IW-RG650A|IW-RG650B

6.5U GPU Rackmount Chassis

User Manual

PREFACE

Thank you for choosing the InWin IW-RG650A/IW-RG650B GPU server. This manual is written for system technicians who are responsible for installation, managing and repairing this server chassis. This document provides an overview of all the features of the chassis, a list of accessories or other components you may need to finish the installation and instructions on adding and removing components in the InWin IW-RG650A/IW-RG650B. For the latest version of this manual, you may visit InWin's server website.

SAFETY INFORMATION

To ensure a safe and smooth operation of your InWin IW-RG650A/IW-RG650B, it is essential that you choose an appropriate location for the system, provide an appropriate operating environment and supply an adequate amount of power for all components of the system. As you plan for installation, follow the guidelines below to ensure that the system and its environment are safely and appropriately positioned for efficient operation and service. Your system should be installed and serviced only by a qualified technician.

Environment Selection:

The system is designed to operate in a typical office environment:

- The location should be clean, dry and free of airborne particles.
- It should be placed in a well-ventilated room, and away from sources of heat including direct sunlight and radiators.
- It should be kept away from sources of vibration or physical shock.
- The space should be accommodated with a properly grounded wall outlet, and with sufficient space to access the power supply cords.
- The operating environment temperature should be around 0°C to 40°C (32°F to 104°F).

Heed Safety Instructions:

Before working with InWin IPC/storage/SMB server products, we strongly recommend you use this guide as a reference and follow the safety instructions. The instructions in this manual will help you ensure and maintain compliance with existing product certifications and approvals. Follow the described, regulated components mentioned in this manual. Use of non-UL listing products or other regulators may not comply with product regulations in the region(s) in which the product is sold.

System Power On/Off:

The power button DOES NOT totally turn off the system AC power. To remove the power of the system, you must unplug the AC power cord from the outlet or the system's power supply units. Make sure the power cord is unplugged before you open the chassis, add or remove any components.

Hazardous Conditions, Devices and Cables:

Hazardous electrical conditions can be present on/in power supply units and their cables. Disconnect the power cord and any other devices attached to the server before opening the case. Failing to follow safety procedures will increase the risk of personal injury or equipment damage.

Electrostatic Discharge (ESD) and ESD Protection:

In most cases, ESD may damage disk drives, electronic boards and other parts. We recommend that you conduct installation only at an ESD free space. If not possible, perform ESD protection protocol by wearing anti-static wrist straps attached to the ground on any unpainted metal surface on your server during operation.

Installing or Removing Jumpers:

A jumper is a short length conductor used to close, open or bypass part of an electronic circuit. Jumpers on InWin backplanes have a small tab on top that you can pick up with your fingertips. Grip the jumper carefully and plug the jumper to cover the jumper pins on the backplane. Once you need to remove the jumper, grip the jumper and carefully pull without squeezing.

CAUTION

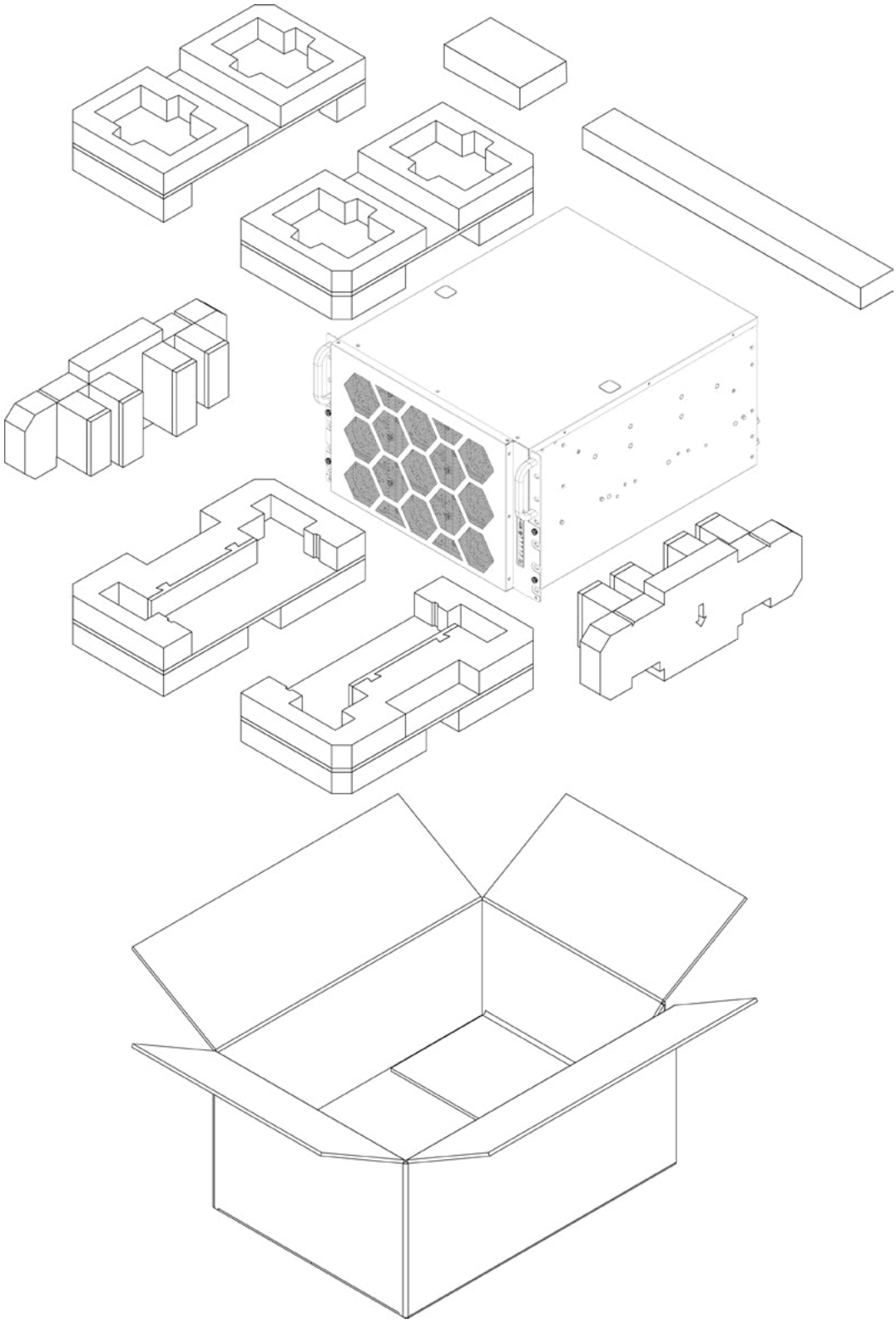
To avoid damage and maintain your safety, please read the following terms listed below:

1. Do not populate hard drives and turn on the power until the system has stabilized. Make sure hard drives and other components are properly connected before turning on the system.
2. Tighten or loosen all screws with a screwdriver.
3. Apply the correct screws packed in the accessories box.
4. For your safety, please have at least two people lift and install the unit in its designated area.
5. Before mounting the unit to the cabinet, make sure the rail is installed correctly.
6. When installing and removing any module or part, please use the handles.

1 Product Introduction

1.1 Box Contents

When you open the IW-RG650A/IW-RG650B box, the contents should include following:

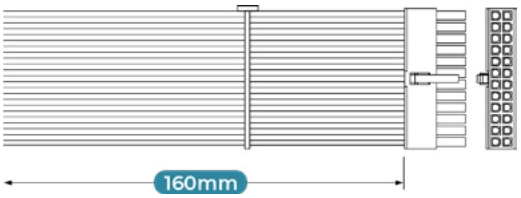
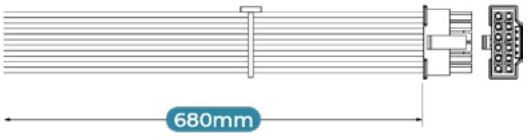
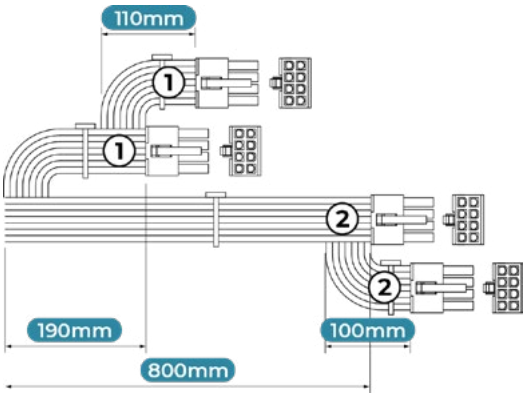
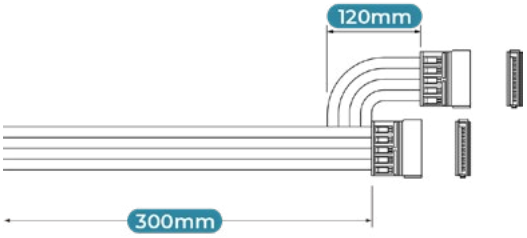
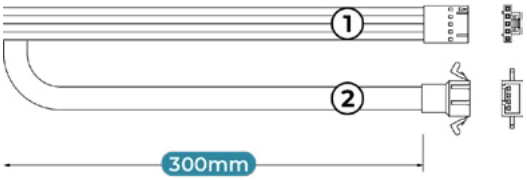


1.2 Accessories Box

No.	Item	No.	Item
1	Motherboard Screws x 12	4	Cable Ties and Mounts x 5
2	Motherboard Stand-off Sockets x 12	5	Fan 4-pin to 4-pin Cables x 4
3	2.5” SSD Screws x 16		

1.2.1 Power Cables

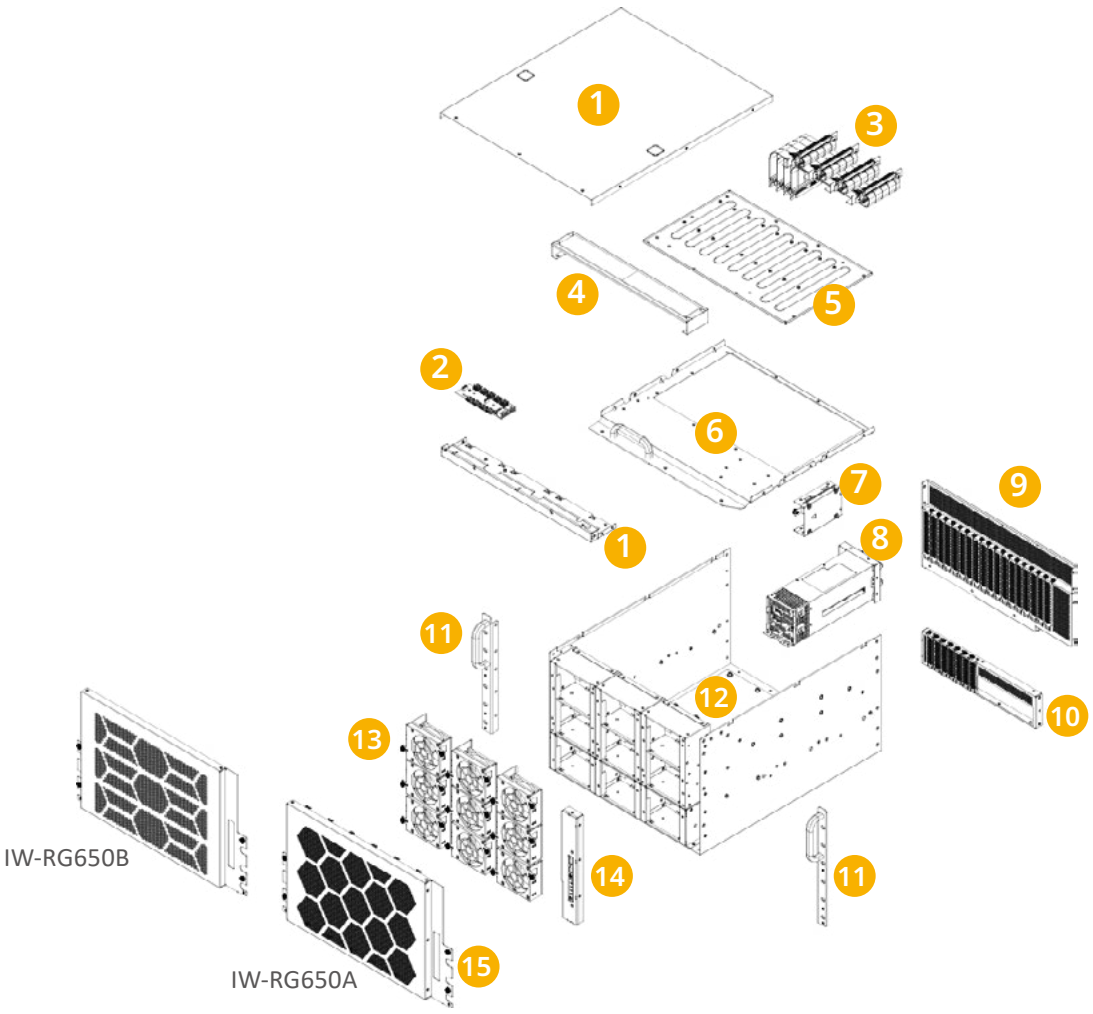
• 3200W PSU Cable Information

No.	Item	Quantity
1	 24-Pin Main motherboard	1
2	 12V-2x6 pin GPU	4
3	 1. 8-Pin fan board 2. 8-Pin CPU	1
4	 SATA	1
5	 1. PMBus 2. PWM	1

Length Unit: mm

1.3 General Information

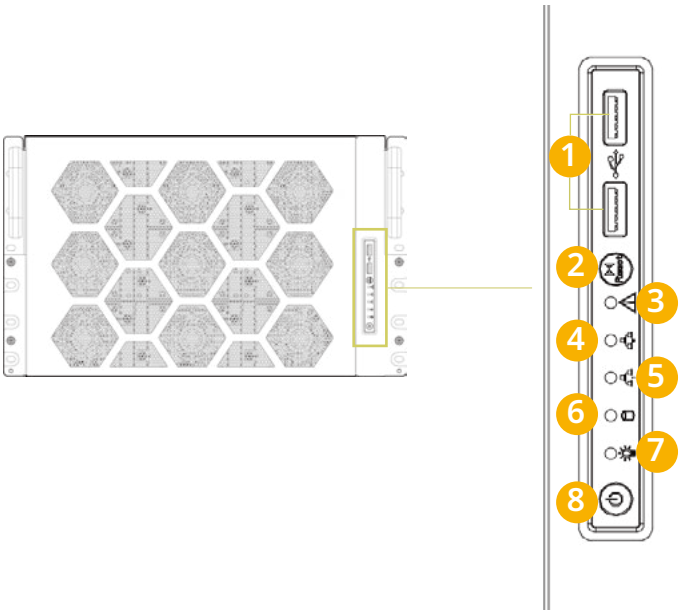
When you open the chassis, it should reflect the diagram's image.



1	Top cover	**9**	Full-height PCIe slots x 18
2	Fan hub	**10**	Low-profile PCIe slots x 7
3	Riser cables	**11**	Handles
4	GPU holder	**12**	ATX, CEB, EEB M/B mounting area
5	GPU mounting area	**13**	80x38 mm 12000rpm PWM hot-swap fans x 9
6	Upper layer panel	**14**	Front controls and indicator
7	2.5" SSDs tray	**15**	Front mesh panel
8	80 PLUS® Titanium CRPS 3200W PSU		

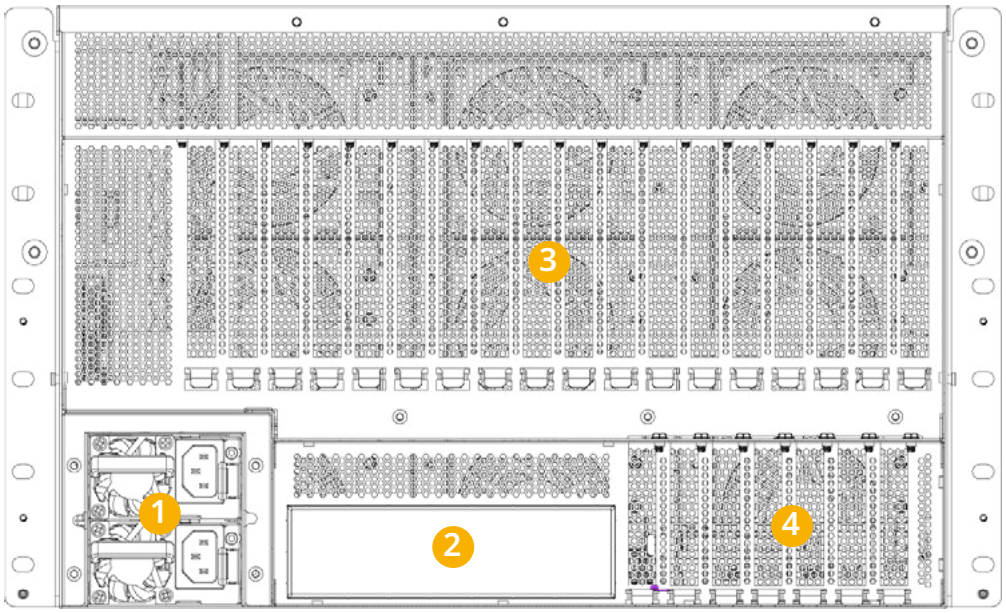
1.3.1 Front Panel Controls and Indicators

The IW-RG650A/IW-RG650B comes with a pre-installed 2.5" NVMe/SAS/SATA SSD bracket that accommodates two SSDs. (A maximum of two SSD brackets can be installed; additional brackets are required for more SSDs.) The control panel, indicators are located on the Front Panel.



No.	Name	Color	Status	Description
1	USB 3.0 Connector		N/A	USB devices connection.
2	System Reset Button		N/A	Press the button to activate system reset.
3	System Fail LED	Amber	Solid on	System Status (- , +).
			Solid on	System Status (+ , -).
4 & 5	LAN LED (LAN1 – LAN2)	Blue	Blinking	Link between system and network.
			Off	No data transmission or receiving is occurring.
6	Hard Disk LED	Amber	Blinking	System HDD accessing
7	Power LED	Blue	Solid On	System is powered on.
			Off	System is off.
8	Power On/Off Button		N/A	Press the button to turn the power on.

1.3.2 Rear Panel Configuration



No.	Name	Description
1	Power Supply Window	This window is for installing single PSU, please reference InWin compatibility list to select the compatible models.
2	System I/O (Depends on M/B Specifications)	The I/O shield should come with the motherboard.
3	Full-Height PCIe Slot x 18	The slot supports standard high-profile cards. The bracket should be removed before using.
4	Low-Profile PCIe Slot x 7	The slot supports standard low-profile cards. The bracket should be removed before using.

2 Hardware Installation

2.1 Motherboard & Expansion Card Installation

Before installing the motherboard, please find the I/O shield from your motherboard package and install it into the system I/O window. If you cannot find the I/O shield, please check with your motherboard vendor, or contact InWin for I/O shield OEM service.
* A total of 4 riser cables are included for multi-GPU installations.

For a quick installation video, please visit **Motherboard & GPU Installation .**

2.2 SSD Bracket Installation

Up to 2 tool-less SSD brackets can be installed for storage expansion (1 bracket is included), with each bracket supporting up to 2 SSDs.

For a quick installation video, please visit **SSDs Installation.**

2.3 Fan Installation

The IW-RG650A/IW-RG650B's built-in fan modules feature a tool-less design, which makes it easy to maintain.

For a quick installation video, please visit **Fan Installation.**

2.4 Power Supply Installation

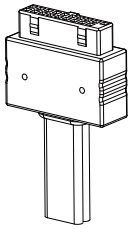
The IW-RG650A/IW-RG650B come with an 80 PLUS® Titanium CRPS 3200W PSU.
* InWin offers additional PSU connectors and PDB customization services for multi-GPU installations exceeding 4 GPUs.

For a quick installation video, please visit **Power Supply Installation.**

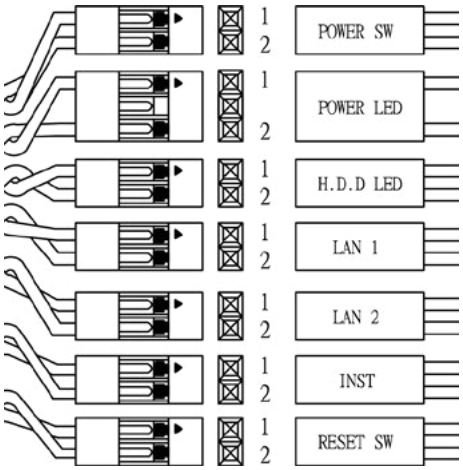
2.5 Connecting Cables

Connecting LED Cable, Front Control Panel

Refer to your motherboard user guide for pin functions and locations, and then plug the connectors to the pins on the motherboard to activate the functions.



•USB3.0



•LED Connector

No.	Connector Name	Abbreviation	Color	Front I/O Indication
P8	Power Switch	POWER SW	White/ Black	Power ON/OFF Button with LED
P7	POWER LED	POWER LED	White/ Purple	Power ON/OFF Button with LED
P6	HDD LED	H.D.D LED	White/ Blue	HDD Active LED
P5	LAN 1 LED	LAN 1	White/ Green	LAN LED
P4	LAN 2 LED	LAN 2	White/ Yellow	LAN LED
P3	INST	INST	White/ Orange	Intrusion Switch
P2	Reset Switch	RESET SW	White/ Red	System Reset Button
	USB 3.0 Connector	None	-	USB 3.0

• If the motherboard's led power source is a 3-pin type, please use the 3-pin to2-pin adapter from the accessories box to connect.

2.6 Slide Rail Installation

The IW-RG650A/IW-RG650B is a rackmount model, which supports EIA-RS310D standard cabinets and chassis racks. InWin provides standard slide rails to allow users to mount the chassis onto the cabinets.

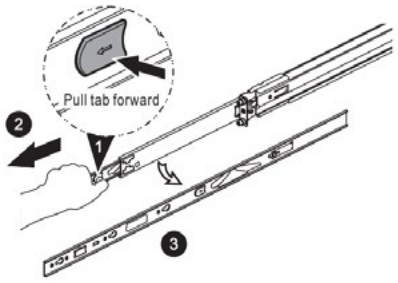
2.6.1 Identifying the Slide Rail

The slide rail by your order might be different. You can reference the quick installation guide inside the slide rail package and follow the instructions to mount the rail onto your cabinet or chassis rack.

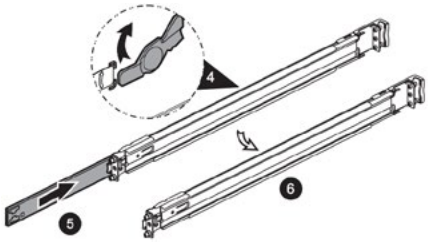
2.6.2 Removing the Inner Rail and Sliding the Intermediate Rail Back

Step 1: Pull out the inner rail until it reaches the stop. Release the blue slide tab to unlock.
Step 2: Continue pulling the inner rail until the second stops. Release the white slide tab to remove the inner rail.
Step 3: Pull the latch on the middle rail upward and retract the middle rail back.

Step 1 - 2



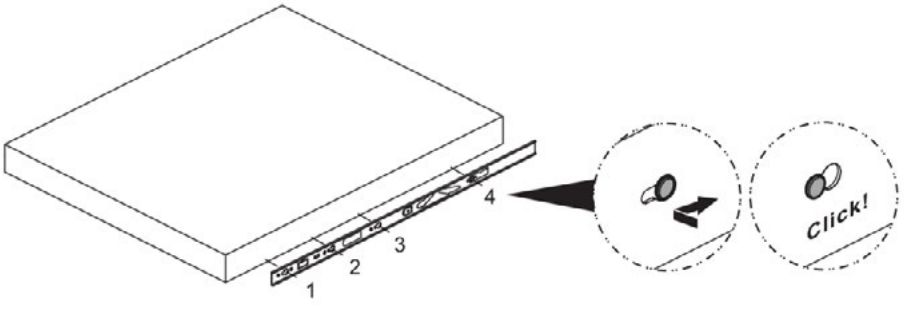
Step 3



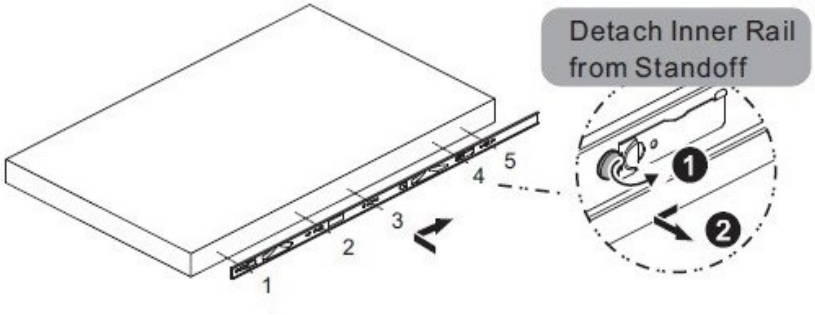
2.6.3 Attaching the Inner Rail to the Chassis

Step 1: Align the chassis sidewall standoffs to the inner rail keyholes. Slide the inner rail toward the front until the standoffs snap into place, securing the rail to the chassis.
Step 2: Repeat the same action on the other side.
Step 3: When removing the inner rail: Pull up the latch and slide the inner rail forward. Remove the keyhole from the standoff to detach the inner rail. (Action ❶and ❷ in the figure)

Step 1 - 2



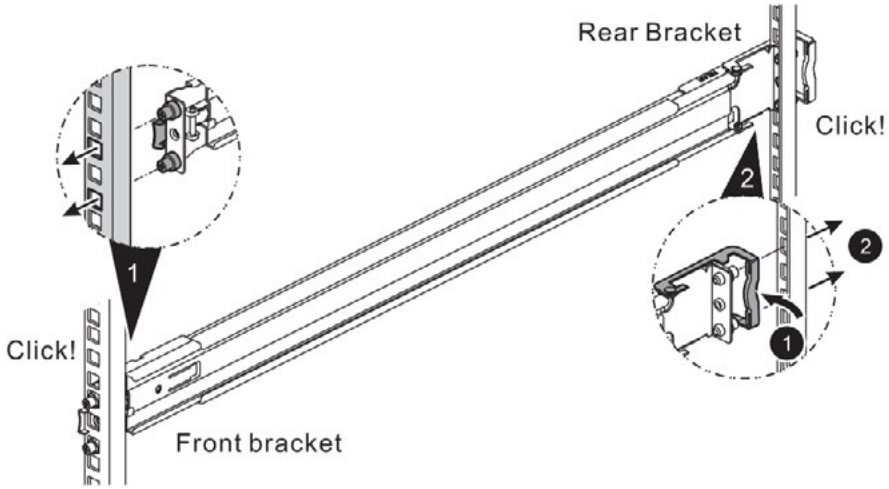
Step 3



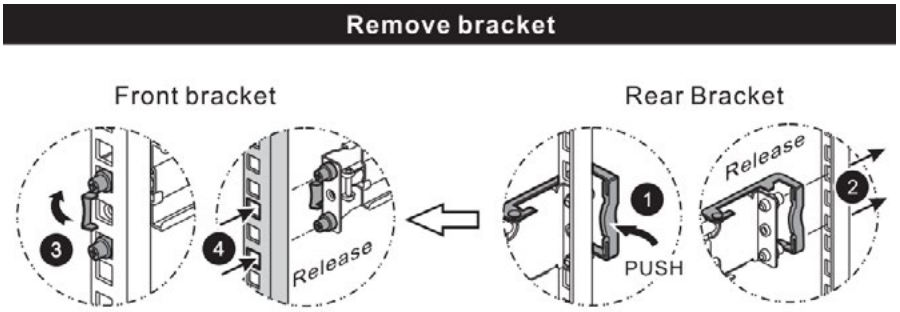
2.6.4 Mounting the Rail Bracket to the Cabinet

Step 1: Extend the rail bracket over the rear rack of the cabinet.
Step 2: Pull out the rear hook on the end of the outer rail, align and push the rail bracket pins into the post holes on the rack. Then, pull back the hook on the end of the outer rail.
Step 3: Extend the opposite side of the rail bracket to the front rack of the cabinet.
Step 4: Hang the front hooks of the outer rail at the front of the rack post holes. Pull the rail bracket pins that go into the front post holes on the rack until they click.
Step 5: The other side is the same process. Repeat the installation steps 1-4.
Step 6: Once you would like to detach the bracket, pull outward on the front and the rear hooks of the outer rail to release the bracket. Repeat the same action to the other side.

Step 1 - 5

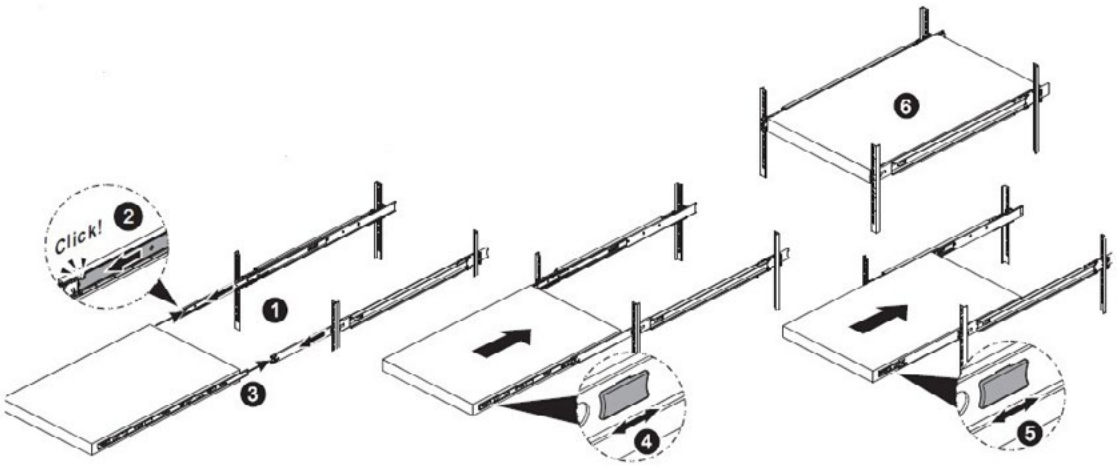


Step 6



2.6.5 Inserting the Chassis to the Cabinet

Step 1: Pull out the middle rail to the stop position.
Step 2: Move the ball bearing retainer to the front end of the middle rail, and it should click into the locked position.
Step 3: Insert the inner rails of the chassis into the middle rails on both sides of the rack.
Step 4: Push the chassis to the stop position, and then release the blue slide tab (by either pulling the tab forward or pushing the tab back) to continue.
Step 5: Until reaching the second stop position, release the blue slide tab again to continue.
Step 6: Push the chassis into position on the rack completely. Make sure that the front end of the chassis is aligned with the edge of the rack to complete the installation.



3 Compatibility Lists

To reach the best performance and avoid system failure, InWin strongly recommends customers to choose the components from InWin's compatibility list. All the components are tested in InWin's lab, and assured the components are compatible with InWin's chassis. You can download the latest updated device compatibility list from InWin's website:ipc.in-win.com.

4 Technical Support

If you need help with installation or troubleshooting, you can contact your local InWin reps, or send an e-mail to InWin's local contacts for technical assistance.

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