SuperServer®
ARS-121L-DNR



USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

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Preface

About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the server. Installation and maintenance should be performed by certified service technicians only.

Please refer to the ARS-121L-DNR server specifications page on our website for updates on supported memory, processors and operating systems (http://www.supermicro.com).

Notes

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: https://www.supermicro.com/support/manuals/
- Product drivers and utilities: https://www.supermicro.com/wdl
- Product safety info: https://www.supermicro.com/about/policies/safety_information.cfm

If you have any questions, please contact our support team at: support@supermicro.com

This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion_Utility/

Warnings

Special attention should be given to the following symbols used in this manual.



Warning! Indicates important information given to prevent equipment/property damage or personal injury.



Warning! Indicates high voltage may be encountered when performing a procedure.

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Contacting Supermicro

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer ARS-121L-DNR. The following provides an overview of the specifications and capabilities of the system.

System Overview	
Motherboard	G1SMH
Chassis	CSE-MG102TS-R000NDFP-2N
Processor (per node)	Dual processors NVIDIA Grace™ CPU Superchip Embedded 480 GB ECC LPDDR5 with up to 1 TB /s throughput
Chipset (per node)	System On Chip (SoC)
Storage (per node)	Supports two E1.S NVMe drives Two M.2 NVMe slots
Expansion Slots (per node)	Two PCIe 5.0 x16 slots (one HHFL, one FHFL)
I/O Ports (per node)	One RJ45 1 GbE Dedicated IPMI LAN port One rear USB port One Mini DisplayPort
System Cooling	Nine counter-rotating, heavy-duty fans with optimal fan speed control
Power	Two 2000 W redundant Titanium Level power supplies
Form Factor	1U rackmount, 1.75" x 17.33" x 37" (44 x 440 x 940 mm) (H x W x D)

Notes: A Quick Reference Guide can be found on the product page of the Supermicro website. The following safety models associated with the ARS-121L-DNR has been certified as compliant with UL or CSA: MG102-R20G1 and MG102-GH200.

1.2 System Features

The following views of the system display the main features. Refer to Appendix B for additional specifications.

Front View

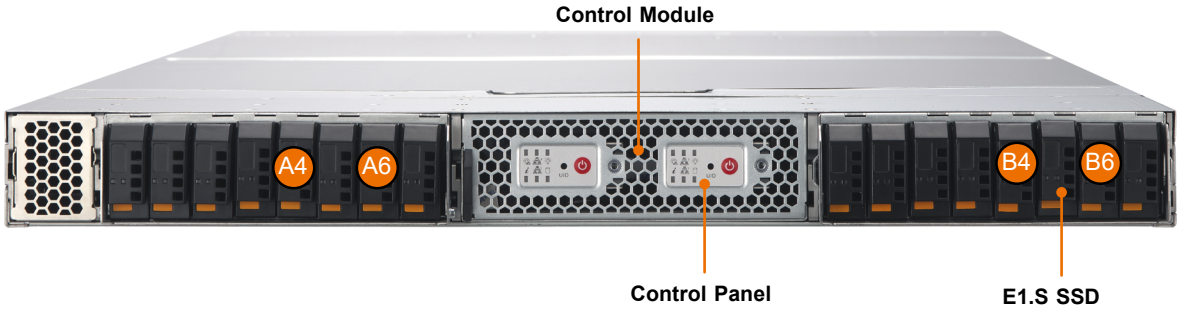


Figure 1-1. Front View

System Features: Front	
Feature	**Description**
Control Panel	One control pad with power switch and LED indicators
E1.S SSD (per node)	Supports two E1.S NVMe drives
Control Module	Cage where control module is installed

Logical Storage Drive Numbers	
Item	**Description**
A4, A6, B4, B6	Total four E1.S hot-swap NVMe drive slots

Drive Carrier Indicators

Each E1.S NVMe SSD drive has two LED indicators: an activity indicator and a status indicator.

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Green	Solid On	Idle
	Green	Blinking	I/O activity
	Off		Eject device
Status LED	Off		Idle
	Amber	Blinking at 4 Hz	Locate device
	Amber	Blinking at 1 Hz for a few seconds, then off	Eject device or insert device, as appropriate

Control Panel

The switches and LEDs located on the control panel are described below.

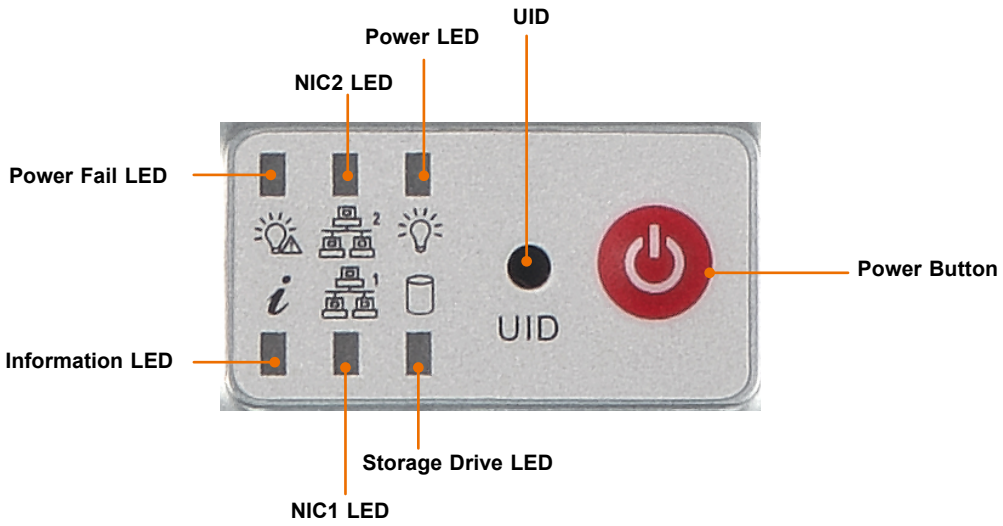


Figure 1-2. Control Panel

Control Panel Features	
Feature	**Description**
Power Button	The main power button is used to apply or remove power from the power supply to the server. Turning off system power with this button removes the main power but maintains standby power. To perform many maintenance tasks, you must also unplug system before servicing.
UID Button	The unit identification (UID) button turns on or off the blue light function of the Information LED and a blue LED on the rear of the chassis. This button can also be used to reset the BMC.
Power LED	Indicates power is being supplied to the system power supplies. This LED should normally be illuminated when the system is operating.
NIC1/2 LED	Indicates network activity on LAN port 1/2 when flashing.
Power Fail LED	Indicates a power supply module has failed.
Information LED	Alerts operator to several states (noted in the table below).
Storage Drive LED	Indicates activity on the storage drives when flashing.

Information LED	
Color, Status	**Description**
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1 Hz)	Fan failure, check for an inoperative fan.
Solid blue	UID has been activated locally to locate the server in a rack environment.
Blinking blue (300 msec)	UID has been activated remotely using IPMI to locate the server in a rack environment.

Rear View

The illustration below shows the features included on the rear of the chassis. Power supply modules include a power supply LED.

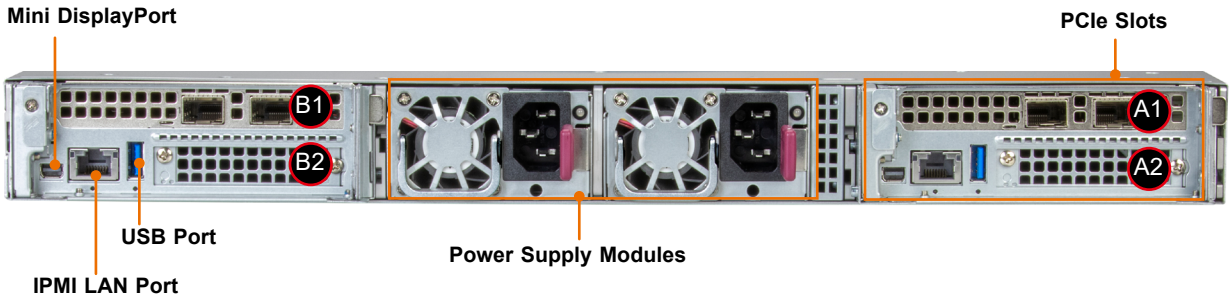


Figure 1-3. System: Rear View

System Features: Rear	
Feature	**Description**
Mini DisplayPort (per node)	One Mini DisplayPort interface for video
IPMI LAN Port (per node)	One RJ45 1 GbE IPMI LAN port
USB Port (per node)	One rear USB port
PCIe Slots (per node)	Two PCIe 5.0 x16 slots (one HHFL, one FHFL)
Power Supply modules	Two 2000 W redundant power supply modules

Expansion Slot Locations	
Item	**Description**
A2 & B2	Two PCIe 5.0 x16 HHFL slots
A1 & B1	Two PCIe 5.0 x16 FHFL slots

Power Supply Status Indicator

Power Supply Status Indicator	
LED Color and State	**Power Supply Indicator**
Solid Green	Indicates that the power supply is on
Blinking Green	Indicates that the power supply is plugged in and turned off by the system.
Blinking Amber	Indicates that the power supply has a warning condition and continues to operate.
Solid Amber	Indicates that the power supply is plugged in, and is in an abnormal state. The system might need service. Please contact Supermicro technical support.
Off	No AC power to modules

Top View

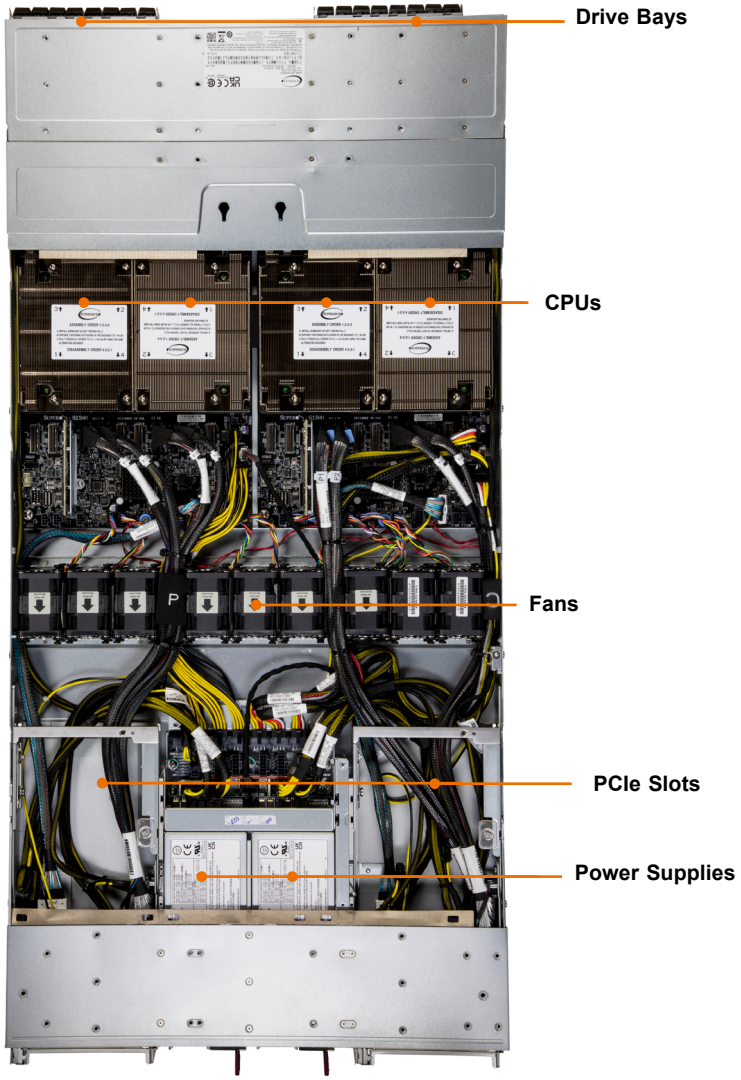


Figure 1-4. System: Top View

System Features: Top	
Feature	**Description**
Processors (per node)	Dual processors One NVIDIA Dual 72-core CPUs on a Grace™ CPU Superchip
Drive Bays (per node)	Supports two E1.S NVMe drives
Fans	Nine counter-rotating, heavy-duty fans with optimal fan speed control
Power Supplies	Two 2000 W Titanium Level efficiency power supplies
PCIe Slots (per node)	Two PCIe 5.0 x16 slots (one HHFL, one FHFL)

1.3 Motherboard Layout

Below is a layout of the G1SMH motherboard with jumper, connector, and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information, and jumper settings, refer to Chapter 4 or the Motherboard Manual.

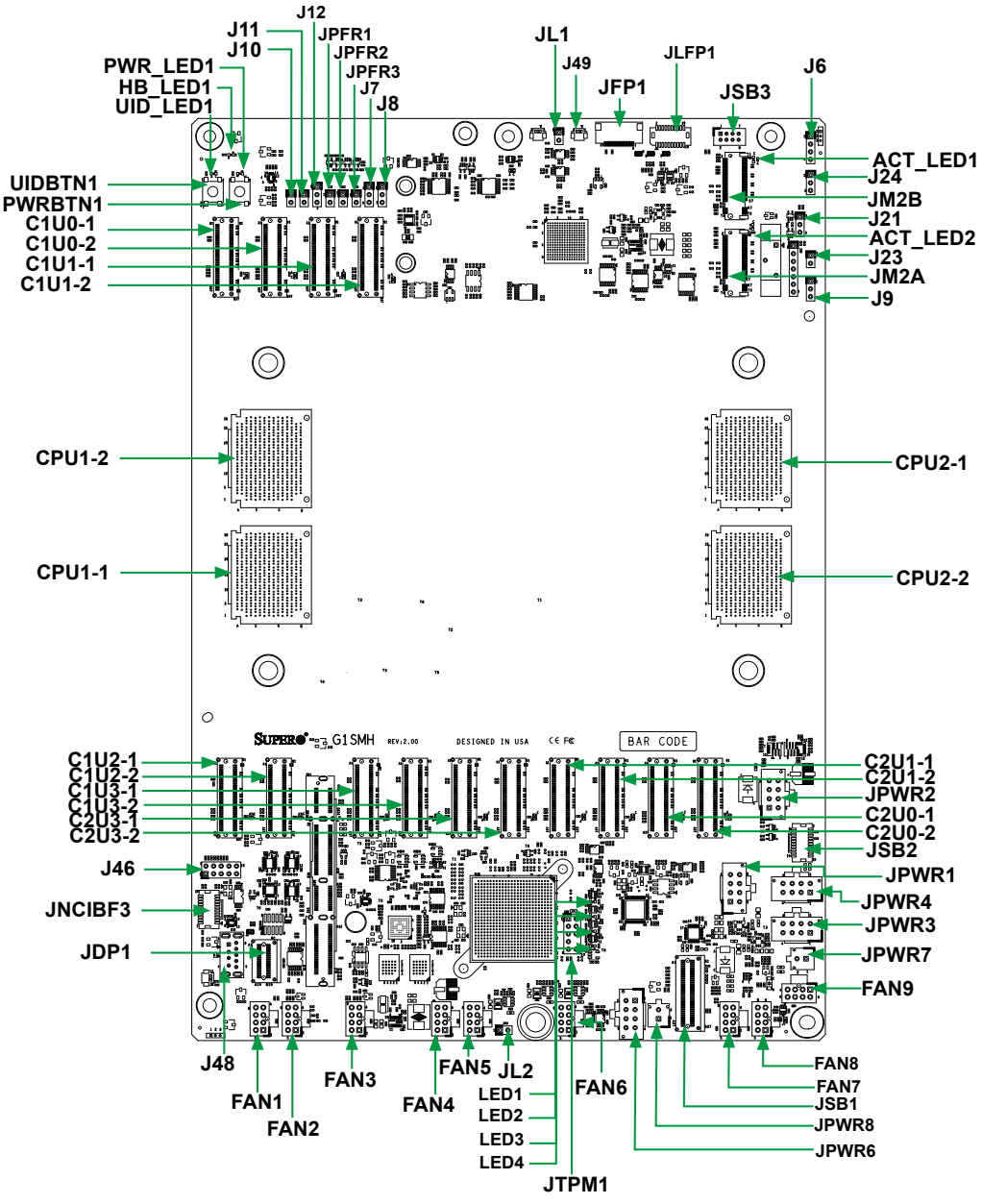


Figure 1-5. Motherboard Layout

Notes:

- Components not documented are for internal testing only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. To avoid a possible explosion, do not install the onboard battery upside down.

Quick Reference Table

LED	Description	Status
ACT_LED1	M.2 Activity	Green Blinking: M.2 is active
ACT_LED2	M.2 Activity	Green Blinking: M.2 is active
HB_LED1	CPLD Initialization	Green Blinking: CPLD initialized
PWR_LED1	Motherboard Power	Solid green after pressing PWRBTN1
LED1	EROT Detected	Yellow Solid: EROT is detected
LED2	EROT Not Detected	Red Solid: EROT is not detected
LED3	Normal Power Detected	Before pressing PWRBTN1: Green Blinking After pressing PWRBTN1: Green Solid
LED4	Standby Power Detected	Before pressing PWRBTN1: Orange Solid After pressing PWRBTN1: Orange Off
UID_LED1	UID Activity	Blinks blue after pressing UIDBTN1

Connector	Description
BT1	Onboard Battery
CPU1-1, CPU1-2	CPU1 Mirror Mezz Connectors
CPU2-1, CPU2-2	CPU2 Mirror Mezz Connectors
FAN1-FAN9	System Cooling Fan Headers
J48	Debug Dongle Only
JFP1	Front Control Panel Header
JL1	Chassis Intrusion Header
JM2A/JM2B	M.2 PCIe Interfaces
JSB1	IPMI Board Sideband Signal SlimSAS Connector
JSB2	Power Supply SMBus I^2C Header
JPWR1-JPWR5	12V 8-pin CPU Core Power Supply Connector
JPWR6	AOM-GP101-IPMI Power Connector
JPWR7-JPWR8	2-pin Power Connectors for Standby Power
JTPM1	TPM (Trusted Platform Module)/Port 80
PWRBINT1	Power Button
UIDBTN1	UID Button

Note: Jumpers, connectors, switches, and LED indicators that are not described in the preceding tables are for manufacturing testing purposes only, and are not covered in this manual.

Grace CPU Superchip

The ARS-121L-DNR features two Grace chips with attached LPDDR5x memory on a mezzanine module, and a 480 GB/s NVLink, chip-to-chip on the module. There is no off-the-module NVLink support.

Grace CPU Superchip Overview	
Core Count	144 Arm Neoverse V2 Cores with 4 x128b SVE2
L1 Cache	64 KB i-cache + 64 KB d-cache
L2 Cache	1 MB per core
L3 Cache	234 MB
LPDDR5x Size	480 GB on-module memory options
Memory Bandwidth	Up to 1 TB/s
NVIDIA MVLink-C2C Bandwidth	480 GB/s
PCIe Links	Up to eight PCIe Gen5 x16 option to bifurcate
Module Thermal Design Power (TDP)	500 W TDP with memory
Form Factor	Superchip module
Thermal Solution	Air cooled



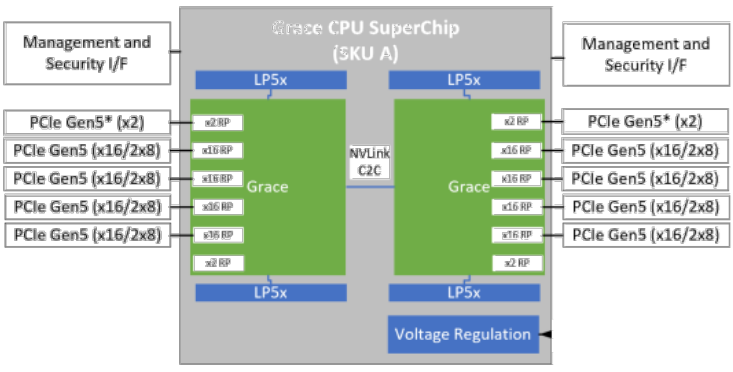


Figure 1-6. Grace CPU Supership

Motherboard Block Diagram

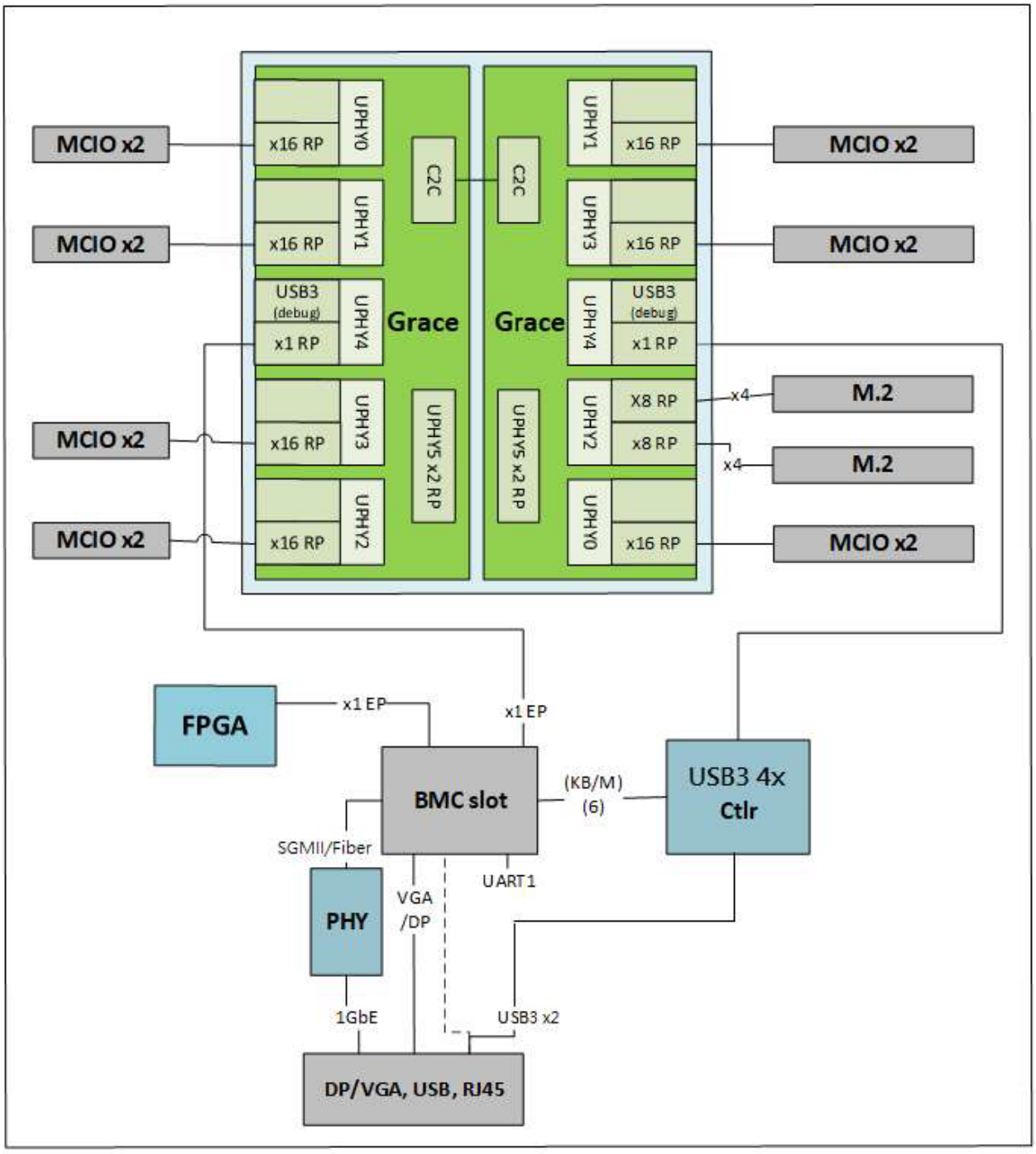


Figure 1-7. Motherboard Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the previous pages for the actual specifications of your motherboard.

Chapter 2

Server Installation

This chapter provides advice and instructions for mounting your system in a server rack. If your system is not already fully integrated with processors, system memory, etc., refer to Chapter 3 for details on installing those specific components.

Caution: Electrostatic Discharge (ESD) can damage electronic components. To prevent such damage to PCBs (printed circuit boards), it is important to use a grounded wrist strap, handle all PCBs by their edges, and keep them in anti-static bags when not in use.

2.1 Unpacking the System

Inspect the box in which the system was shipped, and note if it was damaged. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted or in Appendix A.

2.2 Preparing for Setup

The box in which the system was shipped should include the rackmount hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The chassis should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack, approximately 25 inches, to allow the front door to open completely, and approximately 30 inches of clearance in back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location, such as a dedicated equipment room or service closet.
- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component fromthe rack.
- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical and general safety precautions in Appendix A.
- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer’s maximum rated ambient temperature (TMRA).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

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

- Load the rack from the bottom to the top with the heaviest component at the bottom of the rack. If this unit is the only unit in the rack, it should be mounted at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a workspace.
- Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

2.3 Installing the System into a Rack

This section provides information on installing the SC126E32 chassis into a rack unit with the quick-release rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Note: This rail will fit a rack between 26.5" and 36.4" deep.

Separating the Sections of the Rack Rails

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

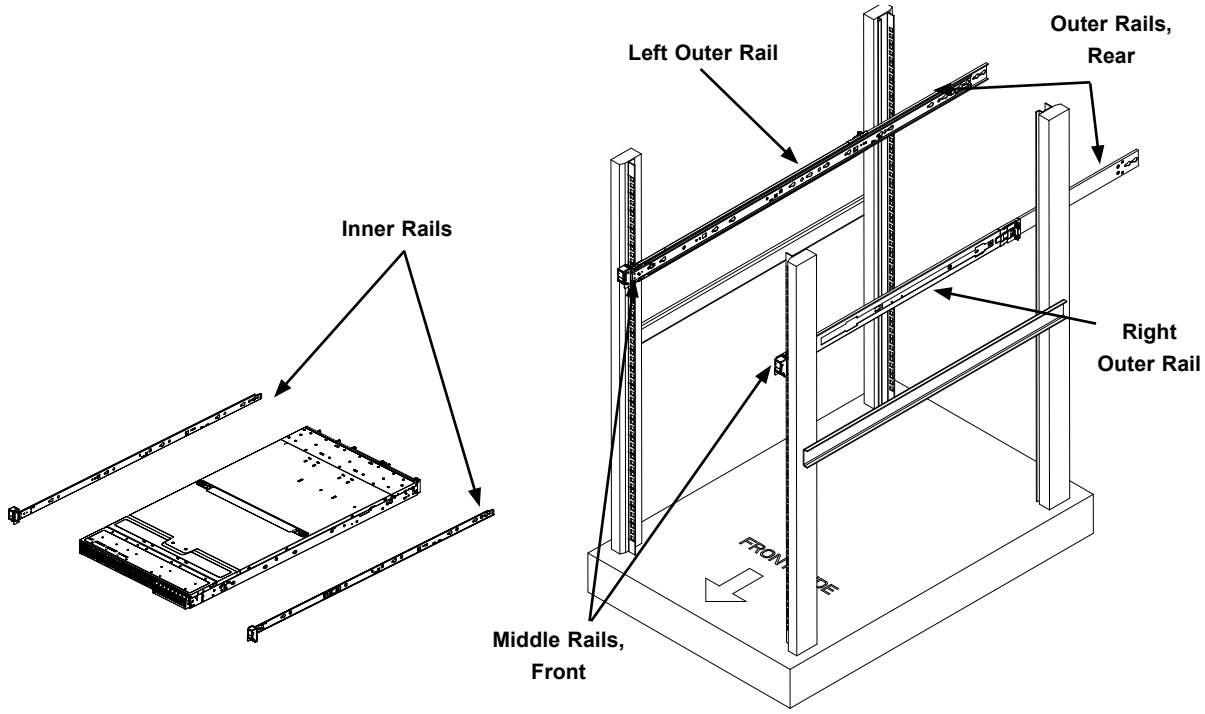


Figure 2-1. Identifying the Inner Rails, Middle Rails and Outer Rails

Note: Figures are for illustrative purposes only. Your actual chassis may differ. Always install servers into racks from the bottom up.

Important: Slide rail mounted equipment is not to be used as a shelf or a work space.

Important: Do not pick up the server by the front handles. They are designed to pull the system from a rack only.

Releasing the Inner Rail

It is necessary to release the inner rail from the middle and outer rails before installing the inner rail on the chassis.

Releasing the Inner Rail from the Middle and Outer Rails

1. Lift the front latch on the inner rail and pull the inner rail out of the middle rail, and the middle rail out of the outer rail until the rails are fully extended.
2. Press down the locking lever on the inside of the inner rail to release the inner rail. Continue to pull the inner rail out of the middle rail.

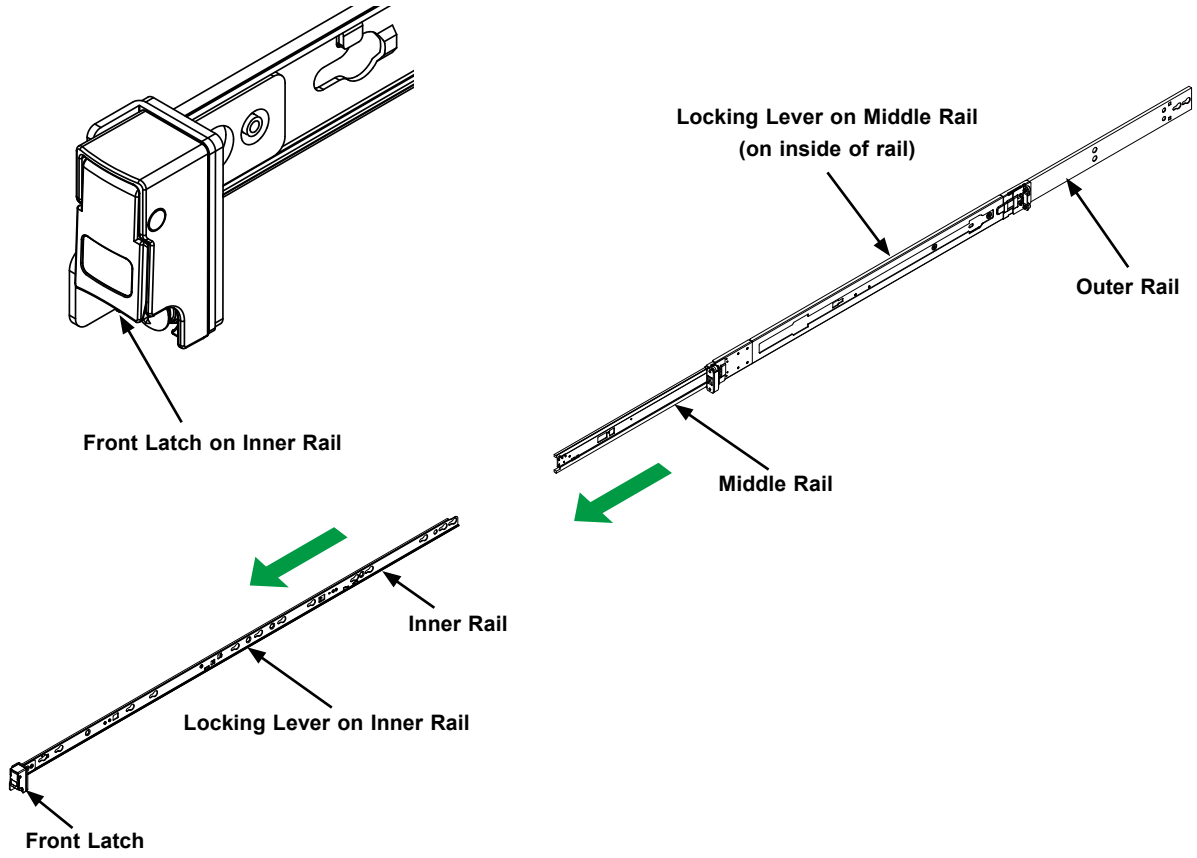


Figure 2-2. Extending the Rails and Releasing the Inner Rail

Important: Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

Installing the Inner Rails on the Chassis

Installing the Inner Rails

1. Confirm that the left and right inner rails have been correctly identified.
2. Place the inner rail firmly against the side of the chassis, aligning the pins on the side of the chassis with the slotted through holes in the inner rail.
3. Slide the inner rail toward the rear of the chassis until the pins are at the end of the narrow slot, which secures the inner rail to the chassis. An optional screw may be added for extra security.
4. Repeat for the other inner rail.

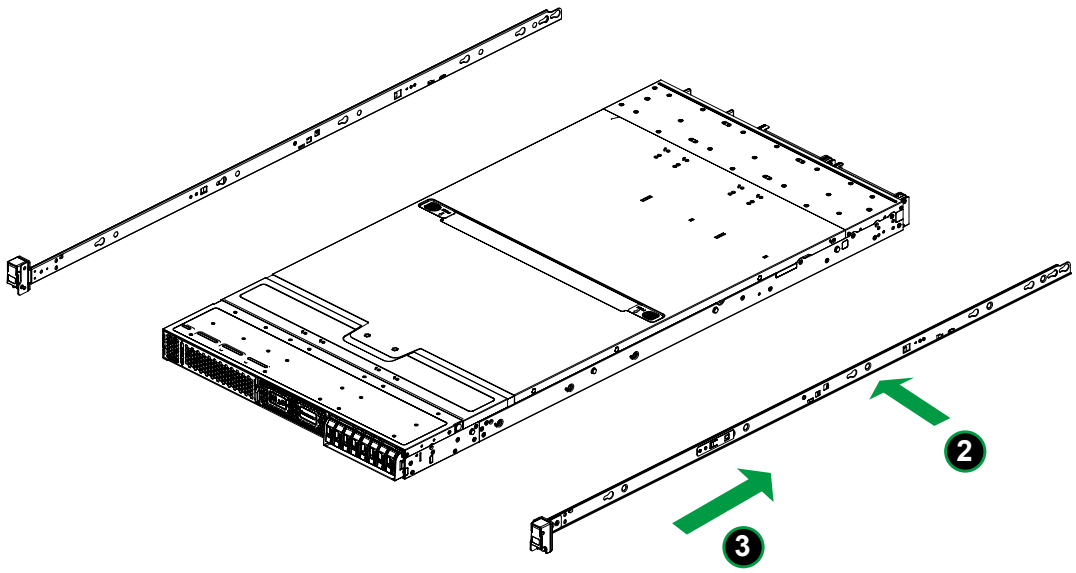


Figure 2-3. Installing the Inner Rails

Note: All graphics in this manual are for illustrative purposes only. Your components may look different.

Installing the Outer Rails on the Rack

Installing the Outer Rails

1. Confirm that the left and right outer rails have been correctly identified.
2. Release the small locking lever on the inside of the middle rail and push the middle rail back into the outer rail.
3. Insert the pins at the front of the outer rail into the square holes on the front of the rack. Push until the latch snaps into place.
4. The outer rail is actually two pieces that slide to lengthen. Pull out the rear of the outer rail, adjusting the length until the square pin assembly passes, then fits against the back of the rear post. Be careful to keep the rail level.
5. Insert the pins at the rear of the outer rail into the square holes on the rear of the rack. Push until the latch snaps into place.
6. Repeat for the other outer rail.

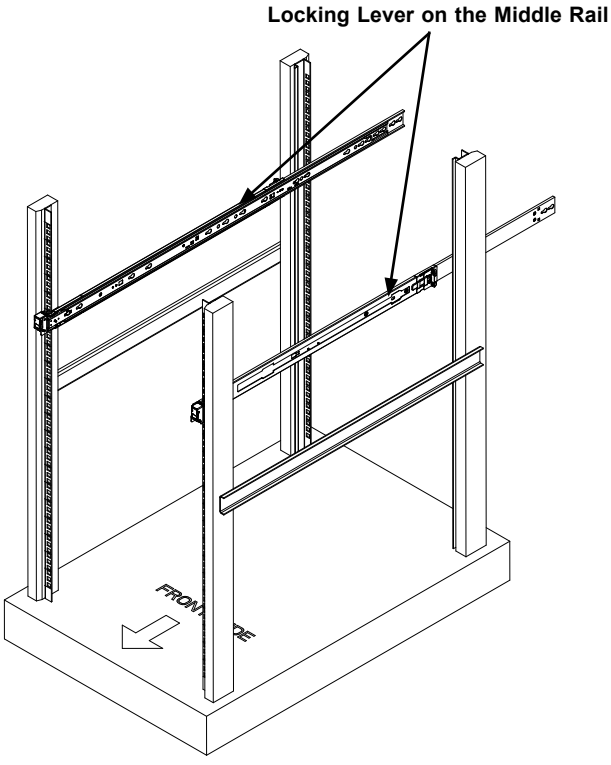


Figure 2-4. Installing the Outer Rails

Note: This figure is for illustrative purposes only. Always install servers into racks from the bottom up.

Installing into the Rack

After the rails are installed on the chassis and on the rack, the server can be installed in the rack. It is heavy and requires two to three people to lift.

Installing the Chassis into a Rack

1. Pull both middle rails out the front of the outer rail until each clicks to a stop.
2. Align the inner rails on the chassis with the front of the middle rails.
3. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides. When partially in, the locking levers will stop further progress.
4. Press down the locking levers on the inside of the inner rails and push the chassis all the way into the rear of the rack. The front latches will click into place.

The chassis is now mounted in the rack. It can be pulled partially out for service by lifting both front latches.

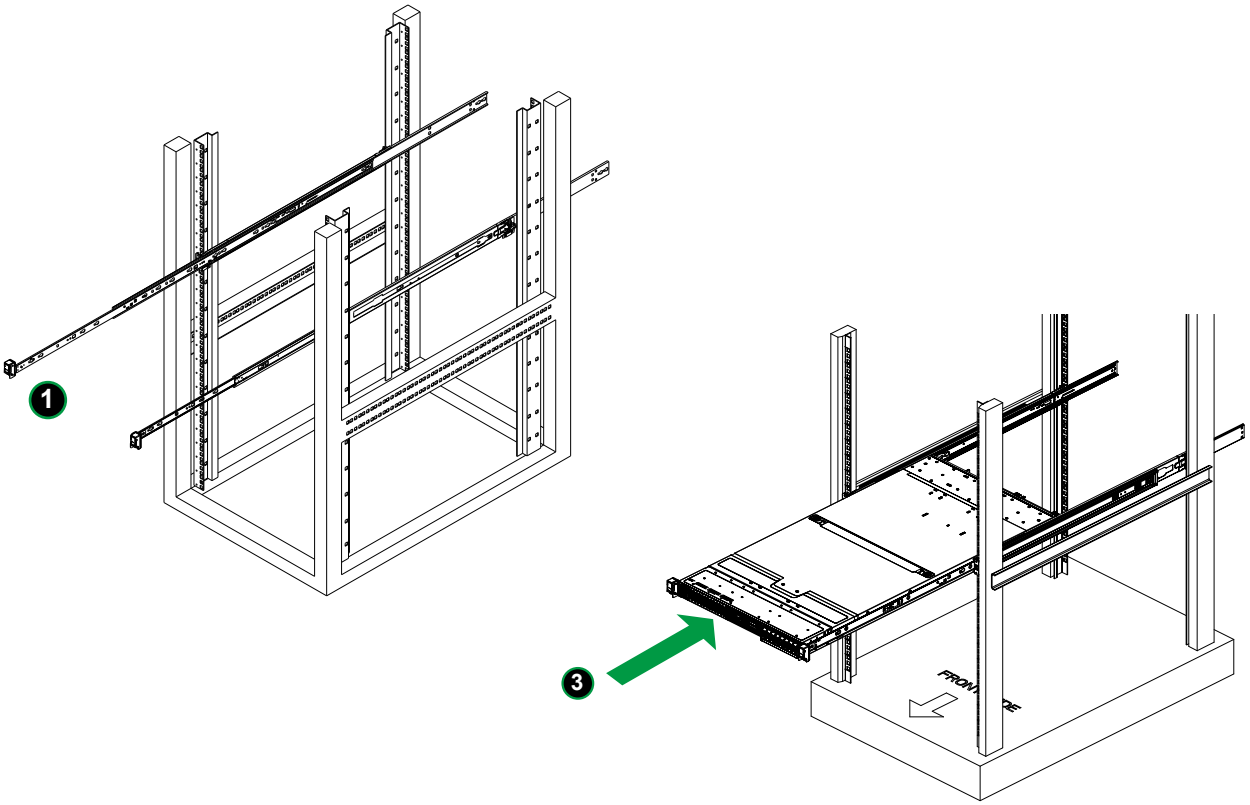


Figure 2-5. Installing the Chassis into the Rack

Note: This figure is for illustrative purposes only. Always install servers into racks from the bottom up.

Removing the Chassis from the Rack

Caution: The chassis is heavy and requires two to three people to lift it out.

Removing the Chassis

1. Lift the right and left front latches on either side of the front panel.
2. Pull the chassis out until it clicks to a stop.
3. Press down the locking lever on the inside of the inner rail (Figure 2-2) to release the chassis. Continue to pull the chassis out of the middle rails.

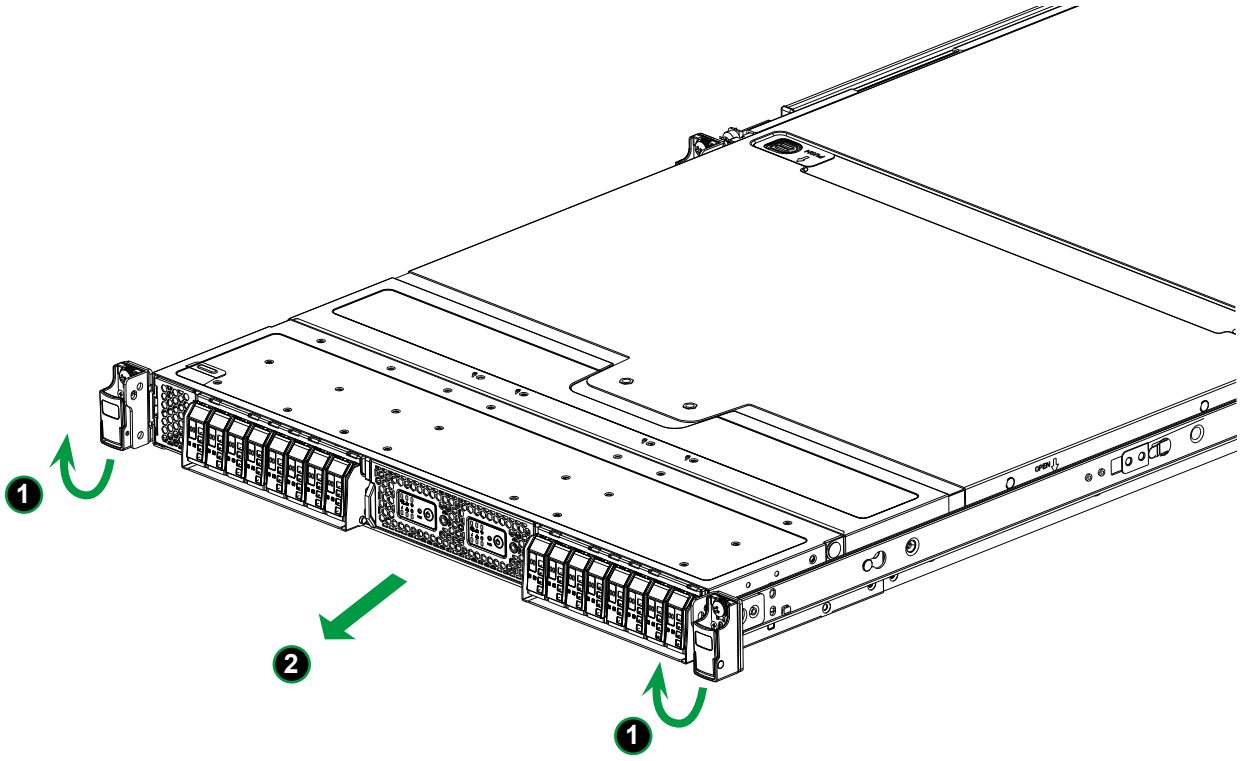


Figure 2-6. Removing the Chassis from the Rack

Note: All graphics in this manual are for illustrative purposes only. Your components may look different.

Removing the Outer Rails from the Rack

In the uncommon event that it is necessary to remove the outer rails from the rack, follow these instructions. The chassis must be out of the rack.

Releasing the Outer Rails

1. On the front of the outer rail, slide the small plastic safety slider (red in drawing) up and hold it while pushing the plastic release button (green in drawing) just below it.
2. While holding the release button in, pull the outer rail forward to disengage the pins and the front of the rail from the rack.
3. Support the front of the outer and middle rail assembly while releasing the rear.
4. Remove the outer rail from the rear of the rack in the same way as the front. Slide the safety slider up and push and hold the release button, then pull the rear pins out of the rack and remove the rail.

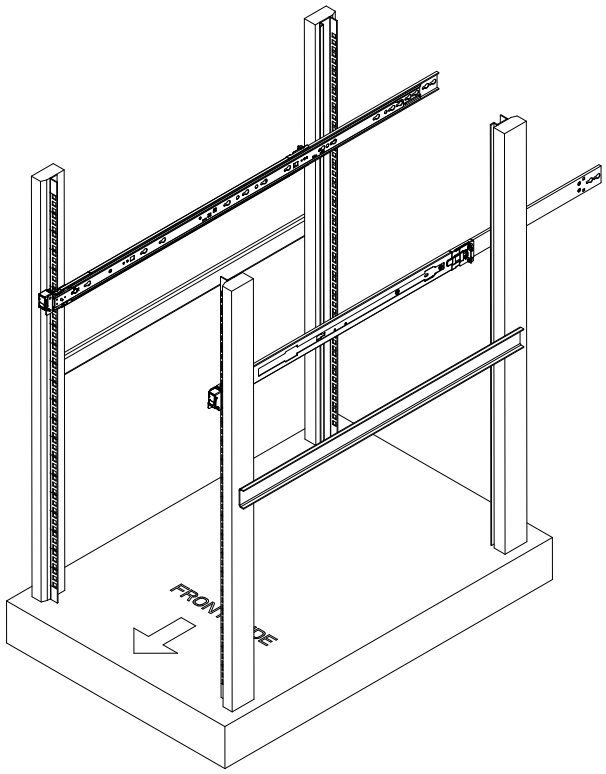


Figure 2-7. Removing the Outer Rails

Note: All graphics in this manual are for illustratiive purposes only.

Chapter 3

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components require that power first be removed from the system. Please follow the procedures given in each section.

Caution: Electrostatic Discharge (ESD) can damage electronic components. To prevent such damage to printed circuit boards (PCBs), it is important to use a grounded wrist strap, handle all PCBs by their edges and keep them in anti-static bags when not in use.

3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cord(s) from the power strip or outlet. (If your system has more than one power supply, remove the AC power cords from all power supply modules.)
3. Disconnect the power cord(s) from the power supply module(s).

3.2 Accessing the System

The chassis features a removable top cover for access to the internal components. When performing service on components inside the system, remove the system from the rack and place it on a work bench or desk. Do not service with the system extended from the rack.

Removing the Top Cover

The top cover can be removed to access the chassis fans while the server continues to operate.

Removing Chassis Cover

Remove the screws securing the cover (if used), push the release buttons towards the front of the chassis, then lift the cover.

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

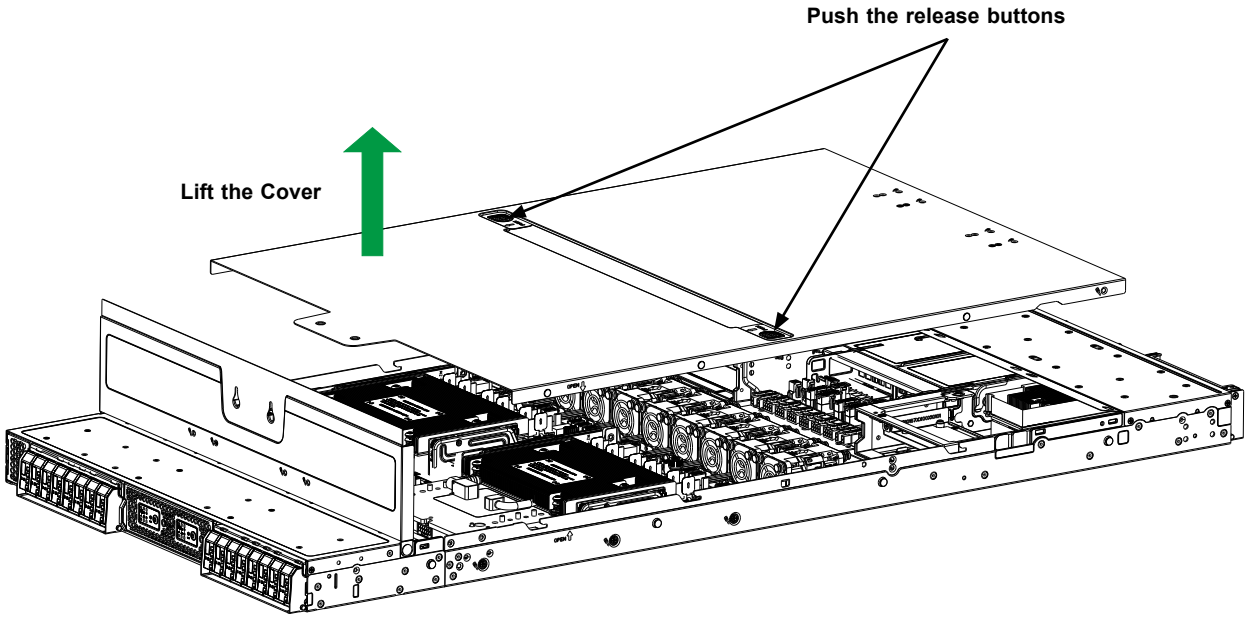


Figure 3-1. Removing the Chassis Cover

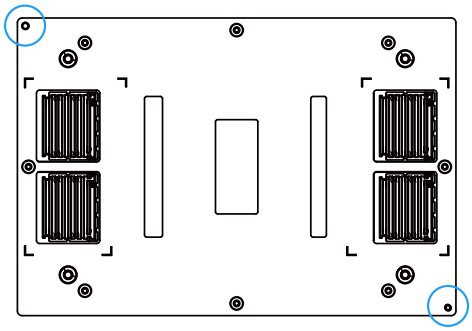
3.3 Processor and Heatsink Installtion

Important:

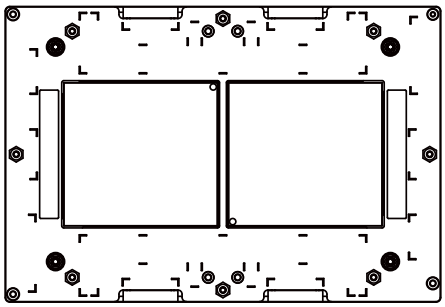
- For the Superchip module and heatsink installation you need to use a T20 torque driver.
- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components.
- If you buy a Superchip module separately, make sure that you use an NVIDIA-certified multi-directional heatsink only.
- Make sure to install the motherboard into the chassis before you install the heatsink.
- Refer to the Supermicro website for updates on the Superchip module support.
- Processors and heatsinks must be installed by the manufacturer.

Installing the Superchip onto the Motherboard

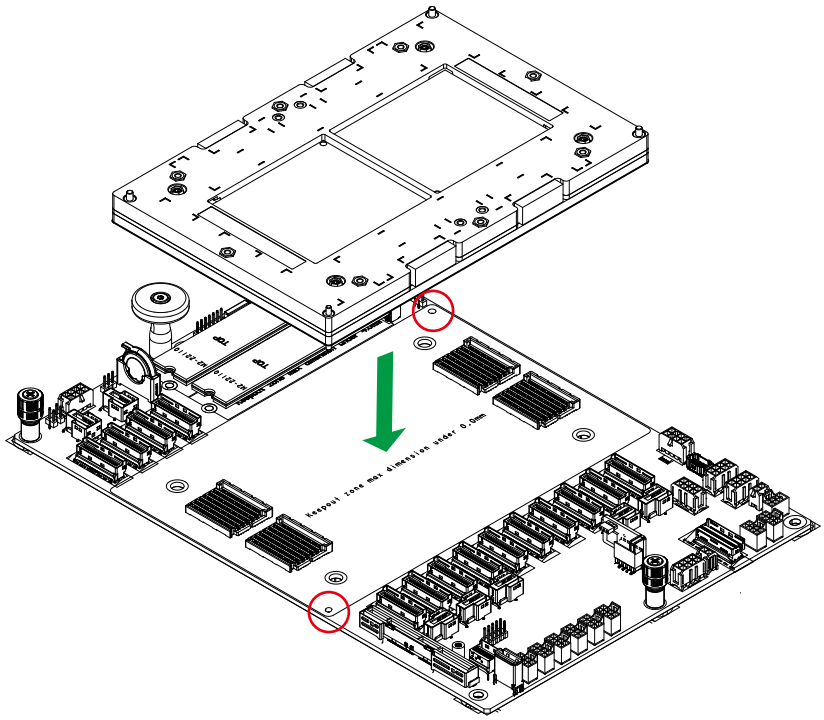
1. Remove the plastic protector on the CPU connector.
2. Align the Superchip with its guide pins to the holes circled in red on the motherboard.



Superchip Bottom View

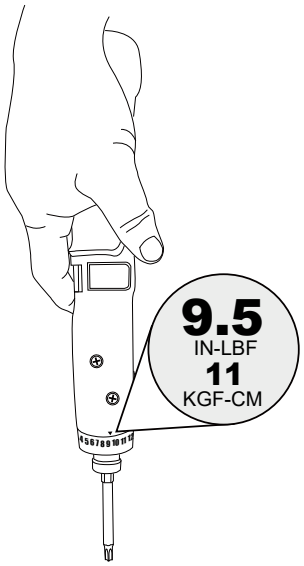


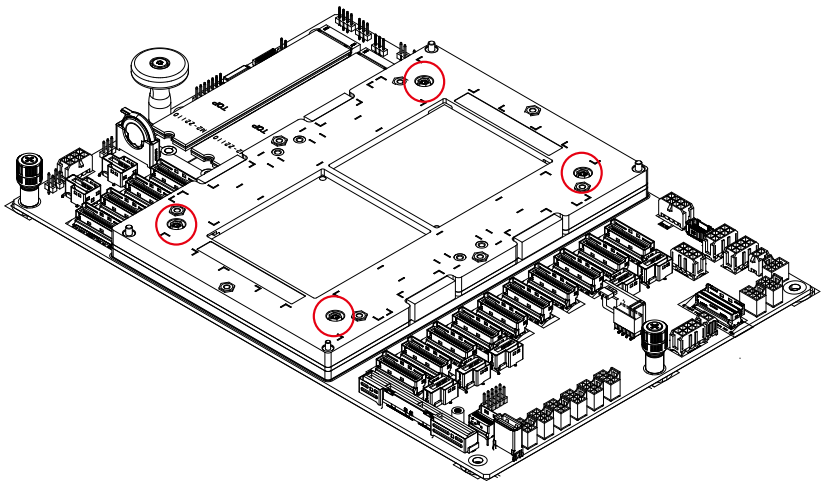
Superchip Top View



3. Before the springs underneath the Superchip are compressed, check the alignment of the guide pins and the holes on the motherboard again.

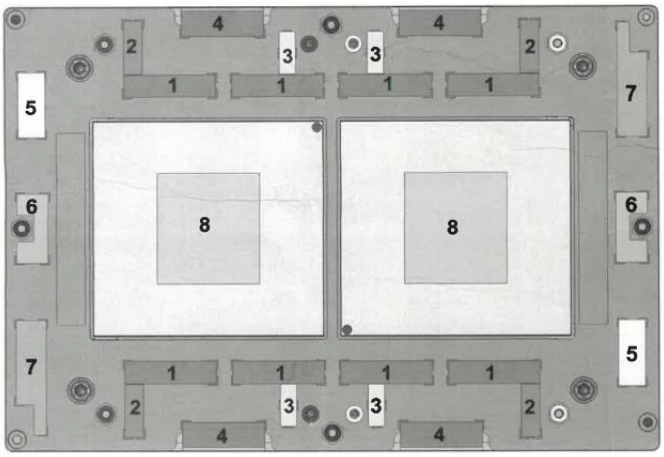
4. Fasten the four screws using a torque of **9.5 +/- 4% in-lbf (11 kgf-cm)** to complete the Superchip installation.

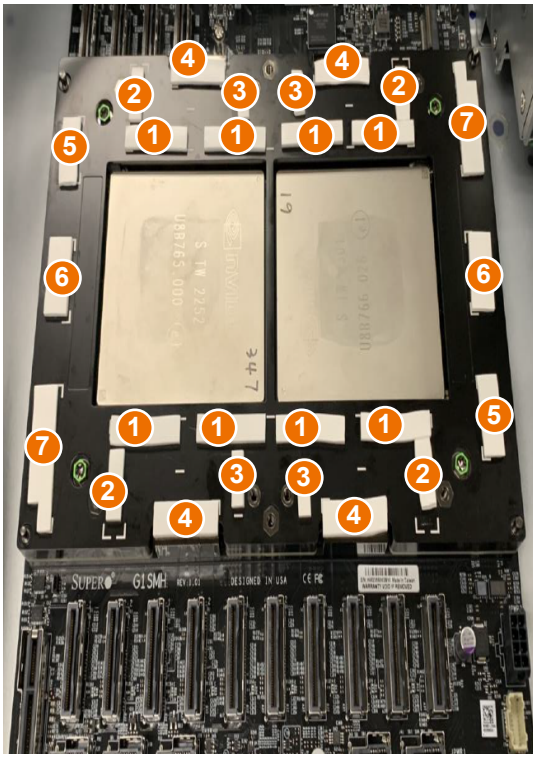




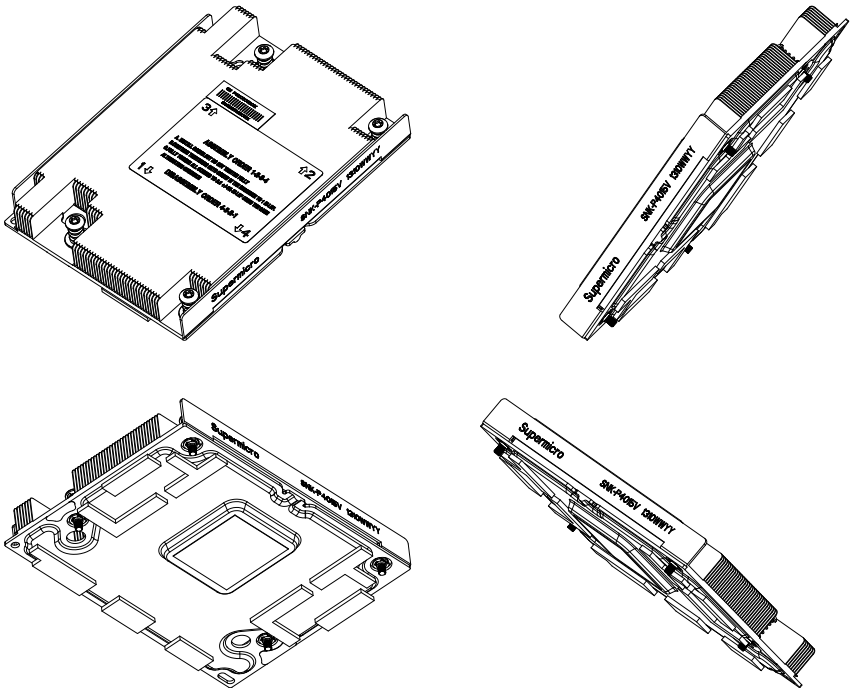
5. Place the thermal pads on the location where the heatsinks will go. See the table below.

Thermal Interface Materials				
No.	**P/N**	**Size**	**Quantity**	**Gap**
1	285-1036-000	TGP3500PT, 7.0 x 29.0 x 2.0 mm	8	1.2
2	285-1037-000	TGP3500PT, 6.0 x 17.0 x 2.0 mm	4	1.2
3	285-1038-000	TGP3500PT, 5.0 x 13.5 x 2.0 mm	4	1.2
4	285-1039-000	TGP3500PT, 8.0 x 26.0 x 2.0 mm	4	1.2
5	285-1033-000	TGP3500PT, 8.50 x 20.50 x 2.0 mm	2	1.2
6	285-1034-000	TGP3500PT, 10.0 x 22.0 x 2.0 mm	2	1.2
7	285-1035-000	TGP3500PT, 9.5 x 36.0 x 2.0 mm	2	1.2
8	285-0965-000	TGP3500PT, 33.0 x 35.0 x 0.2 mm	2	0.025

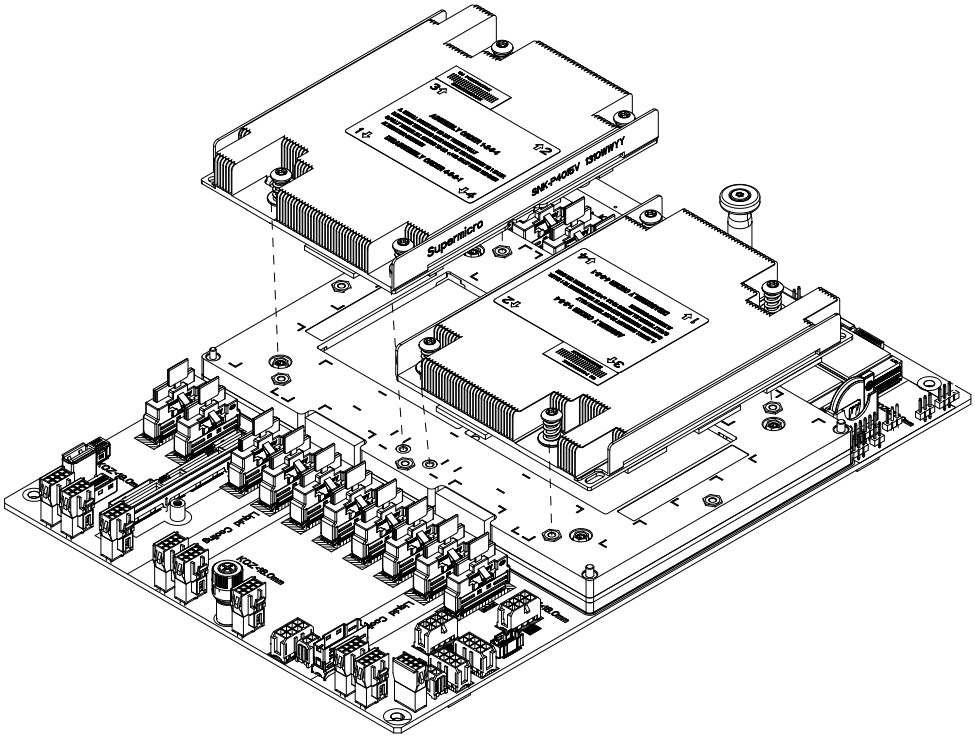




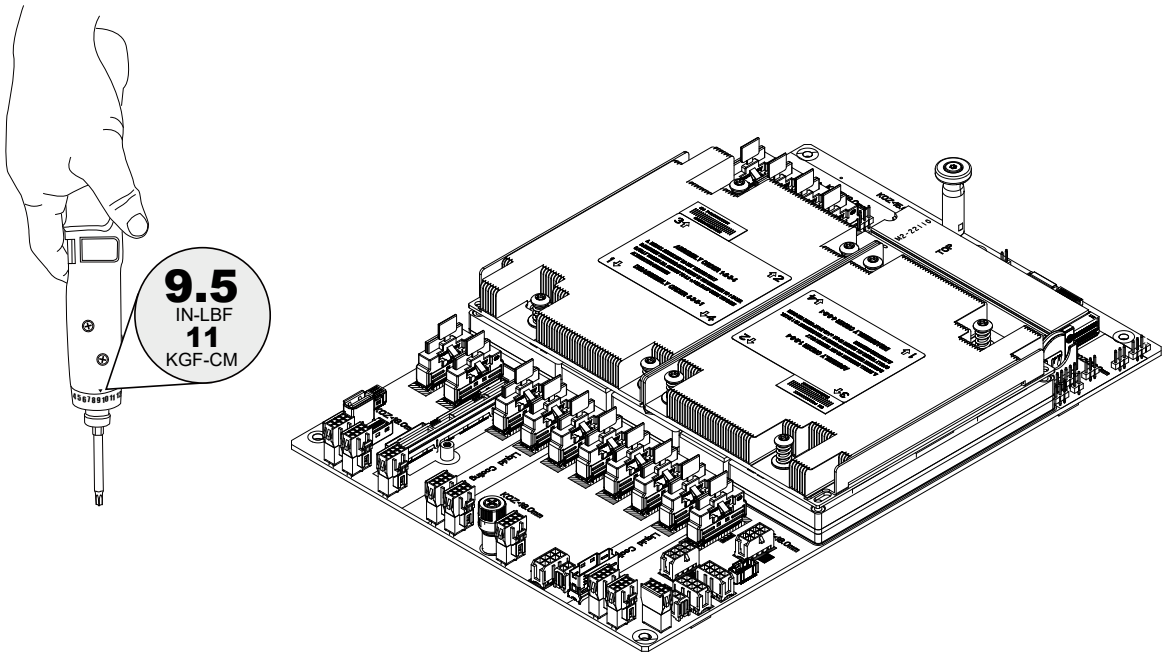
6. Peel off the thermal pad protector underneath each heatsink.



7. Place the heatsinks on top of the Superchip.



8. Using a torque of **9.5 +/- 4% in-lbf (11 kgf-cm)**, secure the heatsinks onto the Superchip with four screws.



Un-installing the NVIDIA Grace™ CPU Superchip Module and Heatsinks

1. Remove the heatsinks attached to the top of the Superchip by reversing the installation procedure.
2. Remove the screws from the Superchip.
3. Lift the Superchip off from the motherboard.

3.4 Memory

The G1SMH supports up to 480 GB of LPDDR5 ECC with 1 TB/s throughput. The memory is embedded on the Superchip and no installation is required.

3.5 Motherboard Battery

The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

Replacing the Battery

Begin by removing power from the system.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

Note: Handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

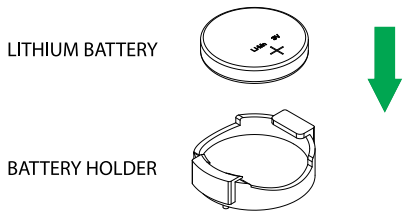


Figure 3-2. Installing the Onboard Battery

Important: There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (BR2032).

3.6 Storage Drives

SSD Storage Modules

The ARS-121L-DNR supports a total of up to four E1.S NVMe drives, using mounting trays or carriers (two E1.S NVMe drives per node).

Note: Enterprise-level storage modules are recommended for use in Supermicro servers. For information on recommended drives, visit the Supermicro website.

Carrier

The storage modules are mounted in trays/carriers to simplify their installation and removal from the chassis. The tray/carrier also helps promote proper airflow through the drive bays. Each storage module has two LED indicators.

In the event that the carrier needs to be removed from the chassis, please follow the instructions below.

Removing Drives from the Chassis

1. Slide the tray/carrier release button located on the front of the carrier (see illustration). The tray/carrier handle with pop out.
2. Pull the tray/carrier out of the chassis.

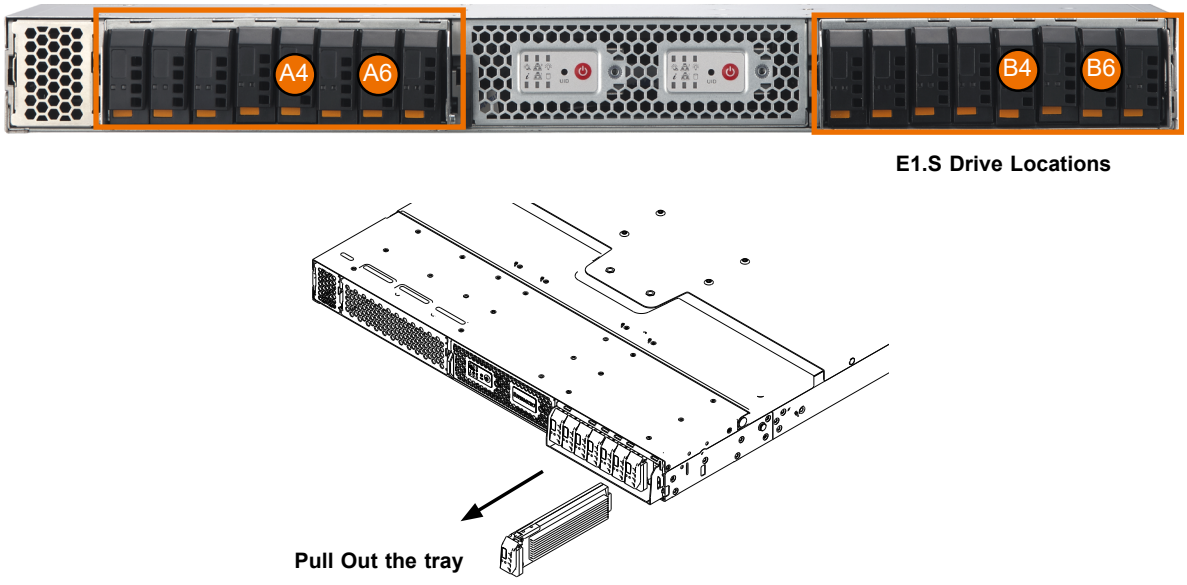


Figure 3-3. Removing Drive Trays from the Chassis

Note: All graphics in this manual are for illustrative purposes only. Your components may look different.

3.7 System Cooling

Fans

Up to nine counter-rotating, heavy-duty fans with optimal fan speed control provide cooling for the system. These fans are not hot-swappable; power must be removed from the system before replacing them.

Replacing a System Fan

1. If necessary, open the chassis while the power is running to determine which fan requires changing. (Never run the server for an extended period of time with the chassis open.)
2. Power down the system.
3. Remove the chassis from the rack and seat it on a work bench (safety area). Open the chassis cover as described earlier in this section.
4. Unplug and pull up on the failed fan to remove it completely out of the chassis. There are no screws to remove.
5. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans. Plug the fan into the motherboard.
6. Power up the system and check that the fan is working properly.
7. The fan will automatically begin running at the correct speed.

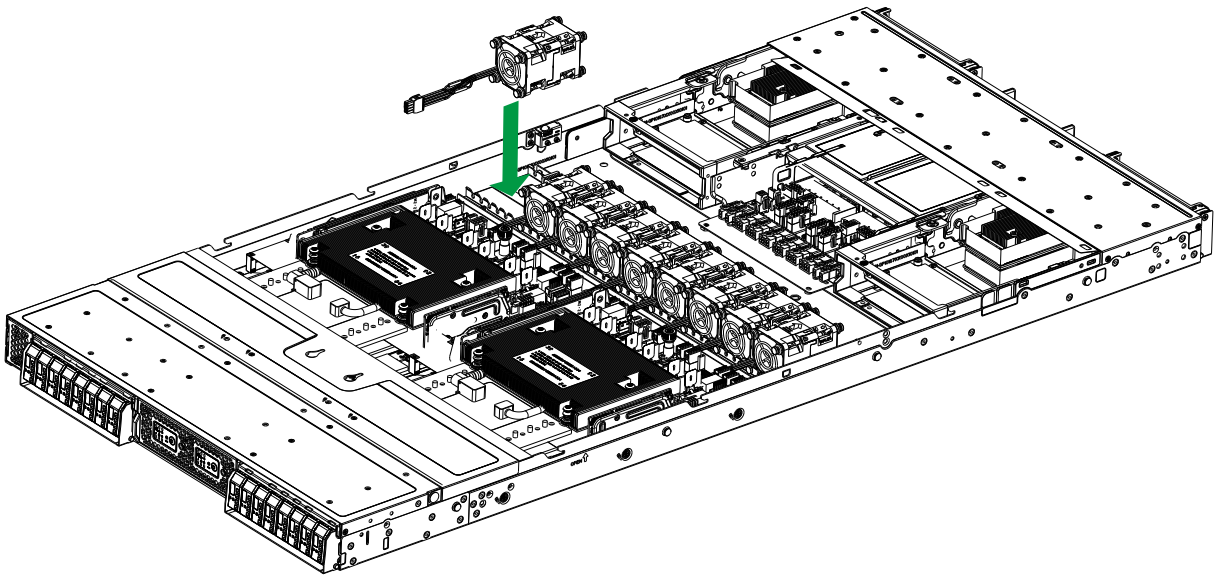


Figure 3-5. Placing a System Fan

3.8 Power Supply

The CSE-MG102TS-R000NDFP-2N features two redundant 2000 W CRPS power supplies. Each power supply can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100-120 V or 180-240 V. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Changing the Power Supply

1. Unplug the AC cord from the module to be replaced.
2. Push the release lever on the back of the power supply as illustrated.
3. Pull the power supply out using the handle provided.

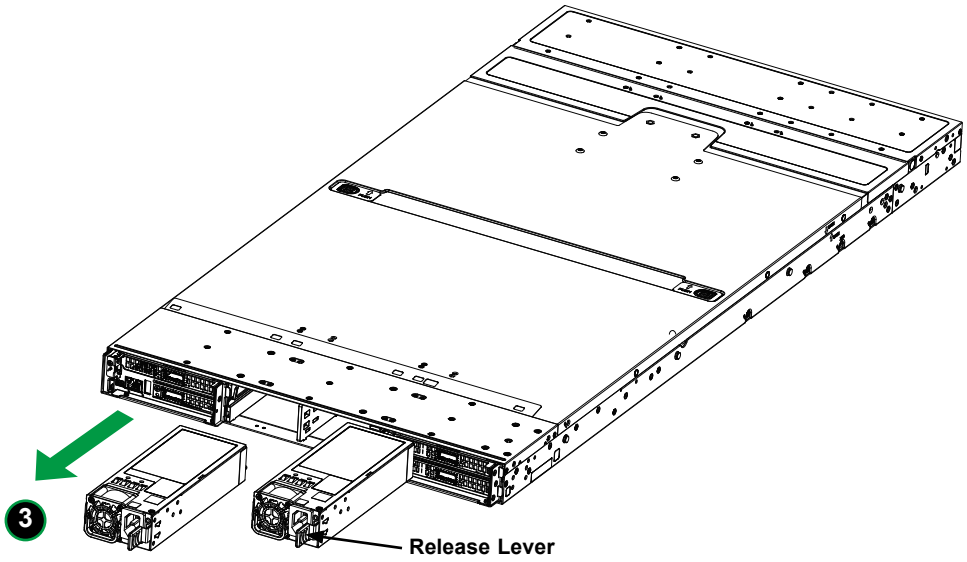


Figure 3-6. Changing the Power Supply

4. Replace the failed power module with the same model.
5. Push the new power supply module into the power bay, push the release lever in until it clicks.
6. Plug the AC power cord back into the module.

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1. More detail can be found in the Motherboard Manual Please review the Safety Precautions in Appendix A before installing or removing components.

4.1 Power Connections

12 V 8-pin Main Power Supply Connector (JPWR1-JPWR4)

JPWR1-4 is an 8-pin ATX power input to provide primary power to the motherboard. Refer to the table below for pin definitions..

12 V 8-pin Power Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12 V

12 V 2-pin Main Power Supply Connector (JPWR7)

JPWR7 is a 2-pin ATX power input to provide primary power to the motherboard. Refer to the table below for pin definitions.

12 V 2-pin Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	2	+12 V

12 V 8-pin Backplane Power Supply Connector (JPWR5)

JPWR5 is an 8-pin ATX power input to provide power to the backplane. Refer to the table below for pin definitions.

12 V 8-pin Power Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12 V

12 V 8-pin IO Board Power Supply Connector (JPWR6)

JPWR6 is an 8-pin ATX power input to provide power to the IO board. Refer to the table below for pin definitions.

12 V 8-pin Power Connector Pin Definitions			
Pin#	**Definition**	**Pin#**	**Definition**
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12 V

12 V 20-pin Main Power Supply Sideband Connector (JSB2)

JPWR8 is a 2-pin ATX power input to provide power to the backplane. Refer to the table below for pin definitions.

12 V 8-pin Power Connector Pin Definitions			
Pin#	**Definition**	**Pin#**	**Definition**
1	PSU1_PRSNT	11	N.A.
2	PSU2_PRSNT	12	SMB_DATA
3	PSU3_PRSNT	13	N.A.
4	PSU4_PRSNT	14	SMB_SCL
5	PSU1_PWROK	15	N.A.
6	PSU2_PWROK	16	Ground
7	PSU3_PWROK	17	N.A.
8	PSU4_PWROK	18	PSU_12V_SENSE
9	PSU_PWRON	19	N.A.
10	SMB_ALERT	20	PSU_12V_SENSE_RTN

4.2 Headers and Connectors

Power SMB Header (PWRI2C)

Power System Management Bus (I^2C) header monitors power supply, fan and system temperatures. See the table below for pin definitions.

Power SMB Header Pin Definitions	
Pin#	**Definition**
1	Clock
2	Data
3	Alert
4	Ground
5	+3.3 V

TPM/Port 80 Header

A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM support and Port 80 connection. Use this header to enhance system performance and data security. Refer to the table below for pin definitions. Please go to the following link for more information on the TPM: http://www.supermicro.com/manuals/other/TPM.pdf.

Trusted Platform Module Header Pin Definitions			
Pin#	**Definition**	**Pin#**	**Definition**
1	+3.3 V	6	GND
2	SPI_CS#	7	SPI_MOSI
3	RESET#	8	N.A.
4	SPI_MOSI	9	+3.3V_STBY
5	SPI_CLK	10	SPI_IRQ#

Onboard Battery (BT1)

The onboard back up battery is located at BT1. The onboard battery provides backup power to the on-chip CMOS, which stores the BIOS setup information. It also provides power to the Real Time Clock (RTC) to keep it running.

Chassis Intrusion (JL1)

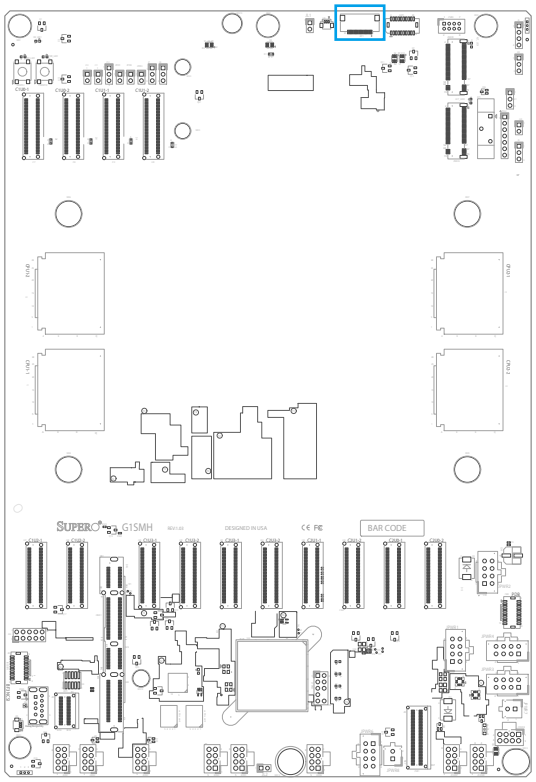
A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to the header to inform you when the chassis has been opened.

Chassis Intrusion Pin Definitions

Pins	Definition
1	Intrusion Input
2	Ground

Front Control Panel

JFP1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with Supermicro chassis. See the figure below for the location of JFP1.



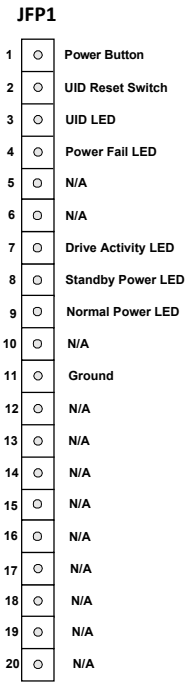


Figure 4-1. JFP1 Pin Definitions

Front Control Panel Pin Definitions

Power LED

The Power LED connection is located on pins 8 and 9 of JFP1. Refer to the table below for pin definitions.

Power LED Pin Definitions (JF1)	
Pin#	**Definition**
8	Standby Power LED-
9	Normal Power LED-

Drive Activity LED

The Drive Activity LED connection is located on pin 7 of JFP1. Attach a drive LED cable here to display drive activity detected on the motherboard's built-in drive controllers. See the table below for pin definitions.

Drive Activity LED Pin Definitions (JF1)	
Pin#	**Definition**
7	Drive Activity LED

Power Fail LED

The Power Fail LED connection is located on pin 4 of JFP1. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JFP1)	
Pin#	**Definition**
4	Power Fail LED

UID LED

The UID LED is on pin 3 of JFP1. Connect the front panel UID LED to this header to indicate when the rear UID switch is turned on. Refer to the table below for pin definitions.

UID LED
Pin Definitions (JFP1)

Pin#	Definition
3	UID LED

UID Reset Button

The UID Reset Button connection is located on pins 2 and 11 of JFP1. Attach the hardware UID reset switch from the computer case to this header to reset the system. Refer to the table below for pin definitions.

UID Reset Button
Pin Definitions (JFP1)

Pin#	Definition
2	UID Reset Switch
11	Ground

Power Button

The Power Button connection is located on pins 1 and 11 of JFP1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button. To turn off the power in the suspend mode, press the button for at least 4 seconds. Refer to the table below for pin definitions.

Power Button
Pin Definitions (JFP1)

Pin#	Definition
1	Power Button
11	Ground

4.3 LED Indicators

UID LED (UID_LED1)

The UID LED is located next to two buttons at one of the corners of the motherboard. One of the buttons is the UIDBTN1 button. Press this button and the LED will blink blue to show that the UID is active. Press the UIDBTN1 button for one second and the LED will turn solid blue. Use this UID LED to 'mark' the system, so the motherboard can be easily identified. See the table below for more information.

UID LED States		
Color	**State**	**Definition**
None	Off	UID Off
Blue	Solid On	Unit Initiated Locally
Blue	Slow Blinking	Unit Initiated Remotely
Blue	Slow Blinking	System Recovery

CPLD Initialization LED (HB_LED1)

The CPLD Initialization LED is located next to two buttons at one of the corners of the motherboard. When the the LED is blinking green it indicates that the CPLD has been initialized. See the table below for more information.

CPLD Initialization LED States	
State	**Definition**
Off	CPLD Uninitialized
Blinking Green	CPLD Initialization OK

Motherboard Power LED (PWR_LED1)

A motherboard power LED is located next to two buttons at one of the corners of the motherboard. Press the PWRBTN1 and the LED will be solid green. See the table below for more information.

Motherboard Power LED State		
Color	**State**	**Definition**
Green	Solid On	BMC is not ready
Green	Blinking	BMC Normal
Green	Fast Blinking	BMC: Initializing

M.2 Activity LEDs

ACT_LED1 and ACT_LED2 are onboard M.2 LEDs. When these LEDs are blinking green, the M.2 SSD is active.

M.2 Activity LEDs	
State	**Definition**
Off	M.2 Inactive
Blinking green	M.2 Active

EROT Detected LEDs (LED1 and LED2)

The EROT Detected OK LED (LED1) and the EROT Detected Fail LED (LED2) shows the status of the Root-of-Trust (RoT). LED1 is solid yellow if the RoT is in a good state. LED2 is solid red if there is an error. See the tables below for more information.

Root-of-Trust LED1 State		
Color	**State**	**Definition**
Yellow	Solid On	Root-of-Trust is OK

Root-of-Trust LED2 State		
Color	**State**	**Definition**
Red	Solid On	Error detected

Normal Power Detected LED (LED3)

The Normal Power Detected LED indicates the motherboard is on normal power. Before pressing PWRBTN1, the LED blinks green. After pressing PWRBTN1, the LED is solid green.

Normal Power Detected LED State		
Color	**State**	**Definition**
Green	Blinking	Normal Power not detected
Green	Solid	Normal Power detected

Standby Power Detected LED (LED4)

The Standby Power Detected LED indicates the motherboard is on standby power. Before pressing PWRBTN1, the LED is solid orange. After pressing PWRBTN1, the LED is off.

BMC Heartbeat LED State	
State	**Definition**
Solid orange	Standby Power detected
Off	Standby Power not detected

4.4 M.2 Solid State Drive Installation

Installing Dual M.2 SSDs

1. Disconnect power from the motherboard or system.
2. Refer to the motherboard layout and locate the M.2 dual slots (JM2A/JM2B).
3. Insert the lower M.2 sideways into the connector so that it lays flat, then follow the instructions below from ❶ to ❸.
4. Insert the upper M.2 sideways into the connector so that it lays flat, then follow the instructions below from ❹ to ❻.

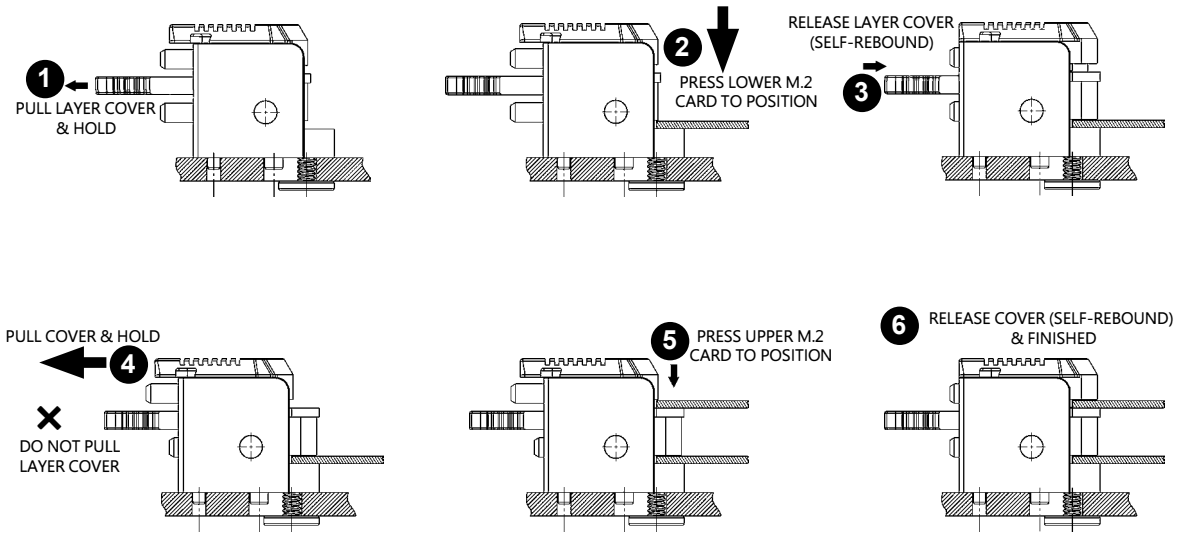


Figure 4-2. Installing Dual M.2 SSDs

Releasing Dual M.2 SSDs

1. Follow the instructions below from ❶ to ❺ to remove M.2 SSDs.

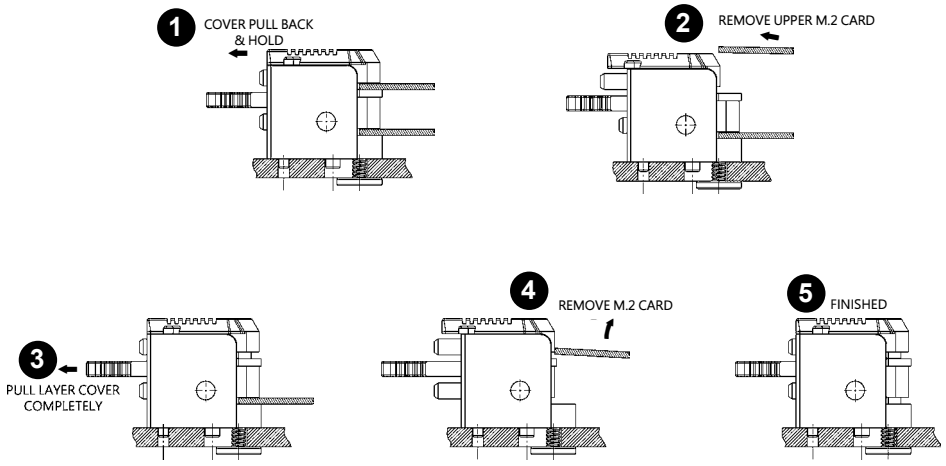


Figure 4-3. Releasing Dual M.2 SSDs

Chapter 5

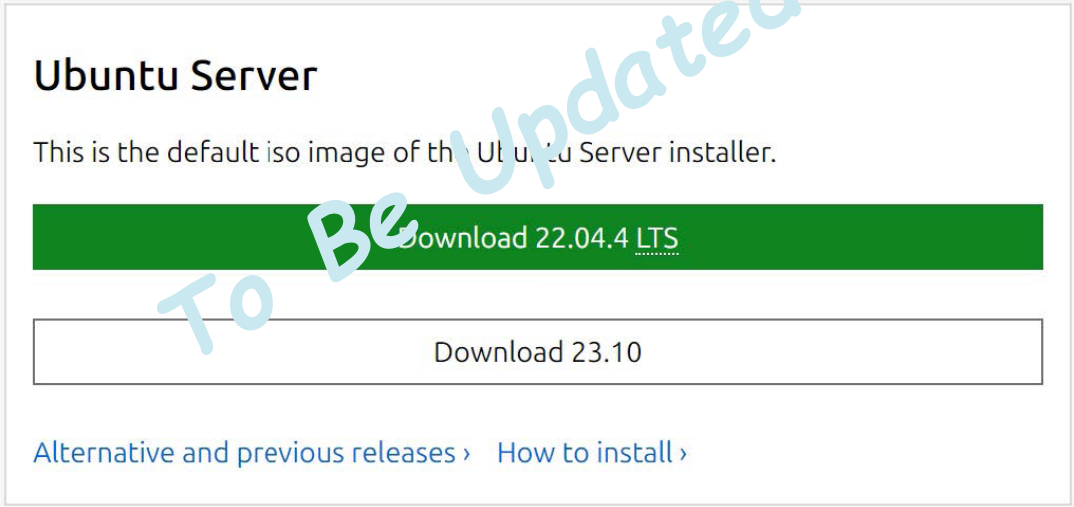
Software

After the hardware has been installed, you can boot the Operating System (OS). Additionlly, the following software is supported on the G1SMH.

5.1 Ubuntu® Server 22.04 ISO Installation

Prerequisites

Obtain the Ubuntu Server ISO for ARM image (aarch64) and save it to your local disk or a shared server. It's recommended to use Ubuntu Server 22.04.4 LTS. Please refer to Ubuntu Server for ARM for the ISO packages.



Connecting to BMC Network

To utilize the BMC remote functionality, ensure that the network is connected to the BMC.

Connecting to Ethernet Using a Network Card

During the Ubuntu 22.04 installation process, network configuration is essential to test the connection to mirror locations for Ubuntu repositories and archives. Please ensure Ethernet connectivity by using a network card. If there's a firewall configuration within your network, the mirror location test may fail. In such cases, disconnect the Ethernet cable for the OS installation. The OS installation can still be successful without an Ethernet connection for obtaining the latest updates. For further details, please refer to Step 6. Installing Ubuntu 22.04 OS.

Installing Ubuntu 22.04 OS

Step 1. Obtaining the BMC IP Address

Connect the system to a monitor or display using a Mini DisplayPort (Mini DP) or a Mini DisplayPort-to-DisplayPort (DP) adapter. Ensure that network is connected to BMC using a network cable and power on the system. The BMC IP address will appear on the right corner of the Supermicro Logo screen.

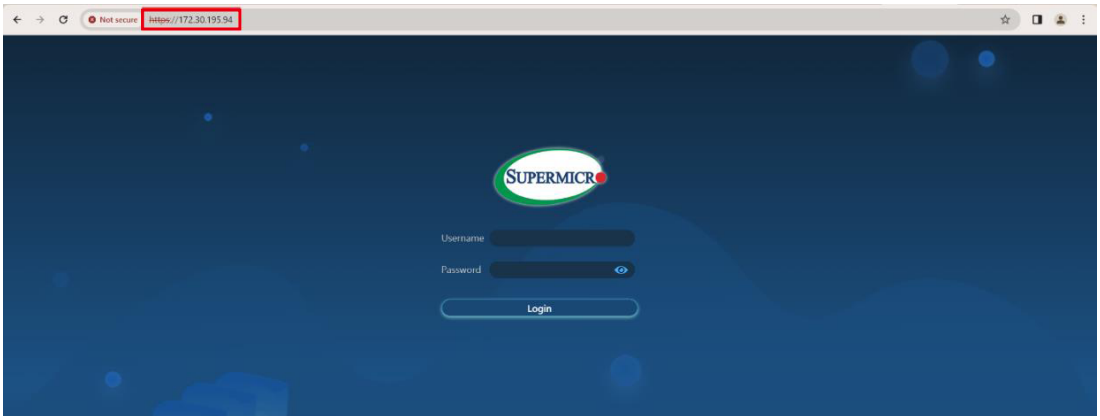


Step 2. Accessing the BMC Remote Server

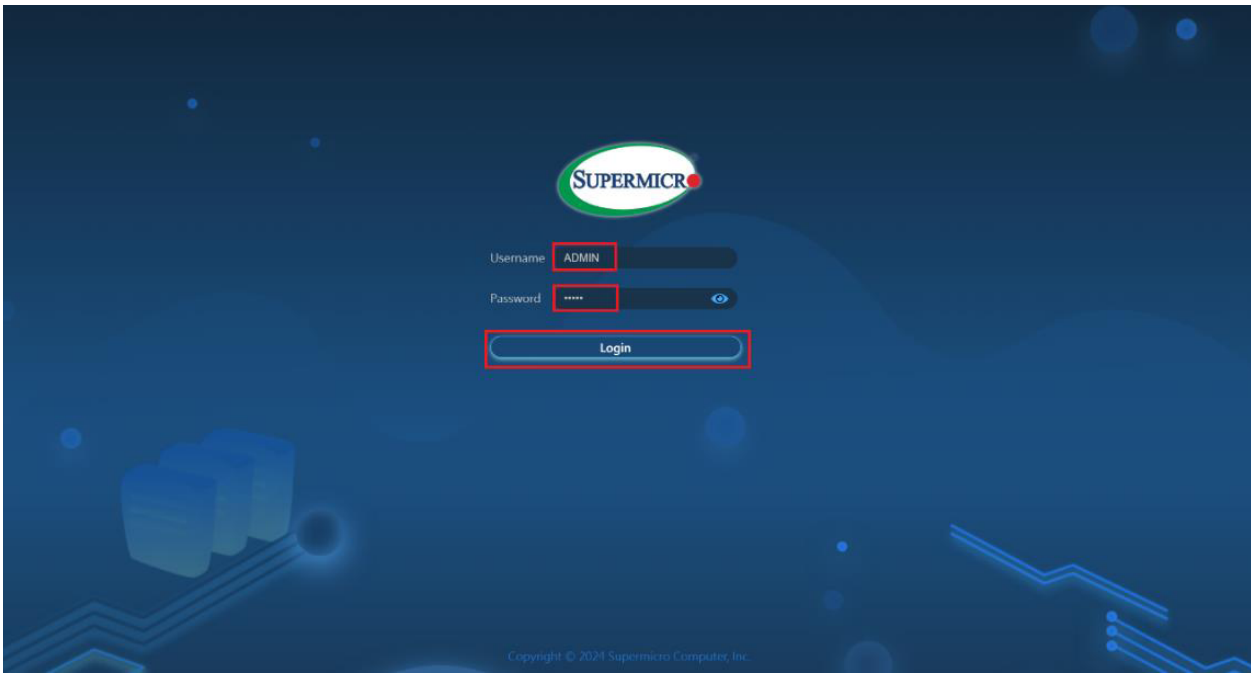
Log in to the BMC Remote Server

1. In the terminal, execute a ping command to the BMC IP address (e.g., 172.30.195.94) to verify its connectivity.

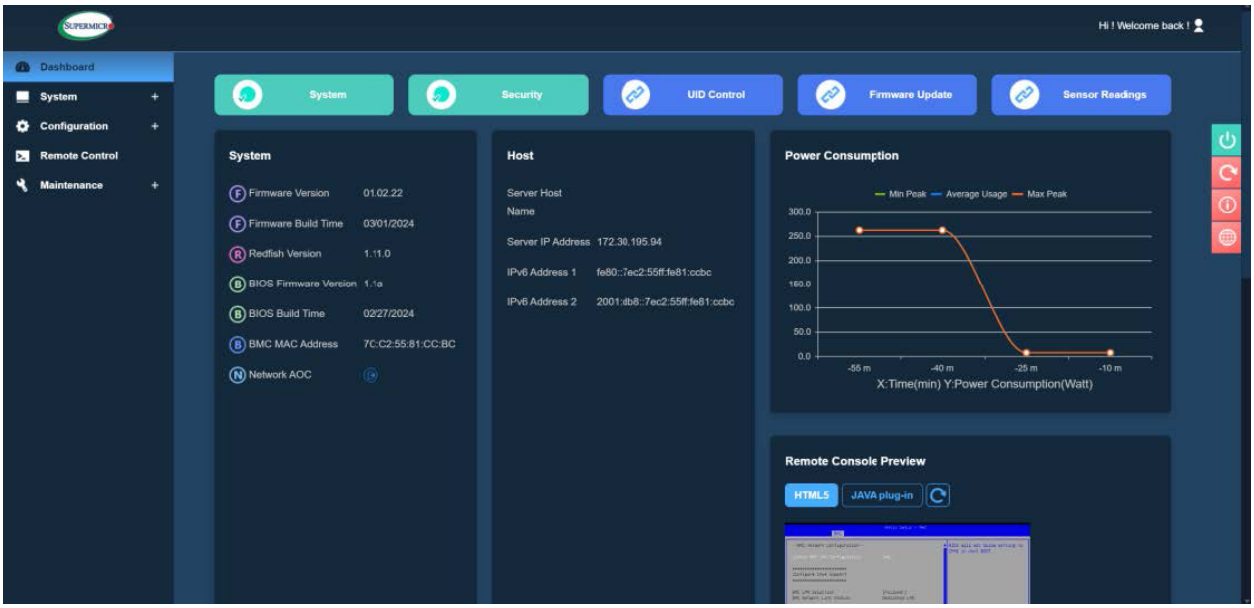
2. Launch a new web browser and input the BMC IP address into the URL field. **Outcome:** The BMC Remote Console login screen will be displayed.



3. Input the username "**ADMIN**" and the unique BMC password, which is located on the label on the opposite side of the service tag of the system. Click "**Login**" to proceed.

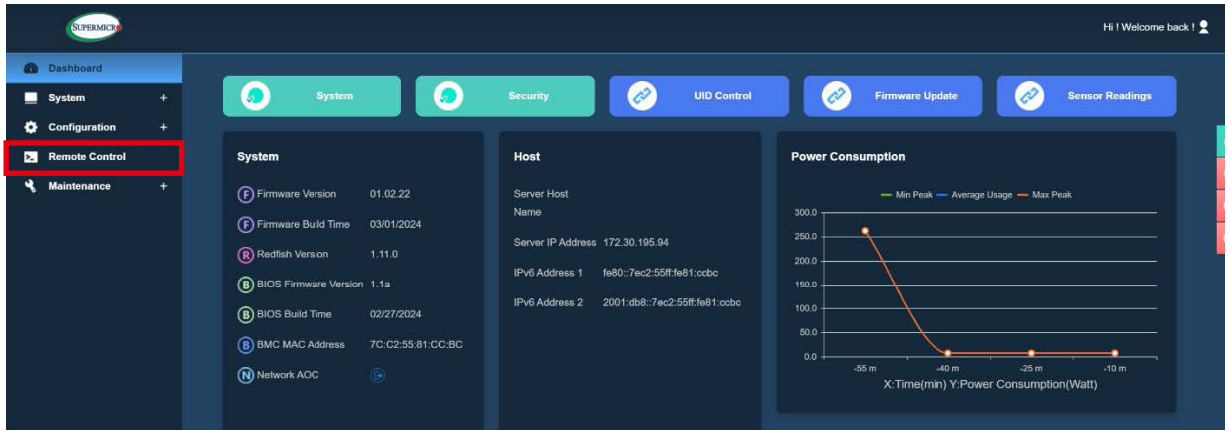


Outcome: The BMC Dashboard offers insights into system overview, configuration, health status, and maintenance.

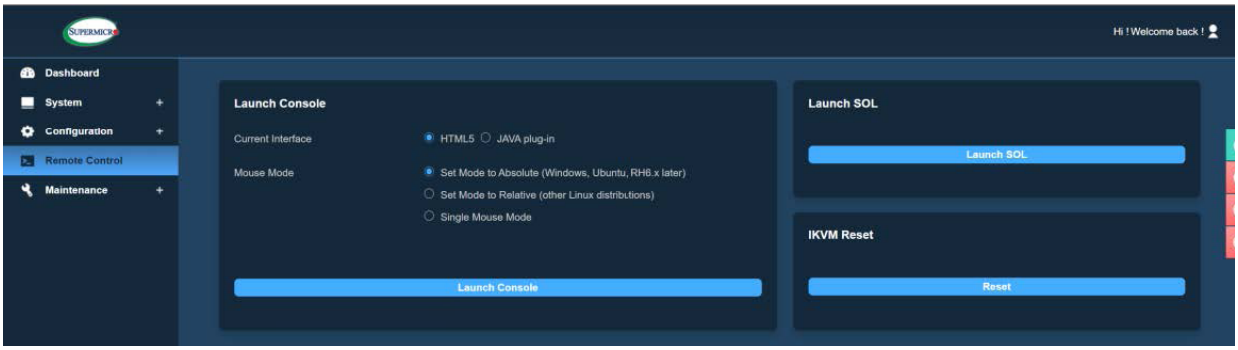


Step 3. Controlling the BMC Remotely

1. The Remote Control menu in the BMC Remote Server enables remote server operations.

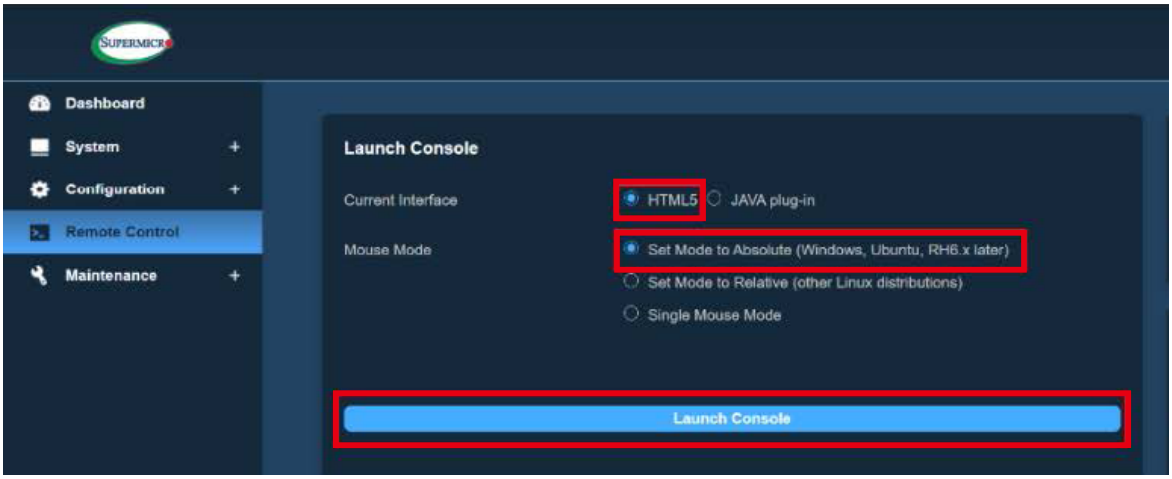


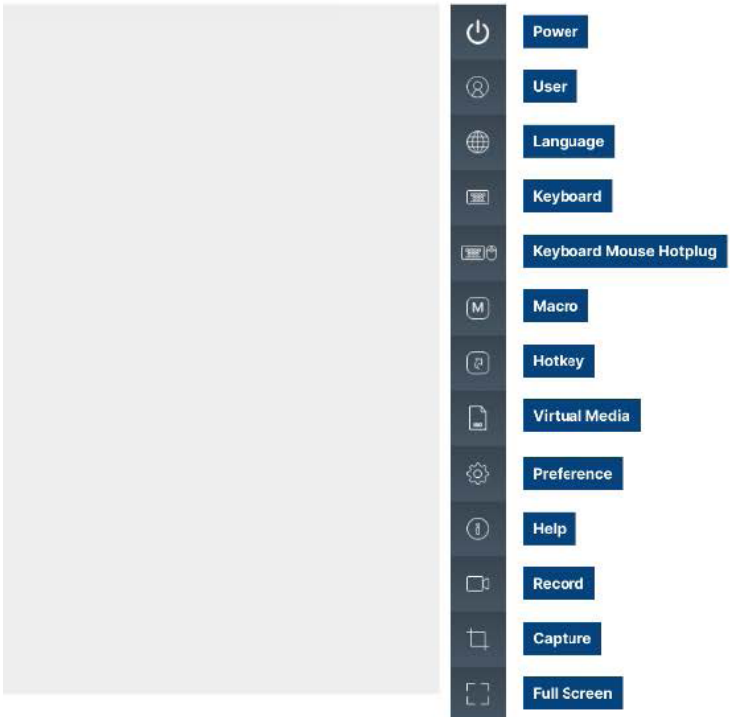
2. Use the Launch Console section to configure the remote console interface settings. Choose between the HTML5 interface or a JAVA plug-in.



Launch an HTML5 Remote Browser

1. Set HTML5 as the current interface.
2. Choose the mouse mode according to your operating system, such as "**Set Mode to Absolute (Windows, Ubuntu, RH6.x, or later)**".
3. Click the "**Launch Console**" button to open a console in a new browser window.



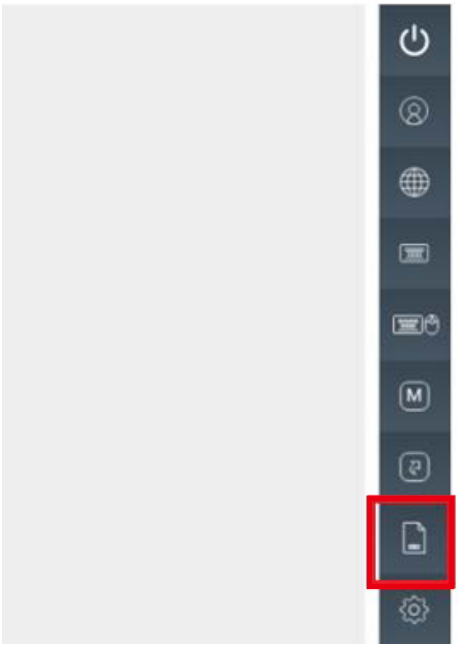


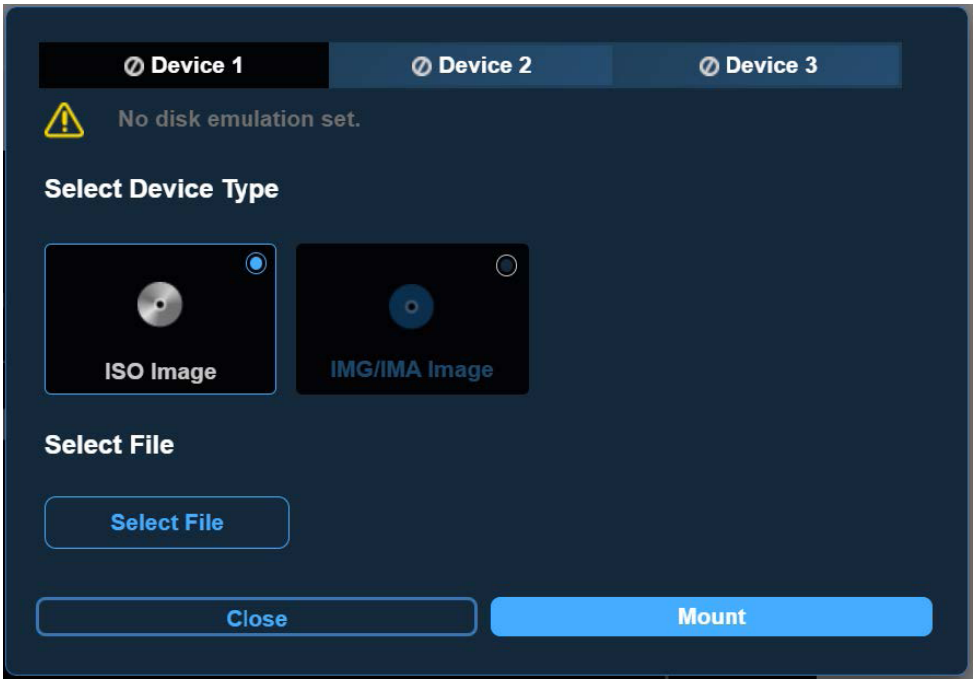
Step 4. Mounting the ISO Image

There are two methods to mount ISO images. If the ISO files are stored locally on your disk, you can mount them directly within the remote control browser. Alternatively, if the ISO files are located on a shared server, you can mount them via the Configuration > Virtual Media menu.

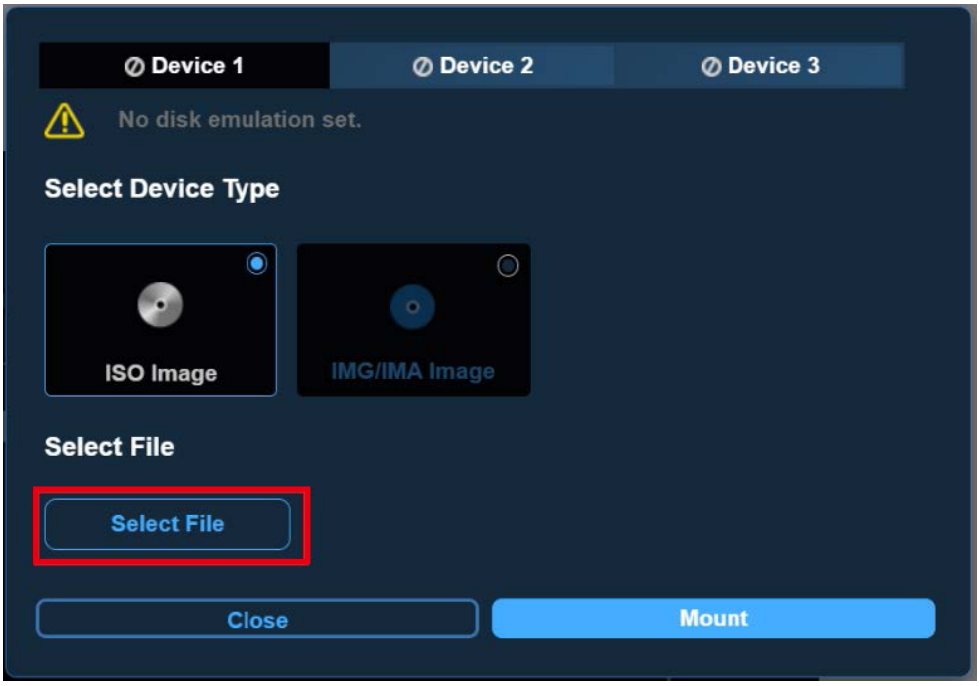
Method One: Mount the ISO Image Using a Local File

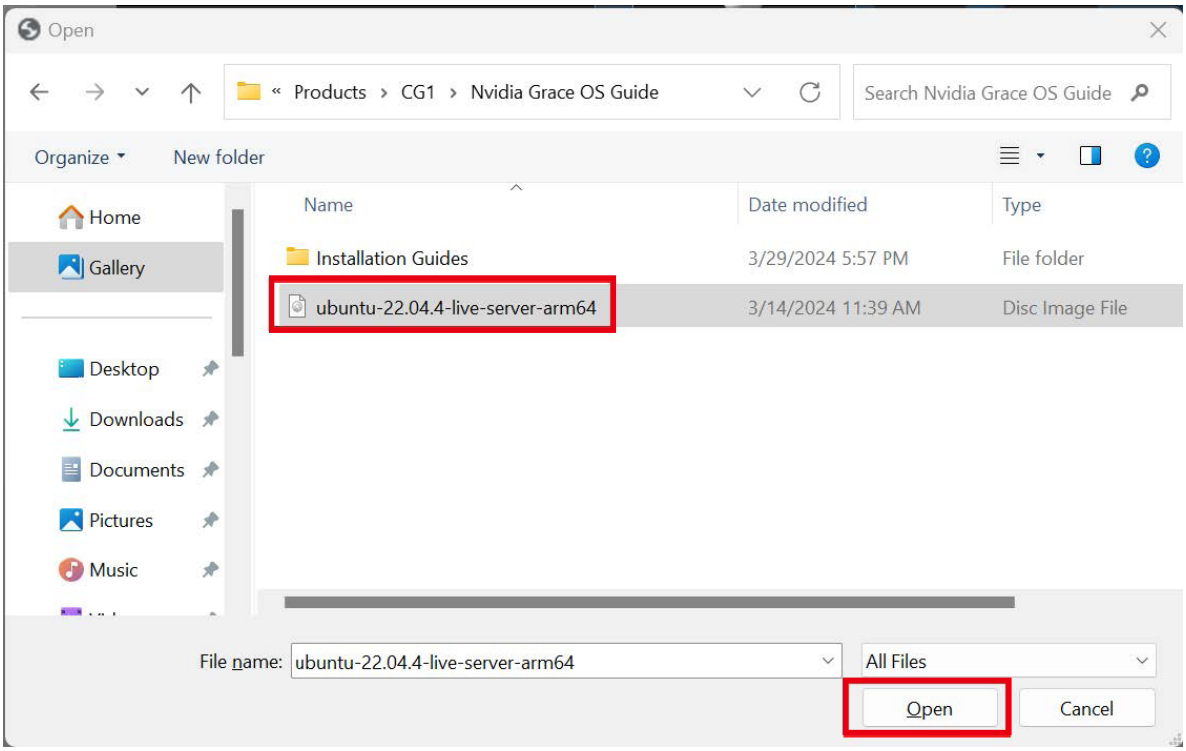
1. In the remote control browser, click the "**Virtual Media**" icon. This action will prompt a dialogue box to appear, enabling you to select the image type and files for mounting.





2. Click the **"Select File"** button to browse and choose the Ubuntu ISO image on your local disk for use.

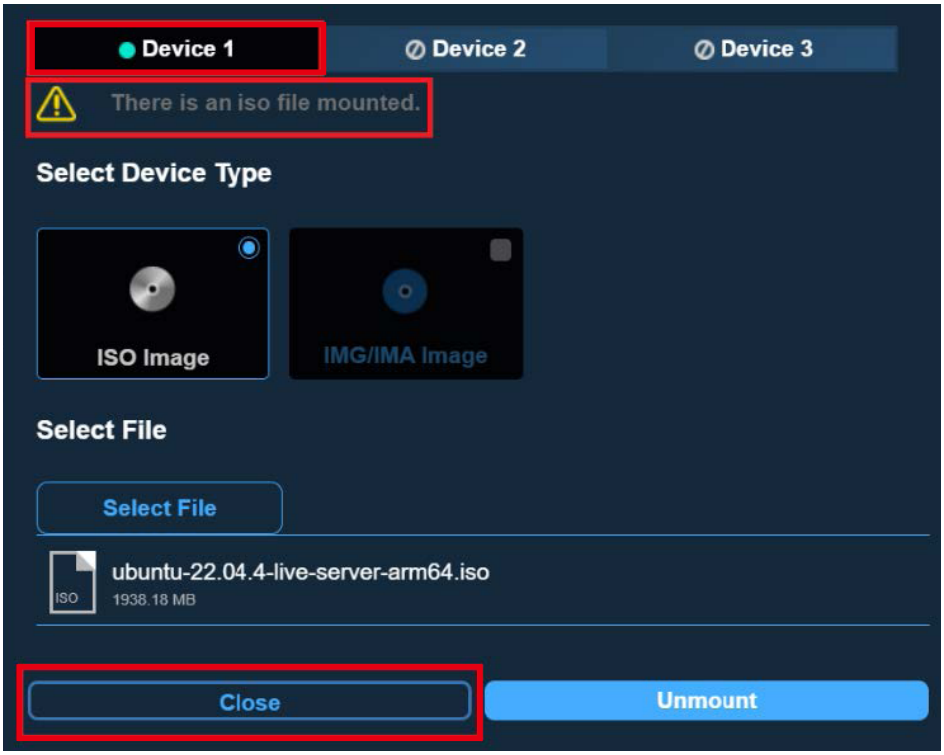




3. Click the "**Mount**" button to attach the chosen ISO image.

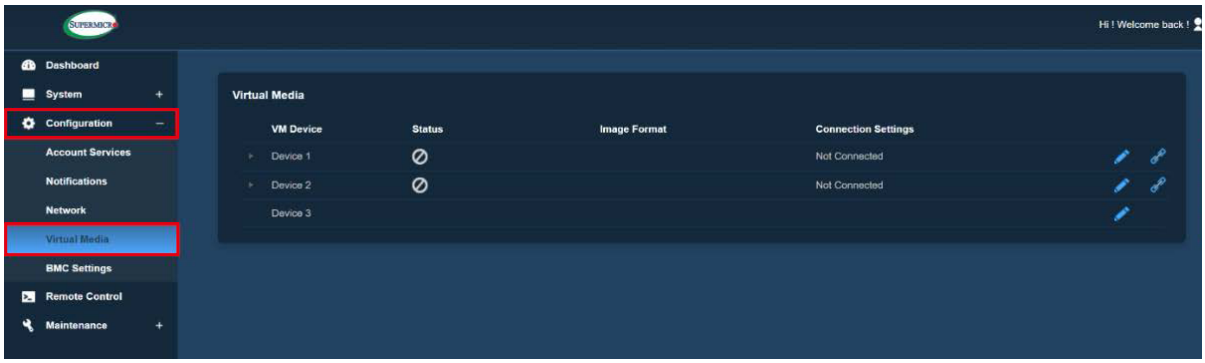


Result: Upon successful mounting of the ISO image, a green indicator will appear in the "**Device**" tab. Close the dialogue to continue.

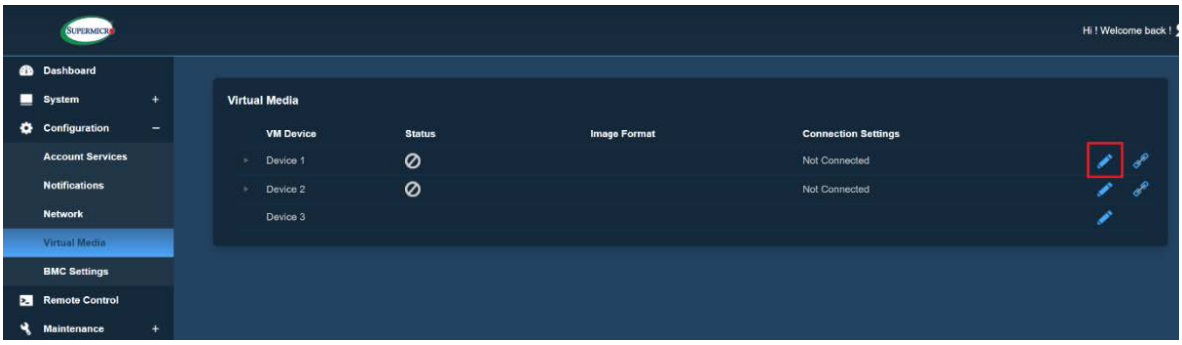


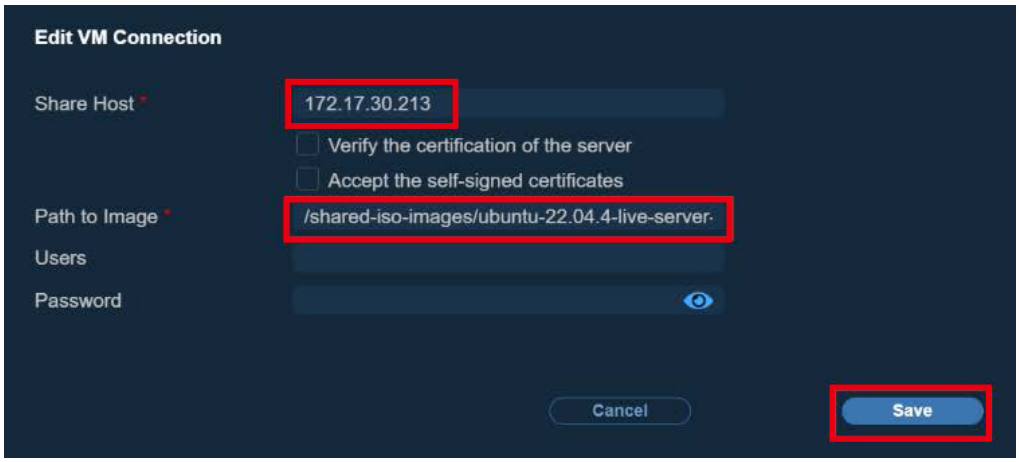
Method Two: Mount the ISO Image through a Shared Server

1. On the BMC dashboard, go to Configuration > Virtual Media, this allows you to attach an ISO image from the server.



2. Click the "**Edit**" icon to adjust the VM configuration. Enter the server host address and the path to the ISO image. Then, click "**Save**" to apply the changes.

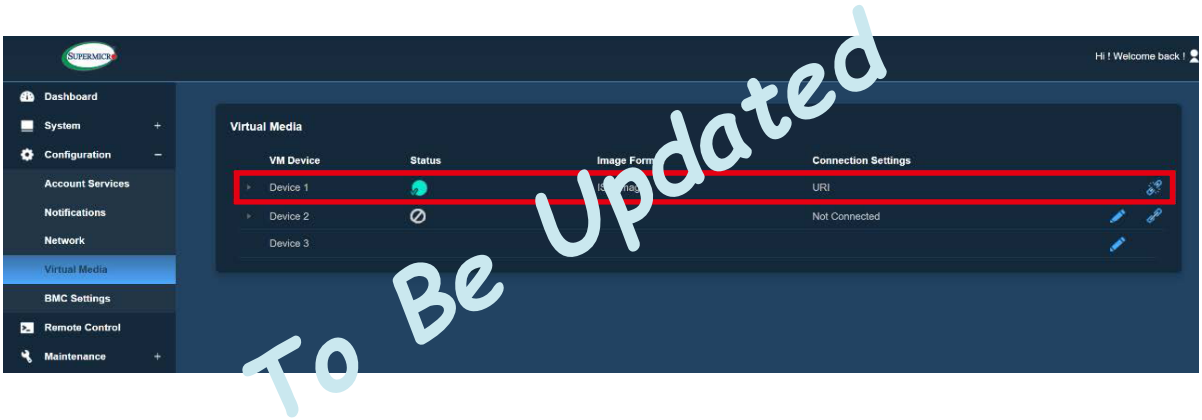




3. Click the "**Connect**" icon to mount the virtual media. The device status will display as green once the VM is successfully configured.



The device status will display as green once the VM is successfully configured.



Step 5. Setting Boot Override in UEFI BIOS

To configure the boot option from the mounted image in virtual media, users must manually adjust the boot settings in the BIOS setup.

1. Power on the system and wait for the Log screen to display. To access the BIOS setup menu, repeatedly press <**DEL**> until "**Entering Setup...**" appears at the bottom left corner of the screen. Subsequently, the UEFI BIOS screen is displayed.

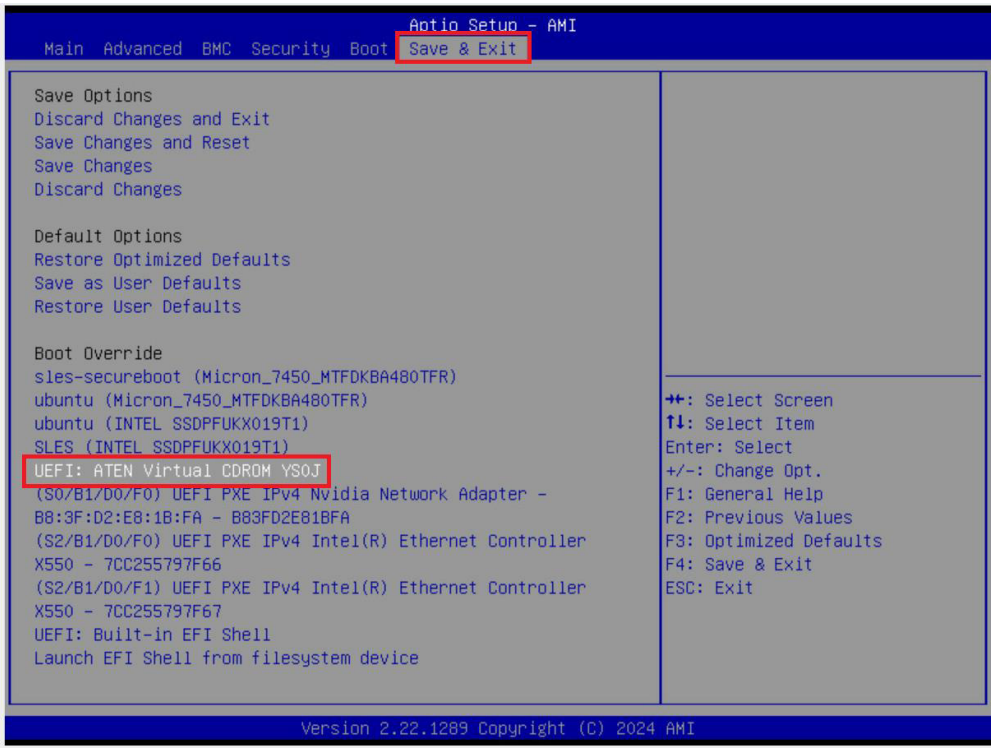




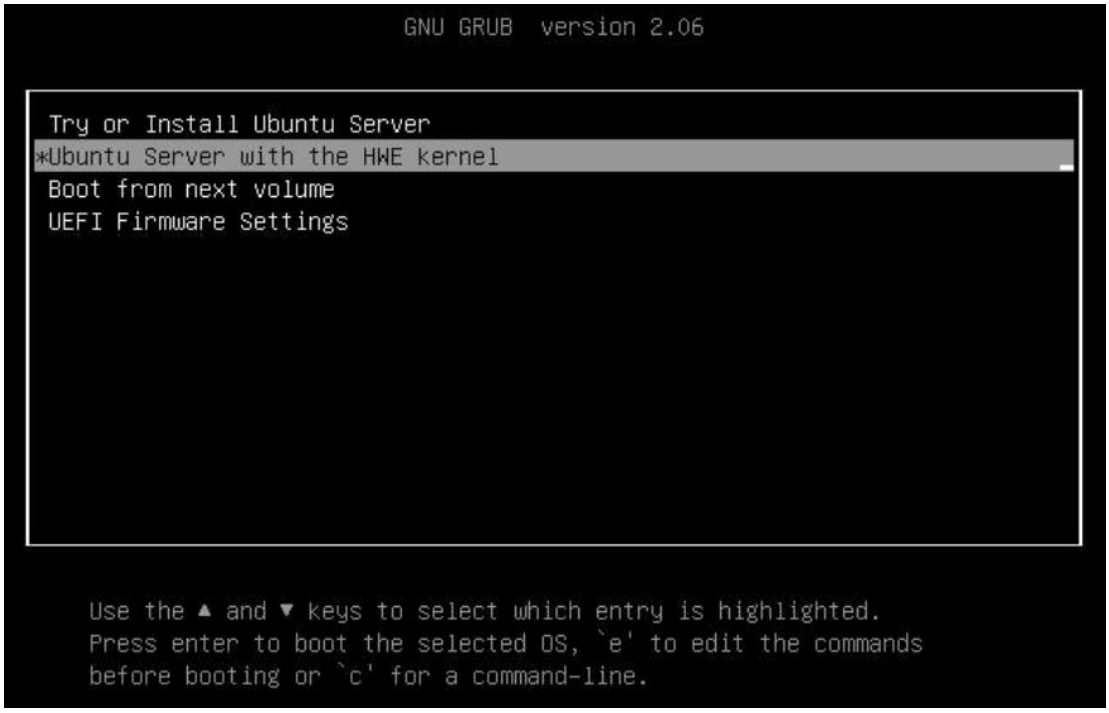
Subsequently, the UEFI BIOS screen is displayed.



2. Navigate to the "**Save & Exit**" menu using the arrow keys, then select "**UEFI: ATEN Virtual CDROM YSOJ**" as the boot option. This selection presents the ISO image mounted in Virtual Media. Hit "**Enter**" to proceed.

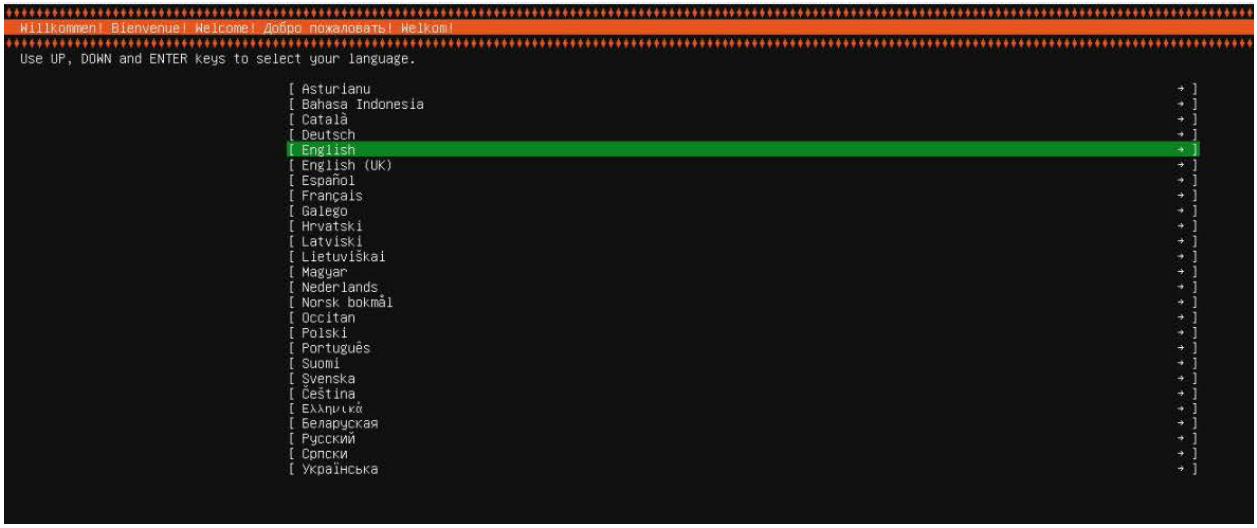


3. Follow the Ubuntu installer steps to continue installation. Choose "**Ubuntu Server with the HWE kernel**" to proceed.



Step 6. Installing Ubuntu 22.04 OS

1. In the Ubuntu installer, select the **language**.



2. Configure the keyboard options.

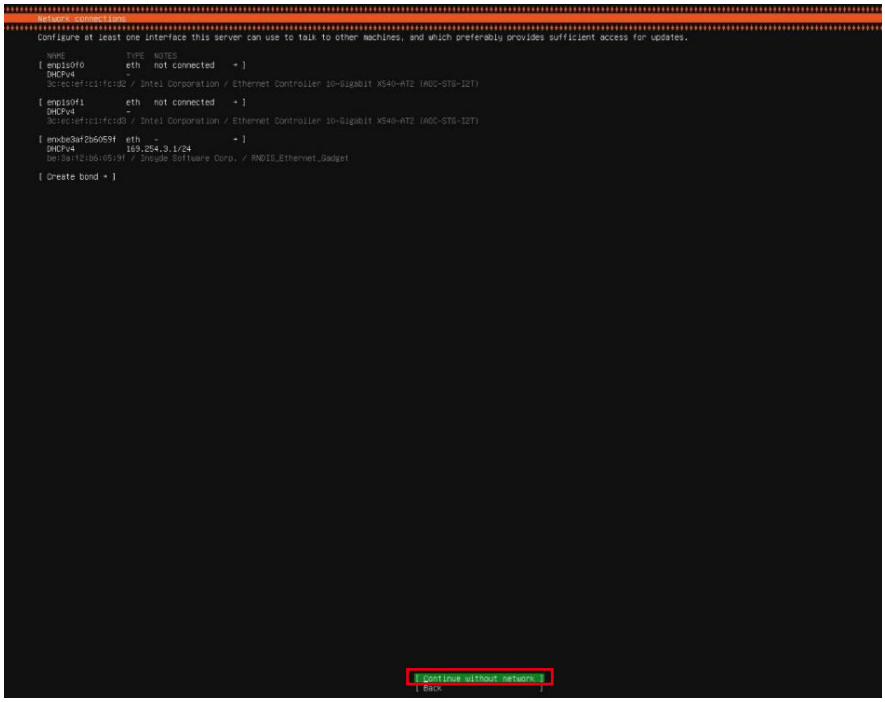


3. Select "**Ubuntu Server**" as the base for the installation.

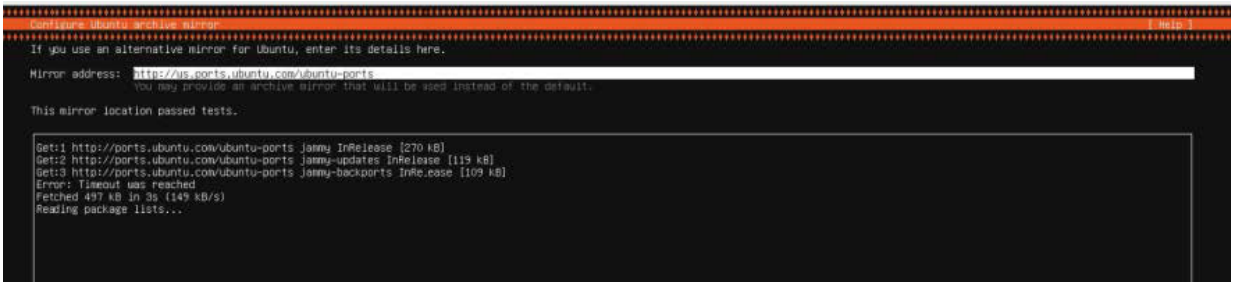
4. Configure the network connection to proceed. If an Ethernet network connection is available, proceed by selecting at least one network configuration option displayed on the installation UI.



If Ethernet is disconnected during the installation process, proceed by selecting the "**Continue without network**" button.



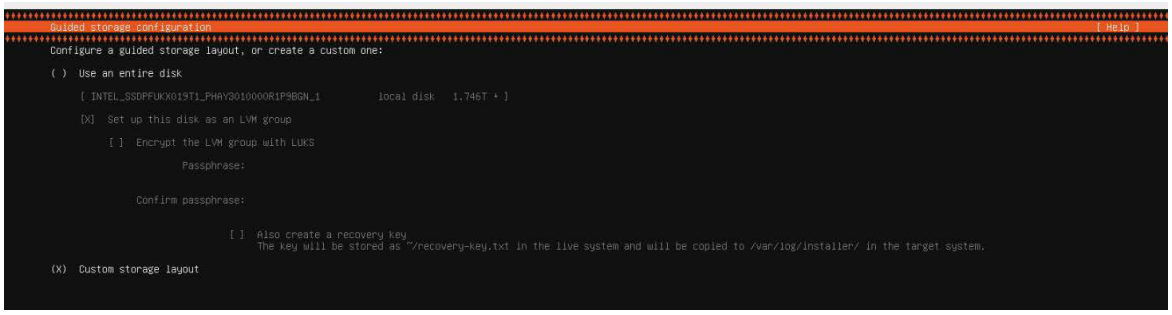
5. Configure the Ubuntu archive mirror address and run the test. Proceed with the following message: "**This mirror location passed tests**."



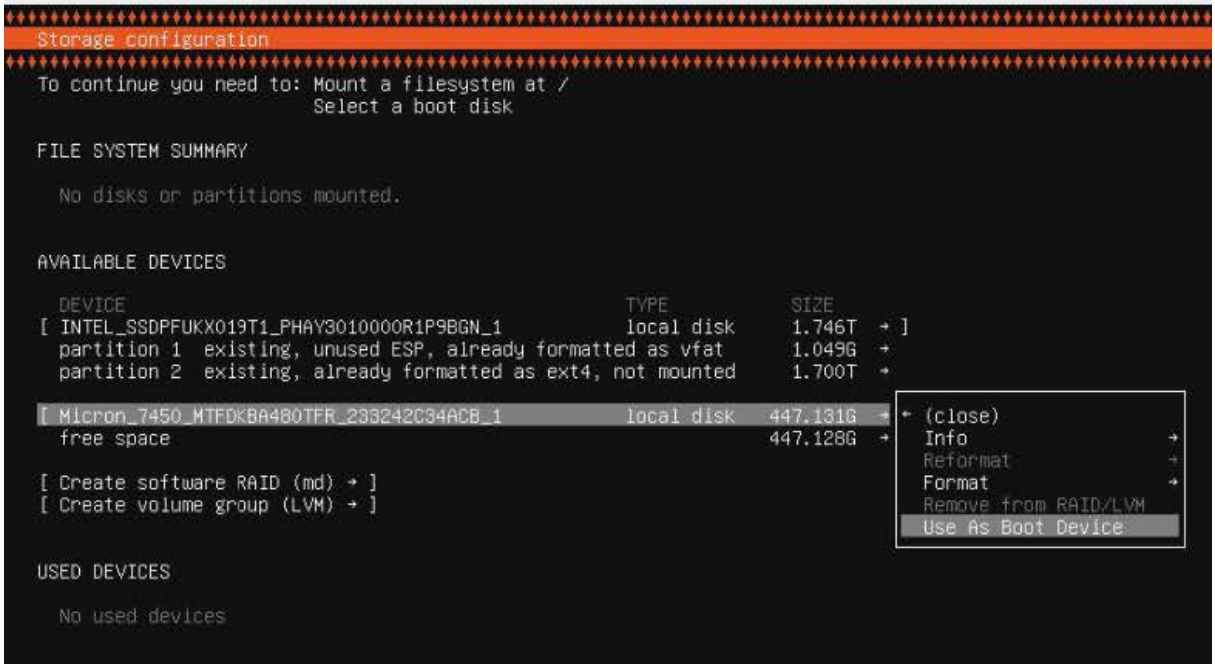
If Ethernet is disconnected during the installation process, please proceed with the following message: "**The mirror location cannot be checked because no network has been configured**."



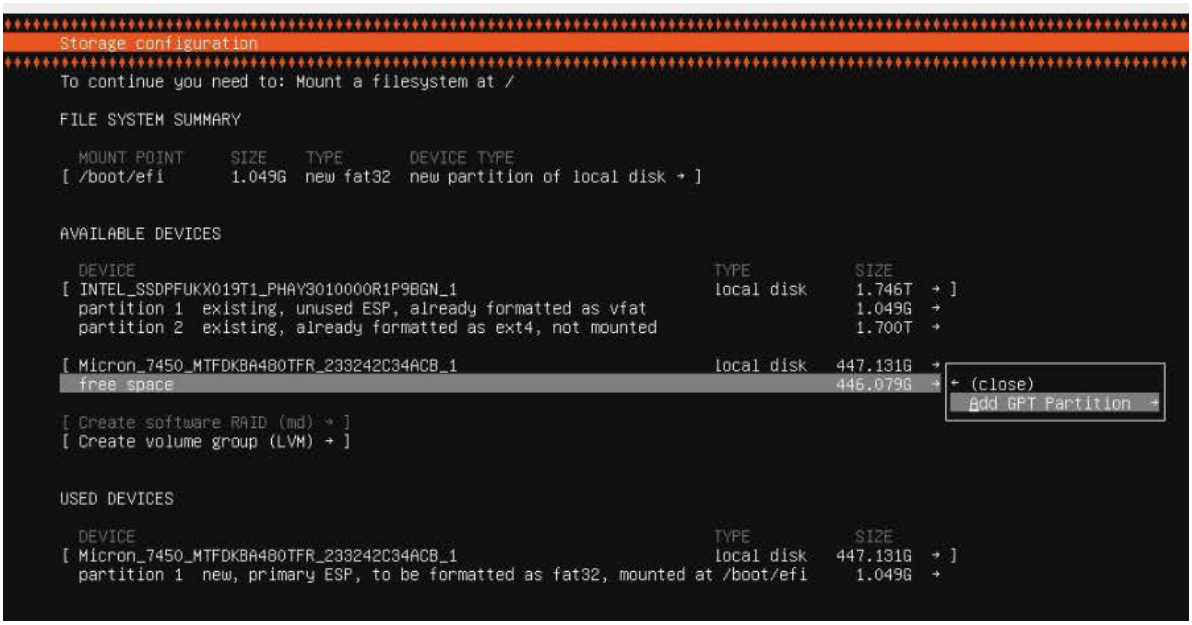
6. Configure the storage layout.



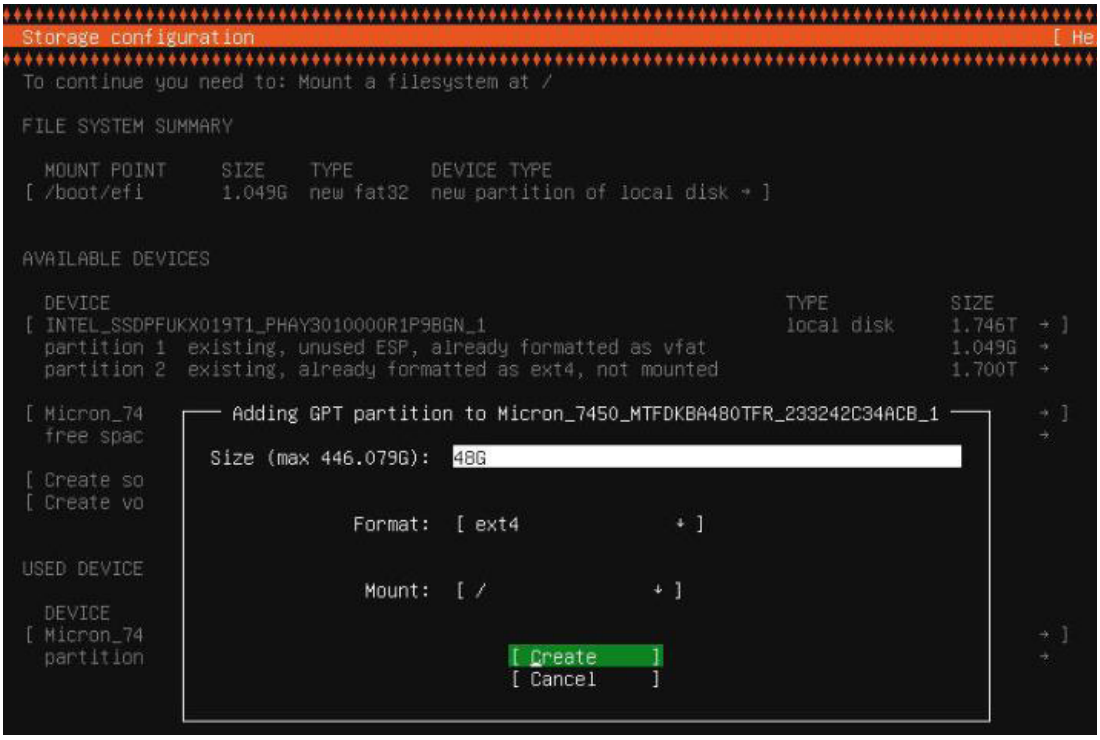
7. Set one of the disks as the boot device. You may choose either a disk or a USB drive as your boot device.

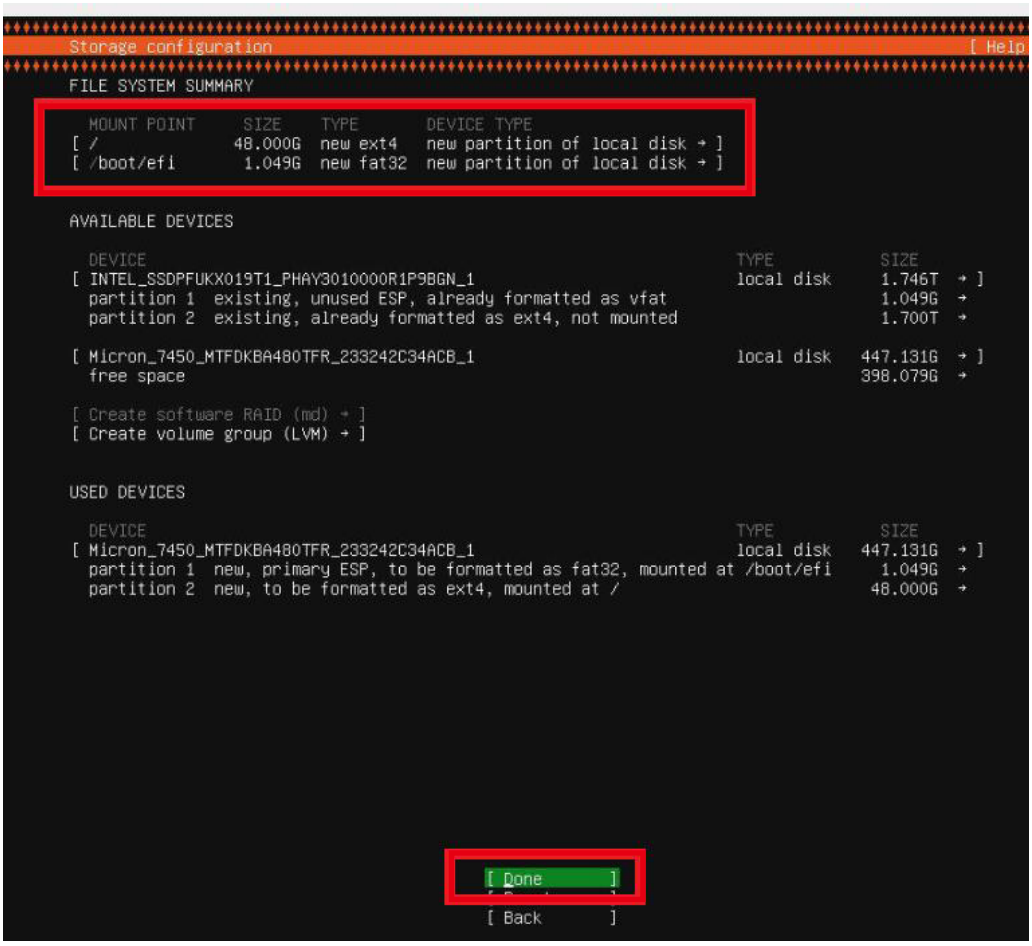


8. Create GPT partitions from the free space in the disk. To continue installation, at least two partitions are required to proceed: one mount point at "**/boot/efi**" and the other mount point at "**/**".

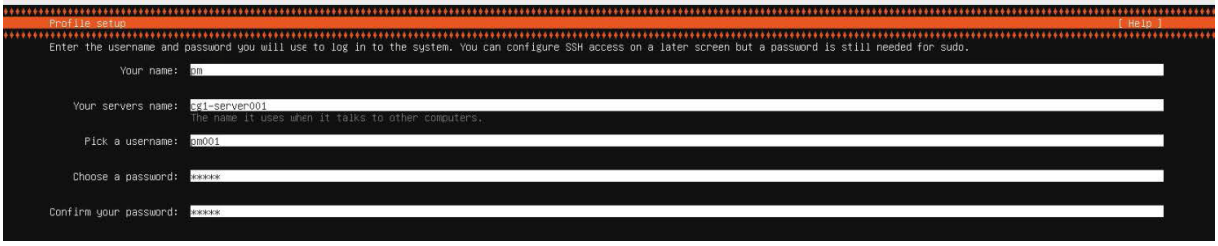


9. Select the size, format, and mount point when adding GPT partition to the boot disk.

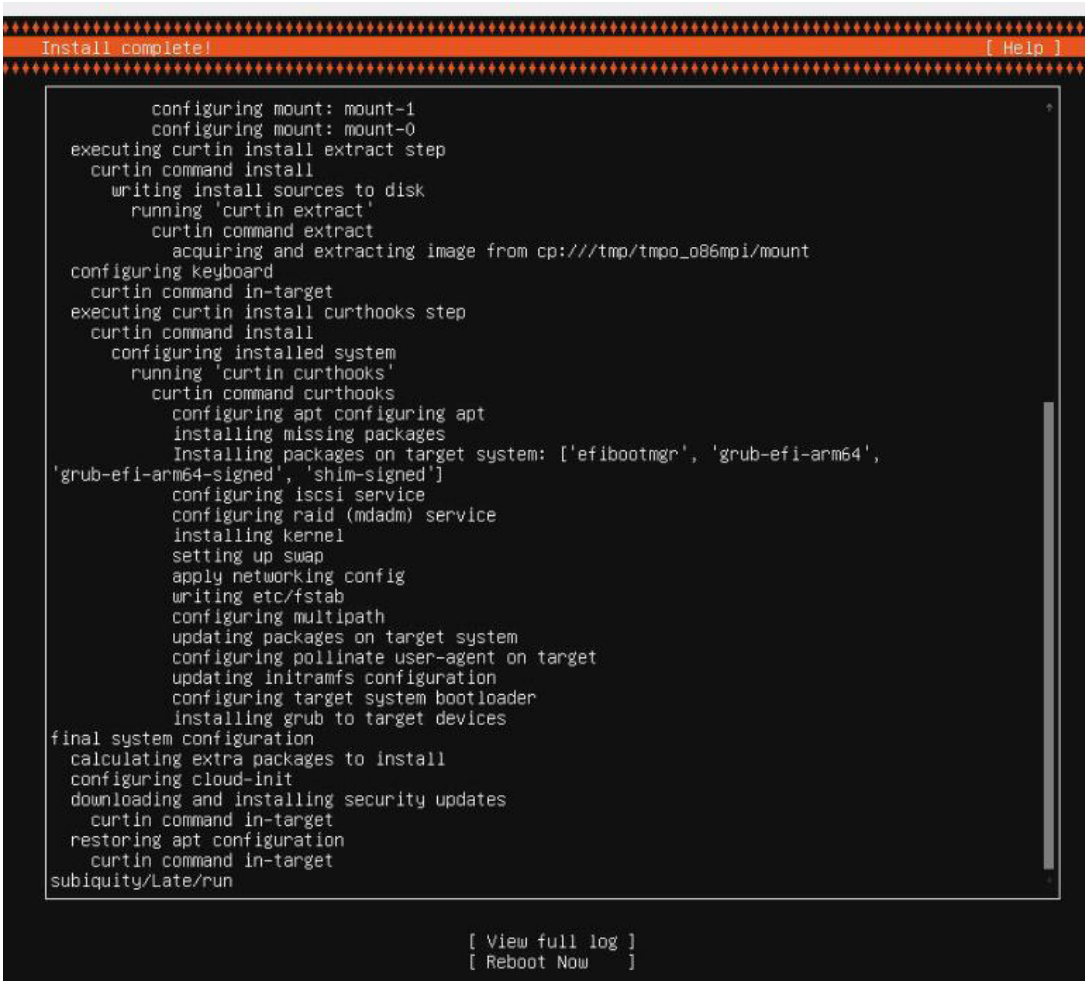




10. Create the profile name, server name, username, and password.



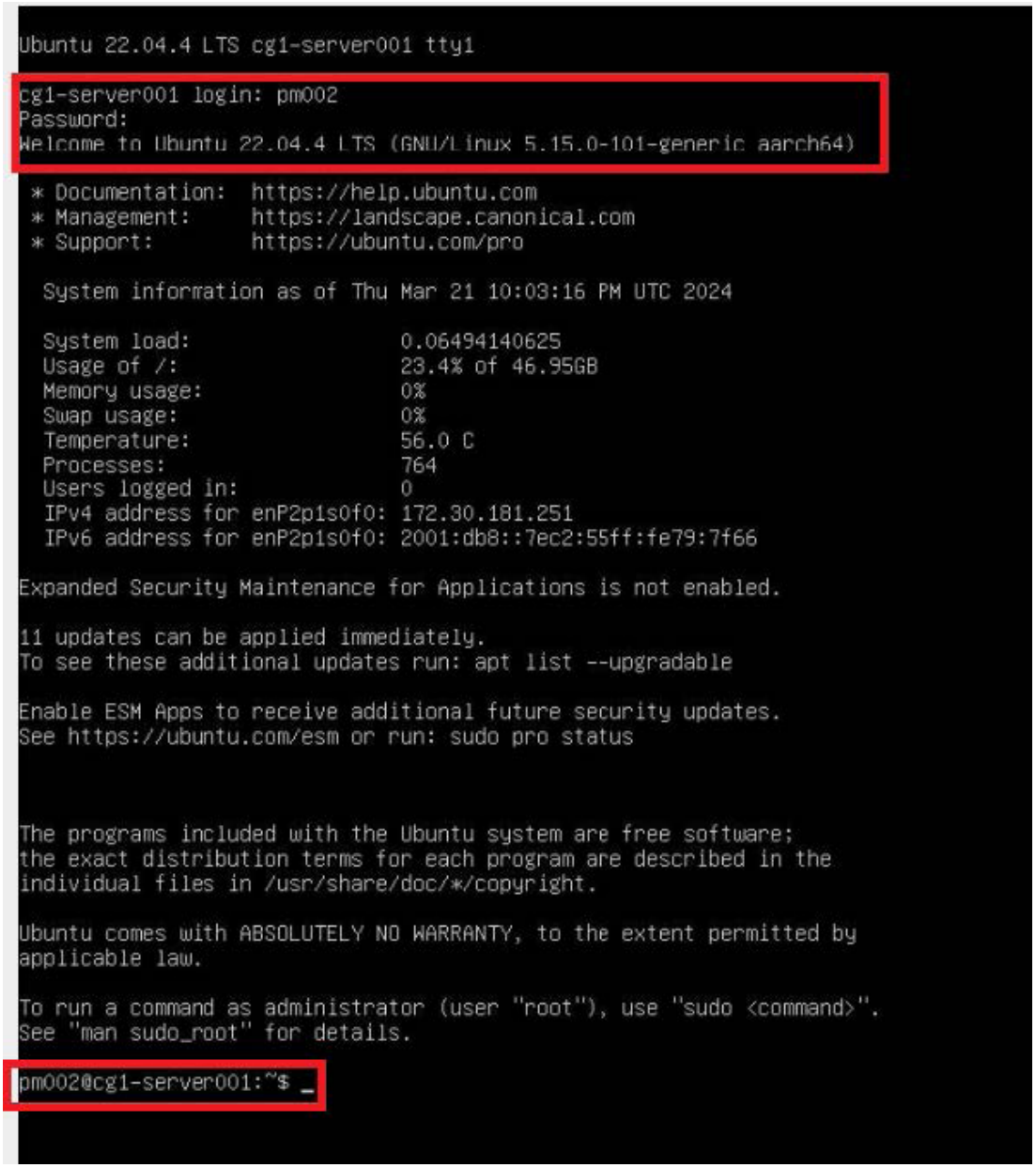
11. Wait until the installation is complete and reboot the system.



12. Enter username and password to log in.



Log in successfully.



5.2 Red Hat Enterprise Linux (RHEL) 9.3 ISO Installation

Prerequisites

Obtain RHEL 9.3 ISO for the ARM image (aarch64) and save it to your local disk or a shared server. It's recommended to use the RHEL 9.3 AArch64 DVD ISO image file. Please refer to Downloading a RHEL installation ISO image for the ISO packages.

Installing RHEL 9.3 OS

Step 1. Obtaining BMC IP Address

Connect the system to a monitor or display using a Mini DisplayPort (Mini DP) or a Mini DisplayPort-to-DisplayPort (DP) adapter. Ensure that the network is connected to the BMC using a network cable and power on the system. The BMC IP address will appear on the right corner of the Supermicro Logo screen.



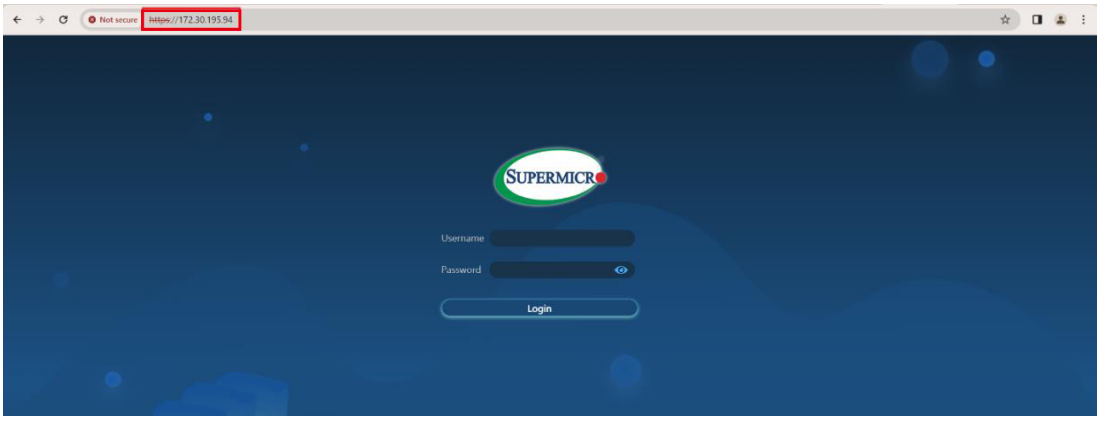
Step 2. Accessing the BMC Remote Server

Log in to the BMC Remote Server

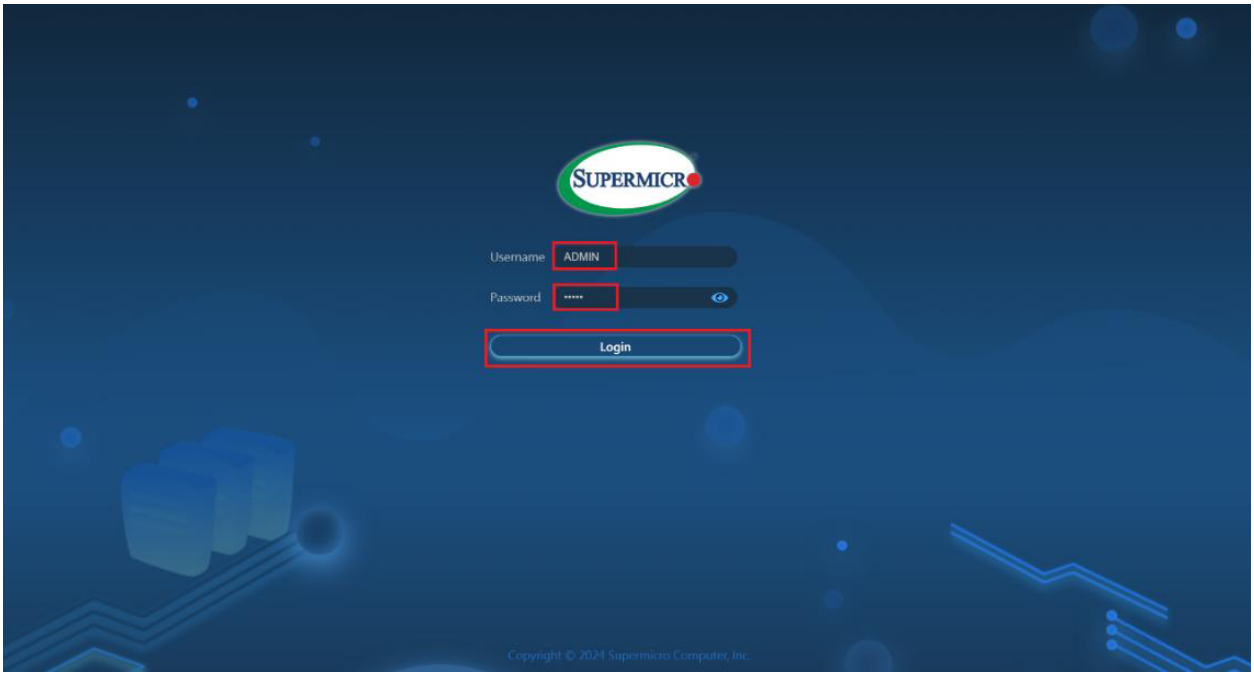
1. In the terminal, execute a ping command to the BMC IP address (e.g., 172.30.195.94) to verify its connectivity.

2. Launch a new web browser and input the BMC IP address into the URL field.

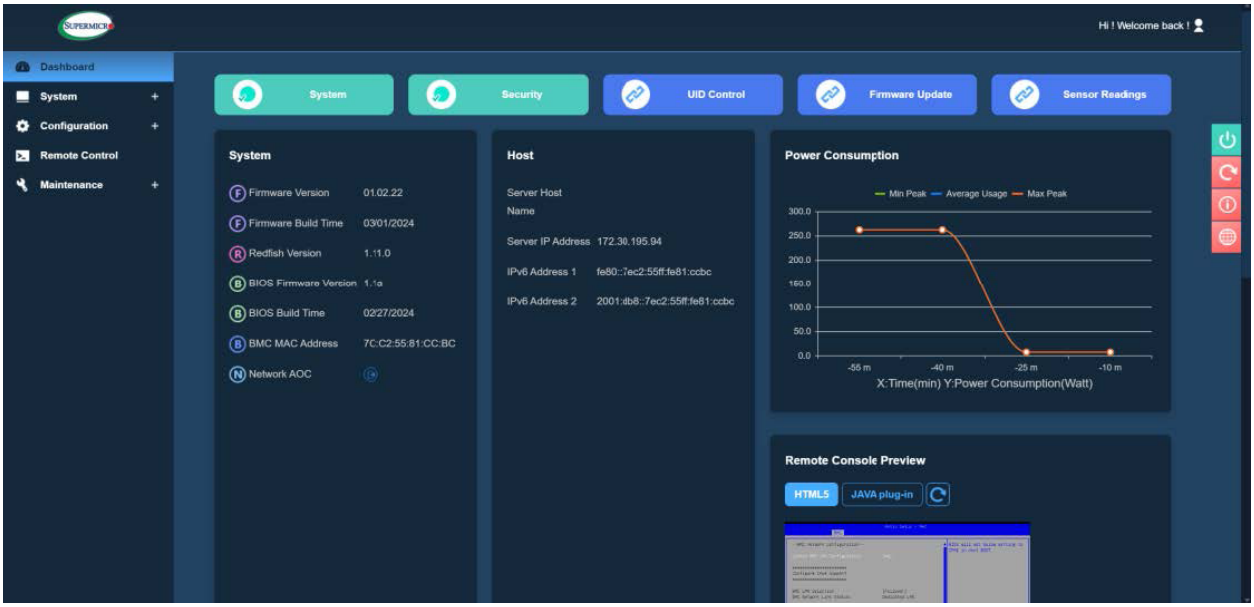
Outcome: The BMC Remote Console login screen will be displayed.



3. Input the username "**ADMIN**" and the unique BMC password, which is located on the label on the opposite side of the service tag of the system. Click "**Login**" to proceed.

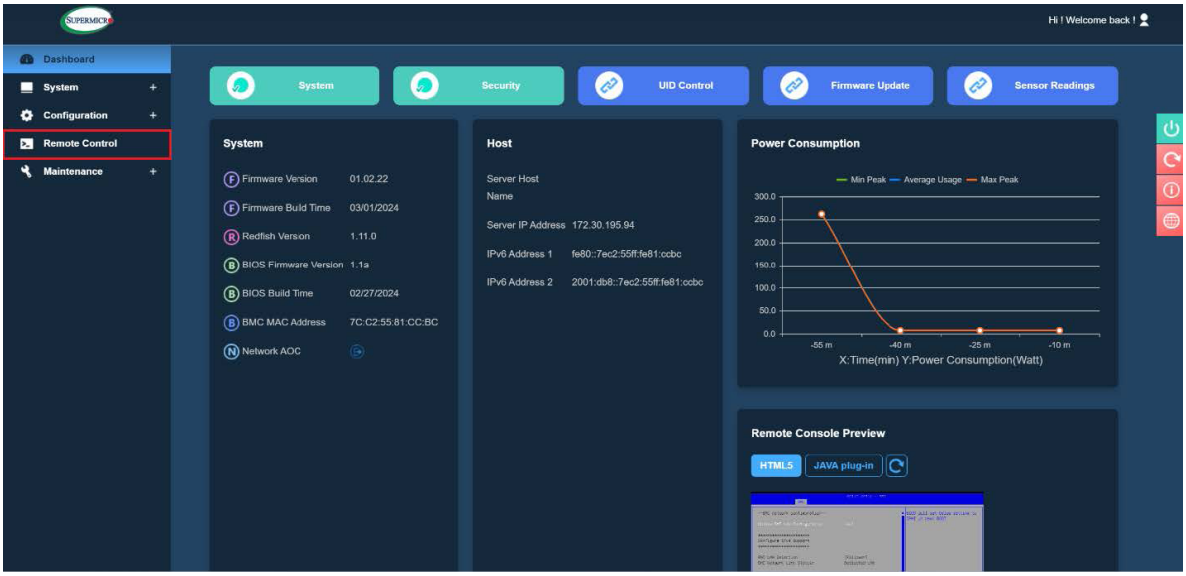


Outcome: The BMC Dashboard offers insights into system overview, configuration, health status, and maintenance.

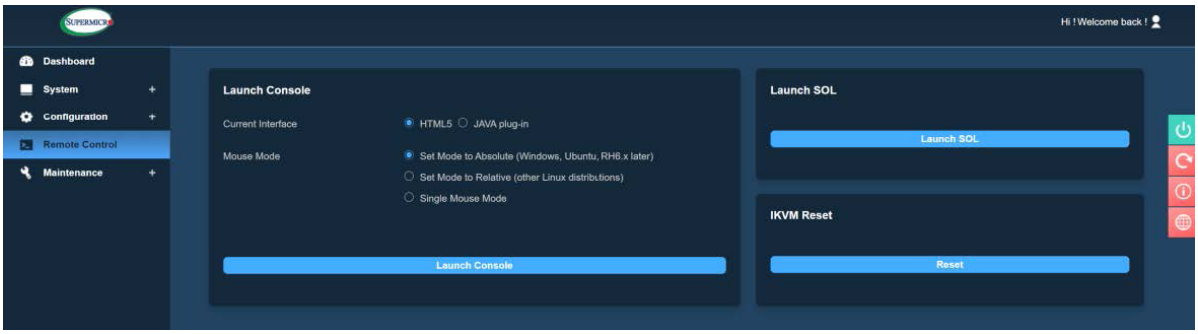


Step 3. Controlling the BMC Remotely

1. The Remote Control menu in the BMC Remote Server enables remote server operations.

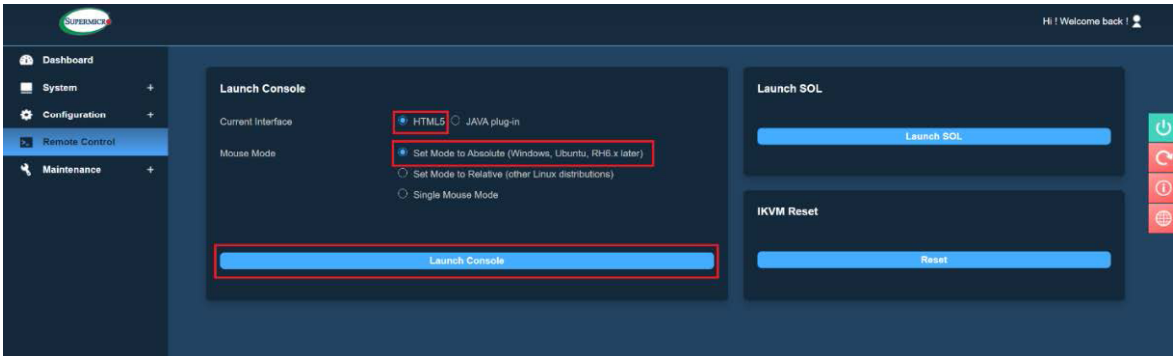


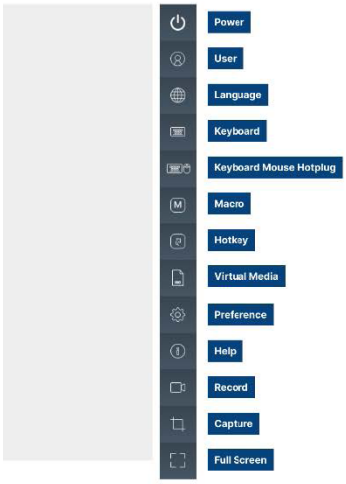
2. Use the Launch Console section to configure the remote console interface settings. Choose between the HTML5 interface or a JAVA plug-in.



Launch an HTML5 Remote Browser

1. Set HTML5 as the current interface.
2. Choose the mouse mode according to your operating system, such as "**Set Mode to Absolute (Windows, Ubuntu, RH6.x, or later)**."
3. Click the "**Launch Console**" button to open a console in a new browser window.



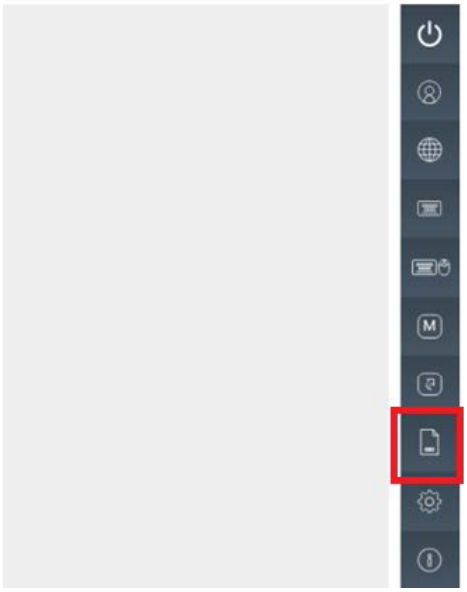


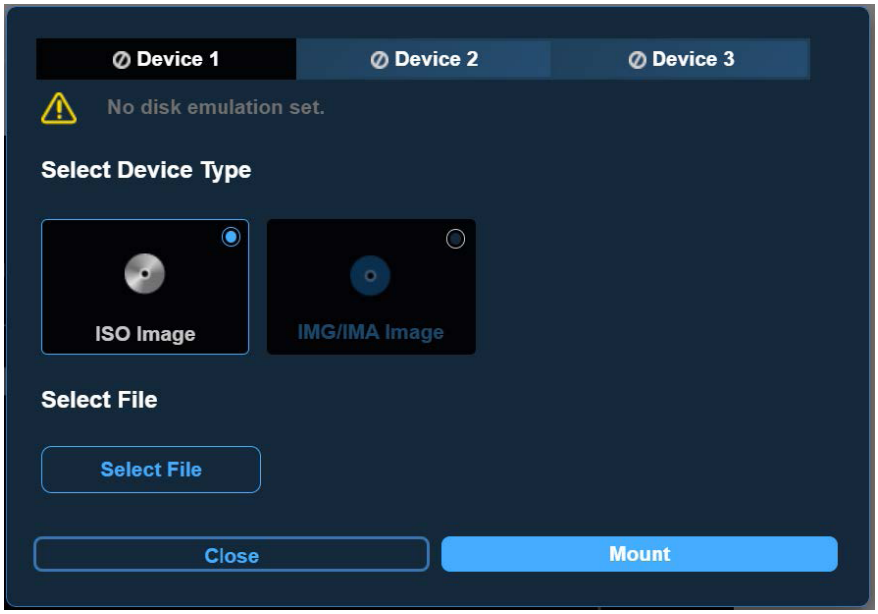
Step 4. Mounting the ISO Image

There are two methods to mount ISO images. If the ISO files are stored locally on your disk, you can mount them directly within the remote control browser. Alternatively, if the ISO files are located on a shared server, you can mount them via the Configuration > Virtual Media menu.

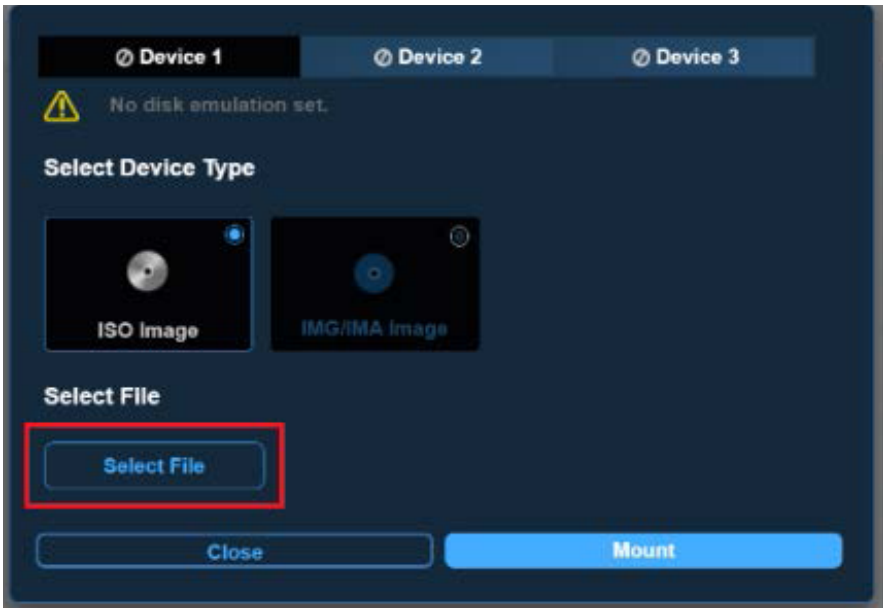
Method One: Mount the ISO Image Using a Local File

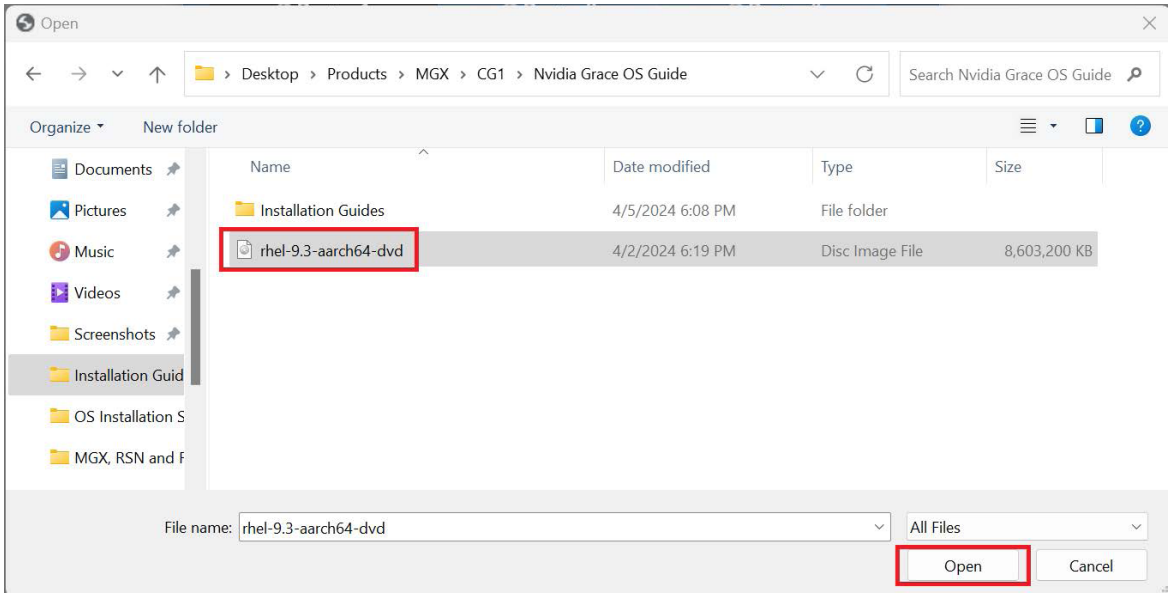
1. In the remote control browser, click the "**Virtual Media**" icon. This action will prompt a dialogue box to appear, enabling you to select the image type and files for mounting.



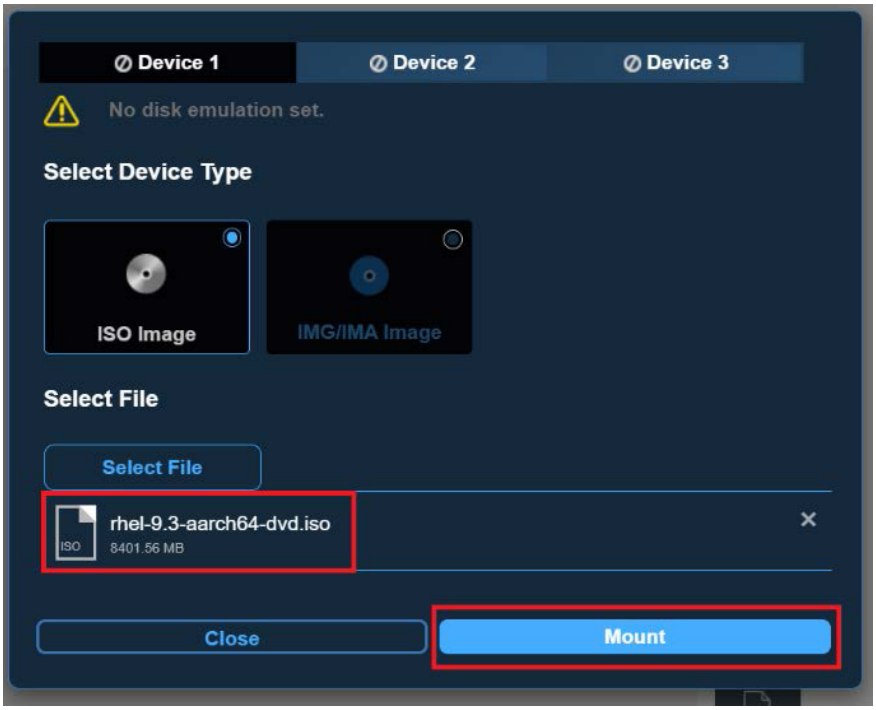


2. Click the **"Select File"** button to browse and choose the RHEL ISO image from your local disk for use.

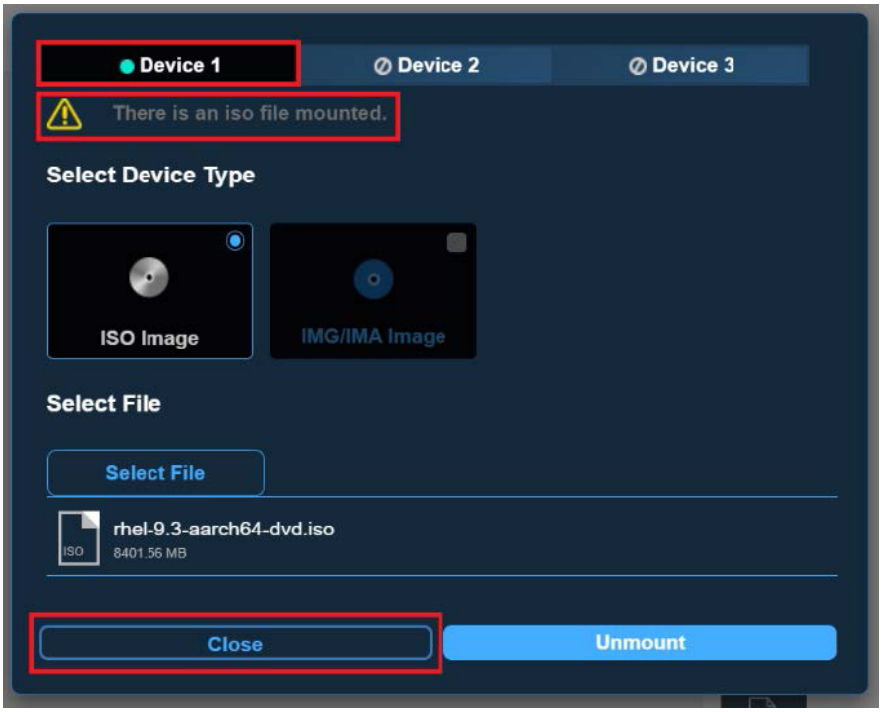




3. Click the "**Mount**" button to attach the selected ISO image.



Result: Upon successful mounting of the ISO image, a green indicator will appear in the "**Device**" tab. Close the dialogue to continue.

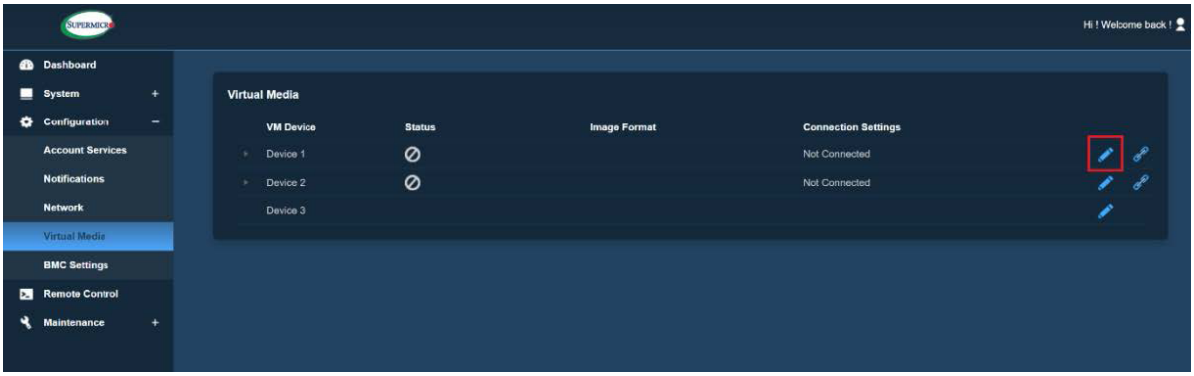


Method Two: Mount the ISO Image through a Shared Server

1. On the BMC dashboard, go to Configuration > Virtual Media. This allows you to attach an ISO image from the server.

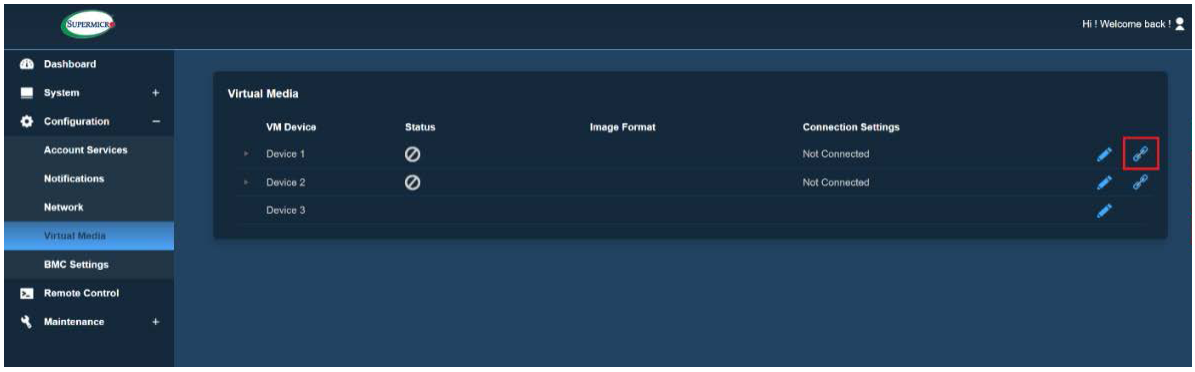


2. Click the "**Edit**" icon to adjust the VM configuration. Enter the server host address and the path to the ISO image. Then, click "**Save**" to apply the changes.

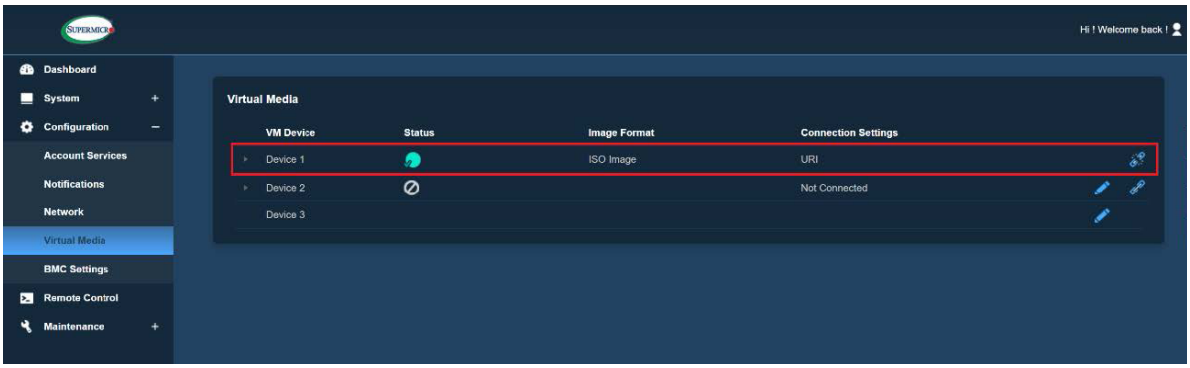




3. Click the "**Connect**" icon to mount the virtual media.



4. The device status will display as green once the VM is successfully configured.



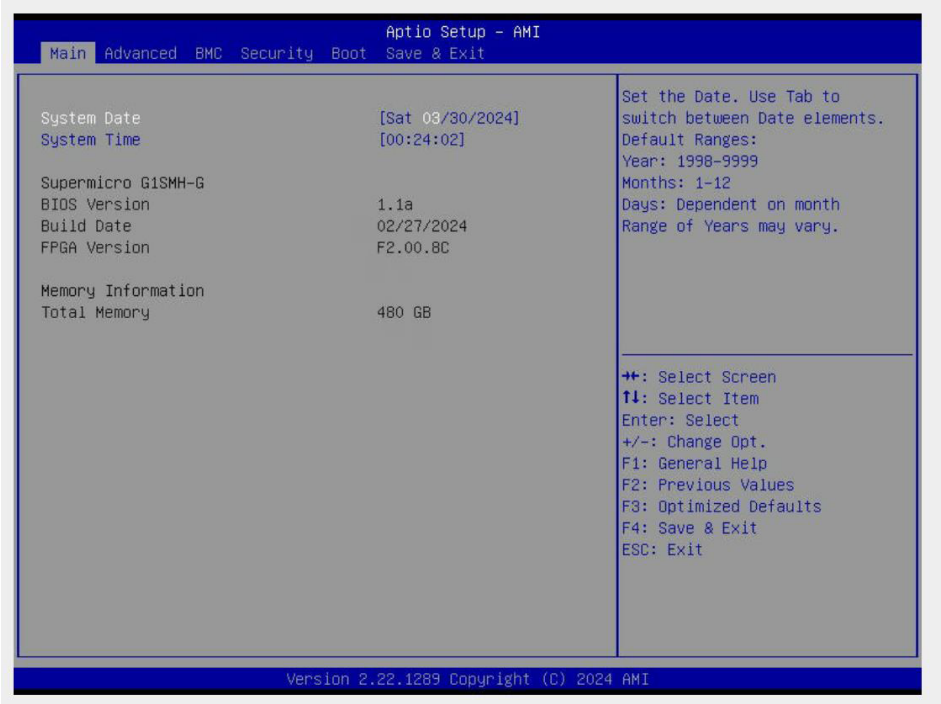
Step 5. Setting Boot Override in UEFI BIOS

To configure the boot option from the mounted image in virtual media, users must manually adjust the boot settings in the BIOS setup.

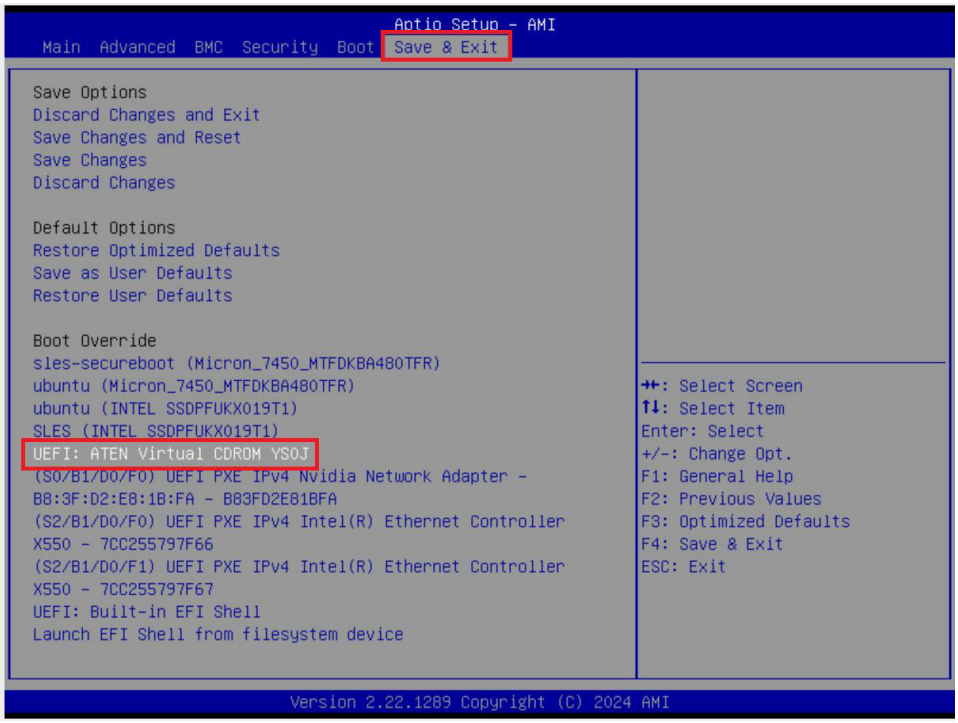
1. Power on the system and wait for the Log screen to display. To access the BIOS setup menu, repeatedly press <**DEL**> until "**Entering Setup...**" appears at the bottom left corner of the screen.



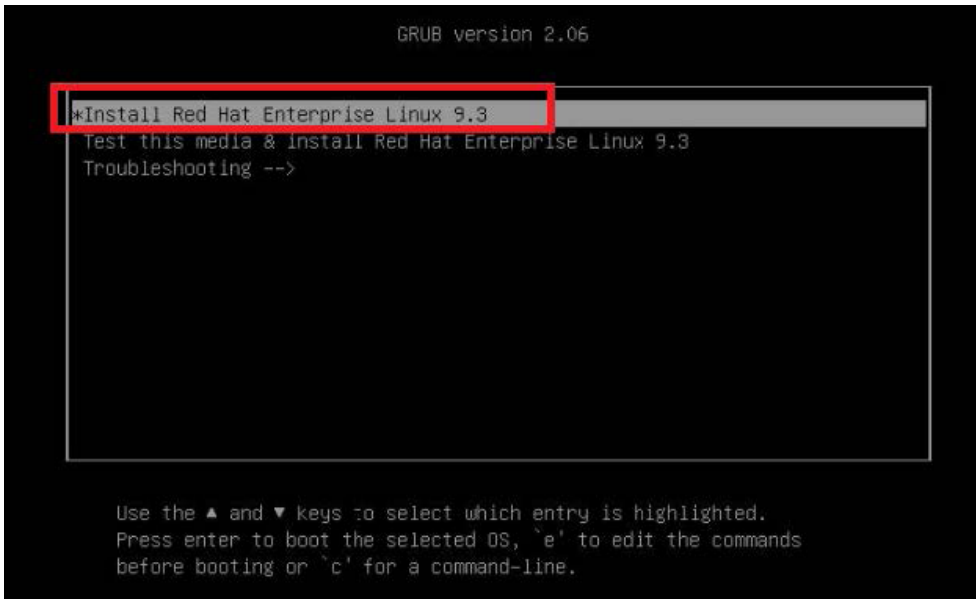
Subsequently, the UEFI BIOS screen is displayed.



2. Navigate to the "**Save & Exit**" menu using the arrow keys, then select "**UEFI: ATEN Virtual CDROM YSOJ**" as the boot option. This selection presents the ISO image mounted in Virtual Media. Hit "**Enter**" to proceed.

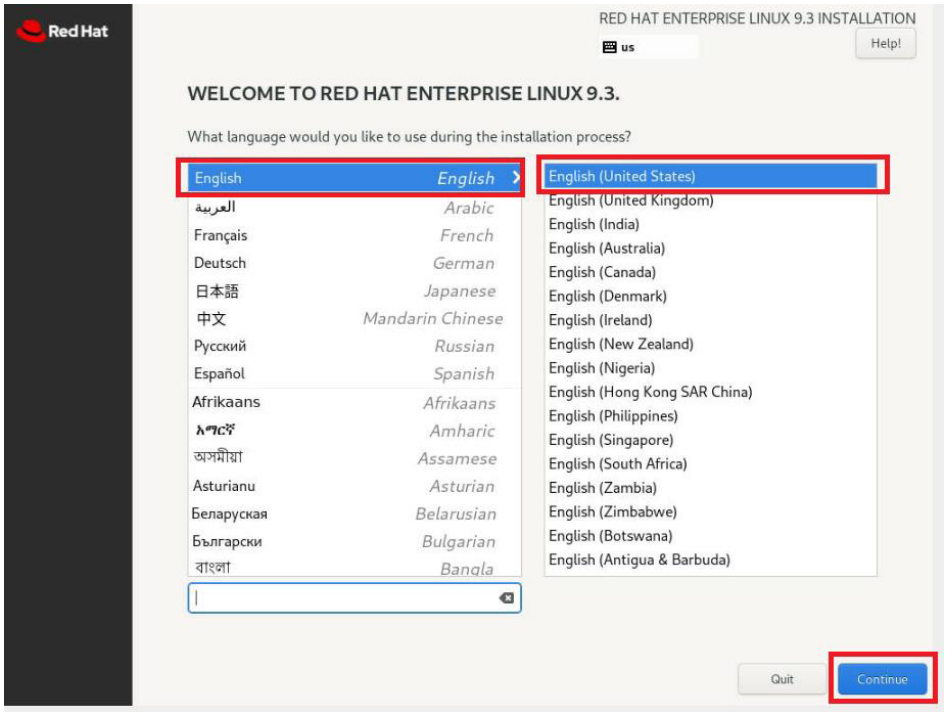


3. Follow the RHEL installer steps to continue installation. Choose "**Install Red Hat Enterprise Linux 9.3**" to proceed.

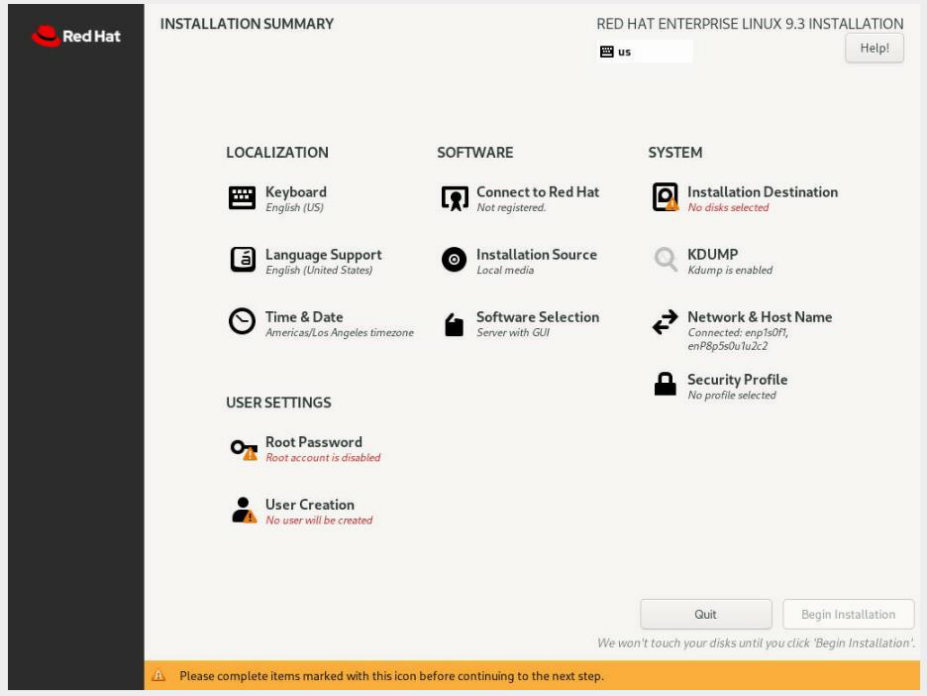


Step 6. Installing RHEL 9.3 OS

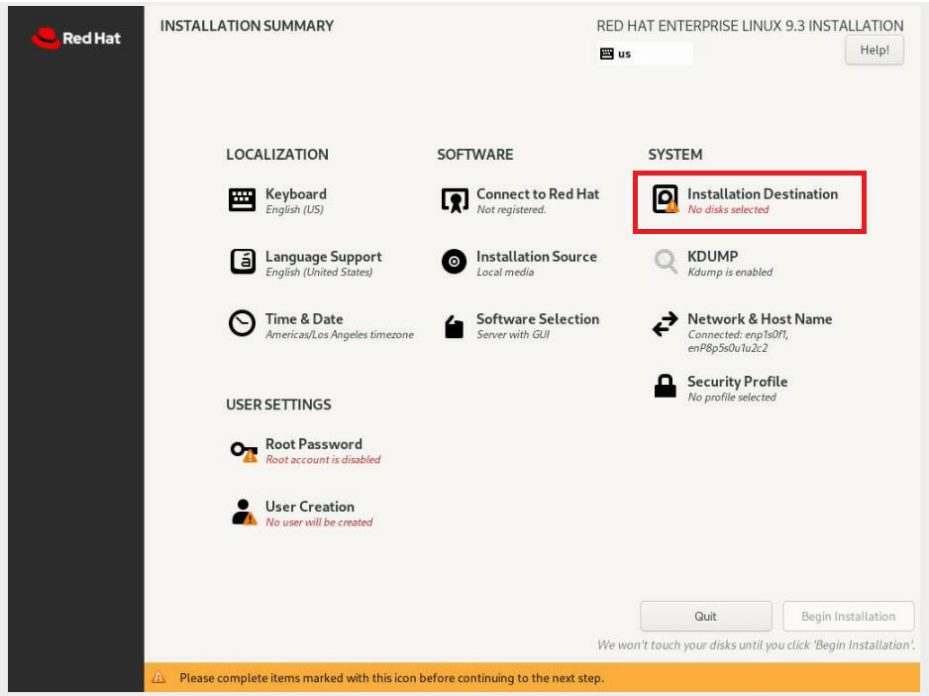
1. In the RHEL installer, select the language.



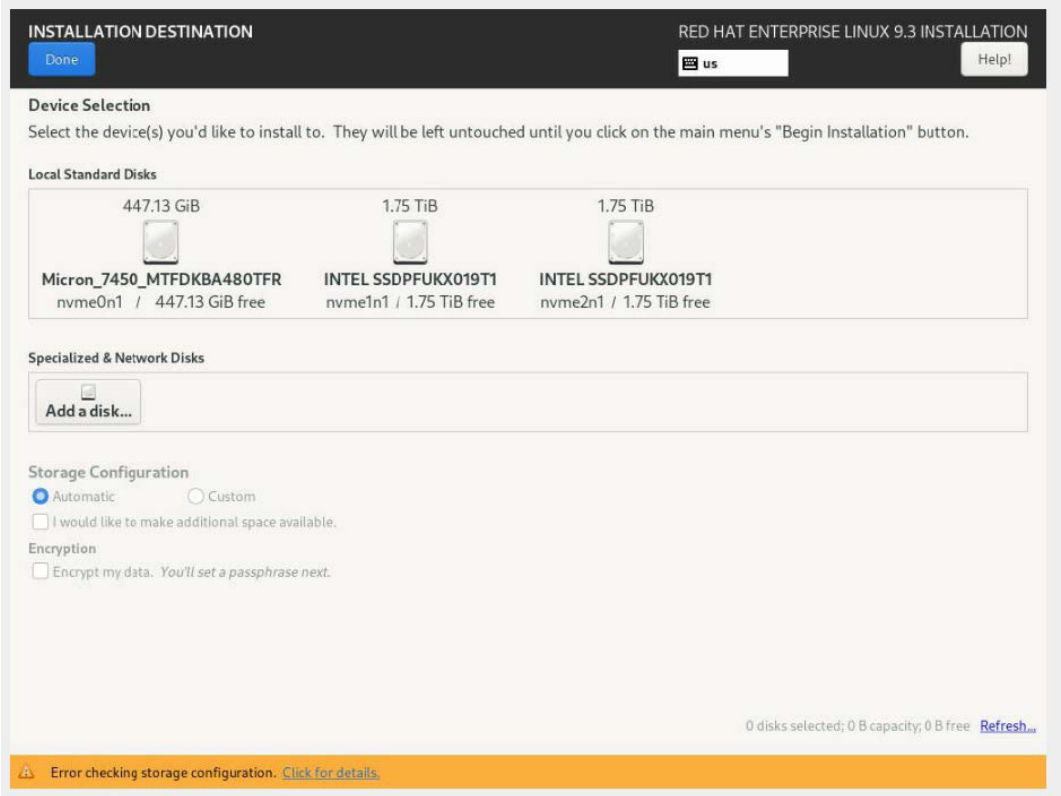
2. The Installation Summary window provides a glance of the configuration you need before you begin the installation.



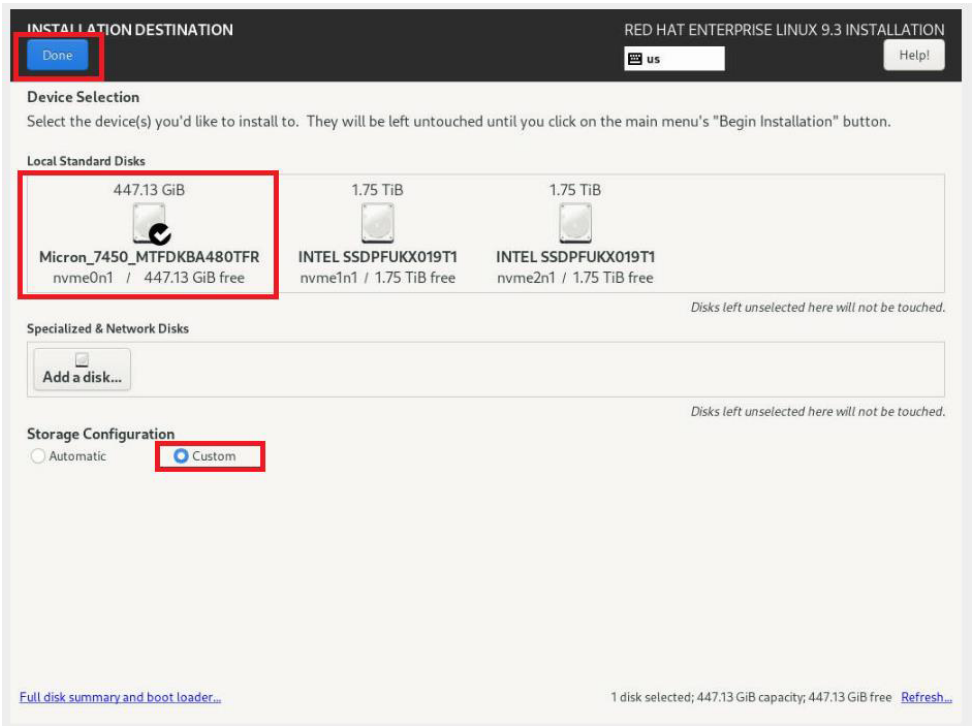
3. Click the "**Installation Destination**" button to select the storage disk.



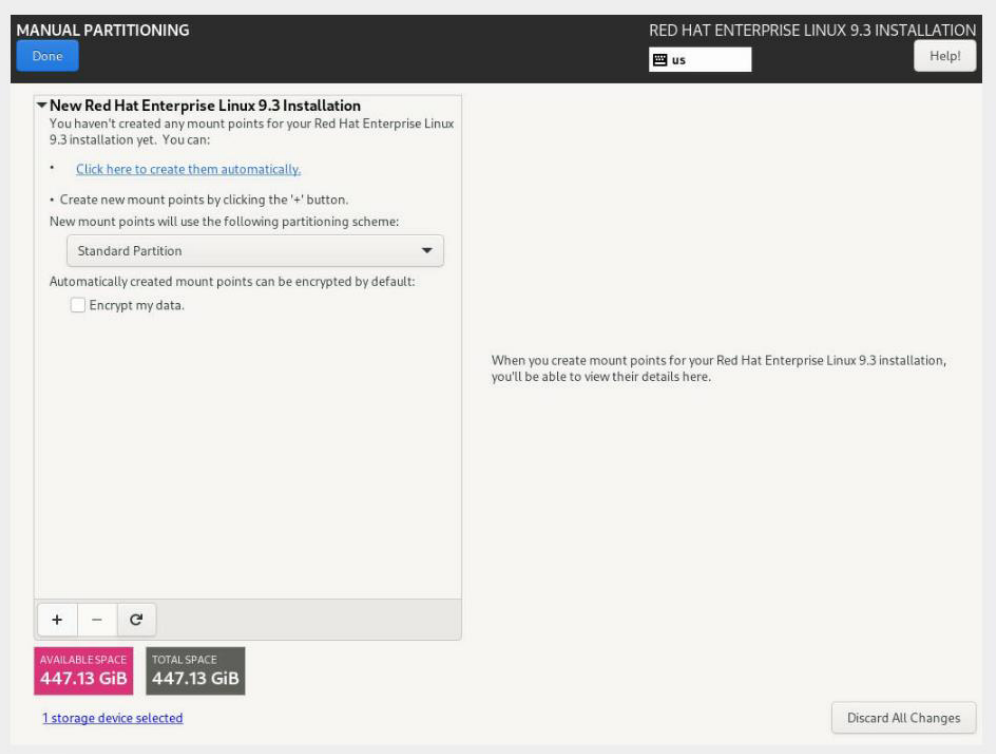
4. Select the disk to which you want to install the RHEL OS.



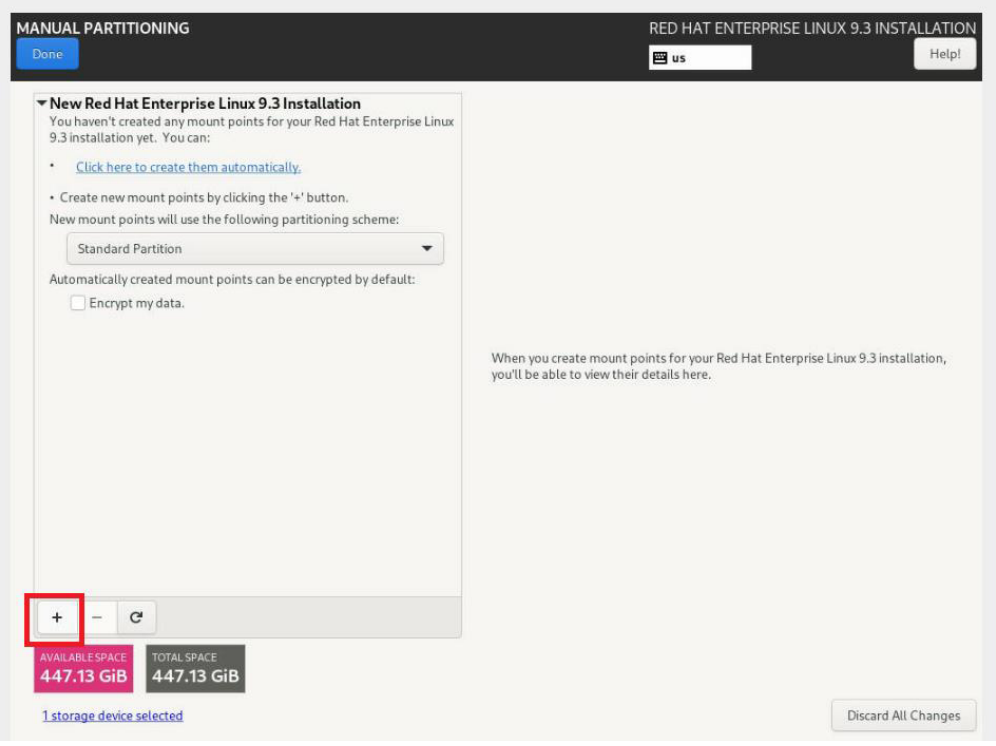
5. Click on one of the disks and select "**Custom**" if you want to customize the volume of the disk.



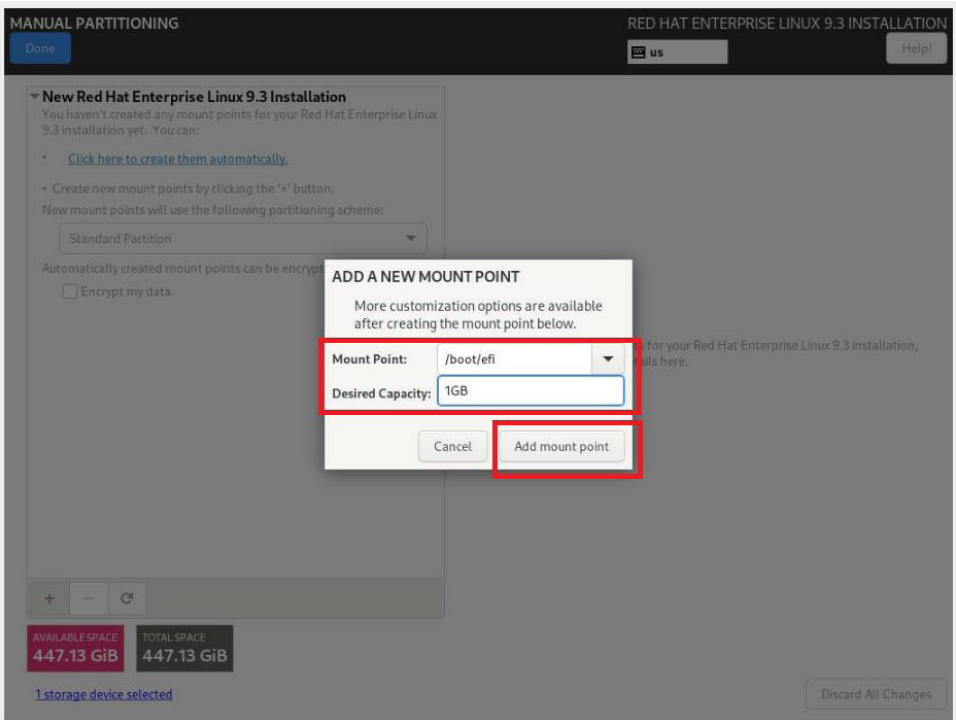
It will show you the space of the disk you selected.



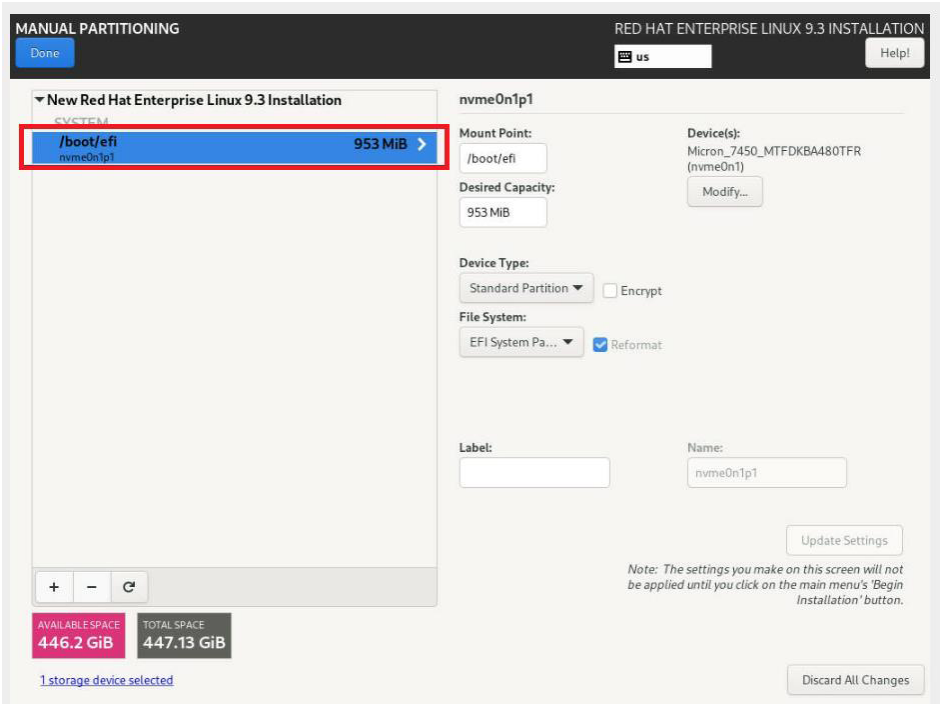
6. For RHEL, you need to have at least three mount points (/boot/efi, /, and swap). Click the "**+**" button to create new mount point "**/boot/efi**" as the boot partition for the EFI system.



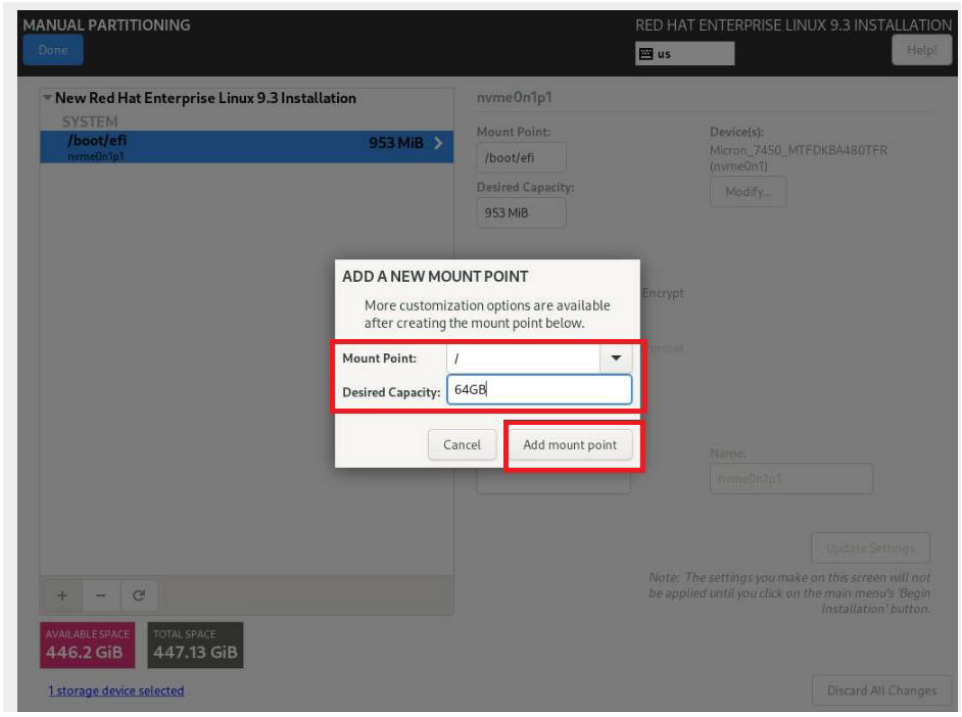
7. The "**Add a new mount point**" dialogue will pop up. Select the mount point "**/boot/efi**" and the storage size. Then, click the "**Add mount point**" button.



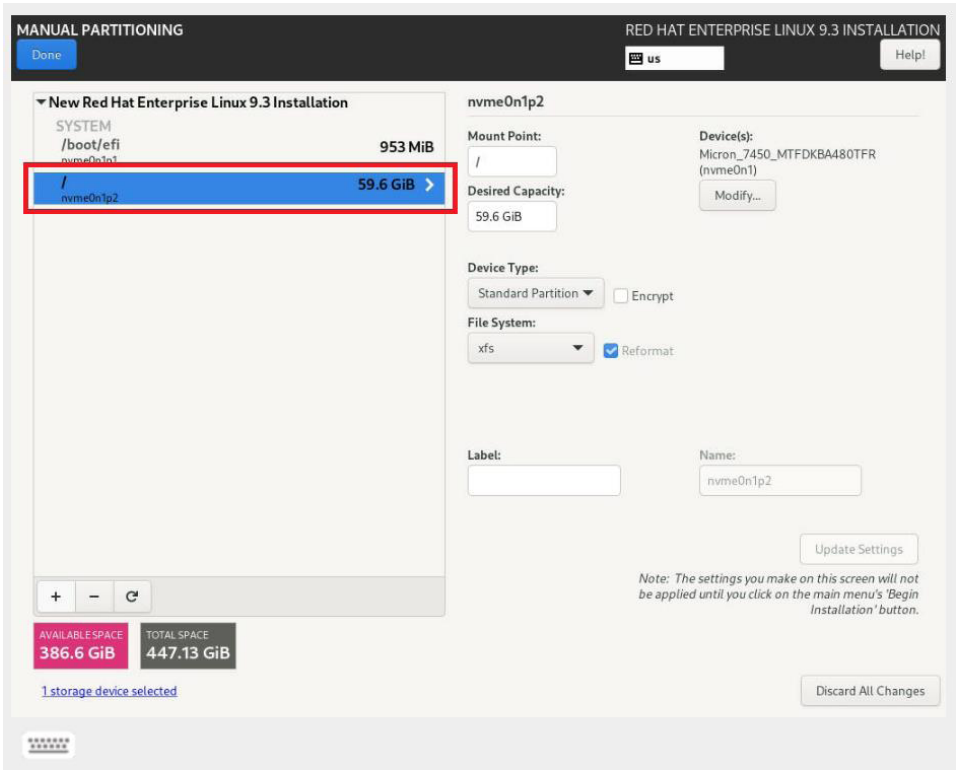
Result: The new mount point "**/boot/efi**" will be added under the "**New Red Hat Enterprise Linux 9.3 Installation**".



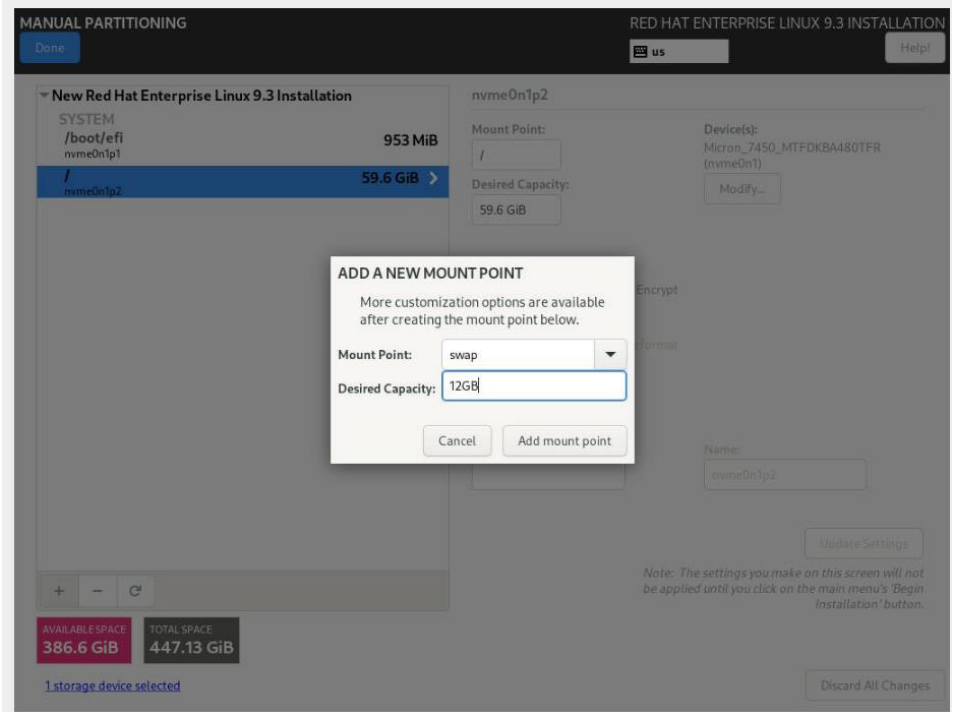
8. Click the "**+**" button to create another new mount point "**/**" as the root directory. Configure the mount point "**/**" and the desired storage size. Then, click the **"Add mount point**" button.



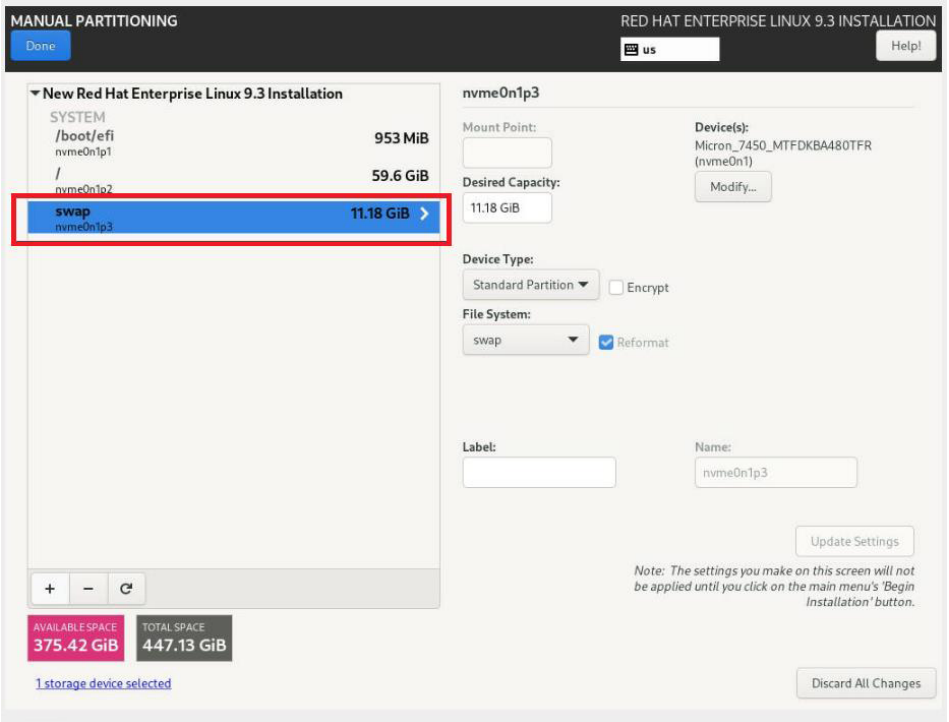
Result: The new mount point "**/**" will be added under the "**New Red Hat Enterprise Linux 9.3 Installation**".



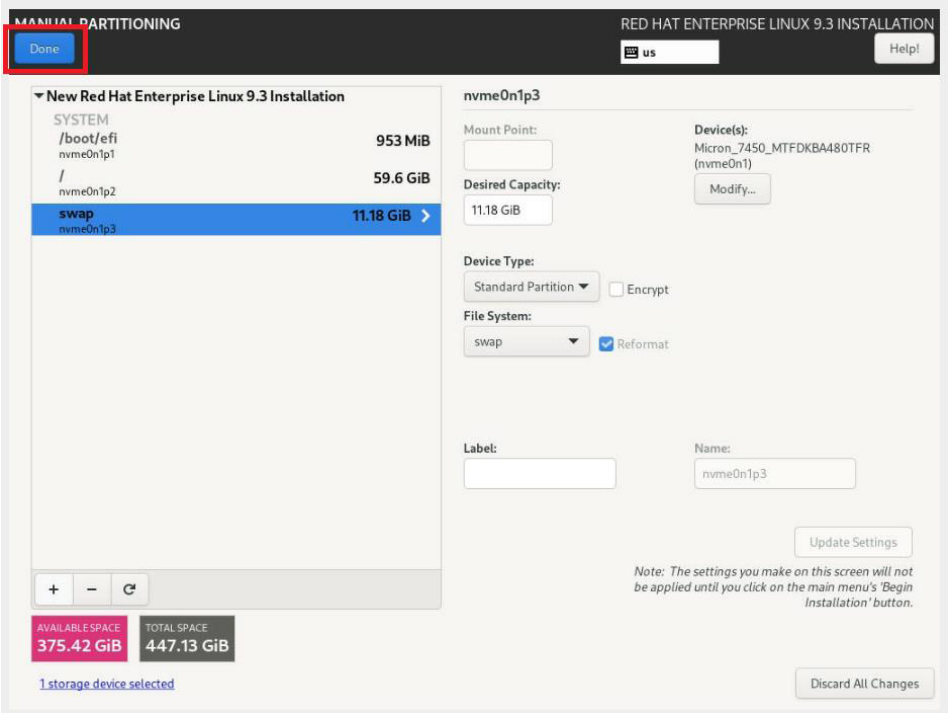
9. Click the "**+**" button to create another new mount point "**swap**" for virtual memory space. Configure the mount point "**swap**" and the desired storage size. Then, click the "**Add mount point**" button.



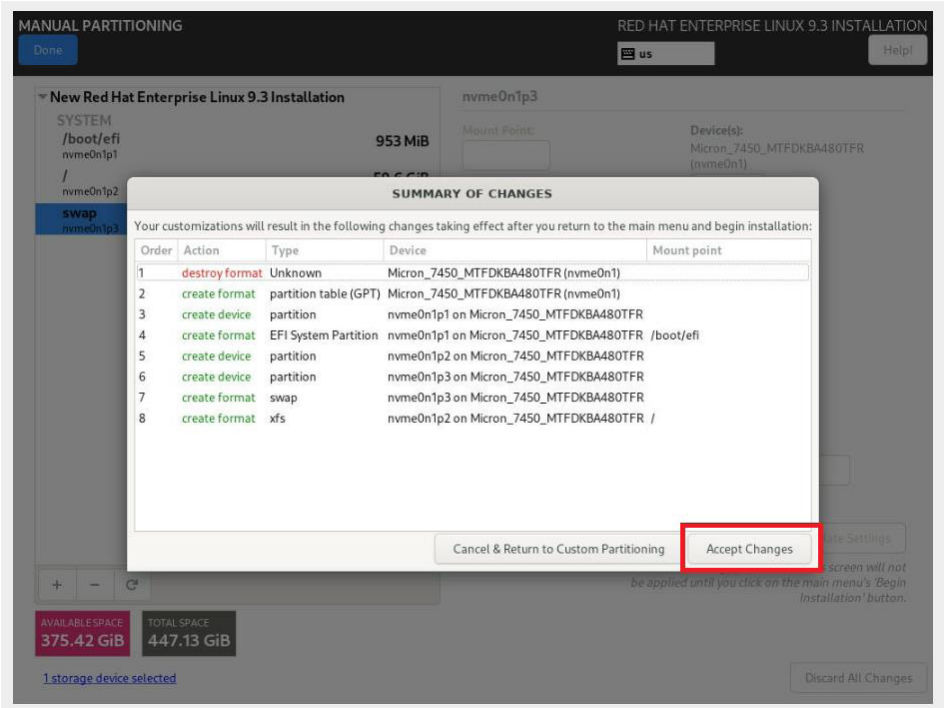
Result: The new mount point "**swap**" will be added under the "**New Red Hat Enterprise Linux 9.3 Installation**."



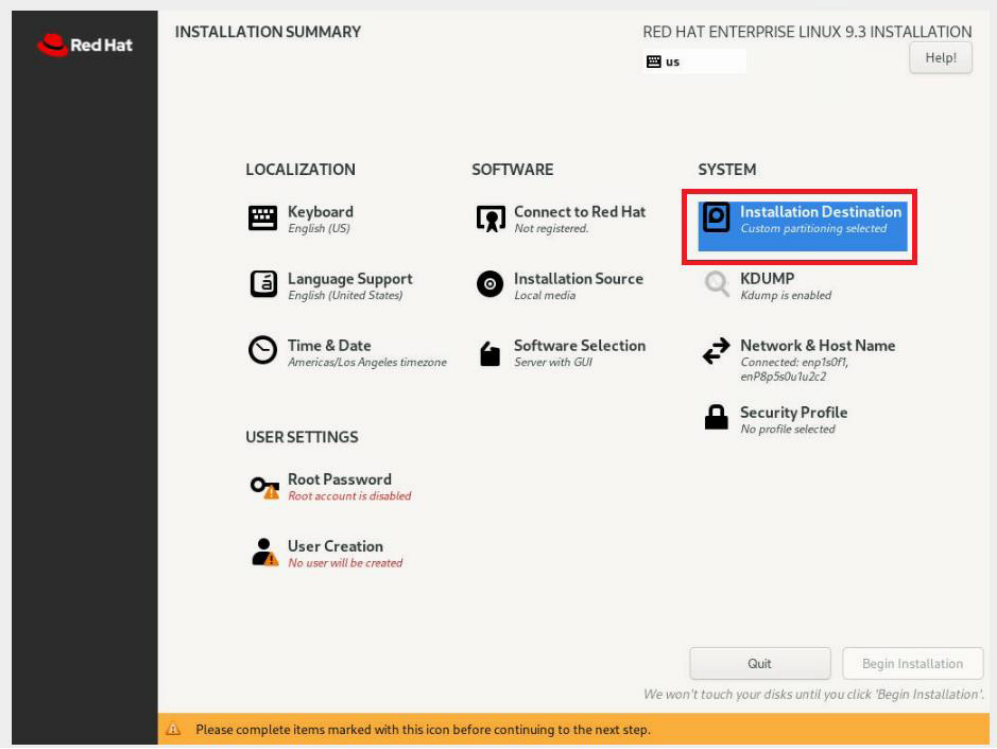
10. Click the "**Done**" button at the left top corner after all the required partitions are created.



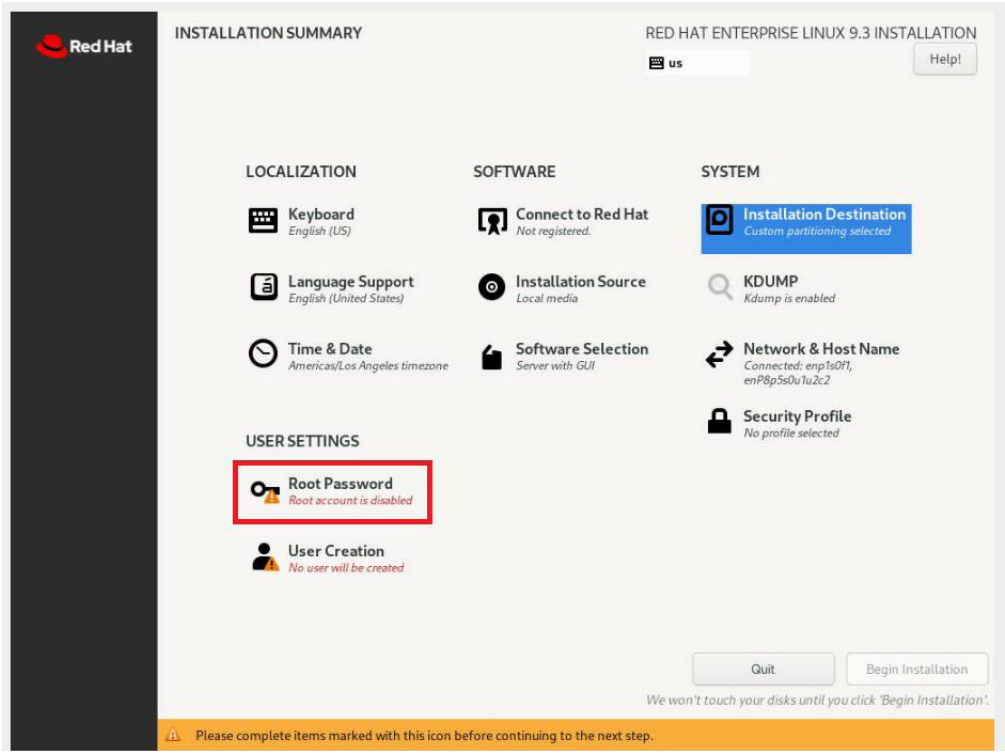
11. Accept the changes for customize partitions.



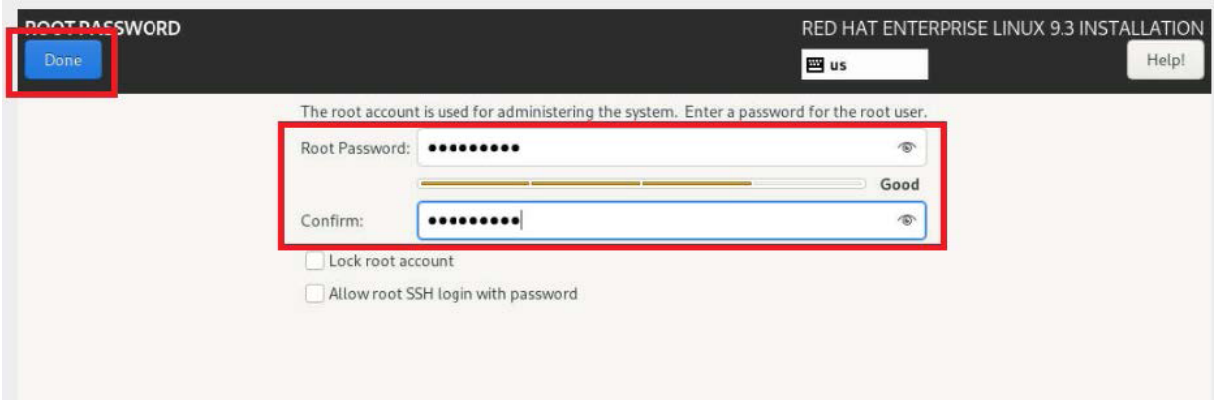
Result: In the "**Installation Summary**" screen, Installation Destination has been updated to "**Custom partitioning selected**."



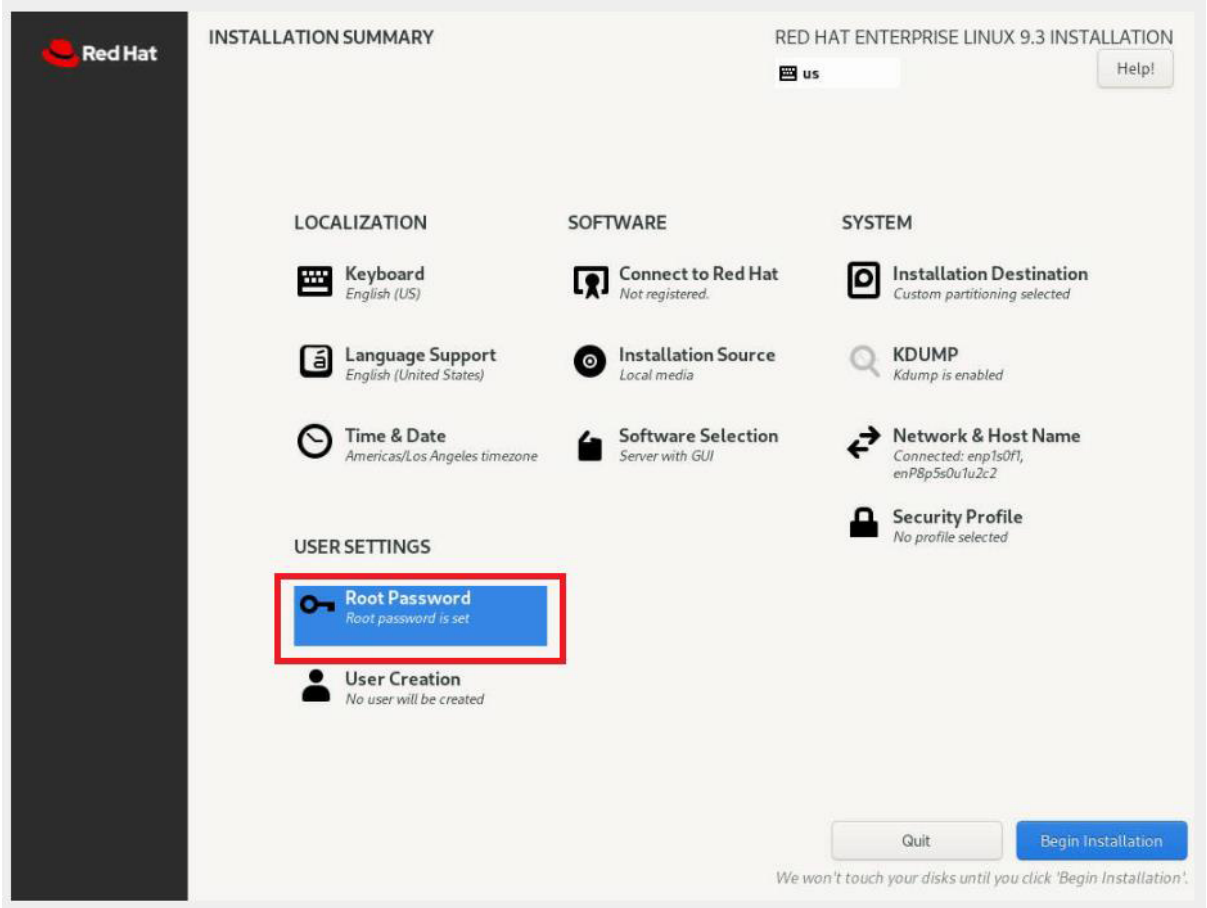
12. Click "**Root Password**" in "**Installation Summary**".



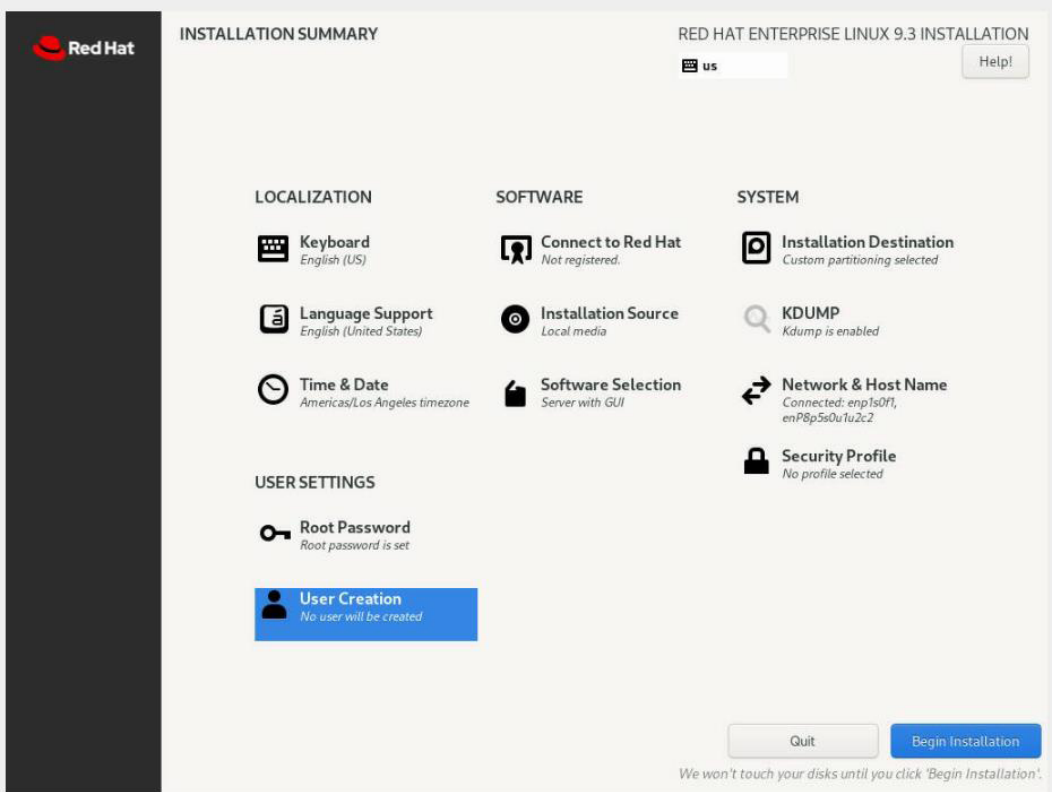
13. Enter the password for the root user.



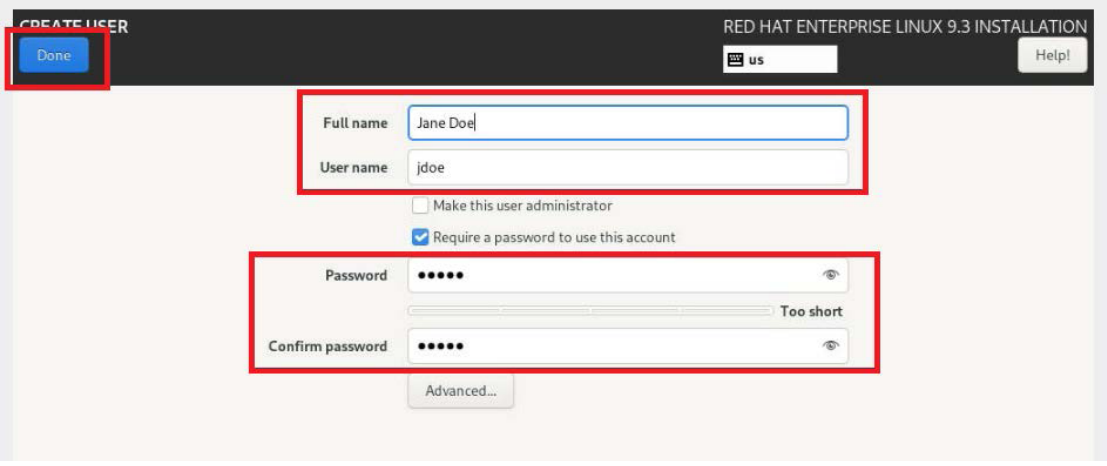
Result: The status of the Root User becomes "**Root password is set**".



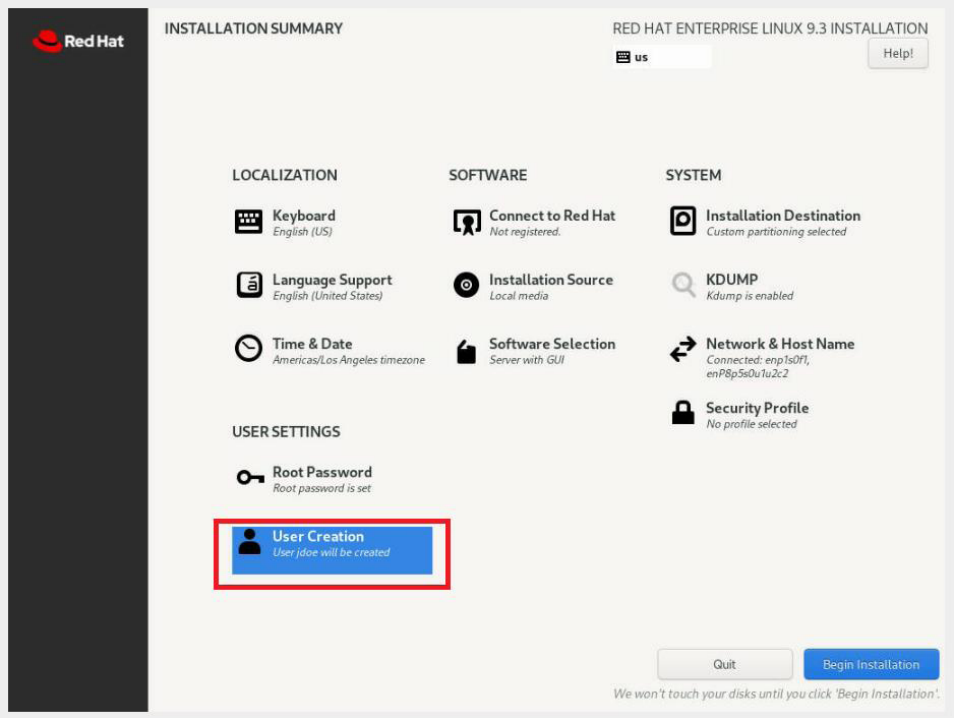
14. Click "**User Creation**" in "**Installation Summary**".



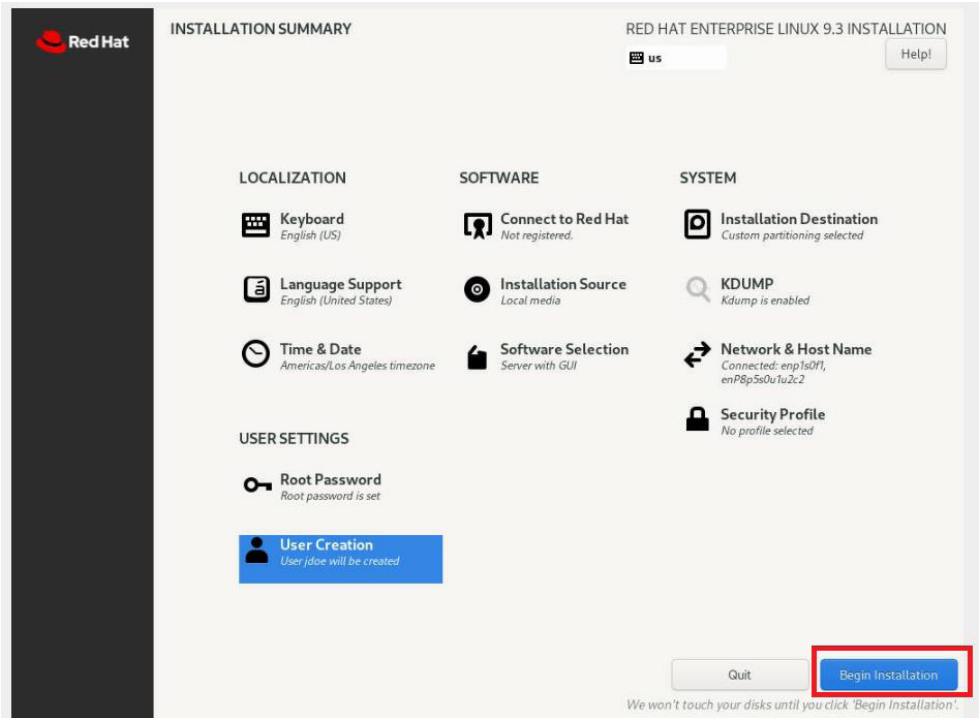
15. Enter "**Full Name**", "**User Name**" , "**Password**" and "**Confirm Password**" details. Once done, click the "**Done**" button.

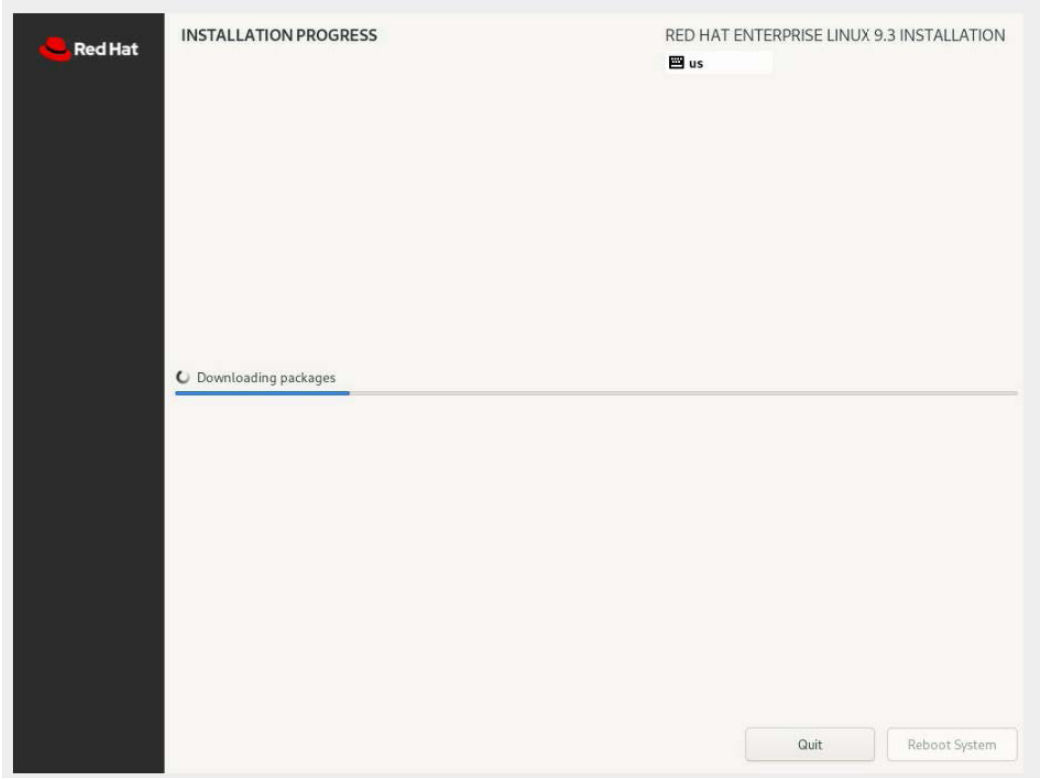


Result: The status of **User Creation** becomes "**User username is set**".

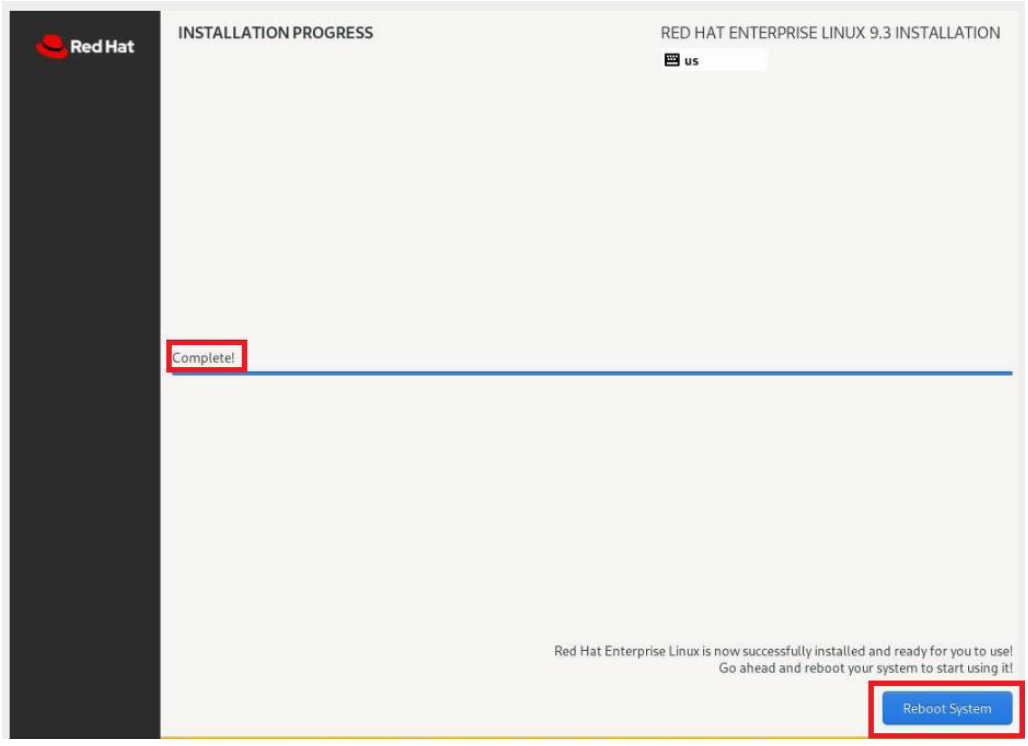


16. After completing all the above steps, click "**Begin Installation**" to start the installation process.

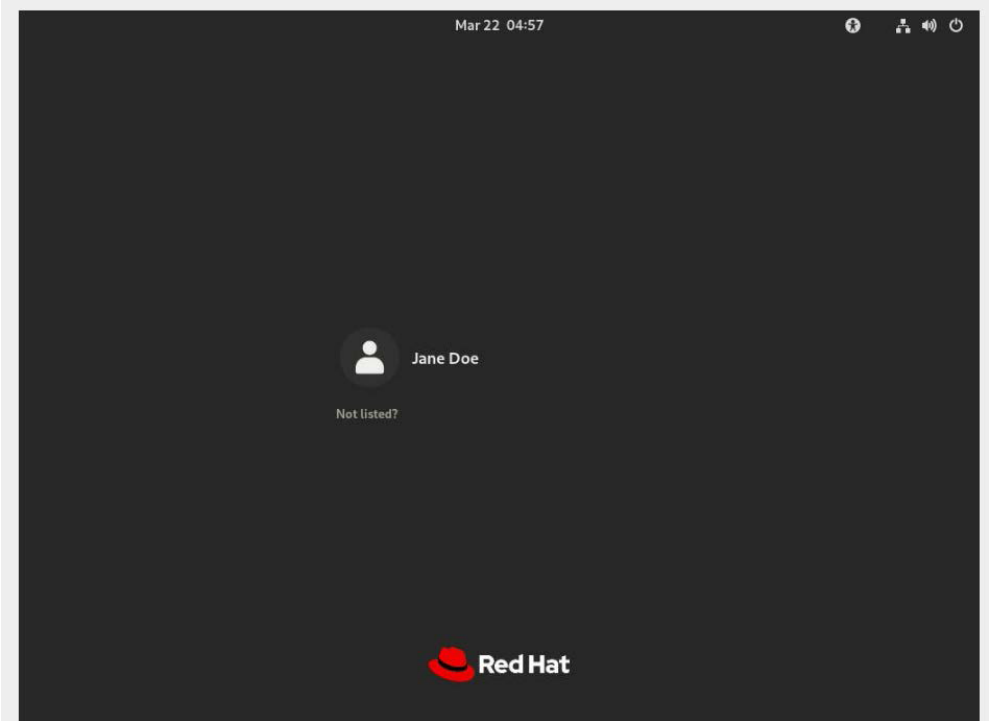




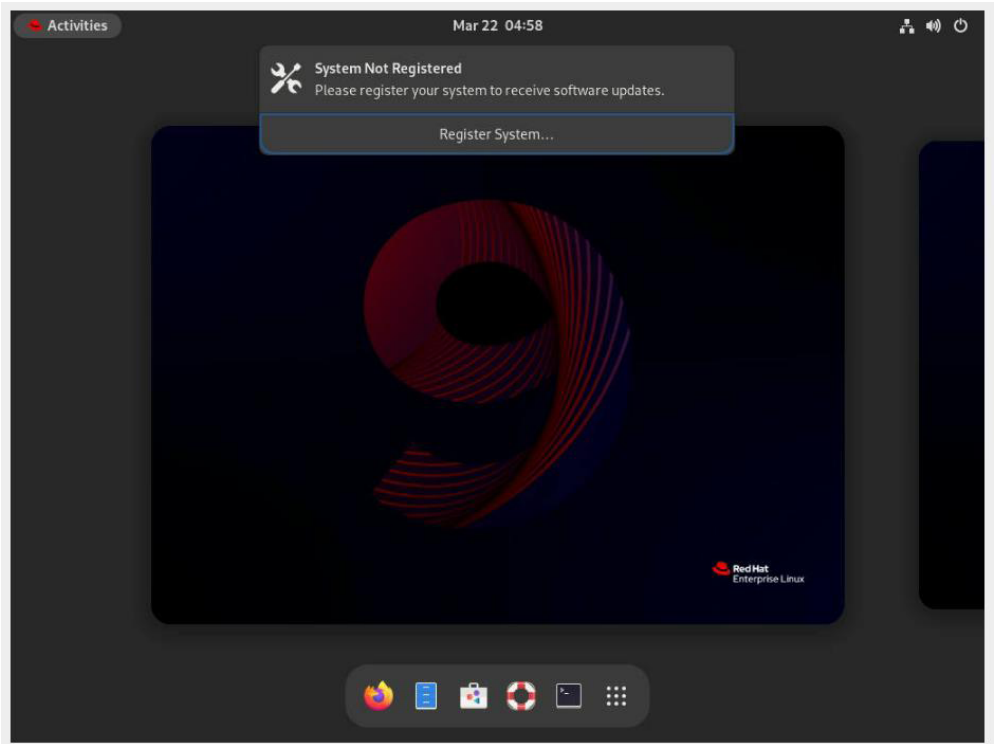
17. After the installation is complete, click "**Reboot System**" to reboot.



18. After rebooting, the user login page will appear. Enter the user password to log in.



Result: You have successfully logged in and can now begin using the system.



5.3 SUSE Linux Enterprise Server 15 Installation

Prerequisites

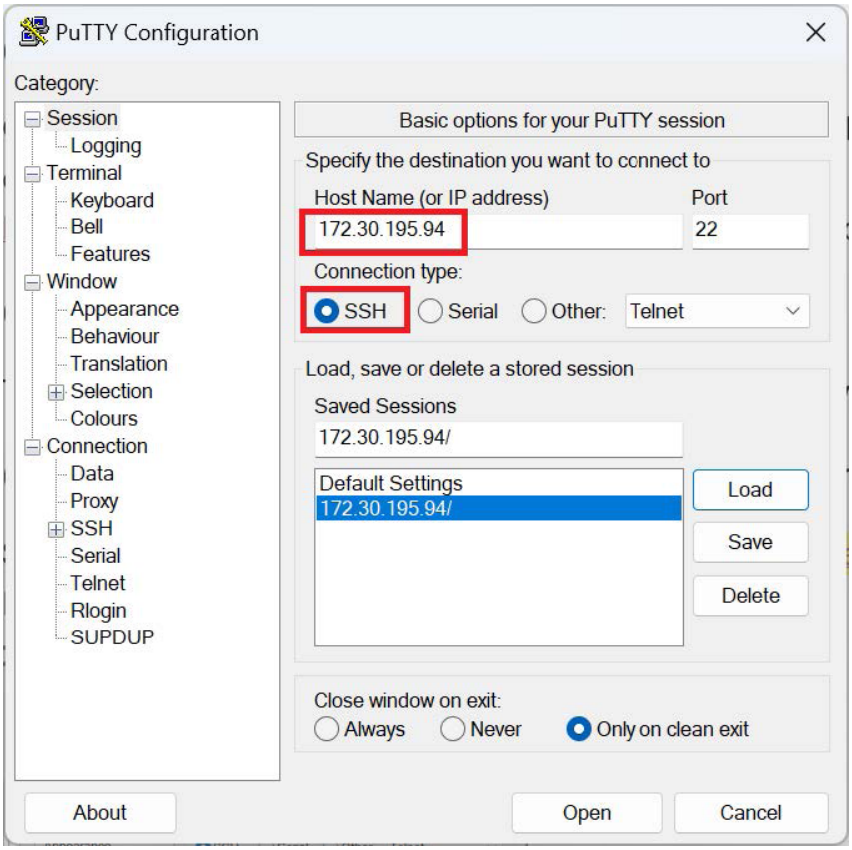
Obtain the SUSE Linux Enterprise Server 15 ISO for ARM image (aarch64) and save it to your local disk or a shared server. It's recommended to use the SLES 15SP5 ISO image file. Please refer to Downloading a SLES 15 installation ISO image for the ISO packages.

Connecting to BMC Network

To utilize BMC remote functionality, ensure that the network is connected to the BMC.

Opening SSH to the BMC from PuTTY Terminal

Set up an SSH connection to the BMC IP Address (See Step 1. Obtaining BMC IP Address) through a PuTTY terminal.



Installing SLES 15 OS

Step 1. Obtaining the BMC IP Address

Connect the system to a monitor or display using a Mini DisplayPort (Mini DP) or a Mini DisplayPort-to-DisplayPort (DP) adapter. Ensure that network is connected to the BMC using a network cable and power on the system. The BMC IP address will appear on the right corner of the Supermicro Logo screen.



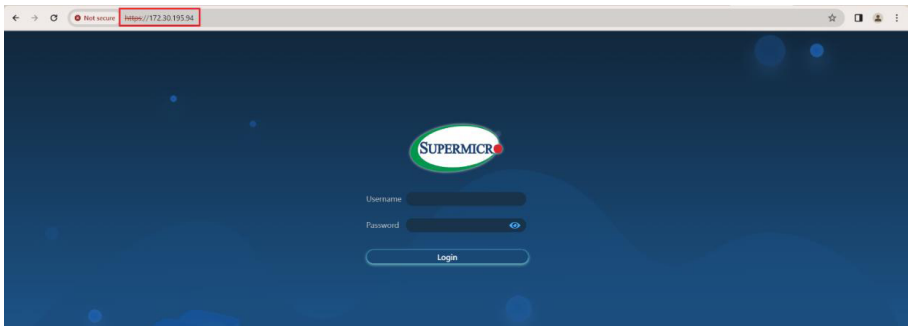
Step 2. Accessing the BMC Remote Server

Log in to BMC Remote Server

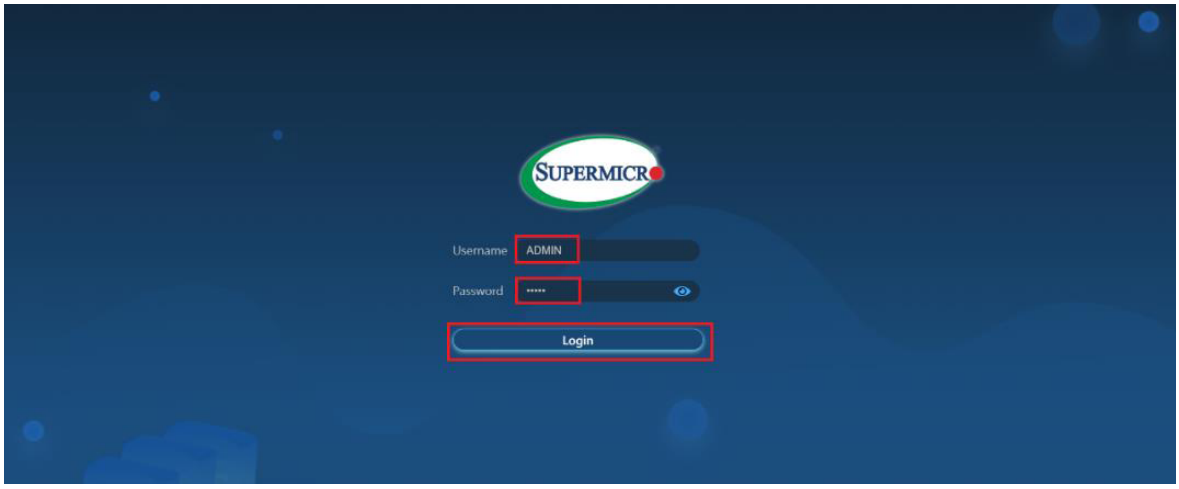
1. In the terminal, execute a ping command to the BMC IP address (e.g., 172.30.195.94) to verify its connectivity.

2. Launch a new web browser and input the BMC IP address into the URL field.

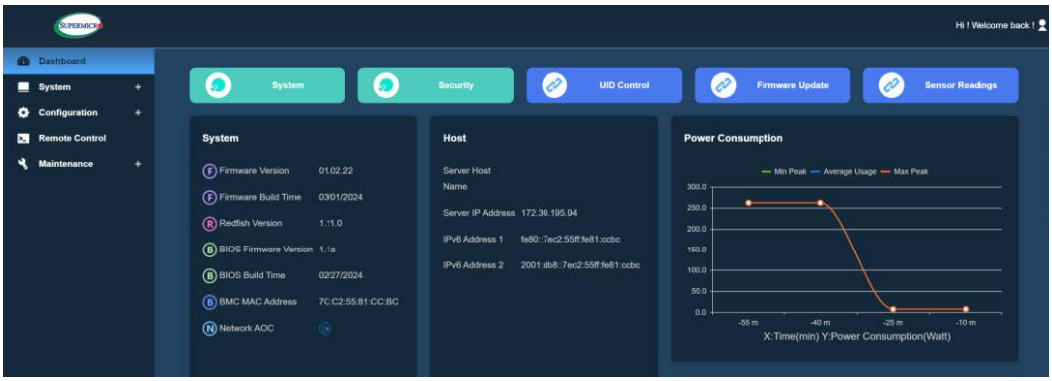
Outcome: The BMC Remote Console login screen will be displayed.



3. Input the username "**ADMIN**" and the unique BMC password, which is located on the label on the opposite side of the service tag of the system. Click "**Login**" to proceed.

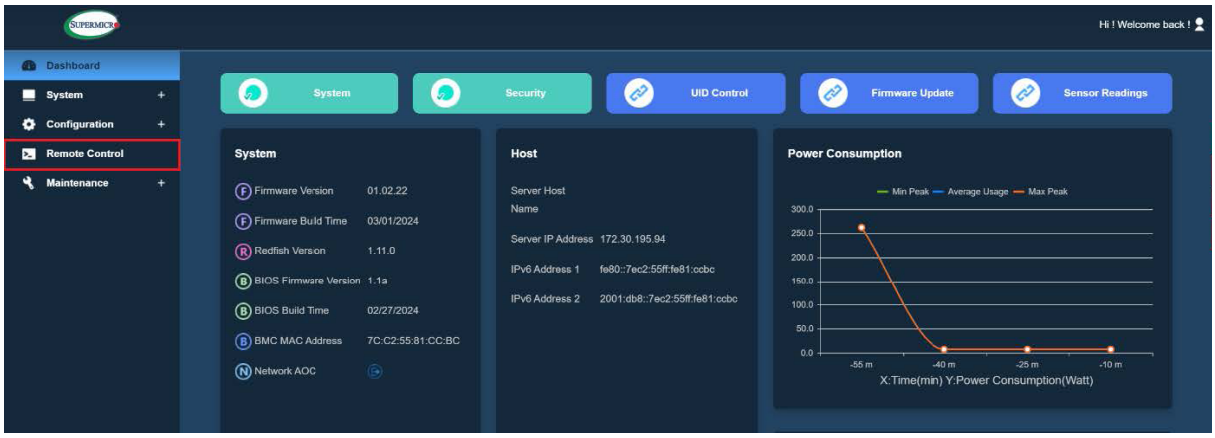


Outcome: The BMC Dashboard offers insights into system overview, configuration, health status, and maintenance.

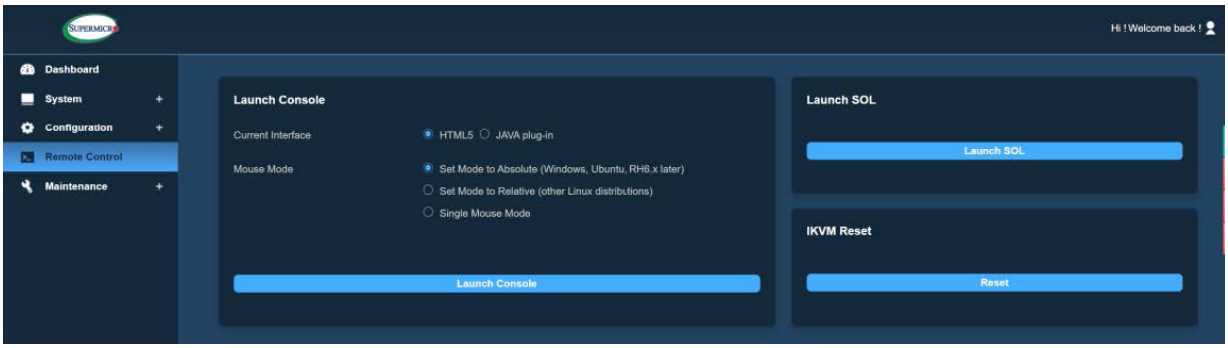


Step 3. Controlling the BMC Remotly

1. The Remote Control menu in the BMC Remote Server enables remote server operations.

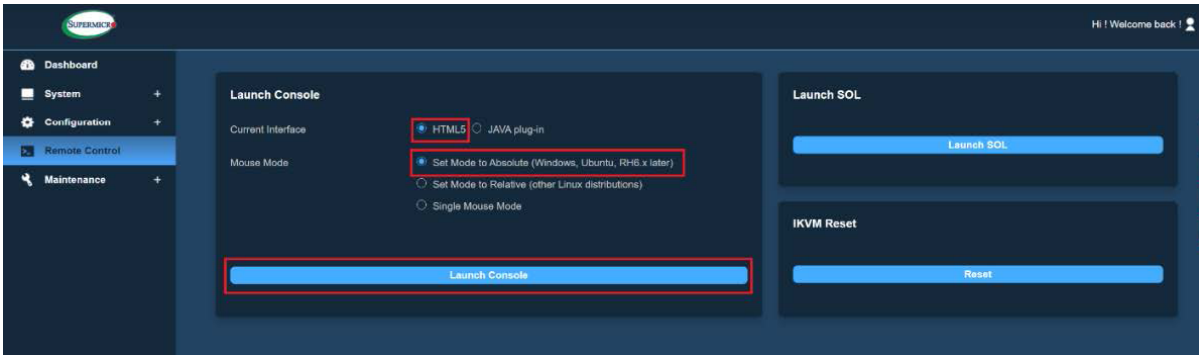


2. Use the Launch Console section to configure the remote console interface settings. Choose between the HTML5 interface or a JAVA plug-in. Launch an HTML5 remote browser.



To launch an HTML5 Remote Browser

1. Set HTML5 as the current interface.
2. Choose the mouse mode according to your operating system, such as "**Set Mode to Absolute" (Windows, Ubuntu, RH6.x, or later)**."
3. Click the "**Launch Console**" button to open a console in a new browser window.



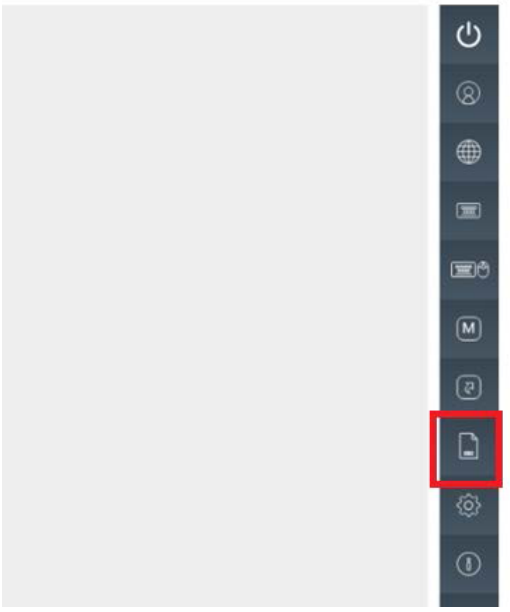


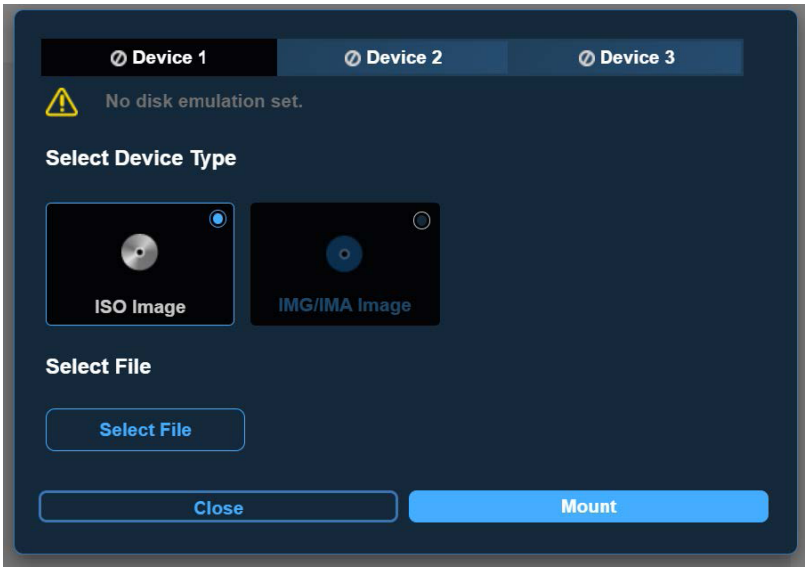
Step 4. Mounting the ISO Image

There are two methods to mount ISO images. If the ISO files are stored locally on your disk, you can mount them directly within the remote control browser. Alternatively, if the ISO files are located on a shared server, you can mount them via the Configuration > Virtual Media menu.

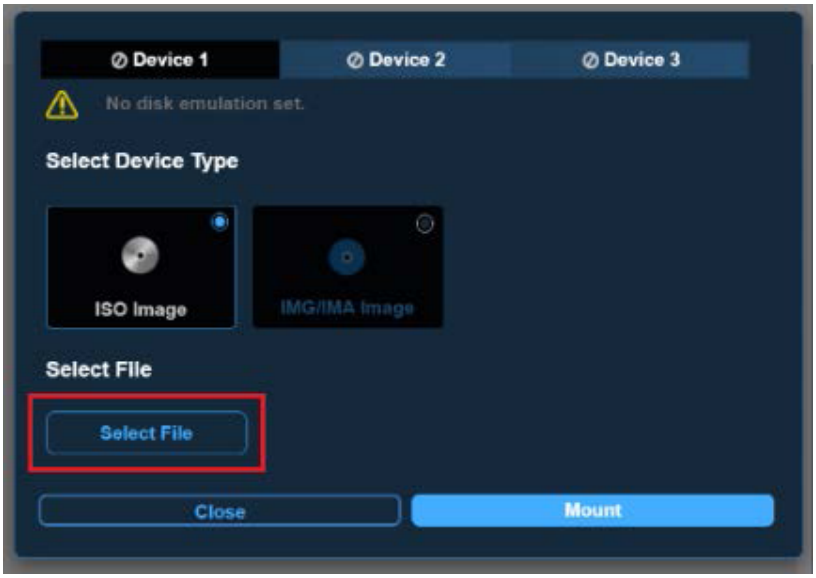
Method One: Mount the ISO Image Using a Local File

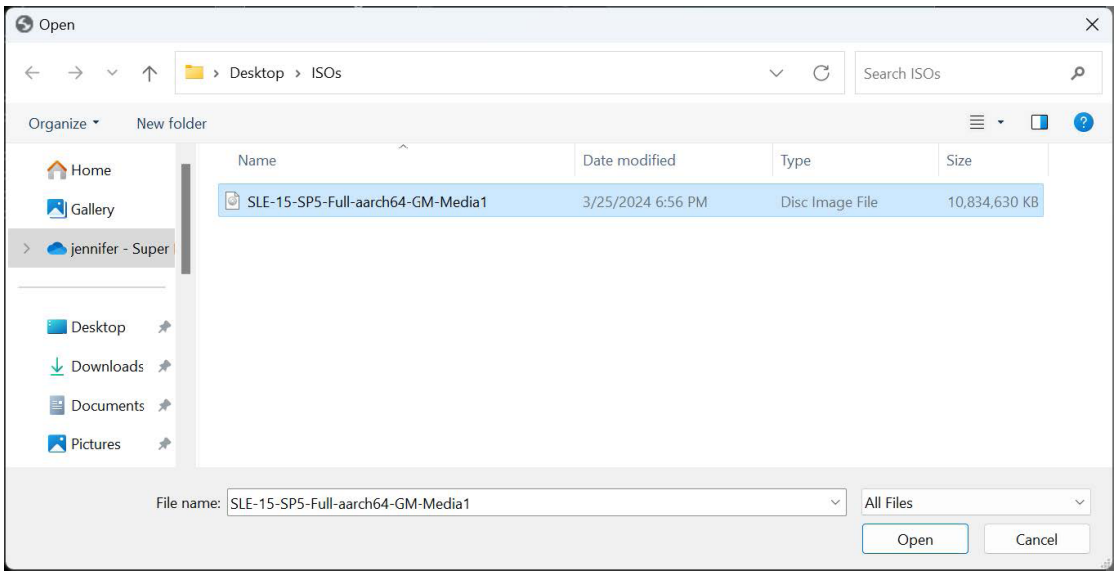
1. In the remote control browser, click the "**Virtual Media**" icon. This action will prompt a dialogue box to appear, enabling you to select the image type and files for mounting.



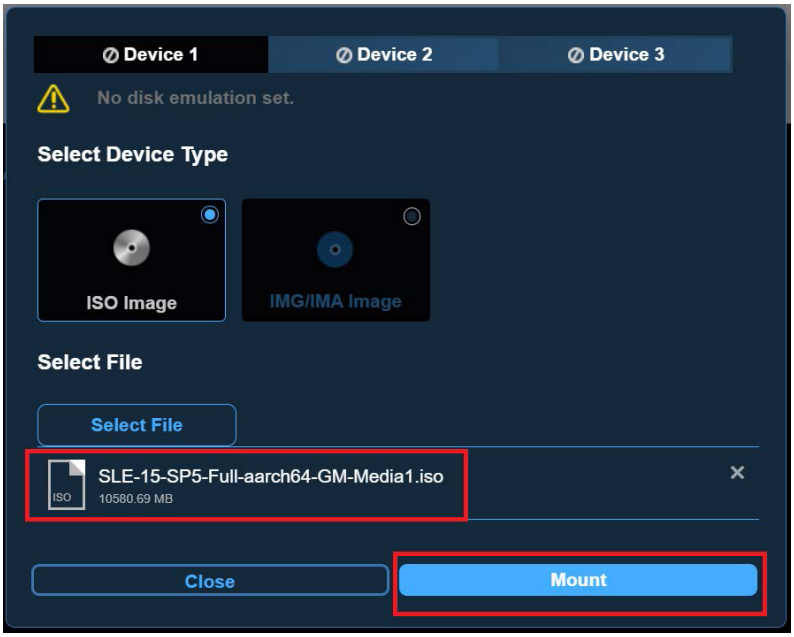


2. Click the "**Select File**" button to browse and choose the SLES ISO image on your local disk for use.





3. Click the "**Mount**" button to attach the chosen ISO image.

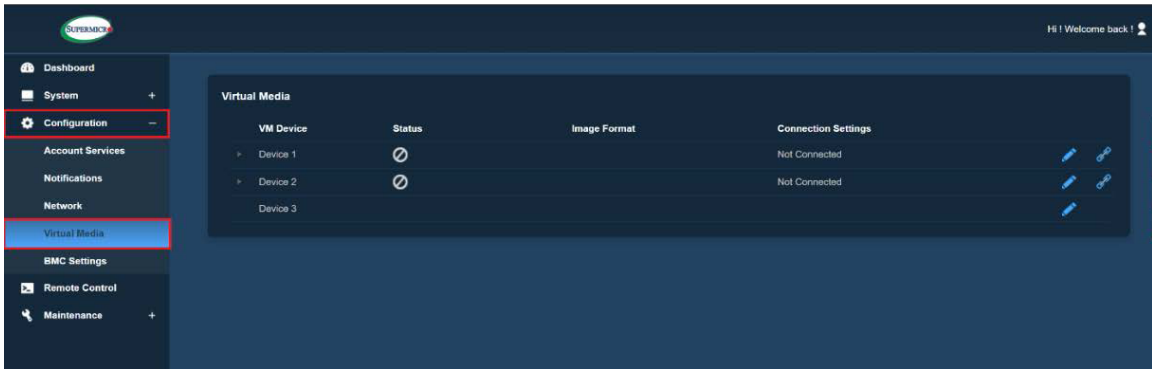


Result: Upon successful mounting of the ISO image, a green indicator will appear in the "**Device**" tab. Close the dialogue to continue.

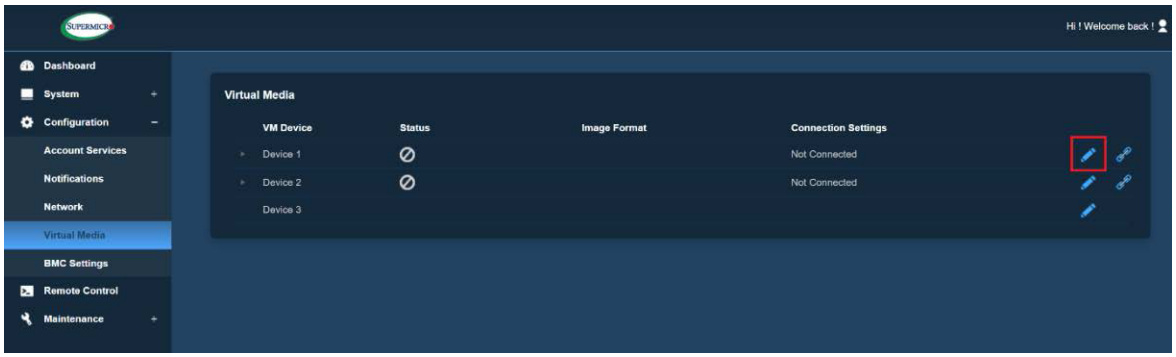


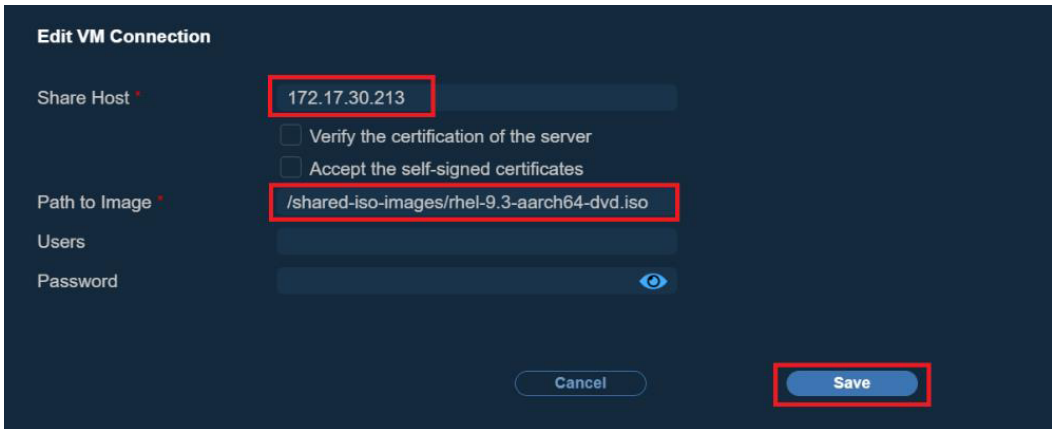
Method Two: Mount the ISO Image through Shared Server

1. On the BMC dashboard, go to Configuration > Virtual Media. This allows you to attach an ISO image from the server.

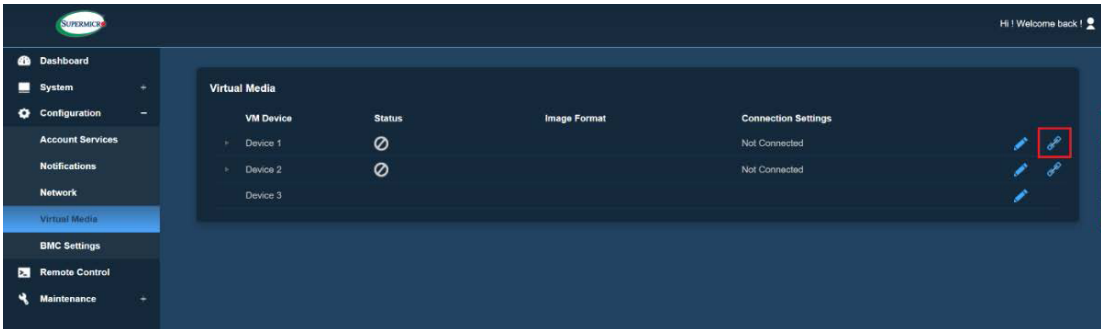


2. Click the "**Edit**" icon to adjust the VM configuration. Enter the server host address and the path to the ISO image. Then, click "**Save**" to apply the changes.

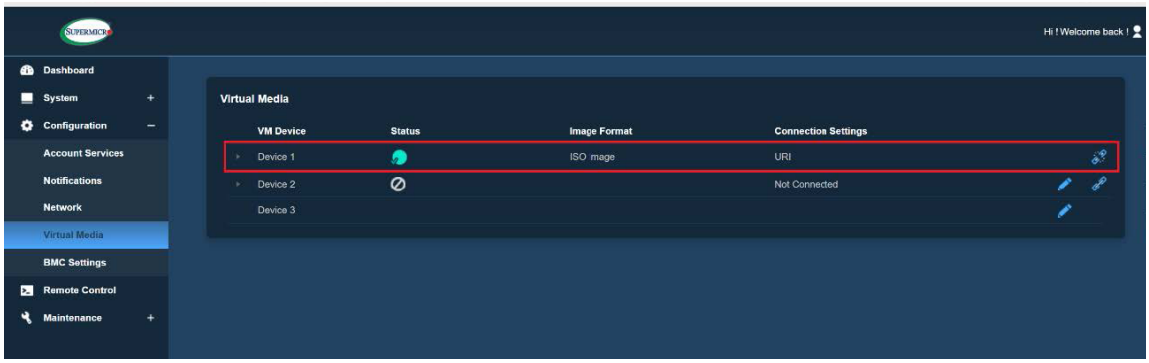




3. Click the "**Connect**" icon to mount the virtual media.



4. The device status will display as green once the VM is successfully configured.



Step 5. Entering in UEFI BIOS Menu

To configure the boot option from the mounted image in virtual media, users must manually adjust the boot settings in the BIOS setup.

1. Power on the system and wait for the Log screen to display. To access the BIOS setup menu, repeatedly press <**DEL**> until "**Entering Setup...**" appears at the bottom left corner of the screen.

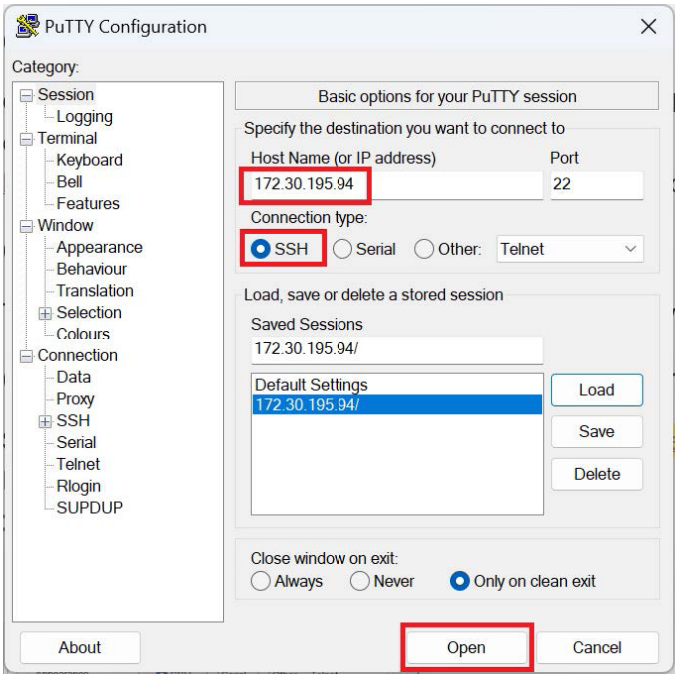


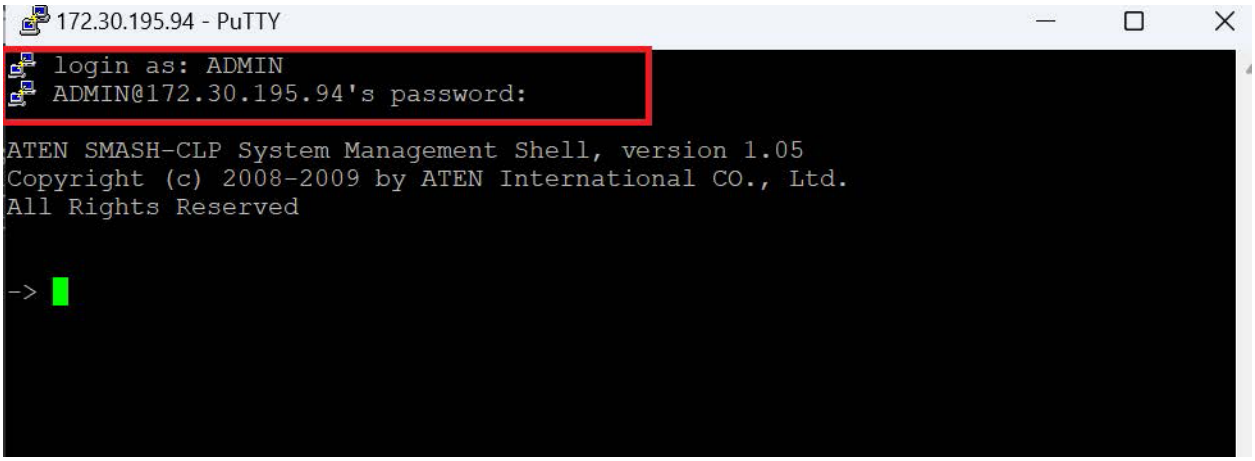


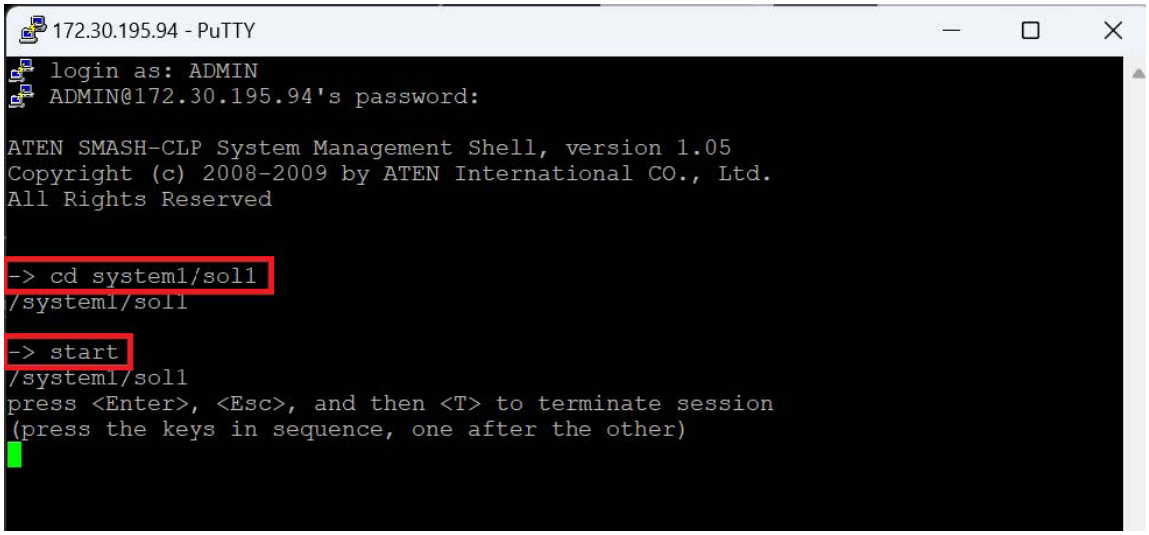
Subsequently, the UEFI BIOS screen is displayed.

Step 6. Opening a SSH SOL Connection in PuTTY

Open a connection to the BMC IP address (For detailed instructions, refer to Step 1. Obtaining BMC IP Address.) and log in using the provided username and the unique BMC password through PuTTY. Once logged in, navigate to the directory by typing the command "**cd system1/sol1**". Then, initiate the SOL session by entering the command "**start**".

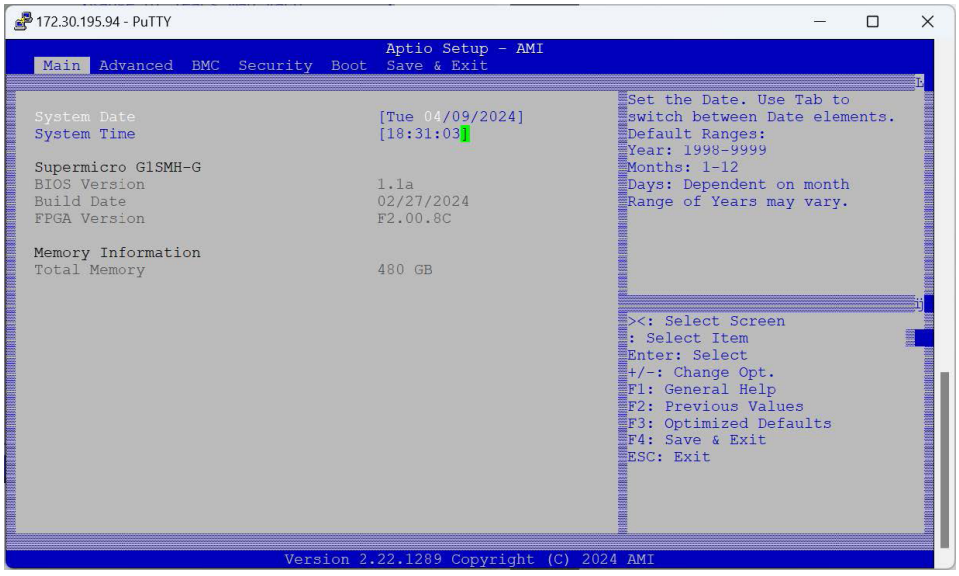


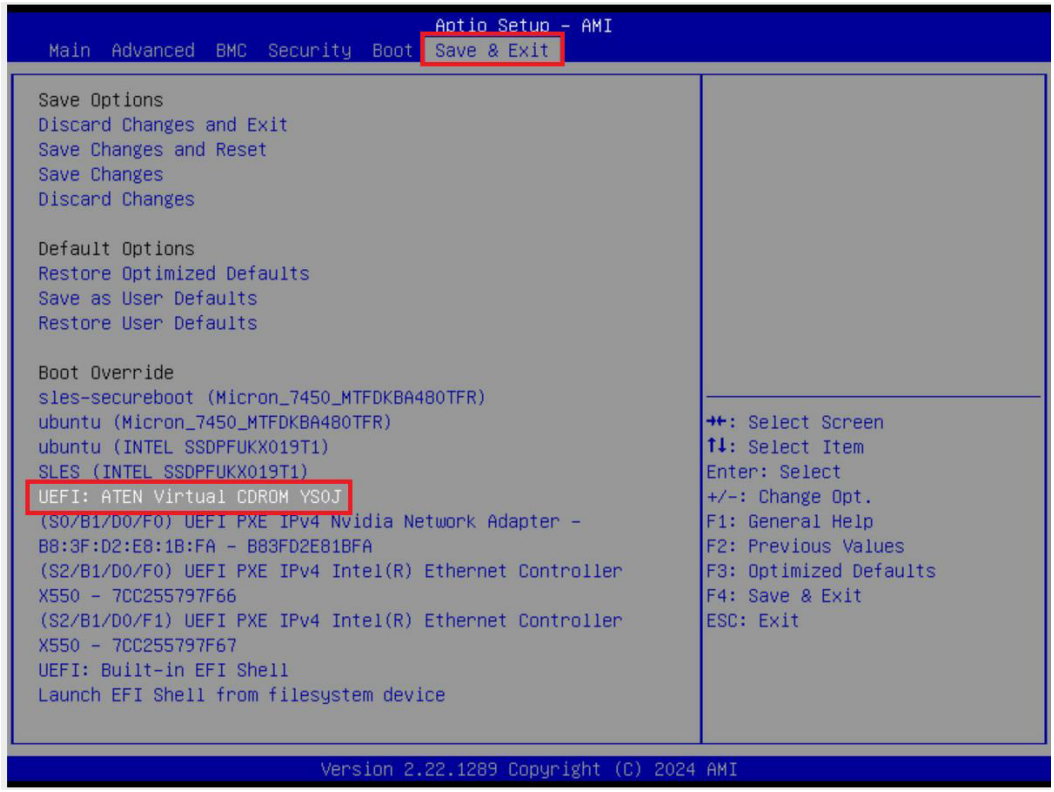




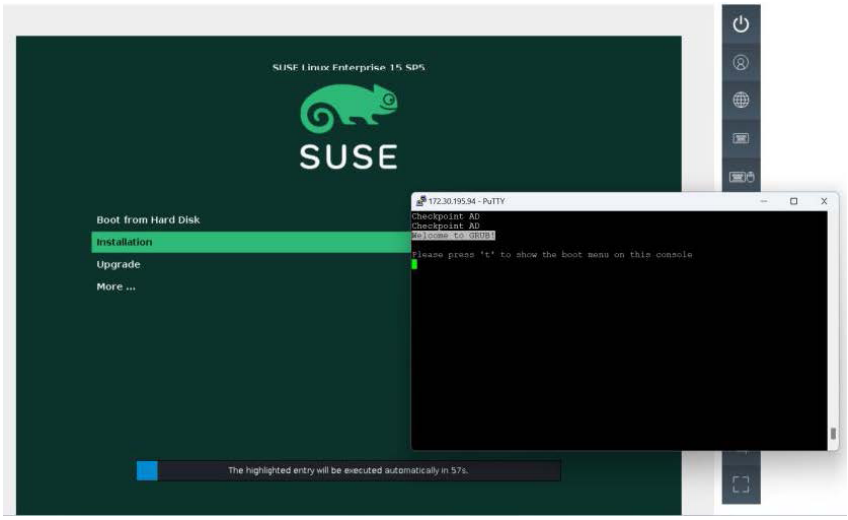
Step 7. Setting the Boot Option in PuTTY Terminal

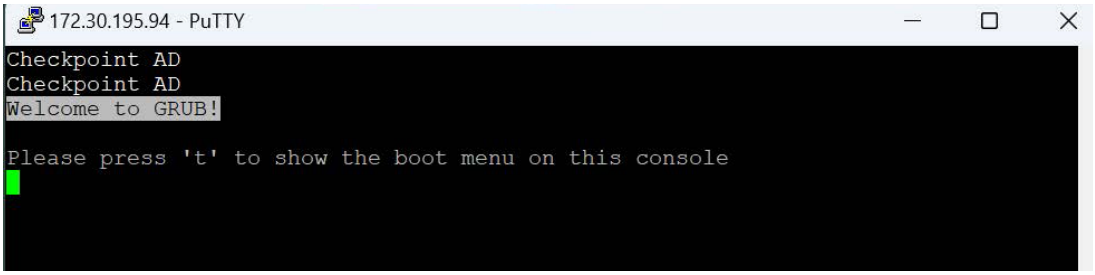
1. Navigate to the "**Save & Exit**" menu using the arrow keys in PuTTY terminal, then select "**UEFI: ATEN Virtual CDROM YSOJ**" as the boot option. This selection presents the ISO image mounted in Virtual Media. Hit "**Enter**" to proceed.



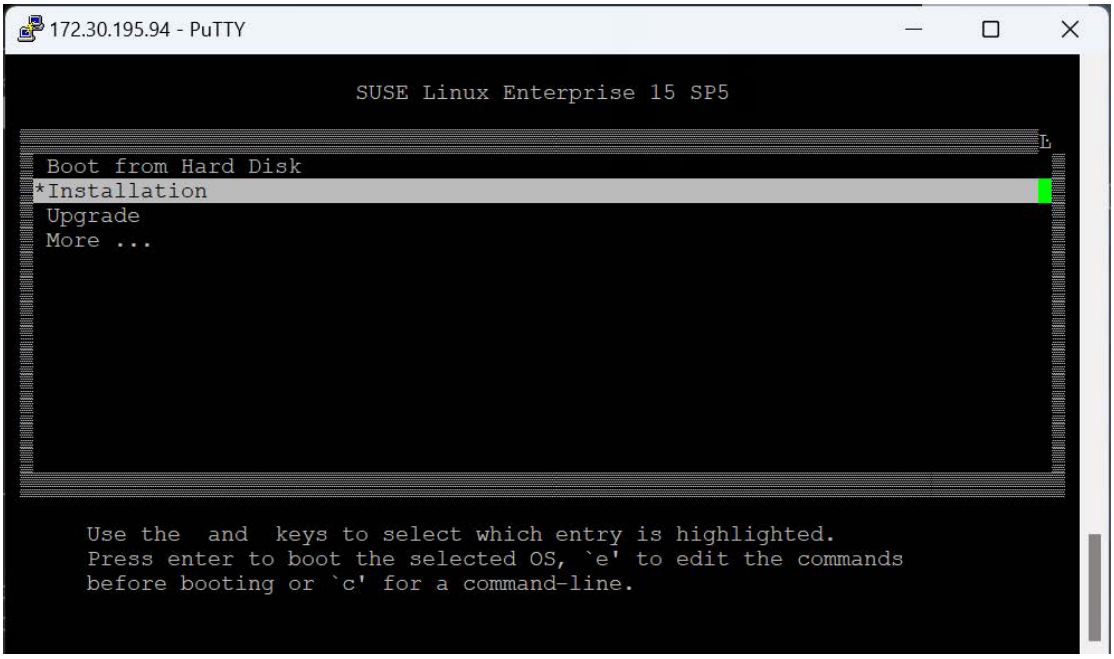


2. Select "**Installation**" and press "**t**" to show the boot menu in PuTTY terminal.

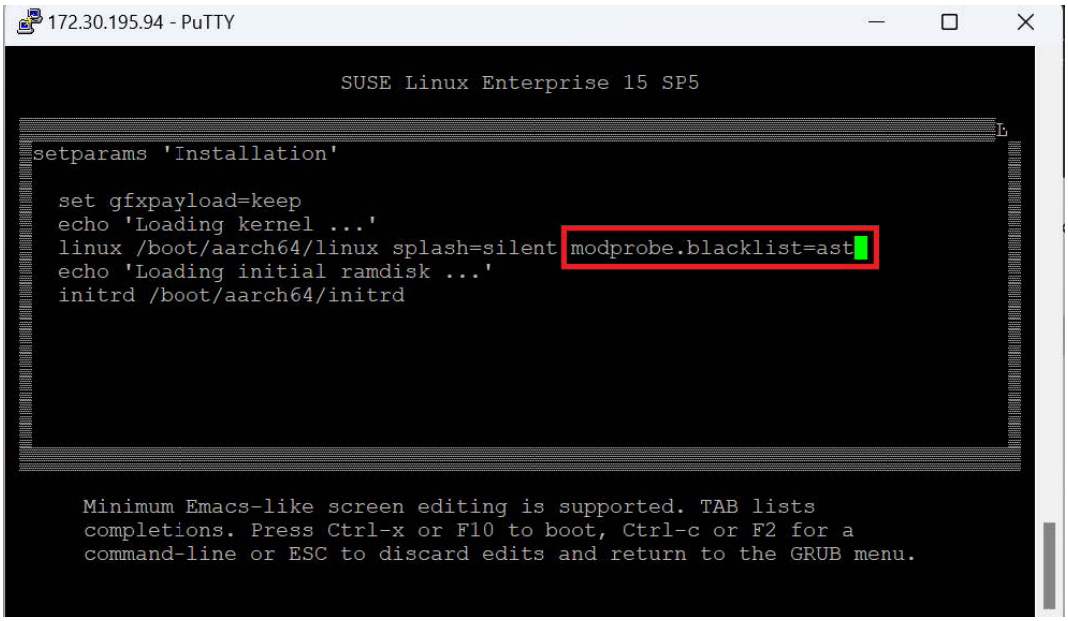




3. Highlight "**Installation**" and press "**e**" to edit the commands.



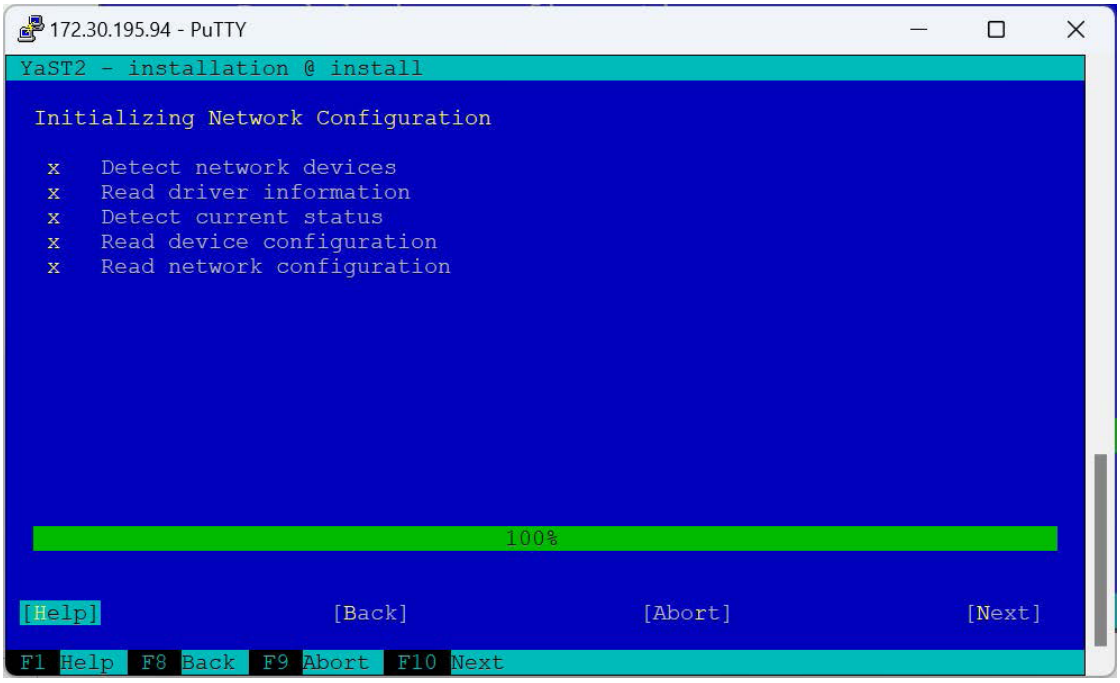
4. Append "**modprobe.blacklist=ast**" to the end of the list of kernel boot parameters. Boot the entry by clicking the **Ctrl-X** or pressing **F10**.



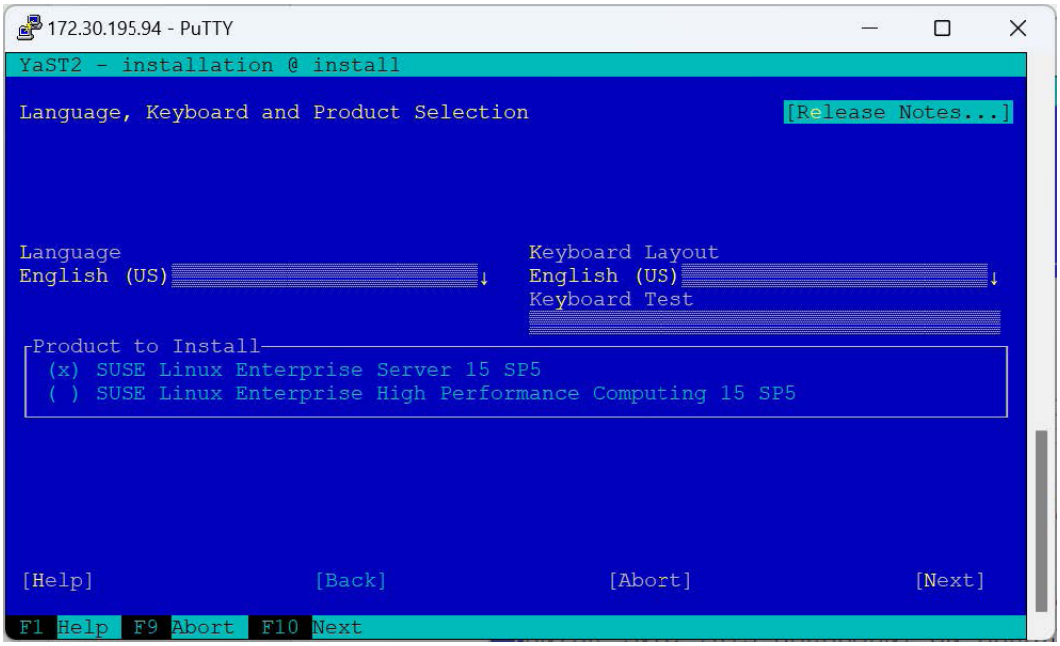
Step 8. Installing SLES 15 OS

Follow the SLES Installer Steps in PuTTY to Continue Installation

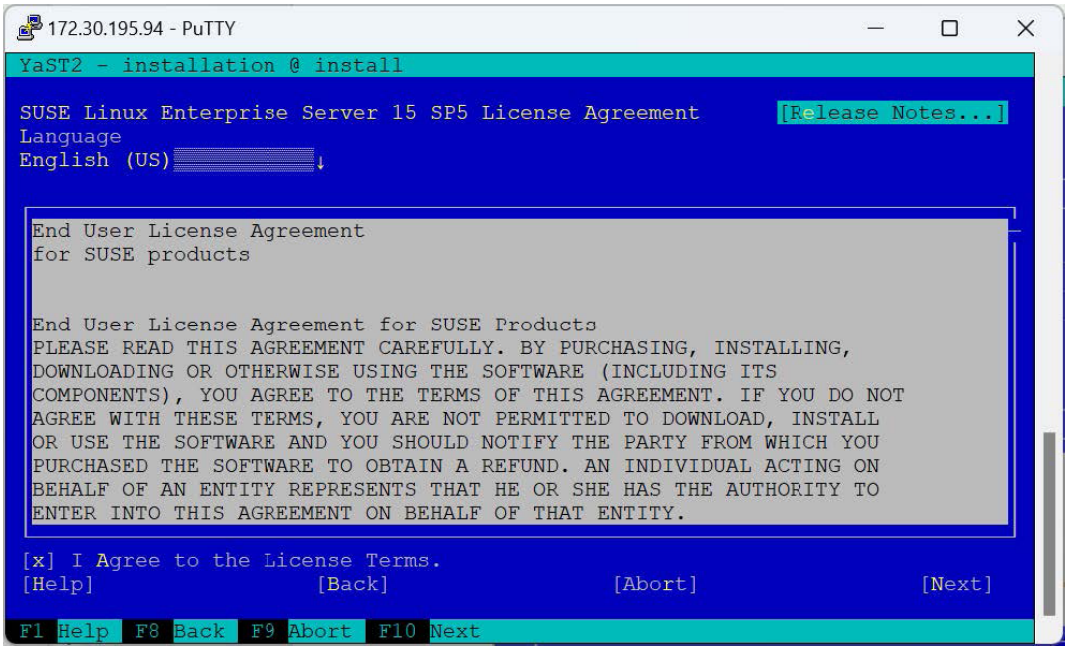
1. Initialize network configuration.



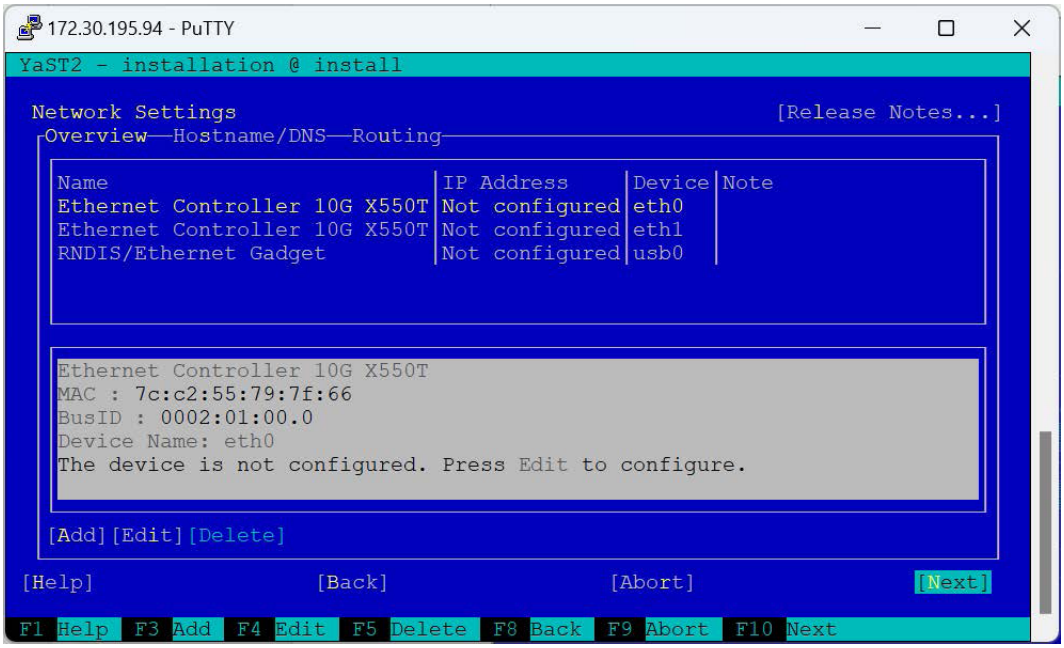
2. Select the Language, Keyboard, and Product to install.



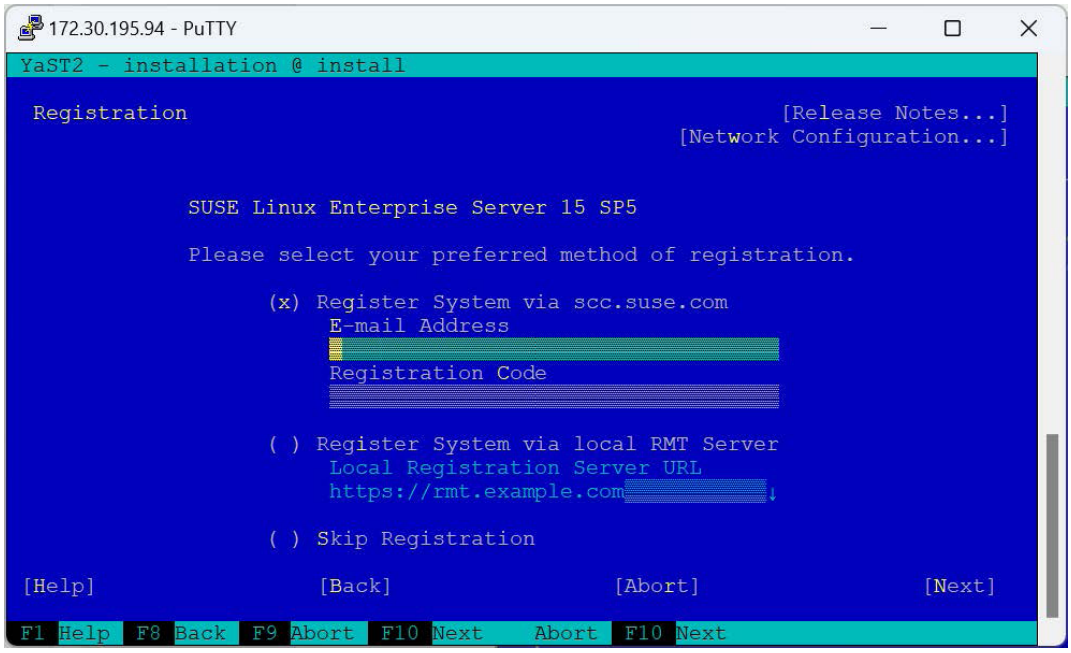
3. Review the End User Agreement and proceed if you agree to the License Terms.



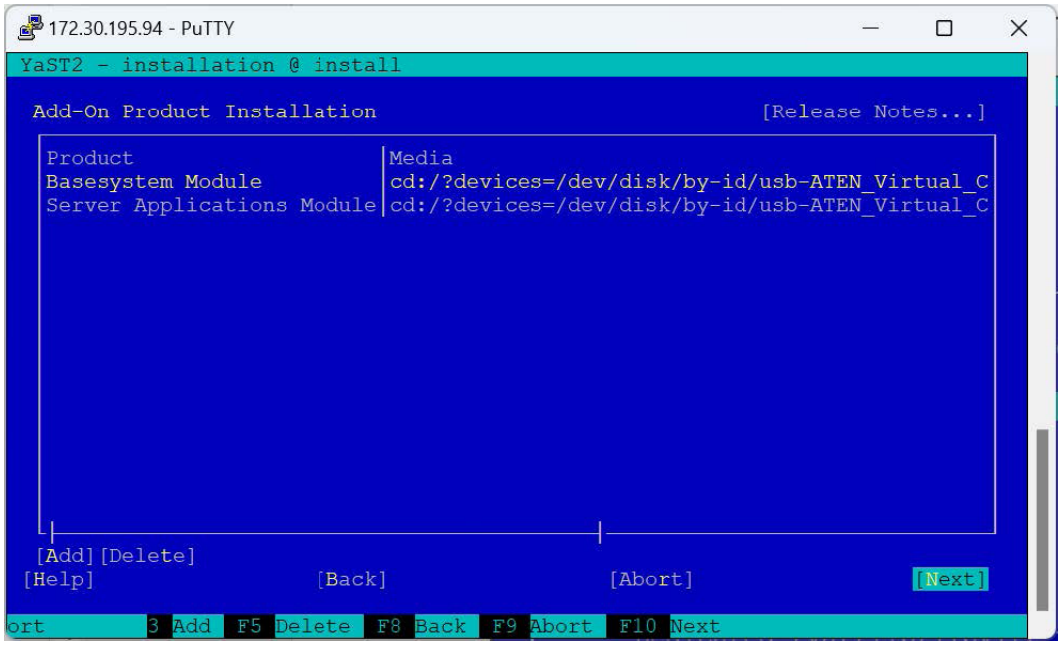
4. Configure the Network settings.



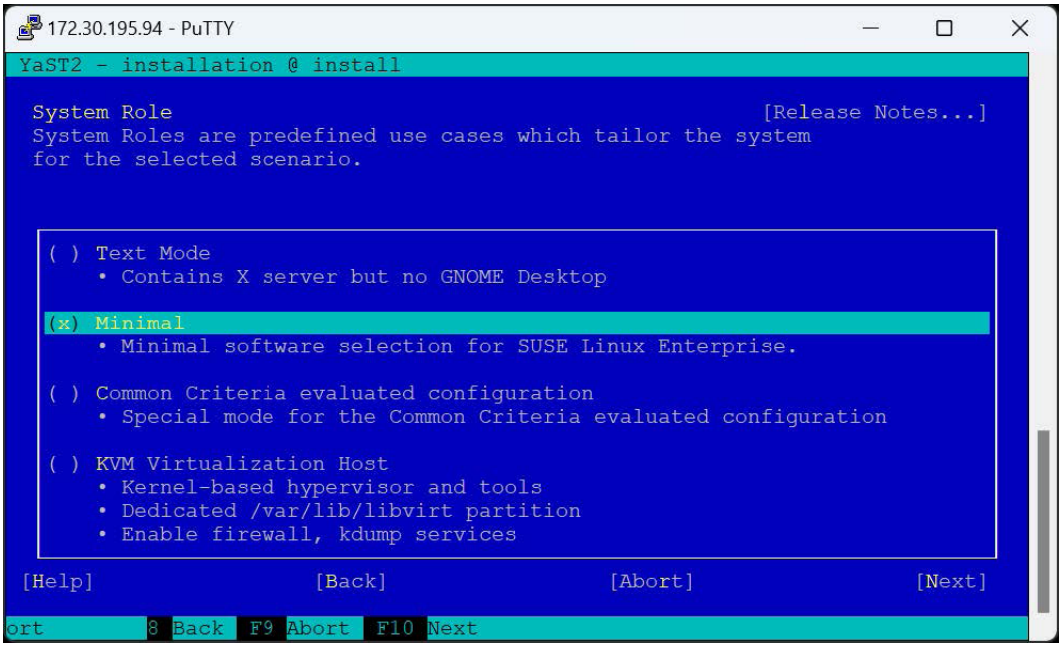
5. Fill in the Registration details.



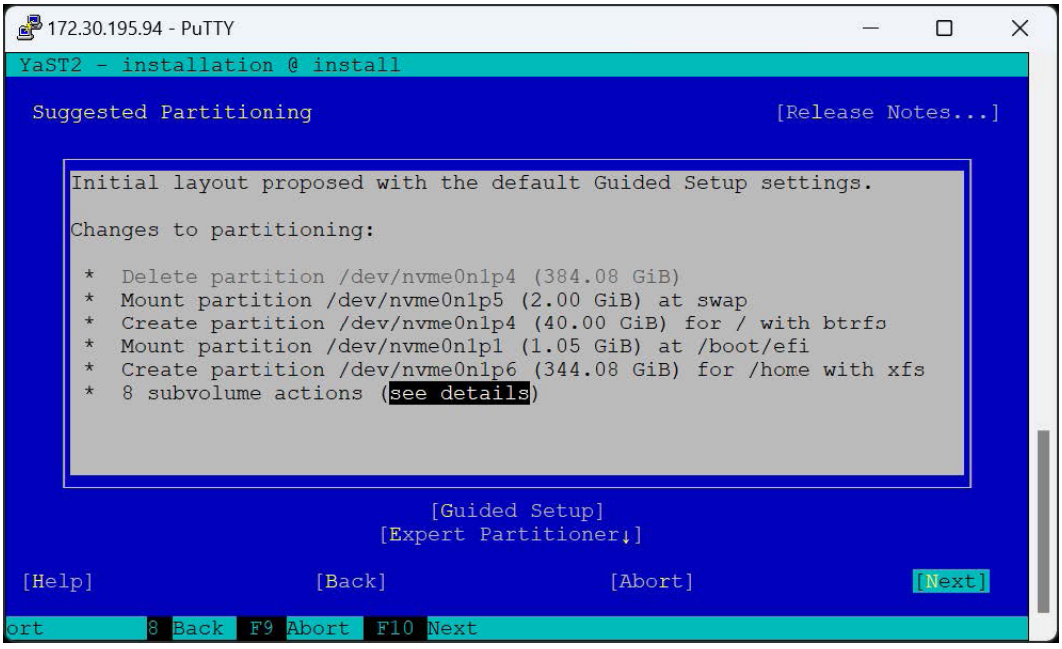
6. Select Add-on Products if you want to install.



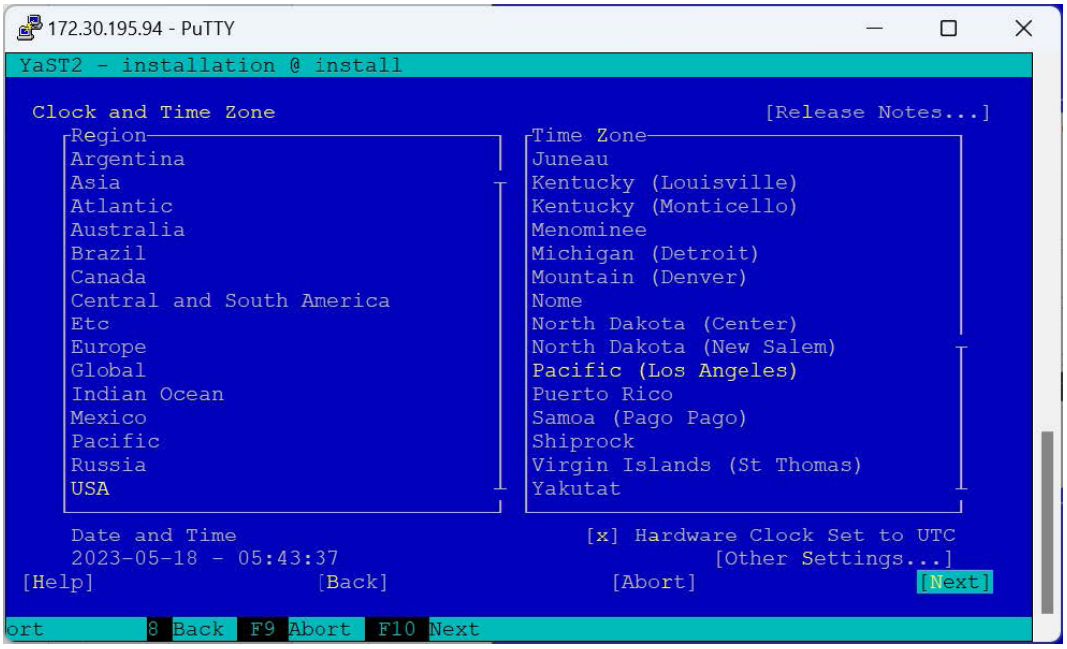
7. Define the System Role based on your specific use case. This role will dictate the installation selections tailored to your requirements.



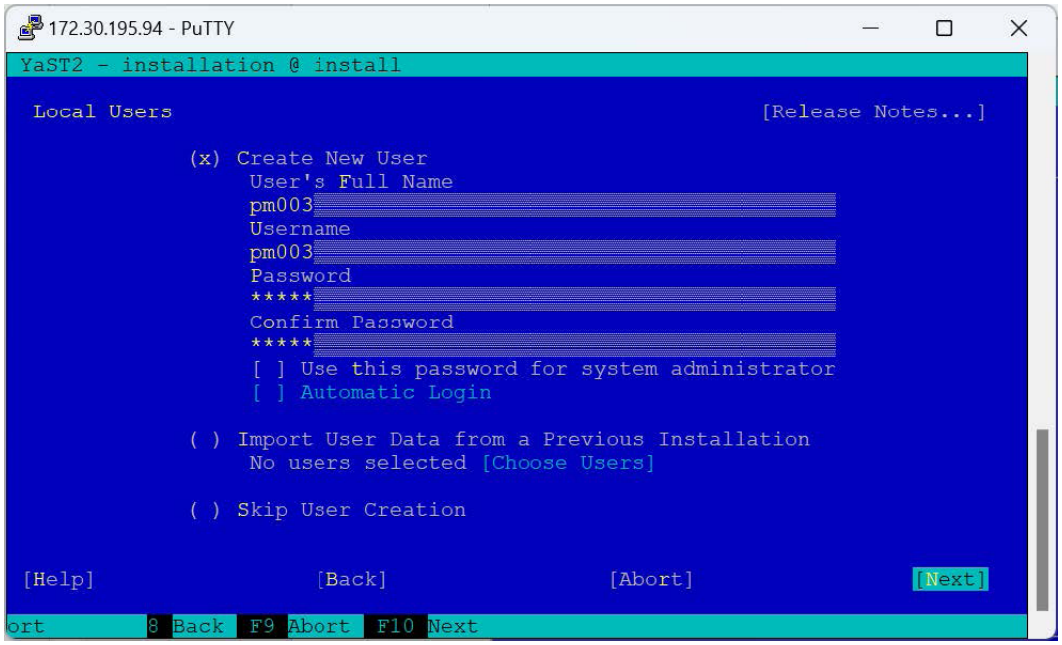
8. Choose the partitioning scheme that best suits your requirements.



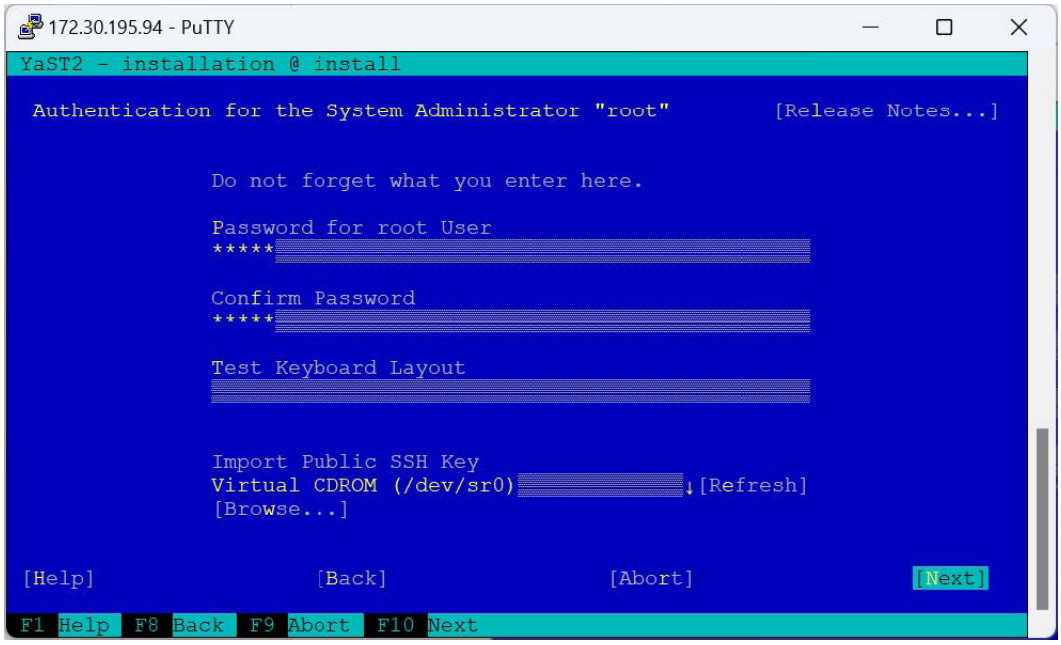
9. Select the Clock and Time Zone.



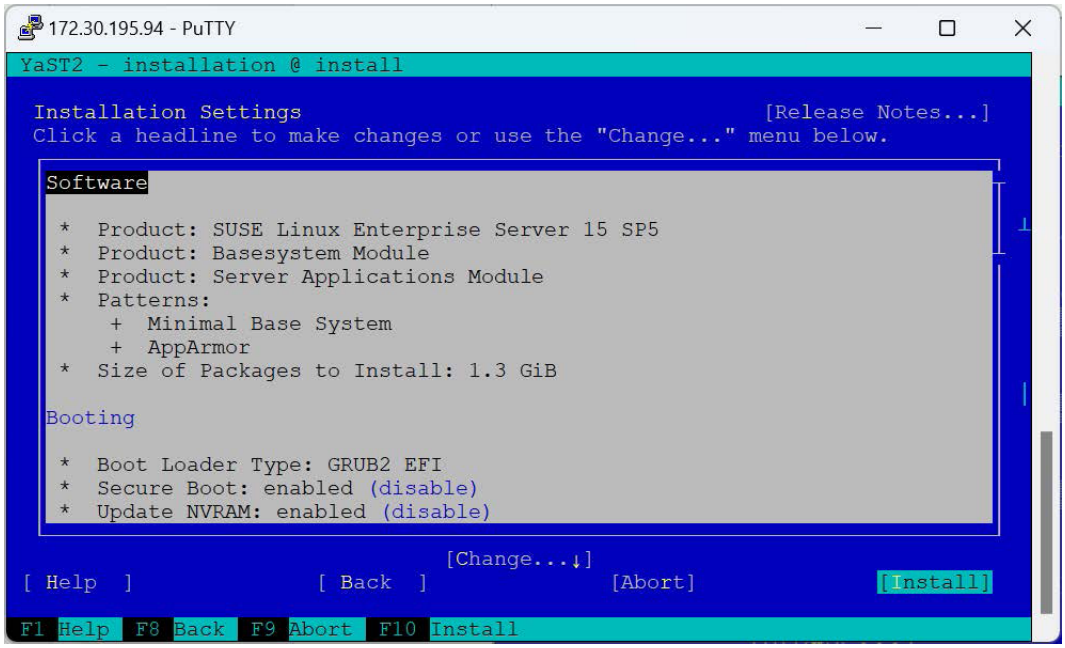
10. Set up local username and password.

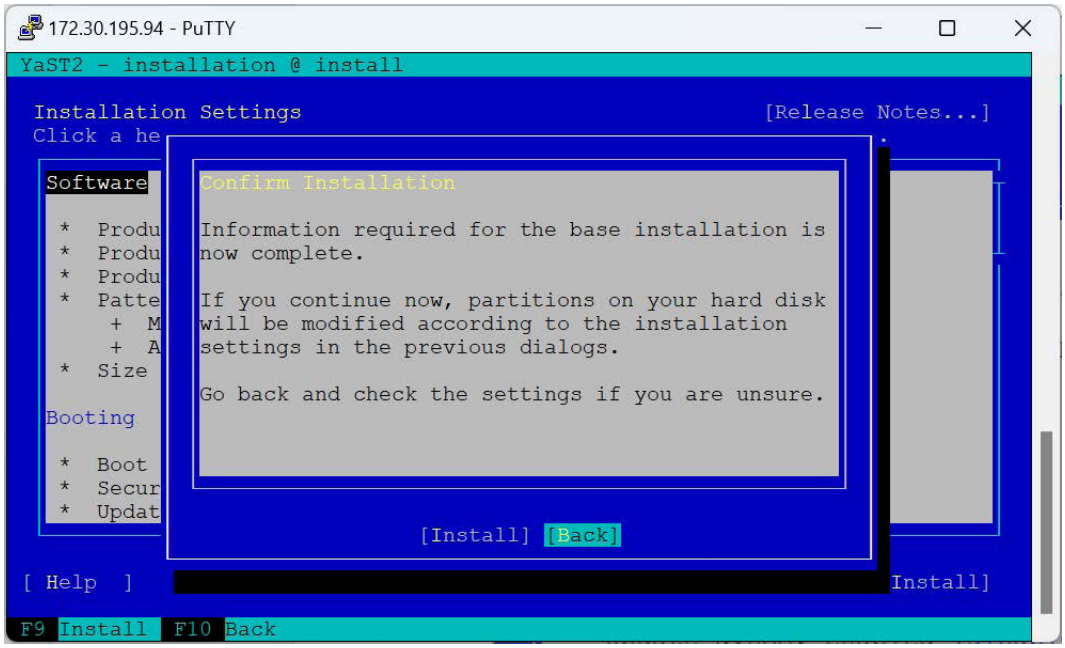


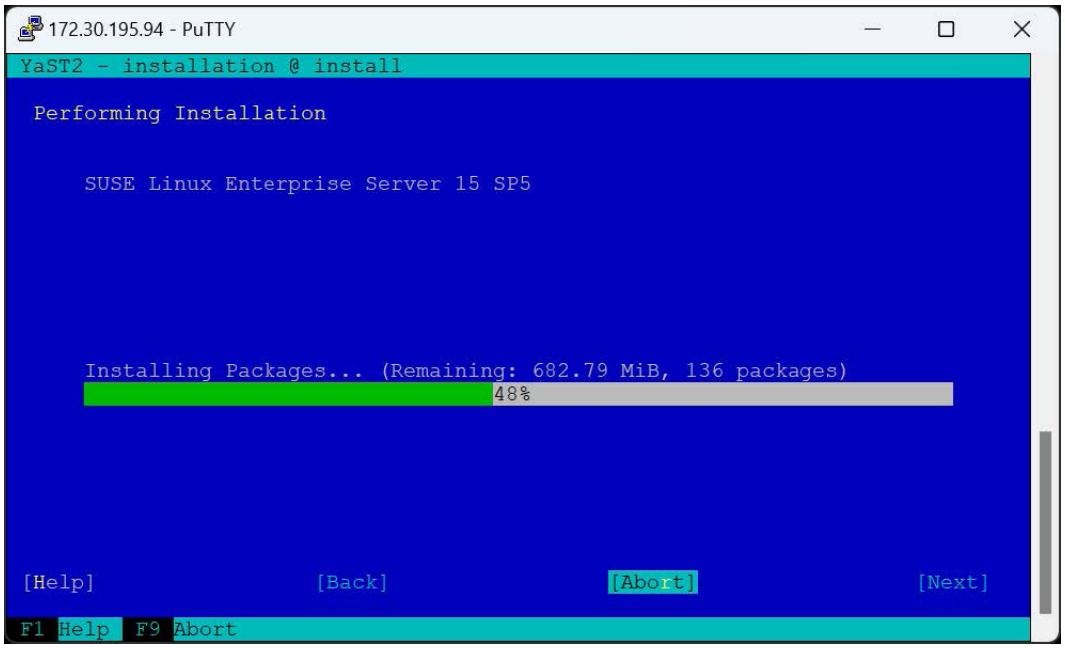
11. Set up System administrator "**root**" and its password.



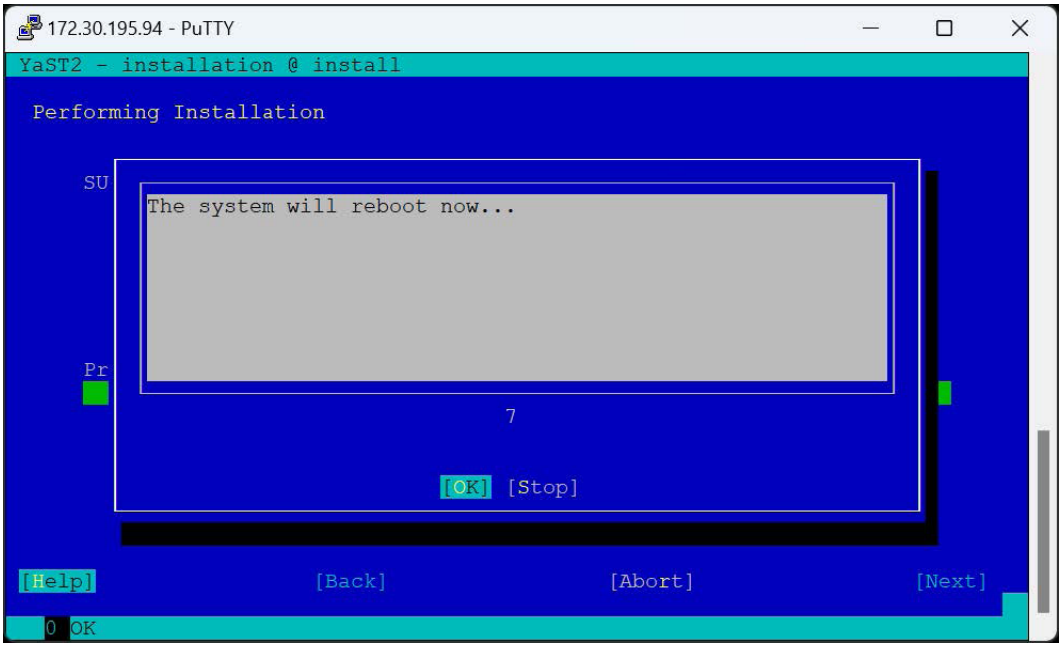
12. Review the Installation Settings and click "**Install**" to start the installation process.



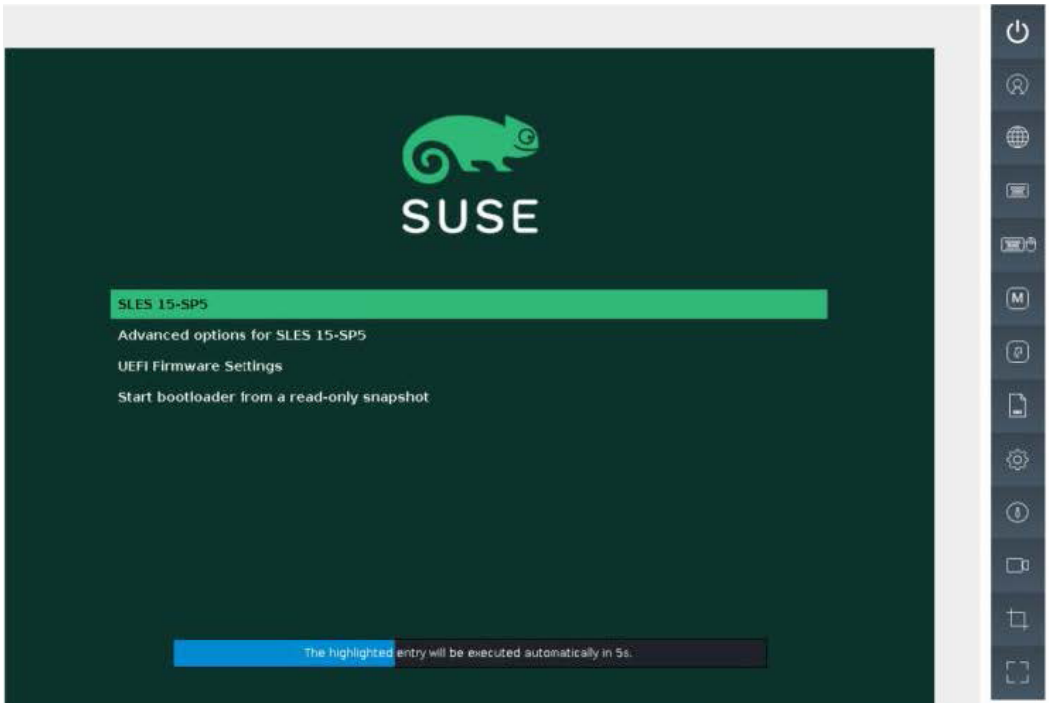

172.30.195.94 - PuTTY
YaST2 - installation @ install
Installation Settings
[Release Notes...]
Click a he
Software
* Produ
* Produ
* Produ
* Patte
+ M
+ A
* Size
Booting
* Boot
* Secur
* Updat
Confirm Installation
Information required for the base installation is now complete.
If you continue now, partitions on your hard disk will be modified according to the installation settings in the previous dialogs.
Go back and check the settings if you are unsure.
[Install] [Back]
[Help]
Install]
F9 Install F10 Back


172.30.195.94 - PuTTY
YaST2 - installation @ install
Performing Installation
SUSE Linux Enterprise Server 15 SP5
Installing Packages... (Remaining: 682.79 MiB, 136 packages)
48%
[Help]
[Back]
[Abort]
[Next]
F1 Help F9 Abort

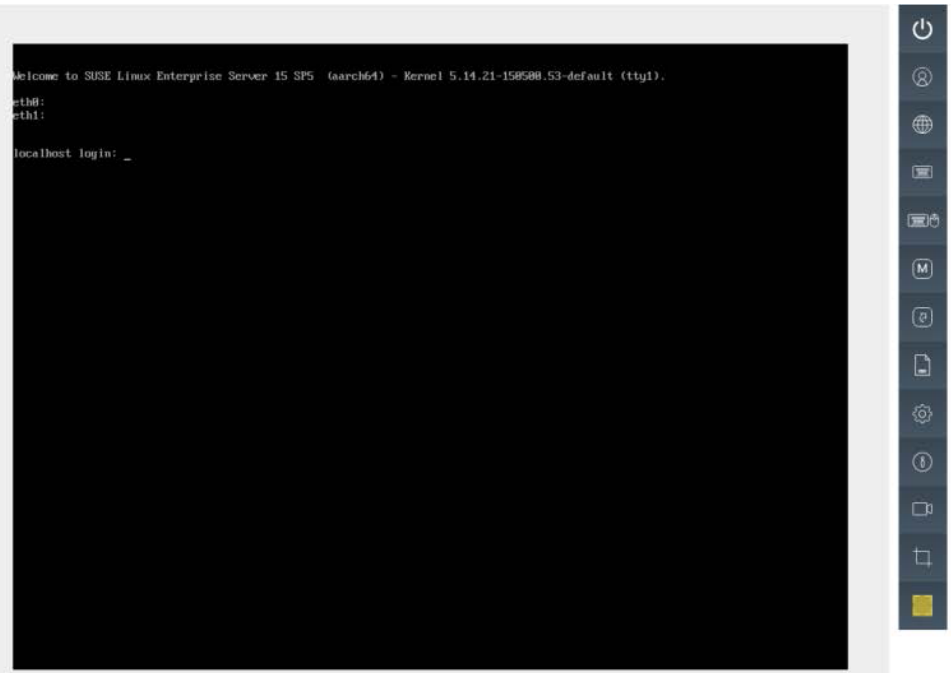
13. Once installation is complete, the system will reboot.



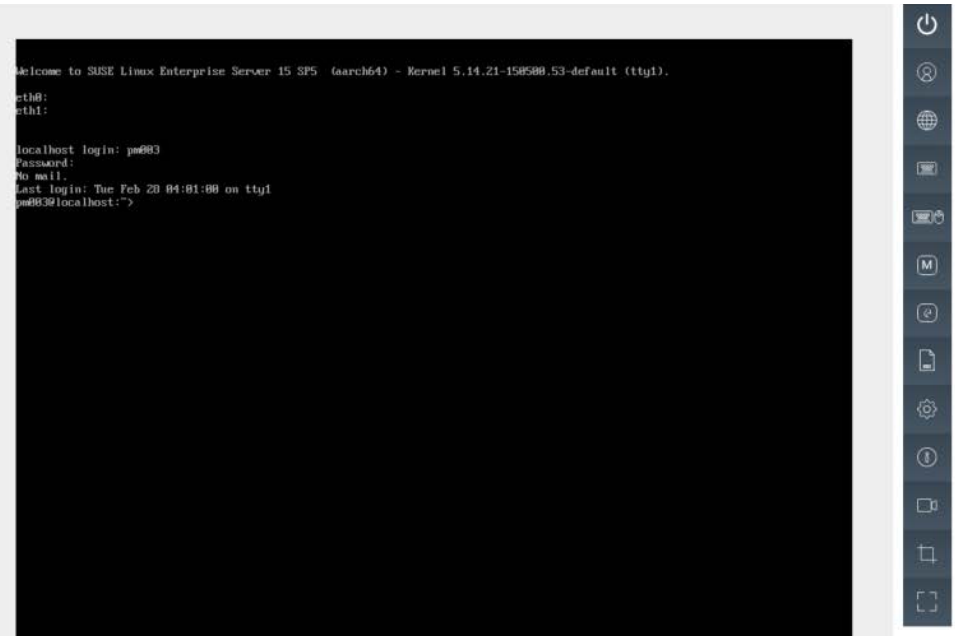
14. Select "**SLES 15-SP5**" and click "**Enter**" to proceed in the remote control.



15. Enter username and password to login.



Logged in successfully.



5.4 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

SuperDoctor® Manual and Resources



Figure 5-1. SuperDoctor 5 Interface Display Screen (Health Information)

5.5 IPMI

The G1SMH motherboard supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring and management. There are several BIOS settings that are related to IPMI.

Supermicro ships standard products with a unique password for the BMC ADMIN user. This password can be found on a label on the motherboard.

For general documentation and information on IPMI, please visit our website at:

http://www.supermicro.com/products/nfo/IPMI.cfm.

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

6.1 Storage Drives

The default configuration includes total four front hot-swap E1.S NVMe drives and AOC networking card (Follow ACL list).

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro website.



Figure 7-1. Supermicro Website

- Specifications for servers and other hardware are available by clicking **Products** option.
- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

Direct Links for the ARS-121L-DNR System

ARS-121L-DNR specifications page

G1SMH motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

Frequently Asked Questions

Add-on Card Descriptions

TPM User Guide

BMC User Guide

For validated memory, use our Product Resources page.

Direct Links (continued)

Product Matrices page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, etc.

Security Center for recent security notices.

Supermicro Phone and Addresses

7.2 Baseboard Management Controller (BMC)

This system supports the Baseboard Management Controller (BMC). BMC is used to provide remote access, monitoring, and management. There are several BIOS settings that are related to BMC.

For general documentation and information on BMC, please visit our website at: https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf

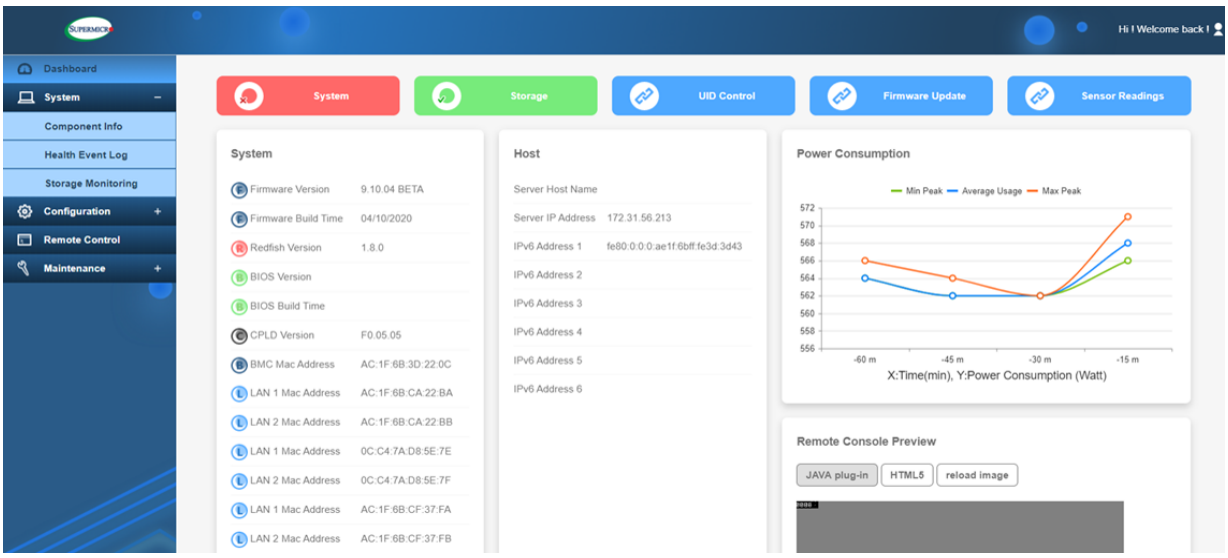


Figure 7-2. BMC Dashboard

7.3 Crash Dump Using the BMC Dashboard

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using the BMC Dashboard. The BMC manual is available at https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf.

Check Error Log

1. Access the BMC web interface.
2. Click the **Server Health** tab, then **Event Log** to verify an IERR error.

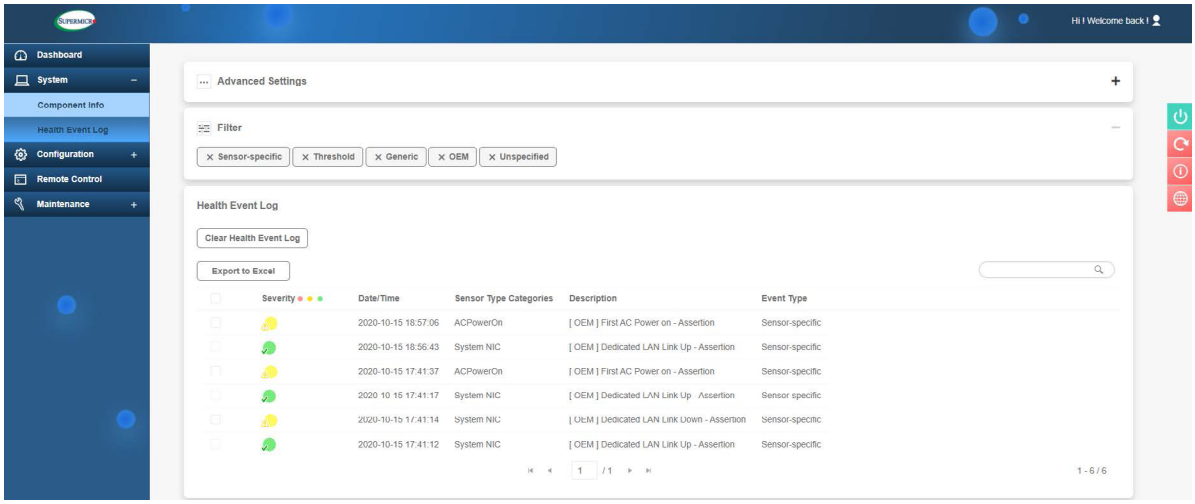


Figure 7-3. BMC Event Log

In the event of an IERR, the BMC executes a crash dump. You must download the crash dump and save it.

7.4 CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard and remove the battery from the motherboard.
3. Short the CMOS pads, JBT1, with a metal object such as a small screwdriver for at least four seconds.
4. Remove the screwdriver (or shorting device).
5. Replace the cover, reconnect the power cord(s), and power on the system.

Note 1: Clearing CMOS will also clear all passwords.

Note 2: Do not use the PW_ON connector to clear CMOS.

7.5 BMC Reset

The BMC can be reset using the UID button.

- Reset – Press and hold the UID button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.
- Restore factory default configuration – Hold the UID button for twelve seconds. The LED blinks at 4 Hz while defaults are configured. **Note:** All BMC settings including username and password will be removed except the FRU and network settings.

Firmware update – When the BMC firmware is being updated, the UID LED blinks at 10 Hz.

BMC Reset Options		
Event	**UID LED**	**BMC Heartbeat LED**
Reset	Blue, Blinks at 2 Hz	Green, solid
Restore Defaults	Blue, Blinks at 4 Hz	Off
Update	Blue, Blinks at 10 Hz	N/A

7.6 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: http://www.supermicro.com/. Click the "Where to Buy" tab.

7.7 Reporting an Issue

Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, please note that as a motherboard manufacturer, Supermicro also sells motherboards through its channels, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problems with the specific system configuration that was sold to you.

1. Please go through the Troubleshooting Procedures and Frequently Asked Questions (FAQ) sections in this chapter or see the FAQs on our website (http://www.supermicro.com/FAQ/index.php) before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website (http://www.supermicro.com/ResourceApps/BIOS_BMC_Intel.html).
3. If you still cannot resolve the problem, include the following information when contacting Supermicro for technical support:
   - System, motherboard, and chassis model numbers and PCB revision number
   - BIOS release date/version (This can be seen on the initial display when your system first boots up.)
   - System configuration

An example of a Technical Support form is on our website at http://www.supermicro.com/RmaForm/. **Distributors:** For immediate assistance, please have your account number ready when placing a call to our Technical Support department. We can be reached by email at support@supermicro.com.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alternation, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Vendor Support Filing System

For issues related to Intel, use the Intel IPS filing system:

https://www.intel.com/content/www/us/en/design/support/ips/training/welcome.html

For issues related to Red Hat Enterprise Linux, since it is a subscription based OS, contact your account representative.

7.8 Feedback

Supermicro values your feedback as we strive to improve our customer experience in all facets of our business. Please email us at techwriterteam@supermicro.com to provide feedback on our manuals.

7.9 Contacting Supermicro

Headquarters

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Chapter 8

BIOS

This chapter describes optional system components and installation procedures.

8.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the G1SMH motherboard. The BIOS is stored on a chip and can be easily upgraded using a flash program.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted and might not yet be recorded in this manual. Please refer to the Manual Download area of our website for any changes to BIOS that may not be reflected in this manual.

Starting the Setup Utility

To enter the BIOS Setup Utility, hit the <Delete> key while the system is booting-up. (In most cases, the <Delete> key is used to invoke the BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.) Each main BIOS menu option is described in this manual.

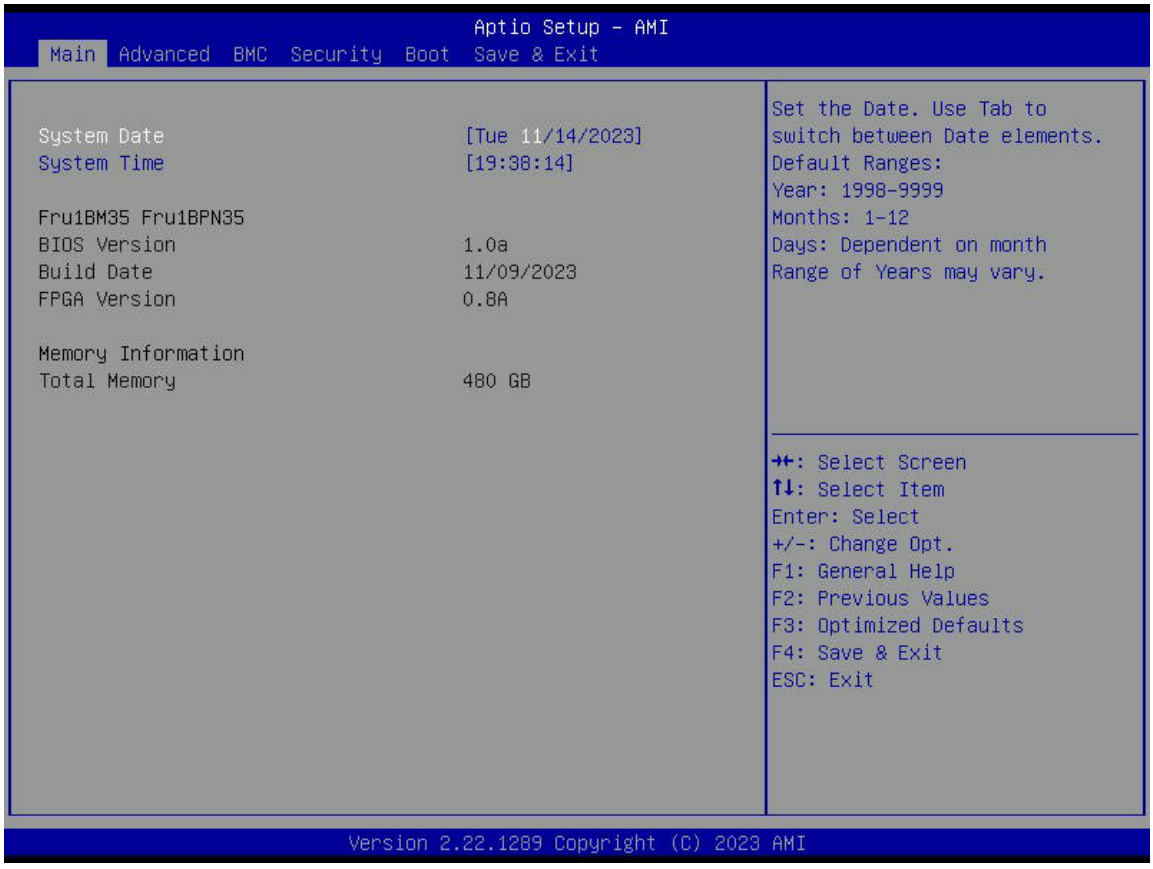
The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. “Grayed-out” options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (Note that BIOS has default text messages built in. We retain the option to include, omit, or change any of these text messages.) Settings printed in Bold are the default values.

A " ▶" indicates a submenu. Highlighting such an item and pressing the <Enter> key will open the list of settings within that submenu.

The BIOS setup utility uses a key-based navigation system called hot keys. Most of these hot keys (<F1>, <F2>, <F3>, <Enter>, <ESC>, <Arrow> keys, etc.) can be used at any time during the setup navigation process.

8.2 Main Setup

When you first enter the AMI BIOS setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS setup screen is shown below. The following Main menu items will be displayed:



System Date/System Time

Use this option to change the system date and time. To change system date and time settings, please highlight *System Date* or *System Time* using the arrow keys and enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00. The date's default value is 01/01/2015 after RTC reset.

Fru1BM35 Fru1BPN35

BIOS Version

This item displays the version of the BIOS ROM used in the system.

Build Date

This item displays the date when the version of the BIOS ROM used in the system was built.

FPGA Version

This item displays the FPGA version used in the system.

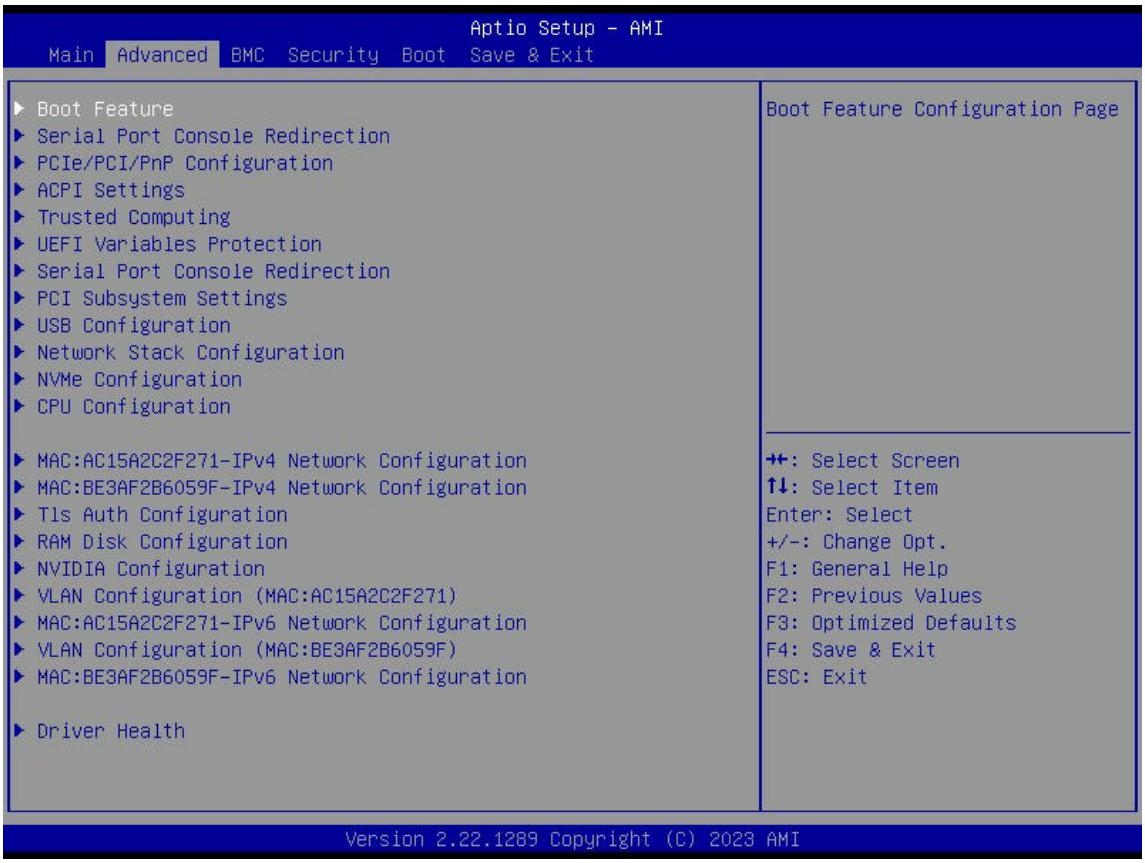
Memory Information

Total Memory

This item displays the total size of memory available in the system.

8.3 Advanced

Use the arrow keys to select Advanced Setup and press <Enter> to access the submenu items.



▶Boot Feature

Quiet Boot

Use this feature to select the screen display between the Power-on Self Test (POST) messages and the OEM logo upon bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Disabled and **Enabled**.

Watch Dog Function

If enabled, the Watch Dog Timer will allow the system to reset or generate NMI based on jumper settings when it is expired for more than 5 minutes. The options are **Disabled** and Enabled.

▶Serial Port Console Redirection

COM0

Console Redirection

Select Enabled to enable console redirection support for a serial port specified by the user. The options are Disabled and **Enabled**. If set to Enabled, the following options become available.

▶Console Redirection Settings

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100Plus, VT-UTF8 and **ANSI**.

Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 384000, 57600, **115200**, 230400, 460800, and 921600 (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

Parity

Options include **None**, Even, Odd, Mark and Space.

Stop Bits

Options include **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

The options include Disabled and **Enabled**.

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options include **Disabled** and Enabled.

Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options include **VT100**, LINUX, XTERMR6, SC0, ESCN and VT400.

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

Console Redirection EMS

This option sets console redirection to Disabled and **Enabled**.

▶Console Redirection Settings

Out-of-Band Mgmt Port

Terminal Type EMS

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100Plus, **VT-UTF8** and ANSI.

Bits Per Second EMS

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600 and **115200**, 230400, 460800, and 921600 (bits per second).

Flow Control EMS

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None**, Hardware RTS/CTS, Software Xon/Xoff.

Data Bits EMS

This feature is used to set the data transmission size for Console Redirection. The option is set to **8**.

Parity EMS

This feature is set to **None**. A parity bit is not sent with your data bits in transmission.

Stop Bits EMS

A stop bit indicates the end of a serial data packet. The option is set to 1 indicating the Stop Bit for standard serial data communication.

▶PCIe/PCI/PnP Configuration

This menu provides PCIe/PCI/PnP configuration settings and information.

PCI Bus Driver Version

PCI Devices Common Settings:

Above 4G Decoding

This setting Disables or **Enables** 64-bit capable devices ability to be decoded in above 4G address space (only if the system supports 64-bit PCI decoding). The options are Disabled and **Enabled**.

SR-IOV Support

If the system has SR-IOV capable PCIe devices, this setting will **Disabled** or Enabled the Single Root IO Virtualization Support for the system.

BME DMA Mitigation

Re-enable Bus Master Attribute disabled during PCI enumeration for PCI Bridges after SMM Locked. The options are **Disabled** and Enabled.

▶ACPI Settings

System ACPI Parameters.

▶South Bridge

USB Module Version

USB Devices:

Legacy USB Support

This feature enabled legacy USB support. The options are Enabled, **Disabled**, and Auto.

▶Trusted Computing

Configuration

Security Device Support

If this feature and the TPM jumper on the motherboard are both set to Enabled, onboard security devices will be enabled for TPM (Trusted Platform Module) support to enhance data integrity and network security. Please reboot the system for a change on this setting to take effect. The options are Disable and **Enable**.

▶UEFI Variables Protection

Password protection of Runtime Variables

This feature protects the NVRAM runtime variable with a password. The options are Disable and **Enable**.

▶Serial Port Console Redirection

COM0

Console Redirection

Select Enabled to enable console redirection support for a serial port specified by the user. The options are Disabled and **Enabled**. If set to Enabled, the following options become available.

▶Console Redirection Settings

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100Plus, VT-UTF8 and **ANSI**.

Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 384000, 57600, **115200**, 230400, 460800, and 921600 (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

Parity

Options include **None**, Even, Odd, Mark and Space.

Stop Bits

Options include **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

The options include Disabled and **Enabled**.

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options include **Disabled** and Enabled.

Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options include **VT100**, LINUX, XTERMR6, SC0, ESCN and VT400.

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

Console Redirection EMS

This option sets console redirection to Disabled and **Enabled**.

▶Console Redirection Settings

Out-of-Band Mgmt Port

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100Plus, **VT-UTF8** and ANSI.

Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600 and **115200**, 230400, 460800, and 921600 (bits per second).

Flow Control EMS

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None**, Hardware RTS/CTS, Software Xon/Xoff.

Data Bits EMS

This feature is used to set the data transmission size for Console Redirection. The option is set to **8**.

Parity EMS

This feature is set to **None**. A parity bit is not sent with your data bits in transmission.

Stop Bits EMS

A stop bit indicates the end of a serial data packet. The option is set to 1 indicating the Stop Bit for standard serial data communication.

▶PCI Subsystem Settings

PCI Bus Driver

PCI Devices Common Settings:

PCI Latency Timer

Use this feature to set the PCI latency timer register. The options are **32 PCI Bus Clocks**, 64 PCI Bus Clocks, 96 PCI Bus Clocks, 128 PCI Bus Clocks, 160 PCI Bus Clocks, 192 PCI Bus Clocks, 224 PCI Bus Clocks, and 248 PCI Bus Clocks.

PCI-X Latency Timer

Use this feature to set the PCI latency timer register. The options are **32 PCI Bus Clocks**, **64 PCI Bus Clocks**, 96 PCI Bus Clocks, 128 PCI Bus Clocks, 160 PCI Bus Clocks, 192 PCI Bus Clocks, 224 PCI Bus Clocks, and 248 PCI Bus Clocks.

VGA Palette Snoop

Set the VGA Palette Registers Snooping. The options are **Disabled** and Enabled.

PERR# Generation

Enable or disable the PCI Device to generate PERR#. The options are **Disabled** and Enabled.

SERR# Generation

Enable or disable the PCI Device to generate SERR#. The options are **Disabled** and Enabled.

Above 4G Decoding

This feature enables 64-bit devices to support addresses above 4G. This feature is available only when the system supports 64 bit PCI decoding. The options are Disabled and **Enabled**.

SR-IOV Support

This feature enables Single Root IO Virtualization (SR-IOV). This feature is available only when the system supports SR-IOV. The options are **Disabled** and Enabled.

BME DMA Mitigation

This feature re-enables the Bus Master Attribute disabled during PCI enumeration. The options are **Disabled** and Enabled.

▶PCI Express Settings

PCI Express Device Register Settings

Relaxed Ordering

This feature enables or disables PCIe relaxes ordering. The options are Disabled and **Enabled**.

Extended Tag

This feature allows a device to use the 8-bit tag field as a requester. The options are **Disabled** and Enabled.

No Snoop

This feature enables or disables the no snoop option on a PCIe device. The options are Disabled and **Enabled**.

Maximum Payload

This feature sets the maximum payload of the PCIe device. The options are **Auto**, 128 Bytes, 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, and 4096 Bytes.

Maximum Read Request

This feature sets the maximum read request size of the PCIe device. The options are **Auto**, 128 Bytes, 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, and 4096 Bytes.

PCI Express Link Register Settings

ASPM Support

This feature sets the ASPM level. Enabling ASPM may cause some PCIe devices to fail. The options are **Disabled**, Auto, and Force L0s.

Extended Synch

This feature sets the extended synchronization patterns. The options are **Disabled** and Enabled.

Link Training Retry

This feature sets the number of Retry attempts when training a link. The options are Disabled, 2, 3 and **5**.

Link Training Timeout (uS)

This feature defines the number of microseconds the software will wait before polling the Link Training bit in the Link Status register. The value can range from 10 to 10,000 microseconds (uS).

Unpopulated Links

This feature allows disabling unpopulated PCIe links in order to save power. The options are **Keep Link ON** and Disable Link.

▶PCI Express GEN 2 Settings

PCI Express GEN2 Device Register Settings

Completion Timeout

This feature allows system software to modify the Completion Timeout value. The options are **Default**, Shorter, Longer and Disabled.

ARI Forwarding

This feature disables the traditional device number field and permits access to extended functions in an ARI device. The options are **Disabled** and Enabled.

AtomicOp Requester Enable

This feature initiates the AtomicOp Requests when the Bus Master Enable bit is the Command Register Bit. The options are **Disabled** and Enabled.

AtomicOp Egress Blocking

This feature initiates the AtomicOp Requests when the Bus Master Enable bit is the Command Register Bit. The options are **Disabled** and Enabled.

IDO Request Enable

This feature enables the initiation of the ID-Based Ordering (IDO) bit requests. The options are **Disabled** and Enabled.

IDO Completion Enable

This feature enables the initiation of the ID-Based Ordering (IDO) bit requests. The options are **Disabled** and Enabled.

LTR Mechanism Enable

This feature enables the Latency Tolerance Mechanism. The options are **Disabled** and Enabled.

End-End TLP Prefix Blocking

This feature enables the End-End TPL prefix blocking. The options are **Disabled** and Enabled.

PCI Express GEN2 Link Register Settings

Target Link Speed

This feature sets an upper limit on Link operational speed by restricting the values advertised by the Upstream component in its training sequence. If set to Auto, the hardware initialized data will be used. The options are **Auto,** Force to 2.5 GT/s, Force to 5.0 GT/s, Force to 8.0 GT/s, Force to 16.0 GT/s, and Force to 32.0 GT/s

Clock Power Management

This feature allows a device to use the CLKREQ# signal for power management of the Link clock. The options are **Disabled** and Enabled.

Compliance SOS

This feature will force LTSSM to send SKP Ordered Sets between sequences when sending compliance or modified compliance pattern. The options are **Disabled** and Enabled.

Hardware Autonomous Width

When set to Disabled, this feature disables the hardware's ability to change link width for correcting unstable link operation. The options are Disabled and **Enabled**.

Hardware Autonomous Speed

When set to Disabled, this feature disables the hardware's ability to change link speed for correcting unstable link operation. The options are Disabled and **Enabled**.

▶USB Configuration

USB Configuration

USB Module Version

USB Controllers: 1 XHCIs

USB Devices: 2 Keyboard, 1 Mouse, 3 Hubs

XHCI Hand-Off

This is a work-around solution for operating systems that do not support XHCI (Extensible Host Controller Interface) hand-off. The XHCI ownership change should be claimed by the XHCI driver. The options are Enabled and **Disabled**.

USB Mass Storage Driver Support

This feature enables the USB mass storage driver support. The options are Disabled and **Enabled**.

USB hardware delays and time-outs:

USB transfer time-out

This feature sets the time-out value for control, bulk, and interrupt transfers. The options are 1 sec, 5 sec, 10 sec, and **20 sec**.

Device reset time-out

This feature sets the mass storage device Start Unit command time-out. The options are 10 sec, **20 sec**, 30 sec, and 40 sec.

Device power-up delay

This feature sets the maximum time the device will take before it reports itself to the Host Controller. The options are **Auto** and Manual.

▶Network Stack Configuration

Network Stack

This feature enables the UEFI network stack. The options are Disabled and **Enabled**.

IPv4 PXE Support

This feature enables the IPv4 PXE boot. The options are Disabled and **Enabled**.

IPv4 HTTP Support

This feature enables the IPv4 HTTP boot. The options are **Disabled** and Enabled.

IPv6 PXE Support

This feature enables the IPv6 PXE bootт. The options are **Disabled** and Enabled.

IPv6 HTTP Support

This feature enables the IPv6 HTTP boot. The options are **Disabled** and Enabled.

PXE boot wait time

PXE Media detect count

▶NVMe Configuration

NVMe Configuration

▶CPU Configuration

CPU Configuration

Number of processors

Processor type

Number of cores

Number of Active cores

Processor clock

L1 Instruction cache

L1 Data cache

L2 cache

Processor type

Number of cores

Number of cores Enabled

Processor Speed

L1 Instruction cache

L1 Data cache

L2 cache

▶Nvidia Network Adapter - 94:6D:AE:C7:77:14

▶Firmware Image Properties

Family Firmware

This item displays the firmware version of the Nvidia Network Adapter used in the system.

EFI Version

This item displays the EFI version of the Nvidia Network Adapter used in the system.

▶Power Configuration

RT PPS ENABLED ONPOWERUP

This item enables or disables the FT PPS on power up. The default is **Disabled**.

▶Device Level Configuration

Virtualization Mode

This item specifies the type of virtualization used by the controller on all ports. The options are None and **SR-IOV**.

PCI Virtual Functions Advertised

This feature configures the number of virtual functions supported on the device.

▶BlueField Internal CPU Configuration

Internal CPU Model

This feature allows the user to select the model for the internal CPU. The options are SEPARATED HOST and **EMBEDDED CPU**.

Internal CPU Page Supplier

This feature defines the owner that is providing the ICM pages to the external host functions. The options are **ECPF** and EXT HOST PF.

Internal CPU Eswitch Manager

This feature defines the owner of the embedded switch responsibilities. The options are **ECPF** and EXT HOST PF.

Internal CPU IB Vport0

This feature defines the owner of the IB Vport0 responsibilities. The options are **Enabled** and Disabled.

Internal CPU Offload Engine

This feature defines the whether the internal CPU is used as an offload engine. The options are **ECPF** and EXT HOST PF.

VMware Distributed Services Engine (DPU)

This feature enables or disables the VMware Distributed Services Enginer (DPU). The options are **Disabled** and Enabled.

Blink LEDs

This feature specify the number of seconds the LEDs on the physical network port should blink.

Device Name

This feature displays the official product name of the device.

Chip Type

This feature displays the chip type.

PCI Device ID

This feature displays the PCI Device ID of the controller.

PCI Address

This feature displays the PCI Device ID of the controller.

Link Status

This feature displays the Link Status of the controller.

Link Speed

This feature displays the Link Speed of the controller.

Network Link Type

This feature displays the Network Link Type of the controller. The options are InfiniBand and **Ethernet**.MAC Address

This feature displays the MAC Address of the controller.

Virtual MAC Address

This feature displays the Virtual MAC Address of the controller.

Socket Direct Operation

This feature displays the Socket Direct Operation of the controller. The option is **Enabled**.

▶MAC: 946DAEC77714---IPv4 Network Configuration

Configured

This feature indicates whether network address configured successfully or not.

Save Changes and Exit

This feature save the changes and exits.

▶Nvidia Network Adapter - 94:6D:AE:C7:77:15

▶Firmware Image Properties

Family Firmware

This item displays the firmware version of the Nvidia Network Adapter used in the system.

EFI Version

This item displays the EFI version of the Nvidia Network Adapter used in the system.

▶Power Configuration

RT PPS ENABLED ONPOWERUP

This item enables or disables the FT PPS on power up. The default is **Disabled**.

▶Device Level Configuration

Virtualization Mode

This item specifies the type of virtualization used by the controller on all ports. The options are None and **SR-IOV**.

PCI Virtual Functions Advertised

This feature configures the number of virtual functions supported on the device.

▶BlueField Internal CPU Configuration

Internal CPU Model

This feature allows the user to select the model for the internal CPU. The options are SEPARATED HOST and **EMBEDDED CPU**.

Internal CPU Page Supplier

This feature defines the owner that is providing the ICM pages to the external host functions. The options are **ECPF** and EXT HOST PF.

Internal CPU Eswitch Manager

This feature defines the owner of the embedded switch responsibilities. The options are **ECPF** and EXT HOST PF.

Internal CPU IB Vport0

This feature defines the owner of the IB Vport0 responsibilities. The options are **Enabled** and Disabled.

Internal CPU Offload Engine

This feature defines the whether the internal CPU is used as an offload engine. The options are **ECPF** and EXT HOST PF.

VMware Distributed Services Engine (DPU)

This feature enables or disables the VMware Distributed Services Enginer (DPU). The options are **Disabled** and Enabled.

Blink LEDs

This feature specify the number of seconds the LEDs on the physical network port should blink.

Device Name

This feature displays the official product name of the device.

Chip Type

This feature displays the chip type.

PCI Device ID

This feature displays the PCI Device ID of the controller.

PCI Address

This feature displays the PCI Device ID of the controller.

Link Status

This feature displays the Link Status of the controller.

Link Speed

This feature displays the Link Speed of the controller.

Network Link Type

This feature displays the Network Link Type of the controller. The options are InfiniBand and **Ethernet**.

MAC Address

This feature displays the MAC Address of the controller.

Virtual MAC Address

This feature displays the Virtual MAC Address of the controller.

Socket Direct Operation

This feature displays the Socket Direct Operation of the controller. The option is **Enabled**.

▶MAC:946DAEC77715---IPv4 Network Configuration

Configured

This feature indicates whether network address configured successfully or not.

Save Changes and Exit

This feature save the changes and exits.

▶Tls Auth Configuration

This submenu allows the user to configure Transport Layer Security (TLS) settings.

▶Server CA Configuration

▶Enroll Certification

▶Enroll Certification Using File

Use this feature to enroll certification from a file.

Certification GUID

Use this feature to enroll to input the certification GUID.

▶Commit Changes and Exit

Use this feature to save all changes and exit TLS settings.

▶Discard Changes and Exit

Use this feature to enroll to discard all changes and exit TLS settings.

▶Delete Certification

Use this feature to delete certification. The options include **Disabled** and Enabled.

▶RAM Disk Configuration

Disk Memory Type

Use this option to specify the type of memory to use from available memory pool in system to create a disk, including **Boot Service Data** and Reserved.

▶Delete raw

Use this option to create a raw RAM disk.

▶Delete from file

Use this option to create a RAM disk from a given file.

Created RAM disk list:

Remove selected RAM disk(s)

Use this option to remove the selected RAM disks.

▶NVIDIA Configuration

Serial Port Configuration

Use this option to select serial port configuration. The options are Port Disabled, **Console Enabled - SBSA**, and Serial Debug Enabled - SBSA.

▶Boot Configuration

Enable ACPI Timer

Use this option to enable or disable ACPI timer. The options are **Disabled** and Enabled.

▶Grace Configuration

EGM

Use this option to enable or disable EGM mode. The options are **Disabled** and Enabled.

EGM Hypervisor reserved memory

UPHY spread spectrum

Use this option to enable or disable UPHY spread spectrum. The options are Disabled and **Enabled**.

4K ATS Page Granule

Use this option to enable or disable 4K ATS page granules. The options are **Disabled** and Enabled.

Performance Version

Use this feature to specify the desired performance version.

GPU SMMU Bypass Enable

Use this option to allow GPU SMMI bypass when the kernel SMMU driver is configured to work in passthrough mode. The options are Disabled and **Enabled**.

▶Socket 0 configuration

UPHY 0 config

Use this option to configure PCIe C0+C1. The options are **Disabled**, PCIe C0 - x16, and PCIe C0 x8 - C1 x8.

▶PCIe C0 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C1 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 1 config

Use this option to configure PCIe C2+C3. The options are Disabled, **PCIe C2 - x16**, and PCIe C2 x8 - C3 x8.

▶PCIe C2 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C3 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 2 config

Use this option to configure PCIe C4+C5+NVLINK. The options are Disabled, **PCIe C4 - x16**, and PCIe C4 x8 - C5 x8, PCIe C4 x8 - C5 x8, and PCIe C5 x4 - NVLINK x12.

▶PCIe C4 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C5 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 3 config

Use this option to configure PCIe C6+C7+NVLINK. The options are Disabled, **PCIe C6 - x16**, and PCIe C6 x8 - C7 x8, PCIe C7 x4 - NVLINK x12.

▶PCIe C6 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C7 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 4 config

Use this option to configure PCIe C8. The options are Disabled, PCIe C8 - x2, and **PCIe C0 x1 - USB**.

▶PCIe C8 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, x8, x4, **x2**, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 5 config

Use this option to configure PCIe C9. The options are **Disabled**, and PCIe C9 - x2.

▶PCIe C9 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, x8, x4, **x2**, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶Socket 1 configuration EGM

UPHY 0 config

Use this option to configure PCIe C0+C1. The options are **Disabled**, PCIe C0 - x16, and PCIe C0 x8 - C1 x8.

▶PCIe C0 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C1 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 1 config

Use this option to configure PCIe C2+C3. The options are Disabled, **PCIe C2 - x16**, and PCIe C2 x8 - C3 x8.

▶PCIe C2 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C3 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 2 config

Use this option to configure PCIe C4+C5+NVLINK. The options are Disabled, **PCIe C4 - x16**, and PCIe C4 x8 - C5 x8, PCIe C4 x8 - C5 x8, and PCIe C5 x4 - NVLINK x12.

▶PCIe C4 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C5 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 3 config

Use this option to configure PCIe C6+C7+NVLINK. The options are Disabled, **PCIe C6 - x16**, and PCIe C6 x8 - C7 x8, PCIe C7 x4 - NVLINK x12.

▶PCIe C6 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are **x16**, x8, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶PCIe C7 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, **x8**, x4, x2, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 4 config

Use this option to configure PCIe C8. The options are Disabled, PCIe C8 - x2, and **PCIe C0 x1 - USB**.

▶PCIe C8 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, x8, x4, **x2**, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

UPHY 5 config

Use this option to configure PCIe C9. The options are **Disabled**, and PCIe C9 - x2.

▶PCIe C9 Configuration

Max PCIe speed

Set the maximum PCIe speed. The options are **Gen5**, Gen4, Gen3, Gen2, and Gen1.

Max PCIe width

Set the max PCIe width. The options are x16, x8, x4, **x2**, and x1.

Enable ASPM L1

This feature configures ASPM L1. The options are Disabled and **Enabled**.

Enable ASPM L1.1

This feature configures ASPM L1.1. The options are **Disabled** and Enabled.

Enable ASPM L1.2

This feature configures ASPM L1.2. The options are **Disabled** and Enabled.

PCI-PM L1.2 support

This feature configures PCI-PM L1.2. The options are **Disabled** and Enabled.

Supports ClkReq

Set the availability of the ClkReq signal from RP to EP. The options are **Disabled** and Enabled.

Disable DLFE

This feature configures DL feature exchange. The options are **Disabled** and Enabled.

Enable ECRC

This feature enables the ECRC in the controllers hierarchy. The options are **Disabled** and Enabled.

Disable DPC at RP

This feature disables DPC at RP if a DPC capable PCIe switch is connected to RP. The options are **Disabled** and Enabled.

▶Product Information

Product Asset Tag

Asset Tag Protection

Use this option to lock product asset tag information. The options are **Disabled** and Enabled.

▶VLAN Configuration (MAC:946DAEC77714)

▶Enter Configuration Menu

Create new VLAN

VLAN ID

This feature displays the VLAN ID of a new VLAN. The range of the value is from 0 to 4094.

Priority

This feature displays the 802.1Q Priority of the new VLAN. The range of the value is from 0 to 7.

Add VLAN

Configured VLAN list

Use this feature remove the VLAN from the configured VLAN list. The options are **Disabled** and Enabled.

Remove VLAN

▶MAC:946DAEC77714---IPv6 Network Configuration

▶Enter Configuration Menu

Interface Name

Interface Type

MAC address

Host address

Route Table

Gateway addresses

DNS addresses

Interface ID

DAD Transmit Count

Policy

Save Changes and Exit

▶VLAN Configuration (MAC:946DAEC77715)

▶Enter Configuration Menu

Create new VLAN

VLAN ID

This feature displays the VLAN ID of a new VLAN. The range of the value is from 0 to 4094.

Priority

This feature displays the 802.1Q Priority of the new VLAN. The range of the value is from 0 to 7.

Add VLAN

Configured VLAN list

Use this feature remove the VLAN from the configured VLAN list. The options are **Disabled** and Enabled.

Remove VLAN

▶MAC:946DAEC77715---IPv6 Network Configuration

▶Enter Configuration Menu

Interface Name

Interface Type

MAC address

Host address

Route Table

Gateway addresses

DNS addresses

Interface ID

DAD Transmit Count

Policy

Save Changes and Exit

▶Driver Health

▶Intel(R) 10GbE Open Source 8.1.04 AArch64

▶Driver At Handle 659D4D18

▶Mellanox ConnectX Driver

Controller 641F7F18 Child 0 Healthy

Controller 641F7F18 Child 63A20E98 Healthy

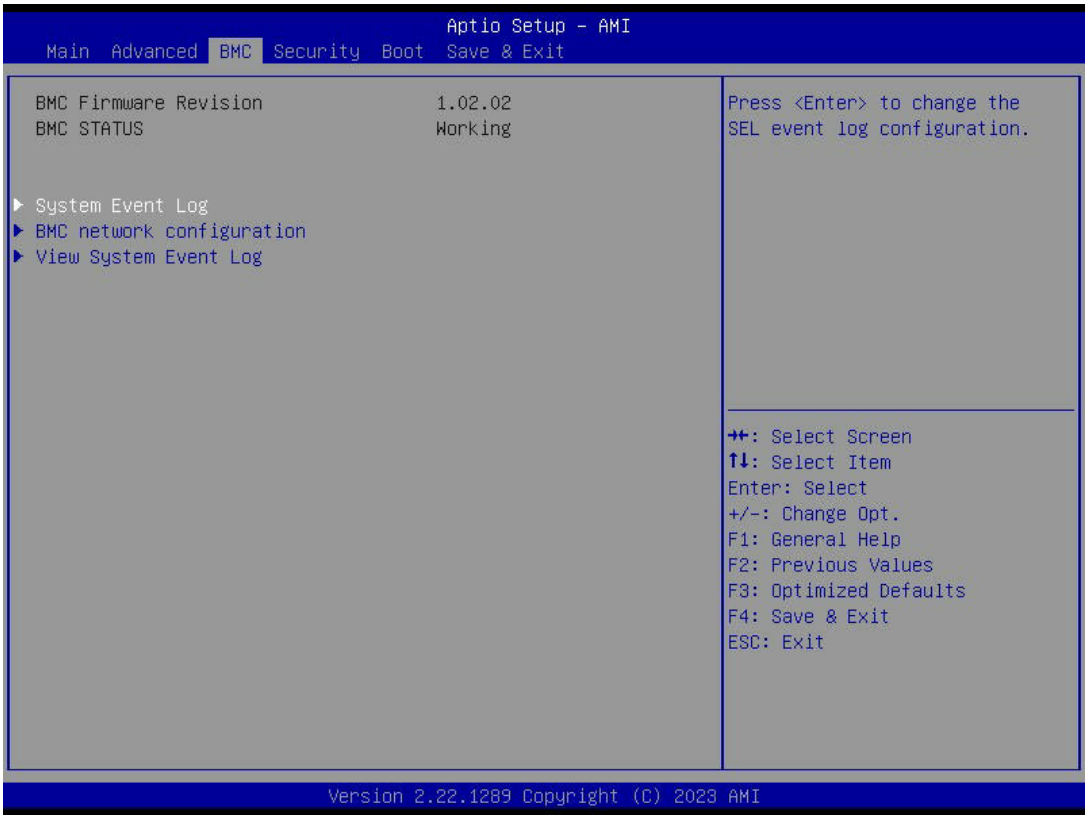
▶Mellanox ConnectX Driver

Controller 641F7298 Child 0 Healthy

Controller 641F7298 Child 6388AF98 Healthy

8.4 BMC

This tab allows you to configure the following Chipset settings for the system.



BMC Firmware Revision

BMC STATUS

FRB-2 Timer

This feature enables or disables FRB-2 timer. The options are **Enabled** and Disabled.

FRB-2 Timer timeout

This setting configures the FRB-2 Timer expiration. The value can range between 1 and 30 minutes.

FRB-2 Timer Policy

This setting configures how the system should respond if the FRB-2 Timer expires. The options are **Do Nothing**, Reset, Power Down, and Power Cycle.

OS Watchdog Timer

This setting starts a BIOS timer which can only be shut off by Management Software after the OS loads. The options are Enabled and **Disabled**.

OS Wtd Timer Timeout

OS Wtd Timer Policy

Serial Mux

This setting enables or disables Serial Mux configuration. The options are Enabled and **Disabled**.

▶System Event Log

Enabling/Disabling Options

SEL Components

Set this feature to enable or disable event logging for error codes during boot. The options are Disabled and **Enabled**.

Erasing Settings

Erase SEL

This feature erases SEL. The options are **No**; Yes, On next reset; and Yes, On every reset.

When SEL if Full

This feature tells the system what to do when SEL is full. The options are **Do Nothing** and Erase Immediately.

Custom EFI Logging Options

Log EFI Status Codes

This feature selects what kind of status code to log. The options are Disabled, Both, **Error code**, and Progress code.

▶View FRU information

FRU Information

System Manufacturer

System Product Name

System Version

System Serial Number

Board Manufacturer

Board Product Name

Board Part Number

Board Serial Number

Chassis Manufacturer

Chassis Part Number

Chassis Serial Number

SDR Version

System UUID

▶Bmc self test log

Log area usage = 00 out of 20 logs

Erase Log

This feature selects when to erase logs. The options are **Yes, On every reset** and No.

When log is full

This feature selects what to do when the log is full. The options are **Clear Log** and Do not log any more.

Empty Log

▶BMC network configuration

--BMC network configuration--

****

Configure IPv4 support

****

Lan channel 1

Configuration Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, DynamicBmcDhcp, and DynamicBmcNonDhcp.

Current Configuration Address source

Station IP address

Subnet mask

Station MAC address

Router MAC address

Lan channel 2

Configuration Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, DynamicBmcDhcp, and DynamicBmcNonDhcp.

Current Configuration Address source

Station IP address

Subnet mask

Station MAC address

Router MAC address

****

Configure IPv6 support

****

Lan channel 1

IPv6 Support

This feature enables or disables LAN1 IPv6 Support. The options are **Enabled** and Disabled.

Configuration Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, DynamicBmcDhcp, and DynamicBmcNonDhcp.

Current Configuration Address source

Station IPv6 address

Prefix Length

IPv6 address status

IPv6 DHCP Algorithm

Configuration Router Lan1 Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, and DynamicBmcDhcp.

Current Router Configuration Address source

IPv6 Router IP Address

IPv6 Router Prefix Value

Lan channel 2

IPv6 Support

This feature enables or disables LAN1 IPv6 Support. The options are **Enabled** and Disabled.

Configuration Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, DynamicBmcDhcp, and DynamicBmcNonDhcp.

Current Configuration Address source

Station IPv6 address

Prefix Length

IPv6 address status

IPv6 DHCP Algorithm

Configuration Router Lan2 Address source

This feature configures the LAN parameter statically or dynamically. The options are **Unspecified**, Static, and DynamicBmcDhcp.

Current Router Configuration Address source

IPv6 Router IP Address

IPv6 Router Prefix Length

IPv6 Router Prefix Value

****

Configure VLAN support

****

Lan channel 1

VLAN Support

This feature enables VLAN support to specify the 802.1q VLAN ID. The options are Enabled, Disabled, and **Unspecified**.

Current Configuration Address source

VLAN ID

VLAN Priority

Lan channel 2

VLAN Support

This feature enables VLAN support to specify the 802.1q VLAN ID. The options are Enabled, Disabled, and **Unspecified**.

Current Configuration Address source

VLAN ID

VLAN Priority

▶View System Event Log

This feature allows the user to retrieve all system event logs.

▶BMC User Settings

BMC User Settings

▶Add User

BMC Add User Details

User Name

User Password

User Access

Channel No

User Privilege Limit

▶Delete User

BMC Delete User Details

User Name

User Password

▶Change User Settings

BMC Change User Settings

User Name

User Password

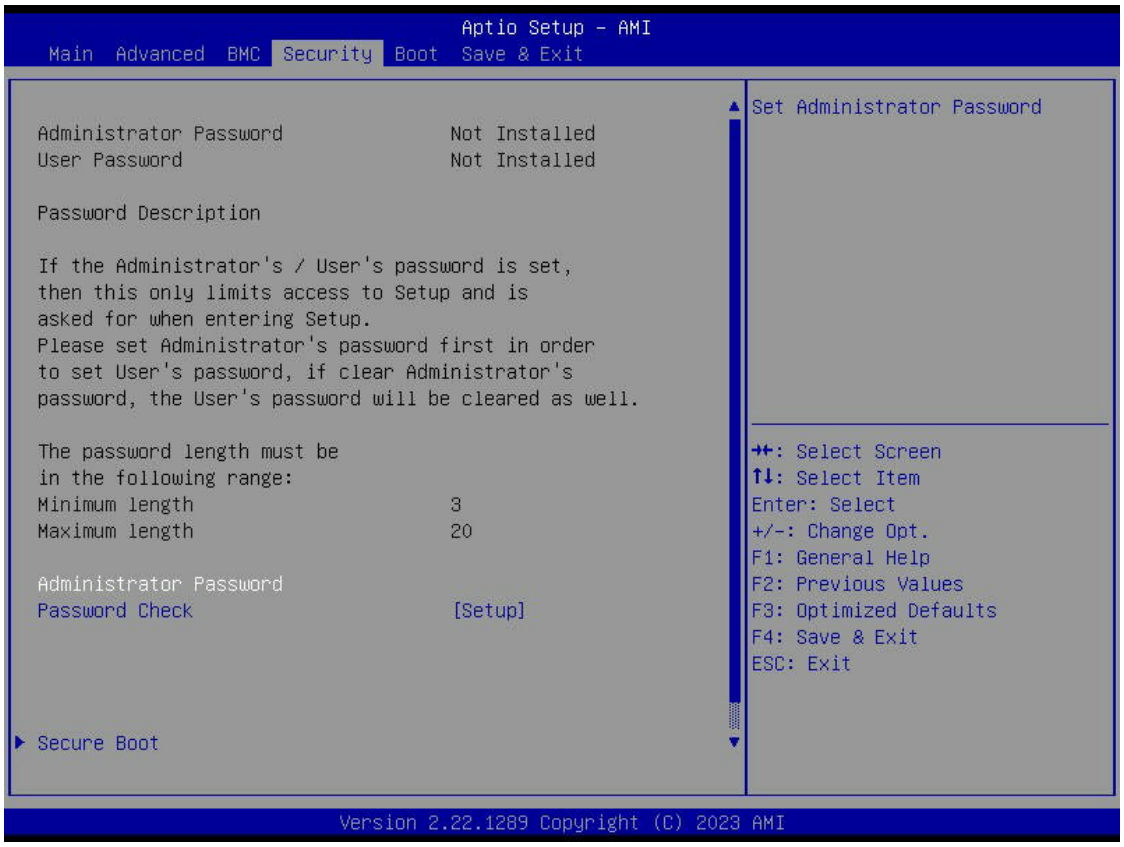
User Access

Channel No

User Privilege Limit

8.5 Security

This tab allows you to configure the following Security settings for the system.



Password Description

The section describes the Administrator's password and the User's password.

Administrator Password

This feature allows the user to set the Administrator Password.

User Password

This feature allows the user to set the User Password.

▶Secure Boot

System Mode

Secure Boot

This option allows you to specify when the Platform Key (PK) is enrolled. When enabled, the System Mode is user deployed, and the CSM function is disabled. The options include **Disabled** and Enabled.

Secure Boot Mode

Use this item to select the secure boot mode. The options are **Standard** and Custom.

▶Restore Factory Keys

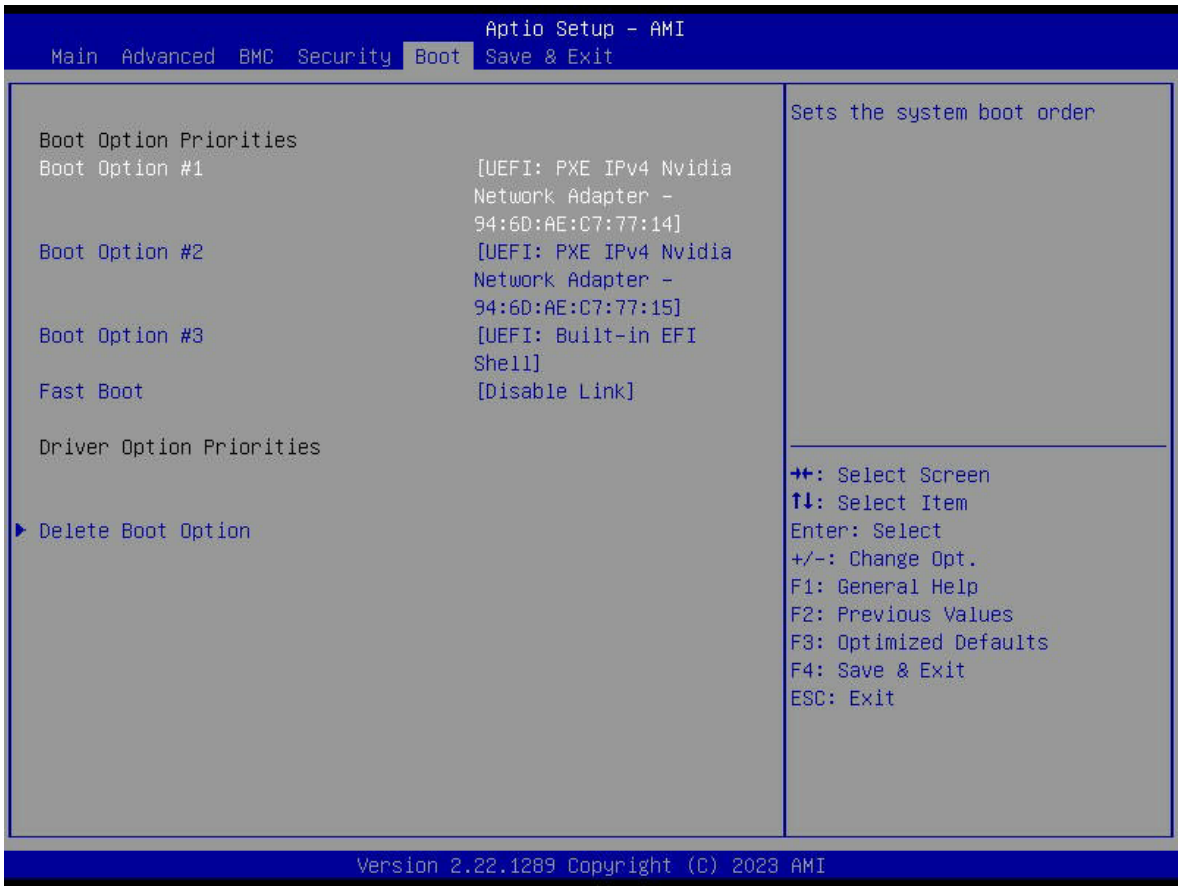
▶Reset to Setup Mode

▶Expert Key Management

TCG Storage Security Configuration:

8.6 Boot

This tab allows the user to configure the following boot settings for the system.



Boot Option Priorities

Boot Option #1

This option sets the system boot order. The options are UEFI: Built-in EFI Shell, **UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:14**, UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:15, and Disabled.

Boot Option #2

This option sets the system boot order. The options are UEFI: Built-in EFI Shell, UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:14, **UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:15**, and Disabled.

Boot Option #3

This option sets the system boot order. The options are **UEFI: Built-in EFI Shell**, UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:14, UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:15, and Disabled.

Fast Boot

This option sets the minimum number of devices required to launch the active boot option. The choices are **Disable Link** and Enabled.

Driver Option Priorities

▶Add New Boot Option

Add New Boot Option

Add boot option

This option sets the boot option. Enter a string for the name of the new boot option.

Path for boot option

This option sets the filepath of the boot option. Enter a string of the filepath.

Boot option File Path

Create

▶Delete Boot Option

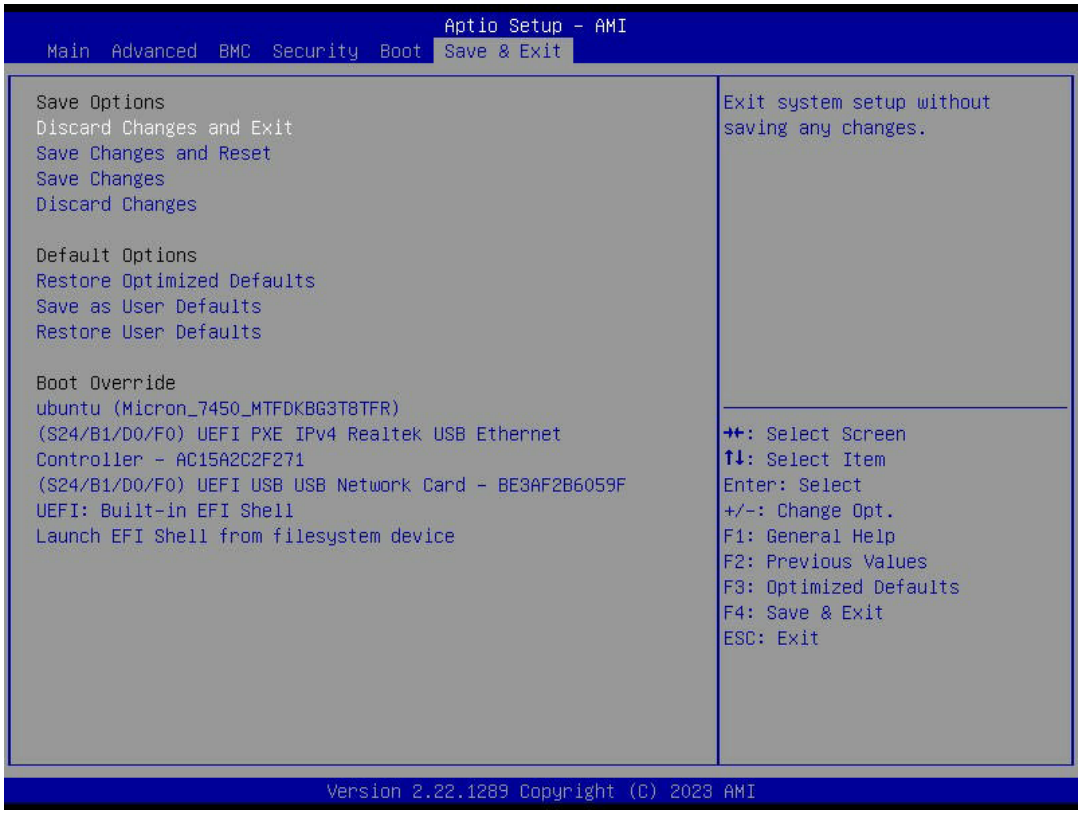
Delete Boot Option

Delete Boot Option

This option deletes a boot option. The options are UEFI: Built-in EFI Shell, **UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:14**, UEFI: PXE IPv4 Nvidia Network Adapter - 94:6D:AE:C7:77:15 and Disabled.

8.7 Save & Exit

Select the Save & Exit tab to enter the Save & Exit BIOS Setup screen.



Save Options

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Save Changes and Reset

Select this option to reset the system after saving the changes.

Save Changes

After completing the system configuration changes, select this option to save the changes you have made. This will not reset (reboot) the system.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS utility Program.

Default Options

Restore Defaults

To set this feature, select Restore Defaults from the Save & Exit menu and press <Enter>. These are factory settings designed for maximum system stability, but not for maximum performance.

Save as User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables the user to save any changes to the BIOS setup for future use.

Restore User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

Boot Override Section

Listed in this section are other boot options for the system (i.e., UEFI: Built-in EFI Shell). Select an option and press <Enter>. Your system will boot to the selected boot option.

Appendix A

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition



Warning! This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

ا كً ف حالة وٌكي أى تتسبب ف اصابة جسذ ةٌ هذا الزهز عٌ خطز !تحذ زٌ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال أٌجوة عي الذوائز
الكهزبائ ةٍ
وكي على درا ةٌ بالووارسات البقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب إٍ الو صٌص ف هًا ةٌ كل تحذ زٌ للعشر تزجوتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions



Warning! Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker



Warning! This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

警告

此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי
המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250VDC, 20A

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة التي تم تثبيتها في
المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다.
보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 250V, 20A.

Power Disconnection Warning

Warning! The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components (except for hot-swap components).



電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、

システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

אזהרה מפני ניתוק חשמלי

!אזהרה

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק
.לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים

يجب فصم اننظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد
انطاقت قبم
انصل إنى اىمناطق انداخهيت نههيكم نتثبيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation



Warning! Only authorized personnel and qualified service persons should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Nur autorisiertes Personal und qualifizierte Servicetechniker dürfen dieses Gerät installieren, austauschen oder warten..

¡Advertencia!

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

Attention

Seul le personnel autorisé et le personnel de maintenance qualifié doivent être autorisés à installer, remplacer ou entretenir cet équipement..

אזהרה!

יש לאפשר רק צוות מורשה ואנשי שירות מוסמכים להתקין, להחליף או לטפל בציוד זה.

ينبغي السماح فقط للموظفين المعتمدين وأفراد الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته.

경고!

승인된 직원과 자격을 갖춘 서비스 담당자만이 이 장비를 설치, 교체 또는 서비스할 수 있습니다.

Waarschuwing

Alleen geautoriseerd personeel en gekwalificeerd onderhoudspersoneel mag deze apparatuur installeren, vervangen of onderhouden..

Restricted Area



Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת
'כלי אבטחה בלבד)מפתח, מנעול וכד.)

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .
،مَكن انصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling



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

電池の取り扱い

バッテリーを間違ったタイプに交換すると爆発の危険があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

如果更换的电池类型不正确，则存在爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

如果更換的電池類型不正確，則有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

WARNUNG

Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

ATTENTION

Il existe un risque d'explosion si la batterie est remplacée par un type incorrect. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

ADVERTENCIA

Existe riesgo de explosión si la batería se reemplaza por un tipo incorrecto. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה!

קיימת סכנת פיצוץ אם הסוללה תוחלף בסוג שגוי. יש להחליף

את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح.
اسحبذال البطارية
فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

배터리를 잘못된 종류로 교체하면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

WAARSCHUWING

Er bestaat explosiegevaar als de batterij wordt vervangen door een verkeerd type. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies



Warning! This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告
此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד

אזהרה!

ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן

את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage



Warning! Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי

אזהרה!

קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر مه التيار الكهزبائي أوالطاقة المجبدة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

경고!
시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다. 서비스 작업 시 주의하십시오.

Waarschuwing
Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes



Warning! Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠
機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告
设备安装必须符合本地与本国电气法规。

警告
設備安裝必須符合本地與本國電氣法規。

Warnung
Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!
La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention
L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقاويه المحلية والسطية المتعلقة
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal



Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللائح البطنية عند

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Fan Warning



Warning! Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファンの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'ecart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה!

חלקים נעים מסוכנים. התרחק מלהבי המאוורר בפעולהכאשר מסירים את חלקי
המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את
האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطرة. ابتعد عن شفرات المروحة المتحركة.من الممكن أن
المراوح لا تزال تدورعند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع
.ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter



Warning! When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを 該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSAマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器，包含遵照当地法规和安全要求的合规的电源线尺寸和插头.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止
使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器，包含遵照當地法規和安全要求的合規的電源線尺寸和插頭.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止
使用未經UL或CSA認證的線材。 (線材上會顯示UL/CSA符號)。

Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapater, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

AC ימאתמו סיילמשח סילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC סימאתמו סיקפס ,סילבכב שמתשהל שי ,רצומה תא סיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכנ הדימ ללוכ ,תוימוקמה תוחיטבה תושירדל ומאתוה רשאו ,הנקתהה למשחה יריש כמב שומישה יקוחל סאתהב .ילמשח רצק וא הלקתל סורגל לולע ,רחא גוסמ סאתמ וא לבכ לש דוק סהילע עיפומ רשאכ) CSA-ב וא UL -ב סיכמסומה סילבכב שמתשהל רוסיא סייק ,תוחיטבה יקוחו .דבלב Supermicro י"ע סאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA)

تحذير!

عند تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة أو قم بشراء الكابلات الكهربائية ومحولات التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية بما في ذلك حجم الموصل والقابس السليم. استخدام أي كابلات ومحولات أخرى قد يتسبب في عطل أو حريق. يحظر قانون السلامة للأجهزة الكهربائية واستخدام الكابلات المعتمدة من قبل UL أو CSA لأي منتجات أخرى غير المعينة والمحددة من قبل Supermicro. والتي تحمل علامة (UL/CSA) مع أي معدات

전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굵기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

Appendix B

System Specifications

Processors (per node)

Dual processors
NVIDIA Grace™ CPU Superchip
Embedded 480 GB ECC LPDDR5 with up to 1 TB/s throughput
Note: Refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset (per node)

System on Chip (SoC)

BIOS

256 Mb SPI AMI BIOS® SM Flash UEFI BIOS
ACPI 6.4, SMBIOS 3.5.0, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection Support

Storage Drives (per node)

Supports two E1.S NVMe drives
Two M.2 NVMe slots
(M.2 is not recommended to be used as a storage drive. It is recommended to use as an OS boot drive.)

PCI Expansion Slots (per node)

Two PCIe 5.0 x16 slots (one HHFL, one FHFL)

Input/Output (per node)

One RJ45 1 GbE Dedicated IPMI LAN port
One rear USB port
One Mini DisplayPort

Motherboard

G1SMH; 14" (W) x 10" (L) (355.6 x 254 mm)

Chassis

CSE-MG102TS-R000NDFP-2N, 1U Rackmount, 1.75" x 17.33" x 37" (44 x 440 x 940 mm) (H x W x D)

System Cooling

Nine counter-rotating, heavy-duty fans with optimal fan speed control

Power Supply

Model: PWS-2K71A-1R, two 2000 W redundant 80 Plus Titanium level power supply modules
AC Input
  2700 W: 200-240 Vac / 50-60 Hz
  2700 W: 240-240 Vdc / 50-60 Hz (for CQC only)

+12 V
  Max: 225 A / Min: 0 A (200 - 240 Vac)
  Max: 225 A / Min: 0 A (240 - 240 Vdc)
12 VSB
  Max: 3.5 A / Min: 0 A

Operating Environment

Operating Temperature: 10ºC to 35ºC (50ºF to 95ºF)
Non-operating Temperature: -40ºC to 60ºC (-40ºF to 140ºF)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

Regulatory Compliance

FCC, ICES, CE, UKCA, VCCI, RCM, NRTL, CB

Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive)
Electromagnetic Compatibility Regulations 2016
FCC Part 15 Subpart B
ICES-003
VCCI-CISPR 32
AS/NZS CISPR 32
BS/EN 55032
BS/EN 55035
CISPR 32
CISPR 35
BS/EN 61000-3-2
BS/EN 61000-3-3
BS/EN 61000-4-2
BS/EN 61000-4-3
BS/EN 61000-4-4
BS/EN 61000-4-5
BS/EN 61000-4-6
BS/EN 61000-4-8
BS/EN 61000-4-11
Product Safety: 2014/35/EU (LVD Directive)
UL/CSA 62368-1 (USA and Canada)
Electrical Equipment (Safety) Regulations 2016
IEC/BS/EN 62368-1
Environment:
Delegated Directive (EU) 2015/863
Directive 2011/65/EU (RoHS)
REACH Regulation EC 1907/2006
WEEE Directive 2012/19/EU
California Proposition 65
Warning! This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. “Perchlorate Material-special handling may apply.
See "www.dtsc.ca.gov/hazardouswaste/perchlorate".

General Data Center Environmental Specifications

Particulate contamination specifications

Air filtration: Data centers must be kept clean to Class 8 of ISO 14644-1 (ISO 2015). The air entering the data center should be filtered with a MERV 11 filter or better. The air within the data center should be continuously filtered with a MERV 8 filter or better.

Conductive dust: Air should be free of conductive dust, zinc whiskers, or other conductive particles.

Corrrosive dust: Air should be free of corrosive dust.

Gaseous* contamination specifications

Copper coupon corrosion rate: <300 Å/month per class G1 as defined by ANSI.ISA71.04-2013, referenced by ASHRAE TC 9.9

Silver coupon corrosion rate: <200 Å/month per class G1 as defined by ANSI.ISA71.04-2013, referenced by ASHRAE TC 9.9

*If testing with silver or copper coupons results in values less that 200 Å/month or 300 Å/month, respectively, then operating up to 70% relative humidity (RH) is acceptable. If the testing shows corrosion levels exceed these limits, then catalysttype pollutants are probably present and RH should be driven to 50% or lower.

この装置は、クラスＡ機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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