



Aivres Exascale Server Rack Solution KRS8000V3 User Manual

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Date: August 29, 2025

Revision History

Refer to the table below for the updates made to this user manual.

Date	Version	Description of Change
March 28, 2025	0.1	First draft
April 01, 2025	1.0	Initial release
May 20, 2025	2.0	- Added leak drip pan caution note in Chapter 2.3 - Updated rack dimension in Table 2-1 and Table 5-17 - Updated the Front View, Rear View drawings and its descriptions in Chapter 3 - Added power connection drawing in Chapter 3.2.1.3 - Updated number of rack deployed devices in Table 2-1, Table 3-7, Table 3-8, Chapter 3-1, Chapter 5.1.2, Chapter 5.2 , and Chapter 5.3 - Updated sliding rails installation steps in Chapter 5.2.2 - Added L-bracket static rails installation drawing in Chapter 5.2.2 - Updated service tag location in Chapter 8.1 and Figure 8-1 - Performed typo check and applied corrections (for example in Figure note 'form' → 'from') - Revised Compute Tray Front View description to correct inaccuracies in Chapter 3.1.1.1 - Updated the I/O Port and Connector description in Table 3-5 - Revised USB 3.0 Type-C port to Micro-USB 2.0 port - Revised RJ45 console port to RJ45 BMC dedicated management port - Updated the key components removal and installation steps, and the drawings in Chapter 5.3 - Added NVLink switch tray installation note in Chapter 5.3.2 - Added PSU removal/installation note in Chapter 5.3.1 [Format Change] Modified page margins from 2.54 to 2.8 cm - Updated Figures that were previously taken from NV documents - Added a note on the power shelf's shelf-to-shelf connector connection in Figure 3-12

Date	Version	Description of Change
May 30, 2025	3.0	- Corrected typo in Figure 3-12 - Updated and revised OOB Switch models, specifications, drawings, and IO descriptions in Chapter 3.1.3 - Updated Web GUI firmware updating steps in Chapter 6.1 - Updated Redfish firmware updating steps in Chapter 6.2 - Added IPMI firmware updating method in Chapter 6.3 - Updated the TOR OOB management switch LED icons and status description in Chapter 4.3 - Updated low-resolution drawings to improve image clarity; further updates planned for future revisions
June 03, 2025	3.1	Deleted the service portal information in Chapter 8.1
June 05, 2025	3.2	Updated the service support email address and hyperlink
July 16, 2025	4.0	- Added screw tightening/loosening direction to the drawings. - Added USB port form factor info applicable to all key components - Changed organizational naming from “Aivres Customer Service and Aivres R&D Technology Center” to “Aivres Global Service” - Corrected typo ‘Leak Drip Pin’ → ‘Leak Drip Pan’ - Updated terminology for consistency: changed ‘RJ45 connector’ to ‘RJ45 port’, ‘RJ-45’ to ‘RJ45’, and ‘1 GB NIC’ to ‘1 GbE NIC’ - Revised Bus bar max. operating input power from 140W to 70kW in Table 3-3 - Added breakout cable note in Table 3-7 - Updated Key component LED drawings and descriptions in Chapter 3.1 and 4 - Updated Web GUI firmware update method in Chapter 6.1 - Update Environmental spec in Table 2-4 - Updated E1.S SSD LED descriptions in Chapter 4.5 - Corrected BT-3 PCIe slot form factor from FHFL to FHHL in Table 3-5 - Added Regulatory Information in Chapter 9 - Added a reference-only drawing note in Figure 3-2

Date	Version	Description of Change
		Changed Compute Tray IO Port descriptions (from '4 x RJ45 port' to '3 x RJ45 port + 1 x RJ45 NIC port') in Table 3-5
August 15, 2025	5.0	- Updated Redfish firmware updating steps in Chapter 6.2 - Removed IPMI firmware updating method. - Added compute tray and NVLink switch tray installation caution notes to emphasize that incorrect actions may cause handle breakage. - Removed Noise Level information as it was not provided in the NVIDIA official thermal report.
August 18, 2025	5.1	- Corrected Reset button description (LED reference removed) in Table 3-5 - Added note for FPC leakage detection sensor humidity level in Table 2-4
August 23, 2025	5.2	- Added a note advising users to obtain relevant installation site specification documents (e.g., CDU and manifold assembly) from Aivres representatives. - Revised power source to 50 VDC and 380/415 VAC in Table 2-2 - Updated Rack Top Bus Bar Bolts drawing in Figure 3-13
August 29, 2025	5.3	- Delete Power Whip voltage rating value in Table 2-2 - Updated Deployed Device in Table 2-1 - Updated CDU Options in Table 2-3 - Updated Rack Front View Description (blank panels and CDU space) in Chapter 2-3 - Revised fan specification (not hot-swappable) - Revised storage drive type, thickness and form factor in Table 2-1 and 3-5

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Conventions

The following conventions are used in this document:



WARNING indicates a potential for personal injury.



CAUTION indicates a potential loss of data or damage to equipment



NOTE indicates tips and additional information to aid in the proper completion of a procedure, choice of an option, or completing a task.

Security Statement

At Aivres, product safety has been our first priority and main focus. For better understanding of our products, carefully read through the following security risk statements.

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3. Some interfaces and commands used for production, assembly, return-to-depot processes, and advanced fault diagnosis may cause equipment abnormality or business interruption if misused. These commands were not covered in this document. For more information, please contact Aivres Customer Service.
4. Aivres has implemented emergency response procedures and action plans for security vulnerabilities, ensuring that product safety issues are resolved promptly. For any identified security concerns or required support regarding security vulnerabilities while using our products, please contact Aivres Customer Service.

Aivres will constantly keep our products and solutions safe and secured and achieve better customer satisfaction.

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1 General Information

This manual provides an overview of the Aivres exascale rack solution KRS8000V3, covering its technical features, system installation and setup. It is designed to help users maximize the product's capabilities and functionalities.

It is recommended that server installation, configuration, and maintenance is performed by experienced technicians only. This manual is intended for: Technical Support Engineers, Product Maintenance Engineers, and On-Site Technicians.

1.1 Safety Guidelines

Use the following safety guidelines to help ensure your personal safety and to help protect the product.

- Aivres provides a comprehensive installation service for Aivres Server, Rack, and Cabinet Systems. If your purchases do not include the Aivres on-site installation service, make sure that you inspect the shipping cartons before unpacking the equipment. If a shipping carton appears severe damaged, water immersed, or the seal or pressure-sensitive adhesive tape (PSA) is broken, request the carrier agent be present when the carton is opened. Keep all contents and packing material for the agent inspection and contact your supplier immediately if the equipment is purchased through a third-party supplier, or contact Aivres customer service if the equipment is purchased through the Aivres authorized provider or on-line store.
- BIOS and BMC setup is a significant factor in correctly configuring your server. If there are no special requirements, it is suggested to use the Default Values and not alter the parameter settings arbitrarily. After the first login, please change the BMC user password in time.
- Please install the product-compatible operating system and use the driver that comes with the server or provided by Aivres. You can go to our official site, on the Top Navigator, click on **Support > Product Resources > Drivers**, then find the correct driver of your product based on the prompt. An incompatible operating system or a non-Aivres driver may cause compatibility issues and affect the normal use of the product. Aivres will not assume any responsibility or liability for this.

Aivres shall not be liable for any damage, including but not limited to loss of profits, loss of information, interruption of business, personal injury, or any consequential damage incurred before, during, or after the use of our products.

1.2 General Safety Instructions

1.2.1 WARNING (High-Risk Situations)



WARNING

Please follow the instructions below to ensure safety. Failure to do so may result in potential significant property damage or loss, personal injury or even death.

- The power supplies in the system may generate high voltages and energy hazards that may cause personal injury, including electrical burns, shocks, or other severe consequences. It is crucial to follow all safety precautions when working with or around these components to prevent accidents.
- Always use the power supply components provided with the server, including power cords and power sockets (if included) etc. For your safety and to protect the equipment, DO NOT replace or modify power cords, plugs, or any related components without proper guidance.
- Use only approved power cord or power extension cord. DO NOT make unauthorized modifications to your power cord. It is strongly advised not to plug, attach or connect two or multiple power cords into each other. If you must use an extension cord, please consult Aivres Global Service (844-912-0007), or email to serversupport@aivres.com.
- To prevent electric shock hazards due to leakage currents, ensure that the power cables of the system and peripherals are securely connected to a properly earthed/grounded outlet. If earthing/grounding conductors are not installed and it is uncertain whether there is appropriate earthing/grounding protection, please do not use or attempt to operate the equipment. You can contact and consult a licensed electrician.
- Connect the equipment only to a power source that meets the specifications on the rated input label. Use only the designated external power supplies to prevent electrical hazards. To protect the equipment from damages caused by voltage spikes or drops, it is suggested to use a voltage stabilizer or an uninterruptible power supply (UPS).
- DO NOT insert any objects into the openings of the system, as this may cause a short circuit, potentially resulting in fire or electric shock.
- Keep the system away from heat sources (such as radiators or exhaust vents) to prevent overheating, which may lead to fire hazards or system failure. Make sure the air vents remain clear and unobstructed to allow proper airflow and cooling.
- Avoid spilling liquids or dropping food into the system or its components. Do not operate the system in high-humidity or dusty environments.
- Using an incompatible battery may result in an explosion. Before replacing the battery, consult the manufacturer and use only the recommended or equivalent battery type. For proper disposal, contact a local waste recycling center.

- This is a Class A product and may cause radio interference. In such cases, users must take appropriate measures to minimize or eliminate the interference to prevent potential operational disruptions.

1.2.2 CAUTION (Moderate-Risk Situations)

CAUTION

Follow the guidelines below to help prevent potential issues such component damage or data loss.

- If any of the following situations occur, immediately unplug the power cord from the outlet and contact Aivres Customer Service:
 - The power cord or plug is damaged.
 - The product has been exposed to liquid.
 - The product has fallen or sustained damage.
 - Foreign objects have entered the product.
 - The product does not function properly even when you follow the operating instructions.
- If the system is exposed to liquid, please follow steps below:
 - 1) Power off the system, disconnect all cables from the outlet, wait for 10 to 20 seconds, and then open the chassis cover.
 - 2) Place the system in a well-ventilated area and let it dry for at least 24 hours. Make sure the system is completely dry and no remaining moisture before proceeding.
 - 3) Close the chassis cover, reconnect all cables, and then power on the system.
 - 4) If the system fails to operate normally or exhibits abnormal behavior, please contact Aivres R&D Technology Center for technical support (844-912-0007).
- Ensure proper placement of system and power cables. Avoid running cables through high-traffic areas, and do not place objects on them.
- Before removing the chassis cover or accessing the internal system components, allow the equipment to cool down. This ensures that all components, including heat-sensitive parts, have reached a safe temperature to avoid injury or damage
- To avoid damage to the motherboard, power off the system and wait for at least 5 seconds before removing components or disconnecting peripherals from the system.

- To prevent damages to electronic components from electrostatic discharge, please follow the precautions below:
 - Before handling or accessing any electronic components, discharge any static electricity from your body to avoid transferring it to sensitive parts. You can do this by touching an earthing object, such as the unpainted metal surface on the rack.
 - While operating the system, occasionally touch the earthing conductor or an earthing object to discharge accumulated static electricity from your body.
 - DO NOT remove any static-sensitive components from their anti-static packaging unless they are ready for installation or use.
 - For more information on electrostatic protection methods, refer to [ESD Precautions](#).
- Before removing or installing internal components, ensure that proper authorization has been received from Aivres and follow the precautions below:
 - Power off the system and disconnect all cables, including all system connections. Always hold the connector firmly when disconnecting cables, and gently pull it out - NEVER pull on the cable itself.
 - Only remove the chassis cover or access internal components after the system has completely cooled down.
 - Touch the earthing conductor or an earthing object to discharge any static electricity from your body.
 - Handle components and plug-in cards with care. Firmly grip the edges of the plug-in cards, components, or their metal retaining brackets.
- During the installation and use of the rack/cabinet, follow the precautions below:
 - After the rack/cabinet has been installed, ensure that the stabilizer feet are securely fixed to the rack and grounded, with the full weight of the rack properly supported by the ground.
 - Always load components starting from the bottom, and place the heaviest items first. When removing or extending components from the rack, use slight force to keep the rack stable.
 - Be careful when pressing the release latch to slide components in or out, as the rail may pinch or injure your fingers.
 - Avoid overloading the AC power branch circuits within the rack. The total load should not exceed 80% of the circuit's rated capacity.
 - Ensure proper ventilation for all components in the rack/cabinet.

- Never step on any other component while performing maintenance or repairs inside the rack/cabinet.
- Do not attempt to repair individual components or modify any printed circuit board. Improper repairs can cause serious safety issues.
 - Follow only the repair procedures specified in the product documentation. Troubleshooting and repairs are limited to CRU or module-level replacement.
 - Installation and maintenance must be carried out by qualified personnel. You can contact Aivres for support and guidance.

1.2.3 ESD Precautions

To avoid causing damage to the system, ensure you follow the necessary electrostatic discharge precautions when installing the system or handling its components. Static electricity discharged from a finger or other conductor may damage system boards or other static-sensitive components. Such damage can reduce the device's service life.

To prevent electrostatic damage:

- Use static-safe containers to transport and store products, minimizing direct hand contact.
- Keep electrostatic-sensitive components in their packaging before they arrive at static-free workstations.
- Place parts on a grounded surface before taking them out from their packaging.
- Avoid touching pins, leads, or circuitry.
- Always ensure proper grounding when touching, handling, or installing a static-sensitive component or assembly:
 - Use a wrist strap connected by a ground cord to a grounded workstation or server chassis. Wrist straps are flexible straps with a minimum of 1 megohm ± 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
 - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
 - Use conductive field service tools.
 - Use a portable field service kit with a folding static-dissipating work mat

If you do not have any of the suggested equipment for proper grounding, please consult an authorized reseller for installation of the part. You also can contact Aivres Customer Service for more information on static electricity or assistance with product installation.

2 Product Overview

This chapter describes the basic information and specification of the Aivres exascale server rack solution KRS8000V3.

2.1 Introduction

At the core of this innovation is our first fully integrated rack-level system, Aivres KRS8000V3, featuring 36 Grace CPUs and 72 Blackwell GPUs with a state-of-the-art liquid cooling technology for maximum efficiency and reliability. Designed to handle trillion-parameter large language models (LLMs), KRS8000V3 redefines the limits of real-time inference and AI training, making it a cornerstone of next-generation computing infrastructure.

Aivres exascale computing solution KRS8000V3 delivers cutting-edge performance with advanced server racks, ultra-fast interconnects, and scalable software, all designed to handle the immense demands of exascale workloads.



Figure 2-1 KRS8000V3 Product View

2.2 Specifications

Table 2-1 Rack Specification

Item	Description
Form Factor	48RU Rack
NVL Configuration	1x72 rack level (4 GPUs per compute tray)
Deployed Device	• 1RU Top-of-Rack, OOB Management Switch (2) • 1RU NVLink Switch Tray (9) • 1RU Compute Tray (18) • 1400 A Bus Bar (1) • 1RU 33 kW Power Shelf (8) • 1RU Rack Stiffener (1) • 1RU Rack Stiffener + Leak Drip Pan (1) • 1RU Blank Panel (9)
Network Architecture	North-South (N-S) and East-West (E-W) Networking
Management Chipset	DC-SCM BMC management board
TDP	121 kW
Dimensions (W x H x D)	600 × 2236 × 1200 mm (23.6 x 88.0 x 47.2 inches)
Weight	Rack weight: Gross weight:
Casters/Leveling Feet	Move the rack with the casters Stabilize the rack with the leveling feet
Maintenance	Front maintenance Rear maintenance

Table 2-2 Power Supply and Distribution

Item	Description
Input AC Outlet	380/415 VAC
Output DC Outlet	50 V, via bus bar
Power Whip	- Type: 1-phase or 3-phase - Cable Length: 1.5 m or 3.5 m - Power Distribution Method: Bus bar connection
Power Shelf	33 kW power shelf, houses 6 PSUs with 5+1 redundancy
Bus Bar System	50 VDC, 1400 A copper alloy with aluminum ground block and plastic insulator
Circuit Breaker	63 A

Table 2-3 Cooling System

Item	Description
Cooling Method	Hybrid cooling
CDU Options	- L2L In-row CDU - L2A SideCar CDU - L2L In-rack CDU
Fan Configuration	Eight (8) high-speed 12 VDC 4056 fans with N+1 redundancy
Airflow	Front-to-rear (F2R)
Heat Dissipation Capacity	Above 102 kW (Liquid cooling) Above 18 kW (Air cooling)
Coolant Type	Water/Glycol mixture (PG25)
Coolant Flow Rate	105 to 130 L/min (based on inlet temperature)
Inlet/Outlet Temperature	Max. Inlet Temp.: 45°C Max. Outlet Temp.: 65°C
Pressure Drop	Max. 13.3 psi

Item	Description
Manifold	Yes, Left/Right 44RU Bottom Feed (BF) and Top Feed (TF) Cooling Manifold Configuration
Leak Detection System	Yes
Emergency Shut-off Mechanism	Yes
Power Consumption	125 kW

Table 2-4 Environmental Requirement

Item	Description
Operating Environment	Operational: 0°C to 35°C (32°F to 95°F) Non-Operational (Storage): -40°C to 70°C (-40°F to 158°F)
Humidity	Operational: 5% RH to 85% RH, non-condensing Non-Operational (Storage): 5% RH to 93% RH non-condensing  NOTE: It is recommended to operate the compute tray's FPC leakage detection sensor at humidity levels under 70%.
Altitude	Operational: 0 to 3048 m (0 to 10,000 ft) Non-Operational (Storage): 0 to 12,912 m (0 to 42,362.2 ft)

2.3 Rack View



NOTE

The drawings shown below are for illustration only.

Actual configuration may vary depending on the model you purchased.

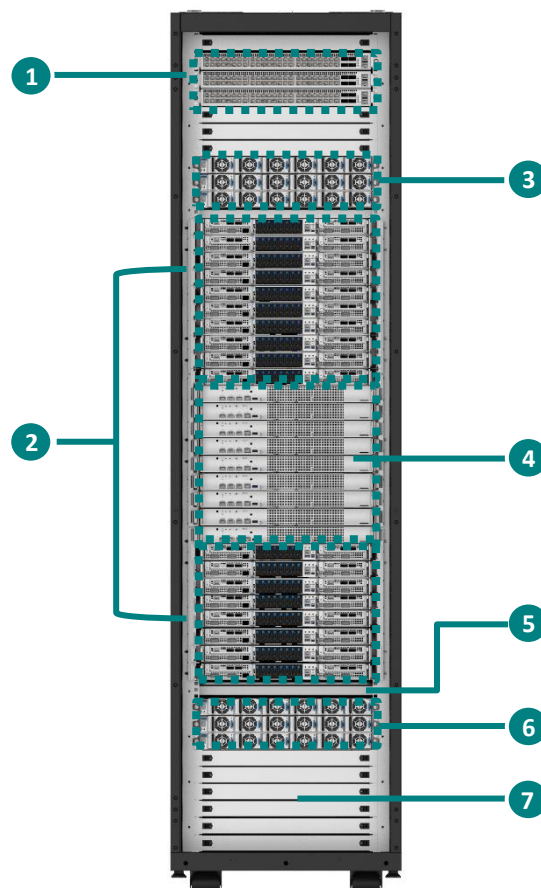


Figure 2-1 KRS8000V3 Front View

Callout	Item	Description
1	OOB Management Switch	Provides a separate, dedicated network access for remote management and monitoring.
2	Compute Tray	Rack computing node featuring two Bianca Compute Boards for high-density computing.
3	Power Shelf	Distributes power to the rack system.

Callout	Item	Description
4	NVLink Switch Tray	Rack tray switch delivering 57.6 Tbps of full duplex bandwidth for NVLink-5.
5	Leak Drip Pan	Collects accidental leaks or spills to prevent damage to surrounding components.  CAUTION: The leak drip pan is above the bottom power shelf and funnels liquid down the drain hose, preventing liquid from entering the high-voltage section of the rack. Liquid in contact with the power shelf or AC power infrastructure can present personal hazard.
6	Power Shelf	Distributes power to the rack system.
7	Blank Panel	Maintains proper system airflow and thermal management.  NOTE: This space can accommodate either blank panels or a CDU (Coolant Distribution Unit). Actual configuration depends on the purchased model.

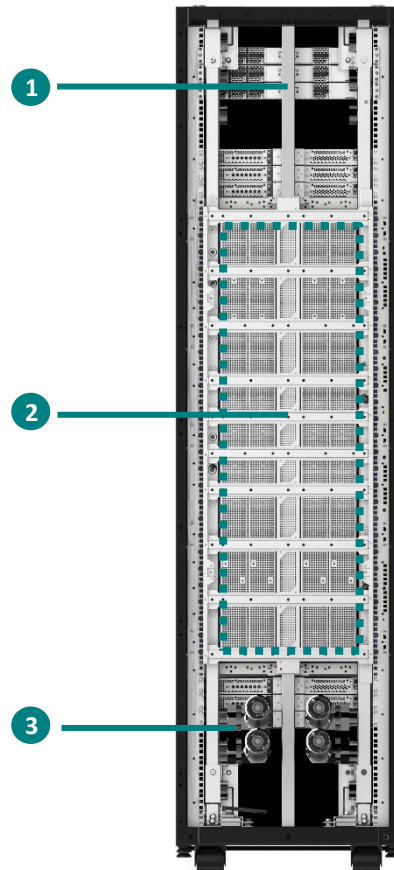


Figure 2-1 KRS8000V3 Rear View

Callout	Item	Description
1	Bus Bar Assembly	Connects and distributes power across the rack.
2	NV Cable Cartridge	Connects the high-speed interfaces (NVLink L1 domain) between the switch trays and the compute trays.
3	Cooling Manifold	Distributes coolant to the cooling system to dissipate the heat. Two configuration available: Bottom Feed (BF) and Top Feed (TF)

NOTE

The drawing shown above illustrates the bottom-feed cooling manifold. A top-feed configuration, with the tube positioned at the rack's top, is also available but not included in this document.

3 Rack Deployment

This chapter provides guidelines for deploying the server rack, including an overview of the key components installed in the rack, as well as site preparation and infrastructure requirements.

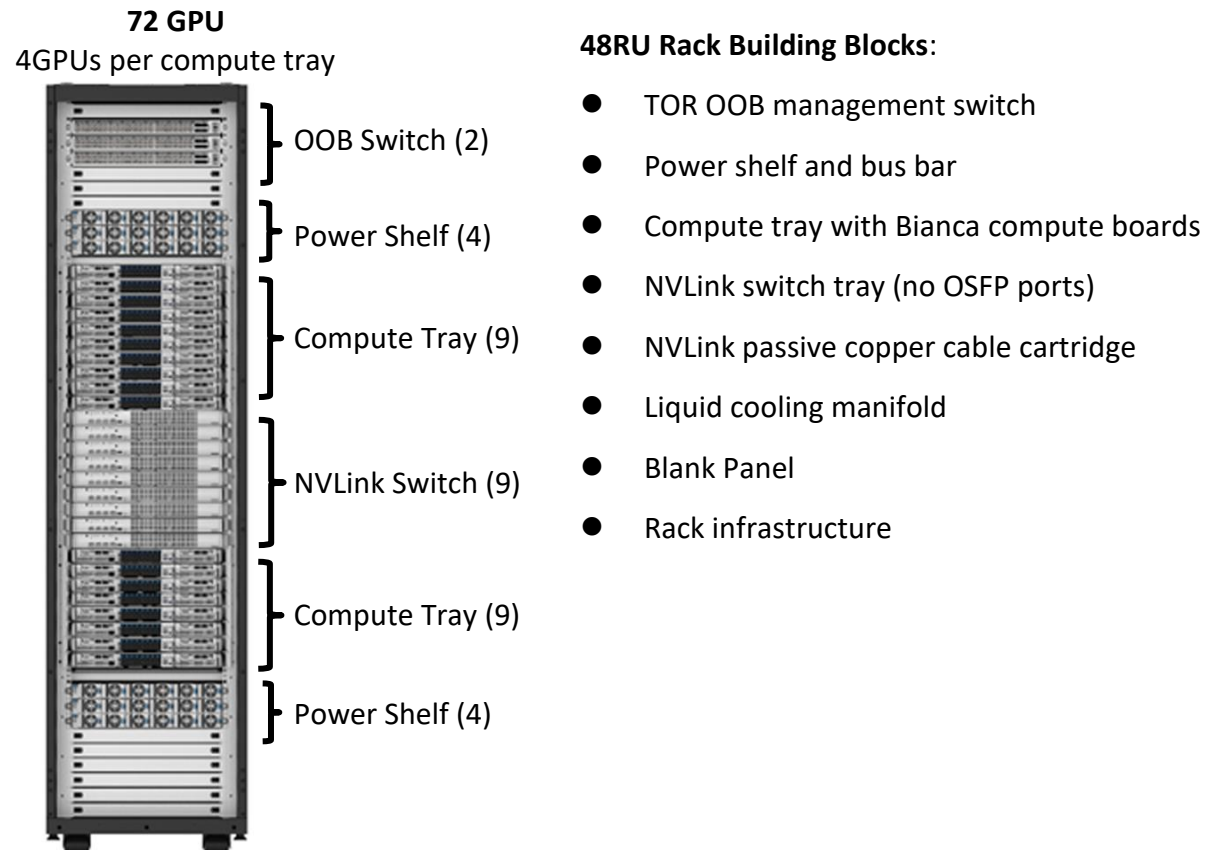


Figure 3-2 Single Rack Configuration

NOTE

The drawings shown above is for illustration only.

Actual configuration may vary depending on the model you purchased.

3.1 Key Components

This section provides an overview of the key components installed in the KRS8000V3 rack-level solution, which includes 18 compute trays, 9 NVLink switch trays, 2 OOB management switches, 8 power shelves, and 4 cable cartridges.

3.1.1 Compute Tray

The compute tray features two Bianca compute boards. Each Bianca compute board can accommodate 1 NVIDIA Grace™ CPU and 2 NVIDIA Blackwell GPUs, along with the M.2 riser card and the HMC module. In addition to the Bianca compute board, the computer tray also houses the PDB board, the HDD storage backplane, dual NVIDIA® CONNECTX®-7 mezzanine card, NIC board, OSFP board, BMC board, HMC board, IO board, and the AICs (add-in cards).

3.1.1.1 Front View

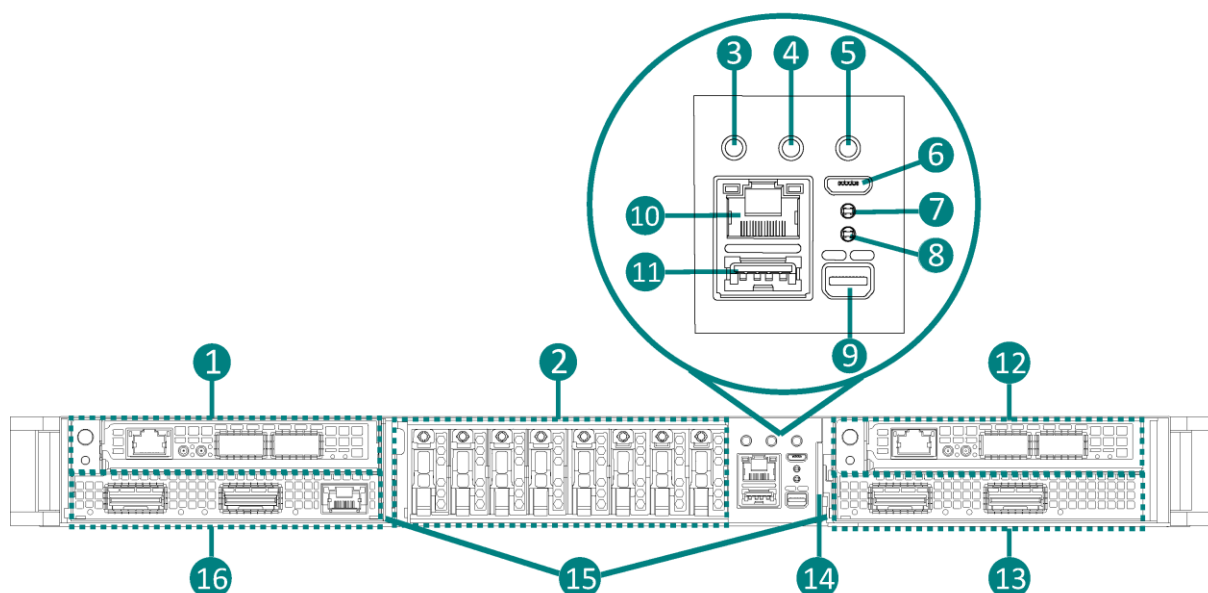


Figure 3-3 Compute Tray Front View

Callout	Item	Description
1	Left BlueField-3 Card Assembly	The BlueField®-3 card equipped with 1 OOB RJ45 management port and 2 QSFP ports with up to 400 Gb/s Ethernet or NDR InfiniBand connectivity. NOTE: The RJ45 port on the BlueField-3 Networking Platform must be connected to an Ethernet network that supports DHCP capabilities and has Internet access.

Callout	Item	Description
2	E1.S Hot-swap Drive Bay (0-7)	Install E1.S 9.5 mm hot-swap drives to these bays.  NOTE: For more information on SSD drive status LEDs, see SSD Tray LEDs .
3	Power Button with LED	Press to turn on or off the system. Press and hold to force a shutdown.  NOTE: The Power Button LED indicates the system power status. For more information, Compute Tray LEDs .
4	UID Button with LED	Press to turn on or off the UID LED.  NOTE: When the UID LED is flashing blue, it means the system is being identified/located.
5	Reset Button	Press and hold the reset button with a flat object for at least 15 seconds to reset the system.
6	Micro-USB Management Port	Functions as a CPU UART debug port for debugging and diagnostics. This port is USB 2.0-compliant.
7	NVLink Health LED	Indicates the NVLink connection status.  NOTE: For more information on NVLink connection status, see Compute Tray LEDs .
8	System Fault LED	Indicates whether a system fault is occurred.  NOTE: For more information on system fault status, see Compute Tray LEDs .
9	Mini DisplayPort Connector	Connects a VGA display to the system.
10	RJ45 BMC Management Port	Provides remote management (via IPMI, Redfish, or web GUI) for monitoring, power control, and firmware, and also allows access to the BMC.
11	USB Type A Port	Connects USB devices to the system. This port is USB 3.0-compliant.

Callout	Item	Description
12	Right BlueField-3 Card Assembly	The BlueField®-3 card equipped with 1 OOB RJ45 management port and 2 QSFP ports with up to 400 Gb/s Ethernet or NDR InfiniBand connectivity.  NOTE: The RJ45 port on the BlueField-3 Networking Platform must be connected to an Ethernet network that supports DHCP capabilities and has Internet access.
13	Right OSFP Cage	Houses 1 OSFP twin-port supporting Ethernet connection.  NOTE: Actual configuration may vary depending on the model you purchased.
14	Pull Tab	A label and Service Tag sticker for easy identification and service management.
15	Ejector Handle Holder (x2)	Two handle holders are used to install or remove the device from the rack.
16	Left OSFP Cage	Houses 1 RJ45 1GbE NIC port and 1 OSFP twin-port supporting Ethernet connections.  NOTE: Actual configuration may vary depending on the model you purchased.

3.1.1.2 Rear View

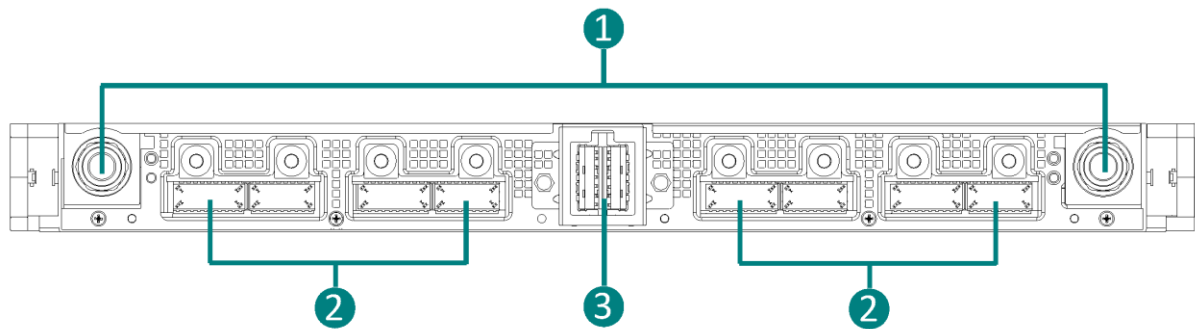


Figure 3-4 Compute Tray Rear View

Callout	Item	Description
1	UQD LC Connector (x2)	Universal Quick Disconnect (UQD) Liquid-Cooling (LC) connector, provides quick and reliable disconnection and reconnection for liquid-cooling systems.
2	NVLink5 Connector (x4)	Connects the compute tray to the cable cartridges.
3	Bus bar Clip Connector	Connects and secures the connection between the compute tray and the bus bar for power delivery.

3.1.1.3 Specifications

Table 3-5 Compute Tray Specification

Item	Description
Form Factor	1U
Number of Trays	18
Processor	2 NVIDIA Grace™ CPU Superchip: • Arm Neoverse V2 cores (up to 72 cores) • L1 cache of 64 KB i-cache + 64 KB d-cache per core, L2 cache of 1 MB per core, and L3 cache of 114 MB • 4 PCIe Gen 5.0 x16 with 400 G bandwidth options available • Supported NVLink4 up to 300 GB/s and NVLink-C2C up to 900 GB/s • TCP up to 300 W
GPU	4 NVIDIA Blackwell GPU
Memory	• 120 GB, 240 GB, and 480 GB on-module LPDDR5X memory options available • Up to 1.0 TB (128 GB per memory module) • Data transfer rate of up to 500 GB/s with low power consumption (16 W) • Memory bandwidth up to 384 GB/s for 480 GB, up to 512 GB/s for 120 and 240 GB • Memory protection including ECC, memory mirroring, and memory rank sparing
Expansion Slot	• 2 x PCIe 5.0 x16 FHHL  NOTE: This information is not yet complete and will be updated in a future revision.
Storage Drive	Front Side (hot-plug): • 8 x 9.5 mm E1.S SSD, 3.84 TB Internal: • 1 x Onboard NVMe M.2, 1.92 TB (optional)

Item	Description
NIC Controller	• Mirror mezzanine connector for the CX-7 mezzanine network cards • NVLink5 (Blackwell GPU), 1.8 TB/s • NVLink4 (Grace CPU), 300 GB/s
I/O Port and Connector	Front: • 1 x UID button with LED • 1 x power button with LED • 1 x reset button • 4 x QSFP port (for BlueField-3) • 2 x OSFP twin-port • 3 x RJ45 OOB management port (one for BMC, two for BlueField-3) • 1 x RJ45 1GbE NIC port • 1 x Mini DisplayPort Connector • 1 x Micro-USB port (for debugging only) • 1 x USB Type-A 3.0 port Rear: • 2 x UQD LC connector • 4 x NVLink5 connector • 1 x bus bar clip connector
Fan Module	Eight (8) high-speed 12 VDC 4056 fans with N+1 redundancy
Chassis Dimensions (H x W x L)	438 x 43.6 x 766 mm (17.2 x 1.7 x 30.2 inches)
Weight	26.76 kg (59.0 lbs)

3.1.2 NVLink Switch Tray

The NVLink™ switch system is a rack-mounted switch designed to support fifth Generation NVLink, delivering an impressive 57.6 Tbps of full-duplex bandwidth within a compact 1U chassis. Each NVLink switch tray includes two (2) InfiniBand ICs and exposes 72 NVLink5 ports and 144 OSFP ports via backplane connectors. Each NVLink5 port consists of 2 lanes (fix width) with a per-link raw BW of 26.5625 GB/s.

CAUTION

The switch tray comes as part of a set of 9 switches in a rack, with a backplane as part of the GB200 system for the whole product to operate. Even one missing switch in the rack out of the 9 switches will make the full solution non-operational.

3.1.2.1 Front View

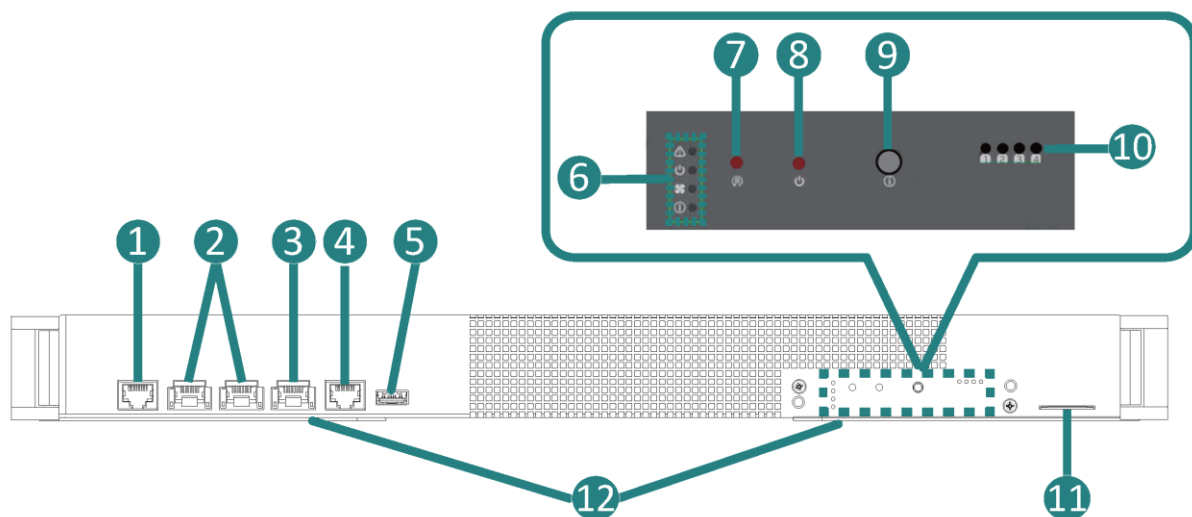


Figure 3-5 3.2 NVLink Switch Tray Front View

Callout	Item	Description
1	RJ45 Leakage Detection	Connects to a leak detection system for monitoring liquid exposure.
2	RJ45 Ethernet MGT Port (x2)	1 GbE port for eth0 and eth1 management
3	RJ45 BMC MGT Port	1 GbE port for BMC management
4	RJ45 Serial Console Port	Provides serial access to the CPU UART or BMC over an RJ45 connection.

Callout	Item	Description
5	USB Type A Port	Connects USB devices for maintenance or diagnostics. This port is USB 2.0-compliant.
6	System Status LEDs	Four indicators (system fault status, system power status, system fan status, and UID status) showing the operating status of the device.  NOTE: For more information on NVLink switch system status LEDs, see NVLink Switch Tray LEDs.
7	Reset Button	Press and hold the reset button with a flat object for at least 15 seconds to reset the system.  CAUTION: DO NOT use a sharp pointed object such as a needle or a push pin.
8	Power Button	Press to turn on or off the system. Press and hold to force a shutdown.  CAUTION: DO NOT use a sharp pointed object such as a needle or a push pin.
9	UID Button	Press to turn on or off the UID LED.  NOTE: When the UID LED is flashing blue, it means the system is being identified/located.
10	NVLink Health LEDs	Four indicators (1, 2, 3 and 4) showing the NVLink connection status.  NOTE: For more information on NVLink Health Status LEDs, see NVLink Switch Tray LEDs.
11	Pull Tab	A label and Service Tag sticker for easy identification and service management.
12	Ejector Handle Holder (x2)	Two handle holders are used to install or remove the device from the rack.

3.1.2.2 Rear View

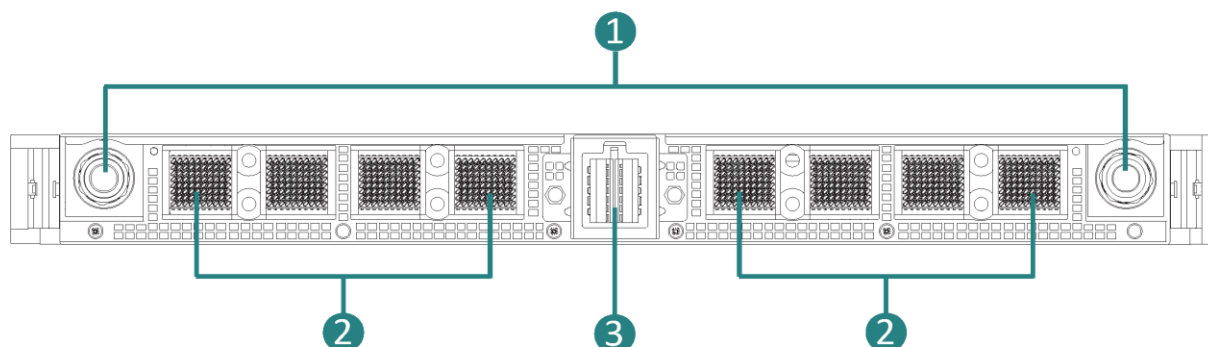


Figure 3-6 3.2 NVLink Switch Tray Rear View

Callout	Item	Description
1	UQD LC Connector (x2)	Universal Quick Disconnect (UQD) Liquid-Cooling (LC) connector, provides quick and reliable disconnection and reconnection for liquid-cooling systems.
2	NVLink5 Connector (x4)	Connects the NVLink switch tray to the cable cartridges.
3	Bus Bar Clip Connector	Connects and secures the connection between the NVLink switch and the bus bar for power delivery.

3.1.2.3 Specifications

Table 3-6 NVLink™ Switch Tray Specification

Item	Description
Number of Switches	9 (2 NVLink™ X-800 Switch)
I/O Port and Connector	5 RJ45 Ports and 1 USB Type-A Port
Speed	NVLink4 128 x 212.5 GB/s (64 links per ASIC) NVLink5 144 x 400 GB/s (72 links per ASIC)
Total Bandwidth	14.4 TB/s

Item	Description
Switching Throughput	57.6 Tb/s
Power	- AC/DC 2 kW Input Voltage: 180 to 240 VAC - DC/DC 2 kW Input Voltage: -40 to -72 VDC - Power consumption: 1.36 kW (max 1.62 kW)
Chassis Dimensions (H x W x D)	438 x 43.6 x 660 mm (17.2 x 1.7 x 26 inches)
Weight	20.3 kg (44.7 pounds)

3.1.3 Management Switch

The TOR (Top-of-Rack) OOB (Out-of-Band) management switch is a dedicated management solution for network devices within a rack, providing remote management and monitoring capabilities independent of the main network traffic, ensuring reliable and secure device control.

3.1.3.1 Front View

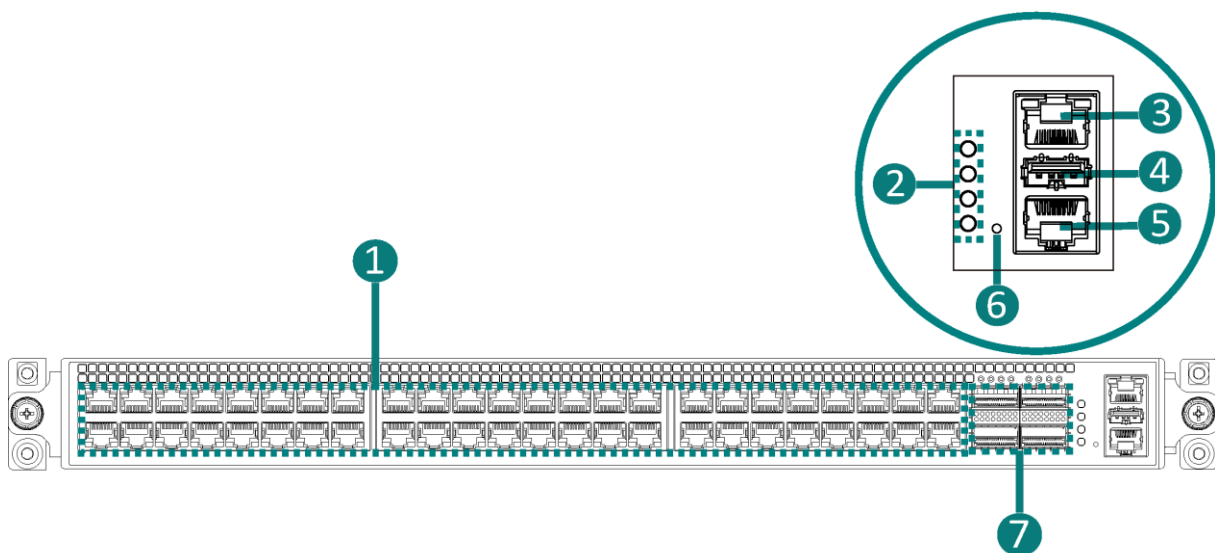


Figure 3-7 Management Switch Front View

Callout	Item	Description
1	RJ45 OOB Ports (x48)	RJ45 OOB 1G Base-T ports (ports 1-16, 17-32, and 33-48), a dedicated management network for remote access and device management.

Callout	Item	Description
2	System Status LEDs	Four Indicators (system health status, fan status, power status, and UID status) showing the operational status of the device.  NOTE: For more information on OOB switch system status LEDs, see Management Switch LEDs.
3	RJ45 Ethernet MGT Port	1 GbE port for Ethernet management
4	USB Type A Port	Connects USB devices for software upgrade, file management or diagnostics. This port is USB 2.0-compliant.
5	Serial RS232 Console Port	Provides serial access to the CPU UART or BMC for initial configuration and debugging  NOTE: Certain configurations are equipped with an RJ45 console port for debugging.
6	Reset Button	Press and hold the reset button with a flat object for at least 15 seconds to reset the system.  CAUTION: DO NOT use a sharp pointed object such as a needle or a push pin.
7	QSFP28 Port (x4)	QSFP28 (Quad Small Form-factor Pluggable 28) 100 GbE ports, each capable of transmitting data at 25 Gbps.

3.1.3.2 Rear View

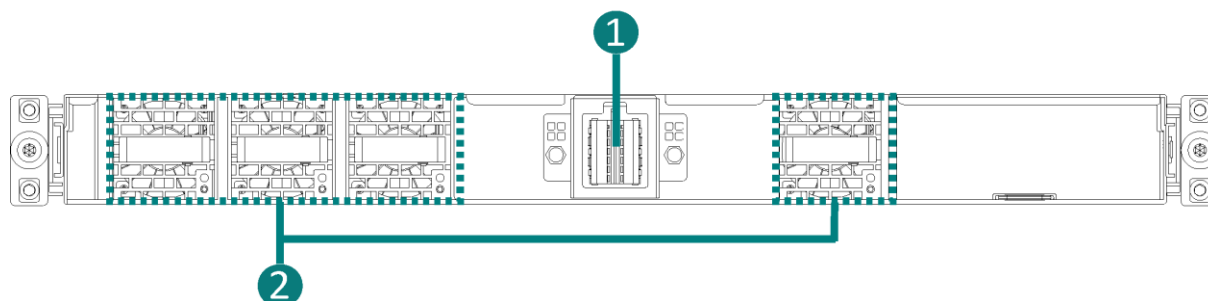


Figure 3-8 Management Switch Rear View

Callout	Item	Description
1	Fan Module (x4)	4 hot-swapped N+1 redundant fans for cooling the switch temperature
2	Bus Bar Clip Connector	Connects and secures the connection between the NVLink switch and the bus bar for power delivery.

3.1.3.3 Specifications

Table 3-7 OOB Management Switch Specification

Item	Description
Number of Network Switches	2 NOTE: The actual number of switches may vary depending on the model purchased.
Switching Capacity	448 Gbps
Ports	48 x 1 Gbase-T RJ45 OOB ports 1 x USB Type-A 2.0 port 1 x RJ45 MGT port 1 x RS232 console port 4 x 100 GbE QSFP28 ports, each port can be split into:

Item	Description
	- 4 x SFP28, 16 ports of 10G or 25G in total; or - 2 x QSFP28, up to 8 ports of 50G in total  NOTE: Using breakout cables to split a QSFP28 port into four SFP ports.
Speed	1/10/25/40/50/56/100 GbE per QSFP28 port 10/100/1000 Mbase-T per RJ45 port
System CPU	x86 Dual-Core Intel® Atom® Processor, 2.2 GHz RAM: ECC DDR4 SO-DIMM 8 GB Image storage: SSD M.2 PCIe Gen3 20 GB
Operating System	NVidia® Cumulus® Linux 5.11
Power Consumption	Typical power with passive cables (ATIS): 100 W
Power Input	40 V to 60 VDC, via bus bar
Airflow	Connector-to-Power, port side cold air intake 4 hot-swapped fans with N+1 redundancy
Mounting Options	Rail-kit included in the package 19" MGX Rack compatible
Dimensions (H x W x D)	43.6 × 438 × 781 mm (1.71 x 17.2 x 30.7 inches)
Weight	11.39 kg (25.11 lbs)
 NOTE: 1. Use the RS232 serial port for initial configuration and debugging. When installing the system for the first time, connect a PC to set up network parameters for remote access. 2. The out-of-band RJ45 Ethernet port enables remote management access. By default, it supports auto-negotiation (100MbE to 1GbE). Network settings for this management port, such as the IP address, must be configured in advance via the RS232 serial console port or by DHCP.	

3.1.4 Power Shelf

The KRS8000V3 uses a 33 kW input power shelf with six (6) 5.5 kW PSU, and a single 60 A power whip per power shelf. The rack power configuration is 120 kW; however, the actual power requirement will vary based on the specific configuration and the network management switch appliances included in the rack.

3.1.4.1 Front View

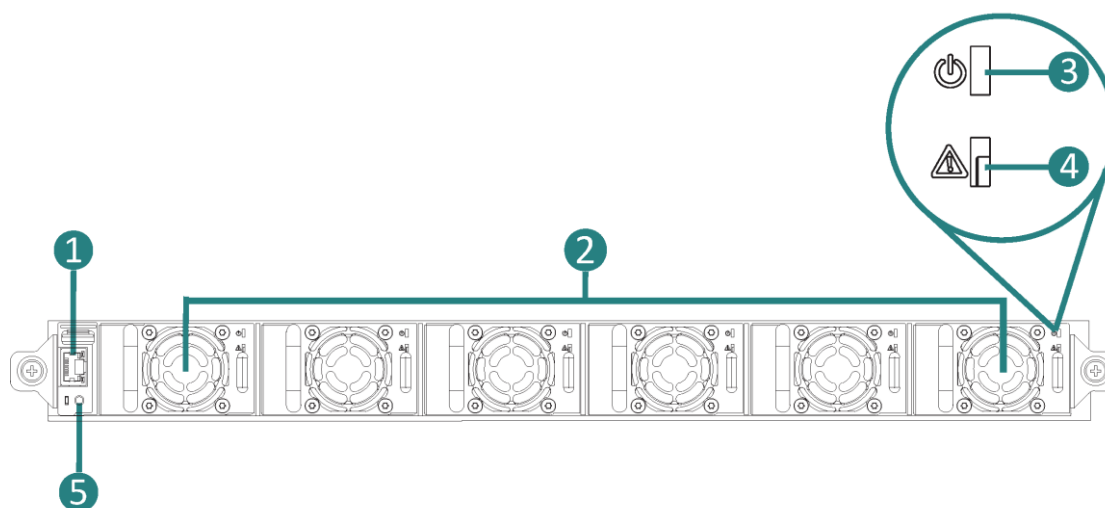


Figure 3-9 Power Shelf Front View

Callout	Item	Description
1	RJ45 Port	Telemetry and monitoring of the power shelf NOTE: It provides network access and PoE input to power the PMC for remote monitoring and management.
2	PSU (1-6)	Each PSU provides 5.5 kW power to the system.
3	PSU Power Status LED	Indicates whether the PSU is receiving AC input and supplying DC output. NOTE: For more information, see Power Shelf LEDs .
4	PSU Fault Status LED	Indicates whether a PSU fault or warning has occurred. NOTE: For more information, see Power Shelf LEDs .

Callout	Item	Description
5	PMC Status LED	Indicates the operational status of the power shelf  NOTE: For more information, see Power Shelf LEDs .

3.1.4.2 Rear View

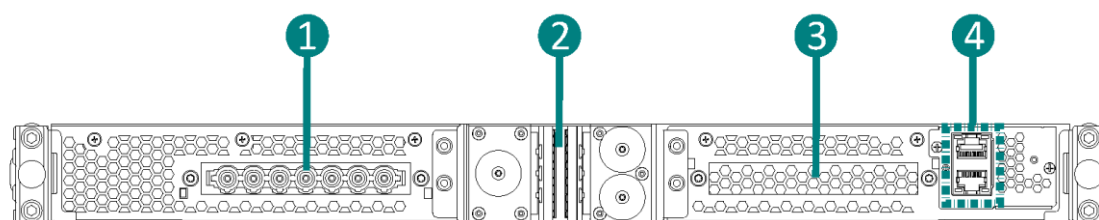


Figure 3-10 Power Shelf Rear View

Callout	Item	Description
1	Power Whip 1 Connector	Connects the power whip cable to the power distribution system (1 x 60 A)
2	Bus Bar Clip Connector	Connects and secures the connection between the power shelf and the bus bar
3	Power Whip 2 Connector (if applicable)	Connects the power whip cable to the power distribution system (2 x 30 A)
4	RJ45-1 & RJ45-2 Shelf-to-Shelf Connector	Connects CAT6 cables in a daisy-chain configuration to enable current sharing and synchronize power shelf startup

3.1.4.3 Specifications

Table 3-8 Power Shelf Specification

Item	Description
Number of models	Eight (8) 33 kW 1RU power shelves Each power shelf has six (6) 5.5 kW PSU with N+1 redundancy  NOTE: The actual number of power shelves may vary depending on the model purchased.
Form Factor	1U
Input Voltage	200-277 VAC (346-480 VAC 3-phase Wye line-to-line)
Input Frequency	47-63 Hz
Input Current	60 A
Output Power	Maximum power capacity 33 kW of DC power with six (6) 5.5 kW PSUs
Output Voltage	50 V
Maximum Output Current	660 A
Power Efficiency	> 96% (about 34.4 kW input from the power source)
Indicators & Alarms	LEDs for power status and connectivity
Remote Management	Yes
Chassis Dimensions (H x W x D)	43.6 x 448 x 718.5 mm (1.71 x 17.6 x 28.28 inches)
Weight	28.12 kg (62.0 lbs)

3.1.5 Cable Cartridge

The cable cartridge is a passive cable backplane which houses over 5,000 active copper cables used to connect compute trays and switch trays into a large NVLink L1 domain. This high-speed communication ensures each GPU can communicate with every other GPU between all 72 GPUs in the domain at 1.8 TB/s.

The following diagrams show the cable cartridge with the protective covers removed and installed.

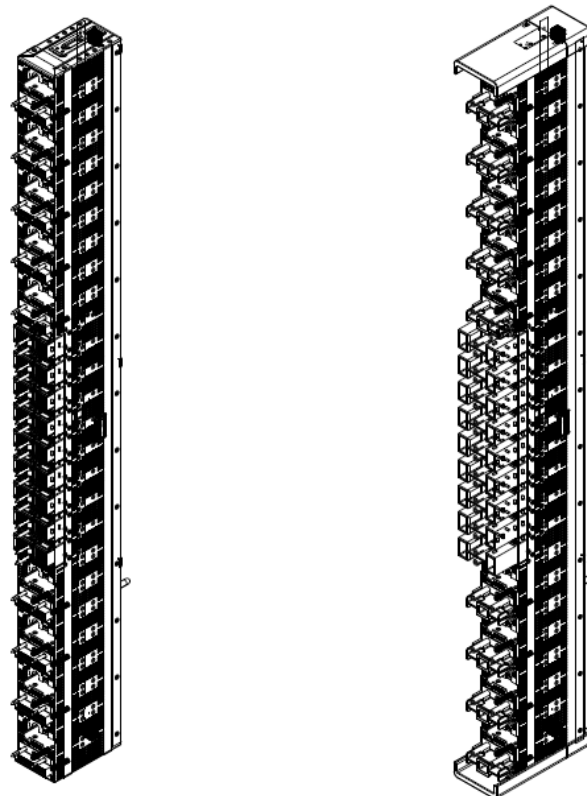


Figure 3-11 Cable Cartridge Front Angled View

Detailed information and updates on cable cartridge will be added in future revisions of this manual.

3.2 Site Preparation

This chapter outlines the key requirements for deploying the rack at the installation site to ensure optimal performance and proper operation, including power, cooling, and networking considerations. Ensuring these prerequisites are met will help ensure a smooth deployment and maintain long-term efficiency.

WARNING

This equipment must be installed by trained service personnel in a restricted-access location, as defined by the NEC and IEC 60950-1, First Edition, The Standard for Safety of Information Technology Equipment.

3.2.1 Power Requirements

The KRS8000V3 rack solution uses a bus bar structure to take the output of the power shelf and distribute power in the rack. The bus bar eliminates the need for traditional PDUs by providing direct power connections, improving efficiency, reducing cable clutter, and supporting high-power density configurations.

The bus bar structure includes the following components:

- **Power Shelf:** AC/DC conversion, input from the AC infrastructure and output to the DC bus bar. For Power Shelf specification, see [Power Shelf Specification](#).
- **Bus bar:** distribute power shelf DC output internal to the rack
- **Power Whip:** AC cable which connects to the rear of the power shelf
- **Shelf-to-shelf connector:** connect the power shelves to enable current sharing and synchronize startup

NOTE

Full power supply specification documents are classified as Aivres Confidential and require a signed NDA before being made available.

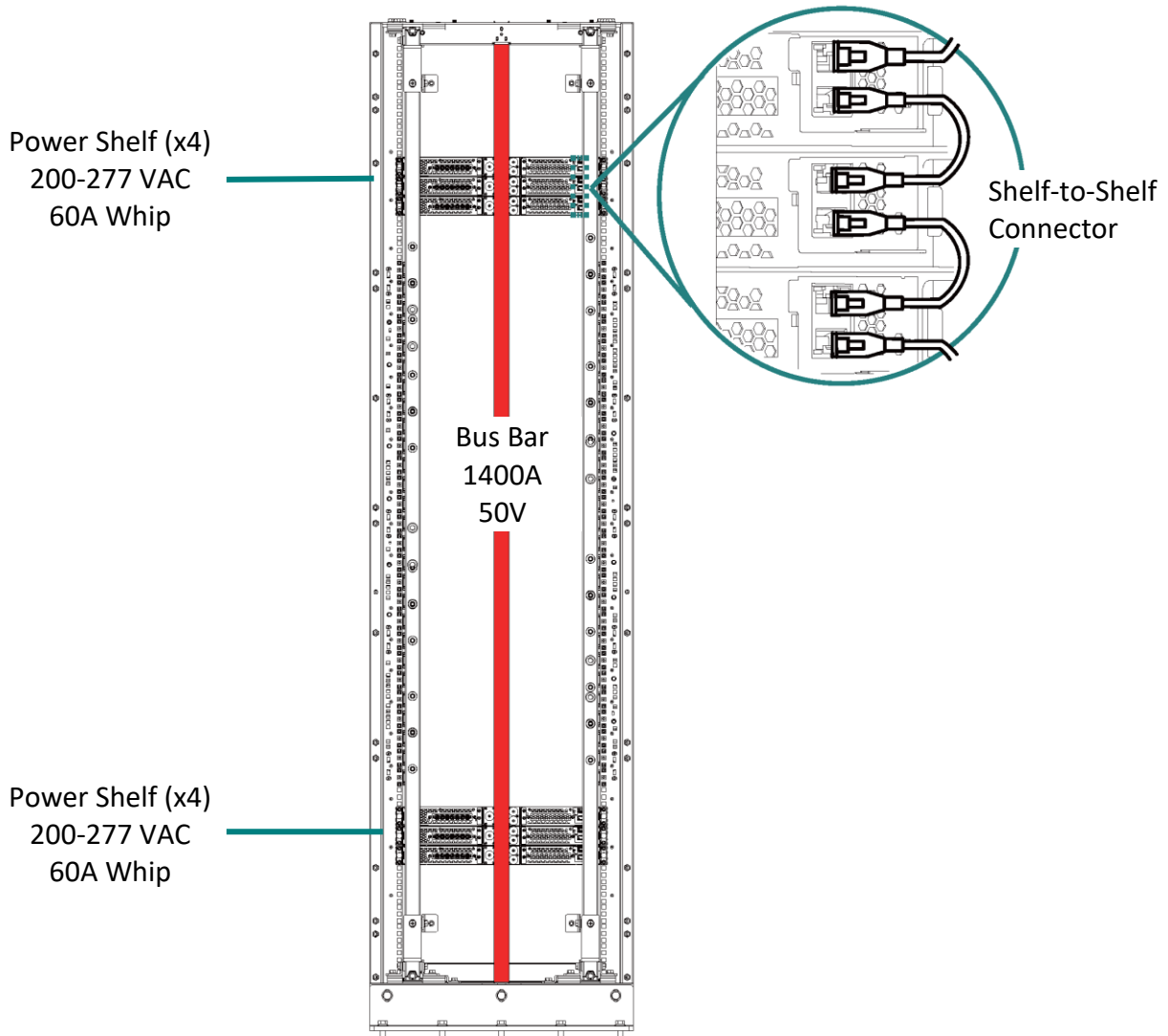


Figure 3-12 Rack Power System Overview



NOTE

- Power shelves must be connected in a daisy-chain configuration using the shelf-to-shelf connectors. Use a CAT6 cable to link the bottom connector of one shelf to the top connector of the next shelf.
- After linking the power shelves in a daisy-chain configuration, two shelf-to-shelf connectors—one at the topmost shelf and one at the bottommost shelf—will remain unused. Connect a cable to the unused connector that is closest to the cable cartridge.

Table 3-1 DC Power Supply Requirement (Bus bar)

Description	Requirement
Nominal Voltage	50 VDC
Maximum Input Current	660 A

Table 3-2 AC Power Supply Requirement (Power shelf)

Description	Requirement
Nominal Voltage	200-277 VAC
Maximum Input Current	60 A

3.2.1.1 Operating Power Limits

Table 3-3 DC Operating Power Limits (Bus bar)

Description	Limit or Range
Operating Input Voltage Range	50 VDC
Maximum Operating Input Current	1400 A
Maximum Operating Input Power	70 kW

Table 3-4 AC Operating Power Limits (Power shelf)

Description	Limit or Range
Operating Input Voltage Range	3-phase Delta 4-wire: - Minimal 180 VAC - Normal 200/277 - Maximum 305 VAC 3-phase Wye 5-wire: - Minimal 311 VAC - Normal 346/480 - Maximum 528 VAC
Maximum Operating Input Current	60 A
Maximum Operating Input Power	35 kW

3.2.1.2 Grounding Requirements

Before connecting cables or powering the KRS8000V3 rack, you must connect the chassis to earth ground. This equipment must be connected directly to the DC supply system grounding electrode conductor or to a grounding bolt and isolated mounting spacer (replaceable with conductive spacer) used to tie RTN to the chassis. You can choose between two rack grounding schemes: one that uses an isolated chassis with return (RTN) grounding, or another where the chassis return is connected with a hard ground tie between the chassis.

To maintain a common ground potential, make an electrical connection between the rack and the bus bar by masking the bus bar mounting holes or using the serrated washers.

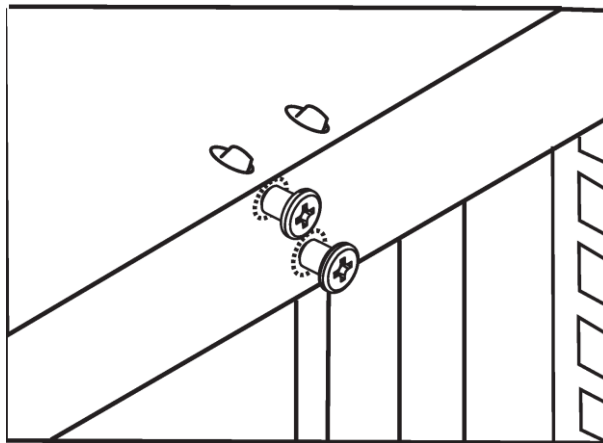


Figure 3-13
Bus Bar Bolts with Serrated Washers (Rack Top)

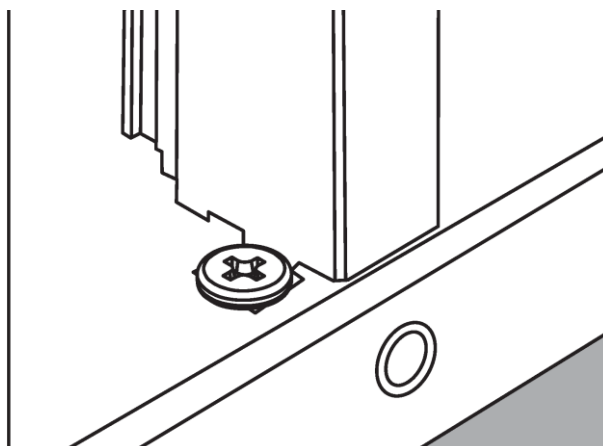


Figure 3-14
Bus Bar Bolts with Serrated Washers (Rack Bottom)

3.2.1.3 Startup and Shutdown

The rack enters full power mode automatically when the power shelves are connected to AC power, supplying power to all system components.

To startup the rack:

1. Connect the power shelf to the bus bar using the bus bar clip connector.
2. Connect the power shelf to the AC socket-outlet using the power whip.



NOTE

- Make sure that all power whips are firmly connected to the power shelves and AC outlet.
- The power shelves can be powered on in parallel.

3. Connect the rack components (compute tray, NVLink switch tray, and OOB switch) to the bus bar using the bus bar clip connector for power delivery.

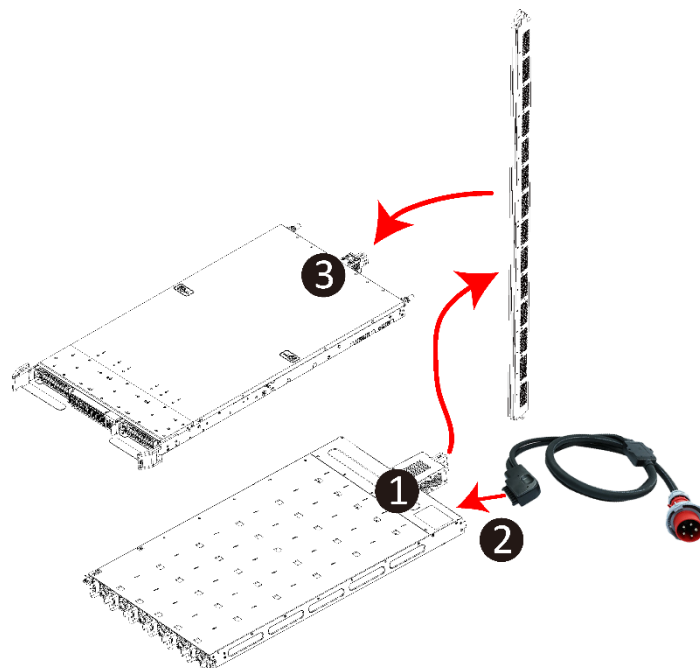


Figure 3-15 Power Connection

To fully power off the rack, disconnect the AC power whips from all power shelves and AC socket-outlet. Ensure that rack key components are powered off in the correct order.

The power off sequence for KRS8000V3 is as follows: 1) Compute Tray, 2) NVLink Switch Tray, 3) OOB Management Switch, and 4) Power shelf.

3.2.1.4 Bus Bar Specifications

Table 3-5 Physical Specifications

Item	Description
Dimensions (H x W x D)	87 x 49 x 2180 mm (3.42 x 1.93 x 85.8)
Weight	61 kg
Surge Protection	No
Remote Management	No

Table 3-6 Electrical Specifications

Item	Requirement
Input Voltage (V)	200-277 VAC (3-phase Delta 4 wire)
Output Voltage (V)	50 VDC
Input Current Rated (A)	60 A
Output Current Rated (A)	660 A
Frequency	47-63 Hz
Maximum Power Load (kW)	33 kW

Table 3-7 Connector Types

Item	Requirement
Bus Bar Clip Connector	BK220, 1U, Connect, E171666
Power Whip Connector	E191367 60 A @415 V
Bus Bar Receptacle	TBU

Table 3-8 Environmental Specifications

Item	Requirement
Operating Environment	0°C to 60°C (32°F to 140°F) 8%RH to 90%RH non-condensing 6,500 ft/2 km elevation
Storage Environment	-40°C to 85°C (-40°F to 185°F) 8%RH to 90%RH non-condensing 50,000 ft/15 km elevation

3.2.2 Cooling Requirements

The KRS8000V3 rack solution utilizes a hybrid cooling solution that combines liquid cooling and air cooling to maintain optimal thermal performance. To support the liquid-cooling plates installed in the compute tray and NVLink switch tray, a Coolant Distribution Unit (CDU) is required to regulate and circulate liquid coolant efficiently, reducing heat load on air cooling components. The CDU circulates coolant through the liquid-cooling components in the rack and transfers the absorbed heat to an external cooling infrastructure.

The supported CDU options include in-row CDU, in-rack CDU, and sidecar CDU.

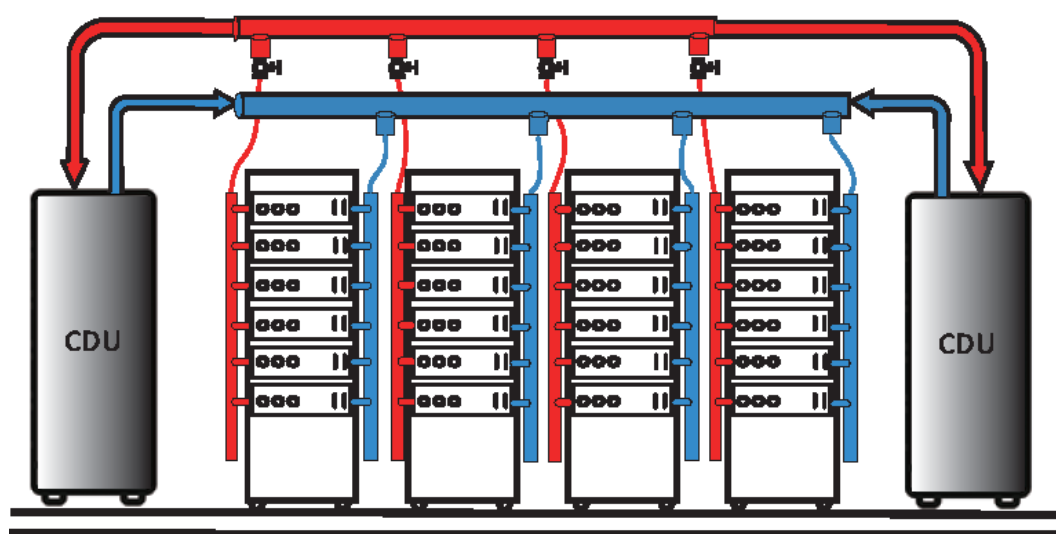


Figure 3-16 In-row CDU Liquid Circulation Network

Table 3-9 In-row CDU Requirement

Characteristic	Liquid-to-Liquid Requirements
Minimum cooling capacity	600 kW at 4°C (39.2°F)
Minimum secondary flow rate	70 lpm
Effectiveness	> 90% at 4°C (39.2°F)
Minimum pressure head	30 psid +dP across CDU
Design secondary (PG25) supply temp.	Up to 45°C (113°F)
Maximum secondary (PG25) return temp.	65°C (149°F)
Design facility water temperature	< 41°C (105.8°F) (for 45°C secondary temp.)
Secondary side filtration	50 and 25 microns
Power draw	< 2% of capacity being cooled in kW

Characteristic	Liquid-to-Liquid Requirements
Power feed requirement	• 190 V / 50 Hz & 60 Hz • 200 V / 50 Hz • 208 V / 50 Hz & 60 Hz • 220 V / 50 Hz & 60 Hz • 380 V / 50 Hz • 400 V / 50 Hz • 415 V / 50 Hz & 60 Hz • 480 V / 60 Hz

Table 3-10 In-rack CDU Requirement

Characteristic	Liquid-to-Liquid Requirements
Minimum cooling capacity	115 kW at 4°C (39.2°F)
Minimum secondary flow rate	138 lpm
Effectiveness	> 90% at 4°C (39.2°F)
Minimum pressure head	20 psid +dP across CDU
Design secondary (PG25) supply temp.	Up to 45°C (113°F)
Maximum secondary (PG25) return temp.	65°C (149°F)
Design facility water temperature	< 41°C (105.8°F) (for 45°C secondary temp.)
Secondary side filtration	50 and 25 microns
Power draw	< 2% of capacity being cooled in kW
Power feed requirement	Compatible with rack bus bar
Form factor	40U or less

Table 3-11 Sidecar CDU Requirement

Characteristic	Liquid-to-Air Requirements
Minimum cooling capacity	60 kW at 10°C (50°F)
Minimum flow rate	72 lpm
Effectiveness	At least 80% at 10°C (50°F)
L2A HX cfm/kW required	6900 cfm (115 cfm/kW at 10°C)
Minimum pressure head	20 psid +dP across CDU
Design secondary (PG25) supply temp.	Up to 45°C (113°F)
Maximum secondary (PG25) return temp.	65°C (149°F)
Design approach temperature for L2A HX	10°C (50°F)

Characteristic	Liquid-to-Air Requirements
Design supply air temperature	< 35°C (95°F)
Secondary side filtration	50 and 25 microns
Power draw @Max. fan and pump speed	< 5% of capacity being cooled in kW
Power feed requirement	• 190 V / 50 Hz & 60 Hz • 200 V / 50 Hz • 208 V / 50 Hz & 60 Hz • 220 V / 50 Hz & 60 Hz • 380 V / 50 Hz • 400 V / 50 Hz • 415 V / 50 Hz & 60 Hz • 480 V / 60 Hz

Table 3-12 Rack Cooling Operating Limits

Parameter	Min	Max
Supply inlet temperature limit	17°C (62.6°F)	45°C (113°F)
Return outlet temperature limit	NA	65°C (149°F)
Burst pressure	217 psig	NA
Operating pressure	NA	72 psig

Table 3-13 Rack Airflow Requirement

Inlet air (°C)	Airflow (CFM)
20	1700
25	1980
30	2320
35	2790
40	3500
The maximum air inlet temperature at front of the rack (cold side) is 40°C, while the maximum air outlet temperature at rear of the rack (hot side) is 60°C.	

Table 3-14 Rack Flowrate Requirement

Inlet Temperature	Flowrate (lpm, l/min)	Pressure (psi, lbf/in ²)
25	57.4	2.7
30	68.5	3.8
35	83.4	5.4
40	105.2	8.4
45	134	13.3

NOTE: This table is only applicable for 72U rack-level configurations with 2 inlets, 2 outlets, and 1.5-inch liquid-cooling hoses.

3.2.3 Networking Requirements

Ensure the data center provides the required network infrastructure, including TOR (Top-of-Rack) switches, 9 NVLink switches and external network uplinks.

The network connections allow clients to connect to the database servers and also enables remote system administration.

Table 3-15 Network Type

Feature	Description
External-net (North-South, Front-end network)	Connects the rack to the external network, such as the Internet and a dedicate or shared remote storage
Internal-net (in-band network)	Used exclusively to manage the rack, such as ssh access and control plane functions
Ipmi-net (BMC OOB Eth network)	For OOB management and connects the BMC of the compute tray and switch tray
Fabric-net (East-West, Back-end network)	InfiniBand or Ethernet network that connects the rack's Compute Fabric HCA (ConnectX-7)
OS-Net	1/10G ports on each compute tray for debugging purpose
NVLink-net	Two 1G ports on each switch tray for managing the NVLinks

Table 3-16 Network Configuration

Network Type	VLAN Configuration	Minimum Supported Speed
External-net (North-South, Front-end network)	121	400 Gb ports
Internal-net (in-band network)	122	200 Gb ports
Ipmi-net (BMC OOB Eth network)	111	
Fabric-net (East-West, Back-end network)	Each compute tray connects to a Compute InfiniBand or Ethernet through four CX7 NICs	
OS-Net	NA	1/10 Gb ports
NVLink-net	NA	1 Gb ports

NOTE: Each compute tray connects to the OOB MGT switch through the two BF-3 NICs. The External-net on 400 Gb ports, and the internal-net on 200 Gb ports.

The KRS8000V3 rack solution requires the following IP addresses for management:

- 18 x compute tray BMC IP addresses
- 18 x compute tray management Ethernet interface IP addresses
- 18 x switch tray management IP addresses (2 ports per tray)



NOTE

- All management interfaces are 1GbE RJ45 interfaces.
- The NVLink switch management interfaces must be in the same broadcast domain of the VLAN and allow switch-to-switch unicast and link-local multicast traffic.
- IP connectivity from an external x86 system to the compute tray BMCs must be enabled to perform firmware updates

4 System Status LED

This chapter provides information about various system LED status and corresponding action suggestions.

4.1 Compute Tray LEDs

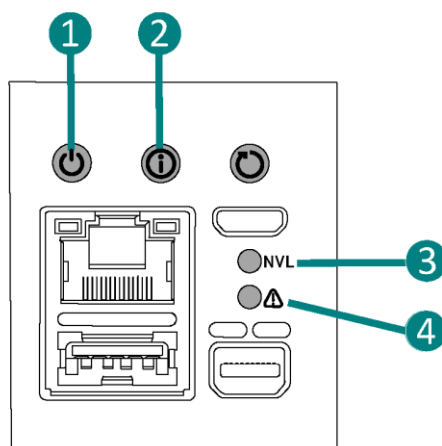


Figure 4-17 Compute Tray Front Panel LEDs

Callout	Item	Description
1	Power Button LED	System Power Status: - Off: system off - Flashing Blue (1 Hz): stand-by mode - Flashing Blue (4 Hz): system running POST - Solid Blue: system power on
2	UID Button LED	UID Status: - Off: ID status off, UID is not active - Flashing Blue (1 Hz): identify location
3	NVLink Health LED	NVLink Connection Status: - Off: No link on any NVLink - Flashing Amber (1 Hz): Beacon/locate on any NVLink - Solid Amber: an NVLink error or a degraded state

Callout	Item	Description
		- Flashing Green (0.5 Hz): Link is active - Solid Green: link connected, but no traffic
4	System Fault LED	System Fault Status: - Off: system normal, no fault detected - Flashing Amber (4 Hz): Leak detected - Solid Amber: system fault present

4.2 NVLink Switch Tray LEDs

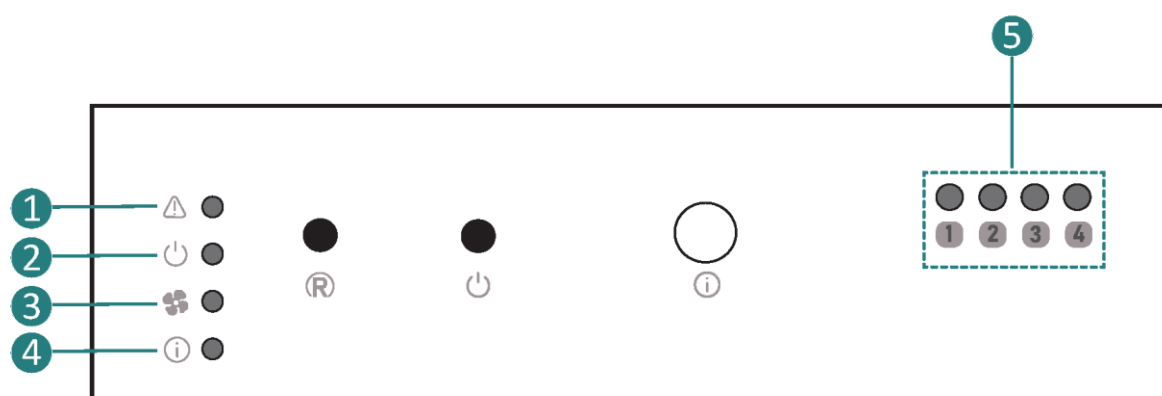


Figure 4-18 NVLink Switch Front Panel LEDs

Callout	Item	Description
1	System Fault Status	- Solid Green: system normal - Solid Amber: system fault present - Flashing Green: system booting NOTE: When pressing and holding the Reset Button, the system fault status LED flashes green.
2	System Power Status	- Off: during the boot process - Solid Amber: power error - Solid Green: power normal
3	System Fan Status	- Off: during the boot process - Solid Amber: fan error

Callout	Item	Description
		• Solid Green: fan normal
4	UID Status	• Off: during the boot process • Solid Blue: system normal • Flashing Blue (1 Hz): identify location NOTE: Press the UID button to turn on/off this LED.
5	NVLink Health LED	Four indicators (1, 2, 3, 4) showing the NVLink switch connection status for cartridges #1 through #4. • Off: no NVLink • Solid Amber: physical link on any NVLink connection • Flashing Amber (1 Hz): identify link • Flashing Amber (2 Hz): link error • Solid Green: NVLink connected, but no traffic • Flashing Green: NVLink is active

4.3 Management Switch LEDs

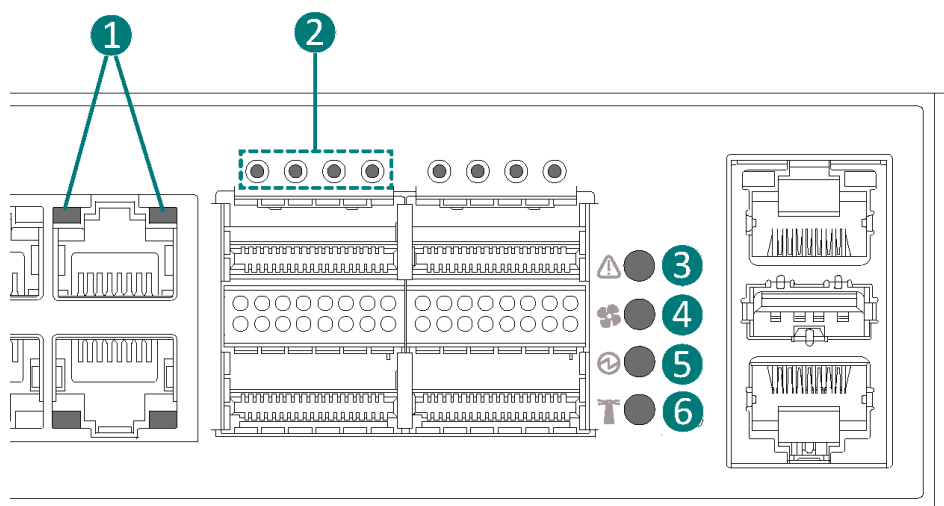


Figure 4-19 OOB Management Switch LEDs

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

Callout	Item	Description
1	Port Status for RJ45 Port	• Off: system normal • Solid Green: Link is active • Flashing Amber: port fault detected, replace the port cable on the corresponding port
2	Port Status for QSFP28 Port	The QSFP28 port includes four lane LEDs (Lane 1-4), only Lane 1 is active; Lanes 2-4 are not supported currently. • Off: system normal • Solid Green: Link is active • Flashing Amber: port fault detected, replace the port cable on the corresponding port
3	System Health Status	• Off: system off • Solid Green: System is powered on and functioning normally • Flashing Green: during the boot process  NOTE: If the system health status LED remains red after five minutes, unplug the system and contact your Aivres representative.
4	System Fan Status	• Off: system off • Solid Green: fan normal, status available only after the network OS has booted. • Solid Red: one or more fans have failed
5	System Power Status	• Off: system off • Solid Green: bus bar input power is normal • Solid Red: bus bar connection error or PDB malfunction
6	UID Status	• Off: ID status off, UID is not active • Solid Blue: UID is active, indicating the switch is being located

4.4 Power Shelf LEDs

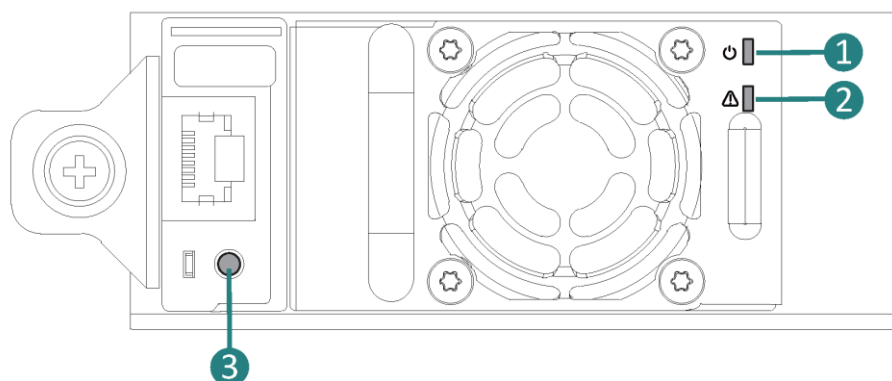


Figure 4-20 Power Shelf LEDs

Callout	Item	Description
1	PSU Power Status LED	PSU Power Status: - Off: NO AC input - Solid Green: PSU normal, that is, PSU is receiving AC input and supplying DC output - Blinking Green: PSU in standby mode, or only AC input present (no load)
2	PSU Fault Status LED	PSU Fault Status: - Off: No fault detected - Solid Amber: AC Loss or PSU failure has occurred - Blinking Amber: warning events
3	PMC Status LED	Power Shelf Status: - Off: No PoE power or the port is not enabled for PoE - Solid Green: PoE power is active and supplying power

4.5 SSD Tray LEDs

NOTE

There are two types of SSD trays with different mechanical designs. The location of the LED indicators differs depending on the tray type.

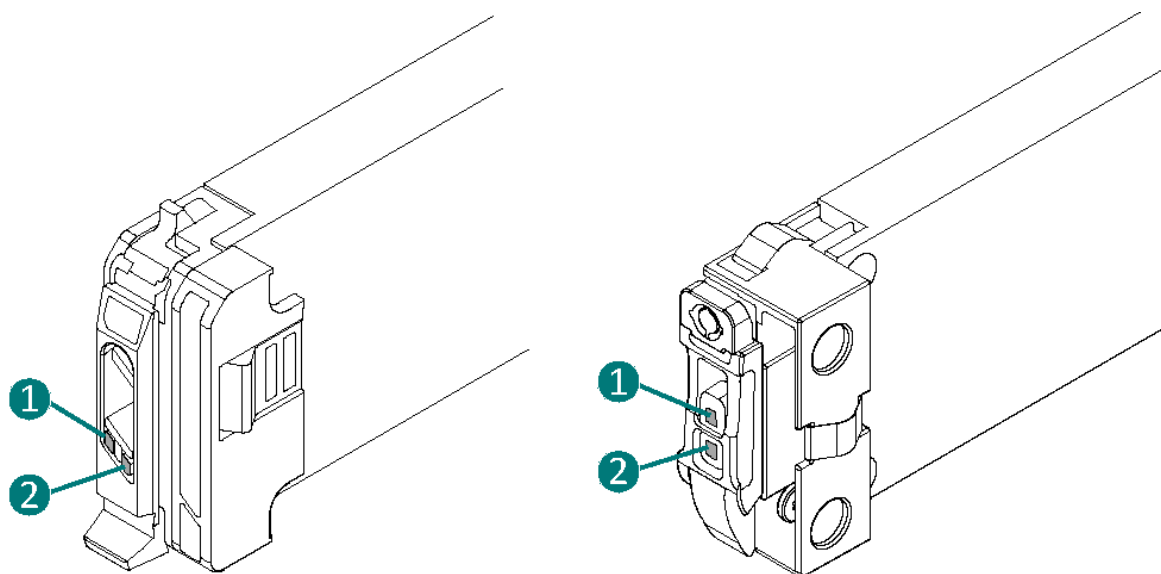


Figure 4-21 E1.S SSD LEDs

Callout	Item	Description
1	Drive Activity (Green/White)	- Off: no power or drive not present - Solid Green: drive is powered and active. Safe to remove. - Blinking Green (4 Hz): drive activity in progress (read/write). Safe to remove. - Solid White: drive is powered and active. Removal is not permitted. - Blinking White (4 Hz): drive activity in progress (read/write). Removal is not permitted.
2	Drive Status (Amber/Blue)	- Off: no power of drive not present - Solid Blue: drive operating normally - Solid Amber: device failure detected

5 Getting Started

This chapter describes the pre-disassembly, removal and installation instructions of the required system components for Aivres exascale rack solution KRS8000V3 that come pre-assembled, and associated internal cabling. It is intended for installation personnel who are familiar with hardware devices.

5.1 Preparing for Installation

5.1.1 Prerequisites

Please determine the installation site, prepare the necessary tools, and ensure the installation environment meets the requirements of the server room or data center before installing the rack, including proper airflow, sufficient power supply, stable network connection, and adequate space to accommodate the cooling manifold and associated hose routing with obstruction.

If any specification documents related to the installation site are required—especially for the CDU and manifold assembly—please request them from Aivres representatives.

- There should be a minimum of 127 mm (5 inches) of cabling clearance at the front, and 310 mm (12.2 inches) at the rear.
- There must be adequate front and rear service clearances. The rack must have sufficient horizontal width clearance in the front and rear to allow the modular components to be fully slide into the front service access positions (typically this requires 914.4 mm (36 inches) clearance).

Table 5-17 Rack Dimension and Clearance Requirements

Dimension	
Width	600 mm (23.6 inches), Outer width
Height	2236 mm (88 inches), casters not included
Depth	1200 mm (47.2 inches)
Clearance	
Front	914 mm (36 inches)
Rear	
Side	NA

5.1.2 Identifying the Rack Package

When you receive the product, verify that the shipment contains everything that you expected to receive.

The rack package includes the following items:

- 1 x 48RU rack enclosure, 18 x compute trays, 2 x OOB TOR management switches, 9 x NVLink switch modules, 1 x rack bus bar assembly, 2 x cooling manifold assemblies, 4 x NV cable cartridges with 1 cartridge bracket, 8 x power shelves, 9 x 1RU blank panel, 1 x 4U/6U CDU (optional) and additional components depending on the purchased configuration.
- Accessory box may be included with the rack. Contents of the accessory box include but not limited to: rail installation kit and printed installation guide*, supporting hardware, power cords* and debug cables*.



NOTE

- For more information on the accessory box content, please contact your Aivres Representative.
 - Items marked with asterisk (*) are optional and available on select models only.
-

5.2 Hardware Installation

This section provides a general overview of rack hardware installation, including the prerequisites and installation of the key components.

5.2.1 Pre-disassembly Instructions

Read the installation instructions for all the hardware operations before disassembling or re-assembling the components. All prerequisites must be completed prior to starting the installation or maintenance procedure.



CAUTION

- To reduce the risk of personal injury, electric shock, or damage to the equipment, be sure that the rack is adequately stabilized before extending or removing the key components from the rack.
- Do not extend more than one key component out of the rack at the same time.
- To prevent damage to electrical components, properly connect and secure all power cords and ground the rack before starting any installation procedure. Improper grounding can cause electrostatic discharge.

- Do not leave open space above or below any installed key components in the rack. To prevent damage to rack components and ensure proper air circulation, always install a blank panel to cover the open space.
- Do not block any air vents, usually 150 mm (6 inches) of air space provides proper airflow.
- For safety concerns and stability needs, use the Aivres recommended rail-kit, bus bar, power whip, PDU, cooling liquid manifold, switch module, node server, cable cartridge and rack enclosure at all times. Always confirm that the mentioned third-party equipment meets all requirements for installation. If you have any questions or need any assistance, contact **Aivres R&D Technology Center** (844-912-0007). Aivres will not undertake any responsibility for the losses arising from any third-party devices operation not conducted herein.

5.2.2 Installing the Rails

To install the key components into the rack, first install the sliding-rails or L-bracket static rails (for power shelf installation only) to the rack.



NOTE

The rail is marked with 'L' and 'R' to indicate the left and right rails, respectively. Ensure correct rails are installed to the rack accordingly.

1. Determine the desired 1RU U-space on the rack.

72 GPU MGX Rack	
48	1RU blank
47	1RU blank
46	OOB 1GbE MGMT Switch 02
45	OOB 1GbE MGMT Switch 01
44	1RU blank
43	1RU blank
42	1U Power shelf-08
41	1U Power shelf-07
40	1U Power shelf-06
39	1U Power shelf-05
38	Rack stiffener
37	1U Compute Tray
36	1U Compute Tray
35	1U Compute Tray
34	1U Compute Tray
33	1U Compute Tray
32	1U Compute Tray
31	1U Compute Tray
30	1U Compute Tray
29	1U Compute Tray
28	1U Compute Tray
27	1U Switch Tray
26	1U Switch Tray
25	1U Switch Tray
24	1U Switch Tray
23	1U Switch Tray
22	1U Switch Tray
21	1U Switch Tray
20	1U Switch Tray
19	1U Switch Tray
18	1U Compute Tray
17	1U Compute Tray
16	1U Compute Tray
15	1U Compute Tray
14	1U Compute Tray
13	1U Compute Tray
12	1U Compute Tray
11	1U Compute Tray
10	Rack stiffener + Leak drip pan
9	1U Power shelf-04
8	1U Power shelf-03
7	1U Power shelf-02
6	1U Power shelf-01
5	1RU blank
4	1RU blank
3	1RU blank
2	1RU blank
1	1RU blank

Component Installed	Rack Space	Recommended Rail-kit
Compute Tray	11U-18U and 28U-37U	Sliding-rail
NVLink Switch Tray	19U-27U	Sliding-rail
OOB Management Switch	45U and 46U	Sliding-rail
Power Shelf	06U-09U and 39U-42U	L-bracket static rail

Figure 5-22 Reference Rack Elevation

To install the sliding-rails:

1. The sliding-rail kit consists of three rails: outer rail, middle rail, and inner rail. Fully extend the rail kit, then pull the white releasing tab forward to separate the inner rail from the middle rail.

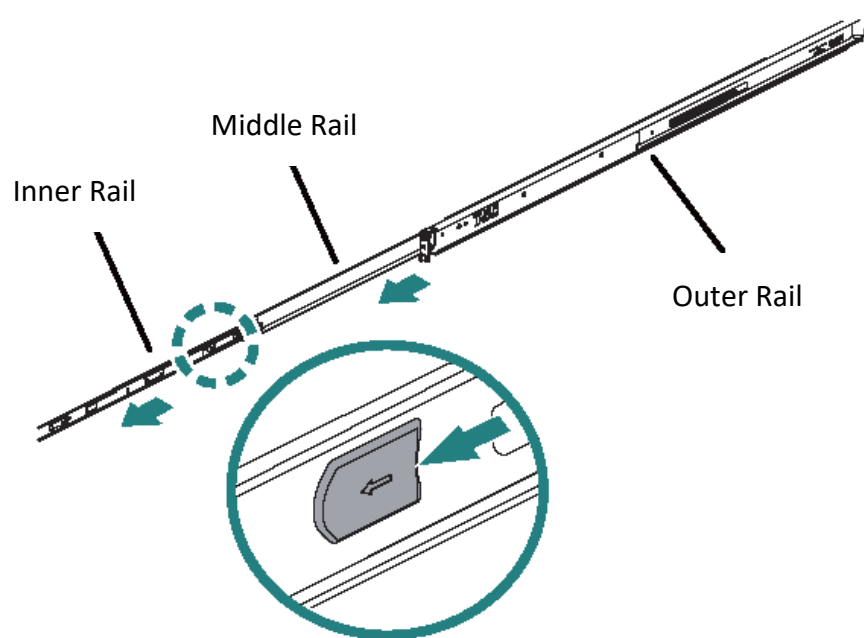


Figure 5-23 Inner Rail Separation

2. Press the retraction latch activation tab to allow the middle rail to retract automatically into the outer rail.

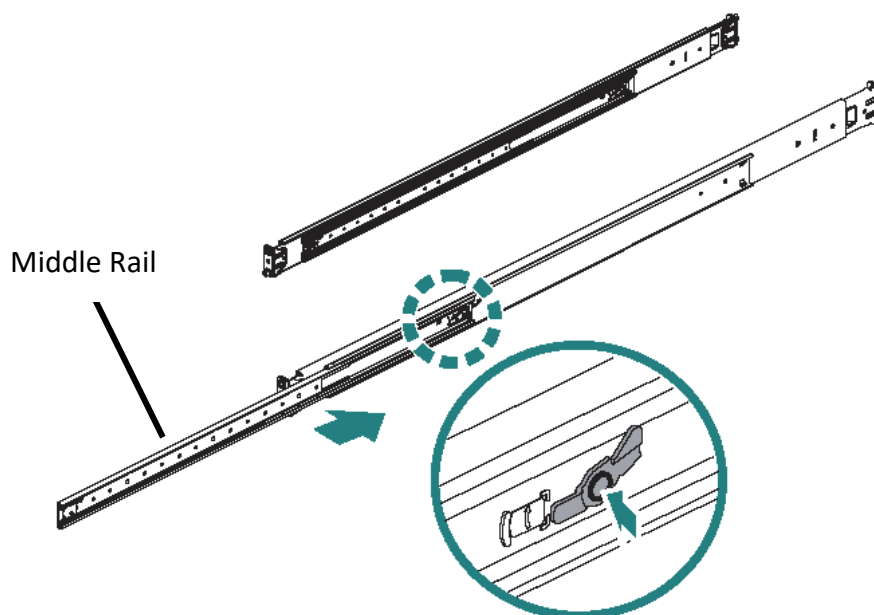


Figure 5-24 Retraction Latch

3. Install the inner rail on the component chassis:
 - A. Align the four keyholes on the inner rail with the four standoffs on the corresponding chassis side, and slide forward until they lock into place. Make sure they are fully seated ①.
 - B. Secure it with one (1) M4xL4 screw on each side ②.

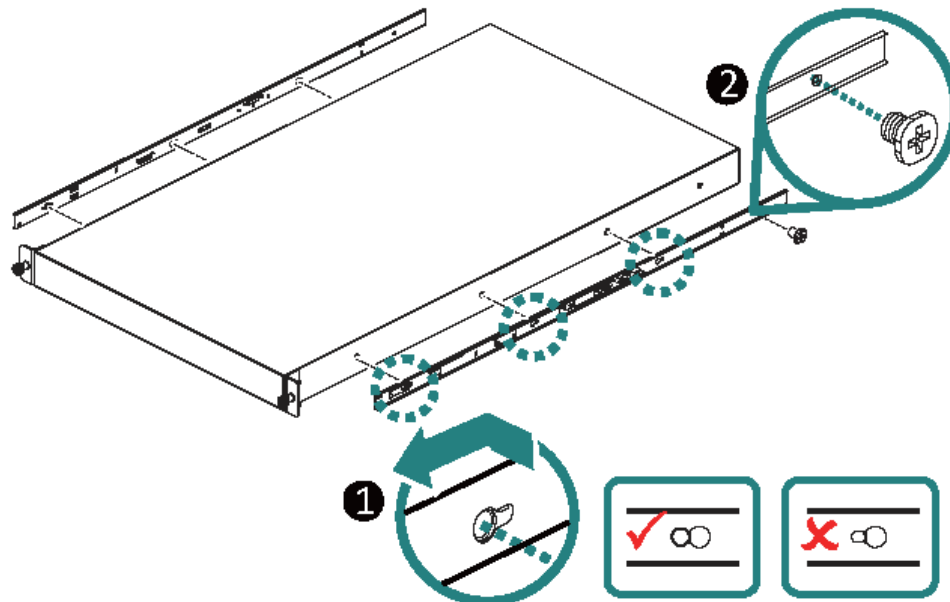
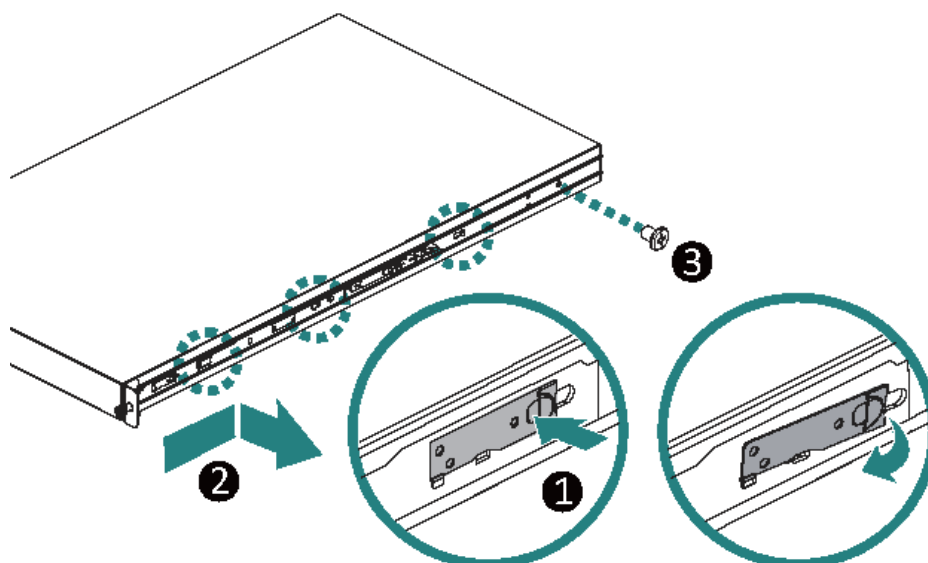


Figure 5-25 Installing the Inner Rail on the Component Chassis

⚠ CAUTION

To detach the inner rail from the standoffs, gently press the metal securing latch to tilt it slightly away from the keyhole, then slide the rail backward until it is fully released. **DO NOT OVER-PULL** the securing latch, as it may deform.



4. Install the rail-kit on the rack:
 - A. Align and insert the rear bracket of the rail with the square mounting-hole on the rear rack-post at the selected U-space.

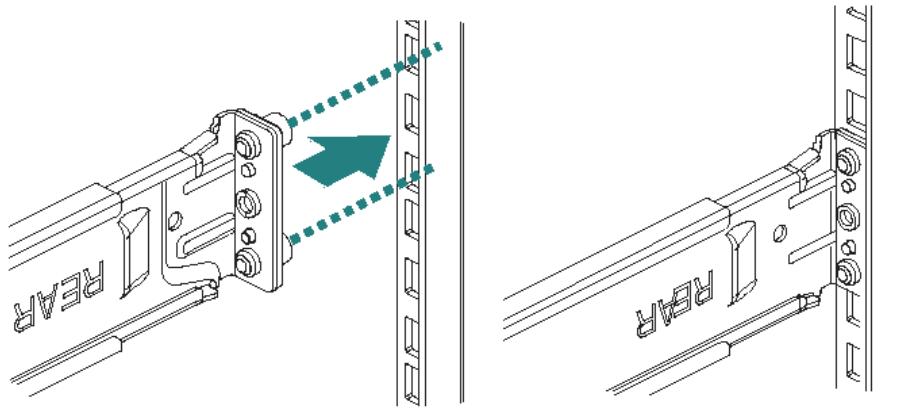


Figure 5-26 Securing the Rear Bracket

- B. Pull out the rail to its full extension.
 - C. Align and insert the front bracket of the rail with the square mounting-hole on the front rack-post at the same height.
 - D. Repeat the same step for other rail.



CAUTION

The front bracket and rear bracket of the rail, and the two rails MUST be installed at the same height.

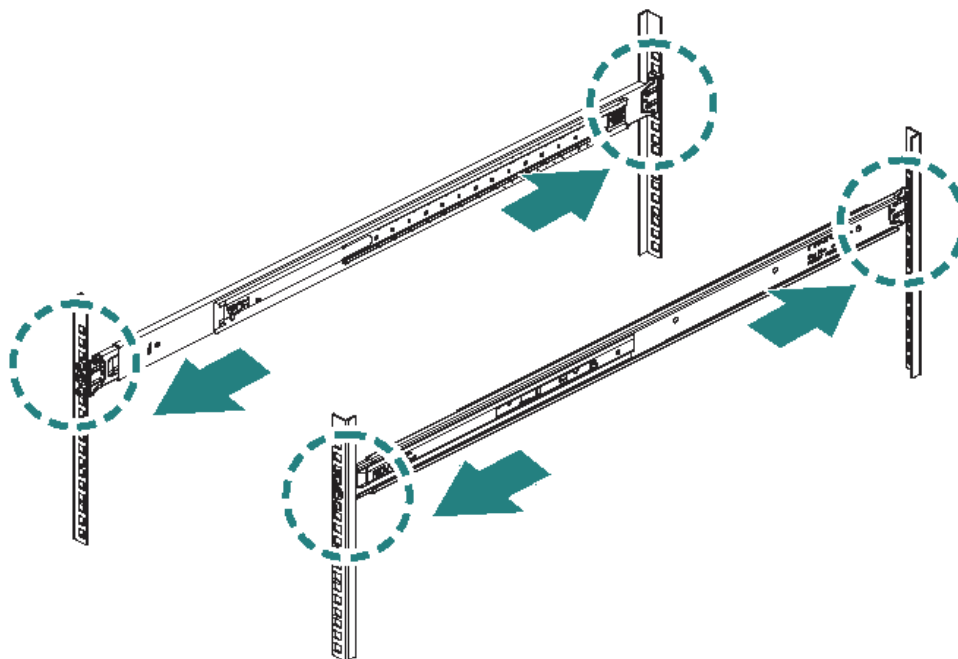


Figure 5-27 Installing Rail-kit on the Rack

- E. Secure the front bracket with one (1) M5 washer and one (1) M5xL6 screws.

 NOTE

Before securing the front bracket, place one (1) M5 washer over the FIRST mounting-hole of the selected U-space, then install and tighten an M5xL6 screw.

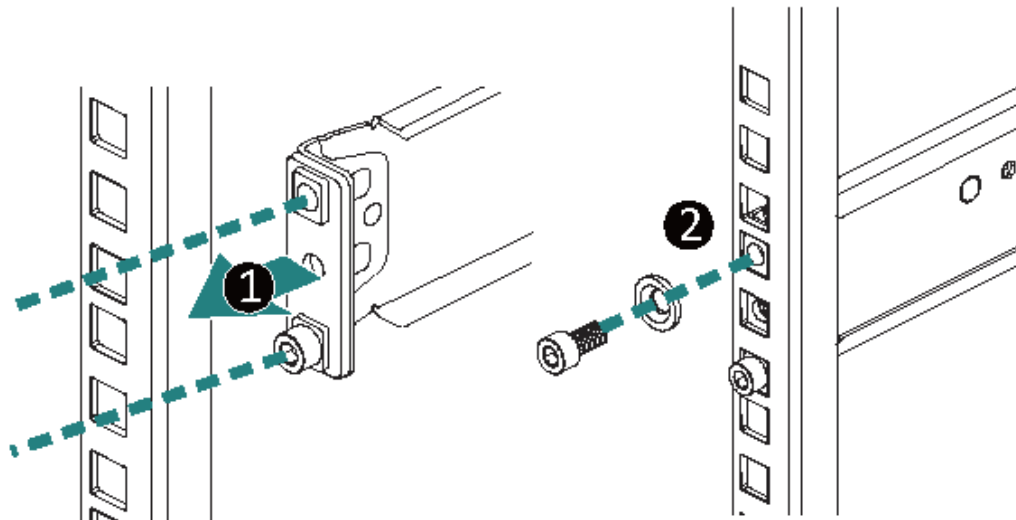


Figure 5-28 Securing the Front Bracket

To install the L-bracket static rails:

NOTE

Use the L-bracket static rails only for installing the power shelf.

1. Align and insert the rear bracket of the rail with the square mounting-hole on the rear rack-post at the selected U-space, and secure it with two (2) M5xL6 screws in the FIRST and THIRD mounting-hole.
2. Pull out the rail to its full extension.
3. Align and insert the front bracket of the rail with the square mounting-hole on the front rack-post at the same height, and secure it with two (2) M5xL6 screws in the FIRST and THIRD mounting-hole.
4. Repeat the same step for other rail.

CAUTION

The front bracket and rear bracket of the rail, and the two rails MUST be installed at the same height.

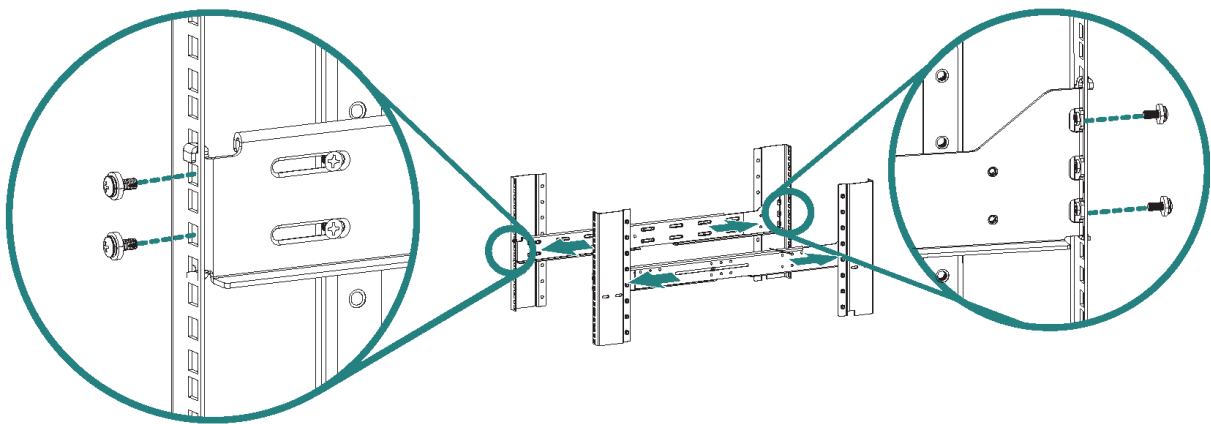


Figure 5-29 Securing the Front Bracket

5.2.3 Installing the Ejection Bar

To install the compute tray and NVLink switch tray into the rack, first install the ejection bar.

1. Determine the desired U-space at rack space 11U to 37U, and verify that you have a 9RU space.
2. Align and attach the left ejector bar to the left rack-post, and secure it with nine (9) M5xL16 screws.

The installation of the right ejector bar follows the same procedure.

NOTE

Make sure the ejector bars are correctly oriented, with the holes properly aligned with the square mounting holes on the rack-post.

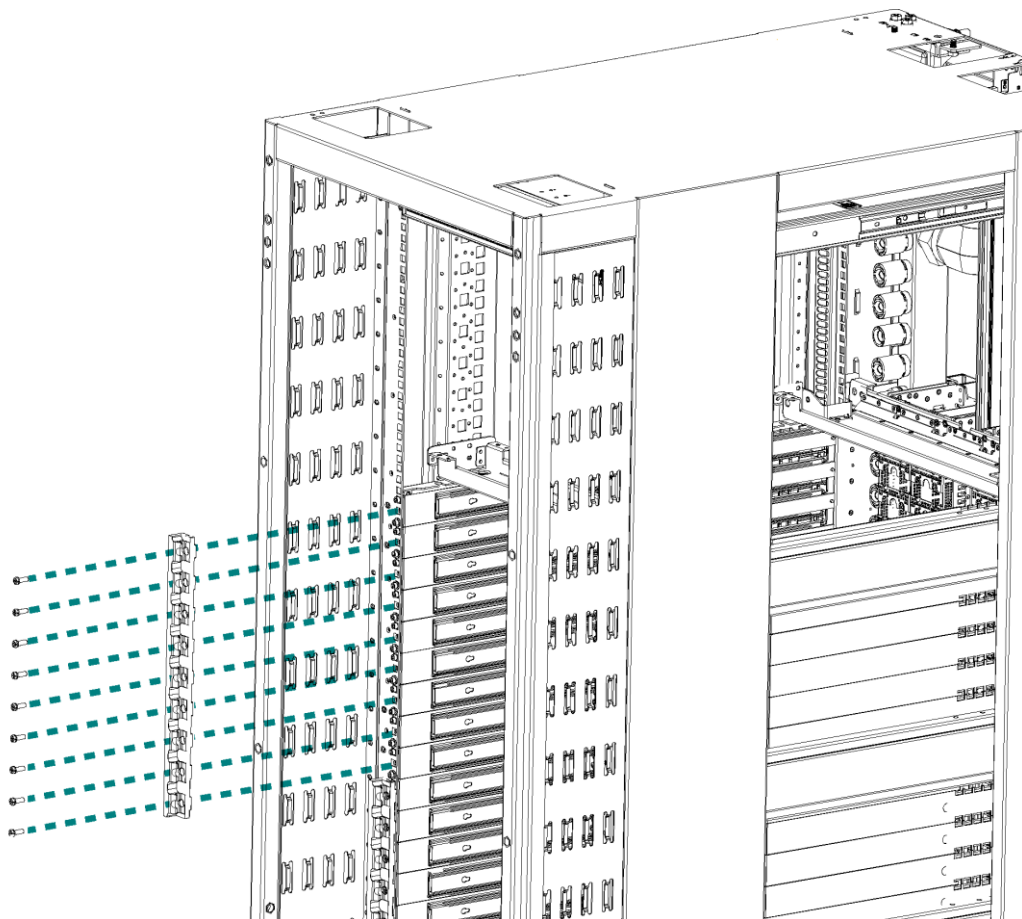


Figure 5-30 Left Ejection Bar Installation

5.2.4 Installing the Blank Panel

To prevent damage to rack components and ensure proper air circulation, always install a blank panel to cover the open space.

1. Determine the form factor of the blank filler panel that you need to cover the open space in the rack.
2. Insert the left side of the blank panel into the rack's mounting hole, aligning the studs on the back of the panel with the holes in the rack.

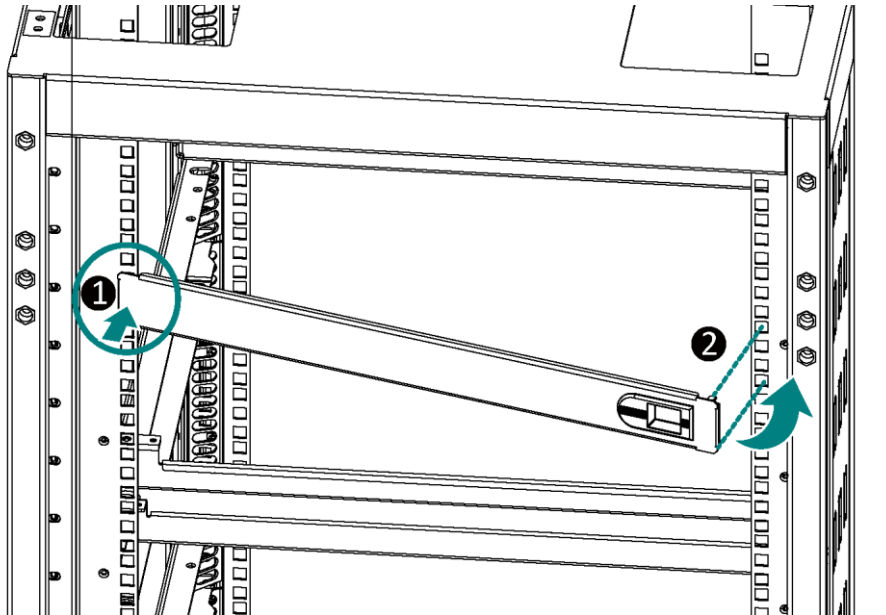


Figure 5-31 Blank Panel Installation

3. Gently press the right side of the panel towards the rack until it clicks into place.

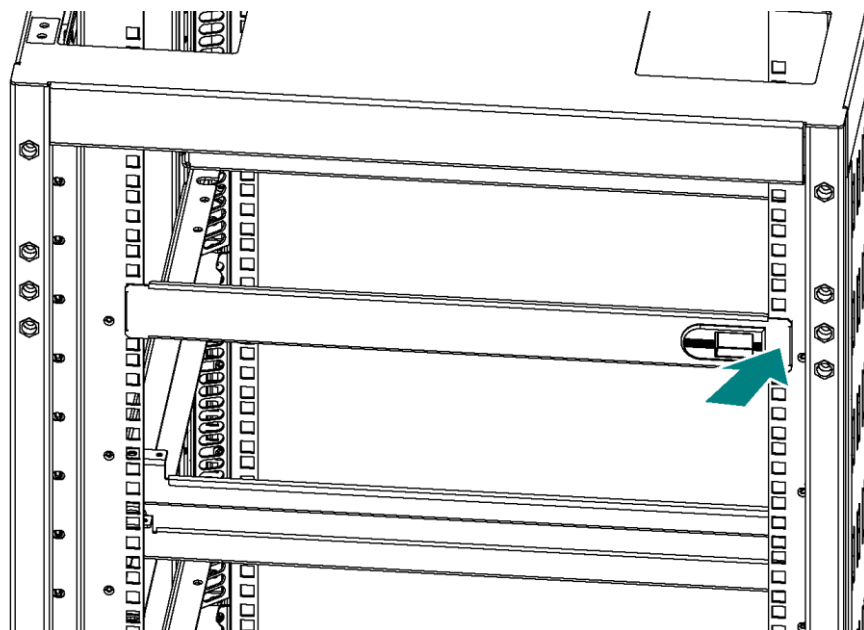


Figure 5-32 Blank Panel Installation

To remove the blank panel from the rack:

1. Press the release latch on the right side of the panel to disengage it from the rack's mounting hole.

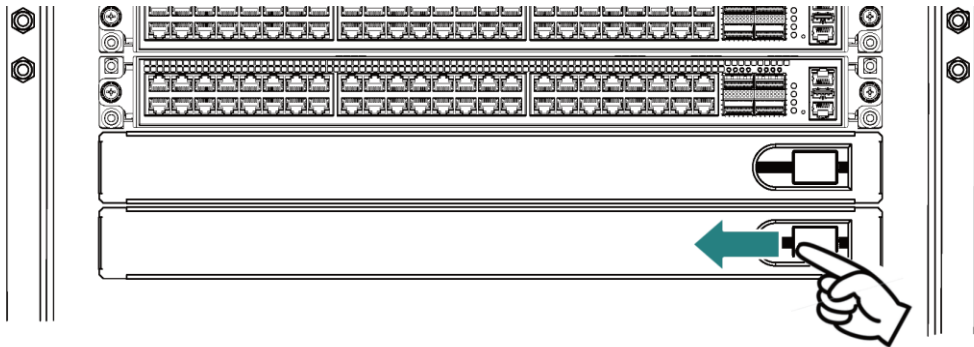


Figure 5-33 Blank Panel Removal

2. Pull the right side of the panel outward, and then lift up the left side out from the rack, detaching the blank panel completely.

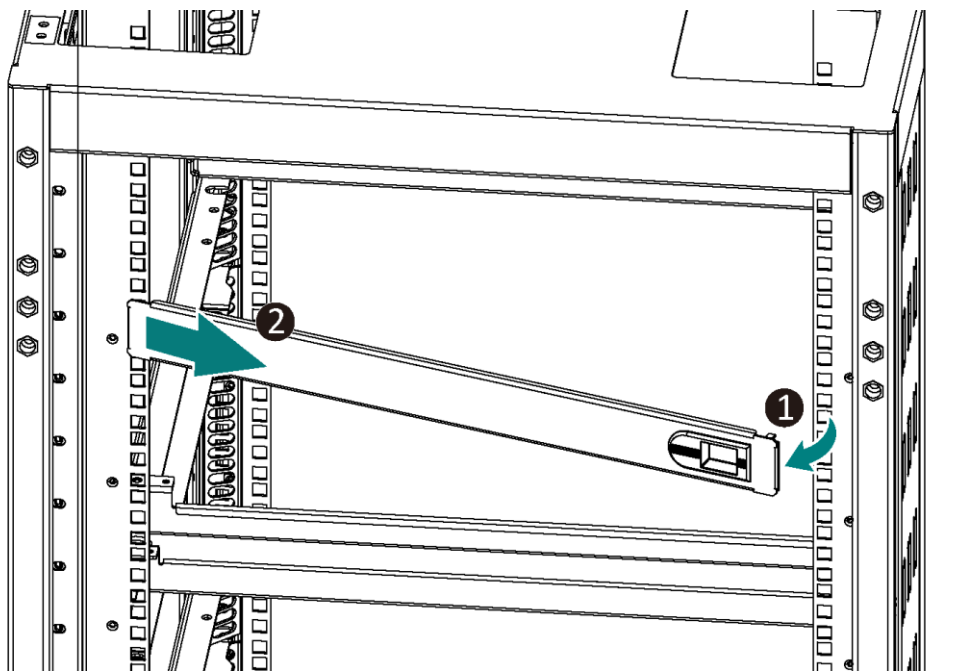


Figure 5-34 Blank Panel Removal

5.2.5 Installing the Cage Nut

The rack's mounting holes are square-shaped, which may not provide a secure fit for certain screws. By installing a cage nut into the rack post, adjust the square-shaped to a round shape, ensuring for a more secure screw installation.

1. Determine the desired installation positions of the square mounting hole.
2. Insert a cage nut from inside the rack post.
3. Use an insertion tool (such as a screwdriver), pinch and fasten the cage nut into the same hole. Make sure the cage nut is firmly hooked into the hole.
4. Install another cage nut to the other rack post in the same way.

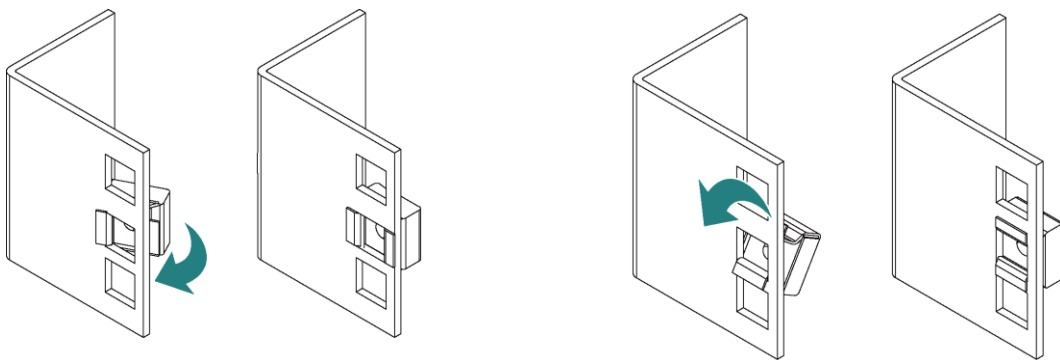


Figure 5-35 Installing the Cage Nut



NOTE

- Cage nuts can be inserted into the rack mounting holes either horizontally (left to right) or vertically (top to bottom), depending on the installation requirement.
- Make sure that the cage nuts hooked into the holes of the two rack-posts are at the same height.

5.3 Key Components Maintenance

This section provides installation and removal procedures for the key components in the Aivres Exascale server rack solution KRS8000V3, which are designated as either shipped or pre-assembled as an option. It is intended for installation personnel who are familiar with hardware devices.

5.3.1 Compute Tray

To remove the hot-swapped compute tray from the rack:

1. Disconnect all cables from the compute tray.
2. Use both hands, pull the front ejector handle holders outward to its opened position to release the compute tray from the rack ejection bar ①, then slide the compute tray out of the rack ②.



NOTE

The compute tray's two water hoses will disconnect from the manifold once it is released from the ejection bar. Ensure no liquid spills.

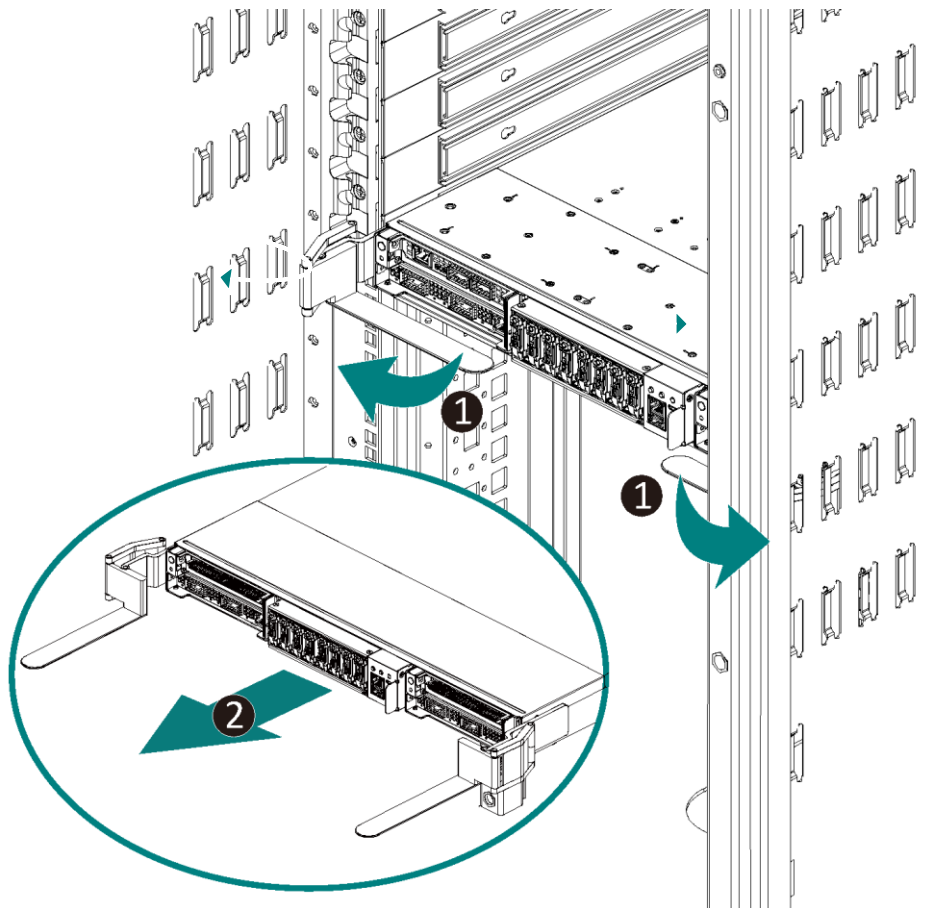


Figure 5-36 Compute Tray Removal

To install the hot-swapped compute tray to the rack:

1. Fully extend the middle rails until they click into place (hear a click).
2. Align the compute tray, with inner rails attached, and slide it horizontally into the rack, ensuring only partially inserted.

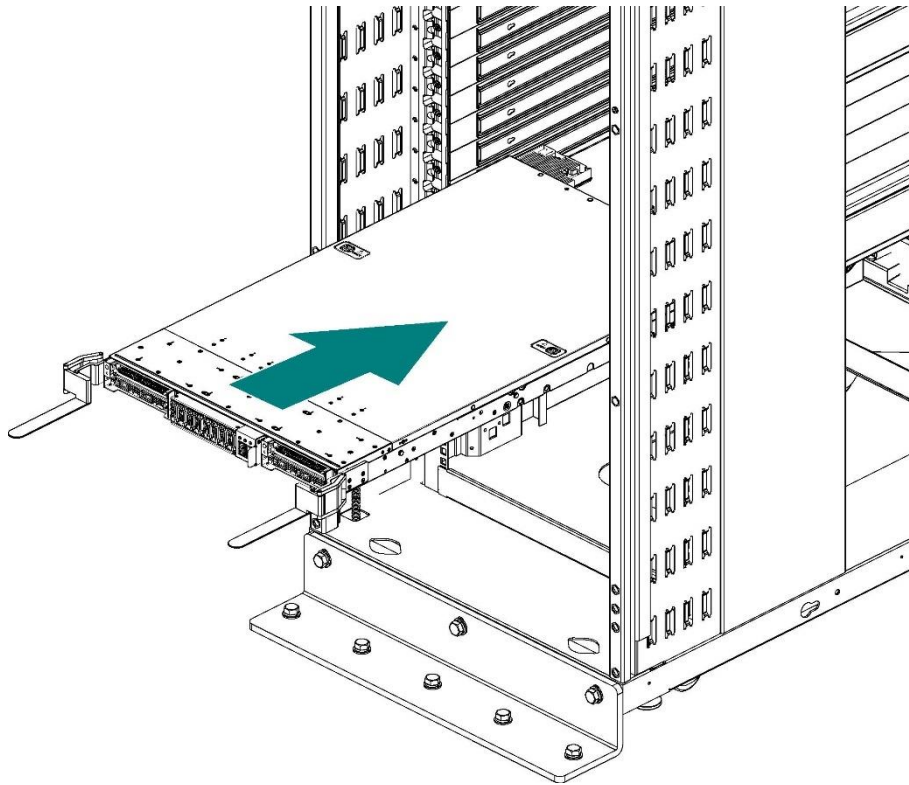
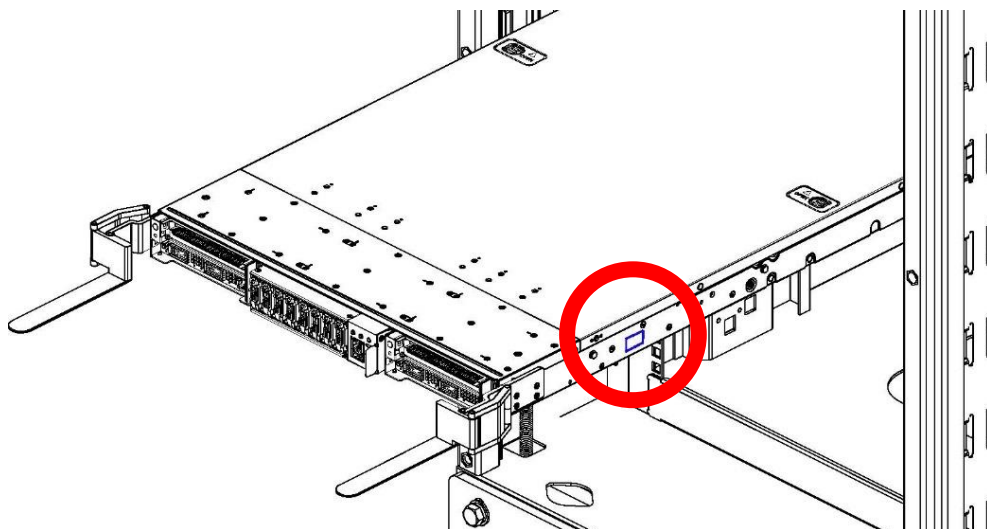


Figure 5-37 Compute Tray Installation

NOTE

Pull or push the blue release tab on both sides of the inner rails simultaneously if the compute tray (inner rails) does not slide smoothly into the rack (middle rails).



3. Slowly slide the compute tray forward until the ejector handle holders align with the ejection bar. Do not fully insert the compute tray at this point.
4. Fully open the ejector handle holders. Then, using both hands push the ejector handle holders into its closed position ①.

⚠ CAUTION: Make sure the ejector handle holders are securely locked into the ejection bar ②. Failure to do so may cause the handles to break.

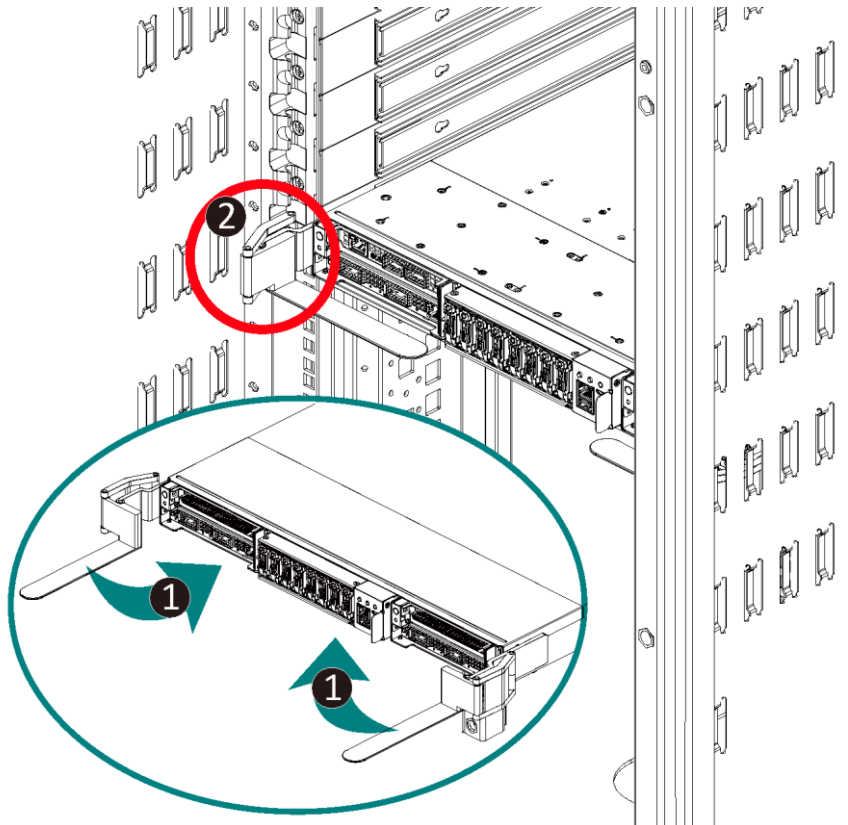


Figure 5-38 Compute Tray Installation

NOTE

When installing a new compute tray to the rack, remove the two (2) QD caps from the QD couplings, and the four (4) orange protective covers from the rear ports.

If any, remove the protective covers from the cable cartridge connectors, and the QD caps from the manifold UQD LC connectors.

5. Connect all cables to the compute tray.

5.3.2 NVLink Switch Tray

To remove the hot-swapped NVLink switch tray from the rack:

1. Disconnect all cables from the NVLink switch.
2. Use both hands, pull the front ejector handle holders outward to its opened position to release the switch tray from the rack ejection bar ①, then slide the switch tray out of the rack ②.



NOTE

The switch's two water hoses will disconnect from the manifold once the switch is released from the ejection bar. Ensure no liquid spills.

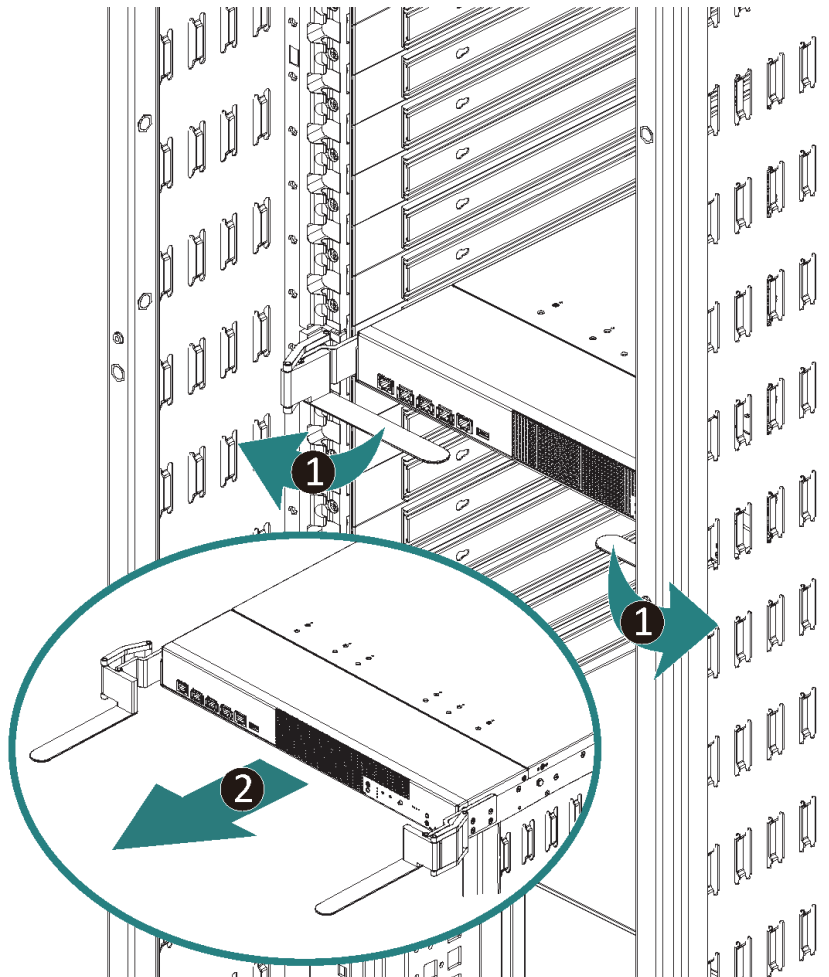


Figure 5-39 Switch Tray Removal

To install the hot-swapped NVLink switch tray to the rack:

1. Fully extend the middle rails until they lock into place with a click.

2. Align the compute tray, with inner rails attached, and slide it horizontally into the rack, ensuring only partially inserted. If you are reinstalling the switch tray that you removed, place it in the same U-space from which it was removed.

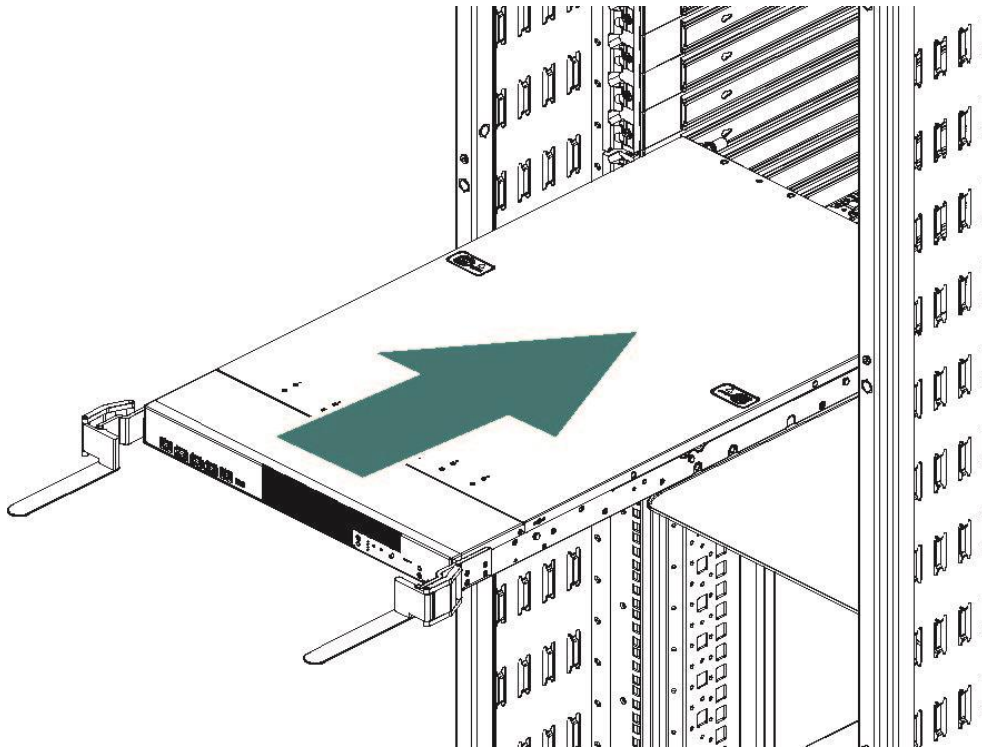
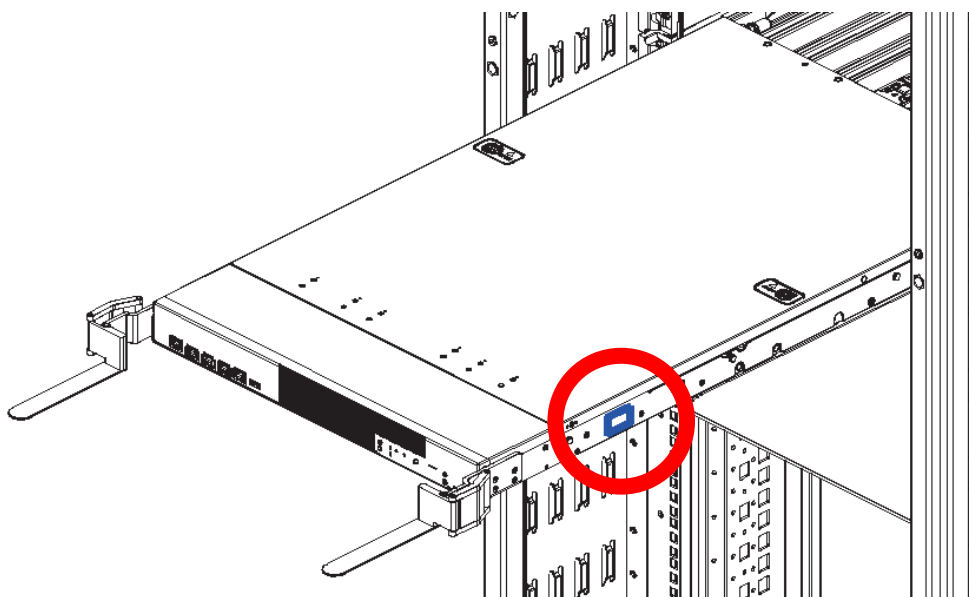


Figure 5-40 NVLink Switch Tray Installation

NOTE

Pull or push the blue release tab on both sides of the inner rails simultaneously if the switch tray (inner rails) does not slide smoothly into the rack (middle rails).



3. Slowly slide the NVLink switch tray forward until the ejector handle holders align with the ejection bar. Do not fully insert the switch tray at this point.
4. Fully open the ejector handle holders. Then, using both hands push the ejector handle holders into its closed position ①.

⚠ CAUTION: Make sure the ejector handle holders are securely locked into the ejection bar ②. Failure to do so may cause the handles to break.

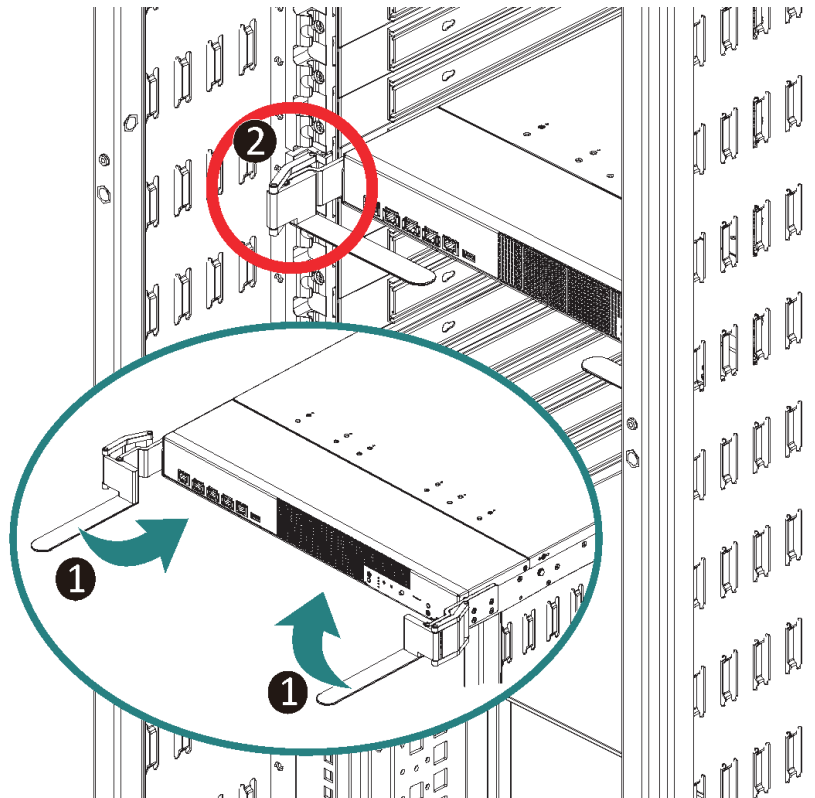


Figure 5-41 NVLink Switch Tray Installation

⚠ CAUTION

When adding a new switch tray to the rack, you must reset (reboot or power cycle) all the existing switch trays and compute trays that are already in that same rack.

NOTE

- When installing a new switch tray to the rack, remove the two (2) QD caps from the QD couplings, and the four (4) orange protective covers from the rear ports.
- If any, remove the protective covers from the cable cartridge connectors, and the QD caps from the manifold UQD LC connectors.

5. Connect all cables to the NVLink switch tray.

5.3.3 Management Switch

To remove the OOB TOR management switch from the rack:

1. Disconnect all cables from the switch.
2. Loosen the two (2) black captive screws securing the switch to the rack.

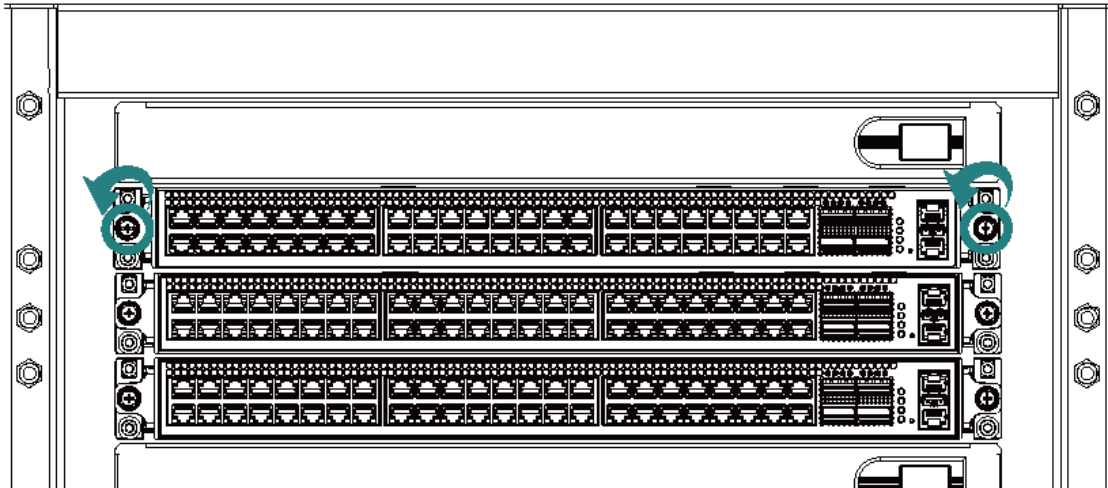


Figure 5-42 OOB Management Switch Screw Removal

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

3. Remove the two (2) T25 screws installed in the THIRD mounting hole securing the front bracket in place.

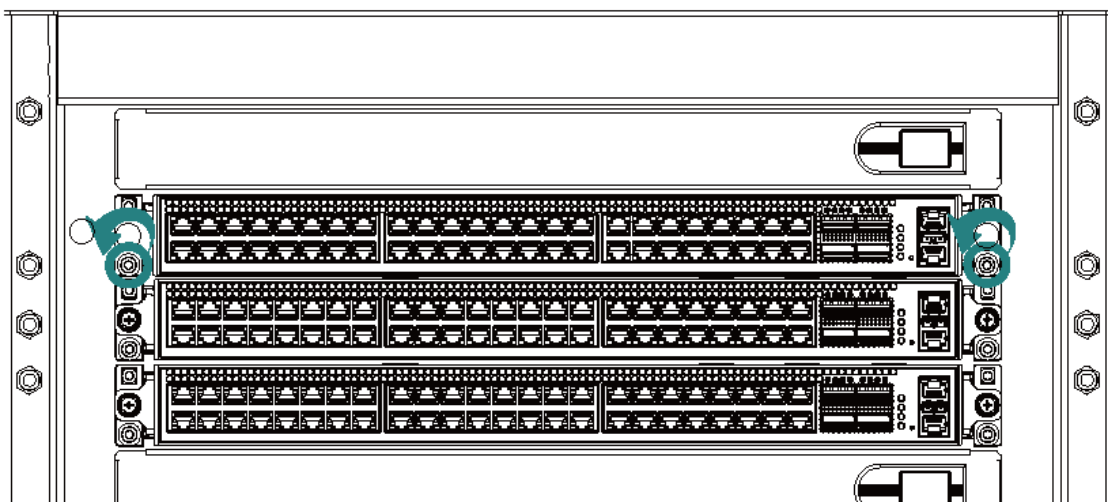


Figure 5-43 OOB Management Switch Screw Removal

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

4. (If any) Remove the two (2) T20 screws installed in the SECOND mounting hole securing the rear bracket in place.

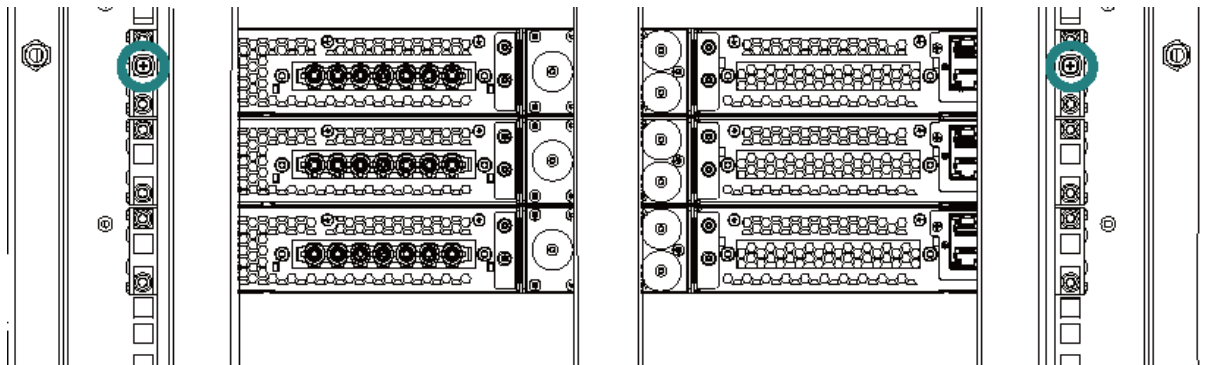


Figure 5-44 OOB Management Switch Screw Removal

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

5. Gently slide and remove the switch out of the rack.

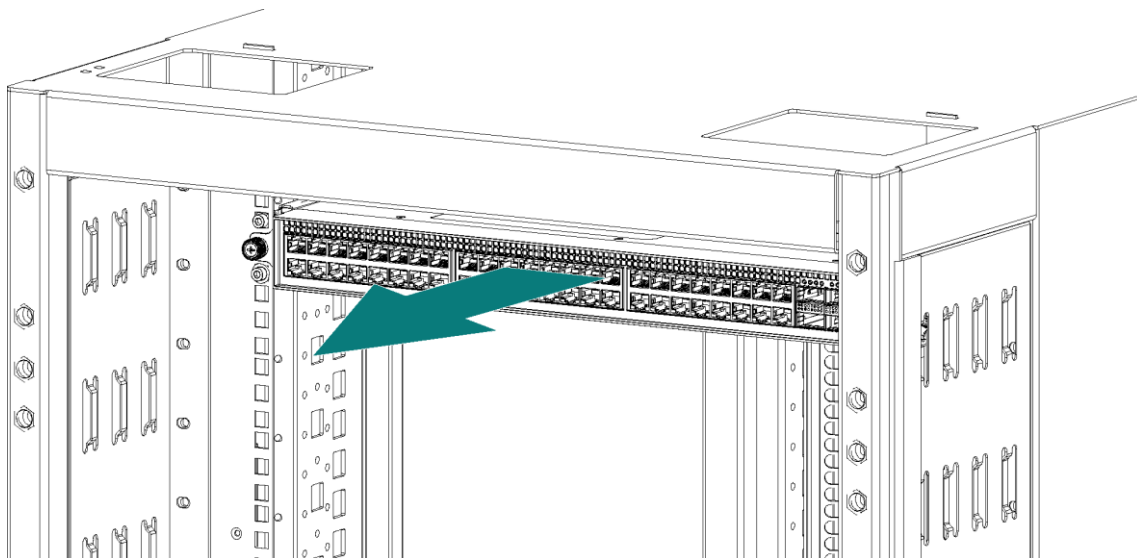


Figure 5-45 OOB Management Switch Removal

To install the OOB TOR management switch to the rack:

1. Determine the desired 1RU U-space on the rack (46U or 47U).

NOTE

If your rack configuration includes three (3) OOB switches, install them in rack spaces 45U, 46U and 47U. For a four (4) OOB switch configuration, use rack spaces 44U to 47U.

2. Align the screw holes on the left mounting ear with those on the left side of the switch chassis, then secure it with four (4) M5 screws. The installation of the right mounting ear follows the same procedure.
3. Align the OOB management switch with the rails, and slide the switch all the way into the rack.

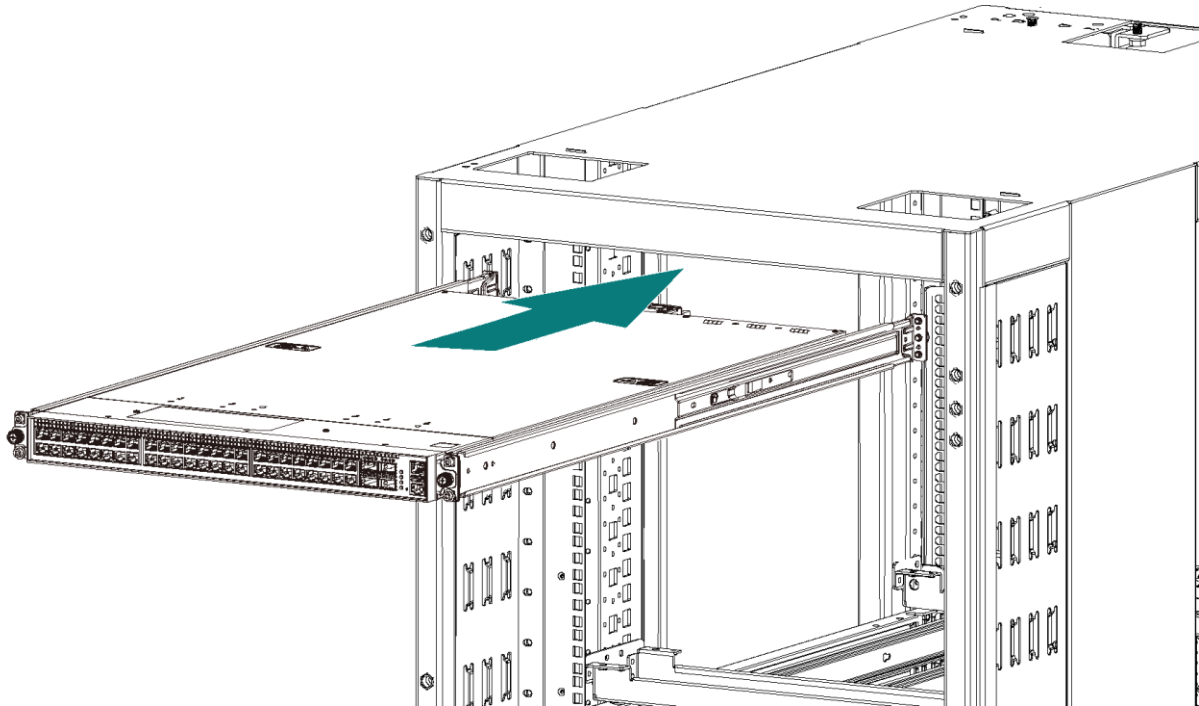


Figure 5-46 OOB Management Switch Installation

4. Secure the front bracket with two (2) T25 screws in the THIRD mounting hole.

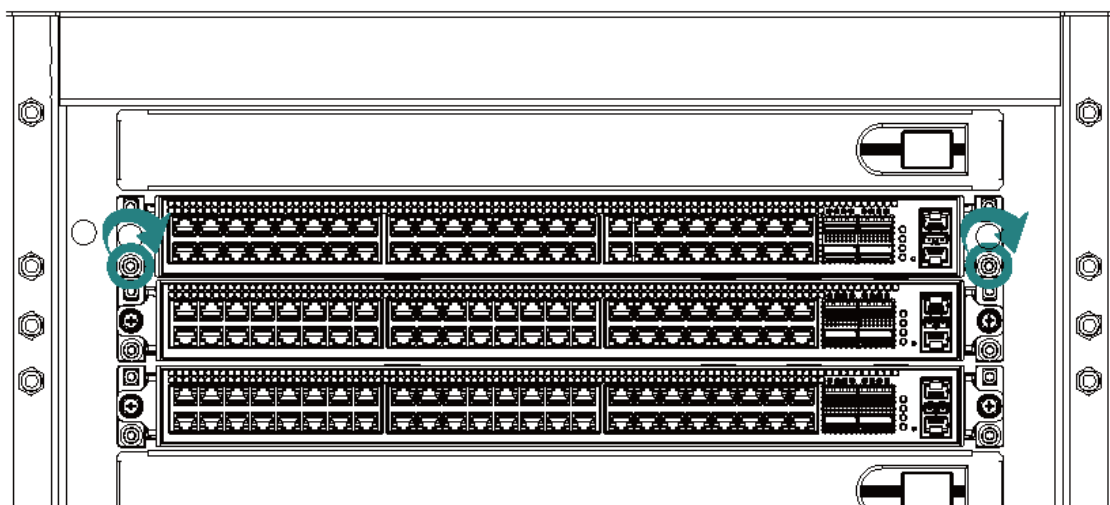


Figure 5-47 OOB Management Switch Screw Installation

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

5. (If any) Secure the rear bracket with two (2) T20 screws in the SECOND mounting hole.

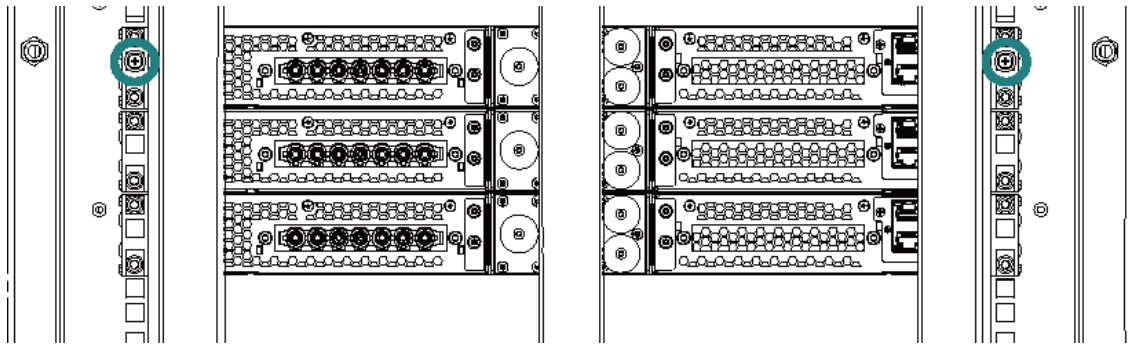


Figure 5-48 OOB Management Switch Screw Installation

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

6. Tighten the two (2) black captive screws to secure the switch to the rack.

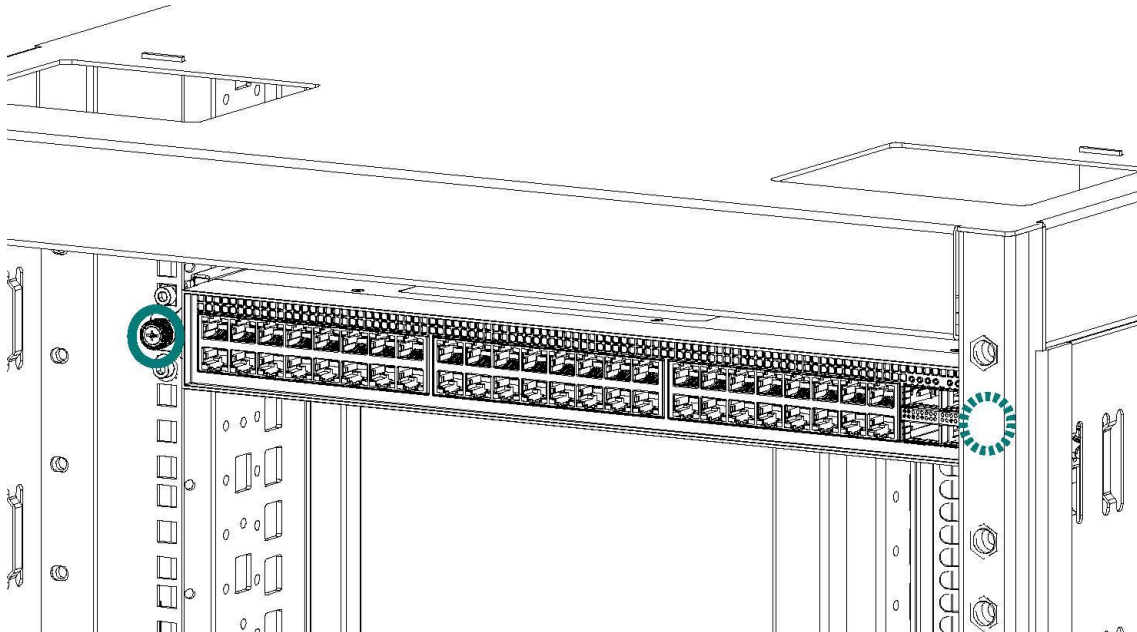


Figure 5-49 OOB Management Switch Screw Installation

The current drawing is low resolution and will be replaced with a higher-quality image in a future revision

7. Connect all cables to the switch.

5.3.4 Power Shelf

To remove the power shelf from the rack:

1. Disconnect all cables from the power shelf.
2. Remove the two (2) screws securing the power shelf to the rack.

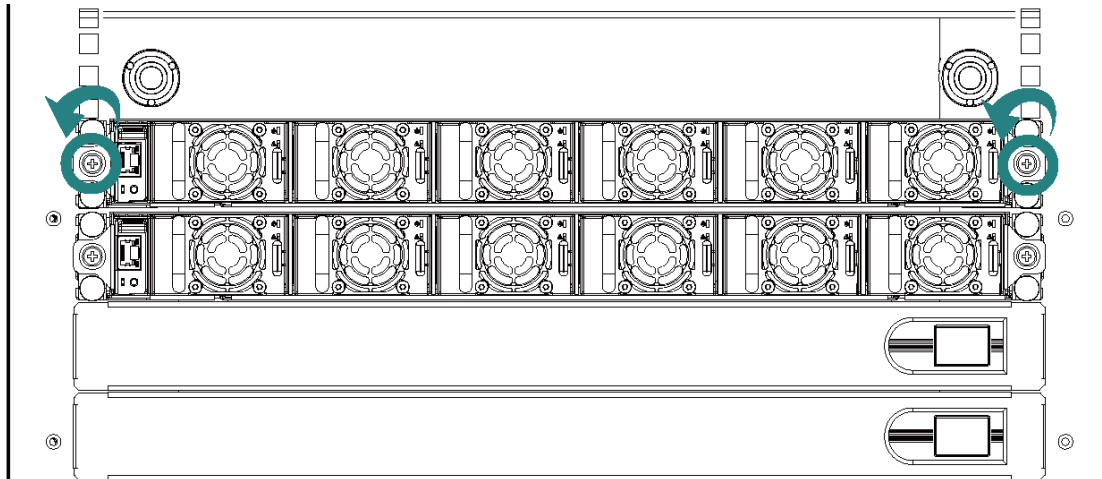


Figure 5-50 Power Shelf Screw

3. Use both hands, carefully slide and remove the power shelf from the L-bracket static rails.

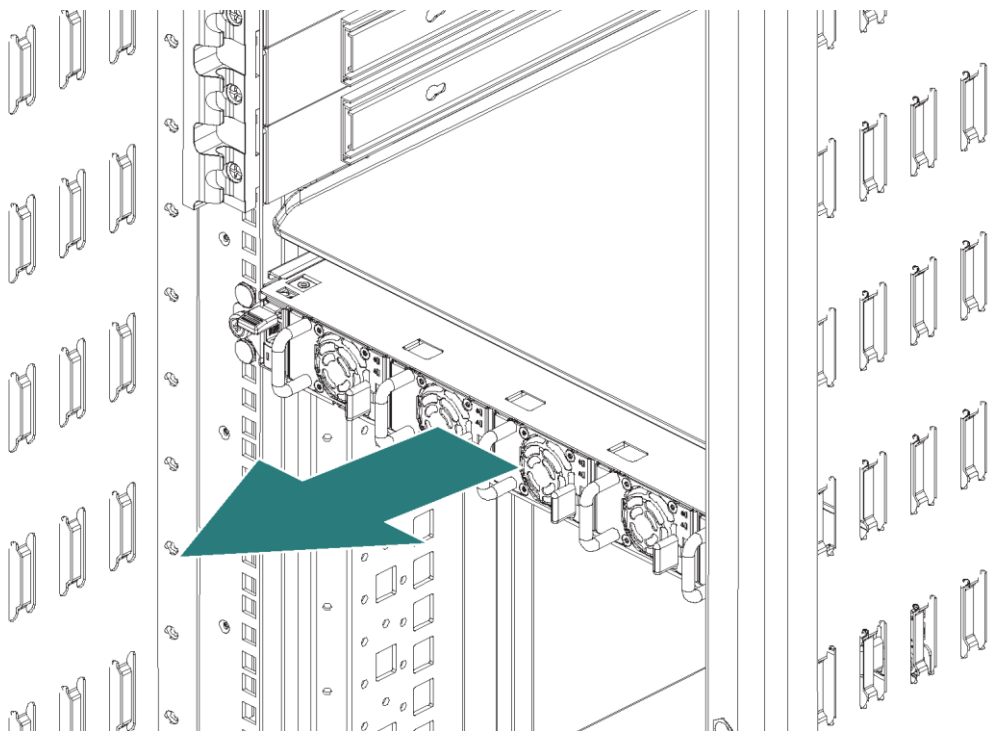


Figure 5-51 Power Shelf Removal

4. Grasp the handle and press on the release lever to unlock the PSU from the power shelf, then use both hands to pull the PSU out of the PSU bay.

NOTE

- The power supply unit (PSU) can be removed without removing the power shelf from the rack.
- It is recommended to remove all PSUs before removing the power shelf from the rack. The power shelf houses up to six PSUs and may be too heavy to handle safely when fully loaded, potentially causing personal injury.

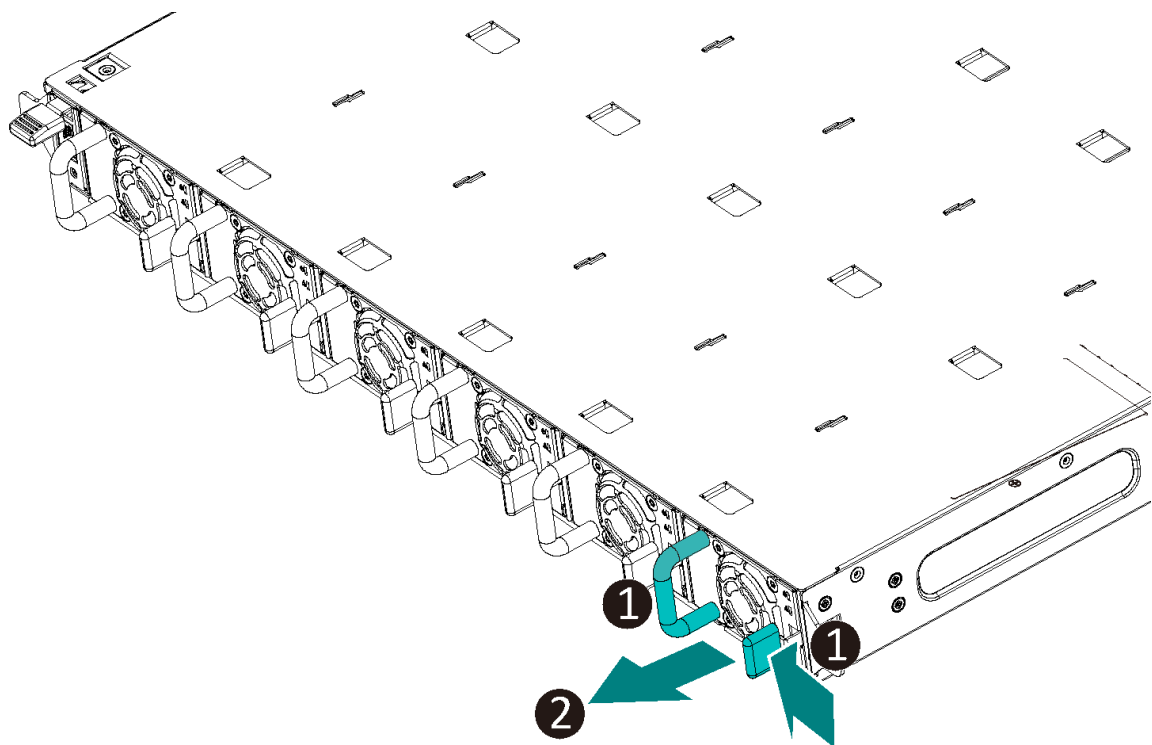


Figure 5-52 PSU Removal

To install the power shelf to the rack:

1. Determine the desired 1RU U-space on the rack (06U-09U and 39U-42U).

NOTE

For a six (6) power shelf configuration, use rack spaces 07U-09U and 39U-41U.

2. Align the power shelf cage with the rails, and slide the cage all the way into the rack.

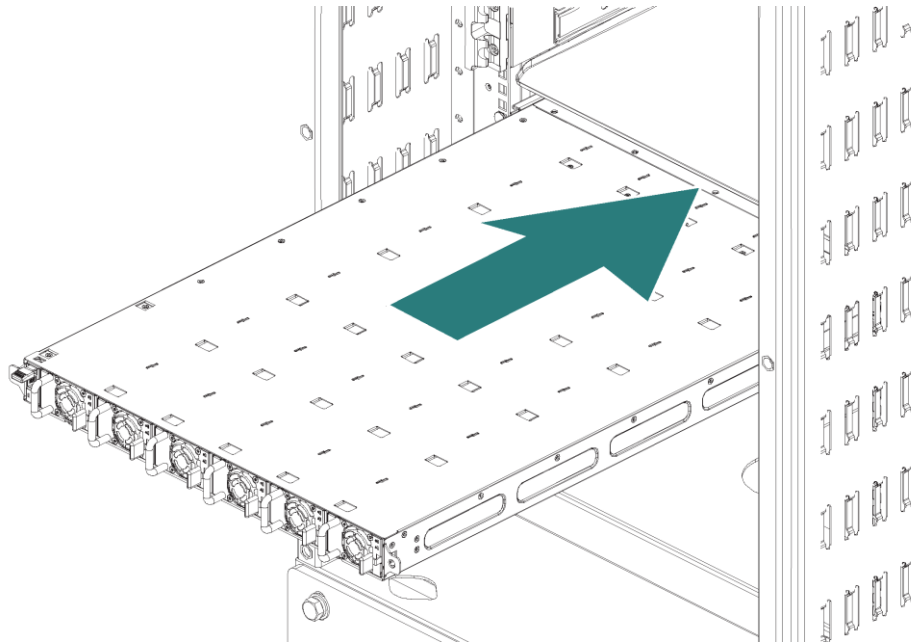


Figure 5-53 Power Shelf Installation

3. Tighten the two (2) screws to secure the power shelf cage to the rack.

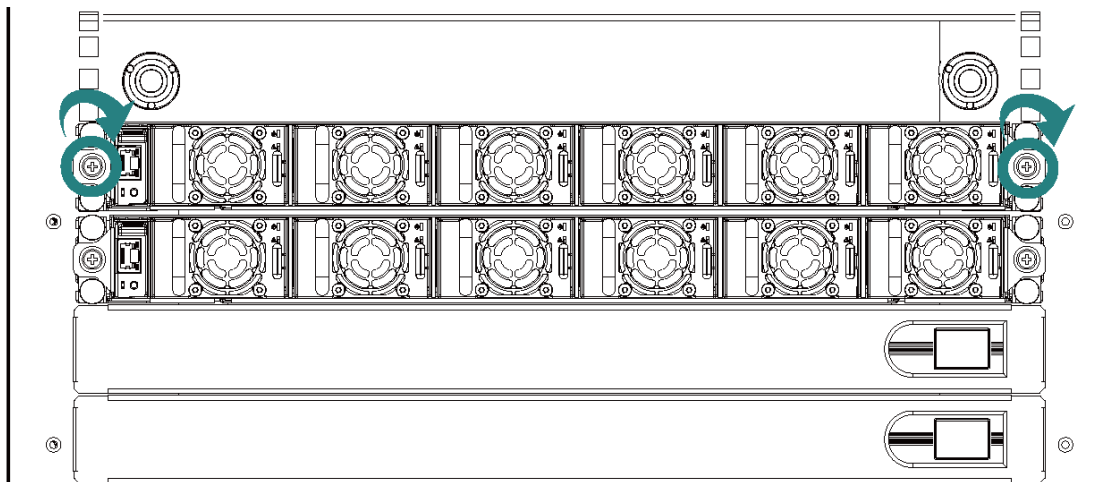


Figure 5-54 Power Shelf Screw

4. Install six (6) PSUs into the power shelf cage:
 - A. Make sure the release latch is on the right side.
 - B. With one hand grasp the handle, and with the other hand hold the PSU. Carefully insert the PSU into the PSU bay until the release latch clicks back into position.
5. Connect all cables to the power shelf.

6 Firmware Upgrade

This chapter provides a basic guideline for updating the firmware on all KRS8000V3 system components, such as CPLDs, PSUs, PCIe switches, and so on.

Before updating the latest version of the firmware, make sure you have requested the Aivres representatives for the validated version of the firmware package.

NOTE

The firmware package is for 72x1 rack configuration with support for trunk links.

6.1 Updating Firmware via Web GUI

This section describes the upgrade instructions of updating firmware package using the Web GUI.

NOTE

- Make sure the latest firmware package has been acquired.
- The Web GUI Screenshot will vary depending on the actual configuration.

1. Login to the WEB GUI as an administrator.
You must know the BMC IP address, a user name, and a password.
2. Go to **Maintenance > Firmware information** to check the firmware version on your system, then click **Firmware Update**.

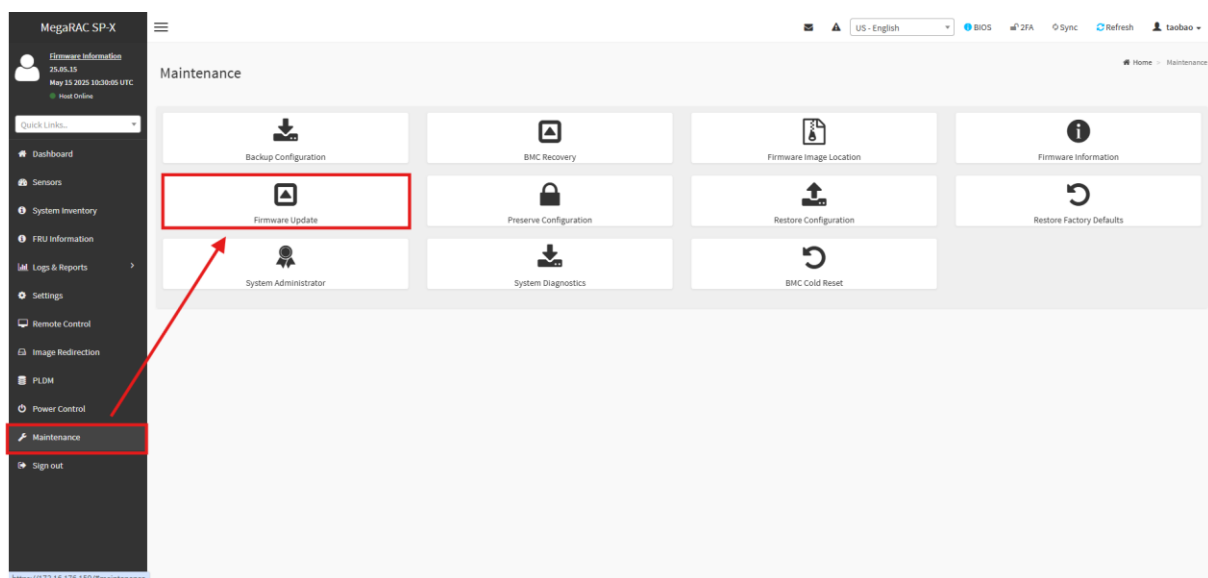


Figure 6-1 Updating Firmware Package

- Click the browse button and choose the firmware package file (*.ima) from the local drive, and then click '**Start firmware Update**'.

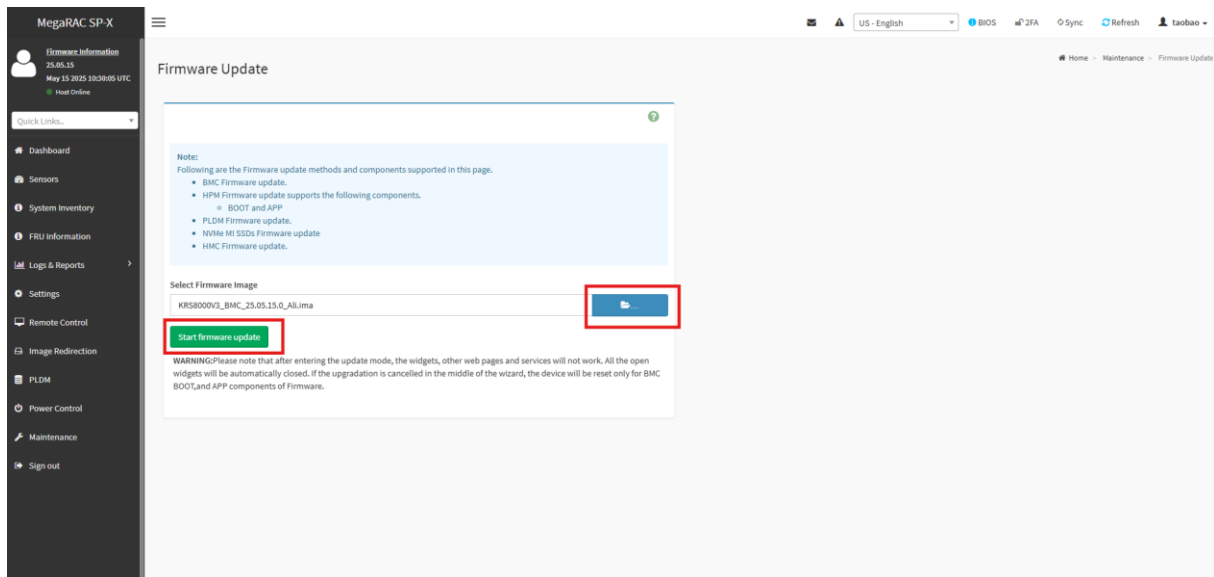


Figure 6-2 Updating Firmware Package

- The Preserve Configuration Items will be displayed. Click the '**Proceed to Flash**' button. Wait for few minutes until the image file upload process is successful.

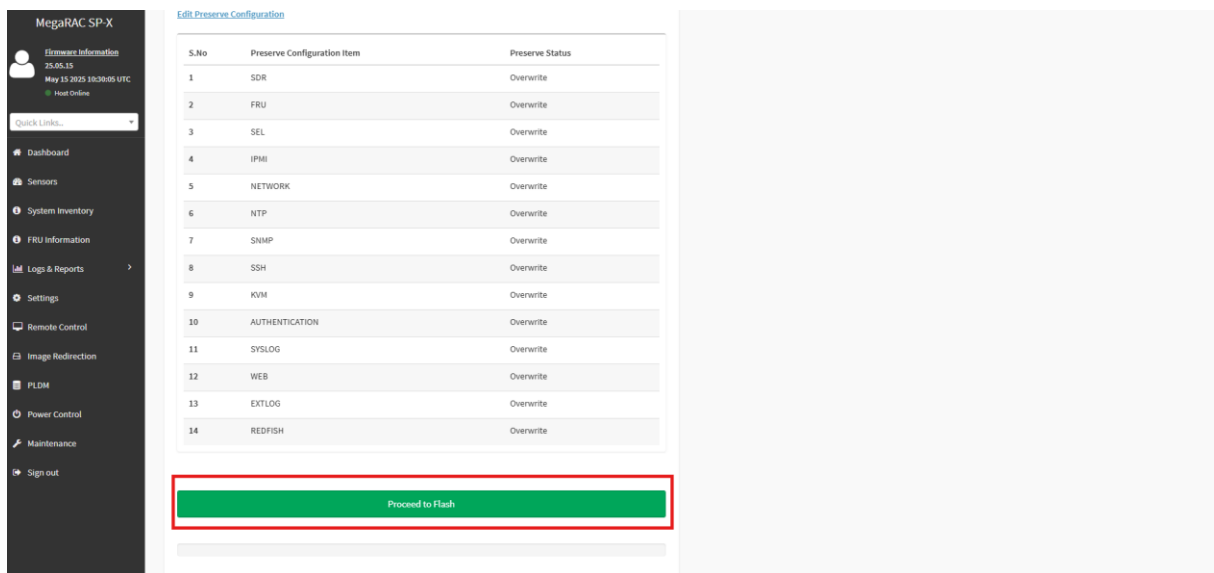


Figure 6-3 Updating Firmware Package

- When the upload is complete, select the **Full Flash** option and click '**Flash to Proceed**'.
- Once the updated procedure is complete, the Web GUI will restart automatically. Please wait for about 1 minute to login again.
- Go to **Maintenance > Firmware information** to check if the firmware version has been updated.

6.2 Updating Firmware via Redfish

You can update the firmware on the KRS8000V3 system key components out-of-band (OOB) by using Redfish APIs or from the host operating system by using the command-line interface (CLI) commands.



NOTE

- Redfish clients must be installed on your workstation or laptop which must have direct network access to the BMC on the target server
- Redfish client recommended tools:
 - Chrome: Postman, Talend API Tester
 - Firefox: RESTClient

1. Run the following command to update the firmware bundle:

```
curl --http1.0 -k -X POST --user
${BMC_account}:${BMC_password} -H 'Content-
Type:multipart/form-data' --insecure
https://${BMC_IP}/redfish/v1/UpdateService/upload -F
'UpdateFile=@<BMC_File_Name>' -F
'UpdateParameters=@parameters.json;type=application/json' -
F
'OemParameters=@oem_parameters.json;type=application/json'
| jq
```



NOTE: The BMC firmware update requires two additional JSON files:

- **oem_parameters.json**: Contains vendor-specific (OEM) metadata

Example:

```
{
  "ImageType": "BMC"
}
```

- **parameters.json**: Defines general update parameters (such as Target, ImageType, and Platform)

Example:

```
{
  "Targets": [
    "/redfish/v1/UpdateService/FirmwareInventory/BMC"
  ]
}
```

1. After submitting the BMC update command, the system creates a **Task Monitor** resource. Run the "Find Task ID" command.

```
curl --http1.0 -k -X GET --user  
${BMC_account}:${BMC_password}  
https://${BMC_IP}/redfish/v1/TaskService/Tasks | jq
```



NOTE: The **Task ID** is usually the last number in the output.

2. Run the following command to check the Update Status. (Use the **Task ID** to track if the update is still running, completed successfully, or failed).

```
curl --http1.0 -k -X GET --user  
${BMC_account}:${BMC_password}  
https://${BMC_IP}/redfish/v1/TaskService/Tasks/<Task_ID> |  
jq
```

3. After the update, verify that both BMC firmware Image 1 and Image 2 have been updated and reflect the same version number.

- Image 1:

```
curl --http1.0 -k -X GET --user  
${BMC_account}:${BMC_password}  
https://${BMC_IP}/redfish/v1/UpdateService/FirmwareInventory/BMCImage1 | jq | grep Version
```

```
"Version": "25.07.14",
```

- Image 2:

```
curl --http1.0 -k -X GET --user  
${BMC_account}:${BMC_password}  
https://${BMC_IP}/redfish/v1/UpdateService/FirmwareInventory/BMCImage2 | jq | grep Version
```

```
"Version": "25.07.14",
```

7 Troubleshooting Resources

To access the troubleshooting resources, see the [Aivres Resource Center](#):

For troubleshooting resources available for Aivres exascale server KRS8000 products, please contact your sales representative. If the provided documentation does not resolve the issue, reach out to Aivres Global Service (844-912-0007), or email to serversupport@aivres.com.

8 Warranty

Aivres warrants that all Aivres-branded hardware products shall be free from material malfunctioning and material defects under conditions of normal use for a period of three (3) years from the Date of Invoice.

Service offerings may vary by geographic region. Please contact your Aivres representative to identify service levels and needs for your regions.

For detailed information, go to <https://aivres.com/support/service-warranty/>.

8.1 Warranty Service

Aivres warranty service includes remote technical support and 3 years parts replacement throughout the warranty period. Warranty Service are Advance Replacement Service in the first year and Standard Replacement Service in the second and third years.

The Warranty Start Date is based on Aivres invoice date.

For warranty information on a specific system, please email serversupport@aivres.com with the product serial number on the equipment surface label.

Information needed when requesting for support:

- Contact name, phone number, e-mail address
- System Serial Number, Part Number, Model and location (address) of the product needing service
- Detailed description of problem, logs (sel and blackbox, and any other related logs from OS), screenshot of issue, pictures of damaged/questions parts, etc.

To locate Service Tag, check the inner right side of the rack, near the front-bottom area, where you can find the Express Service Code, Service Tag, and other information.

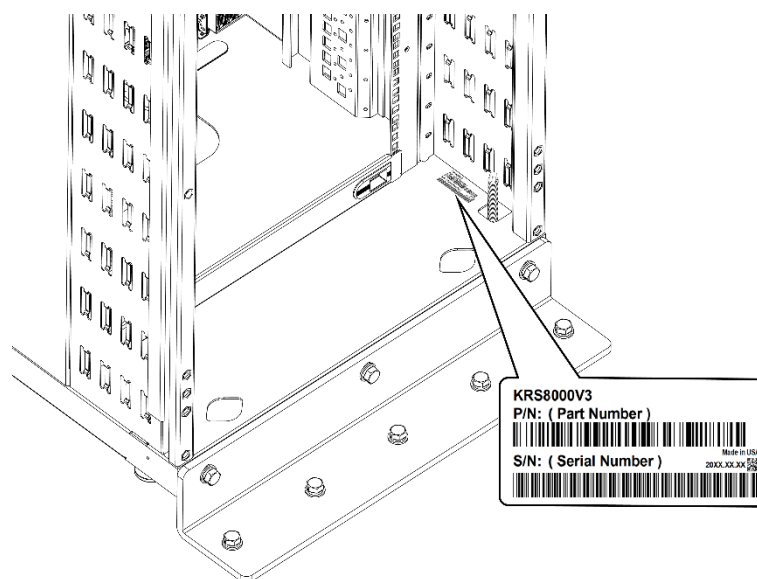


Figure 8-1 Rack Service Tag

Support Contact Information:

Type	Description	Support Window
Global Hotline	Global: 1-844-860-0011 / 1-760-769-1847	24 x 7 x 365
Email	Global: serversupport@aivres.com	24 x 7 x 365
	USA: serversupportusa@aivres.com	Mon-Fri
	Korea: serversupport_kr@aivres.com	9 AM to 6 PM
	Japan: serversupport_jp@aivres.com	(Local time)

9 Regulatory Information

The KRS8000V3 rack-scale solution is designed to meet international regulatory compliance requirements for data center deployment. The system has been tested and found to comply with the limits for digital device pursuant to Part 15 of the FCC Rules. It also meets CE marking requirements and complies with Electromagnetic Compatibility (EMC) standards for enterprise and data center environments.

Regulatory certifications apply to the rack system and its key components, including the compute tray, NVLink switch tray, out-of-band (OOB) management switch, and power shelf. The compute tray has been tested and certified by Aivres to comply with regulatory requirements. The following table outlines the key regulatory statements and approvals that apply. Other components are expected to meet applicable regulatory requirements based on manufacturer-provided certifications.

Table 9-1 Certifications and Approvals Table

Region/Country	Compliance/Mark	/Approval	Remarks
EU	RoHS Compliant	Directive 2011/65/EU and Delegated Directive (EU) 2015/863	
EU	CE Marking	EMC Directive 2014/30/EU	
United States	FCC Compliance	FCC 47 CFR Part 15, Subpart B (Class A/B)	
United States and Canada	UL/cUL	UL 62368-1	
Global	CB Certificate	IEC 62368-1	IECEE CB Scheme



NOTE

- Regulatory certifications may vary depending on specific configuration and regional deployment. For detailed certificates or declarations, contact your authorized support representative.
- For specific regulatory information, please refer to the regulatory label provided on the product or its packaging.
- For complete system-level compliance, please refer to individual component documentation and ensure installation is performed by qualified personnel.