Hitachi Advanced Server HA805 G3

v9.1

TechSpecs

This document provides at-a-glance information about the Hitachi Advanced Server HA805 G3. It includes platform information, standard and optional features, core options, and technical specifications.

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Preface

About this document

This document describes the Hitachi Advanced Server HA805 G3. It includes platform information, standard and optional features, core options, and technical specifications.

Document conventions

This document uses the following typographic convention:

Convention	Description
Bold	• Indicates text in a window, including window titles, menus, menu options, buttons, fields, and labels. Example: **Click OK**. • Indicates emphasized words in list items.
Italic	Indicates a document title or emphasized words in text.
`Monospace`	Indicates text that is displayed on screen or entered by the user. Example: `pairdisplay -g oradb`

Intended audience

This document is intended for the person who installs, administers, and troubleshoots servers and storage systems. Hitachi Vantara assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

Accessing product downloads

Product software, drivers, and firmware downloads are available on Hitachi Vantara Support Connect: https://support.hitachivantara.com/.

Log in and select Product Downloads to access the most current downloads, including updates that may have been made after the release of the product.

Getting Help

Hitachi Vantara Support Connect is the destination for technical support of products and solutions sold by Hitachi Vantara. To contact technical support, log on to Hitachi Vantara Support Connect for contact information: https://support.hitachivantara.com/en_us/contact-us.html.

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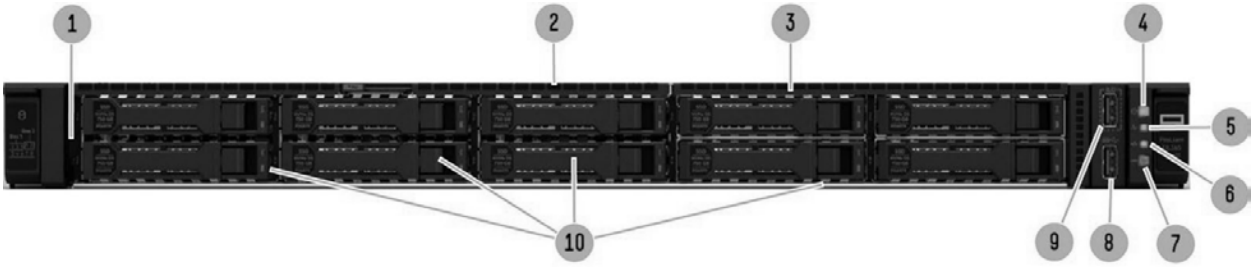
Chapter 1: Overview

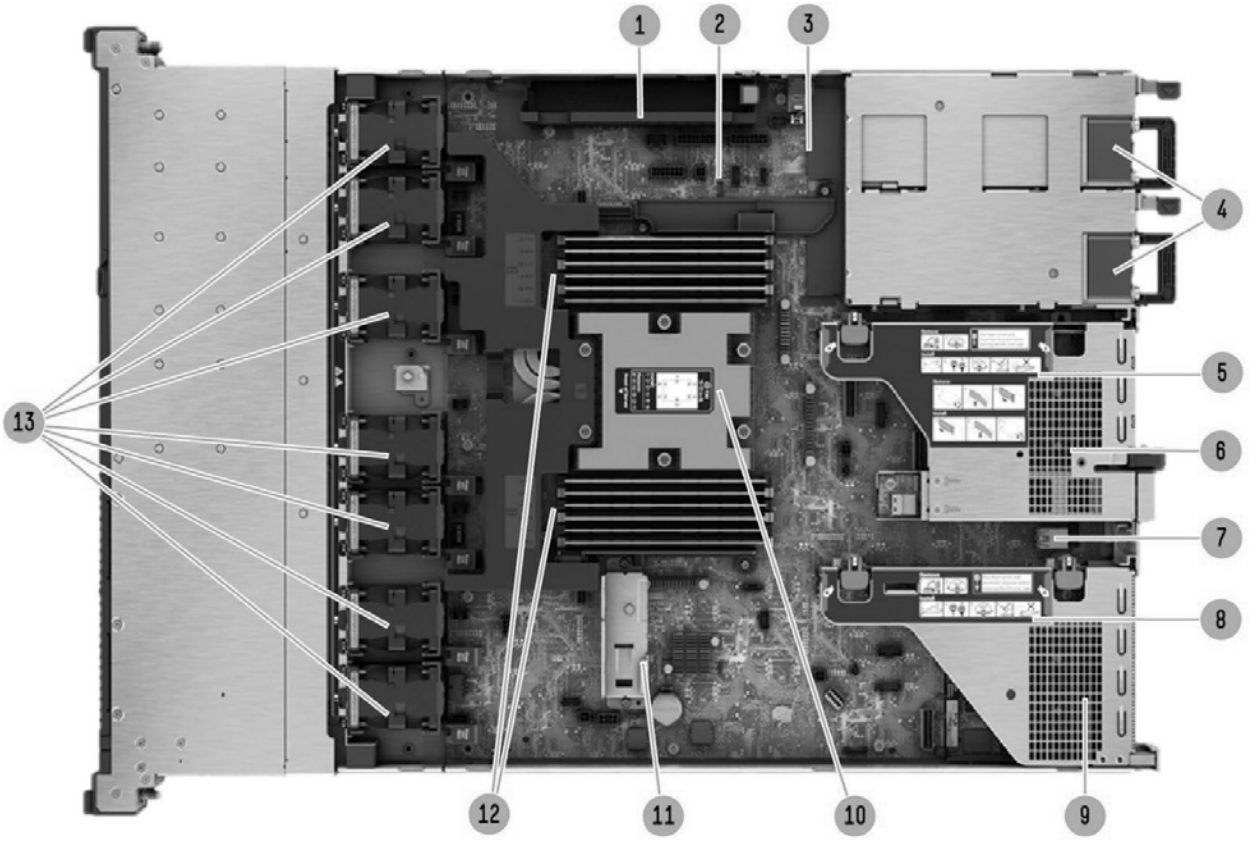
Hitachi Advanced Server HA805 G3

The HA805 G3 server is a low-cost 1U 1P solution that delivers exceptional value, balancing compute, memory, and network bandwidth. Powered by 4th Generation AMD EPYC™ Processors with up to 128 cores, increased memory bandwidth (up to 3 TB), high-speed PCIe Gen5 I/O, this server is a superb low-cost, 1U 1P, performance solution for your virtualized workloads. The silicon root of trust anchors the server firmware, creating a fingerprint for the AMD Secure Processor that must be matched exactly before the server will boot. The HA805 G3 server is an excellent choice for virtualized workloads such as software-defined compute, CDN, VDI, and secure edge apps that require balancing processor, memory, and network bandwidth.



Front View - 8 SFF + optional 2 SFF Drive Bay

1. Serial number pull tab
2. Quick removal access panel
3. 2 SFF Cage Bay (Optional - shown)
4. Power On/Standby button and system power LED
5. Health LED
6. NIC status LED
7. Unit ID button/ LED
8. USB 3.2 Gen1 port
9. iLO Service Port
10. 8 SFF Cage Bay

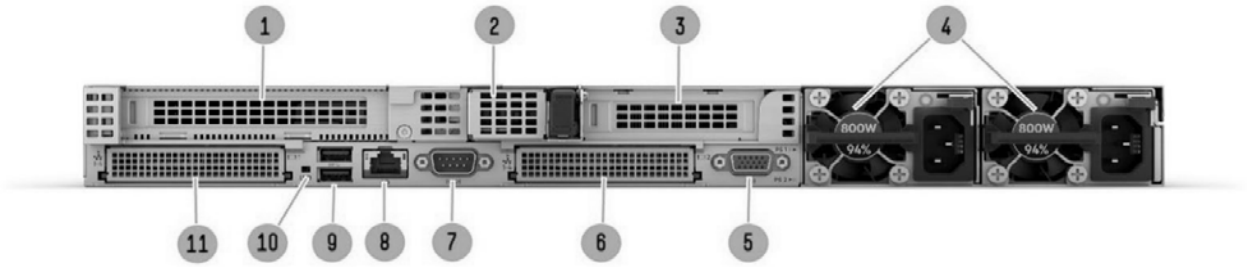


Internal View – Standard for all HA805 G3 Servers

1. Megacell battery holder
2. Hard drive backplane power connectors
3. Chassis intrusion detection connector
4. 2 Hot Plug redundant Flexible Slot Power supplies
5. Secondary PCIe 5.0 riser
6. OCP 3.0 Slot 22 (Under)
7. Internal Dual USB 3.2 Gen1 port
8. Primary PCIe 5.0 riser
9. OCP 3.0 Slot 21 (Under)
10. Processor is shown with standard heat sink1
11. FHFL PCIe card holder
12. DDR5 DIMM slots2
13. Hot-plug fans

Note:

- [1]Optional: Performance Heat Sink and Closed-Loop Liquid Cooling Heat Sink
- [2]Fully populated 12 DIMMs shown.



Rear View – Secondary Low Profile Riser

1. Slot 1 Primary PCIe 5.0 Riser
2. Optional NS204i-u hot-plug NVMe boot device
3. Slot 2 Secondary PCIe 5.0 Riser1
4. Hot-plug Power Supply 1 and 22
5. Video (VGA) port
6. OCP 3.0 Slot 22
7. Optional Serial port
8. Dedicated iLO management port
9. USB 3.1 Gen1 Ports (2)
10. Unit ID LED
11. OCP 3.0 Slot 21

Note:
[1]low profile and full height options

What's new

- All new Hitachi Advanced Server Platform: HA805 G3.
- New 4th Generation AMD EPYC™ Processors, up to 128 cores, 360W, and 384MB of L3 Cache.
- New DDR5 Smart Memory - 4800MT/s.
- New PCIe Gen5 support.
- New Integrated Lights-Out 6 (iLO 6) server management software.
- New hot-pluggable NS204i-u Boot Device.
- GPU support for Nvidia A2 single-width GPU.

Platform information

Form factor - 1U rack.

Chassis types - 8 SFF with optional 2 SFF drive bay

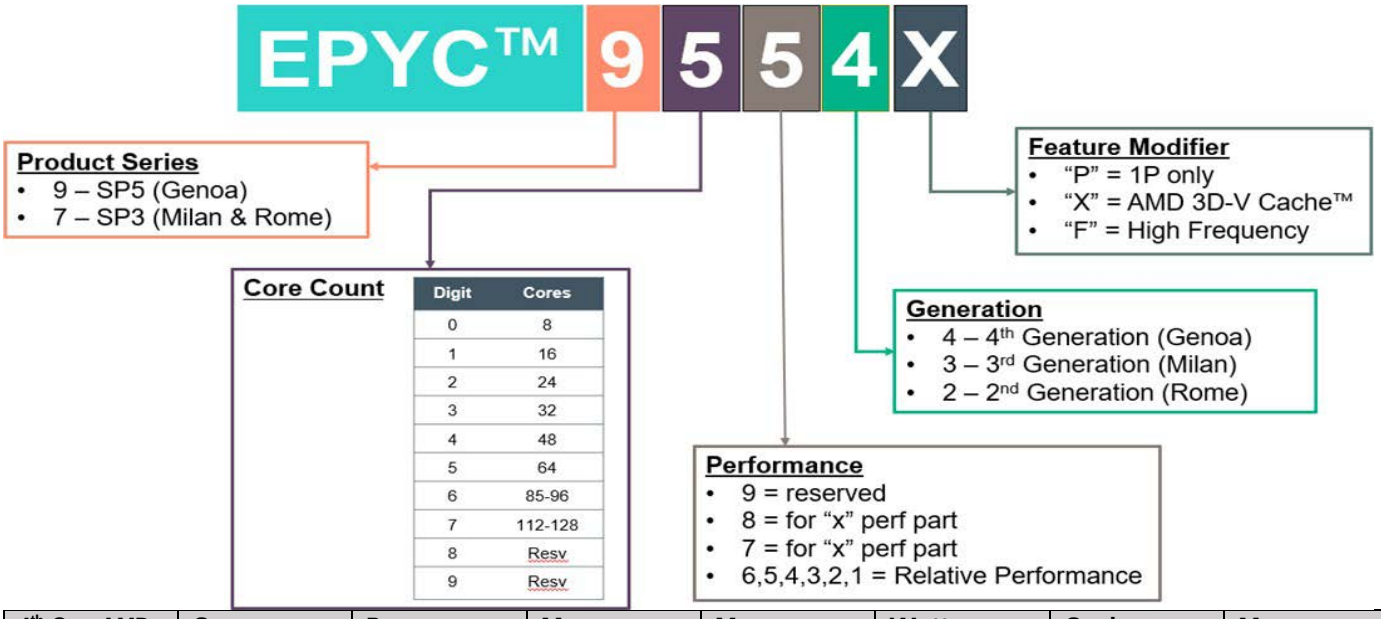
System Fans - Choice of Performance Fan, and Liquid cooling Fan Kit.

Note:

- The HA805 G3 supports up to 7 fans with fan redundancy built in. One fan rotor failure will place the server in degraded mode but fully functional. Two fan rotor failures could provide a warning and imminent server shutdown.
- Each Fan kit is designated to operate under different configurations. Refer to the cooling option message in the unique option section for more information.

Chapter 2: Standard features

Processors – One of the following, depending on the model.
Note: For more information regarding AMD EPYC processors, see the following:
https://www.amd.com/en/processors/epyc-server-cpu-family



4th Gen AMD EPYC Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage	Cache	Memory
EPYC 9754	128	2.25 GHz	3.1 GHz	3TB	360	256	4800MT/s
EPYC 9734	112	2.2 GHz	3.0 GHz	3TB	340	256	4800MT/s
EPYC 9654P	96	2.4 GHz	3.7 GHz	3TB	360	384	4800MT/s
EPYC 9634	84	2.25 GHz	3.7 GHz	3TB	290	384	4800MT/s
EPYC 9554P	64	3.1 GHz	3.75 GHz	3TB	360	256	4800MT/s
EPYC 9534	64	2.45 GHz	3.7 GHz	3TB	280	256	4800MT/s
EPYC 9454P	48	2.75 GHz	3.8 GHz	3TB	290	256	4800MT/s
EPYC 9474F	48	3.6 GHz	4.1 GHz	3TB	360	256	4800MT/s
EPYC 9354P	32	3.25 GHz	3.8 GHz	3TB	280	256	4800MT/s
EPYC 9334	32	2.7 GHz	3.9 GHz	3TB	210	128	4800MT/s
EPYC 9374F	32	3.85 GHz	4.3 GHz	3TB	320	256	4800MT/s
EPYC 9254	24	2.9 GHz	4.15 GHz	3TB	200	128	4800MT/s
EPYC 9224	24	2.5 GHz	3.7 GHz	3TB	200	64	4800MT/s
EPYC 9274F	24	4.05 GHz	4.3 GHz	3TB	320	256	4800MT/s
EPYC 9124	16	3 GHz	3.7 GHz	3TB	200	64	4800MT/s
EPYC 9174F	16	4.1 GHz	4.4 GHz	3TB	320	256	4800MT/s

Note:

- 6096pin LGA SP5 new socket type.
- 1MB L2/Core, Up to 32MB L3/CCD.

- All, non-liquid cooled, 4th generation AMD EPYC processors can support up to 3TB of memory each under 1DPC, 12 channels per processor.
- 128 PCIe 5.0 Lanes.
- The wattage information indicates the processor's default Configurable TDP (cTDP).

Chipset

No chipset – System on Chip (SoC) design.

On-system management chipset

Hitachi Advanced Server iLO 6 ASIC.

Memory

Type	DDR5 Smart Memory Registered (RDIMM)
DIMM Slots Available	12 DIMM slots per processor, 12 channels per processor, 1 DIMM per channel
Maximum capacity (RDIMM)	3.0 TB 12 x 256 GB RDIMM @ 4800 MT/s at 1 DPC

Note:

- All processors support up to 3TB of memory per server.
- LRDIMM and Persistent Memory are not supported.

Memory protection

Advanced ECC

Advanced ECC uses single-device data correction to detect and correct single and all multibit errors that occur within a single DRAM chip.

Online spare

Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

Expansion slots

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
1 (Default Primary Riser)	PCIe 5.0	X16	X16	Full-height, Full-length slot
2 (Secondary Riser)	PCIe 5.0	X16	X16	Low Profile or Full-height, Half-length slot
21	PCIe 5.0	X8	X16	OCP 3.0
22	PCIe 5.0	X8	X16	OCP 3.0

Note:

- Both OCP slots (slot 21 and 22) support shared NIC and WOL (wake on LAN) functions.
- If NS204i-u Boot Device is selected, then low profile secondary riser (P55029-B21) must be selected.
- Requires a FHFL card holder to support the full-length cards at primary riser.
- When supporting GPU1 & Slot21 scenario, GPU1 & OCP 21 slot combined can support up to **112GB/s bandwidth due to** AMD CPU limitation.

Storage controllers

Boot device

NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device

Note:

- Includes Hot Plug capable dual 480GB NVMe M.2 automatically configured into a RAID 1 Mirror.
- Externally accessible but does not occupy a PCIe slot.
- Requires specific cable kit and secondary low-profile riser along with specific cooling selections based on configuration.

Tri-Mode controller

- MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller
- MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller
- MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller
- MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller
- MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller
- SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage

Internal storage devices

Drives

None ships standard.

Maximum Storage	Capacity	Configuration
Hot Plug SFF SAS SSD	76.8 TB	10 x 7.68 TB
Hot Plug SFF SATA SSD	76.8 TB	10 x 7.68 TB
Hot Plug SFF NVMe PCIe U.3 SSD	153.6 TB	10 x 15.36 TB

Interfaces

Serial	1 optional port - rear
Video Port	1 standard VGA Port - rear
Network Ports	None. Choice of OCP or stand-up card, supporting a wide arrange of NIC adapters
iLO Remote Mgmt Port	1 1Gb Dedicated - rear
Front iLO Service Port	1 standard
USB 3.2 Gen1	5 standard on all models: 1 front, 2 rear, 2 internal

Graphics

Integrated video standard

- Video modes up to 1920 x 1200@60Hz (32 bits per pixel [bpp])
- 16MB Video Memory

iLO 6 on system management memory

- 64 MB Flash
- 8 Gbit DDR 4 with ECC protection

Power supply

- 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Note: Available in 94% Power Efficiency.
- 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Note: Available in 96% Power Efficiency.
- 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Note: Available in 94% Power Efficiency.
- 1800W-2200W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Note: Available in 96% Power Efficiency.

Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, and tool-less installation into servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.
All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit.

Operating systems and virtualization software support for Hitachi Advanced Servers

- Windows Server 2019
- Windows Server 2022
- Red Hat Enterprise Linux (RHEL) 8.6
- Red Hat Enterprise Linux (RHEL) 9.0
- SUSE Linux Enterprise Server (SLES) 15 SP4
- VMware ESXi 7.0 U3
- VMware ESXi 8.0

Industry standard compliance

- ACPI 6.1 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA/Display Port
- USB 3.2 Gen1 Compliant
- USB 2.0 Compliant
- Energy Star
- SMBIOS 3.1
- UEFI 2.7

- UEFI Class 3
- Redfish API
- IPMI 2.0
- Secure Digital 2.0
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4
- UEFI (Unified Extensible Firmware Interface Forum)
- APML 1.0

Embedded management

Integrated Lights-Out (iLO)

Monitor your servers for ongoing management, service alerting, reporting, and remote management with iLO.

UEFI

Configure and boot your servers securely with industry-standard Unified Extensible Firmware Interface (UEFI).

Intelligent provisioning

Hassle-free server and OS provisioning for 1 or more servers with Intelligent Provisioning.

iLO RESTful API

iLO RESTful API is DMTF Redfish API implementation and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards.

Server UEFI

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secure configuration than the legacy ROM while interacting with your server at boot time. Hitachi Advanced servers have a UEFI Class 3 implementation.

UEFI enables numerous new capabilities specific to Hitachi Advanced servers such as

- Secure Boot and Secure Start enable enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.1 Gen1 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization
- Embedded TPM Support

UEFI boot mode only

- NVMe Boot Support
- iSCSI Software Initiator Support
- HTTP/HTTPs Boot support as a PXE alternative
- Boot support for option cards that only support a UEFI option ROM

Security

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- FIPS 140-3 validation (iLO 6 certification in progress)
- Common Criteria certification (iLO 6 certification in progress)
- Configurable for PCI DSS compliance
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Support for Commercial National Security Algorithms (CNSA)
- Tamper-free updates – components digitally signed and verified
- Secure Recovery – recover critical firmware to a known good state on detection of compromised firmware
- Ability to rollback firmware
- Secure erase of NAND/User data
- TPM (Trusted Platform Module) 2.0 option

  Note: TPM is embedded on Hitachi Advanced Server mainboards and does not require additional option kit selection to enable this function.
- Bezel Locking Kit option
- Chassis Intrusion detection option

Chapter 3: Standard Features

Server management

Hitachi Advanced Server iLO

iLO licenses offer smart remote functionality without compromise, for all Hitachi Advanced servers. The license includes the fully integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

Warranty

This product is covered by a global limited warranty and supported by Hitachi Vantara Services and a worldwide network of Authorized Channel Partners resellers. Hardware diagnostic support and repair are available for three years from the date of purchase.

Chapter 4: Optional features

Parts and materials

Hitachi Vantara will provide supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product TechSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash

CTO Server	8SFF CTO server
Included Drive Cage	Not available
8 SFF SAS/SATA	1 Optional
8 SFF NVMe	1 Optional
2 SFF SAS/SATA	1 Optional
2 SFF NVMe	1 Optional

Drives replaced by Hitachi Vantara due to malfunction.

Note:

- This applies to CTO configurations; field upgrades may differ depending on field configuration.

Step 1: Choose core options

- Choice of 1 Processor model and Heat Sink Kit.
    - Requires necessary Heat Sink for different processor wattage.
- Choice of DDR5 memory options.
    - Requires necessary Fan Kits for different memory configurations and subjects to the recommended system ambient temperature.
- Choice of Drive cage, Storage Controllers, and Storage Controller Cables.
- Choice of SSD or HDD .
- Choice of OS Boot Devices.
- Choice of Riser Cards.
    - Choice of Networking options.
- PCIe standup or OCP 3.0. Requires necessary Fan Kits and subjects to the recommended system ambient temperature.
- Choice of Graphic solutions.
- Choice of Power and Cooling options.
- Choice of Security option.

Step 2: Choose additional options

Choice of support services.

Core Options

Choice of Core Options

Processor

Select one 4th Generation AMD EPYC Processor

AMD EPYC 9124 3.0GHz 16-core 200W Processor	P53702-B21.P
AMD EPYC 9174F 4.1GHz 16-core 320W Processor	P53698-B21.P
AMD EPYC 9224 2.5GHz 24-core 200W Processor	P58540-B21.P
AMD EPYC 9254 2.9GHz 24-core 200W Processor	P53707-B21.P
AMD EPYC 9274F 4.05GHz 24-core 320W Processor	P53711-B21.P
AMD EPYC 9334 2.7GHz 32-core 210W Processor	P53712-B21.P
AMD EPYC 9354P 3.25GHz 32-core 280W Processor	P53704-B21.P
AMD EPYC 9374F 3.85GHz 32-core 320W Processor	P53710-B21.P
AMD EPYC 9454P 2.75GHz 48-core 290W Processor	P53709-B21.P
AMD EPYC 9474F 3.6GHz 48-core 360W Processor	P53706-B21.P
AMD EPYC 9534 2.45GHz 64-core 280W Processor	P53699-B21.P
AMD EPYC 9554P 3.1GHz 64-core 360W Processor	P53703-B21.P
AMD EPYC 9634 2.25GHz 84-core 290W Processor	P53705-B21.P
AMD EPYC 9654P 2.4GHz 96-core 360W Processor	P53697-B21.P
AMD EPYC 9734 2.2GHz 112-core 340W Processor	P60465-B21.P
AMD EPYC 9754 2.25GHz 128-core 360W Processor	P60463-B21.P

Note:

- Processors up to 240W require Standard Heat Sink (P58456-B21.P) and Performance Fan kit (P58462-B21.P).
- Processors more than 240W and less than or equal to 300W require Performance Heat Sink (P58457-B21) and Performance Fan kit (P58462-B21.P).
- Processors more than or equal to 320W require Closed-Loop Liquid Cooling Heat Sink (P58463-B21) and Liquid Cooling Fan kit (P59668-B21.P).

Memory

Choose one or more memory selections from below:

Note:

- Quantity of memory DIMMs selected per socket must be 1, 2, 4, 6, 8, 10, or 12.
- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.
- Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family but may also be affected by the amount and type of additional hardware options installed within a specific server configuration.

Registered DIMMs (RDIMMs)

32GB (1x32GB) Single Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P50310-B21.P
64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P50312-B21.P
128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P50313-B21.P
256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P50314-B21.P

Note:

- Mixing 3DS memory and non-3DS memory is not supported.
- Supported memory configuration and recommended system ambient temperature:

Memory	SFF CTO server	
	Perf Fans (P58462-B21.P)	LC Fans (P59668-B21.P)
<= 64GB DIMM (P50310-B21, P50312-B21.P)	—	—
128GB DIMM (P50313-B21)	—	25C
256GB DIMM (P50314-B21)	25C	25C Max = 4

Note:

- Blank = no limitation.
- Not Support = Configuration not allowed because of thermal limitation.
- Requires Performance or Liquid Cooling Fan Kit for both 128GB and 256GB DIMMs.
- Max=4 of 256GB DIMM memory can be selected if the Liquid Cooling Heat Sink/ Liquid Cooling Fan Kit is selected.

Storage

Drive cages

Note:

- For the 8SFF CTO server, If 8SFF Backplane is not selected then Internal Controllers, Controller cables and Drives must not be allowed for selection. This config will be shipped as a driveless config.
- Maximum one(1) 2SFF backplane kits can be selected together with 8SFF backplane kit, to support up to 10SFF in total.
- The type of drives that each drive cage supports are listed in the below table.

PN	Description	SATA	SAS	NMVe U.3 Static SSD	NVMe U.3 SSD	NVMe U.2 SSD
P54999-B21	DL325 Gen11 8SFF x1 TM BP Kit	X	X	X	X	Not Support
P55000-B21	DL325 Gen11 8SFF x4 TM BP Kit	X	X	X	X	Not Support
P56652-B21	DL325 Gen11 2SFF x4 TM BP Kit	X	X	X	X	Not Support

Hitachi Advanced Server HA805 G3 8SFF x1 Tri-Mode U.3 Backplane Kit
Note:
• Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
• This drive cage can only be selected with 8SFF CTO Server.
• Max = 1.
• Requires Tri-Mode controllers if NVMe u.3 drives are selected with this backplane kit.
• If this Backplane kit is selected, one of the following cable options is supported:
  • With PCIe controllers: 8SFF x1 Tri-Mode Secondary Cable Kit (P57009-B21).
  • With OCP controllers: 8SFF x1 OCP2 Tri-Mode Cable Kit (P59619-B21).
  • SATA direct attach: no cable kit selection required.
	P54999-B21.P

Hitachi Advanced Server HA805 G3 8SFF x4 Tri-Mode U.3 BC Backplane Kit
Note:
• Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
• This drive cage can only be selected with 8SFF CTO Server.
• Max = 1.
• Requires Tri-Mode controllers if SAS/SATA SFF drives are selected with this backplane kit.
• If this 8SFF x4 U.3 Backplane kit is selected, one of the following cable options is supported:
  • With SR932i-p: 8SFF x4 Primary SR932i-p Tri-Mode Cable Kit (P57004-B21) or 8SFF x4 Secondary SR932i-p Tri- Mode Cable Kit (P57005-B21).
  • With PCIe controllers: 8SFF x2 Tri-Mode Secondary Cable Kit (P57006-B21).
  • With OCP controllers: 8SFF x2 Tri-Mode OCP2 Cable Kit (P57008-B21).
  • NVMe direct attach: no cable kit selection required.
• Requires Performance Fan Kit (P58462-B21) or Liquid Cooling Fan Kits (P59668-B21).
	P55000-B21.P

Hitachi Advanced Server HA805 G3 2SFF x4 Tri-Mode U.3 BC Backplane Kit
Note:
• Supports 2 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
• This drive cage can only be selected with 8SFF CTO Server.
• Max = 1.
• If this 2SFF U.3 Backplane kit is selected, one of the following cable options is supported:
  • With PCIe controllers: 2SFF x4 Secondary Tri-Mode Cable Kit (P59621-B21).
  • With OCP controllers: 2SFF x4 OCP2 Tri-Mode Cable Kit (P59620-B21).
  • NVMe direct attach: no cable kit selection required.
  • SATA direct attach: 2SFF SATA Direct Attach Cable Kit (P59617-B21).
• Requires 8SFF x1 U.3 Backplane Kit (P54999-B21) or 8SFF x4 U.3 Backplane Kit (P55000-B21) in the order.
	P56652-B21.P

Storage Controller

The Gen11 storage controller portfolio has been updated to include new technology like OCP3.0 as well as PCIe adapters. For a more detailed breakout of the available Gen11 controllers, visit the storage controller's TechSpecs site:

Compute MR Gen11 Controllers Quick Spec

Compute SR Gen11 Controllers Quick Spec

Note:

- When selecting SR RAID controllers for external storage and MR RAID controllers for internal storage, be aware these two products use different RAID configuration tools.
- Mixing of MR (MegaRAID) series controllers and SR (SmartRAID) series controllers is not allowed.

MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller **Note:** This controller supports up to 16 SAS/SATA/NVMe Drives.	P47789-B21.P
MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller **Note:** • This controller supports up to 8 SAS/SATA/NVMe Drives. • Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21).	P58335-B21.P

MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller **Note:** • This controller supports up to 16 SAS/SATA/NVMe Drives. • Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21).	P47781-B21.P
MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller **Note:** This controller supports up to 16 SAS/SATA/NVMe Drives.	P47785-B21.P
MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller **Note:** • This controller supports up to 16 SAS/SATA/NVMe Drives. • Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21).	P47777-B21.P
SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller **Note:** • This controller supports up to 32 SAS/SATA/NVMe Drives. • Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21).	P47184-B21.P

Battery and Hybrid Capacitor

Smart Storage Hybrid Capacitor with 145mm Cable Kit	P02377-B21.P
96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	P01366-B21.P
Hitachi Advanced Server HA805 G3 Megacell Extension Cable Kit	P56659-B21.P

Note:

- If 96W Smart Stg Li-ion Batt 145mm Kit is selected the Smart Hybrid Capacitor 145mm kit cannot be selected and vice versa.
- If M.2 enablement Kit and "96W Smart Stg Li-ion Batt 145mm Kit OR Smart Hybrid Capacitor w/ 145mm Kit" are selected, the Megacell Ext Cbl Kit must be selected.

Storage Controller Cables

Hitachi Advanced Server HA805 G3 8SFF x4 Primary SR932i-p Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to SR932i-p controllers at the primary riser slot with up to x4 speed.	P57004-B21.P
Hitachi Advanced Server HA805 G3 8SFF x4 Secondary SR932i-p Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to SR932i-p controllers at the secondary riser slot with up to x4 speed.	P57005-B21.P
Hitachi Advanced Server HA805 G3 8SFF x2 Secondary Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at primary riser slot with x2 speed.	P57006-B21.P
Hitachi Advanced Server HA805 G3 8SFF x2 OCP2 Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with x2 speed	P57008-B21.P
Hitachi Advanced Server HA805 G3 8SFF x1 Secondary Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at secondary riser slot with x1 speed.	P57009-B21.P
Hitachi Advanced Server HA805 G3 8SFF x1 OCP2 Tri-Mode Cable Kit **Note:** Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with x1 speed.	P59619-B21.P
Hitachi Advanced Server HA805 G3 2SFF SATA Direct Attach Cable Kit **Note:** Supports 2 SFF SATA direct attach.	P59617-B21.P
Hitachi Advanced Server HA805 G3 2SFF x4 OCP2 Tri-Mode Cable Kit **Note:** Supports 2 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with up to x4 speed.	P59620-B21.P

Hitachi Advanced Server HA805 G3 2SFF x4 Secondary Tri-Mode Cable Kit **Note:** Supports 2 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at secondary riser slot with up to x4 speed.	P59621-B21.P

Supported storage configurations

Drives						Backplane		Supported Controller		Cable kit	
Type	Max Qty	SAS	SATA	U.3 NVMe	EDSFF	Box1 4LFF/ 8SFF/ 20EDSFF	Box2 2SFF	Box1 4LFF/ 8SFF/ 20EDSFF	Box2 2SFF	Box1 4LFF/ 8SFF/ 20EDSFF	Box2 2SFF
LFF	**4**		4			Included in CTO		Direct Attach (SATA)		Included	
LFF	**4**	4	4			Included in CTO		MR416i-o/MR408i-o/MR216i-o		Included	
SFF	**8**		8			P54999-B21		Direct Attach (SATA)		Included	
SFF	**8**	8	8	8		P54999-B21		MR416i-o/MR408i-o/MR216i-o		P59619-B21	
SFF	**8**	8	8	8		P54999-B21		SR932i-p/MR416i-p/MR216i-p		P57009-B21	
SFF	**8**		8	8		P55000-B21		Direct Attach (NVMe x2)		Included	
SFF	**8**	8	8	8		P55000-B21		SR932i-p		P57004-B21	
SFF	**8**	8	8	8		P55000-B21		SR932i-p		P57005-B21	
SFF	**8**	8	8	8		P55000-B21		SR932i-p/MR416i-p/MR216i-p		P57006-B21	
SFF	**8**	8	8	8		P55000-B21		MR416i-o/MR408i-o/MR216i-o		P57008-B21	
SFF	**10**		8	2		P54999-B21	(P56652-B21	Direct Attach (SATA)	Direct Attach (NVMe x4)	Included	Included
SFF	**10**		10			P54999-B21	(P56652-B21	Direct Attach (SATA)	Direct Attach (SATA)	Included	P59617-B21
SFF	**10**	2	10	2		P54999-B21	(P56652-B21	Direct Attach (SATA)	MR408i-o	Included	P59620-B21
SFF	**10**	8	8	10		P54999-B21	(P56652-B21	MR408i-o	Direct Attach (NVMe x4)	P59619-B21	Included
SFF	**10**	8	10	8		P54999-B21	(P56652-B21	MR408i-o	Direct Attach (SATA)	P59619-B21	P59617-B21
SFF	**10**	10	10	10		P54999-B21	(P56652-B21	MR408i-o	SR932i-p/MR416i-p/MR216i-p	P59619-B21	P59621-B21
SFF	**10**	10	10	10		P54999-B21	(P56652-B21	MR416i-o/MR216i-o		P59619-B21	P59620-B21
SFF	**10**	10	10	10		P54999-B21	(P56652-B21	SR932i-p/MR416i-p/MR216i-p		P57009-B21	P59621-B21
SFF	**10**		8	10		P55000-B21	(P56652-B21	Direct Attach (NVMe x4)	Direct Attach (NVMe x4)	Included	Included
SFF	**10**		10	8		P55000-B21	(P56652-B21	Direct Attach (NVMe x4)	Direct Attach (SATA)	Included	P59617-B21
SFF	**10**	2	10	10		P55000-B21	(P56652-B21	Direct Attach (NVMe x4)	MR416i-p	Included	P59621-B21
SFF	**10**	2	10	10		P55000-B21	(P56652-B21	Direct Attach (NVMe x4)	MR416i-o	Included	P59620-B21
SFF	**10**	10	10	10		P55000-B21	(P56652-B21	SR932i-p	MR416i-o/MR408i-o/MR216i-o	P57004-B21	P59620-B21
SFF	**10**	8	8	10		P55000-B21	(P56652-B21	SR932i-p	Direct Attach (NVMe x4)	P57004-B21	Included
SFF	**10**	8	10	8		P55000-B21	(P56652-B21	SR932i-p	Direct Attach (SATA)	P57004-B21	P59617-B21
SFF	**10**	10	10	10		P55000-B21	(P56652-B21	SR932i-p	MR416i-o/MR408i-o/MR216i-o	P57005-B21	P59620-B21
SFF	**10**	8	8	10		P55000-B21	(P56652-B21	SR932i-p	Direct Attach (NVMe x4)	P57005-B21	Included
SFF	**10**	8	10	8		P55000-B21	(P56652-B21	SR932i-p	Direct Attach (SATA)	P57005-B21	P59617-B21
SFF	**10**	10	10	10		P55000-B21	(P56652-B21	SR932i-p		P57006-B21	P59621-B21
SFF	**10**	10	10	10		P55000-B21	(P56652-B21	MR416i-o/MR408i-o/MR216i-o	MR416i-p/MR216i-p	P57008-B21	P59621-B21
SFF	**10**	10	10	10		P55000-B21	(P56652-B21	MR416i-p/MR216i-p	MR416i-o/MR408i-o/MR216i-o	P57006-B21	P59620-B21
EDSFF	**20**				20	Included in CTO		Direct Attach (NVMe x4)		Included	
EDSFF	**20**				20	Included in CTO		Direct Attach (NVMe x2)		P57010-B21	

***Included** = Included with CTO server or Drive Cage

Drives

Solid State Drives

Intensive - 12G SAS – SFF	
1.92TB SAS 24G Read Intensive SFF BC Multi-Vendor SSD	P49031-B21.P
Mixed Use - 12G SAS – SFF	
1.6TB SAS 24G Mixed Use SFF BC Multi-Vendor SSD	P49049-B21.P
Read Intensive - 6G SATA - SFF	
480GB SATA 6G Read Intensive SFF BC Multi-Vendor SSD	P40497-B21.P
1.92TB SATA 6G Read Intensive SFF BC PM893 SSD	P44009-B21.P
3.84TB SATA 6G Read Intensive SFF BC PM893 SSD	P44010-B21.P
Mixed Use - 6G SATA – SFF	
1.92TB SATA 6G Mixed Use SFF BC PM897 SSD	P44013-B21.P
Read Intensive - NVMe – SFF	
1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50216-B21.P
3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50219-B21.P
7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50222-B21.P
15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50224-B21.P
Mixed Use - NVMe – SFF	
1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21.P
3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21.P
6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-B21.P
Hard Disk Drive **Enterprise - 12G SAS - SFF Drives**	
300GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi-Vendor HDD	P28028-B21.P
2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi-Vendor HDD	P28352-B21.P

Boot Controllers

NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device **Note:** • RAID 1 is preconfigured on this option and additional RAID cannot be applied on this Boot Device. • Requires Performance Fan Kits (P58462-B21) or Liquid Cooling Fan Kits (P59668-B21). • If this NS204i-u boot device is selected along with the SFF/LFF CTO servers and Liquid Cooling Fan Kits, the 2SFF drive cage (P56652-B21) cannot be selected, and recommended system ambient temperature is 25C. • If this NS204i-u boot device is selected, the Secondary Low Profile riser (P55029-B21) and NS204i-u Cable Kit (P57013-B21) must be selected.	P48183-B21.P
HA8X5 G3 NS204i-u NVMe Hot Plug Boot Device Cable Kit	P57013-B21.P

Risers

Note: The Primary riser shipping default in the CTO server is PCIe Gen5 x16 FH HL.

HA8X5 G3 1U x16 Low Profile Secondary Riser Kit
P55029-B21.P

HA8X5 G3 1U x16 Riser Kit
P56915-B21.P

Note:

- Both riser kits are in the secondary slot.
- Requires Low Profile Secondary riser kit if NS204i-u (P48183-B21) is selected.

Networking

Note: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

PCIe Adapters

1 Gigabit Ethernet adapter	
BCM 5719 1Gb 4p BASE-T Adapter	P51178-B21.P
10/25 Gigabit Ethernet adapters **Note:** Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature.	
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter	P26262-B21.P
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter	P08443-B21.P
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter	P42044-B21.P
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter	P08458-B21.P
100/200 Gigabit Ethernet adapters **Note:** Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature.	
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter	P25960-B21.P
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter	P21112-B21.P
Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter	P10180-B21.P

OCP 3.0 Adapter

1 Gigabit Ethernet OCP adapters	
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter	P08449-B21.P
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter	P51181-B21.P
10 Gigabit Ethernet OCP Adapters	
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter	P26256-B21.P
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter	P10097-B21.P
10/25 Gigabit Ethernet OCP adapters **Note:** Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature	
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter	P10115-B21.P
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter	P26269-B21.P
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter	P10106-B21.P
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter	P42041-B21.P
100/200 Gigabit Ethernet adapters **Note:** • Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature. • Requires OCP1 upgrade cable kit (P56658-B21) to support PCIe Gen5 x16 bandwidth on OCP21 slot.	
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter	P22767-B21.P

Recommended System Ambient Temperature

P/N	SFF CTO servers			
	Perf Fans (P58462-B21)		LC Fans (P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P08443-B21.P	—	—	—	—
P26264-B21.P	—	25C	—	25C
P42044-B21.P	—	25C	—	25C
P08458-B21.P	—	25C	—	25C
P21112-B21.P	—	25C	—	25C
P10180-B21.P	—	Not support	25C	Not supported
P25960-B21.P	—	Not support	25C	Not supported
R8M41A	—	Not support	25C	Not supported

InfiniBand (Future Add)

Note:

- Requires Performance Fan Kit (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature.
- Requires OCP upgrade cable kit (P56658-B21) for 200Gb OCP adapters (P31323-B21 or P31348-B21).

InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter	P23665-B21.P
InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter	P23666-B21.P
InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-B21.P
InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-B21.P
InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter	P31323-B21.P
InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-B21.P
InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter	P45641-B21.P
InfiniBand NDR200 1-port OSFP PCIe5 x16 MCX75310AAS-HEAT Adapter	P45642-B21.P

Recommended System Ambient Temperature

P/N	SFF CTO servers			
	Perf Fans (P58462-B21)		LC Fans (P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P23665-B21.P	—	—	—	—
P23664-B21.P	—	25C	—	25C
P23666-B21.P	—	25C	—	25C
P45641-B21.P	—	Not support	25C	Not support
P45642-B21.P	—	Not support	25C	Not support
P/N	**OCP21**	**OCP22**	**OCP21**	**OCP22**
P31323-B21.P	—	Not support	25C	Not support
P31348-B21.P	—	Not support	Not support	Not support

Note:

- Blank = no limitation.
- Not support = configuration not allowed because of thermal limitation.

GPU

Up to two (2) NVIDIA A2 16GB PCIe Non-CEC Accelerator (R9H23C.P) adapters can be installed in the HA805 G3. These can only be installed in the PCIe positions.

Note:

- This is a PCIe Gen4 x 8 single-width low profile, HHHL GPU card.
- If this GPU is installed in PCIe Slot2 with Performance Fan kits (P58462-B21), the recommended system ambient temperature is 25C.
- If this GPU is installed on either PCIe Slot1 or 2 with Liquid Cooling Fan kits (P59668-B21), the recommended system ambient temperature is 25C.

Storage options

Emulex Fibre Channel HBAs	
SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A.P
SN1700E 64Gb 2-port Fibre Channel Host Bus Adapter	R7N78A.P
QLogic Fibre Channel HBAs	
SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A.P

Power and cooling

Cooling
Note: Requires one (1) Heat Sink and Seven (7) Fan Kit in the order.

HA8X5 G3 CPU Standard 1U Heat Sink Kit **Note:** Required For processors less than or equal to 240W	P58456-B21.P
HA8X5 G3 CPU Performance 1U Heat Sink Kit **Note:** Required for processors more than or equal to 260W and less than or equal to 300W	P58457-B21.P

Hitachi Advanced Server HA805 G3 Closed-loop Liquid Cooling FIO Heat Sink Kit **Note:** • This Closed-loop liquid cooling Heat Sink FIO kit is designed for processors more than or equal to 320W. • Requires Liquid Cooling Fan Kits (P59668-B21.P). • The HA805 G3 Closed-Loop Liquid Cooling Heat Sink FIO kit is subject to a Maximum Usage Limitation of not exceeding five (5) years of operation and is required to be replaced when reaching limitation. Parts and components that Hitachi Vantara determines have reached or exceeded their Maximum Usage limitations will not be provided, repaired, or replaced under warranty or service contract. Contact your local sales representative for additional information.	P58463-B21.P
HA8x5 G3 1U Performance Fan Kit **Note:** • Default fan choice if Liquid Cooling not required. • 8SFF x4 U.3 backplane kit (P55000-B21.P) • 2SFF x4 U.3 backplane kit (P56652-B21.P) • 10 NVMe/SAS drives selected in the order. • Networking options: 10/25G, 100/200G, and InfiniBand options. • Graphic options • NS204i-u kit	P58462-B21.P
Hitachi Advanced Server HA805 G3 Liquid Cooling Fan Kit **Note:** If Closed-loop Liquid Cooling Heat Sink (P58463-B21.P) is selected, this fan kit must be selected.	P59668-B21.P

Cooling options summary – SFF servers			
CPU TDP	<= 240W	260W – 300W	>= 320 W
Heatsink	Standard (P58456-B21.P)	Performance (P58457-B21.P)	Closed-Loop Liquid Cooling (P58436-B21.P)
(7) Fans	-	Performance (P58462-B21.P)	Liquid Cooling (P59668-B21.P)

Power Supplies

Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, and tool-less installation into ProLiant Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

Note:

- Select a minimum (1), maximum (2) power supplies.
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- 1600W Power supplies only support high line voltage (200VAC to 240VAC).
- HA8x5 G3 servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).

800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit **Note:** Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support Power Discovery Services (blue connector).	P38995-B21.P
1000W Flex Slot Titanium Hot Plug Power Supply Kit **Note:** For EMEA Region: Commission Regulation (EU) 2019/424 laying down eco-design requirements for servers and data-storage products applies from 1 March 2020. A more stringent (compared to the currently applicable values) value for the minimum power efficiency at 96% of PSUs will apply latest from, 1 January 2024, after deferral. For more details, refer to Lot9 enforcement deferral notice "European Union law Document 52022XC1209 (01)"	P03178-B21.P
1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit **Note:** • Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support Power Discovery Services (blue connector). • The power supply selected only supports high line voltage (200VAC to 240VAC).	P38997-B21.P
1800-2200W Flex Slot Titanium Hot Plug Power Supply Kit	P44712-B21.P

Security

HA8X5 G3 Intrusion Cable Kit **Note:** This provides a physical connection from the chassis board and hood and detects any physical intrusion into the chassis, providing security during the entire supply chain process of shipping, receiving distribution, and operation.	P48922-B21.P
Bezel Lock Kit **Note:** The Bezel lock kit (875519-B21.P)	875519-B21.P

Chapter 5: Core Options

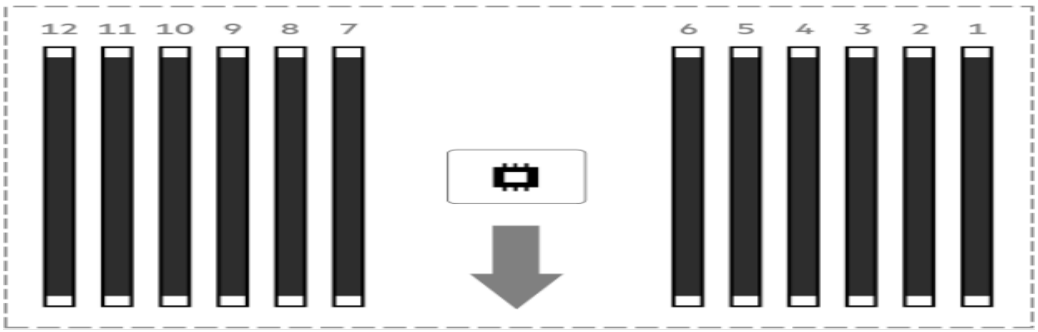
Additional Cable Options

HA8X5 G3 OCP1 Upgrade Cable Kit **Note:** Supports PCIe x16 bandwidth at OCP slot 21. Required if one of the following options is in the order: • OCP InfiniBand network adapters (P31323-B21.P, P31348-B21.P) • BCM 57504 10/25GbE 4p SFP28 Adaptor (P26269-B21.P) • Intel E810 100GbE 2p QSFP28 OCP3 Adaptor (P22767-B21.P)	P56658-B21.P
HA8x5 Serial Port Enablement Kit **Note:** This cable kit supports an optional serial port at the rear of the server.	P50887-B21.P

Rail Kits

Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.
To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative.
Note: Two or more people are required for all Rack Server installations. Refer to your installation instructions for proper tools and the number of people to use for any installation.

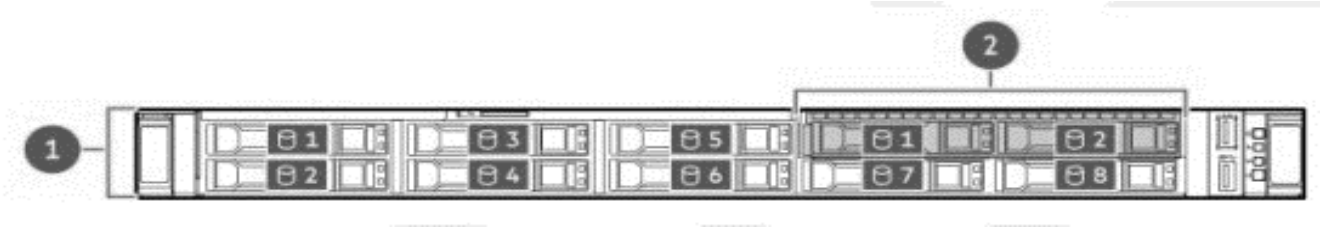
HA8x5 G3 Easy Install Rail Kit **Note:** This Rail kit can be selected only with the 8SFF server.	P52351-B21.P
HA8x5 G3 1U Cable Management Arm for Rail Kit **Note:** CMA can be selected only with the Rail kit.	P26489-B21.P



The arrow points to the front of the server

General Memory Population Rules and Guidelines:

- Install DIMMs only after the corresponding processor is installed.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, and the number and model of installed processors qualified on the platform.
- To realize the performance memory capabilities listed in this document, DDR5 Smart Memory is required.



8SFF + Optional 2SFF (SAS/SATA/ NVMe)

Chapter 6: Technical Specifications

System Unit

Dimensions (Height x Width x Depth)

- 8SFF chassis:
  - 4.29 X 43.46 X 64.94 cm
  - 1.69 X 17.11 X 25.57 in

- Package
  - 24.2 X 60 X 91.6 cm
  - 9.53 X 23.6 X 36.06 In

Weight (approximate)

- 8 SFF chassis:
  - Minimum 8 SFF chassis with 0 drives, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, 1 Smart Array controller, and 7 standard fans.
    - 12.56 kg
    - 27.69 lb
  - Maximum 8 SFF chassis with 8 drives, 1 processor, 2 power supply, 1 standard heatsink, 12 DIMM, 1 Smart Array controller, and 7 standard fans.
    - 15.54 kg
    - 34.27 lb
- Package
  - 4.21 kg
  - 9.281 lb

Input Requirements (per power supply)

Rated Line Voltage

- 100 to 120 VAC
- 200 to 240 VAC

BTU Rating

Maximum

- For 1600W Power Supply: 5918 BTU/hr (at 200 VAC), 5884 BTU/hr (at 240 VAC) for China
- For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only

Power Supply Output (per power supply)

-Rated Steady-State Power

- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VAC)
- For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only

-Maximum Peak Power

- For 1600W Power Supply: 1600W (at 200 to 240 1VAC), 1600W (at 240 VAC) input for China only
- For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only

System Inlet Temperature

Standard Operating Temperature

10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. The maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

Extended Ambient Operating Temperature

- For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).
- For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).
- System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

Non-operating

-30° to 60°C (-22° to 140°F). The maximum rate of change is 20°C/hr (36°F/hr).

Relative Humidity (non-condensing)

- **Operating** - 8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.

- **Non-operating** - 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Altitude

- **Operating** - 3050 m (10,000 ft). This value may be limited by the type and number of options installed. The maximum allowable altitude change rate is 457 m/min (1500 ft/min).

- **Non-operating** - 9144 m (30,000 ft). The maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Emissions Classification (EMC) – Regulatory Information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center
https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072

Acoustic Noise

Listed are the declared mean A-Weighted sound power levels (LwAm), declared average bystander position A-Weighted sound pressure levels (LpAm), and the statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LwAm when the product is operating in a 23°C ambient environment. Noise emissions were measured under ISO 7779 (ECMA 74) and declared under ISO 9296 (ECMA 109).

The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Have your representative provide information from the EMESC website for further technical details regarding the configurations listed below.

Idle	
LWA,m	5.1 B Perf 4.7 B Value
LpAm	37 dBA Perf 35 dBA Value
Kv	0.4 B Perf 0.4 B Value
Operating	
LWA,m	5.9 B Perf 5.7 B Value
LpAm	47 dBA Perf 42 dBA Value
Kv	0.4 B Perf 0.4 B Value

Note:

- The declared mean A-weighted sound power level, LWA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample, rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m, and Kv.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- System under abnormal conditions may increase the noise level, persons in the vicinity of the product [cabinet] for extended periods should consider wearing hearing protection or using other means to reduce noise exposure.

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