

GIGABYTE™

DO22-ST0

ORV3 Rack - 420U 48V

User Manual

Rev. 1.0

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Documentation Classifications

In order to assist in the use of this product, Giga Computing provides the following types of documentation:

- User Manual: detailed information & steps about the installation, configuration and use of this product (e.g. motherboard, server barebones), covering hardware and BIOS.
- User Guide: detailed information about the installation & use of an add-on hardware or software component (e.g. BMC firmware, rail-kit) compatible with this product.
- Quick Installation Guide: a short guide with visual diagrams that you can reference easily for installation purposes of this product (e.g. motherboard, server barebones).

Please see the support section of the online product page to check the current availability of these documents.

For More Information

For related product specifications, the latest firmware and software, and other information please visit our website at <http://www.gigabyte.com/Enterprise>

For GIGABYTE distributors and resellers, additional sales & marketing materials are available from our reseller portal: <http://reseller.b2b.gigabyte.com>

For further technical assistance, please contact your GIGABYTE representative or visit <https://support.gigabyte.com/> to create a new support ticket

For any general sales or marketing enquiries, you may also message GIGABYTE server directly by email: server.grp@gigabyte.com

Conventions

The following conventions are used in this user's guide:

	NOTE! Pieces of additional information related to the current topic.
	CAUTION! Precautionary measures to avoid possible hardware or software problems.
	WARNING! Alerts to any damage that might result from doing or not doing specific actions.

Server Warnings and Cautions

Before installing a server, be sure that you understand the following warnings and cautions.



WARNING!

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.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.



WARNING!

To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.



WARNING!

This server is equipped with high speed fans. Keep away from hazardous moving fan blades during servicing.



CAUTION!

- Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.
- Danger of explosion if battery is incorrectly replaced.
- Replace battery with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.



CAUTION!

Risk of explosion if battery is replaced incorrectly or with an incorrect type. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



Electrostatic Discharge (ESD)

CAUTION!

ESD CAN DAMAGE DRIVES, BOARDS, AND OTHER PARTS. WE RECOMMEND THAT YOU PERFORM ALL PROCEDURES AT AN ESD WORKSTATION. IF ONE IS NOT AVAILABLE, PROVIDE SOME ESD PROTECTION BY WEARING AN ANTI-STATIC WRIST STRAP ATTACHED TO CHASSIS GROUND -- ANY UNPAINTED METAL SURFACE -- ON YOUR SERVER WHEN HANDLING PARTS.

Always handle boards carefully, they can be extremely sensitive to ESD. Hold boards only by their edges without touching any components or connectors. After removing a board from its protective ESD bag or from the system, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the ESD bag. Do not slide the board over any surface.

System power on/off: To service components within the server, please ensure the power has been disconnected.

e.g. Remove the node from the server chassis (to disconnect power) or disconnect the power from the server chassis.

Make sure the system is removed from the rack before opening the chassis, adding, or removing any non hot-plug components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the system chassis and disconnect the cables attached to the system before servicing the chassis. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface on the server) when handling parts.

ESD and handling boards: Always handle boards carefully. They can be extremely sensitive to electrostatic discharge (ESD). Hold boards only by their edges. After removing a board from its protective wrapper or from the system, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that can be gripped with fingertips or with a pair of fine needle nosed pliers. If the jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool used to remove a jumper, or the pins on the board may bend or break.

Table of Contents

Chapter 1 JBOD Hardware	8
1-1 Installation Precautions	8
1-2 Product Specifications	9
Chapter 2 Rack System Appearance	10
2-1 System Front View	10
2-2 System Rear View	11
2-3 Management LAN Module LEDs	12
2-4 Power Supply Module LEDs	13
Chapter 3 Rack System Hardware Installation	14
3-1 Replacing the Power Supplies	14
3-1-1 Replacing the Power Supplies	14
3-1-2 Replacing the Power Shelf	15
3-1-3 Replacing the LAN Switch Tray	16
3-2 Cable Routing	17
3-2-1 Power Shelf to Data LAN Switch Cable Routing	17
3-2-2 Power Shelf to AC supply 3-phase Connector Cable Routing	18
3-2-3 LAN Cable Routing	19

Chapter 1 JBOD Hardware

1-1 Installation Precautions

The motherboard/system contain numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the service guide and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications



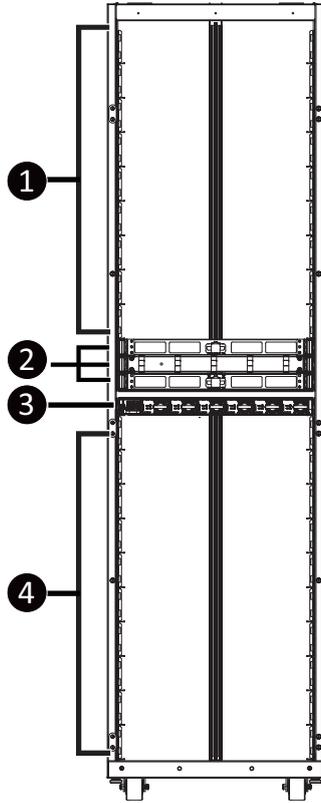
NOTE:

We reserve the right to make any changes to the product specifications and product-related information without prior notice.

 System Dimension	◆ 600 (W) x 2223 (H) x 1068 (D) mm
 Open Rack Version	◆ ORV3
 No. of Bus Bars	◆ 1 Bus Bar with 48V
 Total Capacity	◆ 42OU
 Power Shelf	◆ (Qty / Max. Watts / Location) ◆ 1 set (1OU) / 15 kW (N+1) redundancy / at 21st OU Supports up to 30kW with an additional power shelf
 Switch Tray	◆ 3 sets (1OU) / at 22nd, 23rd & 24th OU
 Available Node Space	◆ 18OU + 20OU

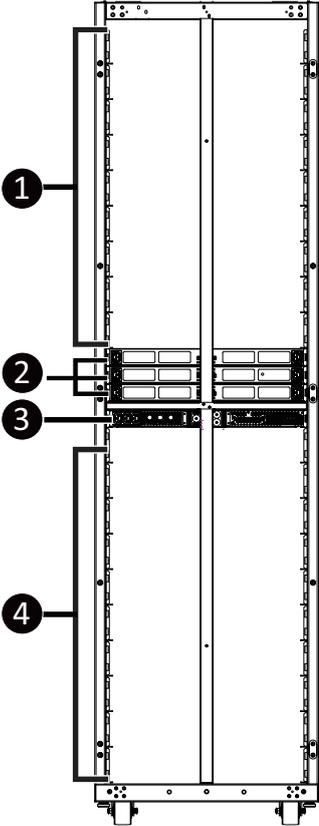
Chapter 2 Rack System Appearance

2-1 System Front View



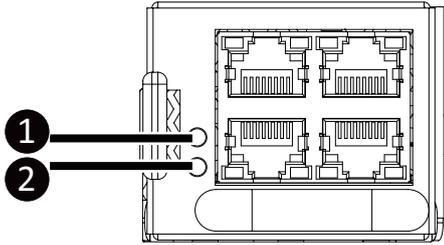
No.	Decription
1.	Upper Half Rack (18 Units / 25U-42U)
2.	Data LAN Switch (22U/23U/24U)
3.	Power Shelf with Power Supply Modules x 6 (21U)
4.	Lower Half Rack (20 Units / 1U-20U)

2-2 System Rear View



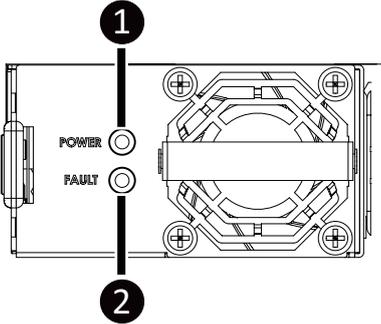
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4.	Lower Half Rack (20 Units / 1U-20U)

2-3 Management LAN Module LEDs



No.	Name	Color	Description
1	Power LED	Green	The power status of PMC. When PMC power up, it shall turn on; when system gets ready, it shall blink.
2.	Alert LED	Red	When warning or fault happens, it shall blink.
--	Identify LED	Green/Red Alternative	When find the location of PMC, these four led shall blink. Keep on when reset PMC or update PMC firmware.

2-4 Power Supply Module LEDs



Status	LED 1 Green Color (POWER)	LED 2 RED Color (FAULT)
AC_LOSS	Off	ON
PSU fails event	Off	Solid RED
Output 50V is ON	Solid Green	Off
PSON OFF (PSU is ready on)	Blinking Green @ 2Hz	Off
Bootloading	Off	Blinking RED@ 2Hz

Chapter 3 Rack System Hardware Installation



Pre-installation Instructions

Perform the steps below before you open the server or before you remove or replace any component.

- Back up all important system and data files before performing any hardware configuration.
- Turn off the system and all the peripherals connected to it.

3-1 Replacing the Power Supplies



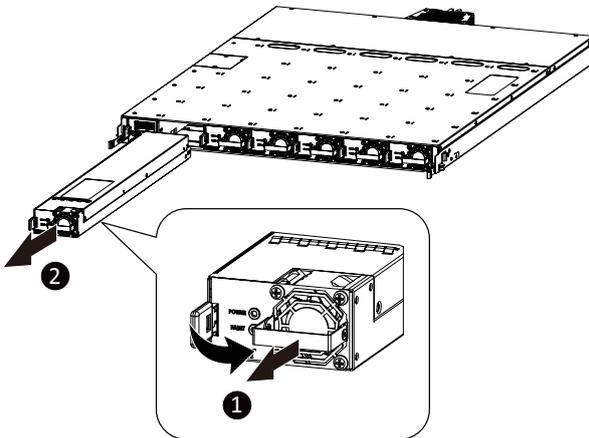
CAUTION!

- In order to reduce the risk of injury from electric shock, disconnect AC power from the power shelf before removing it from the system.

3-1-1 Replacing the Power Supplies

Follow these instructions to replace the power supplies:

1. Disconnect the grounding cable connecting the power shelf to the rack.
2. Push the power supply latch down and at the same time pull out the power supply by using its handle.

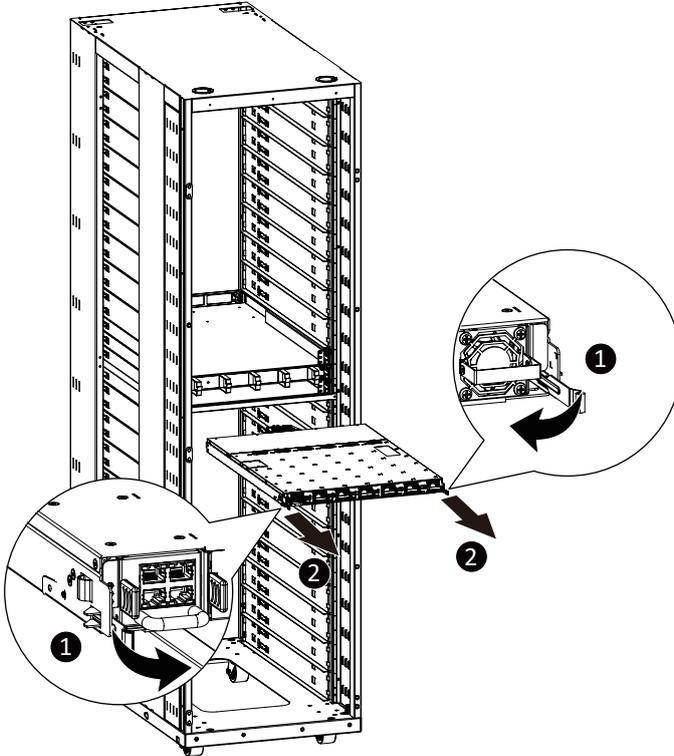


3. To install the power supply, insert the replacement power supply firmly into the chassis.

3-1-2 Replacing the Power Shelf

Follow these instructions to replace the power shelf:

1. Disconnect all power cables.
2. Push the power module latch inwards and pull the power module out of its compartment.

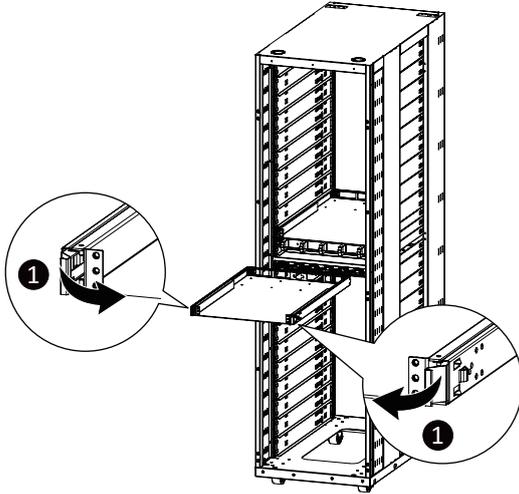


3. Remove all power supply units from the power shelf.

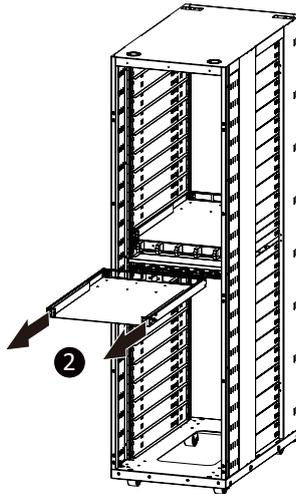
3-1-3 Replacing the LAN Switch Tray

Follow these instructions to replace the lan switch tray:

1. Disconnect all power cables.
2. Push the switch latch inwards and pull the switch tray out of its compartment.

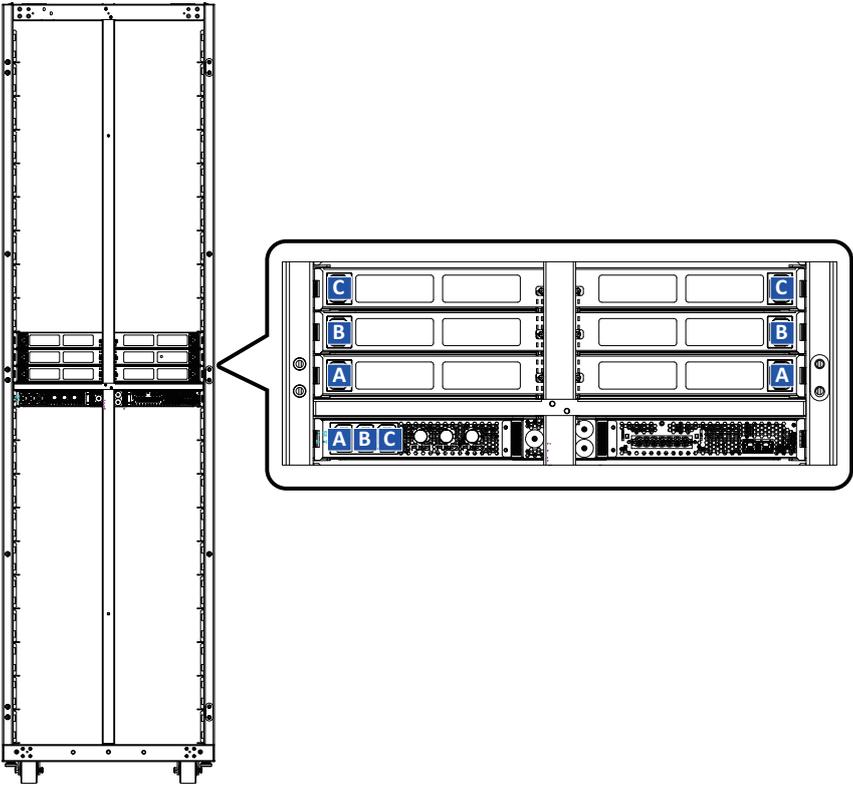


3. Replace a switch tray into the cabinet until it clicks.



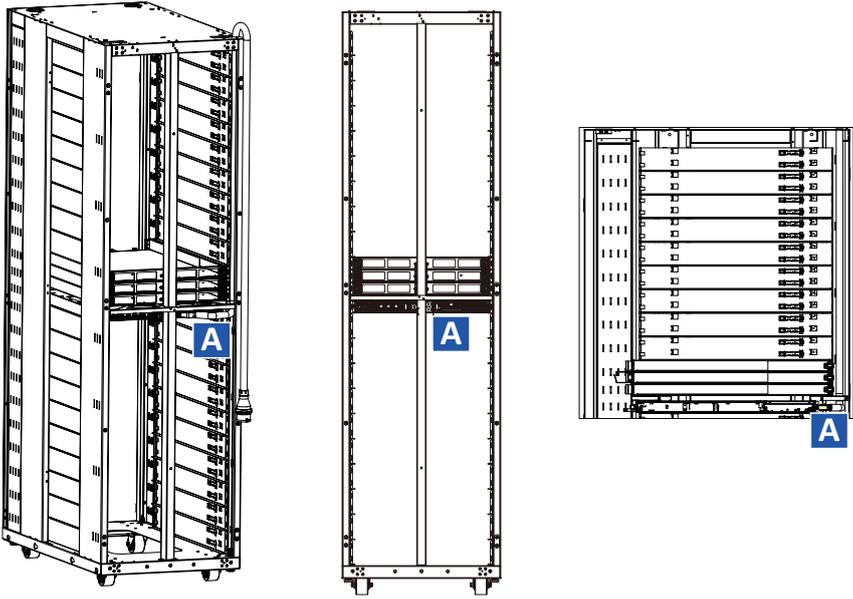
3-2 Cable Routing

3-2-1 Power Shelf to Data LAN Switch Cable Routing Rack Ports (Rear Side)



Item	Connect To
A	LAN Switch (22U) Power Port
B	LAN Switch (23U) Power Port
C	LAN Switch (24U) Power Port

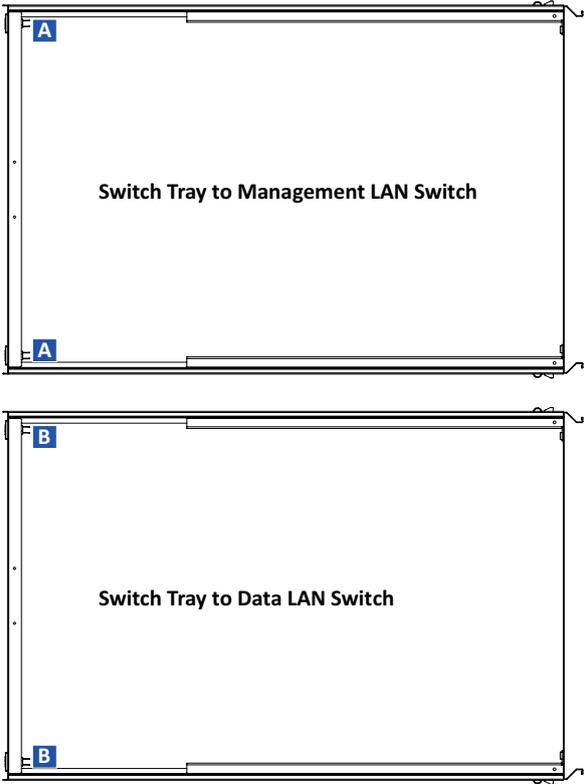
3-2-2 Power Shelf to AC supply 3-phase Connector Cable Routing Rack Ports



Item	Connect To
A AC supply 3-phase Connector	

3-2-3 LAN Cable Routing

Switch Tray Ports



Item	Connect To
A	Management LAN Switch Power Supply Connector
B	Data LAN Switch Power Supply Connector