

Overview

HPE StoreEasy 1000 Storage

Whether you are a small, medium, or large business with a branch or remote offices, storage worries should be the last thing on your mind. As you work with your large number of users, you need to accommodate their demands to store and access growing volumes of files such as business documents, images, audio files, and videos. You need efficient file storage that is secure, yet easy to manage.

Hewlett Packard Enterprise is here to help. With HPE StoreEasy 1000 Storage—a family of optimized, efficient, secure, and highly available storage systems—you stand to gain a lot. The StoreEasy 1000 product family is designed for small businesses, branch offices, and workgroup environments.

The StoreEasy 1000 product family caters to your unique storage needs. They integrate easily into new and existing environments, offering your storage administrators and IT generalists a straightforward, consistent management experience.

With built-in security, your data remains well protected and available to your users when and where they want to access it. It also enables you to install and run endpoint protection such as antivirus on the system itself, reducing the cost and complexity of connecting an external endpoint protection server. With features including continuous health monitoring, mirrored OS disks, advanced memory protection, reliable software support, and more, you can provide users with storage that keeps their data accessible and highly available.

What's New

- New BTO SKUs available with Windows Storage Server 2016 Standard Edition OS, Intel® Xeon® E5-2600v4 processors, and upgraded memory
 - Q1J33A – HPE StoreEasy 1450 8TB SATA WSS2016 Storage
 - Q1J34A – HPE StoreEasy 1450 16TB SATA WSS2016 Storage
 - Q1J35A – HPE StoreEasy 1650 32TB SAS WSS2016 Storage
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Overview

Models

HPE StoreEasy 1450 Storage

HPE StoreEasy 1450 Storage products are storage solutions that deliver multi-protocol file serving and application storage in a compact and affordable 1U rack-mount form factor. They're easy to install and manage, making them perfect for a small workgroup, small business or remote office. StoreEasy 1450 models come with Windows Storage Server 2016 or 2012 R2 Standard Edition OS (depends on model selected), pre-installed from the factory on the four internal LFF drives. The StoreEasy 1450 is built on a ProLiant DL160 Gen 9 server and includes a rail kit and cable management arm.



1-4 4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drives Bays

HPE StoreEasy 1450 WSS2016 Storage Q0F47A

HP StoreEasy 1450 Storage K2R11A

NOTE: The above CTO models have no drives pre-configured - at least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of OS in the factory. The OS is not a field installable option. Please go to StoreEasy 1450 configuration information section for details of available options for various components.

HP StoreEasy 1450 4TB SATA Storage K2R12A

(4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HP StoreEasy 1450 8TB SATA Storage K2R13A

(4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HPE StoreEasy 1450 8TB SATA WSS2016 Storage Q1J33A

(4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HPE StoreEasy 1450 16TB SATA WSS2016 Storage Q1J34A

(4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

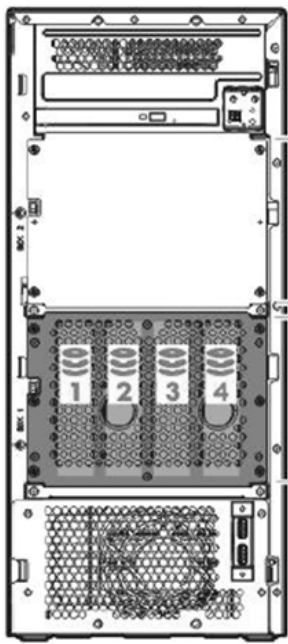
HP StoreEasy 1450 16TB SATA Storage K2R14A

(4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

Overview

HPE StoreEasy 1550 Storage

HPE StoreEasy 1550 Storage products are storage solutions that deliver multi-protocol file serving and application storage in a compact and affordable tower form factor package. They're easy to install and manage, making them perfect for a small workgroup, small business or remote office. StoreEasy 1550 models come with Storage Server 2016 or 2012 R2 Standard Edition OS (depends on model selected) pre-installed from the factory on the four internal LFF drives. The StoreEasy 1550 is built on a ProLiant ML110 Gen 9 Server.



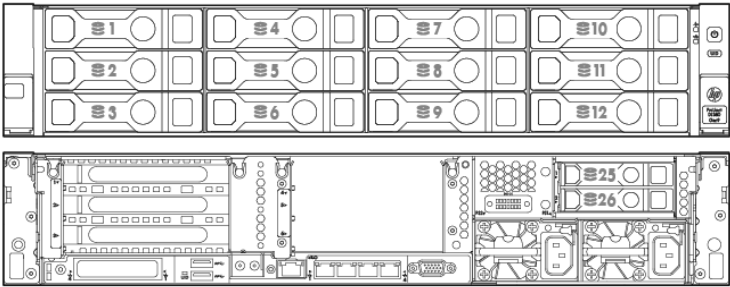
1-4 4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drives Bays

HPE StoreEasy 1550 WSS2016 Storage	Q0F48A
HP StoreEasy 1550 Storage	K2R62A
NOTE: The above CTO models have no data drives pre-installed for capacity - at least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of OS in the factory. The OS is not a field installable option. Please go to StoreEasy 1550 configuration information section for details of available options for various components.	
HP StoreEasy 1550 4TB SATA Storage (4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R63A
HP StoreEasy 1550 8TB SATA Storage (4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R64A
HP StoreEasy 1550 16TB SATA Storage (4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R65A

Overview

HPE StoreEasy 1650 Storage

HPE StoreEasy 1650 Storage products deliver high capacity and drives down your cost per GB. Eight or six-core processing (depends on model selected, up to 120TB internal storage capacity, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. StoreEasy 1650 models come with Windows Storage Server 2016 or 2012 R2 Standard Edition OS (depends on model selected), pre-installed from the factory on two SFF Solid State Disks (located in rear). The StoreEasy 1650 is built on a ProLiant DL380 Gen 9 Server and includes a rail kit and cable management arm.



- 1-1212 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays
- 25-262 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

HPE StoreEasy 1650 WSS2016 Storage	Q0F49A
HP StoreEasy 1650 Storage	K2R15A

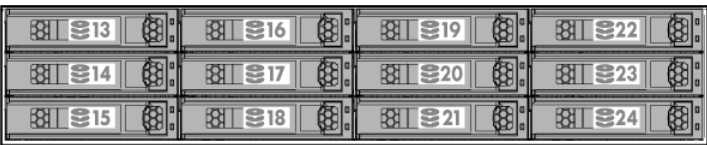
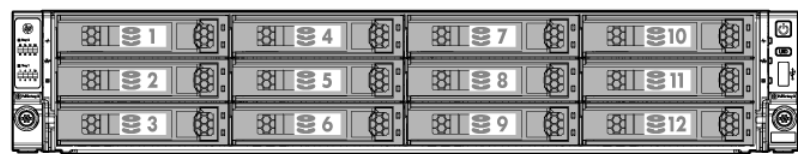
NOTE: The above CTO models have no data drives pre-installed for capacity– StoreEasy Drive bundles should be ordered separately for complete configuration. There are 2 SFF SSDs in rear with pre-installed OS. Please go to StoreEasy 1650 configuration information section for details of available options for various components.)

HP StoreEasy 1650 16TB SAS Storage (8 x 2TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed and 4 open LFF slots in front and 2 SFF SSDs in rear with pre-installed OS)	K2R16A
HP StoreEasy 1650 32TB SAS Storage (8 x 4TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed and 4 open LFF slots in front and 2 SFF SSDs in rear with pre-installed OS)	K2R17A
HPE StoreEasy 1650 32TB SAS WSS2016 Storage (8 x 4TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed and 4 open LFF slots in front and 2 SFF SSDs in rear with pre-installed OS)	Q1J35A
HP StoreEasy 1650 48TB SAS Storage (8 x 6TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed and 4 open LFF slots in front and 2 SFF SSDs in rear with pre-installed OS)	K2R18A

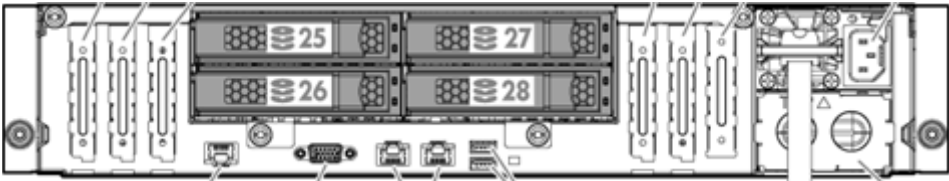
Overview

HPE StoreEasy 1650 Expanded Storage

HPE StoreEasy 1650 Expanded Storage products offers revolutionary storage density, with more than double the storage capacity of Competitors for addressing bulk file storage use cases in a 2U form factor. Eight or six-core processing (depending on model selected), up to 280TB internal data storage capacity, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. StoreEasy 1650 Expanded models come with Windows Storage Server 2016 or 2012 R2 Standard Edition OS (depends on model selected), pre-installed on two M.2 Solid State Disks in internal PCIe slot. The StoreEasy 1650 Expanded Storage is built on an Apollo 4200 Gen9 Server and includes a rail kit and cable management arm.



- 1-12. Front row of LFF drives
- 13-24. Second row of LFF Drives



- 25-28 Rear rows of LFF drives

HPE StoreEasy 1650 Expanded WSS2016 Storage

Q0F50A

HP StoreEasy 1650 Expanded Storage

N9Y08A

(28 open LFF HDD slots- 24 in Front, 4 in Rear and two M.2 Solid State Disks with pre-installed OS in PCIe slot)

NOTE: The above CTO models have no data drives pre-installed for capacity – StoreEasy Drive bundles should be ordered separately for complete configuration. Please go to StoreEasy 1650 Expanded configuration information section for details of available options for various components)

HP StoreEasy 1650 Expanded 32TB SAS Storage

N9Y09A

(8 x 4TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and two M.2 Solid State Disks with pre-installed OS in PCIe slot)

HP StoreEasy 1650 Expanded 48TB SAS Storage

N9Y10A

(8 x 6TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and two M.2 Solid State Disks with pre-installed OS in PCIe slot)

HP StoreEasy 1650 Expanded 64TB SAS Storage

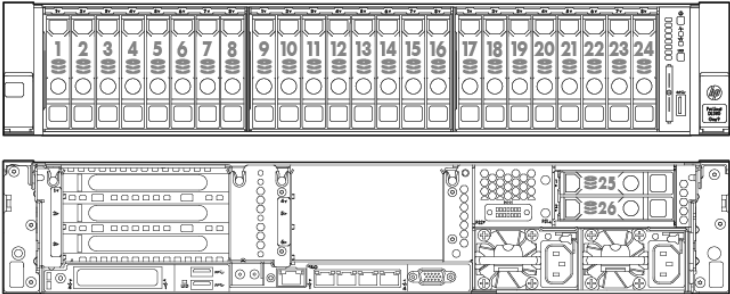
N9Y11A

(8 x 8TB 12G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and two M.2 Solid State Disks with pre-installed OS in PCIe slot)

Overview

HPE StoreEasy 1850 Storage

HPE StoreEasy 1850 Storage products deliver Enterprise-class performance, expandability, and flexibility. Eight or six-core processing (depending on model selected), up to 24 internal SFF data drives for performance, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. StoreEasy 1850 models come with Windows Storage Server 2016 or 2012 R2 Standard Edition OS (depending on model selected), pre-installed from the factory on two SFF Solid State Disks (located in rear). The StoreEasy 1850 is built on a ProLiant DL380 Gen 9 server and includes a rail kit and cable management arm.



- 1-2424 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays
- 25-262 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

HPE StoreEasy 1850 WSS2016 Storage	Q0F51A
HP StoreEasy 1850 Storage (24 open SFF slots in front and 2 SFF SSDs in rear with pre-installed OS) NOTE: This model has no data drives pre-installed for capacity– StoreEasy Drive bundles should be ordered separately for complete configuration. Please go to StoreEasy 1850 configuration information section for details of available options for various components.)	K2R19A
HP StoreEasy 1850 9.6TB SAS Storage (8 x 1.2TB 12G 10K RPM ENT SAS SFF HDDs pre-installed, 16 open SFF slots and 2 SFF SSDs in rear with pre-installed OS)	K2R20A
HP StoreEasy 1850 14.4TB SAS Storage (8 x 1.8TB 12G 10K RPM 512e SAS SFF HDDs pre-installed, 16 open SFF slots and 2 SFF SSDs in rear with pre-installed OS)	K2R21A

Hardware Specifications of StoreEasy models

	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
Processor / Cache Memory	Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor
	StoreEasy 1450 WSS2016 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/20MB/85W) Processor	StoreEasy 1550 WSS2016 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/20MB/85W) Processor	StoreEasy 1650 WSS2016 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor	StoreEasy 1650 Expanded WSS2016 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor	StoreEasy 1850 WSS2016 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor
Memory					
Type	DDR4 Registered (RDIMM)				
Maximum (by O/S license)	24TB (WSS2016), 4TB (WSS2012 R2)				
Standard	8GB (1 x 8GB)	8GB (1 x 8GB)	16GB (2 x 8GB)	16GB (2 x 8GB)	16GB (2 x 8GB)
DIMM Sockets	16	8	24	16	24
Network Controller					
NIC ports	2	2	4	2	4
Controller	HPE 361i Adapter 1GbEthernet 2-port	Broadcom 5717 Dual-port 1Gb	HPE 331i Adapter 1GbEthernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband	HPE 361i Adapter 1GbEthernet 2-port plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband	HPE 331i Adapter 1G Ethernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband

StoreEasy 1450 Expansion Slots		Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
CPU1 PCIe riser slots	Expansion Slots #						
	1	PCIe 3.0	x16	x16		Full-height, half-length slot	Processor 1
	2	PCIe 3.0	x16	x16		Low profile slot	Smart Array P440

Hardware Specifications of StoreEasy models

CPU2 riser PCIe slots	Expansion Slots # 3	PCIe 3.0	x16	x16	Low profile slot	Processor 2
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NOTE: When populating slots on CPU2 riser, second processor must be installed.

NOTE: Bus Width data indicates the number of physical electrical lanes running to the connector.

StoreEasy 1550 Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
5	PCIe 3.0	x8	x8		Full-height, half-length slot	For processor 1
4	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
3	PCIe 3.0	x8	x8		Full-height, half-length slot	Smart Array P440
2	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
1	PCIe 3.0	x16	x16		Full-height, $\frac{3}{4}$ length (up to 9.5") Slot	For processor 1

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

NOTE: Five total expansion PCIe 3.0 slots. One PCIe 3.0 x16 (x16 speed); Two PCIe 3.0 x 8 (x8 speed); Two PCIe 3.0 x 4 (x4 speed).

StoreEasy 1650 and 1850 Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe 3.0	x8	x16	7	Full-height, half-length slot	Proc 1
2	PCIe 3.0	x8	x16	10	Full-height, half-length slot	Proc 1
3	PCIe 3.0	x8	x8	13	Half length, full height slot	Proc 1

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

** Indicates the number of physical electrical lanes running to the connector.

NOTE: All slots support PCIe cards to 150W or more depending on card, but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

Slot 2 PCIe Riser (Optional 3-slot) 719073-B21

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
4	PCIe 3.0	x16	x16	16		Full height, full length slot	Proc 2
5	PCIe 3.0	x16	x16	20		Full height, full length slot	Proc 2

Hardware Specifications of StoreEasy models

6	PCIe 3.0	x8	x8	23	Full-height, half-length slot	Proc 2
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* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

** Indicates the number of physical electrical lanes running to the connector.

NOTE: When populating the second optional riser slot, the second processor must be installed.

NOTE: All slots support PCIe cards to 150W or more depending on card but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

StoreEasy 1650 Expanded Storage Expansion Slots

Standard	Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
	1	PCIe 3.0	x8	X8	Low profile	Proc 1
	2	PCIe 3.0	x16	x16	Low profile	Dual M.2 SSDs
	5	PCIe 3.0	x16	x16	Low Profile	Proc 2
	6	PCIe 3.0	x8	x8	Low Profile	Proc 2
	7	PCIe 3.0	X16	X16	Low Profile	Proc 2

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

** Indicates the number of physical electrical lanes running to the connector.

NOTE: When populating the second optional riser slot, the second processor must be installed.

NOTE: All slots support PCIe cards to 150W or more depending on card but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

Storage Controller	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
Controller(s)	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)	HPE Flexible Smart Array P840ar/2G FIO Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)
	StoreEasy 1450 WSS2016	StoreEasy 1650 WSS2016 (BTO)	StoreEasy 1650 WSS2016 (CTO)	StoreEasy 1650 Expanded WSS2016	StoreEasy 1850 WSS2016
	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	HPE Flexible Smart Array P840ar/2G FIO Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)	HPE Flexible Smart Array P840ar/2G FIO Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller; HPE Dynamic Smart Array B140i Controller (only used for OS SSDs)

Hardware Specifications of StoreEasy models

RAID (for data drives using Smart Array controller)	6, 60, 1, 10, 1 ADM, 10 ADM	6, 60, 1, 10, 1 ADM, 10 ADM	6, 60, 1, 10, 1 ADM, 10 ADM	6, 60, 1, 10, 1 ADM, 10 ADM	6, 60, 1, 10, 1 ADM, 10 ADM
Internal SAS connectors	1	1	2	2	2
External SAS connectors	None	None	None	None	None
Storage	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
Hard Drives Internal	(4) Four 3.5" (Large Form Factor) hot-plug bays	(4) Four 3.5" (Large Form Factor) hot-plug bays standard, up to (4) Four additional 3.5" LFF bays as an option	(12) Twelve 3.5" (Large Form Factor) hot-plug bays in front and (2) Two 2.5" (Small Form Factor) hot-plug bays in rear	(28) Twelve 3.5" (Large Form Factor) hot-plug bays in front and rear rows and (2) Two 2.5" (Small Form Factor) hot-plug bays in rear	(24) 2.5" (Small Form Factor) hot-plug bays in front and (2) Two 2.5" (Small Form Factor) hot-plug bays in rear
External	Support for D3600, D3700, D6000 and D6020 (requires an additional Smart Array controller than the standard SA P440)	Support for D3600, D3700, D6000 and D6020 (requires an additional Smart Array controller than the standard SA P440)	Support for D3600, D3700, D6000 and D6020 (requires an additional Smart Array controller than the standard SA P440ar)	Support for D3600, D3700, D6000 and D6020 (requires an additional Smart Array controller than the standard SA P840ar)	Support for D3600, D3700, D6000 and D6020 (requires an additional Smart Array controller than the standard SA P440ar)
Maximum Storage Capacity (raw)					
Internal SATA	40TB	80TB	120TB	280TB	48TB
Internal SAS	40TB	80TB	120TB	280TB	43.2TB
Internal plus External	1.96PB P440 allows 4 x 10TB internal+ 192 x 10TB external using 16 D3600s (requires 2 P441s)	3.92PB P440 allows 8 x 10TB internal+ 384 x 10TB external using 16 D3600s (requires 4 P441s)	4.920PBs 12 x 10TB HDDs internal+480 x 10TB HDDs using 40 D3600s (requires 5 P441s)	4.12PBs 28 x 10TB HDDs internal+384 x 10TB HDDs using 40 D3600s (requires 4 P441s)	2.932PB 24 x 1.8TB HDDs internal+480 x 6TB HDDs using 40 D3600s (requires 5 P441s)
Power Supply	900W AC 240V DC Power Input Module (redundant optional)	750W CS Gold Hot Plug Power Supply (redundant optional)	800 Watts Platinum, Hot-plug redundant	800 Watts Platinum, Hot-Plug redundant	800 Watts Platinum, Hot-Plug redundant
Power Cords	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
	One high voltage	One C13 US power	Two high voltage	Two high voltage	Two high voltage

Hardware Specifications of StoreEasy models

power cord (IEC C13 to C14) standard	cord. Regional or country specific power cord is optional.	power cords (IEC C13 to C14) standard	power cords (IEC C13 to C14) standard	power cords (IEC C13 to C14) standard
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NOTE: All StoreEasy 1X50s (except the StoreEasy 1550) ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the [ProLiant Power Cables](#) web page.

NOTE: The HPE StoreEasy 1550 Storage product is a tower server that ships standard with one 6' C13 US power cord that allows connection to wall outlets in a home or office. If a different regional or country specific power cord is required it is ordered as an option. See StoreEasy 1550 ordering section for more details.

System Fans	7 hot-plug redundant fans, standard	2 hot-plug non redundant, standard	6 hot-plug redundant fans, standard	8 hot-plug redundant fans, standard for 1 processor; 10 hot-plug redundant fans standard, for 2 processors	6 hot-plug redundant fans, standard
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Form Factor	1U rack mount (includes rail kit and cable management arm)	4.5U Tower	2U rack mount (includes rail kit and cable management arm)	2U rack mount (includes rail kit and cable management arm)	2U rack mount (includes rail kit and cable management arm)
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Additional options See the corresponding ProLiant QuickSpecs for additional options.

StoreEasy 1450 (DL160 Gen 9):

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346224>

StoreEasy 1550 (ML110 Gen 9):

<https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04545452>

StoreEasy 1650 (DL380 Gen 9):

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346247>

StoreEasy 1650 Expanded (Apollo Gen 9):

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04616495>

StoreEasy 1850 (DL380 Gen 9):

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346247>

NOTE: Options offered in the HPE ProLiant servers listed above will work in the respective StoreEasy product if supported on Windows Server 2016 or 2012 R2, Standard Edition (depending on model selected).

Because StoreEasy is a storage product not every possible option available in the equivalent ProLiant server is listed in the StoreEasy 1000 QuickSpecs. Options that are shown in this document are the most common ones needed for the primary StoreEasy usage model as a file storage product.

Features and benefits

Optimized: Ease of management

The HPE StoreEasy 1000 Storage systems comes with pre-configured hardware and either Microsoft Windows Storage Server 2016 or 2012R2, Standard Edition operating system for purpose-built file storage.

HPE enhanced Initial Configuration Tasks Wizard: StoreEasy installation and network configuration wizards simplify installation and prevent network configuration errors for faster deployment.

The StoreEasy Dashboard consolidates all key status information such as capacity utilization, performance, and health in a single interface and reduces the need to navigate multiple tools and interfaces for system monitoring. Low capacity warning email alerts now available to minimize disruption.

The StoreEasy Pool Manager is a best practices driven storage provisioning tool that automatically discovers system storage and recommends the most efficient setup for optimum performance, optimum capacity, or a balanced configuration based on the available storage. Best practices driven storage provisioning tool discovers system storage and recommends the most efficient setup for optimum performance, optimum capacity or a balanced configuration based on the available storage.

The StoreEasy Tools menu within Windows Server manager to access the most commonly accessed tools and tasks that an administrator uses for day-to-day management of StoreEasy. The StoreEasy Tools menu provides management of storage pools, snapshots, emails and alerts, enclosure settings, and firmware updates. It also includes access to the Deduplication Evaluation tool, storage viewer and the initial configuration task wizard.

StoreEasy hard drive bundles make it easier for you to buy, deploy and provision additional storage capacity over the life of the product.

Windows Storage Server 2016 includes a set of new and enhanced features, in addition to all of the existing WSS2012R2 features around advanced security and data services. StoreEasy 1000 systems based on WSS 2016 have an improved deduplication engine that supports individual files up to 1TB in size and file systems up to 64TB in size. Additionally, new security and encryption technologies provide stronger protection against man-in-the-middle attacks.

Optimized: Tailored for file storage

The Microsoft Windows Storage Server 2016 or Windows Storage Server 2012 R2 Standard Edition operating system includes a robust range of file serving and storage capabilities. They address heterogeneous environments and enable more efficient storage utilization. They deliver a similar level of performance and reliability as more expensive storage solutions and they offer support for both file (CIFS/SMB and NFS) and block (iSCSI) protocols, allow for a flexible mix of configurations and includes advanced data management tools. WSS2016 or WSS2012 R2 leverages your Windows Server management skill sets and tools including Active Directory, PowerShell and System Center.

Extensive protocol support: SMB (2.0, 2.1, 3.0, 3.02 and 3.1.1), NFS (v2, v3, v4.1), WebDAV, HTTP/HTTPS, FTP/FTPS, iSCSI

NOTE: The SMB 3.1.1 protocol is only supported on Windows Server 2016, Windows Storage Server 2016 and Windows 10 operating systems.

- SMB 3.X.X protocol: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- SMB 3.1.1 protocol: Enhances security between SMB clients and StoreEasy. When both a client and StoreEasy connect over SMB 3.1.1, SMB signing and encryption protects against an attacker tampering with or eavesdropping on any network packets. SMB 3.1.1 with AES-128-GCM, the latest fixed cryptographic algorithm, showed a 2x performance improvement compared with SMB 3.0 using AES-128-CCM in certain scenarios such as copying large files over an encrypted SMB

Features and benefits

connection.

- SMB 3.X.X Multi-channel: Enable aggregation of network bandwidth and network fault tolerance when multiple paths are available between SMB clients and file servers.
- SMB 3.1.1. Multichannel and Multi-NIC Cluster Networks: Allows the use of multiple NICs on the same cluster network subnet and automatically enables SMB Multichannel. This allows customers to maximize throughput of SMB 3.1.1 network traffic.
- NFS v4.1: With Windows Storage Server, Server for NFS supports continuous availability. This makes it possible to reliably store and run VMware ESX on a virtual machine that is running Windows Server by using the NFS protocol to share files. Additional improvements in failover clustering take advantage of better resilience to hardware and software outages that may afflict individual cluster nodes. At the same time, failover clustering isolates VMware ESX hypervisor hosts from intermittent glitches during failovers.
- iSCSI: Some applications require block storage. iSCSI Target Server can provide these applications with continuously available block storage. Since the storage is remotely accessible it can also consolidate block storage for central or branch office locations. By using boot-capable NICs or a software loader, you can deploy hundreds of diskless servers. This is ideal for large deployments of identical operating system images, such as a Hyper-V server farm or High Performance Computing (HPC) clusters.
- File Server Resource Manager (FSRM): File Server Resource Manager is a set of features within the Windows Storage Server OS that allows you to manage and classify data that is stored on file servers. File Server Resource Manager includes the following features:
 - Storage Quotas: Quotas allow you to limit the space that is allowed for a volume or folder, and they can be automatically applied to new folders that are created on a volume. You can also define quota templates that can be applied to new volumes or folders.
 - File screening: File screens help you control the types of files that user can store on a file server. You can limit the extension that can be stored on your shared files. For example, you can create a file screen that does not allow files with an MP3 extension to be stored in personal shared folders on a file server.
 - File Classification Infrastructure: File Classification Infrastructure provides insight into your data by automating classification processes so that you can manage your data more effectively. You can classify files and apply policies based on this classification. Example policies include dynamic access control for restricting access to files, file encryption, and file expiration. Files can be classified automatically by using file classification rules or manually by modifying the properties of a selected file or folder.
 - File Management Tasks: File Management Tasks enables you to apply a conditional policy or action to files based on their classification. The conditions of a file management task include the file location, the classification properties, the date the file was created, the last modified date of the file, or the last time the file was accessed. The actions that a file management task can take include the ability to expire files, encrypt files, or run a custom command.
- Storage reports: Storage reports are used to help you identify trends in disk usage and how your data is classified. You can also monitor a selected group of users for attempts to save unauthorized files.
- Unlimited Client Access Licenses (CALs) included

NOTE: Windows Server 2016 and Windows Storage Server 2016 are built on the same code base. Likewise, Windows Storage Server 2012 R2 and Windows Server 2012 R2 are built on the same code base. Applications certified for Windows Server are expected to have the same application compatibility profile on Windows Storage Server. Windows Storage Server and Windows Server have the same application frameworks, services and plumbing to support running the full breadth of Windows-compatible applications. Applications that rely upon certain roles that are removed from Windows Storage Server 2016 and 2012 R2, such as fax server, Active Directory domain controller or terminal services will not be able to leverage those roles. Independent Software Vendors (ISVs) ultimately decide what versions and editions of Windows are supported by their products and users should review ISV compatibility and support information before purchasing. StoreEasy customers should review the End User License Agreement (EULA) to see the types of applications that are permitted for installation. All

Features and benefits

Windows Storage Server 2016 or 2012 R2 systems can join Active Directory domains, but cannot be a domain controller.

More Information on Windows Storage Server 2016 can be found here:

<https://blogs.technet.microsoft.com/storageserver/2016/10/14/announcing-windows-storage-server-2016/>

More information on Windows Storage Server 2012 R2 can be found here:

<http://technet.microsoft.com/en-us/library/jj643303.aspx>

Efficient: Saves you money and time

Achieve an average of 50 percent space savings with granular data deduplication and compression.

Data deduplication enables Windows Storage Server 2016 or 2012 R2 to store more data in less physical space for greater storage efficiency. Data deduplication uses variable size chunking and compression, which deliver optimization ratios of 2:1 for general file servers and up to 20:1 for virtualization data. Evaluate your deduplication savings with the included deduplication evaluation tool which allows you to determine the expected savings that you would get if deduplication is enabled on a particular volume. The Deduplication evaluation tool supports local drives and mapped or unmapped remote shares.

Data deduplication within Windows Storage Server 2016 has specific improvements for deduplicating large volumes and large files - up to 64 TB and 1TB respectively. In WSS 2012 R2, it was recommended to run deduplication on volumes under 10TB in size. WSS 2016's deduplication engine will run multiple threads in parallel using multiple I/O queues on a single volume and thereby improve the performance for deduping large volumes.

With Work Folders users can store and access work files on personal computers and devices, often referred to as bring-your-own device (BYOD), in addition to corporate PCs. Users gain a convenient location to store work files, and they can access them from anywhere. Organizations maintain control over corporate data by storing the files on centrally managed file servers, and optionally specifying user device policies such as encryption and lock-screen passwords. Work Folders can be deployed with existing deployments of Folder Redirection, Offline Files, and home folders. Work Folders stores user files in a folder on the server called a sync share. You can specify a folder that already contains user data, which enables you to adopt Work Folders without migrating servers and data or immediately phasing out your existing solution. Work Folders is supported on Windows 10, Windows 8.1, Windows 8, Windows 7, Apple iOS and Android devices. New for Windows Storage Server 2016 version of Work Folders, when a Windows 10 client makes any changes to a file those changes are immediately synched to Work Folders and the client notified.

The file sync and share feature enables mobile workers to access their files from anywhere, and provides corporate data controls including data encryption, data wipe, user lock screen password enforcement, file classification, and storage quotas

Use advanced data management to automatically improve use of resources, comply with data retention policies, and enhance protection of sensitive files.

Consolidate multiple workloads and IT services in a single platform with included support for a broad range of file access protocols, Microsoft® Hyper-V and SQL Server application storage, iSCSI block access, and IT infrastructure services such as print, Domain Name System (DNS), and DHCP..

DFS Namespaces: Enables you to group shared folders that are located on different servers into one or more logically structured namespaces. Each namespace appears to users as a single shared folder with a series of subfolders. However, the underlying structure of the namespace can consist of numerous file shares that are located on different servers and in multiple sites.

Features and benefits

Hosted Branch Cache: Using client/server architecture, Windows 7/8 client computers can cache content on the local network via the Hosted Cache running on the StoreEasy 1000 Storage. Other clients who need the same content retrieve it directly from the Hosted Cache.

New VHDX Standard: Deploy larger capacity virtual storage that can grow to 64 terabytes, is more resilient against corruption, and provides more efficient usage of new 4 KB sector hard disks with the new VHDX virtual storage standard.

Live Storage Migration: Maintain maximized service-level availability even while moving virtual machine storage between host servers independent of the actual virtual machine.

Secure: Protect your data always

StoreEasy 1000 Storage protects data while at rest with file system encryption and BitLocker Drive Encryption, and while it is being transferred with SMB encryption and signing.

Use File Classification Infrastructure to dynamically identify files based on sensitivity and implement sophisticated access controls using Active Directory Rights Management Services.

Volume Shadow Copy Service: Creates point-in-time copies (snapshots) of files and folders at predetermined time intervals that can then be accessed from client computers.

VSS for Remote SMB File Shares: Leverage proven Volume Shadow Copy Service (VSS) to offload snapshot and backup operations to remote storage from VSS hardware providers within Hyper-V virtual machines

Distributed File System Replication (DFS-R): Enables you to efficiently replicate folders (including those referred to by a DFS namespace path) across multiple servers and sites. DFS Replication uses a compression algorithm known as remote differential compression (RDC). RDC detects changes to the data in a file, and it enables DFS Replication to replicate only the changed file blocks instead of the entire file.

Install and run endpoint protection, such as an antivirus, on the system itself—reducing the cost and complexity of connecting to an external endpoint protection server. Prevent against data loss with Volume Shadow Copy Service online snapshots and support for agent-based backup software.

Opt for simplified and cost efficient compliance archiving with iTernity Compliant Archive Solution (iCAS), now validated to meet the United States Securities and Exchange Commission (SEC) 17a-4(f) requirements.

Highly Available: Prevent business and user disruption

Increase uptime with such standard features as near continuous health monitoring with HPE Active Health System, mirrored OS drives, redundant fans (not available on all models) and power, and advanced memory protection.

Confidently deploy large file systems leveraging file system online self-healing, online verification, and precise and rapid repair that massively reduces downtime from file corruption.

Take advantage of Double-Take Availability software for critical data protection with real-time byte-level replication. In the event of a failure, recover the data—with a minimum of loss—from the replicated data repository. Software installation files now included with free 14-day evaluation license.

Get support from file storage experts with 3-Year Parts, 3-Year Labor, and 3-Year Onsite support with next business day response (StoreEasy 1650, 1650 Expanded, 1850) or 3-Year Parts, 1-Year Labor, and 1-Year Onsite support with next business day response (StoreEasy 1450, 1550). All StoreEasy products also include one year of 9x5 software telephone support for the Windows Storage Server operating system.

Optional Software

HPE Data Protector software

HPE Data Protector Software is enterprise data protection and disaster recovery, ensuring recovery from any disruption. Data Protector integrates a variety of techniques to eliminate backup and recovery windows. The capabilities to eliminate planned downtime range from online backup and backup of open files to zero-downtime, zero-impact backup. The software provides industry-leading instant recovery as well as several disaster recovery alternatives to eliminate unplanned downtime, allowing recovery of entire data centers in minutes.

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution. For more information visit the [**HPE Data Protector**](#) product page.

Double-Take Availability

Protect your critical HPE StoreEasy data with Double-Take Availability's real-time byte-level replication. In the event of a failure, recover the data—with a minimum of loss—from the replicated data repository. For more information visit the [**HPE Complete Double-Take Availability**](#) product page.

iCAS software by iTernity

Get open, flexible, and expandable long-term archiving with iTernity Compliant Archive Solution (iCAS). Together, HPE StoreEasy and iCAS are your key to legally compliant data archiving. For more information visit the [**HPE Complete iTernity iCAS**](#) product page.

StoreEasy 1450 configuration information

Specifications for StoreEasy 1450 WSS2016 CTO & BTO Storage models

Processor	One Intel® Xeon® E5-2603v4 Processor (1.7GHz/6-core/15MB/85W)
Memory	8GB (1 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Internal SAS Controller
Internal Drive Support	Four 3.5" (Large Form Factor) hot-plug drive bays in front
Network Port(s)	HPE 361i Adapter 1GbEthernet 2-port
Expansion Slots	2 x PCIe (one slot occupied by Smart Array P440)
Power	1 x 900W Gold Non-Redundant
Form Factor	1U Rack
Operating Systems	Microsoft® Windows Storage Server 2016, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: https://www.hpe.com/us/en/servers/integrated-lights-out-ilo.html

Common Specifications for all StoreEasy 1450 Storage models

Processor	One Intel® Xeon® E5-2603v3 Processor (1.6GHz/6-core/20MB/85W)
Memory	8GB (1 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Internal SAS Controller
Internal Drive Support	Four 3.5" (Large Form Factor) hot-plug drive bays in front
Network Port(s)	HPE 361i Adapter 1GbEthernet 2-port
Expansion Slots	2 x PCIe (one slot occupied by Smart Array P440)
Power	1 x 900W Gold Non-Redundant
Form Factor	1U Rack
Operating Systems	Microsoft® Windows Storage Server 2012 R2, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: https://www.hpe.com/us/en/servers/integrated-lights-out-ilo.html

Select a Pre-configured model

StoreEasy 1450 Pre-configured models come with factory-installed drives and the Microsoft Windows Storage Server 2016 or 2012 R2 Standard Edition operating system pre-installed

NOTE: All options in steps 2 to 11 (except addition of internal drives in step 2) of configure-to-order model are available for Pre-configured models. Ordered options ship separately and are not factory integrated.

NOTE: Model names are based on raw storage capacity, not available user storage.

HP StoreEasy 1450 4TB SATA Storage (4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R12A
HP StoreEasy 1450 8TB SATA Storage	K2R13A

StoreEasy 1450 configuration information

(4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HPE StoreEasy 1450 8TB SATA WSS2016 Storage Q1J33A

(4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HP StoreEasy 1450 16TB SATA Storage K2R14A

(4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

HPE StoreEasy 1450 16TB SATA WSS2016 Storage Q1J34A

(4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)

StoreEasy 1450 WSS2016 Storage Q0F47A

NOTE: The above model does not include pre-configured HDDs. At least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of WSS2016 OS in the factory. This systems cannot be shipped with less than 4 HDDs. The four drives will be factory configured as RAID 10 with the OS pre-installed. Other drive types and capacities can be used in external enclosures.

StoreEasy 1450 Storage model K2R11A

NOTE: The above model does not include pre-configured HDDs. At least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of WSS2012 R2 OS in the factory. This systems cannot be shipped with less than 4 HDDs. The four drives will be factory configured as RAID 6 with the OS pre-installed. Other drive types and capacities can be used in external enclosures.

Step2 : Choose required internal drive bundles and optional external drives

Drive Options	Minimum Number of Drives Required	4
	Maximum Number of Drives Allowed	4

StoreEasy 1450 LFF Drive Bundles

HPE StoreEasy 40TB Smart-carrier 4-pack Bundles Q0F60A

NOTE: Bundle contains 4 x HPE 10TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #857644-B21)

HP StoreEasy 32TB Smart-carrier 4-pack Bundle N9Y12A

NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #865190-B21)

HP StoreEasy 24TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle K2R22A

NOTE: Bundle contains 4 x HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846514-B21)

HP StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

NOTE: Bundle contains 4 x HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 818367-B21) E7W91A

HP StoreEasy 12TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

NOTE: Bundle contains 4 x HPE 3TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846528-B21) E7W90A

HP StoreEasy 8TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

NOTE: Bundle contains 4 x HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 818365-B21) E7W89A

HP StoreEasy 4TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

NOTE: Bundle contains 4 x HPE 1TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846524-B21) E7W88A

HPE Drive options

HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD 861754-B21

HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD 861756-B21

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD 765466-B21

StoreEasy 1450 configuration information

HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765464-B21
HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty He 512e HDD	857648-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty He 512e HDD	861594-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861750-B21

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

HPE 1.6TB SATA 6G WI LFF SCC DS SSD	872365-B21
HPE 800GB SATA 6G WI LFF SCC DS SSD	872361-B21
HPE 400GB SATA 6G WI LFF SCC DS SSD	872357-B21

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

HPE 1.6TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869388-B21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869380-B21

6G SATA Hot Plug LFF (3.5-inch) Mixed Use Solid State Drives

HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	832417-B21

D3000 or D6000 Disk Enclosures

The StoreEasy 1450 product support all of the D3000 or D6000 Disk Enclosure product families. A Smart Array with external ports must be added to the StoreEasy 1450 to add external Disk Enclosures. (See the D3000 or D6000 Disk Enclosure QuickSpecs for more information)

Step 3: Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
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HPE Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
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Step 4 : Choose optional second Network Adapter

NOTE: HPE 361i 1GbEthernet 2-port Network Adapter is included in all of the StoreEasy 1450 models. Recommended option for additional network connectivity is HPE Ethernet 1Gb 4-port 366T Adapter – SKU# 811546-B21

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/O AT, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 366T Adapter	811546-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

10 Gigabit Ethernet adapters

NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter

Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/O AT features are also available with this NIC)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21

StoreEasy 1450 configuration information

Mellanox chipset-based with RDMA, RSS, VMQ, VMWVQ, MSI-X, EEE features¹

HP Ethernet 10Gb 2-port 546SFP+ Adapter 779793-B21

25 Gigabit Ethernet adapters

HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter 817762-B21

1. Features description

RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.

EEE (Green Ethernet): Reduces power consumption during periods of low activity.

I/O AT: I/O Acceleration Technology (I/OAT), developed by Intel, is a set of features particularly designed to reduce the receiver-side packet processing overhead.

MSI-X: For PCI 3.0, a device can support up to 2,048 different messages. Devices that support PCI 3.0 MSI-X feature a dynamically programmable hardware table that contains entries for each of the interrupt sources in the device. Each entry in this table can be programmed with one of the messages that are allocated to a device, and can be independently masked.

VMDq: Virtual Machine Device Queues (VMDq) is a technology that allows the network adapter to create multiple separate queues, distributing the processing load across multiple cores.

VMWVQ: Enables VMs in your VMWare environment to take advantage of 10GbE, without this capability the max you can get is about 3 - 4 Gb.

VMQ: VMQ, in a Hyper-V implementation, uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine. This improves network performance to the VMs.

RDMA: Remote Direct Memory Access (RDMA) is a technology that allows computers in a network to exchange data in main memory without involving the processor, cache, or operating system of either computer. Like locally-based Direct Memory Access (DMA), RDMA improves throughput and performance because it frees up resources. RDMA also facilitates a faster data transfer rate.

iSCSI: iSCSI acceleration reduces CPU utilization by up to

Step 5: Choose optional Fibre Channel HBAs and CNAs

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows please see:

<https://www.hpe.com/us/en/product-catalog/storage/storage-adapters.hits-12.html>.

Emulex Fibre Channel HBAs

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter C8R38A

HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter C8R39A

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AJ762B

HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763B

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AK344A

HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A

HPE SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter P9D93A

HPE SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter P9D94A

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter QW971A

HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter QW972A

Converged Network Adapter

HP StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

HP StoreFabric CN1200E 10Gb Converged Network Adapter E7Y06A

HPE StoreFabric CN1200E 10GBASE-T Dual Port Converged Network Adapter N3U51A

HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter N3U52A

Step 6: Choose optional second Processor

HP DL160 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit 763235-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1450 models

StoreEasy 1450 configuration information

HP DL160 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/20MB/85W) Processor Kit 801289-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1450 WSS2016 CTO model

I/O Expansion Option

HP DL160 Gen9 Low Profile PCIe CPU2 Riser Kit 725586-B21

NOTE: CPU 2 is required if this riser is to be installed, enables one PCIe3 slot.

Step 7: Choose optional extra memory kit

NOTE: Hewlett Packard Enterprise recommends that you add the same type memory to the product that is shipped standard with the product

Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit 726718-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1450 models

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit 805347-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1450 WSS2016 CTO model

Step 8 : Choose redundant power supply

Add a second power supply for redundancy.

HPE 900W AC 240VDC Power Input Module FIO Kit 828734-B21

NOTE: This power supply must be ordered when adding a second power supply to the StoreEasy 1450 Base model only (K2R11A)

HPE 900W AC 240VDC Power Input Module 775595-B21

NOTE: This power supply must be ordered when adding a second power supply to the StoreEasy 1450 Pre-configured models only (K2R12A, K2R13A, K2R14A)

Step 9 : Choose optional Optical Drives

HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive 726536-B21

HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive 726537-B21

Step 10 : Choose optional Security option

HPE Trusted Platform Module Option 488069-B21

HP Trusted Platform Module 2.0 Kit 745823-B21

Step 11 : Choose optional System Recovery option

HPE StoreEasy XX50 Rcvry Software Media Kit P4A92A

HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit Q0F58A

The HPE StoreEasy XX50 Recovery Software Media Kit contains a System Recovery DVD that is used to re-install the factory operating system image. Booting the system from the System Recovery DVD will restore the operating system image and logical drive to the factory default state. This enables recovery of the system if all other means to boot the system fail. Refer to the StoreEasy 1000 Administrator Guide for more information on performing a System Recovery.

NOTE: If desired the StoreEasy 1450 Recovery Software can be downloaded from HPE's Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) available here:

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002>

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001>

StoreEasy 1450 configuration information

NOTE: For more information on how to perform a system recovery on a StoreEasy 1450 refer to the StoreEasy 1000 Administrator's Guide. The guide can be downloaded from <http://hpe.com/support> . Go to the HPE Support Center and search for the StoreEasy 1450 product model in the drivers and download section.

NOTE: All data on the original operating system logical drive is erased during the System Recovery process. Back up any data on the operating system drives before performing the System Recovery if possible. While the System Recovery process makes every attempt to preserve the existing data volumes, you should have a backup of your data before recovering the system.

StoreEasy 1550 configuration information

Specifications for HPE StoreEasy 1550 WSS2016 CTO Storage model

Processor	One Intel® Xeon® E5-2603v4 Processor (1.7GHz/6-core/20MB/85W)
Memory	8GB (1 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller
Internal Drive Support	Four 3.5" (Large Form Factor) hot-plug drive bays in front, up to four additional LFF drive bays available as an option
Network Port(s)	Broadcom 5717 1Gb 2-port
Expansion Slots	5 x PCIe (one slot occupied by Smart Array P440)
Power	1 x 750W Gold Non-Redundant
Form Factor	4.5U Tower
Operating Systems	Microsoft® Windows Storage Server 2016, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: www.hpe.com/servers/iloadvanced

Common Specifications for all HPE StoreEasy 1550 Storage models

Processor	One Intel® Xeon® E5-2603v3 Processor (1.6GHz/6-core/15MB/85W)
Memory	8GB (1 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller
Internal Drive Support	Four 3.5" (Large Form Factor) hot-plug drive bays in front, up to four additional LFF drive bays available as an option
Network Port(s)	Broadcom 5717 1Gb 2-port
Expansion Slots	5 x PCIe (one slot occupied by Smart Array P440)
Power	1 x 750W Gold Non-Redundant
Form Factor	4.5U Tower
Operating Systems	Microsoft® Windows Storage Server 2012 R2, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: www.hpe.com/servers/iloadvanced

Choose a Pre-configured model

StoreEasy 1550 Pre-configured models come with factory-installed drives and the Microsoft Windows Storage Server 2012 R2 Standard Edition operating system pre-installed

NOTE: All options in steps 2 to 10 of configure-to-order model are available for pre-configured models. Ordered options ship separately and are not factory integrated

NOTE: Model names are based on raw storage capacity, not available user storage.

HPE StoreEasy 1550 4TB SATA Storage (4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R63A
HPE StoreEasy 1550 8TB SATA Storage (4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R64A
HPE StoreEasy 1550 16TB SATA Storage (4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed)	K2R65A

StoreEasy 1550 configuration information

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1550 base models below have no internal drives pre-installed. These models require selection of drives for factory Integration

NOTE: Options (other than drives selected as part of the configure-to-order process) ship separately and are not factory integrated.

StoreEasy 1550 WSS2016 Storage

Q0F48A

NOTE: This model does not include pre-configured HDDs. At least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of the WSS2016 OS in the factory. This system cannot be shipped with less than 4 HDDs. The four drives will be factory configured as RAID 10 with the OS pre-installed. Other drive types and capacities can be used in external enclosures.

StoreEasy 1550 Storage

K2R62A

NOTE: This model does not include pre-configured HDDs. At least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of the WSS2012 R2 OS in the factory. This system cannot be shipped with less than 4 HDDs. The four drives will be factory configured as RAID 6 with the OS pre-installed. Other drive types and capacities can be used in external enclosures.

Step2 : Choose required internal storage and optional external storage drives

Drive Options	Minimum Number of Drives Required	4
	Maximum Number of Drives Allowed	8 (requires optional LFF HDD card cage)

StoreEasy 1550 LFF Drive Bundles and HDD card cage (The following drive pack bundles and Hot Plug Drive cage kit options are required to be ordered together)

HPE StoreEasy 40TB Smart-carrier 4-pack Bundles

Q0F60A

NOTE: Bundle contains 4 x HPE 10TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #857644-B21)

HPE StoreEasy 32TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

K2R22A

NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 865190-B21)

HPE StoreEasy 24TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

K2R22A

NOTE: Bundle contains 4 x HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846514-B21)

HPE StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

E7W91A

NOTE: Bundle contains 4 x HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 818367-B21)

HPE StoreEasy 12TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

E7W90A

NOTE: Bundle contains 4 x HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846528-B21)

HPE StoreEasy 8TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

E7W89A

NOTE: Bundle contains 4 x HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 818365-B21)

HPE StoreEasy 4TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

E7W88A

NOTE: Bundle contains 4 x HPE 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846524-B21)

StoreEasy 1550 configuration information

Second 4LFF Hot Plug Drive cage kit

784584-B21

HPE Drive options

SAS Hot Plug LFF (3.5-inch) Midline 512e Drives

HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861754-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861756-B21
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765464-B21

SATA Hot Plug LFF (3.5-inch) Midline 512e (MDL) Drives

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty He 512e HDD	857648-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty He 512e HDD	861594-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861750-B21

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

HPE 1.6TB SATA 6G WI LFF SCC DS SSD	872365-B21
HPE 800GB SATA 6G WI LFF SCC DS SSD	872361-B21
HPE 400GB SATA 6G WI LFF SCC DS SSD	872357-B21

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

HPE 1.6TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869388-B21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869380-B21

6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives

HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	832417-B21

D3000 or D6000 Disk Enclosures

The StoreEasy 1550 support all of D3000 or D6000 Disk Enclosure product families. A Smart Array with external ports must be added to the StoreEasy 1550 to add external Disk Enclosures. (See the D3000 or D6000 Disk Enclosure QuickSpecs for more information).

Step 3: Choose specific region/country power cords

NOTE: The StoreEasy 1550 comes standard with a 750W Power Supply with one power cord (AF556A).

HP PWR CRD 1.83m 10A C13-UL DOM	AF556A
HP PWR CRD 1.83m 10A C13-CHINA	AF557A
HP PWR CRD 2.5m 10A C13-ARGENTINA	AF558A
HP Pwr Crd 1.83m 10A C13 Th-Ph Kit	AF559A
HP PWR CRD 1.83m 10A C13-KOREA	AF560A
HP PWR CRD 1.83m 10A C13-TAIWAN	AF561A
HP PWR CRD 2.0m 10A C13-INDIA	AF562A
HP 1.83m 10A C13 IL Power Cord	AF564A
HP 1.83m 10A C13 CH Power Cord	AF565A
HP 1.83m 10A C13 DK Power Cord	AF566A
HP 2.5m C13 So Africa Power Cord	AF567A
HP 1.83m 10A C13 EU Power Cord	AF568A
HP 2.5m C13 AU/NZ Power Cord	AF569A
HP 1.83m 10A C13 UK Power Cord	AF570A
HP 1.83m C13 IT/CL Power Cord	AF571A
HP 2m C13 JPN Power Cord	AF572A
HP 1.83m 10A C13 NBR14136 Brazil Pwr Crd	AF591A

StoreEasy 1550 configuration information

Step 4: Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller 726903-B21

HPE Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter 726911-B21

Step 5 : Choose optional second Network Adapter

NOTE: Broadcom 5717 1Gb 2-port Network Adapter is included in all of the StoreEasy 1550 models. Recommended option for additional network connectivity is HPE Ethernet 1Gb 2-port 361T Adapter – SKU# 652497-B21

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/O AT, VMQ, VMWQNQ, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 2-port 361T Adapter 652497-B21

HP Ethernet 1Gb 4-port 366T Adapter 811546-B21

Broadcom chipset-based with RSS,VMQ, VMWQNQ, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 331T Adapter 647594-B21

HP Ethernet 1Gb 2-port 332T Adapter 615732-B21

10 Gigabit Ethernet adapters

NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter

Intel chipset-based with RSS, VMQ, VMWQNQ, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560SFP+ Adapter 665249-B21

HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/O AT features are also available with this NIC) 716591-B21

HPE Ethernet 10Gb 2-port 562SFP+ Adapter 727055-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWQNQ,MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 546SFP+ Adapter 779793-B21

1. Features description

RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.

EEE (Green Ethernet): Reduces power consumption during periods of low activity.

I/O AT: I/O Acceleration Technology (I/OAT), developed by Intel, is a set of features particularly designed to reduce the receiver-side packet processing overhead.

MSI-X: For PCI 3.0, a device can support up to 2,048 different messages. Devices that support PCI 3.0 MSI-X feature a dynamically programmable hardware table that contains entries for each of the interrupt sources in the device. Each entry in this table can be programmed with one of the messages that are allocated to a device, and can be independently masked.

VMDq : Virtual Machine Device Queues (VMDq) is a technology that allows the network adapter to create multiple separate queues, distributing the processing load across multiple cores.

VMWQNQ: Enables VMs in your VMWare environment to take advantage of 10GbE, without this capability the max you can get is about 3 - 4 Gb.

VMQ : VMQ, in a Hyper-V implementation, uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine. This improves network performance to the VMs.

RDMA: Remote Direct Memory Access (RDMA) is a technology that allows computers in a network to exchange data in main memory without involving the processor, cache, or operating system of either computer. Like locally-based Direct Memory Access (DMA), RDMA improves throughput and performance because it frees up resources. RDMA also facilitates a faster data transfer rate.

iSCSIa : iSCSI acceleration reduces CPU utilization by up to 8x.

StoreEasy 1550 configuration information

Step 6: Choose optional extra memory kit

NOTE: Add the same type memory to the product that is shipped standard with the product

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit	805347-B21
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NOTE: The above memory kit needs to be ordered only with StoreEasy 1550 WSS2016 CTO model

Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
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NOTE: The above memory kit needs to be ordered only with StoreEasy 1550 models

Step 7 : Choose redundant power supply

Add a second power supply for redundancy

NOTE: Two power supplies require two power cords. Order power cords from Step 3 above.

HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
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Step 8 : Choose optional Optical Drives

HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21

Step 9: Choose optional Security option

HP Trusted Platform Module Option	488069-B21
HP Trusted Platform Module 2.0 Kit	745823-B21

Step 10: Choose optional System Recovery option

HPE StoreEasy XX50 Rcvry Software Media Kit	P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit	Q0F58A

The HPE StoreEasy XX50 Recovery Software Media Kit contains a System Recovery DVD that is used to re-install the factory operating system image. Booting the system from the System Recovery DVD will restore the operating system image and logical drive to the factory default state. This enables recovery of the system if all other means to boot the system fail. Refer to the StoreEasy 1000 Administrator Guide for more information on performing a System Recovery.

NOTE: If desired the StoreEasy 1550 Recovery Software can be downloaded from HPE's Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) are available here:

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002>

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001>

NOTE: For more information on how to perform a system recovery on a StoreEasy 1550 refer to the StoreEasy 1000 Administrator's Guide. The guide can be downloaded from <http://www.hpe.com/support> Select HPE Support Center and search for the StoreEasy product model in the drivers and download section.

NOTE: All data on the original operating system logical drive is erased during the System Recovery process. Back up any data on the operating system drives before performing the System Recovery if possible. While the System Recovery process makes every attempt to preserve the existing data volumes, you should have a backup of your data before recovering the system.

StoreEasy 1650 configuration information

Specifications for HPE StoreEasy 1650 WSS2016 CTO & BTO Storage models

Processor	One Intel® Xeon® E5-2609v4 Processor (1.7GHz/8-core/20MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P840ar/2GB FBWC 12Gb 2-ports Int SAS Controller (CTO) HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller (BTO)
Internal Drive Support	Twelve 3.5" (Large Form Factor) hot-plug drive bays in front, Two 2.5" (Small Form Factor) hot-plug drive bays in rear occupied by OS drives
Network Port(s)	1Gb Ethernet 4-port 331i Adapter
Expansion Slots	3x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating Systems	Microsoft® Windows Storage Server 2016, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Common Specifications for all HPE StoreEasy 1650 Storage models

Processor	One Intel® Xeon® E5-2609v3 Processor (1.9GHz/6-core/15MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory) within all of the StoreEasy 1650 models
Storage Controller	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller
Internal Drive Support	Twelve 3.5" (Large Form Factor) hot-plug drive bays in front, Two 2.5" (Small Form Factor) hot-plug drive bays in rear occupied by OS drives
Network Port(s)	1Gb Ethernet 4-port 331i Adapter
Expansion Slots	3x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating Systems	Microsoft® Windows Storage Server 2012 R2, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Choose a Pre-configured model

StoreEasy 1650 Pre-configured models come with factory-installed data drives and the Microsoft Windows Storage Server 2012 R2 Standard Edition operating system pre-installed on 2 x SFF Solid State Disk (SSD) drives in the rear SFF drive bays.

NOTE: All options in steps 2 to 9 of configure-to-order model are available for pre-configured models. Ordered options ship separately and are not factory integrated.

NOTE: Model names are based on raw storage capacity, not available user storage.

HP StoreEasy 1650 16TB SAS Storage

(8 x 2TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed in front slots, 4 open LFF slots)

K2R16A

HP StoreEasy 1650 32TB SAS Storage

(8 x 4TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed in front slots, 4 open LFF slots)

K2R17A

HPE StoreEasy 1650 32TB SAS WSS2016 Storage

Q1J35A

StoreEasy 1650 configuration information

(8 x 4TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed in front slots, 4 open LFF slots)

HP StoreEasy 1650 48TB SAS Storage

K2R18A

(8 x 6TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed in front slots, 4 open LFF slots)

NOTE: When adding drives to the any of the 4 open LFF slots for the models above, Hewlett Packard Enterprise recommends as a best practice to use all internal data drives of the same type and capacity.

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1650 models come with 2 x SFF Solid State Disk (SSD) drives factory configured as RAID 1 with OS pre-installed (the OS drives are in the two rear bays). The StoreEasy 1650 models can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration.

StoreEasy 1650 WSS2016 Storage

Q0F49A

StoreEasy 1650 Storage

K2R15A

NOTE: These models do not include data drives. It does include two Solid State Disk (SSD) drives factory configured as RAID 1 with the WSS2016 or WSS2012 R2 OS pre-installed depending on model selected (the OS drives are in two rear SFF bays). Data drives can be added for factory integration.

NOTE: HPE recommends that the internal data drives for these models be the same type and capacity.

Specifications

Same as the StoreEasy 1650 pre-configured models listed above

Step2 : Choose required internal storage and optional external storage drives

Drive Options	Minimum Number of internal drives required	0
	Maximum Number of internal drives allowed	12

StoreEasy 1650 LFF Drive Bundles

HPE StoreEasy 40TB Smart-carrier 4-pack Bundles

Q0F60A

NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #857644-B21)

HP StoreEasy 32TB Smart-carrier 4-pack Bundle

N9Y12A

NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #861590-B21)

HP StoreEasy 24TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

K2R22A

NOTE: Bundle contains 4 x HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846514-B21)

HP StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle

E7W91A

StoreEasy 1650 configuration information

NOTE: Bundle contains 4 x HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 818367-B21)

HP StoreEasy 12TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle E7W90A

NOTE: Bundle contains 4 x HPE 3TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846528-B21)

HP StoreEasy 8TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle E7W89A

NOTE: Bundle contains 4 x HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU# 818365-B21)

HP StoreEasy 4TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle E7W88A

NOTE: Bundle contains 4 x HPE 1TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 846524-B21)

HPE Drive options (The following options are applicable for both the external and internal storage drives)

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	857644-B21
HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819201-B21
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	861590-B21
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	861754-B21
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	846514-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	872487-B21
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	872485-B21

SAS Hot Plug LFF (3.5-inch) 512e Performance Drives

HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	861754-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	861756-B21

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HPE 8TB 6G SATA 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819203-B21
HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	846510-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HPE 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	861693-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	872489-B21
HPE 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	861691-B21

SATA Hot Plug LFF (3.5-inch) 512e Performance Drives

HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	861750-B21
HPE 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives	861752-B21

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21

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

HP 1.2TB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804680-B21
HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804674-B21
HP 400GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804668-B21
HP 200GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804642-B21

6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives

HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	832417-B21

StoreEasy 1650 configuration information

D3000 or D6000 Disk Enclosures

The StoreEasy 1650 models support all of D3000 or D6000 Disk Enclosure product families. A Smart Array controller with external ports must be added to the StoreEasy 1650 to add external Disk Enclosures. (See the D3000 or D6000 Disk Enclosure QuickSpecs for more information).

Step 3 : Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller	726903-B21

HPE Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
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Step 4 : Choose optional second Network Adapter

NOTE: HPE 331i Adapter 1GbEthernet 4-port is included in all of the StoreEasy 1650 models. Recommended option for additional network connectivity is HPE Ethernet 10Gb 2-port 560SFP+ Adapter – SKU#665249-B21

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/O AT, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 366T Adapter	811546-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

10/25 Gigabit Ethernet adapters

NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter

Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/O AT features are also available with this NIC)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21

Emulex chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HP Ethernet 10Gb 2-port 557SFP+ Adapter	788995-B21
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Mellanox chipset-based NICs with RDMA, RSS, VMQ, VMWNP,MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HPE Ethernet 10/25Gb 2-port 640QSFP28 Adapter	817753-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HPE Ethernet 4X25Gb 1-port 620QSFP28 Adapter	817762-B21
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FlexibleLOM Adapters

NOTE: FlexibleLOM Adapters provide flexibility in meeting networking needs now and adapt to any future requirements without using a standard PCIe slot. These options are field upgradeable, integrate seamlessly with the StoreEasy system architecture and form factor. Only one FlexibleLOM can be added to the StoreEasy 1650.

StoreEasy 1650 configuration information

Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter (RDMA and I/O AT features are also available with this NIC)	700699-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 4-port 536FLR-T Adapter	764302-B21

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
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Emulex chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	727060-B21
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	794525-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

1. Features description

RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.

EEE (Green Ethernet): Reduces power consumption during periods of low activity.

I/O AT: I/O Acceleration Technology (I/OAT), developed by Intel, is a set of features particularly designed to reduce the receiver-side packet processing overhead.

MSI-X: For PCI 3.0, a device can support up to 2,048 different messages. Devices that support PCI 3.0 MSI-X feature a dynamically programmable hardware table that contains entries for each of the interrupt sources in the device. Each entry in this table can be programmed with one of the messages that are allocated to a device, and can be independently masked.

VMDq: Virtual Machine Device Queues (VMDq) is a technology that allows the network adapter to create multiple separate queues, distributing the processing load across multiple cores.

VMWNP: Enables VMs in your VMWare environment to take advantage of 10GbE, without this capability the max you can get is about 3 - 4 Gb.

VMQ: VMQ, in a Hyper-V implementation, uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine. This improves network performance to the VMs.

RDMA: Remote Direct Memory Access (RDMA) is a technology that allows computers in a network to exchange data in main memory without involving the processor, cache, or operating system of either computer. Like locally-based Direct Memory Access (DMA), RDMA improves throughput and performance because it frees up resources. RDMA also facilitates a faster data transfer rate.

iSCSIa: iSCSI acceleration reduces CPU utilization by up to 8x.

InfiniBand Adapters

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information :

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

HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21

StoreEasy 1650 configuration information

Step 5: Choose optional Fibre Channel HBAs and CNAs

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows please see:

<https://www.hpe.com/us/en/product-catalog/storage/storage-adapters.hits-12.html>

Emulex Fibre Channel HBAs

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
HPE StoreFabric SN1100E 4-port 16Gb Fibre Channel Host Bus Adapter	P9D99A
HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP StoreFabric 84E 4-port 8Gb Fibre Channel Host Bus Adapter	E7Y63A
HPE StoreFabric SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter	Q0L13A
HPE StoreFabric SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter	Q0L14A
HPE StoreFabric SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter	Q0L11A
HPE StoreFabric SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter	Q0L12A

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HPE StoreFabric 84Q 4-port 8Gb Fibre Channel Host Bus Adapter	P9D91A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter	P9M75A
HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter	P9M76A

Converged Network Adapter

HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter	N3U52A
HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A
HPE StoreFabric CN1200E 10GBASE-T Dual Port Converged Network Adapter	N3U51A

Step 6: Choose optional second Processor

HP DL380 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit	817925-B21
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NOTE: The above processor needs to be ordered only with StoreEasy 1650 WSS2016 CTO model

HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	719052-B21
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NOTE: The above processor needs to be ordered only with StoreEasy 1650 models

I/O Expansion Option

HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit	719073-B21
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NOTE: This is for slot 2 and supports double wide GPGPUs. Slot2: 2x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL.

Step 7: Choose optional extra memory kit

NOTE: Add the same type memory to the product that is shipped standard with the product

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1650 WSS2016 CTO model

Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
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StoreEasy 1650 configuration information

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit

726719-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1650 models

Step 8: Choose optional Security option

HPE Trusted Platform Module 2.0 Kit

745823-B21

HP Trusted Platform Module Option

488069-B21

Step 9: Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit

P4A92A

HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit

Q0F58A

The HPE StoreEasy XX50 Recovery Software Media Kit contains a System Recovery DVD that is used to re-install the factory operating system image. Booting the system from the System Recovery DVD will restore the operating system image and logical drive to the factory default state. This enables recovery of the system if all other means to boot the system fail. Refer to the StoreEasy 1000 Administrator Guide for more information on performing a System Recovery.

NOTE: If desired the StoreEasy 1650 Recovery Software can be downloaded from HPE's Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) are available here:

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002>

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001>

NOTE: For more information on how to perform a system recovery on a StoreEasy 1650 refer to the StoreEasy 1000 Administrator's Guide. The guide can be downloaded from <http://www.hpe.com/support>. Select HPE Support Center and search for the StoreEasy product model in the drivers and download section.

NOTE: All data on the original operating system logical drive is erased during the System Recovery process. Back up any data on the operating system drives before performing the System Recovery if possible. While the System Recovery process makes every attempt to preserve the existing data volumes, you should have a backup of your data before recovering the system.

StoreEasy 1650 Expanded configuration information

Specifications for all HPE StoreEasy 1650 Expanded WSS2016 CTO Storage model

Processor	One Intel® Xeon® E5-2609v4 Processor (1.7GHz/8-core/20MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Flexible Smart Array P840ar/2G FIO Controller
Internal Drive Support	Twenty eight 3.5" (Large Form Factor) hot-plug drive bays (24 in front and 4 in rear), 2 x Solid State Disks on M.2 Enablement Kit in rear PCIe slot used for OS drives
Network Port(s)	1Gb Ethernet 2-port 361i Adapter
Expansion Slots	4x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating System	Microsoft® Windows Storage Server 2016, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Common Specifications for all HPE StoreEasy 1650 Expanded Storage models

Processor	One Intel® Xeon® E5-2609v3 Processor (1.9GHz/6-core/15MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Flexible Smart Array P840ar/2G FIO Controller
Internal Drive Support	Twenty eight 3.5" (Large Form Factor) hot-plug drive bays (24 in front and 4 in rear), 2 x Solid State Disks on M.2 Enablement Kit in rear PCIe slot used for OS drives
Network Port(s)	1Gb Ethernet 2-port 361i Adapter
Expansion Slots	4x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating System	Microsoft® Windows Storage Server 2012 R2, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Choose a Pre-configured model

StoreEasy 1650 Expanded Pre-configured models come with factory-installed drives and the Microsoft Windows Storage Server 2012 R2 Standard Edition operating system pre-installed

NOTE: All options in steps 2 to 9 of configure-to-order model are available for pre-configured models. Ordered options ship separately and are not factory integrated.

NOTE: Model names are based on raw storage capacity, not available user storage.

HP StoreEasy 1650 Expanded 32TB SAS Storage (8 x 4TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots)	N9Y09A
HP StoreEasy 1650 Expanded 48TB SAS Storage (8 x 6TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots)	N9Y10A
HP StoreEasy 1650 Expanded 64TB SAS Storage (8 x 8TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots)	N9Y11A

NOTE: When adding drives to the any of the 4 open LFF slots for the models above, Hewlett Packard Enterprise recommends as a

StoreEasy 1650 Expanded configuration information

best practice to use all internal data drives of the same type and capacity.

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1650 Expanded models come with two Solid State Disks on a M.2 Enablement Kit in PCIe slot factory configured as RAID 1 with the WSS2016 or WSS2012 R2 OS pre-installed (depending on model selected). The StoreEasy 1650 Expanded can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration.

NOTE: You should use internal data drives for this models be the same type and capacity. The data drives don't have to be the same as the OS drives.

StoreEasy 1650 Expanded WSS2016 Storage Q0F50A

NOTE: This model does not include pre-configured data drives. Data drives can be added for factory integration

StoreEasy 1650 Expanded Storage N9Y08A

NOTE: This model does not include pre-configured data drives. Data drives can be added for factory integration

Specifications Same as the StoreEasy 1650 Expanded pre-configured models listed above

Step2 : Choose required internal storage and optional external storage drives

Drive Options	Minimum Number of Drives Required	0
	Maximum Number of Drives Allowed	28

StoreEasy 1650 Expanded LFF Drive Bundles

HP StoreEasy 8TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle N9Y58A

NOTE: Bundle contains 4 x HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 833926-B21)

HP StoreEasy 16TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle N9Y43A

NOTE: Bundle contains 4 x HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 833928-B21)

HP StoreEasy 24TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle N9Y44A

NOTE: Bundle contains 4 x HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 846516-B21)

HP StoreEasy 32TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle N9Y45A

NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 834031-B21)

HP StoreEasy 32TB SATA LFF (3.5in) Low profile 4-pack HDD N9Y46A

NOTE: Bundle contains 4 x HPE 8TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 834028-B21)

HPE StoreEasy 40TB SAS LFF (3.5in) Low profile 4-pack HDD Q0F61A

NOTE: Bundle contains 4 x HPE 10TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 857646-B21)

HP StoreEasy 40TB SATA LFF (3.5in) Low profile 4-pack HDD Q0F62A

NOTE: Bundle contains 4 x HPE 10TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive (SKU# 857650-B21)

D3000 or D6000 Disk Enclosures

The StoreEasy 1650 Expanded support all of the HPE D3000, D6000 and D6020 Disk Enclosures to add additional capacity. A Smart Array with external Ports must be added to the StoreEasy 1650 Expanded to add external Disk Enclosures.

StoreEasy 1650 Expanded configuration information

(See the HPE D3000, D6000 or D6020 Disk Enclosure QuickSpecs for more information)

Step 3 : Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
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HPE Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
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Step 4 : Choose optional second Network Adapter

NOTE: HPE 361i 1GbEthernet 2-port Network Adapter is included in all of the StoreEasy 1650 Expanded models.

Recommended option for additional network connectivity is HPE Ethernet 10Gb 2-port 560SFP+ Adapter – SKU#665249-B21

1 Gigabit Ethernet adapters

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

10/25 Gigabit Ethernet adapters

NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter

Emulex chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HPE Ethernet 10Gb 2-port 557SFP+ Adapter	788995-B21
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Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/O AT features are also available with this NIC)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HPE Ethernet 4X25 Gb 1-port 620QSFP28 Adapter	817762-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNP,MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HPE Ethernet 10/25Gb 2-port 640QSFP28 Adapter	817753-B21

FlexibleLOM Adapters

NOTE: FlexibleLOM Adapters provide flexibility in meeting networking needs now and adapt to any future requirements without using a standard PCIe slot. These options are field upgradeable, integrate seamlessly with the StoreEasy system architecture and form factor. Only one FlexibleLOM can be added to the StoreEasy 1650 Expanded.

Emulex chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	727060-B21
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Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

StoreEasy 1650 Expanded configuration information

HPE Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWVQ, MSI-X features¹

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

QLogic chipset-based with RSS, VMQ, VMWVQ, VMDq, MSI-X features¹

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 4-port 536FLR-T Adapter	764302-B21

1. Features description

RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.

EEE (Green Ethernet): Reduces power consumption during periods of low activity.

I/O AT: I/O Acceleration Technology (I/OAT), developed by Intel, is a set of features particularly designed to reduce the receiver-side packet processing overhead.

MSI-X: For PCI 3.0, a device can support up to 2,048 different messages. Devices that support PCI 3.0 MSI-X feature a dynamically programmable hardware table that contains entries for each of the interrupt sources in the device. Each entry in this table can be programmed with one of the messages that are allocated to a device, and can be independently masked.

VMDq: Virtual Machine Device Queues (VMDq) is a technology that allows the network adapter to create multiple separate queues, distributing the processing load across multiple cores.

VMWVQ: Enables VMs in your VMWare environment to take advantage of 10GbE, without this capability the max you can get is about 3 - 4 Gb.

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RDMA: Remote Direct Memory Access (RDMA) is a technology that allows computers in a network to exchange data in main memory without involving the processor, cache, or operating system of either computer. Like locally-based Direct Memory Access (DMA), RDMA improves throughput and performance because it frees up resources. RDMA also facilitates a faster data transfer rate.

iSCSIa: iSCSI acceleration reduces CPU utilization by up to 8x.

InfiniBand Adapters

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information :

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

HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21

Step 5: Choose optional second Processor

Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor	Q0F70A
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NOTE: Q0F70A is not Factory Integrated on sku Q0F50A. For factory integration of the second processor order sku Q0F50A.

Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor	P9N51A
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NOTE: P9N51A is not Factory Integrated on skus N9Y09A, N9Y10A or N9Y11A. For factory integration of the second processor order sku N9Y08A.

StoreEasy 1650 Expanded configuration information

Step 6: Choose optional extra memory kit

NOTE: Add the same type memory to the product that is shipped standard with the product

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit	805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit	805349-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1650 Expanded WSS2016 CTO model

Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1650 Expanded models

Step 7: Choose optional Security option

HPE Trusted Platform Module 2.0 Kit	745823-B21
HP Trusted Platform Module Option	488069-B21

Step 8 : Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit	P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit	Q0F58A

The HPE StoreEasy XX50 Expanded Recovery Software Media Kit contains a System Recovery DVD that is used to re-install the factory operating system image. Booting the system from the System Recovery DVD will restore the operating system image and logical drive to the factory default state. This enables recovery of the system if all other means to boot the system fail. Refer to the StoreEasy 1000 Administrator Guide for more information on performing a System Recovery.

NOTE: If desired the StoreEasy 1650 Expanded Recovery Software can be downloaded from HPE's Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) are available here:

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002>

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001>

NOTE: For more information on how to perform a system recovery on a StoreEasy 1650 Expanded refer to the StoreEasy 1000 Administrator's Guide. The guide can be downloaded from <http://www.hpe.com/support>. Select HPE Support Center and search for the StoreEasy product model in the drivers and download section.

NOTE: All data on the original operating system logical drive is erased during the System Recovery process. Back up any data on the operating system drives before performing the System Recovery if possible. While the System Recovery process makes every attempt to preserve the existing data volumes, you should have a backup of your data before recovering the system.

StoreEasy 1850 configuration information

Specifications for HPE StoreEasy 1850 WSS 2016 CTO Storage model

Processor	One Intel® Xeon® E5-2609v4 Processor (1.7GHz/8-core/20MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller
Internal Drive Support	Twelve 3.5" (Large Form Factor) hot-plug drive bays in front, Two 2.5" (Small Form Factor) hot-plug drive bays in rear occupied by OS drives
Network Port(s)	1Gb Ethernet 4-port 331i Adapter
Expansion Slots	3x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating Systems	Microsoft® Windows Storage Server 2016 Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Common Specifications for all HPE StoreEasy 1850 Storage models

Processor	One Intel® Xeon® E5-2609v3 Processor (1.9GHz/6-core/15MB/85W)
Memory	16GB (2 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory)
Storage Controller	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller
Internal Drive Support	Twelve 3.5" (Large Form Factor) hot-plug drive bays in front, Two 2.5" (Small Form Factor) hot-plug drive bays in rear occupied by OS drives
Network Port(s)	1Gb Ethernet 4-port 331i Adapter
Expansion Slots	3x PCIe
Power	2 x 800W Platinum
Form Factor	2U rack
Operating System	Microsoft® Windows Storage Server 2012 R2, Standard Edition
Licenses	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License NOTE: For more information, visit: http://www.hpe.com/servers/iloadvanced

Choose a Pre-configured model

StoreEasy 1850 Pre-configured models come with factory-installed data drives and the Microsoft Windows Storage Server 2012 R2 Standard Edition operating system pre-installed on 2 x SFF Solid State Disk (SSD) drive in the rear SFF drive bays.

NOTE: All options in steps 2 to 9 of configure-to-order model are available for pre-configured models. Ordered options ship separately and are not factory integrated.

NOTE: Model names are based on raw storage capacity, not available user storage.

HP StoreEasy 1850 9.6TB SAS Storage

K2R20A

(8 x 1.2TB 12G SAS 10K RPM ENT SFF HDDs pre-installed, 16 open SFF slots)

HP StoreEasy 1850 14.4TB SAS Storage

K2R21A

(8 x 1.8TB 12G SAS 10K RPM ENT 512e SFF HDDs pre-installed, 16 open SFF slots)

NOTE: When adding drives to the any of the 16 open SFF slots for these models, You should use all internal data drives of the same type and capacity.

StoreEasy 1850 configuration information

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1850 models come with 2 x SFF Solid State Disk (SSD) drives factory configured as RAID 1 with OS pre-installed (the OS drives are in the two rear bays). The StoreEasy 1850 models can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration

NOTE: You should use internal data drives for this models be the same type and capacity.

HPE StoreEasy 1850 WSS 2016 Storage

QOF51A

NOTE: This model does not include pre-configured data drives. It includes 2 x Solid State Disk (SSD) drives factory configured as RAID 1 with the WSS2012 R2 OS pre-installed (the OS drives are in the two rear SFF bays). Data drives can be added for factory integration.

HP StoreEasy 1850 Storage

K2R19A

NOTE: This model does not include pre-configured data drives. It includes 2 x Solid State Disk (SSD) drives factory configured as RAID 1 with the WSS2012 R2 OS pre-installed (the OS drives are in the two rear SFF bays). Data drives can be added for factory integration.

NOTE: The above models do not include pre-configured data drives. Data drives can be added for factory integration

Specifications

Same as the StoreEasy 1850 pre-configured models listed above

Step2 : Choose required internal Storage and optional external storage options

Drive Options	Minimum Number of Drives Required	0
	Maximum Number of Drives Allowed	24

StoreEasy 1850 SFF Drive Bundles

HP StoreEasy 7.2TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle

K2R23A

NOTE: Bundle contains 4 x HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive (SKU 791034-B21)

HP StoreEasy 4.8TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle

E7W93A

NOTE: Bundle contains 4 x HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive (SKU 781518-B21)

HP StoreEasy 3.6TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle

E7W92A

NOTE: Bundle contains 4 x HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive (SKU 785069-B21)

HPE Drive options(The following options are applicable for both the external and internal storage drives)

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive

791034-B21

HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive

781518-B21

HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive

785069-B21

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive

748387-B21

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive

759212-B21

StoreEasy 1850 configuration information

HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
12G SAS Mixed Use Hot Plug SFF (2.5-inch) Solid State Drives	
HPE 3.2TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822567-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872382-B21
HPE 1.6TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822563-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872376-B21
HPE 800GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822559-B21
HPE 400GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822555-B21
6G SATA Hot Plug RI-3 SFF (2.5-inch) SC Solid State Drives	
HPE 3.84TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816576-B21
HPE 1.92TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816572-B21
HPE 960GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816568-B21
HPE 480GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816562-B21
12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802891-B21
HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779176-B21
HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802586-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779172-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802578-B21
12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value M1 Solid State Drives	
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868818-B21
6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives	
HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868830-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	871770-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869384-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868818-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869378-B21
HPE 150GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869374-B21
6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HPE 1.6TB SATA 6G Write Intensive SFF (2.5 in) SC 3yr Wty Digitally Signed Firmware SSD	872363-B21
HPE 800GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872359-B21
HPE 400GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872355-B21
6GSATAHotPlugSFF(2.5-inch)SCMixedUseSolidStateDrives	
HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872348-B21

StoreEasy 1850 configuration information

HP 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive

832414-B21

D3000 or D6000 Disk Enclosures

The StoreEasy 1850 models support all of D3000 or D6000 Disk Enclosure product families. A Smart Array with external ports must be added to the StoreEasy 1850 to add external Disk Enclosures. (See the D3000 or D6000 Disk Enclosure QuickSpecs for more information).

Step 3 : Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller

726825-B21

HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller

726903-B21

HPE Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter

726911-B21

Step 4 : Choose optional second Network Adapter

NOTE: HPE 331i Adapter 1GbEthernet 4-port is included in all of the StoreEasy 1850 models. Recommended option for additional network connectivity is HPE Ethernet 10Gb 2-port 561T Adapter - SKU# 716591-B21

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/O AT, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 366T Adapter

811546-B21

HP Ethernet 1Gb 2-port 361T Adapter

652497-B21

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 1Gb 4-port 331T Adapter

647594-B21

HP Ethernet 1Gb 2-port 332T Adapter

615732-B21

10/25 Gigabit Ethernet adapters

NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter

Intel chipset-based with RSS, VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560SFP+ Adapter

665249-B21

HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/O AT features are also available with this NIC)

716591-B21

HPE Ethernet 10Gb 2-port 562SFP+ Adapter

727055-B21

Broadcom chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X features¹

HP Ethernet 10Gb 2-port 530T Adapter

656596-B21

HP Ethernet 10Gb 2-port 530SFP Adapter

652503-B21

Emulex chipset-based with RDMA, RSS, VMQ, VMWNP, MSI-X features¹

HP Ethernet 10Gb 2-port 557SFP+ Adapter

788995-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNP,MSI-X,EEE features¹

HPE Ethernet 10/25Gb 2-port 640QSFP28 Adapter

817753-B21

HP Ethernet 10Gb 2-port 546SFP+ Adapter

779793-B21

QLogic chipset-based with RSS,VMQ, VMWNP, VMDq, MSI-X,EEE features¹

HPE Ethernet 4X25 Gb 1-port 620QSFP28 Adapter

817762-B21

FlexibleLOM Adapters

StoreEasy 1850 configuration information

NOTE: FlexibleLOM Adapters provide flexibility in meeting networking needs now and adapt to any future requirements without using a standard PCIe slot. These options are field upgradeable, integrate seamlessly with the StoreEasy system architecture and form factor. Only one FlexibleLOM can be added to the StoreEasy 1850.

Intel chipset-based with RSS, VMQ, VMWVQ, VMDq, MSI-X,EEE features¹

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter (RDMA and I/O AT features are also available with this NIC)	700699-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21

QLogic chipset-based with RSS,VMQ, VMWVQ, VMDq, MSI-X features¹

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 4-port 536FLR-T Adapter	764302-B21

Broadcom chipset-based with RSS,VMQ, VMWVQ, VMDq, MSI-X features¹

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
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Emulex chipset-based with RDMA, RSS, VMQ, VMWVQ, MSI-X features¹

HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	727060-B21
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	794525-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWVQ, MSI-X features¹

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

1. Features description

RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.

EEE (Green Ethernet): Reduces power consumption during periods of low activity.

I/O AT: I/O Acceleration Technology (I/OAT), developed by Intel, is a set of features particularly designed to reduce the receiver-side packet processing overhead.

MSI-X: For PCI 3.0, a device can support up to 2,048 different messages. Devices that support PCI 3.0 MSI-X feature a dynamically programmable hardware table that contains entries for each of the interrupt sources in the device. Each entry in this table can be programmed with one of the messages that are allocated to a device, and can be independently masked.

VMDq: Virtual Machine Device Queues (VMDq) is a technology that allows the network adapter to create multiple separate queues, distributing the processing load across multiple cores.

VMWVQ: Enables VMs in your VMWare environment to take advantage of 10GbE, without this capability the max you can get is about 3 - 4 Gb.

VMQ : VMQ, in a Hyper-V implementation, uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine. This improves network performance to the VMs.

RDMA: Remote Direct Memory Access (RDMA) is a technology that allows computers in a network to exchange data in main memory without involving the processor, cache, or operating system of either computer. Like locally-based Direct Memory Access (DMA), RDMA improves throughput and performance because it frees up resources. RDMA also facilitates a faster data transfer rate.

iSCSIa : iSCSI acceleration reduces CPU utilization by up to 8x.

InfiniBand Adapters

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information :

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

HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21

StoreEasy 1850 configuration information

Step 5: Choose optional Fibre Channel HBAs and CNAs

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows please see:

<https://www.hpe.com/us/en/product-catalog/storage/storage-adapters.hits-12.html>

Emulex Fibre Channel HBAs

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
HPE StoreFabric SN1100E 4-port 16Gb Fibre Channel Host Bus Adapter	P9D99A
HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP StoreFabric 84E 4-port 8Gb Fibre Channel Host Bus Adapter	E7Y63A
HPE StoreFabric SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter	Q0L13A
HPE StoreFabric SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter	Q0L14A
HPE StoreFabric SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter	Q0L11A
HPE StoreFabric SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter	Q0L12A

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HPE StoreFabric 84Q 4-port 8Gb Fibre Channel Host Bus Adapter	P9D91A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter	P9M75A
HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter	P9M76A

Converged Network Adapter

HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter	N3U52A
HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A
HPE StoreFabric CN1200E 10GBASE-T Dual Port Converged Network Adapter	N3U51A

Step 6: Choose optional second Processor

HPE DL380 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit	817925-B21
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NOTE: The above processor needs to be ordered only with StoreEasy 1850 WSS2016 CTO model

HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	719052-B21
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NOTE: The above processor needs to be ordered only with StoreEasy 1850 models

I/O Expansion Option

HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit	719073-B21
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NOTE: This is for slot 2 and supports double wide GPGPUs. Slot2: 2x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL.

Step 7: Choose optional extra memory kit

NOTE: Hewlett Packard Enterprise recommends that you add the same type memory to the product that is shipped standard with the product

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1850 WSS2016 CTO model

Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
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StoreEasy 1850 configuration information

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit

726719-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1850 models

Step 8: Choose optional Security option

HPE Trusted Platform Module 2.0 Kit

745823-B21

HP Trusted Platform Module Option

488069-B21

Step 9 : Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit

P4A92A

HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit

Q0F58A

The HPE StoreEasy XX50 Recovery Software Media Kit contains a System Recovery DVD that is used to re-install the factory operating system image. Booting the system from the System Recovery DVD will restore the operating system image and logical drive to the factory default state. This enables recovery of the system if all other means to boot the system fail. Refer to the StoreEasy 1000 Administrator Guide for more information on performing a System Recovery.

NOTE: If desired the StoreEasy 1850 Recovery Software can be downloaded from HPE's Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) is available here:

<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002>

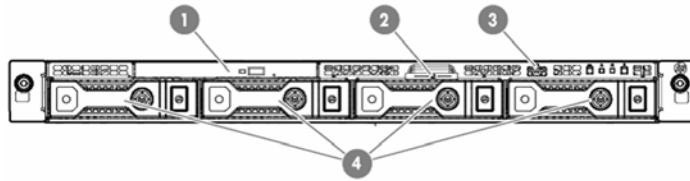
<https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001>

NOTE: For more information on how to perform a system recovery on a StoreEasy 1850 refer to the StoreEasy 1000 Administrator's Guide. The guide can be downloaded from <http://www.hpe.com/support> . Select HPE Support Center and search for the StoreEasy product model in the drivers and download section.

NOTE: All data on the original operating system logical drive is erased during the System Recovery process. Back up any data on the operating system drives before performing the System Recovery if possible. While the System Recovery process makes every attempt to preserve the existing data volumes, you should have a backup of your data before recovering the system.

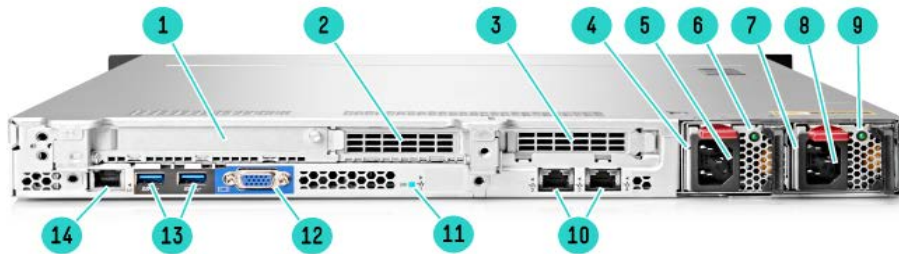
Different Views of StoreEasy 1000 models

StoreEasy 1450



Front View

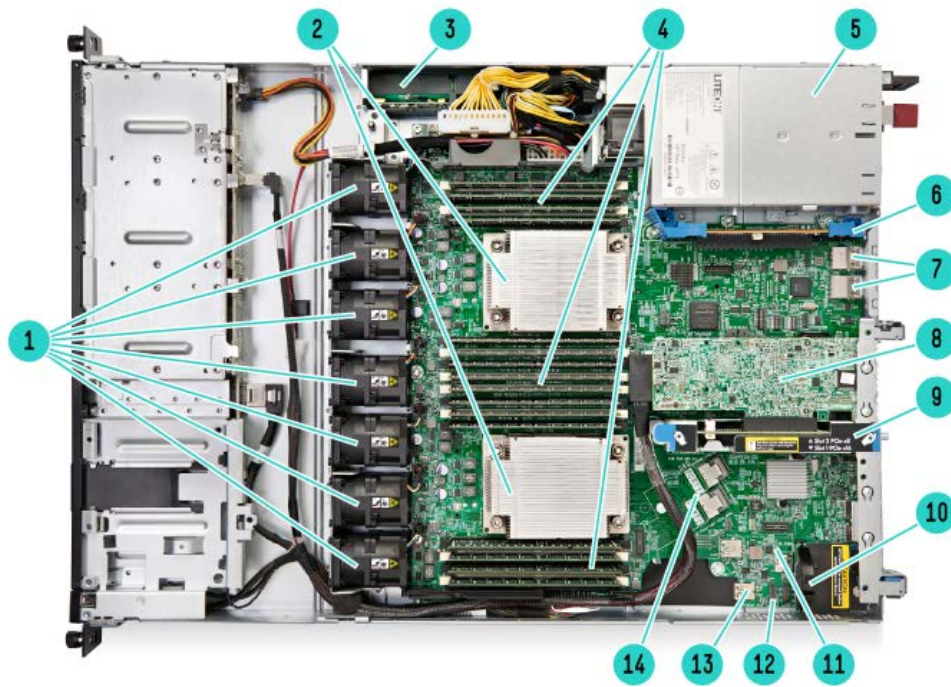
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|-----------------------------|----------------------|
| 1. Optical Drive (optional) | 3. USB 2.0 connector |
| 2. Serial label pull tab | 4. LFF Drive Bays |



Rear view

- | | |
|---|-------------------------------------|
| 1. PCIe3 slot 1 (primary, associated with processor 1) | 8. Power supply 2 power connector |
| 2. PCIe3 slot 2 (primary, associated with processor 1 occupied by Smart Array P440) | 9. Power Supply 2 LED |
| 3. PCIe3 slot 3 (secondary, associated with processor 2) | 10. Embedded 2x1GbE network adapter |
| 4. Power supply 1 bay | 11. Unit ID LED |
| 5. Power supply 1 Power Connector (Optional) | 12. Video Connector |
| 6. Power supply 1 LED (Optional) | 13. USB3.0 connectors |
| 7. Power supply 2 bay | 14. Dedicated iLO connector |

Different Views of StoreEasy 1000 models



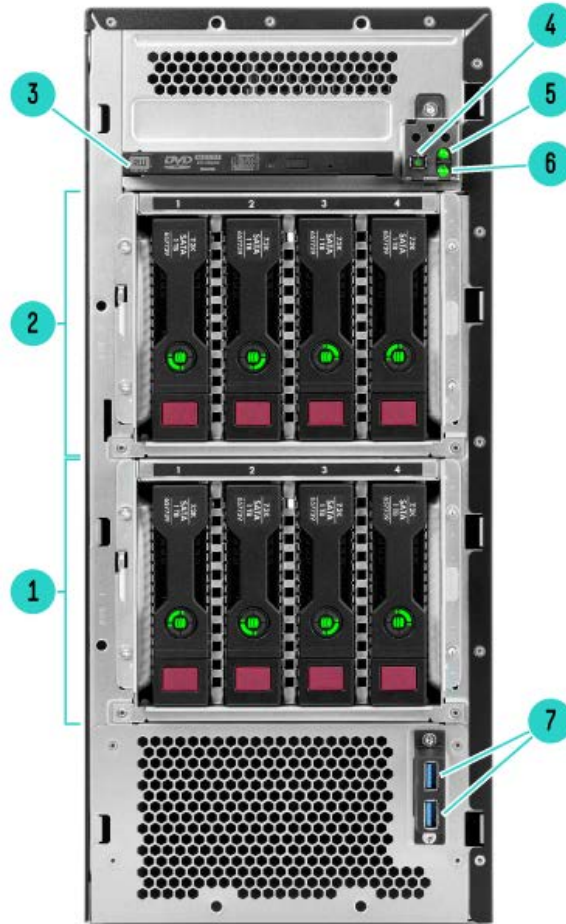
Internal View

- | | |
|---|---|
| 1. Hot Swappable fans (up to 7) | 8. HPE Smart Array P440 controller |
| 2. Processor heat sinks (processors with HPE Smart Sockets placed below heat sinks) | 9. Primary PCIe riser (2 PCIe3 slots associated with CPU1) |
| 3. HPE Smart Storage Battery | 10. Dedicated iLO module connector |
| 4. DDR4 DIMM slots (up to 16) | 11. MicroSD card slot |
| 5. Entry level power supply bay (1x900W shown) | 12. Internal SATA ports (one for ODD and another one reserved) |
| 6. Connector for secondary PCIe riser (associated with CPU2) | 13. Internal USB 3.0 connector |
| 7. Embedded 2x1GbE network adapter | 14. Embedded B140i SATA controller (not used in StoreEasy 1450) |

Different Views of StoreEasy 1000 models

StoreEasy 1550

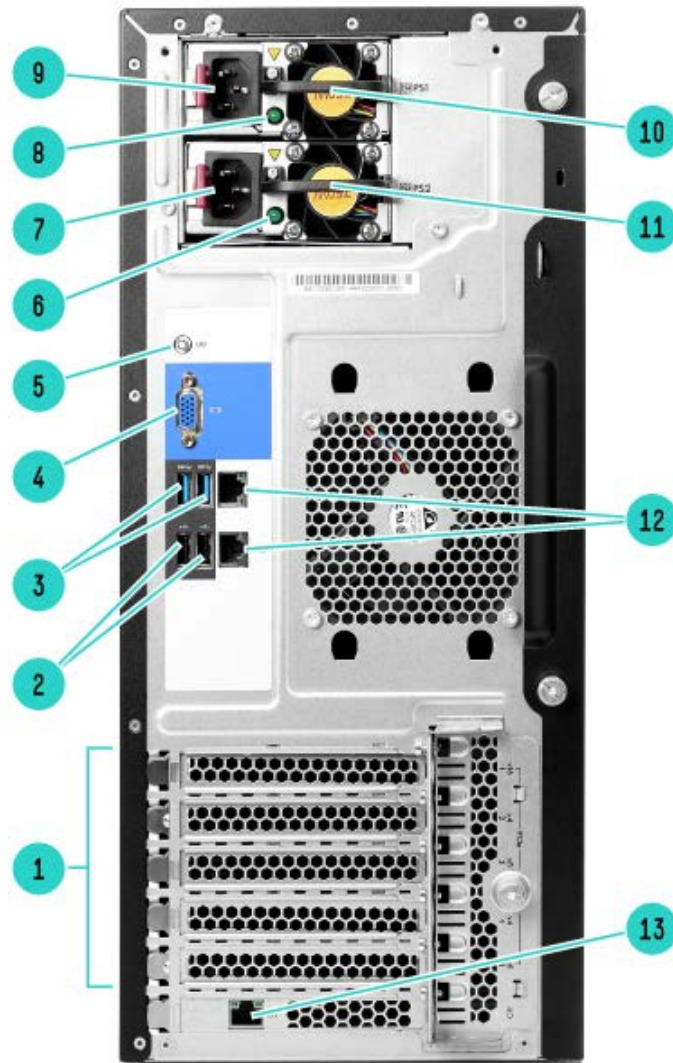
NOTE: StoreEasy 1550 product views shown below are for references purposes and do not reflect exact configuration of the product. Refer to the technical specifications section of the QuickSpecs for more details.



Front View

- | | |
|-----------------------------|---------------------------|
| 1. Drive cage | 5. Health LED |
| 2. Drive cage (optional) | 6. NIC status LED |
| 3. Optical drive (optional) | 7. USB 3.0 (2) connectors |
| 4. Power button/LED | |

Different Views of StoreEasy 1000 models



Rear View

- | | |
|---|------------------------------------|
| 1. PCIe3 Slots (Slots 1-5) | 8. Power supply 1 LED |
| 2. USB 2.0 (2) connectors | 9. Power supply 1 power connection |
| 3. USB 3.0 (2) connectors | 10. Power Supply 1 bay |
| 4. Video connector | 11. Power Supply 2 bay (optional) |
| 5. UID button/LED | 12. Network RJ-45 ports (2) |
| 6. Power supply 2 LED | 13. HPE ML Gen9 dedicated iLO port |
| 7. Power supply 2 power connection (optional) | |

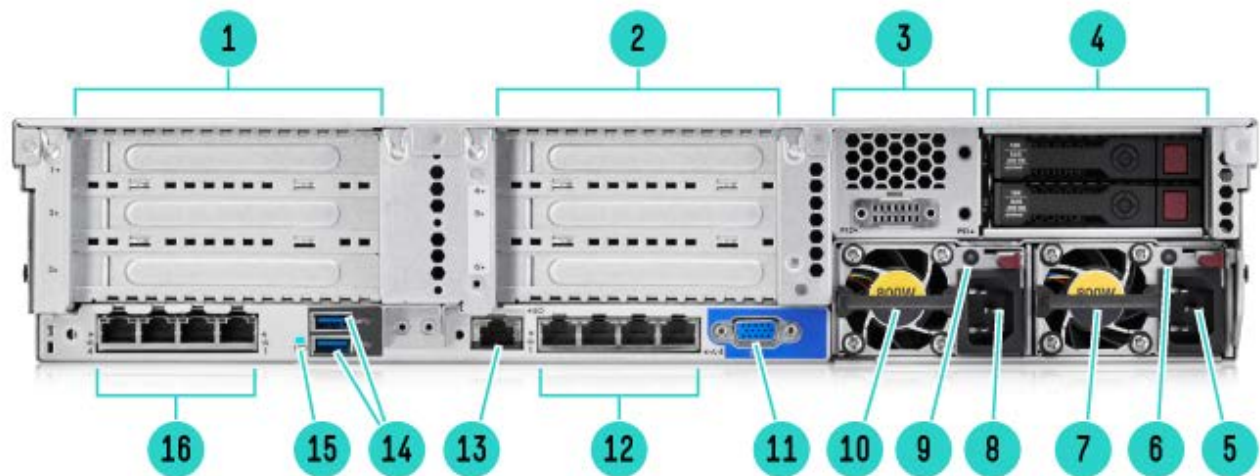
StoreEasy 1650

Different Views of StoreEasy 1000 models



Front View

- | | |
|---|---------------------|
| 1. Health LED | 4. UID button/LED |
| 2. Power On/Standby button and system power LED | 5. 12 LFF Drive Bay |
| 3. NIC status LED | |

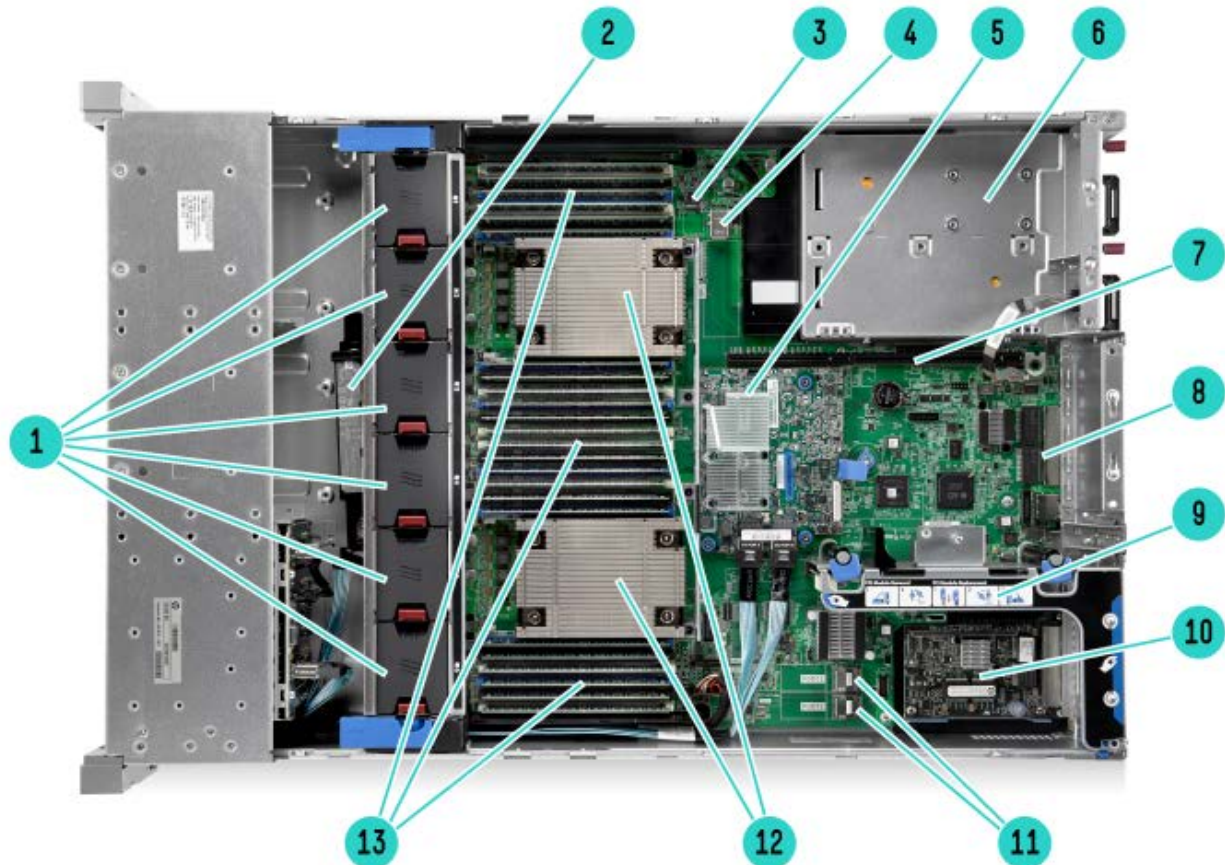


Rear view*

- | | |
|--|-------------------------------------|
| 1. PCI Slots (Slots 1-3 top to bottom, riser shipped standard) | 9. Power supply Power LED |
| 2. PCI Slots (Slots 4-6 top to bottom, requires optional second riser card and second processor) | 10. Power supply Power connection |
| 3. Optional serial port | 11. VGA connector |
| 4. Rear 2 SFF drive slots | 12. Embedded 4x1GbE Network Adapter |
| 5. HPE Flexible Slot Power Supply bay 1 (800w shown) | 13. Dedicated iLO connector |

Different Views of StoreEasy 1000 models

- | | |
|--|--|
| 6. Power supply Power LED | 14. USB 3.0 connectors (2) |
| 7. Power supply Power connection | 15. Unit ID LED |
| 8. HPE Flexible Slot Power Supply bay 2 (800w shown) | 16. Optional FlexibleLOM ports (Shown: 4x1GbE) |

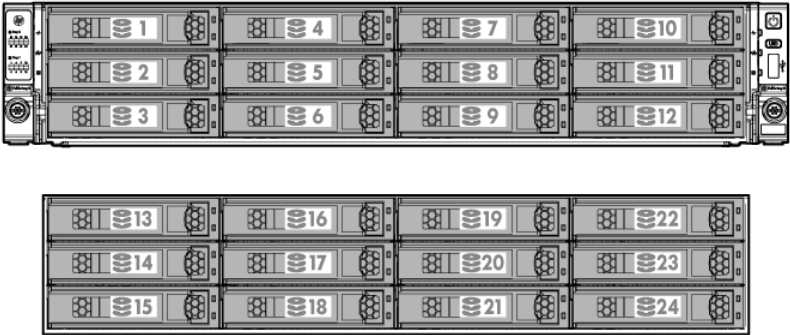


Internal View

- | | |
|--|---|
| 1. Fan cage shown with 6 standard Hot-plug fans (High Performance fans optional) | 8. Embedded 4x1GbE NIC |
| 2. HPE Smart Storage Battery | 9. Primary PCIe riser, standard (Optional double wide GPU riser) |
| 3. MicroSD card slot | 10. Optional Flexible LOM slot |
| 4. Internal USB 3.0 connector | 11. X4 SATA ports (1 and 2) |
| 5. HPE Flexible Smart Array (P440ar) | 12. 2 Processors, heatsink showing, with HPE Smart Socket Guide |
| 6. (Under) Hot Plug redundant HPE Flexible Slot Power supplies | 13. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor) |
| 7. Connection for second (optional) riser (Required second CPU) | |

StoreEasy 1650 Expanded

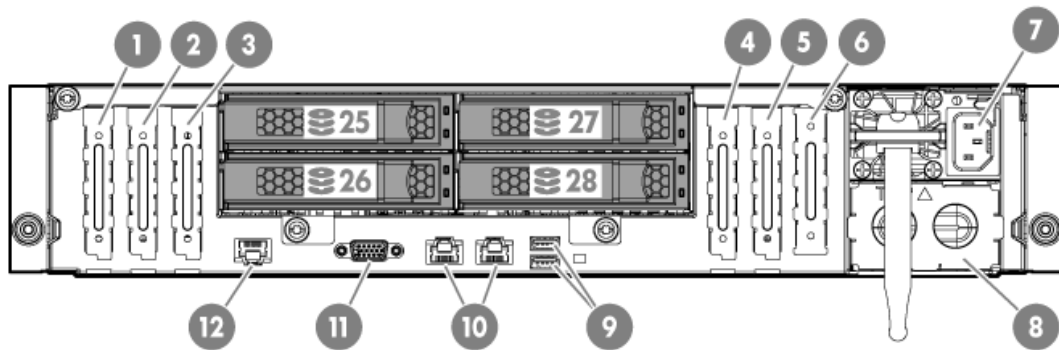
Different Views of StoreEasy 1000 models



Front View

- 1-12. Front row of LFF drives
- 13-24. Second row of LFF Drives

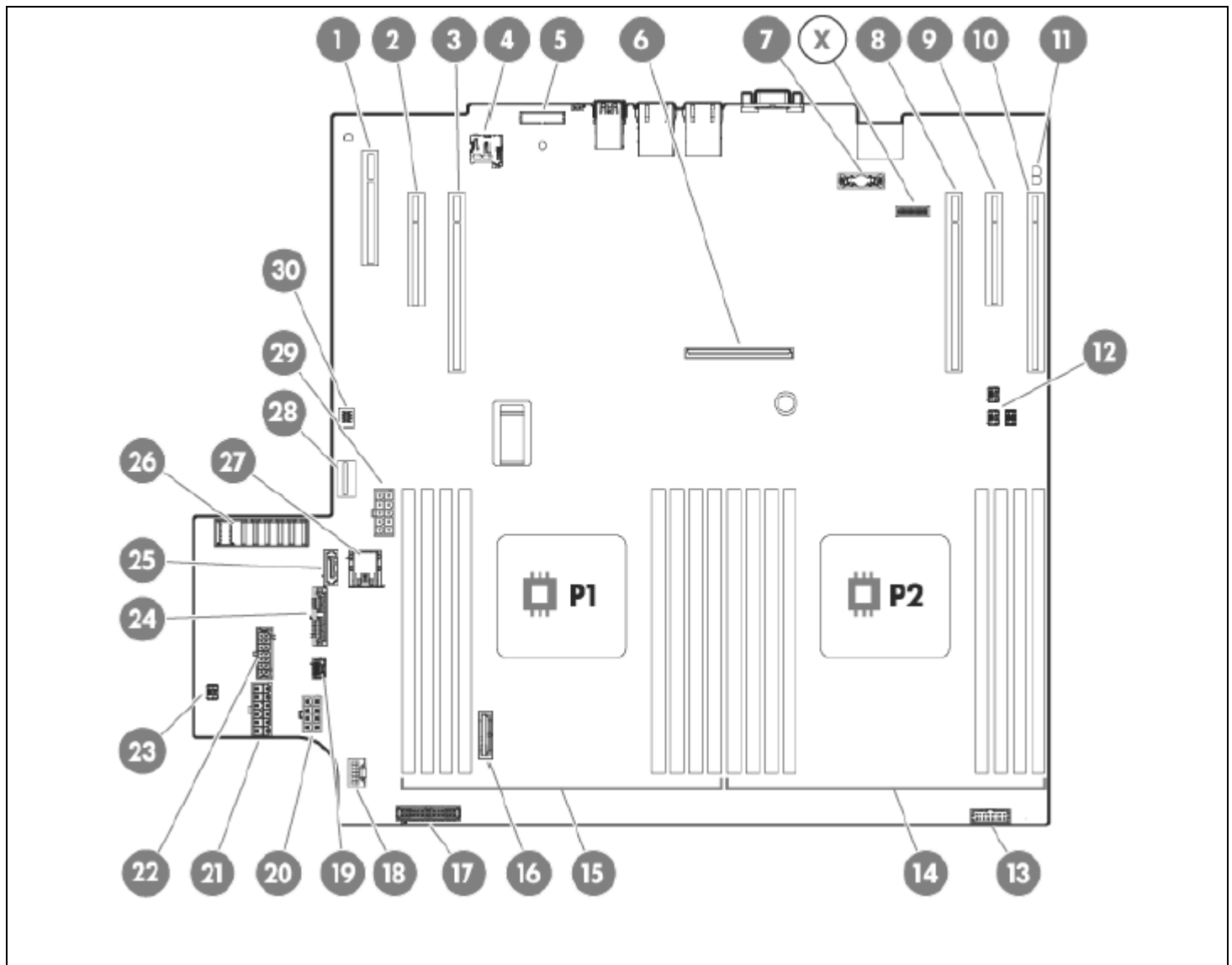
Different Views of StoreEasy 1000 models



Rear view

- | | |
|---|-----------------------------------|
| 1. PCI Slot 7 | 9. USB 3.0 Ports |
| 2. PCI Slot 6 | 10. Embedded 2x1GbE Ethernet |
| 3. PCI Slot 5 | 11. Rear VGA (Video) Port |
| 4. Dual M.2 Solid State Disks | 12. Dedicated iLO Management Port |
| 5. PCI Slot 1 | 25. LFF Drive number 25 |
| 6. Flexible LOM Slot | 26. LFF Drive number 26 |
| 7. HPE Flexible Slot Power Supply bay 1 | 27. LFF Drive number 27 |
| 8. HPE Flexible Slot Power Supply bay 2 (blank shown) | 28. LFF Drive number 28 |

Different Views of StoreEasy 1000 models

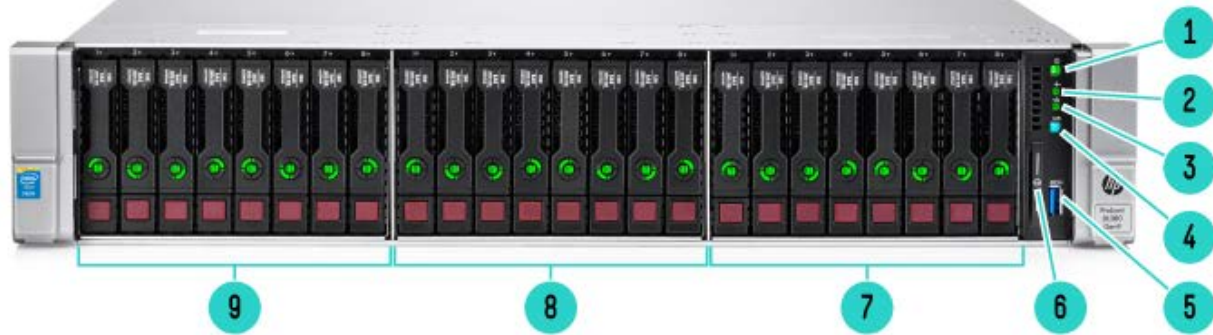


Internal View

- | | |
|--|--|
| 1. Flexible LOM Slot | 17. Fan signal connector |
| 2. PCIe3 x8 (8, 4, 1) slot 1 for low-profile, standup expansion board | 18. HPE Smart Storage Battery connector |
| 3. PCIe3 x16 (16, 8, 4, 1) slot 2 for low-profile, standup expansion board or riser cage options | 19. Rear SFF drive backplane detection connector |
| 4. microSD slot | 20. Fan power connector |
| 5. TPM connector | 21. Front drive cage 2 backplane power connector |
| 6. HPE Flexible Smart Array Controller slot | 22. Front drive cage 1 backplane power connector |
| 7. Dedicated iLO management module connector | 23. Storage backup power connector for expansion slots 1–2 |
| 8. PCIe3 x16 (16, 8, 4, 1) slot 5 for low-profile, standup expansion board | 24. SATA 6Gb/s connector 4 |
| 9. PCIe3 x8 (8, 4, 1) slot 6 for low-profile, standup expansion board | 25. SATA 6Gb/s connector 5 |
| 10. PCIe3 x16 (16, 8, 4, 1) slot 7 for low-profile, standup expansion board | 26. Power pass-through board connector |
| 11. NMI header | 27. Internal USB 3.0 connector |

Different Views of StoreEasy 1000 models

StoreEasy 1850



Front View

- | | |
|----------------------------|---|
| 1. 8 SFF Drive Bay 1 | 6. UID button/LED |
| 2. 8 SFF Drive Bay 2 | 7. NIC status LED |
| 3. 8 SFF Drive Bay 3 | 8. Health LED |
| 4. Serial label pull tab | 9. Power On/Standby button and system power LED |
| 5. Front USB 3.0 connector | |

Rear view and internal view of StoreEasy 1850 the same as StoreEasy 1650 shown above

Technical Specifications

StoreEasy 1450	Dimensions (H x W x D)	4 LFF - 1.7 x 17.1 x 23.9 inches (4.29 x 43.46 x 60.76 cm)	
	Weight (approximate)	Maximum:	33.04 lb (15kg)
		(all hard drives, power supplies, and processors installed)	
		Minimum:	22.03 lb (10kg)
		(one hard drive, power supply, and processor installed)	
	Input Requirements For Standard 460W PSU, see power specifications tables for detail on 460W, 50W and 1200W power supplies)	Rated Line Voltage	100 to 240 VAC For 550W Power Supply:
		Rated Input Current	6.7 A (at 100 VAC) 3.3 A (at 100 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	For 550 W Power Supply:
			< 670 W (at 100 VAC), < 660 W (at 200 VAC),
	BTU Rating	Maximum	For 550 W Power Supply: 2201 BTU/hr (at 100 VAC), 2153 BTU/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: https://paonline56.itcs.hpe.com/?Page=Index - Click on the system of interest. Example: DL160 Gen9- Follow the instructions of the next screens.	
	Power Supply Output	Rated Steady-State Power	For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC),
		Maximum Peak Power	For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC),
	System Inlet Temperature	Standard Operating Support	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 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), 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. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
		Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:

Technical Specifications

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

For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:

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

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

NOTE: Supports A3 and A4 extended ambient.

Relative Humidity	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	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-condensing) Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3048 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).
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).	
	Idle	
	L WAd	Entry 5.1 B Base 5.2 B Performance 5.0 B
	L pAm	Entry 34.2 dBA Base 35.9 dBA Performance 34.9 dBA
	Operating	
	L WAd	Entry 5.3 B Base 5.3 B Performance 5.6 B
	L pAm	Entry 36.3 dBA Base 36.2 dBA Performance 39.7 dBA
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22; K24; EN 61000-3-2; EN 61000-3-3;

Technical Specifications

EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four		
	PCI link rate	4Gb/s		
	Storage protocol support	SATA		
	SAS/SATA peak data tranfer rate	6Gb/s		
	Number of SAS/SATA links	10 links		
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors		
	Expander support	No		
	Drives supported (max)	Up to 10 Internal Drives		
	RAID support	0, 1, 10, 5 SATA		
	Software management	HPE SSA, SMH, SIM		
	Warranty	Server warranty		
	HPE Secure Encryption license	Not Supported		
	HPE SmartCache License	Not Supported		
HPE Smart Storage Administrator	Supported			
HPE Embedded Dual Port 361i Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX		
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 1588, IEEE 802.1AS IEEE 802.3az - Energy Efficient Ethernet (EEE)		
	Data Transfer Method	PCI Express v 2.0, 5.0 GT/s, two lanes (x2)		
	Controller	Intel I350 Powerville		
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined	
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined	
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined	
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined	
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined	

Technical Specifications

Connector	Duplex)
	Two RJ-45
Cable Support	10 Base-T
	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
	10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)

HPE Smart Array P440	Dimensions (excluding bracket)	Low Profile PCIe Form Factor 6.6 x 2.7 x 0.57 in (16.8 x 6.86 x 1.6 cm)	Low Profile PCIe Form Factor 19.05 cm x 24.13 cm x 5.72 cm (7.5 in x 9.5 in x 2.25 in)	Low Profile PCIe Form Factor 6.6 x 2.7 x 0.57 in (16.8 x 6.86 x 1.6 cm)
	Disk Drive	12Gb/s SAS (Serial Attached SCSI) capable 12Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial AT Attachment)		
	SAS Port Link Rate	12Gb/s per physical link supported;		
	PCIe Link Rate	PCIe3 x8		
	Cache Memory	DDR3-1866MHz, 72-bit wide bus at 14.9GB/s (4GB cache module)		
	Physical Drives Supported	Up to 8 drives without 12G SAS Expander card; up to 48 drives with 2 SAS Expander card (ML350 Gen9)		
	Logical Drives Supported	Up to 64 logical drives		
	Memory Addressing	64-bit, supporting servers with memory space greater than 4 GiB (4.4GB)		
	RAID Support	RAID 6, 60 (Advanced Data Guarding) RAID 5, 50 (Distributed Data Guarding) RAID 1, 10 (Drive Mirroring) RAID 1 ADM, 10 ADM (Advanced Data Mirroring) RAID 0 (Striping)		
	Upgradeable Firmware	Upgradeable firmware with recovery ROM feature		

StoreEasy 1550	Tower Dimensions	17.32(H) x 7.68(W) x 18.92(D) in (44 x 19.5 x 48.05 cm)		
	Tower Weight	Minimum:	27.56lb (12.5kg)	
		Maximum:	55lb (24.9g)	
	Input Requirements	Range Line	100 to 240 VAC	
		Voltage	For 350W & 550W Power Supply:8A (at 100~240 VAC)	
		Rated Input Current		
		Rated Input Frequency	50 to 60 Hz	
		Rated Input Power	For 550 W Power Supply:< 639 W (at 100 VAC),< 605 W (at 200 VAC)	
			For 350 W Power Supply:< 427 W (at 100 VAC),< 427 W (at 200 VAC)	
	BTU Rating	Maximum	For 550 W Power Supply:2204 BTU/hr (at 100 VAC),2113 BTU/hr (at 200 VAC)	
			For 350 W Power Supply:1452 BTU/hr (at 100 VAC),1544 BTU/hr (at 200 VAC)	

Technical Specifications

Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: https://paonline56.itcs.hpe.com/?Page=Index . Click on the system of interest.	
Power Supply Output	Rated Steady-State Power	For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC),
	Maximum Peak Power	For 350 W Power Supply: 350 W (at 100 VAC), 350 W (at 200 VAC),
System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), 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. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae .
		For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae .
		System performance may be reduced if operating in the extended ambient operating range or with a fan fault. NOTE: Supports A3 extended ambient.
Relative Humidity	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	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	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457m/min (1500 ft/min).
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).	

Technical Specifications

Idle

L WAd	3.6 Bels (LFF Non Hot-Plug Base)
	3.6 Bels (LFF Hot-plug Base)
	4.1 Bels (LFF Hot-plug Performance)
L pAm	21 dBA (LFF Non Hot-Plug Base)
	21 dBA (LFF Hot-plug Base)
	27 dBA (LFF Hot-plug Performance)

Operating

L WAd	3.6 Bels (LFF Non Hot-Plug Base)
	3.7 Bels (LFF Hot-plug Base)
	4.2 Bels (LFF Hot-plug Performance)
L pAm	21 dBA (LFF Non Hot-Plug Base)
	21 dBA (LFF Hot-plug Base)
	25 dBA (LFF Hot-plug Performance)

NOTE: Configurations tested for LFF non hot-plug based models included one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

NOTE: Configurations tested for LFF hot-plug base models included one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

NOTE: Configurations tested for LFF hot-plug performance models included four (4) 2TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

NOTE: The Listed sound levels apply to standard shipping configurations.

Additional options may result in increased sound levels.

Emissions Classification

FCC Rating	Class B
Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM

Technical Specifications

	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported
HPE Ethernet 1Gb 2-port 330i Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, two lanes (x2)
	Controller	BCM5717
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex) 20 Mb/s per port, 80 Mb/s combined
		100Base-TX (Half-Duplex) 100 Mb/s per port, 400 Mb/s combined
		100Base-TX (Full-Duplex) 200 Mb/s per port, 800 Mb/s combined
		100Base-TX (Half-Duplex) 1000Mb/s per port, 4000 Mb/s combined
		100Base-TX (Full-Duplex) 2000Mb/s per port, 8000 Mb/s combined
	Connector	RJ-45
	Cable Support	10 Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)
StoreEasy 1650/1850	Dimensions	SFF Drives: 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm) LFF Drives: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm) NOTE: Dimensions without Bezel.
	Weight (approximate)	Minimum: 32.6 lb (14.759 kg) (Minimum - 8SFF chassis with 1xSFF HDD and 7 HDD blanks, 1x processor, 1x power supply (plus blank), 1x Flexible Smart Array, 1x Riser installed)
		Maximum: 51.5 lb (23.6 kg) (Maximum - 12

Technical Specifications

	LFF hard drives (No rear drives), 2x processors, 2x power supplies, 1x Flexible Smart Array, 2x Risers installed)	
Input Requirements (per power supply)	Range Line Voltage	100 to 120 VAC 200 to 240 VAC
BTU Rating	Maximum	For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only
Power Supply Output (per power supply)	Rated Steady-State Power	For 1400W Power Supply: 1400W (at 100 VAC), 1400W (at 240 VAC), 1400W (at 240 VAC) For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only
	Maximum Peak Power	For 1400W Power Supply: 1400W (at 100 to 127 VAC), 1400W (at 200 to 240 1VAC), 1400W (at 240 VAC) input for China only For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only
System Inlet Temperature	Standard Operating Support	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 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), 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. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae .
		For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:

Technical Specifications

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

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	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-condensing)	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).
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).	
	Idle	
	L WAd	4.0 B Entry LFF 4.1 B Entry 4.2 B Base 5.7 B Base LFF 4.3 B Perf
	L pAm	23 dBA Entry LFF 24 dBA Entry 24 dBA Base 39 dBA Base LFF 25 dBA Perf
	Operating	
	L WAd	4.3 B Entry LFF 4.6 B Entry 4.8 B Base 5.9 B Base LFF 5.6 B Perf
	L pAm	25 dBA Entry LFF 29 dBA Entry 30 dBA Base 31 dBA Base LFF 39 dBA Perf

NOTE: The Listed sound levels apply to standard shipping configurations (Entry LFF, Entry, Base, Base LFF and Performance models) additional options may result in increased sound levels. The Base LFF model leverages our High Efficiency Fans, other models are shipping with standard fan options.

Emissions	FCC Rating	Class A
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Technical Specifications

Classification (EMC)	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
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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.

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM
	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported

HPE Ethernet 1Gb 4-port 331i Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T
		IEEE 802.3ab 1000Base-T
		IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, two lanes (x2)
	Controller	BCM5719
	Network Transfer Rate	10Base-T (Half-Duplex)
		10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex)
		20 Mb/s per port, 80 Mb/s combined
		100Base-TX (Half-Duplex)
		100 Mb/s per port, 400 Mb/s combined

Technical Specifications

	100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
	1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined
	1000Base-TX (Full-Duplex)	2000Mb/s per port, 8000 Mb/s combined
Connector	Four RJ-45	
Cable Support	10 Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
	10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)	

HPE Smart Array P440ar	Dimensions (excluding bracket)	Flexible Smart Array Form Factor 5.3 x 4.1 x 1.2 in	Low Profile PCIe Form Factor
	Disk Drive	12Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial AT Attachment)	6.6 x 2.7 x 0.57 in (16.8 x 6.86 x 1.6 cm)
	SAS Port Link Rate	12Gb/s per physical link supported	
	PCIe Link Rate	PCIe3 x8	
	Cache Memory	DDR3-1866MHz, 72-bit wide bus at 14.9GB/s (2GB cache module)	
	Physical Drives Supported	Up to 26 drives	
	Logical Drives Supported	Up to 64 logical drives	
	Memory Addressing	64-bit, supporting servers with memory space greater than 4 GiB (4.4GB)	
	RAID Support	RAID 6, 60 (Advanced Data Guarding) RAID 5, 50 (Distributed Data Guarding) RAID 1, 10 (Drive Mirroring) RAID 1 ADM, 10 ADM (Advanced Data Mirroring) RAID 0 (Striping)	
	Upgradeable Firmware	Upgradeable firmware with recovery ROM feature	

StoreEasy 1650 Expanded	Dimensions	LFF Drives: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm) NOTE: Dimensions without Bezel.
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Input Requirements (per power supply)	Range Line Voltage	100 to 120 VAC 200 to 240 VAC
	BTU Rating	Maximum For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only
Power Supply Output (per power supply)	Rated Steady-State Power	For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only
	Maximum Peak	For 800W Power Supply: 800W (at 100 to 127 VAC), 800W

Technical Specifications

supply)	Power	(at 200 to 240 1VAC), 800W (at 240 VAC) input for China only
System Inlet Temperature	Standard	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 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), 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. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Operating Support	
	Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae .
		For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae .
		System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
Relative Humidity	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	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-condensing)	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).
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).	
	Idle	
	L WAd	4.0 B Entry LFF 4.1 B Entry 4.2 B Base 5.7 B Base LFF

Technical Specifications

	L pAm	4.3 B Perf
		23 dBA Entry LFF
		24 dBA Entry
		24 dBA Base
		39 dBA Base LFF
		25 dBA Perf
	Operating	
	L WAd	4.3 B Entry LFF
		4.6 B Entry
		4.8 B Base
5.9 B Base LFF		
5.6 B Perf		
L pAm	25 dBA Entry LFF	
	29 dBA Entry	
	30 dBA Base	
	31 dBA Base LFF	
	39 dBA Perf	
NOTE: The Listed sound levels apply to standard shipping configurations (Entry LFF, Entry, Base, Base LFF and Performance models) additional options may result in increased sound levels. The Base LFF model leverages our High Efficiency Fans, other models are shipping with standard fan options.		
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
	NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.		

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA

Technical Specifications

HPE Ethernet 1Gb 2-port 36li Adapter	Software management	HPE SSA, SMH, SIM	
	Warranty	Server warranty	
	HPE Secure Encryption license	Not Supported	
	HPE SmartCache License	Not Supported	
	HPE Smart Storage Administrator	Supported	
	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, two lanes (x2)	
	Controller	BCM5719	
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s per port, 40 Mb/s combined 10Base-T (Full-Duplex) 20 Mb/s per port, 80 Mb/s combined 100Base-TX (Half-Duplex) 100 Mb/s per port, 400 Mb/s combined 100Base-TX (Full-Duplex) 200 Mb/s per port, 800 Mb/s combined 1000Base-TX (Half and Full-Duplex) 1000Mb/s per port, 4000 Mb/s combined 1000Base-TX (Full-Duplex) 2000Mb/s per port, 8000 Mb/s combined	
	Connector	Four RJ-45	
	Cable Support	10 Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) 10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)	

Service and Support, HPE Care Pack, and Warranty Information

Warranty

HPE StoreEasy 1650, HPE StoreEasy 1650 Expanded and HPE StoreEasy 1850 Storage products come with a standard 3-3-3 warranty (3 years parts exchange, 3 years labor and 3 years onsite, next business day response). HPE StoreEasy 1450 and 1550 Storage products come with a standard 3-1-1 warranty (3 years parts exchange, 1 year labor and 1 year onsite, next business day response). Software media is warranted to be free of physical defect for a period of 90 days from delivery.

Services Included with the Product One year of Hewlett Packard Enterprise Software Support for the Windows Storage Server OS, standard 9x5 business hours (software advisory and remedial software telephone support, and media and documentation distribution service).

Service and Support

Services to accelerate time to results

Hewlett Packard Enterprise Storage Services bring you a rich portfolio of consulting and support services designed to add value to our core storage products and solutions. We have the know-how and experience to put storage technology to work for you. We work closely with you as your strategic partner, leveraging our full services portfolio to make sure that everything works to optimize your enterprise.

Choose from services aligned to our storage product offerings and lifecycle. From mission-critical onsite services to innovative web-based remote support, you choose the precise level of attention and support your business demands.

Discover, plan, and design Choose from a rich portfolio of services to make the most of HPE StoreEasy Storage, so you can efficiently and affordably consolidate, manage, and extract value from unstructured data.

Hewlett Packard Enterprise Services can help you discover needs and create a plan for simplifying the environment, reducing risk, and maximizing your storage investments

HPE Backup Recovery Efficiency Analysis - Assessment of how efficiently backup components are being used as the amount of data to be backed up continues to grow exponentially via analysis intelligence and a snapshot of your current backup environment.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8490ENW.pdf>

HPE Backup Recovery Impact Analysis - Focus placed on service requirements and design as the key to success for gaining a clear understanding of the role of increasingly diverse data protection strategies.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA4-1175ENW.pdf>

HPE Backup Recovery Modernization - Initial discovery, interviews, reference architecture design, proposal content development, vendor grading, and final recommendations carried out so as to require minimal resources and locations on your part.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA4-1199ENW.pdf>

HPE Storage Cloud Design Service - Build a scalable, low-cost enterprise storage environment with inherent cloud benefits to meet big data needs.

Deploy and integrate

We can help you configure, set up, and efficiently use your HPE StoreEasy Storage, as well as help migrate data, improve capacity utilization, and establish information management standards used across backup, replication, and archiving needs.

HPE StoreEasy 1000/3000 Storage Installation and Startup Service -Expert system installation and setup

Service and Support, HPE Care Pack, and Warranty Information

by a Hewlett Packard Enterprise technical specialist designed to reduce implementation time and cost, with your basic questions about the service answered during the included orientation session.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4AA2-6112ENN.pdf>

HPE Storage Data Migration Services - End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network or network attached storage environment and using innovative software to help you migrate to Hewlett Packard Enterprise storage quickly and efficiently.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA3-0774ENW.pdf>

HPE Storage and Data Consultant Residency Service - Strategic augmentation of your current environment with Hewlett Packard Enterprise resources who become your trusted advisor to provide answers that are right for your storage and backup environment.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA3-9481ENW.pdf>

HPE Proactive Select - A flexible way to purchase services to fit your environment with an extensive menu of Hewlett Packard Enterprise Proactive Select event and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA2-3842ENW.pdf>

Operate and support

Choose the right support to maximize uptime, free up your resources, and achieve improved value-as you get the most out of the existing IT assets while accelerating time-to-revenue.

HPE Proactive Care 24x7 - Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center Specialists plus firmware and software management and best practice advice

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

HPE Proactive Care Personalized Support - An option-if you have HPE Proactive Care- to bring increased personalization of the Proactive Care support experience through the assignment of an Account Service Manager (ASM) who provides IT best practice advice to help address IT issues and projects.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA4-3446ENW.pdf>

HPE Support Plus 24 - Support for environments where proactive help from Hewlett Packard Enterprise is not required, with 24x7 hardware and software support onsite that includes third-party support with a maximum four-hour onsite response.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-6638EN.pdf>

HPE Education Services - Comprehensive training for new, as well as experienced, storage administrators designed to expand your skills and keep you up to speed with the latest storage and virtualization technology from Hewlett Packard Enterprise Storage.

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

Optimized Care -

Delivers the highest levels of performance and stability through deployment and proactive management practices

Choose from three levels of operate and support care
HPE Proactive Care 24x7-Plus, 20 credits per year

Additional options - HPE Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of Hewlett Packard Enterprise Personalized Support, and 10 additional HPE Proactive Select credits per year

Service and Support, HPE Care Pack, and Warranty Information

Standard Care- maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support	HPE Proactive Care 24x7-Plus , 10 credits per year Additional options - HPE Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of Hewlett Packard Enterprise Personalized Support, and 10 additional HPE Proactive Select credits per year
Basic Care- Minimum recommended support	Support Plus 24- Plus, 10 credits per year Additional options - 10 HPE Proactive Select credits per year
Remote Support Automation	HPE Insight Remote Support-Available at no additional cost to all warranty, HPE Care Pack Service and service agreement customers, uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnosis and problem resolution. https://www.hpe.com/h20195/V2/GetPDF.aspx/4AA2-4676ENW.pdf https://www.hpe.com/us/en/services/remote-it-support.html
For more information	http://www.hpe.com/services/storage To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner HPE Care Pack Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners: <ul style="list-style-type: none"> • Services for customers purchasing from Hewlett Packard Enterprise or an enterprise reseller are quoted using Hewlett Packard Enterprise order configuration tools. • Customers purchasing from a commercial reseller can find HPE Care Pack Services at http://ssc.hpe.com/portal/site/ssc/

Summary of Changes

Date	Version History	Action	Description of Change
07-Aug-2017	From Version 33 to 34	Changed	Changes made in all Sections
05-Jun-2017	From Version 32 to 33	Changed	Changes were made throughout the entire document
03-Apr-2017	From Version 31 to 32	Changed	Changes were made throughout the entire document
13-Feb-2017	From Version 30 to 31	Changed	Changes were made throughout the entire document
28-Nov-2016	From Version 29 to 30	Changed	Changes were made throughout the entire document
15-Aug-2016	From version 28 to 29	Changed	Changes made to the Configuration Sections of the document.
17-Jun-2016	From Version 27 to 28	Changed	Changes made to the Hardware Specifications and Configuration Info Sections.
11-Mar-2016	From Version 26 to 27	Changed	Changes were made throughout the entire document
19-Feb-2016	From Version 25 to 26	Changed	Changed the entire document structure.
29-Jan-2016	From Version 24 to 25	Changed	Content edition on the configuration section
11-Dec-2015	From Version 23 to 24	Changed	Changes made to the Standard Features and Options Sections
01-Dec-2015	From Version 22 to 23	Changed	Changes were made throughout the entire document
28-Sept-2015	From Version 21 to 22	Changed	Added the StoreEasy System Recovery DVD, changes in the What's New Sections
19-Jun-2015	From Version 20 to 21	Changes	Changes made on the following sections: Overview, Features and Benefits, Standard Features, Options and Service and Support
01-Jun-2015	From Version 19 to 20	Changed	Added the StoreEasy 1550 Storage model
30-Mar-2015	From Version 18 to 19	Changed	Added new models, changes were made on the entire document.
18-Dec-2014	From Version 17 to 18	Changed	Added SCSI HBA to StoreEasy 1640 options and other minor edits.
17-Oct-2014	From Version 16 to 17	Changed	Changed in the Options Section of the QS.
		Removed	Removed the HPE StoreEasy 1X30 Storage from the document.
18-Jul-2014	From Version 15 to 16	Added	Added HPE StoreEasy Windows Storage Server 2012 R2 Upgrade section
03-Jul-2014	From Version 13 to 15	Changed	Standard Features – Memory – StoreEasy 1640 Standard changed 12GB to 16GB and 3 x 4GB to 4 x 4GB; Standard Features – Storage External – added D3000 to supported products; Optional Software – HPE LiveVault section – replaced URL; Models – Pre-Configured – StoreEasy 1640 Models – memory - changed 12GB to 16GB and 3 x 4GB to 4 x 4GB; Options – added HPE D3000 Enclosures section
09-May-2014	From Version 12 to 13	Changed	Storage Controllers and Service and Support were revised.
11-Apr-2014	From Version 11 to 12	Changed	Changes were to Storage Controllers, Hard Drives, and Optional Software.
31-Mar-2014	From Version 10 to 11	Changed	Changes were made throughout.
31-Jan-2014	From Version 9 to 10	Changed	Updated the following: Standard Features - Windows Storage Server 2012 Note updated; Optional Software - HPE Autonomy LiveVault updated; Configuration Information - Add a Network Adapter - 656596-B21 added "(StoreEasy 1430 only)" to the description; added 718904-B21 and 728987-B21 to the supported adapters; Add More Storage- StoreEasy 1430/1530 - removed BC377A and BC390AAE, added D7526A, D7527A and D7527AAE and removed link to DA14228 and added 729552-B21 and 650926-B21 and QW990A; StoreEasy 1630/1830 - added 698531-B21, D7526A, D7527A, removed BC377A and BC390AAE - removed links to DA14227, DA14228, DA13200 DA14336 and DA14343, added 729552-B21 and 650926-B21 added C8R38A and C8R39A and QW990A; Hard Drives for the StoreEasy 1430/1530 - added 652753-B21, 718171-B21; 734362-B21, 718189-B21, 739900-B21, 718183-B21, 739890-B21, 718177-B21, 691860-B21, 691856-B21, 691854-B21, and 691852-B21; Hard Drives for StoreEasy 1630 - - added 718171-B21; 734362-B21, 718189-B21, 739900-B21, 718183-B21,

Summary of Changes

			739890-B21, 718177-B21, 691860-B21, 691856-B21, 691854-B21, and 691852-B21; removed 653124-B21 and 653122-B21. Hard Drives for StoreEasy 1830 - added 718162-B21, 717965-B21, 734360-B21, 717973-B21, 717971-B21, 739898-B21, 739888-B21, 717969-B21, 653078-B21
04-Oct-2013	From Version 8 to 9	Changed	Updated the following sections Standard Features - Storage Controller Options - HPE Hard Drives for StoreEasy 1830
20-Sep-2013	From Version 7 to 8	Changed	Updated the following: Options - StoreEasy Disk Enclosures - Updated existing NOTE and added new NOTE for the 25 SFF Disk Enclosure; Options - Drives for StoreEasy Enclosures - added 1.2TB SAS HDD - 693648-B21
19-Aug-2013	From Version 6 to 7	Changed	Changed What's New to read: New StoreEasy 1630 with 2 SFF rear drives with pre-installed OS. 12 LFF slots open for data drives. Changes made to update the HPE StoreEasy 1630 Storage throughout the QuickSpecs.
28-Jun-2013	From Version 5 to 6	Changed	Drives for StoreEasy Enclosures was revised in Options Note was added to Operating System in Standard Features HPE 10 GbE PCI-e Dual Port Network Interface Card was added to StoreEasy 1830 in Options HPE StoreFabric SN1000Q 16GB 1-port and 2-port PCIe Fibre Channel Host Bus Adapters were added to QLogic Fibre Channel HBAs in Options
10-Jun-2013	From Version 4 to 5	Changed	Overview: Updated What's New, HPE StoreEasy 1430 Storage, HPE StoreEasy 1530 Storage, HPE StoreEasy 1630 Storage and HPE StoreEasy 1830 Storage. Features and Benefits: Updated Efficiently Save money and time, Secure: Protect your data and organization always and Highly Available, Prevent User and Organization disruption sections. Optional Software: Update HPE Data Protector software hyperlink. Options: Updated HPE Hard Drives for StoreEasy 1430/1530, HPE Hard Drives for StoreEasy 1630, StoreEasy Disk Enclosures, Drives for StoreEasy Enclosures, Add a Power Cord StoreEasy 1530 and StoreEasy 1830 I/O Expansion Options sections.
19-Apr-2013	From Version 3 to 4	Changed	Standard Features: Updated Maximum Storage Capacity(raw) Models (Drives Configure-to-Order): Updated StoreEasy 1830 Storage Options: Updated Add a Network Adapter section StoreEasy 1430/1530, StoreEasy 1630 and StoreEasy 1830 Service and Support, Hp Care Pack, and Warranty Information: Updated Warranty section
08-Mar-2013	From Version 2 to 3	Changed	Changes were made in the following sections:

Summary of Changes

			Standard Features: Updated Operating System section Options: in all sections updated parts and part numbers.
21-Dec-2012	From Version 1 to 2	Changed	Changes were made in the following sections: Overview: update Models Models (Drives Configure to Order): in Step 1 update hyperlink Options: in all sections updated parts and part numbers.
21-Dec-2012	Version 1	Created	Document Created



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

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