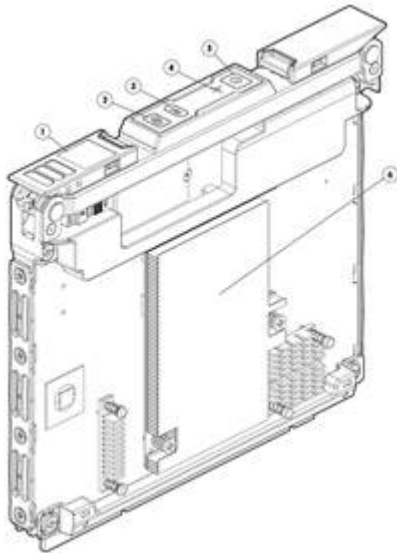


### Overview

#### HP ProLiant m710 Server Cartridge

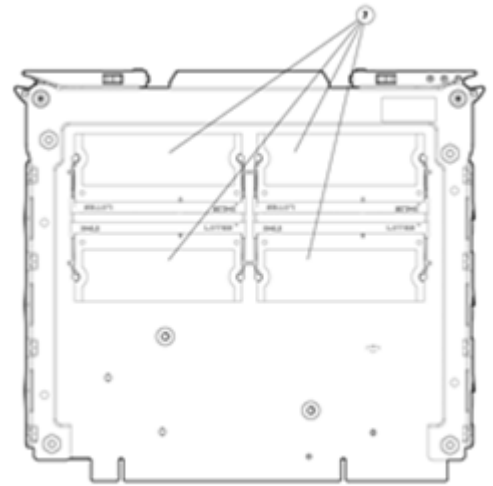
HP Moonshot System with the HP ProLiant m710 server cartridge is designed to enhance the performance of Rich Application Streaming and Video Transcoding. The ProLiant m710 server cartridge has one Intel® Xeon® E3-1284L v3 four-core processor with Intel® Iris™ Pro P5200 graphics, 32GB of ECC protected memory, 10Gb Ethernet along with one M.2 flash storage module for local OS booting.

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 power LED/button
6. One (1) Intel® Xeon E3-1284Lv3™ Processor



#### Rear View:

7. Four (4) DDR3 SODIMM memory slots

### Standard Features

**NOTE:** For information on 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](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](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](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](http://h18000.www1.hp.com/products/quickspecs/14733_div/14733_div.html)

**Processor** Intel® Xeon® E3-1284L v3 (1.8-3.2GHz/4-core/6MB/47W)  
Integrated Intel® Iris™ Pro P5200 graphics and 128MB of embedded DRAM

**Cache Memory** 6MB shared Level 3

---

**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** Mellanox Connect-X3  
Dual 10GbE NIC. Supports RDMA over Converged Ethernet (RoCE)

**Storage Controller** Integrated into the Intel® QM87 chipset

---

M.2 2280 solid state device	765479-B21	120GB
	765481-B21	240GB
	765483-B21	480GB

**NOTE:** m710 cartridge may be purchased with zero M.2 storage (i.e. network/diskless boot).

### Standard Features

#### Interfaces

Cartridge Link LED/button  
Cartridge UID LED/button  
Drive LED  
Cartridge health LED  
HDMI 1.4b compliant connector for external monitor  
Micro-USB 2.0 connector

**NOTE:** HDMI and Micro-USB connectors are for diagnostic usage only and may require removal of any adjacent cartridge.

**NOTE:** To connect a standard USB device to the cartridge, connect a USB on-the-go adapter to the cartridge Micro-USB connector, and then connect the USB device to the adapter.

#### Industry Standard Compliance

PXE Support  
PCIe 3.0  
iSCSI Boot (with supported operating systems)

#### Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server 2012 / 2012 R2](#)  
[Red Hat Enterprise Linux \(RHEL\) 6.5 and 7.0](#)  
[SUSE Linux Enterprise Server \(SLES\) 11 SP3](#)  
[Canonical Ubuntu 14.04](#)

**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.

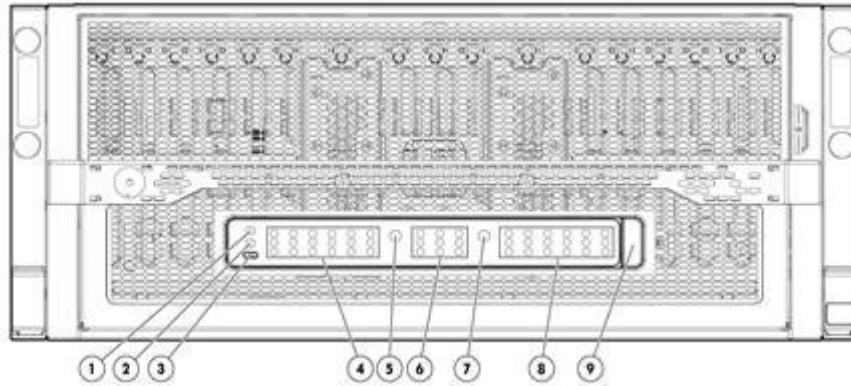
A Moonshot 1500 chassis provides the following benefits:

- 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.

### Standard Features

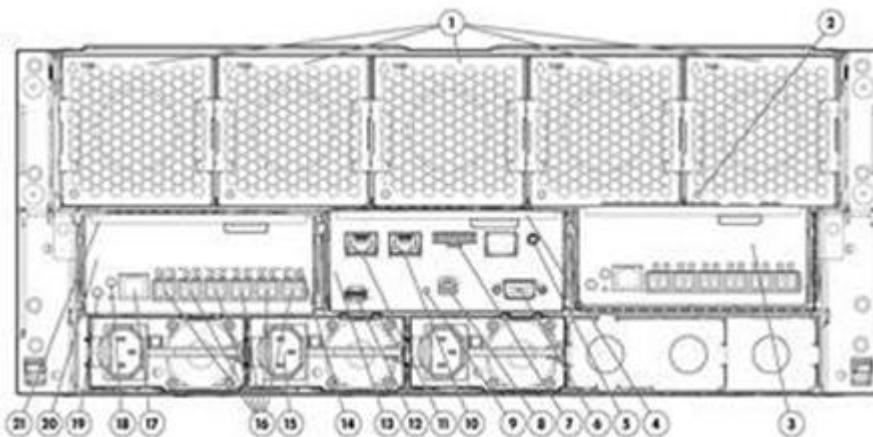
#### HP Moonshot 1500 Chassis

Faster innovation and unprecedented scale begins with the Moonshot 1500 Chassis. Specifically designed to support servers using System on a Chip (SoC) technology, 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.



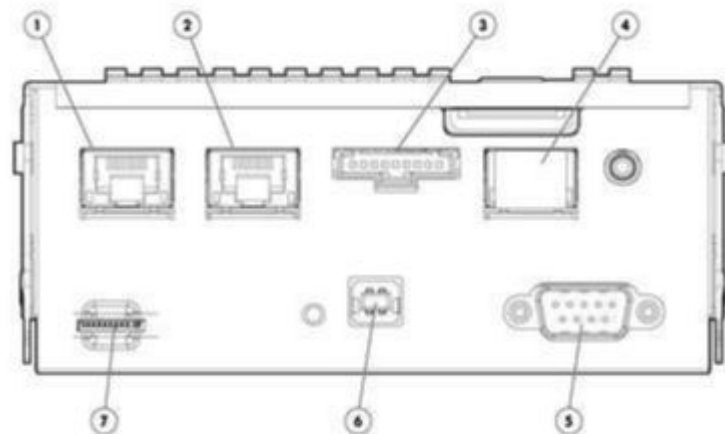
**Front View**

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



### Standard Features

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Fans</li> <li>2. Fan LED</li> <li>3. Uplink Module A</li> <li>4. HP Moonshot 1500 CM Module release lever</li> <li>5. HP Moonshot 1500 CM Module UID/LED button</li> <li>6. HP Moonshot 1500 CM Module serial port</li> <li>7. HP Moonshot 1500 CM Module HP APM port</li> <li>8. HP Moonshot 1500 CM Module USB connector</li> <li>9. HP Moonshot 1500 CM Module LED</li> <li>10. iLO CM link port (disabled by default)</li> <li>11. iLO CM Management port</li> </ol> | <p><b>Back View</b></p> <ol style="list-style-type: none"> <li>12. HP Moonshot 1500 CM Module MicroSD slot</li> <li>13. HP Moonshot 1500 Chassis Management (CM) Module</li> <li>14. Switch Module uplink/downlink activity LEDs</li> <li>15. Power supply connector</li> <li>16. 40Gb QSFP+ connector (x4)</li> <li>17. Serial connector</li> <li>18. Uplink Module UID/LED button</li> <li>19. Uplink Module health LED</li> <li>20. Uplink Module B</li> <li>21. Uplink Module release lever</li> </ol> |
|--|--|



### HP Moonshot 1500 Chassis Management (CM) Module

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. iLO CM Management port</li> <li>2. iLO CM link port (disabled by default)</li> <li>3. HP Moonshot 1500 CM Module HP APM port</li> <li>4. HP Moonshot 1500 CM Module diagnostic port</li> </ol> | <ol style="list-style-type: none"> <li>5. HP Moonshot 1500 CM Module serial port</li> <li>6. HP Moonshot 1500 CM Module USB connector</li> <li>7. HP Moonshot 1500 CM Module MicroSD slot</li> </ol> |
|--|--|

### 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 on 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](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](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](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/>

### Standard Features

HP Moonshot- 4QSFP Uplink Module QuickSpecs:

[http://h18000.www1.hp.com/products/quickspecs/14733\\_div/14733\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14733_div/14733_div.html)

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

### 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: <http://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.

### Standard Features

#### 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.

#### Form Factor

HP ProLiant m710 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 1500 Chassis Setup and Installation Guide

HP Moonshot iLO Chassis Management Firmware User Guide

#### HP Moonshot Component Pack

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 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

Serial interface control

Power switch security

Administrator's password



### Standard Features

#### 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. Server Cartridge Warranty includes 3-Year Parts, 0-Year Labor, 0-Year Onsite support. 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

#### Connect your devices to HP

Unlock all of the benefits of your technology investment by connecting your products to HP. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HP Proactive Care Service and HP Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HP support.

1- IDC

2 – HP CSC reports 2014 - 2015

#### 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.
- 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: <http://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.

### *Service and Support*

**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)

<b>HP Moonshot 1500 Chassis</b>	HP Moonshot 1500 Chassis Opt OS <b>NOTE:</b> This chassis does NOT include 1 year of Ubuntu support <b>NOTE:</b> If you prefer Ubuntu support for the chassis consider part number 755371-B21 <b>NOTE:</b> Mixed Cartridge configuration is supported – See Network section in step 2 for restrictions	755372-B21
<b>HP Moonshot Server Upgrade Kit</b>	HP Moonshot Server Multipack <b>NOTE:</b> up to 15 cartridges of any kind fit in this multipack	814659-B21

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

<b>HP Moonshot Server</b>	HP ProLiant m710 1P E3-1284L CPU 32GB Configure-to-order Server Cartridge <b>NOTE:</b> Mixed Cartridge configuration is supported – See Network section in step 2 for restrictions <b>NOTE:</b> Each Moonshot server comes preconfigured with four 8 GB SODIMM pre-installed. This is the only memory configuration available on this server. <b>NOTE:</b> Each Moonshot cartridge is pre-configured with a single Intel® Xeon® E3-1284L v3 (x86-64) processor running at 1.8-3.2GHz. This processor is four-core and contains 6MB of shared L3 cache. The same processor package also contains an Integrated Intel® Iris™ Pro P5200 graphics controller and 128MB of embedded DRAM.	755860-B21
---------------------------	---	------------

### Configuration Information - Factory Integrated Models

#### HP Solid State

#### Optional Factory Integration Options (FIO)

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

**NOTE:** Must order identical quantity as configured Moonshot server

HP Moonshot 120GB M.2 2280 Solid State Device

HP Moonshot 240GB M.2 2280 Solid State Device

HP Moonshot 480GB M.2 2280 Solid State Device

## 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

HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit

**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](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

#### 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

HP Moonshot-45XGc Switch Module Kit

HP Moonshot-180G Switch Module Kit

#### Uplinks

HP Moonshot 6SFP Uplink Module Kit

HP Moonshot-16SFP+ Uplink Module Kit

HP Moonshot-4QSFP+ Uplink Module Kit

### Configuration Information - Factory Integrated Models

#### Step 3: Choose Additional Chassis Factory Integration Options

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

<b>HP Rail Kits</b> (Chassis Specific)	<p>HP 4.3U Server Rail Kit <span style="float: right;">681254-B21</span></p> <p>HP 0.66U Spacer Blank Kit <span style="float: right;">681260-B21</span></p> <p><b>NOTE:</b> 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.</p> <p><b>NOTE:</b> The HP 4.3U Rail Kit is required to be ordered for every chassis to properly install the chassis into a rack.</p> <p><b>NOTE:</b> 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.</p>
<b>HP Rack Adapter</b>	<p>HP 13U FIO Rack Adapter Kit for 3X4.3U Chassis <span style="float: right;">681677-B21</span></p> <p><b>NOTE:</b> Group the HP Moonshot 1500 Chassis units into a 13U space. Order one per three chassis.</p> <p><b>NOTE:</b> HP 4.3U Server Rail Kit (PN 681254-B21) is still required</p> <p><b>NOTE:</b> The 0.66U spacer is not used when selecting this option.</p>

#### Step 4: Choose Additional Chassis Options

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

##### HP Care Pack Services 3 year Care Pack

HP 3yr Nbd Moonshot 1500 OptOS FC SVC	U8K89E
HP 3yr Nbd DMR Moonshot1500 OptOS FC SVC	U8K90E
HP 3yr Nbd CDMR Moonshot1500 OptOS FC SVC	U8K91E
HP 3yr 24x7 Moonshot 1500 OptOS FC SVC	U8K92E
HP 3yr 24x7 DMR Moonshot1500 OptOS FC SVC	U8K93E
HP 3yr 24x7 CDMR Moonshot1500 OptOS FC SVC	U8K94E
HP 3yr CTR Moonshot 1500 Opt OS FC SVC	U8K95E
HP 3yr CTR DMR Moonshot1500 OptOS FC SVC	U8K96E
HP 3yr CTR CDMR Moonshot1500 OptOS FC SVC	U8K97E

##### 4 year Care Pack

HP 4yr Nbd Moonshot 1500 OptOS FC SVC	U8AT3E
HP 4yr Nbd DMR Moonshot1500 OptOS FC SVC	U8AT4E
HP 4yr Nbd CDMR Moonshot 1500 OptOS FC SVC	U8AT5E
HP 4yr 24x7 Moonshot 1500 OptOS FC SVC	U8AT6E
HP 4yr 24x7 DMR Moonshot1500 OptOS FC SVC	U8AT7E
HP 4yr 24x7 CDMR Moonshot1500 OptOS FC SVC	U8AT8E
HP 4yr CTR Moonshot 1500 Opt OS FC SVC	U8AT9E
HP 4yr CTR DMR Moonshot 1500 OptOS FC SVC	U8AU0E
HP 4yr CTR CDMR Moonshot1500 OptOS FC SVC	U8AU1E

##### 5 year Care Pack

HP 5yr Nbd Moonshot 1500 OptOS FC SVC	U8AU2E
HP 5yr Nbd DMR Moonshot1500 OptOS FC SVC	U8AU3E
HP 5yr Nbd CDMR Moonshot1500 OptOS FC SVC	U8AU4E
HP 5yr 24x7 Moonshot 1500 OptOS FC SVC	U8AU5E
HP 5yr 24x7 DMR Moonshot1500 OptOS FC SVC	U8AU6E
HP 5yr 24x7 CDMR Moonshot 1500 OptOS FC SVC	U8AU7E

### Configuration Information - Factory Integrated Models

HP 5yr CTR Moonshot 1500 Opt OS FC SVC	U8AU8E
HP 5yr CTR DMR Moonshot1500 OptOS FC SVC	U8AU9E
HP 5yr CTR CDMR Moonshot1500 OptOS FC SVC	U8AV0E

#### 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.

<b>HP Insight Cluster Management Utility (CMU)</b>	<p>HP Insight Cluster Management Utility Media</p> <p><b>NOTE:</b> For additional license kits please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html">http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html</a></p>	BD477A
--	--	--------

<b>HP Advanced Power Manager</b>	<p>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.</p> <p>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).</p> <p>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.</p>	
	<p>HP Advanced Power Manager Kit</p> <p><b>NOTE:</b> Each HP APM can connect to 2 HP SL Advanced Power Manager Distribution (SL APMD) modules</p>	741192-B21
	<p>HP SL Advanced Power Manager Distribution Module Kit</p> <p><b>NOTE:</b> Each SL APMD can connect up to 10 chassis</p>	620002-B21

<b>SFP+ Options</b>	HP BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
---------------------	---	------------

<b>Direct Attach Cables</b>	<p>HP X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable</p> <p>HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable</p>	<p>JG326A</p> <p>JG327A</p>
	<p>HP X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable</p> <p>HP X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable</p> <p>HP X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable</p> <p>HP X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable</p>	<p>JG328A</p> <p>JG329A</p> <p>JG330A</p> <p>JG331A</p>
	<p><b>NOTE:</b> The transceivers and cables listed above have been qualified and certified to work with this product. Transceiver and DAC cables from any manufacturer may be accepted, but they will not be supported by HP.</p> <p>HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable</p>	<p>JG327A</p>

<b>QSFP Options</b>	HP X140 40G QSFP+ MPO SR4 Transceiver	JG325B
---------------------	---------------------------------------	--------

### Additional Options

#### 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](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
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

### Additional Options

#### 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](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](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: <http://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:

<http://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

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](http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html)  
(Worldwide)

### Additional Options

<b>HP Basic Power Distribution Units</b>	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	
	<b>HP 277 Volt options for H3X07A and H3X08A</b>		
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html">http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html</a> (Worldwide)		
	<b>NOTE:</b> Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .		
<b>HP Remote Monitored Power Distribution Units</b>	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	
	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	

### Additional Options

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

<b>HP Moonshot System</b>	HP Moonshot System typically contains forty-five (45) server cartridges, Four (4) Power Supplies (with redundancy) One (1) Switch Module Kit and One (1) Uplink Module Kit.	
<b>HP Moonshot 1500 Chassis Dimensions</b> (H x W x D)	7.47 x 17.45 x 35.34in (18.96 x 44.33 x 89.97cm) <b>NOTE:</b> 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.)	
<b>Weight</b> (approximate)	Maximum (all server cartridges, power supplies, one switch and one uplink installed)	180 lbs.
<b>Typical Power</b>	2756W	
<b>Max Power</b>	3674W	
<b>Input Requirements</b> (per power supply)	Rated Line Voltage	
<b>Power Specifications</b>	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: <a href="http://www.hp.com/go/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a>	
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	1661W at 200VAC 1649W at 240VAC
	Maximum Peak Power	1500W (Max) @ 200VAC 1500W (Max) @ 240VAC
	<b>System Inlet Temperature</b>	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).

### Additional Options

	Non-operating	-22° to 140° F (-30° to 60° C) Maximum rate of change is 36°F/hr (20°C/hr).
<b>Relative Humidity</b> (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.
<b>Altitude</b>	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).
<b>Acoustic Noise</b>	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).	
	<b>Idle</b>	
	L WAd	7.1 Bels
	L pAm	54 dB
	<b>Operating</b>	
	L WAd	7.3 Bels
	L pAm	57 dB
<b>Emissions Classification (EMC)</b>	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	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.

---

<b>Server Cartridge</b>	<b>HP Moonshot m710 Server Cartridge</b>	6.57 x 7.23 x 0.78in (16.71 x 18.37 x 1.98cm)
	<b>Dimensions (H x W x D)</b>	
	<b>Typical Power</b>	50.4W
	<b>Max Power</b>	68.5W

---

**HP 1200W Common Slot Platinum Plus Hot Plug Power Supply**  
Part Number 656364-B21



### Additional Options

	100	120	200	208	220	230	240
<b>Input Voltage Range (Vrms)</b>							
<b>Frequency Range (Nominal) (Hz)</b>							
<b>Nominal Input Voltage (Vrms)</b>	100	120	200	208	220	230	240
<b>Maximum Rated Output Wattage</b>	800	900	1200	1200	1200	1200	1200
<b>Nominal Input Current (A rms)</b>	9.1	8.4	6.7	6.4	6.1	5.8	5.5
<b>Maximum Rated Input Wattage Rating (Watts)</b>	897	999	1321	1319	1317	1315	1314
<b>Maximum Rated VA (Volt-Amp)</b>	909	1012	1338	1337	1334	1332	1331
<b>Efficiency (%) at Max. Rated Output Wattage</b>	89.2	90.1	90.9	91.0	91.1	91.2	91.3
<b>Power Factor</b>				.998			
<b>Leakage Current (mA)</b>	.42	.50	.83	.87	.92	.96	1.00
<b>Maximum Inrush Current (A peak)</b>			30				
<b>Maximum Inrush Current duration (mS)</b>			20				
<b>Maximum British Thermal Unit Rating (BTU-Hr)</b>	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					
<b>Input Voltage Range (Vrms)</b>	200 - 240					
<b>Frequency Range (Nominal) (Hz)</b>	50 - 60					
<b>Nominal Input Voltage (Vrms)</b>	200	208	220	230	240	
<b>Maximum Rated Output Wattage</b>	1500	1500	1500	1500	1500	
<b>Nominal Input Current (A rms)</b>	8.4	8.1	7.6	7.3	7.0	
<b>Maximum Rated Input Wattage Rating (Watts)</b>	1661	1659	1655	1652	1649	
<b>Maximum Rated VA (Volt-Amp)</b>	1681	1679	1675	1672	1669	
<b>Efficiency (%) at Max. Rated Output Wattage</b>	90.3	90.4	90.6	90.8	91.0	
<b>Power Factor</b>	0.999	0.999	0.999	0.999	0.999	0.999
<b>Leakage Current (mA)</b>	0.50	0.75	0.79	0.83	1.00	
<b>Maximum Inrush Current (A peak)</b>			40			
<b>Maximum Inrush Current duration (mS)</b>			0.2			
<b>Maximum British Thermal Unit Rating (BTU-Hr)</b>	5667	5661	5648	5637	5627	

### HP 1500W Common Slot -48V Hot Plug Power Supply Kit

Part Number	746708-B21		
<b>Input Voltage Range (VDC)</b>	-40 to -72		
<b>Frequency Range (Nominal) (Hz)</b>	DC		
<b>Nominal Input Voltage (VDC)</b>	-40	-48	-72
<b>Maximum Rated Output Wattage</b>	1500	1500	1500
<b>Nominal Input Current (ADC)</b>	40.5	33.5	22.2
<b>Maximum Rated Input Wattage Rating (Watts)</b>	1621	1607	1598





### Additional Options

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	
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 ownership 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: <http://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](http://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](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
17-Jul-2015	From version 10 to 11	Update	Updates throughout the QuickSpecs
1-Jun-2015	From version 9 to 10	Update	Update the configuration section
5-May-2015	From version 8 to 9	Update	Add chassis part number
9-Apr-2015	From version 7 to 8	Update	Add power supply
3-Feb-2015	From Version 6 to 7	Changed	Changes throughout the QuickSpecs
21-Jan-2015	From Version 4 to 6	Changed	Changes made in the configuration section
01-Dec-2014	From Version 3 to 4	Changed	Changes throughout the QuickSpecs
05-Nov-2014	From Version 1 to 3	Changed	Change Images and verbiage
09-Sept-2014	Create Version 1	Created	Create QS for HP ProLiant m710 Sever Cartridge

© Copyright 2015 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows NT are US registered trademarks of Microsoft Corporation. Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries.

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.

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