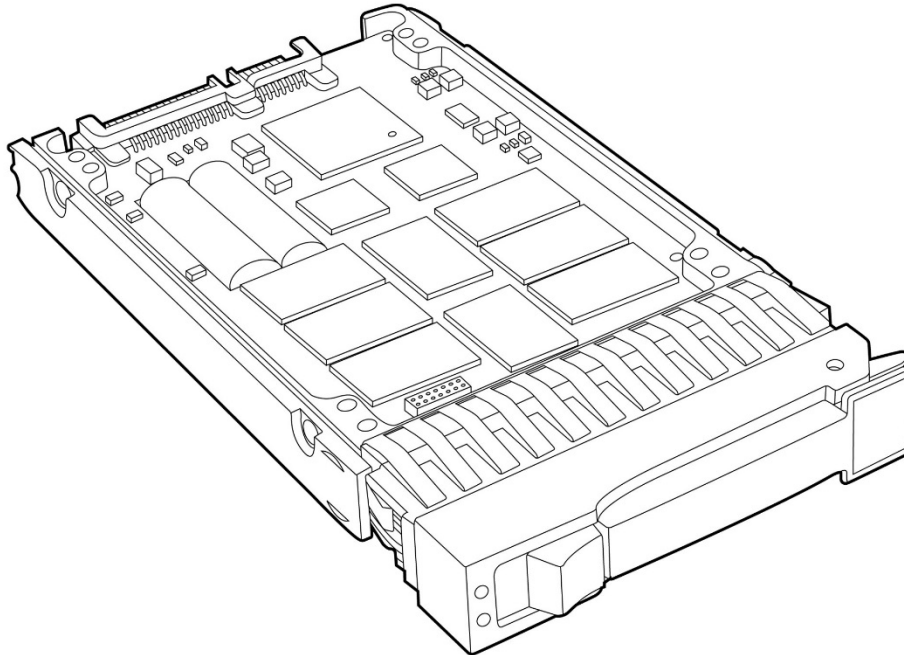


Overview

HPE Solid State Drives (SSD)

HPE Solid State Drives (SSDs) deliver exceptional performance and endurance for customers with applications requiring high random read IOPs performance. Leveraging NAND Flash technology, they support HPE ProLiant servers, HPE Synergy and server storage platforms. They are generally available as Small Form Factor (SFF) and Large Form Factor (LFF) hot plug devices, non-hot plug SFF devices, and SFF Quick Release devices. These drives deliver higher performance, lower latency, and more power-efficient solutions when compared with traditional rotating media. Plus they fit seamlessly into the existing HPE server infrastructure.



What's New

- HPE 6G SATA Read Intensive (RI) SSDs – Available in capacities 240GB, 480GB, 960GB, 1.92TB, & 3.8TB with Digitally Signed Firmware
- Introducing the HPE Solid-State Drive Selector Tool – an online tool to assist with determining the best SSD fit for specific requirements <http://ssd.hpe.com/>

Overview

SSD Selection

To streamline the configuration process for HPE ProLiant Gen9 servers and to provide the best product availability, HPE recommends SSDs from the list located here: <https://ssd.hpe.com/recommend>

To further assist with configuration, HPE also offers an SSD Selector Tool located here: <http://ssd.hpe.com/>

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 Apollo 35/40/70 Systems HPE Apollo 2000/6000 Servers HPE XL170r/XL190r/XL270d (Apollo 6500) Gen10 Server 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 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 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 D2220sb/D2500sb Storage Blade HPE Scalable Object Storage with Scality RING HPE SimpliVity 2600 HPE SimpliVity 325/380 Gen10 HPE Storage File Controllers HPE StoreEasy 1460/1560/1650/1660/1860
		Disclaimer: This may not be a complete listing of applicable servers

Standard Features

What is SSD? An enduring data storage device utilizing NAND (negative-AND) semiconductor technology to store and access data which is volatile without the aid of an auxiliary power source.

SSD Quality Today's businesses are seeing larger, more complex applications, coupled with an increasing amount of mission-critical and transaction processing data demand. In this environment, storage has become a critical component, significantly defining requirements for both systems reliability and performance. This is why HPE drives undergo a rigorous qualification process to ensure functionality and eliminate firmware and O/S incompatibilities.

Integration Many issues customers have with third party drives are "simple" integration issues. When buying from another supplier, there is no guarantee that a drive has been correctly set for proper operation with ProLiant servers and storage systems. These incompatibilities can create problems in configuration, can rob your system of performance, or at their worst, can cause you to lose data. HPE drives are specifically designed and tested for flawless operation in your HPE equipment. The integration of solid state drives in HPE systems means that associated components are right for your ProLiant server.

Support Matrix Please see the following URL for the latest list of supported servers and enclosures:
<https://www.hpe.com/us/en/servers.html>
NOTE: Non-hot plug devices are 15mm Z-height, which restricts them to those servers that can accept a 15mm device.

Product Category HPE Enterprise SSDs are available in three categories based on workload level: Read Intensive (RI), Mixed Use (MU), and Write Intensive (WI). The categories indicate the number of drive writes per day (DWPD1) that you can expect from the drive. (DWPD is the maximum number of 4K host writes to the entire drive capacity of the SSD per day over a five-year period.

		Write Performance Driven Workloads: Read Performance Driven Workloads: OLTP, Business Intelligence, Big Data Analytics, VDI, etc. Read caching, Web Servers, Social Media, Boot/Swap, etc.		
PCIe & PCIe NVMe	SFF, Add-In Cards, Mezz Cards	High Write Performance Endurance >=10 DWPD	Balanced R/W Performance Endurance >1 and <10 DWPD	Focused on Read Performance Endurance <=1 DWPD
12GB SAS	SFF, LFF			
6GB SATA	SFF, LFF, M.2 M.2 Enablement Kits			
		Write Intensive	Mixed Use	Read Intensive

Standard Features

Maximum Usage Limitations

NAND Flash devices use semiconductor technology that has a finite number of data that can be written to the device, defined as the Maximum Usage Limit, commonly called write endurance

Write Endurance - Write endurance is measured while running 100% random 4KiB writes across the entire SSD

Drive Writes Per Day - Workload environment is based on 100% random 4KiB writes for five (5) years

Drive	Write endurance specifications for 6G SATA Read Intensive (RI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
VE Enterprise Boot 80GB	40TB	0.3
Read Intensive-3 120GB	175TB	0.8
Read Intensive-2 120GB	66TB	0.3
VE Enterprise Boot 120GB	75TB	0.3
Read Intensive-3 240GB	351TB	0.8
Read Intensive-2 240GB	131TB	0.3
Read Intensive 240GB	180TB	0.4
VE Enterprise Value 240GB	145TB	0.3
Read Intensive-3 480GB	368TB	0.4
Read Intensive-2 480GB	263TB	0.3
Read Intensive 480GB	368TB	0.4
VE Enterprise Value 480GB	290TB	0.3
Read Intensive-2 800GB	438TB	0.3
VE Enterprise Value 800GB	490TB	0.3
Read Intensive-3 960GB	1403TB	0.8
Read Intensive 1.6TB	877TB	0.3
VE Enterprise Value 1.6TB	935TB	0.3
Read Intensive-3 1.92TB	2805TB	0.8

Standard Features

Drive	Write endurance specifications for 6G SATA Read Intensive (RI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Read Intensive-3 3.84TB	5610TB	0.8
Drive	Write endurance specifications for 12G SAS Read Intensive (RI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
12G SAS Read Intensive-3 480GB	876TB	1
12G SAS VE Enterprise Value 800GB	1800TB	1
12G SAS Read Intensive-3 960GB	1752TB	1
12G SAS VE Enterprise Value 1600GB	3700TB	1
12G SAS Read Intensive 1.92TB	6.78PB	1.9
12G SAS Read Intensive-3 1.92TB	3504TB	1
12G SAS Read Intensive-3 3.84TB	7008TB	1
Drive	Write endurance specifications for Read Intensive (RI) M.2	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years
340GB Read Intensive-2 M.2 Kit	180TB	0.3
340GB 6G SATA Read Intensive M.2 2280	180TB	0.3
120GB Read Intensive-1 M.2 Kit	70TB	0.3
Read Intensive M.2 Enablement Kit 120GB	170TB	0.78
120GB 6G SATA Read Intensive M.2 2280	70TB	0.3
VE M.2 Enablement Kit 64GB	9.2TB	0.3

Standard Features

Drive	Write endurance specifications for NVMe PCIe Read Intensive (RI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Read Intensive 400GB	219TB	0.3
Read Intensive 1.2TB	657TB	0.3
2.0TB	1095PB	0.3
Drive	Write endurance specifications for 6G SATA Mixed Use (MU) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Mixed Use-3 120GB	657TB	3
VE Enterprise Value M1 120GB	550TB	2.5
Mixed Use-2 200GB	1096TB	3
Mixed Use-3 240GB	1315TB	3
VE Enterprise Value M1 240GB	1100TB	2.5
Mixed Use-3 480GB	2630TB	3
Mixed Use-2 480GB	2630TB	3
VE Enterprise Value M1 480GB	2200TB	2.5
Mixed Use-2 800GB	4383TB	3
VE Enterprise Value M1 800GB	1900TB	1.3
VE Enterprise Value 120GB G1	430TB	1.9
VE Enterprise Value 240GB G1	860TB	1.9
VE Enterprise Value 48GB G1	1730TB	1.9
Mixed Use-3 960GB	5260TB	3
LE Enterprise Value 960GB	6728TB	3.8

Standard Features

Drive	Write endurance specifications for 6G SATA Mixed Use (MU) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Mixed Use-2 1.6TB	8766TB	3
Mixed Use-3 1.92TB	10519TB	3
Drive	Write endurance specifications for 12Gb SAS Mixed Use (MU) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
12G SAS Mixed Use-3 400GB	2190TB	3
12G SAS Mixed Use-1 800GB	4380TB	3
12G SAS Mixed Use-3 800GB	4380TB	3
12G SAS Mixed Use-1 1.6TB	8760TB	3
12G SAS Mixed Use-3 1.6TB	8760TB	3
12G SAS Mixed Use-3 3.2TB	17520TB	3
Drive	Write endurance specifications for NVMe PCIe Mixed Use (MU) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Mixed Use 400GB	2.19PB	3
Mixed Use 800GB	4.38PB	3
Mixed Use 1.6TB	8.76PB	3
Mixed Use 2.0TB	10.95PB	3

Standard Features

Drive	Write endurance specifications for 6G SATA Write Intensive SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
ME Enterprise Mainstream 100GB	1.8PB	10
Write Intensive-2 200GB	3653TB	10
ME Enterprise Mainstream 200GB	3.6PB	10
Write Intensive-2 400GB	7305TB	10
ME Enterprise Mainstream 400GB	7.2PB	10
Write Intensive-2 800GB	14610TB	10
ME Enterprise Mainstream 800GB	14.6PB	10
Write Intensive-2 1.2TB	21915TB	10

Standard Features

Drive	Write endurance specifications for 12G SAS Write Intensive (WI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
12G SAS ME ENT Mainstream H2 200GB	3.9PB	10
12G ME ENT Mainstream H2 400GB	7.3PB	10
12G SAS ME ENT Mainstream H2 800GB	14.6PB	10
12G SAS ME ENT Mainstream H2 1.6TB	29.2PB	10
12G SAS Write Intensive 200GB	9.1PB	25
12G SAS Write Intensive 400GB	18.3PB	25
12G SAS Write Intensive 800GB	36.5PB	25
12G SAS Write Intensive- 1 800GB	14600TB	10
12G SAS Write Intensive- 1 1.6TB	29200TB	10

Drive	Write endurance specifications for NVMe PCIe Write Intensive (WI) SSDs	
	Lifetime Writes	Drive Writes Per Day for Five (5) Years (using JESD219 workload)
Write Intensive 400GB	7.3PB	10
Write Intensive 800GB	14.6PB	10
Write Intensive 1.6TB	29.2PB	10
Write Intensive 2.0TB	36.5PB	10

HPE Solid State Drives are equipped with tools that can report the amount of lifetime remaining. Introducing HPE SMARTSSD Wear Gauge™. In order to take advantage of SMARTSSD Wear Gauge™, Smart Array Firmware version 5.0 or greater is required and HPE Array Configuration Utility (ACU) or HPE Diagnostic Utility (ADU) must be running.

SNMP Storage Agents for both Microsoft® Windows® and Linux provide status and condition updates through traps, OS event logs and the HPE System Management Homepage

:

<https://www.hpe.com/us/en/product-catalog/detail/pip.hp-system-management-homepage-software.344313.html>

The HPE SMARTSSD Wear Gauge™ requires a Smart Array or Smart HBA controller listed below.

- HPE Smart Array PX1X Controller Series or newer
- HPE Smart HBA PX4XController Series

Standard Features

- HPE Dynamic Smart Array BX2XiController Series or newer
- HPE Dynamic Smart Array B320i Controller

NOTE: Subject to maximum usage/maximum supported lifetime limitations. Maximum Supported Lifetime is the period in years set to equal the warranty for the device. Maximum usage limit is the maximum amount of data that can be written to the device before reaching the device's write endurance limit.

HPE Direct Connect to the HPE Smart Array B110i SATA RAID Controller is not supported in this tool.

Data Retention

Data Retention is the period of time for retaining the data in the NAND once the maximum rated endurance level has occurred. These SSD's are rated for 3 months if no power is applied once the SSD has reached maximum rated write endurance.

Warranty

3/0/0 warranty; Customer Self Repair (CSR) subject to maximum usage limitations. Maximum usage limit: This is the maximum amount of data that can be written to the drive. Drives that have reached this limit will not be eligible for warranty coverage.

Service and Support

Service and Support HPE Technology Services for Industry Standard Servers

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability powered by a rich portfolio of consulting and support services designed to add value to our core products and solutions connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time

Protect your business beyond warranty with HPE Support Services

HPE support services offer complete care and support expertise with committed response choices that are designed to meet your IT and business needs

NOTE: HPE Solid State Drives are supported as a part of the HPE Server Infrastructure. No separate Support Services are needed to be purchased.

Connect your devices to HPE

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%¹ reduction in down time, near 100%² diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. 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.

1. IDC Whitepaper
2. HPE CSC Reports 2014-2015

HPE Support Center Personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more <http://h20565.www2.hpe.com/portal/site/hpsc/>

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 personalized IT support anywhere, anytime

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Support Services or HPE contractual support agreement.

NOTE: HPE Support Center Mobile App above 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 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.

Technical Specifications

Warranty / Service Coverage For ProLiant servers and storage systems, the service on the main product covers HP-branded hardware options not designated by Hewlett Packard Enterprise as requiring separate coverage, that are qualified for the server, purchased at the same time or afterward and internal to the enclosure. These items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been reached.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction. It does not apply Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by Hewlett Packard Enterprise as consumable parts and/or that have reached maximum supported lifetime and/or the maximum usage limits as set forth in the manufacturer's operating manual, the product QuickSpecs, or the technical data sheet are not eligible for the defective media retention service feature option

Subject to: Maximum supported lifetime: This is a period in years set to equal the warranty for the specific drive. After this period no further service coverage will be available for the drive. Maximum usage limit: This is the maximum amount of data that can be written to the drive. Drives that have reached this limit will not be eligible for services coverage.

For more information

To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: <https://www.hpe.com/us/en/product-catalog/servers/proliant-servers.html> or <https://www.hpe.com/us/en/integrated-systems/bladesystem.html>

Technical Specifications

HPE Solid State Drives

Application Information Solid State Drives offer high performance, low latency, low power solutions that fit seamlessly into the HPE server infrastructure using the Hewlett Packard Enterprise universal hot plug drive carrier. HPE Enterprise SSDs support Power Loss Protection (PLP).

NOTE: Any drive with SC in the product description is for Gen8 hot plug server bays servers only. They cannot be used in any other server generation.

Read Intensive SSDs

6G SATA Read Intensive Hot Plug SFF (2.5-inch) Solid State Drives

NOTE: The 80GB and 120GB Enterprise Boot SSDs with Endurance Manager enabled are targeted for Boot/Swap applications and may have performance throttled due to write workloads. Write performance shown for 80GB and 120GB Enterprise Boot SSDs is based on no endurance throttling.

NOTE: Random Performance is based on a 4KiB transfer size at a queue of 16.

HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868814-B21	Capacity	240GB		
		Height	7mm		
		Length x Width	Standard SFF		
		Interface	SATA		
		Transfer Rate Synchronous (Maximum)	6Gbps		
		Performance	Rotational Speed	N/A	
			Access Latency	Read: 120uSec Write: 105uSec	
			Random Reads	66,000 IOP/s	
			Random Writes	9,800 IOP/s	
			Sequential Reads	370 MiB/s	
Sequential Writes	300 MiB/s				
Physical Configuration	Logical Blocks	512 bytes			
Power	9W				
Operating Temperature	0-60°C				

Technical Specifications

HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868818-B21	Capacity	480GB	
		Height	7mm	
		Length x Width	Standard SFF	
		Interface	SATA	
		Transfer Rate Synchronous (Maximum)	6Gbps	
		Performance	Rotational Speed	N/A
			Access Latency	Read: 120uSec Write: 58uSec
			Random Reads	66,000 IOP/s
			Random Writes	17,000 IOP/s
			Sequential Reads	530 MiB/s
			Sequential Writes	490 MiB/s
			Physical Configuration	Logical Blocks
		Power	9W	
Operating Temperature	0-60°C			

HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868822-B21	Capacity	960GB	
		Height	7mm	
		Length x Width	Standard SFF	
		Interface	SATA	
		Transfer Rate Synchronous (Maximum)	6Gbps	
		Performance	Rotational Speed	N/A
			Access Latency	Read: 120uSec Write: 41uSec
			Random Reads	64,000 IOP/s
			Random Writes	24,500 IOP/s
			Sequential Reads	530 MiB/s
			Sequential Writes	490 MiB/s
			Physical Configuration	Logical Blocks
		Power	9W	
Operating Temperature	0-60°C			

Technical Specifications

HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868826-B21	Capacity	1.92TB	
		Height	7mm	
		Length x Width	Standard SFF	
		Interface	SATA	
		Transfer Rate Synchronous (Maximum)	6Gbps	
		Performance	Rotational Speed	N/A
			Access Latency	Read: 120uSec Write: 38uSec
			Random Reads	61,500 IOP/s
			Random Writes	26,000 IOP/s
			Sequential Reads	530 MiB/s
			Sequential Writes	490 MiB/s
			Physical Configuration	Logical Blocks
		Power	9W	
Operating Temperature	0-60°C			

HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868830-B21	Capacity	3.8TB	
		Height	7mm	
		Length x Width	Standard SFF	
		Interface	SATA	
		Transfer Rate Synchronous (Maximum)	6Gbps	
		Performance	Rotational Speed	N/A
			Access Latency	Read: 120uSec Write: 36uSec
			Random Reads	63,500 IOP/s
			Random Writes	27,500 IOP/s
			Sequential Reads	530 MiB/s
			Sequential Writes	490 MiB/s
			Physical Configuration	Logical Blocks
		Power	9W	
Operating Temperature	0-60°C			

Technical Specifications

6G SATA Read Intensive Hot Plug LFF (3.5-inch) Solid State Drives

HPE 480GB SATA 6G Read Intensive LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware SSD	869056-B21	Capacity	480GB		
		Height	7mm		
		Length x Width	Standard SFF		
		Interface	SATA		
		Transfer Rate Synchronous (Maximum)	6Gbps		
		Performance	Rotational Speed	N/A	
			Access Latency	Read: 120uSec Write: 58uSec	
			Random Reads	66,000 IOP/s	
			Random Writes	17,000 IOP/s	
			Sequential Reads	530 MiB/s	
		Sequential Writes	490 MiB/s		
Physical Configuration		Logical Blocks	512 bytes		
Power		9W			
Operating Temperature		0-60°C			

HPE Read Intensive Solid State M.2 Enablement Kit for ProLiant Servers

NOTE: The performance data in the table below is for a single M.2 SSD that would be installed in the M.2 enablement kit. Whether the assembly is a single M.2 or dual M.2 enablement kit installation, each M.2 SSD is an independent SSD device and the performance would be the same for each installed device of the same capacity.

HPE 1.92TB 12G SAS Read Intensive SFF 2.5-in 3yr Wty Solid State Drive	802888-B21	Capacity	1920GB		
		Length x Width	Standard SFF		
		Interface	SAS		
		Transfer Rate Synchronous (Maximum)	12Gbps		
		Performance	Rotational Speed	N/A	
			Random Reads	102,000 IOP/s	
			Random Writes	34,000 IOP/s	
			Sequential Reads	1,000 MiB/s	
			Sequential Writes	510 MiB/s	
		Physical Configuration		Logical Blocks	512 bytes
Power		9W			
Operating Temperature		0-60°C			

Technical Specifications

NVMe PCIe Mixed Use (MU) Hot Insertion/Assisted Removal SFF (2.5-inch) Solid State Drives

NOTE: Please see select Gen9 compatibility on SKU listings page 8.

12G SAS Write Intensive (WI) Hot Plug SFF (2.5-inch) Solid State Drives

HPE 200GB 12G SAS Write Intensive SFF 2.5-in 3yr Wty Solid State Drive	802576-B21	Capacity	200GB	
		Height	15mm	
		Length x Width	Standard SFF	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12Gbps	
		Performance	Rotational Speed	N/A
			Random Reads	106,000 IOP/s
			Random Writes	83,000 IOP/s
			Sequential Reads	1,000 MiB/s
			Sequential Writes	660 MiB/s
		Physical Configuration	Logical Blocks	512 bytes
	Power	9W		
	Operating Temperature	0-60°C		

Summary of Changes

Date	Version History	Action	Description of Change
06-Apr-2020	Version 41	Changed	Models Section was Updated
01-Oct-2018	Version 40	Changed	Overview, Technical Specifications, were updated. Models section SKUs removed.
28-Nov-2016	Version 39	Added	SKUs added: 872853-B21, 872855-B21, 871768-B21, 871770-B21, 868814-B21, 868818-B21, 868822-B21, 868826-B21, 868830-B21, 869056-B21, and 869058-B21.
		Changed	Overview, Models, Standard Features, and Technical Specifications were revised.
		Removed	739906-B21, 739896-B21, 764937-B21, 764935-B21, 764933-B21, and 764931-B21.
28-Oct-2016	Version 38	Removed	Obsolete SKUs were removed from the QuickSpecs.
31-Mar-2016	Version 37	Added	SKUs added in Models section: 846436-B21, 846434-B21, 846432-B21, and 846430-B21.
		Changed	Overview, Standard Features, Service and Support, and Technical Specifications sections were updated.
		Removed	Obsolete SKUs were deleted: 728743-B21, 728739-B21, 739904-B21, 739894-B21, 728735-B21, 728726-B21, 734366-B21, 728745-B21, 728741-B21, 728737-B21, 728732-B21, and 734368-B21.
16-Feb-2016	Version 36	Added	SKUs added in Models section: 835563-B21, 835565-B21, 788028-B21, 777894-B21, 846495-B21, 846497-B21, 789135-B21, 789141-B21, 789137-B21, 789163-B21, 789153-B21, 789149-B21, 756611-B21, 756604-B21, and 756607-B21.
		Changed	What's new, Standard Features, and Service and Support sections were updated.
		Removed	Obsolete SKUs were deleted: 788028-B21, 777894-B21,
01-Dec-2015	Version 35	Changed	Models and Service and Support sections were updated.
		Removed	Obsolete SKUs were deleted: 822553-B21, 822557-B21, 822561-B21, 822565-B21, 816560-B21, 816564-B21, 816570-B21, and 816574-B21.
01-Dec-2015	Version 34	Added	SKUs added in Models section: 816576-B21, 816574-B21, 816572-B21, 816568-B21, 816564-B21, 816561-B21, 816560-B21, 822567-B21, 822565-B21, 822563-B21, 822561-B21, 822559-B21, 822557-B21, 822555-B21, and 822553-B21.
		Changed	Overview, Models, Standard Features, Service and Support sections were updated.
23-Oct-2015	Version 33	Changed	Standard Features and Service and Support sections were updated.
		Removed	Obsolete SKUs deleted: 789155-B21, 789161-B21, 757354-B21, 757357-B21, 789143-B21, 757345-B21, 739902-B21, 764921-B21, 756614-B21, and 764953-B21.
28-Sep-2015	Version 32	Added	SKUs added: 816929-B21, 816899-B21, 816933-B21, 816903-B21, 764908-B21, 816985-B21, 817015-B21, 816979-B21, 764894-B21, 816919-B21, 816889-B21, 816923-B21, 816893-B21, 817011-B21, 816975-B21, 816999-B21, 816969-B21, 816909-B21, 816879-B21, 816913-B21,

Summary of Changes

			816883-B21, 816995-B21, 816965-B21, 816989-B21, 765044-B21.
		Changed	Overview, Models, Standard Features and Service and Support sections were updated.
17-Aug-2015	Version 31	Added	SKUs inserted to Models and Service and Support Section.
		Changed	What's new, Models, Standard Features, Service and Support sections were updated.
		Removed	SKUs deleted from Models and Service and Support section.
01-Jun-2015	Version 30	Added	SKUs added in models: 777262-B21 and 777264-B21.
		Changed	Information in Product categories and Technical Specifications sections were updated.
01-May-2015	Version 29	Changed	Information in Product categories and Technical Specifications sections were updated.
30-Mar-2015	Version 28	Changed	Changes made throughout the QuickSpecs.
13-Feb-2015	Version 27	Removed	SKUs removed: 777894-B21 and 788028-B21
09-Feb-2015	Version 26	Added	New SKUs were added on Models section.
		Changed	Technical Specifications, Standard Features sections were updated.
12-Dec-2014	Version 25	Changed	Note on Value Endurance Solid State M.2 Enablement Kit for ProLiant Blades changed from: NOTE: These drives are supported by the BL460c Gen9 and BL660 Gen9. To: NOTE: These drives are supported by the BL460c Gen9.
01-Dec-2014	Version 24	Added	SKUs added: 762263-B21, 762272-B21, 757339-B21, 757342-B21, 757354-B21, 757357-B21, 775588-B21, and 785233-B21.
		Changed	Overview, Models and Standard Features sections were updated.
23-Sep-2014	Version 23	Added	SKUs added on Models section: 690829-B21, 756666-B21, 756636-B21, 756651-B21, 756621-B21, 756630-B21, 756639-B21, 756624-B21, 756660-B21, 756614-B21, 756669-B21, 756654-B21, 756633-B21, 756663-B21, 756642-B21, and 756627-B21.
		Changed	What's new, Models, Technical Specifications sections were updated.
		Removed	Obsolete SKUs removed: 690829-B21, 690821-B21, 690825-B21, 690819-B21, 653082-B21, and 636625-B21.
11-Jul-2014	Version 22	Changed	Technical Specification Section was updated.
08-Jul-2014	Version 21	Changed	Technical Specification Section was updated.
10-Jun-2014	Version 20	Changed	Overview section was updated. On Standard Features Maximum Usage Limitations table was updated. Technical specifications was updated.
01-Apr-2014	Version 19	Changed	Models was revised.
18-Feb-2014	Version 18	Changed	Changed the What's New section to read: HPE 12Gb SAS SSDs - High Endurance and Mainstream Endurance.
09-Dec-2013	Version 17	Removed	Discontinued models were removed.
30-Sep-2013	Version 16	Changed	Changes made throughout the Technical Specifications section.
16-Aug-2013	Version 15	Changed	The Notes in the Models section were revised.

Summary of Changes

24-Jul-2013	Version 14	Changed	Models were revised.
14-Jun-2013	Version 13	Changed	Changes were made throughout the QuickSpecs to include new models.
25-Mar-2013	Version 12	Added	Standard Features: Added PB to Maximum Usage Limitations to the Lifetime Writes.
04-Jan-2013	Version 11	Removed	Removed 6G SAS MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives.
19-Nov-2012	Version 10	Changed	Correction made in the Models section.
24-Sep-2012	Version 9	Changed	Changes made throughout QuickSpecs.
08-Jun-2012	Version 8	Changed	Changes made to Models and Service and Support sections.
01-Jun-2012	Version 7	Changed	Corrected Part Numbers in the Models and Technical Specifications sections.
14-May-2012	Version 6	Changed	Changes made throughout the QuickSpecs.
16-Mar-2012	Version 5	Changed	Maximum Usage Limitations chart was completely revised and Data Retention was added.
06-Mar-2012	Version 4	Changed	Models was updated and the title was changed.
07-Jul-2011	Version 3	Changed	Changes made in the Standard Features section only.



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