RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HPE Edgeline EL4000 System

HPE Edgeline EL4000 is one of the industry's first "Converged Edge Systems" – integrating unprecedented levels of edge compute, precision data capture and control, data center class security, device and systems managements, as well as large and blazingly fast storage capability – all in one converged box. This rugged and compact system is designed to perform in harsher edge environments with higher shock, vibration and temperature levels. It is perfect for expanding your IoT infrastructure beyond traditional data center confines and can also help break cloud vendor lock-in to enable true edge computing.

HPE Edgeline Converged Edge Systems are also designed to greatly accelerate the speed at which IoT data can be acquired, analyzed and actioned upon. This enables your business to make real-time decisions that can add value to your operations and result in better business outcomes. This is achieved through three points of convergence in one box:

1. Unprecedented deep edge compute and high capacity storage based on open standards

Traditional data center or cloud solutions for IoT require data to be transferred from the edge – exposing them to potential issues of latency, bandwidth, cost, security, duplication, corruption and compliance. HPE Edgeline Converged Edge Systems can acquire data with precision, analyze it on an industry-standard x86 deep compute platform, drive high-performance Human Machine Interface (HMI) displays for operators and initiate control actions from the edge itself, in real-time, removing transfer issues and resulting in faster insights for better business agility.

The HPE Edgeline EL4000 System runs unmodified enterprise-class analytics software such as HPE Vertica, and each server is engineered to deliver very high performance. For example, The HPE EL4000 can ingest, repair and load millions of Smart Meter datasets per second, with just nanoseconds of latency. That's the equivalent performance of a typical 2-processor rack server, yet the EL4000 is out at the edge!

The slim, 1U HPE Edgeline EL4000 Converged Edge System can be configured with a combination of one to four HPE ProLiant m510 (Intel® Xeon® D – 8 or 16 core) or HPE ProLiant m710x (Intel® Xeon® E3 – 4 core with workstation-class GPU) compute nodes. Solid State Drive (SSD) options in the M.2 form factor with different interface types (SATA or NVMe), can also be selected to help deliver the perfect balance between cost efficiency and extreme storage performance.

2. Unique integration of precision data acquisition, measurement and control systems based on open standards

The I/O capabilities of HPE Edgeline EL4000 Converged Edge System is built on open industry standards such as PCI Express and PXIe. Select models also include a wide variety of option I/O cards to support 10-40 Gb Ethernet, InfiniBand or Fiber Channel.

Precision data capture and control capabilities are achieved through open PXI standards, and when coupled with automated machine learning, they open up new horizons for equipment monitoring and management, predictive analytics to detect impending failures and augmented reality for manual-less servicing – key facets of Smart Factory initiatives such as Industry 4.0.

The HPE Edgeline EL4000 also supports I/O expansion using up to four PCIe cards (one per compute node) or up to four PXIe modules (one to four assignable to any compute node). A choice of two switched 10Gb (SFP+) or two pass-through 4x10Gb (QSFP+) network uplink ports is also available.

3. Data center class security, device and remote systems management

HPE Edgeline Converged Edge Systems bring our industry leading HPE Integrated Lights Out (iLO) systems management and security technology to the edge – the exact same HPE iLO found in our industry standard HPE ProLiant servers used in traditional datacenters. A single HPE iLO RJ45 management Ethernet port enables you to deploy, monitor and support your HPE Edgeline EL4000 System - even when it's located at a remote site.

Overview

The HPE Edgeline EL4000 is also fully compatible with popular IoT security solutions for protection in high-risk edge environments. Aruba ClearPass enables custom profiles to be created to identify and secure IoT devices. Through real-time interaction with third party security solutions, ClearPass offers automated threat protection and recovery for devices that represent risk, with minimal hands-on IT interaction required. Aruba Virtual Intranet Access (VIA) enables seamless Virtual Private Network (VPN) tunnels for secure connectivity between edge locations and the corporate network.

HPE Edgeline Converged Edge Systems have a modular design that enables easy subsystem replacements and upgrades.

HPE Edgeline – Engineered for Edge Environments

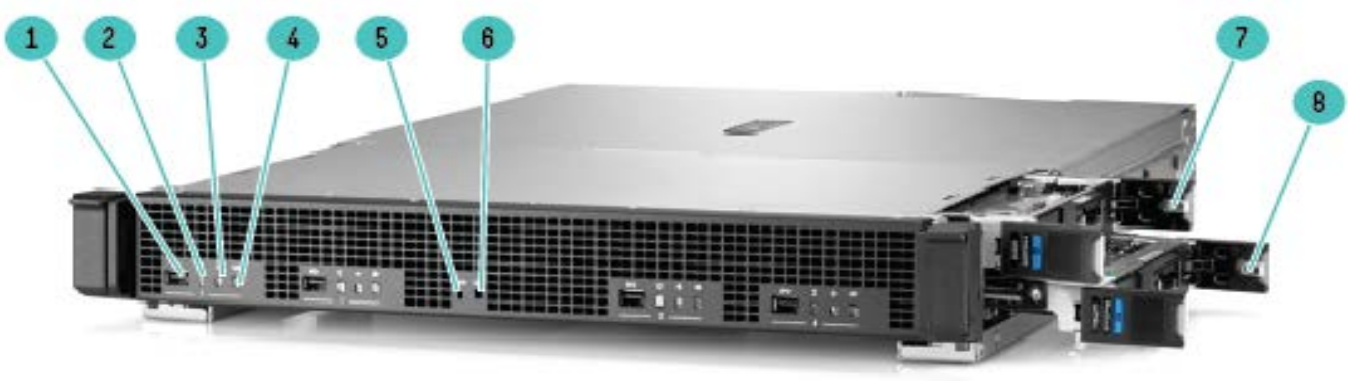
The HPE Edgeline EL4000 Converged Edge System is designed to reside where the data is created, often in environmentally harsh, space-constrained and/or dusty environments. This compact, ruggedized system is designed to withstand increased shock and vibration, and can also tolerate high ambient operating temperatures up to 55°C (131°F) – well beyond what traditional servers can typically endure. Telco specific options such as NEBS Level 3 certification, are also available. When floor space options are limited, a wide range of wall, rack, or shelf mounting options open up a multitude of placement possibilities. Finally, you can easily connect HPE Edgeline Converged Edge Systems to your electrical infrastructure by selecting AC or -48V DC hot-pluggable power supplies.

HPE Edgeline – It's more than just IoT!

Powering the Intelligent Workspace at the Enterprise Edge
When coupled with Citrix technology, the HPE Edgeline EL4000 Converged Edge System is a perfect solution for secure, simple, smart and scalable delivery of applications, desktops and user data at the enterprise edge. This solution enables your enterprise or SMB to enhance worker productivity from anywhere, at any time, from any device. Take advantage of HPE's world-class data center technology at the enterprise IT edge with HPE ProLiant m710x compute nodes to enable workstation-class graphics, accelerated desktops and rich applications. Or use HPE ProLiant m510 compute nodes to support up to 660 office workers, using just 0.61W of power per user. Have a specific need? This proven mobility solution can be scaled and adapted to meet your specific needs to enable you to take advantage of the same benefits of security, compliance and system performance found in traditional datacenters.

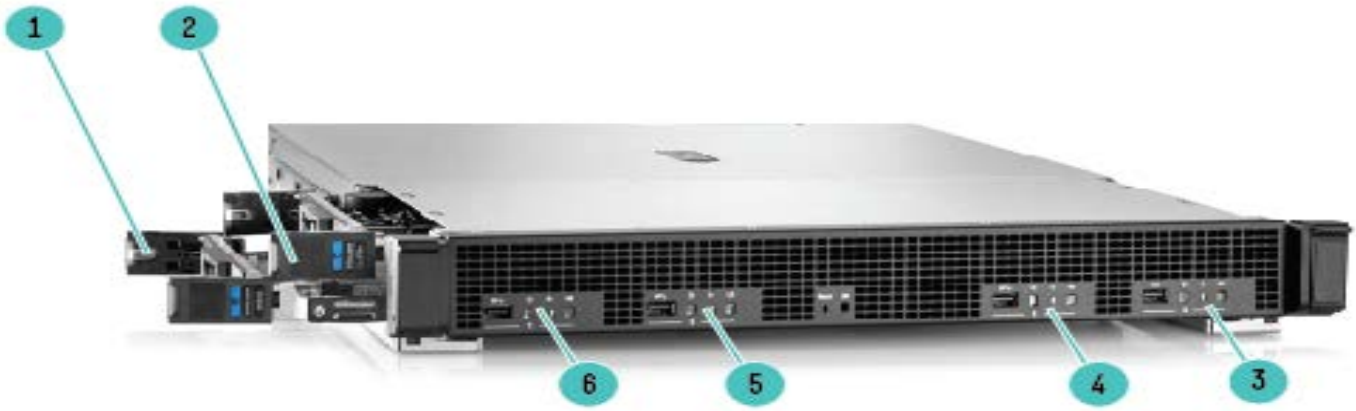
Processing and Caching of Rich Media at the Media Edge
The HPE Edgeline EL4000 Converged Edge System provides a high performance, easy to manage platform for Multiple System Operators (MSO) and Over-The-Top (OTT) providers to enable processing, integration and caching of video, audio and other rich media content nearer to the consumer. It also helps perform compute and bandwidth intensive tasks, such as video transcoding and caching at the media edge site (e.g. a distribution center in a building/town). This greatly reduces demand on the core network back to the datacenter and improves responsiveness for content consumers. Configure your ruggedized system with HPE ProLiant m710x compute nodes to enjoy up to 108 AVC/h.264 (1080p @ 30fps) or 8 HEVC/h.265 (4K @ 60fps) simultaneous hardware accelerated video transcodes. Then, cache the data using high-performance memory and SSDs on the HPE ProLiant m510 compute nodes to deliver a superior and differentiated experience to your end users.

Standard Features



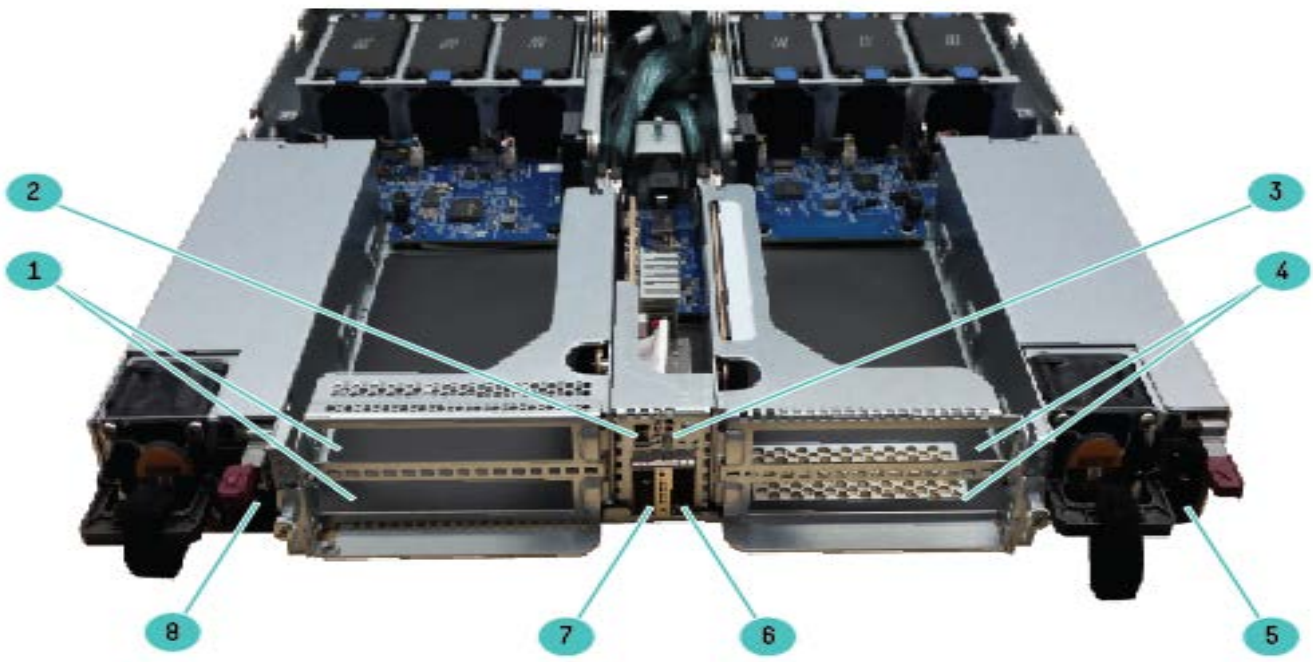
HPE Edgeline EL4000 Front View

Item	Description
1.	USB 2.0 Port
2.	Server Cartridge Power LED/Button
3.	Server Cartridge Health LED
4.	Server Cartridge UID LED
5.	Management Reset Button (Pinhole)
6.	Chassis System Health LED
7.	HPE ProLiant server cartridge 3
8.	HPE ProLiant server cartridge 4



Item	Description
1.	HPE ProLiant server cartridge 2
2.	HPE ProLiant server cartridge 1
3.	Cartridge 4 lights indicator
4.	Cartridge 3 lights indicator
5.	Cartridge 2 lights indicator
6.	Cartridge 1 lights indicator

Standard Features



HPE Edgeline EL4000 Rear View

Item	Description
1.	Two (2) PCIe I/O Card Slots -or- PXIe# modules (3 – Top, 4- Bottom)
2.	iLO Network Port – 1GbE RJ45
3.	Chassis UID Indicator
4.	Two (2) PCIe I/O Card Slots -or- PXIe# modules (1 – Top, 2- Bottom)
5.	Power Supply 1
6.	Network Port B* - 10GbE SFP+ or 4x10GbE QSFP+
7.	Network Port A* - 10GbE SFP+ or 4x10GbE QSFP+
8.	Power Supply 2

NOTES: * Network connections are available in 10GbE SFP+ (switched) or 4x10GbE QSFP+ (pass-thru). Only the 10GbE SFP+ option is shown.

* PXIe model has Two 10GbE SFP+ (switched) ports on the front of the chassis instead of the rear.

Standard Features

Enclosure

The HPE Edgeline EL4000 System holds 1-4 HPE ProLiant server cartridges (supported types are listed in this document). The base system is available in a variety of models:

1) PCIe I/O with 10GbE Switched networking
2) PCIe I/O with 10GbE Pass-Through networking
3) PXIe modules with 10GbE Switched networking# (Data Capture and Control)

The PCIe models support 1-4 Full-Height Half-Length PCIe I/O cards (x16 physical) – 1 I/O card connected to each installed server. The PXI model# supports 1-4 PXIe modules, one or more of which can be allocated to 1-4 installed servers for precision data capture and control.

The core network can be Layer 2 switched or pass-through depending on the system option selected A separate 1G RJ45 network port is provided for access to the iLO management network.

All HPE Edgeline EL4000 models support 4 ports for USB 3.0 (1 for each installed server). Six non-hot swappable fans are used for cooling airflow, with an optional dust filter. Two redundant HPE Flex Slot power supplies can be installed per system.

The HPE Edgeline EL4000 System is rated for extended operating temperatures of up to 55°C, which allows it to be located in environments unsuitable for traditional servers. It is also compliant with ASHRAE Class A3 and A4 specifications and will be NEBS Level 3 certified.
NOTE: Actual allowable system operating temperature will be determined by the options (I/O cards, drives etc.) selected. Refer to the appendix for details.
Launching in 2017

Server Cartridges

HPE Edgeline EL4000 System uses proven HPE ProLiant server cartridges from the HPE Moonshot family. One (1) to Four (4) modular hot-pluggable servers of a supported type can be installed in each system. Examples:

- HPE ProLiant m510 Server (Intel® Xeon® D – 8 or 16 cores, up to 128GB RAM)
- HPE ProLiant m710x Server (Intel® Xeon® E3 – 4 cores with GPU, up to 64GB RAM)

HPE Flexible Slot Power Supply

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant servers. HPE's Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

The HPE Edgeline EL4000 system supports 1-2 HPE Flex Slot power supplies in a 1+1 redundant configuration (both AC and DC input options are available).

Standard Features

Embedded Management

The HPE ProLiant server cartridge plugged into a HPE Edgeline EL4000 has its own iLO 4 management processor, which can be accessed directly through the management network.

The HPE Edgeline EL4000 System implements a light-weight chassis controller to monitor and control common chassis elements. The iLO4 on the server cartridge communicates with the Chassis Controller to gather and report status information on the chassis itself.

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at **http://www.hpe.com/info/ilo.**

HPE 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. Update your system with the Edgeline Component Pack.

For more information, see the Edgeline Component Pack Update Guide on the Hewlett Packard Enterprise website: **http://www.hpe.com/info/edgeline-docs**

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 Partner Ready 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 the warranty services are available through HPE 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. Additional information regarding worldwide limited warranty and technical support is available at: **http://h20564.www2.hpe.com/hpsc/wc/public/home**

Additional Features

HPE Insight Cluster Management Utility

HPE Insight Cluster Management Utility (CMU) is an Hewlett Packard Enterprise-licended 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/product-catalog/detail/pip.3296361.html#**

HPE StoreVirtual VSA

HPE StoreVirtual VSA Software provides complete storage array functionality for virtualized environments without the need for external array hardware. Built on proven technology, HPE StoreVirtual VSA delivers software-defined storage by virtualizing up to 50TB of disk capacity on a server running VMware vSphere, Microsoft Hyper-V or Linux KVM. The HPE StoreVirtual VSA eliminates the need for external shared storage required to implement advanced hypervisor features. For more details refer to: **https://www.hpe.com/us/en/storage/storevirtual.html**

NOTE: A free 1TB StoreVirtual license is available with the purchase of any Intel® Xeon® based server cartridge. For details on this offer refer to: **http://www8.hp.com/us/en/products/data-storage/free-vsa.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.**

Services and Support

Services and Support

HPE Technology Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability.

Protect your business beyond warranty with HPE Services

HPE Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the selected support.

Recommended HPE Services for your HPE Product

(4 and 5 year Service offerings are also available)

Optimized Care

Foundation Care 24x7, three-year Service

HPE Foundation Care 24x7 connects you to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed. Collaborative software included in this service provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions.
https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en

Standard Care

Foundation Care NBD, three-year Service

HPE Foundation Care Next Business Day (NBD) gives you support during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software with a call back within two hours. Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software
questions.
https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en

Related Services

HPE Edgeline Installation & Startup Service

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

HPE Datacenter Care service

HPE Datacenter Care helps you improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services “building blocks.” You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with Hewlett Packard Enterprise via a single point of accountability for Hewlett Packard Enterprise and others’ products. For more information, visit
http://www.hpe.com/services/datacentercare

Services and Support

HPE Self-Service Spares Service

HPE Self-Service Spares Service answers the question: What do you do when you need parts? We can set it up so that you get spare parts onsite through our automated self-service spares. 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.

Defective Media Retention (DMR) and Comprehensive Defective Material Retention (CMDR)

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.

HPE Foundation Care services are available with defective media retention or comprehensive defective material retention of those other data-retentive components, such as hard drives, memory, switches and processors. This 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.

Other Services

HPE Technology Services Support Credits offer flexible services and technical skills to meet your changing IT demands. With a menu of services tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT with technical and operational services. There is even a custom deliverable where we work with you to develop exactly what meets your needs. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. **http://www.hpe.com/ww/learn**

Services and Support

HPE Support Center

Hewlett Packard Enterprise provides several tools that make it simpler to get help from Hewlett Packard Enterprise:

HPE Support Center is personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more: **http://www.hpe.com/support/hpesc**

The HPE 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. HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE support package or Hewlett Packard Enterprise contractual support agreement.
NOTE: HPE Support Center Mobile App is subject to local availability.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum sage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, 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 Hewlett Packard Enterprise due to malfunction.

For more information

To learn more on HPE Edgeline System, please contact your Hewlett Packard Enterprise 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, 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.

Factory Integrated Models must start with an HPE Edgeline EL4000 System. Each HPE Edgeline System requires the following minimum configuration:

- One (1) HPE ProLiant Server Cartridge
- One (1) HPE Flex Slot Power Supply

Networking (10G switched or pass-through) and option I/O type (PCIe or PXIe currently) cannot be changed once the HPE Edgeline EL4000 system has been ordered. However, the server cartridge, I/O cards can be replaced.

Step 1: Base Configuration (Choose one HPE Edgeline EL4000 System)

HPE Edgeline System	HPE Edgeline EL4000 10GbE 2xSFP+ Switch System	847535-B21
	HPE Edgeline EL4000 4x10GbE 2xQSFP+ Pass Thru System	847534-B21
	HPE Edgeline EL4000 HPE Edgeline EL4000 10GbE 2xSFP+ Switch PXIe System	847536-B21

Step 2: Configure ProLiant Server Cartridge (Up to four may be selected per EL4000 System)

HPE ProLiant Server Cartridge	**NOTE:** See HPE ProLiant Server Cartridge QuickSpecs for Cartridge Configurations	
	NOTE: Functional systems require atleast 1 server cartridge to be configured	
	HPE ProLiant m510 Server Cartridge	814688-B21
	https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c05069171	
	HPE ProLiant m510-16c Server Cartridge	858545-B21
	https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c05069171	
	HPE ProLiant m710x Server Cartridge	833105-B21
	https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c05069173	

Step 3: Choose Required Power Options (up to two may be selected)

Power Supplies	**HPE Flex Slot Power Supplies**	
	HPE 800W Flex Slot Platinum Hot Plug Power Supply Kit	720479-B21
	HPE 800W Flex Slot -48VDC Hot Plug Power Supply Kit	720480-B21
	NOTE: Functional systems require atleast 1 power supply to be configured. Two (2) redundant power supplies are supported per system. All x86 server cartridges support power-capping. Refer to the HPE Flexible Slot Power Supply QuickSpecs for additional information:	
	https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346217	

Step 4: Choose more options for Factory Integration from Core and Additional Options sections below.

Core 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. Some options are not orderable currently. HPE reserves the right to revise these options prior to release.

HPE Edgeline Drive Kits	**I/O Bay Drive Option Kit**	
	HPE Edgeline EL4000 Right PCIe Hard Drive Cage Kit **NOTE:** Must be ordered if any 2.5" SFF drives will be used in the EL4000 system. Both SFF drives will be connected to the SATA HBA integrated on server cartridge 1	867451-B21
HPE Drives	**Hot Plug SFF Hard Drives**	
	HPE 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
	HPE 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
	HPE 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816985-B21
	HPE 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	817011-B21
	NOTE: At least One (1) HDD cage option kit must be ordered with these drive options	
HPE PCIe I/O	**Standard PCIe I/O Options** **NOTE:** Power limit is 50W per card in a PCIe x16 physical slot (x8 Gen3 electrical). Only Full-Height Half-Length (FHHL) and smaller cards are supported. **NOTE:** Each PCIe card is assigned to one server cartridge. The quantity of PCIe cards ordered cannot exceed the numbers of servers configured in the EL4000 system.	
HPE Storage Controllers	HP H241 12Gb 2-ports Ext Smart Host Bus Adapter **NOTES:** This controller does not support a cache or battery, or connection to internal drives. Secure Encryption is supported with an additional license purchase. Refer to the Smart Array H241 controller documentation for technical details: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04346305**	726911-B21
HPE Networking	HPE Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HPE Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HPE Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HPE InfiniBand	HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21

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. Some options are not orderable currently and are listed with a targeted release date for planning purposes only. HPE reserves the right to revise these options prior to release.

Rack Options	HPE Edgeline EL4000 Short Rack Rail Kit **NOTE:** The Short Rack Rail kit is for a standard (19" wide) server rack, but only extends but only extends half of the Edgeline system depth. This rail is adjustable for rack depths of 22" - 34.5".	868575-B21
	HPE Edgeline EL4000 Full Rack Rail Kit **NOTE:** The Full Rack Rail kit is for a standard (19" wide) server rack, and extends the entire depth of the Edgeline system. This rail is adjustable for rack depths of 24" – 36". This kit does not come with a Cable Management Arm (CMA), which must be ordered separately.	868577-B21
	HP 1U Cable Management Arm for Easy Install Rail Kit **NOTE:** The optional Cable Management Arm (CMA) requires a Full Rack Rail kit to be ordered.	734811-B21
Cable Kits	HPE Edgeline EL1000/4000 System Console USB-to-RS232 Cable Kit **NOTE:** The system console kit plugs into the Edgeline USB port corresponding to a server cartridge, and allows serial port access to its boot-time BIOS ROM Based Setup Utility (RBSU) console. The RBSU can be used to set various server configuration parameters such as an iLO Static IP address. This cable can also be used for connecting the server to any RS232 compliant serial device (e.g. UPS). In this scenario, BIOS console redirection to serial port should be turned off in RBSU to prevent boot-time messages from going to the attached serial device. Sys Console Cbl Kit cable is required in some environments to set static IP as well as other functions when the Edgeline system is present in non DHCP serving environments	871947-B21
	HPE m710x Front I/O Cable Kit **NOTE:** 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 *(this cable can also be used with m510 servers)* Installing this cable will require partial extraction of the EL4000 chassis from the rack to access the server cartridge ports on the sides	867893-B21
HPE Embedded Management	**HPE Integrated Lights Out (iLO) Advanced**	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity License	512486-B21
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking License	512487-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced Flexible Qty License with 3yr 24x7 Tech Support and Updates	BD506A
	HP iLO Advanced Tracking License with 3yr 24x7 Tech Support and Updates	BD507A
	NOTE: One (1) optional iLO Advanced license can be ordered for each configured server in the system. iLO Advance Pack for its vMedia/vKVM features is highly recommended, unless the end-user is proficient at doing automated PXE-based network installation of an OS. For more details on iLO Advanced, refer to: **http://www.hpe.com/info/ilo**	
HPE Insight Cluster Management Utility (CMU)	HPE Insight Cluster Management Utility Media **NOTE:** For additional license kits please see the QuickSpecs at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111735**	BD477A
HPE StoreVirtual	HPE StoreVirtual Free 1TB VSA	VSA1TB-S

Additional Options

VSA	**NOTE:** Get free Software Defined Storage of up to 1TB using HPE StoreVirtual VSA. The free license is available with the order of any Intel® Xeon® based server cartridge. For details on this offer refer to: **http://www8.hp.com/us/en/products/data-storage/free-vsa.html.** Full license upgrades to 4TB, 10TB or 50 TB capacities can also be purchased. Refer to the QuickSpecs at: **https://www.hpe.com/h20195/v2/GetPDF.aspx%2Fc04111621.pdf**	(Free License)
Install and Startup Services	HPE Install Edgeline EL4000 SVC	H2EL2E
	HPE Startup Edgeline EL4000 SVC	H2US8E
Support Services	HPE 3 Year Foundation Care Next Business Day Edgeline 4000 SVC	H2ED5E
	HPE 3 Year Foundation Care 24x7 Edgeline 4000 SVC	H2ED8E
	NOTE: Enhanced Service Level Agreements (SLAs) and 4-year or 5-year support options are also available. See HPE Support Services Central for additional services at: **http://ssc.hpe.com**	
HPE Networking Options	**SFP Options**	
	NOTE: Ensure that the Edgeline model with SFP+ ports has been selected before ordering these options	
	HPE BLc Virtual Connect 1G SFP SX Transceiver	453151-B21
	HPE BLc Virtual Connect 1G SFP RJ-45 Transceiver	453154-B21
	SFP+ Options	
	Transceivers	
	HPE BLc Virtual Connect 10Gb SFP+ SR Transceiver	455883-B21
	Direct Attach Copper Cables	
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 7m Direct Attach Copper Cable	487658-B21
	HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HPE X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HPE B-series SFP+ to SFP+ Active Copper 1.0m Direct Attach Cable	AP818A
	HPE B-series SFP+ to SFP+ Active Copper 3.0m Direct Attach Cable	AP819A
	HPE B-series SFP+ to SFP+ Active Copper 5.0m Direct Attach Cable	AP820A
	QSFP+ Options	
	NOTE: Ensure that an Edgeline model with QSFP+ ports has been selected before ordering these options. Each of the two QSFP+ ports contain 4x10GbE links, 1 going to each of the 4 server cartridge bays in the chassis. If a server cartridge is not installed, its corresponding 10GbE network links cannot be used. The QSFP+ port cannot be aggregated into a single 40GbE link.	
	Transceivers	
	NOTE: Due to the QSFP+ port topology on Edgeline, use only the 4x10G transceiver at both the system and Top-of-Rack (ToR)/Core switch sides, and not a standard 1x40G transceiver.	
	HPE BladeSystem c-Class 4x10G QSFP+ MPO SR4 100m Transceiver	805755-B21
	Direct Attach Copper Cables	
	NOTE: When QSFP+ to QSFP+ copper cables are used, the Top-of-Rack (ToR)/Core switch must be configured as 4x10GbE links on the downlink QSFP+ port.	
	HPE X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
	HPE X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
	HPE X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
	HPE X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
	HPE X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
	HPE X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A

Additional Options

HPE Rack Series

NOTE: HPE Edgeline systems, in conjunction with an appropriate racking kit option, fit into any HPE rack (including 1200mm deep racks) and most third-party racks

HPE Advanced Series Racks

600mm Wide Racks

HPE 42U 600mm x 1075mm Advanced Pallet Rack	H6J65A
HPE 42U 600mm x 1075mm Advanced Shock Rack	H6J66A
HPE 42U 600mm x 1200mm Advanced Pallet Rack	H6J67A
HPE 42U 600mm x 1200mm Advanced Shock Rack	H6J68A
HPE 36U 600mm x 1075mm Advanced Pallet Rack	H6J77A
HPE 36U 600mm x 1075mm Advanced Shock Rack	H6J78A
HPE 14U 600mm x 1075mm Advanced Shock Rack	H6J82A
HPE 22U 600mm x 1075mm Advanced Pallet Rack	H6J83A
HPE 22U 600mm x 1075mm Advanced Shock Rack	H6J84A
HPE 48U 600mm x 1075mm Advanced Pallet Rack	H6J87A
HPE 48U 600mm x 1075mm Advanced Shock Rack	H6J88A
HPE 42U 600mm x 1075mm Kitted Advanced Pallet Rack with Side Panels and Baying	TL253A
HPE 42U 600mm x 1075mm Kitted Advanced Shock Rack with Side Panels and Baying	TL254A

NOTE: HPE 14U and 22U Advanced Series Racks include side panels.

800mm Wide Racks

HPE 42U 800mm x 1200mm Advanced Pallet Rack	H6J69A
HPE 42U 800mm x 1200mm Advanced Shock Rack	H6J70A

Network Racks

HPE 42U 600mm x 1200mm Advanced Shock Network Rack	H6J72A
HPE 42U 800mm x 1200mm Advanced Shock Network Rack	H6J74A

NOTE: Please see the HPE Advanced Series Racks QuickSpecs for information on additional racks options and rack specifications.

https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123187

HPE Enterprise Series Racks

600mm Wide Racks

HPE 36U 600mm x 1075mm Enterprise Pallet Rack	BW895A
HPE 36U 600mm x 1075mm Enterprise Shock Rack	BW896A
HPE 36U 600mm x 1075mm Enterprise Crate Rack	BW897A
HPE 36U 600mm x 1200mm Enterprise Pallet Rack	BW899A
HPE 36U 600mm x 1200mm Enterprise Shock Rack	BW900A
HPE 42U 600mm x 1075mm Enterprise Pallet Rack	BW903A
HPE 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
HPE 42U 600mm x 1075mm Enterprise Crate Rack	BW905A
HPE 42U 600mm x 1200mm Enterprise Pallet Rack	BW907A
HPE 42U 600mm x 1200mm Enterprise Shock Rack	BW908A
HPE 42U 600mm x 1200mm Enterprise Air Duct Rack	BW910A
HPE 42U 600mm x 1200mm Enterprise Shock Network Rack	BW966A
HPE 47U 600mm x 1075mm Enterprise Pallet Rack	BW911A
HPE 47U 600mm x 1075mm Enterprise Shock Rack	BW912A
HPE 47U 600mm x 1200mm Enterprise Pallet Rack	BW913A
HPE 47U 600mm x 1200mm Enterprise Shock Rack	BW914A
HPE 47U 600mm x 1200mm Enterprise Air Duct Rack	BW936A

800mm Wide Racks

HPE 42U 800mm x 1075mm Enterprise Pallet Rack	BW917A
HPE 42U 800mm x 1075mm Enterprise Shock Rack	BW918A
HPE 42U 800mm x 1200mm Enterprise Pallet Rack	BW919A
HPE 42U 800mm x 1200mm Enterprise Shock Rack	BW920A
HPE 42U 800mm x 1200mm Enterprise Shock Network Rack	BW968A

HPE Grey Enterprise Series Racks

HPE 42U 600mm x 1200mm Grey Enterprise Shock Rack	TK756A

Additional Options

	HPE 42U 600mm x 1200mm Grey Enterprise Air Duct Rack	TK766A
	HPE 42U 800mm x 1200mm Grey Enterprise Shock Rack	TK760A
	HPE 42U 800mm x 1200mm Grey Enterprise Shock Network Rack	TK772A
	NOTE: Please see the HPE Enterprise Series Racks QuickSpecs for information on additional racks options and rack specifications: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123237**	
	HPE Standard Series Rack	
	HPE 42U 600mm x 1075mm Standard Pallet Rack	AF046A
	HPE V142 1075mm deep Pallet 100 series Rack	AF046S
	NOTE: Please see the HPE Enterprise Series Racks QuickSpecs for information on additional racks options and rack specifications: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123338**	
HPE Rack Options	**KVM Consoles**	
	HPE Rackmount Console Kits	
	HPE LCD8500 1U US Rackmount Console Kit	AF630A
	HPE LCD8500 1U US TAA Rackmount Console Kit	AF645A
	NOTE: The HPE LCD8500 1U Rackmount Console Kit is an ultra-dense, high-performance KVM console that combines a full 18.5-inch LCD monitor with keyboard and touch pad in a 1U form factor. Refer to the QuickSpecs for additional information: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154398**	
	HPE KVM Switches	
	HPE 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HPE 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HPE 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HPE 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HPE 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Refer to the HPE KVM Console Switch QuickSpecs for additional information: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04168373**	
	HPE KVM Console USB/Display Port Interface Adapter	AF654A
	NOTE: This adapter can be used to connect the KVM switch to a video-enabled server cartridge such as the HPE m710x. Appropriate cable kits for USB and Displayport connection to the server must also be ordered E.g. 867893-B21: HPE m710x Front I/O Cable Kit.	
	NOTE: In an Edgeline EL4000 System, connection to the server cartridge video port is from the sides and may require partial extraction of the system from a standard rack.	
HPE Uninterruptible Power Systems (UPS)	**HPE Rack-mountable UPS**	
	HPE R1500 G4 Uninterruptible Power Supply (UPS)	
	NOTE: Line Interactive Single Phase UPS that provides up to 1.5kVA in a 1U rack mount form factor	
	HPE R1500 G4 NA Uninterruptible Power System	J2Q99A
	HPE R/T2200 G4 Uninterruptible Power System (UPS)	
	NOTE: Line Interactive Single Phase UPS that provides up to 2.2kVA in a 2U rack mount form factor. System can be converted for either rack or tower use.	
	HPE R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
	HPE R/T3000 G4 Uninterruptible Power System (UPS)	
	NOTE: Line Interactive Single Phase UPS that provides up to 3kVA in a 2U rack mount form factor. System can be converted for either rack or tower use.	
	HPE R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
	HPE R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
	NOTE: Other UPS sizes are also available. Please see the HPE Single Phase UPS QuickSpecs for additional information: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04155328**	
HPE Power Distribution Units	**HPE Basic Power Distribution Units (bPDU)**	
	NOTE: HPE Basic PDU's provide reliable, low-cost power distribution throughout the rack and are	

Additional Options

(PDU) available in both vertical and horizontal form factors to allow for flexible installation in your rack. Please see the QuickSpecs for more information:
https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111250

HPE Basic Power Distribution Unit: 1U/0U Version

HPE Basic 1.9kVA/L5-20P 16A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	H5M54A
HPE Basic 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	H5M56A

HPE Basic Power Distribution Unit: Half Height Version

HPE Basic 2.8kVA/L5-30P 24A/120V Outlets (18) 5-20R/Vertical NA/JP PDU	H5M55A
HPE Basic 4.9kVA/60320 C20 Detachable 16A/230V Outlets (20) C13/Vertical WW PDU	H5M57A
HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (20) C13/Vertical NA/JP PDU	H5M58A
HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU	H5M61A

HPE Basic Power Distribution Unit: Mid Height Version

HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M59A
HPE Basic 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (6) C19/Vertical NA PDU	H5M60A
HPE Basic 9.2kVA/50A Terminal Block 40A/230V Outlets (30) C13 (6) C19/Vertical WW PDU	H5M75A
HPE Basic 3Ph 5.7kVA/ L21-20P 16A/120-208V Outlets (24) C13 (3) 5-20R/Vertical NA/JP PDU	H5M63A
HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	H5M64A
HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M62A

HPE Basic Power Distribution Unit: Full Height Version

HPE Basic 3Ph 11kVA/60309 16A/240V Outlets (36) C13 (6) C19/Vertical NA PDU	H5M67A

HPE Monitored Power Distribution Units (mPDU)

NOTE: : HPE Monitored PDU's provide reliable power distribution within your rack combined with highly accurate power metering available for each power load segment. Please see the QuickSpecs for more information: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04229513**

HPE Monitored Power Distribution Unit: 1U Version

HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	D9N43A
HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	D9N46A
HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU	D9N44A

HPE Monitored Power Distribution Unit: Half Height Version

HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU	D9N45A

HPE Monitored Power Distribution Unit: Mid Height Version

HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU	D9N47A
HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU	D9N51A
HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	D9N53A

HPE Monitored Power Distribution Unit: Full Height Version

HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU	D9N49A
HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N58A
HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU	D9N61A
HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU	D9N54A
HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12)	D9N59A

Additional Options

C19/Vertical NA/JP PDU	
HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N62A
HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA PDU	D9N63A

HPE Intelligent Power Distribution Units (iPDU)

NOTE: HPE Intelligent PDU's deliver a unique set of capabilities that not only allow you to meter and switch individual outlets, but also communicate directly with each server to understand and track power usage, configuration, and redundancy information. For more information, please review the QuickSpecs: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04128194**

HPE 6 Outlet Intelligent Power Distribution Unit Cores

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF520A
HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF521A
HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF522A
HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF533A
HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU	AF523A
HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6) C19/Horizontal NA/JP PDU	AF901A

HPE 12 Outlet Intelligent Power Distribution Unit Cores

HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12) C19/Horizontal NA/JP PDU	AF535A

HPE Intelligent Power Distribution Unit Extension Bar Kits

HPE 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A

NOTE: Intelligent Extensions Bars have individually monitored outlets that are also individually switchable for power cycling attached equipment. Each individual C13 outlet has Power Line Communications to support Intelligent Power Discovery when connected to PLC enabled common slot power supplies.

HPE 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

Technical Specifications

Power Supply Specifications								
Description	**HPE 800W Flex Slot Platinum Hot Plug Power Supply Kit**							
Part Number	720479-B21							
Input Voltage Range (V rms)	100-240							
Frequency Range (Nominal) (Hz)	50-60							
Nominal Input Voltage (V rms)	100	120	127	200	208	220	230	240
Maximum Rated Output Wattage Rating (Watts)	800	800	800	800	800	800	800	800
Nominal Input Current (A rms)	9.1	7.5	7.0	4.4	4.2	4.0	3.8	3.7
Maximum Rated Input Wattage Rating (Watts)	906	891	878	871	870	869	868	868
Maximum Rated VA (Volt-Amp)	915	900	887	880	879	877	876	877
Efficiency (%)	88.3	89.8	91.1	91.9	92.0	92.1	92.2	92.1
Power Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Leakage Current (mA)	0.32	0.38	0.40	0.63	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	30							
Maximum Inrush Current duration (ms)	10							
Maximum British Thermal Unit Rating (BTU-Hr)	3090	3040	2997	2972	2968	2963	2960	2963

Description	**HPE 800W Flex -48VDC Hot Plug Power Supply Kit**		
Part Number	720480-B21		
Input Voltage Range (V DC)	-40 to -72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (V DC)	-40	-48	-72
Maximum Rated Output Wattage Rating (Watts)	800	800	800
Nominal Input Current (A DC)	22.0	18.1	11.9
Maximum Rated Input Wattage Rating (Watts)	882	871	858
Maximum Rated VA (Volt-Amp)	882	871	858
Efficiency (%)	90.7	91.9	93.2
Power Factor	1.0		
Leakage Current (mA)	0.0		
Maximum Inrush Current (A peak)	30		
Maximum Inrush Current duration (ms)	10		
Maximum British Thermal Unit Rating (BTU-Hr)	3008	2971	2929

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at URL:
http://www.hp.com/go/hppoweradvisor
NOTE: Power Specification and Technical Content for supported power supplies can be found at:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111541

Technical Specifications

HPE Edgeline EL4000 System

Chassis Dimensions (H x W x D)	1U, 23" deep, 17" wide, reversible rackmount with slide rails	
Weight	**847535-B21: HPE Edgeline EL4000 10GbE 2xSFP+ Switch System** - 17.62 KG (38.85 lbs) **847534-B21: HPE Edgeline EL4000 4x10GbE 2xQSFP+ Pass Thru System** - 17.20 KG (37.92 lbs) **NOTE:** Configuration used includes 4 server cartridges, 2 power supplies, 4 PCIe I/O cards	
Power	Typical: 400-600W Maximum: 800W	
System Inlet Temperature	**Standard Operating**	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000ft) above sea level to a maximum of 3050m (10,000ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. **NOTE:** When configured with certain server models, a fan fault when operating above 30°C (86°F) may reduce system performance. Refer to the appendix for details.
	Extended Operating	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. **NOTE:** The approved extended temperature hardware configurations for this system are listed in the appendix.
	Non-Operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidify	**Operating**	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity
	Non-Operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	**Operating**	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-Operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min)

Technical Specifications

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).

847535-B21: HPE Edgeline EL4000 10GbE 2xSFP+ Switch System

Configured with: HPE ProLiant m510 Server Cartridges

Idle	
L Wad	6.0 Bels
L pAm	47.0 dB
Operating	
L Wad	6.6 Bels
L pAm	53.0 dB

Configured with: HPE ProLiant m710x Server Cartridges

Idle	
L Wad	6.0 Bels
L pAm	46.0 dB
Operating	
L Wad	6.7 Bels
L pAm	54.5 dB

NOTE: Configuration used includes 4 server cartridges (each configured with 4 DIMMs and 1 SATA M.2) and 2 power supplies.

847534-B21: HPE Edgeline EL4000 4x10GbE 2xQSFP+ Pass Thru System

Configured with: HPE ProLiant m510 Server Cartridges

Idle	
L Wad	6.5 Bels
L pAm	52.0 dB
Operating	
L Wad	6.8 Bels
L pAm	55.0 d

Configured with: HPE ProLiant m710x Server Cartridges

Idle	
L Wad	6.5 Bels
L pAm	52.0 dB
Operating	
L Wad	6.8 Bels
L pAm	55.0 dB

NOTE: Configuration used includes 4 server cartridges (each configured with 4 DIMMs and 1 SATA M.2) and 2 power supplies.

Technical Specifications

Emissions Classification (EMC)	**FCC Rating**	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; K22;K24; EN61000-3-2; EN 61000-3-3; EN 60950-1; IEC60950-1

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.

Technical Specifications

Hewlett Packard Enterprise Extended Ambient Operating Temperature Support

The American Society of Heating Refrigeration and Air-Conditioning Engineers set standards for building systems, energy efficiency, indoor air quality, refrigeration and sustainability. The ASHRAE A3 and A4 classes are the latest classes that have been defined in an effort to support the Fresh Air Data cooling initiative. Hewlett Packard Enterprise Extended Ambient Operating Support is defined below as comparable to an ASHRAE class. For selected system configurations the Hewlett Packard Enterprise Edgeline Extended Ambient Operating Support allows operation even beyond ASHRAE class.

NOTE: Actual allowable system operating temperature will be determined by the options (I/O cards, drives etc.) selected. Details are provided in the Edgeline system configuration tables for the desired operating environment shown below.

The following table provides a summary of environmental ranges supported, with altitude de-ratings, by Hewlett Packard Enterprise ProLiant servers. Items in bold are ProLiant features that exceed the ASHRAE comparable class feature set.

Extended Ambient Operating Support Specification	**Dry bulb temp range (°C)**	**Relative humidity range (%RH)**	**Dew point limits (°C)**	**Maximum altitude**	**Altitude de-rating***
Standard Operating	10°C to 35°C (50°F to 95°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.8°C/305m above sea level
Extended Ambient 40°C Operating (ASHRAE Class A3 compliant)	5°C to 40°C (41°F to 104°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.0°C/175m above 900m
Extended Ambient 45°C Operating (ASHRAE Class A4 compliant)	5°C to 45°C (41°F to 113°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.0°C/125m above 900m
Extended Edgeline Ambient 55°C Operating	0°C to 55°C (32°F to 131°F)	8% to 90%	-12°C (min) to 24°C (max)	3050 meters	1.8°C/305m above sea level

NOTE: *Altitude de-rating assumes no direct sustained sunlight

NOTE: The maximum rate of change for Inlet Ambient Temperature is 20°C/hr (36°F/hr). The upper limit and rate of change can be limited by the type and number of options selected.

Technical Specifications

847535-B21: HPE Edgeline EL4000 10GbE 2xSFP+ Switch System
847534-B21: HPE Edgeline EL4000 4x10GbE 2xQSFP+ Pass Thru System
847536-B21: HPE Edgeline EL4000 10GbE 2xSFP+ Switch PXIe System

Hewlett Packard Enterprise Standard Operating Support (10°C to 35°C)	
COMPONENT	**SUPPORT STATUS**
Base System	Supported
Fans	Supported with Redundancy
SATA M.2	Supported
NVMe M.2	Supported
PCIe I/O Cards	Supported
PXIe I/O Cards	TBA

Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	
COMPONENT	**SUPPORT STATUS**
Base System	Supported
Fans	Supported with Redundancy
SATA M.2	Supported
NVMe M.2	Supported
PCIe I/O Cards	TBA
PXIe I/O Cards	TBA

Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)	
COMPONENT	**SUPPORT STATUS**
Base System	Supported
Fans	Supported with Redundancy **NOTE:** Upon fan failure the servers in the system may reduce performance
SATA M.2	Supported
NVMe M.2	Supported
PCIe I/O Cards	TBA
PXIe I/O Cards	TBA

Technical Specifications

Hewlett Packard Enterprise Extended Edgeline Ambient 55°C Operating Support	
COMPONENT	**SUPPORT STATUS**
Base System	Supported **NOTE:** Near 55°C inlet ambient AND when the CPU is stressed at 100%, the HPE m510-16c server may reduce performance. There is no impact for other server models.
Fans	Supported with_Redundancy **NOTE:** Upon fan failure the servers in the system may reduce performance
SATA M.2	Supported
NVMe M.2	NOT Supported
PCIe I/O Cards	TBA
PXIe I/O Cards	TBA

Carrier Grade HPE Edgeline EL4000 System

Carrier-grade servers are designed to meet the specific needs of network equipment providers (NEPs) and independent software vendors (ISVs) that supply fixed and mobile operators. Typically, such servers host network elements, such as media gateways, signaling gateways, media servers, and soft-switches.

Selected configurations of the HPE Edgeline EL4000 System will be certified to a carrier grade level E.g. Network Equipment Building Standards (NEBS) Level 3.

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise 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 Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise 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 Enterprise web site at: **http://www.hp.com/go/green**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
27-Mar-2017	From version 3 to 4	Update	Updte Technical specifications, features and configuration information
13-Feb-2017	From version 2 to 3	Updated	Update several sections troughout the QuickSpecs
18-Nov-2016	From version 1 to 2	Updated	Added more option details. Updated thermal and acoustic specifications. Refreshed rack, PDU and other options.
26-Sep-2016	Version 1	Created	Create QS for HPE Edgeline EL4000 System

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

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