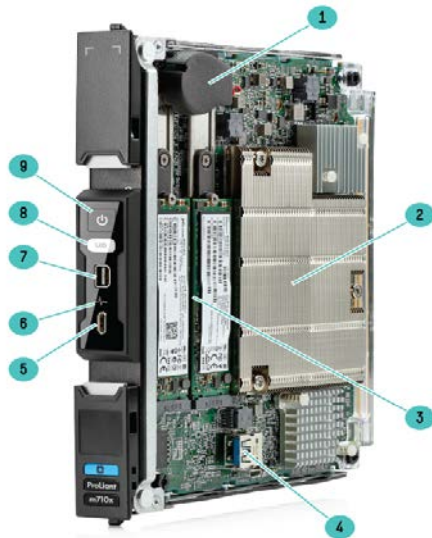## Overview

HPE ProLiant m710x Server Cartridge

HPE ProLiant m710x Server Cartridge is designed to enhance the performance of Rich Application Streaming, Remote Workstation/Desktop Delivery and Video Transcoding. It has one Intel® Xeon® E3-1585L v5 four-core processor with integrated Intel® Iris ProTM P580 graphics, up to 64GB of ECC protected memory, dual 10Gb Ethernet along with up to Four (4) 1TB NVMe M.2 SSD storage modules, and up to One (1) 240GB M.2 SSD for local OS booting.
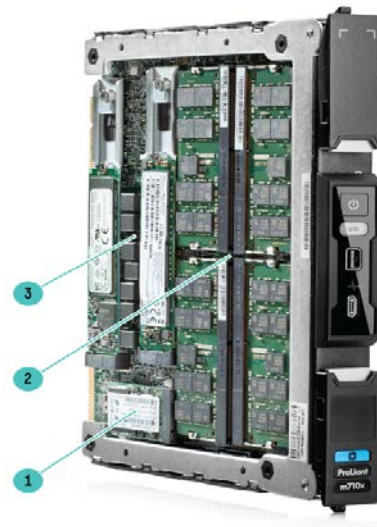
The HPE Moonshot System uses an innovative new architecture that results from one simple design tenet: to align purpose-built modules with the right workload to provide optimal results for your environment. Traditional servers rely on dedicated components, including management, networking, storage, power cords and cooling fans in a single chassis. In contrast, the Moonshot system shares these chassis components and is capable of supporting 45 server cartridges per 4.3U chassis. This gives you the ability to generate greater revenue from a smaller footprint while driving down your operational costs.

HPE Edgeline is the industry's first "Converged Edge System" - converging compute, storage, data capture, control and enterprise-class systems and device management built to thrive in hardened environments and handle shock, vibration and extreme temperatures. HPE Edgeline Systems allow deployment 1 to 4 HPE ProLiant m710x servers, along with associated storage and I/O options to locations both inside and outside the traditional datacenter (e.g. factories, branch office and retail outlet).

Front View:
1. Battery
2. Intel® Xeon® E3 Processor and Heat Sink
3. Two (2) 2280 or 22110 M.2 SSDs (NVMe)
4. Standard USB Connector
5. Micro USB Connector
6. Server Cartridge Health LED
7. Mini-DisplayPort Connector
8. Server Cartridge UID LED/Button
9. Server Cartridge Power LED/Button

Rear View:
1. 2242 M.2 SSD (SATA)
2. Four (4) DDR4 SODIMMs
3. Two (2) 2280 or 22110 M.2 SSDs (NVMe)

Hewlett Packard Enterprise

Standard Features

Processor

Intel® Xeon® E3 Model	SoC Frequency	Turbo Frequency	Cores	L3 Cache	Power	DDR4 MHz
E3-1585L v5	3.0GHz	3.7GHz	4-core	8MB	45W	2133

NOTE: For more information regarding Intel® Xeon® E3, please see the following
URL: **http://www.intel.com/content/www/us/en/processors/xeon/xeon-processor-e3-family.html**

Chipset

Intel® C236 Chipset
NOTE: For more information regarding chipset, please see the following
URL: **http://ark.intel.com/products/90594/Intel-GL82C236-PCH**

Graphics

Intel® Iris Pro™ P580 Graphics (3D) with 128MB of embedded DRAM (L4 cache) -and- iLO remote console (2D) Expansion I/O slots for selected 3D graphics cards are available in the HPE Edgeline System. Refer to the chassis documentation for details.

On System Management Chipset

HPE iLO (Firmware HPE iLO4 2.4 or later) 4GB NAND
NOTE: 1GB USB user space configurable via UEFI and accessible via iLO is available only on HPE Edgeline System. Read and learn more in the iLO QuickSpecs:
http://www.hpe.com/info/ilo

Memory

Type	HPE SmartMemory DDR4 ECC Unbuffered Small Outline (SODIMM)	
Supported DIMMs	DDR4-2133 8GB (2R x 8), 16GB (2R x 8)	
DIMM Slots Available	4	(4 DIMM slots per processor, 2 channels per processor, 2 DIMMs per channel)
Maximum Capacity (RDIMM)	64GB	(4 x 16GB SODIMM)

NOTES:

- Rules under "Memory" section must be followed for Configuring and Mixing of DIMMs.
- Registered DIMMs (RDIMMs), Load Reduced DIMMs (LRDIMMs) and Non-Volatile DIMMs (NVDIMMs) are not supported

Standard Features

Memory Protection	Advanced ECC	Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.
	Patrol/Demand scrubbing	Patrol and Demand scrubbing detect and correct memory errors by periodically inspecting the entire memory space or when the data is accessed during normal operation.

Expansion slots   Expansion I/O slot options are available in the HPE Edgeline System. Refer to the chassis documentation for details.

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

Storage Controller and Devices   SATA and PCIe controllers are Integrated in the Intel® Xeon® E3 SoC and Intel® C236 Chipset

SSD Slot #	Technology	Bus Width	Connector Width	Form Factor	Supported Sizes
SATA #1	SATA-3	x1	x1	M.2 2242	64GB 120GB 240GB
NVMe #1	PCIe 3.0	x4	x4	M.2 2280 or 22110	256GB 512GB 1024GB
NVMe #2	PCIe 3.0	x4	x4	M.2 2280 or 22110	256GB 512GB 1024GB
NVMe #3	PCIe 3.0	x4	x4	M.2 2280 or 22110	256GB 512GB 1024GB
NVMe #4	PCIe 3.0	X2	x4	M.2 2280 or 22110	256GB 512GB 1024GB

NOTE: The HPE m710x server cartridge may be purchased with zero M.2 storage (i.e. network/diskless boot).
NOTE: SATA and NVMe M.2 SSDs can both be used as an OS boot drive

Maximum Internal Storage	M.2 2242 SATA solid state device	240 GB	1 x 240 GB
	M.2 2280 NVMe solid state devices	4 TB	4 x 1 TB

Power Supply   Power supply options depend on the chassis used. Refer to the chassis documentation for details.

System Fans   System fan options depend on the chassis used. Refer to the chassis documentation for details.

Interfaces   Server Cartridge Link LED/button
Server Cartridge UID LED/button
Drive LED
Server Cartridge Health LED
Micro-USB 2.0 connector
NOTE: To connect a standard USB device to the server cartridge, connect a Micro-USB to USB Type-A adapter (from the orderable m710x cable kit) to the cartridge Micro-USB connector, and then connect the USB device to the adapter.

Mini-DisplayPort connector
NOTE: To connect a monitor, use one of the following adapters from the orderable m710x cable kit:

- Mini Displayport (DP) to Displayport (DP) Female Adapter
- Mini Displayport (DP) to HDMI Adapter

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	**Microsoft Windows Client** **Microsoft Windows Server** **RedHat Enterprise Linux (RHEL)** **SUSE Linux Enterprise Server (SLES)** **Citrix XenServer** **VMware ESXi** **NOTE:** Only 64-bit versions of these operating systems are supported **NOTE:** For more information on the Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our OS Support Site at: **http://www.hpe.com/info/ossupport** and our driver download page which can be found from the HPE Support Center: **http://www.hpe.com/support/hpesc**
Industry Standard Compliance	PXE Support PCIe 3.0 Compliant WOL Support Microsoft® Logo certifications USB 2.0 and 3.0 Support ACPI 2.0 Compliant
HPE Server UEFI ROM	Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. The HPE ProLiant m710x Server defaults to UEFI and does not support Legacy BIOS Boot Mode. **NOTE:** The UEFI System Utilities function is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit **http://www.hpe.com/servers/uefi** UEFI enables numerous new capabilities specific to HPE ProLiant servers such as: • Secure Boot • Operating system specific functionality • Support for > 2.2 TB (using GPT) boot drives • USB 3.0 Stack (only used in HPE Edgeline System) • Embedded UEFI Shell • Mass Configuration Deployment Tool using RESTful API for iLO 4 • PXE boot support for IPv6 networks • Boot support for option cards that only support a UEFI option ROM (only used in HPE Edgeline System) • Network Stack configurations **NOTE:** For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.
Form Factor	HPE ProLiant m710x Server Cartridge plugs into the HPE Moonshot 1500 and HPE Edgeline EL1000/EL4000 Systems.

Embedded Management		
	HPE Integrated Lights-Out (HPE iLO)	Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at **http://www.hpe.com/info/ilo**
	UEFI	Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://www.hpe.com/servers/uefi**.
	RESTful API	RESTful API for iLO 4 is Redfish 1.0 conformance for simplified server management such as configuration and maintenance tasks based on modern industry standards. Learn more at **http://www.hpe.com/info/restfulapi** **NOTE:** Full REST API is available when the server is installed in a HPE Edgeline System

Standard Features

	Intelligent Provisioning	Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at **http://www.hpe.com/servers/intelligentprovisioning** **NOTE:** Intelligent provisioning is only supported when the server is installed in a HPE Edgeline System
		NOTE: HPE iLO provides only Remote Console and Virtual Media capabilities when the server is installed in a HPE Moonshot 1500 System. **NOTE:** HPE iLO provides the full set of ProLiant features when the server is installed in a HPE Edgeline System. Advanced Pack licenses will be required for enhanced capabilities, including Remote Console and Virtual Media.
Server Utilities	Moonshot Component Pack	The HPE Moonshot Component Pack is a comprehensive firmware solution tested on the HPE Moonshot System and delivered as a compressed file. The compressed file includes all the component files needed to update a Moonshot System. Users deploy the firmware updates contained in the Moonshot Component Pack via the iLO Chassis Manager CLI or HPE Moonshot-45G/180G Switch Module CLI. This can be accomplished using HPE Smart Update Manager, which is included with the files, or manually. Access the Moonshot supporting software/driver download page via: **https://www.hpe.com/us/en/servers/moonshot.html** **NOTE:** The Moonshot Component Pack is only supported when the server is installed in a HPE Moonshot 1500 System.
	Edgeline Component Pack	The HPE Edgeline Component Pack, is the delivery mechanism for firmware updates on the HPE Edgeline System. Before using your system for the first time, verify that you have the latest drivers, firmware, and system software installed. For more information, see the Edgeline Component Pack Update Guide on the Hewlett Packard Enterprise website: **http://www.hpe.com/info/edgeline-docs** **NOTE:** The Edgeline Component Pack is only supported when the server is installed in a HPE Edgeline System.
	Scripting Tool Kit and Windows PowerShell	Provision 1 to many servers using your own scripts to discover and deploy them with Scripting Tool Kit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/proliant/stk** Or **http://www.hpe.com/servers/powershell**. **NOTE:** This Feature will be available when the server is installed in a HPE Edgeline System.
	RESTful Interface Tool	RESTful Interface tool is a scripting tool to provision using RESTful API for iLO4 to discover and deploy servers at scale. Learn more at **http://www.hpe.com/info/resttool** **NOTE:** This Feature will be available when the server is installed in a HPE Edgeline System.
	HPE Insight Online	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty or contractual support agreement with Hewlett Packard Enterprise, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at **http://www.hpe.com/info/insightonline/explore**.

Standard Features

Security
- Serial interface control
- Administrator's password
- Power-on password
- TPM2.0
- UEFI
- iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption [1]
- iLO 4 can be disabled via a Global Setting [2]
- iLO Advanced supports directory services integration [3]

NOTE: [1], [2] and [3] are delivered by iLO Chassis Manager in HPE Moonshot 1500 System and HPE m710x's embedded iLO4 in the HPE Edgeline System.
NOTE: [1], [2] and [3] require an HPE iLO Advanced License when the HPE m710x is installed in a HPE Edgeline System.

HPE Trusted Platform Module

HPE Trusted Platform Module 2.0 is embedded on the Server Cartridge, and can be enabled and disabled using the BIOS.
NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008, 2012/2012 R2. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 2.0. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04939549**
NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.
NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

Warranty

This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE support services or customized service agreements.
NOTE: Server Warranty includes 3-Year Parts, 0-Year Labor, 0-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Optional CSR parts are designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. 2) No CSR parts are also designed for requiring a Hewlett Packard Enterprise authorized service provider replace the part. Additional information regarding worldwide limited warranty and technical support is available at: **http://h20564.www2.hpe.com/hpsc/wc/public/home**

Optional Features

HPE Insight Cluster Management Utility (CMU)	HPE Insight Cluster Management Utility (CMU) is a Hewlett Packard Enterprise-licensed and Hewlett Packard Enterprise-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 Hewlett Packard Enterprise Insight Cluster Management Utility, please contact your sales representative or go to: **https://www.hpe.com/us/en/servers/server-management.html**
Factory Express Portfolio for Servers and Storage	HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise 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. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Moonshot, HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, and HPE BladeSystem, HPE 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   To see recommended HPE Support Services for your HPE product
(4 and 5 year Service offerings are also available)

See HPE Moonshot 1500 System Quick
Specs: **https://www.hpe.com/us/en/servers/moonshot.html**

See HPE Edgeline System Quick Specs:
http://www.hpe.com/info/edgeline-docs

For more information   To learn more on HPE Moonshot or HPE Edgeline Systems, please contact your Hewlett Packard
Enterprise sales representative.

Additional Options

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

NOTES:

- If you want to configure the HPE Moonshot 1500 System with server cartridges, proceed to the HPE Moonshot 1500 System Quick Specs: **https://www.hpe.com/us/en/servers/moonshot.html**
- If you want to configure the HPE Edgeline EL1000/EL4000 System with server cartridges, proceed to the HPE Edgeline QuickSpecs: **http://www.hpe.com/info/edgeline-docs**
- If you want to configure a server cartridge only, proceed to Step 1

Step 1: Base Configuration (Choose upgrade kit)

HPE ProLiant Server Upgrade Kit	HPE Moonshot Server Multipack	814659-B21
	NOTE: Up to 15 server cartridges of any kind fit in this multipack	
	NOTE: Mixed Cartridge configuration is supported	

Step 2: Pick ProLiant Server Cartridge

HPE ProLiant m710x Server Cartridge	HPE ProLiant m710x E3-1285v5 3.1GHz 4-core 45W Configure-to-order Server Cartridge	833105-B21
	NOTE: Each ProLiant server cartridge is pre-configured with a single Intel® Xeon® E3-1585L v5 (x86-64) Four-core processor running at 3.0-3.7GHz. The same processor package also contains an integrated Intel® Iris Pro™ P580 Graphics processor with 128MB of embedded DRAM. This processor contains 6MB of shared L3 cache with Memory configurable up to 64GB.	

NOTES:

- The processor on each server is fixed and cannot be changed after ordering. DIMMs and SSDs are configurable.
- Mixing of different server cartridges within the same chassis is supported

Step 3: Configure ProLiant Server Cartridge (Choose appropriate Option)

NOTE: Additional options are not configurable for server upgrade kits.
NOTE: Must order identical quantity on all configured ProLiant server cartridges.
NOTE: Part numbers provided below can be used to order upgrades as well

HPE Memory	**Select 1 to 4 of the following:**	
	HPE 8GB (1x8GB) ECC Dual Rank x8 DDR4-2400 CAS-15-15-15 Unbuffered SO-DIMM Field Upgradable Kit	863951-B21
	HPE 16GB (1x16GB) ECC Dual Rank x8 DDR4-2400 CAS-15-15-15 Unbuffered SO-DIMM Field Upgradable Kit	863953-B21
HPE Solid State Drives	**Select 0 to 1 of the following:**	
	HPE 64GB SATA M.2 2242 Solid State Drive Field Upgradable Kit	866840-B21
	HPE 120GB SATA M.2 2242 Solid State Drive Field Upgradable Kit	866842-B21
	HPE 240GB SATA M.2 2242 Solid State Drive Field Upgradable Kit	866844-B21
	Select 0 to 4 of the following:	
	HPE 256GB PCIe M.2 2280 Solid State Drive Field Upgradable Kit	862159-B21
	HPE 512GB PCIe M.2 2280 Solid State Drive Field Upgradable Kit	862161-B21
	HPE 1024GB PCIe M.2 2280 Solid State Drive Field Upgradable Kit	862163-B21
	NOTE: Mixing of 2280/22110 M.2 SSD types in a server is allowed	

Service and Support

Step 4: To Select a different server cartridge see details:

HPE Moonshot 1500 System:
https://www.hpe.com/us/en/servers/moonshot.html

HPE Edgeline EL1000/EL4000 System:
http://www.hpe.com/info/edgeline-docs

Additional Options

Step 5: Choose Additional Options

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

Cable Kits	HPE m710x Front I/O Cable Kit	867893-B21

NOTE:
1. This optional kit provides the following cables for connecting the HPE ProLiant m710x server directly to a monitor, keyboard, mouse or other accessories.
- Mini Displayport (DP) to Displayport (DP) Female Adapter
- Mini Displayport (DP) to HDMI Adapter
- Micro-USB to USB Type-A Female Adapter

2. These cables can be used in production when the server is installed in a HPE Edgeline EL1000 system (front access). However, they will require removal of the top cover when the server is installed in a Moonshot 1500 (top access) and partial extraction of the chassis from the rack when installed in an Edgeline EL4000 system (side access).

HPE Embedded Management	HPE Integrated Lights Out (iLO) Advanced	
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity LTU	512486-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking LTU	512487-B21
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD506A
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Tracking LTU	BD507A

NOTE: If the server cartridge will be installed in a Moonshot 1500 system, do NOT order any iLO Advanced pack licenses (it's not supported). If the server will be installed in an Edgeline system, 1 optional iLO Advanced license can be ordered for each configured server. E.g. In a HPE Edgeline EL4000 system with 4 server cartridges, you can order 0-4 iLO Advanced licenses depending on the number of servers you wish to enable with the advanced capabilities.
For more details on iLO Advanced, refer to: **http://www.hpe.com/info/ilo**

HPE Insight Software	HPE Insight Control	
	HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU	C6N27A
	HPE Insight Control including 1yr 24x7 TSU E-LTU	C6N28ABE
	HPE Insight Management Media Kit	C6N31A
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO E-LTU	C6N36ABE
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO LTU	C6N36A

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24x7 HPE Software Technical Support and Update Service.

Additional Options

NOTE: Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: **http://www.hpe.com/info/insightmanagement**
NOTE: For additional license options please see the QuickSpecs at: **http://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04123391**

High Performance Clusters

HPE Cluster Management Utility

HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU	QL803B
HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU	BD476A

NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer will also receive a support agreement.

HPE Insight Cluster Management Utility Media	BD477A

NOTE: For additional license kits please see the QuickSpecs at:
https://www.hpe.com/us/en/servers/server-management.html

Memory

DIMM Population Order for the HPE m710x Server Catridge

Total Memory	Slot #			
	DIMM 1 (GB)	DIMM 2 (GB)	DIMM 3 (GB)	DIMM 4 (GB)
8 GB		8		
16 GB		8		8
24 GB		16		8
32 GB		16		16
40 GB	16	16		8
48 GB	16	16	8	8
64 GB	16	16	16	16

NOTE: Table shows recommended HPE m710x server memory configurations that have been optimized by HPE.
NOTE: DIMM slots are not color coded on this server. Refer to the picture below for the locations.
NOTE: Do not use Registered DIMMs (RDIMMs). Load Reduced DIMMs (LRDIMMs) and Non-Volatile DIMMs (NVDIMMs)

General Memory Population Rules and Guidelines:
- There are two (2) Memory channels per processor. This server only has 1 processor.
- There are two (2) DIMM slots for each memory channel; four (4) total slots per processor.
- A minimum of one DIMM is required per processor.
- DIMM 1 and DIMM 2 belong to CPU Channel A. DIMM 3 and DIMM 4 belong to Channel B. Recommended configurations are designed to optimize performance.
- When mixing DIMMs of different sizes, load the heaviest load (DIMM with most ranks) DIMM first.
- Load DIMMS in this sequence: DIMM 2 -> DIMM 4 -> DIMM 1 -> DIMM 3. See the diagram above.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- Use only HPE memory specified in this document.

Memory

DIMM Locations on the HPE m710x Server			
DIMM 3 / DIMM 4 = Channel B		**DIMM 1 / DIMM 2 = Channel A**	
1.	DIMM 3	3.	DIMM 2
2.	DIMM 4	4.	DIMM 1

Memory

Intel Supported Memory Bandwidth for HPE ProLiant m710x Intel® Xeon® E3-1585L v5 Series Processor Family

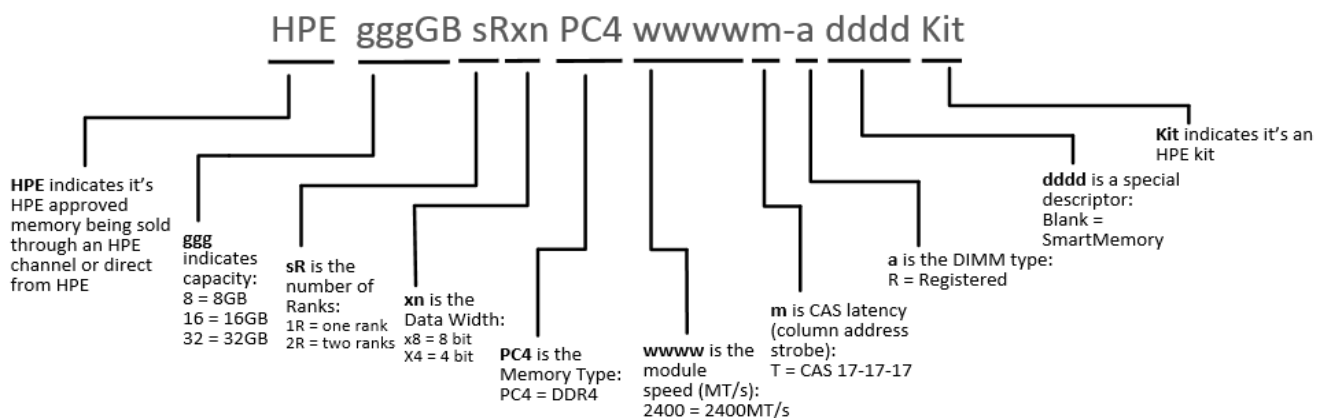| Memory Bandwidth and Capacity		
[DIMM Type]	**ECC Unbuffered Small Outline DIMMs (SODIMMs)**	
HPE P/N	HPE 16GB (1x16GB) ECC Dual Rank x8 DDR4-2400 CAS-15-15-15 Unbuffered SO-DIMM Field Upgradable Kit	863953-B21
DIMM Rank	Dual Rank	Dual Rank
DIMM Capacity	8GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V
DRAM Depth [bit]	1G	2G
DRAM Width [bit]	x8	X8
DRAM Density	8Gb	8Gb
CAS Latency	15-15-15	15-15-15
DIMM Native Speed (MT/s)	2400	2400
Slots that can be populated	4	4
Maximum Capacity (GB)	32	64
POPULATED DIMM SPEED (MT/s)		
1 DIMM Per Channel	2133	2133
2 DIMM Per Channel	2133	2133

Memory Speed by Processor Model	Processor Model E3-1585L v5	Supported Memory Speeds 2133 MT/s

DDR4 memory options part number decoder
NOTE: Capacity references are rounded to the common gigabyte (GB) values.
- 8GB = 8,192MB
- 16GB = 16,384MB

HPE gggGB sRxn PC4 wwwwm-a dddd Kit

HPE indicates it's HPE approved memory being sold through an HPE channel or direct from HPE

ggg indicates capacity:
8 = 8GB
16 = 16GB
32 = 32GB

sR is the number of Ranks:
1R = one rank
2R = two ranks

xn is the Data Width:
x8 = 8 bit
X4 = 4 bit

PC4 is the Memory Type:
PC4 = DDR4

wwww is the module speed (MT/s):
2400 = 2400MT/s

m is CAS latency (column address strobe):
T = CAS 17-17-17

a is the DIMM type:
R = Registered

dddd is a special descriptor:
Blank = SmartMemory

Kit indicates it's an HPE kit

Storage

SSD Options on the HPE m710x Server Cartridge	SSD Numbering	Supported Module	Connection Type
	SATA # 1	M.2 2242	SATA-3 x1
	NVMe # 1	M.2 2280 or 22110	PCIe 3.0 x4
	NVMe # 2	M.2 2280 or 22110	PCIe 3.0 x4
	NVMe # 3	M.2 2280 or 22110	PCIe 3.0 x4
	NVMe # 4	M.2 2280 or 22110	PCIe 3.0 x2

Technical Specifications

Server Cartridge	HPE ProLiant m710x 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	70W
	Max Power	85W
System Inlet Temperature	**Standard Operating**	HPE Moonshot 1500 and HPE Edgeline EL1000/4000 Systems Fully supported. Typical range is 10° to 35°C (50° to 95°F) with altitude derating. Refer to the HPE Moonshot 1500 or Edgeline EL1000/4000 System documentation for details.
	Extended Operating	HPE Moonshot 1500 System: NOT supported. HPE Edgeline EL1000/4000 System: Depending on hardware configuration, the supported system inlet range can be extended up to 55°C. Compliance to ASHRAE A3 and A4 standards is also available. The approved hardware configurations for this system are listed in the Edgeline system documentation.
	Non-operating	Refer to the HPE Moonshot 1500 or Edgeline EL1000/4000 System documentation for details.
Altitude	**Operating**	Refer to the HPE Moonshot 1500 or Edgeline EL1000/4000 System documentation for details.
	Non-operating	Refer to the HPE Moonshot 1500 or Edgeline EL1000/4000 System documentation for details.
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).	
	Refer to the HPE Moonshot 1500 or Edgeline EL1000/4000 System documentation for details.	
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.

Environment-friendly Products and Approach - End-of-life Management and Recycling	Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Technical Specifications

Other Infrastructure Components

System Types	HPE Moonshot HPE Moonshot 1500 System **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111337** HPE Edgeline HPE Edgeline EL1000 System **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c05211199** HPE Edgeline EL4000 System **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c05211200**
Switch (Moonshot 1500 Only)	FastPATH HPE Moonshot-45G Switch Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111342** HPE Moonshot-180G Switch Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111343** Comware HPE Moonshot-45Gc Switch Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04773032** HPE Moonshot-45XGc Switch Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04384058** HPE Moonshot-180XGc Switch Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04923651**
Uplink Module (Moonshot 1500 Only)	HPE Moonshot-6SFP+ Uplink Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111340** HPE Moonshot-16SFP+ Uplink Module **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04499458** HPE Moonshot-4QSFP+ Uplink Module **http://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111341**

Summary of Changes

Date	Version History	Action	Description of Change
01-May-2017	From version 4 to 5	Updated	Updates throughout the QuickSpecs
16-Dec-2016	From version 3 to 4	Updated	Added iLO licensing and clarified some notes
9-Sep-2016	From version 2 to 3	Changed	Detailed configuration information and cleanup
15-Jul-2016	From version 1 to 2	Changed	Updates throughout the QuickSpecs
6-Jun-2016	Version 1	Created	Create QS for HPE ProLiant m710x Server Cartridge

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