

Overview

HP Apollo 2000 Chassis

The Apollo 2000 System is the enterprise bridge to scale-out architecture for traditional data centers delivering the space and cost savings of density-optimized infrastructure in a non-disruptive manner. It is a dense, multi-server platform that packs a lot of performance and workload capability into a small amount of datacenter space while delivering the efficiencies of a shared infrastructure.

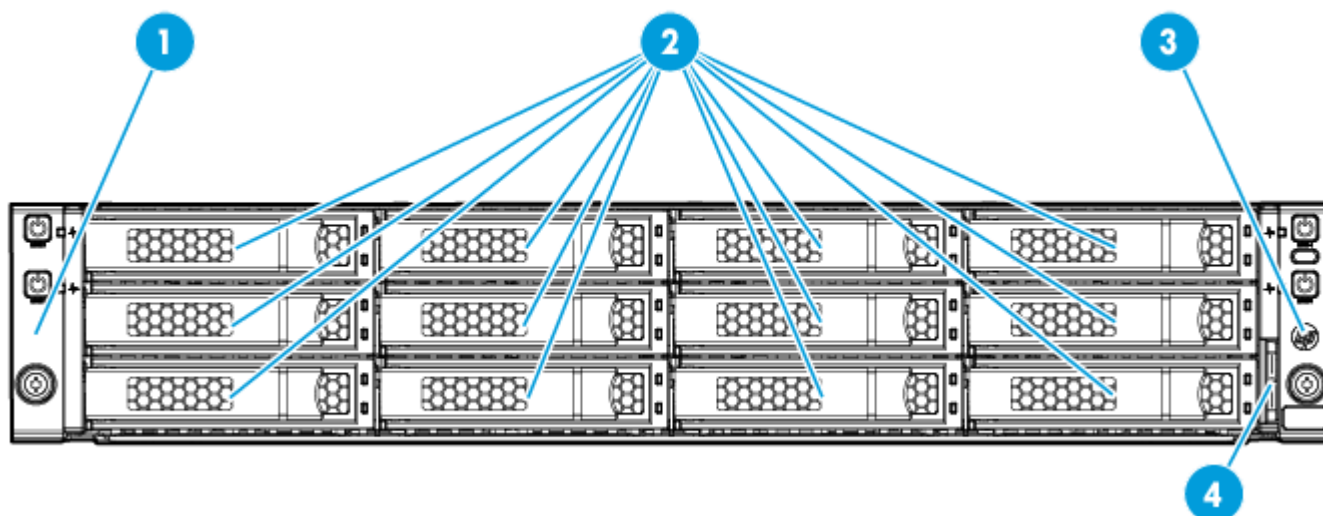
The Apollo 2000 System offers the configuration flexibility to support a variety of workloads, from remote site systems to large HPC clusters and everything in between. And it can be deployed cost-effectively starting with a single 2U, shared infrastructure chassis to meet the configuration needs of a wide variety of scale-out workloads.

The Apollo 2000 System is a density-optimized, 2U shared infrastructure chassis for up to 4 ProLiant Gen9 independent, hot-plug servers with all the traditional data center attributes – standard racks and cabling and rear-aisle serviceability access. A 42U rack fits up to 20 Apollo r2000 series chassis accommodating up to 80 servers per rack.

With Apollo 2000 System servers there is flexibility to tailor the system to the precise needs of each workload with compute and flexible I/O and storage options. Apollo 2000 System servers can be “mixed and matched” within a single chassis to support different applications and it can even be deployed with a single server, leaving room to scale as customer’s needs grow..

The Apollo 2000 chassis comes with 4 new generation single rotor fans and an additional 4 fans can be added for redundancy. The power can be managed by the HP Advanced Power Manager (HP APM) an optional rack level manager.

- **HP Apollo r2200 Chassis – 12 LFF**

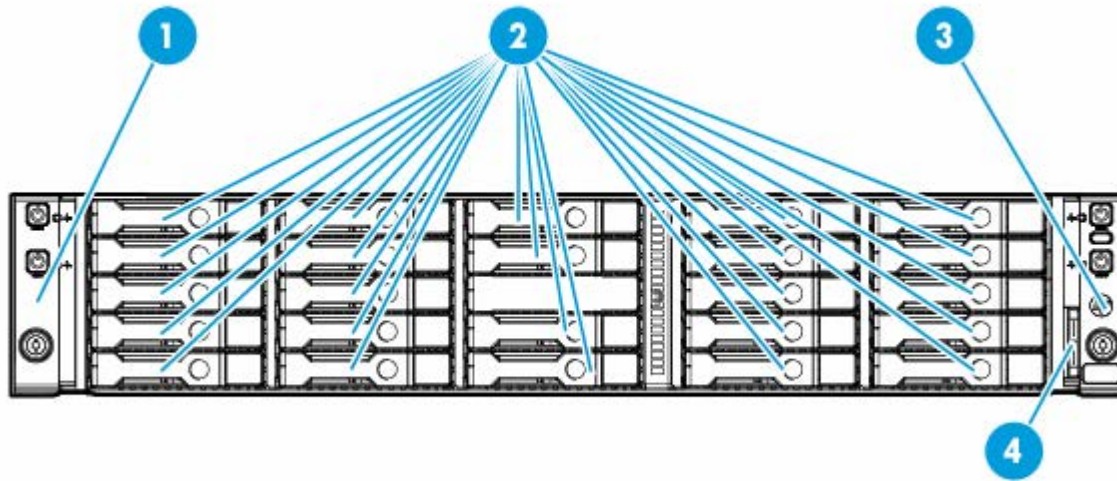


Item Description

- | | | | |
|---|---------------------------------|---|-------------------------------|
| 1 | Left bezel ear | 3 | Right bezel ear |
| 2 | Low-profile LFF hot-plug drives | 4 | Chassis serial label pull tab |

- **HP Apollo r2600 Chassis – 24 SFF**

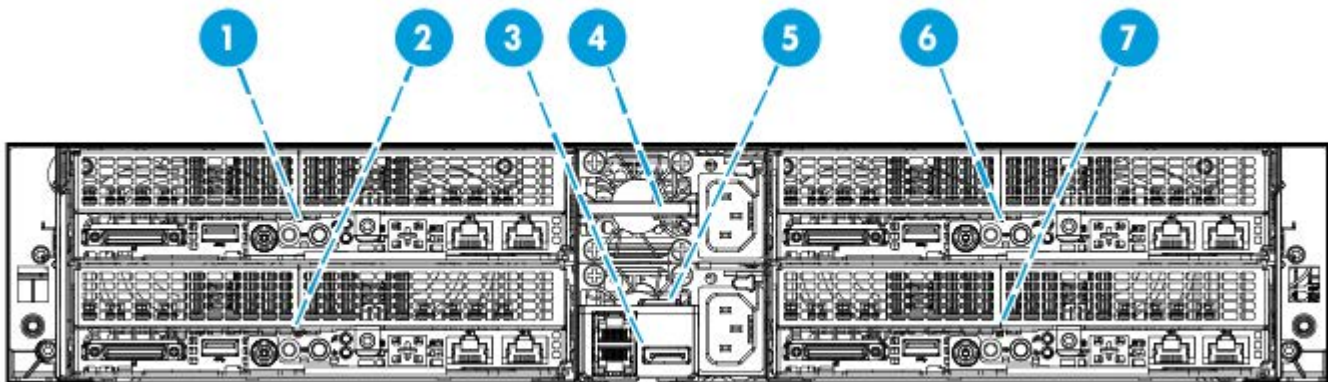
Overview



Item	Description
1	Left bezel ear
2	SFF HP SmartDrives
3	Right bezel ear
4	Chassis serial label pull tab

Chassis Rear panel Components

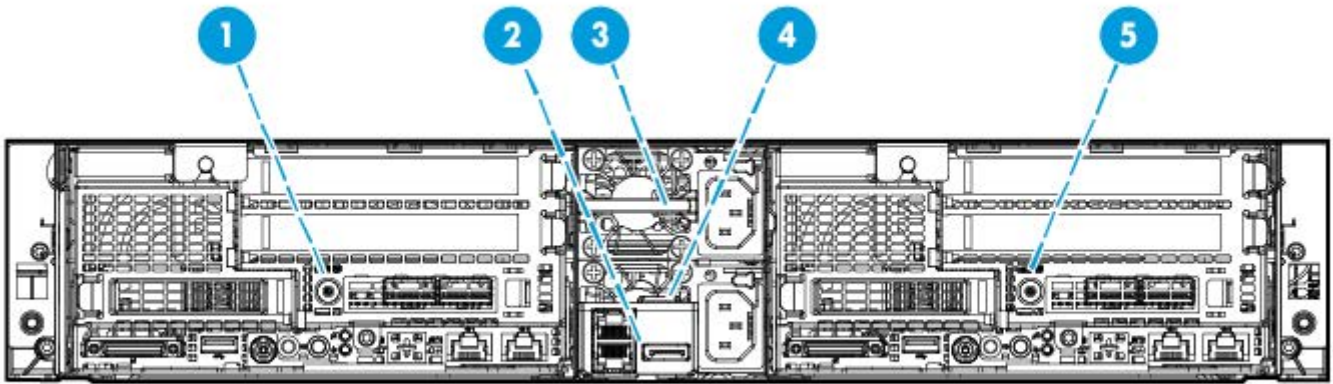
Four 1U Nodes



Item	Description
1	Node 4
2	Node 3
3	RCM module
4	Power Supply 2
5	Power Supply 1
6	Node 2
7	Node 1

Overview

Two 2U Nodes



Item	Description
1	Node 3
2	RCM module
3	Power Supply 2
4	Power Supply 1
5	Node 1

Core Features

Chassis

There are 2 chassis options with different storage configurations

- HP Apollo r2200 Chassis – 12 LFF hot-plug SAS or SATA HDDs or SSDs - allocated equally across server nodes
- HP Apollo r2600 Chassis – 24 SFF hot-plug SAS or SATA HDDs or SSDs - allocated equally across server nodes

Each HP Apollo 2000 Chassis is built with the following:

- 4 server slots per chassis.
- Up to two (2) 800W/1400W power supply for the chassis HP Thermal Logic technology for lower power consumption and airflow.
- Four (4) single rotor fans standard and options for four (4) additional single rotor fans for redundancy and improved power consumption and acoustics.

System Fans

The Chassis ships standard with 4 single rotor fan modules.

Server Tray Blank Kit

A chassis requires that four (4) server tray slots be populated with either an HP ProLiant XL170r, XL190r server or an HP Apollo 2000 Server Tray Blank Kit.

Rack Airflow Requirements

HP Apollo 2000 Chassis

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. For maximum cooling, HP racks are recommended to allow these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels will result in improper cooling that can lead to thermal damage.

Optional Features

HP Insight Management software

Insight Management

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP Insight Management lowers the cost of running your HP ProLiant servers by providing you with best-in-class management tools, including HP Insight Control, HP Virtual Connect Enterprise Manager (VCEM), and HP Insight Dynamics/Matrix Operating Environment. Insight Management increases your productivity and reduces your operating costs to get you higher value from your HP ProLiant servers.

Electronic download of Insight Management Media

Insight Management software media is available for free download (not including license entitlement certificates) at this website:

<http://www.hp.com/go/insightupdates>.

Software media available for download includes:

- HP Insight Control
- HP Insight Control for Microsoft® System Center
- HP Insight Control for VMware vCenter Server
- HP Virtual Connect Enterprise Manager (VCEM)
- HP Insight Dynamics / Matrix Operating Environment

Customers will receive an Insight Control or Insight Dynamics license entitlement certificate via physical shipment or email. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s).

One year of 24x7 Software Technical Support and Updates are included with your purchased licenses.

HP provides a complete range of installation and support services to ensure the successful deployment and operations of your server infrastructure. For more information about support services and licensing options, see the following website:

<http://www.hp.com/go/insightsoftware>

Insight Software Media Kit (DVDs)

Physical media (DVDs) are also available for purchase from HP or from your authorized reseller

Service Pack for ProLiant

Customers should use the HP Service Pack for ProLiant (SPP) to perform firmware, driver, and related software updates.

- SPP main webpage: www.hp.com/go/spp
- SPP downloads webpage: www.hp.com/go/spp/download

HP Integrated Lights-Out (iLO)

HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant SL, XL, ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control and

Optional Features

HP Insight Control

Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO.

HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <http://www.hp.com/go/insightcontrol>.

HP Matrix Operating Environment

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.

The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

NOTE: For more information, visit: <http://www.hp.com/go/matrixoe>.

HP Advanced Power Manager

The HP Advanced Power Manager (HP APM) is an optional rack level solution. HP APM will automatically discover hardware components and enable server level power on and off, server metering, aggregate dynamic power capping, configurable power-up dependencies and sequencing, consolidated Ethernet access to all resident iLOs, and asset management capabilities.

HP APM features rack level event logging, RADIUS authentication, integrated serial concentrator, up to 11 local user accounts, read only service port, and supports SNMP, SSH, Syslogd, telnet.

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. 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 HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty.

NOTE: Server Warranty includes 1 year Parts, 1 year Labor, 1-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 HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

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

Service and Support

Service and Support

The support of HP Apollo 2000 is at the node level. Support purchased for the nodes covers the chassis and any other option part of this system

HP Technology Services for Industry Standard Servers

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HP Care Pack Services

HP Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

Recommended HP Care Pack Services for your HP Apollo 2000

Optimized recommendation

Supports maintaining servers at optimum performance availability

3-Year HP Proactive Care Service, 24x7, 4 hour response

This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855enw.pdf>

Standard recommendation

3-Year Foundation Care 24x7, Care Pack Service

HP Foundation Care 24x7 connects you to HP 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HP server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Basic recommendation

3-Year Foundation Care NBD, Care Pack Service

HP Foundation Care Next Business Day connects you to HP during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Related Services

HP Datacenter Care service

HP Datacenter Care helps you 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 HP Datacenter Care, you benefit from a personalized relationship with HP via a single point of accountability for HP and others' products. For more information, visit

www.hp.com/services/datacentercare

HP ProLiant Server Hardware Installation

Service and Support

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

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

Factory Express for Servers and storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

Data Privacy Services

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely retire IT assets and capture any remaining value from the hardware.
www.hp.com/services/dataprivacy

Additional HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

Get connected to HP to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>.

The HP Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Get access to personalized IT support anywhere, anytime. These tools are available at no additional cost with an HP warranty, HP Care Pack Service or HP contractual support agreement.

NOTE: HP Support Center Mobile App is subject to local availability.

Parts and Materials

HP will provide HP-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.

Data Privacy

Let HP Data Privacy Services help you control access to data and maintain compliance. We offer retention services called Defective Media Retention (DMR) and Comprehensive Defective Material Retention (CDMR) as part of Foundation Care and Proactive Care that allow you to keep failed drives or other memory-retentive components to protect data that may reside. Our sanitization services should be used as part of tech refresh to help ensure no data lingers once the systems are taken out of service or repurposed. Our asset recovery service helps you responsibly retire IT assets. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP

Service and Support

For more information

due to malfunction.

To learn more on services for HP Apollo please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/bladesystem.

Configuration Information - Factory Integrated Models

Step 1: Choose a Chassis

HP Chassis	HP Apollo 2200 12LFF CTO Chassis	798152-B21
	HP Apollo 2600 24SFF CTO Chassis	798153-B21

Step 2: Choose one rail kit per chassis

HP Rail Kits	HP DL2000 Hardware Rail Kit 2000	611428-B21
	HP t2500 Strap Shipping Bracket	740713-B21

NOTE: HP recommends that a minimum of two people are require for all rack installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

Step 5: Choose Cooling Options

HP Cooling Options	HP Apollo 2000 Server Tray Blank Kit	798194-B21
	NOTE: Required for any non-populated slots in the chassis to prevent thermal related issues.	
	HP Apollo 2000 FAN-module Kit	800059-B21

Core Options

Step 4: Choose Base configuration

Server Trays	HP ProLiant XL170r Gen9 Tray	798155-B21
	HP ProLiant XL190r Gen9 Tray	798156-B21

NOTE: Up to 4 single wide server trays can be added to the HP Apollo 2000 Chassis.
Up to 2 single wide double height server trays can be added to the HP Apollo 2000 chassis

RCM Module	HP Apollo 2000 RCM-module Kit	798211-B21
Power Supply	HP 800W FS Ti Ht Plg Pwr Supply Kit	720482-B21
	HP 800W FS Univrsal Ht Plg Pwr Sppl Kit	720484-B21
	HP 800W FS Plat Ht Plg Pwr Supply Kit	720479-B21
	HP 800W FS -48VDC Ht Plg Pwr Supply Kit	720480-B21
	HP 1400W FS Plat Pl Ht Plg Pwr Sppl Kit	720620-B21
Security Hardware	HP 2U Security Bezel Kit	666988-B21
HP Advanced Power Manager	HP Advanced Power Manager Kit	741192-B21
	NOTE: Each HP APM can connect up to 10 chassis via consolidated chassis management cable.	
	HP 4M 20 Pin Consolidated Management Cable	762048-B21

NOTE: 1 cable per chassis.

HP Care Pack Services	Foundation Care	
	NOTE: HP Foundation Care 24x7 connects you to HP 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HP server. Simplify your support experience and make HP your first call for hardware or software questions.	
	HP 3 year 24x7 Apollo 2000 Proactive Care Service	U8AW3E
	HP 3 year 24x7 Apollo 2000 Foundation Care Service	U8AW0E
	HP 3 year NBD Apollo 2000 Foundation Care Service	U8AV1E
	Installation Services	
	NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.	
	HP Installation Apollo 2000 Service2000	U5V60E
	HP Installation Non Standard Hours Apollo 2000 Service2000	U5V61E
	HP Startup Apollo 2000 Service	U5V62E
	HP Startup non Standard Hours Apollo 2000 Service	U5V63E

Technical Specifications

HP Apollo 2200 Chassis	Dimensions	Height	3.44 in (8.73 cm)
		Width	17.64 in (44.80 cm)
		Depth	33.40 in (86.33 cm)
	Shipping Dimensions	Height	11.5 in (29.2 cm)
		Width	23 in (58.4 cm)
		Depth	38.74 in (98.4 cm)
	Chassis Weight	Empty	26.37 lb (11.94 kg)
	Max Enclosure Weight	Approximate	55.93 lb (25.37 kg)
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Non-Operating	-22° to 140° F (-30° to 60° C)
	Relative Humidity	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.

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.

Acoustic Noise (No data so far) 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).

Idle	
LWAd	7.1 Bels
LpAm	54 dBA
Operating	
LWAd	7.2 Bels
LpAm	54 dBA

HP Apollo 2600 Chassis	Dimensions	Height	3.44 in (8.73 cm)
		Width	17.64 in (44.81 cm)
		Depth	32.4 in (82.27 cm)
	Shipping Dimensions	Height	11.5 in (29.2 cm)
		Width	23 in (58.4 cm)
		Depth	37.12 in (94.3 cm)
	Chassis Weight	Empty	21.74 lb (9.86 kg)
	Max Enclosure Weight	Approximate	51.69 lb (23.45 kg)
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Non-Operating	-22° to 140° F (-30° to 60° C)
	Relative Humidity	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

Technical Specifications

(101.7°F) maximum wet bulb temperature, non-condensing.

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.

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	Idle	
	LWAd	7.1 Bels
	LpAm	54 dBA
	Operating	
	LWAd	7.2 Bels
	LpAm	54 dBA

Environmental-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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 web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>
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Summary of Changes

Date	Version History	Action	Description of Change:
30-Mar-2015	Version 1	Created	Create QuickSpecs for HP Apollo 2000

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.