Overview

HPE StoreEasy 1000 Storage

Whether you are a small, medium, or large distributed organization with remote offices, you need reliable, cost-efficient storage that can keep pace with users and growing volumes of file data without getting in the way of how your organization operates.

If your organization needs an easy-to-manage centralized space for storing documents, images, audio, and video files, look no further than HPE StoreEasy 1000 Storage. Designed specifically for file storage, StoreEasy 1000 network-attached storage appliances integrate easily into administrator and user workflows and help them do more with less effort.

Available in a range of form factors, performance, and capacity points, organizations can select a pre-configured HPE StoreEasy 1000 or tailor a system to their capacity and connectivity requirements. Built from industry-leading ProLiant and Apollo servers, StoreEasy runs the Windows Storage Server operating system and integrates easily into new and existing storage environments with tools optimized to help admins spend less time on storage.

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

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 Hot Pluggable Drive Bays

HPE StoreEasy 1450 WSS2016 Storage	Q0F47A
HPE StoreEasy 1450 Storage	K2R11A

NOTE: The above CTO models have no drives pre-configured - four drives of the same type and 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.

HPE StoreEasy 1450 4TB SATA Storage	K2R12A

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

HPE StoreEasy 1450 8TB SATA Storage	K2R13A

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

HPE StoreEasy 1450 8TB SATA WSS2016 Storage	Q1J33A

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

HPE StoreEasy 1450 16TB SATA Storage	K2R14A

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

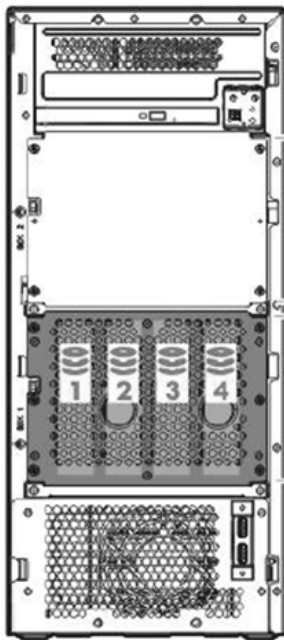|	
HPE StoreEasy 1450 16TB SATA WSS2016 Storage	Q1J34A

NOTE: (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 businesses or remote offices. StoreEasy 1550 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 1550 is built on a ProLiant ML110 Gen9 Server.

1-4   4 x LFF SATA/SAS Hot Pluggable Drive Bays

HPE StoreEasy 1550 WSS2016 Storage	Q0F48A
HPE StoreEasy 1550 Storage	K2R62A

NOTE: The above CTO models have no data drives pre-installed for capacity - 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.

HPE StoreEasy 1550 4TB SATA Storage	K2R63A

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

HPE StoreEasy 1550 8TB SATA Storage	K2R64A

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

|	
HPE StoreEasy 1550 16TB SATA Storage	K2R65A

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

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.
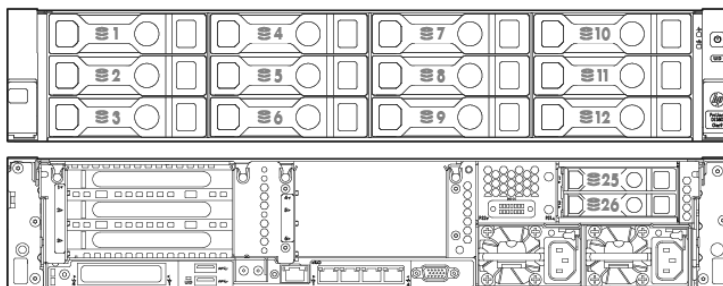
| 1-12 | 12 x LFF SATA/SAS Hot Pluggable Drive Bays |

| 25-26 | 2 x SFF SATA/SAS Hot Pluggable Rear Drive Bays |

HPE StoreEasy 1650 WSS2016 Storage	Q0F49A
HPE 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.

HPE StoreEasy 1650 16TB SAS Storage	K2R16A

NOTE: (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).

HPE StoreEasy 1650 32TB SAS Storage	K2R17A

NOTE: (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).

HPE StoreEasy 1650 32TB SAS WSS2016 Storage	Q1J35A

NOTE: (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).

|	
HPE StoreEasy 1650 48TB SAS Storage	K2R18A

NOTE: (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).

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 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.
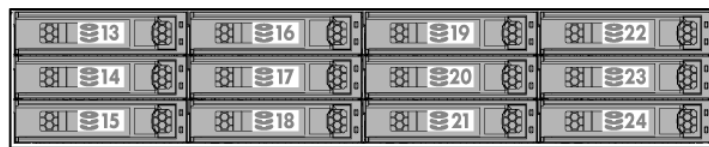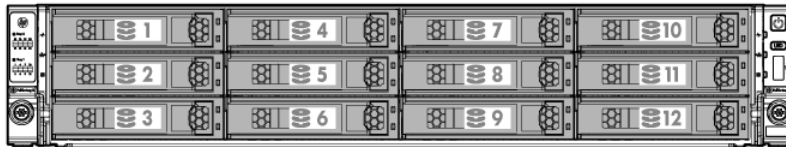
1-12.   Front row of LFF drives

13-24.   Second row of LFF Drives
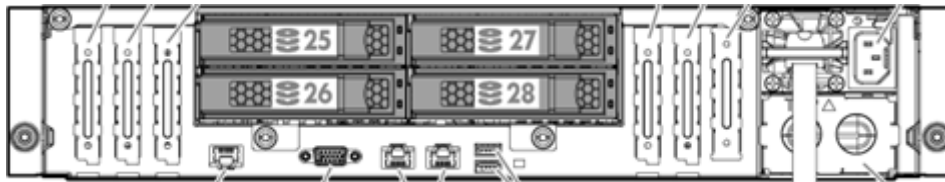
25-28   Rear rows of LFF drives

HPE StoreEasy 1650 Expanded WSS2016 Storage	Q0F50A
HPE StoreEasy 1650 Expanded Storage	N9Y08A

NOTE: (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)

HPE StoreEasy 1650 Expanded 32TB SAS Storage	N9Y09A

NOTE: (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).

HPE StoreEasy 1650 Expanded 48TB SAS Storage	N9Y10A

NOTE: (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).

|	
HPE StoreEasy 1650 Expanded 64TB SAS Storage	N9Y11A

NOTE: (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 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 Gen9 server and includes a rail kit and cable management arm.
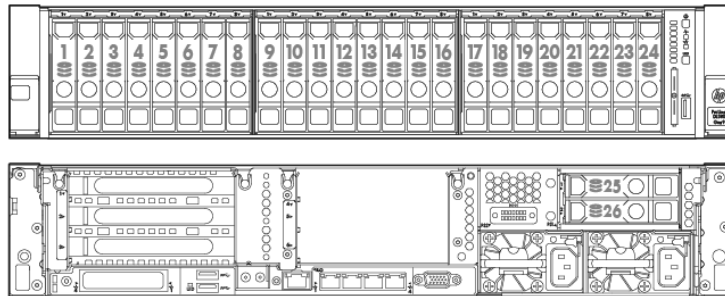
1-24	24 x SFF SATA/SAS Hot Pluggable Hard Drive Bays
25-26	2 x SFF SATA/SAS Hot Pluggable Rear Hard Drive Bays

HPE StoreEasy 1850 WSS2016 Storage	Q0F51A
HPE StoreEasy 1850 Storage	K2R19A

NOTE: (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.)

HPE StoreEasy 1850 9.6TB SAS Storage	K2R20A

NOTE: (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).

HPE StoreEasy 1850 14.4TB SAS Storage	K2R21A

NOTE: (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).

Hardware Specifications of StoreEasy models

Processor/Cache Memory	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
	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	**StoreEasy 1550 WSS2016**	**StoreEasy 1650 WSS2016**	**StoreEasy 1650 Expanded WSS2016**	**StoreEasy 1850 WSS2016**
	Intel® Xeon® E5-2603v4 (1.7GHz/6-core/20MB/85W) Processor	Intel® Xeon® E5-2603v4 (1.7GHz/6-core/20MB/85W) Processor	Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor	Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor	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 1Gb Ethernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband	HPE 361i Adapter 1Gb Ethernet 2-port plus optional HPE Flexible LOM for 10GbE,10Gb or 40Gb Infiniband	HPE 331i Adapter 1Gb Ethernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband

Hardware Specifications of StoreEasy models

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
CPU2 riser PCIe slots	**Expansion Slots #**	PCIe 3.0	x16	x16		Low profile slot	Processor 2
	3						

NOTE: When populating slots on CPU2 riser, a 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, ¾ 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

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

Hardware Specifications of StoreEasy models

Slot 2 PCIe Riser (Optional 3-slot) 719073-B21	Expansion Slots #	Technology	Bus Width	Connector Width	Bus 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
	6	PCIe 3.0	x8	x8	23	Full-height, half-length slot	Proc 2
NOTE: * Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number. **NOTE:** ** Indicates the number of physical electrical lanes running to the connector. **NOTE:** When populating the second optional riser slot, a 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 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)
Storage Controller	StoreEasy 1450 WSS2016	StoreEasy 1650 WSS2016 (BTO)	StoreEasy 1650 WSS2016 (CTO)	StoreEasy 1650 Expanded WSS2016	StoreEasy 1850 WSS2016
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 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 4 x 10TB internal+ 192 x 10TB external using 16 D3600s (requires 2 P441s)	3.92PB 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

Hardware Specifications of StoreEasy models

Power Cords	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
	One high voltage power cord (IEC C13 to C14) standard	One C13 US power cord. Regional or country specific power cord is optional.	Two high voltage power cords (IEC C13 to C14) standard	Two high voltage power cords (IEC C13 to C14) standard	Two high voltage power cords (IEC C13 to C14) standard
	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 **https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html** web page. **NOTE:** The HPE StoreEasy 1550 Storage product is a tower storage system 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 should be 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

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)

Additional options See the corresponding ProLiant QuickSpecs for additional options.

StoreEasy 1450 (DL160 Gen9):
https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346224
StoreEasy 1550 (ML110 Gen9):
https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04545452
StoreEasy 1650 (DL380
Gen9): **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346247**
StoreEasy 1650 Expanded (Apollo 4200 Gen9):
https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04616495
StoreEasy 1850 (DL380 Gen9):
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.

Hardware Specifications of StoreEasy models

Operating System Upgrade Kits	HPE StoreEasy WSS2012 R2 Standard Edition Upgrade Kit	D4T73A
	HPE WSS2016 Standard Edition Upgrade Kit	Q0F57A

Current or previous generation StoreEasy 1000 systems running either Windows Storage Server 2012 or Windows Storage Server 2012 R2 Standard Edition Operating System can be upgraded to the Windows Storage Server 2016, Standard Edition Operating System by purchasing Q0F57A.

HPE StoreEasy 1x40 Storage models running the Windows Storage Server 2012, Standard Edition Operating System can be upgraded to the Windows Storage Server 2012 R2, Standard Edition Operating System by purchasing D4T73A.

This upgrade kit contains the physical media containing the new OS image and a new Microsoft Certificate of Authenticity (COA) label that must be affixed to StoreEasy 1000 once the OS upgrade is complete. The new COA label is required to provide legal proof or purchase of the new OS.

NOTE: Because of the requirement to affix a new WSS2012 R2 or WSS2016 COA label to the product after upgrade, the OS upgrade image cannot be provided as a software download.

Features and benefits

Focus on your business, not your file storage

The HPE StoreEasy 1000 Storage systems come with pre-configured hardware and either Microsoft Windows Storage Server 2016 or 2012 R2 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 practice 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 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.

Optimized: Tailored for file storage

The HPE StoreEasy 1000 Storage systems come with pre-configured hardware and either Microsoft Windows Storage Server 2016 or 2012 R2 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 practice 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 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.

Features and benefits

Windows Storage Server 2016 includes a set of new and enhanced features, in addition to all of the existing WSS2012 R2 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.

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 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.
- 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.
- 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

Features and benefits

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 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

Features and benefits

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.

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.

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.

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 compliant archiving with iTernity Compliant Archive Solution (iCAS), validated to meet the United States Securities and Exchange Commission (SEC) 17a-4(f) requirements and available through HPE Complete.

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.

Features and benefits

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

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 all StoreEasy 1450 WSS2016 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 1Gb Ethernet 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 1Gb Ethernet 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.

HPE StoreEasy 1450 4TB SATA Storage   K2R12A
NOTE: (4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1450 8TB SATA Storage   K2R13A
NOTE: (4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1450 8TB SATA WSS2016 Storage   Q1J33A
NOTE: (4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1450 16TB SATA Storage   K2R14A
NOTE: (4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1450 16TB SATA WSS2016 Storage   Q1J34A
NOTE: (4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

StoreEasy 1450 WSS2016 Storage   Q0F47A

StoreEasy 1450 configuration information

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 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 1450 Storage   **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 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.

Step 2: Choose required internal drive bundles and optional external drives

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

StoreEasy 1450 LFF Drive Bundles

HPE StoreEasy 40TB SAS Smart-Carrier 4-Pack Bundle   **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 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)

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 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)

HPE 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)

StoreEasy 1450 configuration information

HPE Drive options
NOTE: This is not a comprehensive list of compatible drives offered by HPE. However, not every compatible drive can be factory-integrated. The StoreEasy 1450 supports SAS and SATA Smart Carrier LFF HDDs and Smart Carrier Converter LFF SSDs. As a best practice, we advise using the same capacity point and drive type.

SAS Hot Plug LFF (3.5-inch) Drives

HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819201-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	861590-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Extended)	861754-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872487-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872485-B21

SATA Hot Plug LFF (3.5-inch) Drives

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	857648-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	861594-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819203-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Recommended)	861750-B21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872491-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD (Recommended)	861691-B21

D3000 or D6000 Disk Enclosures
StoreEasy 1450 supports 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 Disk Enclosure QuickSpecs for more information).

Step 3: Choose optional external storage controller
SAS Controllers
HPE Smart Array Controllers

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller (Extended)	726825-B21

HPE Smart Host Bus Adapters

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter (Recommended)	726911-B21

Step 4 : Choose optional second Network Adapter
NOTE: HPE 361i 1Gb Ethernet 2-port Network Adapter is included in all StoreEasy 1450 models. The 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/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 366T Adapter (Recommended)	811546-B21
HPE Ethernet 1Gb 2-port 361T Adapter (Extended)	652497-B21

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 331T Adapter (Recommended)	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter (Extended)	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, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 560SFP+ Adapter (Extended)	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter (Extended)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter (Extended)	727055-B21

StoreEasy 1450 configuration information

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE Ethernet 10Gb 2-port 530T Adapter (Recommended)	656596-B21
HPE Ethernet 10Gb 2-port 530SFP+ Adapter (Recommended)	652503-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ,MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 546SFP+ Adapter (Extended)	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/0 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.

VMWNQ: 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.

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

HPE StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter (Recommended)	C8R38A
HPE StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter (Recommended)	C8R39A
HPE 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter (Recommended)	AJ762B
HPE 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter (Recommended)	AJ763B

QLogic Fibre Channel HBAs

HPE 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter (Recommended)	AK344A
HPE 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter (Recommended)	AJ764A
HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter (Recommended)	P9D93A
HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter (Recommended)	P9D94A
HPE StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter (Recommended)	QW971A
HPE StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter (Recommended)	QW972A

Converged Network Adapter

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

StoreEasy 1450 configuration information

Step 6: Choose optional second Processor (WSS2016 models only)

HPE DL160 Gen9 Intel Xeon E5-2603v4 (1.7GHz/6-core/15MB/85W) Processor Kit   801289-B21
NOTE:NOTE: The above processor needs to be ordered only with StoreEasy 1450 WSS2016 models

I/O Expansion Option

HPE 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

HPE 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)   726718-B21
NOTE:NOTE: The above memory kit needs to be ordered only with StoreEasy 1450 models

Registered DIMMs (RDIMMs) for E5-2600v4 Series

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Extended)   805347-B21
NOTE:NOTE: The above memory kit needs to be ordered only with StoreEasy 1450 WSS2016 models

Step 8: Choose redundant power supply

Add a second power supply for redundancy.
HPE 900W Standard AC 240VDC Power Input Module FIO Kit (Recommended)   828734-B21
NOTE:NOTE: This power supply must be ordered when adding a second power supply to the StoreEasy 1450 Base model only (K2R11A)
HPE 900W Standard AC 240VDC Power Input Module (Extended)   775595-B21
NOTE: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

HPE 9.5mm SATA DVD-ROM Optical Drive (Recommended)   726536-B21
HPE 9.5mm SATA DVD-RW Optical Drive (Recommended)   726537-B21

Step 10: Choose optional Security option

HPE Trusted Platform Module Kit   488069-B21

Step 11: Choose optional System Recovery option

HPE StoreEasy XX50 Recovery Software Media Kit   P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software 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 **https://www.hpe.com/us/en/support.html** . 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: **http://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: **http://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 models are available for pre-configured models, however anything ordered with pre-configured models will ship separately and are not factory integrated.
NOTE: Model names are based on raw storage capacity, not usable. Consider RAID overhead when selecting a model.

HPE StoreEasy 1550 4TB SATA Storage   **K2R63A**
NOTE: (4 x 1TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1550 8TB SATA Storage   **K2R64A**
NOTE: (4 x 2TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

HPE StoreEasy 1550 16TB SATA Storage   **K2R65A**
NOTE: (4 x 4TB 6G SATA 7.2K RPM MDL LFF HDDs pre-installed).

StoreEasy 1550 configuration information

Steps for Configure-to-order model

Step 1: Choose a Base Model

The StoreEasy 1550 base models below have no internal data 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 cage)

StoreEasy 1550 LFF Drive Bundles and LFF HDD expansion cage (The following drive pack bundles and Hot Plug Drive cage kit options are required to be ordered together if you want more than 4 LFF drives in your system)

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 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)

Second 4 LFF Hot Plug Drive cage kit	784584-B21

StoreEasy 1550 configuration information

HPE Drive options
NOTE: This is not a comprehensive list of compatible drives offered by HPE. However, not every compatible drive can be factory-integrated. The StoreEasy 1550 supports SAS and SATA Smart Carrier LFF HDDs and Smart Carrier Converter LFF SSDs. As a best practice, we advise using the same capacity point and drive type.

SAS Hot Plug LFF (3.5-inch) Drives

HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819201-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	861590-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Extended)	861754-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872487-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872485-B21

SATA Hot Plug LFF (3.5-inch) Drives

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	857648-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	861594-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819203-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Recommended)	861750-B21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872491-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD (Recommended)	861691-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).

HPE C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord (Extended)	AF556A
HPE C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord (Extended)	AF557A
HPE C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
HPE C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
HPE C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
HPE C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
HPE C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord (Extended)	AF562A
HPE C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
HPE C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
HPE C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
HPE C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
HPE C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord (Extended)	AF568A
HPE C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
HPE C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord (Extended)	AF570A
HPE C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord (Extended)	AF571A
HPE C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord (Extended)	AF572A
HPE C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord	AF591A

StoreEasy 1550 configuration information

Step 4: Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller (Extended)	726825-B21
HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller (Extended)	726903-B21

HPE Smart Host Bus Adapters

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter (Recommended)	726911-B21

Step 5: Choose optional second Network Adapter
NOTE: Broadcom 5717 1Gb 2-port Network Adapter is included in all 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/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 2-port 361T Adapter (Extended)	652497-B21
HPE Ethernet 1Gb 4-port 366T Adapter (Recommended)	811546-B21

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 331T Adapter (Recommended)	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter (Extended)	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, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 560SFP+ Adapter (Extended)	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter (Extended)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter (Extended)	727055-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ,MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 546SFP+ Adapter (Extended)	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/0 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.
VMWNQ: 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

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Extended)	805347-B21

NOTE: The above memory kit needs to be ordered only with StoreEasy 1550 WSS2016 CTO model.
Registered DIMMs (RDIMMs) for E5-2600v3 Series

HPE 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 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.

HPE 750W Common Slot Gold Hot Plug Power Supply Kit (Extended)	512327-B21

Step 8: Choose optional Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive (Recommended)	726536-B21
HPE 9.5mm SATA DVD-RW Optical Drive (Recommended)	726537-B21

Step 9: Choose optional Security option

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

Step 10: Choose optional System Recovery option

HPE StoreEasy XX50 Recovery Software Media Kit	P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software 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.

HPE StoreEasy 1650 16TB SAS Storage   K2R16A

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

HPE StoreEasy 1650 32TB SAS Storage   K2R17A

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

HPE StoreEasy 1650 32TB SAS WSS2016 Storage   Q1J35A

StoreEasy 1650 configuration information

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

HPE StoreEasy 1650 48TB SAS Storage   K2R18A

NOTE: (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
Step 1: 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. They 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 occupy the 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

Step 2: 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 10TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #857644-B21).

HPE 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).

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 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).

HPE 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).

StoreEasy 1650 configuration information

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

NOTE: This is not a comprehensive list of compatible drives offered by HPE. However, not every compatible drive can be factory-integrated. The StoreEasy 1650 supports SAS and SATA Smart Carrier LFF HDDs and Smart Carrier Converter LFF SSDs. As a best practice, we advise using the same capacity point and drive type.

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

HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	857644-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819201-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)	861590-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Extended)	846514-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872487-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)	872485-B21

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

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

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

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)	819203-B21
HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Extended)	872489-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD (Recommended)	861691-B21

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

HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Recommended)	861750-B21

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

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller (Extended)	726825-B21
HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller (Extended)	726903-B21

HPE Smart Host Bus Adapters

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter (Recommended)	726911-B21

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/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 366T Adapter (Recommended)	811546-B21
HPE Ethernet 1Gb 2-port 361T Adapter (Extended)	652497-B21

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 331T Adapter (Recommended)	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter (Extended)	615732-B21

10/25 Gigabit Ethernet adapters

StoreEasy 1650 configuration information

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

Intel chipset-based   with RSS, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 560SFP+ Adapter (Extended)	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter (Extended)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter (Extended)	727055-B21

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE Ethernet 10Gb 2-port 530T Adapter (Recommended)	656596-B21
HPE Ethernet 10Gb 2-port 530SFP+ Adapter (Recommended)	652503-B21

Mellanox chipset-based NICs with RDMA, RSS, VMQ, VMWNQ,MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 546SFP+ Adapter (Extended)	779793-B21
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter (Recommended)	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.

Intel chipset-based with RSS, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

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

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE Ethernet 1Gb 4-port 331FLR Adapter (Recommended)	629135-B22

Emulex chipset-based with RDMA, RSS, VMQ, VMWNQ, MSI-X features[1]

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter (Extended)	727060-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ, MSI-X features[1]

HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter (Extended)	779799-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter (Recommended)	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/0 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.

VMWNQ: 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.

StoreEasy 1650 configuration information

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

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21
HPE InfiniBand QDR/Ethernet 10Gb 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

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

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

QLogic Fibre Channel HBAs

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

Converged Network Adapter

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

StoreEasy 1650 configuration information

Step 6: Choose optional second Processor

HPE DL380 Gen9 Intel Xeon E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit (Extended)	817925-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1650 WSS2016 CTO model.

HPE DL380 Gen9 Intel Xeon E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	719052-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1650 models.

I/O Expansion Option

HPE DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit	719073-B21

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

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

HPE 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)	726718-B21
HPE 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)	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
HPE Trusted Platform Module Kit	488069-B21

Step 9: Choose optional System Recovery option

HPE StoreEasy XX50 Recovery Software Media Kit	P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software 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.

HPE StoreEasy 1650 Expanded 32TB SAS Storage   N9Y09A

NOTE: (8 x 4TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots).

HPE StoreEasy 1650 Expanded 48TB SAS Storage   N9Y10A

NOTE: (8 x 6TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots).

HPE StoreEasy 1650 Expanded 64TB SAS Storage   N9Y11A

NOTE: (8 x 8TB 12G SAS 7.2K RPM LFF MDL HDDs pre-installed, 20 open LFF slots).

StoreEasy 1650 Expanded configuration information

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
Step 1: 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: HPE recommends that the internal data drives for these models be the same type and capacity.

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

Step 2: 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

HPE 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).

HPE 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).

HPE 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).

HPE 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).

HPE 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).

HPE 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).

HPE StoreEasy 48TB SATA LFF (3.5in) Low profile 4-pack HDD	Q2S06A

NOTE: Bundle contains 4 x HPE 12TB 6G SATA 7.2K rpm LFF (3.5-inch) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD   (SKU# 881787-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.
(See the HPE D3000, D6000 or D6020 Disk Enclosure QuickSpecs for more information)

StoreEasy 1650 Expanded configuration information

Step 3: Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller (Extended)	726825-B21

HPE Smart Host Bus Adapters

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter (Recommended)	726911-B21

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, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 331T Adapter (Recommended)	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter (Extended)	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, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 560SFP+ Adapter (Extended)	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter (Extended)	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter (Extended)	727055-B21

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE Ethernet 10Gb 2-port 530SFP+ Adapter (Recommended)	652503-B21
HPE Ethernet 10Gb 2-port 530T Adapter (Recommended)	656596-B21

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ,MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 546SFP+ Adapter (Extended)	779793-B21
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter (Recommended)	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, VMWNQ, MSI-X features[1]

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter (Extended)	727060-B21

Intel chipset-based with RSS, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ, MSI-X features[1]

HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter (Extended)	779799-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter (Recommended)	817749-B21

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE FlexFabric 10Gb 2-port 533FLR-T Adapter (Recommended)	700759-B21
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter (Recommended)	700751-B21

StoreEasy 1650 Expanded configuration information

HPE FlexFabric 10Gb 4-port 536FLR-T Adapter (Recommended)   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/0 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.
VMWNQ: 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

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter   764284-B21
HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter   764285-B21
HPE InfiniBand QDR/Ethernet 10Gb 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

HPE StoreEasy 1650 Expanded E5-2609v4 Processor Upgrade (Recommended)   Q0F70A

NOTE: Q0F70A is not Factory Integrated on sku Q0F50A. For factory integration of the second processor order sku Q0F50A.

HPE StoreEasy 1650 Expanded Processor Upgrade   P9N51A

NOTE: P9N51A is not Factory Integrated on skus N9Y09A, N9Y10A or N9Y11A. For factory integration of the second processor order sku N9Y08A.

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
HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Extended)   805347-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Recommended)   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
HPE 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)   726718-B21
HPE 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)   726719-B21

StoreEasy 1650 Expanded configuration information

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
HPE Trusted Platform Module Kit   488069-B21

Step 8: Choose optional System Recovery option
HPE StoreEasy XX50 Recovery Software Media Kit   P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software 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.

HPE StoreEasy 1850 9.6TB SAS Storage   K2R20A

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

HPE StoreEasy 1850 14.4TB SAS Storage   K2R21A

NOTE: (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
Step 1: 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 WSS2016 Storage	Q0F51A

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.

HPE 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

Step 2: 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

HPE 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).

HPE 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).

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

NOTE: This is not a comprehensive list of compatible drives offered by HPE. However, not every compatible drive can be factory-integrated. The StoreEasy 1850 supports SAS and SATA Smart Carrier SFF HDDs and SSDs. As a best practice, we advise using the same capacity point and drive type.

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HPE 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HPE 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HPE 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

HPE 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HPE 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 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872382-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872376-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

StoreEasy 1850 configuration information

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 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 Mixed Use Solid State Drives

HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872348-B21

D3000 or D6000 Disk Enclosures
The StoreEasy 1850 models support all of D3000 or D6000 Disk Enclosure product families. A Smart Array controller 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

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

HPE Smart Host Bus Adapters

HPE 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 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/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
HPE 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, VMWNQ, VMDq, MSI-X,EEE features[1]

HPE Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 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, VMWNQ, VMDq, MSI-X features[1]

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

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ,MSI-X,EEE features[1]

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

StoreEasy 1850 configuration information

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 1850.

Intel chipset-based with RSS, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

QLogic chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE 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

Broadcom chipset-based with RSS,VMQ, VMWNQ, VMDq, MSI-X features[1]

HPE Ethernet 1Gb 4-port 331FLR Adapter	629135-B22

Emulex chipset-based with RDMA, RSS, VMQ, VMWNQ, MSI-X features[1]

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

Mellanox chipset-based with RDMA, RSS, VMQ, VMWNQ, MSI-X features[1]

HPE 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/0 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.

VMWNQ: 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

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21

StoreEasy 1850 configuration information

HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21

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

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

QLogic Fibre Channel HBAs

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

Converged Network Adapter

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

Step 6: Choose optional second Processor

HPE DL380 Gen9 Intel Xeon E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit (Extended)	817925-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1850 WSS2016 CTO model.

HPE DL380 Gen9 Intel Xeon E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	719052-B21

NOTE: The above processor needs to be ordered only with StoreEasy 1850 models.

I/O Expansion Option

HPE DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit	719073-B21

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.

StoreEasy 1850 configuration information

Registered DIMMs (RDIMMs) for E5-2600v4 Series

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

HPE 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)	726718-B21
HPE 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit (Extended)	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
HPE Trusted Platform Module Kit	488069-B21

Step 9 : Choose optional System Recovery option

HPE StoreEasy XX50 Recovery Software Media Kit	P4A92A
HPE StoreEasy XX50 WSS2016 Recovery Software 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
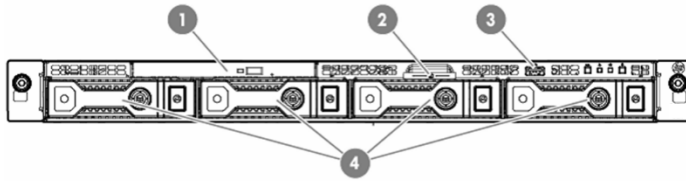
Front View

1. Optical Drive (optional)
2. Serial label pull tab

3. USB 2.0 connector
4. LFF Drive Bays
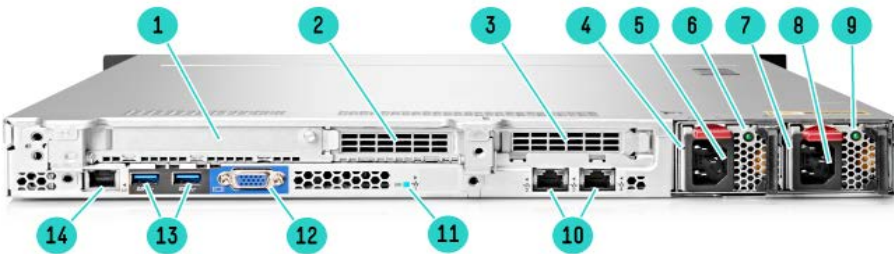
Rear view

1. PCIe3 slot 1 (primary, associated with processor 1)
2. PCIe3 slot 2 (primary, associated with processor 1 occupied by Smart Array P440)
3. PCIe3 slot 3 (secondary, associated with processor 2)
4. Power supply 1 bay
5. Power supply 1 Power Connector (Optional)
6. Power supply 1 LED (Optional)
7. Power supply 2 bay

8. Power supply 2 power connector
9. Power Supply 2 LED
10. Embedded 2x1GbE network adapter
11. Unit ID LED
12. Video Connector
13. USB3.0 connectors
14. Dedicated iLO connector

Different Views of StoreEasy 1000 models
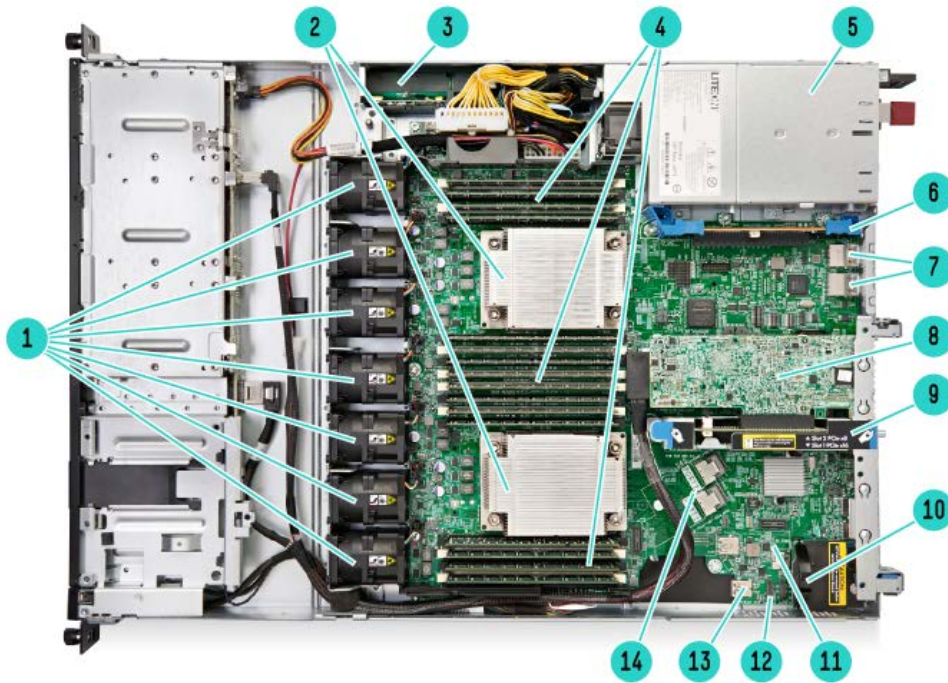
Internal View

1. Hot Swappable fans (up to 7)
2. Processor heat sinks (processors with HPE Smart Sockets placed below heat sinks)
3. HPE Smart Storage Battery
4. DDR4 DIMM slots (up to 16)
5. Entry level power supply bay (1x900W shown)
6. Connector for secondary PCIe riser (associated with CPU2)
7. Embedded 2x1GbE network adapter

8. HPE Smart Array P440 controller
9. Primary PCIe riser (2 PCIe3 slots associated with CPU1)
10. Dedicated iLO module connector
11. MicroSD card slot
12. Internal SATA ports (one for ODD and another one reserved)
13. Internal USB 3.0 connector
14. Embedded B140i SATA controller (not used in StoreEasy 1450)

Different Views of StoreEasy 1000 models

StoreEasy 1550
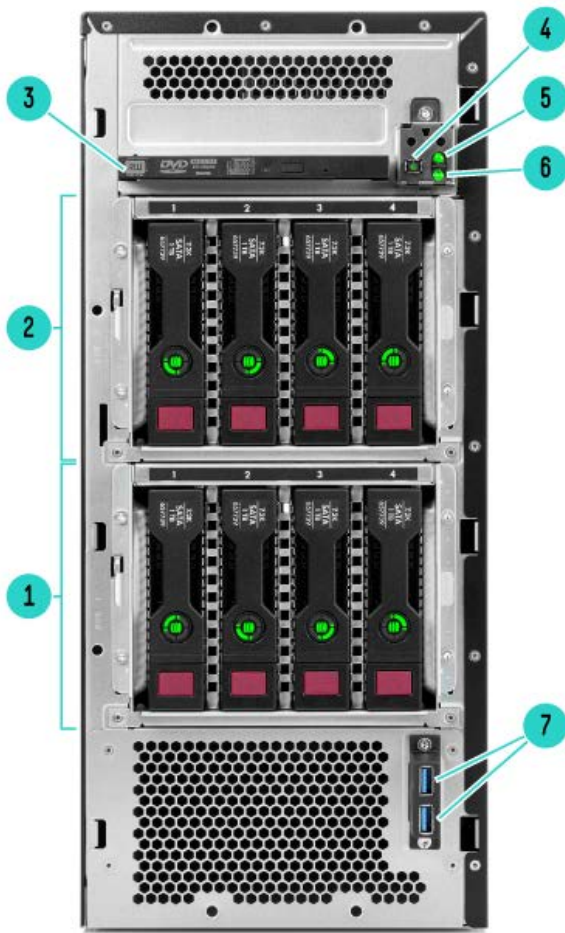
Front View

1. Drive cage
2. Drive cage (optional)
3. Optical drive (optional)
4. Power button/LED

5. Health LED
6. NIC status LED
7. USB 3.0 (2) connectors

Different Views of StoreEasy 1000 models
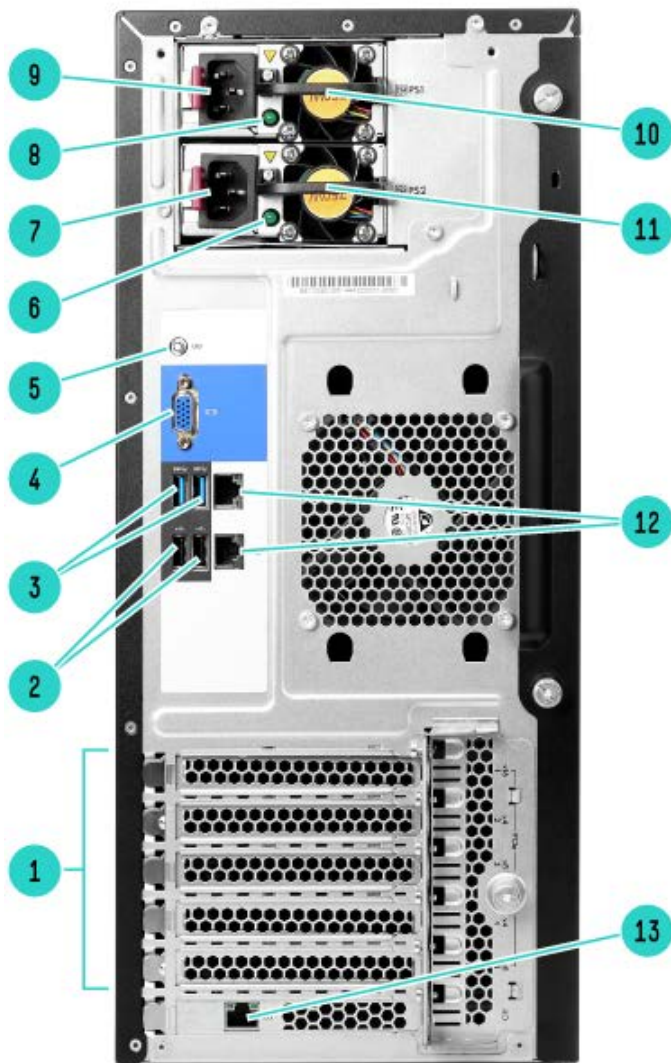
Rear View

1. PCIe3 Slots (Slots 1-5)
2. USB 2.0 (2) connectors
3. USB 3.0 (2) connectors
4. Video connector
5. UID button/LED
6. Power supply 2 LED
7. Power supply 2 power connection (optional)

8. Power supply 1 LED
9. Power supply 1 power connection
10. Power Supply 1 bay
11. Power Supply 2 bay (optional)
12. Network RJ-45 ports (2)
13. HPE ML Gen9 dedicated iLO port

StoreEasy 1650

Different Views of StoreEasy 1000 models

Front View

1. Health LED
2. Power On/Standby button and system power LED
3. NIC status LED

4. UID button/LED
5. 12 LFF Drive Bay
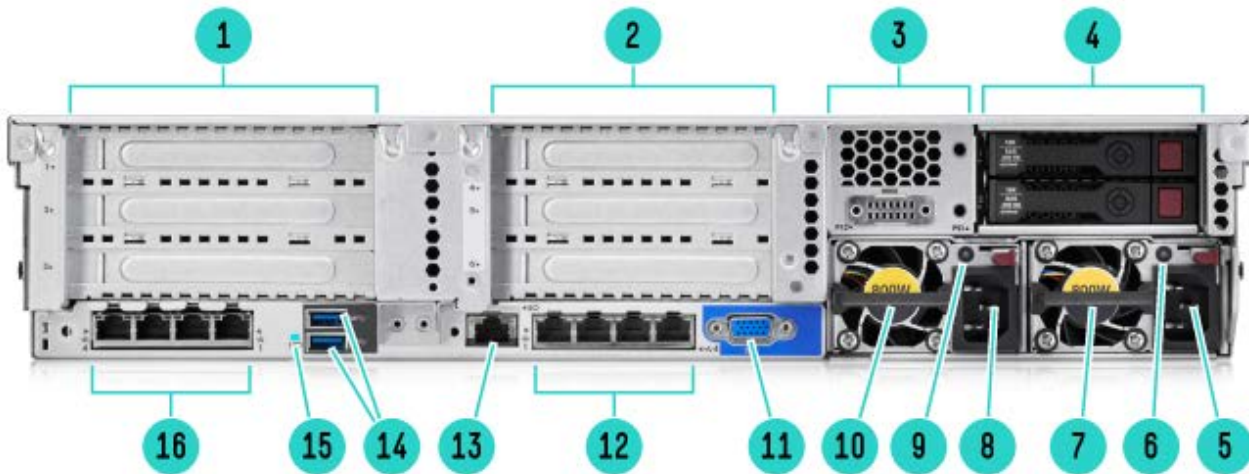
Rear view*

1. PCI Slots (Slots 1-3 top to bottom, riser shipped standard)
2. PCI Slots (Slots 4-6 top to bottom, requires optional second riser card and second processor)
3. Optional serial port
4. Rear 2 SFF drive slots
5. HPE Flexible Slot Power Supply bay 1 (800w shown)

9. Power supply Power LED
10. Power supply Power connection
11. VGA connector
12. Embedded 4x1GbE Network Adapter
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)
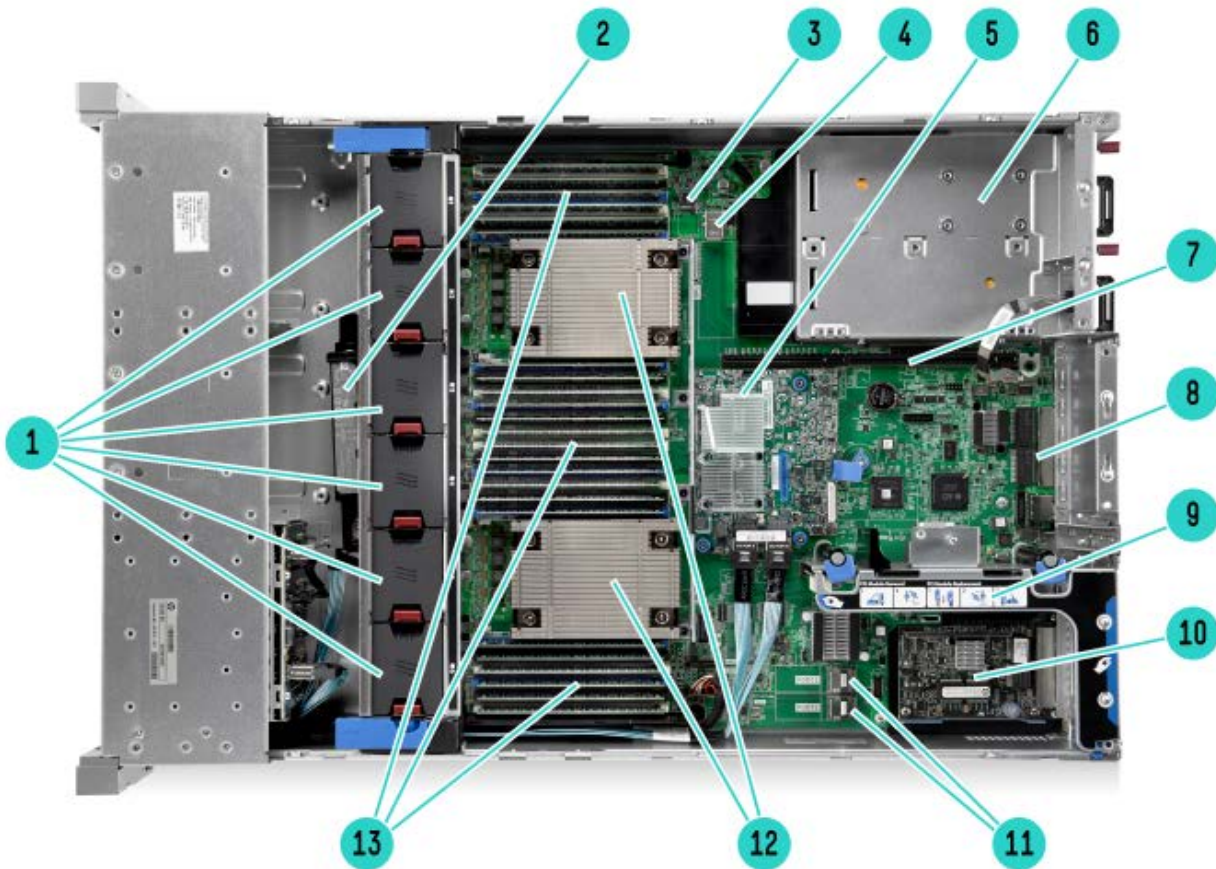
Internal View

1.   Fan cage shown with 6 standard Hot-plug fans (High Performance fans optional)

2.   HPE Smart Storage Battery

3.   MicroSD card slot

4.   Internal USB 3.0 connector

5.   HPE Flexible Smart Array (P440ar)

6.   (Under) Hot Plug redundant HPE Flexible Slot Power supplies

7.   Connection for second (optional) riser (Required second CPU)

8.   Embedded 4x1Gbe NIC

9.   Primary PCIe riser, standard (Optional double wide GPU riser)

10.   Optional Flexible LOM slot

11.   X4 SATA ports (1 and 2)

12.   2 Processors, heatsink showing, with HPE Smart Socket Guide

13.   DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor)
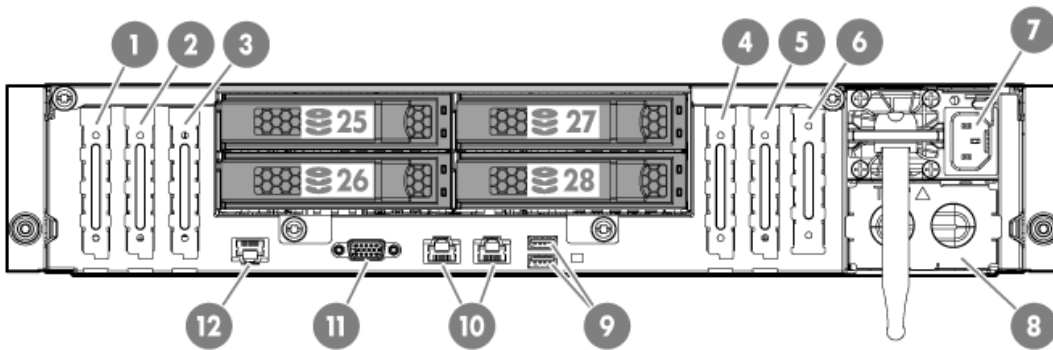
Different Views of StoreEasy 1000 models

StoreEasy 1650 Expanded
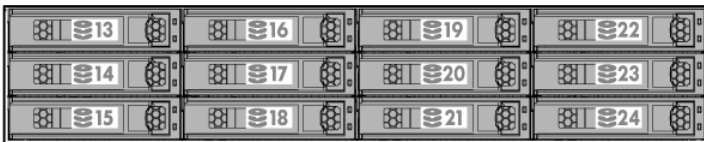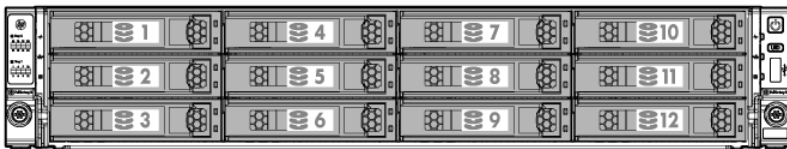
 Front View

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
2. PCI Slot 6
3. PCI Slot 5
4. Dual M.2 Solid State Disks
5. PCI Slot 1
6. Flexible LOM Slot
7. HPE Flexible Slot Power Supply bay 1
8. HPE Flexible Slot Power Supply bay 2 (blank shown)

9.   USB 3.0 Ports
10. Embedded 2x1GbE Ethernet
11. Rear VGA (Video) Port
12. Dedicated iLO Management Port
25. LFF Drive number 25
26. LFF Drive number 26
27. LFF Drive number 27
28. LFF Drive number 28

Different Views of StoreEasy 1000 models
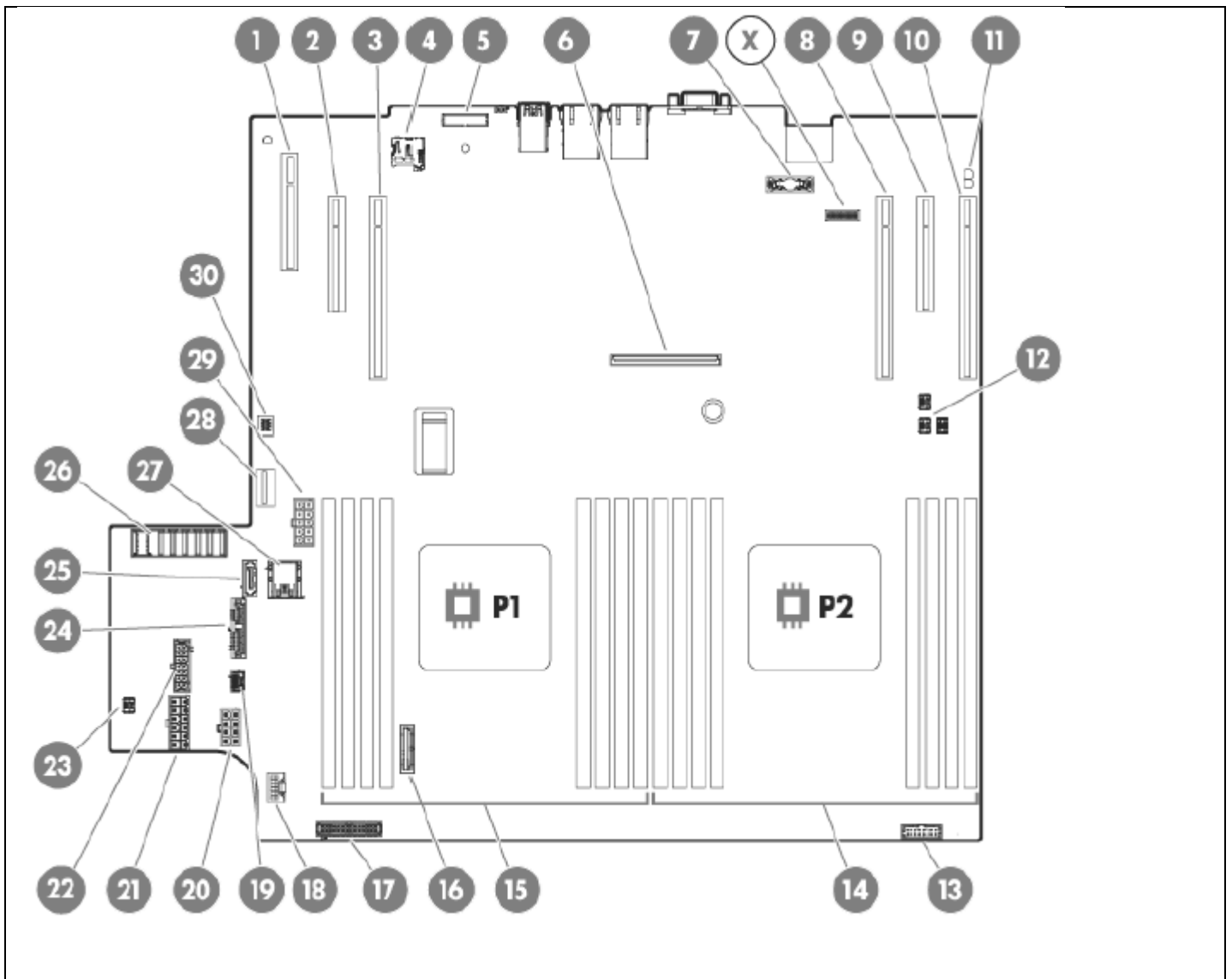
Internal View

1.   Flexible LOM Slot
2.   PCIe3 x8 (8, 4, 1) slot 1 for low-profile, standup expansion board
3.   PCIe3 x16 (16, 8, 4, 1) slot 2 for low-profile, standup expansion board or riser cage options
4.   microSD slot
5.   TPM connector
6.   HPE Flexible Smart Array Controller slot
7.   Dedicated iLO management module connector
8.   PCIe3 x16 (16, 8, 4, 1) slot 5 for low-profile, standup expansion board
9.   PCIe3 x8 (8, 4, 1) slot 6 for low-profile, standup expansion board
10.   PCIe3 x16 (16, 8, 4, 1) slot 7 for low-profile, standup expansion board
11.   NMI header

17.   Fan signal connector
18.   HPE Smart Storage Battery connector
19.   Rear SFF drive backplane detection connector
20.   Fan power connector
21.   Front drive cage 2 backplane power connector
22.   Front drive cage 1 backplane power connector
23.   Storage backup power connector for expansion slots 1–2
24.   SATA 6Gb/s connector 4
25.   SATA 6Gb/s connector 5
26.   Power pass-through board connector
27.   Internal USB 3.0 connector

Different Views of StoreEasy 1000 models

StoreEasy 1850

Front View

1. 8 SFF Drive Bay 1
2. 8 SFF Drive Bay 2
3. 8 SFF Drive Bay 3
4. Serial label pull tab
5. Front USB 3.0 connector

6. UID button/LED
7. NIC status LED
8. Health LED
9. Power On/Standby button and system power LED

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: (all hard drives, power supplies, and processors Installed)	33.04 lb (15kg)
		Minimum: (one hard drive, power supply, and processor installed)	22.03 lb (10kg)
	Input Requirements for Standard 460W PSU, see power specifications tables for detail on 460W, 750W and 1200W power supplies)	Rated Line Voltage	100 to 240 VAC
		Rated Input Current	For 550W Power Supply: 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: **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

Technical Specifications

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.

	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	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	FCC Rating	Class A
(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

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.

Number of PCI links	Four

Technical Specifications

HPE Dynamic Smart Array B140i Controller	**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) 10Base-T (Full-Duplex) 100Base-TX (Half-Duplex) 100Base-TX (Full-Duplex) 1000Base-TX (Half and Full-Duplex)	10 Mb/s per port, 40 Mb/s combined 20 Mb/s per port, 80 Mb/s combined 100 Mb/s per port, 400 Mb/s combined 200 Mb/s per port, 800 Mb/s combined 1000Mb/s per port, 4000 Mb/s combined
	Connector	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)	

Technical Specifications

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: Maximum:	27.56lb (12.5kg) 55lb (24.9g)
	Input Requirements	Range Line Voltage Rated Input Current	100 to 240 VAC For 350W & 550W Power Supply:8A (at 100~240 VAC)
		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)
	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),

Technical Specifications

	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°Cper 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.
	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) of24°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).

Technical Specifications

Acoustic Noise Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

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.

Technical Specifications

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 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

Technical Specifications

	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: (Minimum - 8SFF chassis with 1xSFF HDD and 7 HDD blanks, 1x processor, 1x power supply (plus blank), 1x Flexible Smart Array, 1x Riser installed)	32.6 lb (14.759 kg)
		Maximum: (Maximum - 12 LFF hard drives (No rear drives), 2x processors, 2x power supplies, 1x Flexible Smart Array, 2x Risers installed)	51.5 lb (23.6 kg)
	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

Technical Specifications

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: **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).

Technical Specifications

Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

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 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

Technical Specifications

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
		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)

Technical Specifications

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 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) 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 (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 17.63 x 32 in (8.75 x 44.8 x 81.28 cm) **NOTE:** Dimensions without Bezel.
	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: **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). |

Technical Specifications

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 Classification	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
(EMC)		

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

Technical Specifications

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 2-port 36li 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
		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	

Technical Specifications

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

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.

Service and Support, HPE Care Pack, and Warranty Information

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

https://www.hpe.com/us/en/support.html To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner
HPE Pointnext operational services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- 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 Pointnext operational services at **http://ssc.hpe.com/portal/site/ssc/**

Parts and Materials

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

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Summary of Changes

Date	Version History	Action	Description of Change
02-Jul-2018	Version 39	Changed	Product descriptions were revised.
		Removed	Option 763235-B21 (DL160 Gen9 Intel® Xeon® E5-2603v3) was removed for the SE1450.
04-Jun-2018	Version 38	Changed	Optimized: Tailored for file storage, Optional Software, and StoreEasy 1650 Expanded Technical Specifications were revised.
16-Apr-2018	Version 37	Changed	Optimized: Tailored for file storage, Optional Software, and StoreEasy 1650 Expanded Technical Specifications were revised.
02-Apr-2018	Version 36	Changed	Multiple SKU descriptions were updated.
18-Jan-2018	Version 35	Changed	Overview, Features and Benefits, StoreEasy 1450, StoreEasy 1550, StoreEasy 1650, StoreEasy 1650 Expanded, and StoreEasy 1650 configuration information were revised.
07-Aug-2017	Version 34	Changed	Changes made in all Sections.
05-Jun-2017	Version 33	Changed	Changes were made throughout the entire document.
03-Apr-2017	Version 32	Changed	Changes were made throughout the entire document.
13-Feb-2017	Version 31	Changed	Changes were made throughout the entire document.
28-Nov-2016	Version 30	Changed	Changes were made throughout the entire document.
15-Aug-2016	Version 29	Changed	Changes made to the Configuration Sections of the document.
17-Jun-2016	Version 28	Changed	Changes made to the Hardware Specifications and Configuration Info Sections.
11-Mar-2016	Version 27	Changed	Changes were made throughout the entire document.
19-Feb-2016	Version 26	Changed	Changed the entire document structure.
29-Jan-2016	Version 25	Changed	Content edition on the configuration section.
11-Dec-2015	Version 24	Changed	Changes made to the Standard Features and Options Sections.
01-Dec-2015	Version 23	Changed	Changes were made throughout the entire document.
28-Sept-2015	Version 22	Changed	Added the StoreEasy System Recovery DVD, changes in the What´s New Sections.
19-Jun-2015	Version 21	Changes	Changes made on the following sections: Overview, Features and Benefits, Standard Features, Options and Service and Support.
01-Jun-2015	Version 20	Changed	Added the StoreEasy 1550 Storage model.
30-Mar-2015	Version 19	Changed	Added new models, changes were made on the entire document.
18-Dec-2014	Version 18	Changed	Added SCSI HBA to StoreEasy 1640 options and other minor edits.
17-Oct-2014	Version 17	Changed	Changed in the Options Section of the QS.
		Removed	Removed the HPE StoreEasy 1X30 Storage from the document.
18-Jul-2014	Version 16	Added	Added HPE StoreEasy Windows Storage Server 2012 R2 Upgrade section
03-Jul-2014	Version 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	Version 13	Changed	Storage Controllers and Service and Support were revised.
11-Apr-2014	Version 12	Changed	Changes were to Storage Controllers, Hard Drives, and Optional Software.
31-Mar-2014	Version 11	Changed	Changes were made throughout.
31-Jan-2014	Version 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,

Summary of Changes

			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, 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	Version 9	Changed	Updated the following sections Standard Features - Storage Controller Options - HPE Hard Drives for StoreEasy 1830
20-Sep-2013	Version 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	Version 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	Version 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	Version 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	Version 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: Udated Warranty section.
08-Mar-2013	Version 3	Changed	Changes were made in the following sections: Standard Features: Updated Operating System section Options: in all sections updated parts and part numbers.
21-Dec-2012	Version 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	New	New QuickSpecs.

Summary of Changes

f 𝕏 in ✉

Sign up for updates

Hewlett Packard Enterprise