Hitachi Advanced Server DS220 Hardware Guide

This guide provides the system overview and specifications for Hitachi Advanced Server DS220, including hardware descriptions, ports, network interface cards, and LEDs.

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About the System

Conventions

Several different typographic conventions are used throughout this manual. Refer to the following examples for common usage.

Bold type face denotes menu items, buttons and application names.

Italic type face denotes references to other sections, and the names of the folders, menus, programs, and files.

<Enter> type face denotes keyboard keys.

WARNING!

Warning information appears before the text it references and should not be ignored as the content may prevent damage to the device.

CAUTION!

CAUTIONS APPEAR BEFORE THE TEXT IT REFERENCES, SIMILAR TO NOTES AND WARNINGS. CAUTIONS, HOWEVER, APPEAR IN CAPITAL LETTERS AND CONTAIN VITAL HEALTH AND SAFETY INFORMATION.

Note:

Highlights general or useful information and tips.

Precautionary Measures

Read all caution and safety statements in this document before performing any of the instructions. To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read and observe all warnings and precautions in this chapter before installing or maintaining your system. To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following instructions and information. The following symbols may be used throughout this guide and may be marked on the product and / or the product packaging.

Safety Instructions about your system

In the event of a conflict between the information in this guide and information provided with the product or on the website for a particular product, the product documentation takes precedence.

Your system should be integrated and serviced only by technically qualified persons.

You must adhere to the guidelines in this guide and the assembly instructions in related chapters to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL Listing and other regulatory approvals of the product, and may result in noncompliance with product regulations in the region(s) in which the product is sold.

Table 1: Warning and Cautions

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	Remove the system from the rack to disconnect power system.

Table 1: Warning and Cautions (Continued)

	The enclosure is designed to carry only the weight of the system sled. Do not use this equipment as a workspace. Do not place additional load onto any equipment in this system.
	Indicates two people are required to safely handle the system.
	**Restricted Access Location:** The system is intended for installation only in a Server Room or Computer Room where both these conditions apply: • access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and • access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as medical, industrial, residential, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

Site Selection

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean, dry, and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight and radiators.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power system, because they serve as the product's main power disconnect.
- Provided with either two independent DC power system or two independent phases from a single power system.

Equipment Handling Practices

Reduce the risk of personal injury or equipment damage:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.
- To reduce the weight for easier handling, remove any easily detachable components.
- Never lift or move your system soley by the handle on the component.

Power and Electrical Warnings

CAUTION!

MAKE SURE THE SYSTEM IS REMOVED FROM THE RACK BEFORE SERVICING ANY NON-HOT PLUG COMPONENTS. THE BUS BAR CLIPS MUST BE DISCONNECTED FROM THE POWER SYSTEM IN ORDER TO FULLY SEPARATE THE SYSTEM FROM THE POWER SOURCE.

CAUTION!

TO AVOID RISK OF ELECTRIC SHOCK, DISCONNECT ALL CABLING FROM THE SYSTEM AND REMOVE THE SYSTEM FROM THE RACK.

System Access Warnings

CAUTION!

TO AVOID PERSONAL INJURY OR PROPERTY DAMAGE, THE FOLLOWING SAFETY INSTRUCTIONS APPLY WHENEVER ACCESSING THE INSIDE OF THE PRODUCT:

- Disconnect from the power source by removing the system from the rack.
- Disconnect all cabling running into the system.
- Retain all screws or other fasteners when servicing. Upon completion servicing, secure with original screws or fasteners.

CAUTION!

IF THE SERVER HAS BEEN RUNNING, ANY INSTALLED HDD MODULES MAY BE HOT.

CAUTION!

UNLESS YOU ARE ADDING OR REMOVING A HOT-PLUG COMPONENT, ALLOW THE SYSTEM TO COOL BEFORE SERVICING.

CAUTION!

TO AVOID INJURY DO NOT CONTACT MOVING FAN BLADES. IF YOUR SYSTEM IS SUPPLIED WITH A GUARD OVER THE FAN, DO NOT OPERATE THE SYSTEM WITHOUT THE FAN GUARD IN PLACE.

Rack Mount Warnings

The following installation guidelines are required by UL for maintaining safety compliance when installing your system into a rack.

The equipment rack must be anchored to an unmovable support to prevent it from tipping when your system or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.

Install equipment in the rack from the bottom up, with the heaviest equipment at the bottom of the rack.

Extend only one piece of equipment from the rack at a time.

You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the system(s).

To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained.

Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Electrostatic Discharge (ESD)

CAUTION!

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

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

Cooling and Airflow

CAUTION!

CAREFULLY ROUTE CABLES AS DIRECTED TO MINIMIZE AIRFLOW BLOCKAGE AND COOLING PROBLEMS. FOR PROPER COOLING AND AIRFLOW, OPERATE THE SYSTEM ONLY WITH THE CHASSIS COVERS* / AIR DUCT INSTALLED. OPERATING THE SYSTEM WITHOUT THE COVERS / AIR DUCT IN PLACE CAN DAMAGE SYSTEM PARTS. TO INSTALL THE COVERS* / AIR DUCT:

- Check first to make sure you have not left loose tools or parts inside the system.
- Check that cables, add-in cards, and other components are properly installed.

Attach the covers* / air duct to the chassis according to the product instructions.

* May not apply to all systems.

Please be aware that slots and openings on the front and rear side of the chassis are designed for ventilation; to make sure reliable operation of your system and to protect it from overheating, these openings must not be covered or blocked. The openings should never be covered or blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

Laser Peripherals or Devices

CAUTION!

TO AVOID RISK OF RADIATION EXPOSURE AND / OR PERSONAL INJURY:

- Do not open the enclosure of any laser peripheral or device.
- Laser peripherals or devices are not serviceable.
- Return to manufacturer for servicing.

Use certified and rated Laser Class I for Optical Transceiver product.

Heed safety instructions: Before working with the system, whether using this manual or any other resource as a reference, pay close attention to the safety instructions. Adhere to the assembly instructions in this manual to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components spec-

ified in this manual. Use of other products / components will void the UL listing and other regulatory approvals of the product and will most likely result in non-compliance with product regulations in the region(s) in which the product is sold.

System power on/off: To remove power from system, you must remove the system from rack. Make sure the system is removed from the rack before opening the chassis, adding, or removing any non hot-plug components.

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

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

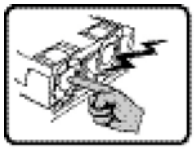
ESD and handling boards: Always handle boards carefully. They can be extremely sensitive to electrostatic discharge (ESD). Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use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

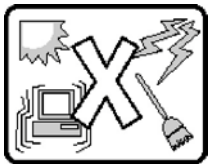
Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that can be gripped with fingertips or with a pair of fine needle nosed pliers. If the jumpers do not have such a tab, take care when using needle nosed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

General Information

Before servicing this system, it is recommened to read this guide completely to be aware of any safety issues or requirements involved in the servicing of this system.

Assembly Safety Guidelines

	The power system in this product contains no user-serviceable parts. Refer servicing only to qualified personnel.

	The system is designed to operate in a typical office environment. Choose a site that is: ● Clean and free of airborne particles (other than normal room dust). ● Well ventilated and away from sources of heat including direct sunlight. ● Away from sources of vibration or physical shock. ● Isolated from strong electromagnetic fields produced by electrical devices. ● In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm. ● Provided with a properly grounded wall outlet. ● Provided with sufficient space to access the power system, because they serve as the product's main power disconnect.
	**WARNING!** The system is safety certified as rack-mounted equipment for use in a server room or computer room, using an approved customer rack. The enclosure is designed to carry only the weight of the system sled. Do not place additional load onto any equipment.
	Heavy object. Indicates two people are required to safely handle the system.

About the System

This guide provides the system overview and specifications for Hitachi Advanced Server DS220, including hardware descriptions, ports, network interface cards, and LEDs.

Introduction

This guide provides the system overview and specifications for Hitachi Advanced Server DS220, including hardware descriptions, ports, network interface cards, and LEDs.

System Features

The system comprises a 2U/30.7" long chassis. Major features include:

- **Chipset**: Intel® C621 / C624 / C628 series
- **Processors (x2)**: Intel® Xeon® Processor Scalable Family (codename Skylake-SP)
- **Expansion:** See *SKU information* **on page 5** for more information.
- **Memory:** Up to 24 DIMM slots are available; ECC DDR4 2666 MT/s RDIMM memory
- **Network*:**
  - Dedicated GbE management NIC port from PHY RTL8211 to BMC
  - Intel® C621 as 4x GbE Integrated Network Solution with PHY (optional)
  - Intel® C624 as 4x10GbE Integrated Network Solution with PHY (optional)
  - Intel® C628 as 2x or 4x10GbE integrated network solution with PHY (optional)

Note:
The system supports: 800W and 1200W Titanium/Platinum redundant PSU, 100-240VAC 50/60Hz, AC/HVDC.

Specifications

Table 1: System Specifications

SPECIFICATIONS	DESCRIPTION
Form factor	2U rack mount
Chassis dimensions (W x H x D)	440mm x 87.5 mm x 780 mm 17.3" x 3.4" x 30.7"
Processor	**Processor type:** Intel® Xeon® Processor Scalable Family (codename Skylake-SP) **Max. TDP support:** 205W, Optimized power delivery for 85W, VRD 13 **Number of processors:** 2 **Internal Interconnect:** 10.4 GT/s, 9.6 GT/s
Chipset	Intel® C621 / C624 / C628

Table 1: System Specifications (Continued)

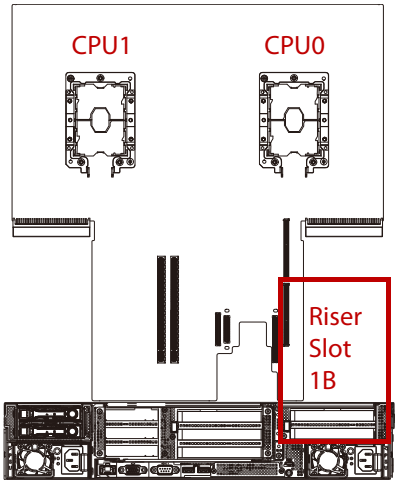
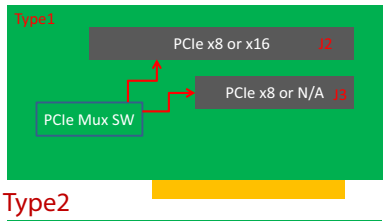
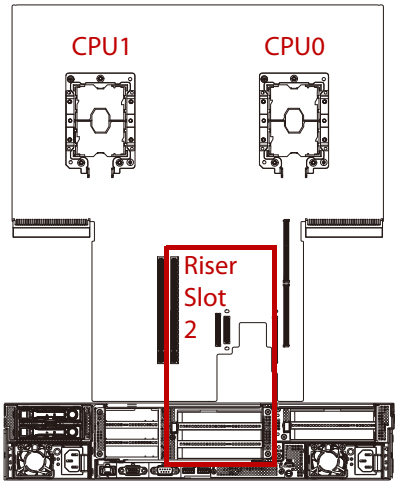
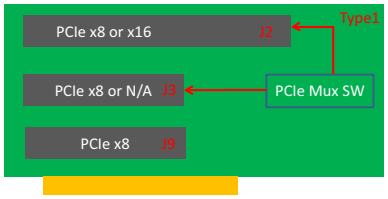
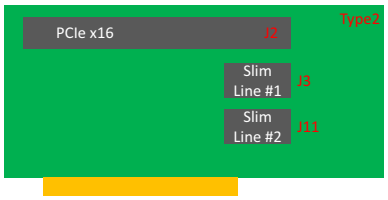
SPECIFICATIONS	DESCRIPTION
Memory	**Total slots:** 24 **Memory type:** DDR4 2666 MT/s RDIMM **Memory size:** 8GB, 16GB, 32 GB* *More options refer to the AVL
Storage controller	**Onboard (Intel® C621 / C624 / C628):** ● (8) SATA 6Gbps port with (2) mini-SAS HD connector ● (6) sSATA 6Gbps port with (1) mini-SAS HD connector (reserved) and (2) 7-pin SATA port (reserved for SATA DOM)
Networking	● Dedicated GbE management NIC port from PHY RTL8211 to BMC ● Intel® C621 as 4x GbE Integrated Network Solution with PHY (optional) ● Intel® C624 as 4x10GbE Integrated Network Solution with PHY (optional) ● Intel® C628 as 2x or 4x10GbE integrated network solution with PHY (optional)
Expansion slot-Riser slot1B (Gen3 x16, CPU0)	● Type1: (1) FHHL x16 or (2) FHHL x8 ● Type2: (1) FHHL x8 + (2) PCIe x4 slimline connector  Type1  Type2 
Expansion slot-Riser slot2 (Gen3 x24, CPU1)	● Type1: (3) FHHL x8 or (1) FHHL x16 + (1) FHHL x8 ● Type2: (1) FHHL x16 + (2) PCIe x4 slimline connector  Type1  Type2 

Table 1: System Specifications (Continued)

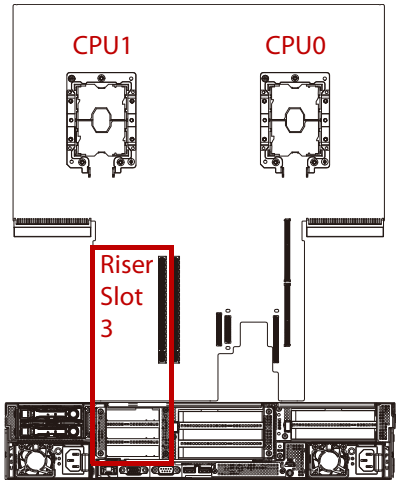
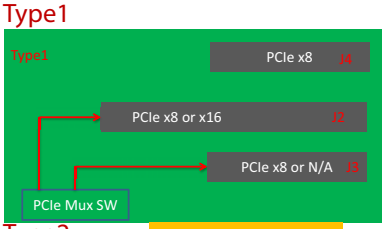
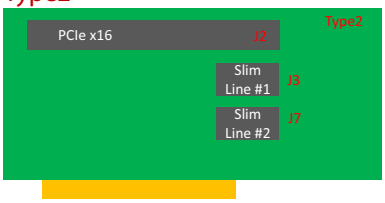
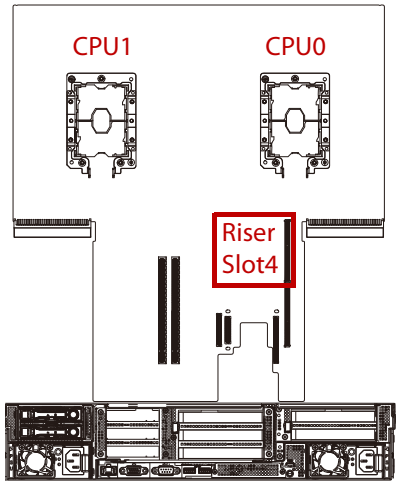
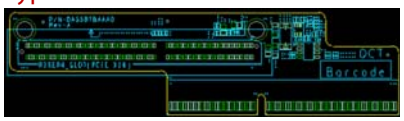
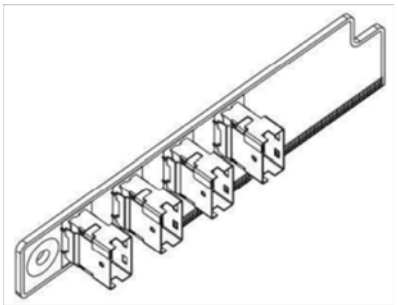
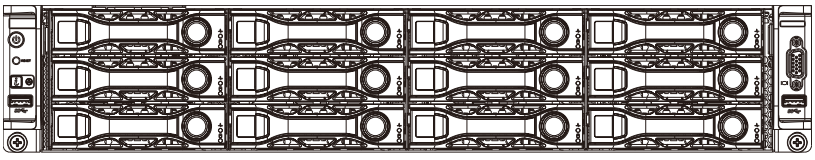
SPECIFICATIONS	DESCRIPTION
Expansion slot-Riser slot3 (Gen3 x24, CPU1)	• Type1: (3) LP x8 or (1) LP x16 + (1) LP x8 • Type2: (1) LP x16 + (2) PCIe x4 slimline connector  Type1  Type2 
Expansion slot-Riser slot4 (Gen3 x16, CPU0)	• Type1: (1) PCIe x16 mini-PCIe slot reserved for SAS mezzanine card • Type2: (4) PCIe x4 slimline connector  Type1  Type 2 
Storage	3.5" SKU:  SKU1: SATA/SAS, see *3.5" All SATA/SAS - SKU1* • HDD Backplane Board
Onboard storage	(2) SATADOM (optional)
Video	Integrated Aspeed AST2500 with 8MB DDR4 video memory
Network options	• (1) GbE quad port OCP mezzanine card or PHY card (Optional)* • (1) 10GbE quad port OCP mezzanine card or PHY card (Optional)* **The quad port PHY card is Installed to OCP mezzanine slot*

Table 1: System Specifications (Continued)

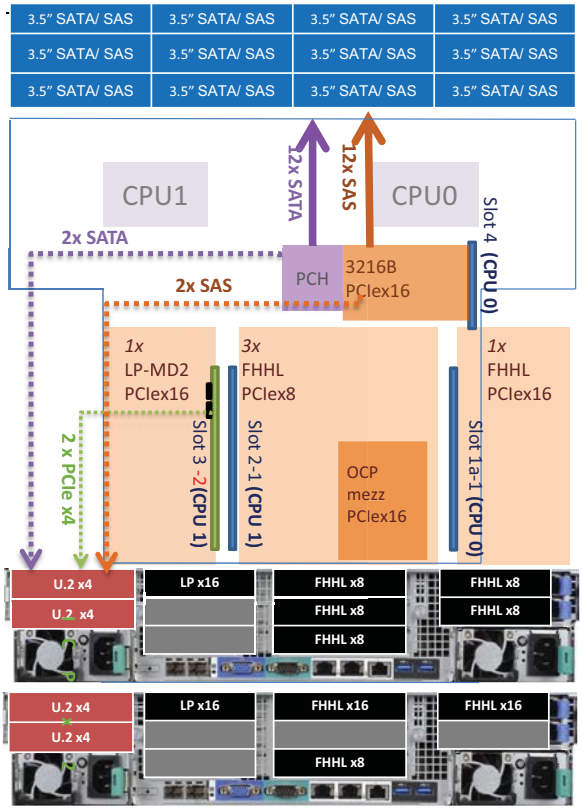
SPECIFICATIONS	DESCRIPTION
Front I/O	● Power/ID/Reset Buttons ● Power/ID/Status LEDs ● (2) USB ports ● (1) VGA port (Display Priority: First; one device one time)
Rear I/O	● (2) USB 3.0 ports ● (1) VGA port (Display Priority: Second; one device one time) ● (1) RS232 serial port ● (1) GbE RJ45 management port ● (1) ID LED ● (1) MicroSD slot
TPM	Yes (optional, SPI mode)
ACPI	ACPI compliance, S0, S5 support
Power supply	800W and 1200W Titanium/Platinum redundant PSU, 100-240VAC 50/60Hz, AC/HVDC support
System rating	● 100-120/200-240Vac, 50/60Hz, 10/6A or 240Vdc, 5.5A (Per PSU inlet) for PSU: 1200W ● 100-120/200-240Vac, 50/60Hz, 7.4/4A or 240Vdc, 3.7A (Per PSU inlet) for PSU: 800W & 1200W
Fan	(6) dual rotor fans (11+1 redundant)
System management	IPMI v2.0 Compliant, on board "KVM over IP" support
Operating environment	● Operating temperature: 5°C to 40°C (41°F to 104°F) ● Non-operating temperature: -40°C to 70°C (-40°F to 158°F) ● Operating relative humidity: 20% to 85%RH ● Non-operating relative humidity: 10% to 95%RH

Note:

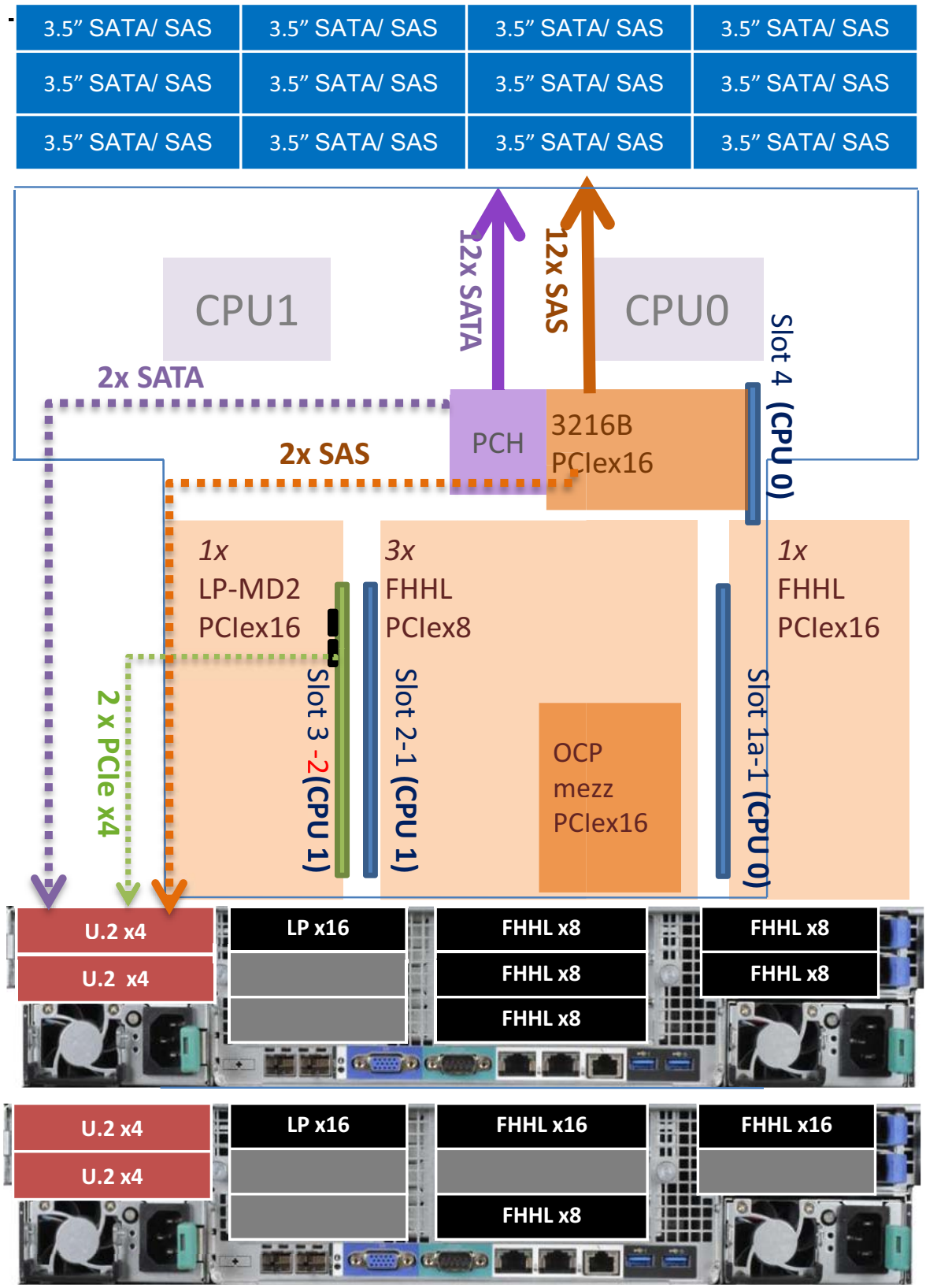
Internal USB port is reserved for UDK USB drive installation only. Feature hot plug is not available on this internal USB port.

SKU information

3.5” SKU Overview



3.5" All SATA/SAS - SKU1



1.2 Package Contents

- (1) DS220-2U system
- (2) processor heat sinks
- (1) power supply unit
- (1) power cord (optional)

A Tour of the System

System Overview

The server is available as a 3.5″ storage drive configuration.

The 3.5″ storage drive configuration system overview is displayed in the following image:

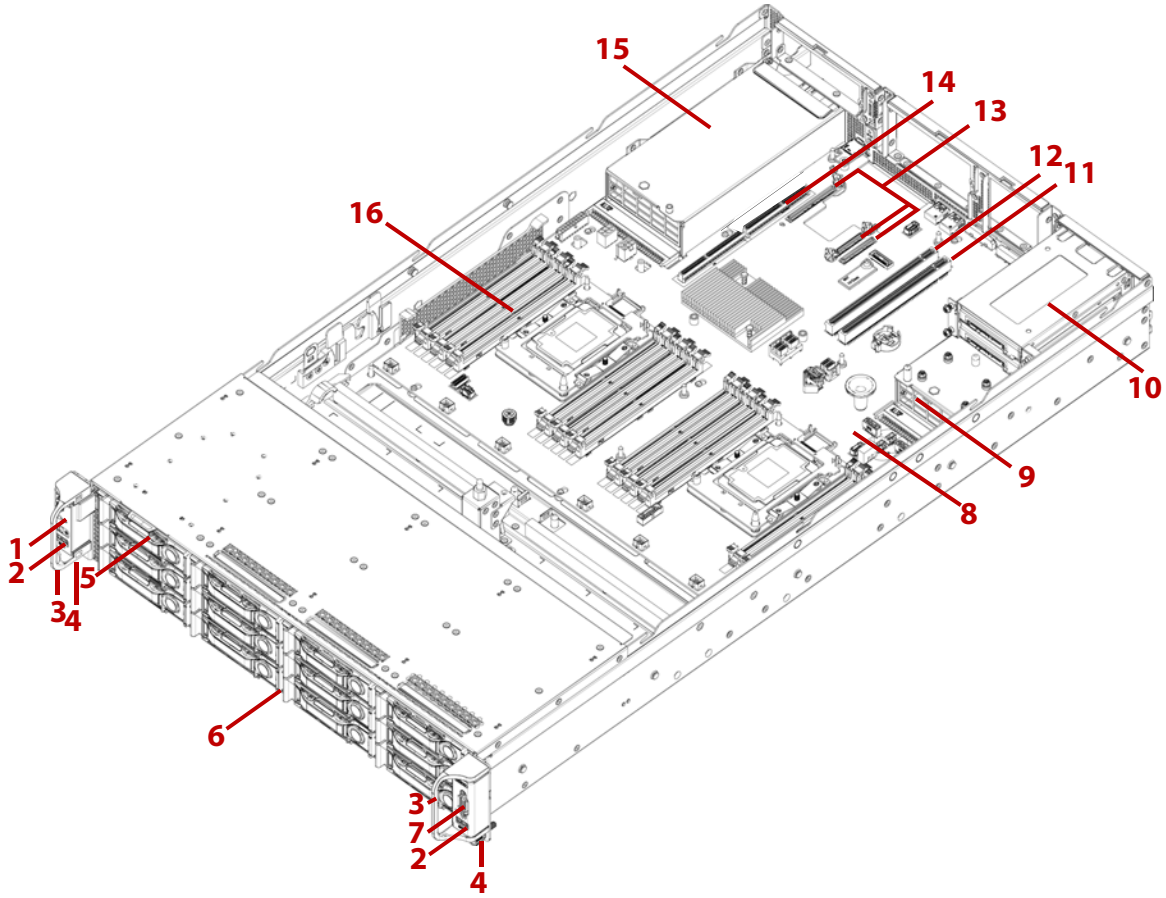


Figure 1. 3.5″ Storage Drive System Component Overview

Table 2: Component Overview

NO.	ITEM	DESCRIPTION
1	Front control panel	See *Front Control Panel (FCP)* on page 12
2	USB port	Connect to USB device
3	Handle	Two server handles used for pulling the system out of the rack **CAUTION!** THE HANDLES ARE DESIGNED FOR THE EXTENSION OF THE SYSTEM FROM THE RACK. THE HANDLES ARE NOT DESIGNED TO CARRY THE WEIGHT OF THE SYSTEM. DO NOT USE THE HANDLES TO MOVE OR LIFT THE SYSTEM.
4	Thumb screw	Secure the system to rack frame

Table 2: Component Overview (Continued)

NO.	ITEM	DESCRIPTION
5	Asset tag	Record serial number or other important information
6	3.5" storage drive tray	Housing up to twelve 3.5" storage drive
7	VGA port	Connect to display device (Display Priority: First; one device one time)
8	Mainboard	System mainboard
9	PSU assembly	Redundant power supply unit assembly (PSU1)
10	3.5" storage drive cage	Housing two 3.5" storage drive
11	Riser slot (CPU1)	Support PCIe add-on card installation with riser feature
12	Riser slot (CPU1)	Support PCIe add-on card installation with riser feature
13	OCP slot (CPU0)	Support OCP 2.0 mezzanine card installation
14	Riser slot (CPU0)	Support PCIe add-on card installation with riser feature
15	PSU assembly	Redundant power supply unit assembly (PSU0)
16	DIMM slots	(12) DDR4 DIMM slots per CPU

System Front View

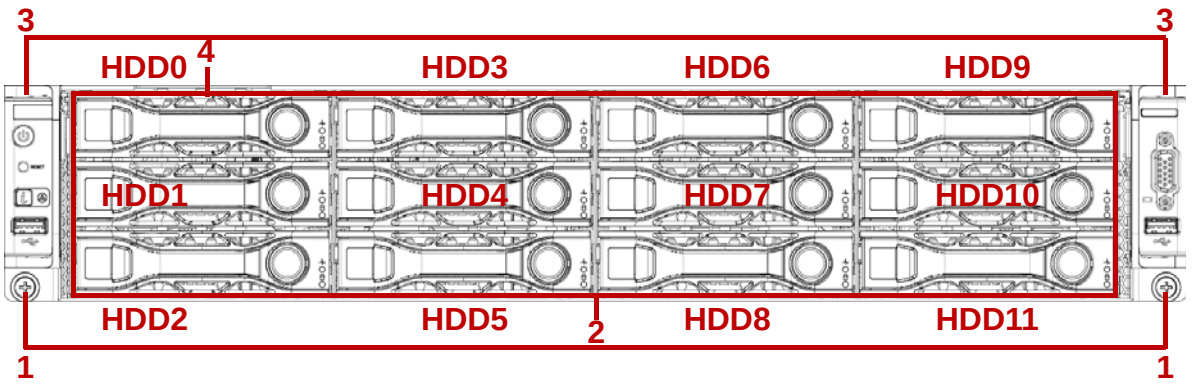


Figure 2. 3.5" Storage Drive System Front View

Table 3: Front Panel View

NO.	NAME	DESCRIPTION
1	Thumb screw	Secure the system to rack frame

Table 3: Front Panel View (Continued)

NO.	NAME	DESCRIPTION
2	3.5" storage drive tray	Housing up to twelve 3.5" storage drive: ● All SATA/SAS SKU HDD0~HDD11 support SAS/SATA HDD/SSD ● Tiered SKU HDD0~HDD7 support SAS/SATA HDD/SSD; HDD8~HDD11 support SAS/SATA HDD/SSD or 2.5" NVMe SSD*
3	Handle	Two server handles used for pulling the system out of the rack **CAUTION!** THE HANDLES ARE DESIGNED FOR THE EXTENSION OF THE SYSTEM FROM THE RACK. THE HANDLES ARE NOT DESIGNED TO CARRY THE WEIGHT OF THE SYSTEM. DO NOT USE THE HANDLES TO MOVE OR LIFT THE SYSTEM.
4	Asset tag	Record serial number or other important information

NVMe SSD M.2 Adapter Add-On Card (Optional)

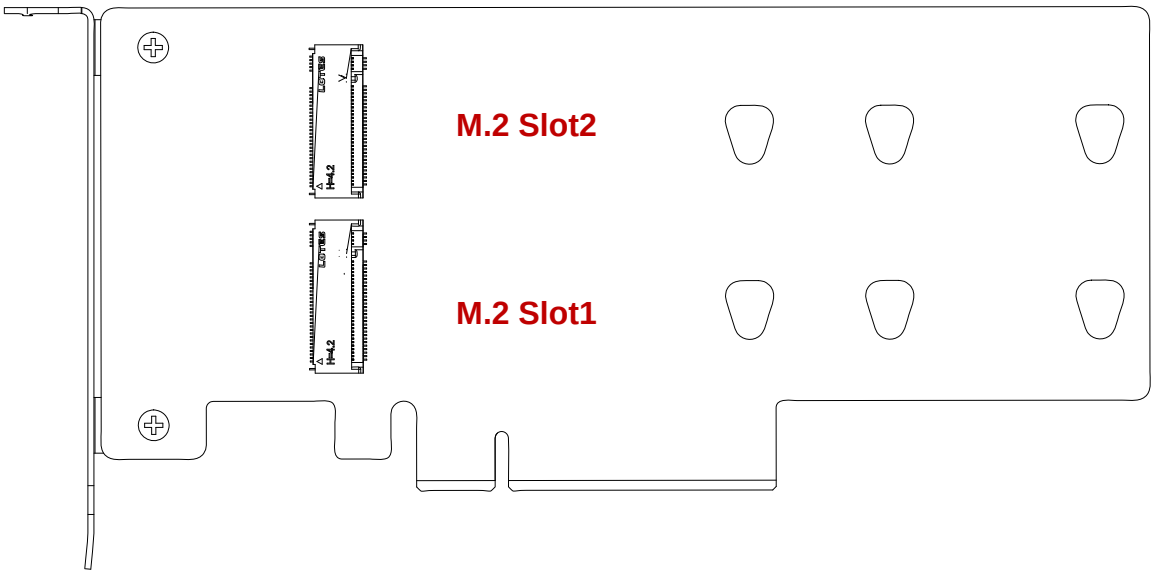


Table 5: Intel® VMD PCIe Root Port BIOS Setup Option Table*

M.2 SLOT#	CPU SOCKET	PSTACK	VMD PORT
1	0	0	1C
2			1D

Front Control Panel (FCP)

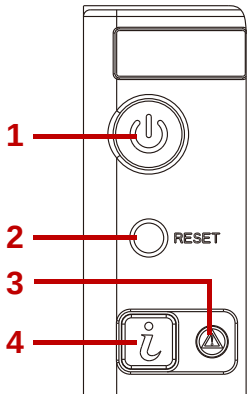


Figure 4. Front Control Panel and Connectors

Table 6: Front Control Panel Descriptions

NO.	ICON	NAME	DESCRIPTIONS
1		Power button with LED	Power on / off Blue on - S0 system power on; Off - S5 system power off
2	RESET	Reset button	Soft reset system function
3		System Status LED	Provides critical and non-critical failure notification Amber blinking - failed; Off - SEL cleared / good
4		Identification button with LED	Toggles ID LED, activate ID LED to identify system Blue blinking - Identifier on front and rear chassis; Off - Normal.

System Rear View

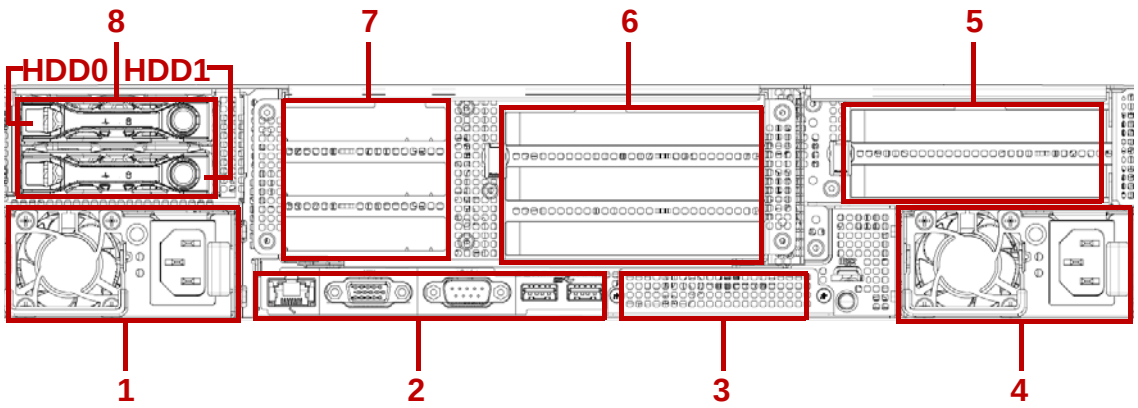


Figure 5. System Rear View

Table 7: System Rear View

NO.	FEATURE	DESCRIPTION
1	Power sub-system	Main power supply unit (PSU1). See *Power Sub-System* on page 15.
2	System I/O ports	See *System Rear I/O* on page 14
3	Expansion slot	Support OCP 2.0 mezzanine card installation (CPU0)
4	Power sub-system	Main power supply unit (PSU0). See *Power Sub-System* on page 15.
5	Expansion slots	PCIe expansion slot with LP MD-2 (CPU0)
6	Expansion slots	PCIe expansion slot with FHHL (CPU1)
7	Expansion slots	PCIe expansion slot with LP MD-2 (CPU1)
8	2.5″ storage drive tray	Housing two 2.5″ storage drive

Table 8: Intel® VMD PCIe Root Port BIOS Setup Option Table* (optional)

REAR HDD SLOT#	CPU SOCKET	PSTACK	VMD PORT
0	1	2	3C
1			3D

System Rear I/O

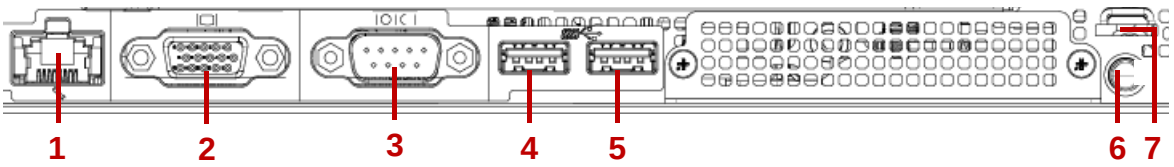


Figure 6. System Rear I/O

Table 9: System Rear I/O Descriptions

NO.	ICON	NAME	DESCRIPTIONS
1		Dedicated NIC	BMC dedicated RJ45 connector
2		VGA port	Maximum display resolution: 1920x1200 32bpp@60Hz (reduced blanking) (Display Priority: First; one device one time)
3		COM A port	DB9 port (Serial_A) for debug or terminal concentrator
4		USB 3.0 port	USB 1 port; connect to USB device
5			USB 0 port; connect to USB device
6		Identification LED	Blue blinking - Identifier; Off - Normal.
7		MicroSD slot	Backup BMC SEL.

Power Sub-System

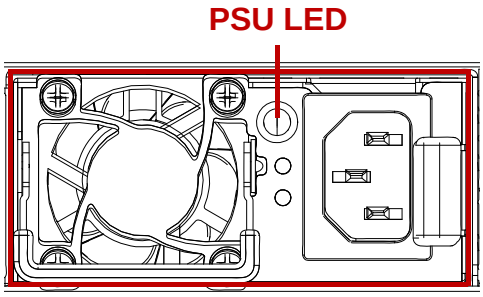


Figure 7. PSU to Mainboard Module Description

A single power supply unit (default) is supplied in the system. A secondary PSU is available for redundancy functionality.

Table 10: Power Supply Units by Model

PSU	AC INPUT
2 x 800W and 1200W Titanium/Platinum high efficiency redundant PSU	100-240VAC 50/60Hz, AC/HVDC support

Table 11: Power Supply Unit LED

PSU LED COLOR	DESCRIPTIONS
Amber On	PSU failure
Green On	PSU good
Green Blinking at 0.5Hz	PSU standby
Green Blinking at 2Hz	PSU cold redundancy standby

LED Status Descriptions

Front Control Panel LEDs

For location of the FCP, see *System Front View* on page 9.

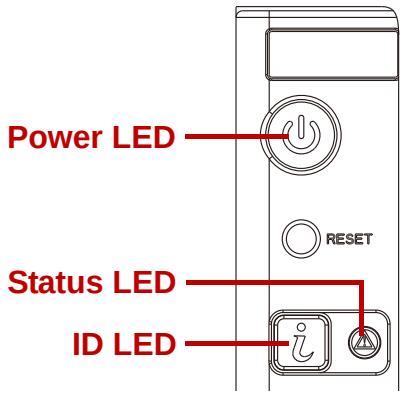


Figure 8. Front Control Panel LEDs

Table 12: Front Control Panel LEDs Behavior

NAME	COLOR	CONDITION	LED DESCRIPTIONS
Power LED	Blue	On	System S0 power on
		Off	System S5 power off
Identification	Blue	Blinking	Unit selected for identification
		Off	No identification request
Status LED	Amber	Blinking	Critical Failure: critical fan, voltage, temperature state.
			Non-Critical Failure: non-critical fan, voltage, temperature state, CPU thermal trip, DC off.
		Off	SEL cleared
			Last pending warning or error has been de-asserted.

BMC Management Port LEDs

The system mainboard includes one dedicated RJ45 GbE management port. The RJ45 connector has two built-in LEDs. See the following illustration and table for details.

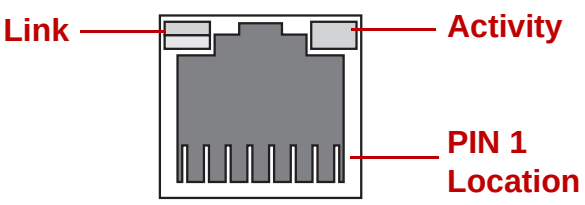


Figure 9. GbE RJ45 Management Port

Table 13: RJ45 LED Descriptions

CONDITION	LINK	ACTIVITY
Unplugged	Off	Off
1G active link	On amber	Blinking green
100M active link	On green	Blinking green
10M active link	Off	Blinking green

Storage Drive LEDs

Rear 2.5" Storage Drive LED Status Behavior

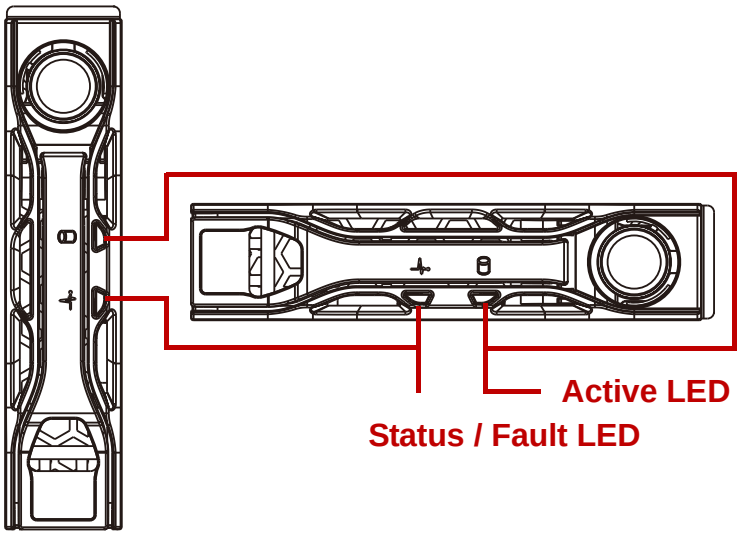


Figure 10. 2.5" Storage Drive LED Identification

The following LED behavior table represents LED conditions.

Table 14: 2.5" Storage Drive LED Status Behavior

NAME	COLOR	CONDITION	DESCRIPTIONS
Drive Status / Fault	Blue	On	Drive is online
		Blinking	Twice per second: Identification Once per second: Rebuilding
	Amber	On	HDD failure
	Off		Slot is empty
Drive Active	Blue	Blinking	HDD access is active

Front 3.5″ Storage Drive LED Status Behavior

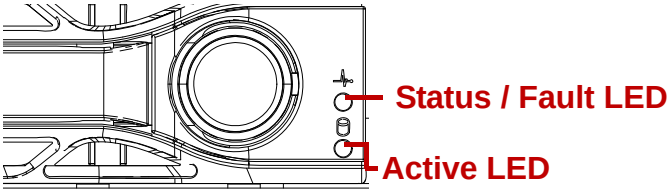


Figure 11. 3.5″ Storage Drive LED Identification

The following LED behavior table represents LED conditions.

Table 15: 3.5″ Storage Drive LED Status Behavior

NAME	COLOR	CONDITION	DESCRIPTIONS
Drive Status / Fault	Blue	On	Drive is online
		Blinking	Twice per second: Identification Once per second: Rebuilding
	Amber	On	HDD failure
	Off		Slot is empty
Drive Active	Blue	Blinking	HDD access is active

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