RS720-E12 Series

RS720-E12-RS24U/RS720-E12-RS24G/
RS720-E12-RS12U/RS720-E12-RS8G

2U Rackmount Server

User Guide

E27128
Revised Edition V2
September 2025

Contents

Contents

Contents

Contents

Appendix

Safety information

Electrical Safety

- Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing any additional devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your dealer.

Operation Safety

- Any mechanical operation on this server must be conducted by certified or experienced engineers.
- Before operating the server, carefully read all the manuals included with the server package.
- Before using the server, ensure all cables are correctly connected and the power cables are not damaged. If any damage is detected, contact your dealer as soon as possible.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Place the server on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

CAUTION: This product is equipped with a three-wire power cable and plug for the user's safety. Use the power cable with a properly grounded electrical outlet to avoid electrical shock.

Restricted Access Area

This equipment should only be installed in a Restricted Access Area where both these conditions apply:

- Access can only be gained by skilled or instructed persons who have been instructed about the reasons for the restrictions applied to the area and about any precautions that shall be taken; and
- Access is through the use of a TOOL, or other means of security, and is controlled by the authority responsible for the area.

Lithium-Ion Battery Warning

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

Heavy System

CAUTION! This server system is heavy. Ask for assistance when moving or carrying the system.

Shock Hazard

CAUTION! Risk of electric shock.

Disconnect all power supply input plugs before servicing.

Optical Drive Safety Information

Laser Safety Information

CAUTION: To prevent exposure to the optical drive's laser, do not attempt to disassemble or repair the optical drive by yourself. For your safety, contact a professional technician for assistance.

About this guide

Audience

This user guide is intended for system integrators, and experienced users with at least basic knowledge of configuring a server.

Contents

This guide contains the following parts:

1. **Chapter 1: Product Introduction**

   This chapter describes the general features of the server, including sections on front panel and rear panel specifications.

2. **Chapter 2: Hardware Setup**

   This chapter lists the hardware setup procedures that you have to perform when installing or removing system components.

3. **Chapter 3: Motherboard Information**

   This chapter gives information about the motherboard that comes with the server. This chapter includes the motherboard layout, jumper settings, and connector locations.

4. **Chapter 4: BIOS Setup**

   This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions

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

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl>+<Alt>+<Del>
`Command`	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets. Example: At the command prompt, type the command line: **`format A:/S`**

References

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Control Center (ACC) user guide**

   This manual tells how to set up and use the proprietary ASUS server management utility. Visit asuscontrolcenter.asus.com for more information.

2. **ASUS websites**

   The ASUS websites worldwide provide updated information for all ASUS hardware and software products. Refer to the ASUS contact information.

1 Product Introduction

This chapter describes the general features of the server. It includes sections on front panel and rear panel specifications.

1.1 System package contents

Check your system package for the following items.

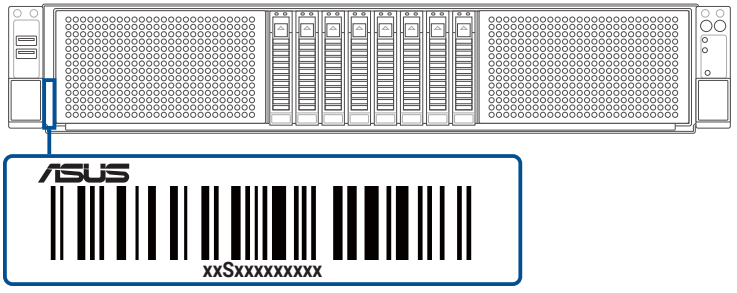
Model name	RS720-E12
Chassis	ASUS 2U rackmount chassis
Motherboard	ASUS Z14PP-D32 server board
SCM board	ASUS ASMB12-SCM board
Accessories	1 x Set of screws 2 x CPU carrier kits 2 x CPU heatsinks 2 x 80 PLUS PSUs 2 x AC power cables
Optional items	1 x 1.5U full-pull ball bearing rail kit 1 x GPU power cable kit 1 x Front bezel

NOTE: If any of the above items is damaged or missing, contact your retailer.

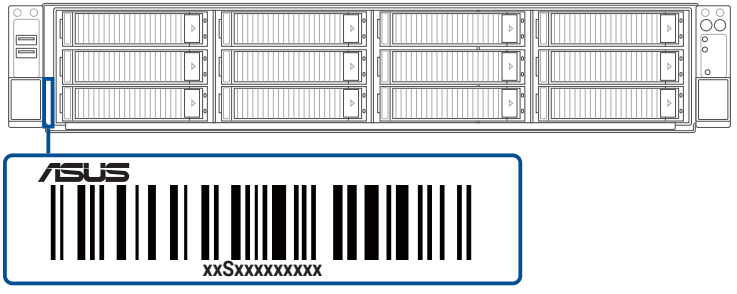
1.2 Serial number label

When requesting support from the ASUS Technical Support Team, provide the product's serial number. The serial number has 12 characters, such as xxSxxxxxxxxx, and is printed on the asset tag. Refer to the below illustration for the location of the asset tag.

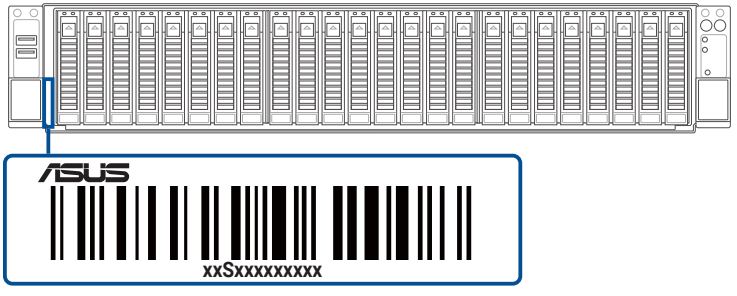
RS720-E12-RS8G



RS720-E12-RS12U



RS720-E12-RS24U/G



1.3 System specifications

The ASUS RS720-E12 series features the ASUS Z14PP-D32 server board designed for Intel® Xeon® 6 processors.

Model name		RS720-E12
Motherboard		Z14PP-D32
Processor support		2 x LGA 4710 Intel® Xeon® 6 processors
Memory	Total slots	32 (8 channels per CPU, 16 DIMMs per CPU)
	Capacity	Maximum up to 4TB
	Memory type	DDR5 6400/5600 RDIMM (1DPC/2DPC) DDR5 8000 MCR RDIMM (1DPC) * **Refer to ASUS server AVL for the latest update**
	Memory size	128GB, 96GB, 64GB RDIMM * **Refer to ASUS server AVL for the latest update**
Expansion slots	Total PCIe slots	10 PCIe slots
	Slot type	3 x PCIe (Gen5 x16 link, FHFL) or 6 x PCIe (Gen5 x8 link, FHHL) 2 x PCIe (Gen5 x16 link, LP) 1 x OCP 3.0 (Gen5 x16 link) 1 x OCP 3.0 (Gen5 x8 link)
	M.2	2 x M.2 sockets (Gen4 x2 link, 2280/2260)
Storage	Motherboard connectors	8 x MCIO x8
	Backplane connectors	**RS720-E12-RS24U/G:** 24 x MCIO x8 (for NVMe) 2 x SlimSAS x4 (for SATA/SAS) **RS720-E12-RS12U:** 6 x MCIO x8 (for NVMe) 2 x SlimSAS x4 (for SATA/SAS) **RS720-E12-RS8G:** 6 x MCIO x8 (for NVMe) 2 x SlimSAS x4 (for SATA/SAS)

(continued on the next page)

Model name		RS720-E12
Storage	Storage controllers	**NVMe/SATA/SAS controller (optional):** ASUS PIKE II 3008-8i/3108-8i Broadcom HBA 9500-16i Broadcom MegaRAID 9540-8i Broadcom MegaRAID 9560-16i Broadcom MegaRAID 9670-24i Broadcom MegaRAID 9670-16i * **Refer to ASUS server AVL for the latest update**
	Storage bays	**RS720-E12-RS24U/G:** 24 x 2.5" hot-swap storage bays (front) Supports 8x NVMe + 16x NVMe/SATA*/SAS* **RS720-E12-RS12U:** 12 x 2.5"/3.5" hot-swap storage bays (front) Supports 12x NVMe/SATA*/SAS* **RS720-E12-RS8G:** 8 x 2.5" hot-swap storage bays (front) Supports 8x NVMe/SATA*/SAS* * **SATA/SAS support requires an optional HBA/RAID card**
	Default cables	**RS720-E12-RS24U/G:** 24x NVMe support: 12 x MCIO cable (optional) **RS720-E12-RS12U:** 12x SATA support: 3 x MCIO to SlimSAS cable (optional) **RS720-E12-RS8G:** 8x SATA support: 2 x MCIO to SlimSAS cable (optional)
	NVMe upgrade options	**RS720-E12-RS24U/G:** 24x NVMe support: 12 x MCIO cable (optional) **RS720-E12-RS12U:** 8x NVMe support: 2 x MCIO cable (optional) 12x NVMe support: 6 x MCIO cable (optional) **RS720-E12-RS8G:** 8x NVMe support: 1 x MCIO cable (optional)
	Auxiliary storage	1 x External ODD (optional)
Networking		1 x Management LAN port 2 x OCP 3.0 adapter (optional)
Onboard graphics		Aspeed AST2600 64MB
Graphics card support		Up to 6 single-slot or 3 double-slot GPUs * **RS720-E12-RS24G and RS720-E12-RS8G only**

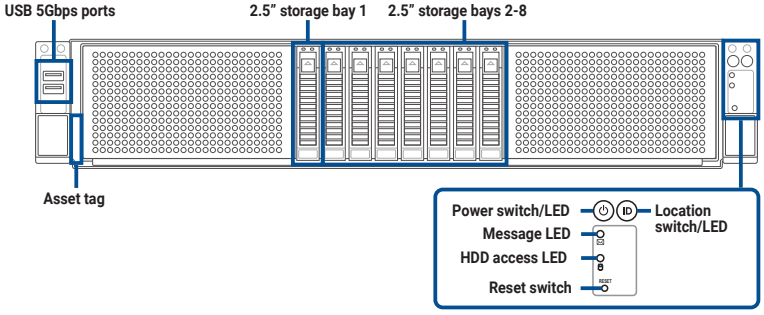
(continued on the next page)

Model name		RS720-E12
I/O ports	Front	2 x USB 5Gbps ports
	Rear	2 x USB 5Gbps ports 1 x Mini DisplayPort 1 x RJ-45 Management LAN port 1 x Debug port
Switch/LED	Front	1 x Power switch w/ LED 1 x Reset switch 1 x Location switch w/ LED 1 x HDD access LED 1 x Message LED
	Rear	1 x Power switch w/ LED 1 x Location switch w/ LED 1 x Message LED
Security options		PFR module (optional) TPM-SPI module (optional)
OS support		Windows® Server, RedHat® Enterprise Linux, SuSE® Linux Enterprise Server, CentOS, Ubuntu, VMWare * **Refer to https://servers.asus.com/support/os for the latest supported OS list**
Management solutions		**Hardware (out-of-band remote management):** ASMB12-iKVM for KVM-over-IP **Software:** ASUS Control Center Enterprise Classic (optional)
Regulatory compliance		BSMI, CE, CB, RCM, FCC (Class A), ISED
Dimensions		449mm x 88mm x 830mm / 17.68" x 3.5" x 32.7" (2U)
Net weight		18.195kg (excluding CPU, DRAM, and storage)
Gross weight		28.855kg (including packaging, excluding CPU, DRAM, and storage)
Power supply and rating		1+1 Redundant 3200/2700W 80 PLUS Titanium PSU Rating: 100-127/220-240Vac, 16A (x2), 50/60Hz 100-127/200-240Vac, 12A/16A (x2), 50-60Hz * **Power supply configuration varies by region**
Environment		Operating temperature: 10° ~ 35° Non-operating temperature: -40° ~ 60° Non-operating humidity: 20% ~ 90% (Non-condensing)

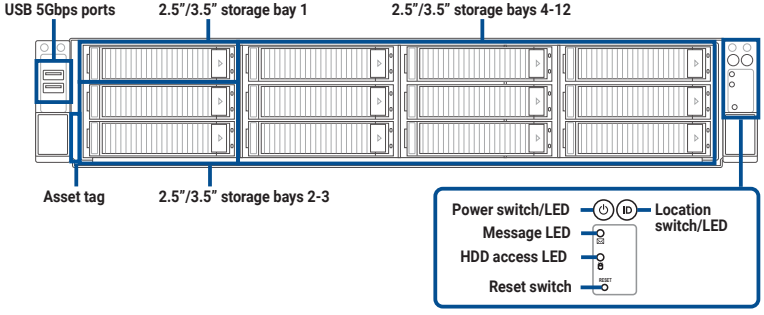
***Specifications are subject to change without notice.**

1.4 Front panel features

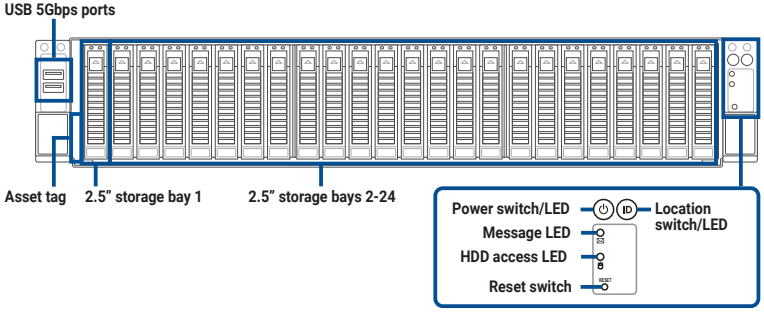
RS720-E12-RS8G



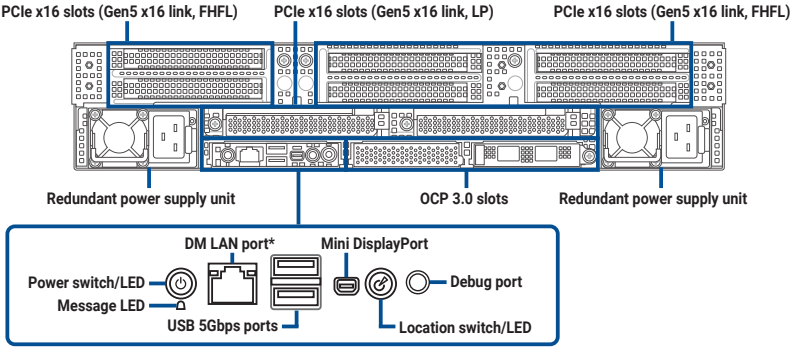
RS720-E12-RS12U



RS720-E12-RS24U/G



1.5 Rear panel features

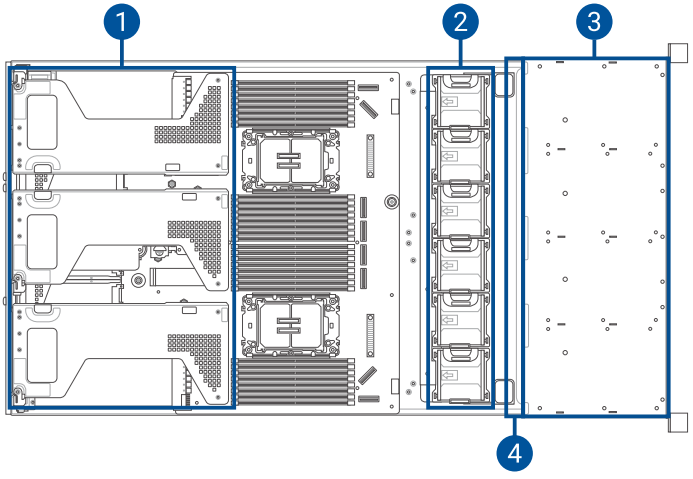


NOTE: The DM (Dedicated Management) port is for ASUS ASMB12-iKVM only.

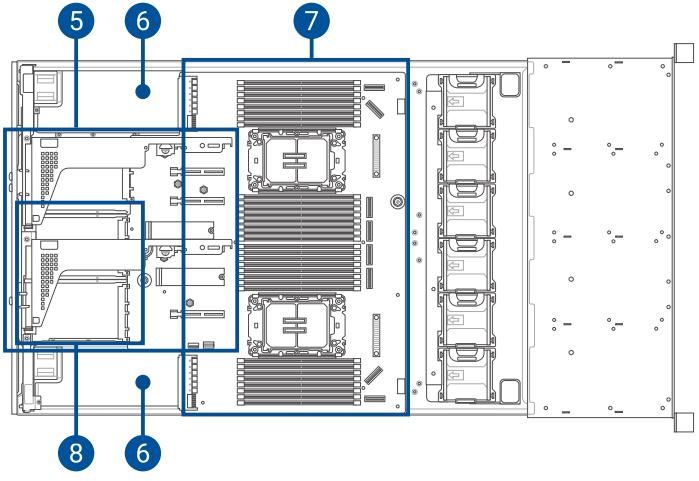
1.6 Internal features

NOTE: Layout and appearance may vary depending on the model.

Upper level (with upper PCIe expansion card brackets)



Lower level (without upper PCIe expansion card brackets)



1. PCIe expansion card brackets (FHFL)
2. System fans
3. Storage device bays
4. Storage device backplane
5. PCIe expansion card brackets (FHHL)
6. Redundant power supply units
7. Server board
8. OCP 3.0 slots

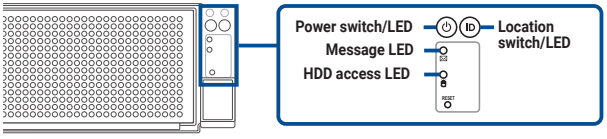
NOTE:

- A protective film is pre-attached to the front cover before shipping. Please remove the protective film before turning on the system for proper heat dissipation.
- The barebone server does not include a floppy disk drive. Connect a USB floppy disk drive to any of the USB ports on the front or rear panel if you need to use a floppy disk.

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

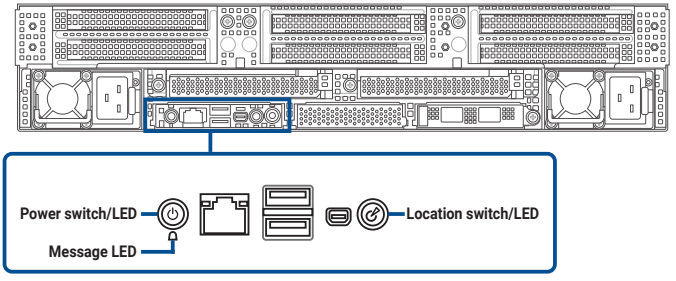
1.7 LED information

1.7.1 Front panel LEDs



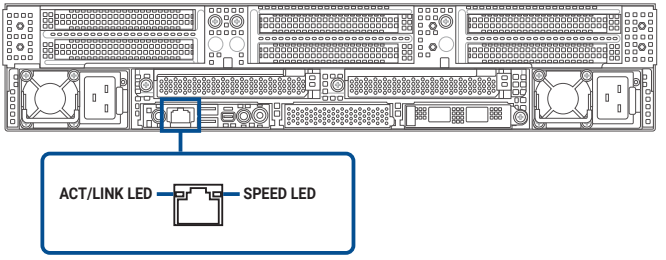
LED	Status	Description
Power LED	ON	System power on
Location LED	ON	Received user command to locate the system
	OFF	Function off
Message LED	ON	A hardware monitor event is indicated
	OFF	System is normal; no incoming event
HDD access LED	Blinking	Storage device reading or writing data
	OFF	No activity

1.7.2 Rear panel LEDs



LED	Status	Description
Power LED	ON	System power on
Message LED	ON	A hardware monitor event is indicated
	OFF	System is normal; no incoming event
Location LED	ON	Received user command to locate the system
	OFF	Function off

1.7.3 LAN (RJ-45) LEDs



Dedicated Management LAN port (DM_LAN1) LEDs

SPEED LED		ACT/LINK LED	
Status	Description	Status	Description
OFF	10 Mbps connection	OFF	No link
ORANGE	100 Mbps connection	ORANGE	Linked
GREEN	1 Gbps connection	BLINKING	Data activity

1.7.4 Storage device status LEDs

Storage Device LED Description		
Status (RED)	ON	Storage device has failed
	Blinking	RAID rebuilding or locating
Activity (GREEN)	ON	Storage device power on
	Blinking	Storage device reading or writing data
	OFF	Storage device not found

NOTE: On RS720-E12-RS24U/G models running Linux-based operating systems, the status LED may also turn on if the storage device is not found.

Hardware Setup

2

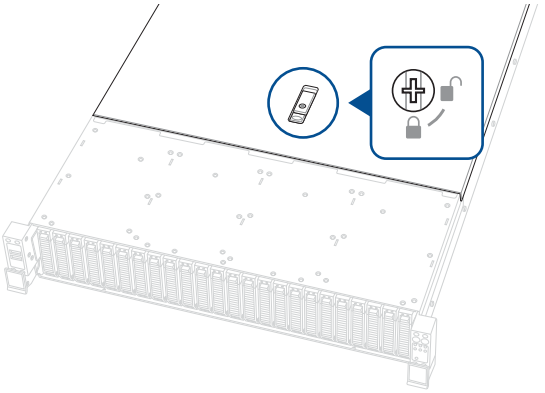
This chapter lists the hardware setup procedures that you have to perform when installing or removing system components.

2.1 Chassis cover

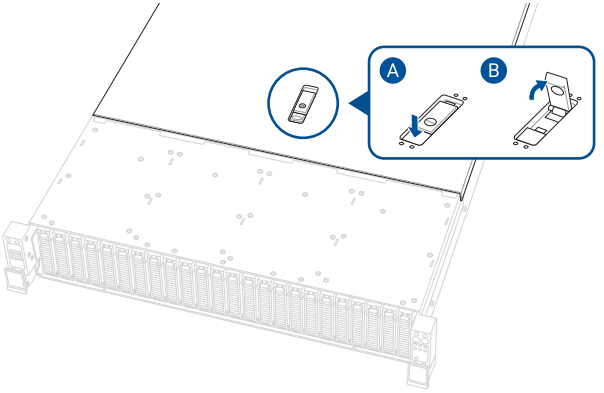
NOTE: A protective film is pre-attached to the system cover before shipping. Remove the protective film before turning on the system for proper heat dissipation.

2.1.1 Removing the chassis cover

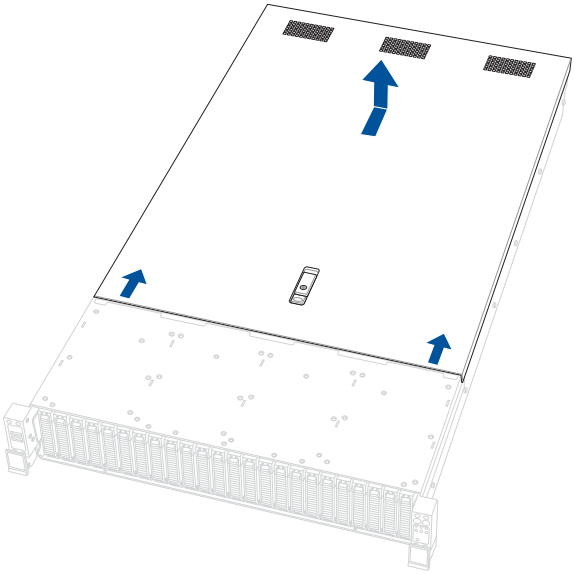
1. Turn the screw counter-clockwise to unlock the latch.



2. Press the spring lock to release the latch, then pull the latch upwards to disengage the chassis cover from the chassis.

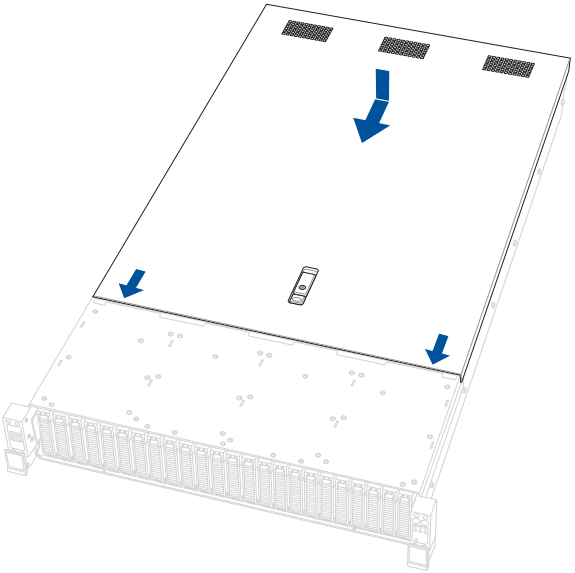


3. Slide the chassis cover towards the rear of the chassis, then lift and remove it from the chassis.

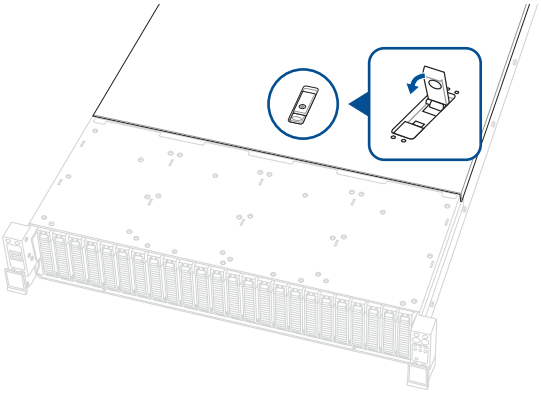


2.1.2 Installing the chassis cover

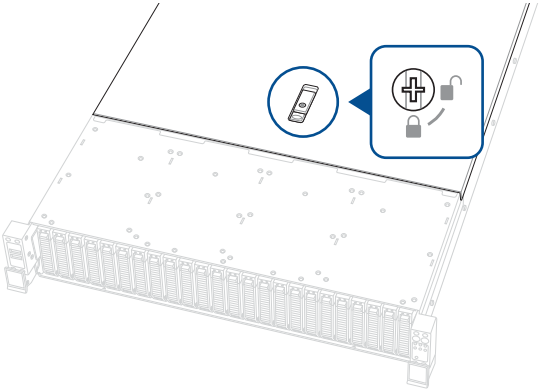
1. Place the chassis cover onto the chassis, then slide the chassis cover towards the front of the chassis.



2. Push the latch downwards to lock the chassis cover into place.



3. Turn the screw clockwise to lock the latch.

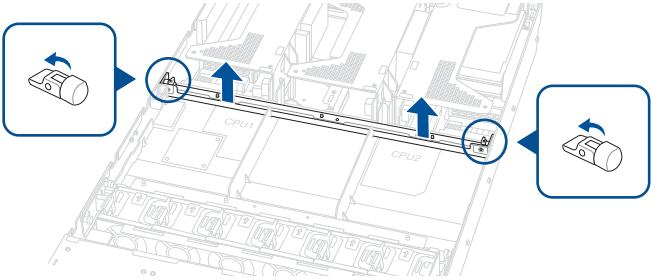


2.2 Air duct

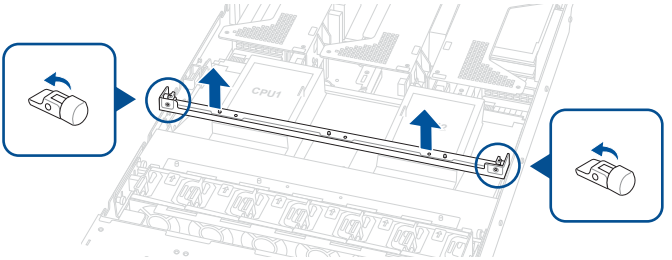
2.2.1 Removing the air duct

1. Disengage the latches, then remove the metal bracket.

GPU models (-RS8G, -RS24G)

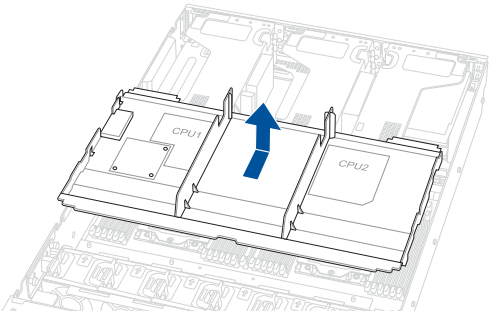


Non-GPU models (-RS12U, -RS24U)

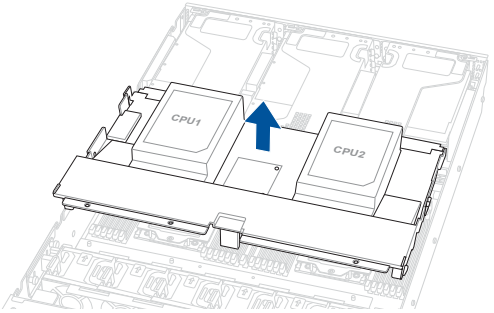


2. Lift and remove the air duct.

GPU models (-RS8G, -RS24G)



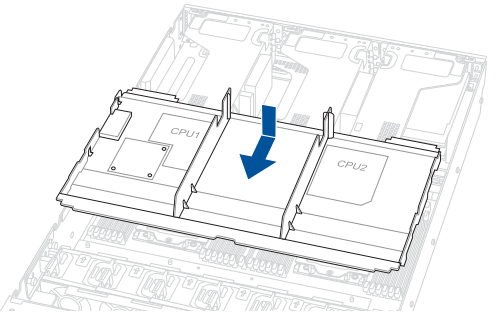
Non-GPU models (-RS12U, -RS24U)



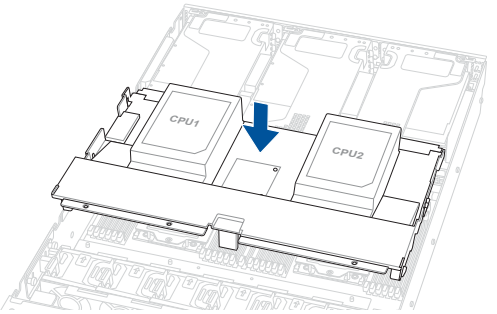
2.2.2 Installing the air duct

1. Install the air duct.

GPU models (-RS8G, -RS24G)

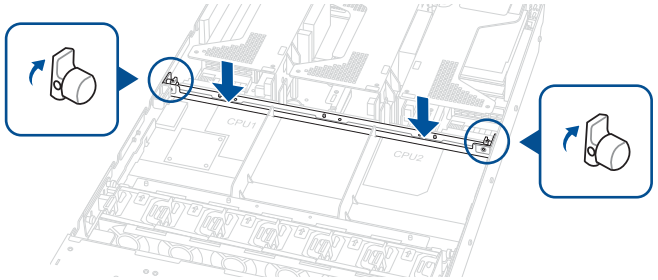


Non-GPU models (-RS12U, -RS24U)

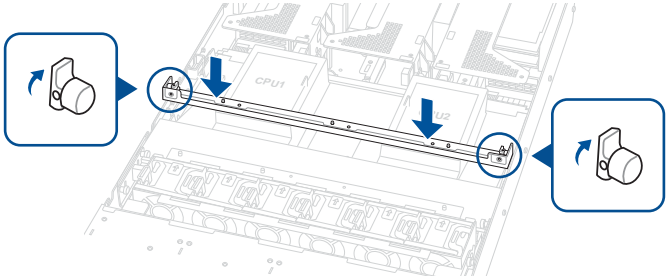


2. Install the metal bracket, then return the latches to the locked position.

GPU models (-RS8G, -RS24G)



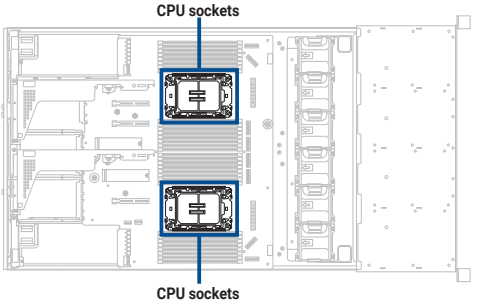
Non-GPU models (-RS12U, -RS24U)



2.3 Central Processing Unit (CPU)

CAUTION:

- Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

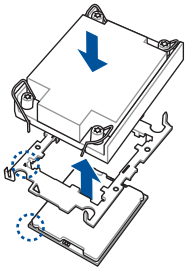


2.3.1 Installing the CPU and heatsink

NOTE:

- Ensure that the triangle mark on the CPU is located in the same corner as the CPU socket.
- Intel® recommends using a torque driver with a T-30 bit and a torque value of 8 lbf-in to prolong the longevity of all PEEK nuts after the quality of the load post is corrected.

1



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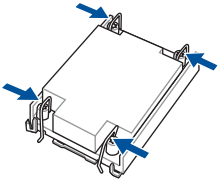
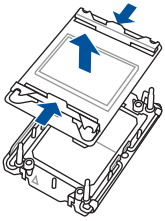
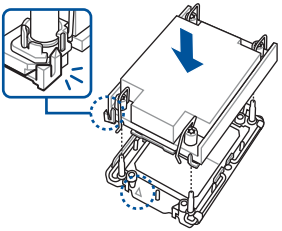


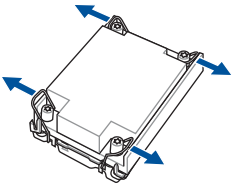
3



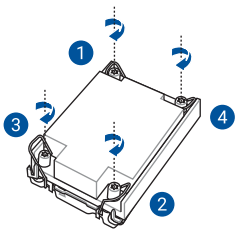
4



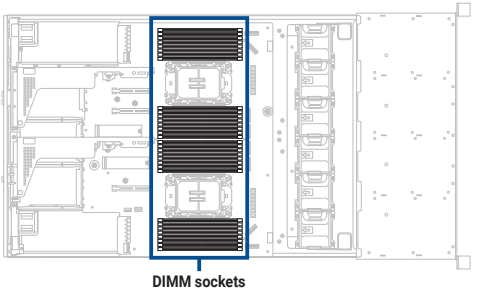
5



6



2.4 System memory



2.4.1 Memory configurations

NOTE:

- Refer to ASUS Server AVL for the updated list of compatible DIMMs.
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.

Granite Rapids series processors

Recommended dual CPU memory configuration					
	2 DIMMs	8 DIMMs	16 DIMMs	24 DIMMs	32 DIMMs
CPU1/2 A1	●	●	●	●	●
CPU1/2 A2				●	●
CPU1/2 B1			●	●	●
CPU1/2 B2					●
CPU1/2 C1		●	●	●	●
CPU1/2 C2				●	●
CPU1/2 D1			●	●	●
CPU1/2 D2					●
CPU1/2 E1		●	●	●	●
CPU1/2 E2				●	●
CPU1/2 F1			●	●	●
CPU1/2 F2					●
CPU1/2 G1		●	●	●	●
CPU1/2 G2				●	●
CPU1/2 H1			●	●	●
CPU1/2 H2					●

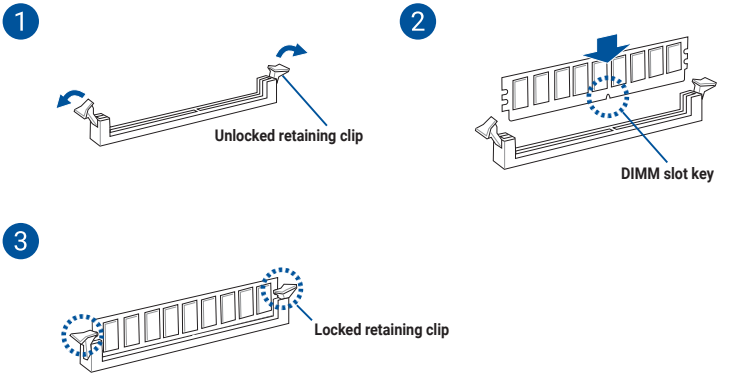
Sierra Forest series processors

Recommended dual CPU memory configuration				
	2 DIMMs	8 DIMMs	16 DIMMs	32 DIMMs
CPU1/2 A1	●	●	●	●
CPU1/2 A2				●
CPU1/2 B1			●	●
CPU1/2 B2				●
CPU1/2 C1		●	●	●
CPU1/2 C2				●
CPU1/2 D1			●	●
CPU1/2 D2				●
CPU1/2 E1		●	●	●
CPU1/2 E2				●
CPU1/2 F1			●	●
CPU1/2 F2				●
CPU1/2 G1		●	●	●
CPU1/2 G2				●
CPU1/2 H1			●	●
CPU1/2 H2				●

2.4.2 Installing a DIMM

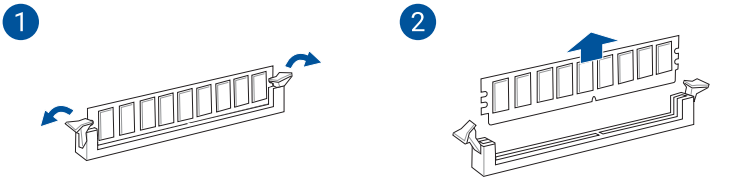
NOTE: A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM.

CAUTION: Always insert the DIMM into the socket vertically to prevent DIMM notch damage.



2.4.3 Removing a DIMM

NOTE: Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it springs out with extra force.



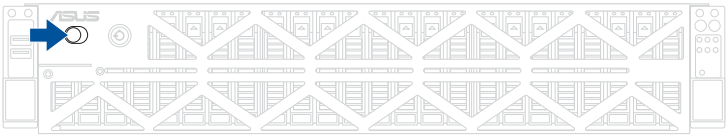
2.5 Front bezel (optional)

For extra security, a front bezel (purchased separately) can be installed to prevent unauthorized physical access to the hard drives and power button.

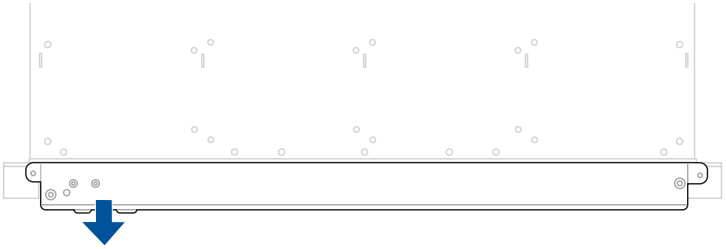
NOTE: To remove this component, follow the instructions in reverse order.

2.5.1 Removing the front bezel

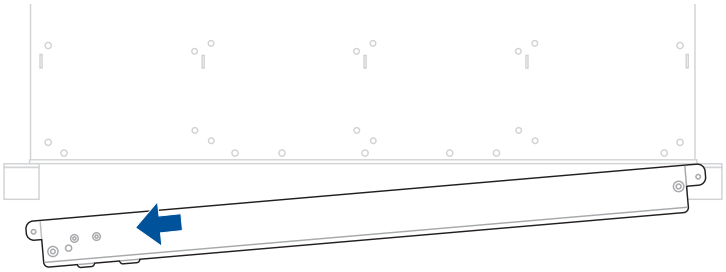
1. Push the bezel release latch towards the right.



2. Pull the left side of the bezel to detach it from the chassis.

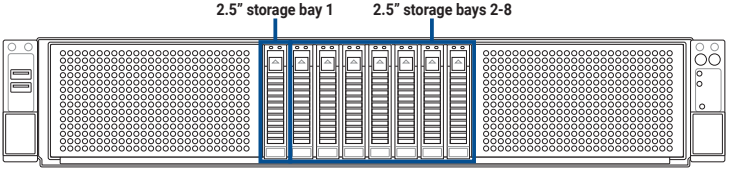


3. Slide the bezel towards the left and remove it from the chassis.

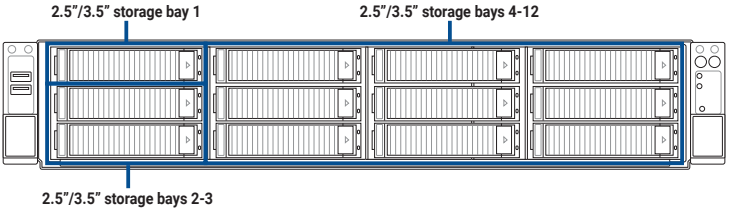


2.6 Storage devices

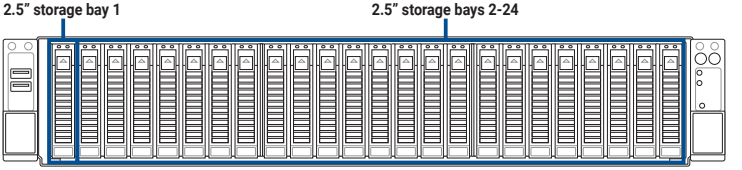
RS720-E12-RS8G



RS720-E12-RS12U



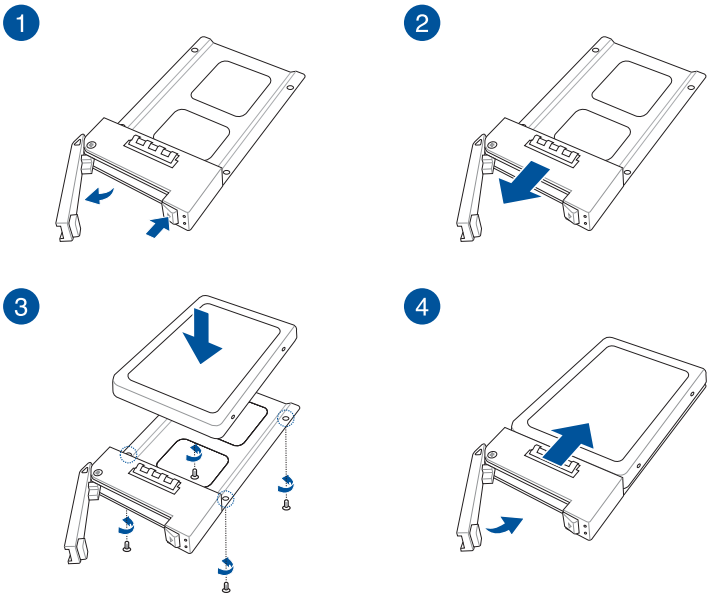
RS720-E12-RS24U/G



2.6.1 Installing a 2.5” storage device

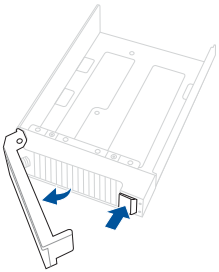
NOTE: To remove this component, follow the instructions in reverse order.

2.5” storage bays

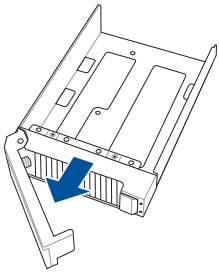


2.5”/3.5” storage bays

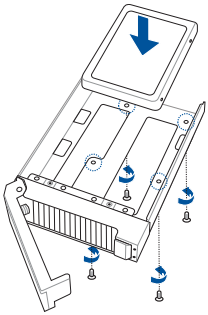
1



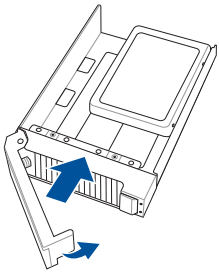
2



3



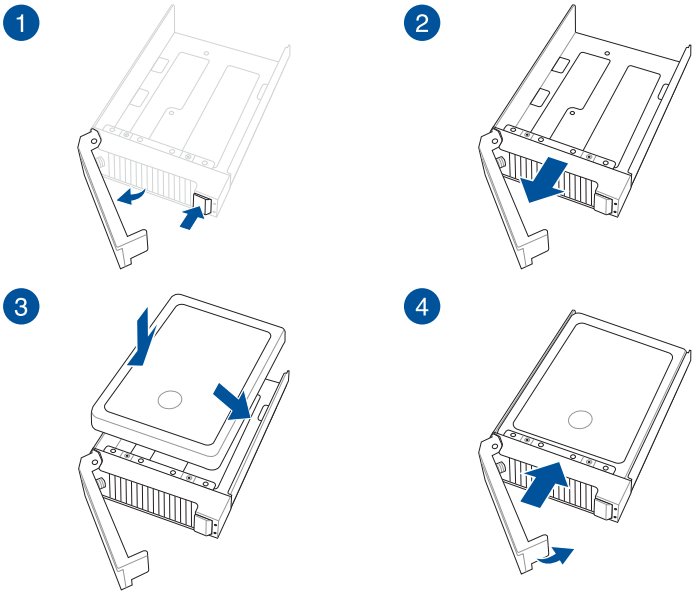
4



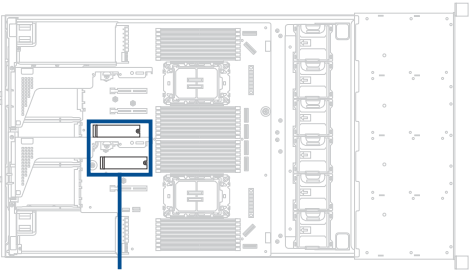
2.6.2 Installing a 3.5” storage device (on selected models)

NOTE: To remove this component, follow the instructions in reverse order.

2.5”/3.5” storage bays

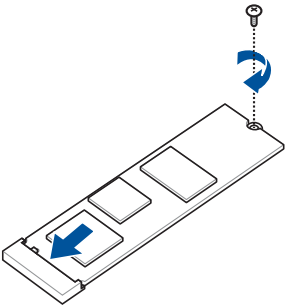


2.6.3 Installing an M.2 SSD module



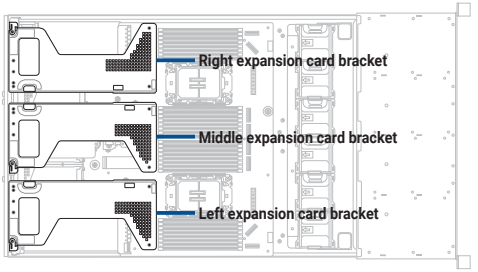
NOTE:

- To remove this component, follow the instructions in reverse order.
- The M.2 screw is included in the accessory pack.
- To install M.2 SSD modules of different lengths, remove the pre-installed standoff screw and install it in a different position.

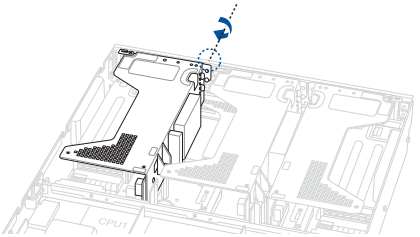


2.7 Expansion card brackets

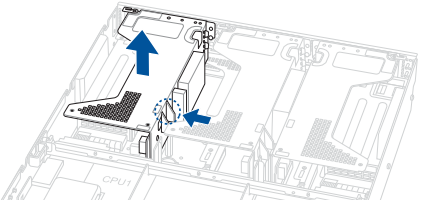
2.7.1 Removing the upper expansion card brackets



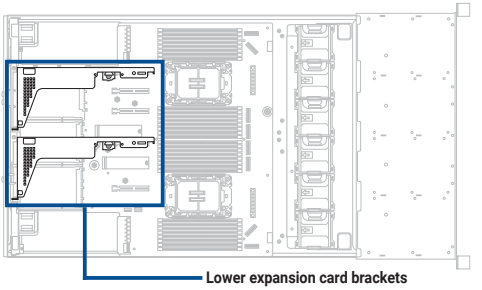
1. Loosen the thumbscrew.



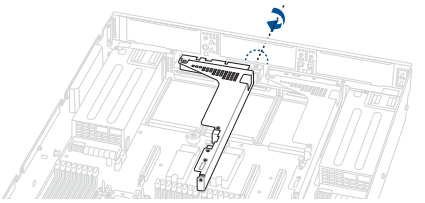
2. Press the latch inwards, then lift and remove the expansion card bracket.



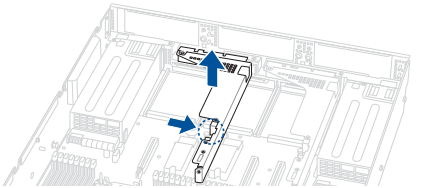
2.7.2 Removing the lower expansion card brackets



1. Loosen the thumbscrew.



2. Press the latch inwards, then lift and remove the expansion card bracket.

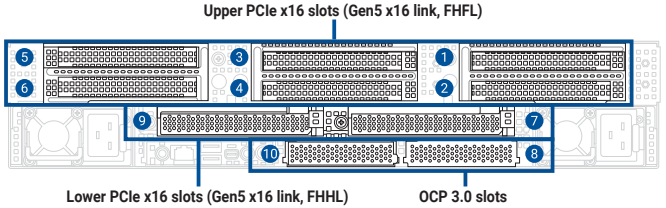


2.8 Expansion slots

WARNING: Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

NOTE:

- Before installing an expansion card, read the documentation that came with it and ensure that the proper hardware settings are configured.
- To remove this component, follow the instructions in reverse order.



Slots with shared PCIe links

Slots with shared PCIe links will automatically switch to Mode 2 if both slots are occupied.

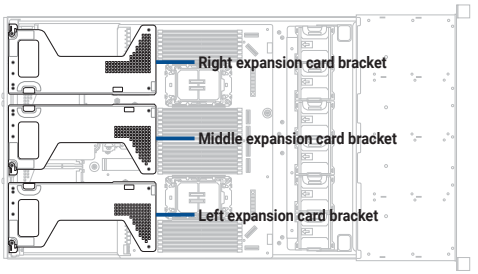
#	PCIe link	Slot interface	Operation mode	
			Mode 1	Mode 2
1	Gen5 x16 link (shared)	PCIE1	Gen5 x16 link	Gen5 x8 link
2		PCIE2	Disabled	Gen5 x8 link
3	Gen5 x16 link (shared)	PCIE3	Gen5 x16 link	Gen5 x8 link
4		PCIE4	Disabled	Gen5 x8 link
5	Gen5 x16 link (shared)	PCIE5	Disabled	Gen5 x8 link
6		PCIE6	Gen5 x16 link	Gen5 x8 link

Slots with dedicated PCIe links

#	PCIe link	Slot interface	Operating mode
1	Gen5 x16 link	MXIO-PCIE_P1	Gen5 x16 link
2	Gen5 x16 link	OCP_P1	Gen5 x16 link
3	Gen5 x16 link	MXIO-PCIE_P2	Gen5 x16 link
4	Gen5 x16 link	OCP_P2	Gen5 x8 link

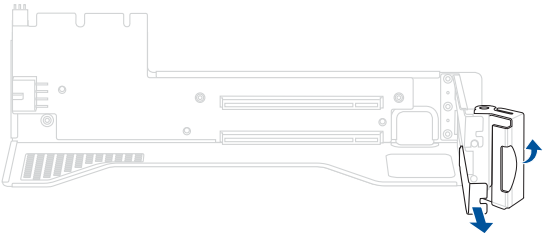
2.8.1 Installing a GPU card

Upper PCIe x16 slots

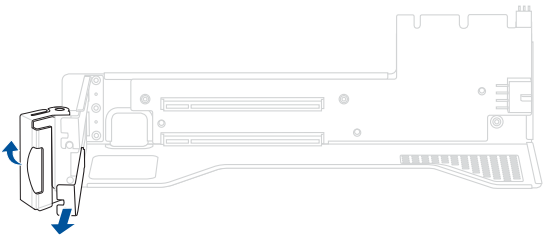


1. Remove the following components:
   - Chassis cover
   - Air duct
   - Upper expansion card brackets
2. Push the slot cover lock outwards, then remove the PCIe slot cover.

Left/middle expansion card brackets

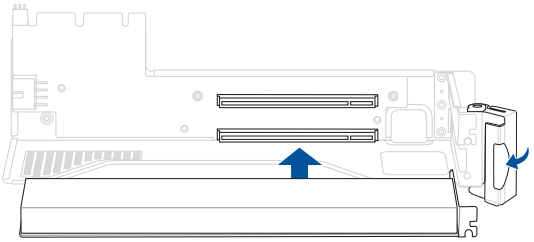


Right expansion card bracket

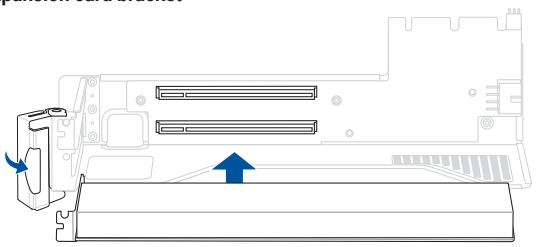


3. Install the GPU card, then push the slot cover lock inwards to secure the expansion card.

Left/middle expansion card brackets

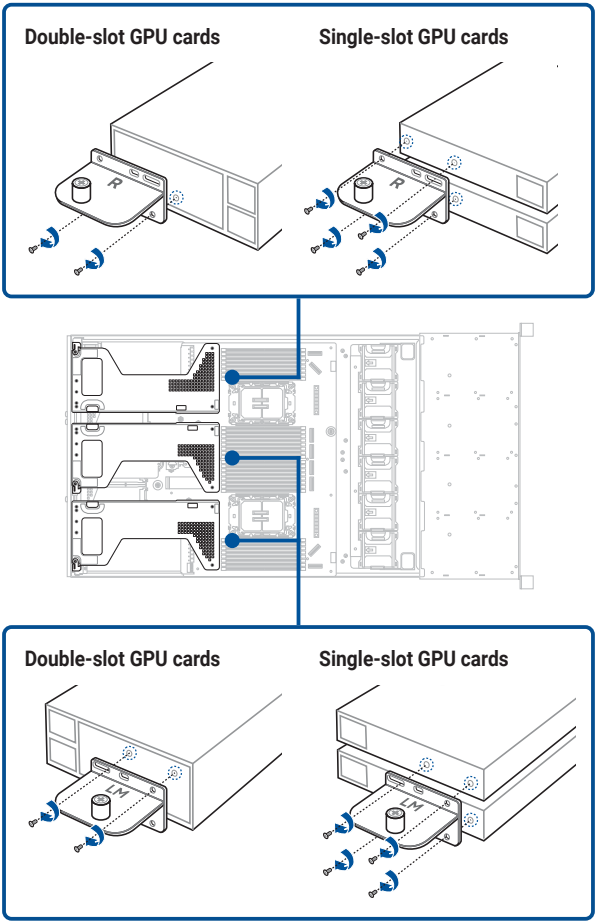


Right expansion card bracket



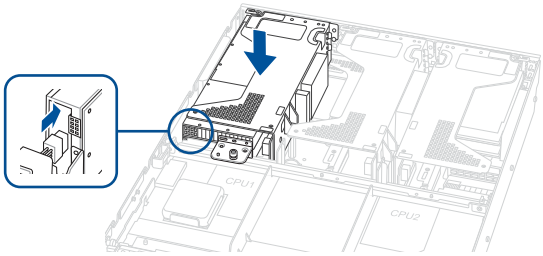
4. Align the screw holes on the GPU bracket with the screw holes on the GPU card.
5. Secure the GPU bracket to the GPU card with two screws.

NOTE: Use the GPU bracket marked “LM” for the left and middle expansion card brackets and the GPU bracket marked “R” for the right expansion card bracket.

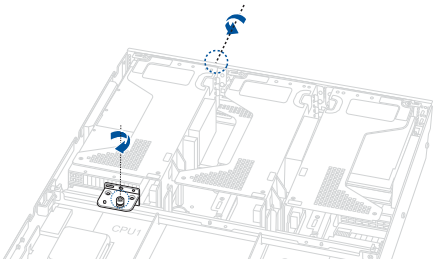


6. Install the expansion card bracket, then connect the GPU power cable to the GPU card.

NOTE: The expansion card brackets are not interchangeable. Install the expansion card brackets into their original position.



7. Tighten the thumbscrews.

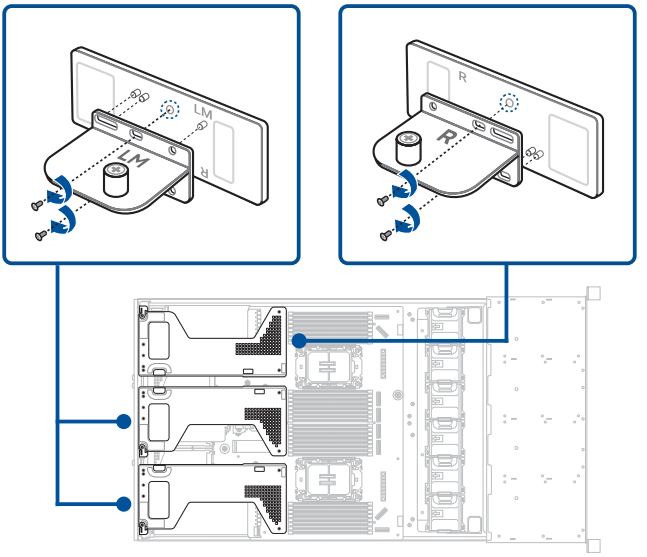


8. If an expansion card bracket is unoccupied, refer to the **Installing an airflow blocker** section to install an airflow blocker.

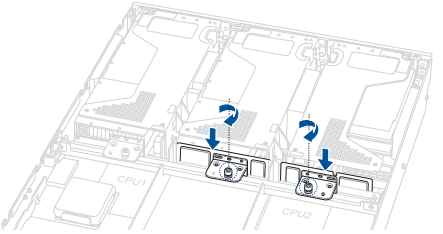
2.8.2 Installing an airflow blocker (optional)

1. Align the holes on the GPU bracket with the notches on the airflow blocker.
2. Secure the GPU bracket to the airflow blocker with two screws.

NOTE: Use the GPU bracket marked "LM" for the left and middle expansion card brackets and the GPU bracket marked "R" for the right expansion card bracket.

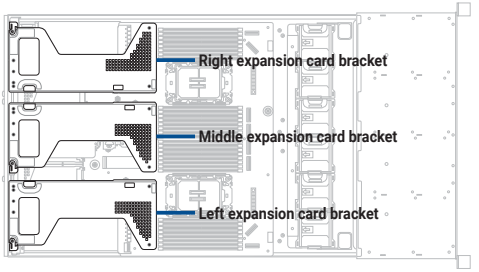


3. Install the airflow blocker, then tighten the thumbscrew.



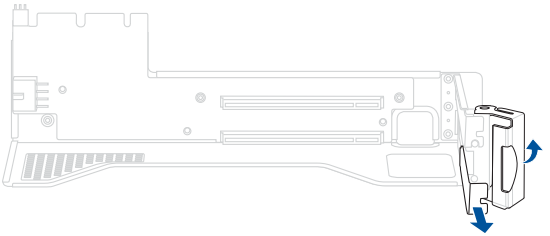
2.8.3 Installing a PCIe expansion card

Upper PCIe x16 slots

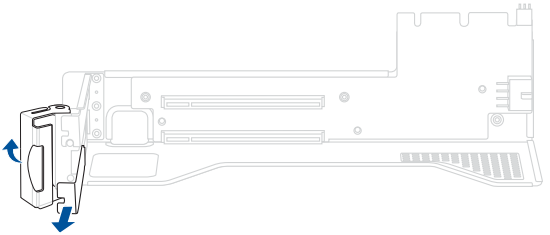


1. Remove the following components:
   - Chassis cover
   - Air duct
   - Upper expansion card brackets
2. Push the slot cover lock outwards, then remove the PCIe slot cover.

Left/middle expansion card brackets

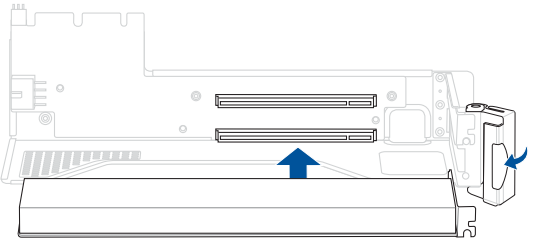


Right expansion card bracket

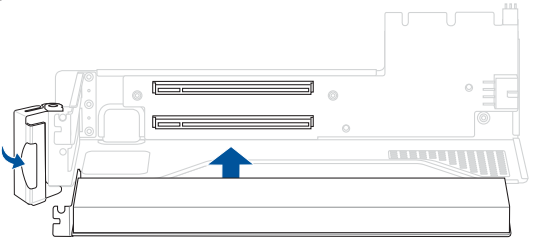


3. Install the expansion card, then push the slot cover lock inwards to secure the expansion card.

Left/middle expansion card brackets

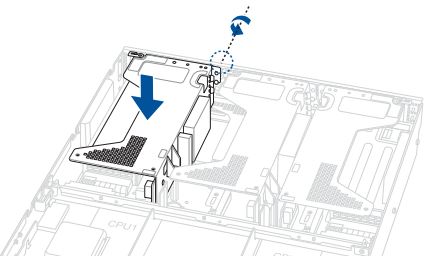


Right expansion card bracket

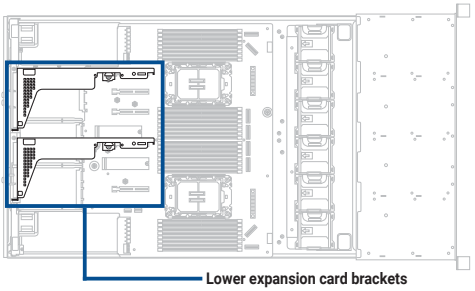


4. Install the expansion card bracket and tighten the thumbscrew.

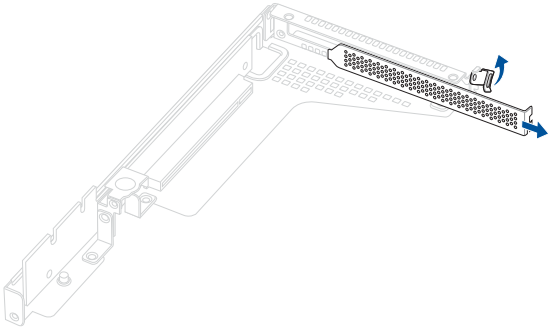
NOTE: The expansion card brackets are not interchangeable. Install the expansion card brackets into their original position.



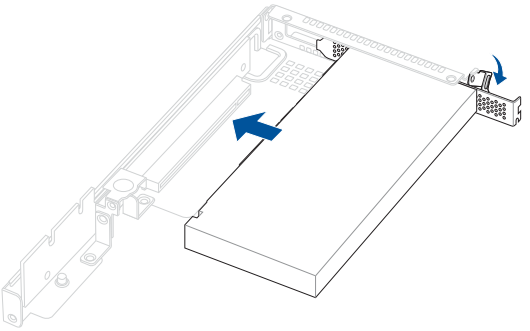
Lower PCIe x16 slots



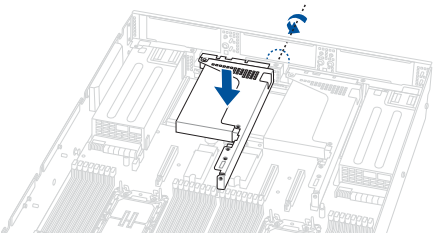
1. Remove the following components:
   - Chassis cover
   - Air duct
   - Upper expansion card brackets
   - Lower expansion card brackets
2. Push the slot cover lock outwards, then remove the PCIe slot cover.



3. Install the expansion card, then push the slot cover lock inwards to secure the expansion card.

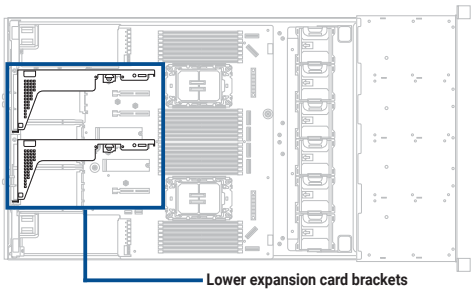


4. Install the expansion card bracket and tighten the thumbscrew.



2.8.4 Installing an HBA/RAID card

1. Refer to the **Installing a PCIe expansion card** section to install the HBA/RAID card into a lower expansion card bracket.

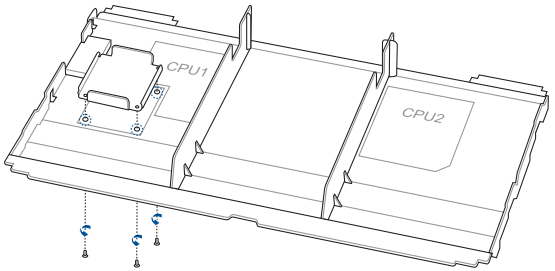


2. Connect the HBA/RAID card to the storage device backplane.
3. To install a cache vault power module, refer to the **Installing a cache vault power module** section (optional).

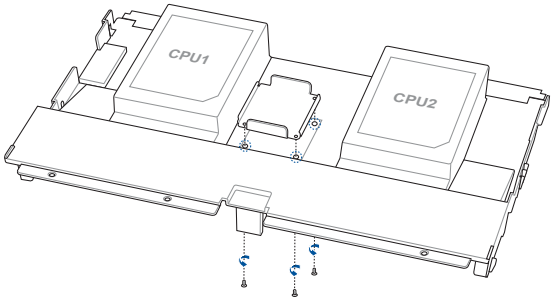
2.8.5 Installing a cache vault power module (optional)

1. Install the cache vault power module clip onto the air duct, then secure it using three screws.

GPU models (-RS8G, -RS24G)

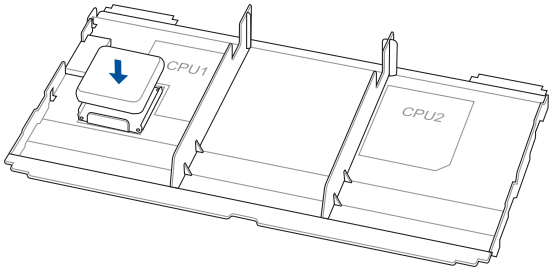


Non-GPU models (-RS12U, -RS24U)

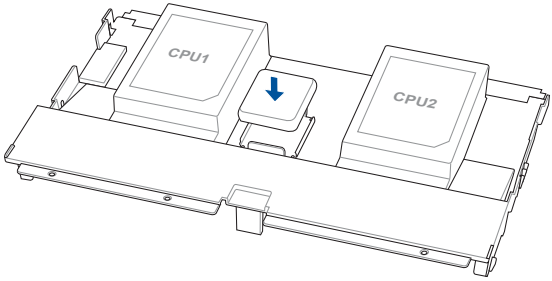


2. Install the cache vault power module, then connect the cache vault power module to the HBA/RAID card.

GPU models (-RS8G, -RS24G)

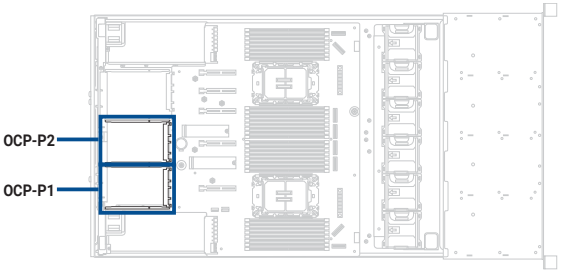


Non-GPU models (-RS12U, -RS24U)



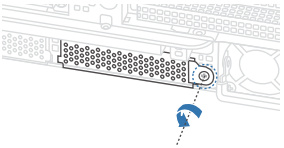
2.8.6 Installing an OCP card

OCP 3.0 slots

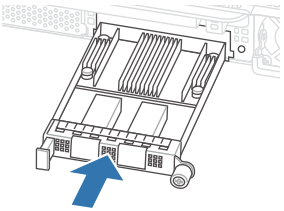


OCP-P1

1. Remove the following components:
   - Chassis cover
   - Air duct
   - Expansion card brackets
2. Remove the screw, then remove the OCP slot cover.

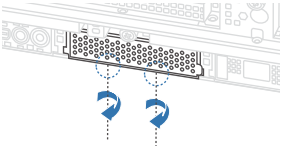


3. Install the OCP card.

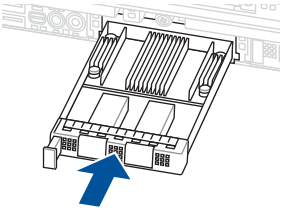


OCP-P2

1. Remove the following components:
   - Chassis cover
   - Air duct
   - Expansion card brackets
2. Remove the screws, then remove the OCP slot cover.



3. Install the OCP card.

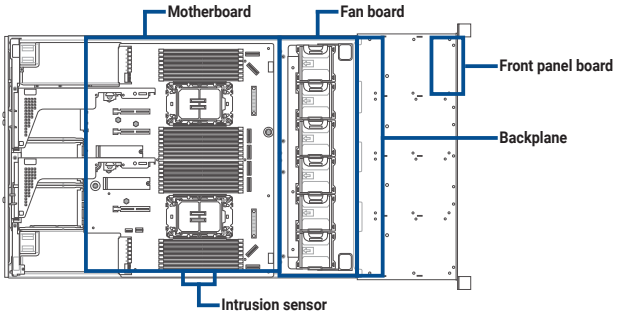


2.9 Cable connections

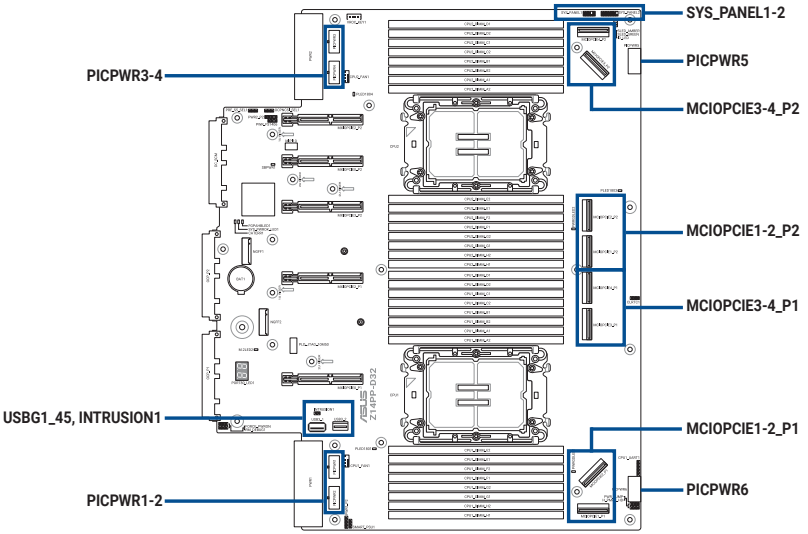
NOTE:

- The bundled system cables are pre-connected before shipment. You do not need to disconnect these cables unless you are going to remove pre-installed components to install additional devices.
- Refer to the **Motherboard Information** chapter for detailed information on the connectors.

Board locations

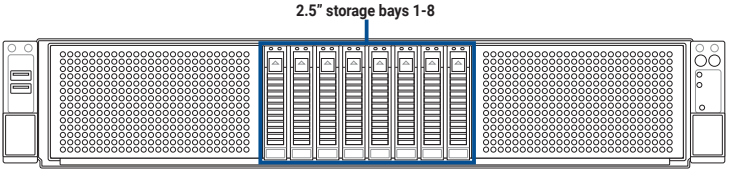


Motherboard connector locations



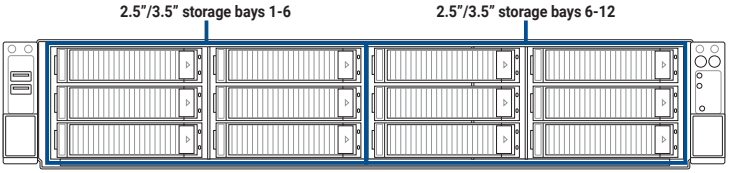
2.9.1 Pre-connected system cables

RS720-E12-RS8G



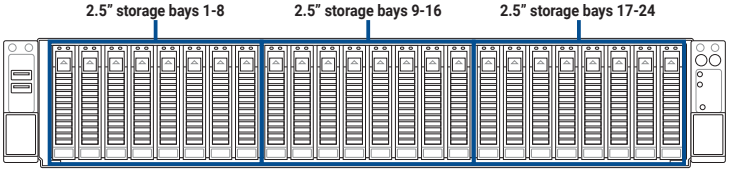
Origin	Connector	Destination	Connector
Motherboard	MCIOPCIE3_P0	Backplane	MCIO_P1
	MCIOPCIE4_P0		MCIO_P2
	MCIOPCIE1_P1		MCIO_P3
	MCIOPCIE2_P1		MCIO_P4
	PICPWR5		PWR1
	PICPWR1	GPU cards	n/a
	PICPWR2		
	PICPWR3		
	PICPWR6	Fan board	PICPWR
	USBG1_45	Front panel board	USB3_HD1
	SYS_PANEL1		FPB_CON1
	SYS_PANEL2		LAN34_CON1
	INTRUSION1	Intrusion sensor	n/a

RS720-E12-RS12U



Origin	Connector	Destination	Connector
Motherboard	MCIOPCIE1_P0	Backplane	MCIO_P1
	MCIOPCIE2_P0		MCIO_P2
	MCIOPCIE3_P0		MCIO_P3
	MCIOPCIE4_P0		MCIO_P4
	MCIOPCIE1_P1		MCIO_P5
	MCIOPCIE2_P1		MCIO_P6
	PICPWR5		PWR1
	PICPWR1	GPU cards	n/a
	PICPWR2		
	PICPWR3		
	PICPWR6	Fan board	PICPWR
	USBG1_45	Front panel board	USB3_HD1
	SYS_PANEL1		FPB_CON1
	SYS_PANEL2		LAN34_CON1
	INTRUSION1	Intrusion sensor	n/a

RS720-E12-RS24U/G



Origin	Connector	Destination	Connector
Motherboard	MCIOPCIE3_P0	Switchboard 1	MCIO_P3
	MCIOPCIE4_P0		MCIO_P4
	MCIOPCIE1_P1	Switchboard 2	MCIO_P5
	MCIOPCIE2_P1		MCIO_P6
	PICPWR5	Backplane	PWR1
	PICPWR1	GPU cards	n/a
	PICPWR2		
	PICPWR3		
	PICPWR6	Fan board	PICPWR
	USBG1_45	Front panel board	USB3_HD1
	SYS_PANEL1		FPB_CON1
	SYS_PANEL2		LAN34_CON1
	INTRUSION1	Intrusion sensor	n/a

2.9.2 Storage device configurations and cabling

RS720-E12-RS8G

Hardware RAID for 8x NVMe (9560-16i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	MCIO_P1
	C1		MCIO_P2

Hardware RAID for 8x NVMe (9670-24i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	MCIO_P1
	C1		MCIO_P2
	C2		MCIO_P3

8x SATA/SAS (9560-16i/9670-24i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	SLIMSAS1, SLIMSAS2

8x SATA/SAS (3008/3108 PIKE card)

Origin	Connector	Destination	Connector
PIKE card	ISAS1	Backplane	SLIMSAS1, SLIMSAS2

RS720-E12-RS12U

Hardware RAID for 12x NVMe (9560-16i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	MCIO_P1
	C1		MCIO_P2

Hardware RAID for 12x NVMe (9670-24i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	MCIO_P1
	C1		MCIO_P2
	C2		MCIO_P3

12x SATA/SAS (9560-16i/9670-24i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	SLIMSAS1, SLIMSAS2
	C1		SLIMSAS3

8x SATA/SAS (3008/3108 PIKE card)

Origin	Connector	Destination	Connector
PIKE card	ISAS1	Backplane	SLIMSAS1, SLIMSAS2

RS720-E12-RS24U/G

16x SATA/SAS (9560-16i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	SLIMSAS1, SLIMSAS2
	C1		SLIMSAS3, SLIMSAS4

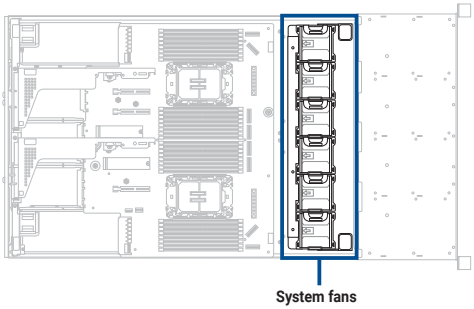
24x SATA/SAS (9670-24i RAID card)

Origin	Connector	Destination	Connector
RAID card	C0	Backplane	SLIMSAS1, SLIMSAS2
	C1		SLIMSAS3, SLIMSAS4
	C2		SLIMSAS5, SLIMSAS6

8x SATA/SAS (3008/3108 PIKE card)

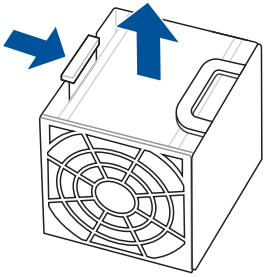
Origin	Connector	Destination	Connector
PIKE card	ISAS1	Backplane	SLIMSAS1, SLIMSAS2

2.10 System fans



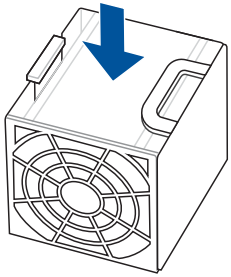
2.10.1 Removing a system fan

Press the latch inwards, then pull and remove the fan from the fan cage.



2.10.2 Installing a system fan

Install the fan into the fan cage and ensure it is securely seated.



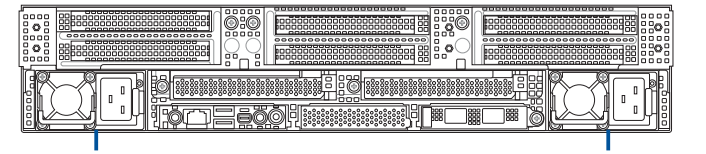
2.11 Redundant power supply units

NOTE:

- The system automatically combines the power supply units. The combined output power varies with input voltages.
- To enable the hot-swap feature (redundant mode), keep the total power consumption of the system under the maximum output power of an individual power supply module.

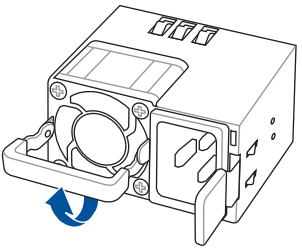
WARNING:

- Always use PSUs with the same watt and power rating. Combining PSUs with different wattages may yield unstable results and potential damage to your system.
- For a steady power input, use only the power cables that come with the server system package.

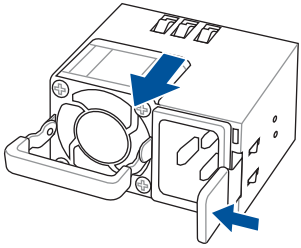


2.11.1 Removing a power supply unit

1. Lift up the PSU lever.

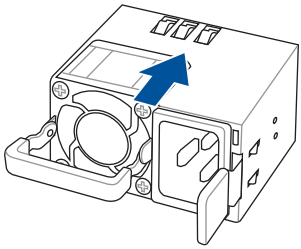


2. Hold the PSU lever and press the PSU latch inwards, then carefully pull the PSU out of the system chassis.



2.11.2 Installing a power supply unit

Align and install the PSU into the server chassis until it clicks into place.



2.12 Motherboard

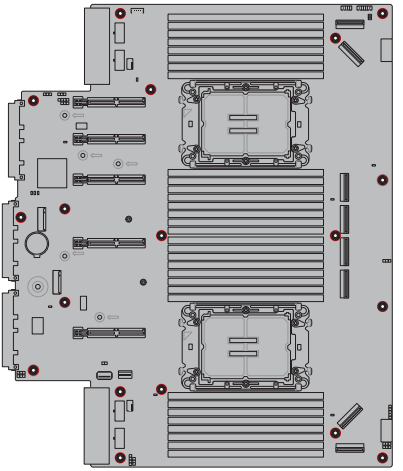
2.12.1 Removing the motherboard

To remove the system motherboard:

1. Disconnect the cables from the motherboard and remove any installed components on the motherboard.

   NOTE: Take a photo or make a note of which components are removed, which cables are disconnected, and which connectors the cables were connected to.

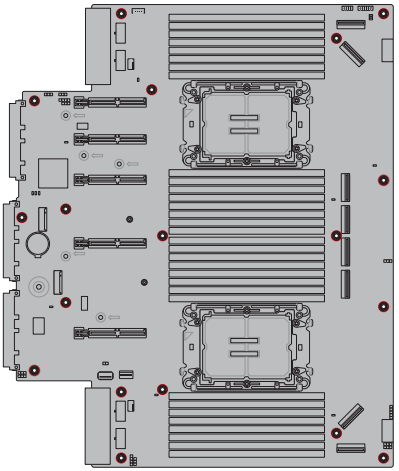
2. Remove the screws, then remove the motherboard.



2.12.2 Installing the motherboard

To install the system motherboard:

1. Place the motherboard into the chassis and ensure the screw holes on the motherboard are aligned with the screw holes in the chassis, then secure the motherboard to the chassis using the screws removed previously.

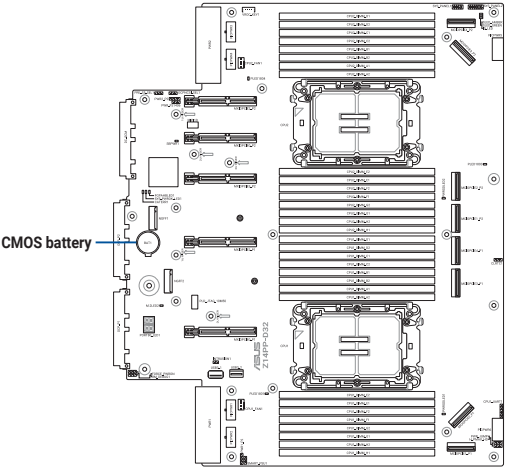


2. Reinstall any removed components and reconnect the cables to the motherboard.

2.13 CMOS battery

2.13.1 Replacing the CMOS battery

1. Remove the CMOS battery.



2. Place the replacement CMOS battery into the battery compartment.

2.14 Rail kit options

This server system supports the rail kit options listed below. For more information on rail kit installation, refer to corresponding documentation on the ASUS support site or on the official product site for this server system.

NOTE:

- We strongly recommend that at least two able-bodied persons perform the installation of the rail kit.
- We recommend the use of an appropriate lifting tool or device, if necessary.

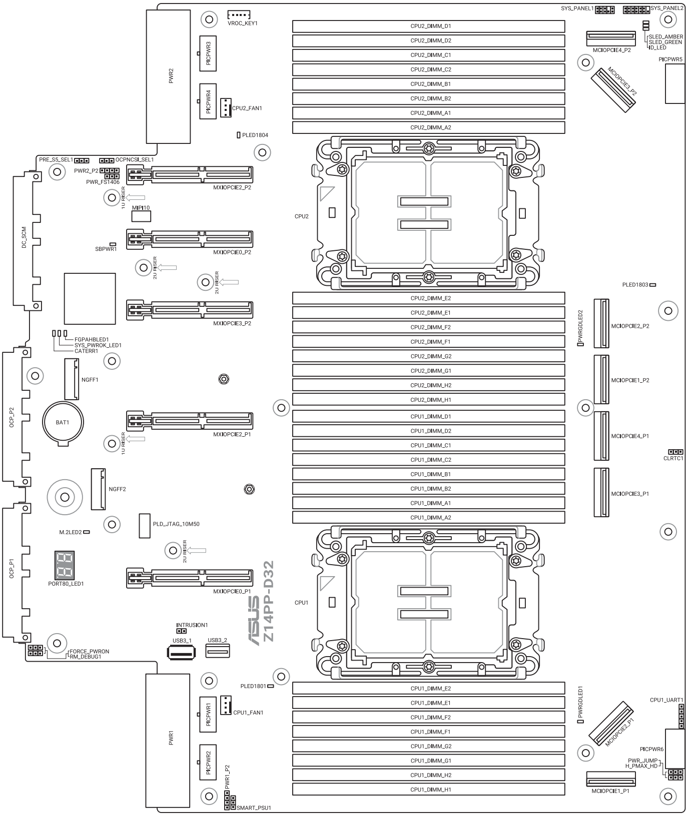
- 1.5U full-pull ball bearing rail kit

3

Motherboard Information

This chapter includes the motherboard layout and brief descriptions of the jumpers and internal connectors.

3.1 Motherboard layout

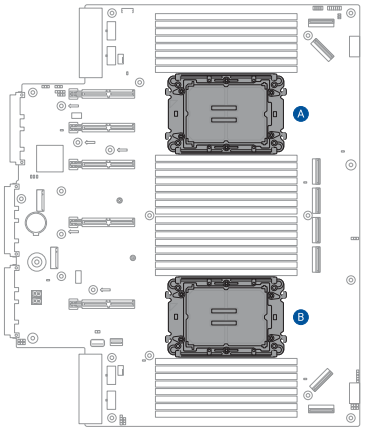


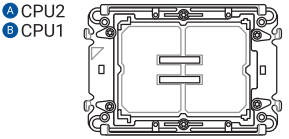
Layout contents

3.2 Sockets

1. CPU sockets (CPU1-2)

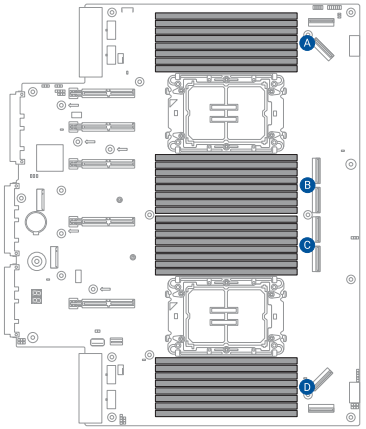
The motherboard comes with two surface mount LGA4710 sockets designed for Intel® Xeon® 6 processors.

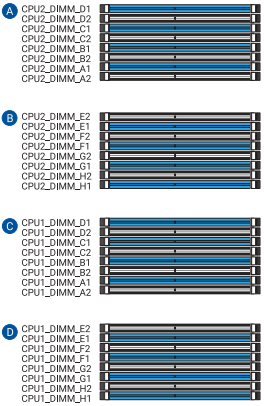




2. Dual Inline Memory Module (DIMM) sockets (CPU1/CPU2_DIMM_A1-H2)

The motherboard comes with thirty two Double Data Rate 5 (DDR5) Dual Inline Memory Modules (DIMM) sockets.





3.3 Jumpers

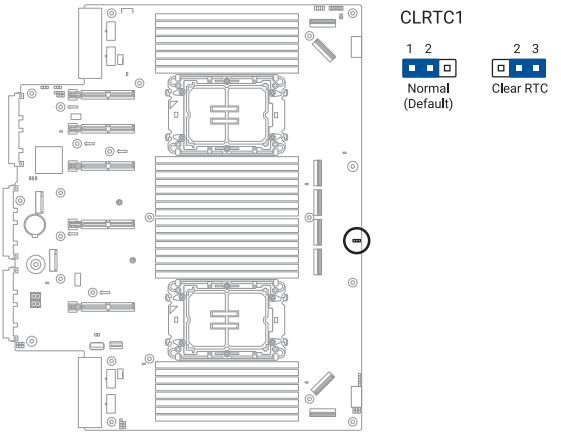
1. Clear RTC RAM (3-pin CLRTC1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

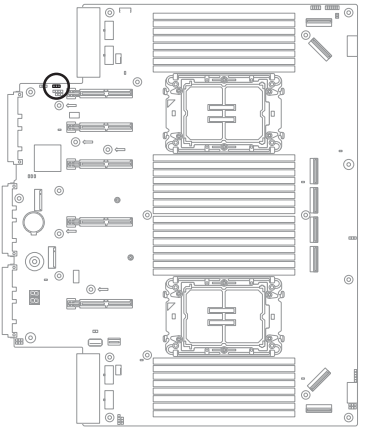
1. Turn OFF the computer and disconnect the power cord.
2. Move the jumper cap from pins 1–2 (default) to pins 2–3. Keep the cap on pins 2–3 for about 5–10 seconds, then move the cap back to pins 1–2.
3. Reconnect the power cord and turn ON the computer.
4. Hold down the <Del> key during the boot process to enter the BIOS setup and reconfigure system setup parameters.

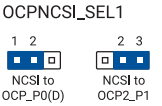
CAUTION: Except when clearing the RTC RAM, never remove the cap in the default position on the CLRTC jumper. Removing the cap will cause system boot failure!



2. NCSI setting (3-pin OCPNCSI_SEL1)

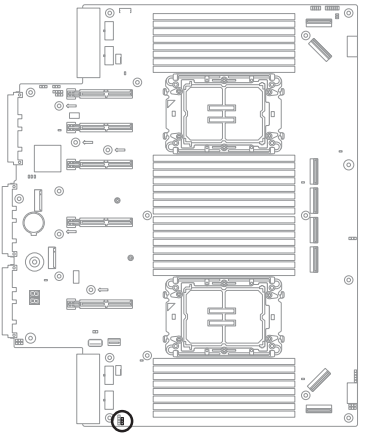
This jumper allows you to select the NCSI device.

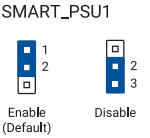




3. Smart Ride Through (SmaRT) setting (3-pin SMART_PSU1)

This jumper allows you to enable or disable the Smart Ride Through (SmaRT) function. This feature is enabled by default. Set to pins 2-3 to disable it. When enabled, SmaRT allows uninterrupted operation of the system during an AC loss event.

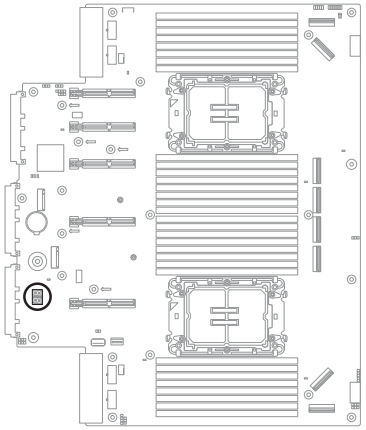




3.4 Internal LEDs

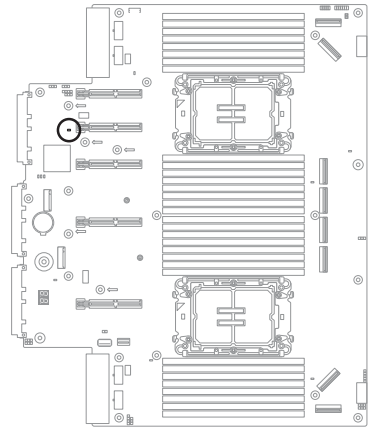
1. Q-Code LED (PORT80_LED1)

The Q-Code LED displays a 2-digit error code that indicates the system status.



2. Standby power LED (SBPWR1)

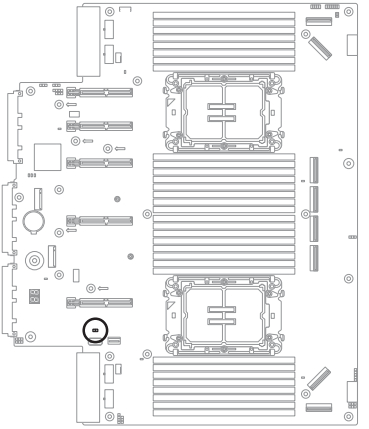
The standby power LED lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component.

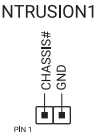


3.5 Internal connectors

1. Chassis intrusion connector (2-pin INTRUSION1)

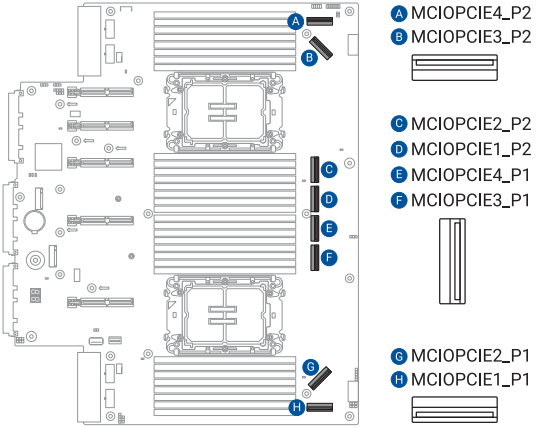
This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.





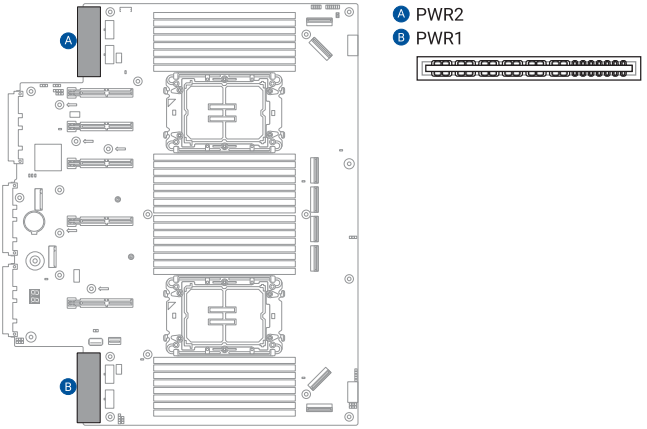
2. MCIOPCIE connector (MCIOPCIE1-4_P1/P2)

This connector connects the PCIe signal to the backplane.



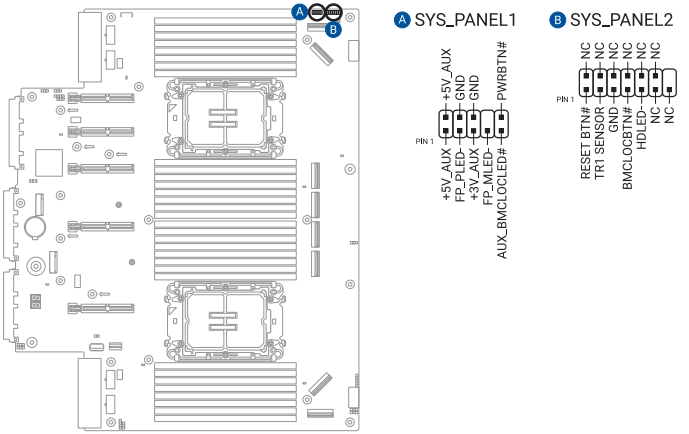
3. Power connector (PWR1-2)

This connector connects to the power supply units and supplies power to the motherboard.



4. System panel connector (10-1 pin SYS_PANEL1; 14-1 pin SYS_PANEL2)

This connector supports several chassis-mounted functions.



- **System power LED (FP_PLED)**

  This 1-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power.

- **Message LED (FP_MLED)**

  This 2-pin connector is for the message LED cable that connects to the front message LED. The message LED is controlled by the BMC to indicate an abnormal event occurrence.

- **Locator LED connector (AUX_BMCLOCLED)**

  This connector allows you to connect the Locator LED. The Location LED helps visually locate and identify the server in error on a server rack.

- **Power Button/Soft-off Button connector (PWRBTN)**

  The 3-1 pin connector allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **Reset button connector (RESETBTN)**

  This connector allows you to connect the chassis-mounted reset button. Press the reset button to reboot the system.

- **TR1 Sensor connector (TR1 SENSOR)**

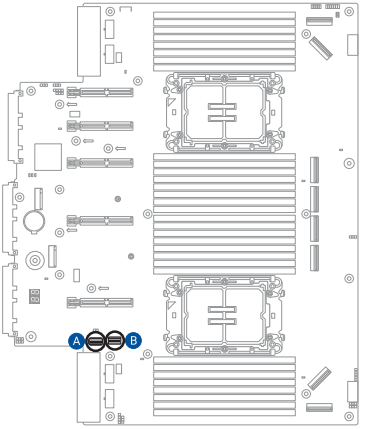
  This connector allows detection of the environmental temperature of the front panel.

- **Locator button connector (BMCLOCBTN#)**

  This connector allows you to connect the Locator button. Press the button to light up the Locator LED.

5. USB 5Gbps connector (USBG1_3; USBG1_45)

This connector allows you to connect a USB 5Gbps module for additional USB 5Gbps ports on the front panel. The Type-A connector allows you to directly connect a USB flash drive.



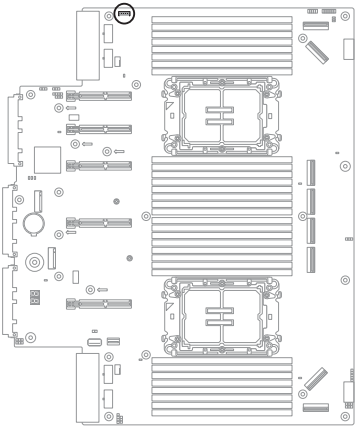
A USBG1_3 (Type-A)

B USBG1_45 (For front panel)

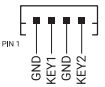
6. VROC_KEY connector (4-pin VROC_KEY1)

This connector allows you to connect a VROC hardware key to enable additional CPU RAID functions with Intel® CPU RSTe.

NOTE: The VROC hardware key is sold separately.



VROC_KEY1



BIOS Setup

4

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

4.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup:

1. **ASUS CrashFree BIOS 3**

   To recover the BIOS using a bootable USB flash disk drive if the BIOS file fails or gets corrupted.

2. **ASUS EzFlash**

   Updates the BIOS using a USB flash disk.

Refer to the corresponding sections for details on these utilities.

4.1.1 ASUS CrashFree BIOS 3 Utility

The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file if it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using a USB flash drive that contains the updated BIOS file.

NOTE: Prepare a USB flash drive containing the updated motherboard BIOS before using this utility.

Recovering the BIOS from a USB flash drive

To recover the BIOS from a USB flash drive:

1. Insert the USB flash drive with the original or updated BIOS file to one USB port on the system.
2. The utility will automatically recover the BIOS. It resets the system when the BIOS recovery finished.

CAUTION: DO NOT shut down or reset the system while recovering the BIOS! Doing so would cause system boot failure!

NOTE: The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website at www.asus.com to download the latest BIOS file.

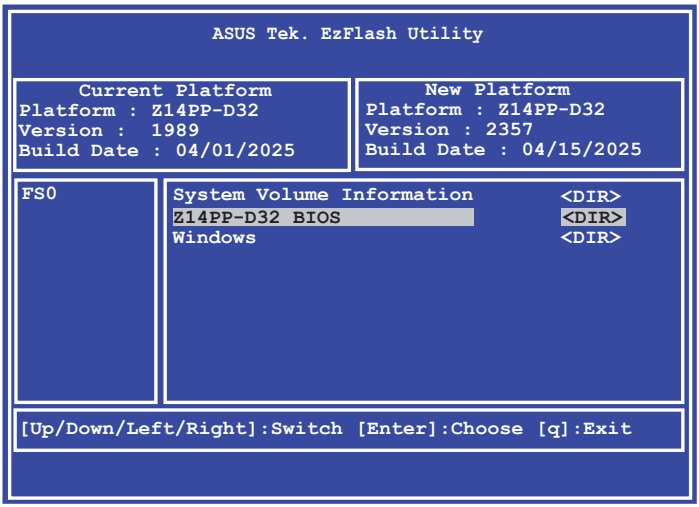
4.1.2 ASUS EZ Flash Utility

The ASUS EZ Flash Utility feature allows you to update the BIOS without having to use a DOS-based utility.

NOTE: Before you start using this utility, download the latest BIOS from the ASUS website at www.asus.com.

To update the BIOS using EZ Flash Utility:

1. Insert the USB flash disk that contains the latest BIOS file into the USB port.
2. Enter the BIOS setup program. Go to the **Tool** menu, then select **Start ASUS EZ Flash**. Press <Enter>.



3. Press the Left/Right arrow keys to switch to the **Drive** field.
4. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, then press <Enter>.
5. Press Left/Right arrow keys to switch to the **Folder Info** field.
6. Press the Up/Down arrow keys to find the BIOS file, then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done.

CAUTION:

- This function can support devices such as a USB flash disk with FAT 32/16 format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!

NOTE: Use the default BIOS settings to ensure system compatibility and stability. Press <F5> and select **Yes** to load the default BIOS settings.

4.2 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in the **Managing and updating your BIOS** section.

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup." This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware chip.

The firmware chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

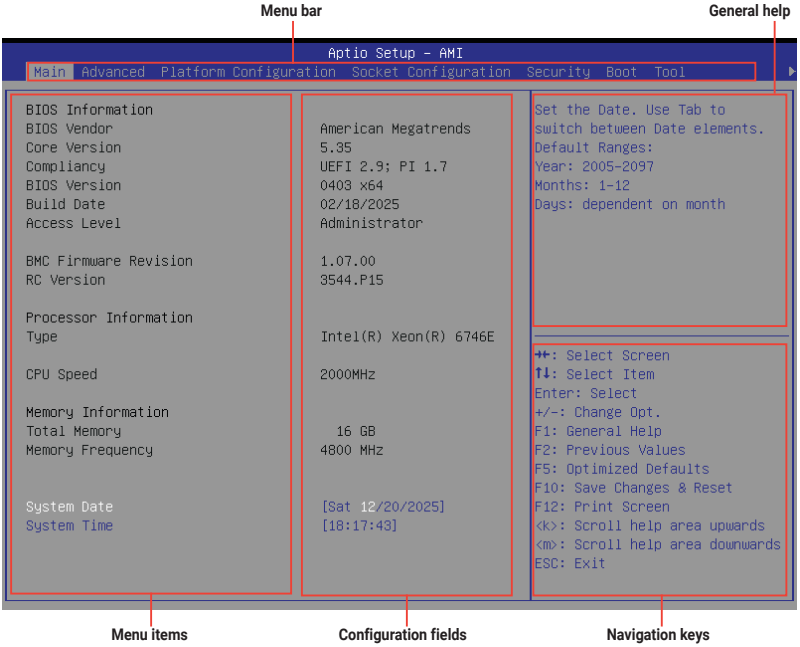
If you wish to enter Setup after POST, restart the system by pressing <Ctrl>+<Alt>+<Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

NOTE:

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Press <F5> and select **Yes** to load the BIOS default settings.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard.

4.2.1 BIOS menu screen



4.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Chipset	For changing the chipset settings
Security	For changing the security settings
Boot	For changing the system boot configuration
Tool	For configuring options for special functions
Event Logs	For changing the event log settings
Server Mgmt	For changing the Server Mgmt settings
Exit	For selecting the exit options

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (such as Advanced) on the menu bar have their respective menu items.

Submenu items

A solid triangle before each item on any menu screen means that the item has a submenu. To display the submenu, select the item then press <Enter>.

Navigation keys

At the bottom right corner of a menu screen are the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings.

General help

At the top right corner of the menu screen is a brief description of the selected item.

Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it and press <Enter> to display a list of options.

Pop-up window

Select a menu item and press <Enter> to display a pop-up window with the configuration options for that item.

Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.

4.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears. The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, and language settings.

System Date [MM/DD/YYYY]

Allows you to set the system date.

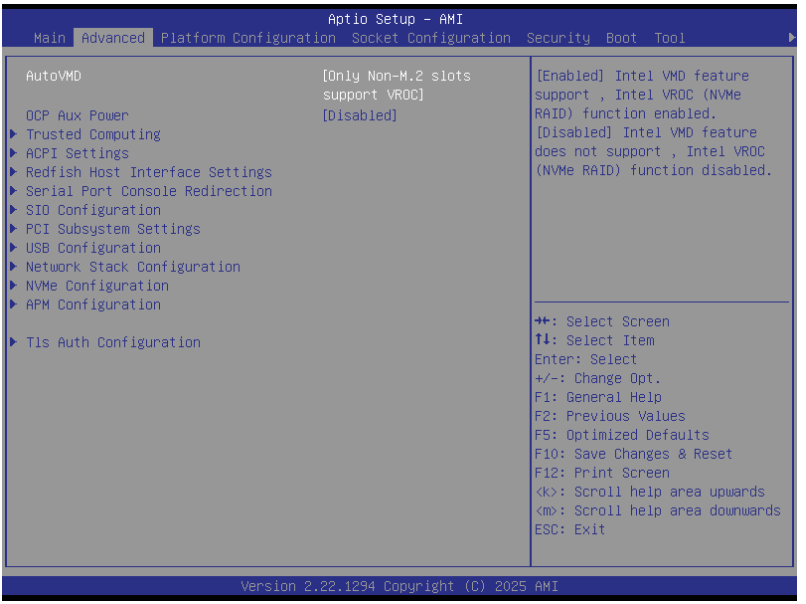
System Time [HH:MM:SS]

Allows you to set the system time.

4.4 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

CAUTION: Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



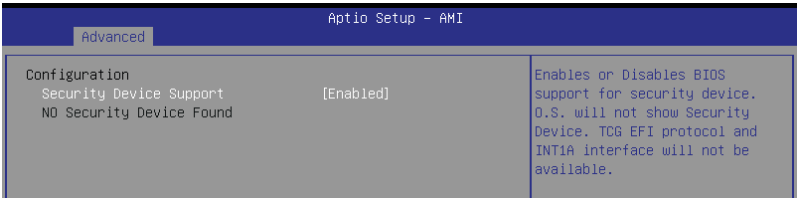
AutoVMD [Only Non-M.2 slots support VROC]

Configuration options: [Disabled] [All drive slots support VROC] [Only M.2 slots support VROC] [Only Non-M.2 slots support VROC]

OCP Aux Power [Disabled]

Configuration options: [Disabled] [Enabled]

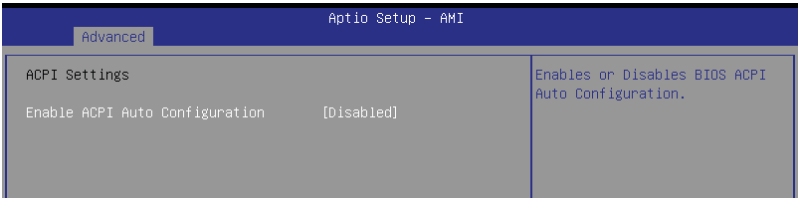
4.4.1 Trusted Computing



Security Device Support [Enabled]

Allows you to enable or disable the BIOS support for security device.
Configuration options: [Disabled] [Enabled]

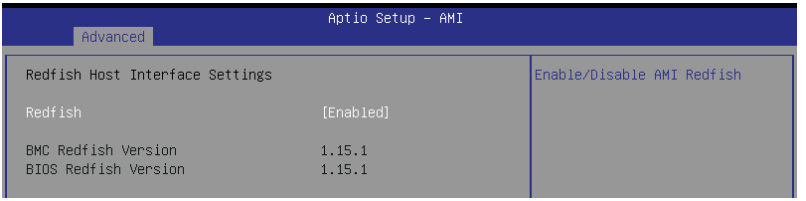
4.4.2 ACPI Settings



Enable ACPI Auto Configuration [Disabled]

Allows you to enable or disable the BIOS ACPI Auto Configuration.
Configuration options: [Disabled] [Enabled]

4.4.3 Redfish Host Interface Settings



Redfish [Enabled]

Allows you to enable or disable AMI Redfish.
Configuration options: [Disabled] [Enabled]

NOTE: The following item is available only when **Redfish** is set to **[Enabled]**.

Authentication Mode [Basic Authentication]

Configuration options: [Basic Authentication] [Session Authentication] [Authentication None]

IP Address

Allows you to set the IP address

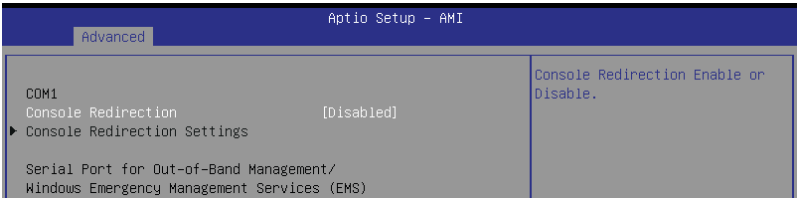
IP Mask Address

Allows you to set the IP mask address

IP Port

Allows you to set the IP port

4.4.4 Serial Port Console Redirection



COM1

Console Redirection [Disabled]

Allows you to enable or disable the console redirection feature.
Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Console Redirection** is set to **[Enabled]**.

Terminal Type [VT100Plus]

Allows you to set the terminal type.

[VT100]	ASCII char set.
[VT100Plus]	Extends VT100 to support color, function keys, etc.
[VT-UTF8]	Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
[ANSI]	Extended ASCII char set.

Bits per second [115200]

Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
Configuration options: [9600] [19200] [38400] [57600] [115200]

Data Bits [8]

Configuration options: [7] [8]

Parity [None]

A parity bit can be sent with the data bits to detect some transmission errors. [Mark] and [Space] parity do not allow for error detection.

[None]	None
[Even]	parity bit is 0 if the num of 1's in the data bits is even
[Odd]	parity bit is 0 if num of 1's in the data bits is odd
[Mark]	parity bit is always 1
[Space]	parity bit is always 0

Stop Bits [1]

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning.) The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.
Configuration options: [1] [2]

Flow Control [None]

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.
Configuration options: [None] [Hardware RTS/CTS]

VT-UTF8 Combo Key Support [Enabled]

This allows you to enable the VT-UTF8 Combination Key Support for ANSI/VT100 terminals.
Configuration options: [Disabled] [Enabled]

Recorder Mode [Disabled]

With this mode enabled only text will be sent. This is to capture Terminal data.
Configuration options: [Disabled] [Enabled]

Resolution 100x31 [Enabled]

This allows you to set the number of rows and columns supported on the Legacy OS.
Configuration options: [Disabled] [Enabled]

Putty Keypad [VT100]

This allows you to select the FunctionKey and Keypad on Putty.
Configuration options: [VT100] [LINUX] [XTERMR6] [SCO] [ESCN] [VT400]

Serial Port for Out-of-Band Management/ Windows Emergency Management Service (EMS)

Console Redirection EMS [Enabled]

Allows you to enable or disable the console redirection feature.
Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Console Redirection EMS** is set to **[Enabled]**.

Console Redirection Settings

Terminal Type EMS [VT-UTF8]

Configuration options: [VT100] [VT100Plus] [VT-UTF8] [ANSI]

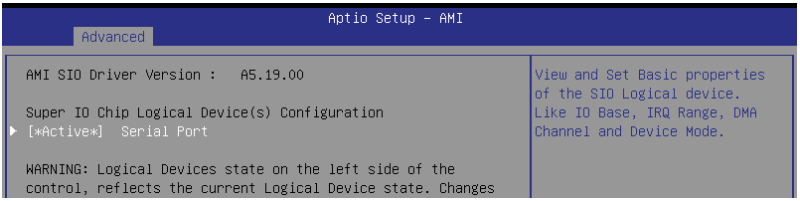
Bits per second EMS [115200]

Configuration options: [9600] [19200] [57600] [115200]

Flow Control EMS [None]

Configuration options: [None] [Hardware RTS/CTS] [Software Xon/Xoff]

4.4.5 SIO Configuration



WARNING: Logical Devices state on the left side of the control, reflects the current Logical Device state. Changes made during Setup Session will be shown after you restart the system.

[*Active*] Serial Port

Allows you to view and set basic properties of the SIO Logical device such as IO Base, IRQ Range, DMA Channel, and Device Mode.

Use This Device [Enabled]

Allows you to enable or disable this Logical Device.
Configuration options: [Disabled] [Enabled]

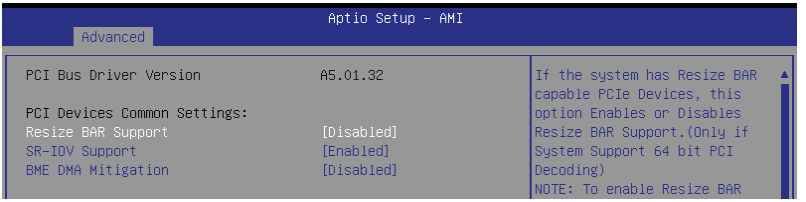
NOTE: The following item is available only when **Use This Device** is set to **[Enabled]**.

WARNING: Disabling SIO Logical Devices may have unwanted side effects. PROCEED WITH CAUTION.

Possible: [Use Automatic Settings]

Allows the user to change the device resource settings. New settings will be reflected no this setup page after system restarts.
Configuration options: [Use Automatic Settings] [IO=3F8h; IRQ=4; DMA;] [IO=3F8h; IRQ=3, 4, 5, 7, 9, 10, 11, 12; DMA;] [IO=2F8h; IRQ=3, 4, 5, 7, 9, 10, 11, 12; DMA;] [IO=3E8h; IRQ=3, 4, 5, 7, 9, 10, 11, 12; DMA;] [IO=2E8h; IRQ=3, 4, 5, 7, 9, 10, 11, 12; DMA;]

4.4.6 PCI Subsystem Settings



Re-Size BAR Support [Disabled]

If system has Resizable BAR capable PCIe Devices, this option enables or disables Resizable BAR Support. (Only if system supports 64-bit PCI Decoding).
Configuration options: [Disabled] [Auto]

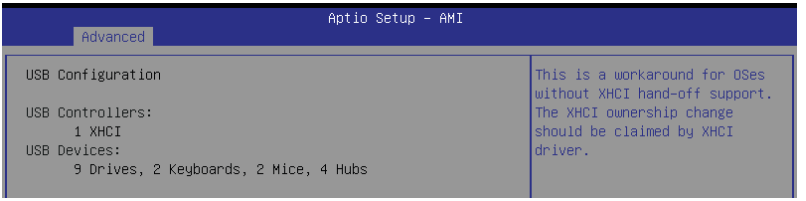
SR-IOV Support [Enabled]

Allows you to enable or disable Single Root IO Virtualization Support if the system has SR-IOV capable PCIe devices.
Configuration options: [Disabled] [Enabled]

BME DMA Mitigation [Disabled]

Allows you to enable or disable BME DMA mitigation.
Configuration options: [Disabled] [Enabled]

4.4.7 USB Configuration



XHCI Hand-off [Enabled]

Configuration options: [Enabled] [Disabled]

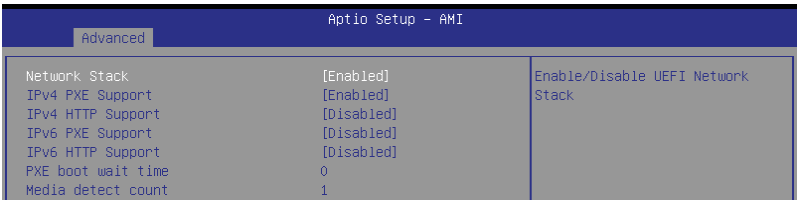
USB Mass Storage Driver Support [Enabled]

Configuration options: [Disabled] [Enabled]

Mass Storage Devices

Allows you to select the mass storage device emulation type for devices connected.
Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CD-ROM]

4.4.8 Network Stack Configuration



Network Stack [Enabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Network Stack** is set to **[Enabled]**.

IPv4 PXE Support [Enabled]

Configuration options: [Disabled] [Enabled]

IPv4 HTTP Support [Enabled]

Configuration options: [Disabled] [Enabled]

IPv6 PXE Support [Disabled]

Configuration options: [Disabled] [Enabled]

IPv6 HTTP Support [Disabled]

Configuration options: [Disabled] [Enabled]

PXE boot wait time [0]

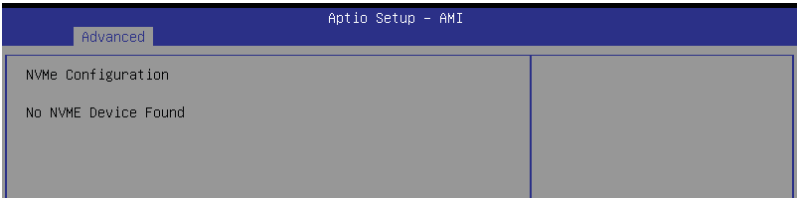
Wait time to press ESC key to abort the PXE boot.

Media detect count [1]

Wait time (in seconds) to detect media.

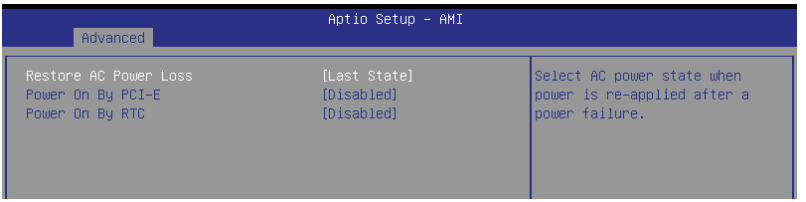
4.4.9 NVMe Configuration

This page will display the NVMe controller and drive information.



4.4.10 APM Configuration

Allows you to configure the Advance Power Management (APM) settings.



Restore AC Power Loss [Last State]

When set to [Power Off], the system goes into off state after an AC power loss. When set to [Power On], the system will reboot after an AC power loss. When set to [Last State], the system goes into either off or on state, whatever the system state was before the AC power loss.
Configuration options: [Power On] [Power Off] [Last State]

Power On By PCI-E [Disabled]

[Disabled] Disables the PCIE devices to generate a wake event.

[Enabled] Enables the PCIE devices to generate a wake event.

Power On By RTC [Disabled]

[Disabled] Disables RTC to generate a wake event.

[Enabled] When set to [Enabled], the items **RTC Alarm Date (Days)** and **Hour/Minute/Second** will become user-configurable with set values.

4.4.11 T1s Auth

Allows you to configure the Server Certificate Authority (CA).

Server / Client CA Configuration

Enroll Cert

Allows you to enroll a certificate using a certificate file or manually input a certificate GUID.

Enroll Cert Using File
Allows you to enroll a certificate using a certificate file. You will be prompted to select a storage device and navigate to the location of the certificate file.

Cert GUID
Allows you to enroll a certificate by manually inputting the certificate GUID.

Commit Changes and Exit
Exit Server CA configuration after saving the changes.

Discard Changes and Exit
Exit Server CA configuration without saving any changes.

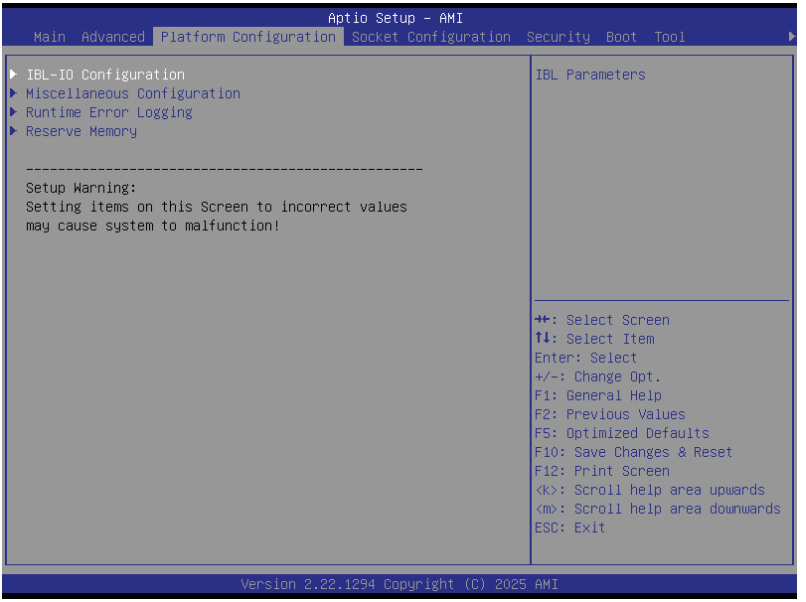
Delete Cert

Allows you to delete the certificate.

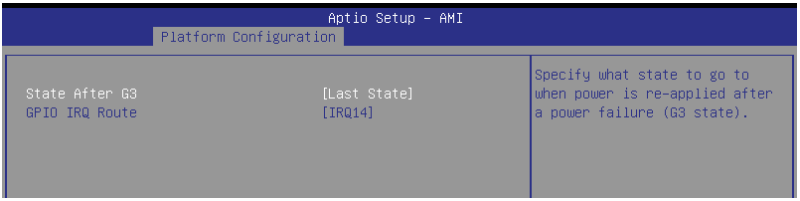
4.5 Platform Configuration menu

The Platform Configuration menu items allow you to change the platform settings.

WARNING: Setting items in this menu to incorrect values may cause the system to malfunction!



4.5.1 IBL-IO Configuration



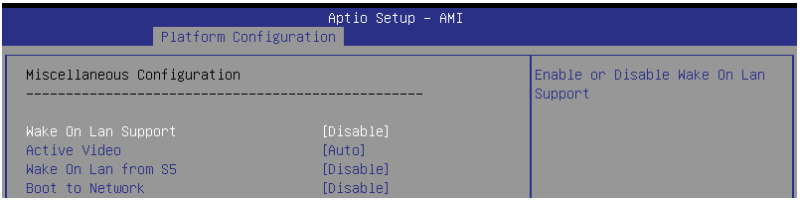
State After G3 [Last State]

Configuration options: [S0 State] [S5 State] [Last State]

GPIO IRQ Route [IRQ14]

Configuration options: [IRQ14] [IRQ15]

4.5.2 Miscellaneous Configuration



Wake On LAN Support [Disabled]

Configuration options: [Disabled] [Enabled]

Active Video [Auto]

Configuration options: [Auto] [Onboard Device] [PCIE Device]

Wake On LAN From S5 [Disabled]

Configuration options: [Disabled] [Enabled]

Boot to Network [Disabled]

Configuration options: [Disabled] [Enabled]

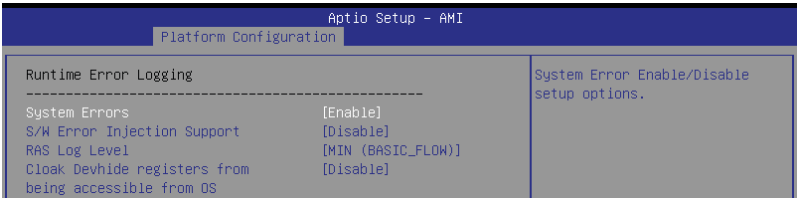
RTC Wake System From S5 [Disabled]

Configuration options: [Disabled] [Enabled] [Enable and set wake on time]

Clock SSC Support [Hardware]

Configuration options: [SSC Off] [SSC = -0.3%] [SSC = -0.5%] [Hardware]

4.5.3 Runtime Error Logging



System Errors [Enabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following item is available only when **System Errors** is set to **[Enabled]**.

S/W Error Injection Support [Disabled]

Configuration options: [Disabled] [Enabled]

RAS Log Level [MIN (BASIC_FLOW)

Configuration options: [None] [MIN (BASIC_FLOW)] [MID (BASIC_FLOW, FUNC_FLOW)] [MAX (BASIC_FLOW, FUNC_FLOW, REG)

Cloak Devhide registers from being accessible from OS [Disabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **System Errors** is set to **[Enabled]**.

Corrected Error Cloaking [Disabled]

Configuration options: [Disabled] [Enabled]

UCNA Cloaking [Disabled]

Configuration options: [Disabled] [Enabled]

UboxToPcuMca Enabling [Enabled]

Configuration options: [Disabled] [Enabled]

FatalErrDebugHalt [Disabled]

Configuration options: [Disabled] [Enabled]

Mca Bank Warm Boot Clear Errors [Enabled]

Configuration options: [Disabled] [Enabled]

Clear Shadow Registers [Enabled]

Configuration options: [Disabled] [Enabled]

OOB RAS Support [Disabled]

Configuration options: [Disabled] [Enabled]

RAS Performance Support [Enabled]

Configuration options: [Disabled] [Enabled]

eMCA Settings

Allows you to configure eMCA options.

Whea Settings

Allows you to configure Whea options.

Memory Error Enabling

Allows you to configure Memory Error options.

IIO Error Enabling

Allows you to configure IIO Error options.

CXL Error Enabling

Allows you to configure CXL Error options.

PCIe Error Enabling

Allows you to configure PCIe Error options.

Error Control Setting

Allows you to configure Error Control options.

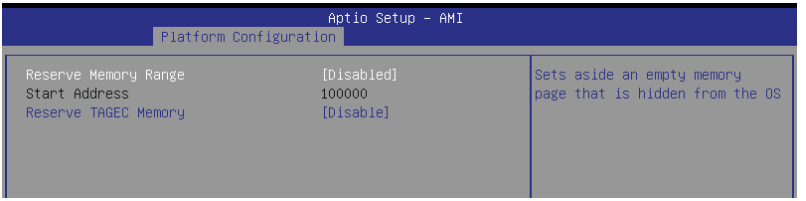
Crash Log Enabling

Allows you to configure Crash Log options.

AWR Configuration

Allows you to configure AWR options.

4.5.4 Reserve Memory



Reserve Memory Range [Disabled]

Configuration options: [Disabled] [Enabled]

Start Address [100000]

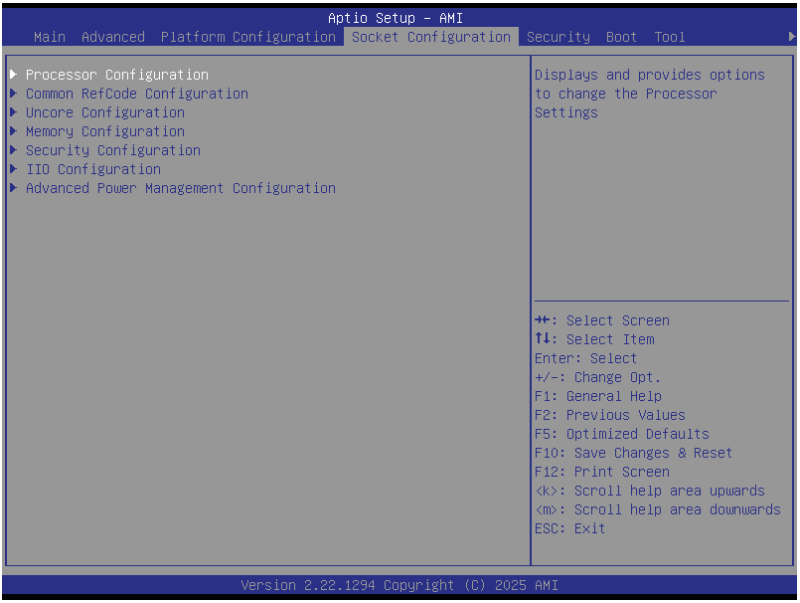
Allows you to set the start address.

Reserve TAGEC Memory [Disabled]

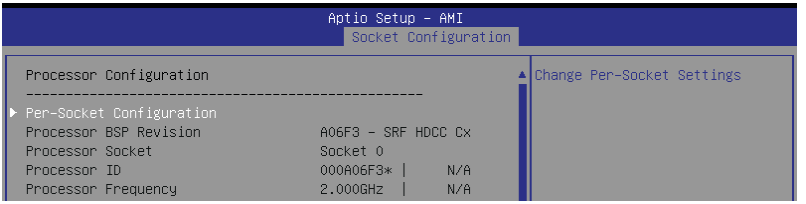
Configuration options: [Disabled] [Enabled]

4.6 Socket Configuration menu

The Socket Configuration menu items allow you to change the socket settings.



4.6.1 Processor Configuration



Per-Socket Configuration

Allows you to configure per-socket options.

Skip Flex Ratio Override [Disabled]

Configuration options: [Disabled] [Enabled]

Check CPU BIST Result [Enabled]

Configuration options: [Disabled] [Enabled]

3StrikeTimer [Enabled]

Configuration options: [Enabled] [Disabled]

Fast String [Enabled]

Configuration options: [Disabled] [Enabled]

Machine Check [Enabled]

Configuration options: [Disabled] [Enabled]

Hardware Prefetcher [Enabled]

Configuration options: [Disabled] [Enabled]

Adjacent Cache Prefetch [Enabled]

Configuration options: [Enabled] [Disabled]

DCU Streamer Prefetcher [Auto]

Configuration options: [Enabled] [Disabled] [Auto]

DCU IP Prefetcher [Enabled]

Configuration options: [Enabled] [Disabled]

L1 Next Page Prefetcher [Enabled]

Configuration options: [Enabled] [Disabled]

Lowest APICID as BSP [Enabled]

Configuration options: [Disabled] [Enabled]

APIC Physical Mode [Disabled]

Configuration options: [Disabled] [Enabled]

IIO LLC Ways Mask (Hex) [0]

Allows you to adjust the IIO LLC Ways Mask.

SMM Blocked and Delayed [Disabled]

Configuration options: [Disabled] [Enabled]

eSMM Save State [Disabled]

Configuration options: [Disabled] [Enabled]

SMBus Error Recovery [SMI]

Configuration options: [Disabled] [SMI] [Error Pin]

Enable Intel(R) TXT [Disabled]

Configuration options: [Disabled] [Enabled]

> **NOTE:** The following items are available only when **Enable Intel(R) TXT** is set to **[Disabled]**.

VMX [Enabled]

Configuration options: [Disabled] [Enabled]

Enable SMX [Disabled]

Configuration options: [Disabled] [Enabled]

Lock Chipset [Enabled]

Configuration options: [Enabled] [Disabled]

BIOS ACM Error Reset [Disabled]

Configuration options: [Disabled] [Enabled]

MSR Lock Control [Enabled]

Configuration options: [Disabled] [Enabled]

PPIN Control [Unlock/Enable]

Configuration options: [Lock/Disable] [Unlock/Enable]

AES-NI [Enabled]

Configuration options: [Disabled] [Enabled]

Core Crash Data GPRs [Disabled]

Configuration options: [Disabled] [Gprs Enabled, Smm Gprs Enabled] [Gprs Enabled, Smm Gprs Disabled]

HWLS Control [Disabled]

Configuration options: [Disabled] [C0/C1 HWLS] [C2/C3 HWLS] [C0/C1 & C2/C3 (all) HWLS]

Processor Trace [Disabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Processor Trace** is set to **[Enabled]**.

Processor Trace Output Scheme [Single Range Output]

Configuration options: [Single Range Output] [ToPA Output]

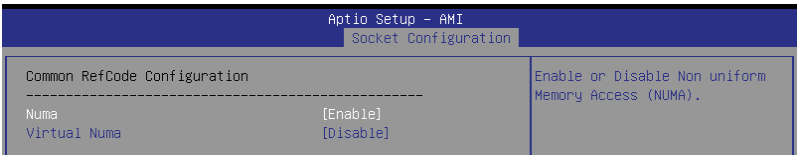
Processor trace memory allocation [4K]

Configuration options: [4-64K]

PSMI Configuration

Allows you to configure PSMI options.

4.6.2 Common RefCode Configuration



Virtual Numa [Disabled]

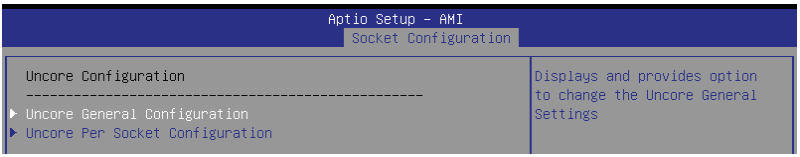
Configuration options: [Disabled] [Enabled]

NOTE: The following item is available only when **Virtual Numa** is set to **[Enabled]**.

Number of Virtual Numa Nodes [0]

Allows you to set the number of virtual Numa nodes.

4.6.3 Uncore Configuration



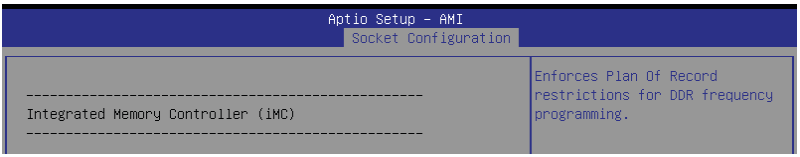
Uncore General Configuration

Allows you to configure Uncore General options.

Uncore Per Socket Configuration

Allows you to configure Uncore Per Socket options.

4.6.4 Memory Configuration



Enforce DDR Memory Frequency POR [Enforce POR]

Configuration options: [Enforce POR] [Enforce Stretch Goals] [Disabled]

Enforce Population POR [Disabled]

Configuration options: [Disabled] [Enabled]

Host Memory Frequency [Auto]

Configuration options: [Auto] [4800-6400]

Global Scrambling [Enabled]

Configuration options: [Disabled] [Enabled]

Memory Topology

Allows you to configure Memory Topology options.

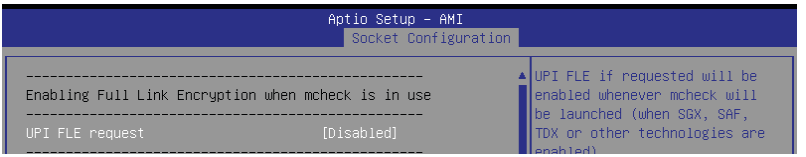
Memory Map

Allows you to configure Memory Map options.

Memory RAS Configuration

Allows you to configure Memory RAS options.

4.6.5 Security Configuration



UPI FLE Request [Disabled]

Configuration options: [Disabled] [Enabled]

Memory Encryption (TME) [Disabled]

Configuration options: [Disabled] [Enabled]

Total Memory Encryption Multi-Tenant (TME-MT) [Disabled]

Configuration options: [Disabled] [Enabled]

Memory Integrity [Disabled]

Configuration options: [Disabled] [Enabled]

TME Encryption Algorithms [AES-XTS-256]

Configuration options: [AES-XTS-128] [AES-XTS-256]

Trust Domain Extensions (TDX) [Disabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Trust Domain Extensions (TDX)** is set to **[Enabled]**.

TDX Secure Arbitration Mode Loader (SEAM Loader) [Disabled]

Configuration options: [Disabled] [Enabled]

TME-MT/TDX key split [1]

Allows you to set the TME-MT/TDX key split.

SGX Error Code (HEX) [16]

Allows you to set the SGX error code.

SGX Factory Reset [Disabled]

Configuration options: [Disabled] [Enabled]

SW Guard Extensions (SGX) [Disabled]

Configuration options: [Disabled] [Enabled]

SGX Package Info In-Band Access [Disabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Software Guard Extensions (SGX)** is set to **[Enabled]**.

SGX PRMRR Size Requested [Auto]

Configuration options: [Auto] [128M-512G]

Select Owner EPOCH Input Type [SGX Owner EPOCH Deactivated]

Configuration options: SGX Owner EPOCH Deactivated] [Change to New Random Owner EPOCHs] [Manual User Defined Owner EPOCHs]

Software Guard Extensions Epoch 0-1

Allows you to set the Software Guard Extensions EPOCH.

SGXLEPUBKEYHASHx Write Enable [Enabled]

Configuration options: [Disabled] [Enabled]

NOTE: The following item is available only when **SGXLEPUBKEYHASHx Write Enable** is set to **[Enabled]**.

SGXLEPUBKEYHASH0-3 [0]
Allows you to set the SGXLEPUBKEYHASH.

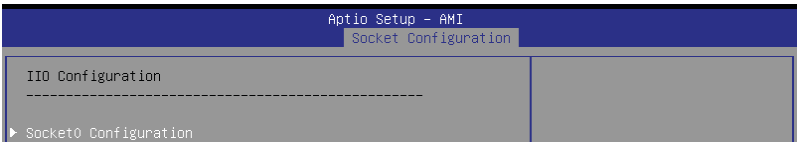
SGX Auto MP Registration [Disabled]

Configuration options: [Disabled] [Enabled]

In Field Scan (IFS)

Allows you to configure In Field Scan options.

4.6.6 IIO Configuration



Socket0 Configuration

Allows you to configure Socket0 options.

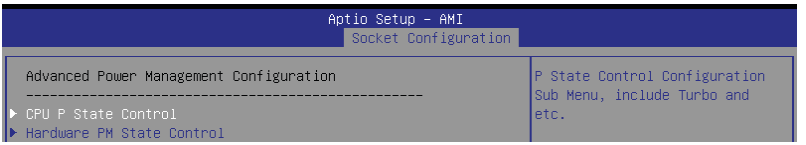
Intel VT for Directed I/O (VT-d)

Allows you to configure VT-d options.

Global Configuration

Allows you to configure Global options.

4.6.7 Advanced Power Management Configuration



CPU P State Control

Allows you to configure CPU P State Control options.

Hardware PM State Control

Allows you to configure Hardware PM State Control options.

CPU C State Control

Allows you to configure CPU C State Control options.

Package C State Control

Allows you to configure Package C State Control options.

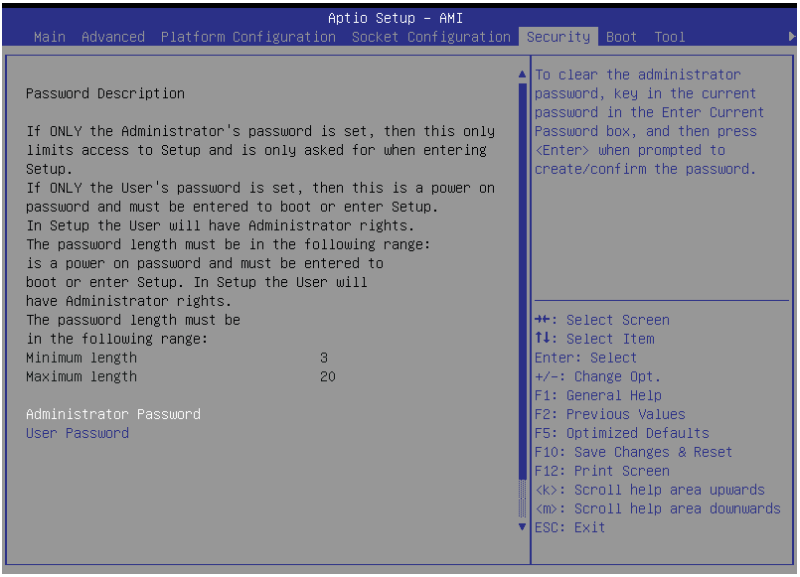
CPU - Advanced PM Tuning

Allows you to configure Advanced PM Tuning options.

Memory Power & Thermal Configuration

Allows you to configure Memory Power and Thermal options.

4.7 Security menu



Administrator Password

To set an administrator password:

1. Select the Administrator Password item and press <Enter>.
2. From the Create New Password box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change an administrator password:

1. Select the Administrator Password item and press <Enter>.
2. From the Enter Current Password box, key in the current password, then press <Enter>.
3. From the Create New Password box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

NOTE: To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password.

User Password

To set a user password:

1. Select the User Password item and press <Enter>.
2. From the Create New Password box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change a user password:

1. Select the User Password item and press <Enter>.
2. From the Enter Current Password box, key in the current password, then press <Enter>.
3. From the Create New Password box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

NOTE: To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password.

Secure Boot

Secure Boot [Disabled]

Secure Boot can be enabled if the system is running in User mode with enrolled platform Key (EPK) or if the CSM function is disabled.
Configuration options: [Disabled] [Enabled]

Secure Boot Mode [Custom]

Allows you to set the Secure Boot selector.
Configuration options: [Standard] [Custom]

Restore Factory Keys

Allows you to restore the factory keys.

Reset To Setup Mode

Allows you to reset to setup mode.

Expert Key Management

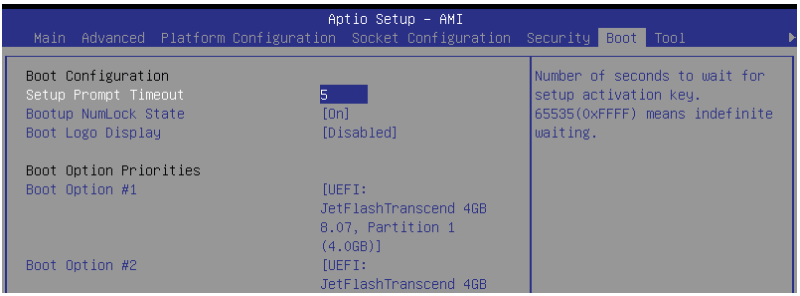
Allows you to configure Expert Key Management options.

Secure Flash Update

Allows you to configure Secure Flash Update options.

4.8 Boot menu

The Boot menu items allow you to change the system boot options.



Setup Prompt Timeout [5]

Allows you to set the number of seconds that the firmware waits before initiating the original default boot selection. 65535 (0xFFFF) means indefinite waiting. Use the <+> or <-> to adjust the value.

Bootup NumLock State [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [On] [Off]

Boot Logo Display [Disabled]

Allows you to enable or disable Quiet Boot option.
Configuration options: [Disabled] [Enabled]

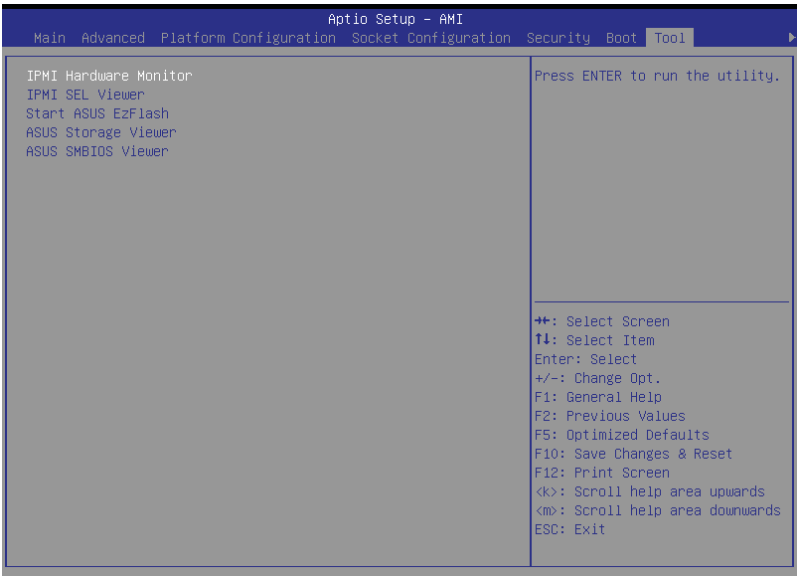
Boot Option Priorities

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

NOTE: To select the boot device during system startup, press <F8> when ASUS Logo appears.

4.9 Tool menu

The Tool menu items allow you to configure options for special functions. Select an item and press <Enter> to display the submenu.



IPMI Hardware Monitor

Allows you to run the IPMI hardware monitor.

IPMI SEL Viewer

Allows you to run the IPMI SEL viewer.

Start ASUS EzFlash

Allows you to run ASUS EZ Flash BIOS ROM Utility. Refer to the **ASUS EZ Flash Utility** section for details.

ASUS Storage Viewer

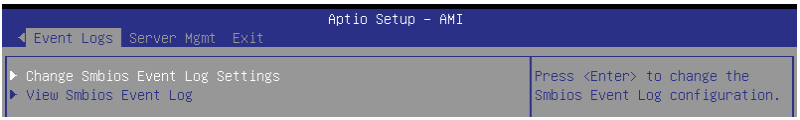
Allows you to run ASUS Storage Viewer.

ASUS SMBIOS Viewer

Allows you to run ASUS SMBIOS Viewer.

4.10 Event Logs menu

The Event Logs menu items allow you to change the event log settings and view the system event logs.



4.10.1 Change Smbios Event Log Settings

Press <Enter> to change the Smbios Event Log configuration.

NOTE: All values changed here do not take effect until computer is restarted.

Smbios Event Log [Enabled]

Change this to enable or disable all features of Smbios Event Logging during boot.
Configuration options: [Disabled] [Enabled]

NOTE: The following items are available only when **Smbios Event Log** is set to **[Enabled]**.

Erase Event Log [No]

Choose options for erasing Smbios Event Log. Erasing is done prior to any logging activation during reset.
Configuration options: [No] [Yes, Next reset] [Yes, Every reset]

When Log is Full [Do Nothing]

Choose options for reactions to a full Smbios Event Log.
Configuration options: [Do Nothing] [Erase Immediately]

Log EFI Status Code [Enabled]

This option allows you to enable or disable logging of the EFI Status Codes.
Configuration options: [Disabled] [Enabled]

NOTE: The following item is available only when **Log EFI Status Code** is set to **[Enabled]**.

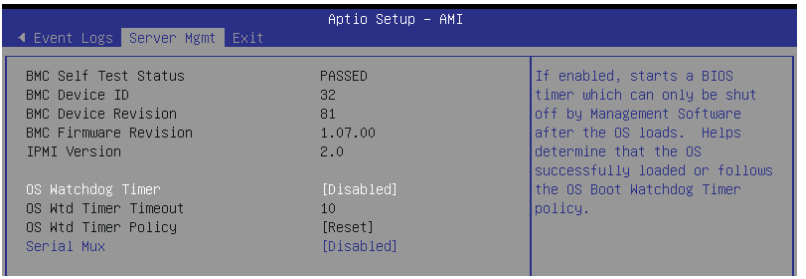
Convert EFI Status Codes to Standard Smbios Type [Disabled]
This option allows you to enable or disable converting of EFI Status Codes to Standard Smbios Type (Not all may be translated).
Configuration options: [Disabled] [Enabled]

4.10.2 View Smbios Event Log

Press <Enter> to view all smbios event logs.

4.11 Server Mgmt menu

The Server Management menu displays the server management status and allows you to change the settings.



OS Watchdog Timer [Disabled]

This item allows you to start a BIOS timer which can only be shut off by management software after the OS loads.
Configuration options: [Enabled] [Disabled]

NOTE: The following items are available only when **OS Watchdog Timer** is set to **[Enabled]**.

OS Wtd Timer Timeout [10]

Enter the value between 1 to 30 minutes to configure the length fo the OS Boot Watchdog Timer.

OS Wtd Timer Policy [Reset]

This item allows you to configure the how the system should respond if the OS Boot Watch Timer expires.
Configuration options: [Do Nothing] [Reset] [Power Down] [Power Cycle]

Serial Mux [Disabled]

Configuration options: [Disabled] [Enabled]

4.11.1 System Event Log

Allows you to change the SEL event log configuration.

SEL Components [Enabled]

Configuration options: [Disabled] [Enabled]

Erase SEL [No]

Allows you to choose options for erasing SEL.
Configuration options: [No] [Yes, On next reset] [Yes, On every reset]

4.11.2 View FRU information

Allows you to view FRU information.

4.11.3 BMC network configuration

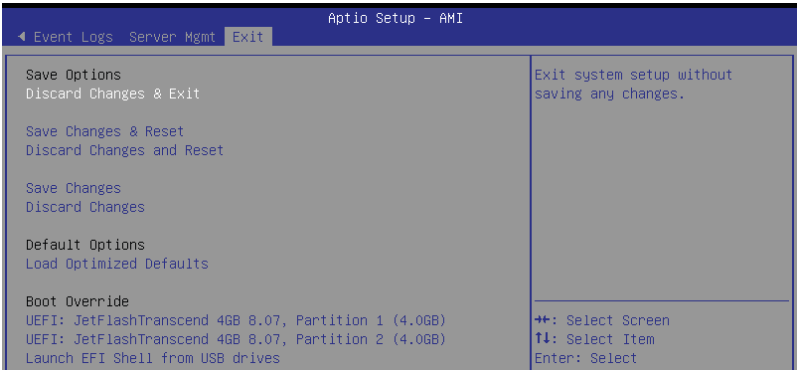
The sub-items in this configuration allow you to configure the BMC network parameters.

4.11.4 View System Event Log

This item allows you to view the system event log records.

4.12 Exit menu

The Exit menu items allow you to save or discard your changes to the BIOS items.



Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save changes done so far to any of the setup options.

Discard Changes

Discard changes done so far to any of the setup options.

Load Optimized Defaults

Load optimized default values for all the setup options.

Boot Override

These items displays the available devices. The device items that appears on the screen depends on the number of devices installed in the system. Click an item to start booting from the selected device.

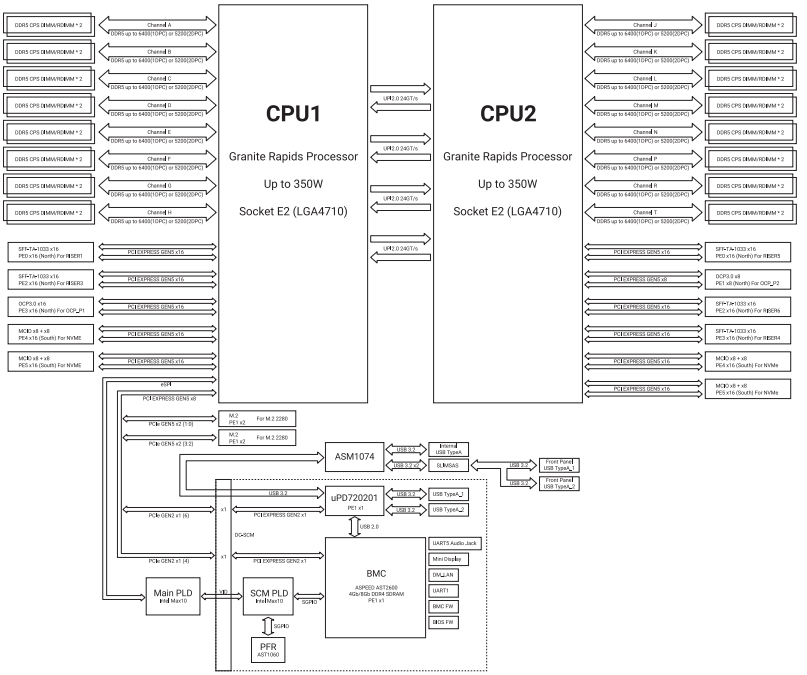
Launch EFI Shell from filesystem device

This item allows you to attempt to launch the EFI Shell application (shellx64.efi) from one of the available filesystem devices.

Appendix

This appendix includes additional information that you may refer to when configuring the motherboard.

Block diagram



Q-Code table

ACTION	PHASE	POST CODE	TYPE	DESCRIPTION
SEC Start up	Security Phase	0x01	Progress	Power on post code
		0x02	Progress	Load BSP microcode
		0x03	Progress	Perform early platform cache Initialization
		0x04	Progress	Set cache as ram for PEI phase
		0x05	Progress	Establish Stack
		0x06	Progress	CPU Early Initialization
Quick VGA	PEI(Pre-EFI initialization)phase	0x10	Progress	PEI Core Entry
		0x11		PEI cache as ram CPU initial
		0x15		NB Initialization before installed memory
		0x19		SB Initialization before installed memory
	VR initialization	0xC8	Progress	Infineon Address
		0xCC		
		0xD4		Ti Address
		0xDC		
		0xB8		
		0xBC		
		0xB0		
		0xB4		
	OCMR initialization	0x11	Progress	Enter OCMR Procedures
		0x12		Enter OCMR On S3
		0x13		Check New CPU
		0x14		Check Cmos Fail
		0x16		Check Overclock Fail
		0x18		Prepare Parameters
		0x21		Build Voltage Table
		0x22		Patch Voltage Table
		0x23		Adjust Voltage Table
		0x24		Before Set Voltages
		0x25		Set Voltages
		0x31		Before Set Spread Spectrum
		0x32		SetBclkStrapAndFrequencyPei
		0x33		Set Spread Spectrum
		0x34		After Set Frequency
	KTI initialization	0xA0	Progress	Initialize KTI input structure
		0xA1		Collect info such as SBSP, Boot Mode, Reset type
		0xA3		Setup up minimum path between SBSP & other sockets
		0xA6		Sync up with PBSPs
		0xA7		Topology discovery and route calculation
		0xA8		Program final route
		0xA9		Program final IO SAD setting
		0xAA		Protocol layer and other Uncore settings
		0xAB		Transition links to full speed opeartion
		0xAE		Coherency Settings
		0xAF		KTI Complete
	IIO Early initialization	0xE0	Progress	IIO early init
		0xE1		Early Pre-link training setting
		0xE2		IIO Gen3 EQ programming
		0xE3		IIO Link training
		0xE4		IIO Gen3 override
		0xE5		IIO early init exit
		0xE6		IIO late init
		0xE7		PCIE port init
		0xE8		IOAPIC init
		0xE9		VTD init
		0xEA		IOAT init
		0xEB		IIO DFX init
		0xEC		NTB init
		0xED		Security init
		0xEE		IIO late init exit
		0xEF		IIO On ready to boot

(continued on the next page)

ACTION	PHASE	POST CODE	TYPE	DESCRIPTION
Quick VGA	MRC Memory initialization	0x70	Progress	High Bandwidth Memory
		0x7E		Pipe Sync AP Boot Mode
		0xB0		Detect DIMM Configuration
		0xB1		Initialize clocks for all MemSs
		0xB2		Gather SPD Data
		0xB3		Early Configuration
		0xB4		Check DIMM Ranks
		0xB5		Parallel Mode Dispatch
		0xB6		DDRIO Initialization
		0xB7		DDR Training
		0xB8		Initialize Throttling
		0xB9		Memory Test
		0xBA		Memory Init
		0xBB		Initialize Memory Map
		0xBC		Set RAS Configuration
		0xBD		Get Margin
		0xBE		BIOS SSA Initialization
		0xBF		MRC Done
		0xC1		Check POR Compatibility
		0xC2		Unlock Memory
		0xC3		Check Status
		0xC4		Check XMP
		0xC5		Initialize Memory
		0xC6		Socket DIMM Information
		0xC7		Prep NVDIMM for Training
		0xC9		Setup SVL and Scrambling
		0xCA		Init CMI Credit Programming
		0xCB		Check Ras Support After MemInit
		0xCC		Initialize ADR
		0xCD		Init Structures Late
		0xCE		Memory Late
		0xCF		Select Boot Mode
	DXE (Driver Execution Environment)phase	0x32	Progress	CPU POST-Memory Initialization
		0x33		CPU Cache Initialization
		0x34		Application Processor(s) (AP) Initialization
		0x35		BSP Selection
		0x36		CPU Initialization
		0x37		Pre-memory NB Initialization
		0x3B		Pre-memory SB Initialization
		0x4F		DXE Initial Program Load(IPL)
		0x60		DXE Core Started
		0x61		DXE NVRAM Initialization
		0x62		SB run-time Initialization
		0x63		CPU DXE Initialization
		0x68		PCI HB Initialization
		0x69		NB DXE Initialization
		0x6A		NB DXE SMM Initialization
		0x70		SB DXE Initialization
		0x71		SB DXE SMM Initialization
		0x72		SB DEVICES Initialization
		0x78		ACPI Module Initialization
		0x79		CSM Initialization
Normal boot	BDS (Boot Device Selection) phase	0x90	Progress	BDS started
		0x91		Connect device event
		0x92		PCI Bus Enumeration
		0x93		PCI Bus Enumeration
		0x94		PCI Bus Enumeration
		0x95		PCI Bus Enumeration
		0x96		PCI Bus Enumeration
		0x97		Console output connect event
		0x98		Console input connect event
		0x99		AMI Super IO start
		0x9A		AMI USB Driver Initialization

(continued on the next page)

ACTION	PHASE	POST CODE	TYPE	DESCRIPTION
Normal boot	BDS (Boot Device Selection) phase	0x9B	Progress	AMI USB Driver Initialization
		0x9C		AMI USB Driver Initialization
		0x9D		AMI USB Driver Initialization
		0xA0		AHCI Initialization
		0xA1		AHCI Initialization
		0xA2		AHCI Initialization
		0xA3		AHCI Initialization
		0xA8		BIOS Setup password verify
		0xA9		BIOS Setup start
		0xAB		BIOS Setup input wait
		0xAD		Ready to Boot event
		0xAE		Legacy Boot event
		0xAF		Exit Boot Services
		0xB2		Legacy Option ROM Initialization
		0xB3		Reset system
		0xB4		USB Hotplug
		0xB5		PCI Bus Hotplug
		0xB6		NVRAM clean up
		0xB7		NVRAM configuration reset

FPGA debug code table

ACTION	PHASE	POST CODE	DESCRIPTION
System hang	7-segment debug code	0.0.	Initialized state
		0.1.	Checking DC-SCM power status
		0.2.	Waiting for BMC boot done
		0.3.	Checking S5 status of S3M
		0.4.	Enabling system main power
		0.5.	Enabling CPU main power and memory powe
		0.6.	Sending S0_PWROK indication to CPU
		0.7.	Sending CPU_PWRGD indication to CPU, waiting for PLTRST# out from CPU
		0.8.	Sending out CPU_RESET# to CPU
		0.9.	Platform on, runtime
		0.A.	Boot failure state

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to 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 instruction manual, 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 his own expense.

NOTE: The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES(A)/NMB(A)

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES(A)/NMB(A)

Australia statement notice

From 1 January 2012 updated warranties apply to all ASUS products, consistent with the Australian Consumer Law. For the latest product warranty details please visit https://www.asus.com/support/. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

If you require assistance please call ASUS Customer Service 1300 2787 88 or visit us at https://www.asus.com/support/.

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

Declaration of compliance for product environmental regulation

ASUS follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASUS product is in line with global environmental regulations. In addition, ASUS disclose the relevant information based on regulation requirements.

Please refer to https://esg.asus.com/Compliance.htm for information disclosure based on regulation requirements ASUS is complied with:

EU REACH and Article 33

Complying with the REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulatory framework, we publish the chemical substances in our products at ASUS REACH website at https://esg.asus.com/Compliance.htm.

EU RoHS

This product complies with the EU RoHS Directive. For more details, see https://esg.asus.com/Compliance.htm

Japan JIS-C-0950 Material Declarations

Information on Japan RoHS (JIS-C-0950) chemical disclosures is available on https://esg.asus.com/Compliance.htm

India RoHS

This product complies with the "India E-Waste (Management) Rules, 2016" and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) in concentrations exceeding 0.1% by weight in homogenous materials and 0.01% by weight in homogenous materials for cadmium, except for the exemptions listed in Schedule II of the Rule.

Vietnam RoHS

ASUS products sold in Vietnam, on or after September 23, 2011,meet the requirements of the Vietnam Circular 30/2011/TT-BCT.

Các sản phẩm ASUS bán tại Việt Nam, vào ngày 23 tháng 9 năm2011 trở về sau, đều phải đáp ứng các yêu cầu của Thông tư 30/2011/TT-BCT của Việt Nam.

Türkiye RoHS

AEEE Yönetmeliğine Uygundur

ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to https://esg.asus.com/en/Takeback.htm for detailed recycling information in different regions.

Ecodesign Directive

The European Union announced a framework for the setting of ecodesign requirements for energy-related products (2009/125/EC). Specific implementing measures are aimed at improving environmental performance of specific products or across multiple product types. ASUS provides product information at https://esg.asus.com/Compliance.htm.

インターネット回線への接続に関するご注意

本製品は電気通信事業者（移動通信会社、固定通信会社、インターネットプロバイダ等）の通信回線（公衆無線LANを含む）に直接接続することができません。本製品をインターネットに接続する場合は、必ずルーター等を経由し接続してください。

Japan statement notice

This product cannot be directly connected to the Internet (including public wireless LAN) of a telecom carrier (mobile network companies, landline network companies, Internet providers, etc.). When connecting this product to the Internet, be sure to connect it through a router or switch.

Safety Precautions

Accessories that came with this product have been designed and verified for the use in connection with this product. Never use accessories for other products to prevent the risk of electric shock or fire.

安全上のご注意

付属品は当該専用品です。他の機器には使用しないでください。機器の破損もしくは、火災や感電の原因となることがあります。

Access Advance Patent Notice

HEVC Advance™
Covered by patents at patentlist.accessadvance.com

Simplified EU Declaration of Conformity

English ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: www.asus.com/support

Français AsusTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives concernées. La déclaration de conformité de l'UE peut être téléchargée à partir du site Internet suivant : www.asus.com/support

Deutsch ASUSTeK Computer Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der zugehörigen Richtlinien übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: www.asus.com/support

Italiano ASUSTeK Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con le direttive correlate. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: www.asus.com/support

Русский Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям соответствующих директив. Подробную информацию, пожалуйста, смотрите на www.asus.com/support

Български С настоящото ASUSTeK Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаните директиви. Пълният текст на декларацията за съответствие на ЕС е достъпна на адрес: www.asus.com/support

Hrvatski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o sukladnosti dostupan je na: www.asus.com/support

Čeština Společnost ASUSTeK Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení souvisejících směrnic. Plné znění prohlášení o shodě EU je k dispozici na adrese: www.asus.com/support

Dansk ASUSTeK Computer Inc. erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene og andre relevante bestemmelser i de relaterede direktiver. Hele EU-overensstemmelseserklæringen kan findes på: www.asus.com/support

Nederlands ASUSTeK Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van de verwante richtlijnen. De volledige tekst van de EU-verklaring van conformiteit is beschikbaar op: www.asus.com/support

Eesti Käesolevaga kinnitab ASUSTeK Computer Inc, et see seade vastab asjakohaste direktiivide oluliste nõuetele ja teistele asjassepuutuvatele sätetele. EL vastavusdeklaratsiooni täielik tekst on saadaval järgmisel aadressil: www.asus.com/support

Suomi ASUSTeK Computer Inc. ilmoittaa täten, että tämä laite on asiaankuuluvien direktiivien olennaisten vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: www.asus.com/support

Ελληνικά Με το παρόν, η AsusTek Computer Inc. δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγιών της ΕΕ. Το πλήρες κείμενο της δήλωσης συμβατότητας είναι διαθέσιμο στη διεύθυνση: www.asus.com/support

Magyar Az ASUSTeK Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó Irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfelelőségi nyilatkozat teljes szövege innen letölthető: www.asus.com/support

Latviski ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistīto Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: www.asus.com/support

Lietuvių „ASUSTeK Computer Inc.“ šiuo tvirtina, kad šis įrenginys atitinka pagrindinius reikalavimus ir kitas svarbias susijusių direktyvų nuostatas. Visą ES atitikties deklaracijos tekstą galima rasti: www.asus.com/support

Norsk ASUSTeK Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i relaterte direktiver. Fullstendig tekst for EU-samsvarserklæringen finnes på: www.asus.com/support

Polski Firma ASUSTeK Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami powiązanych dyrektyw. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem: www.asus.com/support

Português A ASUSTeK Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes das Diretivas relacionadas. Texto integral da declaração da UE disponível em: www.asus.com/support

Română ASUSTeK Computer Inc. declară că acest dispozitiv se conformează cerinţelor esenţiale şi altor prevederi relevante ale directivelor conexe. Textul complet al declaraţiei de conformitate a Uniunii Europene se găseşte la: www.asus.com/support

Srpski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa osnovnim zahtevima i drugim relevantnim odredbama povezanih Direktiva. Pun tekst EU deklaracije o usaglašenosti je dostupan da adresi: www.asus.com/support

Slovensky Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatým príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: www.asus.com/support

Slovenščina ASUSTeK Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: www.asus.com/support

Español Por la presente, ASUSTeK Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: www.asus.com/support

Svenska ASUSTeK Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: www.asus.com/support

Українська ASUSTeK Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: www.asus.com/support

Türkçe AsusTek Computer Inc., bu aygıtın temel gereksinimlerle ve ilişkili Yönergelerin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: www.asus.com/support

Bosanski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj usklađen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o usklađenosti dostupan je na: www.asus.com/support

Simplified UKCA Declaration of Conformity

ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Regulations. Full text of UKCA declaration of conformity is available at: www.asus.com/support

FCC COMPLIANCE INFORMATION

Per FCC Part 2 Section 2.1077

Responsible Party:	**Asus Computer International**
Address:	**48720 Kato Rd., Fremont, CA 94538**
Phone/Fax No:	**(510)739-3777/(510)608-4555**

hereby declares that the product

Product Name :	**Server**
Model Number :	**RS720-E12-RS12U, RS720-E12-RS8G, RS720-E12-RS24U, RS720-E12-RS24G**

compliance statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ver. 180125

Service and Support

Visit our multi-language website at https://www.asus.com/support.