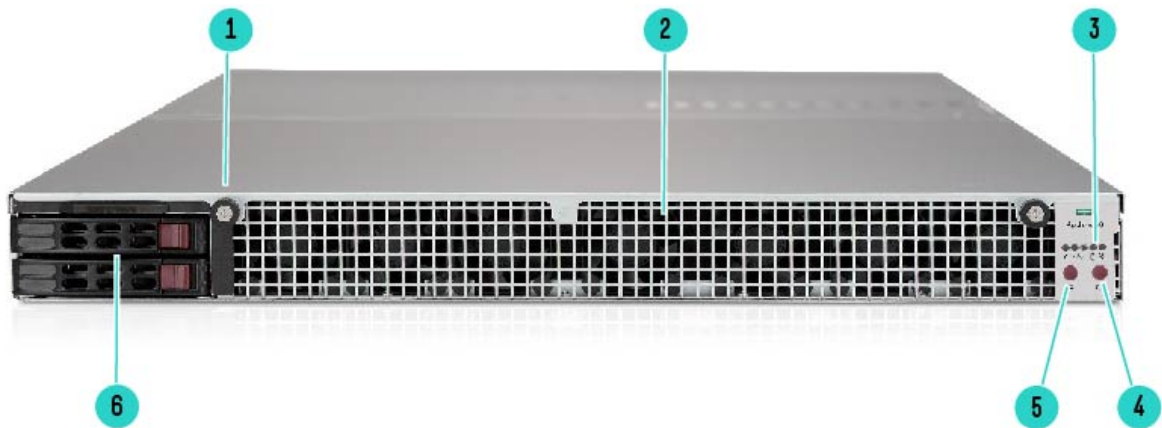


Overview

HPE Apollo sx40 Server

The HPE Apollo sx40 Server features up to four NVIDIA® Tesla® GPUs with the high-bandwidth, energy-efficient interconnect NVIDIA NVLink™ to accelerate mixed-application HPC computing as well as deep learning workloads. NV Link enables increased GPU memory bandwidth and performance for deep learning workloads.

Optimize the server for required workloads by choosing from the available CPUs in the Intel® Xeon® Processor Scalable Family, up to twelve 2666 MT/s DDR4 DIMMs, optional network adapters, and up to two SFF hard drives or solid state drives



Front View

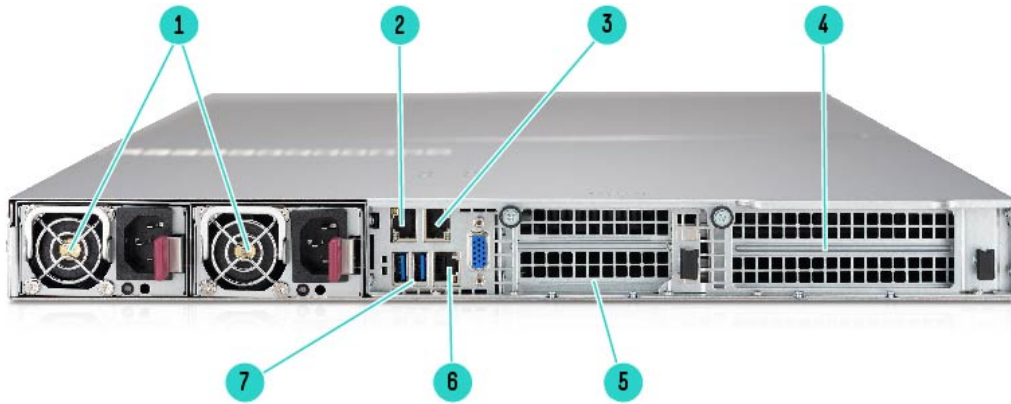
Item Description

1. HPE Apollo sx40 Chassis (1U)
2. Internal fans
3. Status LED

Item Description

4. Power button
5. Unit Identification (UID) LED/button
6. 2 SFF hot-swap SATA drive bays

Overview



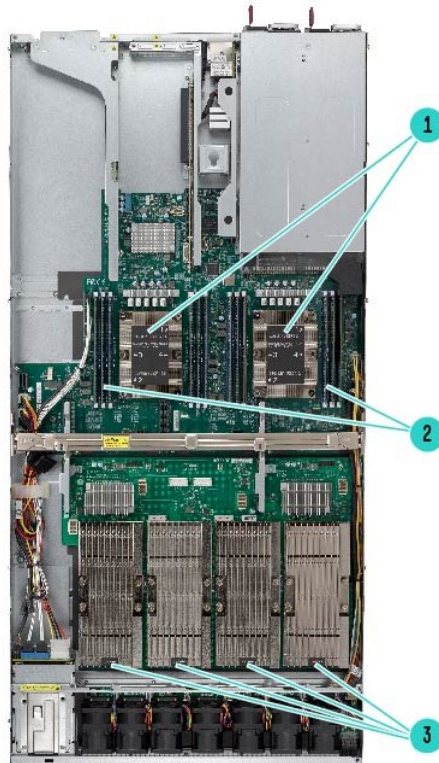
Rear View

Item Description

1. Two 2000W Titanium level power supplies
2. Embedded 10Gb NIC 1
3. Embedded 10Gb NIC 2
4. Two full height PCIe Gen3 x16 slots

Item Description

5. Two low profile PCIe Gen3 x16 slots
6. Dedicated IPMI LAN port
7. Two USB 3.0 connectors



Top View

Item Description

1. Processor 1 & 2
2. DIMMs for processor 1 & 2

Item Description

3. NVIDIA Tesla P100 or V100 SXM2 GPUs

NOTE: sx40 configuration with 4 x32GB V100 GPU's requires that the ambient temperature does not exceed of 25 degrees Celsius

Standard Features

Intel® Xeon® Processor Scalable Family Processors (Please follow product offering to fill out processor SKU)

Model	CPU frequency	Cores	L3 Cache	Power	UPI	DDR4 Hz
Intel® Xeon® Gold 6152	2.1 GHz	22	30.25 MB	140W	10.4 GT/s	2666
Intel® Xeon® Gold 6150	2.7 GHz	18	24.75 MB	165W	10.4 GT/s	2666
Intel® Xeon® Gold 6148	2.4 GHz	20	27.50 MB	105W	10.4 GT/s	2666
Intel® Xeon® Gold 6142	2.6 GHz	16	22.00 MB	105W	10.4 GT/s	2666
Intel® Xeon® Gold 6140	2.3 GHz	18	24.75 MB	65W	10.4 GT/s	2666
Intel® Xeon® Gold 6138	2.0 GHz	20	27.50 MB	135W	10.4 GT/s	2666
Intel® Xeon® Gold 6136	3.0 GHz	12	24.75 MB	90W	10.4 GT/s	2666
Intel® Xeon® Gold 6134	3.2 GHz	8	24.75 MB	135W	10.4 GT/s	2666
Intel® Xeon® Gold 6132	2.6 GHz	14	19.25 MB	85W	10.4 GT/s	2666
Intel® Xeon® Gold 6130	2.1 GHz	16	22.00 MB	85W	10.4 GT/s	2666
Intel® Xeon® Gold 6128	3.4 GHz	6	19.25 MB	85W	10.4 GT/s	2666
Intel® Xeon® Gold 6126	2.6 GHz	12	19.25 MB	85W	10.4 GT/s	2666
Intel® Xeon® Silver 4114	2.2 GHz	10	13.75 MB	85W	9.6 GT/s	2666

Chipset

Intel® C620 Series Chipset

NOTE: For more information regarding Intel® chipsets, please see the following

URL: <http://www.intel.com/products/server/chipsets/>.

Memory

Type DDR4 Load Reduced (LRDIMM), or Registered (RDIMM)

DIMM Slots Available 12 DIMM Slots available

Maximum (LRDIMM) 1.5TB (12 x 128GB)

NOTE: LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.

Network Controller

Ethernet Options

- HPE Ethernet 10 Gb 2-port 535T Adapter
- HPE Eth 10/25Gb 2P 640SFP28 Adapter
- HPE Ethernet 10 Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

InfiniBand Options

- HPE IB EDR/EN 100 Gb 1-port 840QSFP28 Adapter
- HPE IB EDR/EN 100 Gb 2-port 840QSFP28 Adapter
- HPE 100 Gb 1-port OP101 QSFP28 x16 OPA Adapter
- HPE IB EDR 100Gb 1p 841QSFP28 Adapter
- HPE IB EDR/EN 100Gb 2p 841QSFP28 Adapter

Standard Features

Maximum Internal Storage

HPE 1TB SATA 7.2K SFF RW 512n DS HDD	2x 1 TB
HPE 2TB SATA 7.2K SFF RW 512e DS HDD	2x 2 TB
HPE 240GB SATA MU SFF RW DS SSD	2x 240 GB
HPE 480GB SATA MU SFF RW DS SSD	2x 480 GB
HPE 960GB SATA MU SFF RW DS SSD	2x 960 GB
HPE 1.92TB SATA MU SFF RW DS SSD	2x 1.92 TB
HPE 3.84TB SATA RI SFF RW DS SSD	2x 3.8 TB

Interfaces

USB Ports	2 USB 3.0 (external)
Remote Management Port	Dedicated IMPI port
Status LED	1
Power	1
UID	1

Industry Standard Compliance

- ACPI 2.0b Compliant
- PCIe 3.0 Compliant
- PXE Support
- USB 1.1,2.0 and 3.0 Compliant

Power Specifications

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at URL: <https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html#Portfolio>

NOTE: Power Specification and Technical Content for supported power supplies can be found at <https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111541>

Operating Systems and Virtualization Software Support for HPE Apollo Servers

- Red Hat Enterprise Linux (RHEL7.3)
- SUSE Linux Enterprise Server (SLES12 SP2, SLES12 SP2 KVM, SLES15 and SLES15 KVM)

Graphics

Integrated video standard

Form Factor

The Apollo sx40 is a 1U server.

Embedded Management

UEFI

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

Learn more at <https://www.hpe.com/us/en/product-catalog/detail/pip.6935826.html>

Out-of-Band Management

Each system includes an out-of-band management license. Application of the license provides remote access and management capabilities.

Standard Features

Intelligent Provisioning

Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning.

Learn more at <https://www.hpe.com/us/en/product-catalog/detail/pip.5219984.html>

Security

- Power-on password
 - Keyboard password
 - Serial interface control
 - Administrator's password
-

Warranty

This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners (may vary by region). Hardware diagnostic support and repair is available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty.

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<https://support.hpe.com/hpsc/doc/public/display?docId=c02978487>

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support [here](#)

Additional Features

High Performance Clusters - HPE Insight Cluster Management Utility

HPE Insight Cluster Management Utility (CMU) is a Hewlett Packard Enterprise-licensed and Hewlett Packard Enterprise-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <http://www.hpe.com/go/cmuh>

Service and Support

Service and Support

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Optimized Recommendation

HPE Proactive Care* with 24x7 coverage, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

NOTE:*HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

Standard Recommendation

HPE Foundation Care 24x7, three-year Support Service

HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Basic Recommendation

HPE Foundation Care NBD, three-year Support Service

HPE Foundation Care Next Business Day connects you to HPE during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Other Related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also include the installation of one supported operating system type (Windows® or Linux).

Service and Support

HPE Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAXxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Technology Services Support Credits

Offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services “building blocks.” You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others’ products. For more information, visit

<http://www.hpe.com/services/datacentercare>

HPE Flexibly Capacity

With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the “heavy lifting” needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

DC for Hyperscale

Datacenter Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.com/support/hpesc>

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalize IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

NOTE:*HPE Support Center Mobile App is subject to local availability

Service and Support

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

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 QuickSpecs, 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 Drives replaced by Hewlett Packard Enterprise due to malfunction.

Options

Included options are covered under the HPE Service Contract applied to the HPE Server. No separate HPE support services need to be purchased.

For more information

<http://www.hpe.com/support/hpesc>

Configuration Information

Step 1: Base Configuration (Choose one of the CTO Models below)

HPE CTO Model

HPE Apollo sx40 2SFF 4x32GB V100 SMX2 GPU Configure-to-order Server R1C71A

NOTE: sx40 configuration with 4 x32GB V100 GPU's requires that the ambient temperature does not exceed of 25 degrees Celsius

Step 2: Choose Required Options (only one from each category unless otherwise noted)

HPE Processor

HPE Apollo 40 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) Processor Kit	Q5S88A
HPE Apollo 40 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) Processor Kit	Q5S91A
HPE Apollo 40 Intel Xeon-Gold 6140 (2.3GHz/18-core/140W) Processor Kit	Q5S92A
HPE Apollo 40 Intel Xeon-Gold 6138 (2.0GHz/20-core/125W) Processor Kit	Q5S93A
HPE Apollo 40 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) Processor Kit	Q5S94A
HPE Apollo 40 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) Processor Kit	Q5S95A
HPE Apollo 40 Intel Xeon-Gold 6132 (2.6GHz/14-core/140W) Processor Kit	Q5S96A
HPE Apollo 40 Intel Xeon-Gold 6130 (2.1GHz/16-core/125W) Processor Kit	Q5S97A
HPE Apollo 40 Intel Xeon-Gold 6128 (3.4GHz/6-core/115W) Processor Kit	Q5S98A
HPE Apollo 40 Intel Xeon-Gold 6126 (2.6GHz/12-core/125W) Processor Kit	Q5S99A
HPE Apollo 40 Intel Xeon-Silver 4114 (2.2GHz/10-core/85W) Processor Kit	Q5T05A
HPE Apollo 40 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) Processor Kit	Q5S89A
HPE Apollo 40 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) Processor Kit	Q5S90A

HPE Memory

HPE 8GB Single Rank x4 DDR4-2666 Registered Memory Kit	Q7D79A
HPE 8GB Dual Rank x8 DDR4-2666 Registered Memory Kit	Q7D81A
HPE SGI 16GB Dual Rank x4 DDR4-2666 Registered Memory Kit	Q2D31A
HPE SGI 32GB Dual Rank x4 DDR4-2666 Registered Memory Kit	Q2D32A
HPE SGI 64GB Quad Rank x4 DDR4-2666 Load Reduced Memory Kit	Q2D33A
HPE 128GB Octal Rank x4 DDR4-2666 Load Reduced Memory Kit	Q7D83A

HPE Networking

Ethernet Options

HPE Ethernet 10Gb 2-port 535T Adapter	813661-B21
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter	817753-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21
HPE Ethernet 10Gb 2-port 562T Adapter	817738-B21

InfiniBand Options

HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-H21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-H21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21
HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter	872725-H21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-H21

Configuration Information

HPE Hard Drives

Hot Swap SFF drives

HPE 240GB SATA 6G Read Intensive SFF (2.5in) RW 3yr Wty Digitally Signed Firmware SSD	P09685-H21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) RW 3yr Wty Digitally Signed Firmware SSD	P09697-B21
HPE SGI 1.92TB SATA 6G Mixed Use SFF (2.5in) 3yr Wty Digitally Signed Firmware SSD	Q8S85A
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) RW 3yr Wty Digitally Signed Firmware SSD	P07936-B21

HPE M.2 SSD

M.2 SSD

HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-H21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-H21
HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-H21
HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875500-H21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875498-H21

HPE PCIe NVMe

PCIe NVMe

HPE 1.6TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card	P10264-H21
HPE 3.2TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card	P10266-H21
HPE 6.4TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card	P10268-H21

HPE RAID Settings

HPE RAID 0 Drive 1 FIO Setting	339777-B21
HPE RAID 1 Drive 1 FIO Setting	339778-B21

Technical Specifications

System Unit

Server Dimensions

1.7 x 17.2 x 35.2 in
(L x W x D)

4.3 x 43.7 x 89.4 cm

Weight

(approximate)

58 lb

21.8 kg

Maximum (Two hard drives and two processors installed)

System Inlet Temperature Standard

10° to 35° C (50° to 95° F)

Operating Support

Non-operating

-40° to 60° C (-40° to 140° F)

Operating

8% to 90% (non-condensing)

Non-operating

5% to 95% (non-condensing).

Relative Humidity

(non-condensing)

Altitude

Operating

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

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and measured average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Configuration SKU	Entry	Base	Performance
Idle			
LWAd	6.9 B	6.9 B	6.9 B
LpAm	51 dBA	51 dBA	51 dBA
Operating			
LWAd	8.0 B	8.3 B	8.7 B
LpAm	62 dBA	66 dBA	72 dBA

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

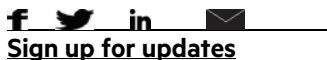
Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
02-Dec-2019	Version 11	Changed	SKUs were updated in Configuration Information section. Obsolete SKUs were removed
02-Apr-2019	Version 10	Changed	Obsolete SKUs were removed. SKUs were added in Configuration Information section Standard Features and Configuration Information sections were updated.
04-Feb-2019	Version 9	Changed	Removed sx40 SKU, Q9B47A, with 16GB Volta GPU support. Added sx40 SKU, R1C71A, with 32GB Volta GPU support. Removed 8TB PCIe NVME card, 877833-B21, support Overview and Configuration Information sections were updated Obsolete SKUs were removed
03-Dec-2018	Version 8	Changed	SKUs were updated in Configuration Information section Obsolete SKUs were removed
01-Oct-2018	Version 7	Changed	Standard Features and Configuration Information were updated.
13-Aug-2018	Version 6	Changed	Standard Features, Service and Support and Configuration Information were updated
04-Dec-2017	Version 5	Changed	Added new server SKU and drive options
02-Oct-2017	Version 4	Changed	Update several sections and verbiage
10-Aug-2017	Version 3	Changed	Change throughout the QuickSpecs sections
24-Jul-2017	Version 2	Changed	Updates made throughout the document
11-Jul-2017	Version 1	New	New QuickSpecs



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