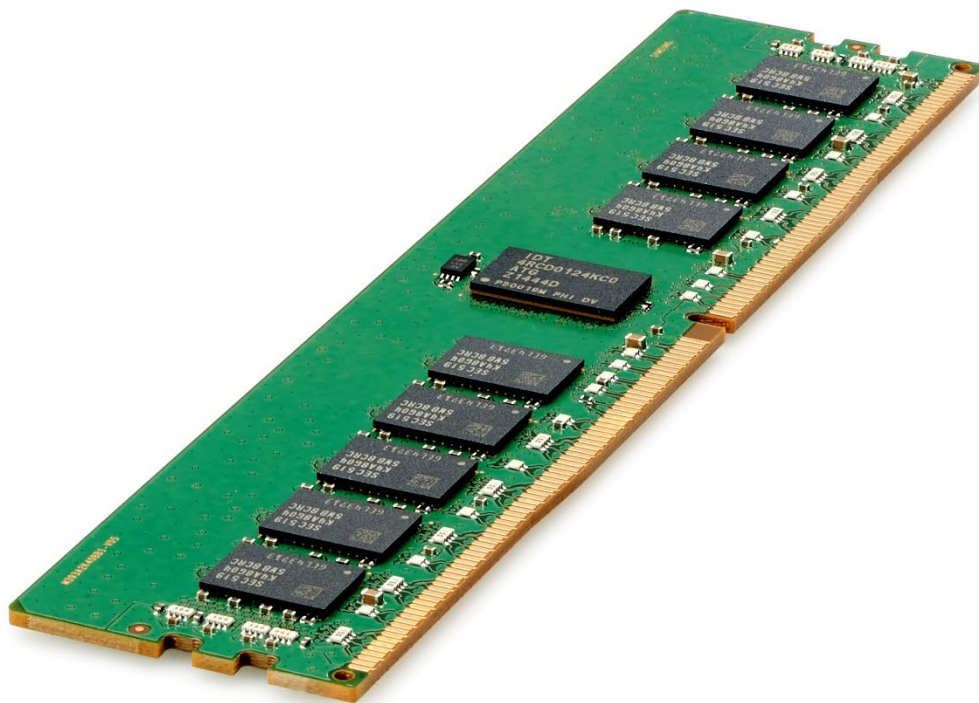


### Overview

#### HPE DDR4 Smart Memory

HPE DDR4 Smart Memory delivers great performance, reliability, and efficiency. Our large selection of server memory solutions provides the compatibility, capacity and bandwidth you need to productively manage your expanding workload with HPE ProLiant Gen9, Gen10, and Gen10 Plus servers, Apollo family servers, Synergy systems, and Blade systems.

As workloads grow and data center trends such as server virtualization, cloud computing, and the use of large database applications increase the need for higher-capacity memory with greater uptime, the quality and reliability of DRAM become ever more important. HPE Smart Memory goes through additional rigorous qualification and testing processes that unlock extended memory performance features available only with HPE Gen9, Gen10, and Gen10 Plus servers. This extensive testing ensures that HPE server memory is completely compatible with and optimized for HPE servers.



#### HPE DDR4 Smart Memory

#### What's New

- HPE Smart Memory 3200 MT/s memory supported on HPE Gen10 Plus AMD servers

## Overview

## Models

## Registered Memory Kits

[illegible]

## Overview

HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P40007-H21
HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P40007-K21
HPE 16GB (1x16GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Memory Kit	P56425-B21
HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Memory Kit	P56427-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Memory Kit	P56429-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Memory Kit	P56431-B21

### Load-reduced Memory Kits

HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-X21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-H21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-K21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P06037-X21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P06037-H21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P06037-K21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P06039-X21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P06039-H21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P06039-K21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P07652-X21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P07652-H21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P07654-X21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P07654-H21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Memory Kit	P56435-B21

### Un-Buffered DIMMs

HPE 8GB (1x8GB) Single Rank x8 DDR4-3200 CAS-22-22-22 Unbuffered Standard Memory Kit	P43016-B21
HPE 16GB (1x16GB) Single Rank x8 DDR4-3200 CAS-22-22-22 Unbuffered Standard Memory Kit	P43019-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Unbuffered Standard Memory Kit	P43022-B21

#### Notes:

- New Hewlett Packard Enterprise Hardware Products may be manufactured using new materials or new and used materials equivalent to, or better than, new in performance and reliability, including newer materials that may not have been available at the time that the hardware product was originally introduced.
- Memory DIMM availability for a specific server platform is dependent upon completion of certification testing.
- Memory compatibility may vary or be limited within a specific server family depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for a server model or family and yet occasionally not be supported with limited configurations within that server family.
- Please consult with the HPE server Quickspecs or your HPE representative if you have any questions regarding memory compatibility with a specific HPE server configuration.

### Fast Fault Tolerance Factory Setting

HPE Smart Memory Fast Fault Tolerance FIO Setting	875293-B21
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**Notes:** Select this part number to enable HPE Fast Fault Tolerance, which allows server memory to run at the resiliency of double device data correction (DDDC), but with significantly higher performance. HPE Fast Fault Tolerance is available on all HPE Gen10 servers with an Intel® central processing unit.

### Support for Sub-Numa Clustering (SNC) with 12 DIMMs (Gen10 Plus)

HPE 12 DIMM SNC2 Hemi SGX FIO Enablement Kit	P26933-B21
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**Notes:** Select this part number (known as a trigger SKU) to indicate how the memory should be configured in the unbalanced 12 DIMM configuration.



## Overview

XXXXXX-**X21** is SKU designation formed by a common six digit part number and a -**X21** suffix that identifies a SKU that is available across multiple server family lines. Refer to the table below to find the SKU suffix that applies to the specific server product line this option can be ordered with.

-B21	-H21	-K21
COMPUTE	SPECIALIZED COMPUTE	STORAGE
HPE Cloudline CL2100/CL2200/CL2800/CL3100/CL4100/CL5200/CL5800 Servers HPE Composable Cloud for ProLiant DL HPE Converged System 700/750 HPE ProLiant BL460c/BL660c Servers HPE ProLiant DL20/DL160/DL180 Servers HPE ProLiant DL325/DL360/DL380/DL385/DL560/DL580 Servers HPE ProLiant DX360/DX380 Servers HPE ProLiant DX170r/DX190r/DX200/DX560/DX4200 Servers HPE ProLiant MicroServer HPE ProLiant for Microsoft Azure Stack HPE ProLiant ML30/ML110/ML350 Servers HPE Synergy 480/660 Systems HPE Synergy D3940 Storage Module	HPE Apollo 35/40/70 Systems HPE Apollo 2000/6000 Servers HPE XL170r/XL190r/XL270d (Apollo 6500) Gen10 Server for BlueData Software HPE Converged System 300/500 HPE Edgeline Systems and Servers HPE Integrity BL860c i6/BL870c i6/BL890c i6 Server Blades HPE Integrity MC990 X Server HPE Integrity rx2800 i6 Server HPE Integrity Superdome HPE SGI 8600 System HPE Solutions for SAP HANA (TDI) HPE Apollo Systems for BlueData Software	HPE Apollo 4200 Gen9/Gen10 Servers HPE Apollo 4200 Gen10 LFF Server for BlueData Software HPE Apollo 4510 Gen10 System HPE D3000/D6020/D8000 Disk Enclosures HPE D2220sb/D2500sb Storage Blade HPE Scalable Object Storage with Scalify RING HPE SimpliVity 2600 HPE SimpliVity 325/380 Gen10 HPE Storage File Controllers HPE StoreEasy 1460/1560/1650/1660/1860
<b>Notes :Disclaimer:</b> This may not be a complete listing of applicable servers		



## Standard Features

### What is HPE Smart Memory?

HPE Smart Memory uniquely optimizes memory performance on the HPE ProLiant Rack and Tower servers, Apollo family servers, Blade systems, and Synergy systems. Authenticated HPE Smart Memory supports extended memory performance in the competitive landscape and provides customers with service enhancement through HPE Active Health Systems and other HPE proprietary software.

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### Quality and Performance

HPE Smart Memory undergoes a rigorous qualification process to provide customers with the highest server memory quality options. Its performance is tested and optimized for HPE servers, supporting unique features only available with HPE servers and systems. In addition, it enhances memory throughput up to 23% and achieves an improvement in latency of up to 25%.

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### HPE Active Health System

HPE Smart Memory works in conjunction with the HPE Active Health System which monitors changes to the server hardware configuration to enable lifecycle monitoring of memory health status. Having insight into memory-related service events will shorten problem diagnosis and deliver rapid resolutions if and when failures occur. Whereas the pre-failure alert simply notifies the administrator of an impending failure, HPE Smart Memory can provide rich insight into memory-related events like multi-bit errors or configuration issues.

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### Support Matrix

Please visit the following URL for the latest list of supported servers:

<http://www.hpe.com/servers/servermemoryconfigurator>

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### Other Resources

For the latest updates on HPE Server Options, visit: <http://www.hpe.com/us/en/servers/memory.html>

For more information on HPE Persistent Memory options, visit: <https://www.hpe.com/us/en/servers/persistent-memory.html>

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## Service and Support

### HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

<https://www.hpe.com/services>

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### Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

<https://www.hpe.com/services/consulting>

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### HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

[HPE Managed Services | HPE](#)

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### Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

<https://www.hpe.com/services/operational>

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### HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/completecure>

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### HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

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## Service and Support

### HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

**Notes:** To review the list of Lifecycle Services available for your product go to:

<https://www.hpe.com/services/lifecycle>

For a list of the most frequently purchased services using service credits, see the [HPE Service Credits Menu](#)

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### Other Related Services from HPE Services:

#### HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.

<https://www.hpe.com/services/training>

#### Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

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

#### Parts and Materials

HPE 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.

### How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at <https://ssc.hpe.com/portal/site/ssc/>





## Service and Support

### AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.

<https://support.hpe.com/hpesc/public/home/signin>

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### Consume IT On Your Terms

**HPE GreenLake** edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"

<https://www.hpe.com/us/en/contact-hpe.html>

For more information

[www.hpe.com/services](http://www.hpe.com/services)

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Technical Specifications

Memory Speed by Processor Model

For details on HPE server memory speeds, visit: <http://www.hpe.com/docs/memory-speed-table>

Memory options part number decoder

Short Name

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
H	P	E		g	g	g	G	B		s	R	x	f	f		P	C	4	-	w	w	w	w	a	-	m		p	p	p	e	e	e	e	e		K	i	t

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

ggg indicates module capacity:  
8 = 8GB  
16 = 16GB  
32 = 32GB  
64 = 64GB  
128 = 128GB

s: number of Ranks:  
1 = one rank  
2 = two ranks  
4 = four ranks  
8 = eight ranks

R=Rank(s)

ff = data bit width  
4 = 4 bit  
8 = 8 bit  
16 = 16 bit

PC4- is the memory type:  
PC4 = DDR4

www is the module speed (MT/s):  
2133 = 2133 MT/s  
2400 = 2400 MT/s  
2666 = 2666 MT/s  
2933 = 2933 MT/s

a is Speed Grade CAS latency (column address strobe):  
P = CAS 15-15-15  
T = CAS 17-17-17  
U = CAS 20-18-18  
V = CAS 19-19-19  
Y = CAS 22-19-19  
Y = CAS 21-21-21  
Y = CAS 24-21-21

m is the module type:  
E = Unbuffered ECC (UDIMM)  
L = Load Reduced DIMM  
R = Registered DIMM

ppp is DRAM package type:  
Blank = Non-3DS (Mono, SDP, DDP or QDP)  
3DS = 3 Dimensional Stacked

eeee is a special descriptor:  
Smart = SmartMemory  
STND = Standard Memory  
Blank = SGI SKU



## Summary of Changes

Date	Version History	Action	Description of Change
04-Dec-2023	Version 29	Changed	Service and Support Section was updated
01-Nov-2021	Version 28	Changed	Overview Section was updated
07-Sep-2021	Version 27	Changed	Overview Section & Models were updated
19-Apr-2021	Version 26	Changed	Models Section was updated
07-Dec-2020	Version 25	Changed	SKUs were updated in Models Section
15-Jun-2021	Version 24	Changed	SKUs were added in Models Section
06-Apr-2020	Version 23	Changed	Technical Specifications Section was updated
09-Dec-2019	Version 22	Changed	SKU Section was updated
02-Dec-2019	Version 21	Changed	Overview SKUs section was updated
07-Oct-2019	Version 20	Changed	Configuration Information section was updated
05-Aug-2019	Version 19	Changed	Overview Section was updated
17-May-2019	Version 18	Added	SKUs were added in Models sections: P19040- <b>X21</b> , P19041- <b>X21</b> , P19042- <b>X21</b> , P19043- <b>X21</b> , P19044- <b>X21</b> , P19045- <b>X21</b> , P19046-B21, P19047- <b>X21</b>
02-Apr-2019	Version 17	Changed	Technical Specifications section was updated
17-Dec-2018	Version 16	Changed	Overview section was updated. SKU added in Overview section: P00423- <b>X21</b> , 838089- <b>X21</b> . SKU deleted in Overview section: 836220-B21
01-Oct-2018	Version 15	Changed	Overview section was updated.
06-Aug-2018	Version 14	Changed	Overview, Standard Features, and Service and Support sections were updated. SKUs were added in Models sections: P05592- <b>X21</b> . Obsolete SKUs were deleted: 838079- <b>X21</b> , 838089- <b>X21</b> , P05580-B21, 838083- <b>X21</b> , 726722-B21.
04-Jun-2018	Version 13	Changed	Overview, Standard Features, Service and Support sections were updated. SKUs added in Models section: 726718-B21, 726719-B21, 728629-B21, 805347- <b>X21</b> , 836220-B21, 815097- <b>X21</b> , 876181-B21, 838079- <b>X21</b> , P05586-B21, 838081- <b>X21</b> , 838089- <b>X21</b> , P05588- <b>X21</b> , 838083- <b>X21</b> , P05590- <b>X21</b> , 726722-B21, 726724-B21, 805353-B21, 809208-B21, 815102- <b>X21</b> , 838085- <b>X21</b> , 838087- <b>X21</b> .
05-Mar-2018	Version 12	Changed	Obsolete SKUs deleted: 726717-B21, 759934-B21, 726720-B21.
04-Dec-2017	Version 11	Changed	Overview, Standard Features, and Service and Support sections were updated. SKUs added in Models section.
25-Sep-2017	Version 10	Changed	Overview, Standard Features, Platform Information, Service and Support, and Technical Specifications section were updated. Obsolete SKU was deleted: 792278-B21
11-Jul-2017	Version 9	Changed	Overview, Standard Features, Platform Information, Service and Support, and Technical Specifications section were updated. SKUs added in Platform Information section: 815097- <b>X21</b> , 876181-B21, 815098- <b>X21</b> , 835955- <b>X21</b> , 815100- <b>X21</b> , 815101- <b>X21</b> , 815102- <b>X21</b> .
13-Feb-2017	Version 8	Changed	Models section was updated.
06-Jun-2016	Version 7	Changed	Overview, Compatibility, Standard Features, Service and Support, and Technical Specifications sections were updated.
31-Mar-2016	Version 6	Changed	Overview, Overview, Standard Features, Service and Support, and Technical Specifications
01-Jun-2015	Version 5	Changed	SKU added in Models section: 726724-B21 What's new, Technical Specifications and models sections were updated.
30-Mar-2015	Version 4	Changed	Overview, Service and Support and Technical Specifications sections were updated. SKU added on Models: 728629-B21
16-Jan-2015	Version 3	Changed	Performance section on Standard Features was updated
01-Dec-2014	Version 2	Changed	Overview and Technical Specifications sections were updated
		Added	SKUs added to Models: 726717-B21, 759934-B21, 726720-B21, 792278-

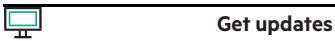
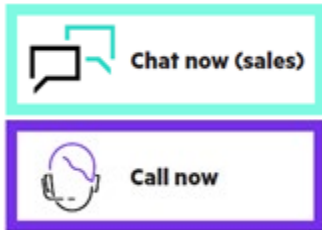
Summary of Changes

Date	Version History	Action	Description of Change
09-Sep-2014	Version 1	New	New QuickSpecs.



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Contact our presales specialists.**



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