

### Overview

#### HPE ProLiant DX8000 Converged Edge System

The HPE ProLiant DX8000 Converged Edge System brings high-power computing to the edge of networks, which previously tended to have limited computing capacity.

The condensed rugged design of the HPE ProLiant DX8000 allows new compute possibilities directly where data is being generated such as a factory floor, locomotives, battlefields, oil rigs, coffee shops, hospitals and beyond.

With the ProLiant DX910 Server Blades installed, The ProLiant DX8000 System expands the scope of Machine Learning, Video Analytics, and Mobile Edge Compute. The compute capacity previously limited to traditional data centers or the cloud is now available at the Edge with the HPE ProLiant DX8000 Converged Edge Systems.

#### **HPE ProLiant DX8000 Converged Edge System enables data-intensive, low-latency compute, based on open standards and advanced remote manageability.**

The HPE ProLiant DX8000 Converged Edge System is designed to help communication service providers (CSP) capitalize on data-intensive, low-latency services for media delivery, connected mobility, and smart cities. The new system enables CSPs to process vast amounts of data in real time directly at the edge, based on open standards to boost flexibility and reduce costs.

To deliver new services that tap into this massive growth of real-time data, CSPs must transform their telecommunications network edge towards standard IT systems and software-defined architectures, such as virtual radio access networks (vRAN) and virtual cable modem termination systems (vCMTS).

The open-standards based HPE ProLiant DX8000 Converged Edge System was therefore developed as a cost effective replacement for CSPs' current proprietary edge systems, with enhanced performance and versatility for data-intensive real-time digital services. Additionally, the HPE ProLiant DX8000 Converged Edge System's unique design delivers high performance and ultra-low latency for the most demanding use cases, including media streaming, IoT, artificial intelligence, and video analytics, in a compact and ruggedized form factor, equipped with edge-optimized serviceability and remote systems management.

#### **The compact and rugged design of the HPE ProLiant DX8000 Converged Edge System allows deployment of traditional datacenter software applications in hostile Edge environments.**

Exceeding the requirements of industry standards NEBS and ASHRAE class 3 and 4, the system is resistant against hazardous environmental influences like heat, shock and vibration, as well as failover, supporting continuous operation between 0 and 55 degrees Celsius. The system can run rack mounted or stand-alone in any space available, with either a front-to-back and back-to-front cooling design.

The single-socket design, equipped with high-end Intel® Xeon® Scalable Processors, reduces latency and energy consumption. System components can be combined, scaled and hot-swapped to meet changing demands, supporting, among others, NICs from Intel or Mellanox, up to 1.5TB of memory and 16TB of storage.

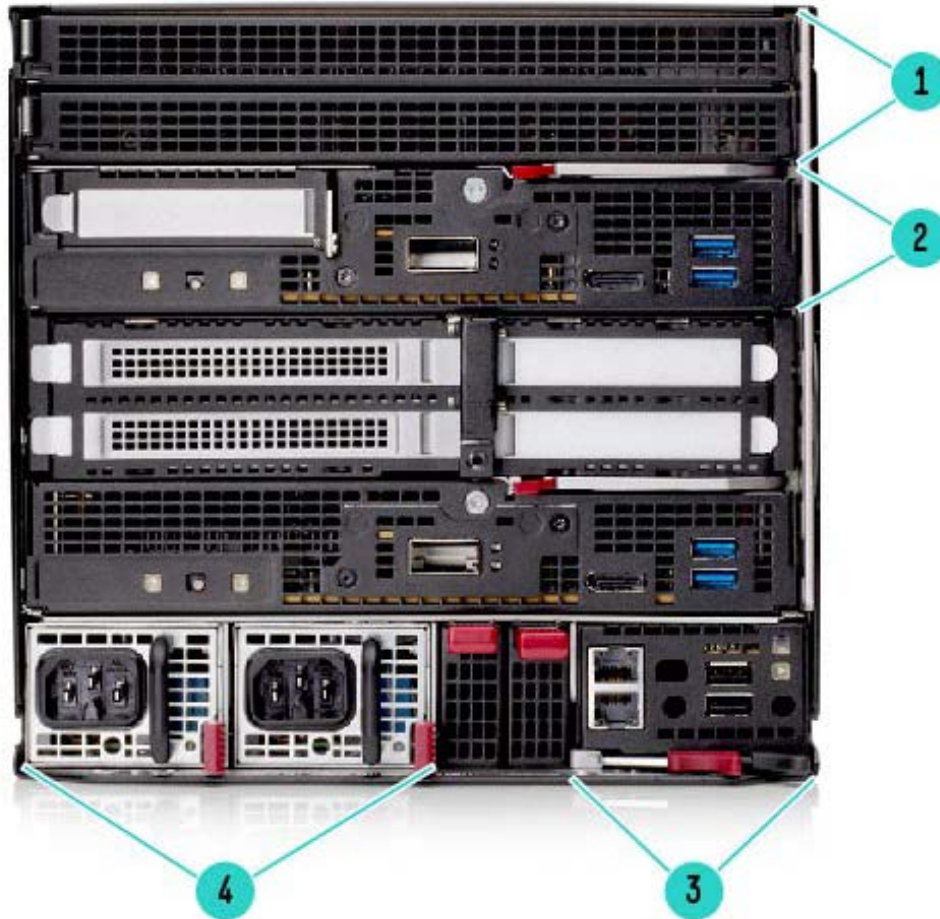
With a range of depth and width options for blades and chassis, the system can be flexibly configured and scaled to meet new or changing use-case requirements.

#### **Data center class security, device and remote systems management.**

The HPE proven HPE iLO 5 technology and the newly developed DX Chassis Manager enable remote provisioning, ongoing system health monitoring, updates, and management of HPE ProLiant DX8000 Converged Edge Systems across thousands of cell sites, from cell towers to oil rigs, without needing IT expertise on site.

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Overview

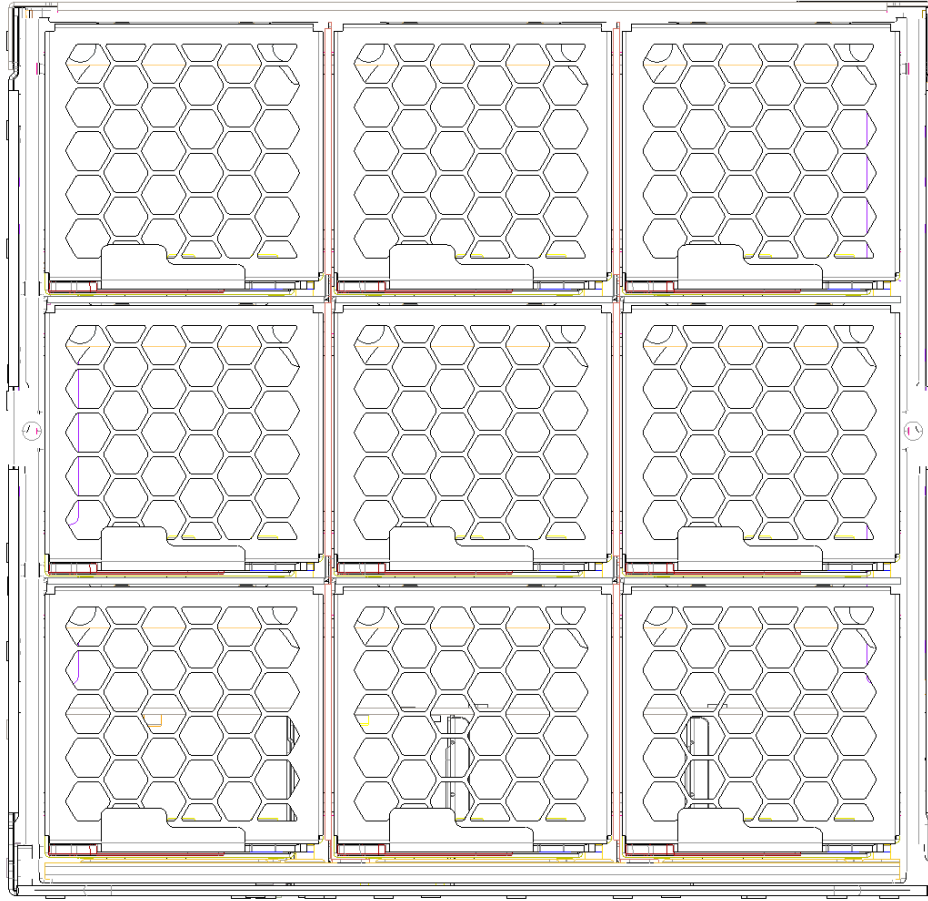


HPE ProLiant DX8000 5U Front Cabling Chassis View

Item	Description	Item	Description
1.	1U Blank	3	Chassis Manager
2	ProLiant DX910 1U Server Blade	4	HPE ProLiant DX8000 1500W (AC/DC) Power Supplies



Overview



**HPE ProLiant DX8000 Rear View**  
9 System Fans



## Standard Features

### Enclosure

The HPE ProLiant DX8000 Chassis supports the following ProLiant Server Blade configuration

#### Server Blade Configurations

- ProLiant DX910 1U Blade Server

#### DX8000 5U Front Cabling Chassis

- Qty of 1, up to 4

The HPE ProLiant DX8000 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.

### Acoustic Noise Specs

Listed are the sound power levels and average bystander position sound pressure levels 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).

- DX8000 has the following sound power levels: 62 dBA at low speeds of 10%-20% PWM, and 95 dBA at full speed.
- It has the following averaged bystander sound pressure levels (office environment): 58 dBA at 30%, and 89 dBA at full speed.

Configuration	Declared Sound Power Level, LWAD (Bels)		Declared Sound Pressure Level, LPAM (dBA) (Bystander Position)	
	Idle	Operating	Idle	Operating
Entry 1U	5.9	6.2	42	45
Base 1U	6.3	6.3	46	46
Perf 1U	6.9	6.9	51	51

### HPE ProLiant Server Blades

HPE ProLiant DX8000 System has a unique Server Blade Form Factor and can only support

- HPE ProLiant DX910 1U Server Blades

**Notes:** Please visit the DX910 Quickspecs at the following URL for detailed information and configuration possibilities

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=a00067735enw>

### HPE DX8000 Systems Power Supply

The HPE ProLiant DX8000 Systems supports 1 or 2 (for redundancy) 1500W Power Supplies.

There are the following chooses depending on the Chassis:

Description	DX8000 5U Front Cabling Chassis
HPE ProLiant DX8000 Front Cabling Chassis 1500W 264VAC Power Supply Kit	Up to Qty2
HPE ProLiant DX8000 Front Cabling Chassis 1500W -48VDC Power Supply Kit	Up to Qty2

**Notes:** Mixing of VAC and VDC options is allowed



## Standard Features

### Embedded Management

The HPE ProLiant DX910 Blade Servers plugged into an HPE ProLiant DX8000 has its own iLO 5 management processor, which can be accessed directly through the management network.

The HPE ProLiant DX8000 System has a Chassis Controller to monitor and control common chassis elements. The iLO 5 on the server blade 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>.

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### HPE NEBS Enablement Kit

It is essential for telecom equipment in tough environments (and for NEBS 3 compliance) to be able to continuously sustain operating temperatures up to 55 degrees Celsius without performance degradation. This is enabled both by using embedded long-life components and intelligent software-controlled fans. Another important NEBS characteristic is that the equipment must sustain a power feed outage lasting longer than 10 milliseconds. In other words, this is the time the hardware must be able to operate, from the time a power failure happens until the battery backup or diesel generators kick in. A tough environment also means performance must be secured under extreme conditions; for example, equipment must be operational after being subjected to an earthquake reaching ~7 to 8 on the Richter scale.

Three optional kits provide the option for fan table selection (for NEBS cooling) through Factory Installed Option. The factory enables NEBS by turning on 3 switches (1 for chassis, 2 for blades). This allows DX8000 system to operate at 63C ambient temperature by setting the fan table at optimal cooling. The ROM based setup utility (f9 access during boot) can be used to set additional fan speed options listed below.

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### Optimal Cooling – default

- Increased Cooling – drops all sensor setpoints by 5deg. Increases min fan speed by 1.5X (50pwm is optimal min).
- Enhanced CPU Cooling – drops CPU set point by 8deg ( -10 DTS becomes -18 DTS)
- Max Cooling – fans always 100%

These option kits (P12387-B21, P12390-B21 and P12394-B21) will be available for ordering in 2Q 2020 after NEBS certification is completed.

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## Service and Support

### Achieve maximum return from your IT investment

Get the expertise you need at every step of your IT journey with **HPE Pointnext services and support**. We help you lower your risks and costs using proven best practices, automation and methodologies that have been tested and refined by Hewlett Packard Enterprise experts through thousands of deployments globally. With **Advisory Services**, we focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business.

HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

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### Consume IT on your terms

**HPE GreenLake Flex Capacity** combines the simplicity, agility, and economics of public cloud with the security and performance benefits of on-premises IT. You determine your own “Right Mix” of Hybrid IT and workload placement without having to use. With its agile pay-per-use service, HPE GreenLake Flex Capacity can help your IT organization:

- Avoid IT expenses stemming from overprovisioning
  - Improve time to market by maintaining a safe buffer of capacity, ready for use when you need it
  - Keep capacity ahead of demand with regular monitoring—and a simple change order to replenish
  - Pay for only the capacity used, not the capacity deployed
  - Reduce IT risk with tailored support
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### Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time, increase diagnostic accuracy and have a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE 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 HPE support. Learn more about getting connected at <http://www.hpe.com/services/getconnected>

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### Free up resources with Operational Services from HPE Pointnext

Choose from the recommended services for customers purchasing from Hewlett Packard Enterprise or an authorized reseller are quoted using Hewlett Packard Enterprise order configuration tools.

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### HPE Datacenter Care

Helps customers to address the pressing needs of IT today and smoothly transform to a more agile cloud-like IT operations model. We help run and monitor your IT by offloading the day to day routine tasks, helping customers be more predictive and proactive, and saving time with one place to call with for all of their IT. Datacenter Care is available as both tailored statement of work and as a packaged service for 3, 4, and 5 year terms.

Partner with an assigned account team backed by local and global experts, access HPE enhanced call experience with priority access, use specialized support for complex, technologies, choose hardware and software support for your devices, implement proactive monitoring to stay ahead of issues, and access HPE IT best practices and IP. HPE Datacenter Care advantage options are available to add to your agreement to give you specialized expertise for performance, security, back up analysis, and much more.

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## Service and Support

### **HPE Proactive Care**

Gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice.

HPE Proactive Care is available in 3, 4 and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR). This Service combines both reactive support when there is a problem with an enhanced call experience and start to finish case management with proactive reporting and advice. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.).

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

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### **HPE Foundation Care** – (Choose the response level that meets your needs)

HPE Foundation Care helps when there is a problem and is available in 3, 4, and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR). Note that Call-To-Repair Service connects you to HPE 24 hours a day, seven days a week for assistance on resolving issues -this includes our highest level commitment to repair hardware within six hours after opening your case and respond to software questions within two hours. In addition, Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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### **Other related services from HPE Pointnext**

#### **Defective Media Retention**

Is an option available with HPE Datacenter Care, HPE Proactive Care, Proactive Care Advanced, and HPE Foundation Care and applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

#### **HPE Server Hardware Installation**

Provides for the basic hardware installation of your new ProLiant DX8000 System. It is part of a suite of HPE deployment services that are designed to give you the peace of mind that comes from knowing your HPE products have been installed by an Hewlett Packard Enterprise authorized service specialist in accordance with the product's documentation.

<https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00062322enw>

#### **HPE Installation and Startup Service**

Provides for the installation of your new ProLiant DX8000 System. This service will assist you in bringing your new HPE ProLiant DX8000 System into operation and make it remotely accessible in a timely and professional manner. The HPE service delivery technician will connect the product to the network as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).

<https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00062211enw>

#### **HPE Service Credits**

Offers flexible services and technical skills to meet your IT demands as your business evolves. With a menu of services, you can access additional resources and specialist skills to help you maintain peak performance of your IT. HPE Service Credits help you proactively respond to your dynamic IT and business needs.

#### **HPE Education Services**

Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

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## Service and Support

### 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.

#### Notes:

- Chassis Warranty includes 3-Year Parts, 3-Year Labor, 3-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:
  - 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 require a Hewlett Packard Enterprise authorized service provider to replace the part. Additional information regarding worldwide limited warranty and technical support is available at: <http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>

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### 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 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 Hewlett Packard Enterprise due to malfunction.

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## Configuration Information

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 ProLiant DX8000 System. Each HPE System requires the following minimum configuration:

- One (1) HPE ProLiant DX910 Blade Server. Link to DX910 quickspecs here:  
<https://h20195.www2.hp.com/v2/getdocument.aspx?docname=a00067735enw>
- One (1) HPE ProLiant DX8000 Power Supply

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### Step 1: Base Configuration (Choose System)

#### HPE ProLiant DX8000 System

HPE ProLiant DX8000 5U Configure-to-order Front Cabling Chassis	P27112-B21
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### Step 2: Configure ProLiant Server Cartridge

#### HPE ProLiant Server Cartridge

HPE ProLiant DX910 1U Node Configure-to-order Blade Server	P27111-B21
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**Notes:** Maximum quantity configurable is 4U (Qty of 4 DX910 1U)

#### Power Supplies

HPE Flex Slot Power Supplies (Min:1, Max:2)

HPE DX8000 1500W 264VAC Front Cabling FIO Power Supply Kit	P27129-B21
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HPE DX8000 1500W -48VDC Front Cabling FIO Power Supply Kit	P27130-B21
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**Notes:**

- Functional systems require at least 1 power supply to be configured.
  - Functional systems require at least 2 power supply for redundancy
  - Mixing of AC (P11290-B21) and DC (P11291-B21) is allowed
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### Step 3: Choose Additional Options

Choose additional options for Factory Integration from sections below

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## Additional Options

### HPE Power Cords

HPE C15 US 125V 15Amp 2.5m Black Power Cord	Q7F42A
HPE C15 EU 250V 10Amp 2.5m Black Power Cord	Q7F45A
HPE C15 UK 250V 10Amp 2.5m Black Power Cord	Q7F46A
HPE C15 CN 250V 10Amp 2.5m Black Power Cord	Q7F53A
HPE C15 US 250V 10Amp 2.5m Black Jumper Cord	Q7F57A
HPE C15 EU 250V 10Amp 2.5m Black Jumper Cord	Q7F58A
HPE C15 US 250V 10Amp 0.76m Black Jumper Cord	Q7F59A
HPE C15 EU 250V 10Amp 0.76m Black Jumper Cord	Q7F60A
HPE C15 US 250V 10Amp 1m Black Jumper Cord	Q7F61A
HPE C15 EU 250V 10Amp 1m Black Jumper Cord	Q7F62A
HPE C15-C14 IN 250V 10Amp 2.5m Black Jumper Cord	R1C67A
HPE C15-C14 IN 250V 10Amp 1m Black Jumper Cord	R1C68A

### SFF drives can be chosen

(8 of these drives can be chosen, with a max capacity of 122.4TB)

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-H21
HPE 800GB SAS 12G Mixed Use SFF SC PM5 SSD	P04527-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC S4610 SSD	P05994-H21
HPE 15.36TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19911-H21

### Chassis Networking Options

HPE Edgeline DX8000 10GbE SFP+ FIO Switch	P27113-B21
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### HPE Support Services

#### Proactive Care

HPE 3 Year Proactive Care 24x7 Edgeline 8000 5U Chassis Service	HH8Q6E
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#### Foundation Care

HPE 3 Year Foundation Care 24x7 Edgeline 8000 5U Chassis Service	HH8Q5E
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#### Installation & Startup Services

HPE Installation Edgeline 8000 Chassis Service	HF8S4E
HPE Installation and Startup Edgeline Edgeline 8000 Service	U8JA4E

**Notes:** For a full listing of support services available for this server, please visit: <https://ssc.hpe.com/>



## Storage

### **HPE ProLiant DX Component Pack**

The HPE ProLiant DX Component Pack, is the delivery mechanism for firmware updates on the HPE ProLiant DX 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 ProLiant DX Component Pack.

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## Technical Specifications

### Power Supply Specifications

<b>Murata (MPS) D1U54P-W-1500-12-HCxTC</b>			
<b>HPE DX8000 1500W 264VAC Front Cabling FIO Power Supply Kit</b>	P27129-B21		
<b>Input Voltage Range (Vrms)</b>	100-240 Nominal (90-264 range)		
<b>Frequency Range (Nominal) (Hz)</b>	50-60 nominal (47-63 range)		
<b>Nominal Input Voltage (Vrms)</b>	90-100 (100)	110-120 (115)	200-240 (240)
<b>Maximum Rated Output Wattage Safety (Watts)</b>	1260	1500	1500
<b>Nominal Input Current (Arms)</b>	14.1	14.5	6.9
<b>Maximum Rated Input Wattage Rated (Watts)</b>	1394	1646	1636
<b>Maximum Rated VA (Volt-Amp)</b>	1410	1668	1656
<b>Efficiency (%)</b>	90.4	91.1	91.7
<b>Power Factor</b>	0.9886	0.9868	0.9879
<b>Leakage Current ( mA ); max as per safety files</b>	0.94mA; 264V; 60Hz		
<b>Maximum Inrush Current (A peak )</b>	<15Apk, 264Vac cold start		
<b>Maximum Inrush Current duration ( ms )</b>	<2ms		
<b>Maximum British Thermal Unit Rating ( BTU-Hr )</b>	4757	5651	5582

<b>Murata (MPS) D1U54-D-1500-12-HCxC</b>			
<b>HPE DX8000 1500W -48VDC Front Cabling FIO Power Supply Kit</b>	P27130-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 Rating (Watts)</b>	1500	1500	1500
<b>Nominal Input Current ( A DC ); 12V/133A; 3.3/6A</b>	45.5	38.1	24.8
<b>Maximum Input Wattage Rating (Watts)</b>	1856	1828	1786
<b>Maximum VA (Volt-Amp)</b>	1856	1828	1786
<b>Efficiency (%)</b>	88.4	89.7	91.9
<b>Power Factor</b>	N/A		
<b>Leakage Current ( mA )</b>	N/A		
<b>Maximum Inrush Current (A peak ); 72VDC; fullload</b>	<20		
<b>Maximum Inrush Current duration ( ms )</b>	<30		
<b>Maximum British Thermal Unit Rating ( BTU-Hr )</b>	6333	6337	6094



## Technical Specifications

System Unit	
<b>Chassis Dimensions (H x W x D)</b>	Height 8.3" (5U) ( 21.2 cm), Width 8.7" (22.1 cm), Depth 17" (43.2 cm). <b>Notes:</b> Installed on the rack tray option kit, it is less than 8.69" tall
<b>Weight</b>	50 lbs to 58 lbs (22.7 kg- 26.3 kg) depending on the configuration
<b>Power</b>	Typical: Maximum: 3000W (with power supply redundancy)
System Inlet Temperature	
<b>Standard Operating</b>	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. <b>Notes:</b> 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.
<b>Extended Operating</b>	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. <b>Notes:</b> The approved extended temperature hardware configurations for this system are listed in the appendix.
<b>Non-Operating</b>	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	
<b>Operating</b>	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
<b>Non-Operating</b>	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	
<b>Operating</b>	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).
<b>Non-Operating</b>	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min)
Emissions Classification (EMC)	
<b>FCC Rating</b>	Class A
<b>Normative Standards</b>	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

**Notes:** 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

### Extended Ambient Operating Support Specification

	Dry bulb temp range (°C)	Relative humidity range (%RH)	Dew point limits (°C)	Maximum altitude	Altitude de-rating*
<b>Standard Operating</b>	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
<b>Extended Ambient 40°C Operating (ASHRAE Class A3 compliant)</b>	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
<b>Extended Ambient 45°C Operating (ASHRAE Class A4 compliant)</b>	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
<b>Extended Edgeline Ambient 55°C Operating</b>	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

#### Notes:

- \*Altitude de-rating assumes no direct sustained sunlight
- 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.

### Hewlett Packard Enterprise Operating Support

Component Type	Support Status			
	Standard	Extended Ambient	Extended Ambient	Extended Edgeline Ambient
<b>Operating Support</b>	10°C to 35°C	40°C (ASHRAE Class A3 compliant)	45°C (ASHRAE Class A4 compliant)	55°C
<b>Base System</b>	Supported	Supported	Supported	Supported <sup>1</sup>
<b>Fans</b>	Supported with Redundancy	Supported with Redundancy	Supported with Redundancy <sup>2</sup>	Supported with Redundancy <sup>2</sup>
<b>SATA M.2</b>	Supported	Supported	Supported	Supported
<b>NVMe M.2</b>	Supported	Supported	Supported	Supported with exceptions <sup>4</sup>
<b>PCIe I/O Cards</b>	Supported <sup>3</sup>	Supported <sup>3</sup>	Supported <sup>3</sup>	Supported <sup>3</sup>

#### Notes:

- <sup>1</sup>Near 55°C inlet ambient AND when the CPU is stressed at 100%.
- <sup>2</sup>Upon fan failure the servers in the system may reduce performance
- <sup>3</sup>Only HPE PCIe options cards were used in this testing
- <sup>4</sup>The following SSDs may reduce performance when operating above 45C ambient temp or fan failure:
  - HPE Edgeline 1.92TB NVMe x4 Lanes Mixed Use M.2 22110 3yr Wty Extended Temperature SSD P05896-B21
  - HPE Edgeline 3.84TB NVMe x4 Lanes Mixed Use M.2 22110 3yr Wty Extended Temperature SSD P05900-B21



## Summary of Changes

<b>Date</b>	<b>Version History</b>	<b>Action</b>	<b>Description of Change</b>
05-Oct-2020	Version 3	Changed	Standard Features and Additional Options sections were updated.
03-Aug-2020	Version 2	Changed	Overview, Standard Features, Configuration Information, Additional Options, and Technical Specifications sections were updated.
24-Jun-2020	Version 1	New	New QuickSpecs



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a00067726enw - 16538 - WorldWide - V3 - 05-October-2020