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ApplianceStor 70Rv3 Performance Storage Server User Manual

Version 1 March 2024

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Manufacturer of this product has the right to change specifications and product descriptions at any time without notice

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About This Manual

Conventions

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

Safety Symbols

The following symbols are placed on some components of the system to alert the user to potential hazards,

WARNING: Electric Shock Hazard – To reduce risk of injury from electric shock hazards, do not open this component.

WARNING: Contains no user or field serviceable parts – To reduce the risk of injury from electric shock hazards, do not open this component.

WARNING: Hot Surface or Component - To reduce risk of injury from a hot component; allow the surface to cool before touching.

WARNING: Insert Network Interface Only - Any receptacle (e.g. RJ45) marked with this symbol indicates a network interface connection. To reduce the risk of electric shock, fire or damage to equipment, do not plug telephone or telecommunications connectors into this receptacle.

WARNING: This symbol, on power supplies or systems, indicates that the equipment is supplied by multiple sources of power. To reduce the risk of injury from electric shock, remove all power cords to completely power down the system.

WARNING: This symbol indicates that the component exceeds the recommended weight for one individual to handle safely. To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Safety Precautions

 Technician Notes

Only authorized technicians should attempt to repair this equipment.

Before installing this system, carefully read all the manuals included with the system.

All repair procedures allow only module replacement. Because of the complexity of the individual boards and sub-assembles, no one should attempt to make repairs at the component level or make modifications to any printed wiring board. Improper repairs can create a safety hazard.

To reduce the risk of personal injury from electric shock and hazardous energy levels, do not exceed the level of repairs specified in these procedures.

The system is designed to be electrically grounded. To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

 Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage static sensitive devices or micro circuitry. Proper packaging and grounding techniques are required to prevent damage.

Keep electrostatic-sensitive parts in their containers until they arrive at a static free work area.

Use a wrist strap connected to the work surface as well as properly grounded tools and equipment

Keep the area free of nonconductive materials such as ordinary plastic tools and foam packing.

Avoid touching pins, leads, or circuitry.

Always place drives with printed circuit board (PCB) assembly-side down.

Grasp cards and boards by the edges. Hold drives by the frame. Avoid touching the solder joints or pins.

If you need to lay the device down while it is out of the antistatic bag, lay it on the antistatic bag. Before picking it up again, touch the antistatic bag and the metal frame of the system unit at the same time.

 Warnings

If you plan to rack mount the AS70Rv3, follow the rack manufacturer's safety instructions.

Install the enclosure only in a rack that has been properly secured in an area with suitable environmental conditions.

Have someone assist you during physical installation.

To properly ventilate the system, you must provide at least 7.6 cm of clearance at the front and back of the system.

To reduce the risk of personal injury or damage to equipment, always ensure that the rack is adequately stabilized prior to extending a component outside the rack. A rack may become unstable if more than one component is extended. Extend only one at a time.

Do not stand or step on any components in the rack.

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Do not overload the AC power supply branch circuit that provides power to the rack. Observe extension cable and power strip ratings. Ensure that the total ampere rating of all equipment plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.

System Warnings

Avoid dust, humidity, and extreme temperatures; place the system on a stable surface.

To reduce the risk of personal injury from hot surfaces, allow the hot-plug disk modules and other system modules to cool before touching them.

To reduce the risk of electric shock or damage to the equipment, do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Ensure the power cord is inserted into a grounded electrical outlet that is easily accessible at all times. Unplug the power cord from the power supply module to shut off power to the equipment

Protect the storage system from power fluctuations and temporary power interruptions with a regulating uninterruptible power supply (UPS). This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system operational during a power failure.

The storage system must always be operated with all hot plug modules installed or slot covers in place to ensure proper cooling.

Route power cords so that they will not be walked on or pinched by items placed upon or against them. Pay particular attention to the plug, electrical outlet, and the point where the cords exit from the product.

Regulatory and Integration Information

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, this system is assigned a serial number. This system serial number can be found on the product label, along with the required approval markings and information. When requesting certification information for this product, always refer to this serial number. This serial number should not be confused with the marketing name or model number.

Product Safety Compliance

This system complies with the following safety requirements:

Table 1: Safety Compliance

IEC 62368-1:2014	Safety of Information Technology Equipment Including Electrical Business Equipment (IECEE)

Worldwide Safety approvals can be supplied upon request. Please contact your sales representative for approvals.

Product EMC Compliance

This product has been tested and verified to comply with the following electromagnetic compatibility (EMC) regulations.

Federal Communications Commission (FCC) Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation.

Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device, as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class A devices do not have an FCC logo or FCC ID on the label. Class B devices have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

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

Declaration of Conformity for Products Marked with the FCC Logo—United States Only This device complies with Part 15 of the FCC Rules Operation and is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, please contact your sales representative.

To identify this product, refer to the Part, Series, or Model number found on the product.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (2014/30/EU) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (items in brackets are the equivalent international standards):

Table 2: European Union Compliance

EN 55032:2015/A11:2020	Electromagnetic Interference
EN 55035:2017/A11:2020	Electromagnetic Immunity
EN61000-3-2 (IEC61000-3-2)	Power Line Harmonics
IEC 62368-1:2014	Product Safety

Power Cords

The power cord set included in the system meets the requirements for use in the country where the system was purchased. If this system is to be used in another country, contact your sales representative to purchase a power cord that is approved for use in that country.

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the cross-sectional area of the wires must be a minimum of 1.00mm² or 18AWG, and the length of the cords must be between 1.8m (6 feet) and 3.6m (12 feet). If you have questions about the type of power cord to use, contact your sales representative.

The following statement applies only to rack-installed products that are GS-Marked:

This equipment is not intended for use at workplaces with visual display units, in accordance with §2 of the German ordinance for workplaces with visual display units."

Introduction

Introduction

Audience Assumptions

This manual assumes that you are a service technician or network administrator familiar with computer hardware, data storage and network administration terminology and tasks.

About This Guide

This user guide provides step by step instructions on how to install, use and maintain the Appliance Stor 70Rv3 Storage Server. This manual is generally organized as follows:

Table 3: Manual Organization

Introduction	General introduction to the AS70Rv3and its components.
Preparation	What you need to do before you start.
Installation	Detailed description of each hardware module and instructions for installation and removal.
Configuration	Initializing your system, setting up your system on a network, configuring your storage, and connecting hosts.
Operation	Ongoing usage and maintenance information provided in a reference format and organized by major system component.

Product Introduction

The AS70Rv3 is a 1U 4 drive high performance video surveillance storage server appliance. The AS70Rv3 integrates VMS and storage in a simple to use, high-performance video surveillance storage solution. It is optimized for Video Surveillance applications and delivers the performance required for the most demanding megapixel installations.

Simple

The Appliance Stor 70Rv3 integrates VMS (Video Management Software) and storage into a simple to use, high performance video surveillance storage server solution. This eliminates the cost of the VMS server, significantly reduces cabling and the nightmare of integrating VMS, OS, commodity server and storage, while significantly reduces the overall solution cost. Guaranteed performance with all major VMS solutions prequalified on the AS70Rv3. It is easy to install and maintain. The AS70Rv3 is ultimate in simplicity while significantly reduces CAPEX and OPEX cost.

Powerful

The AS70Rv3 is a powerful server and storage system, built around high performance Intel® Xeon® processors and fast DDR4 memory. The AS70Rv3 offers high performance and bandwidth connectivity to meet the most demanding megapixel camera applications. The base AS70Rv3 model unmatched LAN connectivity with up to four ethernet ports and an addition port that is dedicated to management. With the AS70Rv3 Video Surveillance Appliance un-matched LAN connectivity and its impressive power it can meet of the most demanding megapixel cameras deployments. It has the performance and reliability for the most demanding deployments.

Reliable

Disk drive failure is the number one cause of lost video storage and downtime. We provide advanced RAID 5 technologies which eliminates the loss of video due to a disk failure. Disk drives are hot swappable without interruption in service or loss of data. The AS70Rv3 only uses ECC RAM and it guarantees that video being stored read and move within is always correct. It uses a parity bit to accomplish the data protection. Most NVRs and DVRs are not protected to this level and with these products crucial video can be lost. The AS70Rv3 gives peace of mind that the video is always reliably being stored.

Right Size

Designed for smaller MegaPixel deployments; it is provided with each drive capacities to 14 TB versions. The AS70Rv3 matches the perfect storage capacity with exceptional performance to ensure optimal, cost effective and dependable video storage. If expansion is required the AS70Rv3 can be used in conjunction the PS5000 allowing capacity to grow beyond Petabytes.

Open

Purpose-built open platform to integrate Video Management Software, and Video Analytic Software Providers. All major supported Video Analytic Software providers are prequalified. More are continually added to ensure the widest possible certification coverage.

Optimized

The Appliance Stor 70Rv3 is optimized for the Video Surveillance applications and market place. It provides the performance and capacity for the most demanding megapixel installations.

Easy

AS70Rv3 provides effortless installation, management and administration. All administration functions assume technicians with basic to no storage knowledge. Once racked, setup time should be 15 minutes or less.

Expandable

Additional RAM can be also be added and this will allow up to 128 GB RAM to be used

System Specification

Core Technology	
CPU Type	Xeon® E-2300 Series
Socket	LGA1200
Core Logic	Intel® C252 Chipset
Memory size	up to 128 GB
Memory type	DDR4 3200 ECC UDIMM
Expansion	
Expansion Slots	2 (not available for user)
Slot Type:	1xPCI-E x16 slot(Gen4 X16 Link)(Full-Height/Half-Length)
	1 xPCI-E x8 slot (Gen4 X8 Link)(Half-Height/Half-Length)
Storage:	
HDD Bays	4 x Hot-swap 3.5"
Drive support	up to 22TB SAS
RAID	0, 1, 5, 10
Networking:	
Data	2 x GbE and 2x 10GbE (optional)
Management	1 x GbE
Video:	
VGA	Aspeed AST2600 with 32MB VRAM
HDMI	HDMI 1.4 Output from CPU
On Board I/O:	1 x External Serial Port

	USB port, (Front x2 USB 3.2, Rear x2 USB 3.2)
	1 x VGA port
	2x RJ45, 1x RJ45 (Management)
Management Solution	Remote KVM-iKVM for KVM-over-IP support
	ASWM Enterprise
Compliance:	
Safety	Europe CB: IEC 62368-1:2014)
EMI	US (FCC, CFR47 Part 15, Class A)
	Europe (CE, EN 55032:2015/A11:2020 , EN 55035:2017/A11:2020 , EN 61000-3-3:2013+A1:2019 , EN IEC 61000-3-2:2019)
Physical Characteristics:	
Dimensions (in./mm)	19.5" x 17.5" x 1.73" / 497mm x 439.5mm x 44mm (1U)
Weight	Max 50 lbs. / 23 Kg
Power	1+1 Redundant 450W 80 PLUS Platinum Power Supply
Voltage	100-240Vac, 6A (for each inlet), 50-60Hz
Operating Environment	
Operation temperature	10 ~ 35 degrees Celsius
Non operation temperature	-40 ~ 70 degrees Celsius
Humidity:	20% ~ 90% (Non condensing)

System Layout

Front panel

The AS70Rv3 displays a simple yet stylish front panel with easily accessible features. The power and reset buttons, LED indicators, and USB port are located on the front panel.

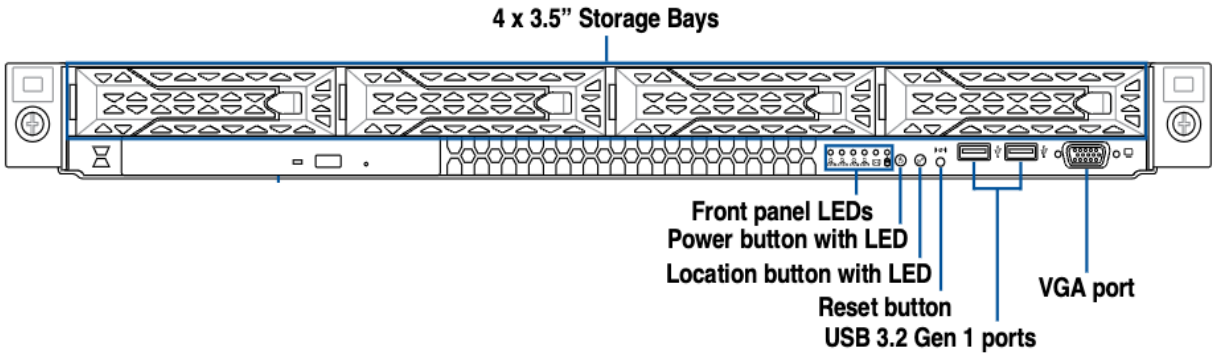
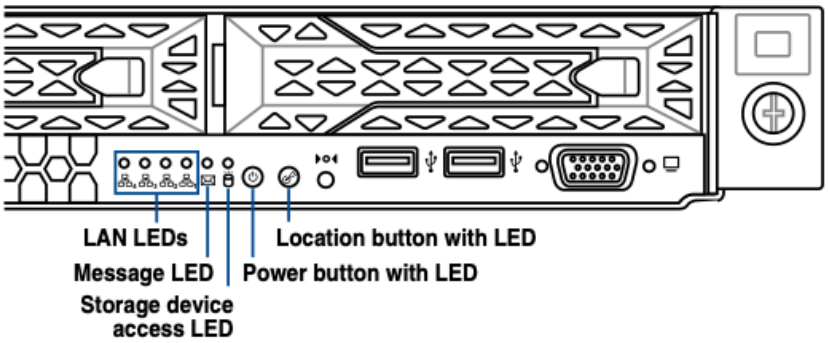


Figure 1: Front Panel

Front Panel LEDs



LED	Icon	Display status	Description
Power LED	⏻	ON	System power ON
Storage device access LED		OFF	No activity
		Blinking	Read/write data into the storage device
Message LED	✉	OFF	System is normal; no incoming event
		ON	With the onboard ASMB10-iKVM: a hardware monitor event is indicated
LAN LEDs		OFF	No LAN connection
		Blinking	LAN is transmitting or receiving data
		ON	LAN connection is present
Location LED	ID	ON	Location switch is pressed
		OFF	Normal status (Press the location switch again to turn off)

Turn off the system power and detach the power supply before removing or replacing any system component.

Rear Panel

The rear panel includes the expansion slots, system power sockets, and rear fans. The I/O shields with openings for the rear panel connectors on the motherboard are also placed in the rear panel.

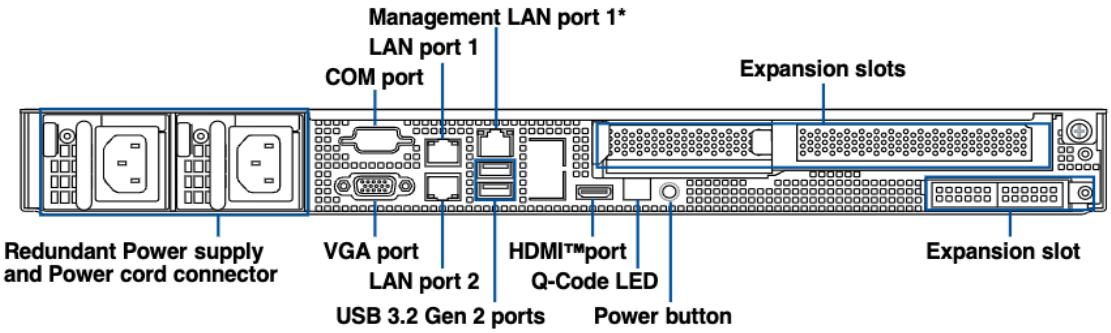
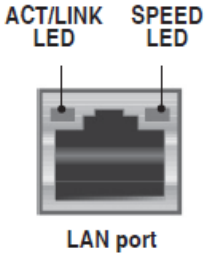


Figure 2: Rear Panel

LAN Port LEDs

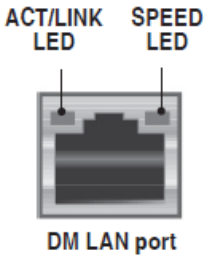
LAN port LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
GREEN	Linked	YELLOW	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



Dedicated Management LAN port (DM_LAN1) LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
YELLOW	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



Before You Begin

Thoroughly research and establish an installation and configuration plan for your specific network environment. You should also plan how you want to configure your storage.

Gather information

The system has the ability to be set with one or multiple IP addresses. The simple online configuration procedures will allow you to set-up your system on your network using these IP addresses. Be sure to ask your network administrator to provide you with sufficient IP addresses for your planned configuration. Your administrator should provide the following information so that you can properly configure your system on your network:

IP Address(s)

Gateway address

Net mask address

DNS server information.

Packing Checklist

Make sure you have all the components that shipped with your system. If any item is damaged or missing, please contact your sales representative for a replacement. The AS70Rv3 is shipped with the following:

Check your system package for the following items:

Table 4: Packing Check List

Model Name	AS70Rv3
Chassis:	AS70Rv3 1U Rack mount
Chassis Component:	2 x 450W Power Supplies
	4 x Hot-swap 3.5" HDD trays (with or without drives depending upon configuration)
	2 x AC Power Cords
	1 x Rail Kit

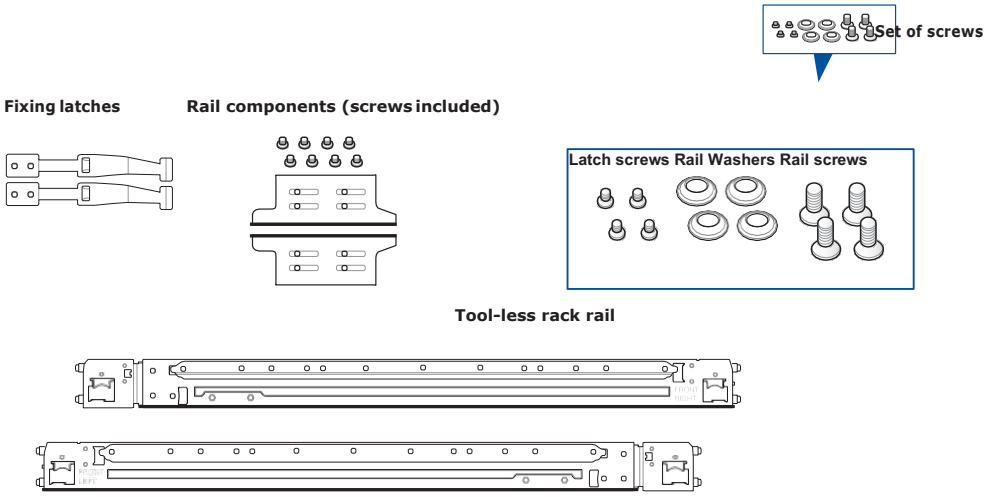
Hardware Installation

Hardware Installation

Tool-less Friction Rail Kit

The tool less design of the rail kit allows you to easily install the rack rails into the server rack without the need for additional tools. The kit also comes with a metal stopping bracket that can be installed to provide additional support and stability to the server.

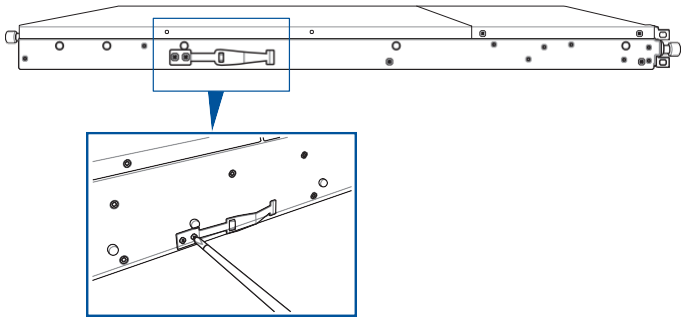
The tool-less rail kit package includes:



Installing the tool-less rack rail

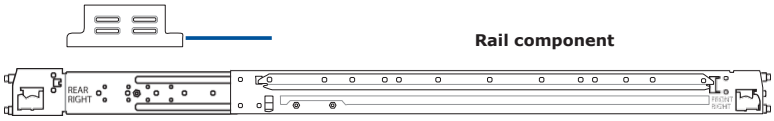
To install the tool-less rack rails into the rack:

1. Secure the two fixing latches to the two sides of the server using the set of latch screws.

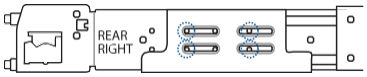


Follow steps 2 to 4 if the depth of your server rack exceeds 850mm, if the depth of your server rack is less than 850mm, please skip steps 2 to 4 and proceed with step 5.

2. Slightly slide out and extend the right rack rail, then prepare one of the bundled rail components.

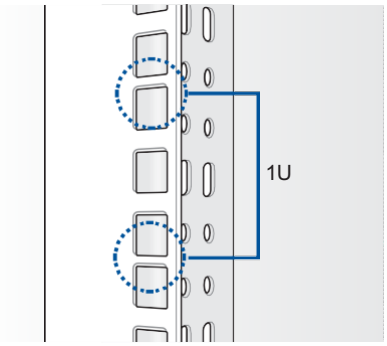


3. Align the rail component with the right rack rail and secure it using four (4) bundled screws.



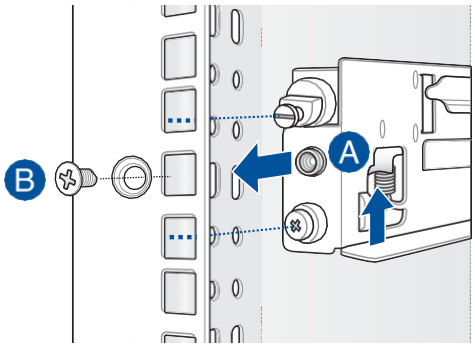
4. Follow steps 2 and 3 to secure the rail component to the left rail rack.
5. Select a desired space and place the appropriate rack rail (left and right) on opposite positions on the rack.

A 1U space consists of three square mounting holes with two thin lips on the top and the bottom.



6. Secure the rail components to the rail using the bundled screws.
7. Press the spring lock (A) then insert the studs into the selected square mounting holes on the rack post.
8. Press the spring lock on the other end of rail then insert the stud into the mounting hole on the rack post. Extend the rack rail, if necessary.
9. (Optional) Use the rail screw and rail washer (B) that comes with the kit to secure the rack rail to the rack post.
10. Perform steps 3 to 5 for the other rack rail.

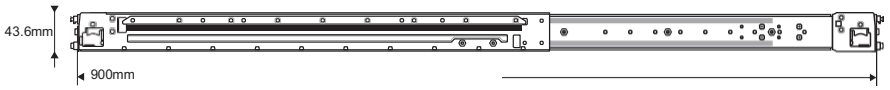
Ensure that the installed rack rails (left and right) are aligned, secured, and stable in place.

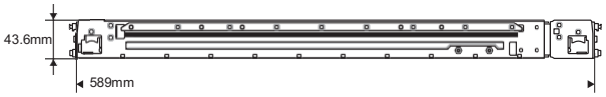


11. Lift the server chassis and insert into the rack rail.

Ensure that the rack rail cabinet and the rack posts are stable and standing firmly on a level surface.

Rail kit dimensions





Protective Film

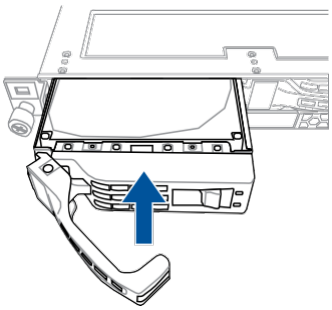
A protection film is pre-attached to the system cover before shipping. Please remove the protection film before turning on the system for proper heat dissipation.

Disk drives

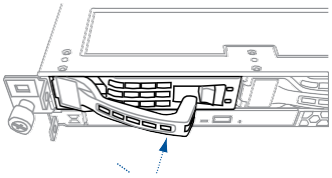
The system supports four hot-swap disk drives. The disk drive installed on the drive tray connects to the motherboard SAS ports via the SAS backplane.

Disk Tray installation

Insert the drive tray and HDD assembly all the way into the depth of the bay until just a small fraction of the tray edge protrudes.

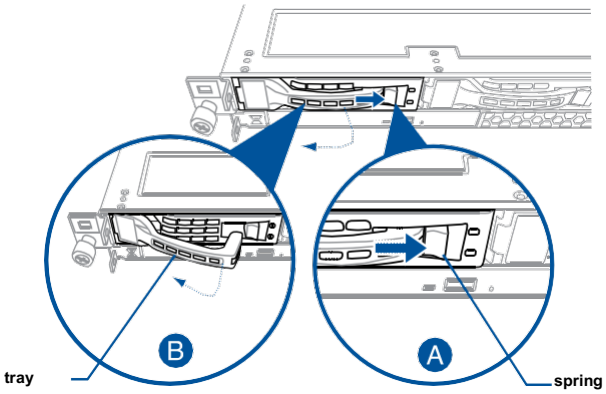


Push the tray lever until it clicks and secures the drive tray in place. The drive tray is correctly placed when its front edge aligns with the bay edge.

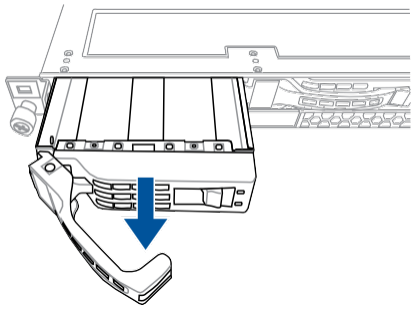


Disk Tray Removal

Push the spring lock to the right (A) then pull the tray lever outward (B) to release the drive tray. The drive tray ejects slightly after you pull out the lever.



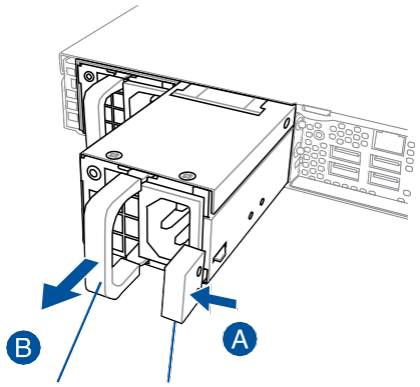
Firmly hold the tray lever and pull the drive tray out of the bay.



Redundant power supply module

To replace a failed redundant power supply module:

Hold the power supply module lever and press the PSU latch (A) then pull the power supply module (B) out of the system chassis.



module lever PSU latch

Get the replacement power supply module. Insert the replacement power supply module into the chassis then push it inwards until the latch locks into place.