

Overview

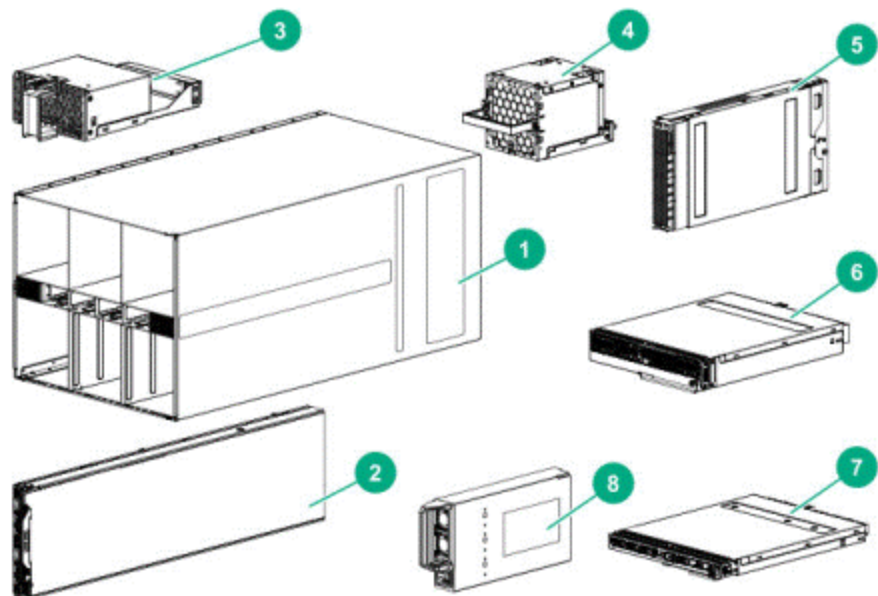
HPE Apollo w6000 Chassis

Is it time for a real workhorse server solution to take your business to the next level?

The HPE Apollo w6000 Chassis is designed with density optimization and HPC solution integration in mind to help you manage and scale to your HPC computing demands. The new modular HPE Apollo w6000 Chassis is designed to hold the servers for your application workloads that deliver even better performance with parallel processing compute capabilities.

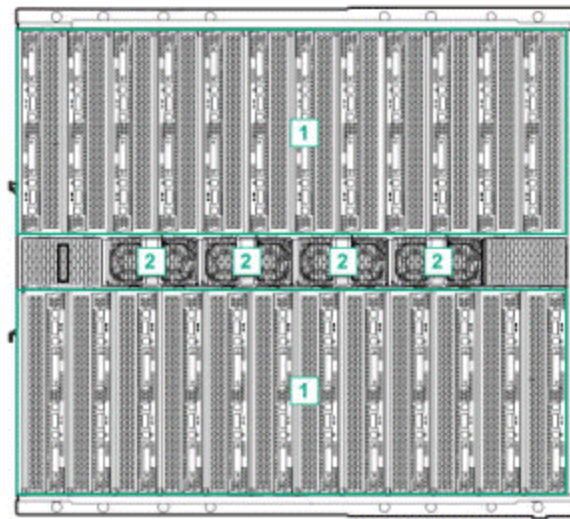
The new modular, fully integrated, and highly flexible HPE Apollo w6000 Chassis accommodates up to twenty four HPE ProLiant XL2x260w server trays, redundant power and cooling, ethernet and high speed fabric switches to address various HPC workload needs. The HPE Apollo 6000 DLC System is a performance optimized, water-cooled solution and is space efficient for your data center. This solution offers outstanding configuration flexibility, simplified administration and rack-scale efficiency that lowers the total cost of ownership needed for large scale HPC deployments.

Cooling requirements are met with 12 hot-pluggable dual rotor fans while the chassis power management is done by either HPE Chassis Controller or enhanced with optional HPE Apollo Platform Manager (APM) which allows granular power control at rack level.



Item	Description	Item	Description
1.	HPE Apollo w6000 Chassis	5.	Chassis controller or HPE Apollo Platform Manager
2.	Server trays (qty. depends on configuration ordered)	6.	High-speed fabric switches (qty. and type depend on configuration ordered)
3.	Front fan modules (4)	7.	Data switches (qty and type depend on configuration ordered)
4.	Rear fan modules (12)	8.	Power supplies (2)

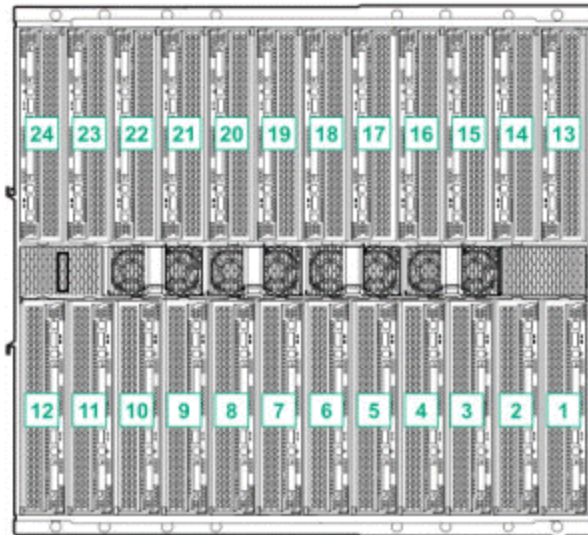
HPE Apollo w6000 Chassis
Front chassis components



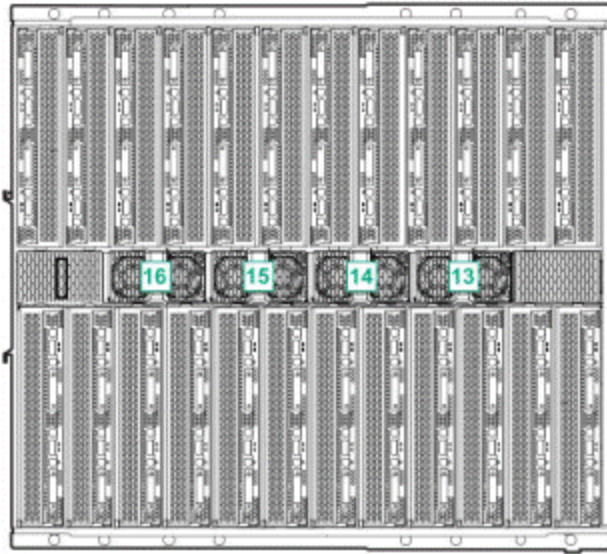
Item	Description
1.	Server bays

Item	Description
5.	Fan module bays

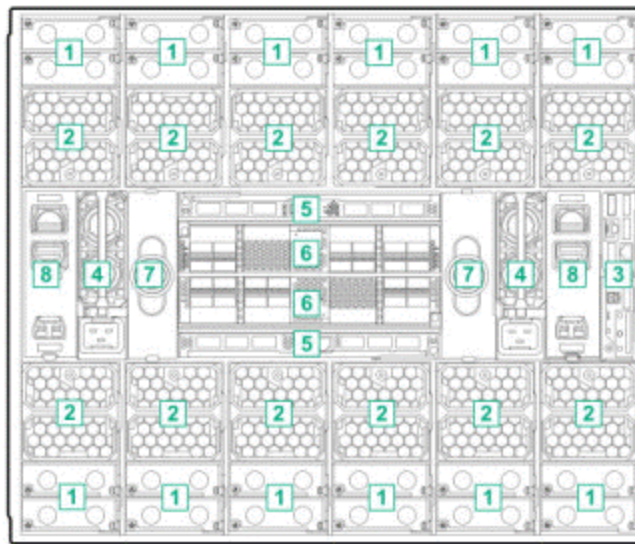
Server bay numbering



Front panel fan module numbering



Rear panel components



Item	Description	Item	Description
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|----|---|----|----------------------------|
| 1. | Blanks | 5. | Data switches |
| 2. | Fan modules | 6. | High-speed fabric switches |
| 3. | Chassis controller or HPE Apollo Platform Manager | 7. | Liquid line connection |
| 4. | Power supply | 8. | HVDC input connections |

Standard Features

Chassis

Each HPE Apollo w6000 Chassis can be fully configured with the following:

- Up to 24 Dual KNL computer Trays (48 nodes) per 10Ux12U x 39.5" chassis
- Up to two (2) 2650W HVDC power supplies providing up to 2650W of redundant power for the chassis.
- HPE Chassis Controller contains the thermal logic technology for lower power consumption and airflow when nodes are fully utilized.
- Twelve (12) dual rotor fan assemblies for redundancy, improved power consumption and acoustics.
- Front 4 hot-swappable fans to provide thermal cooling for integrated switches.

	Up to 22kW of power capacity per chassis
System Fans	The Chassis supports 12 dual rotor fan modules and 4 hot pluggable front fans to direct air to switch bays.
Server Blank Kit	HPE Apollo 6000 Server Tray Blank Kit NOTE: Use this Server Blank tray kit in the absence of a server tray in one of the assigned server slots to maintain the airflow in the chassis to meet thermal requirements during operation or servicing.
Rack Cooling Requirements	HPE Apollo Performance 42U 800mm x 1600mm Shock Direct Liquid Cooling Rack w/Environmental Control
Cabling	- From the chassis to the power shelves (blue) - From the HVDC module to the power supplies (green) - From the PDU to a PDM port on the HPE Apollo Platform Manager (orange) - From each power shelf to a PDM port on the HPE Apollo Platform Manager (yellow) - From each power shelf to the PDU HPE Apollo Platform Manager (pink)

Connect the HPE Apollo Platform Manager

- From the numbered RDM ports to the corresponding chassis controllers (orange)
- From the 12v connectors on the HPE Apollo Platform Manager and chassis controller 3 to the HPE Apollo Environmental Module (blue).

Service and Support Protect your business beyond warranty with HPE Support Services

It is recommended to have the same attached support level for all products included in the HPE Apollo w6000 chassis.

The support of HPE Apollo w6000 the chassis covers the chassis, the included options, the power shelf and APM. The xl2x260w server and switches are not included in the chassis support; separate support services are available for these components.

HPE Pointnext for Industry Standard Servers

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.

Recommended Services Optimized Recommendation

HPE Proactive Care 24x7, 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>

Standard Recommendation

*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.

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>

Parts and Materials

HPE 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 HPE due to malfunction

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 includes 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 MSAXXX3PAR 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 Flexible 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>

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 personalized 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.

*HPE Support Center Mobile App is subject to local availability

Additional can be found at: <http://www.hpe.com/services>

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. 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; refer to the specific hard drive QuickSpecs for details.

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:

<http://h18004.www1.hpe.com/products/servers/platforms/warranty/index.html>

Configuration Information

NOTE: 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 an Hewlett Packard

Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

Step 1: Choose a Chassis Configuration

HPE Chassis	HPE Apollo w6000 1.2m Chassis	870777-B21
	NOTE: This Chassis requires the HPE Apollo Performance 42U 800mm x 1600mm Shock Direct Liquid Cooling Rack w/Environmental Control	
HPE Cooling Options	HPE Apollo 6000 Server Tray Blank Kit	870868-B21
	NOTE: Required for any non-populated slots in the chassis to prevent thermal related issues.	

Step 2: Choose a Compute Server Tray

Server Trays	NOTE: For full server configuration options and details, please see HPE ProLiant XL2x260w QuickSpecs.	
	HPE ProLiant XL2x260w Tray	851659-B21
	NOTE: This is single slot server tray which contains 2P server. Each HPE Apollo w6000 Chassis can fit up to 24 XL2x260w compute server trays.	

Step 3: Choose Additional Options

HPE Advanced Power Manage	HPE Apollo 6000 Fabric FIO Backplane	859368-B21
	NOTE: The Fabric Backplane is required if high speed EDR InfiniBand or OmniPath Architecture is desired.	
	HPE Apollo 6000 Chassis Controller	859362-B21
	NOTE: The Chassis Controller is required to manage the power and thermals of the chassis.	
	HPE Apollo 6000 Platform Manager	859364-B21
	NOTE: One Apollo Platform Manager per rack can be installed in place of Chassis Controller that can connect upto 3 Chassis Controllers for full rack level control.	
	NOTE: One HPE Network to Serial port (SKU: 859365-B21) is included with HPE Apollo Platform Manager.	

Step 4: Choose network and high speed fabric switches

Network switches	HPE Apollo Ethernet 10Gb Pass Thru Module	851928-B21
	NOTE: The HPE Apollo 10GbE Pass Thru Module allows customers to connect to their desired top of rack switches. Quantity of 1 or 2 can be installed into the Apollo w6000 Chassis.	
	HPE Apollo 10/40GbE Ethernet Switch	
	HPE Apollo Ethernet 10/40Gb Switch	846633-B21
	TE: The HPE Apollo 10/40GbE Ethernet Switch is an integrated switch to be placed in switch Bay 1, 2 or both depending on the desired configuration.	
High Speed Fabric Switches	HPE Apollo Ethernet 10/40Gb TAA-compliant Switch	846633-B22
	HPE Apollo A10 InfiniBand EDR 100 Gb 36-port Unmanaged Switch	843407-B21
	NOTE: The HPE Apollo InfiniBand EDR Switch can be installed in High Speed Switch Bay 3, 4 or both depending on switch radix alignment. 1 installed switch represents 2:1 radix alignment while 2 switches allow 1:1 radix alignment.	
	HPE Apollo 100Gb 48-port Intel® Omni-Path Architecture Unmanaged Switch	851341-B21
	NOTE: The Apollo 100Gb 48-port Intel Omni-Path Architecture (OPA) Switch can be installed in Switch Bay 3, 4 or both depending on single or dual rail.	
HPE Support Services	Installation & start up services	
	HPE Installation Apollo 6000 Gen10 Chassis Service	H2GA8E
	HPE Apollo 6000 Generation 10 Installation and Startup Service	H6SV1E
	Support Services	
	HPE 3 Year Proactive Care 24x7 Apollo 6000 Gen10 Chassis Service	H2FP5E
	HPE 3 Year Foundation Care 24x7 Apollo 6000 Gen10 Chassis Service	H2FP4E

Technical Specifications

Apollo w6000 Chassis	Dimensions	Height	17.64 in (44.80 cm)
		Width	20.92 in (53.14 cm)
		Depth	40.39 in (102.60 cm)
	Shipping Dimensions	Height	18 in (45.70 cm)
		Width	23.6 in (60.00 cm)
		Depth	42.8 in (108.70 cm)
	Chassis Weight	Empty	147 lb (66.68 kg)
	Max Enclosure Weight	Approximate	665 lb (301.64 kg)
	Temperature Range	Operating	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. 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).
			NOTE: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.
Relative Humidity	Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 10° to 5°C (50° to 41°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). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ASHRAE	
		Non-Operating	-30° to 60° C (-22° to 140° F) System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) 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.
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared 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).		

Configuration SKU	Entry	Base	Performance
Idle - LWAd	6.9 B	6.9 B	6.9 B
Idle - LpAm	53 dBA	53 dBA	53 dBA
Operating - LWAd	8.1 B	8.6 B	9.0 B
Operating - LpAm	64 dBA	69 dBA	73 dBA

Environmental-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: <http://www.hpe.com/RECYCLE>. 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
25-Sept-2017	Version 1	Created	Created QuickSpecs for HPE Apollo w6000 Chassis

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