



# AS316

# AS316S

# User Manual

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## About this Manual

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Conventions

Safety Symbols

Safety Precautions

Regulatory and Integration Information

## ABOUT THIS MANUAL

### CONVENTIONS

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



**Warning:**

Provides information to prevent injury in the process of completing a task.



**Caution:**

Provides information to prevent damage to the components in the process of completing a task.



**Important:**

Provides information required for completing a task.



**Note:**

Provides tips to aid in completing a task.

---



## 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 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, 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-assemblies, 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 packaging.
- 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.



### ***Rack Warnings***

- If you plan to rack mount this product, please 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 (T<sub>ma</sub>) 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 certification 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 Regulatory Compliance**

#### ***Product Safety Compliance***

This system complies with the following safety requirements:

**Table 1: Safety Compliance**

|  |  |
|--|--|
| EN 62368-1:2014 (2nd Edition) + A11: 2017        | Safety of Information Technology Equipment |
| IEC 62368-1, 2nd Edition, Rev. February 26, 2014 | Safety of Information Technology Equipment |

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

#### ***Product EMC Compliance***

This product has been assembled from components that comply with the following electromagnetic compatibility (EMC) regulations.

|  |
|--|
| FCC CFR Title 47 Part 15 Subpart B: 2019 Class A |
| CISPR 32: 2015; ANSI C63.4-2014                  |
| Industry Canada ICES-003 Issue 7                 |

### ***Communications Commission 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 instruction 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 assembled with components that 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 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 (89/336/EEC) and the Low-Voltage Directive (73/23/EEC) 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 55032:2012/AC 2013 | Electromagnetic Interference |
| EN 55024: 2010        | Electromagnetic Immunity     |
| EN 61000-3-2:2014     | Power Line Harmonics         |
| EN 61000-3-3:2013     | Power Line Flicker           |

### ***Canadian Notice (Avis Canadien)***

#### **Class A Equipment**

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

#### ***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 1.00mm<sup>2</sup> 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



# Chapter 1: Introduction

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Audience Assumptions

About This Guide

Packing Checklist

Specifications

Product Features

System Overview

## 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

AS316 / AS316S comes with appropriate hardware installed. User only needs to configure IP addresses, install appropriate VMS software to administer and view the cameras. This manual is generally organized as follows:

### PACKING CHECKLIST

Make sure you have all the components shipped with your system. If any item is damaged or missing, please contact your sales representative for replacement. The AS316 / AS316S is shipped with the following:

|                         |   |
|-------------------------|---|
| Chassis                 | 3U Enclosure  |
| Solid State Disk Drives | Two 240/480/960GB SSD for OS                                |
| HDD                     | Up to 16 3.5" SAS Hard Drives 6, 8, 10, 12, 14, 16 and 18TB |
| USB Keyboard and Mouse  | One   |
| Power Cords             | Two Power Cord  |

## SPECIFICATIONS

|                                    |   |
|------------------------------------|---|
| CPU                                | AS316: Intel Xeon E-2134<br>AS316S: 2x Intel Xeon Silver 4216 |
| GPU                                | Radeon HD7750   |
| RAM                                | Up to 64GB ECC DDR4 2666MHz<br>Up to 768GB ECC DDR4 2666MHz   |
| Networking                         | 4x GbE, 1x RJ45 Dedicated Management                          |
| Input/Output                       | 4x USB 3.1, 1x USB 3.0, 2xHDMI, mDP                           |
| Max Storage                        | Up to 288TB, Up to 960GB for OS (2x SSD in RAID 1)            |
| Dimensions (W x D x H)             | 17" x 26.8" x 5.2" / 430 x 680 x 133 mm                       |
| Weight                             | Max 09 Lbs / 49 Kgs   |
| Power Supply                       | 1+1 Redundant 800/1200W 100/240V<br>AC 6A 47-63Hz             |
| Operating Temperature              | 10 - 35 °C  |
| Recording Performance <sup>1</sup> | AS316: 500 Mbps<br>AS316S: 2Gbps                              |

<sup>1</sup> Recording performance was testing using Milestone XProtect VMS and RAID5 storage. Performance may be different for other VMS and RAID configurations

## PRODUCT FEATURES

The AS316 / AS316S 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.

## SYSTEM OVERVIEW

**Powerful:** AS316 is built around high performance Intel® Xeon Scalable CPU and DDR4 2666 MHz ECC memory. AS316 offers high performance and bandwidth connectivity to meet the most demanding requirements.

**Purpose-built:** Open platform to integrate Video Management Software (VMS). All major VMS providers are pre-qualified. Most are continually added to ensure the widest possible certification coverage.

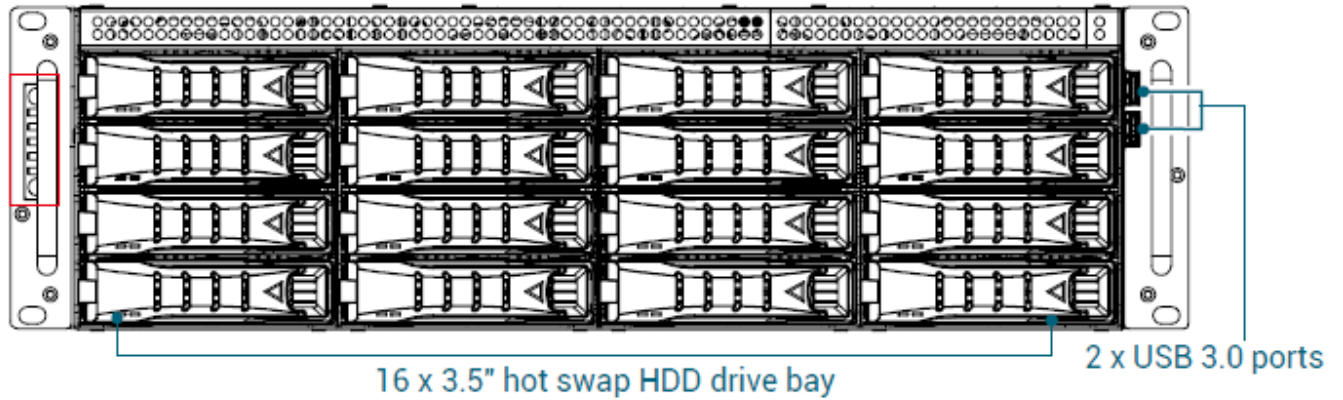
**Effortless installation, management and administration**

### ***Front View***

Following figures shows each front panel component:



**Figure 1: AS316 /AS316S Front View**



| Item | Description        | Item | Description         |
|------|--------------------|------|---------------------|
|      | Power Button       |      | System Alert LED    |
|      | Power Status LED   |      | System Reset Button |
|      | Drive Activity LED |      | USB 3.0 Type A port |
|      | LAN Activity LED   |      |                     |

**Table 3: Drive Slot Mapping**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 |

### ***Rear View***

Following diagram shows the location of all the rear I/O ports on AS316 / AS316S. Power Supplies are also shown.

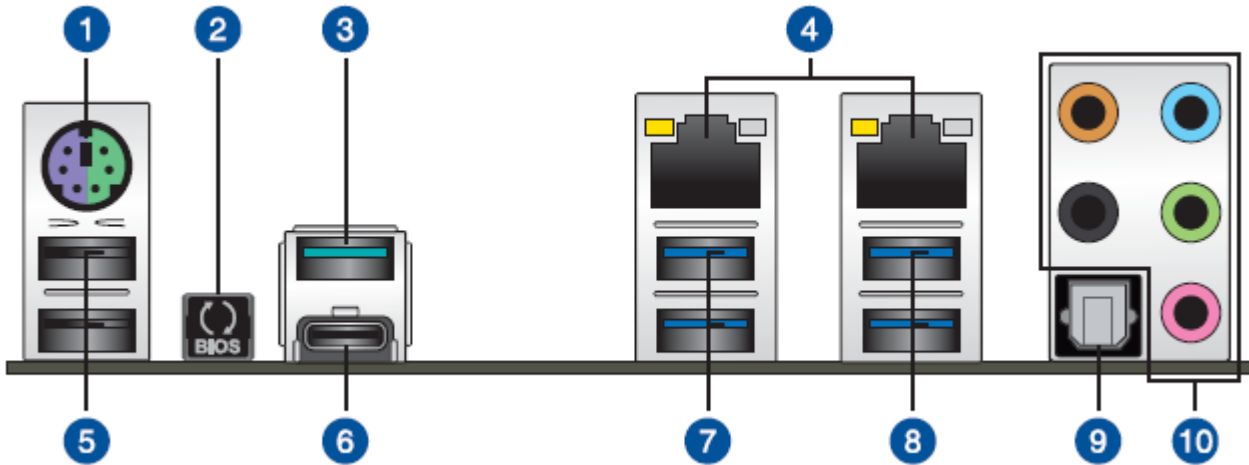


**Figure 2: Rear View of AS316**



| AS316 Rear Panel Connectors |                 |
|-----------------------------|-----------------|
| 1                           | Management Port |
| 2                           | VGA             |
| 3                           | Quad 1GbE Ports |
| 4                           | USB Ports       |

**Figure 3: AS316 Rear I/O Ports**



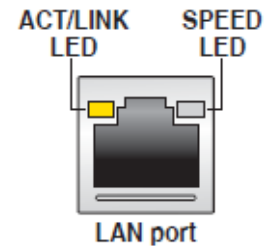
| AS316s Rear Panel Connectors |                           |
|------------------------------|---------------------------|
| 1                            | PS2 Keyboard and Mouse    |
| 2                            | USB BIOS Flashback Button |
| 3                            | USB 3.1 Gen 2 Type A Port |
| 4*                           | LAN Ports                 |
| 5                            | USB 2.0 Ports             |
| 6                            | USB 3.1 Type C            |
| 7                            | USB 3.1 Gen 1 Ports 3, 4  |
| 8                            | USB 3.1 Gen 1 Ports 1, 2  |
| 9                            | Optical S/PDIF OUT        |
| 10**                         | Audio Output Ports        |

**Figure 4: AS316S Rear I/O**



**\* LAN ports LED indications**

| Activity Link LED             |                               | Speed LED |                     |
|-------------------------------|-------------------------------|-----------|---------------------|
| Status                        | Description                   | Status    | Description         |
| Off                           | No link                       | Off       | 10 Mbps connection  |
| Orange                        | Linked                        | Orange    | 100 Mbps connection |
| Orange (Blinking)             | Data activity                 | Green     | 1 Gbps connection   |
| Orange (Blinking then steady) | Ready to wake up from S5 mode |           |                     |



**\*\* Audio 2, 4, 5.1 or 7.1-channel configuration**

| Port       | Headset 2-channel | 4.channel         | 5.1-channel       | 7.1-channel       |
|------------|-------------------|-------------------|-------------------|-------------------|
| Light Blue | Line In           | Line In           | Line In           | Side Speaker Out  |
| Lime       | Line Out          | Front Speaker Out | Front Speaker Out | Front Speaker Out |
| Pink       | Mic In            | Mic In            | Mic In            | Mic In            |
| Orange     | –                 | –                 | Center/Sub woofer | Center/Sub woofer |
| Black      | –                 | Rear Speaker Out  | Rear Speaker Out  | Rear Speaker Out  |

## Chapter 2: Hardware Installation

---

Hard Disk Drives

Power Supply Modules

Mounting the System onto a Rack

## HARDWARE INSTALLATION

This chapter provides detailed instructions on hardware installation

### HARD DISK DRIVES

Removing/Installing a Drive Tray

1



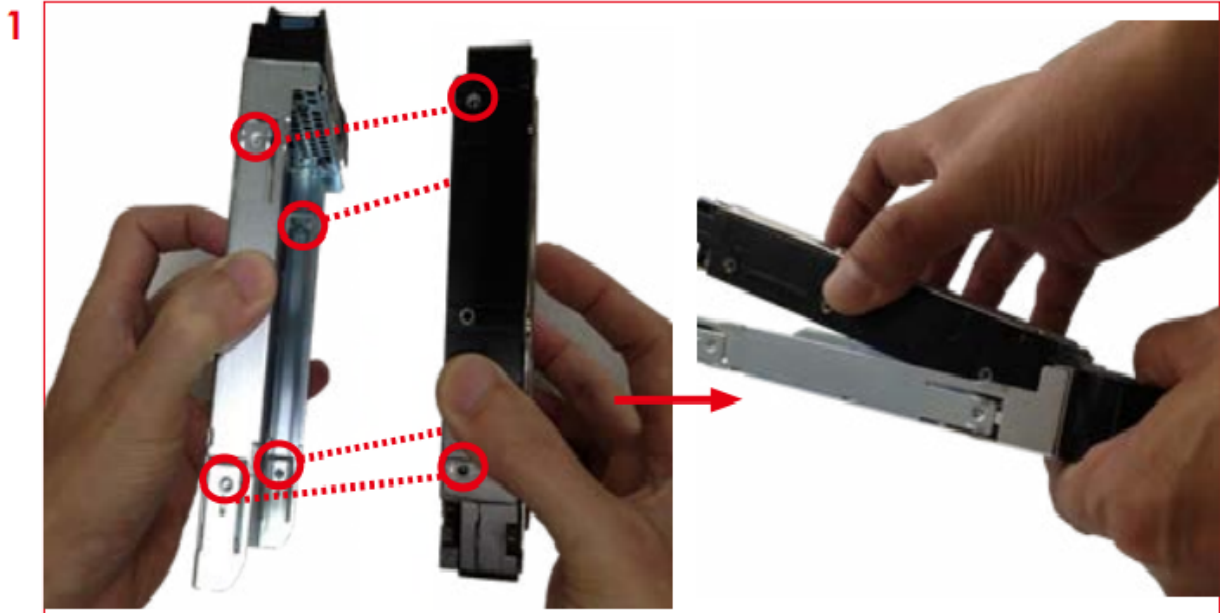
Pull out the HDD tray handle and slide out the HDD tray.

**2**

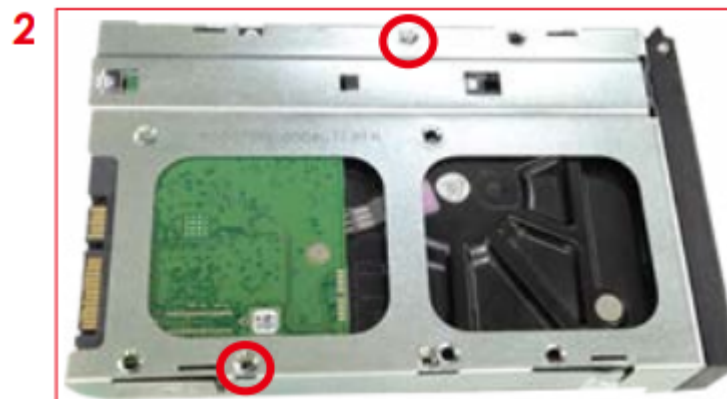


## Installing a Hard Disk Drive

Directly place HDD into tool-less HDD tray until it snaps. Please check if the screw holes on HDD match the dimples on HDD tray.



HDD can also be screwed on HDD tray by reserve 2 screw holes at the bottom for optional screw mounting.



Insert the drive tray into chassis HDD cage. Make sure the drive tray is correctly secured in place when its front edge aligns with the bay edge. Push the tray lever until it reaches the end and clicks

**3**

## Removing a Hard Disk Drive

- Push up HDD from the bottom.



Remove HDD out from HDD tray

2





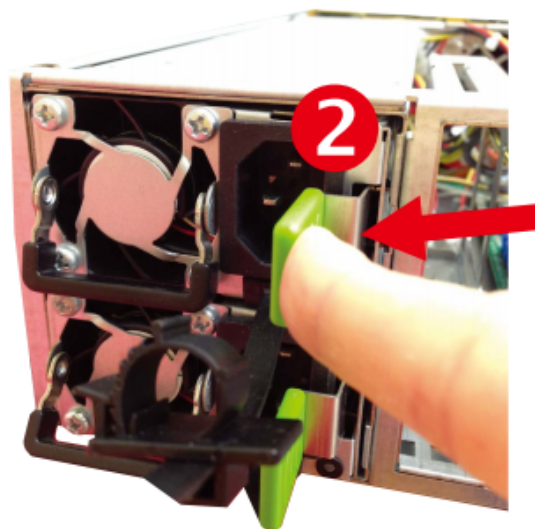
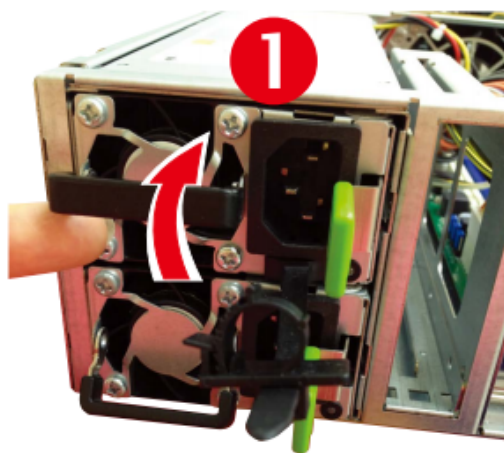
## POWER SUPPLY MODULES

### Removing a PSU module

- Remove power cables connected to the PSU module.
- Allow a minute for fan to spin down.
- Pushing the latch then hold the tray handle tab.
- Then pull the PSU module gently until it slides out of the enclosure.

### Installing a PSU Module

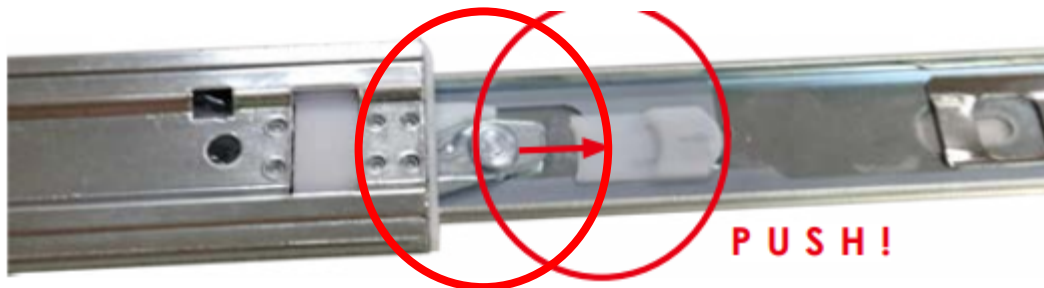
- Slide in PSU module.
- Make sure the latch on the module is fully hooked onto the PSU housing.



## MOUNTING THE SYSTEM ONTO A RACK

### *Installing the tool-less rack rail*

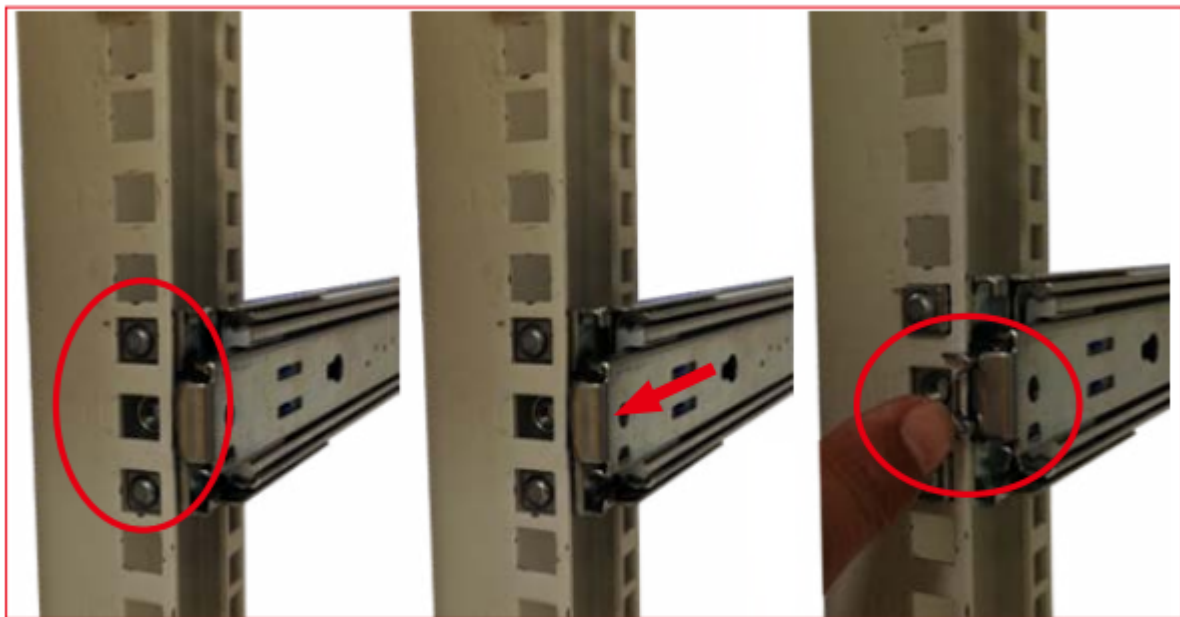
Release and detach the inner rail from the slide



Attach inner rail to the system.



Attach outer rail to the rack.



**1 ALIGN**

**2 PUSH**

**3 LOCK**



WARNING / CAUTION

- Verify ball bearing retainer is locked forward.
- Pull out the intermediate rail until locked out.
- Slide release tab and push system into rack.

