FS RS7260 Dual Intel Xeon Scalable Processors 2u Rackmount Server User Manual

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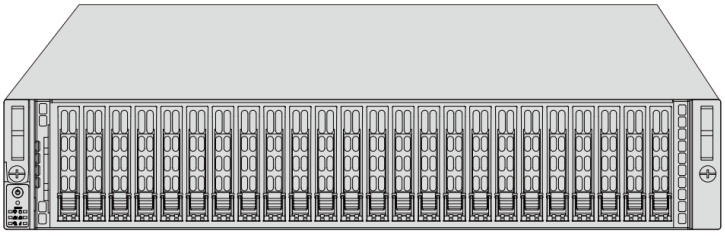
Contents

Introduction

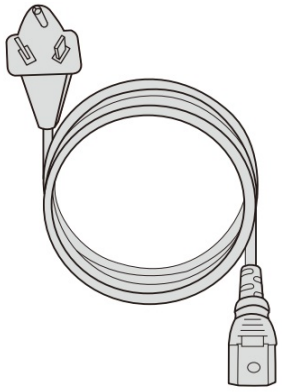
Thank you for choosing RS7260 Rack Server. This guide is designed to familiarize you with the layout of the server and describes how to deploy the server in your network.



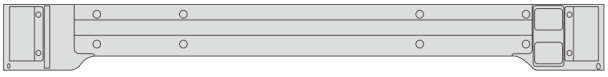
Accessories

RS7260

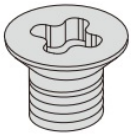
- Power Cable x2



- Rail x2

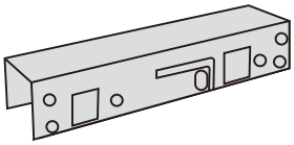


- HDD Screw x32

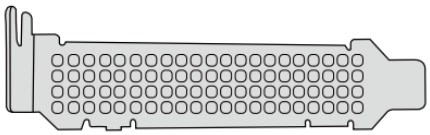


- Rail Screw x18

- Square hole to round hole adapter x2

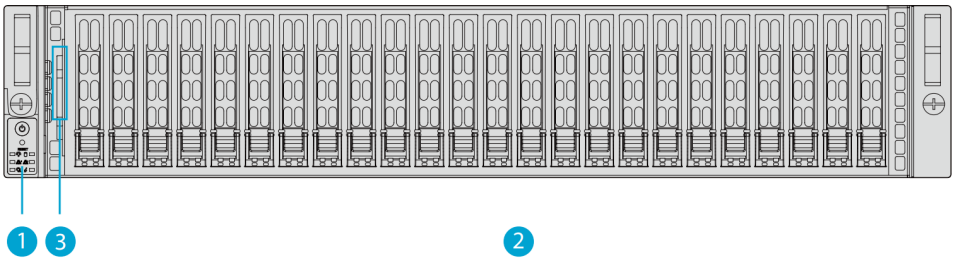


- Baffle x2

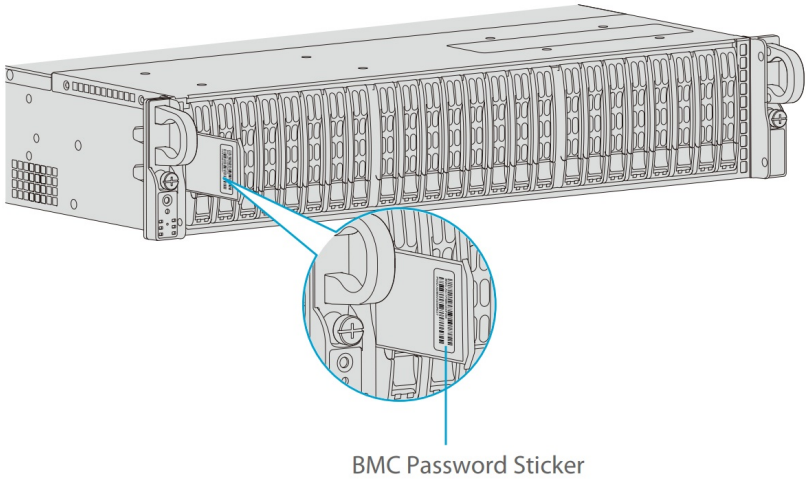


Hardware Overview

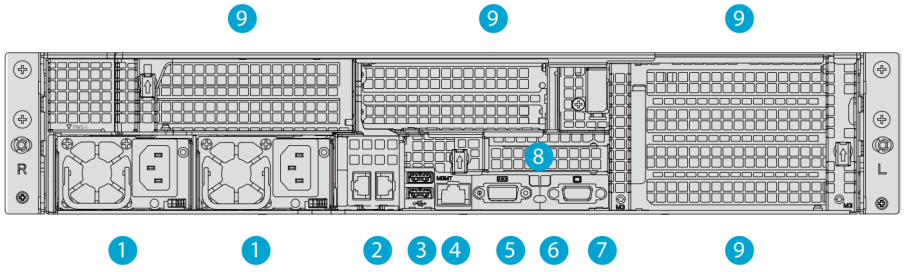
Front View



Features	Description	
1	Control Pane	Power buttons and status indicators
2	Storage Drives	Twenty-fourc 2.5″ drive bays Pull-out identifier (with BMC AD
3	Service/Asset Tag	Pull-out identifier (with BMC ADMIN default password on the side; see figure b elow)



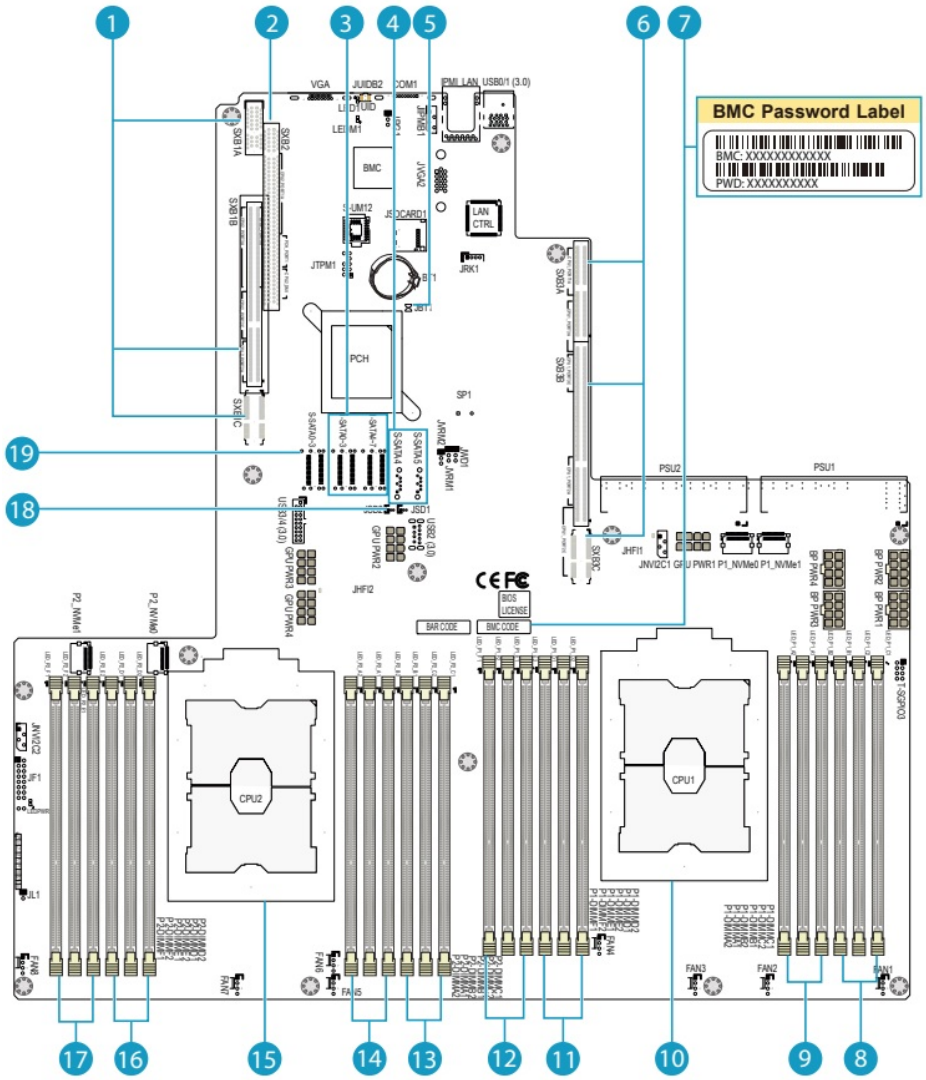
Rear View



Features	Description	
1	Power Supply	Two redundant power supply modules, PWS1 on the left, PWS2 on the right.
2	LAN	Two LAN ports
3	USB	Two USB 3.0 ports
4	IPMI LAN	Dedicated LAN port for IPMI
5	COM	Serial port
6	UID	ID indicator and button to toggle the UID indicators
7	VGA	Video port
8	PCI	One PCI-E low-profile slot
9	PCI	Six PCI-E full-height slots

Motherboard Layout

Below is a layout of the motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions.



No.	Description
1	SXB1A/1B/1C: Proprietary PCI-e Slot used for WIO-Left Devices(supported by CPU2)
2	SXB2: Proprietary PCI-e Slot for WIO-Right Devices (supported by CPU2)
3	I-SATA0~3, I-SATA4~7: SATA 3.0 Ports (Intel PC
4	S-SATA 4, 5: SATA 3.0 Ports (Intel SCU)
5	JBT1: CMOS Clear
6	SXB3A/3B/3C: Proprietary PCI-e Slot for Riser Devices (supportedby CPU1)
7	BMC Password Label
8	P1-DIMMC1(Blue) /P1-DIMMC2 /P1-DIMMB1(Blue) slot
9	P1-DIMMB2 /P1-DIMMA1(Blue) /P1-DIMMA2 slot
10	CPU1 (Install CPU1 first)
11	P1-DIMMD2 /P1-DIMMD1(Blue) /P1-DIMME2 slot
12	P1-DIMME1(Blue) /P1-DIMMF2 /P1-DIMMF1(Blue) slot
13	P2-DIMMC1(Blue) /P2-DIMMC2 /P2-DIMMB1(Blue) slot
14	P2-DIMMB2/P2-DIMMA1(Blue)/P2-DIMMA2 slot
15	CPU2
16	P2-DIMMD2/P2-DIMMD1(Blue)/P2-DIMME2 slot
17	P2-DIMME1(Blue)/P2-DIMMF2/P2-DIMMF1(Blue) slot
18	JSD1/JSD2: SATA DOM (Device_on_Module) Power Connectors
19	S-SATA0~3: SATA 3.0 Ports (Intel SCU)

Installation Requirements

Before you begin the installation, make sure that you have the following:

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- A reliable ground must be maintained at all times.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices.
- Make sure the rack is stable before extending a server or other component from the rack.

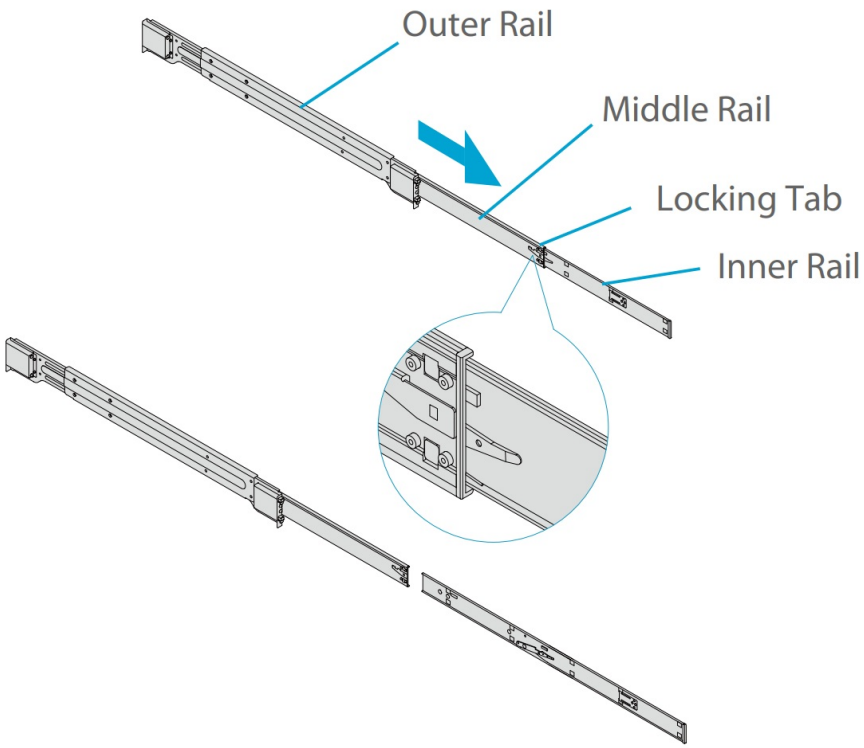
CAUTION: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a work space

Mounting the Server

Installing the Rails

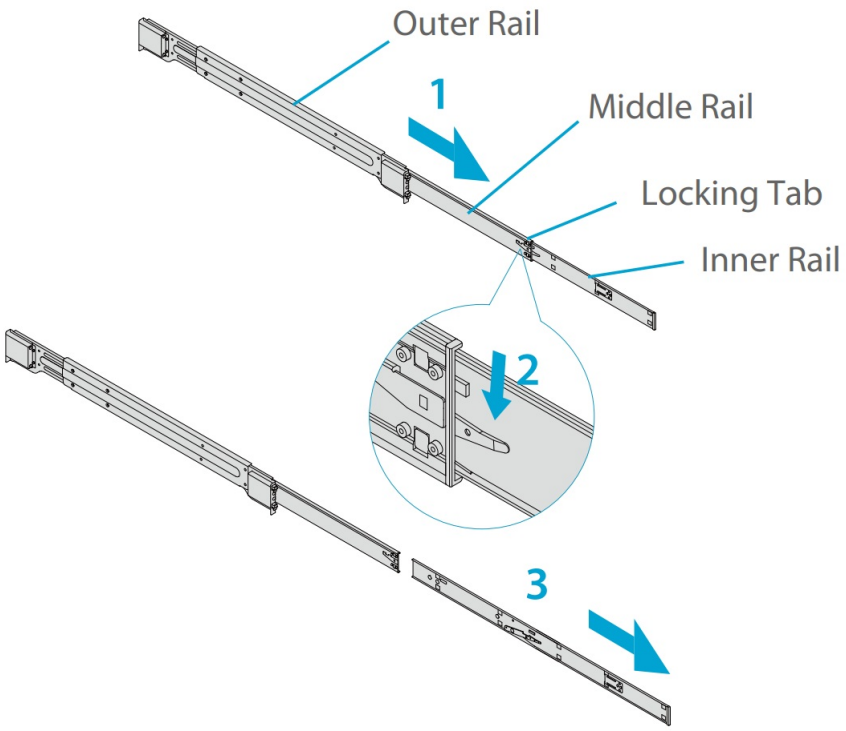
Identifying the Rails



The chassis package includes two rail assemblies. Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis and labeled.

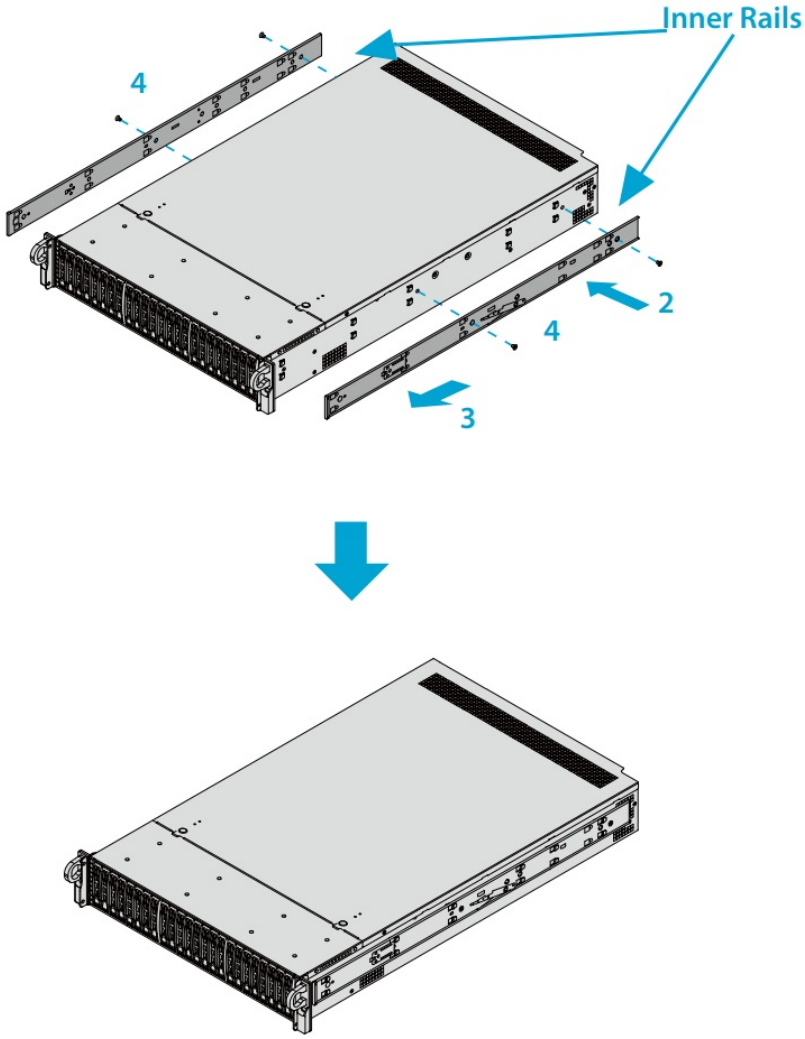
NOTE: Both front chassis rails and the rack rails have a locking tab, which serves two functions. First, it locks the server into place when installed and pushed fully into the rack (its normal operating position). In addition, these tabs lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when pulled out for servicing.

Releasing the Inner Rail



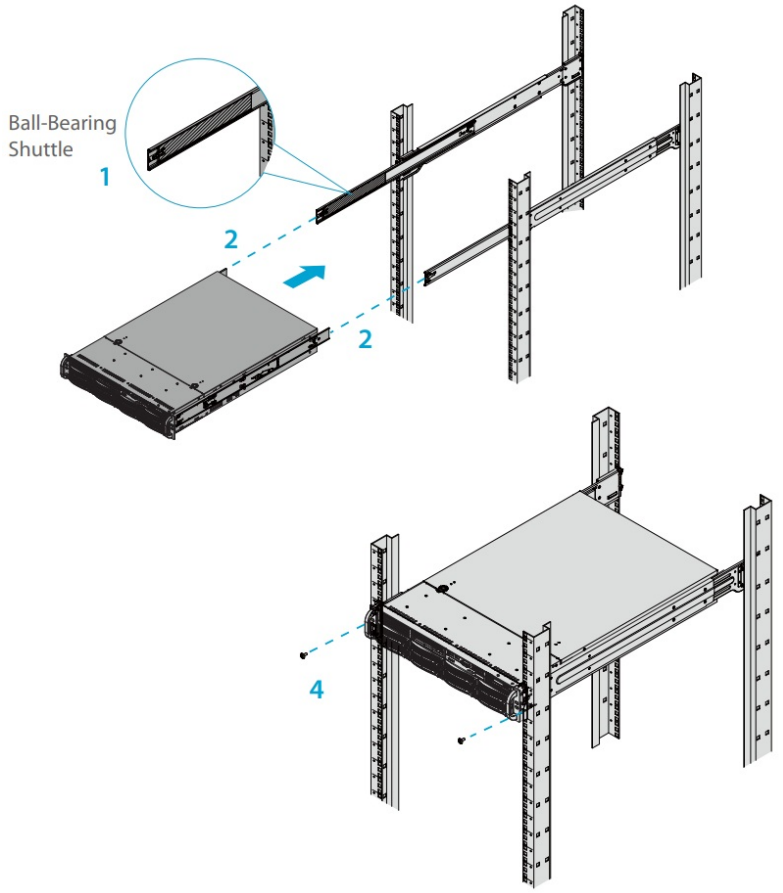
1. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
2. Press the locking tab down to release the inner rail.
3. Pull the inner rail all the way

Installing the Inner Rails



1. Identify the left and right inner rails. They are labeled.
2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail forward toward the front of the chassis until the quick release bracket snaps into place, securing the rail to the chassis.
4. Optionally, you can further secure the inner rail to the chassis with screws

Installing the Chassis into a Rack



1. Extend the outer rails as illustrated.
2. Align the inner rails of the chassis with the outer rails on the rack.
3. Slide the inner rails into the outer rails, keeping the pressure even on both sides. When the chassis has been pushed completely into the rack, it should click into the locked position.
4. Optional screws may be used to hold the front of the chassis to the rack.

NOTE: Keep the ball bearing shuttle locked at the front of the middle rail during installation. Figure is for illustrative purposes only. Always install servers to the bottom of a ra

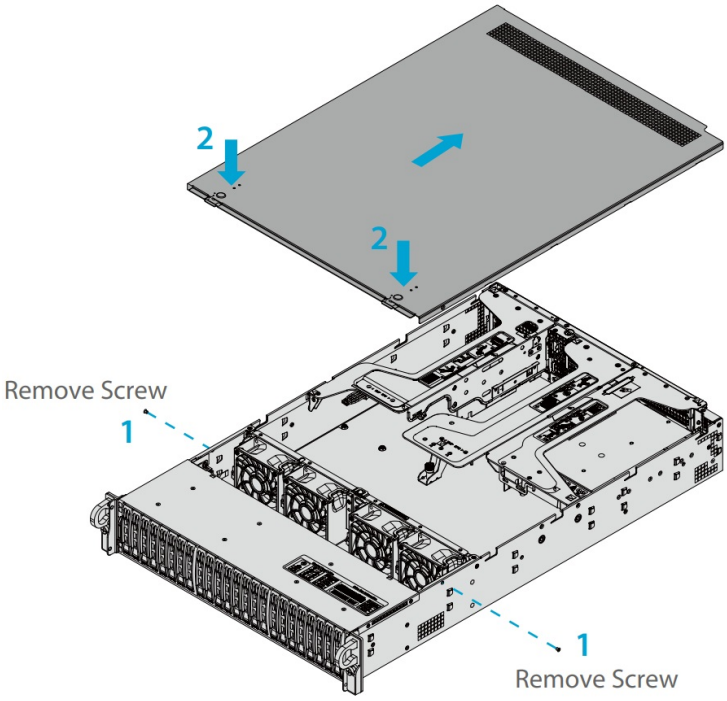
WARNING: Mounting the system into the rack requires at least two people to support the chassis during installation. Please follow safety recommendations printed on the rails.

Removing the Chassis from the Rack

1. Pull the chassis forward out the front of the rack until it stops.
2. Press the release latches on each of the inner rails downward simultaneously and continue to pull the chassis forward and out of the rack.

CAUTION: The system is heavy. It is dangerous for a single person to remove it from the rack. Have sufficient personnel or use a lift to support the chassis.

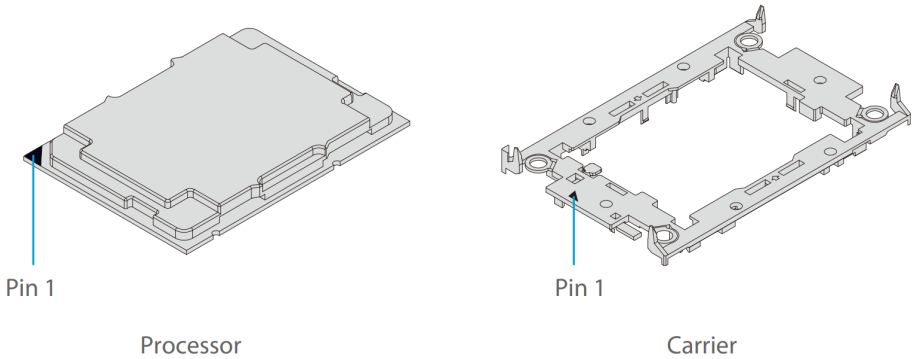
Removing the Top Cover



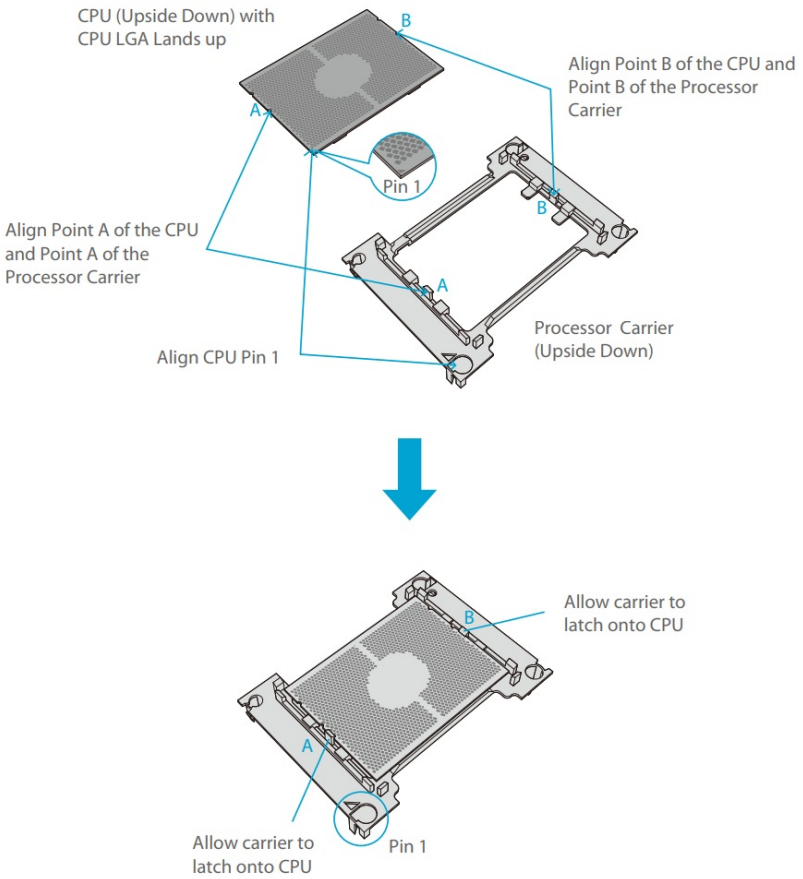
1. Remove the two screws on each side of the cover, which secure the cover to the chassis. These two screws are optional and will not impact functionality if they are not installed.
2. Press the two release buttons and slide the cover toward the rear and lift off.

CAUTION: Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.

Processor Installation



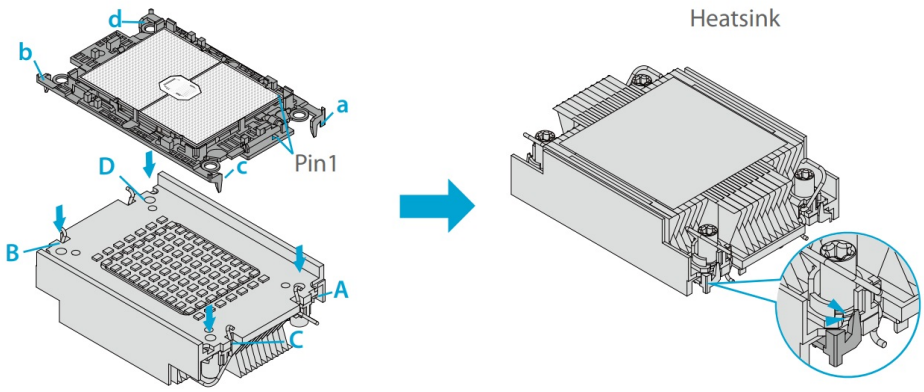
1. Hold the processor with the land grid array (LGA, gold contacts) facing down. Locate the gold triangle at the corner of the processor and the corresponding hollowed triangle on the processor carrier. These triangles indicate the location of pin 1.
2. Using the triangles as a guide, carefully align and place Point A of the processor into Point A of the carrier. Then gently flex the other side of the carrier for the processor to fit into Point B.
3. Examine all corners to ensure that the processor is firmly attached to the carrier.



Heatsink Installation

After creating the processor carrier assembly, mount the heatsink onto the carrier assembly to form the processor heatsink module (PHM).

Processor Carrier Assembly

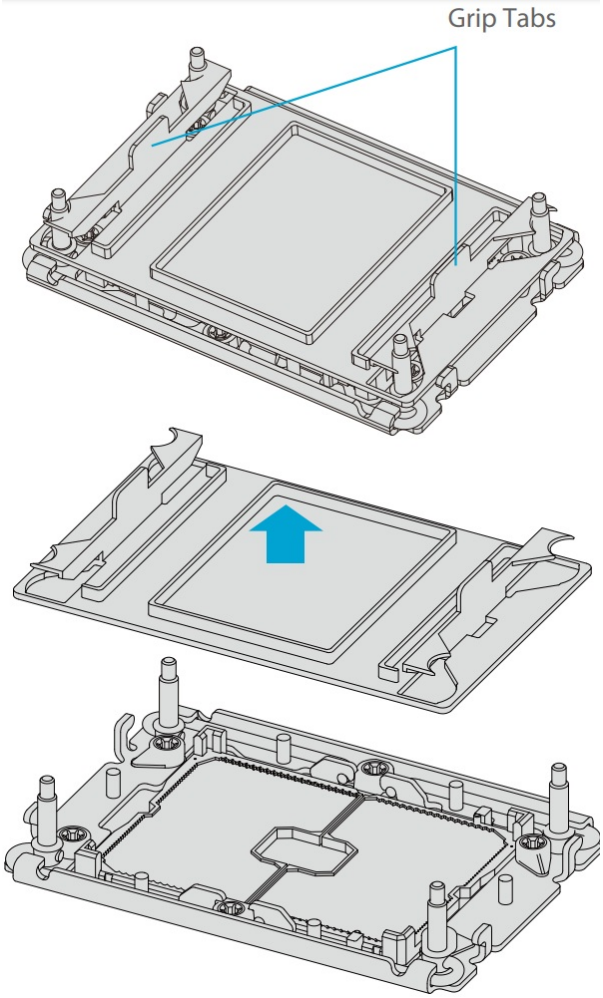


1. Turn the heatsink over with the thermal grease facing up. Note the two triangle cutouts (A, B) located at the diagonal corners of the heatsink.
2. On the processor carrier assembly, find pin 1, as noted by the triangles. Hold the processor carrier assembly over so that the gold LGA is facing up.
3. Align clip “a” (pin 1) on the carrier assembly with the triangular cutout A on the heatsink and b, c, d on the carrier assembly with B, C, D on the heatsink.
4. Push the carrier assembly onto the heatsink, making sure that all four clips on each corner are properly secured.

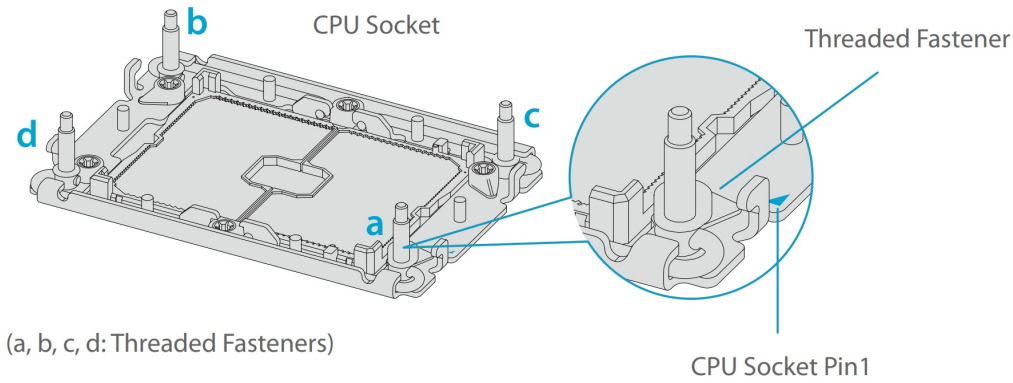
NOTE: If this is a new heatsink, the thermal grease has been pre-applied. Otherwise, apply the proper amount of thermal grease to the underside of the heatsink.

Installing the PHM into the CPU Socke

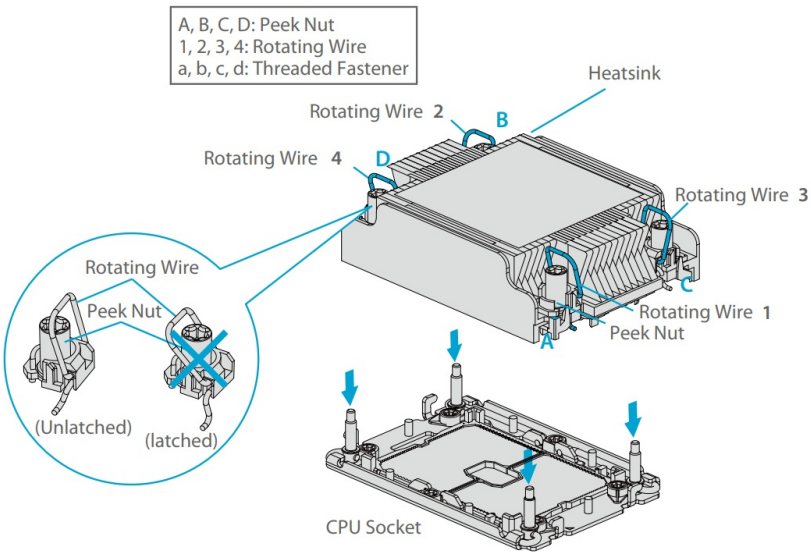
CPU Socket with Plastic Protective Cover



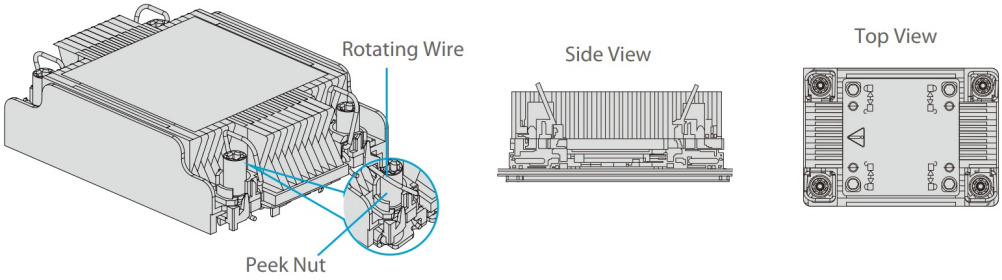
1. Remove the plastic protective cover from the CPU socket. Gently squeeze the grip tabs then pull the cover off.



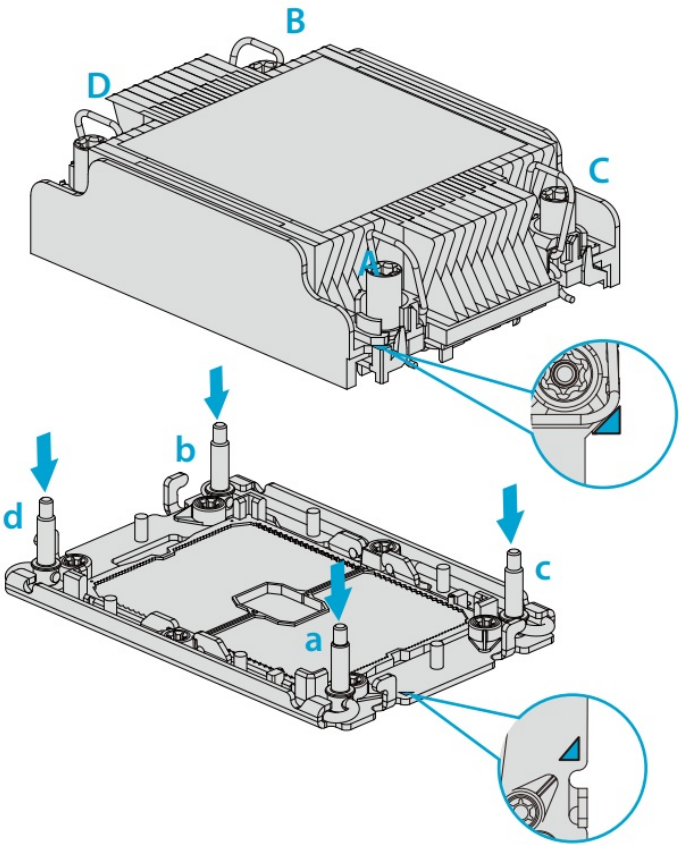
2. Locate four threaded fasteners (a, b, c, d) on the CPU socket.



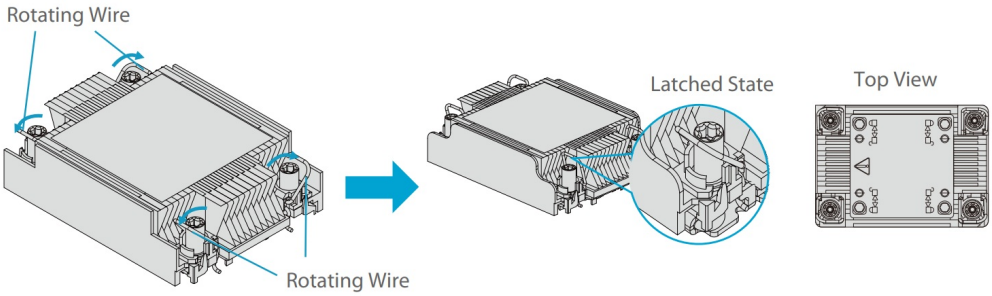
3. Locate four PEEK nuts (A, B, C, D) and four rotating wires (1, 2, 3, 4) on the heatsink.



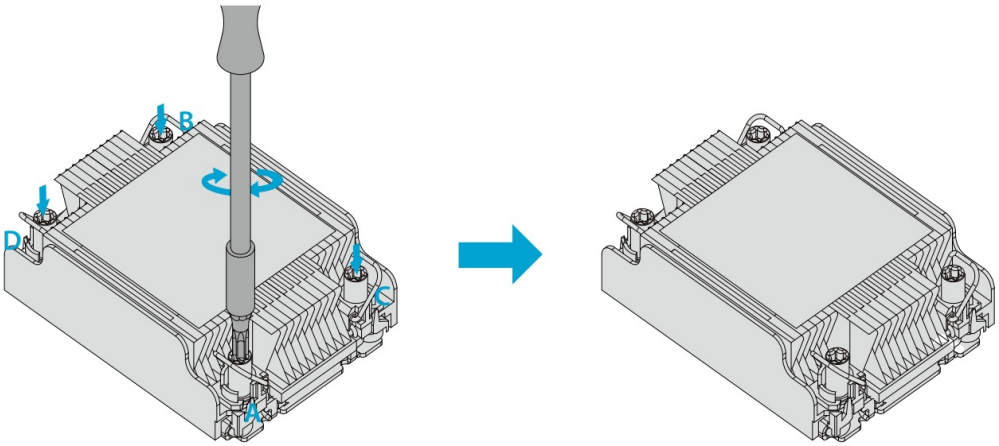
4. Check that the rotating wires (1, 2, 3, 4) are in the unlatched position as shown.



5. Align nut A (next to the triangles and pin 1) on the heatsink with threaded fastener “a” on the CPU socket. Also align nuts B, C, D on the heatsink with threaded fasteners b, c, d on the CPU socket.
6. Gently place the heatsink on the CPU socket, making sure that each nut is properly aligned with its corresponding threaded fastener.



7. Press all four rotating wires outward to latch the PHM onto the CPU s.



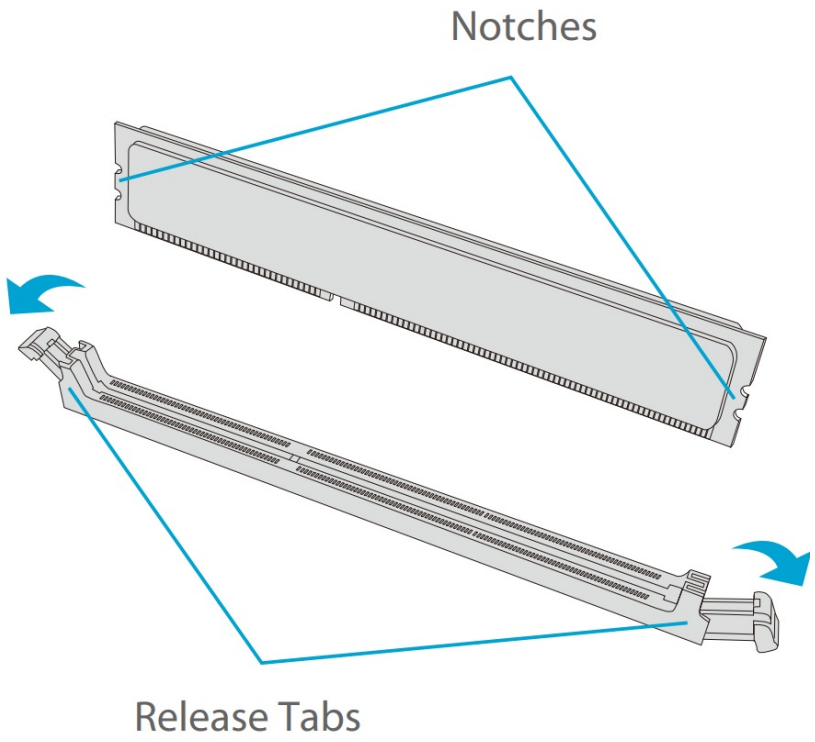
8. With a t30-bit screwdriver, tighten all PEEK nuts in the sequence of A, B, C, and D with even pressure not greater than 12 lbf-in.

Installing Memory

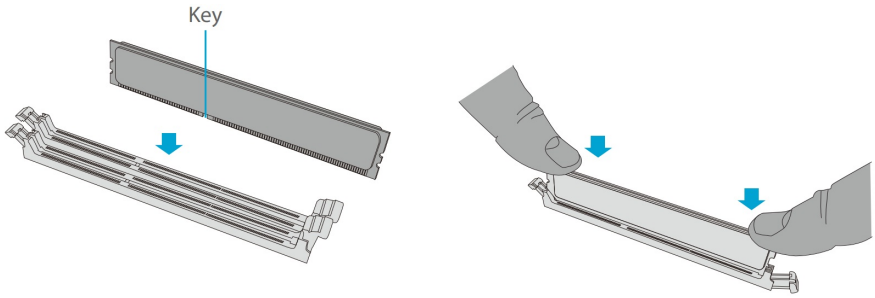
ESD Precautions
Electrostatic Discharge (ESD) can damage electronic components including memory modules. To avoid damaging DIMM modules, it is important to handle them carefully. The following measures are generally sufficient.

- Use a grounded wrist strap designed to prevent static discharge.
- Handle the memory module by its edges only.
- Put the memory modules into the antistatic bags when not in use.

Installing Memory



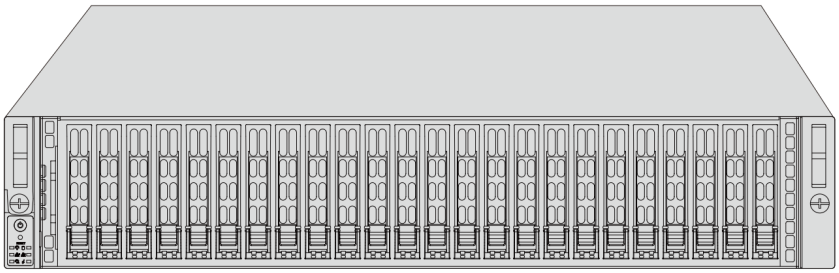
1. Push the release tabs outwards on both ends of the DIMM slot to unlock it.



2. Align the key of the DIMM with the receptive point on the memory slot and with your thumbs on both ends of the module, press it straight down into the slot until the module snaps into place.
3. Press the release tabs to the locked position to secure the DIMM module into the slot.

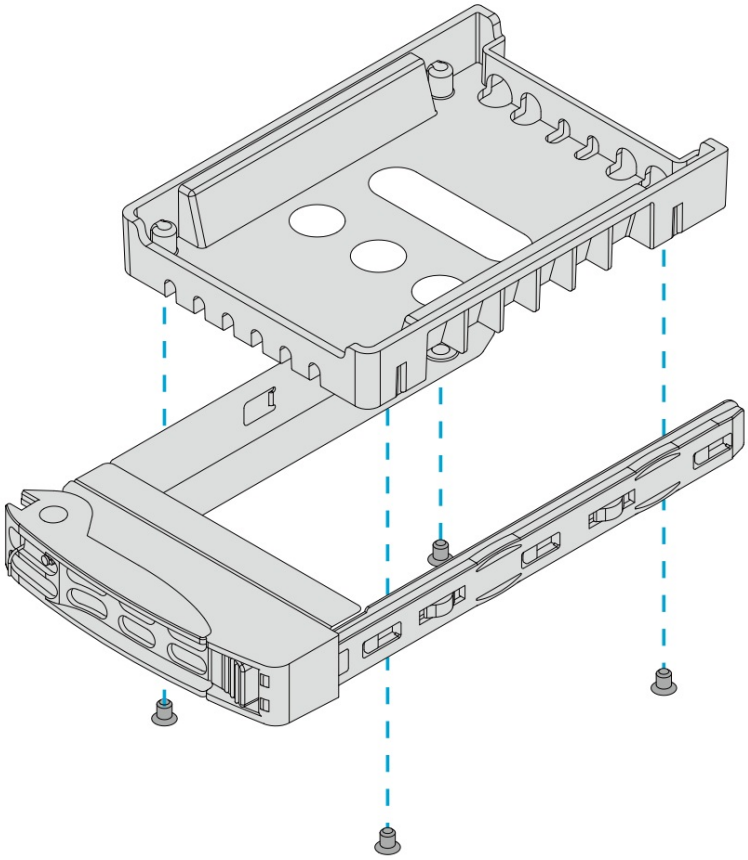
NOTE: Exercise extreme caution when installing or removing memory modules to prevent damage to the DIMMs or slots.

Installing Drives



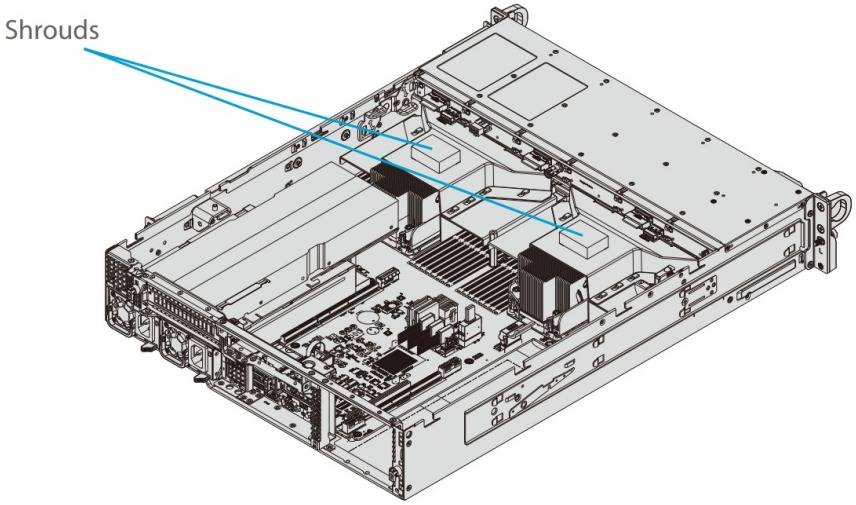
Removing a Hot-Swap Drive Carrier from the Chassis

1. Press the release button on the drive carrier, which will extend the drive carrier handle.
2. Use the drive carrier handle to pull the drive out of the chassis.



3. Remove the dummy drive, which comes pre-installed in the drive carrier, by removing the screws securing the dummy drive to the carrier. These screws are not used to mount the actual hard drive.
4. Insert a drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier. Align the drive in the carrier so that the screw holes line up. Note that there are holes in the carrier marked “SATA” to aid in correct installation.
5. Secure the drive to the carrier with four M3 screws included in the chassis accessory box.
6. Insert the drive carrier with the disk drive into its bay, keeping the carrier oriented so that the hard drive is on the top of the carrier and the release button is on the right side. When the carrier reaches the rear of the bay, the release handle will retract.
7. Push the handle in until it clicks into its locked position.

Installing the Air Shroud



1. Position the air shroud in the chassis as illustrated below.

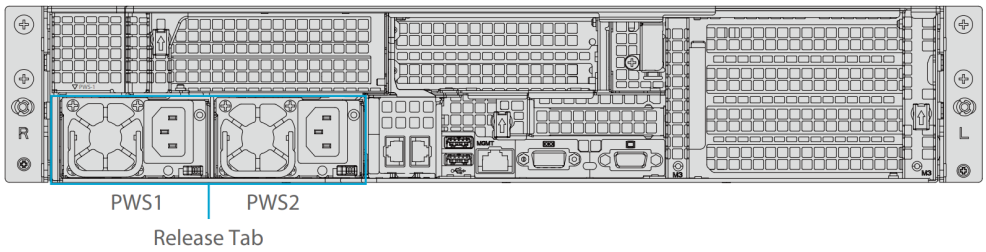
2. Align the notch on the air shroud with the pin on the expansion card bracket.
3. Slide the pin into the back of the notch.
4. Lower the front of the air shroud over the fan tray, sliding the front notches over the pins on the fan tray.

Power Supply

The chassis features redundant power supplies. The system will continue to operate if one module fails. It should be replaced as soon as convenient. The power supply modules are hot-swappable, meaning they can be changed without powering down the system. These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100 120v or 180-240v.

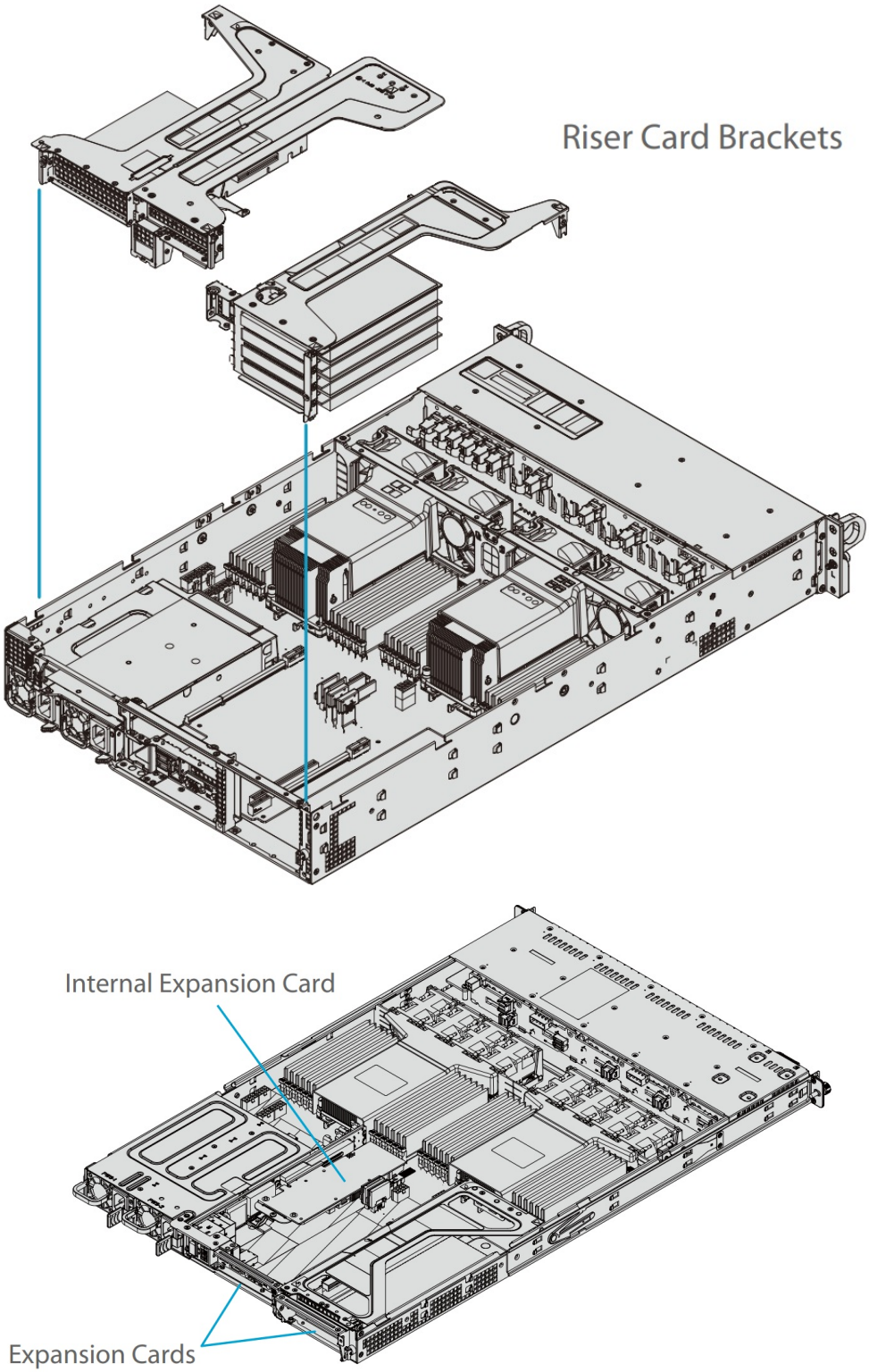
- **Power Supply LEDs**
  On the rear of the power supply module, an LED displays the status.
- Solid Green: When illuminated, indicates that the power supply is on.
- Blinking Green: When blinking, indicates that the power supply is plugged in and turned off by the system.
- Blinking Amber: When blinking, indicates that the power supply has a warning condition and continues to operate.
- Solid Amber: When illuminated, indicates that the power supply is plugged in, and is in an abnormal state. The system might need service. Please contact technical support.

Changing the Power Supply Module:



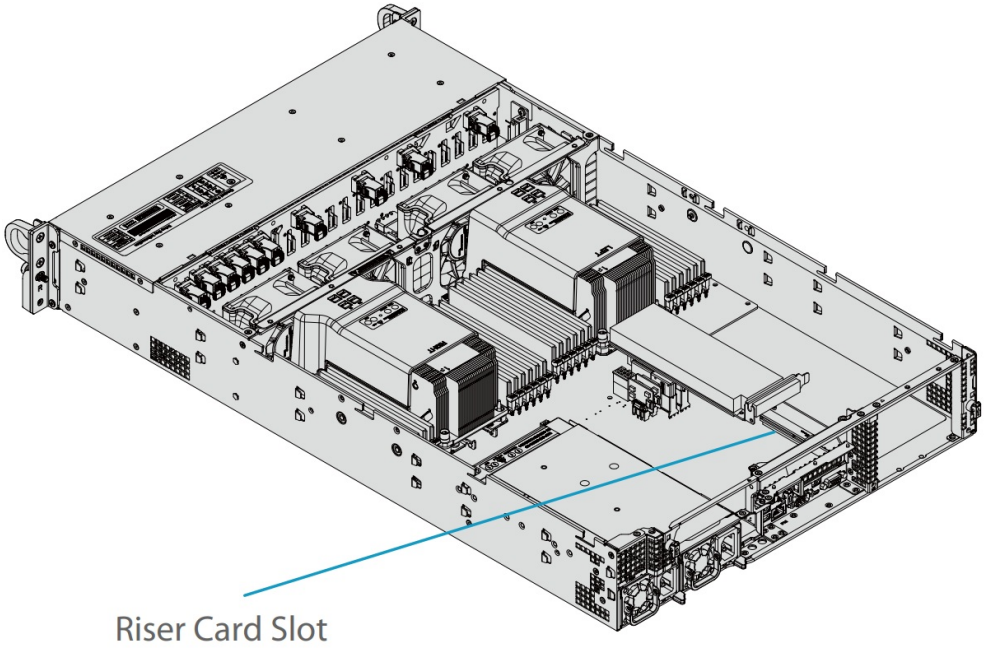
1. Unplug the AC cord from the module to be replaced.
2. On the back of the module, push the release tab sideways, as illustrated.
3. Pull the module out using the handle.
4. Push the new power supply module into the power bay until it clicks. Replace with the same model.
5. Plug the AC power cord back into the module.

Installing a Full Height or GPU Expansion Card



1. Power down the system and remove the top chassis cover.
2. Remove the bracket and sections of the chassis in the rear.
3. If necessary, attach the riser card to the riser card bracket using screws.
4. Insert the expansion card into a slot on the riser card while aligning the expansion card backplate with the open slot in the rear of the chassis.
5. Insert the riser card into the motherboard expansion slot while aligning the riser card bracket with the rear of the chassis.
6. If necessary, connect the GPU power cables to one of the 8-pin power connectors on the motherboard.

Installing the Low Profile Center Expansion Ca

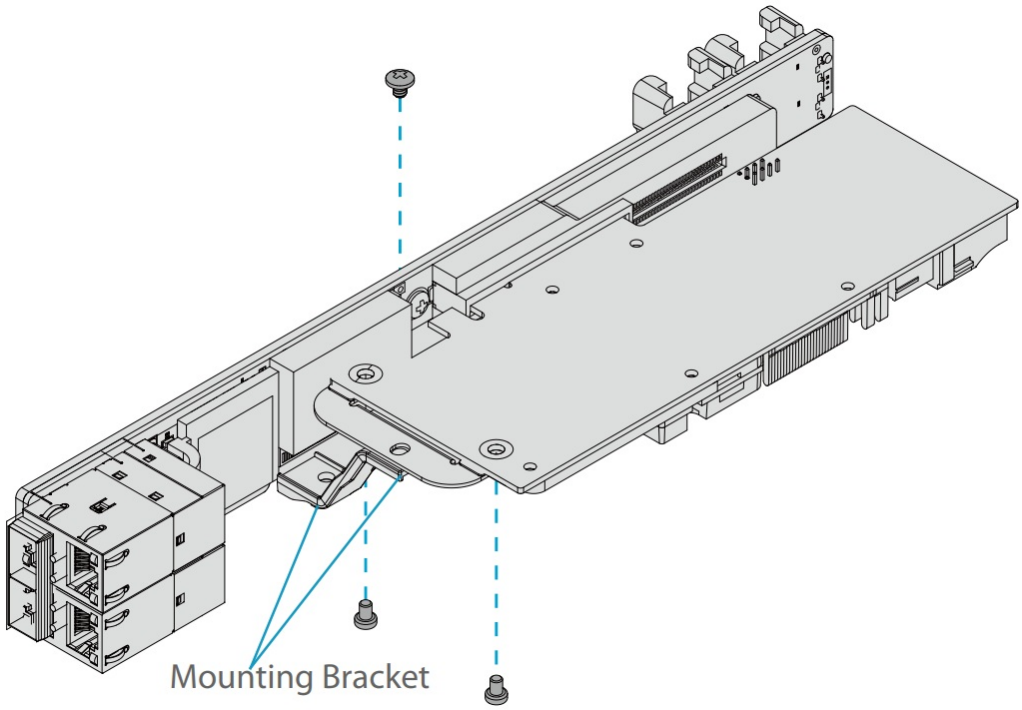


1. Power down the system and remove the top chassis cover.
2. If necessary, remove the full height expansion card to access the low profile riser card slot.
3. Insert the expansion card into the riser card slot while aligning the rear PCI shield into the chassis. Add the screw to secure the PCI shield.
4. Replace the full height expansion card above the low profile card if necessary, then replace the chassis cover.

Installing the Internal Expansion Card

1. Power down the system and remove the top chassis cover.
2. If necessary, remove the full height expansion card to access the low profile riser card slot.
3. Insert the expansion card into the riser card slot while aligning the rear PCI shield into the chassis. Add the screw to secure the PCI shield.
4. Replace the full height expansion card above the low profile card if necessary, then replace the chassis cover.

Installing the Internal Expansion Card



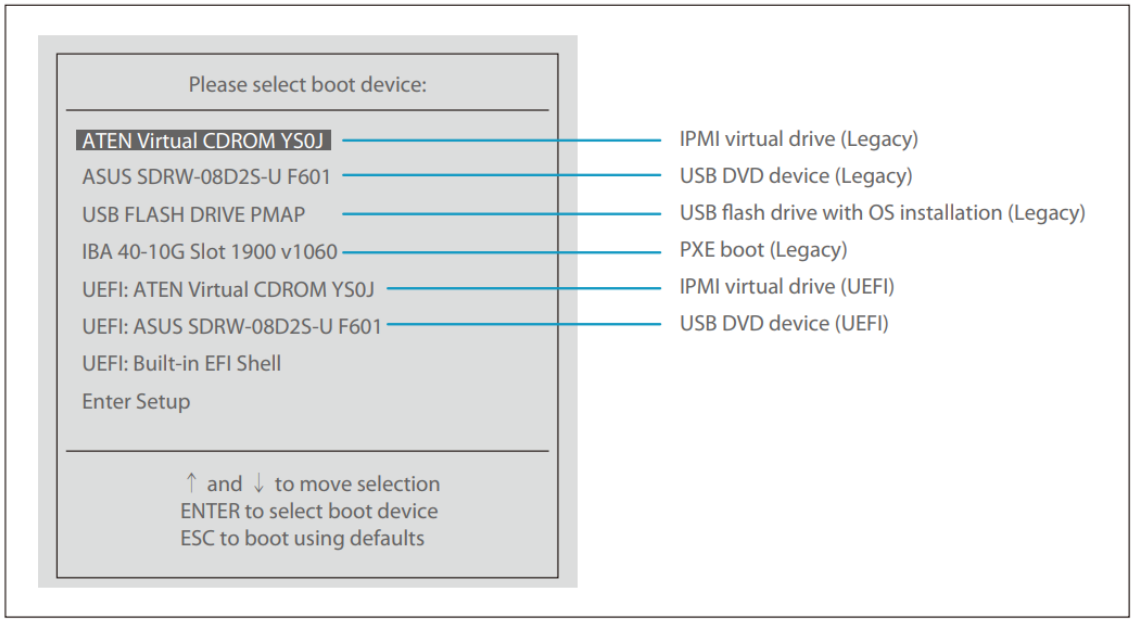
1. Remove the cover.
2. Locate the mounting bracket in the accessories box. Mount the bracket to hold the SAS expansion card onto the riser card.
3. Insert the SAS card into the expansion slot on the riser card and secure it to the bracket.

Software

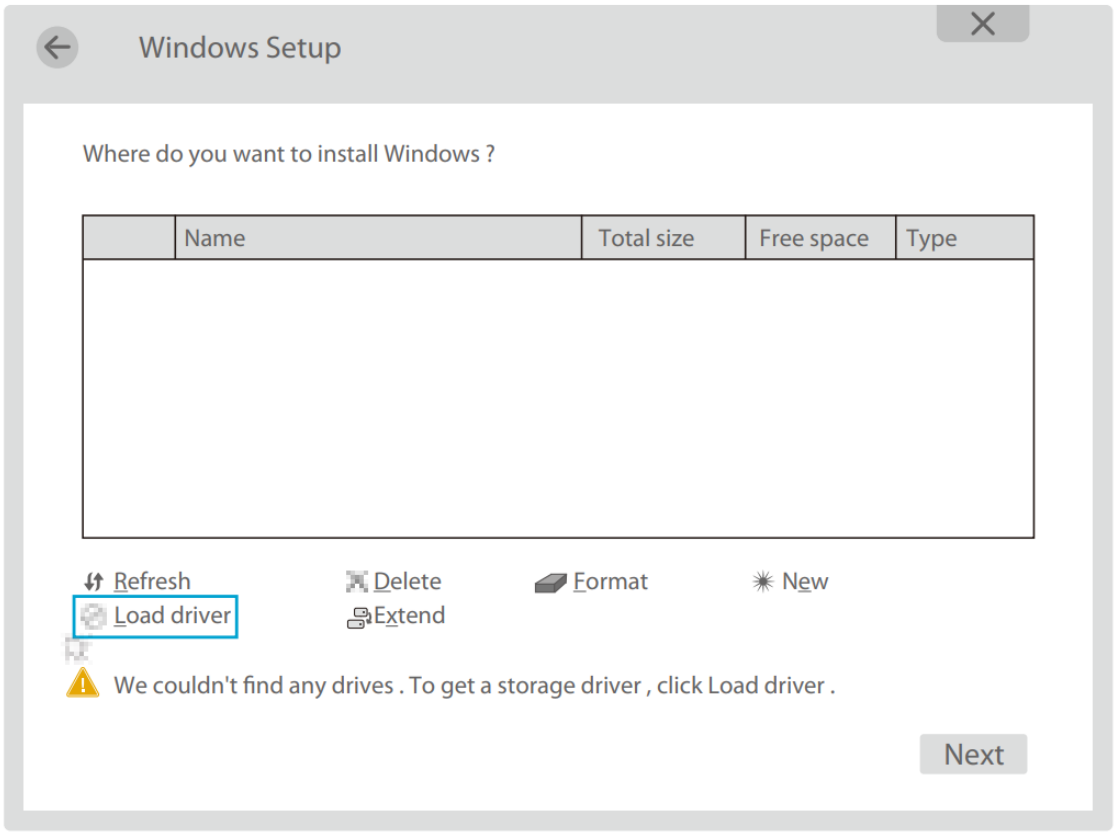
After the hardware has been installed, you can install the Operating System (OS), configure RAID settings and install the drivers.

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the IPMI KVM console.
2. Retrieve the proper RST/RSTe driver. Go to the web page for your motherboard and click on “Download the Latest Drivers and Utilities”, select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing F11 during the system startup.



4. During Windows Setup, continue to the dialog where you select the drives on which to install Windows. If the disk you want to use is not listed, click on “Load driver” link at the bottom left corner.}



To load the driver, browse the USB flash drive for the proper driver files.

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.
- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

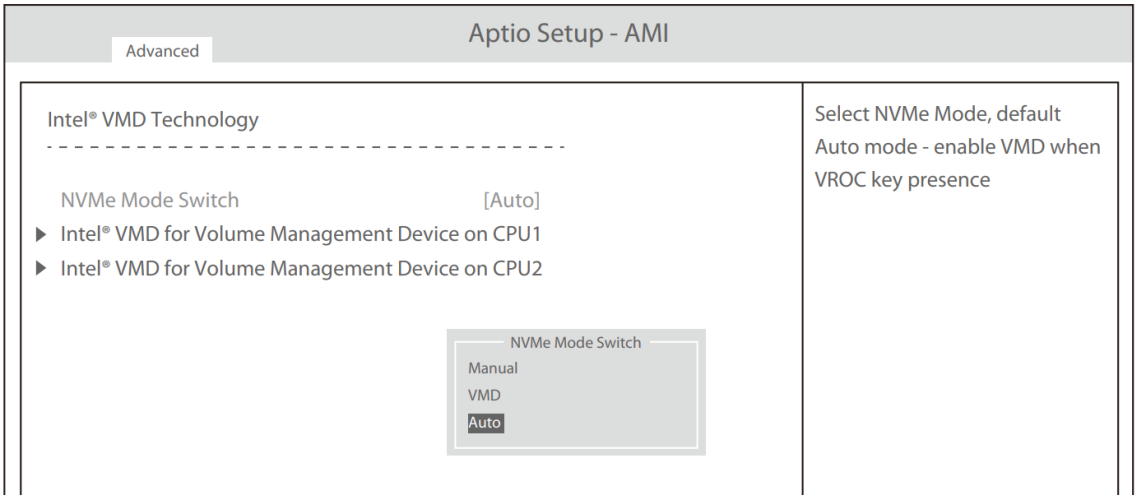
5. Once all devices are specified, continue with the installation.
6. After the Windows OS installation has completed, the system will automatically reboot multiple times.

Configuring the Rack Server

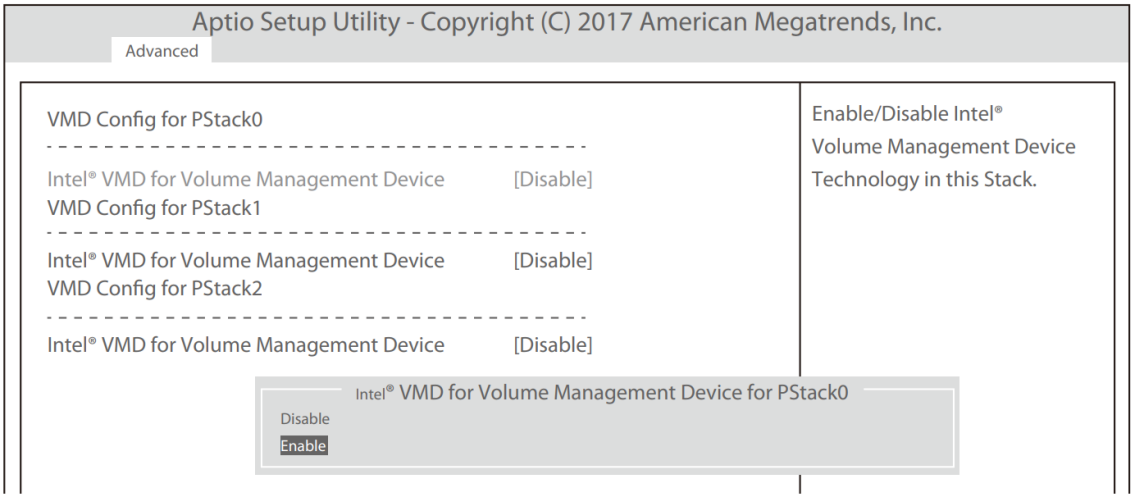
Configuring NVMe RAID Manually

RAID for NVMe SSDs is enabled by default when Intel VROC Raid Key is populated. It may be managed manually through the UEFI BIOS.

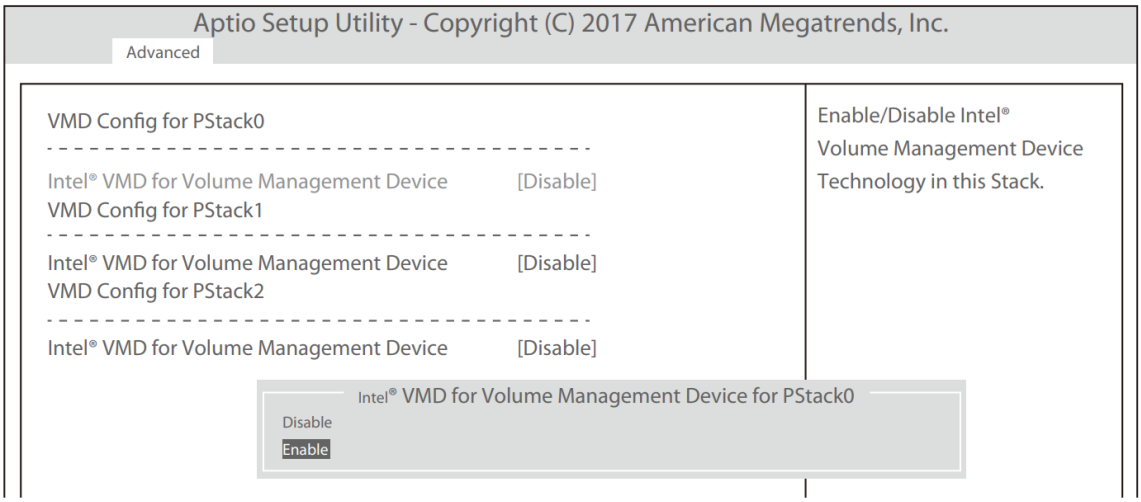
1. Reboot the server and press [DEL] key to access the BIOS options.



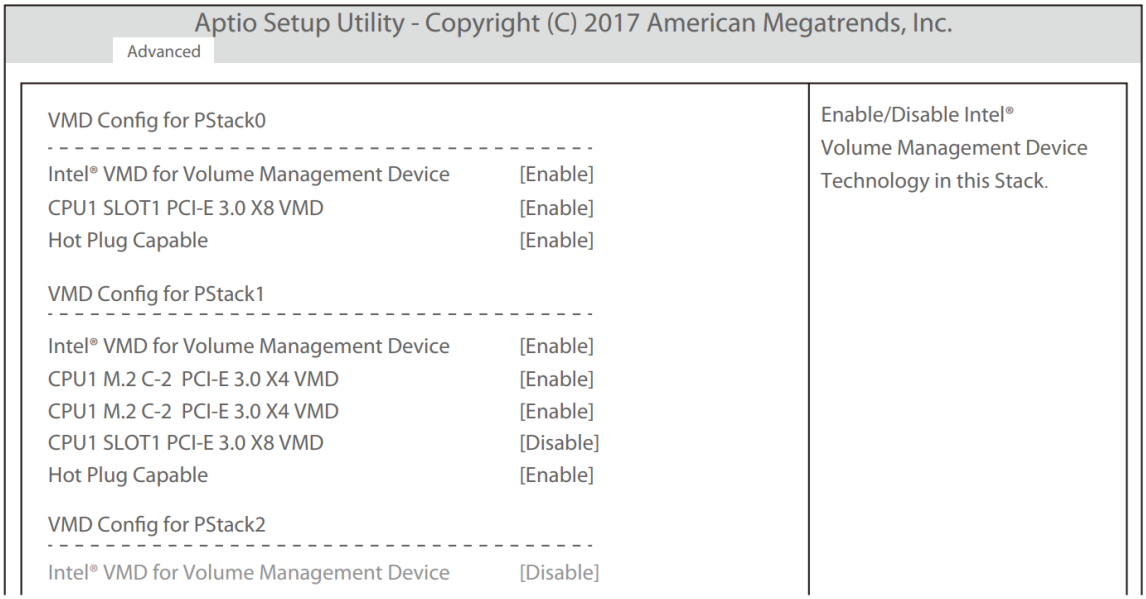
2. Switch to Advanced > Chipset Configuration > North Bridge > IIO Configuration > Intel® VMD Technology.

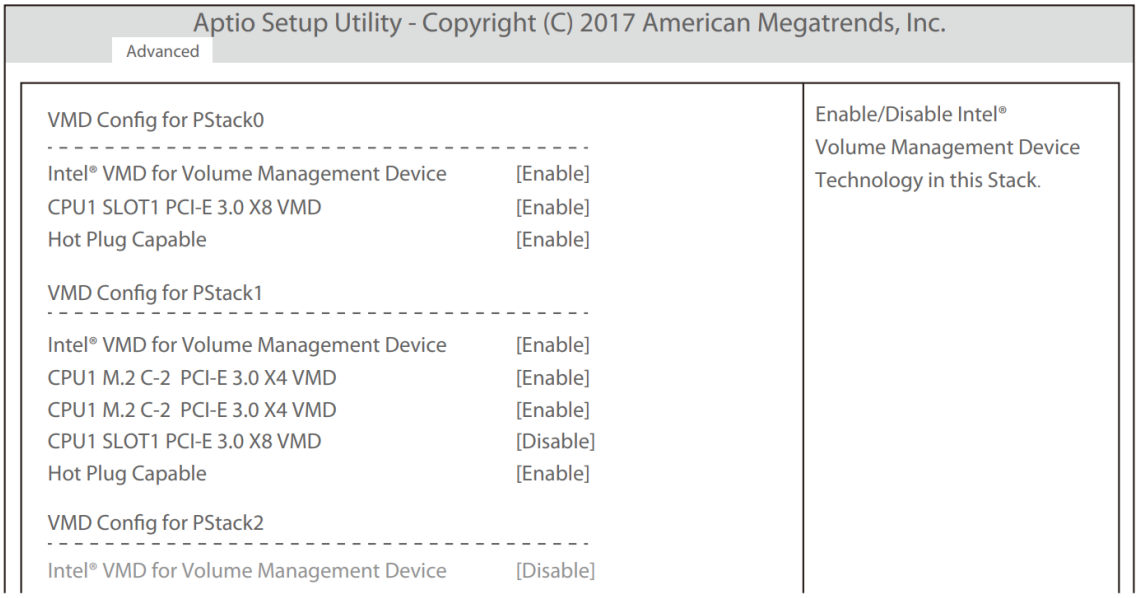


3. Select the desired PStack# to Enable or Disable the corresponding Intel VMD controller.



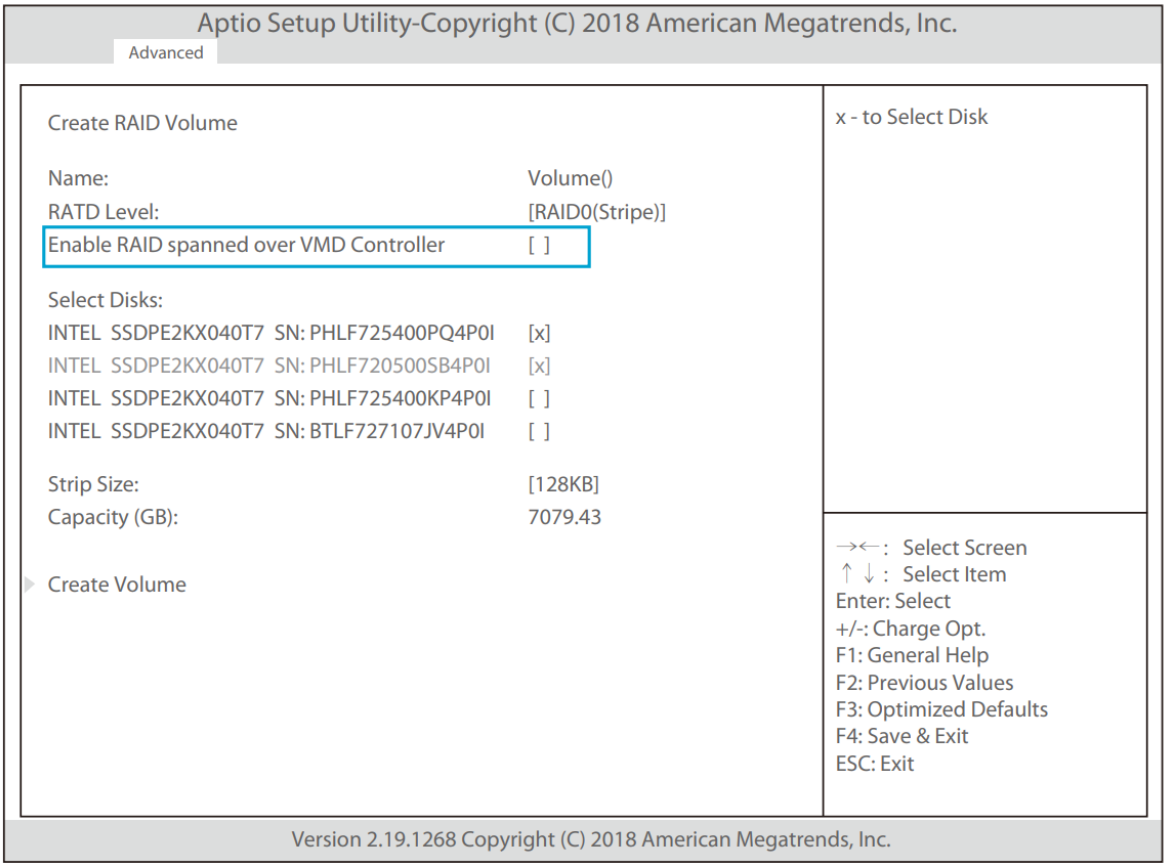
4. Select the desired PCIe slot to Enable or Disable Intel VMD functionality according to the current hardware configuration being used. Hot Plug Capability can also be Enabled or Disabled.

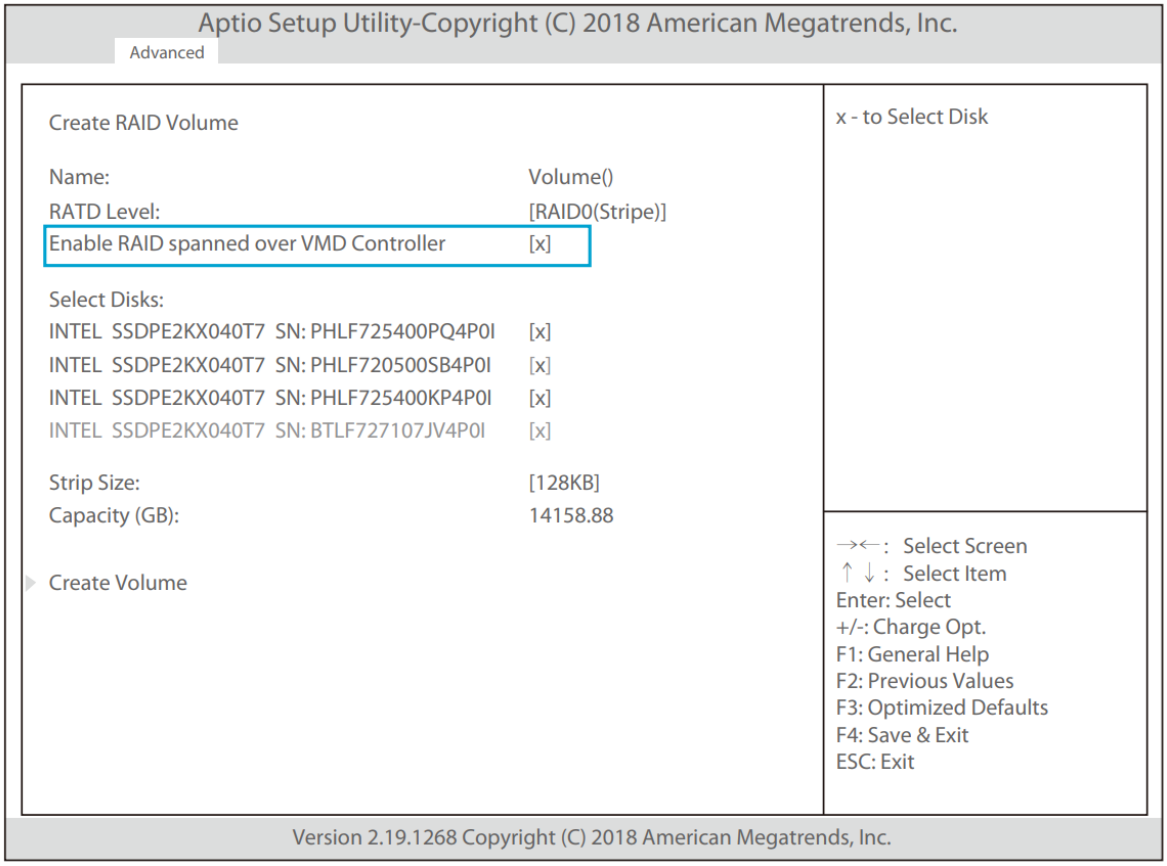




5. Repeat steps 3 and 4 for each PStack# on each CPU to be enabled or disabled. In this example, we enabled CPU1 Slot1 and CPU2 Slot5 (four U.2 form factor SSDs), as well as CPU1 M.2 C-1 and CPU1 M2. C-2 (two M.2 form factor SSDs).
6. Press [F4] to save the configuration and reboot the system and press [DEL] to enter BIOS.

   NOTE: 1. Disabling the VMD controller without first deleting the associated existing RAID volume can lead to unexpected behavior. This action is strongly not recommended. 2. The effects of physically changing or swapping a CPU on the VMD controller enablement has not yet been thoroughly tested or documented.
7. Switch to Advanced > Intel(R) Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume.
8. Set Name.
9. Set RAID Level.





10. If cross-controller RAID is required, select Enable RAID spanned over VMD Controller.
11. Select specific disks for RAID with an [X].
    - **RAID0:** Select at least two [2 – 24] disks
    - **RAID1:** Select only two disks
    - **RAID5:** Select at least three [3 – 24] disks
    - **RAID10:** Select only four disks

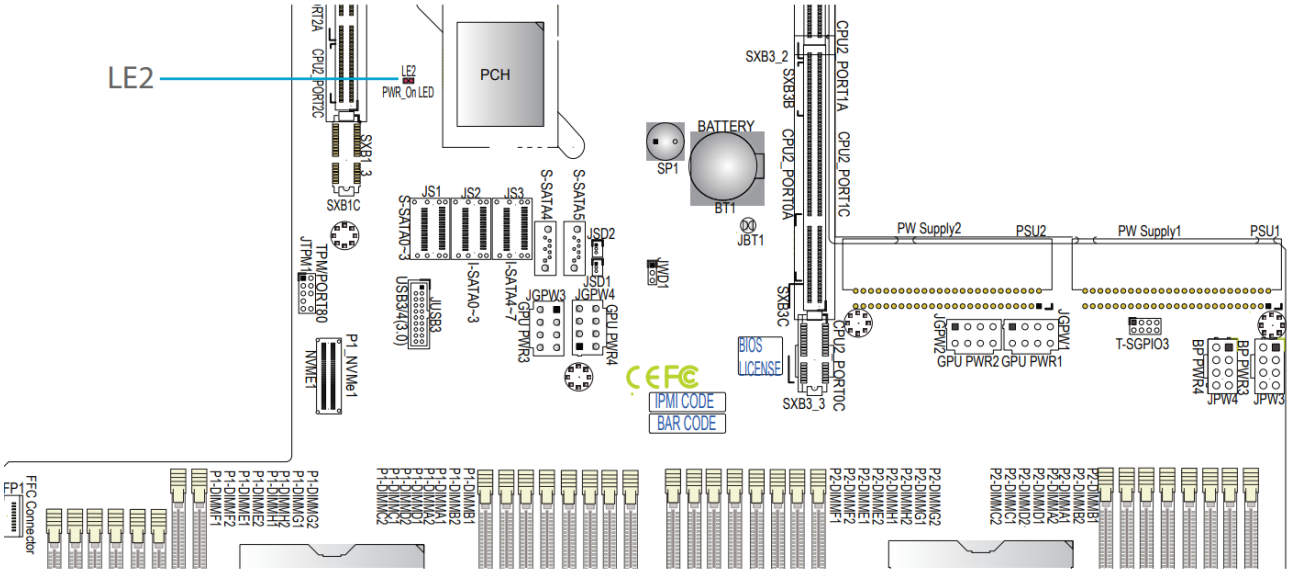
12. Select Strip Size (Default 64KB).
13. Select Create Volume.
14. If another RAID is needed, start again at step 9.
15. Press [F4] to save and reboot.

Troubleshooting

General Technique

If you experience unstable operation or get no boot response, try:

1. With power off, remove all but one DIMM and other added components, such as add-on cards, from the motherboard. Make sure the motherboard is not shorted to the chassis.
2. Set all jumpers to their default positions.
3. Power up. If the system boots, check for memory errors and add-on card problems.



No Power

- Check that the power LED on the motherboard is on.
- Make sure that the power connector is connected to the power supply.
- Check that the motherboard battery still supplies ~3VDC. If it does not, replace it.
- Check that the system input voltage is 100-120v or 180-240v.
- Turn the power switch on and off to test the system.

No Video

If the power is on but you have no video, remove all add-on cards and cables

System Boot Failure

If the system does not display Power-On-Self-Test (POST) or does not respond after the power is turned on, try the following:

- Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or

slots by following the Memory Errors Troubleshooting procedure below.

Memory Errors

- Make sure that the DIMM modules are properly and fully installed.
- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system.
- Check for bad DIMM modules or slots by swapping modules between slots and noting the resu

Losing the System Setup Configuration

- Use a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information.
- Check that the motherboard battery still supplies ~3VDC. If it does not, replace it.
  If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

Support and Other Resources

- **Download :** https://www.fs.com/download.html
- **Help Center :** https://www.fs.com/service/help_center
- **Contact Us :** https://www.fs.com/contact_us.html

Product Warranty

Warranty: Rack servers enjoy 3 years labor, 3 years parts limited warranty against defect in materials or workmanship. For more details about warranty, please check at https://www.fs.com/policies/warranty.html

Return: If you want to return item(s), information on how toreturn can be found at https://www.fs.com/policies/day_return_policy.htm

Documents / Resources

FS RS7260 Dual Intel Xeon Scalable Processors 2u Rackmount Server [pdf] User Manual
RS7260 Dual Intel Xeon Scalable Processors 2u Rackmount Server, RS7260, Dual Intel Xeon Scalable Processors 2u Rackmount Server, Processors 2u Rackmount Server, Rackmount Server