Q3200-RA/Q3400-RA XDR 800Gb/s InfiniBand Switch Systems User Manual

Table of contents

Relevant for Models: Q3200-RA and Q3400-RA

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.

Ordering Information

System Model	NVIDIA SKU	Description
Q3200-RA	920-9B34F-00RX-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
Q3400-RA	920-9B36F-00RX-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

Related Documentation

Document	Description
InfiniBand Architecture Specification 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.

Revision History

A list of the changes made to this document are provided in Document Revision History.

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 4U switch, leverages 200Gb/s-per-lane serializer/deserializer (SerDes) technology. It features 144 ports at 800Gb/s distributed across 72 Octal Small Form-Factor Pluggable (OSFP) cages. The switch's high radix supports a two-level fat-tree topology capable of connecting up-to 10,368 ConnectX-8 network interface cards (NICs) with minimal latency and optimal job locality. The Q3400 is air-cooled.

For integration with existing NDR or HDR infrastructures, the NVIDIA Quantum-X800 Q3200 2U air-cooled configuration switch is ideal. This system houses two independent switches within a single enclosure, together providing 72 ports at 800Gb/s (over 36 OSFP cages).

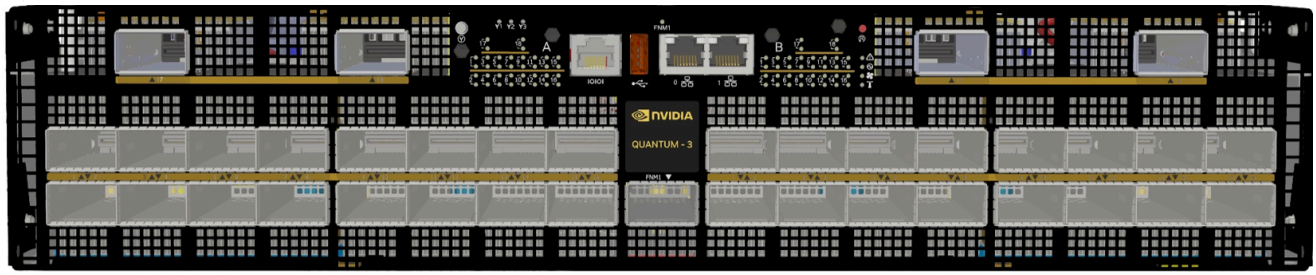
Both the Q3400 and Q3200 switches include a dedicated InfiniBand in-band management port specifically for NVIDIA Unified Fabric Manager (UFM®) management, separated on the front panel from the other ports. This separation allows the full set of standard ports to be used for data network connectivity, 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.

The 4U switch systems are ideal for HPC and AI workloads, leveraging the cutting-edge NVIDIA Scalable Hierarchical Aggregation and Reduction Protocol (SHARP)™, alongside enhanced adaptive routing and performance isolation technologies. With this powerful combination, they deliver unparalleled performance for handling the most demanding tasks in HPC and AI domains. The NVIDIA Quantum-3 switches are available with internal management capabilities.

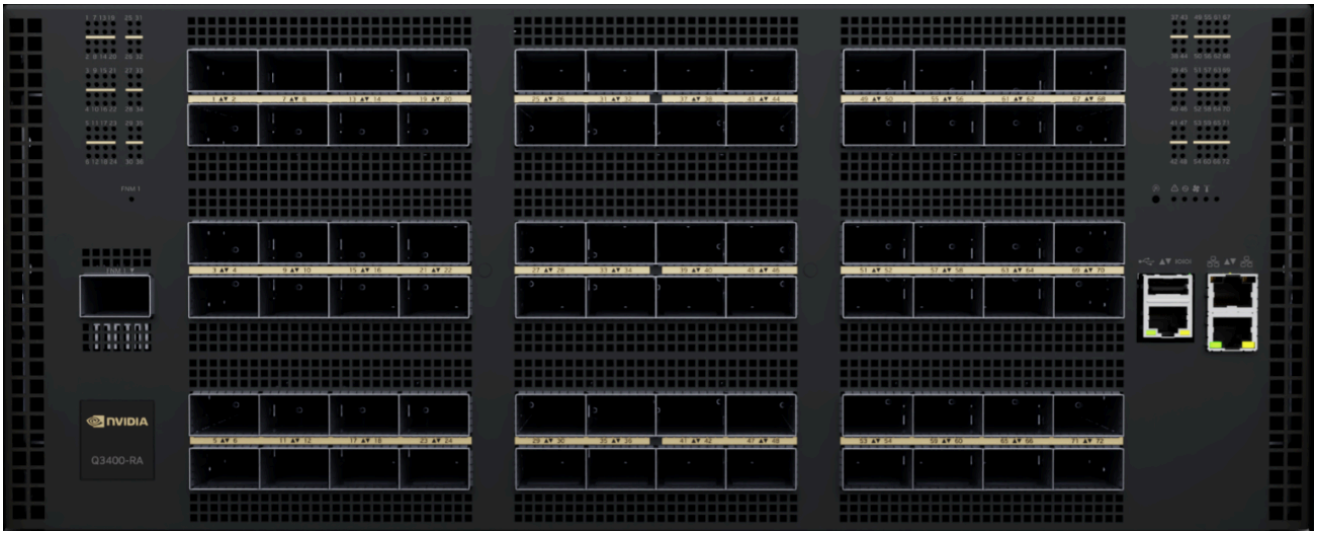
As a rack-mounted InfiniBand solution, the NVIDIA Quantum-3 switches provide maximum flexibility for various network topologies. They support a wide range of configurations, including Fat Tree, Dragonfly+, multi-dimensional Torus, and more. In these setups, the 4U systems act as spines, while the 2U systems serve as leaves, complementing the overall network architecture.

Q3200-RA Front View



Q3200-RA Rear View

Q3400-RA Front View



Q3400-RA Rear View

For additional airflow options, see Airflow.

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

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^2C	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

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

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.

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/.

Installation

System Installation and Initialization

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

Note

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.

Note

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

Incorrect	Correct
	

Incorrect	Correct
	

Note

- 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

Step	Procedure	See
4	Mount the system into a rack enclosure	19" System Mounting Options
5	Power on the system	Initial Power On
6	Perform system bring-up	System Bring-Up of Managed Systems
7	[Optional] FRU replacements	FRU Replacements

Safety Warnings

Prior to the installation, please review the Safety Warnings. Note that some warnings may not apply to all models.

Safety warnings are provided in multiple languages for your convenience:

Note

Note that not all warnings may apply to all models.

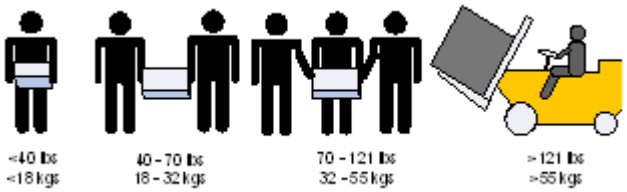
Switch Safety Warnings (English)

Installation Instructions

Read all installation instructions before connecting the equipment to the power source.

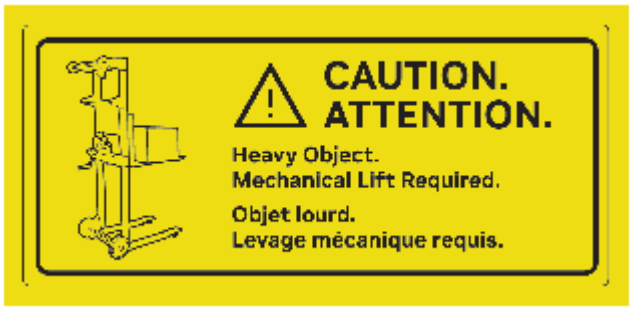
images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png Bodily Injury Due to Weight

Use enough people to safely lift this product.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png Heavy Equipment

This equipment is heavy and should be moved using a mechanical lift to avoid injuries.



images/download/thumbnails/2219582279/image2021-8-11_8-56-28-version-1-modificationdate-1659553766330-api-v2.png Laser Radiation Warning (for Q3450-LD systems)

Class 3B invisible laser radiation when open. Avoid exposure to the beam.

images/download/thumbnails/2219582279/image2021-8-11_8-56-28-version-1-modificationdate-1659553766330-api-v22.png 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

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-56-28-version-1-modificationdate-1659553766330-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-56-28-version-1-modificationdate-1659553766330-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-56-28-version-1-modificationdate-1659553766330-api-v22.png During Lightning—Electrical Hazard

During periods of lightning activity, do not work on the equipment or connect or disconnect cables.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png Equipment Installation

This equipment should be installed, replaced, and/or serviced only by trained and qualified personnel.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png Equipment Disposal

Disposal of this equipment should be in accordance to all national laws and regulations.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png Local and National Electrical Codes

This equipment should be installed in compliance with local and national electrical codes.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png 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. For applicable models: PERCHLORATE MATERIAL - LITHIUM COIN/BUTTON CELL BATTERY. PLEASE DISPOSE OF PROPERLY. SPECIAL HANDLING MAY APPLY.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v2.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v22.png Country of Norway Power Restrictions

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

Taiwan RoHS Declaration - Switch Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. 〝—〞係指該項限用物質為排除項目。

Taiwan RoHS Declaration - Gateway Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. 〝—〞係指該項限用物質為排除項目。

Taiwan BSMI Class A Statement - Warning to the User!

警告使用者：警告：□避免□磁干□，本□品不□安□或使用於住宅□境。

Nordic Countries Notices

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png In Norway: "Apparatet må tilkoples jordet stikkontakt"

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png In Sweden: "Apparaten skall anslutas till jordat uttag"

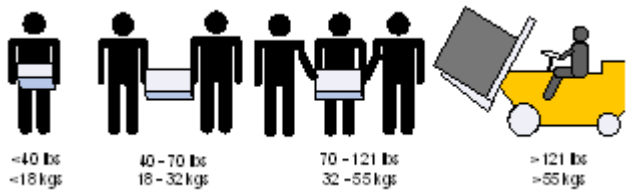
安□安全性警告 (Simplified Chinese)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 安□指示

本□□附有□援□源供□器或在□□位置配有空白□板。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 因重量□致的人身受□

□了安全起□，□安排足□的人□以合力抬起本□品。



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 重□□

本□□□重，□使用□械式起重□□搬移，以避免人□受□。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 有□□的危□

有□□的危□！拆除□扇模□□，即可接□到模□空腔□的□源□□。□勿□工具或□身零件插入到□扇模□空腔□。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □度□高

本□□不□在超□所建□的最高□境□度的□域中□作。此外，□了保□□流的流通正常，□在通□口旁保留至少 8 公分 (3 英□) 的□距。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 堆□□箱

□箱不□堆□在任何其他□□上。如果□箱掉落，可能造成人□受□□□□□□。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png □式□源□接□的□□危□

本□□附有□援□源供□器或在□□位置配有空白□板。如果是□源供□器空白□板，在空白□板已取下或未牢牢固□的情□下，□勿操作本□品。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png □□/中性保□□

本系□具有□□/中性保□□。□拔掉所有□源□□，再打□本□品的□板或碰□任何□部零件。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 多□源□入座

□□□能源危害的危□。所有 PSU 均各自□立。□所有□源供□器□□，□保交□器平台□部在□源□□□□。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png □□□的□□危□

在□□期□，不要使用本□□或□接或拔下□□。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png □架安□□□修

此□品已安□在□架中或在□架中□修□，必□□取特定□防措施以□保系□□持□定。一般您□□□□□□底部到□端放□□架。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □□安□

本□□□限由□□□□□/或合格的人□安□、更□或□修。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □□□置

□置本□□□遵照所有□□法□。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □地□□家□□法□

□遵照□地□□家□□法□安□本□□。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 安□法□

□□必遵循最新版的□家□□法□，安□本□□。在北美地□，□□必遵循美□□家□工法□和加拿大□工法□中的□用□定，安□本□□。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 更□□池

警告：只能以 UL □可□池，且取得最大□常充□□流低於 4mA □□的□池□行更□。

若更□□□□型的□池，□有爆炸的危□。

□依□指示□置□□池。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png UL 列名和 CSA □□□源□

北美地□在接上□源□，□□用□得 UL 列名和 CSA □□、三□□□、[16 AWG] 附成型插□，□定值□ 125 V、[13 A]，□度至少 1.5 公尺 [六英尺]，但不超□ 4.5 公尺的□源□。

□洲地□在接上□源□，□□用□□□□式且□示有 <HAR> 字□、三□□□、□□截面至少 1.0 平方公厘，□定值□ 300 V，□用 PVC □□的□源□。□源□需有成型插□，□定值□ 250 V, 10 A。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 高漏□流

警告： 高漏□流；必□□行地□□接，然□再□接□源供□器。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 安□法□

□□必遵循最新版的□家□□法□，安□本□□。在北美地□，□□必遵循美□□家□工法□和加拿大□工法□中的□用□定，安□本□□。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 互□□□

□接至 RS232 □□和乙太□路介面的□□必□是 UL □□□型 DP-1 或 DP-2。(□注意位於非 LPS □路□).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □□流保□：□□好使用的列名分支□路□□流保□□置最大□定值 20 A 必□整合在配□中。

噪音级别警告

规格部分中列出的噪音级别代表在标定条件下根据 ISO 7779 标准测量出的产品噪音。实际噪音级别可能因安装情况而异，影响因素包括但不限于安装所使用的机架数量、安装所占用的整体空间大小、机架和其他设备所使用的材料及其噪音水平、风扇故障、室温、房间布置以及员工与设备的相对位置。数据中心所有者应根据 OSHA 标准进行有效的听力保护管理，以便保护员工，使其听力免受过大噪音的伤害，并避免让员工长时间待在充满噪音的环境中。

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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。

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

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")

For non tropical use:

安全说明和标记	汉文	“仅适用于非热带气候条件下安全使用。”
	藏文	《[illegible]》
	蒙古文	“[illegible]”
	壮文	Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenx ancienz sawjyungh.
	维文	غەيرى ئىسسىق بەلباغ ھاۋا كىلىماتى شارائىتىدىلا بىخەتەر ئىشلەتكىلى بولىدۇ

For altitude 2000 meter and below:

安全说明和标记	汉文	仅适用于海拔2000m以下地区安全使用。
	藏文	《2000m [illegible]》
	蒙古文	“[illegible]”
	壮文	Dan hab yungh youq gij digih haijbaz 2000m doxroengz haenx ancienz sawjyungh.
	维文	دېڭىز يۈزىدىن 2000 مېتر تۆۋەن رايونلاردىلا بىخەتەر ئىشلەتكىلى بولىدۇ

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.

Taiwan RoHS Declaration - Switch Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. "—" 係指該項限用物質為排除項目。

Taiwan RoHS Declaration - Gateway Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. "—" 係指該項限用物質為排除項目。

Taiwan BSMI Class A Statement - Warning to the User!

警告使用者：警告：□避免□磁干□，本□品不□安□或使用於住宅□境。

Caution: Risk of Explosion

A risk of explosion exists, if the battery is replaced with an incorrect type. Dispose of used batteries according to the instructions.

交□器配有□池供□的□□□□□路。□池更□不□有爆炸危□。只能用相同或等效的□型替□。按照□造商的□明□□用□的□池。注意:更□型□不正□的□池有爆炸危□。按照□明□理用□的□池。

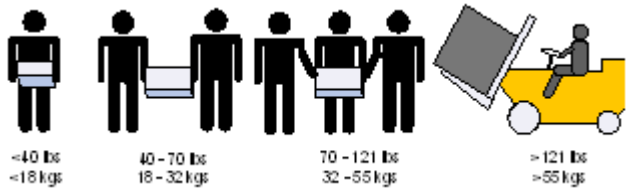
安□安全性警告 (Chinese)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 温度过高

本设备不应在超过所建议的最高环境温度的区域中运作。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□) 的间距。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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。

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 铜缆线的连接与移除

铜电缆重且不易弯折，因此应仔细连接或从连接器端口分离。请参阅电缆制造商了解特殊警告/说明。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 设备弃置

弃置本设备应遵照所有国内法规。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 高漏□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。

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 互连设备

连接至 RS232 设备和乙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)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png □□流保□：□□好使用的列名分支□路□□流保□□置最大□定值 20 A 必□整合在配□中。

噪音级别警告

规格部分中列出的噪音级别代表在标定条件下根据 ISO 7779 标准测量出的产品噪音。实际噪音级别可能因安装情况而异，影响因素包括但不限于安装所使用的机架数量、安装所占用的整体空间大小、机架和其他设备所使用的材料及其噪音水平、风扇故障、室温、房间布置以及员

工与设备的相对位置。数据中心所有者应根据 OSHA 标准进行有效的听力保护管理，以便保护员工，使其听力免受过大噪音的伤害，并避免让员工长时间待在充满噪音的环境中。

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 切□□□不可用作□架或工作空□

> 小心：滑□/□□安□□□不可用作□架或工作空□。□□不□用於□□□滑出□架使用。□限永久安□在最□安置□域□使用，不可用於□修和保□。

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png WEEE 指令

> 根□ WEEE 指令 2002/96/EC，所有□□的□□□□子□□ (EEE)，□分□集中，而且不□□一般家庭□□物一起□置。□以□□和□保的方式□置本□品及其所有零件。

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 挪威□家□源限制

本□□□限□接至挪威的 TN □源系□和 IT □源系□。

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"）

For non tropical use:

安全说明和标记	汉文	"仅适用于非热带气候条件下安全使用。"
	藏文	《[illegible]》
	蒙古文	"ཚ་བའི་ས་ཁུལ་གྱི་གནམ་གཤིས་མིན་པའི་ས་ཁུལ་ཁོ་ནར་ཉེན་མེད་བེད་སྤྱོད་བྱས་འཐུས།"
	壮文	Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenx ancienz sawjyungh.
	维文	غەيرى ئىسسىق بەلباغ ھاۋا كىلىماتى شارائىتىدىلا بىخەتەر ئىشلەتكىلى بولىدۇ

For altitude 2000 meter and below:

安全说明和标记	汉文	仅适用于海拔2000m以下地区安全使用。
	藏文	《2000m [illegible]》
	蒙古文	"རྒྱ་མཚོའི་ངོས་ལས་མཐོ་ཚད་སྨི2000མན་གྱི་ས་ཁུལ་ཁོ་ནར་ཉེན་མེད་བེད་སྤྱོད་བྱས་འཐུས།"
	壮文	Dan hab yungh youq gij digih haijbaz 2000m doxroengz haenx ancienz sawjyungh.
	维文	دېڭىز يۈزىدىن 2000 مېتىر تۆۋەن رايونلاردىلا بىخەتەر ئىشلەتكىلى بولىدۇ

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.

Taiwan RoHS Declaration - Switch Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. 〝—〞係指該項限用物質為排除項目。

Taiwan RoHS Declaration - Gateway Systems

單元Unit	限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板	—	○	○	○	○	○
金屬外殼	○	○	○	○	○	○
塑膠件	○	○	○	○	○	○
PCB 板電子零件	—	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

備考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。

備考3. 〝—〞係指該項限用物質為排除項目。

Taiwan BSMI Class A Statement - Warning to the User!

警告使用者：警告：□避免□磁干□，本□品不□安□或使用於住宅□境。

Caution: Risk of Explosion

A risk of explosion exists, if the battery is replaced with an incorrect type. Dispose of used batteries according to the instructions.

交□器配有□池供□的□□□□□路。□池更□不□有爆炸危□。只能用相同或等效的□型替□。按照□造商的□明□□用□的□池。注意:更□型□不正□的□池有爆炸危□。按照□明□理用□的□池。

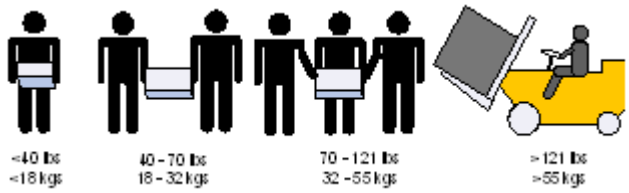
Avertissements de sécurité pour l'installation (French)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instructions d'installation

> Veuillez lire la totalité des instructions d'installation avant de relier l'équipement au secteur.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Blessures à cause du poids

> Prévoyez assez de personnel pour soulever ce produit en toute sécurité.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Équipement lourd

> Cet équipement est lourd et doit être déplacé avec un système de levage mécanique pour éviter les blessures.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Surchauffe

Cet équipement ne doit pas être en service dans un local dont la température dépasse le maximum recommandé. En outre et pour garantir une circulation d'air correcte, laisser un espace d'au moins 8 cm (3") autour des orifices de ventilation.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png En cas d'orage, danger d'électrocution

Pendant un orage, ne pas travailler sur l'équipement ni brancher ou débrancher des câbles.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Installation de l'équipement

Cet équipement ne doit être installé, remplacé et maintenu que par un personnel formé et qualifié.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Mise au rebut de l'équipement

La mise au rebut de cet équipement doit se faire conformément à toutes les lois et réglementations nationales.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Codes électriques locaux et nationaux

Cet équipement doit être installé conformément aux codes électriques locaux et nationaux.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Courant de fuite élevé

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

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

Avertissement de niveau acoustique

Le niveau acoustique indiqué dans la section Spécifications correspond au bruit émis par le produit conformément à la norme ISO 7779 dans des conditions nominales. Le niveau sonore réel peut varier selon les conditions d’installation, y compris, mais sans s’y limiter, le nombre de racks relatifs à l’installation, les dimensions globales de l’installation, le rack et les autres équipements et/ou niveaux de bruit existants, les défauts de ventilation, la

température de la pièce, la configuration de la pièce et la disposition de l'opérateur par rapport à l'équipement. Le propriétaire du Data Center doit proposer des mesures efficaces de protection auditive en conformité avec la norme OSHA, de manière à protéger ses employés contre une exposition prolongée au bruit.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

Installation Sicherheitshinweise (German)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Installationsanleitungen

> Lesen Sie alle Installationsanleitungen, bevor Sie das Gerät an die Stromversorgung anschließen.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Verletzungsgefahr wegen des Gewichts

> Um das Produkt sicher anzuheben, genügend Personen einsetzen.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Schweres Gerät

Dieses Gerät ist schwer und muss mit einem mechanischen Hebegerät verschoben werden, um Verletzungen zu vermeiden.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Stromschlagrisiko

Stromschlagrisiko! Bei abgenommenem Ventilatormodul sind die Stromkontakte in der Modulvertiefung zugänglich. Es dürfen KEINE Werkzeuge oder Körperteile in die Vertiefung des Ventilatormoduls gelangen.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Übertemperatur

Dieses Gerät sollte nicht in einem Bereich mit einer Umgebungstemperatur über der maximal empfohlenen Temperatur 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Mehrere Stromeingänge

Risiko eines Stromschlags und Stomgefahr. Alle Stromversorgungseinheiten sind unabhängig. Trennen Sie alle Stomversorgungen, um einen abgeschalteten Zustand im Inneren der Switch-Plattform sicherzustellen.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Bei Gewitter - Elektrische Gefahr

Arbeiten Sie während eines Gewitters und Blitzschlag nicht am Gerät, schließen Sie keine Kabel an oder ab.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Geräteinstallation

Diese Gerät sollte nur von geschultem und qualifiziertem Personal installiert, ausgetauscht oder gewartet werden.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Geräteentsorgung

Die Entsorgung dieses Geräts sollte unter Beachtung aller nationalen Gesetze Bestimmungen erfolgen.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Regionale und nationale elektrische Bestimmungen

Dieses Gerät sollte unter Beachtung der regionalen und nationalen elektrischen Bestimmungen installiert werden.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Installationscodes

Dieses Gerät muss entsprechend der aktuellsten Version des National Electrical Code installiert weden. In Nodamerika muss das Gerät gemäß den geltenden Anforderungen des US National Electrical Code und des Canadian Electrical Code installiert werden.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png UL- und CSA-zertifiziertes Netzkabel

Für Nordamerika Stromanschluss, wählen Sie ein Netzkabel, das UL-und CSA Certified 3 - Leiter, [18 AWG], mit einem angespritztem Stecker bewertet bei 125 V, [15], mit einer Mindestlänge von 1,5 m [Six Feet] aber nicht mehr als 4,5 m.

Für die europäischen Zusammenhang, wählen Sie ein Netzkabel, das international harmonisiert und der Aufschrift "<HAR>", 3 - Leiter, mindestens 0,75 mm2 Draht, bewertet mit 300 V, mit einem PVC-Mantel isoliert. Das Kabel muss eine angespritztem Stecker bewertet bei 250 V, 10 A.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Hoher Ableitstrom

WARNUNG: Hohe Ableitstrom; Earth Verbindung, bevor Sie die Verbindung von wesentlicher Bedeutung werden.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Überstromschutz: Eine leicht zugängliche Auflistung Abzweigleitung Überstrom-Schutzeinrichtung 20 A bewertet werden müssen in dem Gebäude Verkabelung.

Warnung vor Geräuschpegel

Der im Abschnitt mit den technischen Daten aufgeführte Geräuschpegel stellt die nach ISO 7779 für den Sollzustand gemessenen Geräuschemissionen des Produkts dar. Der tatsächliche Lärmpegel kann je nach Installationsbedingungen variieren. Dazu gehören unter anderem, aber nicht ausschließlich, die Anzahl der Racks für die Installation, die Gesamtinstallationsgröße, das Rack- und anderes Ausrüstungsmaterial sowie Lärmpegel, Lüfterfehler, Raumtemperatur, Raumkonfiguration und der Mitarbeiterstandort in Bezug auf das Gerät. Der Eigentümer des Rechenzentrums sollte für einen wirksamen Lärmschutz gemäß OSHA-Standard sorgen, um Mitarbeiter vor übermäßiger und anhaltender Lärmbelastung zu schützen.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png WEEE-Direktive

> Gemäß WEEE Directive 2002/96/EC müssen alle elektrischen und elektronischen Abfallgeräte (EEE) separat gesammelt und nichit mit normalem Haushaltsmüll ensorgt werden. Dieses Produkt und alle seine Teile in verantwortungsvoller und umweltfreundlicher Art und Weise entsorgen.

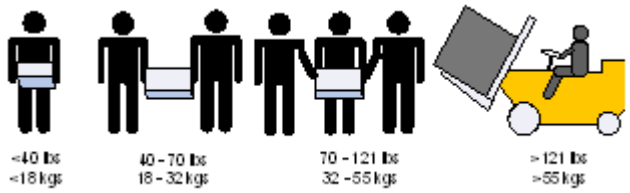
Advertencias de seguridad de instalación (Spanish)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instrucciones de instalación

> Antes de conectar el equipo a la fuente de alimentación, leer todas las instrucciones de instalación.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Lesión corporal a causa de peso

> Recurra a suficientes personas para levantar este producto sin.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Equipos pesados

Dado que el equipo es pesado, se debe mover únicamente mediante un elevador mecánico, para evitar lesiones.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Sobretemperatura

No se debe utilizar el equipo en un área con una temperatura ambiente superior a la máxima recomendada. 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Al haber rayos: peligro de descarga

No utilizar el equipo ni conectar o desconectar cables durante períodos de actividad de rayos.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instalación del equipo

La instalación, el reemplazo y el mantenimiento de este equipo estarán a cargo únicamente de personal capacitado y competente.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Eliminación del equipo

La eliminación definitiva de este equipo se debe efectuar conforme a todas las leyes y reglamentaciones nacionales.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Códigos eléctricos locales y nacionales

Este equipo se debe instalar conforme a los códigos eléctricos locales y nacionales.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Cable de alimentación homologado por UL y con certificación CSA

En conexiones de América del Norte, seleccionar un cable de alimentación homologado por UL y con certificación CSA de tres conductores, [16 AWG], terminado en un enchufe moldeado con capuchón de 125 voltios nominal, [13 A], con una longitud mínima de 1,5 metros, pero no más de 4,5 metros.

En conexiones europeas, seleccionar un cable de alimentación armonizado internacionalmente y marcado "<HAR>", de tres conductores, hilo de 1,0 mm2 como mínimo, 300 voltios nominal, con cobertura protectora aislante de PVC. El cable debe tener un enchufe moldeado con capuchón de 250 voltios nominal, 10 A.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Alta corriente de fuga

ADVERTENCIA: Alta corriente de fuga. Es esencial efectuar la conexión a tierra antes de conectar la alimentación.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

Advertencia de nivel acústico

El nivel acústico indicado en la sección Especificaciones representa el ruido del producto medido de acuerdo con la norma ISO 7779 en condiciones nominales. El nivel de ruido real puede variar en función de las condiciones de instalación, incluido pero no limitado al número de bastidores en la instalación, el tamaño general de la instalación, el rack y otros niveles de material y ruido del equipo, los fallos del ventilador, la temperatura ambiente, la configuración de la sala y la ubicación del empleado en relación con el equipo. El propietario del centro de datos debe gestionar la conservación efectiva de las audiciones según la norma OSHA para proteger a los empleados de la exposición prolongada al ruido.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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.

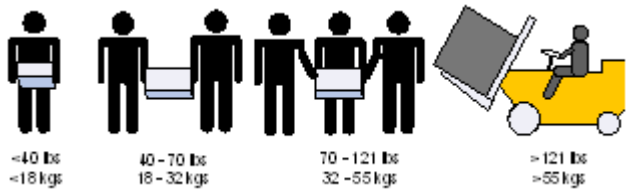
Предупреждения по технике безопасности при установке (Russian)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Инструкция по установке

> Перед подключением оборудования к источнику питания следует ознакомиться с инструкцией по установке.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Травмы при переносе тяжелых предметов

> Для поднятия этого изделия следует задействовать достаточное количество людей.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Тяжелое оборудование

> Это тяжелое оборудование, поэтому его следует перемещать с помощью механического подъемника во избежание травм.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Перегрев

> Не эксплуатировать это оборудование в помещении с температурой окружающей среды, превышающей максимально рекомендуемое значение. Более того, для надлежащей вентиляции следует обеспечить зазор вокруг вентиляционных отверстий не менее 8 см (3 дюйма).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Установка шасси поверх другого оборудования

Не устанавливать шасси поверх другого оборудования. Падение шасси может привести к травмам и повреждению оборудования.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Опасность поражения электрическим током во время грозы

Во время грозы запрещается работать с оборудованием и подключать или отключать кабели.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Установка или обслуживание в стойке

При установке или обслуживании этого изделия в стойке следует обеспечить устойчивость системы. Как правило, стойка заполняется оборудованием снизу вверх.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Установка оборудования

Устанавливать, заменять и/или обслуживать это оборудование должен только подготовленный и квалифицированный персонал.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Утилизация оборудования

Это оборудование утилизируется в соответствии с национальными законами и постановлениями.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Местные и национальные правила установки электрооборудования

Это оборудование устанавливается в соответствии с местными и национальными правилами установки электрооборудования.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Шнур питания, включенный в номенклатуру UL и сертифицированный Канадской ассоциацией стандартизации (CSA)

Подключение к электропитанию в Северной Америке выполняется с помощью шнура питания, включенного в номенклатуру UL и сертифицированного Канадской ассоциацией стандартизации (CSA), 3-жильного, [16 AWG], длиной от 1,5 м [6 футов] до 4,5 м, с литой вилкой, рассчитанной на 125 В [13 А].

Подключение к электропитанию в Европе выполняется с помощью гармонизированного шнура питания с маркировкой <HAR>, 3-жильного, с сечением жилы не менее 1,0 мм², рассчитанного на номинальное напряжение 300 В, с ПВХ оболочкой. Шнур должен иметь литую вилку, рассчитанную на 250 В, 10 А.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Высокий ток утечки

Осторожно! Высокий ток утечки. Заземлить перед подключением к электропитанию.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Защита от перегрузки по току

Цепь подвода питания дожна быть оборудована устройством защитного отключения от сети на ток 20А, которое находится в легкодоступном месте.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Максимальная токовая защита. В проводку здания в легкодоступном месте следует включить устройство защиты от перегрузки по току номиналом 20 А.

Предупреждение об уровне шума

Уровень шума, указанный в разделе «Технические характеристики», представляет собой создаваемый изделием уровень шума, измеренный в соответствии со стандартом ISO 7779 в номинальных условиях. Фактический уровень шума может варьироваться в зависимости от условий установки, включая (но не ограниваясь этими данными) количество стоек в установке, общий размер установки, материалы, из которых изготовлены стойки и другое оборудование, уровни шума стоек, неисправности вентиляторов, температуру в помещении, конфигурацию помещения и расположение сотрудников относительно оборудования. Владелец дата-центра должен обеспечить эффективную защиту здоровья органов слуха в соответствии со стандартом OSHA и оградить сотрудников от чрезмерного и длительного воздействия шума.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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.

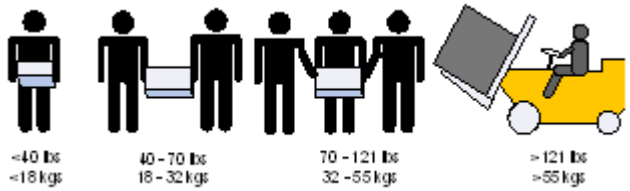
Avertismente privind siguranţa la instalare (Romanian)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instrucţiuni de instalare

Citiţi toate instrucţiunile de instalare înainte de a conecta.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Accidentare cauzată de greutate

Apelaţi la un număr suficient de persoane pentru a ridica în siguranţă acest produs.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Echipament greu

Acest echipament este greu şi trebuie să fie mutat folosind un dispozitiv mecanic de ridicare pentru a evita producerea de leziuni.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Risc de şoc electric

Odată ce modulul ventilator este îndepărtat, pinii electrici sunt accesibili în cavitatea modulului. NU introduceţi instrumente sau părţi din corp în cavitatea modulului ventilator.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Temperatură în exces

Acest echipament nu trebuie să fie acţionat într-o zonă unde temperatura ambiantă depăşeşte valoarea maximă recomandată. În plus, pentru a asigura un flux de aer adecvat, lăsaţi un spaţiu liber de cel puţin 8 cm (3 inchi) în jurul fantelor de ventilare.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Suprapunerea cadrului

Cadrul nu trebuie să fie suprapus peste niciun alt echipament. În cazul în care cadrul cade, poate cauza leziuni corporale şi deteriorări ale echipamentului.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Conexiunea la o sursă de alimentare electrică suplimentară - pericol electric

Acest produs include o sursă de alimentare suplimentară sau un spaţiu gol în locul acesteia. În cazul în care spaţiul pentru sursa de alimentare este gol, nu operaţi produsul când capacul orb este îndepărtat sau nu este fixat în mod sigur.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Siguranţă fuzibilă bipolară/neutră

Acest sistem este prevăzut cu siguranţă fuzibilă bipolară/neutră. Îndepărtaţi toate cordoanele de alimentare înainte de a deschide capacul acestui produs sau înainte de a atinge orice componente interne.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Multiple mufe electrice

Risc de şoc electric şi pericol electric. Toate aparatele cu alimentare de la reţea sunt independente. Deconectaţi toate sursele de alimentare cu energie pentru a asigura decuplarea în interiorul platformei de comutare.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png În timpul descărcărilor electrice - pericol electric

În timpul perioadelor cu descărcări electrice luminoase, nu lucraţi cu echipamentul sau nu conectaţi sau deconectaţi cablurile.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Conectarea/deconectarea cablului din cupru

Cablurile din cupru sunt grele şi inflexibile, de aceea trebuie să fie ataşate sau detaşate de conectori cu grijă. Consultaţi producătorul de cabluri pentru avertismente/instrucţiuni speciale.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Montarea sau depanarea într-un rack

Când acest produs este montat sau depanat într-un rack, trebuie să fie luate măsuri de precauţie speciale pentru a se asigura că sistemul rămâne stabil. În general, trebuie să umpleţi rack-ul cu echipamente începând de jos în sus.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instalarea echipamentului

Acest echipament trebuie să fie instalat, înlocuit şi/sau depanat numai de către personal instruit şi calificat.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Eliminarea echipamentului

Eliminarea acestui echipament trebuie să se realizeze în conformitate cu toate legile şi regulamentele naţionale.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Codurile electrice locale şi naţionale

Acest echipament trebuie să fie instalat conform codurilor electrice locale şi naţionale.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Codurile ed instalare

Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naţionale ale ţării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerințelor aplicabile din Codul electric naţional al SUA şi Codul electric canadian.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Înlocuirea bateriei

Avertisment: Înlocuiţi 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. Eliminaţi bateriile folosite în conformitate cu instrucţiunile.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Cordon de alimentare electrică înregistrat UL şi certificat CSA

Pentru conectarea la o sursă de alimentare pentru America de Nord, selectaţi un cordon de alimentare care este înregistrat UL şi certificat CSA, cu 3 conductoare, [16 AWG], terminat cu o fişă turnată, cu putere nominală egală cu 125 V, [13 A], cu o lungime de minimum 1,5 m [şase picioare], dar nu mai lung de 4,5 m.

Pentru conectarea la o sursă de alimentare în Europa, selectaţi un cordon de alimentare care este armonizat la nivel internaţional şi marcat „<HAR>”, cu 3 conductoare, cu minimum 2 fire de 1,0 mm, cu putere nominală egală cu 300 V şi cu o manta izolantă din PVC. Cordonul de alimentare trebuie să fie prevăzut cu o fişă turnată cu putere nominală egală cu 250 V, 10 A.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Curent de scurgere de înaltă frecvenţă

Avertisment: Curent de scurgere de înaltă frecvenţă; Împământarea este esenţială înainte de a conecta sursa de alimentare.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Codurile de instalare

Acest dispozitiv trebuie să fie instalat în conformitate cu ultima versiune a codurilor electrice naţionale ale ţării în cauză. Pentru America de Nord, echipamentul trebuie să fie instalat conform cerințelor aplicabile din Codul electric naţional al SUA şi Codul electric canadian.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Interconectarea unităţilor

Cablurile pentru conectarea la unitatea RS232 şi la interfeţele Ethernet trebuie să fie de tipul DP-1 sau DP-2 certificate UL. (Notă- când se regăsesc într-un circuit non-LPS).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Protecţie la supracurent: Un dispozitiv de protecţie la supracurent, înregistrat în circuitul de ramificare, uşor accesibil şi cu o putere nominală egală cu 20 A trebuie să fie integrat în cablajul clădirii.

Avertizare privind nivelul acustic

Nivelul acustic menționat în secțiunea Specificații reprezintă zgomotul produsului, măsurat în conformitate cu standardul ISO 7779, în condiții nominale. Nivelul real de zgomot poate varia în funcție de condițiile de instalare, inclusiv, dar fără limitare, numărul de stive din configurație, dimensiunea generală a configurației, materialul de fabricație al stivelor și al altor echipamente, precum și nivelurile de zgomot ale acestora, defectele ventilatoarelor, temperatura și designul încăperii, precum și poziția angajaților față de echipament. Proprietarul centrului de date trebuie să gestioneze eficient normele de protecție auditivă, conform standardului OSHA, pentru a proteja angajații împotriva expunerii prelungite la zgomot.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png Nu utilizaţi comutatorul ca raft sau spaţiu de lucru

Atenţie: Echipamentul montat pe o linie de alunecare/şină nu va fi utilizat ca raft sau spaţiu de lucru. Scopul şinelor nu este de a glisa unitatea de pe rack. Acestea sunt destinate instalării permanente numai la punctul final de oprire şi nu vor fi folosite pentru depanare şi întreţinere

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png Directiva DEEE

În conformitate cu Directiva DEEE 2002/96/CE, toate deşeurile de echipamente electrice şi electronice (EEE) trebuie colectate separat şi nu trebuie eliminate

împreună cu deşeurile menajere obişnuite. Eliminaţi acest produs şi toate componentele sale în mod responsabil şi ecologic.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Restricţii electrice pentru Norvegia

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

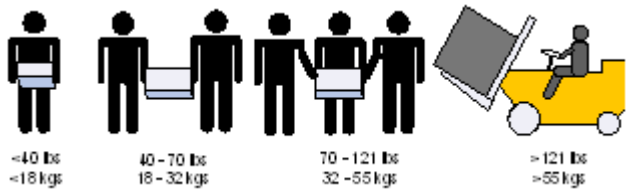
Sigurnosna upozorenja za instaliranje (Croatian)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Upute za instaliranje

Pažljivo pročitajte upute za instaliranje prije spajanja opreme na izvor električne energije.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Tjelesne ozljede uslijed težine

Kako biste sigurno podignuli ovaj proizvod, koristite dovoljan broj ljudi.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Teška oprema

Ova oprema je vrlo teška i treba se premještati pomoću mehaničkog dizala kako bi se izbjegle ozljede.

images/docs.mellanox.com/download/thumbnails/6884607/image2021-8-11_8-56-28-version-1-modificationdate-1628661388513-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Pregrijavanje

Ovom se opremom ne bi trebalo rukovati u područjima s temperaturom okoline koja premašuje najviše preporučene vrijednosti. Osim toga, kako bi se osigurao odgovarajući protok zraka, omogućite najmanje 8 cm (3 inča) razmaka oko otvora ventilatora.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Slaganje kućišta

Kućište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Dvopolni/neutralni osigurači

Ovaj sustav raspolaže dvopolnim/neutralnim osiguračima. Uklonite sve kabele napajanja prije otvaranja poklopca proizvoda ili dodirivanja unutarnjih dijelova.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Tijekom udara munje - Opasnost od električne energije

Tijekom djelovanja munja, nemojte raditi na opremi ili spajati ili odspajati kabele.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Spajanje/Odspajanje bakrenog kabela

Bakreni kabeli su teški i nesavitljivi i kao takvi se moraju pažljivo priključiti na ili isključiti iz konektora. Obratite se proizvođaču kabela za posebna upozorenja/upute.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Instaliranje opreme

Ovu bi opremu trebalo instalirati, zamjenjivati i/ili servisirati samo obučeno i kvalificirano osoblje.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Odlaganje opreme

Odlaganje opreme trebalo bi se vršiti sukladno nacionalnim zakonima i propisima.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Lokalni i nacionalni električni kodovi

Ova oprema trebala bi se instalirati u skladu s lokalnim i nacionalnim električnim kodovima.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Veliko curenje struje

Upozorenje: Veliko curenje struje; Prije spajanja napajanja nužno je spojiti uzemljenje.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Interkonekcija uređaja

Kabeli za spajanje na jedinicu RS232 i Ethernet sučelja moraju biti s UL certifikatom vrste DP-1 ili DP-2. (Napomena - kad se nalazi u krugu bez LPS vodiča).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Zaštita od strujnog preopterećenja: Uvijek dostupni odobreni zaštitni uređaji od strujnog preopterećenja nazivne struje od 20 A moraju se ugraditi u ožičenje zgrade.

Upozorenje na akustičnu razinu

Akustična razina navedena u odjeljku Specifikacije predstavlja buku proizvoda izmjerenu u skladu s ISO 7779 pod nominalnim uvjetima. Stvarna razina buke može varirati ovisno o uvjetima instalacije, uključujući, ali ne ograničavajući se na broj stalaka u instalaciji, ukupnu veličinu instalacije, materijal stalka i druge opreme i razine buke, kvar ventilatora, sobnu temperaturu, raspored prostorija i položaj zaposlenika u odnosu na opremu. Vlasnik podatkovnog centra trebao bi upravljati učinkovitim očuvanjem sluha prema standardu OSHA kako bi zaštitio zaposlenike od prekomjerne i produžene izloženosti buci.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png WEEE direktiva

Sukladno WEEE direktivi 2002/96/EZ, sav električni i elektronički otpad (EEE) trebao bi se prikupljati zasebno i ne bi se trebao odlagati kao običan kućanski otpad. Odlaganje ovog proizvoda i svih njegovih dijelova vršite na odgovoran i ekološki način.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

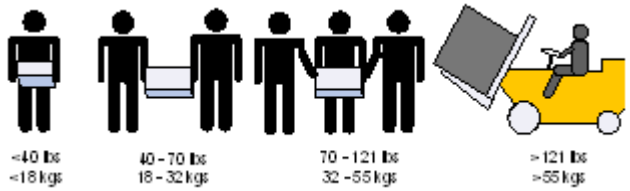
Avvertenze di sicurezza per l’installazione (Italian)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Istruzioni di installazione

Leggere tutte le istruzioni di installazione prima di collegare l’apparecchiatura all’alimentazione.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Lesioni a causa del peso

Usare un numero di persone sufficiente per sollevare in sicurezza questo prodotto.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Apparecchiatura pesante

Questa apparecchiatura è molto pesante e va spostata mediante un sollevatore meccanico, per evitare lesioni.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Temperatura eccessiva

Questa apparecchiatura non va utilizzata in un'area con una temperatura ambiente superiore a quella massima consigliata. Inoltre, per assicurare un flusso d'aria adeguato, lasciare almeno 8 cm (3 pollici) di spazio attorno alle aperture di ventilazione.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Impilare lo chassis

Kućište se ne bi trebalo slagati na drugu opremu. Ako kućište padne, može izazvati tjelesne ozljede i oštećenje opreme.

images/docs.mellanox.com/download/thumbnails/6884607/image2021-8-11_8-56-28-version-1-modificationdate-1628661388513-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Durante i temporali, pericolo di scosse elettriche

Durante i temporali, non effettuare interventi sull'apparecchiatura e non collegare o scollegare i cavi.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Installazione dell'apparecchiatura

Questa apparecchiatura va installata, sostituita e/o sottoposta a manutenzione solo da personale addestrato e qualificato.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Smaltimento dell'apparecchiatura

Lo smaltimento di questa apparecchiatura va effettuato in conformità con tutte le leggi e le normative nazionali.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Codici elettrici locali e nazionali

Questa apparecchiatura va installata in conformità con le norme elettriche locali e nazionali.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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".

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Corrente di dispersione elevata

Avvertenza: corrente di dispersione elevata; il collegamento a terra è essenziale prima di collegare l'alimentazione.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Codici di installazionei

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".

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Protezione contro le sovracorrenti: la

cablatura dell'edificio deve integrare un dispositivo di protezione contro le sovracorrenti di potenza nominale pari a 20.

Avviso sul livello acustico

Il livello acustico indicato nella sezione Specifiche rappresenta il rumore del prodotto misurato in conformità allo standard ISO 7779 in condizioni nominali. Il livello di rumore effettivo può variare a seconda delle condizioni di installazione, tra cui, in via esemplificativa, il numero di rack nell'installazione, le dimensioni complessive dell'installazione, il materiale del rack e di altre apparecchiature e i livelli di rumore, i difetti delle ventole, la temperatura ambientale, la configurazione della stanza e la posizione del personale rispetto all'apparecchiatura. Il proprietario del data center dovrebbe adottare misure efficaci di protezione dell'udito secondo lo standard OSHA per tutelare i dipendenti dalla sovraesposizione al rumore.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png Non utilizzare lo switch come scaffale o piano di lavorol

> 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

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

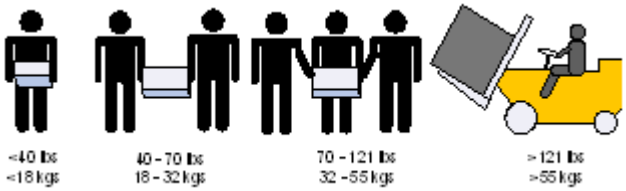
Montaj Güvenlik Uyarıları (Turkish)

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Montaj Talimatları

Ekipmanı güç kaynağına bağlamadan önce tüm montaj talimatlarını okuyun.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Ağırlık Nedeniyle Fiziksel Yaralanma

Bu ürünü güvenli bir şekilde kaldırabilmek için yeterli sayıda insandan yardım alın.



images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Ağır Ekipman

Bu ekipman çok ağırdır ve yaralanmaları önlemek için ekipmanın mekanik asansör kullanılarak taşınması gerekir.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Elektrik Çarpması Riski!

Fan modülüyle çıkarılan güç pimlerine modül boşluğu içinde erişilebilir. Fan modülü boşluğuna alet veya gövde parçaları yerleştirmeyin.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Aşırı ısınma

Bu ekipman, önerilen maksimum ortam sıcaklığını aşan alanlarda çalıştırılmamalıdır. Ayrıca, düzgün hava akışı sağlamak için havalandırma deliklerinin etrafında en az 8 cm (3 inç) açıklık bırakılmalıdır.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Şasi İstif

Şasinin diğer herhangi bir ekipmanın üzerine istiflenmemesi gerekir. Şasi düşerse, fiziksel yaralanmalara ve ekipmanda hasara neden olabilir.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Yedekli Güç Kaynağý Baðlantýsý -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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png 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.

images/download/thumbnails/2219582279/m48-electricity-256px-grn-version-1-modificationdate-1657744197597-api-v2.png Şimşek - Elektrik Çarpma Tehlikesi

Gökyüzünde şimşek çaktığı zamanlarda, ekipman üzerinde çalışmayın veya kablo bağlamayın ya da kablo bağlantısı kesmeyin.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Ekipman Montajı

Ekipmanın yalnızca eğitimli ve nitelikli personel tarafından monte edilmesi, değiştirilmesi ve/veya bakımının yapılması gerekir.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Ekipmanın Atılması

Bu ekipmanın imhasında tüm ulusal yasalara ve düzenlemelere uyulması gerekir.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Yerel ve Ulusal Elektrik Kodları

Bu ekipmanın montajında yerel ve ulusal elektrik kodlarına uyulması gerekir.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Pilin Değiştirilmesi

Uyarı: Yalnızca, maksimum düzgüsüz 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png UL Kayıtlı ve CSA Onaylı Güç Kaynağı Kablosu

Kuzey Amerika'da güç bağlantısı için, UL Kayıtlı ve CSA Onaylı bir güç kaynağı kablosu seçin, 3 - iletken, [16 AWG], 125 V değerinde, kalıplanmış bir fişle biten, [13 A], en az 1,5 m (altı fit) uzunluğunda fakat 4,5 m'den uzun olmayan bir kablo. Avrupa'da güç bağlantısı için, uluslararası uyumlu ve “<HAR>” işaretli, 3 - iletken, en az 1,0 mm2 tel, 300 V değerinde ve PVC yalıtımlı bir güç kaynağı kablosu seçin. Kablonun 250 V, 10 A değerinde bir kalıplanmış fişi olması gerekmektedir.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Yüksek Kaçak Akım

Yüksek kaçak akım varsa; güç kaynağına bağlanmadan önce mutlaka topraklama bağlantısı yapılmalıdır.

images/download/thumbnails/2219582279/image2021-8-11_8-44-35-version-1-modificationdate-1632688251457-api-v22.png Montaj Kodlarıi

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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png 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).

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Aşırı Akım Koruması: Kolayca erişilebilecek 20 V Kayıtlı devre parçası aşırı akım koruma cihazının bina elektrik şebekesinde kurulu olması gerekir.

Akustik Seviye Uyarısı

Teknik Özellikler bölümünde listelenen akustik seviye, nominal koşullarda ISO 7779 uyarınca ölçülen ürün gürültüsünü temsil eder. Gerçek gürültü seviyesi; kurulumdaki raf sayısı, toplam kurulum boyutu, raf ve diğer ekipman malzemesi ve gürültü düzeyleri, fan arızaları, oda sıcaklığı, oda yapılandırması ve ekipmanla ilgili olarak çalışan konumu dahil ancak bunlarla sınırlı olmamak üzere kurulum koşullarına bağlı olarak değişebilir. Veri merkezi sahibi, çalışanları gürültüye uzun süreli ve aşırı maruz kalmaya karşı korumak için OSHA standardına göre etkili bir işitme koruması yönetimi sağlamalıdır.

images/download/thumbnails/2219582279/image2018-11-28_13-42-34-version-1-modificationdate-1543445320017-api-v22.png Anahtarı Raf veya Çalışma Alanı olarak kullanmayınl

> 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.

images/download/thumbnails/2219582279/image2018-11-28_13-42-55-version-1-modificationdate-1543445349743-api-v22.png 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.

images/download/thumbnails/2219582279/image2021-9-26_12-44-2-version-1-modificationdate-1632685461553-api-v2.png Norveç Güç Kısıtlamaları

Bu ünite, bir TN güç sistemine ve sadece Norveç'in IT güç sistemine bağlanmak içindir.

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 בטיחות בהתקנה (Hebrew)

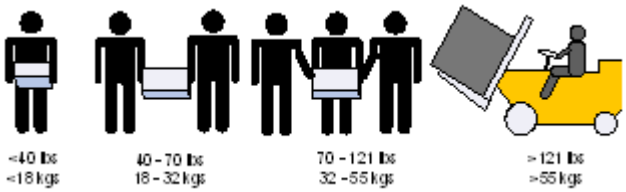
קרא היטב את כל הוראות ההתקנה לפני חיבור המוצר לחשמל.

תקן ישראלי

יש להתקין את המוצר תוך הקפדה על תקנות החשמל הנהוגות בישראל, ולעשות שימוש ביחידת חלוקת כוח העומדת בתקן ישראל (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!

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 באיזור שבו טמפרטורת החדר עולה על הטמפרטורה המקסימלית המומלצת:

בנוסף, כדי להבטיח כניסת אוויר תקינה, יש לוודא כי קיים שטח פנוי של 8 ס"מ (3 אינץ') לפחות סביב פתחי האוורור

ערימת המערכת

אין לערום את המערכת על גבי ציוד אחר. במקרה של נפילה, עשויים להגרם נזקי גוף ורכוש.

חיבור ספק כוח נוסף -סכנת התחשמ

המערכת מכילה ספק כוח נוסף לגיבוי, או, בחלק מהמקרים, חלל ריק המאפשר הרכבת ספק כזה. אין לעשות. שימוש במערכת כשהמכסה החוסם את החלל הריק אינו סגור כהלכה

מספר שקעים חשמליים

סכנת התחשמלות ואזהרת אנרגיה.

כל אחד מספקי הכוח פועל באופן עצמאי. יש לנתק את כל ספקי הכוח, כדי להבטיח ניתוק מוחלט של המערכת. מזרם חשמלי

בעת סופות ברקים - סכנת התחשמלות!

בעת סופות ברקים, אין להפעיל את המערכת או לחבר/לנתק כבלים.

חיבור או ניתוק של כבלי נחושת

כבלי נחושת הם כבדים וקשיחים. לפיכך, יש לחברם ולנתקם מהמחברים בזהירות רבה. לאזהרות נוספות, יש. לעיין בעלון לצרכן מטעם יצרן הכבלים

הרכבה על גבי מדף בארון

כאשר מרכיבים מוצר זה על גבי מדף בארון, יש לנקוט באמצעי זהירות מיוחדים בכדי להבטיח שיוותר יציב. ככלל, יש להתחיל למלא את הארון מהמדף התחתון, ולהתקדם כלפי מעלה

התקנת המוצר

כל התקנה, החלפה או טיפול במוצר זה חייבות 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

על מנת לחבר את המוצר לחשמל בצפון אמריקה, יש לבחור כבל חשמלי ובעל הסמכת CSA, מוליך - 3

,[16 AWG]

.13A ,125V שבקצהו תקע מובנה

.אורכו המינימלי 1.5 מטר (6 אינץ') ואורכו המקסימלי 4.5 מטר

לחיבור אירופאי, בחר כבל חשמלי בעל התאמה בינלאומית וסימון

2^מילימטר 1.0 של מינימלי באורך פנימיים גידים 3-, מוליך","<HAR>"

300V

.עם עטיפת PVC מבודדת

.על הכבל לכלול תקע מובנה 250V, 10A

תקנות התקנה

יש להתקין מערכת זו על פי הגרסה האחרונה של תקנות החשמל המקומיות הנהוגות במדינה. עבור צפון אמריקה, יש להתקין את המערכת בהתאם לתקנות החשמל הלאומיות המיושמות בארה"ב ובקנדה.

חיבור בין מערכות

על כבלים לחיבור היחידה לממשקי RS232 ו-Ethernet

להיות בעלי הסמכת UL מסוג DP-2 או DP-1

(כאשר הם מצויים במעגל חשמלי שאינו מקור כוח מוגבל).

הגנה מפני מתח גבוה

יש להקפיד על המצאותם בבניין ועל זמינותם של אמצעים להגנה מפני מתח גבוה בתקן 20A.

אזהרת עוצמה אקוסטית

ISO 7779 רמת העוצמה האקוסטית המצוינת בפרק המפרטים מתייחסת לרעש מוצר שנמדד בהתאם לתקן בתנאים נומינליים. רמת הרעש בפועל עשויה להשתנות בהתאם לתנאי ההתקנה, הכוללים אך לא מוגבלים למספר הכוננויות בהתקנה, היקף ההתקנה הכולל, החומרים שמהם עשויות הכוננויות ועשוי שאר הציוד, וכן רמות רעש, תקלות מאוורר, טמפרטורת ותצורת החדר ומיקום העובד ביחס לציוד. על האחראי על מרכז הנתונים וזאת כדי להגן עליהם מפני חשיפה ,OSHA להנהיג מדיניות יעילה של הגנה על שמיעת העובדים בהתאם לתקן מוגזמת וממושכת לרעש.

אין להשתמש במערכת כמדף או כשטח עבודה

זהירות: אין להשתמש בציוד כמדף או כשטח עבודה. המסילות לא נועדו לשליפת המערכת מהארון, אלא. להתקנת המערכת במיקומה הקבוע והסופי בארון

WEEE תקנת

על פי תקנות WEEE 2002/96/EC,

יש להשליך את כל פסולת הציוד החשמלי והאלקטרוני בנפרד מפסולת ביתית רגילה. בתום השימוש, השלך.
לאשפה את המוצר הזה ואת כל חלקיו באופן אחראי וידידותי לסביבה

מגבלות חשמליות בנורבגיה

בנורבגיה בלבד, יחידה זו מיועדת לחיבור למערכת אספקת חשמל מסוג TN, ולמערכת אספקת חשמל מסוג IT.

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

⚠ Warning

- 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.

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 package content is as follows:

- 1 – System
- 1 – Rail kit
- 1 - Harness: HAR000631 – Harness RS232 2M cable – DB9 to RJ-45
- OSFP thermal caps:
    - 37caps in Q3200-RA
    - 73 caps in Q3400-RA

Note

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

Note

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

19” System Mounting Options

By default, the Q3200-RA and Q3400-RA systems are shipped with the rail kits described in Q3200-RA Tool-Less Rail Kit and Q3400-RA Tool-Less Rail Kit, respecivly.

Q3200-RA Tool-Less Rail Kit

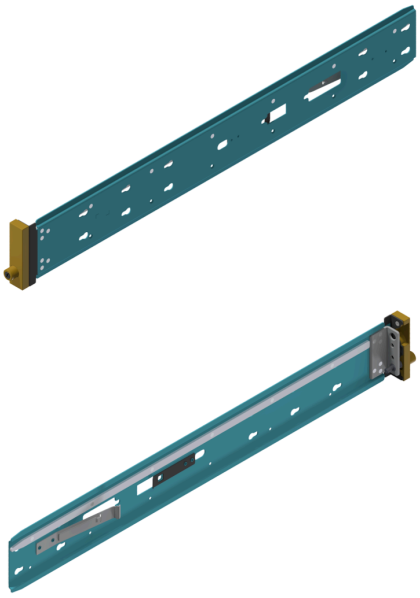
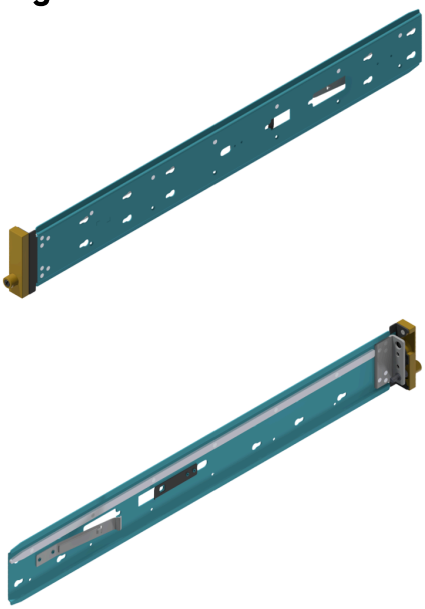
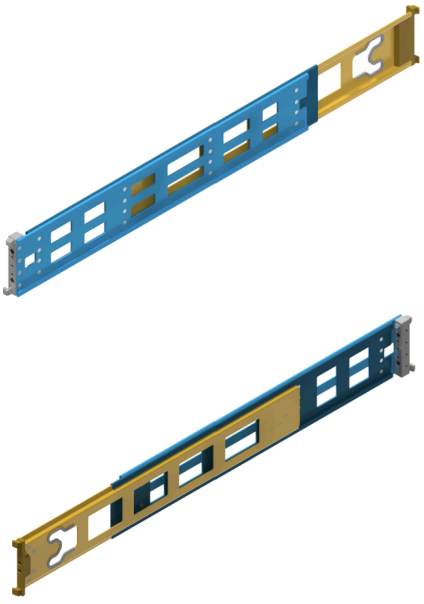
Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00L0-00C	Tool-less rail kit for NVIDIA Quantum-3 2U switch 600-800mm

> **Note**
>
> 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

A		B
Left: 	**Right:** 	

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:

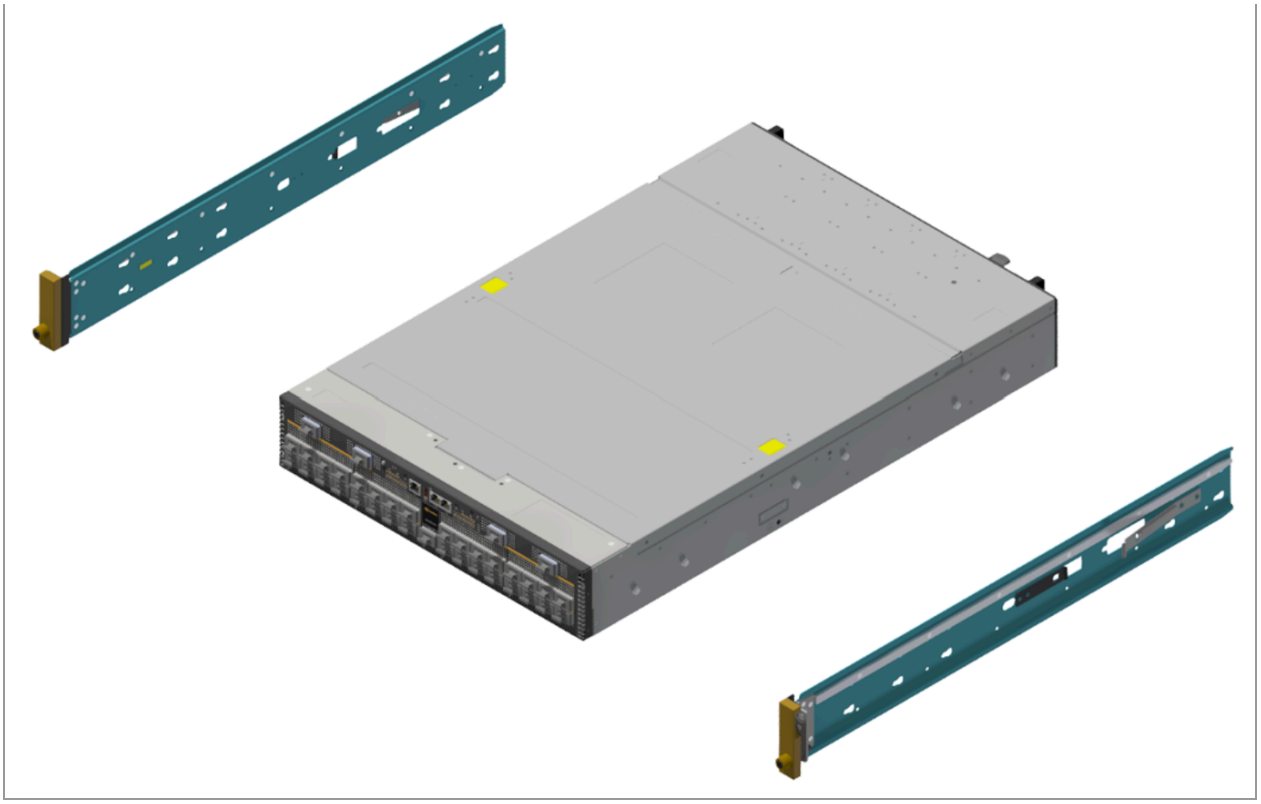
- Make sure the system air flow is compatible with your installation selection. It is important to keep the airflow within the rack in the same direction.
- Note that the part of the system to which you choose to attach the rails (the front panel direction, as demonstrated in Option 1 or the FRUs direction, 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.|

Note

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

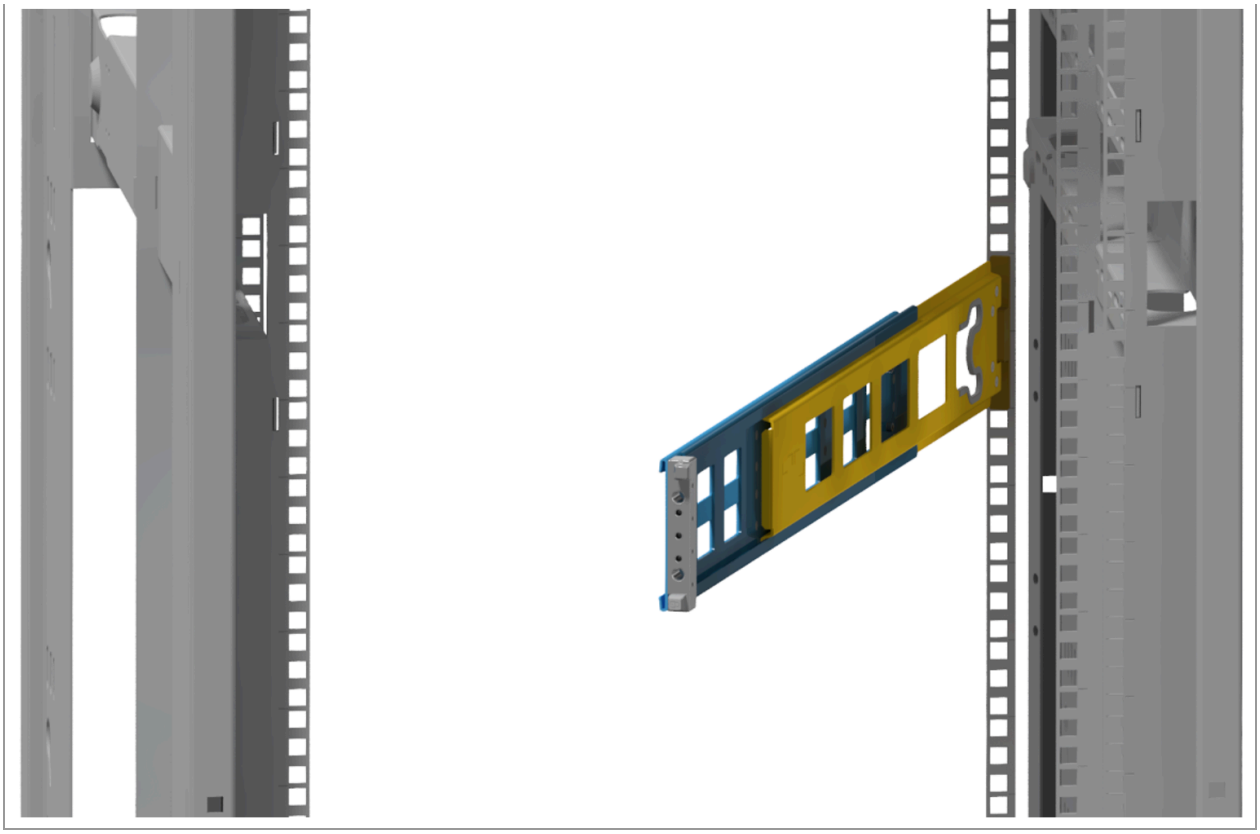
1. Attach the system's rails (A) to the switch chassis. Secure the assembly by gently pushing the rails' pins through the slider key holes, until locking occurs.

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:

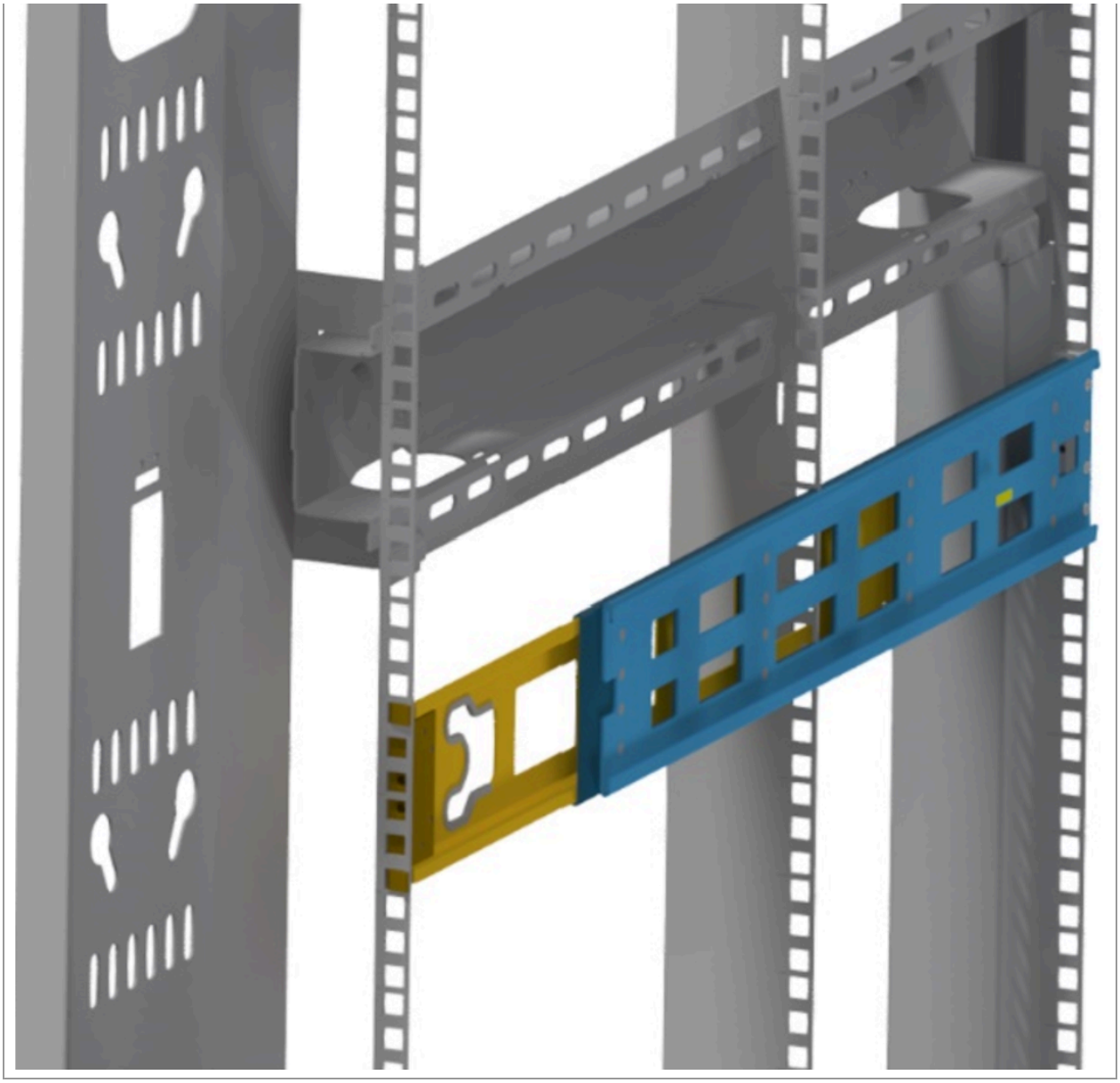
Angularly Inserting the Brakes Located at the Rails Edges into the Designated Slots in the Rack Unit



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



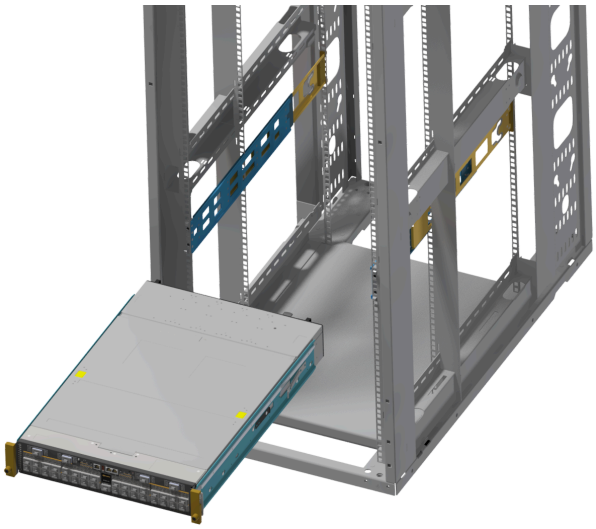
To mount the system into the rack:

> **⚠ Warning**
>
> At least two people are required to safely mount the system in the rack.

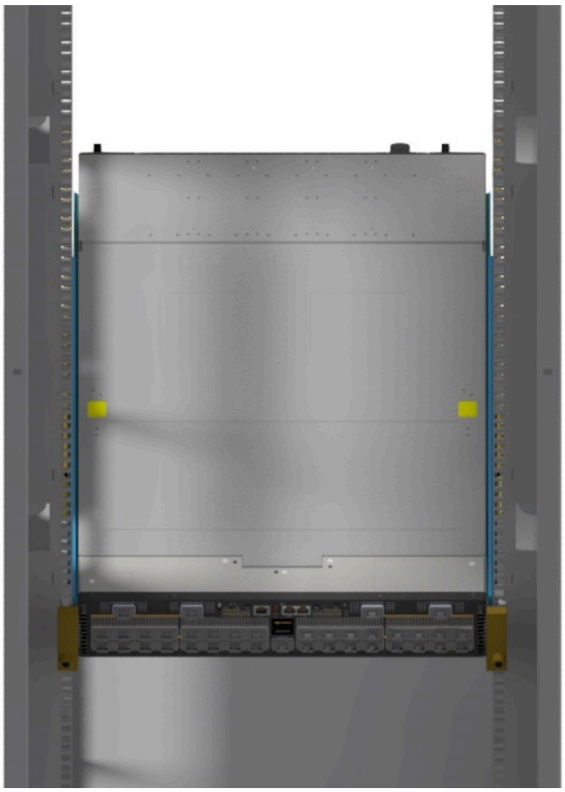
5. While your installation partner is supporting the system's weight, slide the rails installed on the system into the channels in the rack rails, and push them forward until the locking mechanism is activated on both sides and a click is heard.

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



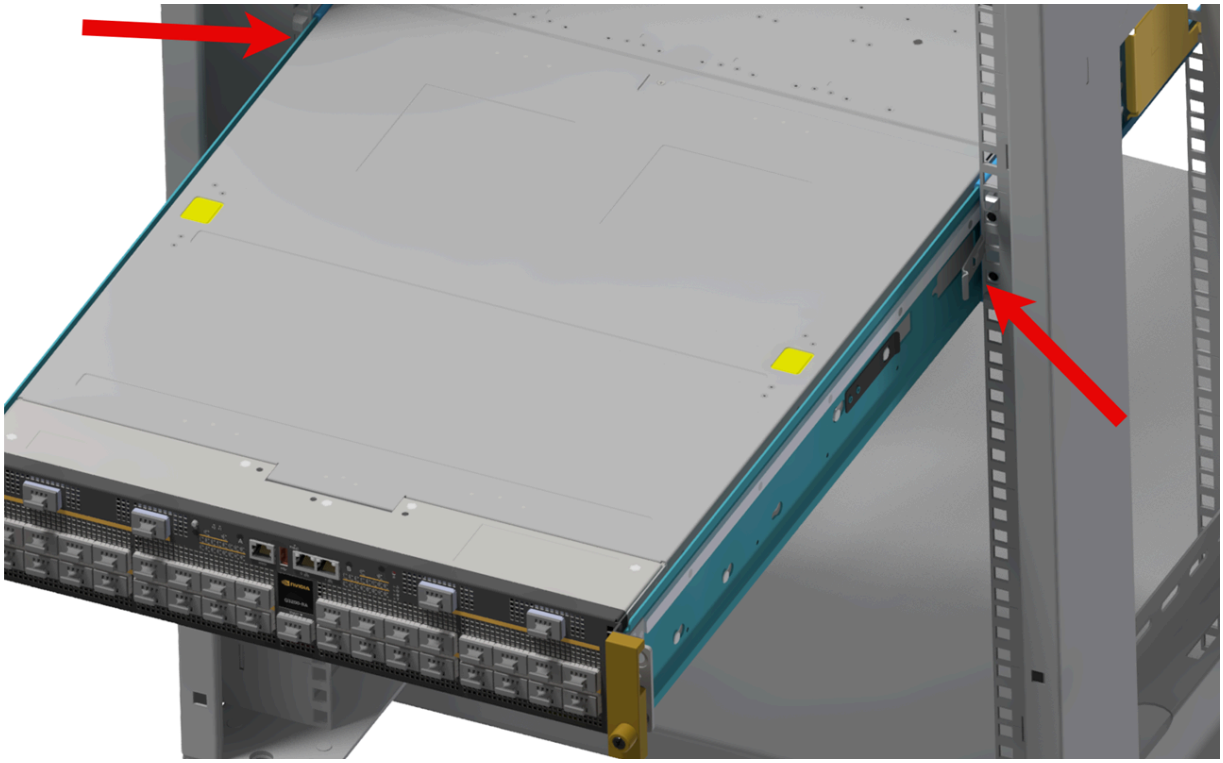
To remove the system from the rack:

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

Warning

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

Q3400-RA Tool-Less Rail Kit

Kit Part Number	Rack Size and Rack Depth Range
930-9SKIT-00L0-00B	Tool-less rail kit for NVIDIA Quantum-3 4U switch 700-800mm

Warning

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

Note

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

A	B	C
		

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.

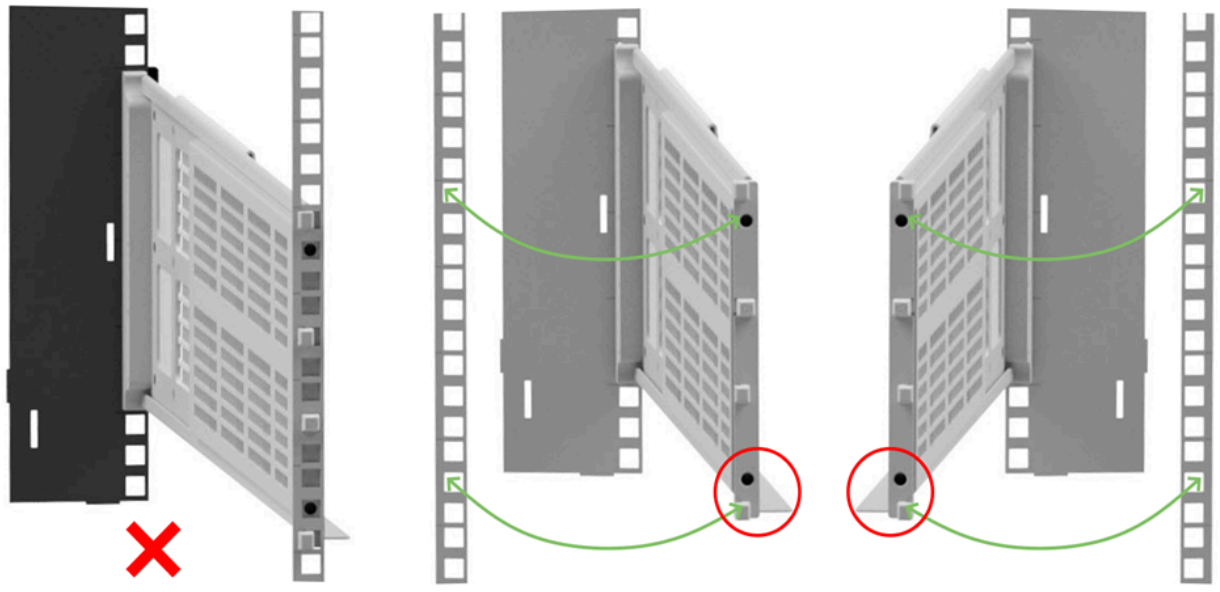
While planning how to place the system, review the two installation options shown in the table below, and consider the following points:

- 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:

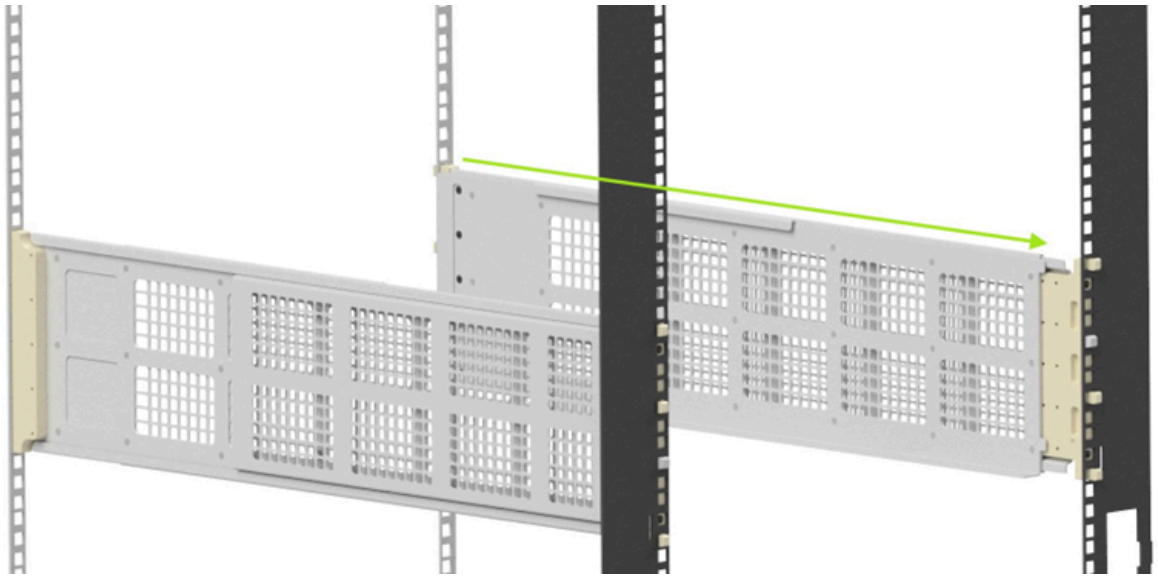
1. Install both rack rails (A) by inserting their pins to the designated key holes in the rack, and aligning them in an angular position.

Inserting the Rack Rails (A) and Aligning them in an Angular Position

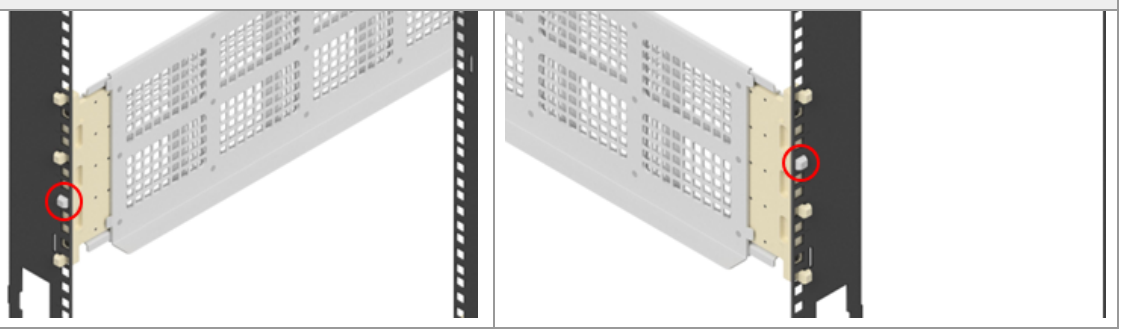


2. Secure the assembly by gently pushing the rails' pins through the slider key holes, until locking occurs.

Rack Rails Fully Inserted and Locked in the Rack Assembly

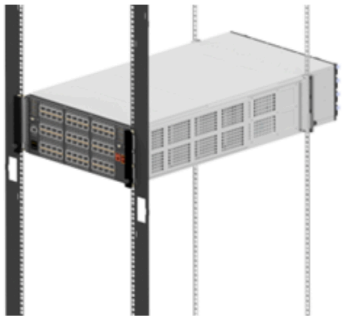
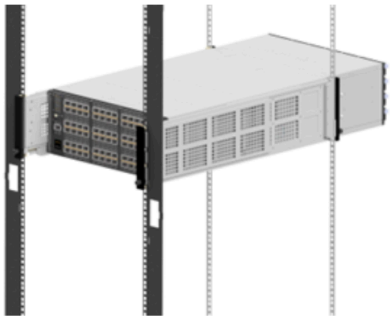


Rack Rails Fully Inserted and Locked in the Rack Assembly



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

Post Position Options - Side View

Flush	Recessed
	

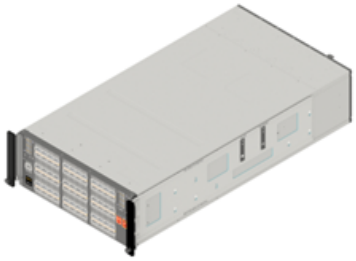
FLUSH POSITION

RECESSED POSITION

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
	

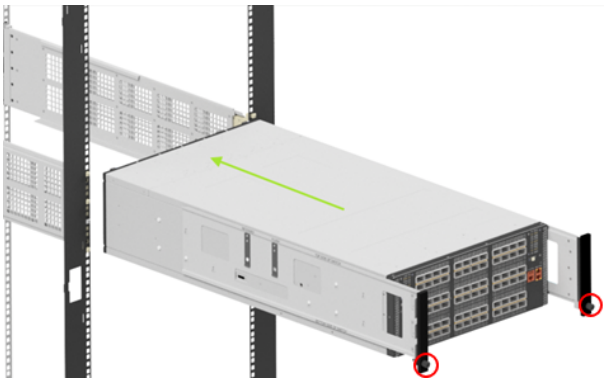
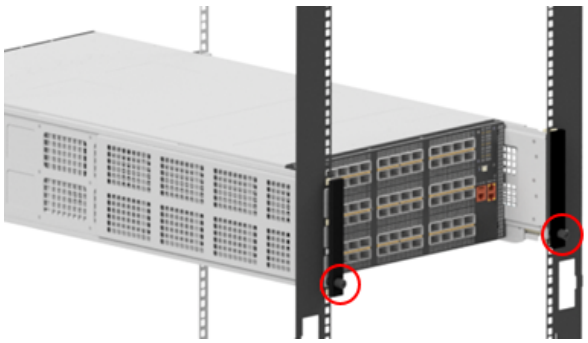
Attaching the System Rails to the Switch Chassis	
	

To mount the system into the rack:

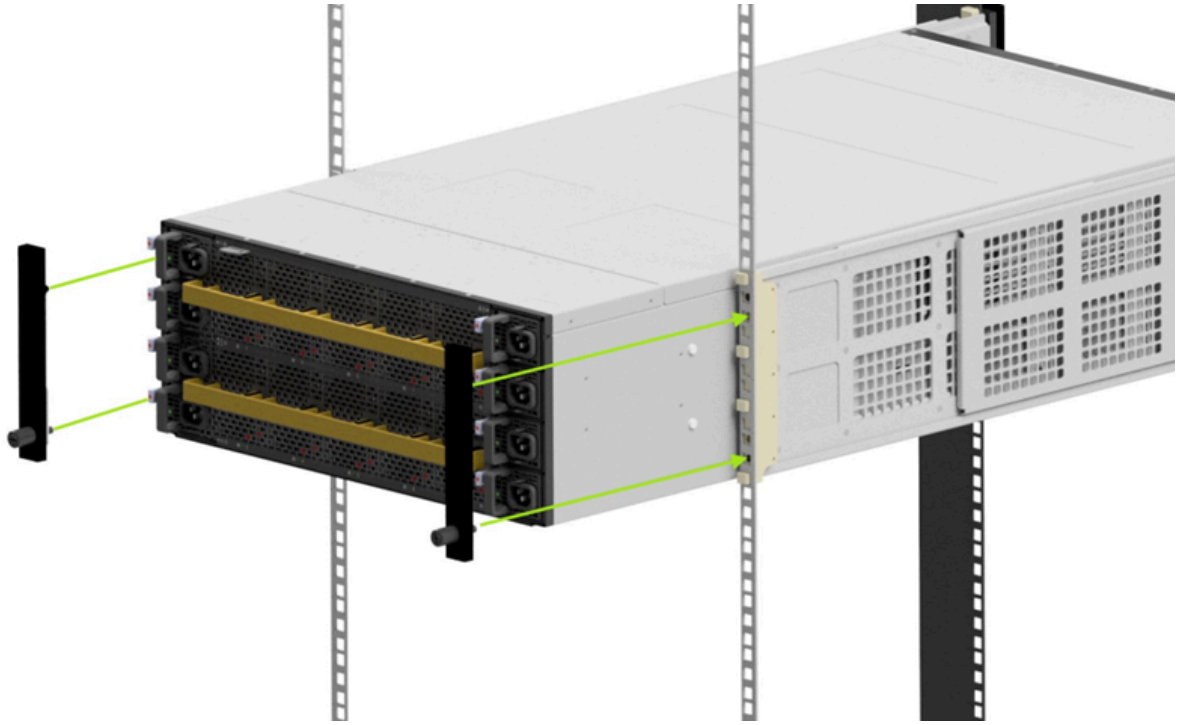
> **⚠ Warning**
>
> At least two people and server lift are required to safely mount the system in the rack.

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 tighen 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:

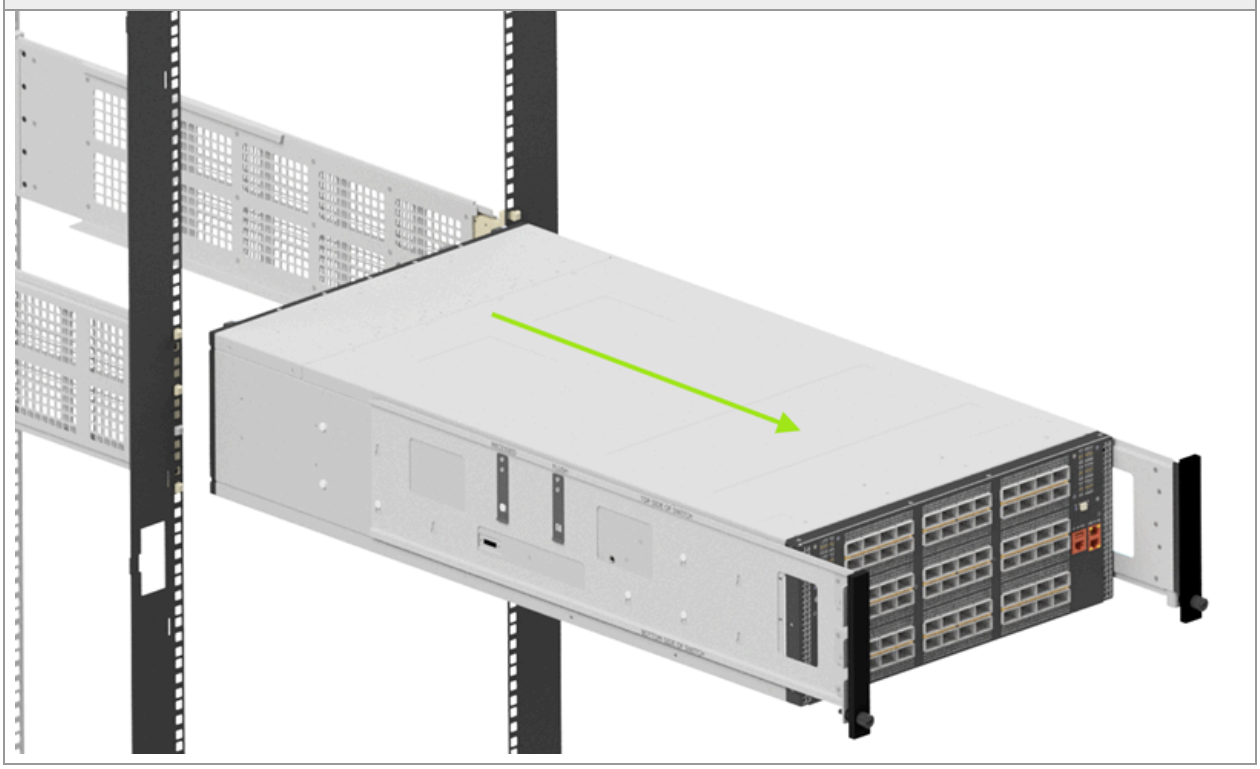
2. Loosen back captive screws and remove Black cubes (C).

3. Loosen front captive screws and pull the system out.

> ⚠ **Warning**
>
> This is a heavy system. Server lift is required to support the system weight safely.

Pulling the System Out

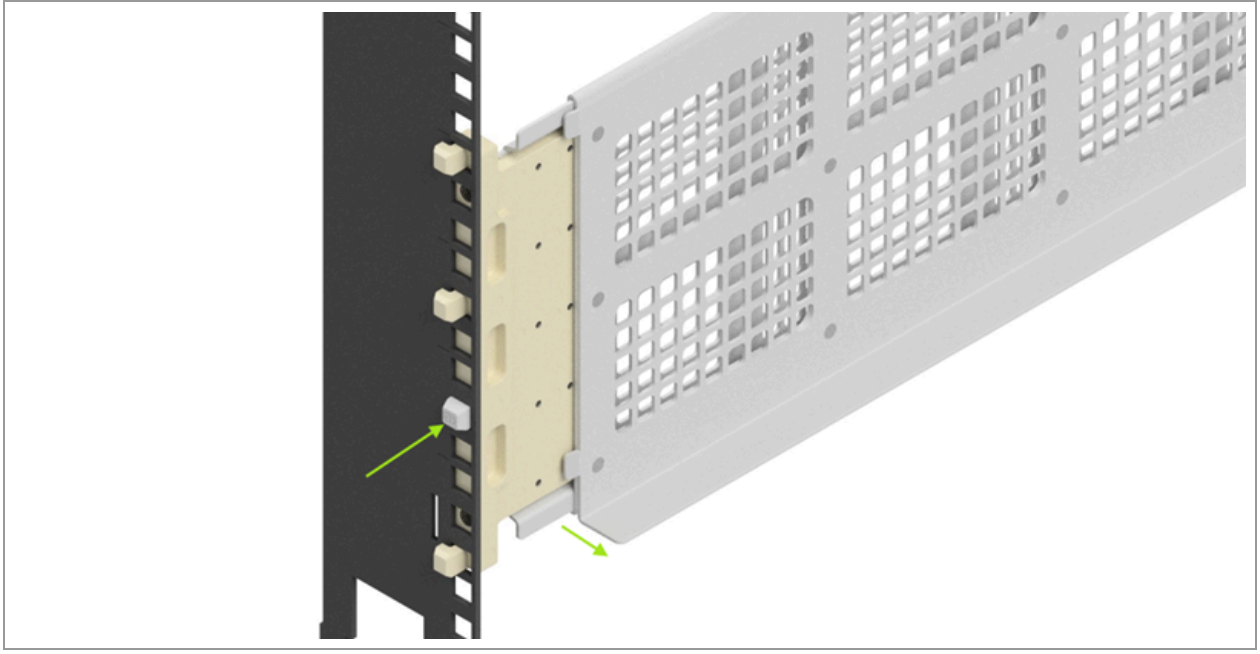
Pulling the System Out



4. Release the rack rails and system rails:

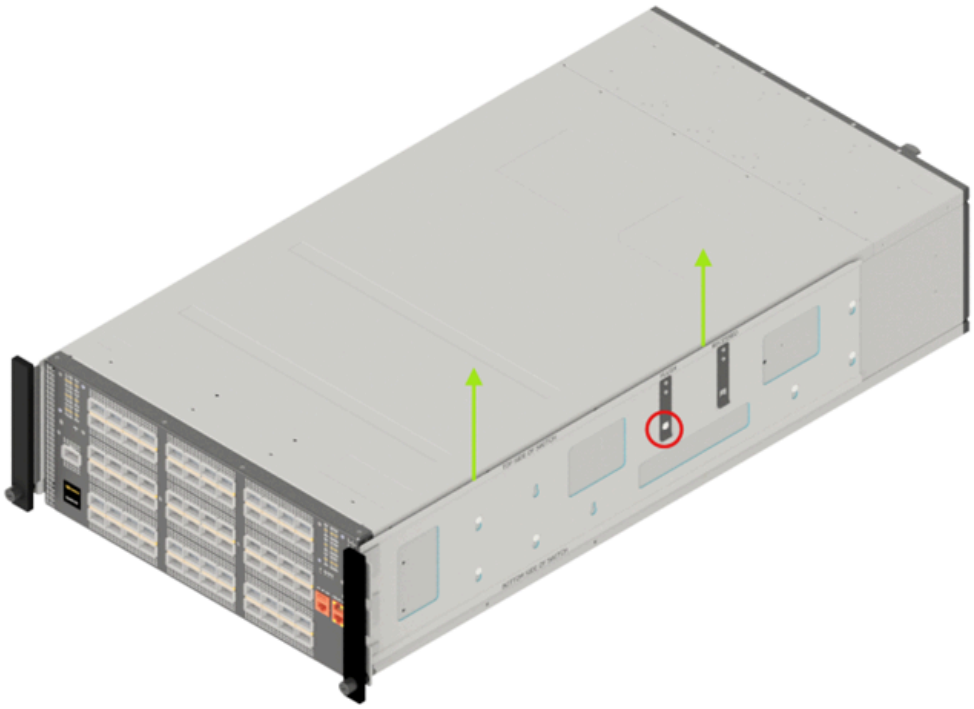
   To release the rack rails, press the locking buttons on both sides and slightly push the rail towards the inside of the cabinet until the the rail pins removed out from the rack post holes.

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



Warning

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

Cable Installation

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

Proper Condition	Improper Condition
	

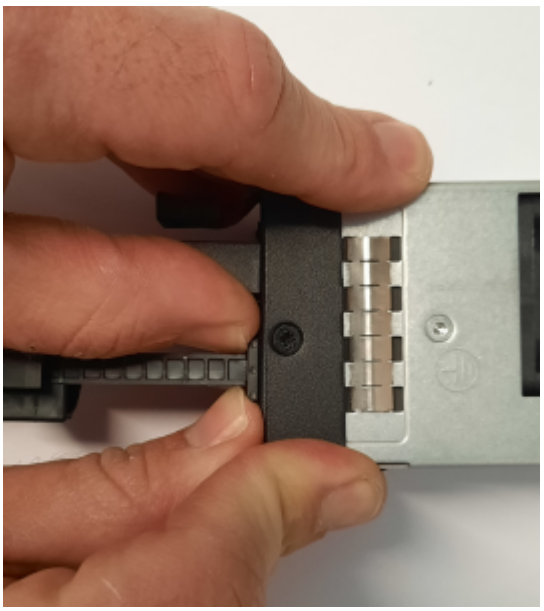
2. It is advised to place the PSU on a flat, stable surface. While you secure the PSU in place, use two thumbs to insert the retainer's two snaps into the designated holes located near the AC inlet. Make sure that the retainer's plastic loop is facing upwards, as demonstrated in the below table.

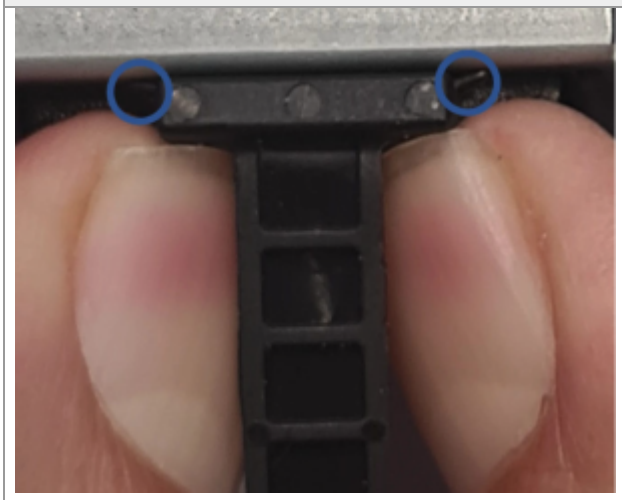
> **Note**
>
> For demonstration purposes, the images in this document show C2P (Connector-to-Power) airflow PSUs with red latches, yet the instructions apply to P2C (Power-to-Connector) PSUs with blue latches as well.

Correct Insertion	Incorrect Insertion

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:

Fully Mated Retainer


Fully Mated Retainer


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.

Proper Loop Placement	Improper Loop Placement
	

Note

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.

Port Cables

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.

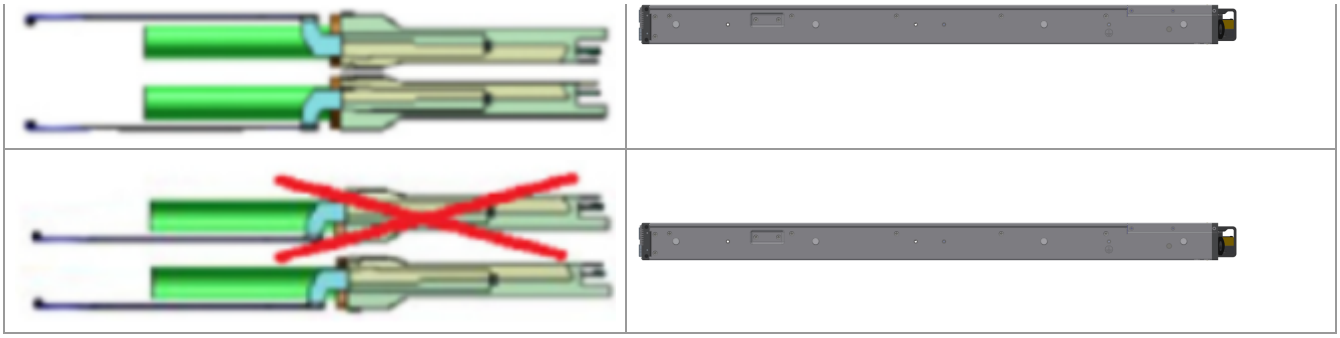
Warning

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.

Note

Unused OSFP cages must be closed with the thermal caps supplied with the system.
images/download/thumbnails/3201684916/image2021-12-1_11-35-14-version-1-modificationdate-1727603600013-api-v2.png

Cable Orientation



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.

For the Q3200 switch system:

Splitting a port changes the notation of that port from x/y/z to x/y/z/i, with “x/y/z” indicating the previous notation of the port prior to the split, and “i” indicating the number of the resulting single-lane port (1,2). Each sub-physical port is then handled as an individual port. For example, splitting port 1/5/1 into 2 lanes results in ports 1/5/1/1 and 1/5/1/2. For full notation schematics, see Port Notation Schematics.

For the Q3400 switch system:

Splitting a port changes the notation of that port from x to x/y, with “x” indicating the previous notation of the port prior to the split, and “y” indicating the number of the resulting XDR port. Each XDR port is then handled as an individual port. For example, splitting port 1 into 2 ports results in ports 1/1 and 1/2. For full notation schematics, see Port Notation Schematics.

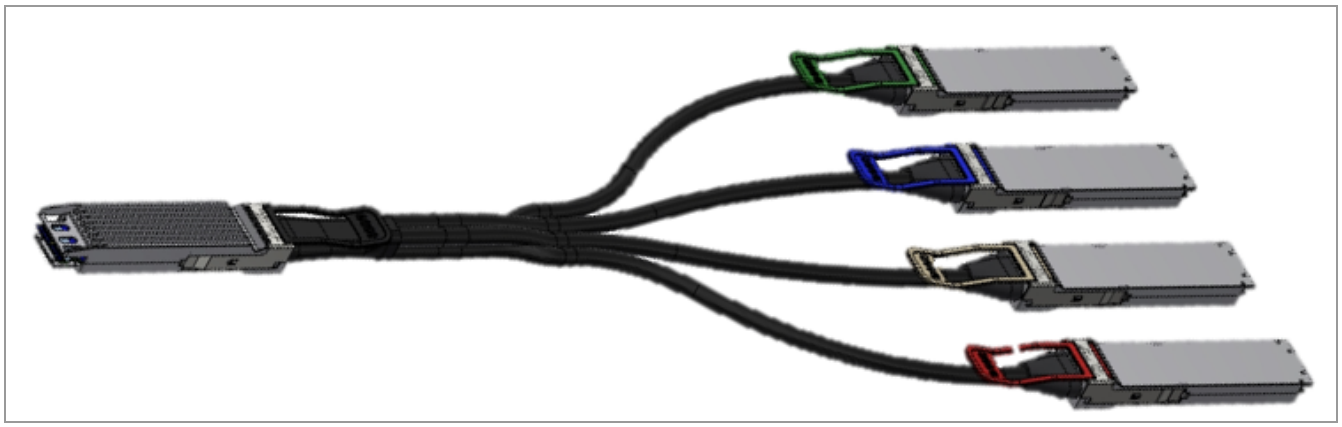
Note

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



Tip

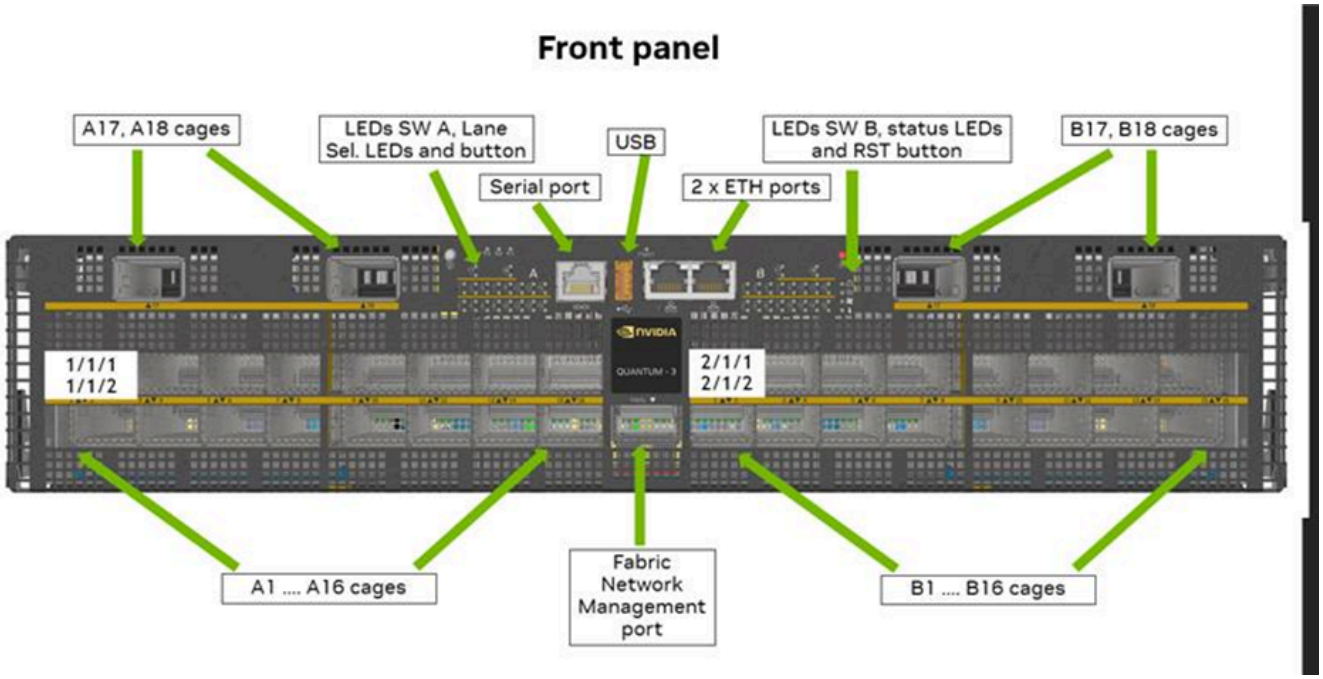
- Splitting the interface deletes all configuration on that interface.
- In order to be able to use this feature, the system profile command must be activated with split-ready configuration (cross-reference to system profile command).
- Changes will take effect after reset. In order to reset an unmanaged 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 *MLNX-OS® User Manual*.

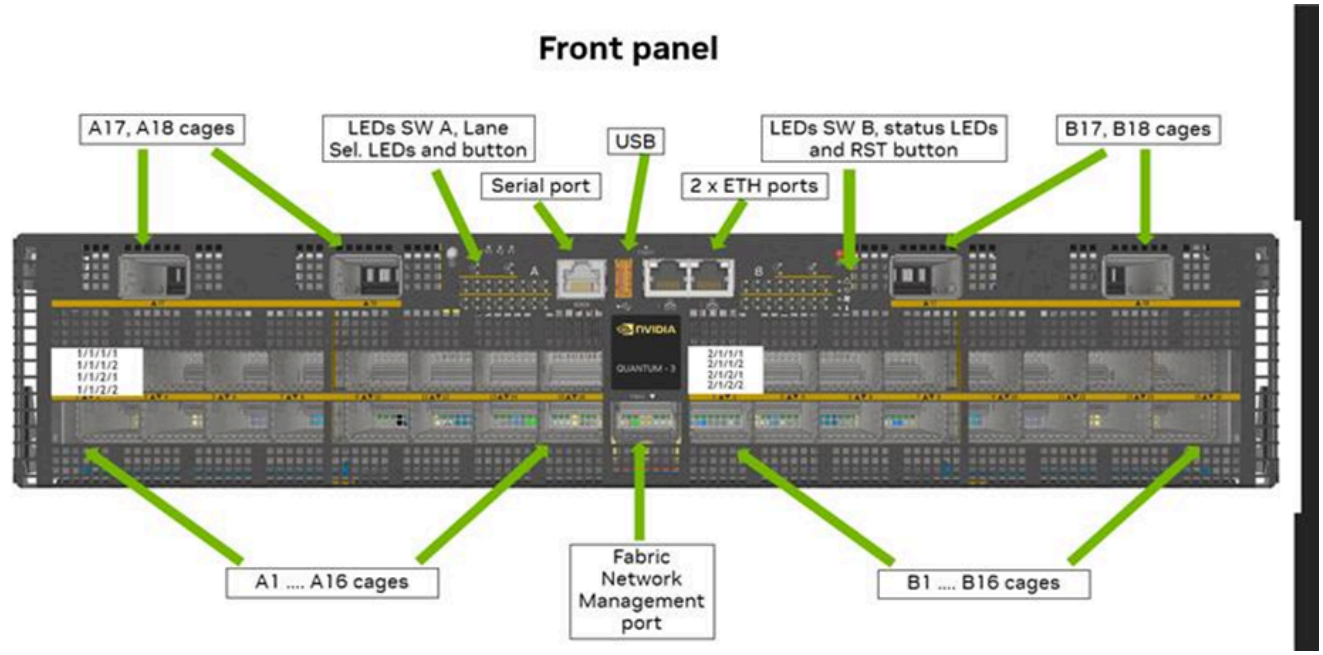
Splitting Options

Q3200-RA Splitting Options

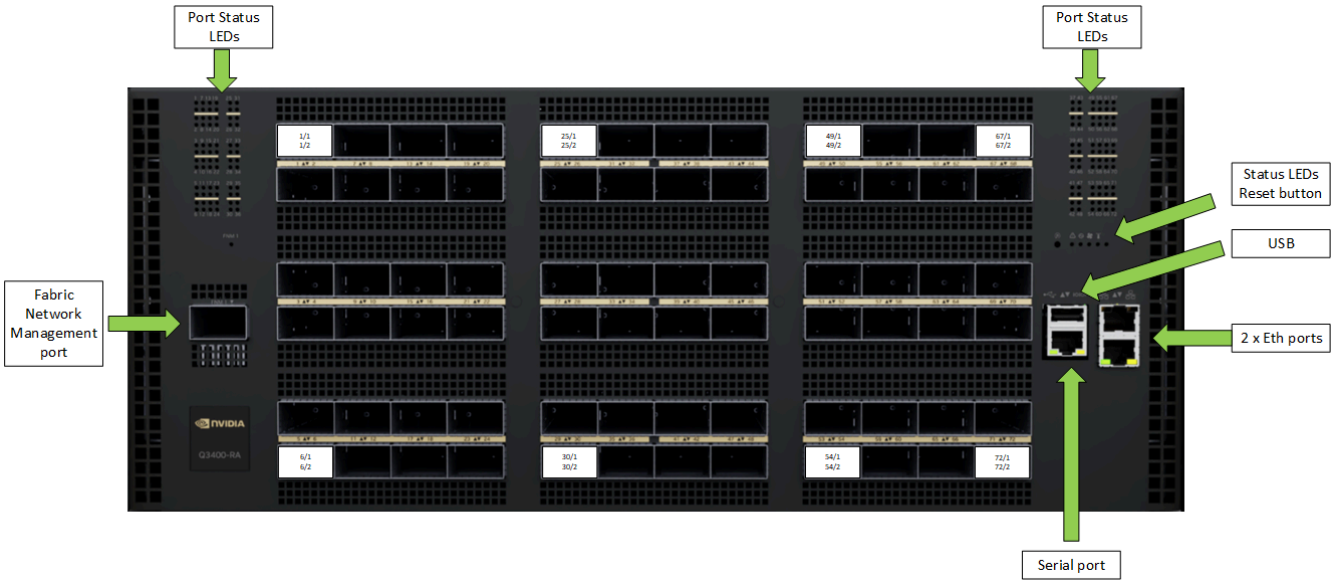
The following diagram shows ASIC A and ASIC B, as well as the cage numbers. Each cage splits into two. For example : ASIC A/Cage1/ has both Port1 and Port2:



The following diagram shows the ASIC/Cage/Port/Split numbering:



Port Notation Schematics for Q3400-RA Cage/Port profile :



Logical Port Numbering Schematic

Initial Power On

Each system's input voltage is specified in the Specifications chapter.

The power cords should be standard 3-wire AC power cords including a safety ground and rated for 15A or higher.

> ⚠ **Warning**
>
> 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 (2x power cables for Q3200, 4x power cables for Q3400).
2. Wait for the system upload process.

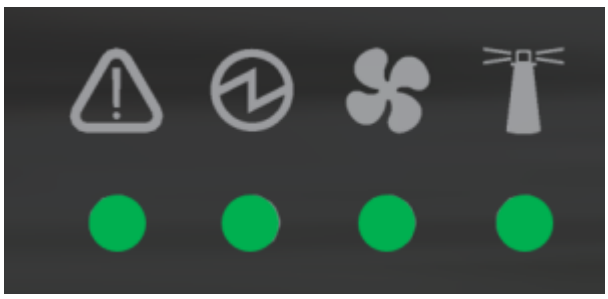
> **⚠ Warning**
>
> It may take up to five minutes to turn on the system. If the System Status LED shows amber after five minutes, unplug the system and call your NVIDIA representative for assistance.

3. 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

Q3200:

Q3400:



⚠ Warning

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:

⚠ Warning

- 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 Gafahr des elektrischen Schocks. Entferrnen des Netzsteckers elnes Netzteils spannungsfrei. Um alle Einhieten spannungsfrei zu machen sind die Netzstecker aller Netzteile zu entfernen.
- ATTENTION Risque de choc et de danger e’lectriques. Le de’branchment d’une seule alimentation stabilise’e ne de’branch uniquement qu’un module “Alimentation Stabilise’e”. Pour isoler completement le module en cause, Il faut de’brancher toutes les alimentations stabilise’es.
- □□□能源危害的危□。所有 PSU 均各自□立。□所有□源供□器□□，□保交□器平台□部在□源□□□□。

System Bring-Up of Managed Systems

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

Note

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

Note

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

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 in needed. For Windows users, employing a Linux environment like Cygwin as your command line tool is recommended for interacting with NVOS.

Note

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.

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

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.

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.

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

Parameter	Setting
Flow Control	None

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.

Set Static IP Address

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

```
admin@nvos:~$ nv set interface eth0 ip address 192.0.2.42/24
admin@nvos:~$ nv set interface eth0 ip gateway 192.0.2.1
admin@nvos:~$ nv config apply
```

> **Note**
>
> Configuring static IP address will trigger unsolicited announcement messages to the gateway in order to reveal the devices'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.

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.

Manual Settings

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
```

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
```

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

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
```

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 infomation please see NTP Commands section in the NVIDIA NVOS User Manual for InfiniBand Switches.

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 .

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`.

Warning

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
```

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.

FRU Replacements

Power Supply

NVIDIA systems are equipped with replaceable power supply units which work in a redundant configuration (2x for Q3200, 4x for Q3400). Either unit may be extracted without bringing down the system.

> ⚠ **Warning**
>
> 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.

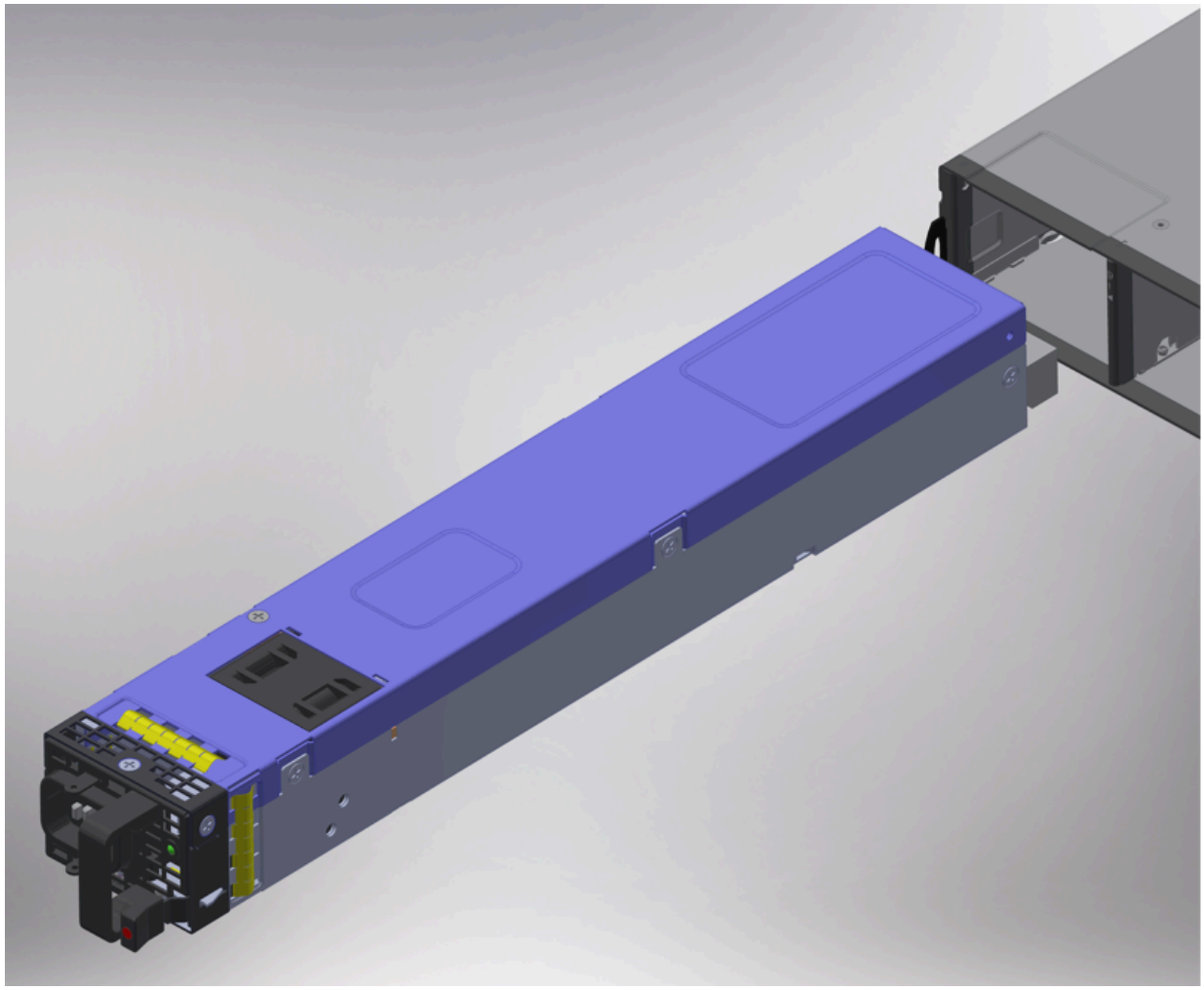
> ⚠ **Warning**
>
> Power supply units have directional air flows similar to the fan module. The fan module airflow must coincide with the airflow of all of the power supply units. If the power supply unit airflow direction is different from the fan module airflow direction, the system’s internal

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. Grasping the handle with your hand, push the latch release with your thumb while pulling the handle outward. As the power supply unit unseats, the power supply unit status LEDs will turn off.
3. Remove the power supply unit.

PS Unit Pulled Out



To insert a power supply unit:

1. Make sure the mating connector of the new unit is free of any dirt and/or obstacles.

> ⚠ **Warning**
>
> 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.

> ⚠ **Warning**
>
> 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.

Fans

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

> ⚠ **Warning**
>
> 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.

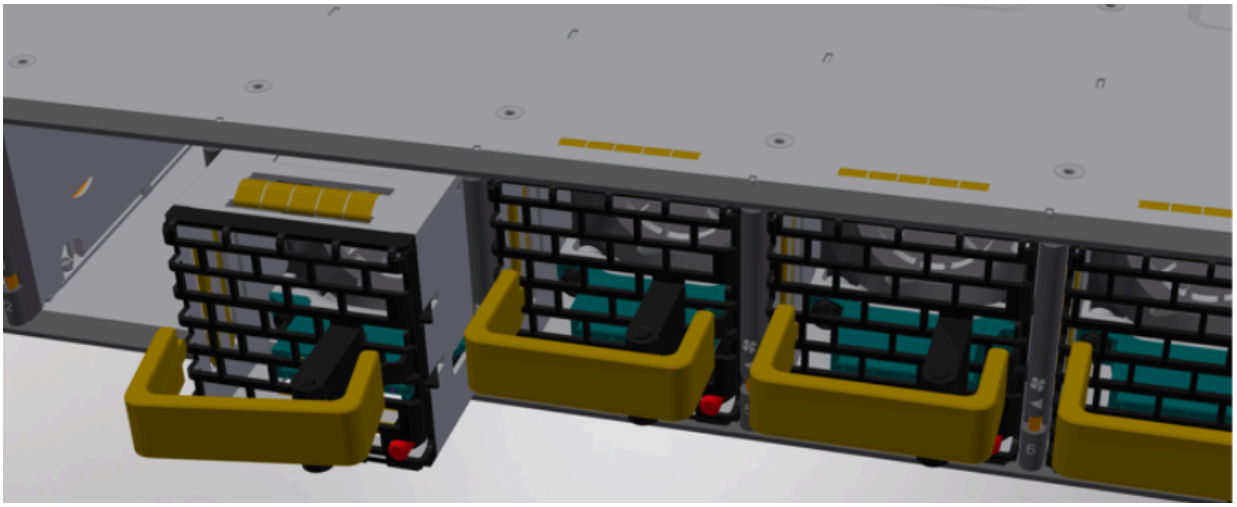
To extract a fan unit:

Note

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.

⚠ Warning

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.

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.

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

*This interface is not found in managed systems.

**This interface is not found in externally managed systems.

In order to review the full configuration options matrix, refer to Management Interfaces, PSUs and Fans.

Data Interfaces

The data interfaces use OSFP connectors. The full list of interfaces per system is provided in Speed and Switching Capabilities.

Each OSFP port consists of 4 logical InfiniBand ports, and can be connected with OSFP cable or connector for 40/56/100/200/400/800Gb/s in Q3200-RA, and for 400/800Gb/s in Q3400-RA. The systems offer Class 8 (33W) OSFP224 transceivers support.

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.

RS232 (Console)

Note

The RS232 serial “Console” port is labeled images/download/thumbnails/3563322759/image2019-3-5_16-50-5-version-1-modificationdate-1738596486340-api-v2.png .

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.

Note

This interface is not found in externally managed systems.

Management

Note

The RJ45 Ethernet “MGT” port is labeled images/download/thumbnails/3563322759/image2019-3-5_16-52-4-version-1-modificationdate-1738596485810-api-v2.png .

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.

Note

This interface is not found in externally managed systems.

USB

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

Note

- 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.

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.

Note

- 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.

Warning

Only original NVIDIA cables supplied with the switch package can be used to connect a switch system to the server.

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 Accessory and Replacement Parts appendix for harness details.

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.

> **Note**
>
> Since the FNM port is semi-populated (only the first four lanes of it are wired), it functions as an HDR port.

Q3200 Air Cooled - Non-planarized FNM Port (Hardware Limited to 2x100 Configuration)				
Mode		Description	Transceivers Legacy Part Number	Transceivers SKU
NDR SM - Single Mode**	FNM side	1 port is active in 200Gb/s, switch side (Finn)	980-9I30H-00NM00	980-9I30H-00NM00 (100m)
NDR SM - Single Mode**	UFM 3.5 side	1 port in 200Gb/s (RHS)	MMS4X00-NS400	980-9I31N-00NM00 (100m)
NDR MM**	FNM side	1 port is active in 200Gb/s, switch side (Finn)	MMA4Z00-NS	980-9I510-00NS00 (50m)
NDR MM*	UFM 3.5 side	1 port in 200Gb/s (RHS)	MMA4Z00-NS400	980-9I51S-00NS00 (50m)
XDR SM - Single Mode**	FNM side	1 port is active in 200Gb/s, switch side (IHS)	-	980-9IAH1-00XM00 (500m)
XDR SM - Single Mode*	UFM 3.5 side	1 port in 200Gb/s (RHS)	-	980-9IAI0-00XM00 (500m)

* UFM3.5 configures the C8180 cards to be non-planarized.

** The 980-9I30H-00NM00 / 980-9I510-00NS00 / 980-9IAI0-00XM00 transceivers support a 2x100 Gb/s configuration .

Q3400 Air Cooled - Planarized FNM Port				
Mode		Description	Transceivers Legacy Part Number	Transceivers SKU
NDR SM - Single Mode	FNM side	1 port is active in 400Gb/s, switch side (Finn)	MMS4X00-NS	980-9I30H-00NM00 (100m)
NDR SM - Single Mode	UFM 3.5 side	1 port in 400Gb/s (RHS)	MMS4X00-NS400	980-9I31N-00NM00 (100m)
NDR Multi Mode	FNM side	1 port is active in 400Gb/s, switch side (Finn)	MMA4Z00-NS	980-9I510-00NS00 (50m)
NDR Multi Mode	UFM 3.5 side	1 port in 400Gb/s (RHS)	MMA4Z00-NS400	980-9I51S-00NS00 (50m)
XDR SM - Single Mode*	FNM side	1 port is active in 400Gb/s, switch side (IHS)	-	980-9IAH1-00XM00 (500m)
XDR SM - Single Mode*	UFM 3.5 side	1 port in 400Gb/s (RHS)	-	980-9IAI0-00XM00 (500m)

* The 980-9IAH1-00XM00 transceiver supports a 4x100 Gb/s configuration with a planarized port design.

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.

⚠ **Warning**

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 Onyx (MLNX-OS) 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”.

LEDs

See LED Notifications.

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 LEDs	Shows the health of the power supply units.	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

System Status LED

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

Front Panel


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

> ⚠ **Warning**
>
> 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.

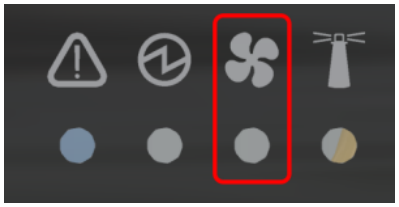
System Status LED Assignments

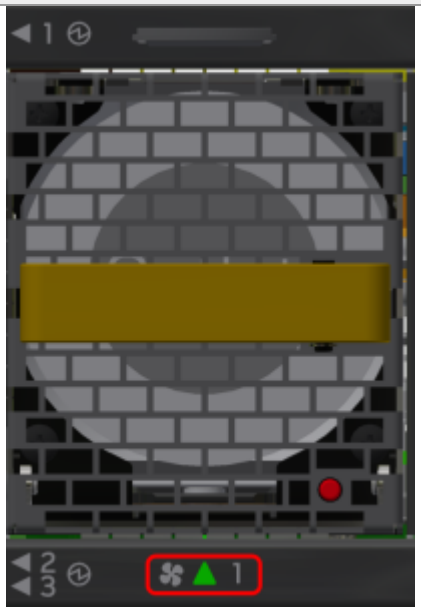
LED Behavior	Description	Action Required
Solid Green	The system is up and running normally.	N/A

LED Behavior	Description	Action Required
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.

Fan Status LED

Fan Status LED - Front and Rear Sides (marked red)

OPN	Front Panel	Rear Panel
Q3200		
Q3400		

OPN	Front Panel	Rear Panel
		

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.

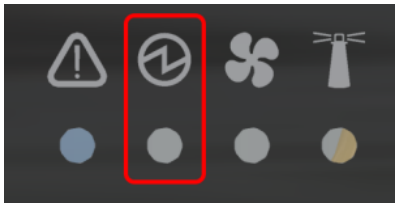
⚠ Warning

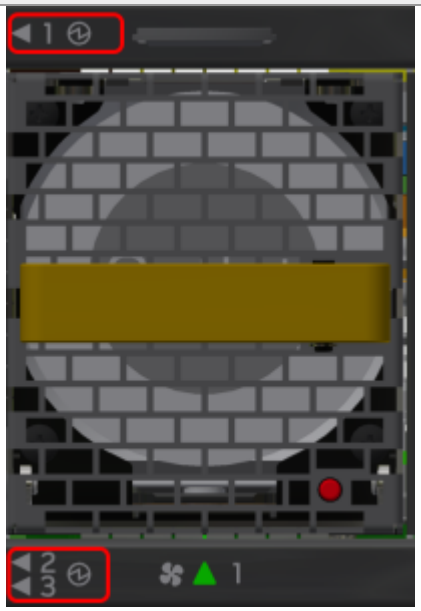
Risk of Electric Shock! With the fan module removed, power pins are accessible within the module cavity. Do not insert tools or body parts into the fan module cavity.

Power Supply 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		
Q3400		

OPN	Front Panel	Rear Panel
		

Power Supply Unit 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

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.

LED Behavior	Description	Action Required
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.
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.

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
```

Port LEDs

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

Port LEDs in InfiniBand System Mode

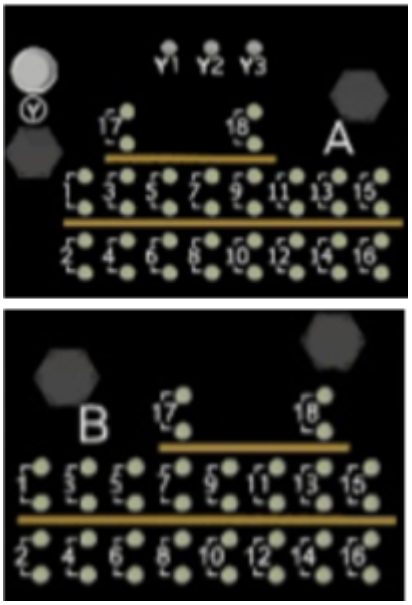
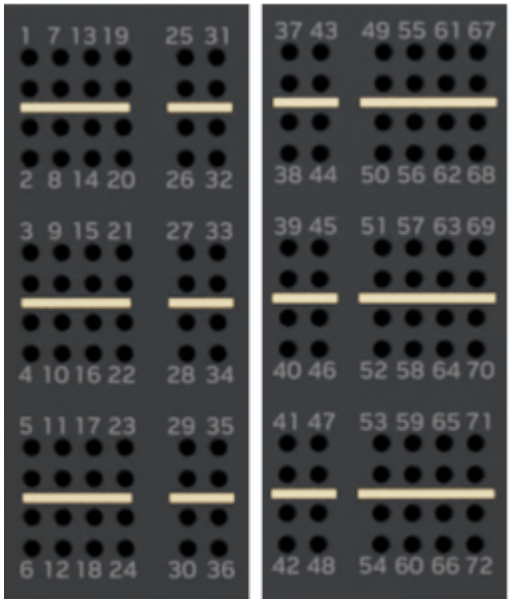
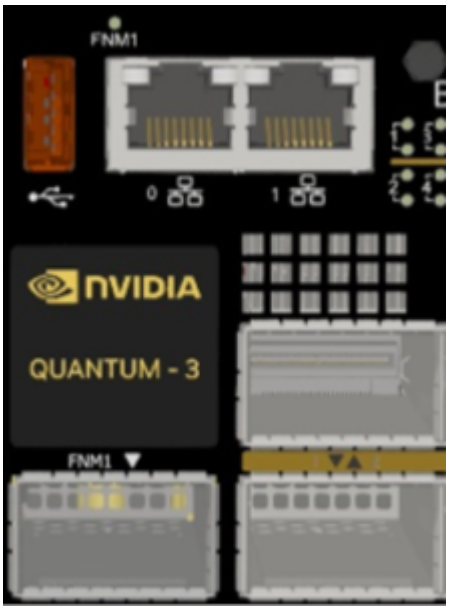
LED Behavior	Description	Action Required
Off	Link is down.	Check the cable.
Solid Green	Link is up with no traffic.	N/A
Flashing Green	Link is up with traffic.	N/A
Solid Amber	Link is up.	Wait for the Logical link to raise. Check that the SM is up.
Flashing Amber	A problem with the link.	Check that the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

Note

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

Q3200-RA	Q3400-RA
Port LEDs:	Port LEDs:

Q3200-RA	Q3400-RA
	
FNM LED: 	FNM LED: 

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

Bandwidth	Flashing Frequency in Hz	Flashing Frequency in Seconds
75-100%	4Hz	0.125 sec On, 0.125 sec Off

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

Q3200-RA:

Q3400-RA:

Note

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

Troubleshooting

Problem Indicator	Symptoms	Cause and Solution
LEDs	System Status LED is blinking for more than 5 minutes	Cause: MLNX-OS software 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 MLNX-OS 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.

Problem Indicator	Symptoms	Cause and Solution

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:
		`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:`
		`"`

Problem Indicator	Symptoms	Cause and Solution
		• Select previous image to boot by pressing an arrow key and choosing the appropriate image.

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	2 PSUs: 23kg
	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
	Noise level	TBD dBA at room temperature
Regulatory	Safety	CB, cTUVus, CE, CU
	EMC	EMC: CE, FCC, VCCI, ICES, RCM
	RoHS	RoHS compliant
Power	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: 3486W
Main Devices	CPU	Intel
	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: 60kg
	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
	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): 2.9KW Max power with active cables: 7KW
Main Devices	CPU	Intel
	Switch	Quantum-3
Throughput	Switching	115.2 Tbps
	Speed	400, 800Gb/s per port

Appendixes

The document contains the following appendixes:

Accessory and Replacement Parts

Ordering Part Numbers for Replacement Parts

Part Number	Part Description
930-9SKIT-00L0-00C	Tool-less rail kit for NVIDIA Quantum-3 2U switch (Q3200)
930-9SKIT-00L0-00B	Tool-less rail kit for NVIDIA Quantum-3 4U switch (Q3400)
930-9SPSU-00RA-00A	NVIDIA Power-Supply Unit, 2000W AC, C2P Airflow, for Quantum-3 switches
930-9SFAN-00RM-00B	NVIDIA fan unit, C2P Airflow, for XDR air cooled switch
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	OSFP thermal cap with openings for airflow

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 100°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** – 120°C: When the ASIC device crosses this temperature, the switch firmware will automatically shut down the device.

- **Emergency** – 130°C: In case the firmware fails to shut down the ASIC device upon crossing its Critical threshold, the device will auto-shutdown upon crossing the Emergency (130°C) threshold.

Interface Specifications

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

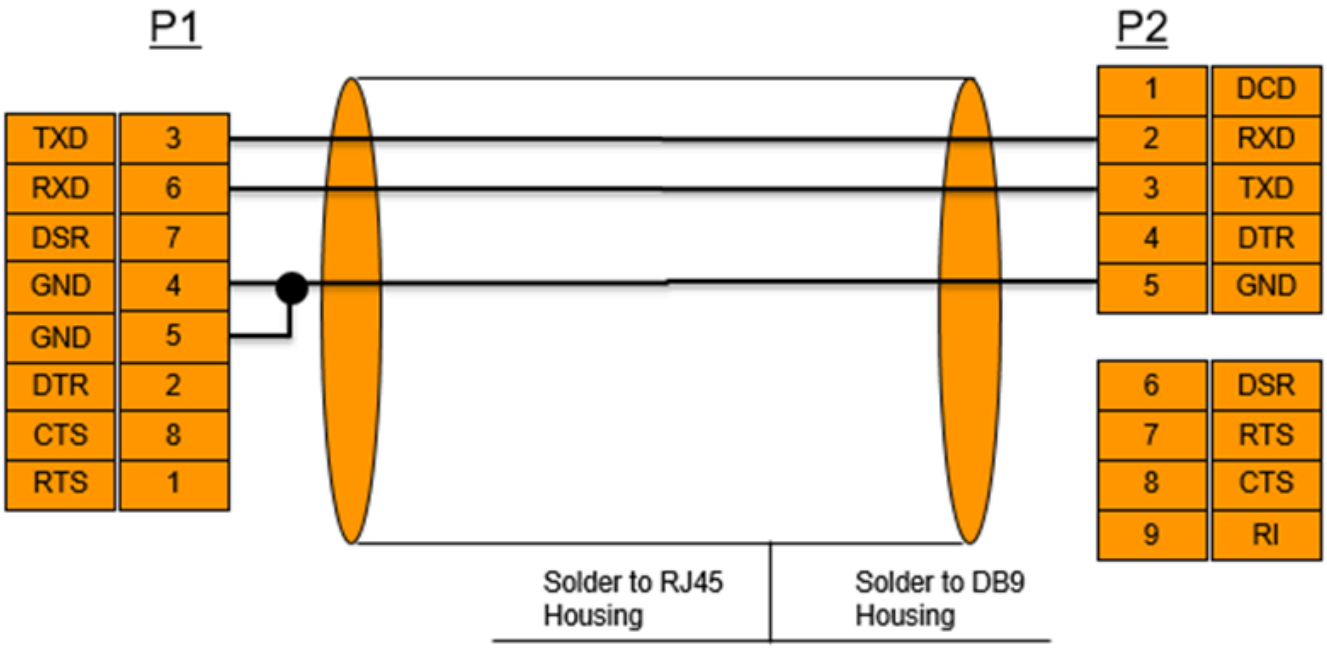
Net Name	PinNum	Signal Description
VCC1	16	+3.3V Power
LPWn_PRSn	17	PRSn Low-Power Mode / Module Present
GND	18	Ground
RX7N	19	Receiver Data Inverted
RX7P	20	Receiver Data Non-Inverted
GND	21	Ground
RX5N	22	Receiver Data Inverted
RX5P	23	Receiver Data Non-Inverted
GND	24	Ground
RX3N	25	Receiver Data 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
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

Net Name	PinNum	Signal Description
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

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



Warning

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.

Disassembly and Disposal

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.

> ⚠ **Warning**
>
> 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.

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.

Document Revision History

Date	Revision	Description
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.

to avoid a default of the application or the product. Weaknesses in customer's product designs may affect the quality and reliability of the NVIDIA product and may result in additional or different conditions and/or requirements beyond those contained in this document. NVIDIA accepts no liability related to any default, damage, costs, or problem which may be based on or attributable to: (i) the use of the NVIDIA product in any manner that is contrary to this document or (ii) customer product designs.

No license, either expressed or implied, is granted under any NVIDIA patent right, copyright, or other NVIDIA intellectual property right under this document. Information published by NVIDIA regarding third-party products or services does not constitute a license from NVIDIA to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property rights of the third party, or a license from NVIDIA under the patents or other intellectual property rights of NVIDIA.

Reproduction of information in this document is permissible only if approved in advance by NVIDIA in writing, reproduced without alteration and in full compliance with all applicable export laws and regulations, and accompanied by all associated conditions, limitations, and notices.

THIS DOCUMENT AND ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL NVIDIA BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF ANY USE OF THIS DOCUMENT, EVEN IF NVIDIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Notwithstanding any damages that customer might incur for any reason whatsoever, NVIDIA's aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms of Sale for the product.

Trademarks

NVIDIA and the NVIDIA logo are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries. Other company and product names may be trademarks of the respective companies with which they are associated.