Cable Installation

3.10.1 Power Cable and Cable Retainer

In some switch models, the product's package includes cable retainers. It is highly recommended to use them in order to secure the power cables in place.

When installing retainers for the PSUs of the switch systems, please adhere to the following instructions:

1. Verify the integrity of the retainer assembly, as demonstrated in the below table:- The snaps' push-pins must have visible edges with no broken or torn parts.
- The shoulders' pins should be in-tact and must not be bent inwards.

Proper Condition	Improper Condition
	

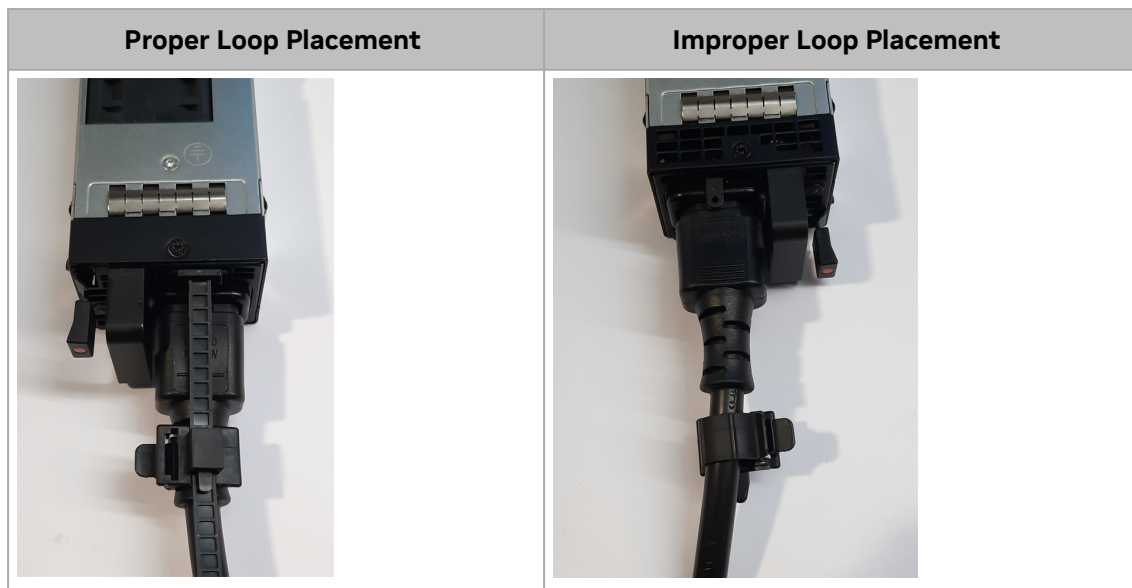
2. It is advised to place the PSU on a flat, stable surface. While you secure the PSU in place, use two thumbs to insert the retainer's two snaps into the designated holes located near the AC inlet. Make sure that the retainer's plastic loop is facing upwards, as demonstrated in the below table.



For demonstration purposes, the images in this document show C2P (Connector-to-Power) airflow PSUs with red latches, yet the instructions apply to P2C (Power-to-Connector) PSUs with blue latches as well.

Correct Insertion	Incorrect Insertion
	

3. Push the retainer until the shoulders' pins (in blue circles below) are open and aligned with the PSU front panel, as shown in the following table:
4. Make sure that the retainer is fully locked in place by gently attempting to pull it outwards.
5. Open the plastic loop and route the AC cord through it. Locate the loop over the AC cord, as shown in the following table, and fasten it tightly.



! Each cable retainer can be used once only. Once the retainer has been fully inserted and the shoulders' pins have been adjusted, the retainer cannot be used again, and should be discarded if pulled out.

3.10.2 Port Cables

× Only InfiniBand cables or modules qualified or approved by NVIDIA are supported.

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, corresponding to each data port, will light when the physical connection is established. When a logical connection is made, the relevant port LED will turn on.

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 full cabling guidelines, ask your NVIDIA representative for a copy of *NVIDIA Cable Management Guidelines and FAQs Application Note*.

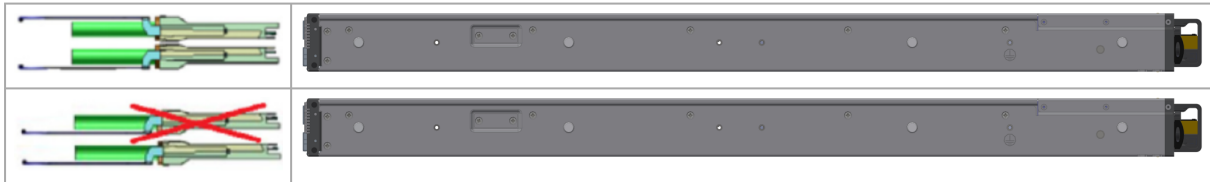
For more information about port LEDs, refer to [Port LEDs](#).

× Do not force the cable into the cage with more than 40 newtons/9.0 pounds/4kg force. Greater insertion force may cause damage to the cable or to the cage.

! Unused OSFP cages must be closed with the thermal caps supplied with the system.



Cable Orientation



3.10.2.1 Splitter (Breakout) Cables and Adapters

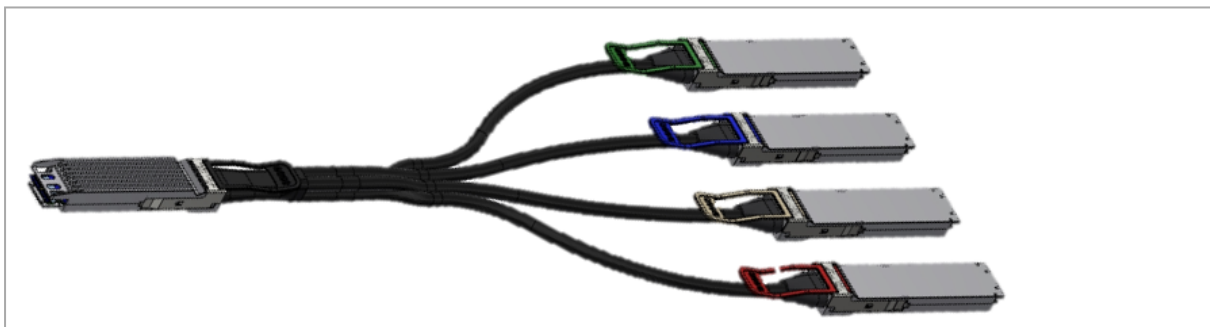
In the XDR systems, a single OSFP cage contains 2 XDR ports. This maximizes flexibility by enabling end users to use a combination of dual-lane and quad-lane interfaces according to the specific requirements of their network. For the systems splitting options, see Splitting Options below.



The following behavior should be expected when disconnecting a 1:2 splitter cable (from cages in both the upper and lower rows):

- When you disconnect a cable marked as “1”, the CLI <cage number>/1 will always go down, and the left LED of the cage will be turned off.
- When you disconnect the cable marked as “2”, the CLI <cage number>/2 will always go down, and the right LED of the cage will be turned off.

Breakout Cable Example



- Splitting the interface deletes all configuration on that interface.
- In order to be able to use this feature, the system profile command must be activated with split-ready configuration (cross-reference to system profile command).

- Changes will take effect after reset. In order to reset an unmanaged switch, please reboot the switch, or run **flint -d <device> swreset** .

For more information on how to change the system's profile to allow Split-Ready configuration, how to change the module type to a split mode, and how to unsplit a split port when using the switch systems, please refer to the "InfiniBand Switching" chapter in the latest [NVIDIA NVOS User Manual](#).

3.10.2.2 Splitting Options

For the Q3200 switch system:

When a port is split, its notation changes from swA1p1 to swA1p1s1/swA1p1s2, where swA1p1 identifies a physical port (switch A, slot 1, port 1), and swA1p1s1 extends the naming convention to denote a sub-port resulting from splitting a multi-lane port. For complete notation details, refer to the Port Notation Schematics below.

For the Q3400/Q3401 switch system:

Port splitting is not supported. Each OSFP cage physically holds two separate ports that are labeled sw1p1 and sw1p2 (for cage 1) up to sw72p1 and sw72p2 (for cage 72).

For the Q3450 switch system:

Port splitting is not supported. All XDR ports are configured with a fixed 4-lane width. This co-packaged silicon photonics XDR switch does not include OSFP cages. Users must connect single-mode fiber directly to the MPO connectors on the front panel. The Q3450 front panel features 72 MPO connectors, where each connector supports two independent 4-lane XDR ports, for a total of 144 XDR ports. The ports are logically labeled as sw1p1 and sw1p2 (indicating the first MPO connector) through sw1p143 and sw1p144 (indicating the 72nd MPO connector).

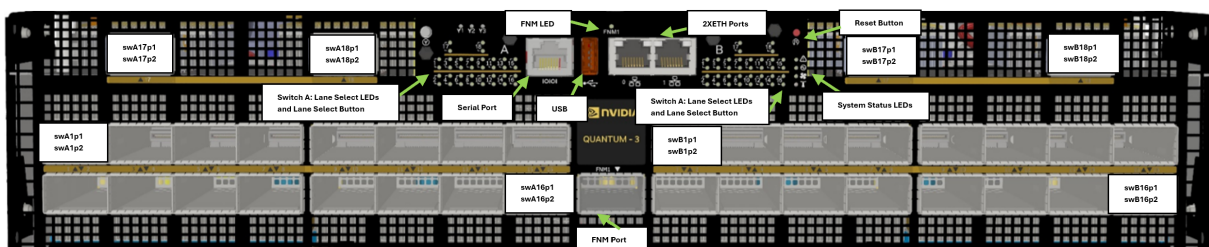
3.10.2.3 Port Notation

Q3200-RA Port Notation

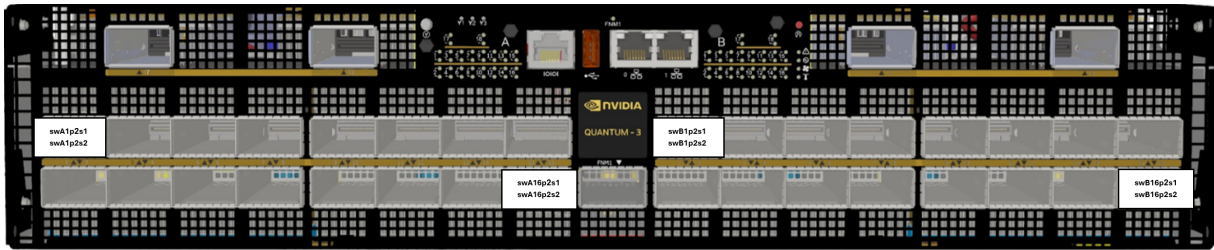
The following diagram shows ASIC A and ASIC B, as well as the cage numbers. Each cage splits into two. For example : ASIC A/Cage 1/ has both Port1 and Port2:



Ports A17–A18 and B17–B18 in the Q3200 system do not support NVIDIA NDR 800 Gb/s active copper or splitter cables (MCA4J80, MCA7J60, MCA7J70 families).

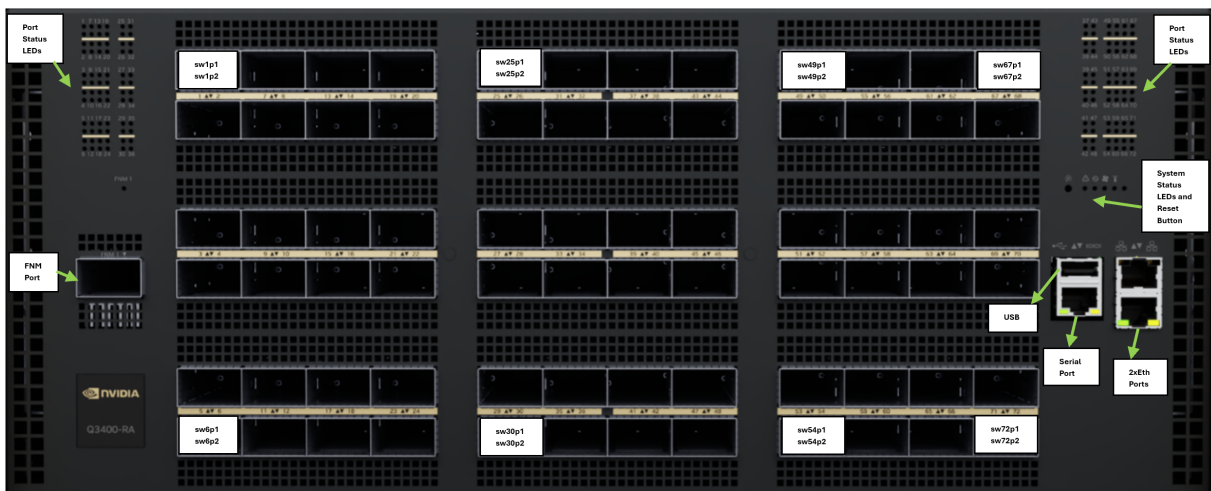


The following diagram shows the ASIC/Cage/Port/Split notation schematic:



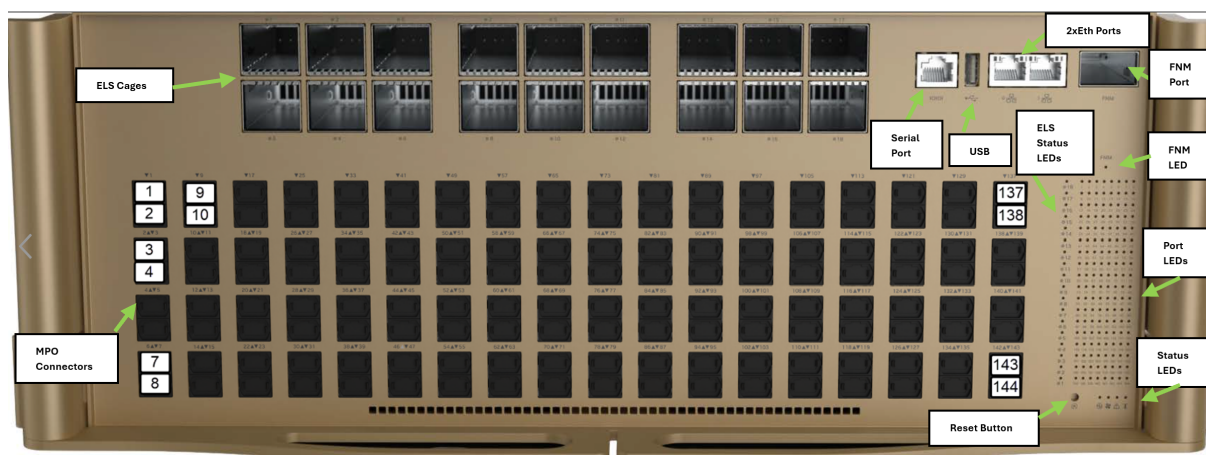
Q3400-RA/Q3401-RD Port Notation

The Cage/Port notation schematic for the Q3400-RA/Q3401-RD systems is shown in the following diagram: :



Q3450 Port Notation

The Cage/Port notation schematic for the Q3450 systems is shown in the following diagram:



3.10.2.4 Q3450 Co-Packaged Optics Topology

The following table details the core hardware components for the Q3450 CPO topology:

Component	Part Number	Model/Description
Q3450-LD Switch	920-9B36M-00MX-8ES	CPO XDR switch system
1.6T dual port XDR Transceiver	980-9IAH3-00XM00	Transceiver to be connected to another pluggable XDR switch
800G Single port XDR Transceiver	980-9IAT3-00XM00	Transceiver to be connected to a pluggable XDR HCA (compute side)
Single-mode MPO12-MPO12	980-9I58G-00N030	Fiber optical cable to be connected between XDR transceivers or CPO switches

3.11 Initial Power On

3.11.1 Q3200 and Q3400 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 15A or higher.

- ✗ The system platform will automatically power on when AC power is applied. There is no power system. Check all boards, power supplies, and fan tray modules for proper insertion before plugging in a power cable.

1. Plug in the power cables. Note that:

- The Q3200 systems require a minimum of 2 power cables for standard operation, and 4 power cables for High Availability setup to ensure redundancy.

- The Q3400/Q3401 systems require a minimum of 4 power cables for standard operation, and 8 power cables for High Availability setup to ensure redundancy.
2. Wait for the system upload process.

3.  It may take up to five minutes to turn on the system. If the System Status LED shows amber after five minutes, unplug the system and call your NVIDIA representative for assistance.

4. Check the frontal System Status LEDs and confirm that all of the LEDs show status lights consistent with normal operation (initially flashing, and then moving to a steady color) as shown below. For more information, refer to [LED Notifications](#).

System Status LEDs 5 Minutes After Power On



-  After inserting a power cable and confirming the green System Status LED light is on, make sure that the Fan Status LED shows green. If the Fan Status LED is not green, unplug the power connection and check that all fan modules are inserted properly and that the mating connector of the fan unit is free of any dirt and/or obstacles. If no obstacles were found and the problem persists, call your NVIDIA representative for assistance.

Two Power Inlets - Electric Caution Notifications:

- 
- Risk of electric shock and energy hazard. The power supply units are independent. Disconnect all power supplies to ensure a powered down state inside of the switch platform.
 - ACHTUNG Gefahr des elektrischen Schocks. Entfernen des Netzsteckers eines Netzteils spannungsfrei. Um alle Einheiten spannungsfrei zu machen sind die Netzstecker aller Netzteile zu entfernen.
 - ATTENTION Risque de choc et de danger électrique. Le débranchement d'une seule alimentation stabilisée ne débranch uniquement qu'un module "Alimentation Stabilisée". Pour isoler complètement le module en cause, il faut débrancher toutes les alimentations stabilisées.
 - 電擊與能源危害的危險。所有 PSU 均各自獨立。將所有電源供應器斷電，確保交換器平台內部在電源關閉狀態。

3.11.2 Q3401 and Q3450 Power On

To power on the Q3401 and Q3450 switch systems, fully insert the DC power plug into the busbar rail located at the rear side of the system. After insertion, secure the system to the rack using the provided rail kit.

3.12 System Bring-Up of Managed Systems

This quick start guide provides an end-to-end setup process for installing and running NVOS.



Before running NVUE commands, please refer to the NVIDIA User Experience (NVUE) section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#).



NVOS supports configurations through NVUE only. Running Linux commands or directly modifying underlying Linux files might result in undefined behavior.

3.12.1 Prerequisites

This guide requires an intermediate-level Linux knowledge. An understanding of text editing, Unix file permissions, and process monitoring is necessary. A variety of text editors are pre-installed, including `vi` and `nano`.

Access to a Linux or UNIX shell is needed. For Windows users, employing a Linux environment like [Cygwin](#) as your command line tool is recommended for interacting with NVOS.



If moving from MLNX-OS to NVOS operating system, please refer to the following appendix: Moving from MLNX-OS to NVOS [NVIDIA NVOS User Manual for InfiniBand Switches](#).

3.12.2 Get Started

NVOS provides two methods for initial provisioning:

- Zero-Touch Provisioning (ZTP) (for more information, see the Zero-Touch Provisioning section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#))
- [Manual Provisioning](#)

3.12.3 Manual Provisioning

When starting NVOS for the first time, the management port send a DHCP request. To determine the IP address of the switch, you can cross reference the MAC address of the switch with your DHCP server. The MAC address is typically located on the side of the switch or on the box in which the unit ships.

3.12.3.1 Login Credentials

The default installation includes two accounts:

- The user account (admin) has **sudo** privileges. The admin account uses the default password **admin**.
- The user account (monitor) has **read only** privileges. The monitor account uses the default password **monitor**.

Upon first login, it will be required to change the default passwords for the admin and monitor accounts. The new password must comply with the default password hardening rules (see Password Hardening section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#)).

The new configured password is treated like any other configuration. If the configuration is not saved, the user will need to reconfigure it upon the system's next boot.

```
You are required to change your password immediately (administrator enforced).
```

```
WARNING: Your password has expired.  
You must change your password now!  
New password:  
Retype new password:
```

In this quick start guide, use the *admin* account to configure NVOS.

All accounts except root can use remote SSH login. Note that the default SSH auto-logout is 15 minutes.

NVOS supports multiple services to authenticate users and authorize switch tasks, both local and remote authentication/authorization methods.

For more information, please refer to Authentication Authorization and Accounting section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#).

3.12.3.2 Serial Console Management

It is recommended to perform management and configuration over the network, either in-band or out-of-band. A serial console is fully supported.

Typically, switches ship from the manufacturer with a mating DB9 serial cable. Switches with ONIE are always set to a 115200 baud rate.

Recommended Serial Connection Settings

Parameter	Setting
Baud Rate	115200
Data bits	8
Stop bits	1
Parity	None
Flow Control	None

3.12.3.3 Wired Ethernet Management

An NVOS switch always provides two dedicated Ethernet management port called eth0 and eth1. This interface is specifically for out-of-band management use. The management interface uses DHCP for addressing by default.

3.12.3.4 Set Static IP Address

To set a static IP address, run the following (ipv6 supported as well):

```
admin@nvos:~$ nv set interface eth0 ipv<4/6> address 192.0.2.42/24
admin@nvos:~$ nv set interface eth0 ipv<4/6> gateway 192.0.2.1
admin@nvos:~$ nv config apply
```



Configuring static IP address will trigger unsolicited announcement messages to the gateway in order to reveal the device's MAC address.

Configure the Hostname

The hostname identifies the switch; as such, make sure the hostname is configured in a unique and descriptive way. For more information, see Hostname section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#).

3.12.3.5 Configure the System Clock

NVOS relies on the system clock for displaying the time and timestamping messages. User can control the system time zone and clock settings.

3.12.3.5.1 Manual Settings

3.12.3.5.1.1 Time Zone

Default time zone is set to Coordinated Universal Time (UTC). User may change the time zone configuration by executing the following:

```
admin@nvos:~$ nv set system timezone Etc/UTC
admin@nvos:~$ nv config apply
```

3.12.3.5.1.2 Clock

The system date and time can be manually changed. NTP servers configured on the switch will supersede any manually entered date-time settings.

```
admin@nvos:~$ nv action change system date-time 2024-12-24 10:25:13
```

3.12.3.5.2 NTP

NVOS supports Network Time Protocol (NTP) for synchronizing the time of the system. For more information see Network Time Protocol section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#)

3.12.3.5.2.1 NTP Servers from DHCP

By default, NTP will obtain the NTP servers from DHCP. It is possible to disable it by executing the following:

```
admin@nvos:~$ nv set system ntp dhcp disabled
admin@nvos:~$ nv config apply
```

3.12.3.5.2.2 Configure NTP Servers

A new NTP server can be added by executing the following:

```
admin@nvos:~$ nv set system ntp server 10.11.100.5
admin@nvos:~$ nv config apply
```

NTP can be configured to accept packets coming from an authenticated source only.

NTP authentication is disabled by default.

An authentication key may be created and used to authenticate incoming NTP packets. To ensure the key is utilized, the following conditions must be met:

- Enable NTP authentication

```
admin@nvos:~$ nv set system ntp authentication enabled
admin@nvos:~$ nv config apply
```

- Add a new NTP key, and associate it with the server:

```
admin@nvos:~$ nv set system ntp key 15 value SECRET
admin@nvos:~$ nv set system ntp key 15 trusted yes
admin@nvos:~$ nv set system ntp server 10.11.100.5 key 15
admin@nvos:~$ nv config apply
```

- NTP server must use the same key.

NVOS support various attributes for NTP servers and keys, for more information please see NTP Commands section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#).

3.12.3.6 Configure Syslog Servers

User can configure the system to send syslog logs to a centralized logging server (one or more):

```
admin@nvos:~$ nv set system syslog server 10.20.30.40
admin@nvos:~$ nv config apply
```

For more syslog configurations, please see Remote Logging section in the [NVIDIA NVOS User Manual for InfiniBand Switches](#).

3.12.4 Test Cable Connectivity

By default, NVOS enables all data plane ports (every InfiniBand port).

To view link status, run the `nv show interface` command or `nv show platform transceiver`.



When running NVUE commands to configure the switch, run the `nv config save` command before you reboot. The command saves the applied configuration to the startup configuration so that the changes persist after the reboot.

```
admin@nvos:~$ nv config save
```

3.12.5 Configure Connection-Mode In an InfiniBand Interface

The connection-mode attribute indicates to which peer this port is connected. This feature is dedicated to Q3200-RA system which can be connected to NDR systems (or older) and to XDR systems.

In case the port is connected to XDR systems, the connection-mode should be XDR. If it connected to NDR system, the connection-mode should be NDR. By default, all the ports are configured to connection-mode XDR.

When connecting port to NDR system, the port connection-mode needs to be changed with the set command (`nv set interface link connection-mode`) to 'ndr' in order to have link up with full bandwidth. Changing port connection-mode will move the port to down and up again when configuration ends.

3.13 FRU Replacements

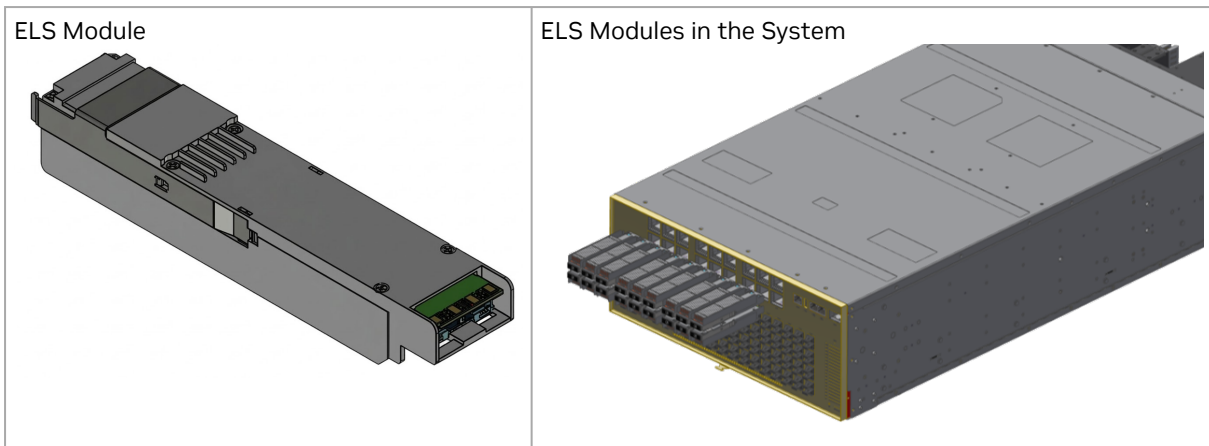
3.13.1 ELS (External Laser Source) Module

The Q3450 systems are equipped with 18 External Laser Source (ELS) modules, with 8 individually controlled laser emitters per ELS, for a total of 144 lasers across the entire platform. Each laser emitter within an ELS is optically mapped in a 1:1 relationship to one MPO connector (one dedicated laser per MPO). Each laser supports 4 × 200 Gbps optical lanes (800 Gbps aggregate per MPO). All 144 lasers are Class 4.



- Do not attempt to remove, replace, or service the ELS module yourself.
- The ELS module must only be replaced with a genuine NVIDIA-approved ELS module.

For any ELS module replacement, repair, or return (RMA), contact your NVIDIA service representative.



3.13.2 Power Supply



This section does not apply to the Q3401-RD and Q3450 systems, which are powered by a DC busbar.

NVIDIA systems are equipped with replaceable power supply units which work in a redundant configuration:

- Q3200-RA: 2 main units + 2 high availability units
- Q3400-RA: 4 main units + 4 high availability units

Either unit may be extracted without bringing down the system.



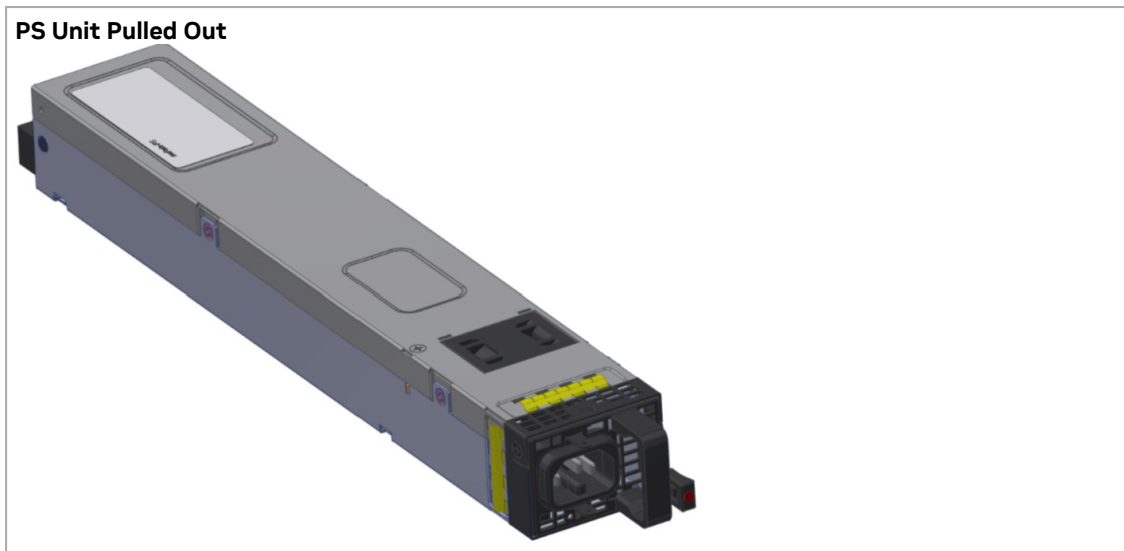
Make sure that the power supply unit that you are NOT replacing is showing all green, for both the power supply unit and the rear System Status LEDs.



Power supply units have directional air flows similar to the fan module. The fan module airflow must coincide with the airflow of all of the power supply units. If the power supply unit airflow direction is different from the fan module airflow direction, the system's internal temperature will be affected. For power supply unit air flow direction, refer to [Air Flow](#).

To extract a power supply unit:

1. Remove the power cord from the power supply unit.
2. Extract the unit by pulling the handle outwards. 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 mating connector of the new unit is free of any dirt and/or obstacles.



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

2. Insert the power supply unit by sliding it into the opening, until a slight resistance is felt.
3. Continue pressing the power supply unit until it seats completely. The latch will snap into place, confirming the proper installation.
4. Insert the power cord into the power supply connector.
5. Insert the other end of the power cord into an outlet of the correct voltage.



The green power supply unit indicator should light. If it does not, repeat the whole procedure to extract the power supply unit and re-insert it.

3.13.3 Fans

The system can fully operate if one fan FRU is dysfunctional. Failure of more than one fan is not supported.



Make sure that the fans have the air flow that matches the model number. An air flow opposite to the system design will cause the system to operate at a higher (less than optimal) temperature. For power supply unit air flow direction, refer to [Air Flow](#).

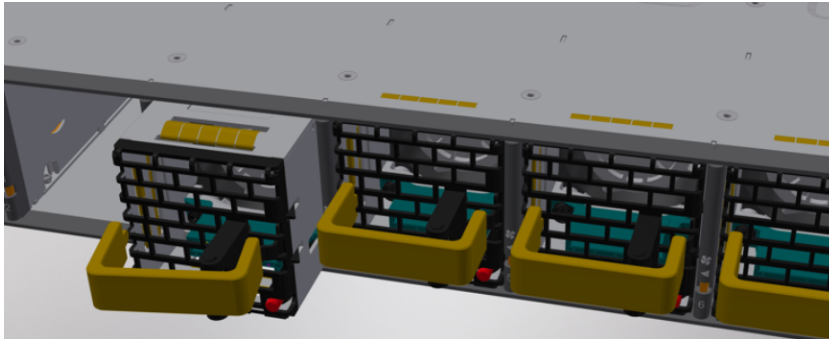
To extract a fan unit:



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

1. Extract the fan by pulling the gold handle outwards. As the fan unit unseats, its status LEDs will turn off.
2. Remove the fan unit by gently pulling out its handle while pushing the latch release with your index finger.

Fan Module Latches



To insert a fan unit:

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

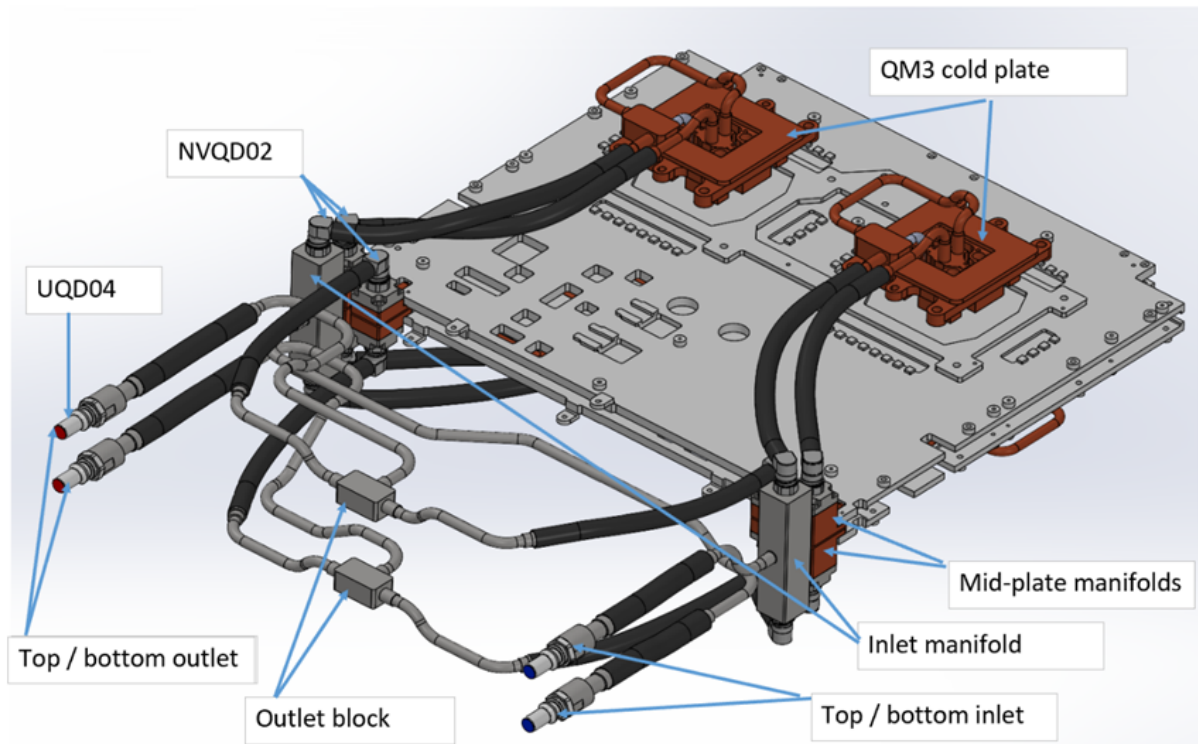
✗ The green Fan Status LED should light. If not, extract the fan unit and reinsert it. After two unsuccessful attempts to install the fan unit, power off the system before attempting any system debug.

3.14 Q3450-LD Liquid-Cooling System

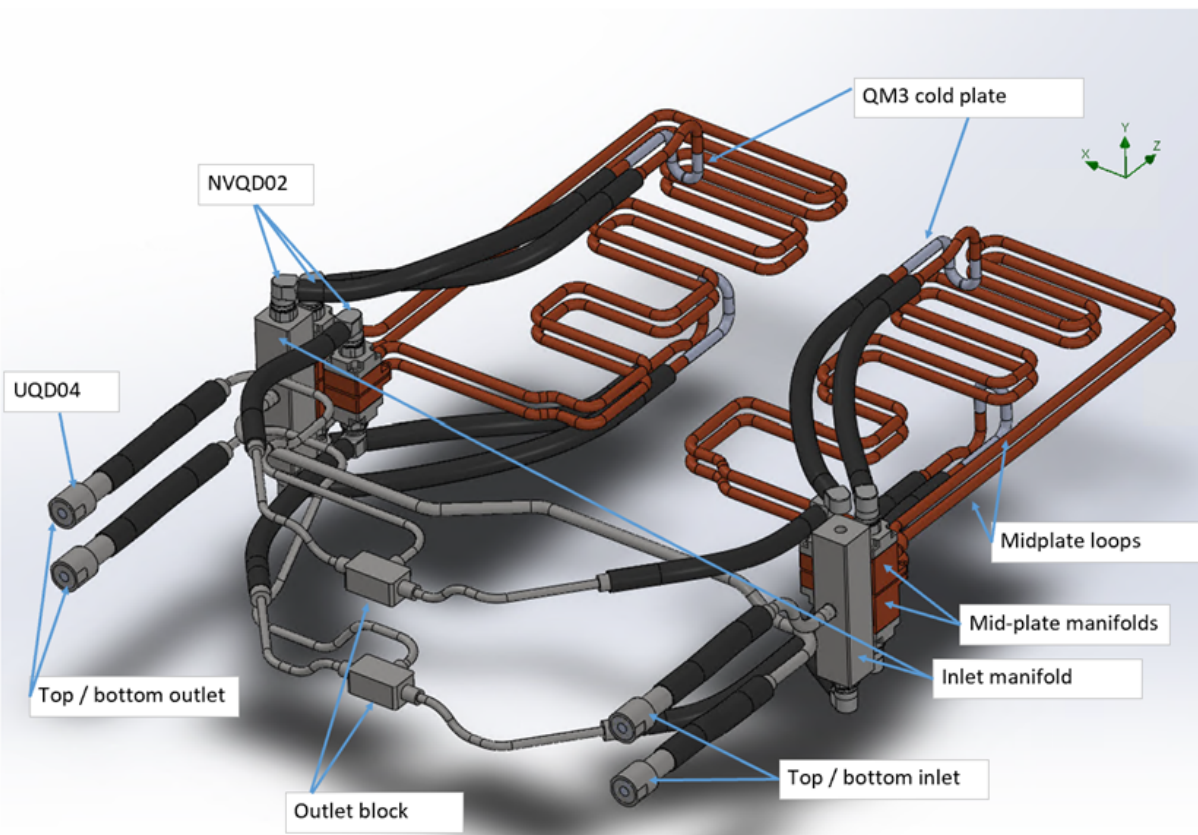
3.14.1 Overview

The Q3450-LD liquid-cooling system features two parallel cooling loops operating concurrently. Liquid enters via two separate inlet ports and exits through two outlet ports. Fluid enters through two inlet manifolds on the left and right sides of the system's rear part, each splitting into two paths: one to the upper QM3 cold plate (left/right) and one to the lower QM3 cold plate (left/right), forming two parallel loops. After cooling the QM3 cold plates, the fluid flows to the mid-plate manifolds, then cools the switch board components via upper and lower loops (left/right). Unlike the inlet lines, which are split by side (left/right), the outlet lines are grouped by level: upper sections from both sides converge at the top outlet block, and lower sections at the bottom outlet block. The combined flow exits through ports on the left side.

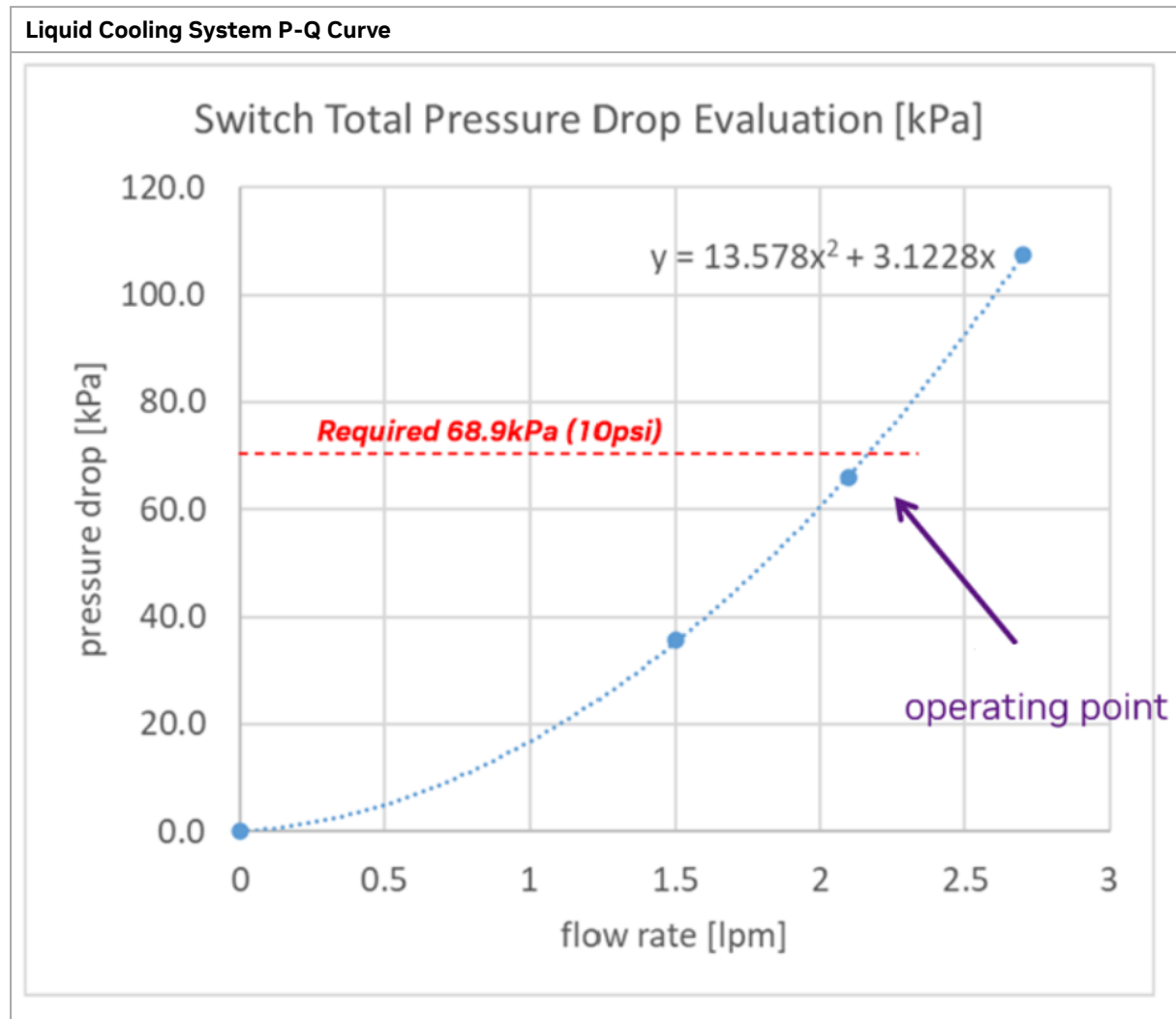
Liquid-Cooling System 3D View



Liquid-Cooling System 3D View with Visible Mid-Plate Loops



The system operates at [4.3 LPM, 10 PSI]. The below curve applies to PG25 at 45°C (see Specifications). As the system has two parallel inlet/outlet ports, the flow rate at the operating condition is half the total switch liquid flow rate.



3.14.2 Deployment

3.14.2.1 Inserting the Switch Module (Liquid System Related)

The switch modules are pre-filled with nitrogen in the cooling system, pressurized to at least 1 psi. If the pressure is below 1 psi, perform a "Pressure Hold": refill to 50 psi with N₂, wait 12 hours, and verify that the pressure remains above 48 psi to pass. Positive nitrogen pressure prevents humidity or dust ingress.

- Before insertion, release the gas using the open-ended hose from the maintenance kit.
- Connect the hose to either of the two FRU hoses to automatically expel the gas.
- Disconnect the hose once the gas is fully released, then proceed with module insertion.



Failure to fully flood the cooling system with liquid before powering-on may cause significant damage and void the warranty.

3.14.2.2 Liquid-Cooling System Related Actions

3.14.2.2.1 Pressure Check of Nitrogen-Filled Components

Purpose:

- Confirm that cold plate assemblies, switch trays, and manifolds retain supplier-filled N2 pressure, ensuring no leaks during transit.

Required Hardware:

- Digital pressure gauge (0–2.1 bar or 0–3.4 bar), data logging.

Process

- Scan the QR code, log pressure
- Release the internal pressure
- Cycle time: <1 minute

Pass/Fail Criteria

- Must retain ≥ 1 psi.
- If the pressure is lower than 1 psi, please perform a "Pressure Hold" test as follows:
 - Refill to 50 psi with N2
 - Wait 12 hours
 - Recheck the pressure. If the pressure is above 48 psi, the unit has passed the test.
- Failures are returned to the supplier.

3.14.2.2.2 PG25 Fill

Purpose:

- To fill assemblies (both individual components and full racks) with 25% propylene glycol, and 75% water solution, ensuring complete fluid coverage and air removal for optimal thermal performance.

Required Hardware:

- For vacuum fill: Vacuum pump, liquid trap
- For positive pressure fill: Fill pump
- 25-micron filter on the supply side (for both the component and the rack)

Process

- Vacuum Fill:
 - Pull vacuum on the assembly from the outlet quick disconnect (QD).
 - Fill the fluid from the inlet QD.
 - Stop filling when the fluid enters the liquid trap.
 - Vacuum specification: 5 kPa or less.
- Positive Pressure Fill:
 - Use a fill pump to introduce coolant.
 - Circulate the fluid back into the reservoir briefly to ensure no bubbles remain.

Pass/Fail Criteria

- Fluid reservoir weight can optionally be measured before and after filling as a quality check.

Caveats:

- If using a positive pressure pump with circulation, ensure a 25-micron filter is installed on the supply side.
- If the assembly is complex with multiple fluidic elevations or high points, vacuum filling is preferred.
- Expected Cycle Time: 2–3 minutes.

RMA

Temperature Sensitivity of Fully Filled Liquid Systems	TPU Exposure Risks	Recommended Shipment Processes	Storage Time Limitation
Fully filled liquid cooling systems are susceptible to temperature fluctuations during transportation or storage, potentially causing volume changes and deformation damage.	Prolonged storage of fully filled PG25 liquid systems can damage TPU internal LC connections. To prevent this, specific shipment processes must be followed.	Partial Drainage Shipment • Remove the switch from system manifold and drain its cooling loop (via gravity or pumping). • Vent the unit during drainage by connecting one UQD side to the drain and the other as a vent. • Ensure the minimum required amount of liquid is drained. For specific drainage values, contact your NVIDIA representative. • This process supports shipment temperatures from -40°C to 70°C. Alternate Wet Tray Shipment • Connect an external hose between the two UQDs of the switch to provide an expansion buffer. • This method is suitable for transportation temperatures between 5°C and 60°C.	Regardless of the chosen shipment method, limit storage time to a maximum of 45 days before arrival at NVIDIA RMA Labs.

RMA with Liquid-Drained System

For drained systems, ensure the shipping temperature remains between -40°C and $+70^{\circ}\text{C}$.



RMA with Liquid-Filled System

Connect a hose between the ports. Ensure the shipping temperature remains between 5°C and 60°C .



3.14.3 Specifications

Parameter	Value
Minimal liquid inlet temperature	17 °C
Maximal liquid inlet temperature	45 °C
Maximal liquid return temperature	55 °C
Target sustained system flow rate	4.3 l/min
Normal pressure	2.4 Bar
Max operating/shipment pressure (gauge) abnormal / single fault	5 Bar
Burst pressure (gauge)	15 Bar
Liquid pressure drop	10 PSI
Coolant	Recochem OAT PG25
Connection type	Tray side (male): UQD04 Rack manifold (female) side: BUQD04
Filtration Requirement	Support [25um: 50um]
Liquid volume	410 mL
Ambient Temperature	Operational: 5°C to 40°C for altitude: 0-900 m Above 900 m, derate 1 °C / 175 m (do not install unit above 3,050 m in any case). Non-Operational: 5°C to 60°C
Humidity	Operational: 10-85% non-condensing Non-Operational: 10-90% non-condensing
Altitude	Operational: 0-3,050 meters Non-operational: 0-12,000 m

4 Software Management

4.1 NVOS

NVOS is the networking operating system that manages the NVLink switches. NVOS provides various interfaces and management protocols that allow the user to control and monitor the switches. Documentation for NVOS will be available via the NVONLINE system.

For more information on software management, refer to [NVIDIA NVOS User Manual for InfiniBand Switches](#).

5 Interfaces

The systems support the following interfaces:

- Data interfaces - InfiniBand
- 10/100/1000Mb Ethernet management interface (RJ45)
- USB port (2.0 type A)
- RS232 Console port (RJ45)
- I²C interface*
- FNM - Fabric Network Management Port
- Reset button
- Status and Port LEDs

In order to review the full configuration options matrix, refer to [Management Interfaces, PSUs and Fans](#).

5.1 Data Interfaces

The full list of interfaces per system is provided in [Speed and Switching Capabilities](#).

5.1.1 Speed

InfiniBand speed is auto-adjusted by the InfiniBand protocol. NVIDIA systems support QDR/FDR/EDR/HDR/NDR/XDR InfiniBand.

- FDR is an InfiniBand data rate, where each lane of a 4X port runs a bit rate of 14.0625Gb/s with 64b/66b encoding, resulting in an effective bandwidth of 56.25Gb/s.
- EDR is an InfiniBand data rate, where each lane of a 4X port runs a bit rate of 25Gb/s with 64b/66b encoding, resulting in an effective bandwidth of 100Gb/s.
- HDR is an InfiniBand data rate, where each lane of a 4X port runs a bit rate of 50Gb/s with 64b/66b encoding, resulting in an effective bandwidth of 200Gb/s.
- NDR is an InfiniBand data rate, where each lane of a 4X port runs a bit rate of 100Gb/s with 64b/66b encoding, resulting in an effective bandwidth of 400Gb/s.
- XDR is an InfiniBand data rate, where each lane of a 4X port runs a bit rate of 200Gb/s with 64b/66b encoding, resulting in an effective bandwidth of 800Gb/s.

5.2 RS232 (Console)



The RS232 serial “Console” port is labeled **IOIOI**.

The Console port is an RS232 serial port on the front side of the chassis that is used for initial configuration and debugging. Upon first installation of the system, you need to connect a PC to this interface and configure network parameters for remote connections. Refer to [Configuring Network Attributes](#) to view the full procedure.



This interface is not found in externally managed systems.

5.3 Management



The RJ45 Ethernet “MGT” port is labeled .

The Management RJ45 Ethernet ports provide access for remote management. The management ports are configured with auto-negotiation capabilities by default (100MbE to 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. Refer to [Configuring Network Attributes](#) to view the full procedure.



This interface is not found in externally managed systems.

5.4 USB

The USB interface is USB 2.0 type A compliant and can be used by the operating system to connect to an external disk for software upgrade or file management.



- USB 1.0 is not supported.
- Do not use excessive force when inserting or extracting the USB disk to and from the connector.
- This interface is not found in externally managed systems.

5.5 I²C

The I²C connector is combined with the USB connector, and is located on the front side of the system. It can be used with the I²C DB9 to micro USB splitting harness.



- This interface is not found in managed systems.
- Apart from the initial configuration, I²C interface is made exclusively for debugging and troubleshooting. Only FAEs are authorized to connect through it.

5.6 FNM - Fabric Network Management Port

The FNM port is a separate OSFP InfiniBand in-band management port. It enables accessing the UFM platform that allows data center operators to efficiently monitor and operate the entire fabric. For more information on the Q3xxx FNM clusters, please refer to the [NVIDIA UFM Enterprise Appliance Hardware User Manual](#).



The FNM port on the Q3xxx switch systems operates as XDR-Lite only and does not support NDR connections.

5.7 Reset Button

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



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

- To reset the system, push the reset button for less than 15 seconds.
- When using an NVOS based system, keeping the reset button pressed for more than 15 seconds will reset the system and the “admin” password, this should allow you to enter without a password and set a new password for the user “admin”.

5.8 LEDs

See [LED Notifications](#).

5.9 LED Notifications

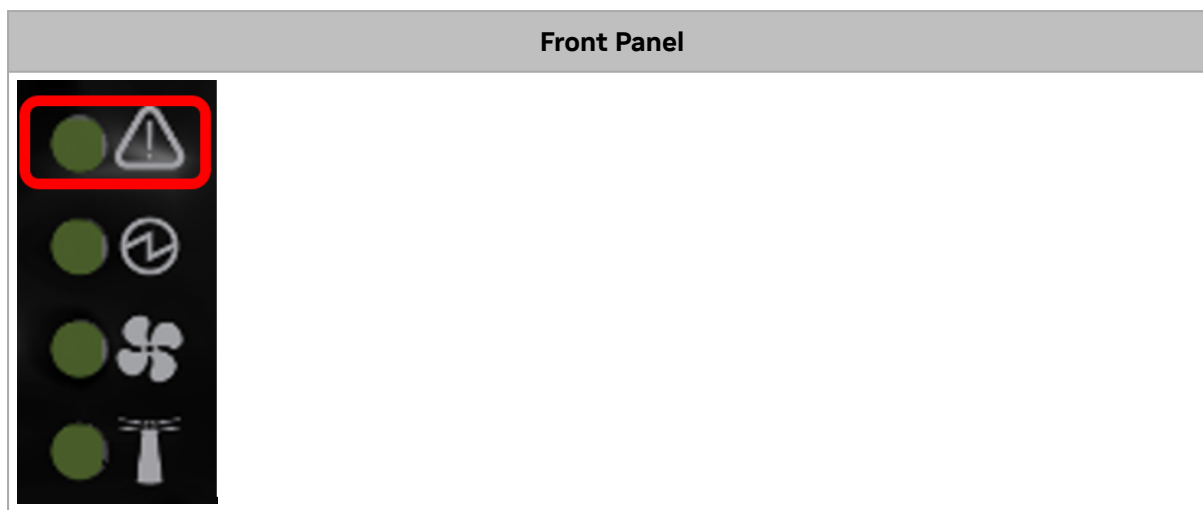
The system's LEDs are an important tool for hardware event notification and troubleshooting.

LEDs Symbols

Symbol	Name	Description	Normal Conditions
	System Status LED	Shows the health of the system.	Green/Flashing green when booting
	Power Supply Units/DC Busbar LEDs	Shows the health of the power supply units/DC busbar	Green
	Fan Status LED	Shows the health of the fans.	Green
	Unit Identifier LED	Lights up on command through the CLI.	Off or blue when identifying a port

5.9.1 System Status LED

System Status LED* - Front Side (Marked red):



*The shape and order of the LEDs and their icons may slightly vary between different system models.

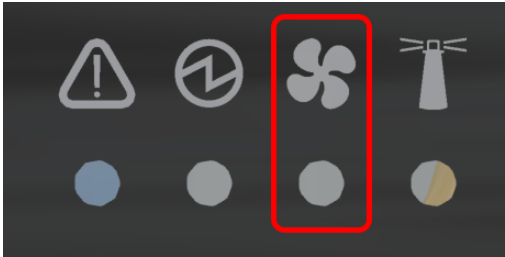
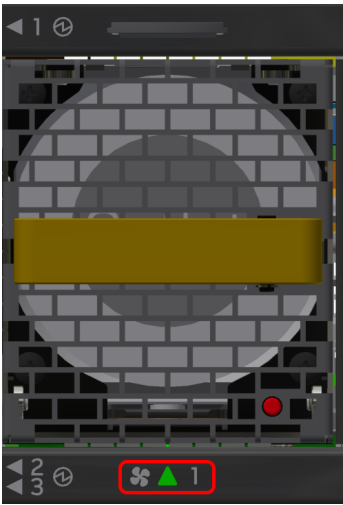
✖ It may take up to five minutes to turn on the system. If the System Status LED shows amber after five minutes, unplug the system and call your NVIDIA representative for assistance.

System Status LED Assignments

LED Behavior	Description	Action Required
Solid Green	The system is up and running normally.	N/A
Flashing Green	The system is booting up. This assignment is valid on managed systems only.	Wait up to five minutes for the end of the booting process.
Solid Amber	Major error has occurred. For example, corrupted firmware, system is overheated, etc.	If the System Status LED shows amber five minutes after starting the system, unplug the system and call your NVIDIA representative for assistance.

5.9.2 Fan Status LED

Fan Status LED - Front and Rear Sides (Marked Red)

OPN	Front Panel	Rear Panel
Q3200	 *The shape and order of the LEDs and their icons may slightly vary between different system models.	
Q3400		
Q3450		

Fan Status Front LED Assignments

LED Behavior	Description	Action Required
Solid Green	All fans are up and running.	N/A
Solid Amber	Error, one or more fans are not operating properly.	The faulty FRUs should be replaced.

Fan Status Rear LED Assignments (One LED per Fan)

LED Behavior	Description	Action Required
Solid Green	A specific fan unit is operating.	N/A
Solid Amber	A specific fan unit is missing or not operating properly.	The fan unit should be replaced.

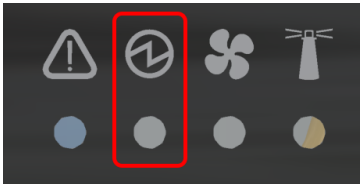


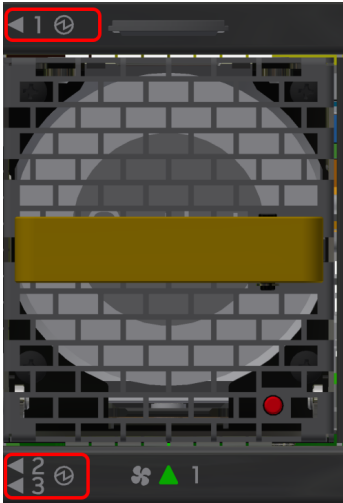
Risk of Electric Shock! With the fan module removed, power pins are accessible within the module cavity. Do not insert tools or body parts into the fan module cavity.

5.9.3 Power Supply/DC Busbar Status LEDs

There are extra power supply inlets in the system (for redundancy). The system cannot operate with only one power supply connected. Each power supply unit has a single 2 color LED that indicates the status of the unit.

Power Status LED (marked red)

OPN	Front Panel	Rear Panel
Q3200	 *The shape and order of the LEDs and their icons may slightly vary between different system models.	

OPN	Front Panel	Rear Panel
Q3400		
Q3401		N/A
Q3450		N/A

Power Supply Unit/DC Busbar Status Front LED Assignments

LED Behavior	Description	Action Required
Solid Green	All plugged (one or two) power supplies are 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 active. If the problem resumes, the FRUs might be faulty, and should then be replaced.

The power supply status LEDs on the rear side of the system are located on the PSUs themselves. Each PSU has a single 2 color LED.

Power Supply Unit Status Rear LED Assignments



This section does not apply to the SN3401-RD and Q3450-LD systems, which are powered by DC busbars.

LED Behavior	Description	Action Required
Solid Green	All PS units are connected and running normally.	N/A
Flashing Green 1Hz	AC present / Only 12VSB on (PSU off) or PSU in Smart-on state.	Call your NVIDIA representative for assistance.
Amber	AC cord unplugged or AC power lost while the second power supply still has AC input power.	Plug in the AC cord of the faulty PSU.
	PS failure (including voltage out of range and power cord disconnected).	Check voltage. If OK, call your NVIDIA representative for assistance.

LED Behavior	Description	Action Required
Flashing Amber	Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan.	Call your NVIDIA representative for assistance.
Off	No AC power to all power supplies.	Call your NVIDIA representative for assistance.

5.9.4 Unit Identification LED

The UID LED is a debug feature, that the user can use to find a particular system within a cluster by turning on the UID blue LED.

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
```

5.9.5 Port LEDs

The port LEDs behavior indicates the ports' state, as detailed in the following table:

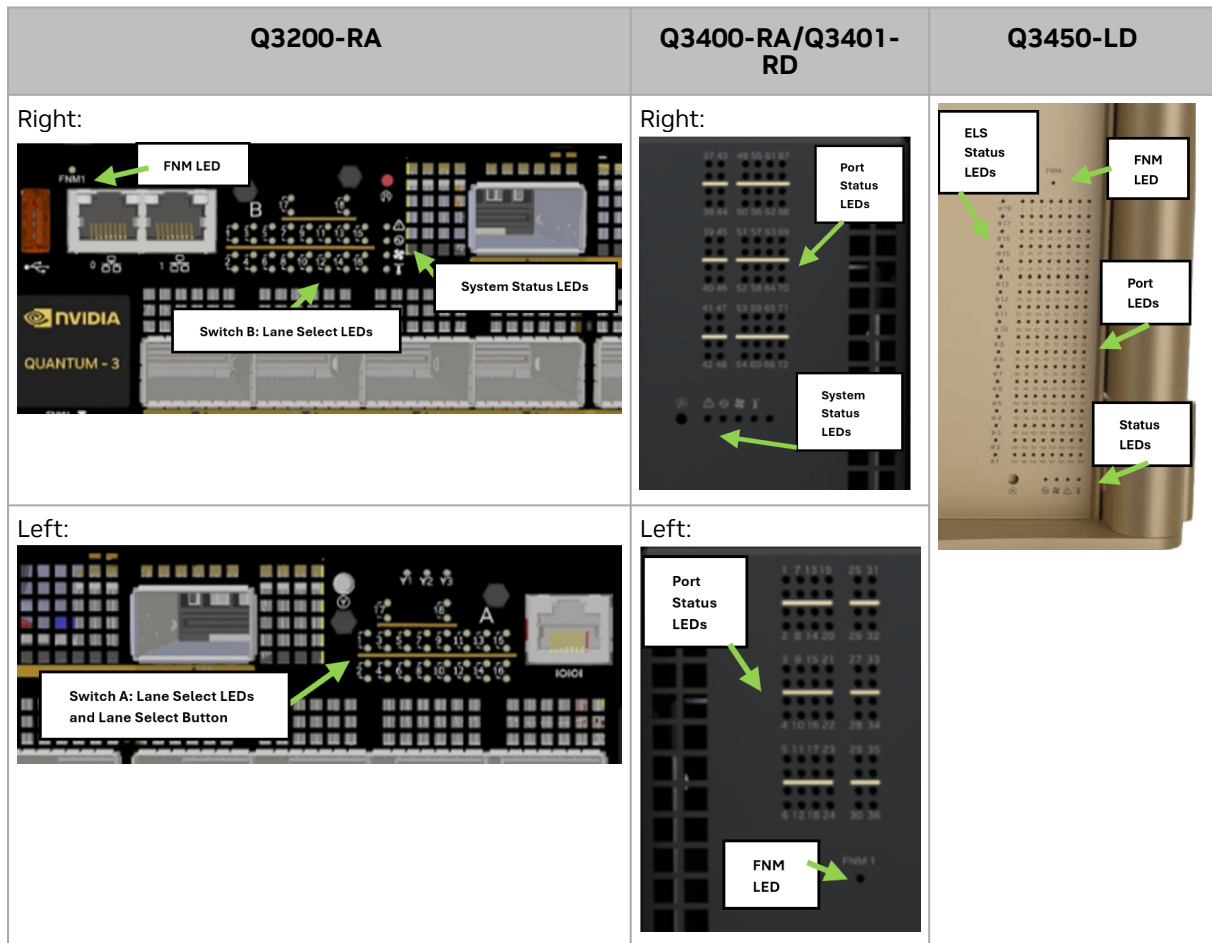
Port LEDs in InfiniBand System Mode

LED Behavior	Description	Action Required
Off	Link is down.	Check the cable.
Solid Green	Link is up with no traffic.	N/A
Flashing Green	Link is up with traffic.	N/A
Solid Amber	Link is up.	Wait for the Logical link to raise. Check that the SM is up.
Flashing Amber	A problem with the link.	Check that the SM is up.

In InfiniBand system mode, the LED indicator, corresponding to each data port, will light orange when the physical connection is established (that is, when the unit is powered on and a cable is plugged into the port with the other end of the connector plugged into a functioning port). When a logical connection is made the LED will change to green. When data is being transferred the light will blink green.



The systems support an additional OSFP port - FNM (Fabric Network Management). This port has a dedicated LED, as shown in the below figure.



Switch Systems Port LEDs Flashing Behavior

Bandwidth	Flashing Frequency in Hz	Flashing Frequency in Seconds
0	Constantly on	
0-25%	0.5Hz	1 sec On, 1 sec Off
25-50%	1Hz	0.5 sec On, 0.5 sec Off
50-75%	2Hz	0.25 sec On, 0.25 sec Off
75-100%	4Hz	0.125 sec On, 0.125 sec Off

5.10 Inventory Pull-out Tab

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



Pull-out Tab



The images provided here are for illustration purposes only. They may not reflect the latest version of the product nor all available models.

6 Troubleshooting

Problem Indicator	Symptoms	Cause and Solution
LEDs	System Status LED is blinking for more than 5 minutes	Cause: The operating system did not boot properly and only firmware is running. Solution: Connect to the system via the console port, and check the software status. You might need to contact an FAE if the software did not load properly.
	System Status LED is amber	Cause: • Critical system fault (CPU error, bad firmware) • Over temperature Solution: • Check environmental conditions (room temperature)
	Fan Status LED is amber	Cause: Possible fan issue Solution: • Check that the fan is fully inserted and nothing blocks the airflow • Replace the fan FRU if needed
	Front PSU Status LED is amber	Cause: Possible PSU issue Solution: • Check/replace the power cable • Replace the PSU if needed
	The activity LED does not light up (InfiniBand)	Make sure that there is an SM running in the fabric.
System boot failure	The last software upgrade failed on x86 based systems	Solution: • Connect the RS232 connector (CONSOLE) to a laptop. • Push the system's reset button. • Press the ArrowUp or ArrowDown key during the system boot. GRUB menu will appear. For example: <pre> Default image: 'SX_X86_64 SX_3.4.0008 2014-11-10 20:07:51 x86_64' Press enter to boot this image, or any other key for boot menu Booting default image in 3 seconds. Boot Menu ----- 0: SX_X86_64 SX_3.4.0008 2014-11-10 20:07:51 x86_64 1: SX_X86_64 SX_3.4.0007 2014-10-23 17:27:34 x86_64 ----- - Use the ArrowUp and ArrowDown keys to select which entry is highlighted. Press enter to boot the selected image or 'p' to enter a password to unlock the next set of features. Highlighted entry is 0: " </pre> • Select previous image to boot by pressing an arrow key and choosing the appropriate image.

7 Specifications

Q3200-RA Technical Specifications

Feature		Value
Mechanical	Size	2U, 3.64" (H) x 17.24" (W) x 26.77" (D), 88mm (H) x 438mm (W) x 680mm (D)
	Mounting	19" rack mount
	Weight	4 PSUs: 24 kg
	Connector cage:	OSFP
Environmental	Temperature	Operational: Reverse air flow: 0° to 35°C
		Non-Operational: -40° to 70°C
	Humidity	Operational: 10%-85% non-condensing Non-Operational: 10%-90% non-condensing
	Altitude	3050m
Regulatory	Noise level	TBD dBA at room temperature
	Safety	CB, cTUVus, CE, CU
	EMC	EMC: CE, FCC, VCCI, ICES, RCM
Power	RoHS	RoHS compliant
	Input Voltage	High-Line 200-240Vac, 10A, 50/60Hz per PSU
	Global Power Consumption	Typical power with passive cables (ATIS): 862W Max power with active cables: 3,486W
Main Devices	CPU	Intel CFL 4 cores i3-8100H 3GHz
	Switch	Quantum-3
Throughput	Switching	2 independent 28.8Tb/s switches
	Speed	40, 56, 100, 200, 400, 800Gb/s per port

Q3400-RA Technical Specifications

Feature		Value
Mechanical	Size	4U, 7" (H) x 17.24" (W) x 33.5" (D): 177.8 mm (H) x 438 mm (W) x 850 mm (D)
	Mounting	19" rack mount
	Weight	8 PSUs: 60 kg
	Speed	400, 800Gb/s per port
	Connector cage	OSFP
Environmental	Temperature	Operational: Reverse air flow: 0° to 35°C
		Non-Operational: -40° to 70°C

Feature		Value
	Humidity	Operational: 10%-85% non-condensing Non-Operational: 10%-90% non-condensing
	Altitude	3050m
	Noise level	78.4dBA at room temperature
Regulatory	Safety	CB, cTUVus, CE, CU
	EMC	EMC: CE, FCC, VCCI, ICES, RCM
	RoHS	RoHS compliant
Power	Input Voltage	200-240Vac, 10A, 50/60Hz per PSU
	Global Power Consumption	Typical power with passive cables (ATIS): 2,900W Max power with active cables: 7,000W
Main Devices	CPU	Intel CFL 4 cores i3-8100H 3GHz
	Switch	Quantum-3
Throughput	Switching	115.2 Tbps
	Speed	400, 800Gb/s per port

Q3401-RD Technical Specifications

Feature		Value
Mechanical	Size	4U, 6.89" (H) × 17.24" (W) × 33.54" (D) 175 mm (H) x 438 mm (W) x 852 mm (D)
	Mounting	19" MGX rack mount
	Weight	57.20 kg
	Speed	400, 800Gb/s per port
	Connector cage	OSFP
Environmental	Temperature	Operational: Reverse air flow: 0° to 40°C
		Non-Operational: -40° to 70°C
	Humidity	Operational: 10%-85% non-condensing Non-Operational: 10%-90% non-condensing
	Altitude	3050m
	Noise level	78.4dBA at room temperature
Regulatory	Safety	CB, cTUVus, CE, CU
	EMC	EMC: CE, FCC, VCCI, ICES, RCM
	RoHS	RoHS compliant
Power	Input Voltage	48-54V DC
	Global Power Consumption	Max power with active cables: 6327W
Main Devices	CPU	Intel CFL 4 cores i3-8100H 3GHz
	Switch	Quantum-3

Feature		Value
Throughput	Switching	115.2 Tbps
	Speed	400, 800Gb/s per port

Q3450-LD Technical Specifications

Feature		Value
Mechanical	Size	4U, 6.89" (H) x 17.24" (W) x 33.07" (D) 175 mm (H) x 438 mm (W) x 840 mm (D)
	Mounting	19" rack mount
	Weight	57.20 kg
	Speed	400, 800Gb/s per port
	Connector cage	144 MPO connectors
	Liquid cooling connection type	4xUDQ4
Environmental	Temperature	Operational: Reverse air flow: 5° to 40°C
		Non-Operational: -40° to 70°C
	Humidity	Operational: 10%-85% non-condensing Non-Operational: 10%-90% non-condensing
	Altitude	3050m
	Noise level	TBD
Regulatory	Safety	CB, cTUVus, CE, CU
	EMC	EMC: CE, FCC, VCCI, ICES, RCM
	RoHS	RoHS compliant
Power	Input Voltage	2x DGX Compliant Bus Bar connectors 40V – 60V input voltage
	Global Power Consumption	Max power with active cables: 4.3kW
Main Devices	CPU	Intel CFL 4 cores i3-8100H 3GHz
	Switch	Quantum-3
Throughput	Switching	115.2 Tbps
	Speed	400/800Gb/s per port

8 Appendixes

The document contains the following appendixes:

- [ELS Replacement Procedure for Q3450-LD Systems](#)
- [Accessory and Replacement Parts](#)
- [Thermal Threshold Definitions](#)
- [Interface Specifications](#)
- [Disassembly and Disposal](#)
- [Safety Warnings](#)

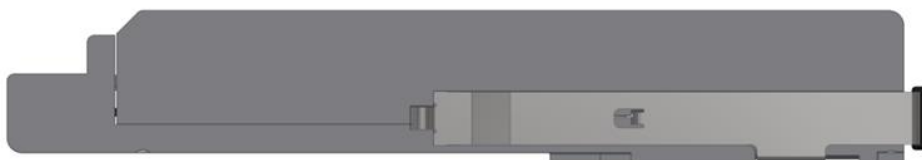
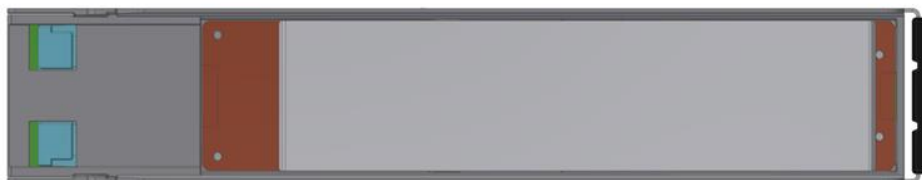
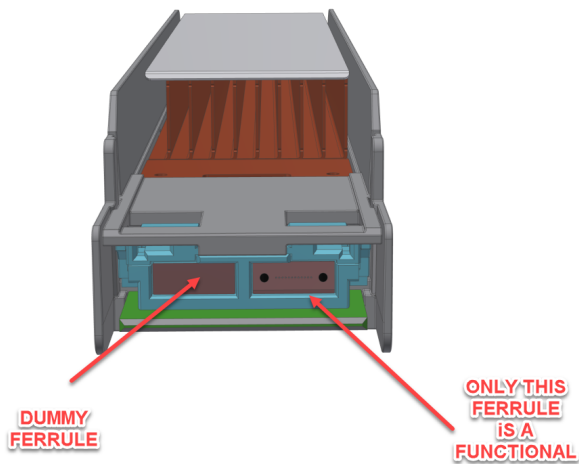
8.1 ELS Replacement Procedure for Q3450-LD Systems



8.1.1 Introduction

This document describes the guidelines for inspection, cleaning, and replacement of the External Laser Source (ELS) modules and ELSFP connectors during debug or replacement procedures for the Q3450-LD systems.

Quigon Module Illustration

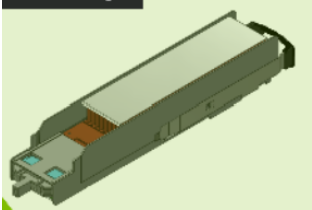
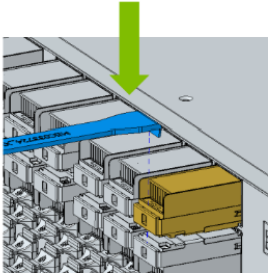
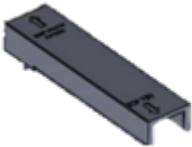
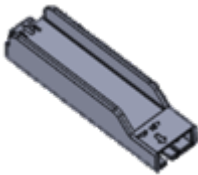


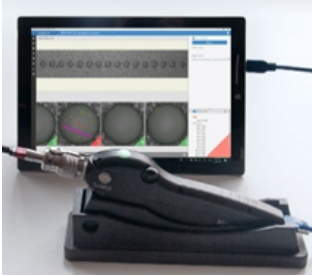
Note: As shown in the illustration above, in the Quigon tool, only one optical ferrule is functional.



- The recommended process for ELS replacement is: inspection --> cleaning if necessary --> inspecting again to ensure cleanliness --> repeating if needed (2-3 time). If the process fails, use another ELS unit.
- If the inspection tools are not available, clean both sides of the optical connectors.

8.1.2 Required Equipment

Item	OPN	Description	Quantity	Illustration
1	920-9B36M-00MX-XXX	Q3450-LD top assembly	1	N/A
2	692-9IAG1-0100IH	Quigon 2.0 TV IHS	1	
3	930-9SECK-00MX-00A Cleaning Kit, including:			
	SCK-SS-ELSFP-02-BODY	ELSFP Gen2 Cleaner Body	1	
	MTCJ6245	L Extraction Tool	1	
	SCK-SS-ELSFP-GUIDE-M-02-P02	ELSFP Guide for Quigon Module	1	
	SCK-SS-ELSFP-GUIDE-C-02-P02	ELSFP Guide for Quigon Cage	1	

Item	OPN	Description	Quantity	Illustration
4	SMX-Manta-HM	Sumix Manta HM	1	
5	MNT-W-Stand	Stand (cradle) for desktop use of Manta W+ and Manta HM probes	1	
6	MNT-W-ELSFP-APC-M-NV	Quigon camera adapter	1	
7	MNT-W-ELSFP-APC-H-AQ	ELSFP with cage camera adapter	1	



The required equipment may be ordered from the following vendors:

- Cleaning: SalesSupport@senko.com
- Inspection: salesteam@sumix.com

8.1.3 Equipment and Software Installation

8.1.3.1 Sumix Inspection Tool Setup

1. Install the MaxInspect™ analytical software.
2. Update the software to the latest version.
3. Place the Sumix device in the stand on a stable surface.
4. Connect the device to the computer.

Sumix Device Placed inside the Stand



8.1.3.2 MaxInspect Task Configuration

Export and import the inspection task for the ELSFP connectors.

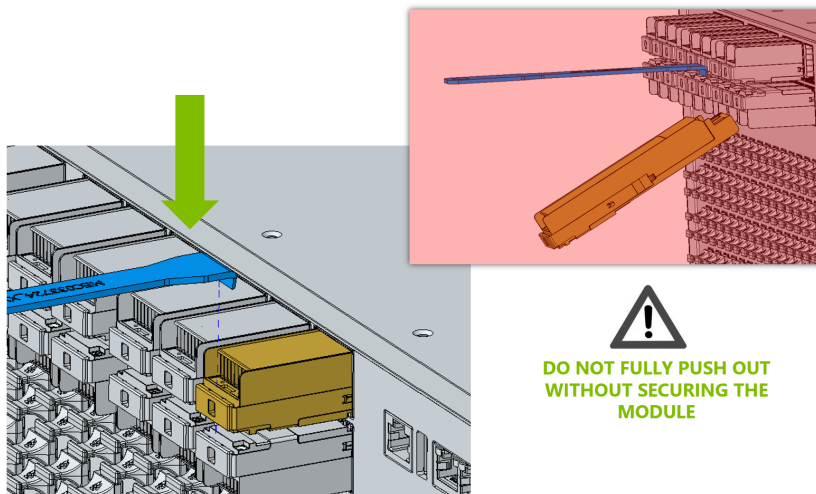
Q3450-LD Connectors	Task Name
Quigon/ELSFP Cage	NV00-Q3450-LD-Quigon/cage _MT12-SM-APC anomalies detection

8.1.4 ELS Module Replacement Instructions

8.1.4.1 Disassembly

Place the extraction jig (MTCJ6245) on the ELS module.

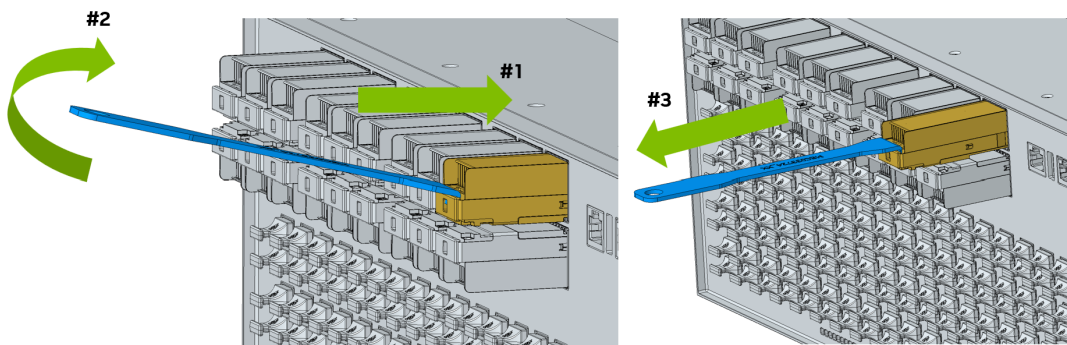
Placement of Extraction Jig on ELS Module



8.1.4.2 Module Removal

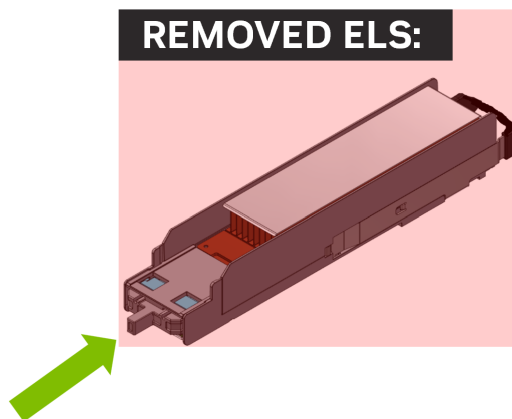
1. Gently push the ELS module inward.
2. Twist the jig slightly upward while pushing to release latch.
3. Pull the module out completely.

Module Removal



4. Assemble the dust cover onto the removed ELS module.

Removed ELS with Dust Cover

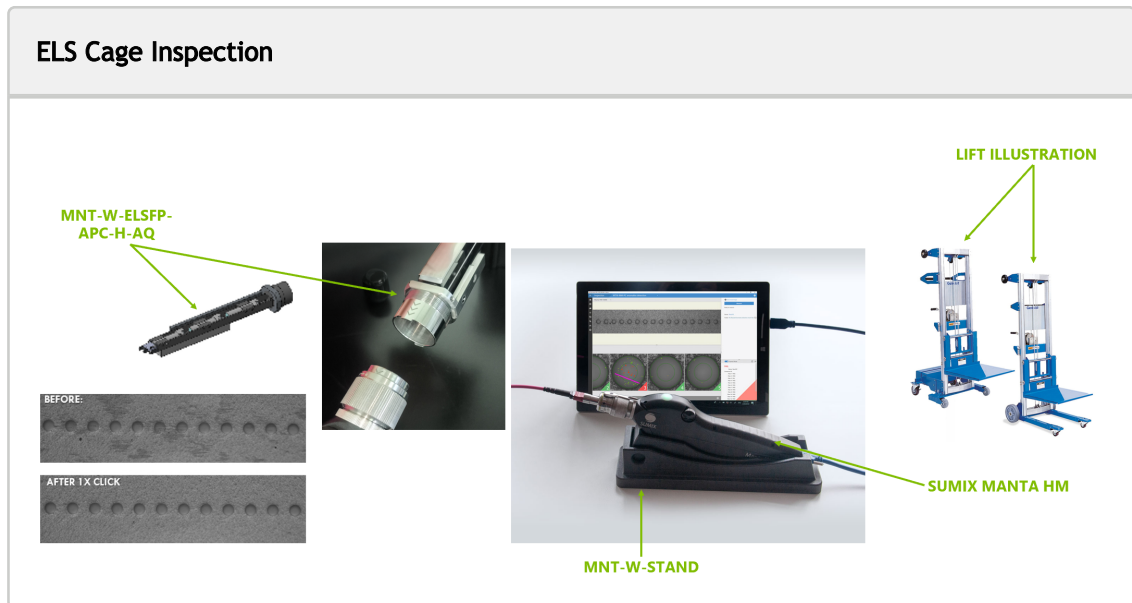


Do not leave a running system unplugged from the ELS module for longer than 30 minutes.

8.1.4.3 ELS Cage Inspection and Cleaning

8.1.4.3.1 Cage Inspection

1. Prepare the Sumix Manta HM with a cage adapter and mount it on stable platform or lift.



2. Plug and screw the dedicated tip into the Sumix device, ensuring the arrows are aligned correctly.

(a) Plugging the Quigon Tip (b) Plugging the ELSFP Cage Tip



3. Open the MaxInspect software.
4. Enter a name to save the data.
5. Auto-tune the image; the fibers should be clearly visible.
6. Perform the measurement while maintaining device stability.
7. Save the inspection report.

8.1.4.3.2 Cage Cleaning

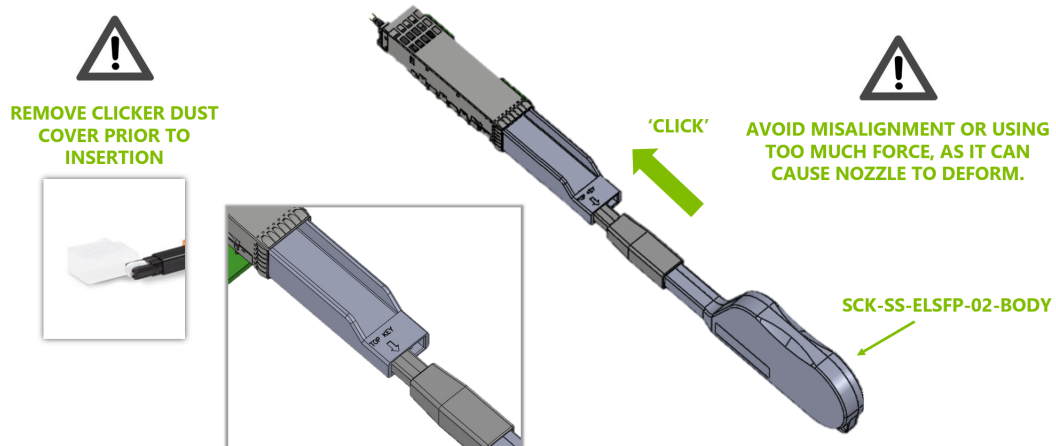
1. Prepare the cage adapter and one-clicker.

Preparing Cage Adapter and Clicker



2. insert the cage adapter into the ELSFP cage.
3. Insert the clicker tool, push until an audible click is heard, then remove it.

Reassembling the Clicker Dust Cover



4. Make sure the cleaning process was completed successfully, or repeat it if needed.

8.1.4.4 New ELS Module Assembly

1. Remove the dust cover from new ELS module.

New ELS Module



2. Plug and screw the dedicated tip into the Sumix device, ensuring the arrows are aligned correctly.

(a) Plugging the Quigon Tip (b) Plugging the ELSFP Cage Tip



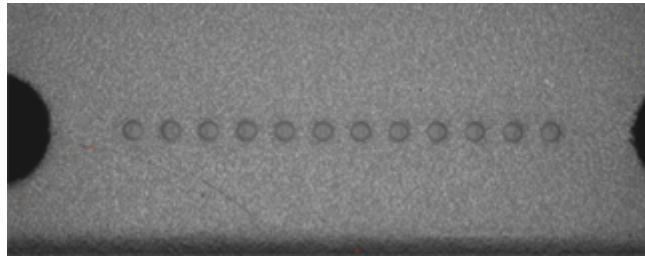
3. Insert the Quigon tool into the tip or the ELSFP cage tip into the cage.

Inserting the Quigon into the Tip



4. Open the MaxInspect software.
5. Enter a name to save the data.
6. Auto-tune the image; the fibers should be clearly visible.

Inspection Image for ELSFP Connectors (Quigon/Cage)



7. Perform the measurement while maintaining device stability.
8. Save the inspection report.

8.1.4.4.1 New ELS Module Cleaning

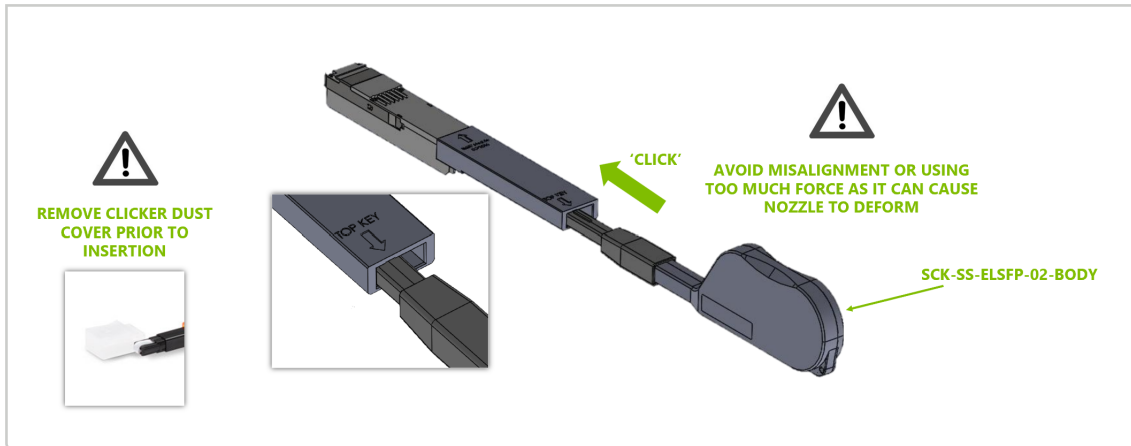
1. Plug the adapter into the one-clicker tool correctly.
2. Insert the Quigon device or ELSFP cage as applicable.

Quigon Inserted into Adapter and One-Clicker



3. Insert the clicker tool, push until an audible click is heard, then remove it.

Removing Clicker and Adapter



4. Make sure the cleaning process was completed successfully, or repeat it if needed.

8.1.4.4.2 New ELS Module Installation

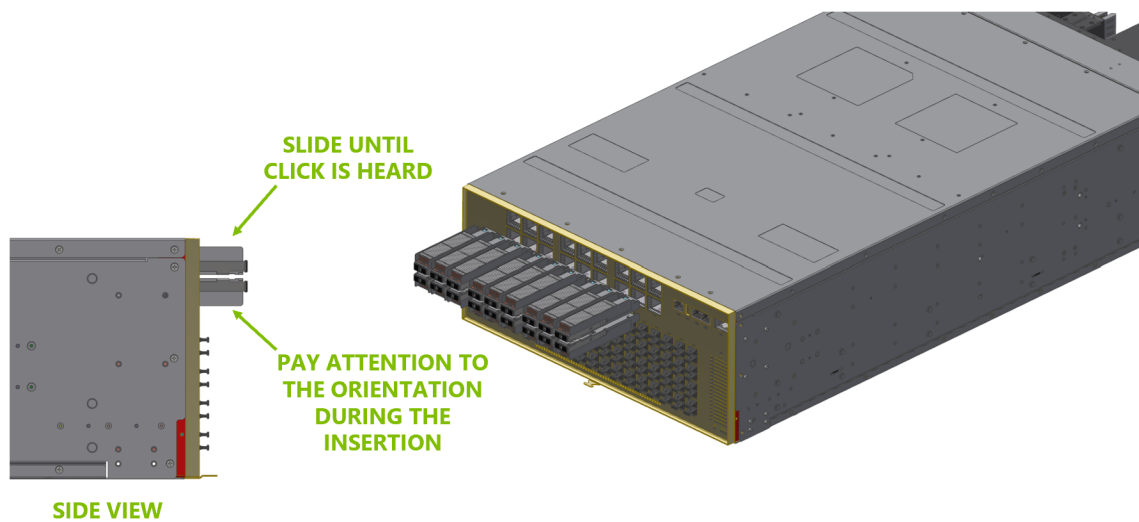


The system may remain powered-on during the replacement.

Do not leave the system without an ELS module installed for longer than 30 minutes.

Align and gently slide the new ELS module into its slot until it is fully seated.

New ELS Module Assembly



8.2 Accessory and Replacement Parts

Ordering Part Numbers for Replacement Parts

NPart Number	Description
930-9SKIT-00LO-00C	Rail kit for NVIDIA Quantum-3 2U switch (Q3200)
930-9SKIT-00LO-00B	Rail kit for NVIDIA Quantum-3 4U switch (Q3400)
930-9SRKT-00FO-00C	Rail kit for NVIDIA Quantum-3 switch (Q3401 and Q3450)
930-9SFAN-00RM-00B	NVIDIA fan Unit, C2P Airflow, for XDR Air Cooled Switch (Q3200 and Q3400)
930-9SFAN-00RM-00G	NVIDIA fan module, 80 x 80 mm, C2P Airflow (Q3401)
930-9SFAN-00RM-00H	NVIDIA fan unit, C2P Airflow, for 64x400G and 64x800G switch (Q3450)
930-9SPSU-00RA-00A	NVIDIA power-supply unit, 2000W AC, C2P Airflow, for Quantum-3 switches (Q3200 and Q3400)
930-9BPWA-00NA-000 (ACC001897 - US only)	Power cord black 250V 15A 1830MM C14 TO C15 UL
930-9BPWE-00NA-000 (ACC001899 - Europe and China)	Power cord black 250V 10A 1830MM C14 TO C15 EUR + CCC
MTDF-DST-A	QSFP thermal cap with openings for airflow
692-9IAG1-0P00IH	NVIDIA ELS (External Laser Source) for Quantum-X Photonics switch

Ordering Part Numbers for Q3450 CPO Topology Transceivers and Cables

Part Number	Description
980-9IAH3-00XM00	NVIDIA twin port transceiver, 1600Gbps, OSFP 2xDR4, 2xMPO APC, 1310nm SMF, up to 500m, IHS, CPO interoperable
980-9IAT3-00XM00	NVIDIA single port transceiver, 800Gbps, OSFP DR4, MPO, APC 1310nm SMF, up to 500m, RHS, CPO interoperable
980-9I58G-00N030	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 30m

8.3 Thermal Threshold Definitions

Three thermal threshold definitions are measured by the Quantum™ ASICs, and impact the overall switch system operation state as follows:

- **Warning** – 105°C: On managed systems only: When the ASIC device crosses the 105°C threshold, a Warning Threshold message will be issued by the management software, indicating to system administration that the ASIC has crossed the Warning threshold. Note that this temperature threshold does not require nor lead to any action by hardware (such as switch shutdown).
- **Critical** – 115°C: When the ASIC device crosses this temperature, the switch firmware will automatically shut down the device.
- **Emergency** – 125°C: In case the firmware fails to shut down the ASIC device upon crossing its Critical threshold, the device will auto-shutdown upon crossing the Emergency (130°C) threshold.

8.4 Interface Specifications

8.4.1 OSFP Pin Description

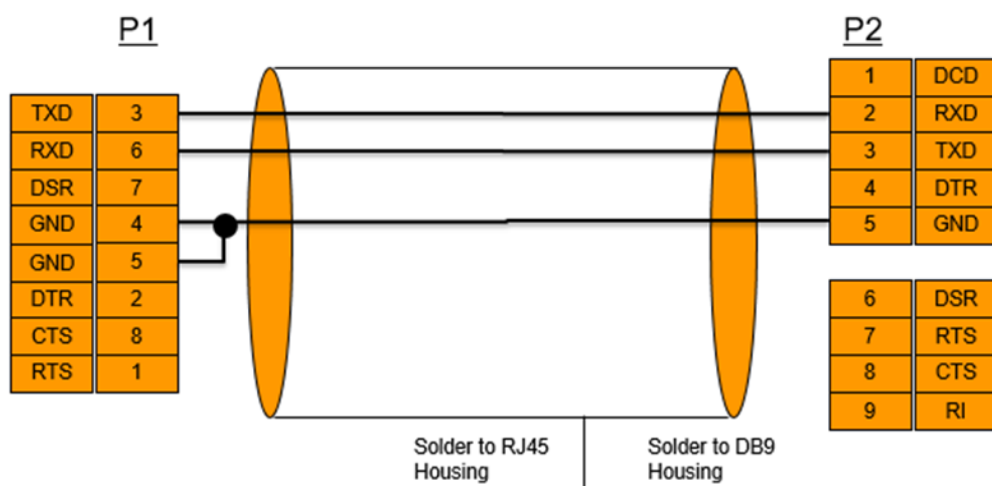
Net Name	PinNum	Signal Description
GND	1	Ground
TX2P	2	Transmitter Data Non-Inverted
TX2N	3	Transmitter Data Inverted
GND	4	Ground
TX4P	5	Transmitter Data Non-Inverted
TX4N	6	Transmitter Data Inverted
GND	7	Ground
TX6P	8	Transmitter Data Non-Inverted
TX6N	9	Transmitter Data Inverted
GND	10	Ground
TX8P	11	Transmitter Data Non-Inverted
TX8N	12	Transmitter Data Inverted
GND	13	Ground
SCL	14	2-wire Serial interface clock
VCC1	15	+3.3V Power
VCC1	16	+3.3V Power
LPWn_PRSn	17	PRSn Low-Power Mode / Module Present
GND	18	Ground
RX7N	19	Receiver Data Inverted
RX7P	20	Receiver Data Non-Inverted
GND	21	Ground
RX5N	22	Receiver Data Inverted
RX5P	23	Receiver Data Non-Inverted
GND	24	Ground
RX3N	25	Receiver Data Inverted
RX3P	26	Receiver Data Non-Inverted
GND	27	Ground
RX1N	28	Receiver Data Inverted
RX1P	29	Receiver Data Non-Inverted
GND	30	Ground
GND	31	Ground
RX2P	32	Receiver Data Non-Inverted

Net Name	PinNum	Signal Description
RX2N	33	Receiver Data Inverted
GND	34	Ground
RX4P	35	Receiver Data Non-Inverted
RX4N	36	Receiver Data Inverted
GND	37	Ground
RX6P	38	Receiver Data Non-Inverted
RX6N	39	Receiver Data Inverted
GND	40	Ground
RX8P	41	Receiver Data Non-Inverted
RX8N	42	Receiver Data Inverted
GND	43	Ground
INT_RSTn	44	INT/RSTn Module Interrupt / Module Reset
VCC2	45	+3.3V Power
VCC2	46	+3.3V Power
SDA	47	2-wire Serial interface data
GND	48	Ground
TX7N	49	Transmitter Data Inverted
TX7P	50	Transmitter Data Non-Inverted
GND	51	Ground
TX5N	52	Transmitter Data Inverted
TX5P	53	Transmitter Data Non-Inverted
GND	54	Ground
TX3N	55	Transmitter Data Inverted
TX3P	56	Transmitter Data Non-Inverted
GND	57	Ground
TX1N	58	Transmitter Data Inverted
TX1P	59	Transmitter Data Non-Inverted
GND	60	Ground

8.4.2 RJ45 to DB9 Harness Pinout

In order to connect a host PC to the Console RJ45 port of the system, a RS232 harness cable (DB9 to RJ45) is supplied.

RJ45 to DB9 Harness Pinout



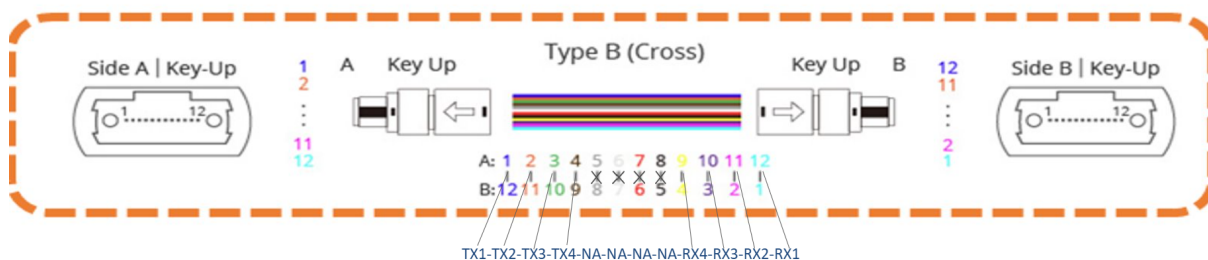
RJ-45 Console and I²C interfaces are integrated in the same connector. Due to that, connecting any cable other than the NVIDIA supplied console cable may cause an I²C hang.

Using uncertified cables may damage the I²C interface. Refer to the [Replacement Parts Ordering Numbers](#) appendix for harness details.

8.4.3 MPO Pin Description

MPO pin ordering:

TX1-TX2-TX3-TX4-NA-NA-NA-NA-RX4-RX3-RX2-RX1



8.5 Disassembly and Disposal

8.5.1 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.

8.5.2 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.



8.6 Safety Warnings

Safety warnings are provided in multiple languages for your convenience:



Note that not all warnings may apply to all models.

8.6.1 Switch Safety Warnings (English)

	Installation Instructions Read all installation instructions before connecting the equipment to the power source.
	Bodily Injury Due to Weight Use enough people to lift this product safely. <40 lbs <18 kgs 40 - 70 lbs 18 - 32 kgs 70 - 121 lbs 32 - 55 kgs >121 lbs >55 kgs
	Heavy Equipment This heavy equipment should be moved using a mechanical lift to avoid injuries.

	Risk of Electric Shock! • 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.  In QM97X0/HGX H100 switch systems: for 200-240Vac use only
	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.
	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.
	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.
	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.
	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.
	During Lightning—Electrical Hazard During periods of lightning activity, do not work on the equipment or connect or disconnect cables.
	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.
	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.
	Equipment Installation This equipment should be installed, replaced, and/or serviced only by trained and qualified personnel.
	Equipment Disposal Disposal of this equipment should be in accordance to all national laws and regulations.
	Local and National Electrical Codes This equipment should be installed in compliance with local and national electrical codes.
	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.
	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.

	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.
	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.
	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.)
	Overcurrent Protection A readily accessible Listed branch circuit overcurrent protective device rated 20 A must be incorporated in the building wiring. 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.
	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.
	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.
	Country of Norway Power Restrictions This unit is intended for connection to a TN power system and an IT power system of Norway only.

8.6.1.1 Taiwan RoHS Declaration - Switch Systems

8.6.1.1.1 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)	○	○	○	○	○	○

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)
塑膠件 (Plastic Parts)	○	○	○	○	○	○
PCB 板電子零件 (PCB Electronic Components)	—	○	○	○	○	○

Notes

- **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.

8.6.1.2 Taiwan RoHS Declaration - Gateway Systems

8.6.1.2.1 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):

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。

8.6.1.3 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。

8.6.2 Nordic Countries Notices

	In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"
	In Norway: "Apparatet må tilkoples jordet stikkontakt"
	In Sweden: "Apparaten skall anslutas till jordat uttag"

8.6.3 安裝安全性警告 (Simplified Chinese)

	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
	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。 
	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。
	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。
	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。
	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。
	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牢固定的情况下，请勿操作本产品
	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。

	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。
	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。
	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。
	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。
	设备弃置 弃置本设备应遵照所有国内法规。
	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。
	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。
	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。
	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。
	高漏電流 警告：高漏电流；必须执行地线连接，然后再连接电源供应器。
	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。
	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)
	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。
	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。
	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。

8.6.3.1 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་ནི་གནས་སྐབས་ཀྱི་དབྱིངས་དང་མི་མཐུན་པའི་སྐབས་ནས་བདེ་སྤྱད་བྱ་དགོས།
壮文	Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenz ancienz sawjyungh.
维文	ئەينى تېخنىكىلىق تاماملىنىش شەرتىدە بىخەتەر ئىشلىتىش كېرەك.

8.6.3.1.1 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་སྐབས་ཀྱི་དབྱིངས་དང་མི་མཐུན་པའི་སྐབས་ནས་བདེ་སྤྱད་བྱ་དགོས།
壮文	Dan hab yungh youq gij digih hajibaz 2000m doxrongz haenz ancienz sawjyungh.
维文	مېتىر يۇقىرى بولمىغان يېرىلرىدە بىخەتەر ئىشلىتىش كېرەك 2000.

8.6.3.1.2 Warning for Class A:

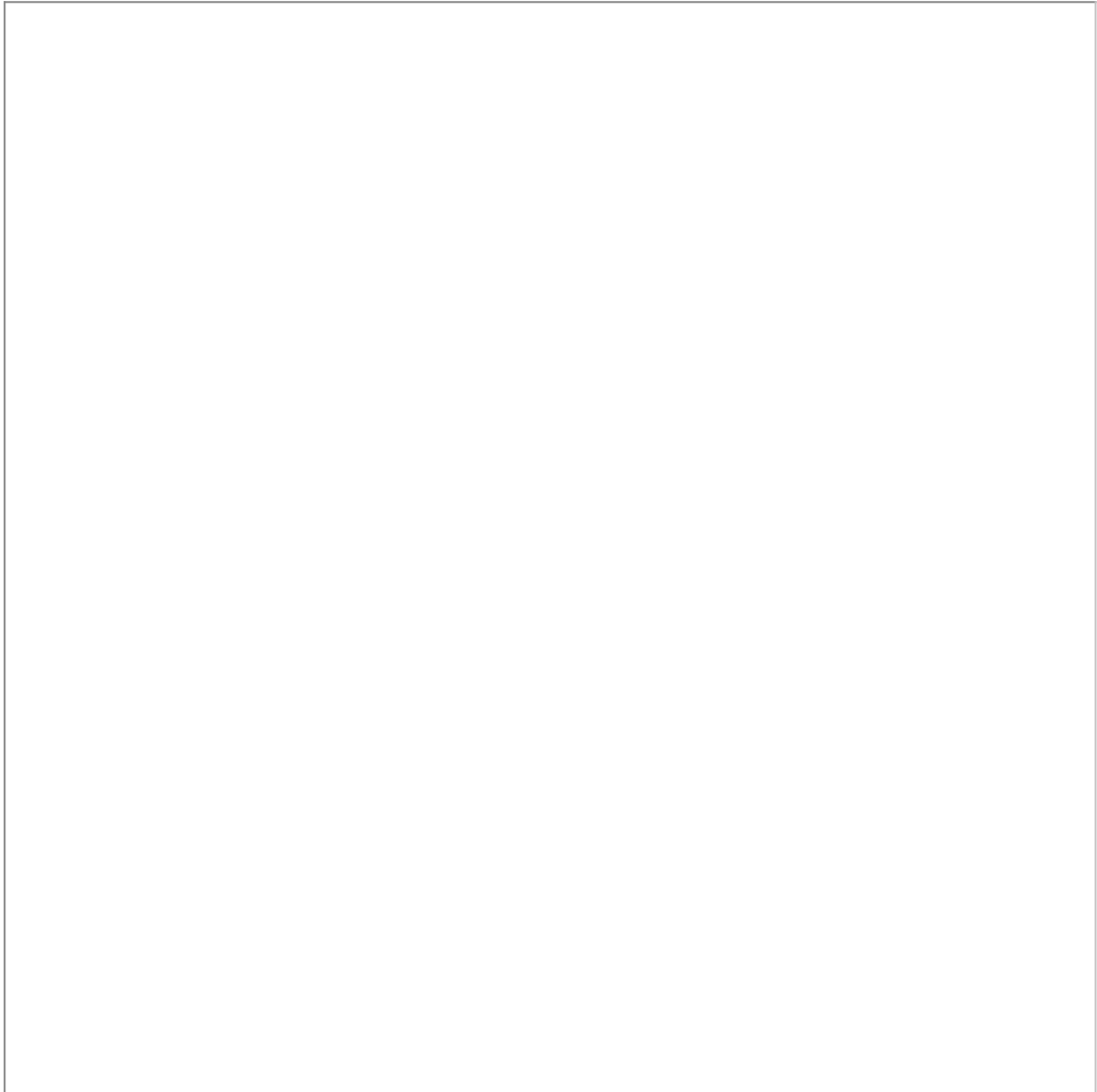
声明

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.

8.6.3.2 Taiwan RoHS Declaration



8.6.3.3 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。

8.6.4 安裝安全性警告 (Traditional Chinese)



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。

	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。 
	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。
	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。
	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。
	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。
	備用電源供應器連接時的電擊危險 本設備附有備援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
	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。
	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。
	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。
	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。
	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。
	設備棄置 棄置本設備應遵照所有國內法規。
	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。
	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。

	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。
	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。
	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。
	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。
	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）。
	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。
	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。
	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。

8.6.5 Avertissements de sécurité pour l'installation (French)

	Instructions d'installation Veuillez lire la totalité des instructions d'installation avant de relier l'équipement au secteur.
	Blessures à cause du poids Prévoyez assez de personnel pour soulever ce produit en toute sécurité.  <40 lbs <18 kgs 40 - 70 lbs 18 - 32 kgs 70 - 121 lbs 32 - 55 kgs > 121 lbs > 55 kgs
	Équipement lourd Cet équipement est lourd et doit être déplacé avec un système de levage mécanique pour éviter les blessures.

	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.
	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.
	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.
	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.
	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.
	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.
	En cas d'orage, danger d'électrocution Pendant un orage, ne pas travailler sur l'équipement ni brancher ou débrancher des câbles.
	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.
	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.
	Installation de l'équipement Cet équipement ne doit être installé, remplacé et maintenu que par un personnel formé et qualifié.
	Mise au rebut de l'équipement La mise au rebut de cet équipement doit se faire conformément à toutes les lois et réglementations nationales.
	Codes électriques locaux et nationaux Cet équipement doit être installé conformément aux codes électriques locaux et nationaux.
	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.
	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.

	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.
	Courant de fuite élevé Avertissement: courant de fuite élevé, une connexion à la terre est indispensable avant de brancher l'alimentation.
	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.
	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.
	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.
	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.
	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.

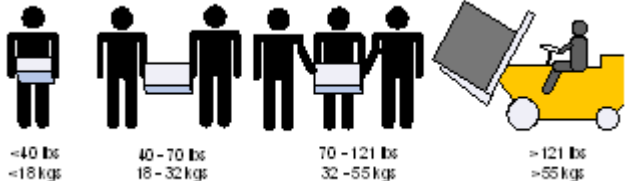
8.6.6 Installation Sicherheitshinweise (German)

	Installationsanleitungen Lesen Sie alle Installationsanleitungen, bevor Sie das Gerät an die Stromversorgung anschließen.
	Verletzungsgefahr wegen des Gewichts Um das Produkt sicher anzuheben, genügend Personen einsetzen.
	Schweres Gerät Dieses Gerät ist schwer und muss mit einem mechanischen Hebegerät verschoben werden, um Verletzungen zu vermeiden.
	Stromschlagrisiko Stromschlagrisiko! Bei abgenommenem Ventilatormodul sind die Stromkontakte in der Modulvertiefung zugänglich. Es dürfen KEINE Werkzeuge oder Körperteile in die Vertiefung des Ventilatormoduls gelangen.
	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.

	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.
	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.
	Mehrere Stromeingänge Risiko eines Stromschlags und Stomgefahr. Alle Stromversorgungseinheiten sind unabhängig. Trennen Sie alle Stromversorgungen, um einen abgeschalteten Zustand im Inneren der Switch-Plattform sicherzustellen.
	Bei Gewitter - Elektrische Gefahr Arbeiten Sie während eines Gewitters und Blitzschlag nicht am Gerät, schließen Sie keine Kabel an oder ab.
	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.
	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.
	Geräteinstallation Diese Gerät sollte nur von geschultem und qualifiziertem Personal installiert, ausgetauscht oder gewartet werden.
	Geräteentsorgung Die Entsorgung dieses Geräts sollte unter Beachtung aller nationalen Gesetze Bestimmungen erfolgen.
	Regionale und nationale elektrische Bestimmungen Dieses Gerät sollte unter Beachtung der regionalen und nationalen elektrischen Bestimmungen installiert werden.
	Installationscodes Dieses Gerät muss entsprechend der aktuellsten Version des National Electrical Code installiert werden. In Nordamerika muss das Gerät gemäß den geltenden Anforderungen des US National Electrical Code und des Canadian Electrical Code installiert werden.
	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.
	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 mm ² Draht, bewertet mit 300 V, mit einem PVC-Mantel isoliert. Das Kabel muss eine angespritztem Stecker bewertet bei 250 V, 10 A.
	Hoher Ableitstrom WARNUNG: Hohe Ableitstrom; Earth Verbindung, bevor Sie die Verbindung von wesentlicher Bedeutung werden

	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.
	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.
	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.
	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.

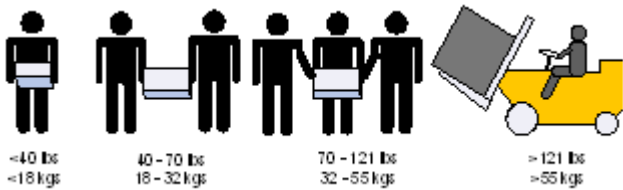
8.6.7 Advertencias de seguridad de instalación (Spanish)

	Instrucciones de instalación Antes de conectar el equipo a la fuente de alimentación, leer todas las instrucciones de instalación.
	Lesión corporal a causa de peso Recurra a suficientes personas para levantar este producto sin. 
	Equipos pesados Dado que el equipo es pesado, se debe mover únicamente mediante un elevador mecánico, para evitar lesiones.
	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.
	Sobrettemperatura 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.
	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.
	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.

	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.
	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.
	Al haber rayos: peligro de descarga No utilizar el equipo ni conectar o desconectar cables durante períodos de actividad de rayos.
	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.
	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.
	Instalación del equipo La instalación, el reemplazo y el mantenimiento de este equipo estarán a cargo únicamente de personal capacitado y competente.
	Eliminación del equipo La eliminación definitiva de este equipo se debe efectuar conforme a todas las leyes y reglamentaciones nacionales.
	Códigos eléctricos locales y nacionales Este equipo se debe instalar conforme a los códigos eléctricos locales y nacionales.
	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.
	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.
	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 mm ² 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.
	Alta corriente de fuga ADVERTENCIA: Alta corriente de fuga. Es esencial efectuar la conexión a tierra antes de conectar la alimentación.
	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.

	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.
	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
	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.

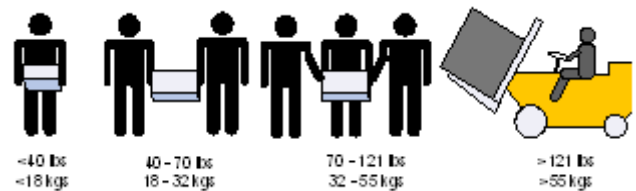
8.6.8 Предупреждения по технике безопасности при установке (Russian)

	Инструкция по установке Перед подключением оборудования к источнику питания следует ознакомиться с инструкцией по установке.
	Травмы при переносе тяжелых предметов Для поднятия этого изделия следует задействовать достаточное количество людей. 
	Тяжелое оборудование Это тяжелое оборудование, поэтому его следует перемещать с помощью механического подъемника во избежание травм.
	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.
	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).
	Установка шасси поверх другого оборудования Не устанавливать шасси поверх другого оборудования. Падение шасси может привести к травмам и повреждению оборудования.
	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.

	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.
	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.
	Опасность поражения электрическим током во время грозы Во время грозы запрещается работать с оборудованием и подключать или отключать кабели.
	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.
	Установка или обслуживание в стойке При установке или обслуживании этого изделия в стойке следует обеспечить устойчивость системы. Как правило, стойка заполняется оборудованием снизу вверх.
	Установка оборудования Устанавливать, заменять и/или обслуживать это оборудование должен только подготовленный и квалифицированный персонал.
	Утилизация оборудования Это оборудование утилизируется в соответствии с национальными законами и постановлениями.
	Местные и национальные правила установки электрооборудования Это оборудование устанавливается в соответствии с местными и национальными правилами установки электрооборудования.
	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.
	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.
	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 мм ² , рассчитанного на номинальное напряжение 300 В, с ПВХ оболочкой. Шнур должен иметь литую вилку, рассчитанную на 250 В, 10 А.
	Высокий ток утечки Осторожно! Высокий ток утечки. Заземлить перед подключением к электропитанию.
	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.

	Защита от перегрузки по току Цепь подвода питания должна быть оборудована устройством защитного отключения от сети на ток 20А, которое находится в легкодоступном месте.
	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.
	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.
	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.

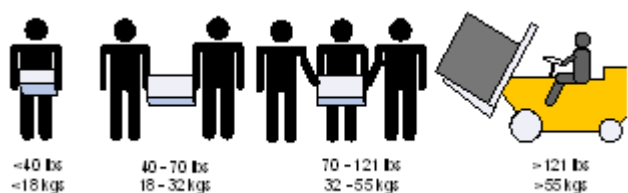
8.6.9 Avertismente privind siguranța la instalare (Romanian)

	Instrucțiuni de instalare Citiți toate instrucțiunile de instalare înainte de a conecta.
	Accidentare cauzată de greutate Apelați la un număr suficient de persoane pentru a ridica în siguranță acest produs. 
	Echipament greu Acest echipament este greu și trebuie să fie mutat folosind un dispozitiv mecanic de ridicare pentru a evita producerea de leziuni.
	Risc de șoc electric Odată ce modulul ventilator este îndepărtat, pinii electrici sunt accesibili în cavitatea modului. NU introduceți instrumente sau părți din corp în cavitatea modului ventilator.
	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 inch) în jurul fanțelor de ventilare.
	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.
	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.

	Siguranță fuzibilă bipolară/neutră Acest sistem este prevăzut cu siguranță fuzibilă bipolară/neutră. Îndepărtați toate cordonalele de alimentare înainte de a deschide capacul acestui produs sau înainte de a atinge orice componente interne.
	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.
	În timpul descărcărilor electrice - pericol electric În timpul perioadelor cu descărcări electrice luminoase, nu lucrați cu echipamentul sau nu conectați sau deconectați cablurile.
	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.
	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.
	Instalarea echipamentului Acest echipament trebuie să fie instalat, înlocuit și/sau depanat numai de către personal instruit și calificat.
	Eliminarea echipamentului Eliminarea acestui echipament trebuie să se realizeze în conformitate cu toate legile și regulamentele naționale.
	Codurile electrice locale și naționale Acest echipament trebuie să fie instalat conform codurilor electrice locale și naționale.
	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.
	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.
	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.
	Curent de scurgere de înaltă frecvență Avertisment: Curent de scurgere de înaltă frecvență; Împământarea este esențială înainte de a conecta sursa de alimentare.
	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

	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.
	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
	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.
	Restricții electrice pentru Norvegia This unit is intended for connection to a TN power system and an IT power system of Norway only.

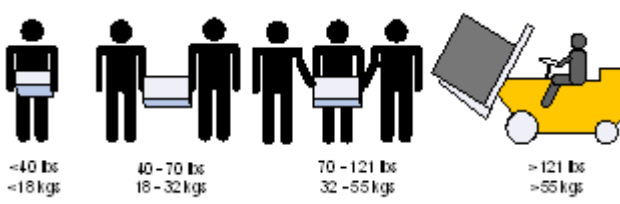
8.6.10 Sigurnosna upozorenja za instaliranje (Croatian)

	Upute za instaliranje Pažljivo pročitajte upute za instaliranje prije spajanja opreme na izvor električne energije.
	Tjelesne ozljede uslijed težine Kako biste sigurno podignuli ovaj proizvod, koristite dovoljan broj ljudi. 
	Teška oprema Ova oprema je vrlo teška i treba se premještati pomoću mehaničkog dizala kako bi se izbjegle ozljede.
	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.
	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.
	Slaganje kućišta Kućište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.
	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.
	Dvopolni/neutralni osigurači Ovaj sustav raspolaže dvopolnim/neutralnim osiguračima. Uklonite sve kabele napajanja prije otvaranja poklopca proizvoda ili dodirivanja unutarnjih dijelova.

	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.
	Tijekom udara munje - Opasnost od električne energije Tijekom djelovanja munja, nemojte raditi na opremi ili spajati ili odspajati kabele.
	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.
	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.
	Instaliranje opreme Ovu bi opremu trebalo instalirati, zamjenjivati i/ili servisirati samo obučeno i kvalificirano osoblje.
	Odlaganje opreme Odlaganje opreme trebalo bi se vršiti sukladno nacionalnim zakonima i propisima.
	Lokalni i nacionalni električni kodovi Ova oprema trebala bi se instalirati u skladu s lokalnim i nacionalnim električnim kodovima.
	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.
	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.
	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.
	Veliko curenje struje Upozorenje: Veliko curenje struje; Prije spajanja napajanja nužno je spojiti uzemljenje.
	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.
	Interkonekcija uređaja Kabele 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.
	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.

	WEEE direttiva 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
	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.

8.6.11 Avvertenze di sicurezza per l'installazione (Italian)

	Istruzioni di installazione Leggere tutte le istruzioni di installazione prima di collegare l'apparecchiatura all'alimentazione.
	Lesioni a causa del peso Usare un numero di persone sufficiente per sollevare in sicurezza questo prodotto. 
	Apparecchiatura pesante Questa apparecchiatura è molto pesante e va spostata mediante un sollevatore meccanico, per evitare lesioni.
	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.
	Temperatura eccessiva Questa apparecchiatura non va utilizzata in un'area con una temperatura ambiente superiore a quella massima consigliata: 45 °C (113 °F). Inoltre, per assicurare un flusso d'aria adeguato, lasciare almeno 8 cm (3 pollici) di spazio attorno alle aperture di ventilazione.
	Impilare lo chassis Kućište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.
	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.
	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.
	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
	Durante i temporali, pericolo di scosse elettriche Durante i temporali, non effettuare interventi sull'apparecchiatura e non collegare o scollegare i cavi.
	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.

	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.
	Installazione dell'apparecchiatura Questa apparecchiatura va installata, sostituita e/o sottoposta a manutenzione solo da personale addestrato e qualificato.
	Smaltimento dell'apparecchiatura Lo smaltimento di questa apparecchiatura va effettuato in conformità con tutte le leggi e le normative nazionali.
	Codici elettrici locali e nazionali Questa apparecchiatura va installata in conformità con le norme elettriche locali e nazionali.
	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".
	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.
	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.
	Corrente di dispersione elevata Avvertenza: corrente di dispersione elevata; il collegamento a terra è essenziale prima di collegare l'alimentazione.
	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".
	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 cablatrice dell'edificio deve integrare un dispositivo di protezione contro le sovracorrenti di potenza nominale pari a 20.
	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
	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
	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.

8.6.12 Montaj Güvenlik Uyarıları (Turkish)

	Montaj Talimatları Ekipmanı güç kaynağına bağlamadan önce tüm montaj talimatlarını okuyun.
	Ağırlık Nedeniyle Fiziksel Yaralanma Bu ürünü güvenli bir şekilde kaldırmak için yeterli sayıda insandan yardım alın. 
	Ağır Ekipman Bu ekipman çok ağırdır ve yaralanmaları önlemek için ekipmanın mekanik asansör kullanılarak taşınması gerekir.
	Elektrik Çarpması Riski! Fan modülüyle çıkarılan güç pimlerine modül boşluğu içinde erişilebilir. Fan modülü boşluğuna alet veya gövde parçaları yerleştirmeyin.
	Aşırı Isınma 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.
	Şasi İstif Şasinin diğer herhangi bir ekipmanın üzerine istiflenmemesi gerekir. Şasi düşerse, fiziksel yaralanmalara ve ekipmanda hasara neden olabilir.
	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.
	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.
	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.
	Şimşek - Elektrik Çarpma Tehlikesi Gökyüzünde şimşek çaktığı zamanlarda, ekipman üzerinde çalışmayın veya kablo bağlamayın ya da kablo bağlantısı kesmeyin.
	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.
	Ekipman Montajı Ekipmanın yalnızca eğitimli ve nitelikli personel tarafından monte edilmesi, değiştirilmesi ve/veya bakımının yapılması gerekir.
	Ekipmanın Atılması Bu ekipmanın imhasında tüm ulusal yasalara ve düzenlemelere uyulması gerekir.
	Yerel ve Ulusal Elektrik Kodları Bu ekipmanın montajında yerel ve ulusal elektrik kodlarına uyulması gerekir.

	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.
	Pilin Değiştirilmesi Uyarı: Yalnızca, maksimum düzgünsüz 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.
	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 mm ² tel, 300 V değerinde ve PVC yalıtımlı bir güç kaynağı kablosu seçin. Kablonun 250 V, 10 A değerinde bir kalıplanmış fişi olması gerekmektedir.
	Yüksek Kaçak Akım Yüksek kaçak akım varsa; güç kaynağına bağlanmadan önce mutlaka topraklama bağlantısı yapılmalıdır.
	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.
	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.
	Anahtar Raf veya Çalışma Alanı olarak kullanmayınız 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.
	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.
	Norveç Güç Kısıtlamaları Bu ünite, bir TN güç sistemine ve sadece Norveç'in IT güç sistemine bağlanmak içindir.

8.6.13 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

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

	כבל אספקת חשמל – צפון אמריקה 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'.
	כבל אספקת חשמל – אירופה יש לבחור כבל חשמלי בעל התאמה בינלאומית וסימון עם 3 מוליכים ושטח חתך מינימלי של 1.0 מ"מ ² . בידוד PVC למתח 300V ותקע מובנה 10A, 250V.
	תקנות התקנה יש להתקין מערכת זו על פי הגרסה האחרונה של תקנות החשמל המקומיות. בצפון אמריקה יש לפעול בהתאם לתקנות החשמל הלאומיות של ארה"ב וקנדה.
	חיבור בין מערכות על כבלים לחיבור היחידה לממשקי RS232 ו-Ethernet מסוג DP-1 או DP-2 להיות בעלי הסמכת UL כאשר הם נמצאים במעגל שאינו מקור כוח מוגבל.
	הגנה מפני מתח גבוה יש להקפיד על הימצאותם וזמינותם של אמצעים להגנה מפני מתח גבוה בתקן 20A בבניין.
	אין להשתמש במערכת כמדף או כשטח עבודה המסילות אינן מיועדות לשליפת המערכת מהארון אלא להתקנתה במיקומה הקבוע.
	תקנת WEEE 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.
	מגבלות חשמליות בנורביגיה בנורביגיה בלבד, יחידה זו מיועדת לחיבור למערכת אספקת חשמל מסוג TN ולמערכת אספקת חשמל מסוג IT.

8.6.15

تعليمات التركيب والسلامة

	تعليمات عامة 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.
	إصابات محتملة نتيجة الوزن هذا المنتج ثقيل الوزن. ينبغي أن يقوم عدة أشخاص برفعه لضمان رفعه بطريقة آمنة. يوصى باستخدام رافعة ميكانيكية مناسبة أثناء النقل لتجنب الإصابات.
	خطر الصعق الكهربائي 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): - فصل مزود طاقة واحد لا يعزل الجهاز بالكامل. - لعزل الجهاز بشكل كامل، يجب فصل جميع مزودات الطاقة المتصلة.
	ارتفاع درجة الحرارة 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.
	تكديس الهيكل (الشاسيه) لا يجوز تكديس الهيكل فوق أي معدات أخرى. في حال سقوطه، قد يتسبب ذلك في إصابات جسدية وأضرار بالمعدات.
	توصيل مزود طاقة احتياطي (اختياري) - خطر كهربائي يضمن هذا المنتج مزود طاقة احتياطياً أو غطاءً بديلاً في مكانه. في حال وجود غطاء بديل، يُمنع تشغيل المنتج إذا كان الغطاء مُزالاً أو غير مثبت.
	مصدر نهائي القطب/المعايد يحتوي هذا النظام على مصدر ثنائي القطب/المعايد. يجب فصل جميع كابلات الطاقة قبل فتح غطاء هذا المنتج أو لمس أي مكونات داخلية.
	مدخل طاقة متعددة 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.
	أثناء العواصف الرعدية — خطر كهربائي أثناء نشاط البرق، يُمنع تشغيل الجهاز. توصيل أو فصل الكابلات.
	توصيل وفصل كابلات النحاس كابلات النحاس ثقيلة وغير مرنة. لذلك يجب توصيلها وفصلها من الموصلات بحذر. يُرجى قراءة تعليمات الشركة المصنعة للحصول على التحذيرات والإرشادات الخاصة بالكابلات.
	التركيب والصيانة داخل الرف (Rack) عند تركيب هذا المنتج أو صيانته داخل رف، يجب اتخاذ احتياطات خاصة لضمان استقرار النظام. بشكل عام، يجب تعبئة الرف بالمعدات بدءاً من الأسفل إلى الأعلى.
	تركيب الجهاز يجب أن يتم تركيب هذا الجهاز أو استبداله و/أو صيانته فقط بواسطة أفراد مدربين ومؤهلين.
	التخلص من الجهاز يجب التخلص من هذا الجهاز وفقاً لجميع القوانين واللوائح الوطنية المعمول بها.
	القوانين الكهربائية المحلية والوطنية يجب تركيب هذا الجهاز بما يتوافق مع القوانين الكهربائية المحلية والوطنية.
	معايير التركيب يجب تركيب هذا الجهاز وفقاً لأحدث إصدار من القوانين الكهربائية الوطنية في البلد. في أمريكا الشمالية، يجب تركيب الجهاز وفقاً لمتطلبات القانون الكهربائي الوطني الأمريكي (NEC) والقانون الكهربائي الكندي (CEC) المعمول بهما.

	استبدال البطارية تحذير: يجب الاستبدال فقط ببطارية معترف بها من UL ومصنّعة لتحمل تيار شحن غير طبيعي لا يقل عن mA4. تحذير: يجب الاستبدال فقط ببطارية معترف بها من ومصنّعة لتحمل تيار شحن غير طبيعي لا يقل عن. هناك خطر حدوث انفجار في حال استبدال البطارية بنوع غير صحيح. يجب التخلص من البطاريات المستعملة وفقًا للتعليمات.
	كابل طاقة معتمد من UL ومصديق من CSA للتوصيل في أمريكا الشمالية: يجب اختيار كابل طاقة معتمد من UL ومصديق 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 مقنن 300 فولت، مع غلاف عازل PVC. يجب أن يحتوي الكابل على قابس مصبوب بقوة 250 فولت / 10 أمبير.
	معايير التركيب يجب تركيب هذا الجهاز وفقًا لأحدث إصدار من القوانين الكهربائية الوطنية في الدولة. في أمريكا الشمالية، يجب الامتثال لمتطلبات القانون الكهربائي الوطني الأمريكي (NEC) والقانون الكهربائي الكندي (CEC).
	الربط بين الوحدات يجب أن تكون الكابلات المستخدمة للاتصال بواجهات الوحدة RS232 وEthernet من نوع DP-1 أو DP-2 ومعتمدة من-UL. ملاحظة: عند وجودها في دائرة غير (LPS).
	الحماية من التيار الرائد يجب تضمين جهاز حماية من التيار الرائد بقوة 20 أمبير، معتمد وسهل الوصول إليه، ضمن التمديدات الكهربائية للمبنى.
	تحذير مستوى الضوضاء يشير مستوى الضوضاء المذكور في قسم المواصفات إلى ضوضاء المنتج المقاسة وفقًا 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 وفقًا لمعيار OSHA لحماية الموظفين من التعرض المفرط والمطول للضوضاء.
	عدم استخدام المحول كرف أو مساحة عمل تحذير: لا يجوز استخدام المحول المثبت كرف أو مساحة عمل. الشرائح غير مخصصة لتحريك الوحدة بعيدًا عن الرف؛ فهي مخصصة للتركيب الدائم في مكانها النهائي فقط، وليست للاستخدام أثناء الصيانة والخدمة.
	توجيه WEEE وفقًا لتوجيه WEEE 2002/96/EC، يجب جمع جميع المعدات الكهربائية والإلكترونية النافثة (EEE) بشكل منفصل، وعدم التخلص منها مع النفايات المنزلية العادية. يجب التخلص من هذا المنتج وجميع أجزائه بطريقة مسؤولة وصديقة للبيئة.
	قيود الطاقة في التوزيع هذه الوحدة مخصصة للتوصيل بنظام طاقة من نوع TN ونظام IT في التوزيع فقط.

9 Document Revision History

Date	Revision	Description
May 2026	1.5	Added Q3450 Co-Packaged Optics Topology in Cable Installation .
March 2026	1.4	Updated Safety Warnings
November 2025	1.3	Preliminary version with the Q3401-RD and Q3450-LD systems.
April 2025	1.2	Updated FNM - Fabric Network Management Port under Interfaces .
December 2024	1.1	Updated: • Software Management • Installation • Specifications Preliminary and subject to change.
September 2024	1.0	Initial release. Preliminary and subject to change.

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