Overview

HPE Apollo 35 v2 System

Are your high performance computing (HPC) applications memory-bound?

The HPE Apollo 35 v2 System provides a high density AMD EPYC™ compute solution with exceptional memory bandwidth and capacity per socket. Offering four servers in 2U, with up to 64 cores and 512GB DDR4 memory per socket, the HPE Apollo 35 v2 System is well suited for memory bandwidth or capacity bound HPC workloads, such as computational fluid dynamics, weather simulation, and oil and gas exploration. With high-performance core density per server and support for high-bandwidth network interfaces, the HPE Apollo 35 System v2 delivers increased HPC performance at both a node and rack level.

Front View

Item	Description	Item	Description
1	Power button	3	Unit Identification (UID) LED/button
2	HPE Apollo 35 v2 System (2U)	4	SFF SATA drive bays

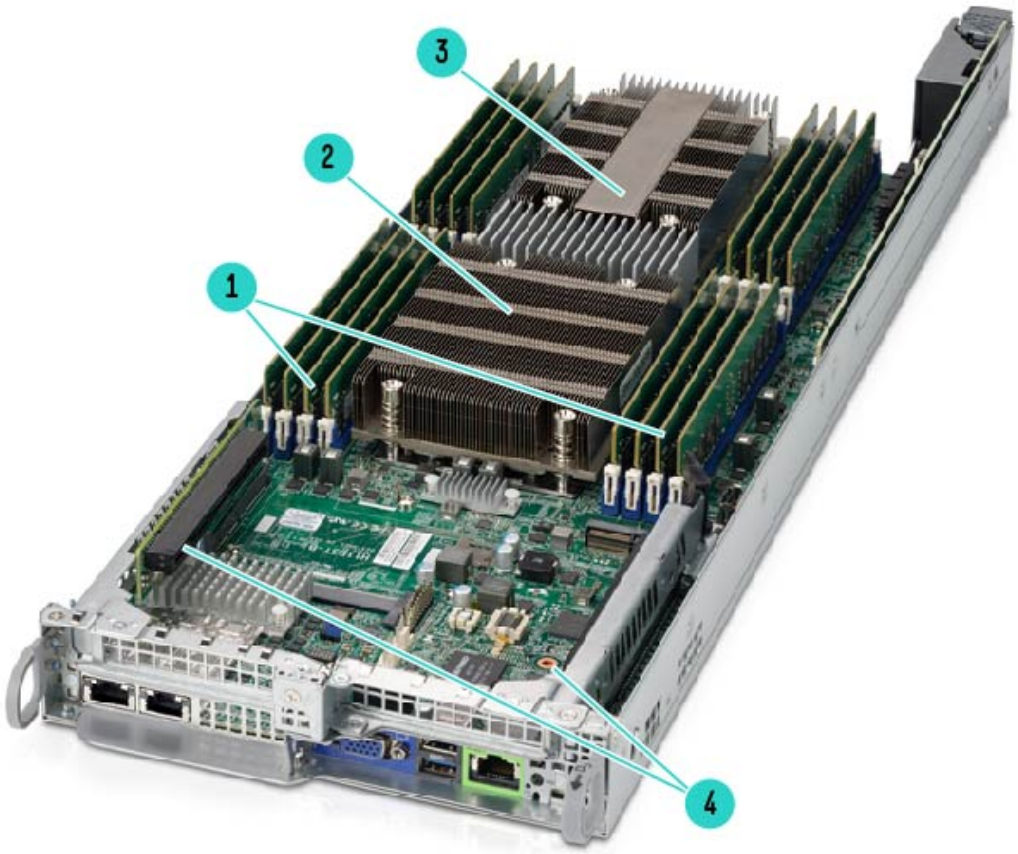
Overview

Rear View

Item	Description	Item	Description
1	Hot-swap Nodes (Four nodes per Apollo 35 v2 system)	5	Two USB ports
2	Two 2600W titanium level power Supplies (1 x C20 inlet per power supply)	6	VGA port
3	Two Low profile HH/HL PCIe Gen4x16 slots	7	Network Interface
4	Dedicated IPMI LAN port		

NOTE: Each Apollo 35 system includes two power supplies and each power supply has one C20 inlet (IEC 60320 C-20).

Overview



Internal View

Item	Description	Item	Description
1	8 Memory DIMM slots per CPU	3	CPU 2
2	CPU 1	4	Two low profile HH/HL PCIe 4.0 x16 slots

Standard Features

Processor

NOTE: Please follow product offering to fill out processor SKU.

AMD EPYC™ 7000 Series

Model	Base Clock Speed	Cores	L3 Cache	Default TDP / TDP	DDR4 Maximum Speed
7702	2.0GHz	64	256MB	200W	3200MT/s
7502	2.5GHz	32	128MB	180W/200W	3200MT/s
7452	2.3GHz	32	128MB	155/180W	3200MT/s
7402	2.8GHz	24	128MB	180W/200W	3200MT/s
7352	2.3GHz	24	128MB	155W	3200MT/s
7302	3.0GHz	16	128MB	155/180W	3200MT/s
7282	2.8GHz	16	64MB	120/150W	3200MT/s

Chipset

System on chip (SoC)

Memory

- Industry Standard DDR4 Registered (RDIMM)
- DIMM Slots Available 16 DIMM per node

Maximum Internal Storage

HPE 1TB SATA 7.2K SFF RW 512n DS HDD	24 x 1TB
HPE 2TB SATA 7.2K SFF RW512e DS HDD	24 x 2TB
HPE 240GB SATA MU SFF RW DS SSD	24 x 240GB
HPE 480GB SATA MU SFF RW DS SSD	24 x 480GB
HPE 960GB SATA RI SFF RW DS SSD	24x 960GB
HPE 1.92TB SATA MU SFF RW DS SSD	24 x 1.92TB
HPE 3.84TB SATA RI SFF RW DS SSD	24 x 3.84TB

Interfaces

- Two USB 3.0 Ports
- Remote Management Port Dedicated IPMI port
- Power 1
- UID 1

Industry Standard Compliance

- ACPI 2.0b Compliant
- PCIe 4.0 Compliant
- PXE Support
- USB 1.1,2.0 and 3.0 Compliant

Operating Systems and Virtualization Software Support for HPE Apollo Servers

- Red Hat Enterprise Linux (RHEL 7.6 and greater)
- SUSE Linux Enterprise Server (SLES12 SP4, SLES15 SP1)

Graphics

Integrated ASPEED AST2500 BMC

Standard Features

Form Factor
The Apollo 35 v2 system is a 2U 4 node server

Embedded Management
UEFI
Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI).
Learn more at **http://www.hpe.com/servers/uefi.**

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

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 three years 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/**

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 provide innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. Hewlett Packard Enterprise 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 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.

Learn more at 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 Hewlett Packard Enterprise 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.

Learn more at 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.

For more information, visit 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).

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

Offers flexible services and technical skills to meet 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.

Service and Support

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 a class today and learn how to get the most from your technology investment. For more information, visit **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 Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more at **http://www.hpe.com/support/hpesc**

The HPE 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

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 quick-specs, 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

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

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**
For more information, visit **http://www.hpe.com/services**

Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- All Factory Integrated Models will be populated with sufficient hard drive blanks
- Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Step 1: Base Configuration (choose one of the following configurable models)

HPE CTO Model

HPE Apollo 35 v2 24SFF Configure-to-order Server	R3X11A

NOTE: Each CTO system includes 2U chassis, 4 x base server trays, 2 x 2600W power supplies (C20 connector). .

Step 2: Choose Required Options

HPE Processors

AMD EPYC 7000 series (Two per Node)

HPE Apollo 35 v2 AMD EPYC 7702 (2.0GHz/64-core/200W) FIO Processor Kit	R3X04A
HPE Apollo 35 v2 AMD EPYC 7502 (2.5GHz/32-core/180-200W) FIO Processor Kit	R3X05A
HPE Apollo 35 v2 AMD EPYC 7452 (2.3GHz/32-core/155-180W) FIO Processor Kit	R3X06A
HPE Apollo 35 v2 AMD EPYC 7402 (2.8GHz/24-core/180-200W) FIO Processor Kit	R3X07A
HPE Apollo 35 v2 AMD EPYC 7352 (2.3GHz/24-core/155W) FIO Processor Kit	R3X08A
HPE Apollo 35 v2 AMD EPYC 7302 (3.0GHz/16-core/155-180W) FIO Processor Kit	R3X09A
HPE Apollo 35 v2 AMD EPYC 7282 (2.8GHz/16-core/120W) FIO Processor Kit	R3X10A

HPE Memory

DDR4 3200MT/s (16 DIMMs per node)

HPE Apollo 35 v2 8GB (1x8GB) Single Rank x8 DDR4-3200 Registered FIO Memory Kit	R3X31A
HPE Apollo 35 v2 16GB (1x16GB) Single Rank x4 DDR4-3200 Registered FIO Memory Kit	R3X32A
HPE Apollo 35 v2 32GB (1x32GB) Dual Rank x4 DDR4-3200 Registered FIO Memory Kit	R3X33A
HPE Apollo 35 v2 64GB (1x64GB) Dual Rank x4 DDR4-3200 Registered FIO Memory Kit	R3X34A

HPE Disk Drives

Hot Swap drives (24 drive per chassis, 6 per node)

HPE Apollo 35 v2 240GB SATA 6G Mixed Use SFF (2.5in) FIO SSD	R3X12A
HPE Apollo 35 v2 480GB SATA 6G Mixed Use SFF (2.5in) FIO SSD	R3X13A
HPE Apollo 35 v2 960GB SATA 6G Read Intensive SFF (2.5in) FIO SSD	R3X14A
HPE Apollo 35 v2 1.92TB SATA 6G Mixed Use SFF (2.5in) FIO SSD	R3X15A
HPE Apollo 35 v2 3.84TB SATA 6G Read Intensive SFF (2.5in) FIO SSD	R3X16A
HPE Apollo 35 v2 1TB SATA 6G Midline 7.2K SFF (2.5in) FIO HDD	R3X17A
HPE Apollo 35 v2 2TB SATA 6G Midline 7.2K SFF (2.5in) FIO HDD	R3X18A

HPE M.2 SSDs (Maximum 1 per node)

HPE Apollo 35 v2 240GB SATA 6G Mixed Use M.2 2280 FIO SSD	R3X19A
HPE Apollo 35 v2 480GB SATA 6G Mixed Use M.2 2280 FIO SSD	R3X20A
HPE Apollo 35 v2 960GB SATA 6G Mixed Use M.2 2280 FIO SSD	R3X21A
HPE Apollo 35 v2 480GB SATA 6G Read Intensive M.2 2280 FIO SSD	R3X22A
HPE Apollo 35 v2 960GB SATA 6G Read Intensive M.2 2280 FIO SSD	R3X23A

Configuration Information

HPE PCIe Workload Accelerator Options

HPE Apollo 35 v2 1.6TB NVMe x8 Lanes Mixed Use HHHL FIO SSD	R3X24A
HPE Apollo 35 v2 3.2TB NVMe x8 Lanes Mixed Use HHHL FIO SSD	R3X25A
HPE Apollo 35 v2 6.4TB NVMe x8 Lanes Mixed Use HHHL FIO SSD	R3X26A

HPE Networking

NOTE: must order a minimum of 1 Network Adapter per node. They should be consistent among all the nodes

InfiniBand Options SIOM (1 card per node either SIOM or PCIe)

HPE Apollo 35 v2 InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 FIO Adapter	R3X27A

InfiniBand Options PCIe

Apollo 35 v2 InfiniBand HDR 200Gb 2-port QSFP56 Mellanox ConnectX-6 PCIe FIO Adapter	R3X35A

NOTE: an Ethernet adapter is required for any IB selection. Can be SIOM (if IB is not a SIOM) or PCIe

Ethernet Options SIOM

HPE Apollo 35 v2 Ethernet 10/25Gb 2-port 640SFP28 FIO Adapter	R3X28A
HPE Apollo 35 v2 Ethernet 10Gb 2-port 562SFP+ FIO Adapter	R3X29A
HPE Apollo 35 v2 Ethernet 10Gb 2-port 562T FIO Adapter	R3X30A

Ethernet Options PCIe

HPE Apollo 35 v2 Ethernet 1Gb 2-port RJ45 PCIe FIO Adapter	R3X64A
HPE Apollo 35 v2 Ethernet 10Gb 2-port SFP+ PCIe FIO Adapter	R3X65A
HPE Apollo 35 v2 Ethernet 10Gb 2-port RJ45 PCIe FIO Adapter	R3X66A
HPE Apollo 35 v2 Ethernet 25Gb 2-port SFP28 PCIe FIO Adapter	R3X67A

NOTE: There are a total of 2 PCIe Gen4 x16 slots per node-one must be filled with a network adapter unless the network adapter is a SIOM form factor. Any empty PCIe Gen4 x16 slots can have Workload Accelerators or additional Network Adapters

HPE RAID Settings

SW or BIOS assisted RAID. No HW RAID Support. Broadcom 3008; IT mode

HPE RAID 0 Drive 1 FIO Setting	339777-B21
HPE RAID 1 Drive 1 FIO Setting	339778-B21
HPE RAID 5 Drive 1 FIO Setting	339779-B21

Memory

Memory Parameters

Parameter	Value	Processor Models	Supported Memory Speeds
Memory Capacity	Up to 1TB	All	3200MT/s

Type	Ranks Per DIMM x Data Width	DIMM Capacity (GB)	Speed (MT/s)	Voltage (V)	Slot Per Channel (SPC)	DIMM Per Channel (DPC)
RDIMM	SRx8	8	3200	1.2	1	1
RDIMM	DRx4	16	3200	1.2	1	1
RDIMM	DRx4	32	3200	1.2	1	1
RDIMM	DRx4	64	3200	1.2	1	1

NOTE: Fully populate 8 memory channels per processor at 1 DIMM per channel

Technical Specifications

System Unit		
Dimensions (H x W x D)	3.47 x 17.25 x 28.5 in (8.8 x 43.8 x 72.39 cm)	
Weight (approximate)	Maximum: (all hard drives, power supplies, and processors installed	85 lb (38.6 kg)
System Input Requirements	AC Input Rating 2600W: 208-240Vac, 15-12.5A, 50-60Hz Rated Input Current: 15-12.5A Rated Input Frequency: 50 – 60 Hz Efficiency: 96+ (Titanium Level)	
System Inlet Temperature	Standard Operating Support	10°C ~ 30°C (50°F ~ 85°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. 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.
	Non-operating	-40°C to 60°C (-40°F to 140°F)
Relative Humidity	Operating	8% to 90% (non-condensing)
	Non-operating (non-condensing)	5% to 95% (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 (2012/19/EU) 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
06-Jan-2020	Version 3	Changed	Standard Features section was updated.
21-Oct-2019	Version 2	Changed	Configuration Information section was updated.
07-Oct-2019	Version 1	New	New QuickSpecs

Sign up for updates

Hewlett Packard Enterprise

For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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