RSC-4H

Rackmount Storage Chassis
User's Manual

UM_RSC-4H_v1.5_070119

Table of Contents

Document Release History

Release Date	Version	Update Content
July 2018	1	User's Manual release to public.
October 2018	1.2	1. Specifciations update 2. New cover 3. Add HDD Backplane connection
Febuary 2019	1.3	Add Installation
April 2019	1.4	Add connector location
July 2019	1.5	BP update.

Preface

Copyright

Trademarks

Changes

The material in this document is for information purposes only and is subject to change without notice.

Warning

1. A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.
2. Use only shielded cables to connect I/O devices to this equipment.
3. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Disclaimer

AIC shall not be liable for technical or editorial errors or omissions contained herein. The information provided is provided "as is" without warranty of any kind. To the extent permitted by law, neither AIC or its affiliates, subcontractors or suppliers will be liable for incidental, special or consequential damages including downtime cost; lost profits; damages relating to the procurement of substitute products or services; or damages for loss of data, or software restoration. The information in this document is subject to change without notice.

Safety Instructions

Before getting started, please read the following important cautions:

- All cautions and warnings on the equipment or in the manuals should be noted.
- Most electronic components are sensitive to electrical static discharge. Therefore, be sure to ground yourself at all times when installing the internal components.
- Use a grounding wrist strap and place all electronic components in static-shielded devices. Grounding wrist straps can be purchased in any electronic supply store.
- Be sure to turn off the power and then disconnect the power cords from your system before performing any installation or servicing. A sudden surge of power could damage sensitive electronic components.
- Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician should do so. Integrated circuits on computer boards are sensitive to static electricity. Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
- Place this equipment on a stable surface when install. A drop or fall could cause injury.
- Please keep this equipment away from humidity.
- Carefully mount the equipment into the rack, in such manner, that it won't be hazardous due to uneven mechanical loading.
- This equipment is to be installed for operation in an environment with maximum ambient temperature below 35°C.
- The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
- Never pour any liquid into ventilation openings. This could cause fire or electrical shock.
- Make sure the voltage of the power source is within the specification on the label when connecting the equipment to the power outlet. The current load and output power of loads shall be within the specification.
- This equipment must be connected to reliable grounding before using. Pay special attention to power supplied other than direct connections, e.g. using of power strips.
- Place the power cord out of the way of foot traffic. Do not place anything over the power cord. The power cord must be rated for the product, 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.
- If the equipment is not used for a long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

- If one of the following situations arise, the equipment should be checked by service personnel:
  1. The power cord or plug is damaged.
  2. Liquid has penetrated the equipment.
  3. The equipment has been exposed to moisture.
  4. The equipment does not work well or will not work according to its user manual.
  5. The equipment has been dropped and/or damaged.
  6. The equipment has obvious signs of breakage.
  7. Please disconnect this equipment from the AC outlet before cleaning. Do not use liquid or detergent for cleaning. The use of a moisture sheet or cloth is recommended for cleaning.
- Module and drive bays must not be empty! They must have a dummy cover.

About This Manual

Thank you for selecting and purchasing RSC-4H.

This user's manual is provided for professional technicians to perform easy hardware setup, basic system configurations, and quick software startup. This document pellucidly presents a brief overview of the product design, device installation, and firmware settings for 4H Rackmount Chassis. For the latest version of this user's manual, please refer to the AIC website: http://www.aicipc.com/tw/productdetail/326.

Chapter 1 Product Features

This chapter delivers the overall layout of the product, including the fundamental components of the rackmount chassis, design specifications, and noteworthy features.

Chapter 2 Hardware Setup

This chapter displays an easy installation guide for assembling the chassis. Utmost caution for proceeding to set up the hardware is highly advised.

Chapter 3 Hardware Specifications

This chapter elaborates the overall layout of the hardware design, including multifarious connectors, jumpers, and LED descriptions.

Chapter 4 Technical Support

For more information or suggestion, please contact the nearest AIC corporation representative in your district or visit the AIC website: http://www.aicipc.com/tw/en. It is our greatest honor to provide the best service for our customers.

Chapter 1. Product Features

RSC-4H is a flexible rackmount storage chassis with tool-less design. This product supports hot swapple HDDs and easy swap fans. For more information about our product, please visit our website at http://www.aicipc.com/en.

Before removing the subsystem from the shipping carton, visually inspect the physical condition of the shipping carton. Exterior damage to the shipping carton may indicate that the contents of the carton are damaged. If any damage is found, do not remove the components; contact the dealer where the subsystem was purchased for further instructions. Before continuing, first unpack the subsystem and verify that the number of components in the shipping carton is accurate and in good condition.

1.1 Box Content

This product contains the components listed below. Please confirm the number and the condition of the components before installation.

- Chassis

  (includes power supply, fan & hard disk drive tray)

- Power cord (vary per region)
- 26" Slide rail x 1 set (optional)
- SFF-8643 SAS cables

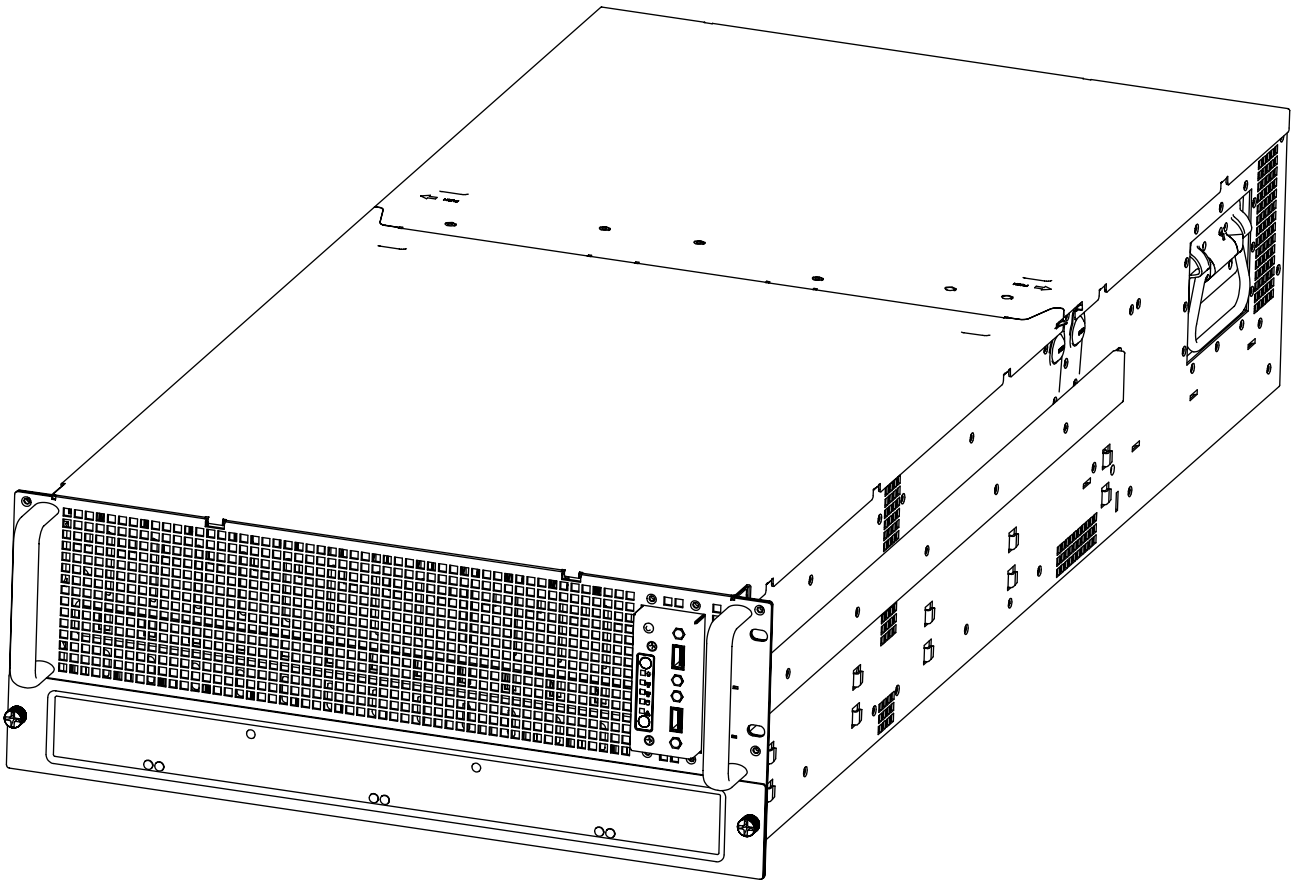
1.2 Specifications

Dimensions (W x D x H)	mm : 435 x 953 x 175.7		
	inches : 17.1 x 37.5 x 6.9		
Industry Standard	EIA-RS310D		
Material	Heavy-duty preplated SPGC cold-rolled steel		
Color	Front Panel : Black		
Cooling	Middle : 4 x 80x38mm PWM & low-power consumption hot swap fans		
	Rear : 2 x 60x38mm PWM easy swap fans		
Power Supply	Standard	1400W 1+1 redundant PSU 80+ Platinum	
Expansion Slots	7 full height		
Front Panel	System power on/off and system reset, 2 x USB 3.0 ports		
LED Indicators	Power, LAN, Drive and Alert		
System Board	12”(W) x 13”(D) E-ATX/SSI EEB 3.6 compliant MB		
Drive Bays	External	2.5” hot swap	2
	Internal	3.5” hot swap	60
Backplanes	3 x 20-port 12Gb SAS backplanes with 28-PHY expander chip and 2 SFF-8643 connectors on each		
Storage Temperature	0ºC(32ºF) ~ 50ºC(122ºF)		
Humidity	5%~95% non-condensing		
Gross Weight	(w/ PSU & Rail) (excluding pallet)	kgs : 43	
		lbs : 94.8	
Packaging Dimensions	(W x D x H)	mm : 603 x 1191 x 404	
		inches : 23.7 x 46.88 x 15.9	
Cubic Feet	8.8		
Container Load Quantity	20’	97	
	40’	199	
	40’ H	240	
Mounting	Standard	26” tool-less slide rail	

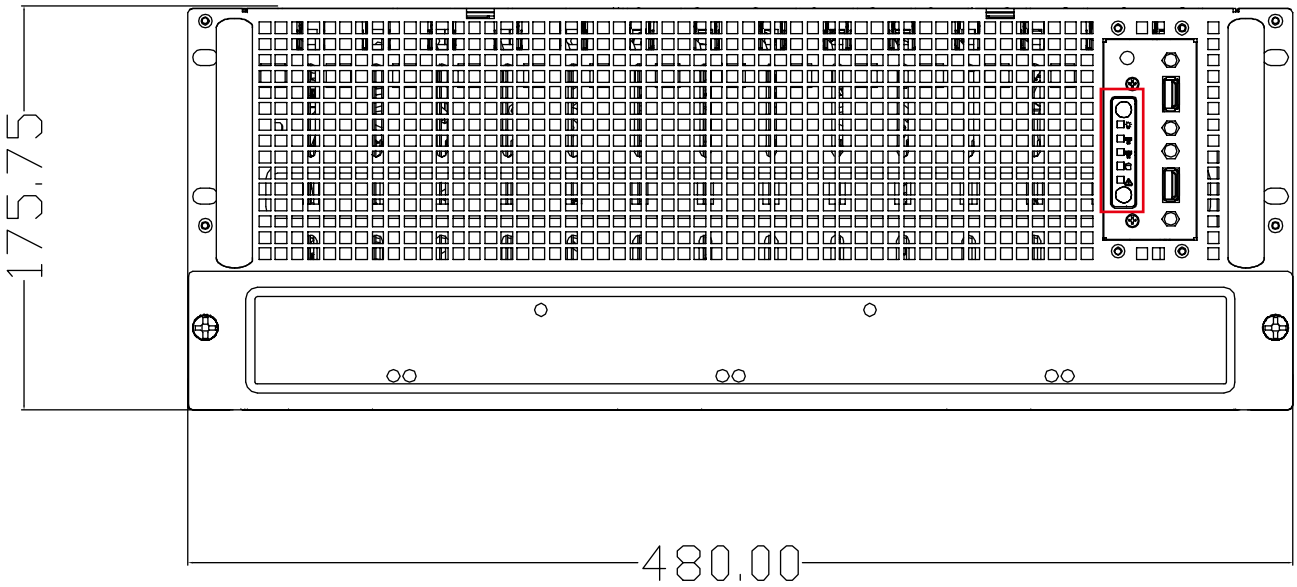
1.3 Features

RSC-4H is a reliable 4U storage server chas with 2 x 2.5" and 60 x 3.5" hotswap drives bays. This product is designed to accommodate 3 x 20-port 12 Gb SAS backplanes with 28-PHY expander chip and 2 SFF-8643 connectors on each.

- High density storage server chassis
- Tool-less design for easy maintenance:
  - 60 tool-less top-loading 3.5" drive trays with built-in light pipe for drive status LED
  - Tool-less top cover
  - Tool-less drive backplane sliding mechanism
- Hot swap cooling fans and 80+ redundant power supply
- Supports up to 2 x 2.5" hot swap drives for OS
- Supports single drive power cycle setting

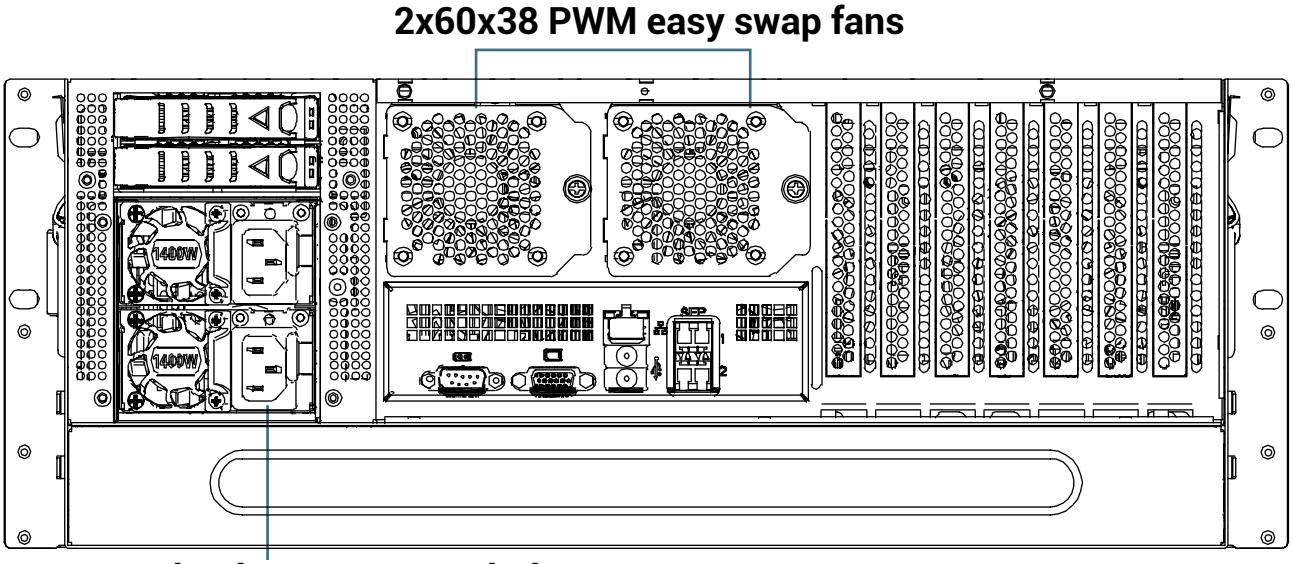


Front

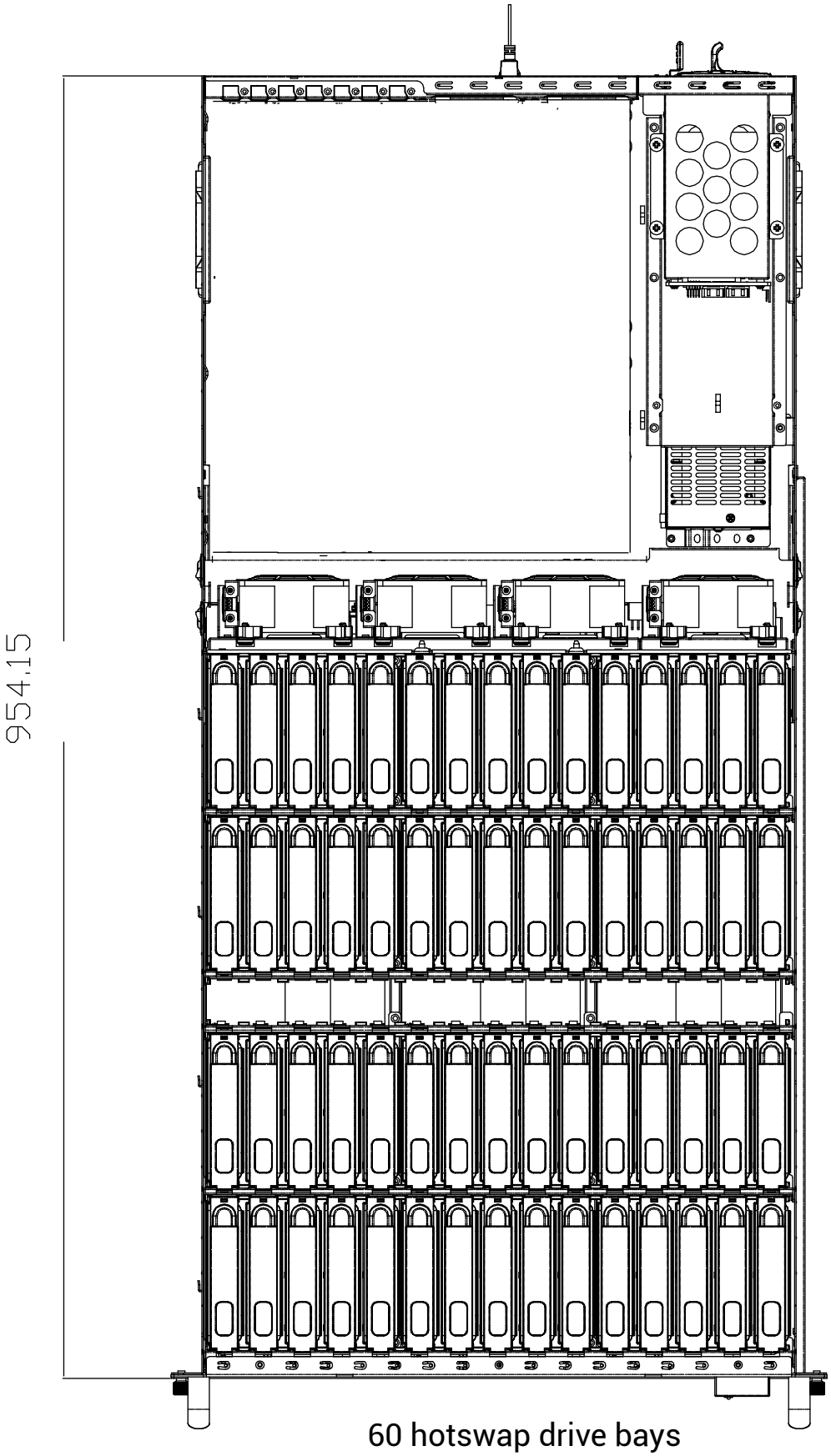


	Power On/Off
	System Power LED
	LAN 1 LED
	LAN 2 LED
	System HDD Activity LED
	Service ID LED On/Off
	System Reset

Rear



Major Components



Chapter 2. Hardware Setup

2.1 Removing and Installing the Top Cover

2.1.1 Installing the top cover

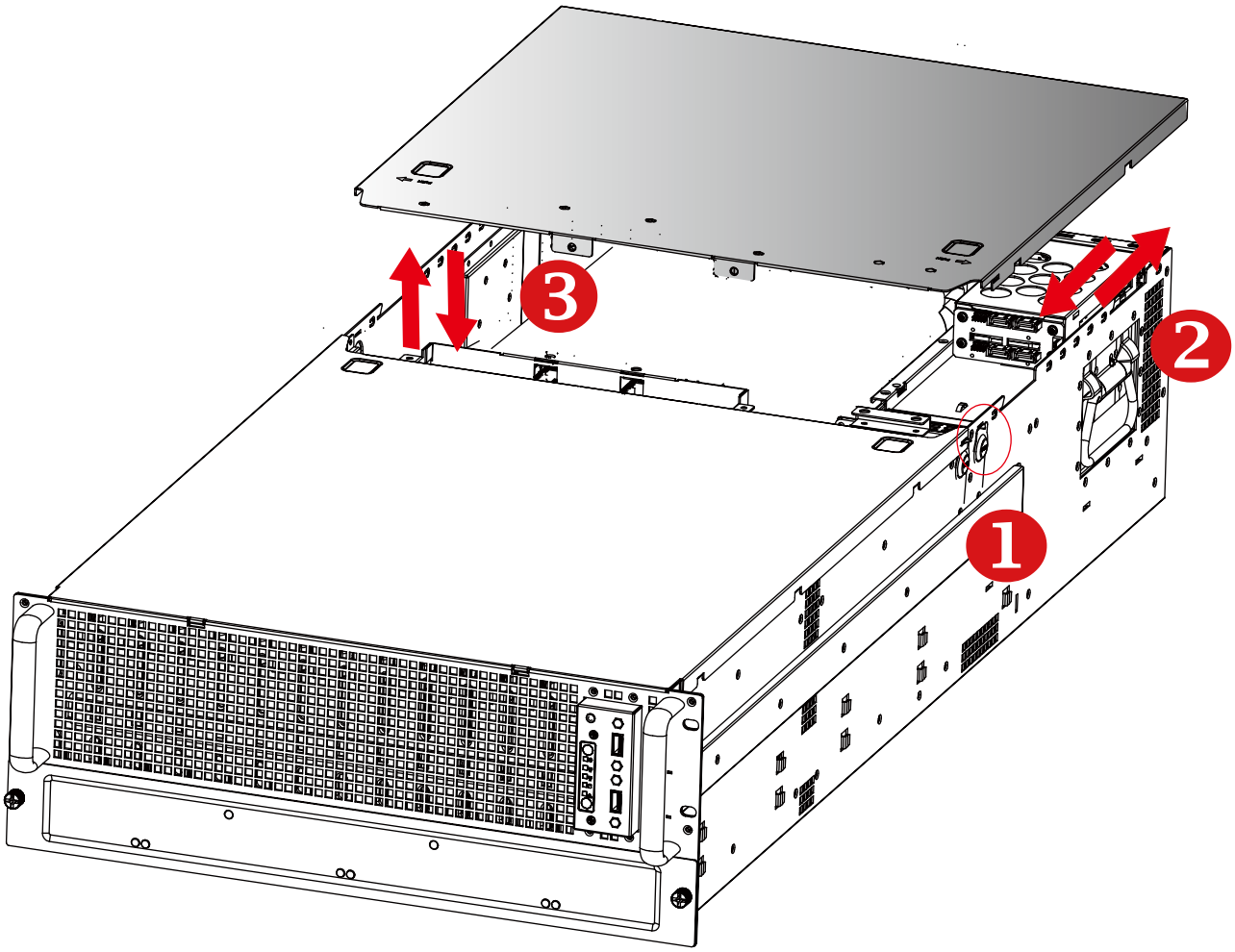
Position the top cover onto the chassis and push horizontally towards the adjacent top cover to install.

2.1.2 Removing the top cover

Step 1 Press the release button on both sides of the chassis.

Step 2 Pull horizontally opposite from the adjacent top cover.

Step 3 Lift the top cover upward to remove.



2.2 Removing and Installing the Hard Disk Drive

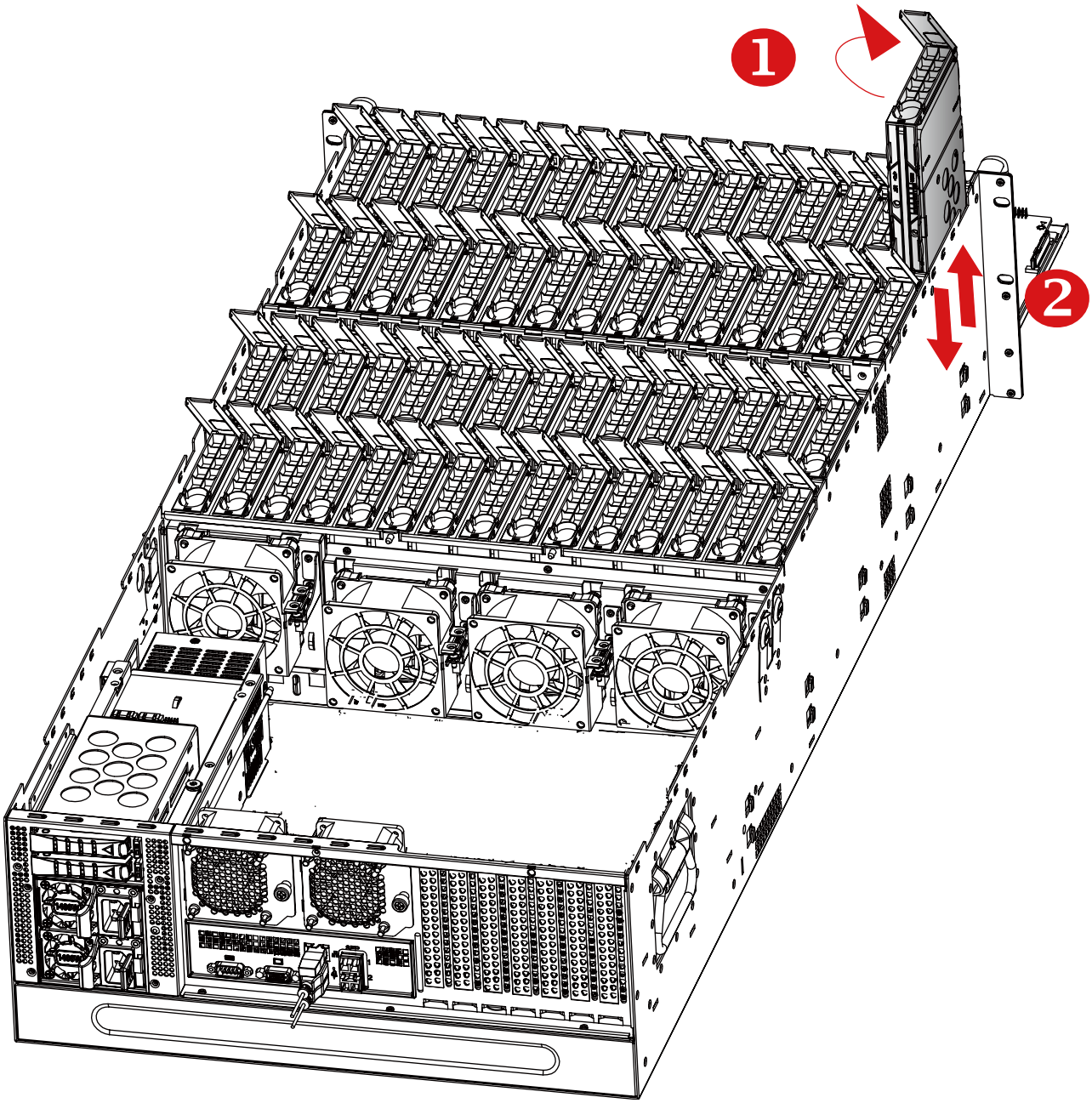
2.2.1 Installing the 3.5" hard disk tray

Push the the hard drive disk tray into the chassis.

2.2.2 Removing the 3.5" hard disk drive tray

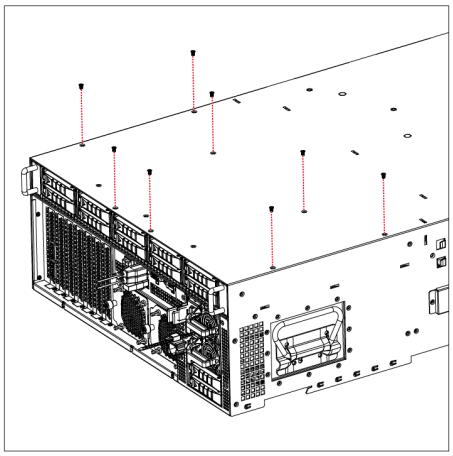
Step 1 Place a finger inside the dent on the hard drive disk tray lever and pull upward.

Step 2 Pull the hard drive disk tray out of the chassis to remove.

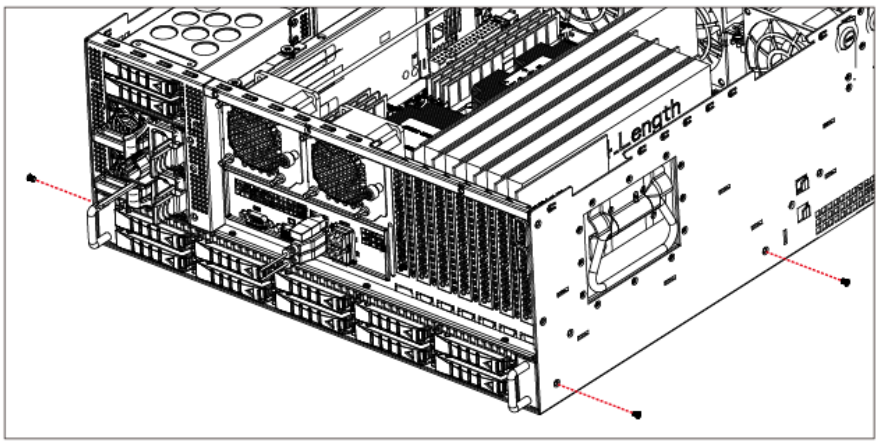


2.2.3 Removing and Installing the 2.5" x 10 bay HDD cage

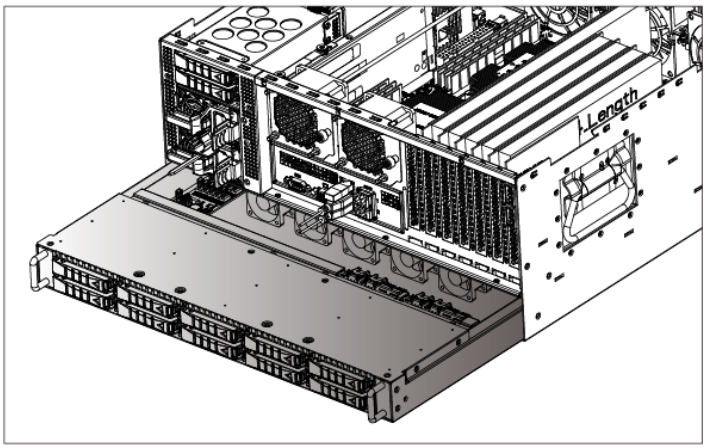
Step 1 Remove the screws x8 at the bottom of the chassis.



Step 2 Dislodge the screws on both sides of the chassis (2 screws on each side, total 4 screws).



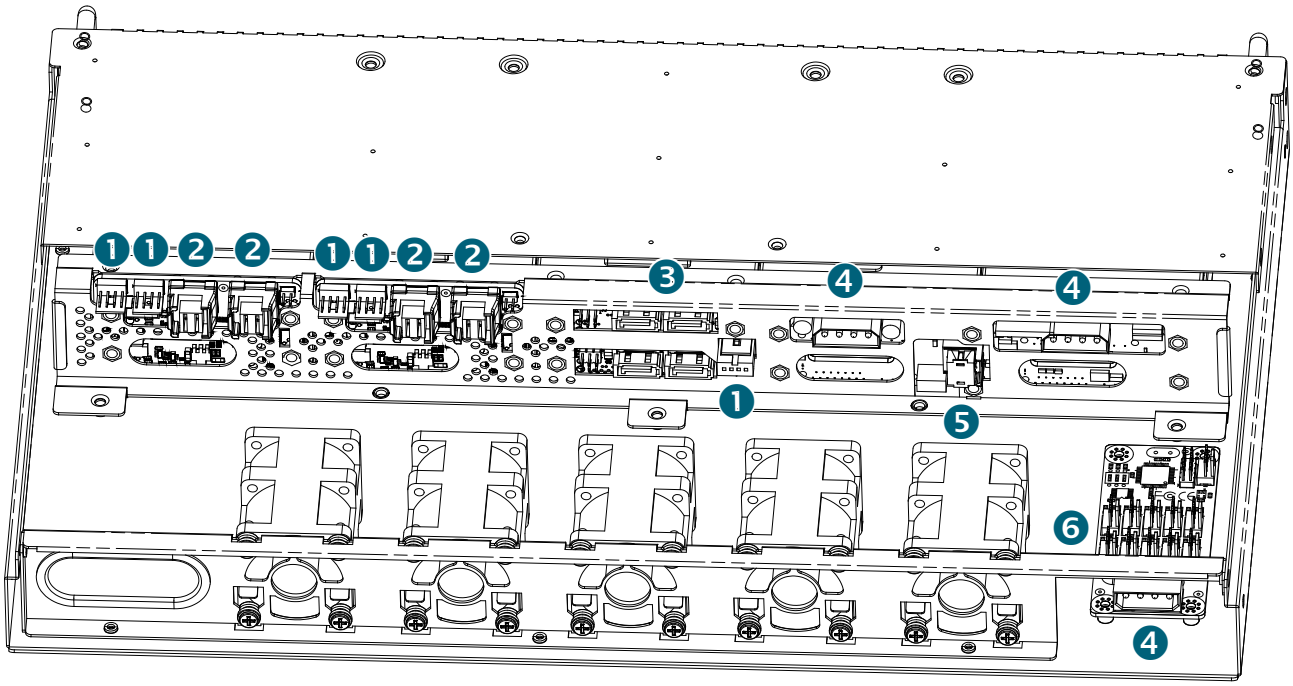
Step 3 Pull the HDD cage from the chassis.



Step 4 Push the 10 bay HDD cage into the chassis and secure the screws on both sides and the bottom of the chassis to complete installation.

2.2.4 Connector Location

Insert the cables of the system into the appropriate slot.



Item	Description
1	S4P Power connector
2	SFF-8643 connector for NVMe
3	SATA 7pin Header
4	L4P Power connector
5	SFF-8643 connector for SATA/SAS
6	Fan connector

2.2.5 Installing the 2.5" HDD tray into the chassis

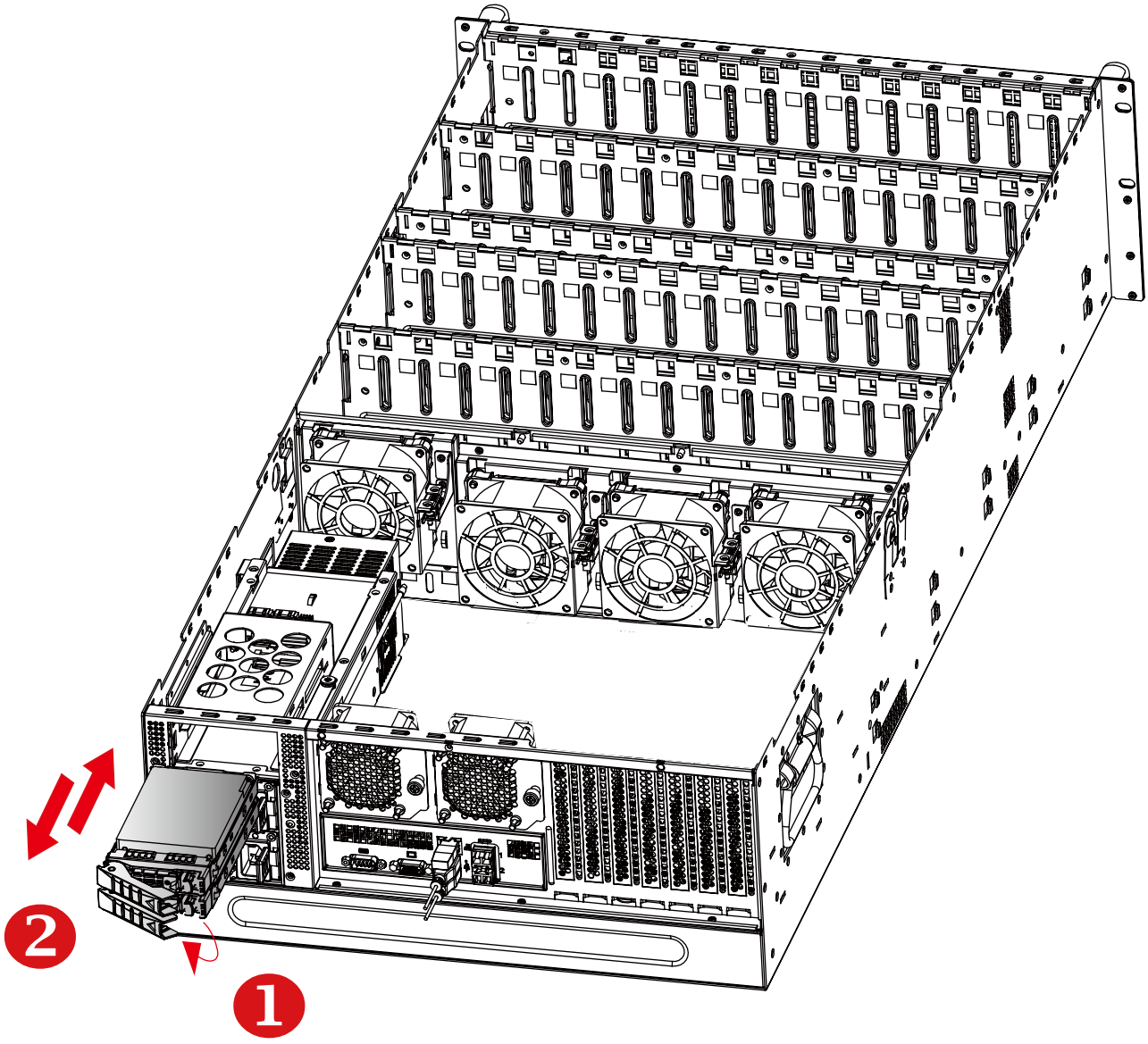
Step 1 Insert the 2.5" HDD into the chassis until it clicks.

Step 2 Close the tray lever.

2.2.6 Removing the 2.5" HDD tray out of the chassis

Step 1 Push the release button on the tray lever.

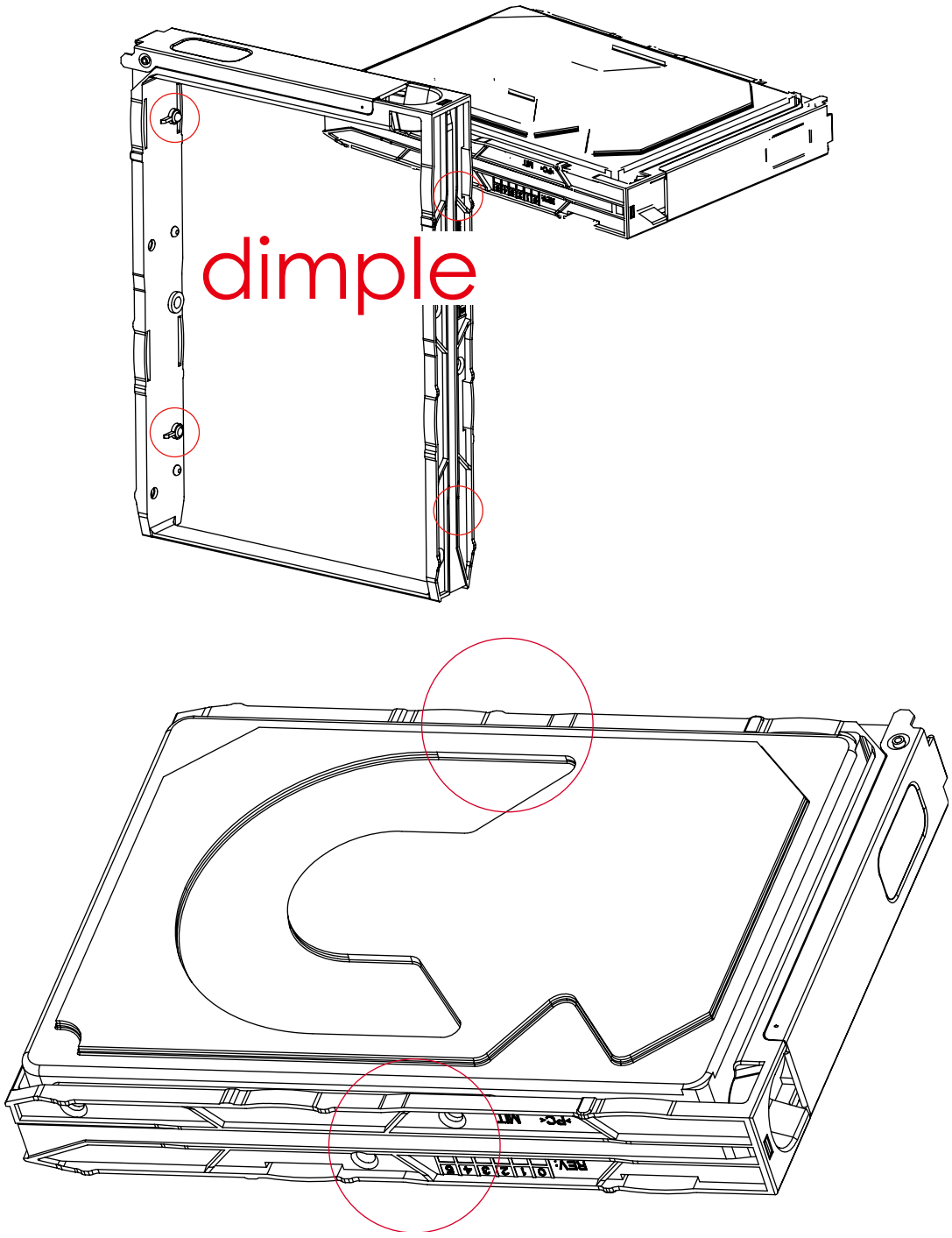
Step 2 Pull to remove the 2.5" HDD Tray from the chassis.



* Power supply is included. Motherboard is not included.

2.2.7 Installing the hard disk drive into the hard disk drive tray

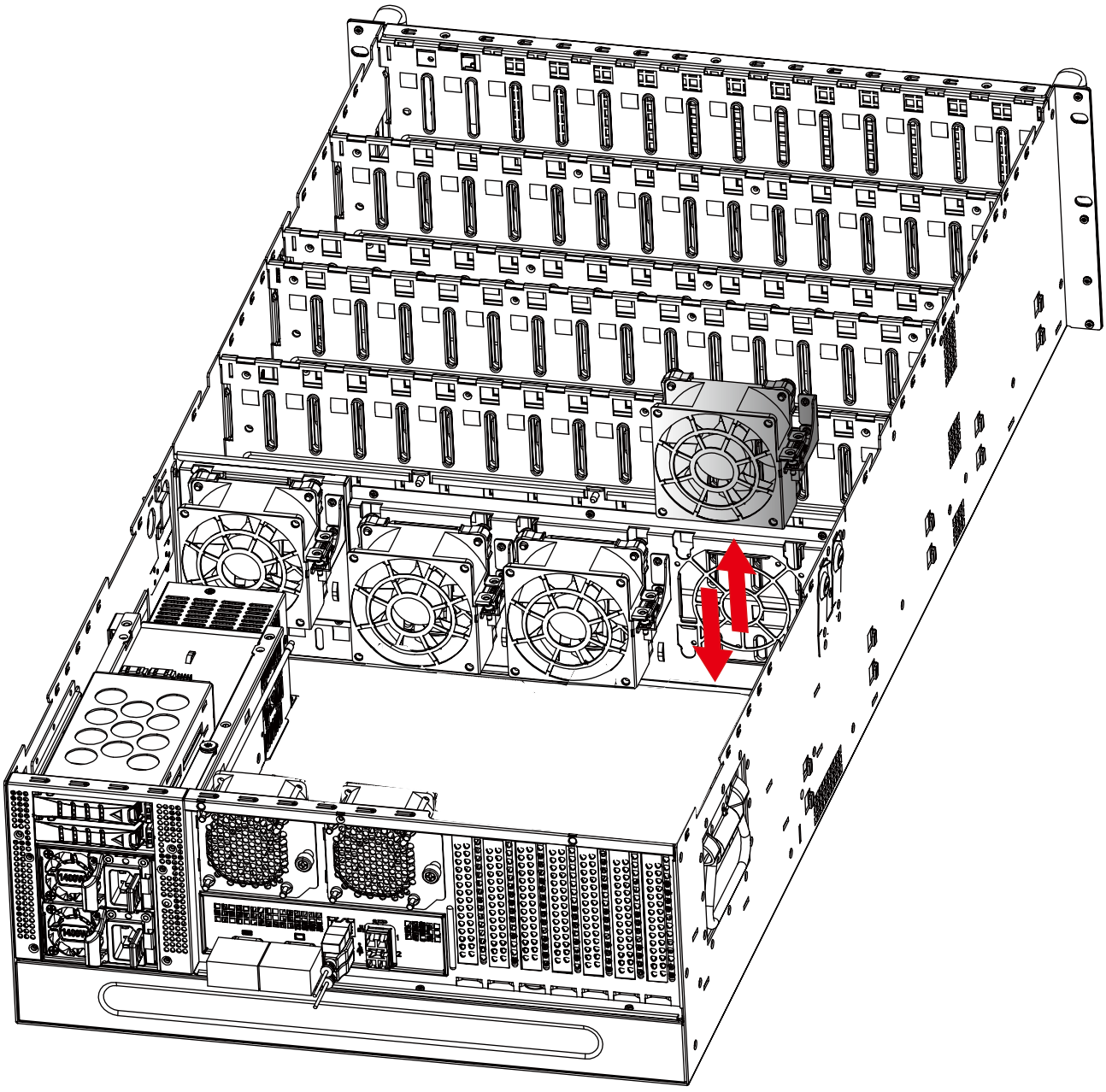
Match the dimples on the tray to insert the HDD. Make certain that the HDD is not damaged during installation or removal process.



2.3 Removing and Installing the Fan Module

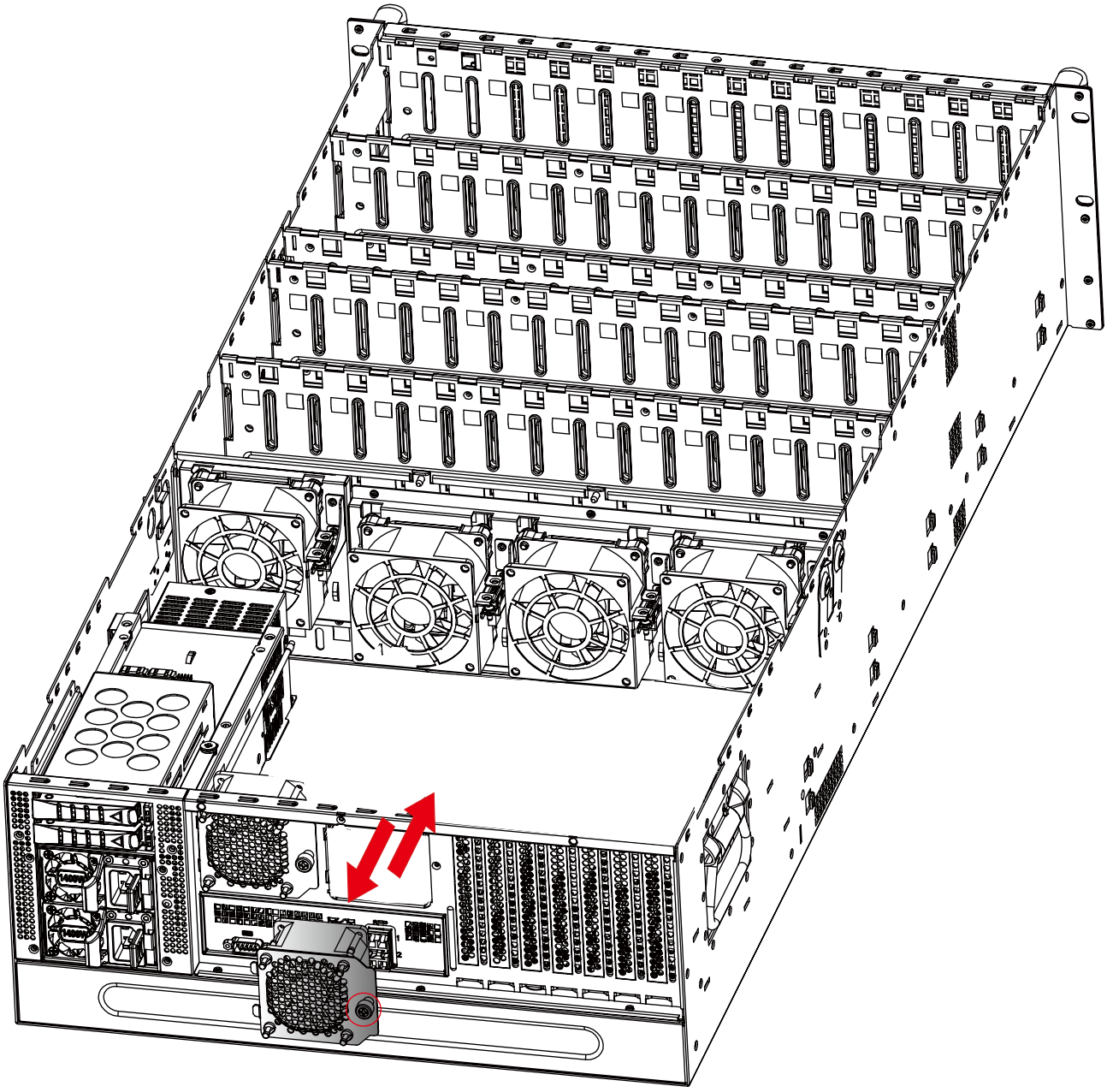
2.3.1 Installing/removing the fan

Insert or pull the fan module to install or remove. Make certain to align the fan module to the appropriate slot.



2.3.2 Installing/removing the fan from the rear panel

Secure or loosen the thumb screw x 1 on the fan module to install or remove.



2.4 Removing and Installing the Power Supply Unit Module

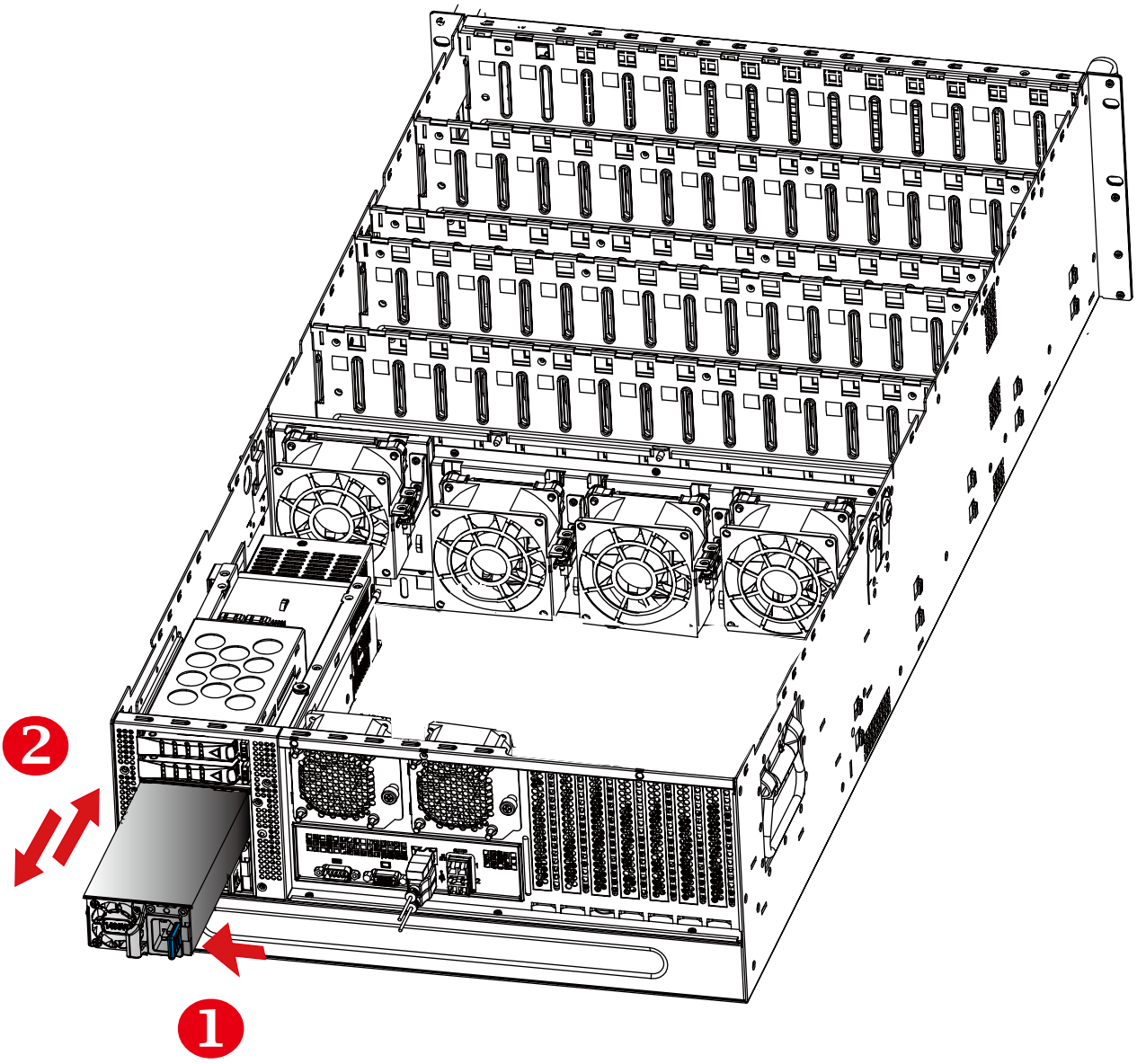
2.4.1 Installing the power supply unit

Push the tray handle on the power supply module to install.

2.4.2 Removing the power supply unit

Step 1 Push the latch inward and hold the tray handle.

Step 2 Pull the tray handle to remove.

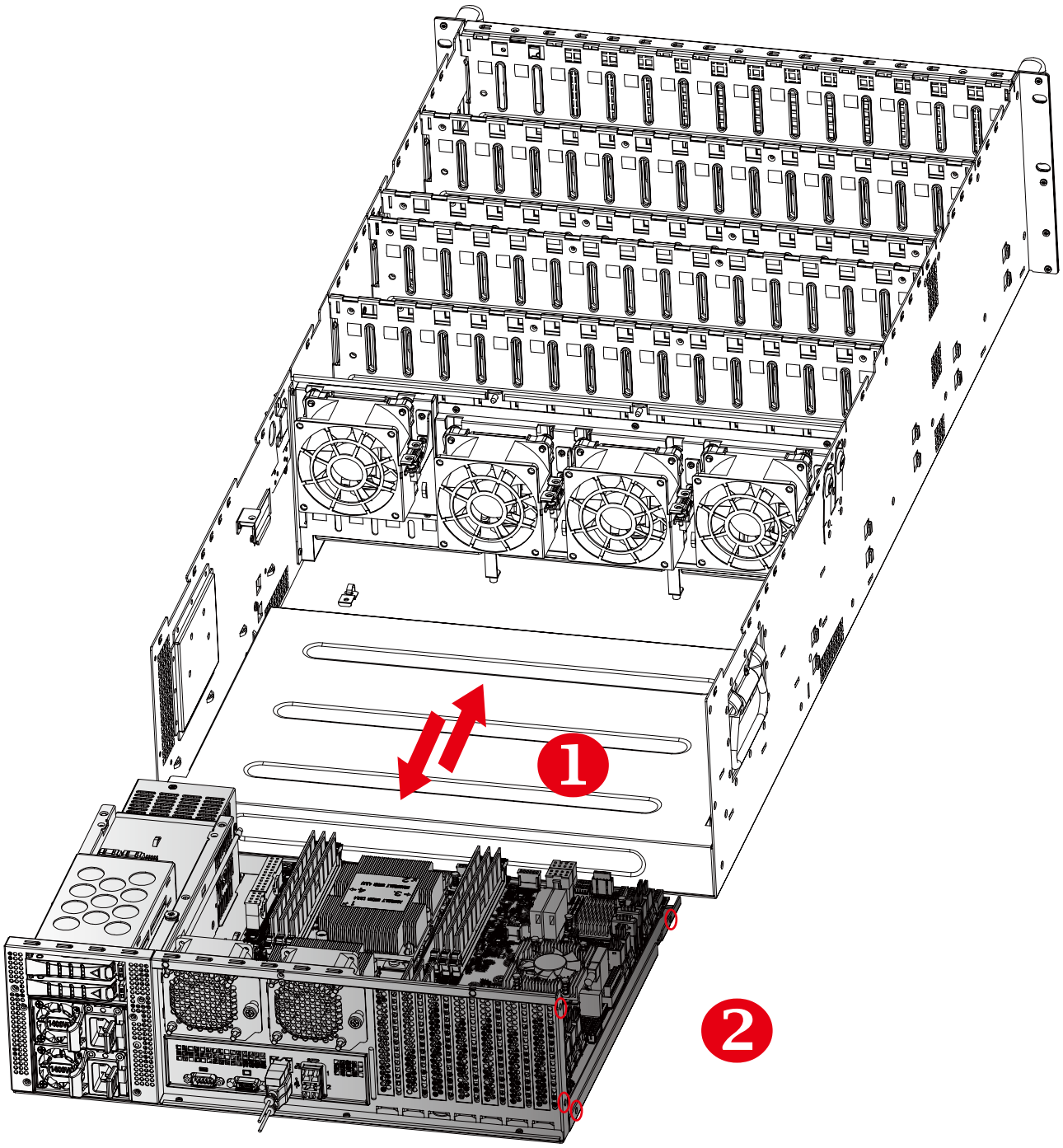


2.5 Removing and Installing the Motherboard

2.5.1 Installing the motherboard

Step 1 Push the motherboard into the chassis.

Step 2 Secure the screw x 8 pcs on both sides (screw x 4 pcs on each side) of the chassis.



Note: The example above is the AIC patented Virgo motherboard. The motherboard will vary according to your selection.

2.6 Removing and Installing the HDD Backplane Module

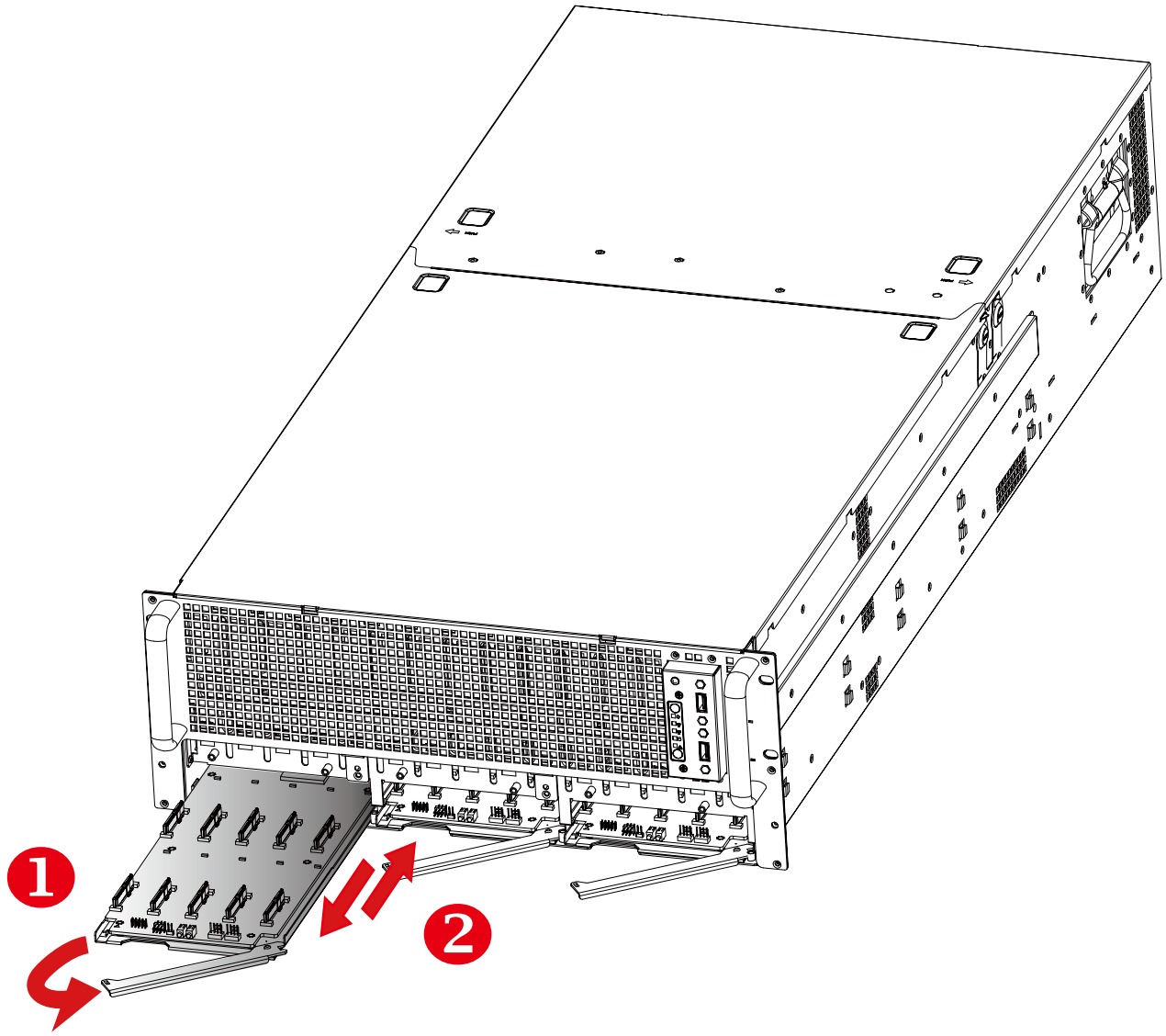
2.6.1 Installing the HDD backplane from the front panel

Push the backplane module into the chassis and close the tray lever to install.

2.6.2 Removing the HDD backplane from the front panel

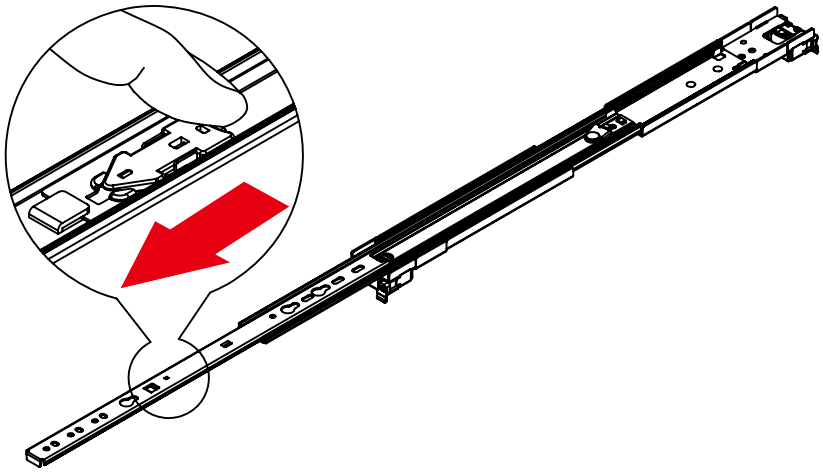
Step 1 Open the lever on the backplane.

Step 2 Pull the backplane module to remove.

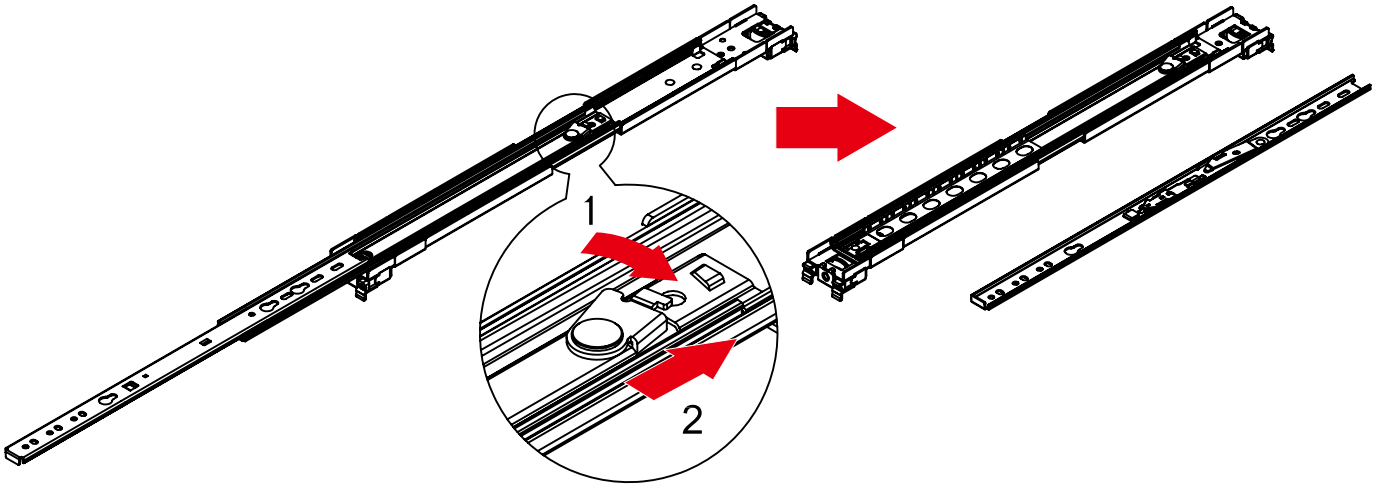


2.7 Tool-less Blade Slide Installation

Step 1 Pull on the "Front-Release"to unlock the inner channel from the Slide Assembly.

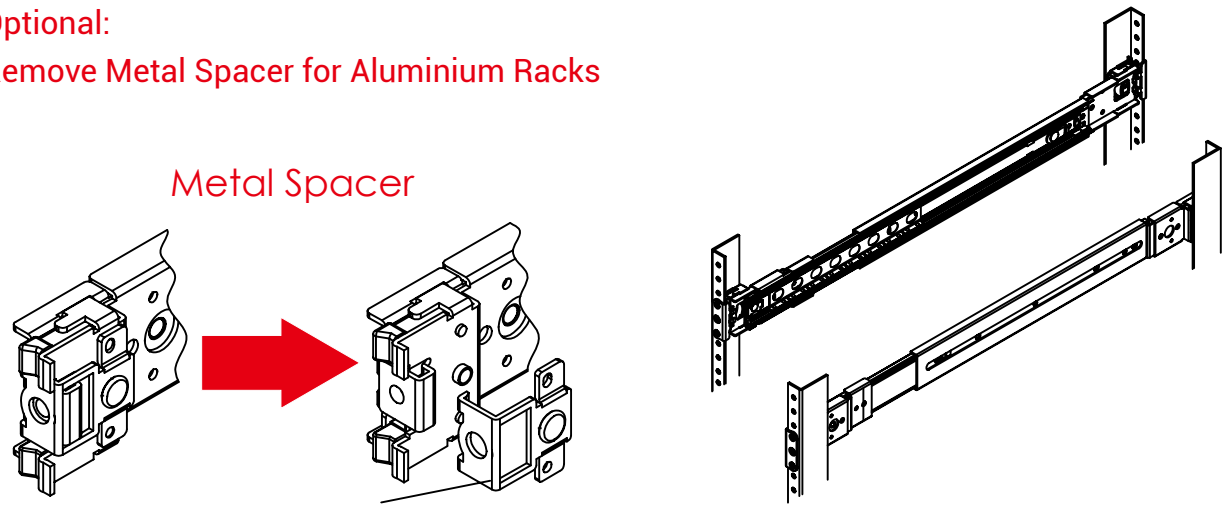


Step 2 Release the Detent-Lock and push Middle Channel inwards to retract Middle Channel.

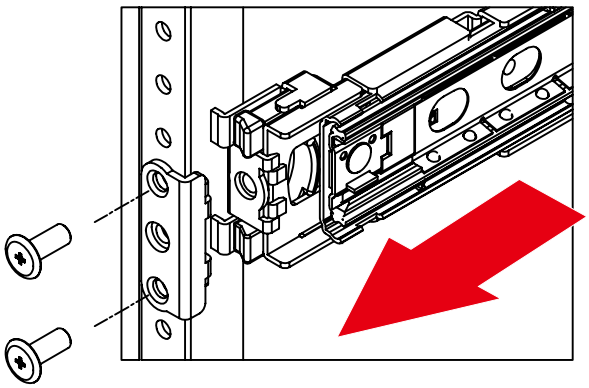


Optional:

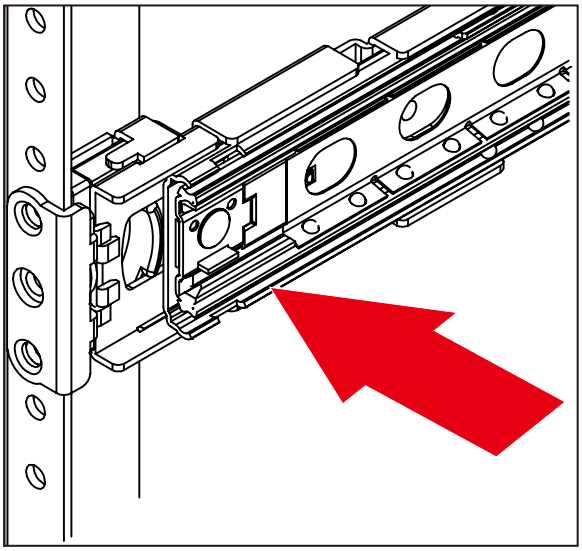
Remove Metal Spacer for Aluminium Racks



Step 3 Align the Front Bracket with the Mounting Hole.

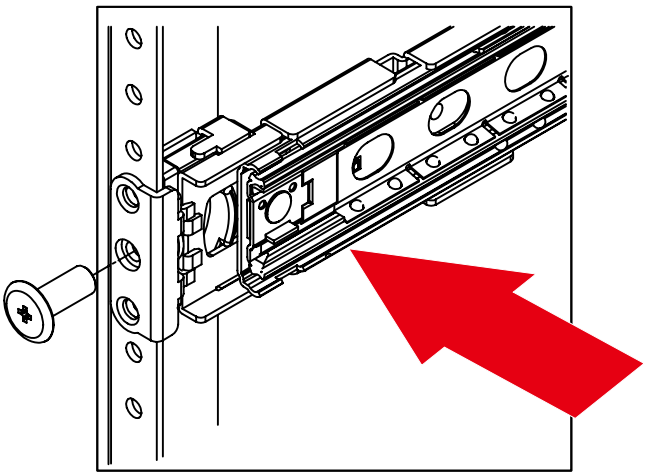


Step 4 Push in to assembly the Front Bracket onto the Rack.

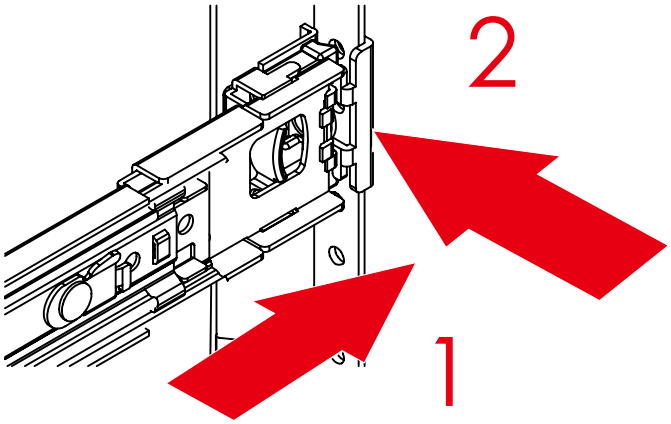


Step 5 Now the bracket is fixed onto the Rack.

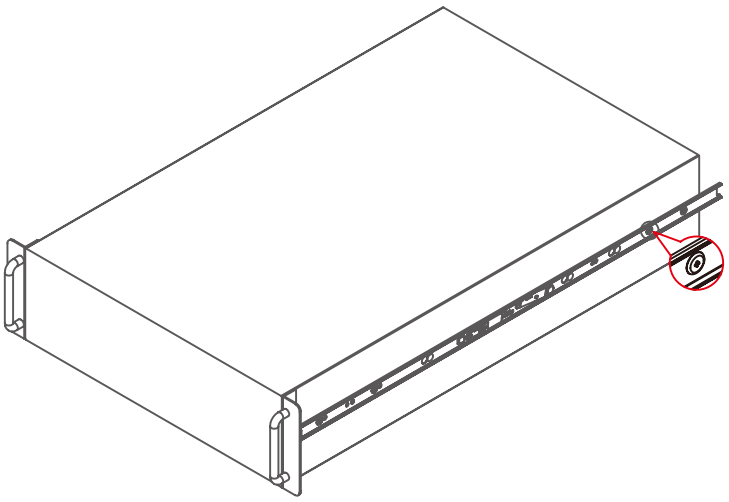
(Optional M6x10L screws are to secure the rails with posts if needed.)



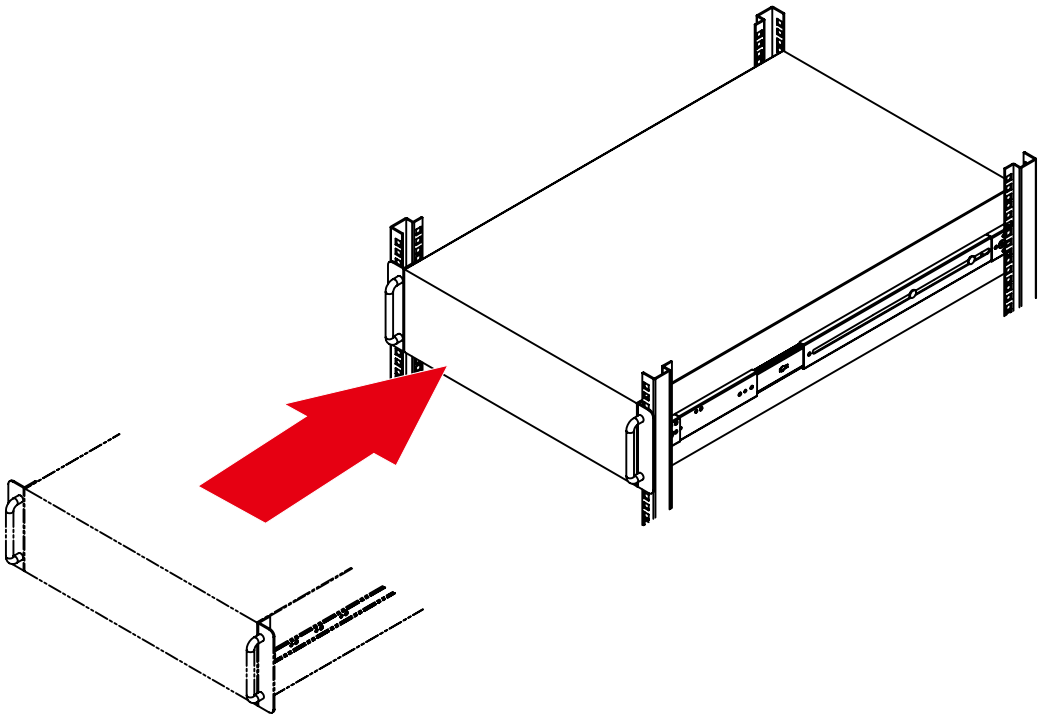
Step 6 Refer to Diagram 3. & 4. to assemble the End Bracket onto the Rack.



Step 7 Assemble the inner channel onto the chassis using thescrews provided.



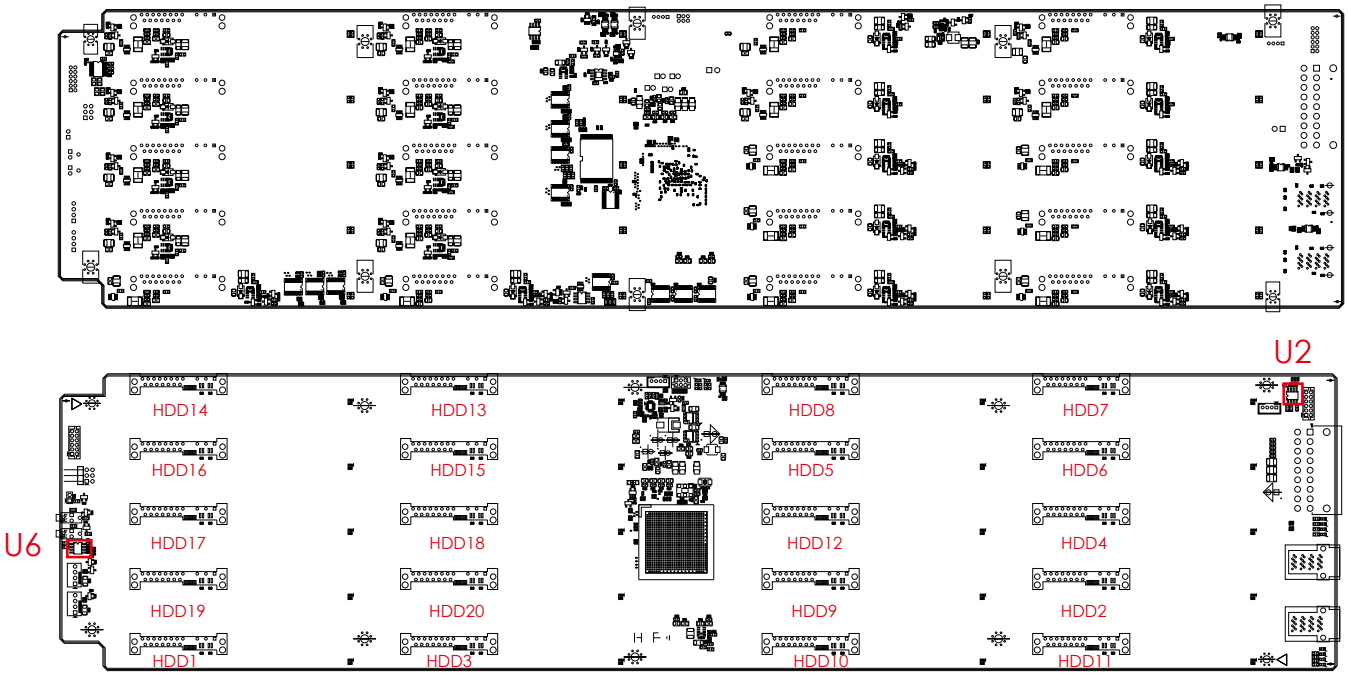
Step 8 Push the chassis with inner channels into Slide to complete Rack Installation.



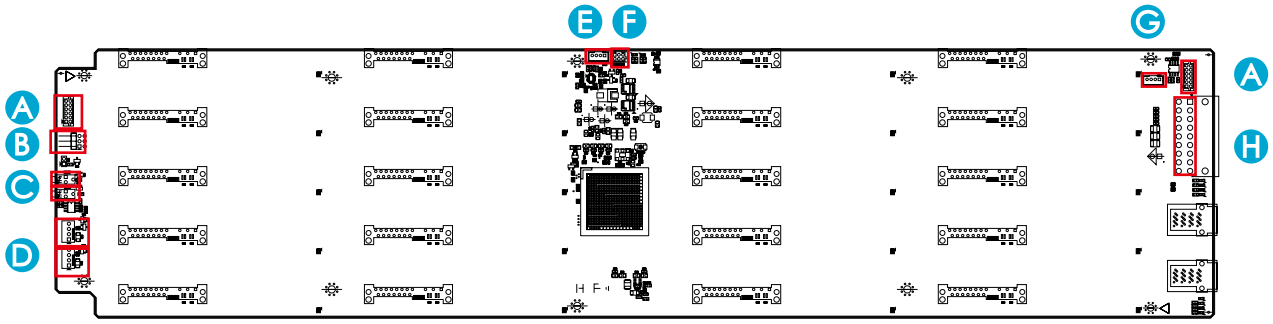
Chapter 3. Hardware Specifications

3.1 HDD Backplane

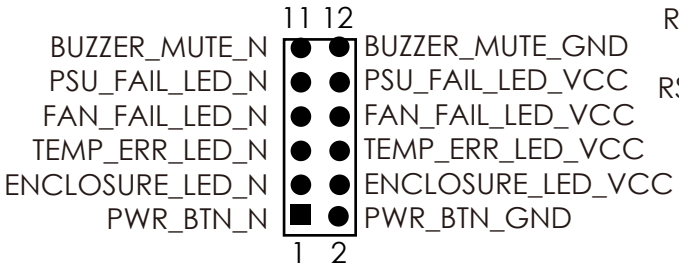
3.1.1 Placement: 20 Bay



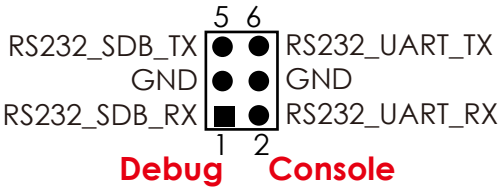
3.1.2 Connector Location: 20 Bay Backplane



A Front Plane Control Connector-JREAR, JFRONT

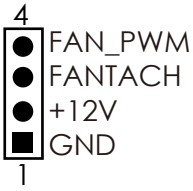


B UART–JUART1



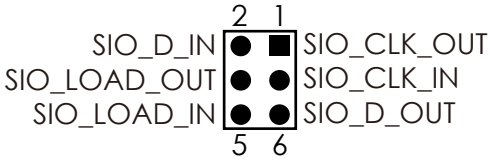
C Fault LED connector-J1

D FAN connector-JFAN0, JFAN1

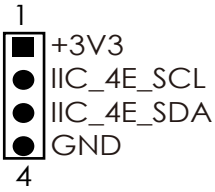


E MDIO– JMDIO1

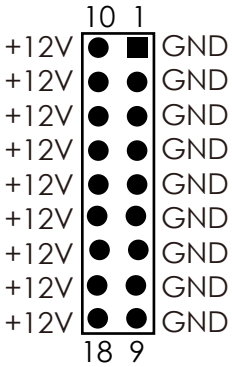
F SGPIO –JSIO1



G IC2 connector-JI2C1



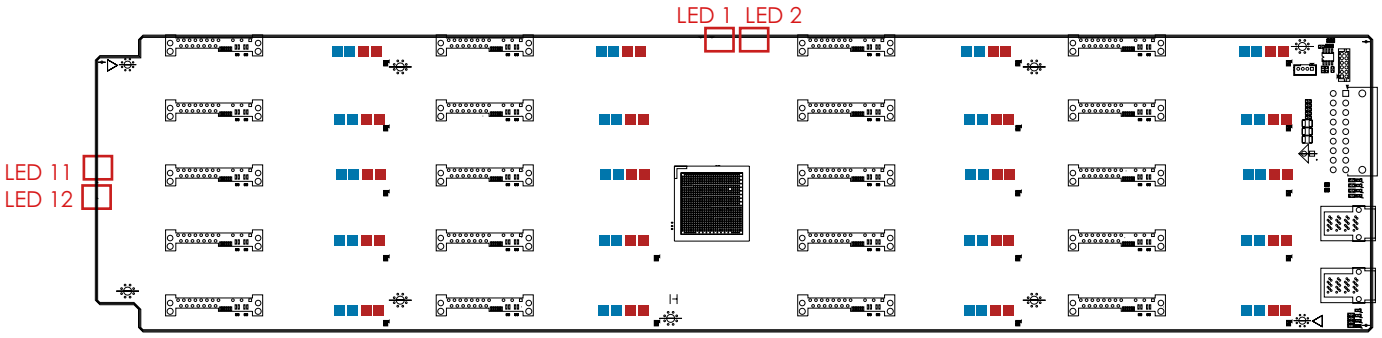
H Power Connector-JP1



3.1.3 System LEDs

LED Definition

HDD Activity LEDs	Blue (On)	HDD present
	Blue (Blinking)	HDD activity detected or Locate HDD
	Off	HDD no connect or p ower Off
HDD Fault LEDs	Off	Normal
	Red (Blinking)	Re-build status for RAID
	Red (On)	HDD fault
LED11	Blue (On)	HDD present
	Off	HDD no connect or power Off
LED12	Red (On)	HDD fault
	Off	Normal



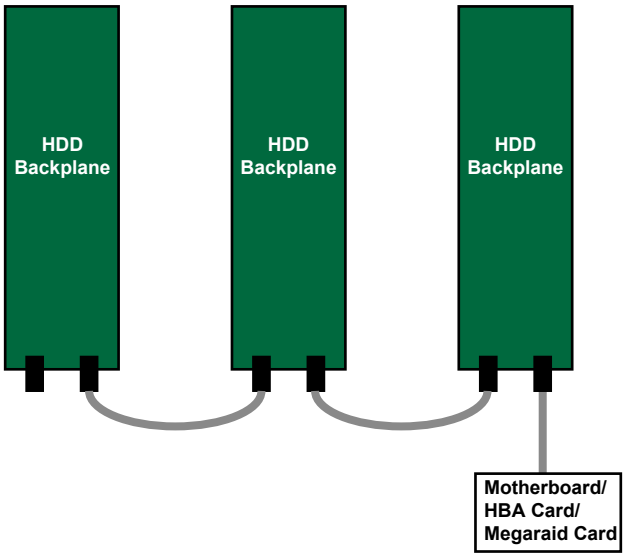
HDD Activity LED
HDD Fault/Status LED

Expander Blink (LED 2)	Blue (Blinking)	Expander device alive. 0.833Hz (12 seconds per cycle)
Expander Heart Bit (LED 1)	Blue (Blinking)	Expander device execution.

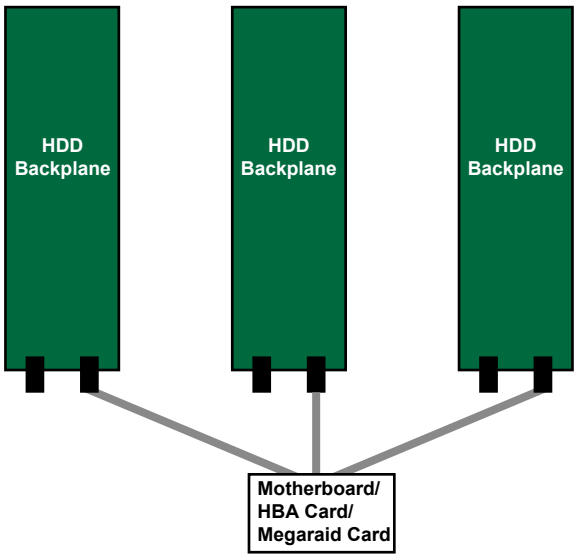
3.1.4 HDD Backplane and Host Connection

There are two types of connections using the SFF-8643 SAS cables to connect HDD backplane to the motherboard/host adapter card/megaraid.

Connection 1: Connect the HDD backplane to the motherboard/HBA/Megaraid in a serial fashion as demonstrated.



Connection 2: Connect each HDD backplane to the motherboard/HBA/Megaraid separately as demonstrated.



Chapter 4. Technical Support

www.aicipc.com

Taiwain, Global Headquarters

Address: No. 152, Section 4,
Linghang N. Rd, Dayuan District,
Taoyuan City 337, Taiwan
Tel: +886-3-433-9188
Fax: +886-3-287-1818
Sales Email: sales@aicipc.com.tw
Support Email: support@aicipc.com

Shanghai, China

Address: Room 1009, No. 777,
Zhaojia Bang Rd, Shanghai 200032,
Shanghai, China
Tel: +86-21-54961421
Fax +86-21-54961422 #608
Sales Email: csales@aicipc.com.tw
Support Email: support@aicipc.com

Moscow, Russia

Address: Khoroshevskoye Shosse, 32A,
Office 403 (2nd Entrance, 4th Floor),
Moscow 123007, Russia
Tel: +7-4997019998
Sales Email: support-ru@aicipc.com.tw
Support Email: support-ru@aicipc.com.tw

North California, United States

Address: 48531 Warm Springs
Boulvard Suite 404 Fremont, CA
94539, United States
Tel: +1-510-573-6730
Fax: +1-510-573-6729
Sales Email: sales@aicipc.com
Support Email: support@aicipc.com

South California, United States

Address: 21808 Garcia Lane
City of Industry, CA 91789,
United States
Toll free: +7-4997019998
Tel: +1-909-895-8989
Fax: +1-909-895-8989#157
Sales Email: sales@aicipc.com
Support Email: support@aicipc.com

New Jersey, United States

Address: 11 Melanie Lane
Unit #20 & 21
East Hanover, NJ 07936, United States
Tel: +1-973-884-8886
Fax: +1-973-884-4794
Sales Email: sales@aicipc.com
Support Email: support@aicipc.com

Houten, The Netherlands

Address: Peppelkade 58, 3992AK, Houten,
The Netherlands
Tel: +31-30-6386789
Fax: +31-30-6360638
Sales Email: sales@aicipc.nl
Support Email: support@aicipc.com