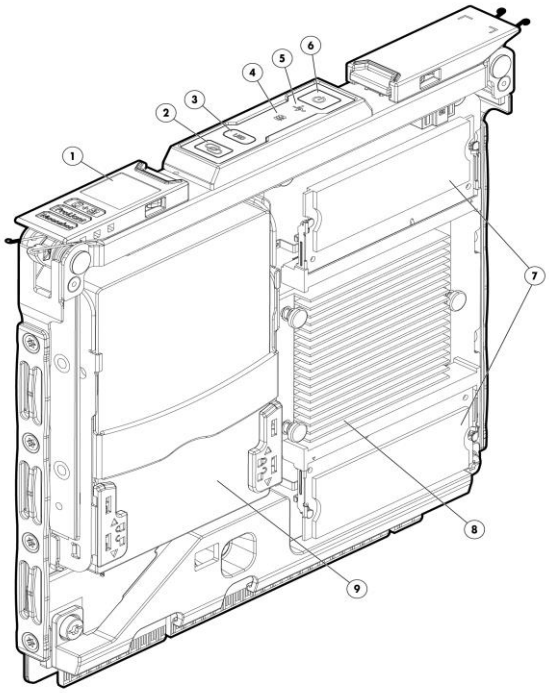
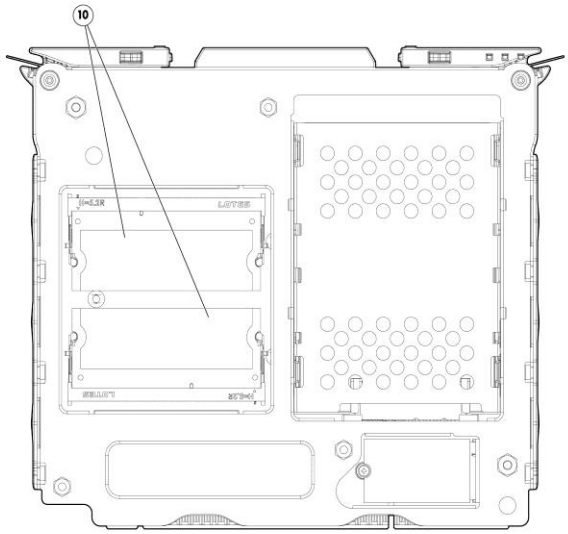
Standard Features

HP ProLiant m300 Server Cartridge

HP Moonshot System with the HP ProLiant m300 server cartridge was created for cost-effective Dynamic Content Delivery, front-end Web and online analytics. The ProLiant m300 server cartridge has one Intel Avoton-based System on a Chip (SoC) server having eight cores with integrated Ethernet along with one 2.5" hard drive and support for up to 32GB of memory on a compact cartridge. The HP Moonshot System uses an innovative new architecture that results from one simple design tenet: to align purpose-built modules with the right workload to provide optimal results for your environment. Traditional servers rely on dedicated components, including management, networking, storage, power cords and cooling fans in a single chassis. In contrast, the Moonshot system shares these chassis components and is capable of supporting 45 servers cartridge per 4.3U chassis.
This gives you the ability to generate greater revenue from a smaller footprint while driving down your operational costs.





Front View:

1. QR Code label
2. Cartridge Link LED/button
3. Cartridge UID LED/button
4. Drive LED
5. Cartridge health LED
6. Cartridge power LED/button
7. Two (2) DDR3 SODIMM memory slots
8. One (1) Intel® Atom™ Processor C2750
9. One (1) small form factor (SFF) drive

Rear View:

10. Two (2) DDR3 SODIMM memory slots

Models

HP ProLiant m300 1P C2750 CPU 32GB Configure-to-order Server Cartridge	734619-B21

NOTE: For ordering the HP ProLiant m300 Server Cartridge, please see Step 1 of the Configuration to Order section of this QuickSpecs.

NOTE: For information on HP Moonshot Switch and Uplink Modules, please see the following:

Standard Features

Switch:
HP Moonshot-45G Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14732_div/14732_div.html
HP Moonshot-45XGc Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/
HP Moonshot-180G Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14731_div/14731_div.html

Uplink
HP Moonshot- 6SFP+ Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14734_div/14734_div.html
HP Moonshot- 16SFP+ Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/
HP Moonshot- 4QSFP Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14733_div/14733_div.html

Processor	Intel® Atom™ Processor C2750 , 2.4 GHz		
Cache Memory	1MB shared per 2 cores		
Memory Protection	ECC		
Memory	Type	HP 8GB (1x8GB) PC3L-12800 (DDR3-1600) SODIMM Low Voltage Memory	
	DIMM Slots Available	Four (4) SODIMM Slots	
	Maximum Configuration	32GB (4x8GB)	
Network Controller	Integrated into the System on a Chip (SoC) Dual 1Gbe NIC		
Storage Controller	Integrated into the System on a Chip (SoC)		
Maximum Internal Storage (per Moonshot Server)	Quick Release SFF SATA	1TB	1 x 1TB
		500GB	1 x 500GB
	Quick Release SFF SATA SSD	240GB	1 x 240GB
	NOTE: Each cartridge will ship with one (1) SATA HDD or SATA SSD hard drive.		
Interfaces	Cartridge Link LED/button Cartridge UID LED/button Drive LED Cartridge health LED		
Industry Standard Compliance	PXE Support PCIe 3.0		
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Canonical Ubuntu		

Standard Features

NOTE: Only 64-bit versions of these operating systems are supported.
NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport and our driver download page: http://www.hp.com/go/servers/Moonshot/download

HP Moonshot 1500 Chassis

The Moonshot 1500 chassis holds up to 45 server cartridges plus redundant network switches. It includes a shared base-plane with three multi-terabit high-speed fabrics: to connect server cartridges to the network, to connect server cartridges to neighboring server cartridges and 2D Torus fabric. Power is delivered through a pooled-power back-plane that ensures the full capacity of the hot-plug power supplies is available to all cartridges.

Each Moonshot 1500 Chassis is built with the following functions:

- Up to 45 server cartridges per chassis.
- Up to 2 independently paired network and uplink modules supported simultaneously within the chassis.
- Five dual-rotor, hot-plug, redundant fans as standard.
- Optionally redundant hot-plug power supplies
- Optionally redundant interconnect modules.
- The HP Moonshot 1500 Chassis Management module manages the health of the chassis and servers.

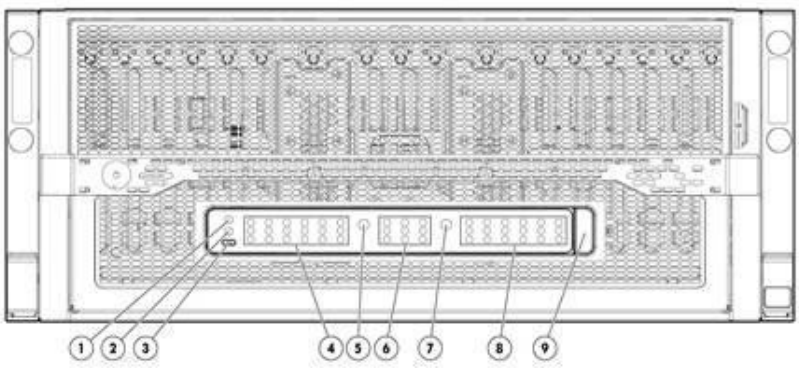
A Moonshot 1500 chassis provides the following benefits:

- Lowest cost of ownership.
- With local and remote hardware management integrated across the solution, one full enclosure can be managed as easily as one server.
- Investment protection: Accommodates multiple server and network designs in one enclosure.
- Lower costs per server, in comparison to rack-mounted servers
- Lower power consumption, in comparison to rack-mounted servers.
- Lower airflow requirements, in comparison to rack-mounted servers

http://h18000.www1.hp.com/products/quickspecs/14527_div/14527_div.html

HP Moonshot 1500 Chassis

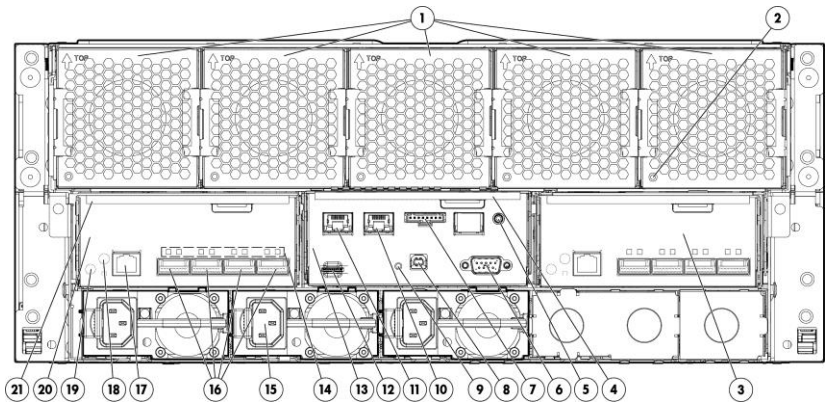
Faster innovation and unprecedented scale begins with the Moonshot 1500 Chassis. Specifically designed to support servers usingSystem on a Chip (SoC) technoligy, the 4.3U chassis enables shared management, networking, storage, power, cooling, and switching. It supports up to 45 hot-pluggable, efficient, extreme low-energy servers cartridges, each tuned to a specific workload.



Front View

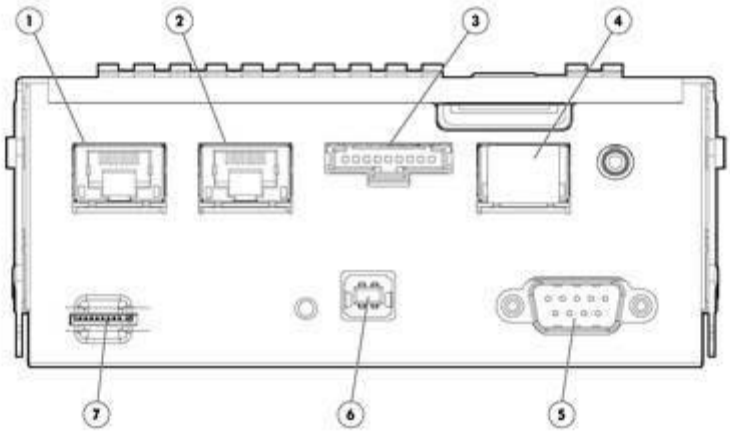
Standard Features

1. Chassis Power LED
2. System health LED
3. Chassis UID/LED/button
4. Front Panel Display LED, Moonshot server 1-18
5. Switch Module A Health LED
6. Front Panel Display LED, Moonshot server 19-27
7. Switch module B health LED
8. Front Panel Display LED, Moonshot server 28-45
9. Front Panel Display release



Back View

1. Fans
2. Fan LED
3. Uplink Module A
4. HP Moonshot 1500 CM Module release lever
5. HP Moonshot 1500 CM Module UID/LED button
6. HP Moonshot 1500 CM Module serial port
7. HP Moonshot 1500 CM Module SL-APM port
8. HP Moonshot 1500 CM Module USB connector
9. HP Moonshot 1500 CM Module LED
10. iLO CM link port (disabled by default)
11. iLO CM Management port
12. HP Moonshot 1500 CM Module MicroSD slot
13. HP Moonshot 1500 Chassis Management (CM) Module
14. Switch Module uplink/downlink activity LEDs
15. Power supply connector
16. 40Gb QSFP+ connector (x4)
17. Serial connector
18. Uplink Module UID/LED button
19. Uplink Module health LED
20. Uplink Module B
21. Uplink Module release lever



HP Moonshot 1500 Chassis Management (CM) Module

Standard Features

1. iLO CM Management port
2. iLO CM link port (disabled by default)
3. HP Moonshot 1500 CM Module HP APM port
4. HP Moonshot 1500 CM Module diagnostic port
5. HP Moonshot 1500 CM Module serial port
6. HP Moonshot 1500 CM Module USB connector
7. HP Moonshot 1500 CM Module MicroSD slot

HP Interconnect modules

NOTE: Up to two identical pairs of Switch and Uplink modules are supported in the Moonshot 1500 Chassis. Dual switch modules are required for network redundancy, regardless of cartridge configuration.

NOTE: Check Compatibility matrix below for supported switch and uplink modules

NOTE: For information HP Moonshot Switch and Uplink Modules, please see the following:

Switch:
HP Moonshot-45G Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14732_div/14732_div.html
HP Moonshot-45XGc Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/
HP Moonshot-180G Switch Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14731_div/14731_div.html

Uplink
HP Moonshot- 6SFP+ Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14734_div/14734_div.html
HP Moonshot- 16SFP+ Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/

HP Moonshot- 4QSFP Uplink Module QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/14733_div/14733_div.html

		Cartridges						Uplink		
Switch	**Speed**	**m300**	**m350**	**m400**	**m700**	**m710**	**m800**	**Moonshot-6SFP+ Uplink**	**Moonshot-16SFP+ Uplink**	**Moonshot-4QSFP+ Uplink**
Moonshot-45G Switch	1Gb	✓		✓ *1Gb speed only*		✓ *1Gb speed only*		✓		
Moonshot-180G Switch	1Gb	✓	✓	✓ *1Gb speed only*	✓	✓ *1Gb speed only*	✓		✓	✓
Moonshot-45XGc Switch	1Gb	✓		✓ *1Gb speed only*		✓ *1Gb speed only*				✓
	10Gb			✓		✓				✓

Standard Features

HP Common Slot Power Supply	HP Moonshot 1500 Chassis can accommodate up to four (4) HP Common slot power supplies listed in Step 2 of the Configure to Order section of this QuickSpecs. HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% and are available in a 1200w and 1500W configurations for this platform. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations. HP Power Advisor can be accessed at: www.hp.com/go/hppoweradvisor. **NOTE:** Redundant Power: Optional redundant power supplies will vary based on configurations. Please refer to specific HP Moonshot server cartridge for details.
Enclosure	The HP Moonshot 1500 Chassis is designed to support the following: • The HP Moonshot 1500 Chassis is 4.3U high and holds up to forty-five (45) Moonshot cartridges. . • Server cartridges, switches, uplinks, power supplies, fans, and HP Moonshot 1500 Chassis Management module are all designed to fit into the HP Moonshot 1500 Chassis. **NOTE:** Can be racked as either a 5U tall chassis or as three chassis in 13U. **NOTE:** For additional chassis information, please see: http://h18000.www1.hp.com/products/quickspecs/14527_div/14527_div.html
Form Factor	HP ProLiant m300 Server Cartridge is a server cartridge that plugs into the HP Moonshot 1500 Chassis.
Embedded Management	Included in all HP Moonshot Systems, the HP Moonshot 1500 Chassis Management module manages the health of the chassis and servers via a command-line interface accessible via SSH as well as a Graphical User Interface. Customers can configure the chassis, set server settings, and flash firmware in the HP Moonshot 1500 chassis. The HP Moonshot 1500 Chassis Management module also supports Intelligent Platform Management Interface (IPMI). The HP Moonshot 1500 Chassis Management module supports the HP RESTful Interface Tool, this tool provides mass scripting configuration for rapid deployment of multiple HP Moonshot Systems. For more information on the HP Moonshot 1500 Chassis Management Module, please contact your sales representative or go to: http://www.hp.com/go/moonshot/docs
HP Moonshot Component Pack	HP Moonshot 1500 Chassis Setup and Installation Guide HP Moonshot iLO Chassis Management Firmware User Guide The HP Moonshot Component Pack, is the delivery mechanism for firmware updates on the HP Moonshot System, it includes firmware, and tools including the HP Smart Update Manager (HP SUM). The HP Smart Update Manager (SUM) - is the engine/application that deploys the

Standard Features

updates from the HP Moonshot Component Pack on HP Moonshot Systems. HP SUM helps you inventory and identify which servers require updates, gets the necessary components from the HP Moonshot Component Pack, and then performs the respective updates individually, as a group, or at scale. HP SUM simplifies the update process, making HP Moonshot servers much easier to manage by letting you know what's happening throughout the update process. The tool provides a graphical user interface (GUI), scriptable command line interface (CLI), and an interactive CLI. In addition, HP SUM offers comprehensive reporting to ensure the latest drivers, software, and firmware are implemented into the server environment

To download the HP Moonshot Component Pack, please reference:
http://www.hp.com/go/moonshot/download

Security

Power-on password
Setup password
Serial interface control
Power switch security
Administrator's password

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP 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 HP Care Pack 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: Chassis Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support. The Moonshot 1500 Chassis part number 755371-B21 also includes 1-Year bundled Ubuntu support.
Server Cartridge Warranty includes 3-Year Parts, 0-Year Labor, 0-Year Onsite support.
Warranty terms may vary by region. Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight Cluster Management Utility (CMU)	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale systems. Insight CMU includes software for the centralized provisioning, management and monitoring of nodes. Insight CMU makes the administration of clusters more user friendly, efficient, and error free than if they were being managed by scripts, or on a node-by-node basis. For more information on HP Insight Cluster Management Utility, please contact your sales representative or go to: http://www.hp.com/go/cmu
Factory Express Portfolio 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. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Moonshot, HP Integrity, HP ProLiant, HP ProLiant Server Blades, and HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. 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.

Service and Support

Service and Support

HP Technology Services for Moonshot
Capitalizing on the Moonshot 1500 System requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Technology Services.

HP is pleased to include full software support for Ubuntu Linux as part of your Moonshot chassis purchase. For chassis supporting revenue-generating or production level workloads, consider purchasing a level of support that matches your requirements.

Protect your business beyond warranty with HP Care Pack Services
HP sells support in easy-to-buy, preconfigured packages with the combination of services, coverage and duration to fit your needs and budget. With Moonshot, we are introducing a new, simpler set of services. Simply choose the service level that best fits the criticality of your hardware.

HP Foundation Care
HP Foundation Care services offer scalable reactive support-packages for HP Moonshot and software. Choose the type and level of service that is most suitable for your IT and business needs. The Moonshot 1500 Care Pack services cover the Moonshot 1500 Chassis and the Moonshot m300 cartridge with one single Care Pack SKU. Entitlement of support requires the customer to provide the 1500 chassis serial number. All HP components structured to the Moonshot System are covered by Care Pack services inclusive of cartridges, switches, power supplies, and fans. HP Foundation Care services include hardware support, basic software support and collaborative software support for software questions related to industry leading operating systems and software. For a complete list of software products covered, refer to: www.hp.com/services/collaborativesupport.

Full software support, including call management and ownership thru to resolution is available for select third party software. As stated earlier, support for Ubuntu software is included in the purchase of your Moonshot chassis.

HP Datacenter Care
HP Datacenter Care offers you a flexible, tailored, relationship-based approach to support the most demanding data centers handling the demands of hyperscale computing.

HP Datacenter Care is flexible enough to deliver exactly what you need in one relationship. All Datacenter Care support is tailored to your needs, based on our experience with hyperscale customers:

- Assigned account team, led by an account support manager (ASM) who knows your business and your IT environment and is responsible for the quality service delivery and experience.
- Enhanced call handling for the best call experience with rapid escalation and incident resolution through the HP Hyperscale Center of Excellence
- Proactive and reactive support, configured to deliver the level of support needed by the different data center components and meeting both service-level agreement (SLA) and cost targets

Then add on other services that are tailored to your specific needs, including:

HP Spares Management service is a component of Datacenter Care that provides spare parts inventory on-site for your technicians to easily replace failed components, simplifying the repair process. You simply go to the part of your data center where the parts live, scan them out, scan in the broken one, and you're done. We maintain your inventory of good spares, so that what you need is ready to go when you need it. And we provide monthly service excellence reports illustrating onsite inventory performance.

To obtain further information or to order HP Datacenter Care Service as described above, contact a

local HP sales representative. Please see the Additional Options section of this QuickSpecs for additional information.

HP Moonshot Installation & Startup Service
HP Installation and Startup Service for the Moonshot System provides for the installation of one system and its associated Moonshot servers and network switches, as well as operating system deployment and basic configuration of OS network parameters to establish network connectivity

In response to the needs of the majority of HP Moonshot System customers, this fixed-price/fixed deliverable service targets new hardware installation and software deployments for the 1500 infrastructure. For more advanced installation, configuration, and integration requirements, custom deployments are available through a customized Statement of Work. . Please see the Additional Options section of this QuickSpecs for additional information.

For more information on HP Services, contact any of our worldwide sales offices or visit one of the following websites:
HP support services: www.hp.com/services/alwayson
HP Care Pack services: www.hp.com/services/carepack

Recommended HP Care Pack Services for your HP product

Optimized Care	**3-Year HP Foundation Care Call to Repair** This is HP's highest level of reactive support giving you our commitment to have the hardware operational within six hours of opening the call with us. This service level includes hardware coverage plus software diagnosis support with collaborative call management for a broad spectrum of third party software products including O/S and hypervisors. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA4-8877ENW.pdf
Standard Care	**3-Year HP Foundation Care 24x7** This service level provides consistent, reliable reactive support with the broadest coverage window which is recommended when maintenance must be performed outside business hours. Calls may be opened 24x7. Should an onsite visit be needed, our commitment is to respond onsite within four hours. Software call back commitment is two hours. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-8877ENW.pdf
Basic Care	**3- Year HP Foundation Care Next Business Day** This service level provides the most economical support coverage and is designed for non-revenue impacting systems. Calls may be opened 24x7. Should an onsite visit be needed, our commitment is to respond onsite the next business day. Software call back commitment is two hours, during regular business hours. For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our website at: www.hp.com/go/carepack
Defective Media Retention (DMR) and Comprehensive Defective Material Retention	If your business deals with sensitive or legally protected data, you know that it's not a simple matter to return a defective hardware component, but keeping it conflicts with the terms and conditions of many standard warranty agreements. If you don't return the component, you'll be charged for the replacement part. HP Foundation Care services are available with defective media retention of failed hard drives and comprehensive defective material retention of those other data-retentive components, such as memory, switches, processors and more. This may be purchased as an optional add-on to your HP Foundation Care service purchase. This service is critical for customers who: • Need to control and secure their classified, proprietary and confidential data.

Service and Support

- Are subject to current data privacy regulations.
- Want a simpler, more cost-effective solution when choosing not to return a malfunctioning disk drive or other data retentive component.

For more information on our data privacy services, see: www.hp.com/services/dataprivacy.

HP Support Center

HP provides several tools that make it simpler to get help from HP:

HP Support Center is 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

HP'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.
HP Support Center are available at no additional cost with a HP warranty, HP Care Pack 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.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.

For more information

To learn more on HP Moonshot System, please contact your HP sales representative.

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with an HP Moonshot 1500 Chassis. Each Moonshot Chassis will be ordered with minimum configurations as follows:

One (1) Cartridge
Three (3) 1200w or 1500w power supplies
One (1) Switch
One (1) Uplink

NOTE: A second Switch and Uplink Module Kit may be ordered to give a redundant network configuration or to enable two separate networks utilizing different Moonshot servers.
NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

Step 1: Base Configuration (Choose one chassis or one upgrade kit)

HP Moonshot 1500 Chassis	HP Moonshot 1500Chassis **NOTE:** This chassis include 1 year of Ubuntu service	755371-B21
	HP Moonshot 1500 Chassis Opt OS **NOTE:** This chassis does NOT include 1 year of Ubuntu support	755372-B21
	HP ProLiant m300 x15 Configure-to-Order Server Multipack **NOTE:** This holds up to fifteen (15) ProLiant m300 Server cartridges in a single shipping box	751780-B21

Step 1A: Configure Moonshot Servers (one of each unless otherwise noted)

HP Moonshot Server	HP ProLiant m300 1P C2750 CPU 32GB Configure-to-order Server Cartridge **NOTE:** Each Moonshot server comes preconfigured with four 8 GB SODIMM pre-installed. This is the only memory configuration available on this server. **NOTE:** Each Moonshot cartridge is pre-configured with a single Intel® Atom™ Processor C2750 running at 2.4 GHz. This processor is eight-coreand contains 1 MB Cache shared per two cores. The C2750 is the only processor option available and represents a balance of performance and energy efficiency.	734619-B21
HP Hard drives	**6G SATA Quick Release SFF (2.5-inch) Midline (MDL) Drives**	
	HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632080-B21
	HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632078-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html	
	6G SATA Value Endurance Quick Release SFF (2.5-inch) Enterprise Value Solid State Drives	
	HP 240GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3yr Wty Solid State Drive	718180-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html **NOTE:** The non-hot plug hard drives use a quick release carrier.	

Configuration Information - Factory Integrated Models

Step 2: Choose Required Chassis Options (one of each unless otherwise noted)

NOTE: Additional options are not configurable for server upgrade kits.

Power Supplies

HP Common Slot Platinum Plus Power Supply Kits

NOTE: 94% efficiency

NOTE: Minimum of three and maximum of four power supplies per chassis

HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit	684532-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

NOTE: due to restricted airflow at 110v max power is 600w per power supply – this is for the 1200w power supply only

NOTE: Due to restricted airflow at 220v max power is 850w per power supply– this is for the 1200w power supply only

NOTE: Power Specification and Technical Content for supported power supplies can be found at:
http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

HP Common Slot -48VDC Power Supplies

HP 1500W Common Slot -48VDC Hot Plug Power Supply Kit	746708-B21

Networking

NOTE: Must order one Switch Kit and one Uplink Kit per chassis.

NOTE: Maximum of two Switch Kits and two Uplink Kit per chassis to allow configurations with redundant or dual networks.

Ordering Guidance for Moonshot 1500 chassis with mixed cartridge configurations

1. **Customer ordering a Quad Node Cartridge (m700, m350, m800) MUST use Moonshot-180G Switch Module.**
   a. Choose one of the following Uplink Module:
      i. Moonshot -16SFP+ Uplink Module
      ii. Moonshot -4QSFP+ Uplink Module
2. **Customer ordering ONLY Single Node Cartridge (m300, m400, m710)**
   a. Choose one of the following:
      i. **For 1G Solution:** Moonshot-45G Switch Module (1G Switch) with Moonshot -6SFP Uplink Module
      ii. **For 10G solution:** Moonshot-45XGc Switch Module (10G Switch) with Moonshot -4QSFP+ Uplink Module.

Switches

HP Moonshot-45G Switch Module Kit	704644-B21
HP Moonshot-45XGc Switch Module Kit	704654-B21
HP Moonshot-180G Switch Module Kit	704642-B21

Uplinks

HP Moonshot 6SFP Uplink Module Kit	704646-B21
HP Moonshot-16SFP+ Uplink Module Kit	783263-B21
HP Moonshot-4QSFP+ Uplink Module Kit	704652-B21

Step 3: Choose Additional Chassis Factory Integration Options

Configuration Information - Factory Integrated Models

NOTE: Additional options are not configurable for server upgrade kits.

HP Rack Adapter	HP 13U FIO Rack Adapter Kit for 3X4.3U Chassis **NOTE:** Group the HP Moonshot 1500 Chassis units into a 13U space. Order one per three chassis. The 0.66U spacer is not used when selecting this option.	681677-B21

Step 4: Choose Additional Chassis Options

NOTE: Additional options are not configurable for server upgrade kits.

HP Power Cords	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
	HP C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
	HP C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
	HP C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
	HP C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
	HP C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A
	HP C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
	HP C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
	HP C13 - IS-1293 IN 250V 10Amp HV 2.5m Power Cord	SG579A
	HP C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord	AF573A
	HP C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord	AF591A
	HP C13 - C14 WW 250V 10Amp 2.0m Jumper Cord	A0K02A
	HP C13 - C14 WW 250V 10A Gray 0.7m Jumper Cord	A0K03A
	HP C13 - C14 WW 250V 10A Gray 1.37m Jumper Cord	A0K04A
	HP C13 - C14 WW 250V 10A Gray 3.0m Jumper Cord	A0K06A
	HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord	A0N33A

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Cluster Management Utility (CMU)	HP Insight Cluster Management Utility Media **NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html	BD477A
HP Advanced Power Manager	The HP Advanced Power Manager is an optional rack level solution for the HP Moonshot System which enables server-level DC (or hardware) power on and off and server-level monitoring. In addition, the HP APM will automatically discover hardware components, dynamic rack power capping, provides efficient Rack management, manages shared infrastructure, and participates in federation with other HP APM units. The HP APM does not replace rack PDUs, but is designed to enable the utilization of basic, low cost, rack PDUs while providing the functionality of 'switched' PDUs (which provide hardware power on/off of individual servers by turning off the AC power to the power supplies of a given server). Because the HP Moonshot System shares power supplies to optimize power efficiency, using 'switched' PDUs to turn off all the power supplies in the chassis will result in the loss of all server nodes in that chassis. The HP APM solves this by allowing server node-level hardware power on/off of the DC power to the individual server node motherboards.	
	HP Advanced Power Manager Kit **NOTE**: Each HP APM can connect to 2 HP SL Advanced Power Manager Distribution (SL APMD) modules	741192-B21
	HP SL Advanced Power Manager Distribution Module Kit **NOTE**: Each SL APMD can connect up to 10 chassis	620002-B21
SFP Options	HP BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
	HP BladeSystem c-Class Virtual Connect 1G SFP RJ-45 Transceiver	453154-B21
SFP+ Options	HP BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
Direct Attach Cables	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 7m Direct Attach Copper Cable	487658-B21
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HP B-series SFP+ to SFP+ Active Copper 1.0m Direct Attach Cable	AP818A
	HP B-series SFP+ to SFP+ Active Copper 3.0m Direct Attach Cable	AP819A
	HP B-series SFP+ to SFP+ Active Copper 5.0m Direct Attach Cable	AP820A

Additional Options

HP Rail Kits (Chassis Specific)	HP 4.3U Server Rail Kit	681254-B21
	HP 0.66U Spacer Blank Kit	681260-B21
	NOTE: For data center airflow management purposes, it is recommended that either the .66U Spacer Blank or the 13U FIO Rack Adapter Kit can be ordered. **NOTE:** The HP 4.3U Rail Kit is required to be ordered for every chassis to properly install the chassis into a rack. **NOTE:** The .66U Spacer Blank kit may be ordered and will give an even 5U (4.3U+0.66U) spacing in a rack. This would enable installing up to 8 chassis in a 42U rack. It is also possible to stack up to 9 chassis in a 42U rack using the 13U FIO Rack Adapter Kit. (See Step 3 of the Factory Integrated Models section). If the 13U kit is used, the .66U spacer would not be used and vice versa.	
Rack Adapter	HP 13U FIO Rack Adapter Kit for 3X4.3U Chassis	681677-B21
	NOTE: Group the HP Moonshot 1500 Chassis units into a 13U space. Order one per three chassis. The 0.66U spacer is not used when selecting this option.	
HP Rack Series	**HP Intelligent Series Rack**	
	HP 636 1200mm Shock Intelligent Rack	BW900A
	HP 642 1200mm Pallet Intelligent Rack	BW907A
	HP 642 1200mm Shock Intelligent Rack	BW908A
	HP 647 1200mm Pallet Intelligent Rack	BW913A
	HP 647 1200mm Shock Intelligent Rack	BW914A
	NOTE: Rack chosen is required to have 1200mm to provide space for cable management arm at the rear of the chassis and host PDU in the rear of the rack. **NOTE:** Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html (Worldwide) **NOTE:** For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
	HP 11000 G2 Series Racks	
	HP 11642 1075mm Pallet Rack	H6J65A
	HP 11642 1075mm Shock Rack	H6J66A
	HP 11648 1075mm Pallet Rack	H6J87A
	HP 11648 1075mm Shock Rack	H6J88A
	HP 11636 1075mm Pallet Universal Rack	H6J77A
	HP 11636 1075mm Shock Universal Rack	H6J78A
	HP 11622 1075mm Pallet Rack	H6J83A
	HP 11622 1075mm Shock Rack	H6J84A
	HP 11614 1075mm Shock Universal Rack	H6J82A
	NOTE: When using the 1075mm racks with the Moonshot 1500 Chassis, the rear door will not be able to be closed.	
HP Rack Options	**KVM Consoles**	
	HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A

Additional Options

	HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
	HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
	HP 647 1200mm Shock Intelligent Rack	BW914A
	HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
	HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
	HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
	HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
	HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
	HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
	HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
	HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
	HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
	HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
	HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups. **NOTE:** For additional information on sizing your server, please reference: http://www.upssizer.com. **NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A

Additional Options

	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)	
HP Basic Power Distribution Units	HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU	H5M55A
	HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU	H5M56A
	HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU	H5M57A
	HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU	H5M58A
	HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU	H5M59A
	HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU	H5M60A
	HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU	H5M61A
	HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU	H5M62A
	HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU	H5M63A
	HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU	H5M64A
	HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU	H5M68A
	HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A
	HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU	H5M71A
	HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A
	HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU	H5M75A
	HP 13.2kVA 480 Volt IEC309 30A 3-Phase Input (15 Outlet) NA Basic PDU	H3X07A
	HP 277 Volt options for H3X07A and H3X08A	
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html (Worldwide)	
	NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: www.hp.com/go/rackandpower.	
HP Remote Monitored Power Distribution Units	HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU	D9N43A
	HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU	D9N46A
	HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	D9N44A
	HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
	HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A

Additional Options

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU	D9N48A
HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU	D9N50A
HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU	D9N49A
HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU	D9N52A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU	D9N53A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU	D9N51A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU	D9N55A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N57A
HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU	D9N58A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N62A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU	D9N61A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU	D9N54A
HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU	D9N63A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU	D9N60A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N56A

Technical Specifications

HP Moonshot System	HP Moonshot System contains forty-five,(45) server cartridges, one (1) 500GB HDD, one (1) 32GB Memory DIMM, Two (2) Power Supplies One (1) Switch Module Kit and One (1) Uplink Module Kit.		
	HP Moonshot 1500 Chassis Dimensions (H x W x D)	7.47 x 17.45 x 35.34in (18.96 x 44.33 x 89.97cm) **NOTE:** Rack chosen is required to have 1200mm to provide space for cable management arm at the rear of the chassis and host PDU in the rear of the rack.)	
	Weight (approximate)	Maximum (all server cartridges, power supplies, one switch and one uplink installed)	180 lbs.
	Typical Power	1311W	
	Max Power	2496W	
	Network Ports (per switch & uplink pair)	Forty-five (45) 10/100/1000 downlink ports Six (6) 10Gb SFP+ uplink ports **NOTE:** See the HP Moonshot-45G Switch Module QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14732_div/14732_div.html **NOTE:** See the HP Moonshot-6SFP Uplink Module QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14734_div/14734_div.html	
	Input Requirements (per power supply)	Rated Line Voltage	
	Power Specifications	Rated Input Current	180 to 264 VAC
		Rated Input Frequency	8.4A at 200VAC 7.0A at 240VAC
		Rated Input Power	47 to 63 Hz
		To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/hppoweradvisor	
	Power Supply Output (per power supply)	Rated Steady-State Power	1661W at 200VAC 1649W at 240VAC
		Maximum Peak Power	1500W (Max) @ 200VAC 1500W (Max) @ 240VAC
	System Inlet Temperature	Operating	50° to 95° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 304.8 m) above sea level to a maximum of 10,000 ft (3048 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 86°F (30°C).
		Non-operating	-22° to 140° F (-30° to 60° C) Maximum rate of change is 36°F/hr (20°C/hr).
	Relative Humidity (non-condensing)	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.
	Altitude	Operating	10,000 ft (3048 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
		Non-operating	30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
	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).	
		Idle	
		L WAd	7.1 Bels
		L pAm	54 dB
		Operating	
		L WAd	7.3 Bels
		L pAm	57 dB
	Emissions Classification (EMC)	**FCC Rating**	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		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.	

Server Cartridge	**HP Moonshot m300 Server Cartridge Dimensions (H x W x D)**	6.57 x 7.23 x 0.78in (16.71 x 18.37 x 1.98cm)
	Typical Power	27.5W
	Max Power	44.0W

HP 1200W Common Slot Platinum Plus Hot Plug Power Supply

Part Number	656364-B21						
Input Voltage Range (Vrms)					100 – 240		
Frequency Range (Nominal) (Hz)					50 – 60		
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.1	8.4	6.7	6.4	6.1	5.8	5.5
Maximum Rated Input Wattage Rating (Watts)	897	999	1321	1319	1317	1315	1314
Maximum Rated VA (Volt-Amp)	909	1012	1338	1337	1334	1332	1331
Efficiency (%) at Max. Rated Output	89.2	90.1	90.9	91.0	91.1	91.2	91.3

Technical Specifications

Wattage							
Power Factor				.998			
Leakage Current (mA)	.42	.50	.83	.87	.92	.96	1.00
Maximum Inrush Current (A peak)			30				
Maximum Inrush Current duration (mS)			20				
Maximum British Thermal Unit Rating (BTU-Hr)	3061	3408	4506	4501	4493	4487	4483

NOTE: Due to restricted airflow at 110v max power is 600w per power supply
NOTE: Due to restricted airflow at 220v max power is 850w per power supply

HP 1500W Common Slot Platinum Plus Hot Plug Power Supply					
Part Number	684532-B21				
Input Voltage Range (Vrms)			200 - 240		
Frequency Range (Nominal) (Hz)			50 - 60		
Nominal Input Voltage (Vrms)	200	208	220	230	240
Maximum Rated Output Wattage	1500	1500	1500	1500	1500
Nominal Input Current (A rms)	8.4	8.1	7.6	7.3	7.0
Maximum Rated Input Wattage Rating (Watts)	1661	1659	1655	1652	1649
Maximum Rated VA (Volt-Amp)	1681	1679	1675	1672	1669
Efficiency (%) at Max. Rated Output Wattage	90.3	90.4	90.6	90.8	91.0
Power Factor	0.999	0.999	0.999	0.999	0.999
Leakage Current (mA)	0.50	0.75	0.79	0.83	1.00
Maximum Inrush Current (A peak)			40		
Maximum Inrush Current duration (mS)			0.2		
Maximum British Thermal Unit Rating (BTU-Hr)	5667	5661	5648	5637	5627

HP 1500W Common Slot -48V Hot Plug Power Supply Kit			
Part Number	746708-B21		
Input Voltage Range (VDC)	-40 to -72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (VDC)	-40	-48	-72
Maximum Rated Output Wattage	1500	1500	1500
Nominal Input Current (ADC)	40.5	33.5	22.2
Maximum Rated Input Wattage Rating (Watts)	1621	1607	1598
Maximum Rated VA (Volt-Amp)	1621	1607	1598
Efficiency (%) at Max. Rated Output Wattage	92.6	93.3	93.9
Power Factor		N/A	
Leakage Current (mA)		N/A	
Maximum Inrush Current (A peak)		63	
Maximum Inrush Current duration (mS)		10	

Technical Specifications

Maximum British Thermal Unit Rating (BTU-Hr)	5530	5484	5451

HP Power Advisor	The HP Power Advisor is a tool provided by Hewlett-Packard to assist in the estimation of power consumption and proper selection of components including power supplies at a system, rack, and multi-rack level. A variety of additional features are also provided including a condensed bill of materials, a cost of owner ship calculator, and a power report. The HP Power Advisor allows for the mixing of rack, tower, blade, and other products in a single environment. Available at: www.hp.com/go/hppoweradvisor	
Power Supply Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/hppoweradvisor. **NOTE:** Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html	
Environment-friendly Products and Approach	**End-of-life Management and Recycling**	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. 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.

Summary of Changes

Date	Version History	Action	Description of Change
5-May-2015	From version 11 to 12	Update	Add chassis information
9-Apr-2015	From version 10 to 11	Update	Add a power supply
3-Feb-2015	From version 9 to 10	Changed	Updates throughout the QuickSpecs
21-Jan-2014	From Version 8 to 9	Changed	Update the configuration section
1-Dec-2014	From Version 7 to 8	Changed	Updated several sections
5-Nov-2014	From Version 6 to 7	Changed	Updates throughout the QuickSpecs
18-Aug-2014	From Version 5 to 6	Updated	Changes made throughout the QuickSpecs.
10-Jun-2014	From Version 3 to 4	Changed	Solid States Drives, Cables, and Power Distribution Units were revised.
25-Apr-2014	From Version 2 to 3	Changed	Changes made throughout the QuickSpecs.
18-Feb-2014	From Version 1 to 2	Changed	Added the What's New and the Pre-Configured Models sections. Changes made in the Configuration Information section.

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