QuickSpecs

Overview

HPE StoreEasy 1000 Storage

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

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

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

With built-in security, your data remains well protected and available to your users when and where they want to access it. It also enables you to install and run endpoint protection such as antivirus on the system itself, reducing the cost and complexity of connecting an external endpoint protection server. With features including constant health monitoring, mirrored OS disks, advanced memory protection, reliable software support, and more, you can provide users with a highly available solution that keeps their data ready and highly available. Not to mention the support and expertise our highly skilled Hewlett Packard Enterprise certified professionals can offer.

What's New

- Brand new models - StoreEasy 1650 Expanded Storage

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. All StoreEasy 1450 models have Windows Storage Server 2012 R2, Standard Edition, pre-installed from the factory on the four internal LFF drives configured as RAID6. The StoreEasy 1450 is built on a ProLiant DL160 Gen 9 server and includes a rail kit and cable management arm.

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

HP StoreEasy 1450 Storage   K2R11A
(NOTE: This model has no drives pre-configured - at least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of OS in the factory. The OS is not a field installable option.
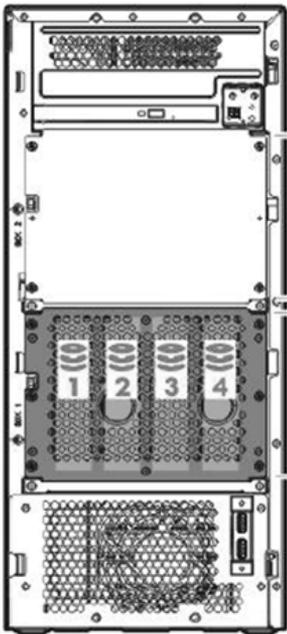
Overview

Please go to StoreEasy 1450 configuration information section for details of available options for various components.)

HP StoreEasy 1450 4TB SATA Storage   K2R12A

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

HP StoreEasy 1450 8TB SATA Storage   K2R13A

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

HP StoreEasy 1450 16TB SATA Storage   K2R14A

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

HPE StoreEasy 1550 Storage

HPE StoreEasy 1550 Storage products are storage solutions that deliver multi-protocol file serving and application storage in a compact and affordable tower form factor package. They're easy to install and manage, making them perfect for a small workgroup, small business or remote office. All StoreEasy 1550 models have Windows Storage Server 2012 R2, Standard Edition, pre-installed from the factory on the four internal LFF drives configured as RAID6. The StoreEasy 1550 is built on a ProLiant ML110 Gen 9 Server.
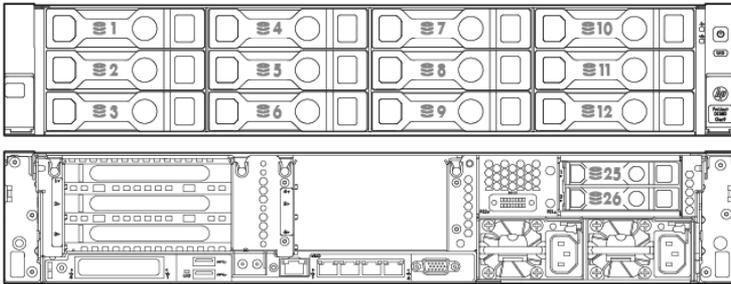

1-4   4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drives Bays

HP StoreEasy 1550 Storage   K2R62A

(NOTE: This model has no drives pre-configured - at least four drives of the same type/capacity, 100GB or greater, must be ordered for pre-installation of OS in the factory. The OS is not a field installable option. Please go to StoreEasy 1550 configuration information section for details of available options for various components.)

HP StoreEasy 1550 4TB SATA Storage   K2R63A

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

HP StoreEasy 1550 8TB SATA Storage   K2R64A

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

HP StoreEasy 1550 16TB SATA Storage   K2R65A

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

Overview

HPE StoreEasy 1650 Storage

HPE StoreEasy 1650 Storage products deliver high capacity and drives down your cost per GB. Six-Core processing, up to 96TB internal storage capacity, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. All StoreEasy 1650 models have Windows Storage Server 2012 R2, Standard Edition, pre-installed from the factory on two rear internal 120B 6G Value Endurance SFF SSDs configured as RAID1. 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/SDD Hot Pluggable Hard Drive Bays
25-26	2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays (StoreEasy 1650 90TB SATA SKU# M0S97A has three LFF Hard Drive Bays in rear – not shown)

HP StoreEasy 1650 Storage
NOTE: This model has no drives pre-configured for capacity requirement– Drive bundles must be ordered separately for complete configuration. Please go to StoreEasy 1650 configuration information section for details of available options for various components.) — K2R15A

HP StoreEasy 1650 16TB SAS Storage — K2R16A
(8 x 2TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 4 open LFF slots and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS)

HP StoreEasy 1650 32TB SAS Storage — K2R17A
(8 x 4TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 4 open LFF slots and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS)

HP StoreEasy 1650 48TB SAS Storage — K2R18A
(8 x 6TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 4 open LFF slots and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS)

HP StoreEasy 1650 90TB SATA Storage — M0S97A
(15 x 6TB 6G 7.2K RPM LFF MDL SATA HDDs pre-installed, 12 HDDs in front slots, 3 HDDs in rear slots (with pre-installed OS on two of the rear HDDs in a RAID 1 configuration. This SKU also comes with 48GB of memory (3 x 16GB RDIMMS). All other specifications are the same as other StoreEasy 1650 SKUs

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. Six-Core processing, up to 224TB internal storage capacity, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. All StoreEasy 1650 Expanded models have Windows Storage Server 2012 R2, Standard Edition, pre-installed from the factory on two rear internal 120B 6G Value Endurance SFF SSDs configured as RAID1. The StoreEasy 1650 Expanded Storage is built on a 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
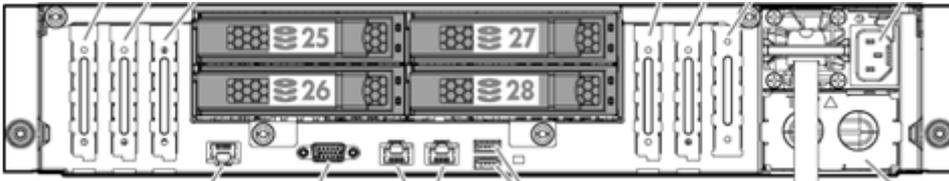
25-28   Rear rows of LFF drives

HP StoreEasy 1650 Expanded Storage   N9Y08A

(28 open LFF HDD slots- 24 in Front, 4 in Rear and Dual 120GB Value Endurance Solid State M.2 Enablement Kit
in rear with pre-installed OS.)
**NOTE: This model has no drives pre-configured for capacity requirement– Drive bundles must be ordered
separately for complete configuration. Please go to StoreEasy 1650 Expanded configuration information
section for details of available options for various components)**

HP StoreEasy 1650 Expanded 32TB SAS Storage   N9Y09A

(8 x 4TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and Dual 120GB Value Endurance
Solid State M.2 Enablement Kit in rear with pre-installed OS)

HP StoreEasy 1650 Expanded 48TB SAS Storage   N9Y10A

(8 x 6TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and Dual 120GB Value Endurance
Solid State M.2 Enablement Kit in rear with pre-installed OS)

**HP StoreEasy 1650 Expanded 64TB SAS Storage**   N9Y11A

(8 x 8TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots and Dual 120GB Value Endurance
Solid State M.2 Enablement Kit in rear with pre-installed OS)

Overview

HPE StoreEasy 1850 Storage

HPE StoreEasy 1850 Storage products deliver Enterprise-class performance, expandability, and flexibility. Six-Core processing, up to 24 internal SFF data drives for performance, and ready for external expandability enhance this ultra-dense 2U shared storage solution for small, medium, or large IT environments. All StoreEasy 1850 models have Windows Storage Server 2012 R2, Standard Edition, pre-installed from the factory on two rear internal 120B 6G Value Endurance SFF SSDs configured as RAID1. The StoreEasy 1850 is built on a ProLiant DL380 Gen 9 server and includes a rail kit and cable management arm.
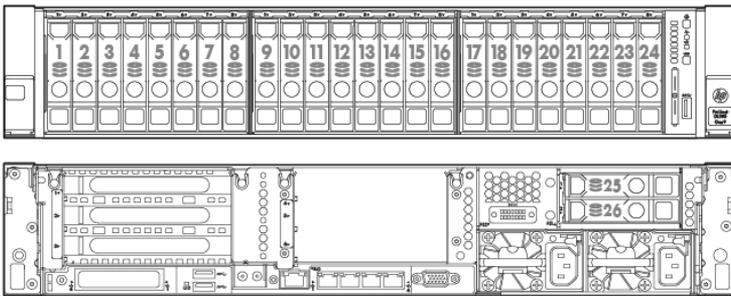
1-24	24 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays
25-26	2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

HP StoreEasy 1850 Storage   K2R19A

(24 open SFF slots in front and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS
NOTE: This model has no drives pre-configured for capacity requirement– Drive bundles must be ordered separately for complete configuration. Please go to StoreEasy 1850 configuration information section for details of available options for various components.)

HP StoreEasy 1850 9.6TB SAS Storage   K2R20A

(8 x 1.2TB 12G 10K RPM ENT SAS SFF HDDs pre-installed, 16 open SFF slots and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS)

HP StoreEasy 1850 14.4TB SAS Storage   K2R21A

8 x 1.8TB 12G 10K RPM 512e SAS SFF HDDs pre-installed, 16 open SFF slots and 2 x 120GB 6G Value Endurance SFF SSDs in rear with pre-installed OS

Hardware Specifications of StoreEasy models

	StoreEasy 1450	StoreEasy 1550	StoreEasy 1650	StoreEasy 1650 Expanded	StoreEasy 1850
Processor / Cache Memory	Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor	Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor

Memory					
Type			DDR4 Registered (RDIMM)		
Maximum (by O/S license)			2TB		
Standard	8GB (1 x 8GB)	8GB (1 x 8GB)	16GB (2 x 8GB)/48GB (2 x 16GB on sku M0S97A only)	16GB (2 x 8GB)	16GB (2 x 8GB)
DIMM Sockets	16	8	24	16	24

Network Controller					
NIC ports	2	2	4	2	4
Controller	HPE 361i Adapter 1GbEthernet 2-port	Broadcom 5717 Dual-port 1Gb	HPE 331i Adapter 1GbEthernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband	HPE 361i Adapter 1GbEthernet 2-port plus optional HPE Flexible LOM for 10GbE,10Gb or 40Gb Infiniband	HPE 331i Adapter 1G Ethernet 4-port, plus optional HPE Flexible LOM for 10GbE, 10Gb or 40Gb Infiniband

StoreEasy 1450 Expansion Slots

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

Hardware Specifications of StoreEasy models

.

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

NOTE: When populating slots on CPU2 riser, second processor must be installed.
NOTE: Bus Width data indicates the number of physical electrical lanes running to the connector.

StoreEasy 1550 Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
5	PCIe 3.0	x8	x8		Full-height, half-length slot	For processor 1
4	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
3	PCIe 3.0	x8	x8		Full-height, half-length slot	Smart Array P440
2	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
1	PCIe 3.0	x16	x16		Full-height, 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

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
** Indicates the number of physical electrical lanes running to the connector.
NOTE: All slots support PCIe cards to 150W or more depending on card, but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

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

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

Hardware Specifications of StoreEasy models

					length slot	
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

* 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.

NOTE: Slot 2 PCIe Riser cannot be added to StoreEasy 1650 sku# M0S97A as the space is occupied by 2 LFF drive bays.

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	Proc 1
3	PCIe 3.0	X8	x8	Low profile	Proc 1
4	PCIe 3.0	X8	X8	Low profile	Proc 1
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.

NOTE: Slot 2 PCIe Riser cannot be added to StoreEasy 1650 SKU# M0S97A as the space is occupied by 2 LFF drive bays.

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 Flexible Smart Array P840ar/2G FIO Controller	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller
RAID	6, 60, 5, 50, 1, 10, 1 ADM, 10 ADM	6, 60, 5, 50, 1, 10, 1 ADM, 10 ADM	6, 60, 5, 50, 1, 10, 1 ADM, 10 ADM	6, 60, 5, 50, 1, 10, 1 ADM, 10 ADM	6, 60, 5, 50, 1, 10, 1 ADM, 10 ADM

Hardware Specifications of StoreEasy models

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/ (12) Twelve 3.5" (Large Form Factor) hot-plug bays in front and (3)Three 3.5" (Large Form Factor) hot-plug bays in rear - SKU# M0S97A only	(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 D3000 and D6000 (requires an additional Smart Array controller than the standard SA P440)	Support for D3000 and D6000 (requires an additional Smart Array controller than the standard SA P440)	Support for D3000 and D6000 (requires an additional Smart Array controller than the standard SA P440ar)	Support for D3000 and D6000(requires an additional Smart Array controller than the standard SA P840ar)	Support for D3000 and D6000 (requires an additional Smart Array controller than the standard SA P440ar)

Maximum Storage Capacity (raw)					
Internal SATA	32TB	48TB	96TB	224TB	48TB
Internal SAS	32TB	48TB	96TB	224TB	43.2TB
	1.568PB	2.352PB	3.930PBs	3.296PBs	2.932PB
Internal plus External	P440 allows 4 x 8TB internal+ 192 x 8TB external using 16 D3600s(requires 2 P441s)	P440 allows 8 x 6TB internal+ 384 x 6TB external using 16 D3600s(requires 4 P441s)	15 x 6TB HDDs internal+480 x 8TB HDDs using 40 D3600s (requires 5 P441s)	28 x 8TB HDDs internal+384 x 8TB HDDs using 40 D3600s (requires 4 P441s)	24 x 1.8TB HDDs internal+480 x 6TB HDDs using 40 D3600s (requires 5 P441s)

	900W Non-Redundant/	750W CS Gold Hot Plug Power Supply	800 Watts Platinum, Hot Plug redundant	800 Watts Platinum, Hot Plug	800 Watts Platinum, Hot Plug

Hardware Specifications of StoreEasy models

Power Supply	800W Gold Redundant (redundant optional)	(redundant optional)		redundant	redundant

Power Cords	**StoreEasy 1450**	**StoreEasy 1550**	**StoreEasy 1650**	**StoreEasy 1650 Expanded**	**StoreEasy 1850**
	One high voltage power cord (IEC C13 to C14) standard	Regional or country specific power cord required.	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 ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the **ProLiant Power Cables** web page.

NOTE: The HPE StoreEasy 1550 Storage product is a tower server that ships standard with a 6' country specific NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional local power cords, they can check the power cord matrix for the appropriate country specific SKU. Please see the following power cord matrix:
 http://www.hp.com/go/powercordmatrix

System Fans	7 hot-plug redundant fans ship standard	2 hot-plug non redundant standard	6 hot-plug redundant fans ship standard	8 hot-plug redundant fans ship standard for 1 processor; 10 hot-plug redundant fans ship for 2 processors	6 hot-plug redundant fans ship 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 Gen 9):
 http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04346224
StoreEasy 1550 (ML110 Gen 9):
 http://h20195.www2.hp.com/v2/gethtml.aspx?docname=c04545452
StoreEasy 1650 (DL380 Gen 9):
 http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04346247
StoreEasy 1650 Expanded (Apollo Gen 9):
 http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04616495
StoreEasy 1850 (DL380 Gen 9):

Hardware Specifications of StoreEasy models

http://h20195.www2.hp.com/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 2012 R2, Standard Edition.
Because StoreEasy is a storage product not every possible option available in the equivalent ProLiant server is listed in the StoreEasy 1X50 QuickSpecs. Options that are shown in this document are the most common ones needed for the primary StoreEasy use model as a file storage product.

Features and benefits

Optimized: Ease of management	The HPE StoreEasy Storage comes with pre-configured hardware with the latest generation storage OS for purpose-built file storage.

Microsoft Windows Storage Server 2012 R2, Standard Edition with HPE enhanced value and unique features.

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

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

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

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

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

Optimized: Tailored for file storage

Windows Storage Server 2012 R2 (WSS2012 R2) includes a robust range of file serving and storage capabilities. It addresses heterogeneous environments and it enables more efficient storage utilization. WSS2012 R2 delivers a similar level of performance and reliability as more expensive storage solutions and it offers support for both file (CIFS/SMB and NFS) and block (iSCSI) protocols, allows for a flexible mix of configurations and includes advanced data management tools. 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), NFS (v2, v3, v4.1), WebDAV, HTTP/HTTPS, FTP/FTPS, ISCSI

- SMB3 protocol: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- SMB3 Multi-channel: Enable aggregation of network bandwidth and network fault tolerance when multiple paths are available between SMB clients and file servers.
- NFS v4.1: For Windows Storage Server 2012 R2, Server for NFS has been updated to support continuous availability. These improvements make it possible to reliably store and run VMware ESX on a virtual machine that is running Windows Server 2012 by using the NFS protocol to share files. Additional improvements in failover clustering take advantage of better resilience to hardware and software outages that may afflict individual cluster nodes. At the same time, failover clustering isolates VMware ESX hypervisor hosts from intermittent glitches during failovers.
- iSCSI: Some applications require block storage. iSCSI Target Server can provide these applications with continuously available block storage. Since the storage is remotely accessible it can also

Features and benefits

consolidate block storage for central or branch office locations. By using boot-capable NICs or a software loader, you can deploy hundreds of diskless servers. This is ideal for large deployments of identical operating system images, such as a Hyper-V server farm or High Performance Computing (HPC) clusters.

- File Server Resource Manager (FSRM): File Server Resource Manager is a set of features within the WSS2012 R2 OS that allows you to manage and classify data that is stored on file servers. File Server Resource Manager includes the following features:
- Storage Quotas: Quotas allow you to limit the space that is allowed for a volume or folder, and they can be automatically applied to new folders that are created on a volume. You can also define quota templates that can be applied to new volumes or folders.
- File screening: File screens help you control the types of files that user can store on a file server. You can limit the extension that can be stored on your shared files. For example, you can create a file screen that does not allow files with an MP3 extension to be stored in personal shared folders on a file server.
- File Classification Infrastructure: File Classification Infrastructure provides insight into your data by automating classification processes so that you can manage your data more effectively. You can classify files and apply policies based on this classification. Example policies include dynamic access control for restricting access to files, file encryption, and file expiration. Files can be classified automatically by using file classification rules or manually by modifying the properties of a selected file or folder.
- File Management Tasks: File Management Tasks enables you to apply a conditional policy or action to files based on their classification. The conditions of a file management task include the file location, the classification properties, the date the file was created, the last modified date of the file, or the last time the file was accessed. The actions that a file management task can take include the ability to expire files, encrypt files, or run a custom command.
- Storage reports: Storage reports are used to help you identify trends in disk usage and how your data is classified. You can also monitor a selected group of users for attempts to save unauthorized files.
- Unlimited Client Access Licenses (CALs) included

NOTE: Windows 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 2012 R2 and Windows Server 2012 have the same application frameworks, services and plumbing to support running the full breadth of Window-compatible applications. Applications that rely upon certain roles that are removed from Windows Storage Server 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 versions of Windows Storage Server 2012 R2 can join Active Directory domains, but cannot be a domain controller.

More information on Windows Storage Server 2012 R2 Standard Edition can be found here: http://technet.microsoft.com/en-us/library/jj643303.aspx

Efficient: Saves you money and time

Achieve an average of 50–60 percent space savings with granular data deduplication.

Data Deduplication: Data deduplication enables Windows Storage Server 2012 R2 to store more data in less physical space for greater storage efficiency. Data deduplication uses variable size chunking and

Features and benefits

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.

Work Folders: 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 7, Windows 8 and Apple iPad clients.

File sync and share feature enable mobile workers to access their files from anywhere. 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.

Reduce your branch office WAN usage with Hosted BranchCache, automatically caching frequently accessed corporate data center files.

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

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

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

Secure: Protect your data always

The 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

Features and benefits

sophisticated access controls using Active Directory Rights Management Services.

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

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

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

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

Opt to utilize the power of LiveVault from j2 Global for easy data backup to the cloud with 7-year retention. Also, enable simplified and cost efficient compliance archiving with iTernity Compliant Archive Solution (iCAS), now validated to meet the United States Securities and Exchange Commission (SEC) 17a-4(f) requirements.

Highly Available: Prevent business and user disruption

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

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

Take advantage of Vision Solutions 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 1650/1850) 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 24x7 software telephone support for the Windows Storage Server operating system.

Optional Software

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

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution. For more information on HPE Data Protector: **http://www.hp.com/go/dataprotector**

Double-Take Availability from Vision Solutions   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 read the **Technical White Paper**.

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 on iTernity iCAS go to: **http://www.iternity.com/HPE-icas_en.html**

LiveVault from j2 Global   HPE StoreEasy and LiveVault enables organizations to protect their critical application data and manage their long-term retention needs in the cloud. For a 30 day free trial of Livevault go to :
http://www.remotedatabackups.com/storeeasy/

StoreEasy 1450 configuration information

Common Specifications for all StoreEasy 1450 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 Internal SAS Controller
Internal Drive Support	Four 3.5" (Large Form Factor) hot-plug drive bays in front
Network Port(s)	HPE 361i Adapter 1GbEthernet 2-port
Expansion Slots	2 x PCIe (one slot occupied by Smart Array P440)
Power	1 x 900W Gold Non-Redundant
Form Factor	1U Rack
Operating 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.hp.com/go/ilo

Select a Pre-configured model

StoreEasy 1450 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 11 (except addition of internal drives in step2) of configure-to-order model are available for
Pre-configured models. Ordered options ship separately and are not factory integrated.

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

HP StoreEasy 1450 4TB SATA Storage   K2R12A

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

HP StoreEasy 1450 8TB SATA Storage   K2R13A

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

HP StoreEasy 1450 16TB SATA Storage   K2R14A

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

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1450 base model below have no internal drives pre-installed. This model requires selection of drive bundles for
factory Integration.

NOTE: 4 drives of the same type and capacity must be selected for the StoreEasy 1450 model. This model cannot ship with
less than 4 drives pre-configured so that the operating system can be pre-installed. The 4 drives will be configured as RAID 6
for OS installation. Other drive types and capacities can be used in external enclosures.

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

StoreEasy 1450 Storage Base model   K2R11A

Specifications   Same as the StoreEasy 1450 pre-configured models listed above

StoreEasy 1450 configuration information

 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 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

Step2 : Choose required internal drive bundles and optional external drives

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

StoreEasy 1450 LFF Drive Bundles

HP StoreEasy 32TB Smart-carrier 4-pack Bundle   N9Y12A
NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive (SKU #793703-B21)

HP StoreEasy 24TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle   K2R22A
NOTE: Bundle contains 4 x HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 761477-B21)

HP StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle
NOTE: Bundle contains 4 x HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 695510-B21)   E7W91A

HP StoreEasy 12TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle
NOTE: Bundle contains 4 x HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 652766-B21)   E7W90A

HP StoreEasy 8TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle
NOTE: Bundle contains 4 x HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 652753-B21)   E7W89A

HP StoreEasy 4TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle
NOTE: Bundle contains 4 x HPE 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 652753-B21)   E7W88A

HPE Drive options (The following options are applicable only for the external storage drives)

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

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

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

HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

SAS Hot Plug LFF (3.5-inch) Performance Drives

HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21

StoreEasy 1450 configuration information

HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive   793669-B21

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

HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive   793695-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive   793683-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive   765255-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive   765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   658071-B21

SATA Hot Plug LFF (3.5-inch) Performance Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive   793667-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives   793665-B21

12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty   762272-B21
Solid State Drive
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty   762270-B21
Solid State Drive

6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty   691860-B21
Solid State Drive
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty   691856-B21
Solid State Drive
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty   691854-B21
Solid State Drive
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty   691852-B21
 Solid State Drive

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value G1
Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1   756660-B21
Solid State Drive

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1
Solid State Drives

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1   764945-B21
 Solid State Drive
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1   764943-B21
Solid State Drive
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1   764941-B21
Solid State Drive
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1   764939-B21
Solid State Drive

6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty   757342-B21
Solid State Drive

StoreEasy 1450 configuration information

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Conveter Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Light G1 Solid State Drives

HP 960GB 6G SATA Light Endurance LFF 3.5-in SC Converter ENT Light 3yr Wty G1 Solid State Drive	756604-B21

D3000 or D6000 Disk Enclosures

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

Step 3: Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

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

HPE Smart Host Bus Adapters

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

Step 4 : Choose optional second Network Adapter

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

1 Gigabit Ethernet adapters
Intel chipset-based with RSS, I/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

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

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

10 Gigabit Ethernet adapters
NOTE: A minimum of two Gigabytes (2 GB) of system memory is required per each adapter
Intel chipset-based with RSS, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 AT features are also available with this NIC)	716591-B21

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

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

StoreEasy 1450 configuration information

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

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

1. Features description

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

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

I/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

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.hp.com/go/ProLiantNICs

HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-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:
 http://h18006.www1.hp.com/storage/saninfrastructure/hba.html.

Emulex Fibre Channel HBAs

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

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A

StoreEasy 1450 configuration information

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
Converged Network Adapter	
HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A

Step 6: Choose optional second Processor

HP DL160 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit	763235-B21
I/O Expansion Option	
HP DL160 Gen9 Low Profile PCIe CPU2 Riser Kit	725586-B21

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

Step 7: Choose optional extra memory kit

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

Registered DIMMs (RDIMMs) for E5-2600v3 Series

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

Step 8 : Choose redundant power supply

Add a second power supply for redundancy.

HP 800W Gold (Redundant)/900W (Non-Redundant) AC Power Input Module	744689-B21

Step 9 : Choose optional Optical Drives

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

Step 10 : Choose optional Security option

HPE Trusted Platform Module Option	488069-B21

Step 11 : Choose optional System Recovery option

HPE StoreEasy XX50 Rcvry Software Media Kit	P4A92A

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 is available here: https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4 A92-11002

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

StoreEasy 1450 configuration information

http://www.hp.com/support . 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

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 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.hp.com/go/ilo**

Choose a Pre-configured model

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

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

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

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

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1550 base model below have no internal drives pre-installed. This model requires selection of drives for factory integration

NOTE: 4 drives of the same type and capacity must be selected for the StoreEasy 1550 model. This model cannot ship with less than 4 drives pre-configured so that the operating system can be pre-installed. The 4 drives will be configured as RAID 6 for OS installation. Other drive types and capacities can be used in external enclosures.

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

StoreEasy 1550 Storage Base model	K2R62A
Specifications	Same as the StoreEasy 1550 pre-configured models listed above

NOTE: This model does not include pre-configured HDDs. At least four drives of the same type/capacity, 100GB or greater,

StoreEasy 1550 configuration information

must be ordered for pre-installation of 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

Step2 : Choose required internal storage and optional external storage drives

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

StoreEasy 1550 LFF Drive Bundles and HDD card cage (These options are required to be ordered together)

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

NOTE: Bundle contains 4 x HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 761477-B21)

HPE StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle	E7W91A

NOTE: Bundle contains 4 x HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 695510-B21)

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

NOTE: Bundle contains 4 x HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive (SKU 652766-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 652753-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 652753-B21)

Second 4LFF Hot Plug Drive cage kit	784584-B21

HPE Drive options (The following options are applicable only for the external storage drives)

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

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

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

HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

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

StoreEasy 1550 configuration information

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid StateDrive	691852-B21

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

HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value G1 Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756660-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756639-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756624-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1 Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764943-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764941-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	757342-B21
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Conveter Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21

StoreEasy 1550 configuration information

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 optional external storage controller

SAS Controllers

HPE Smart Array Controllers

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

HPE Smart Host Bus Adapters

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

Step 4 : Choose optional second Network Adapter
Note : Broadcom 5717 1Gb 2-port Network Adapter is included in all of the StoreEasy 1550 models.   Recommended option for
additional network connectivity is HPE Ethernet 1Gb 2-port 361T Adapter – SKU# 652497-B21

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

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

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

10 Gigabit Ethernet adapters

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

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

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 AT features are also available with this NIC)	716591-B21

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

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

1. Features description
RSS: Receive side scaling (RSS) is a network driver technology that enables the efficient distribution of network receive processing
across multiple CPUs in multiprocessor systems.
EEE (Green Ethernet): Reduces power consumption during periods of low activity.
I/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,

StoreEasy 1550 configuration information

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.

Step 5: 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 E5-2600v3 Series

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

Step 6 : Choose redundant power supply

Add a second power supply for redundancy

HP 750W Common Slot Gold Hot Plug Power Supply Kit   512327-B21

Step 7 : Choose optional Optical Drives

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

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

Step 8: Choose optional Security option

HP Trusted Platform Module Option   488069-B21

Step 9: Choose optional System Recovery option

HPE StoreEasy XX50 Rcvry Software Media Kit   P4A92A

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 is available here:
https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002

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.hp.com/support **Search for the StoreEasy product model in the drivers and download section.**

StoreEasy 1550 configuration information

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

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) SKU# M0S97A only - 48GB (3 x 16GB Dual 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 SKU# M0S97A only- Twelve 3.5" (Large Form Factor) hot-plug drive bays in front, Three 3.5" (Large Form Factor) hot-plug drive bays in rear, two of which contain a 120GB RAID 1 partition for the OS
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.hp.com/go/ilo**

Choose a Pre-configured model

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

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

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

HP StoreEasy 1650 16TB SAS Storage   K2R16A

(8 x 2TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 4 open LFF slots)

HP StoreEasy 1650 32TB SAS Storage   K2R17A

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

HP StoreEasy 1650 48TB SAS Storage   K2R18A

(8 x 6TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 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.**

HP StoreEasy 1650 90TB SATA Storage   M0S97A

(15 x 6TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 12 in front and 3 in rear)

StoreEasy 1650 configuration information

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1650 model come with 2 x120GB 6G SATA Value Endurance SFF (2.5-inch) SC 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 can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration.
NOTE: You should use internal data drives for this models be the same type and capacity. The data drives don't have to be the same as the OS drives.

StoreEasy 1650 Storage K2R15A
NOTE: This model does not include pre-configured data drives. It does include 2 x120GB 6G SATA Value Endurance SFF (2.5-inch) SC Solid State Disk (SSD) drives factory configured as RAID 1 with OS pre-installed (the OS drives are in the two rear SFF bays). Data drives can be added for factory integration
Specifications Same as the StoreEasy 1650 pre-configured models listed above

Step2 : Choose required internal storage and optional external storage drives

Drive Options	Minimum Number of Drives Required	0
	Maximum Number of Drives Allowed	12

StoreEasy 1650 LFF Drive Bundles

HP StoreEasy 32TB Smart-carrier 4-pack Bundle N9Y12A
NOTE: Bundle contains 4 x HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive
 (SKU #793703-B21)
HP StoreEasy 24TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle K2R22A
NOTE: Bundle contains 4 x HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive
 (SKU 761477-B21)
HP StoreEasy 16TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle E7W91A
NOTE: Bundle contains 4 x HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive
 (SKU 695510-B21)
HP StoreEasy 12TB SAS LFF(3.5in) Smart Carrier 4-pack HDD Bundle E7W90A
NOTE: Bundle contains 4 x HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive
(SKU 652766-B21)
HP 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

StoreEasy 1650 configuration information

(SKU 652753-B21)

HP 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 652753-B21)

HPE Drive options (The following options are applicable only for the external storage drives)

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

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

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

HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

SAS Hot Plug LFF (3.5-inch) Performance Drives

HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793669-B21

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

HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793695-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yrWarranty Hard Drive	793683-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

SATA Hot Plug LFF (3.5-inch) Performance Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793667-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives	793665-B21

12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762272-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762270-B21

StoreEasy 1650 configuration information

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

HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value G1 Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756660-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1 Solid State Drives

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764945-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764943-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764941-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	757342-B21
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Conveter Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21

D3000 or D6000 Disk Enclosures

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

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

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

HPE Smart Host Bus Adapters

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

StoreEasy 1650 configuration information

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]

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

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

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

10 Gigabit Ethernet adapters

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

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

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 AT features are also available with this NIC)	716591-B21

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

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

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

HP Ethernet 10Gb 2-port 557SFP+ Adapter	788995-B21

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

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

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

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter (RDMA and I/0 AT features are also available with this NIC)	700699-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

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

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22

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

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

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

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-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-

StoreEasy 1650 configuration information

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.hp.com/go/ProLiantNICs

HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-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:
 http://h18006.www1.hp.com/storage/saninfrastructure/hba.html.

Emulex Fibre Channel HBAs

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

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
Converged Network Adapter	
HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A

Step 6: Choose optional second Processor

StoreEasy 1650 configuration information

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

I/O Expansion Option

HP 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 E5-2600v3 Series

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

Step 8: Choose optional Security option

HP Trusted Platform Module Option	488069-B21

Step 9: Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit	P4A92A

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 is available here:

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

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.hp.com/support** . 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

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), HPE Dual 120GB Value Endurance Solid State 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.hp.com/go/ilo**

Choose a Pre-configured model

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

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

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

HP StoreEasy 1650 Expanded 32TB SAS Storage	N9Y09A

(8 x 4TB 6G 7.2K RPM LFF MDL SAS HDDs pre-installed, 20 open LFF slots)

HP StoreEasy 1650 Expanded 48TB SAS Storage	N9Y10A

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

HP StoreEasy 1650 Expanded 64TB SAS Storage	N9Y11A

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

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

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1650 Expanded model come with 2 x120GB 6G SATA Value Endurance SFF (2.5-inch) SC 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 Expanded can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration.

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

StoreEasy 1650 Expanded configuration information

the same as the OS drives.

StoreEasy 1650 Expanded Storage   N9Y08A

NOTE: This model does not include pre-configured data drives. It does include Dual 120GB Value Endurance Solid State M.2 Enablement Kit in rear PCIe slot factory configured as RAID 1 with OS pre-installed. Data drives can be added for factory integration

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

Step2 : Choose required internal storage and optional external storage drives

Drive Options	Minimum Number of Drives Required	4
	Maximum Number of Drives Allowed	28

StoreEasy 1650 Expanded LFF Drive Bundles

HP StoreEasy 8TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle   N9Y58A
NOTE: Bundle contains 4 x HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive   (SKU# 797279-B21)

HP StoreEasy 16TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle   N9Y43A
NOTE: Bundle contains 4 x HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive   (SKU# 797267-B21)

HP StoreEasy 24TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle   N9Y44A
NOTE: Bundle contains 4 x HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive   (SKU# 797263-B21)

HP StoreEasy 32TB SAS LFF (3.5in) Low profile 4-pack HDD Bundle   N9Y45A
NOTE: Bundle contains 4 x HPE 8TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive   (SKU# 805337-B21)

HP StoreEasy 32TB SATA LFF (3.5in) Low profile 4-pack HDD   N9Y46A
NOTE: Bundle contains 4 x HPE 8TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive   (SKU# 805334-B21)

HPE Drive options (The following options are applicable only for the external storage drives)

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

HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	805337-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797263-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797265-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797271-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797273-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797275-B21

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

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21

StoreEasy 1650 Expanded configuration information

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

SATA Hot Plug LFF (3.5-inch) Performance Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793667-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives	793665-B21

12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762272-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762270-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21

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

HP 960GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789157-B21
HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21
HP 240GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789137-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value G1

Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756660-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756639-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756624-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1

Solid State Drives

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764945-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764943-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764941-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	757342-B21
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Conveter Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21

6G SATA Hot Plug LFF (3.5-inch) Enterprise Light G1 Solid State Drives

HP 960GB 6G SATA Light Endurance LFF 3.5-in SC Converter ENT Light 3yr Wty G1 Solid State Drive	756604-B21

D3000 or D6000 Disk Enclosures

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

StoreEasy 1650 Expanded configuration information

Step 3 : Choose optional external storage controller

SAS Controllers

HPE Smart Array Controllers

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

HPE Smart Host Bus Adapters

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

Step 4 : Choose optional second Network Adapter

Note : HPE 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]

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

10 Gigabit Ethernet adapters

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

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

HP Ethernet 10Gb 2-port 560SFP+ Adapter   665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 AT features are also available with this NIC)   716591-B21

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

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

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

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

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

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter   665243-B21
HP Ethernet 1Gb 4-port 366FLR Adapter   665240-B21

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

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter   779799-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.

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StoreEasy 1650 Expanded configuration information

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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.hp.com/go/ProLiantNICs

HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter	764286-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21

Step 5: Choose optional second Processor

HP Apollo 4200Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit   803303-B21

NOTE: A second processor can only be added to the StoreEasy 1650 Expanded CTO model (SKU N9Y08A) in the factory. NOTE: When a second processor is ordered with the StoreEasy 1650 Expanded CTO model, a redundant fan kit (SKU 806562-B21) will automatically be added to the order. This will increase the total number of fans in the CTO model from 8 to 10.

NOTE: An upgrade kit to add a second processor to the StoreEasy 1650 Expanded CTO or BTO models for field installation will be available at a later date.

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 E5-2600v3 Series

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

Step 7: Choose optional Security option

HP Trusted Platform Module Option   488069-B21

StoreEasy 1650 Expanded configuration information

Step 8 : Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit   P4A92A

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 is available here: https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002

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.hp.com/support. 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

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.hp.com/go/ilo**

Choose a Pre-configured model

StoreEasy 1850 Pre-configured models come with factory-installed drives and the Microsoft Windows Storage Server 2012 R2 Standard
Edition operating system pre-installed

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

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

HP StoreEasy 1850 9.6TB SAS Storage K2R20A

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

HP StoreEasy 1850 14.4TB SAS Storage K2R21A

(8 x 1.8TB 12G 10K RPM ENT SAS 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.

Steps for Configure-to-order model

Step1 : Choose a Base Model

The StoreEasy 1850 models come with 2 x120GB 6G SATA Value Endurance SFF (2.5-inch) SC 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 can ship with just the OS drives and no data drives. If data drives are needed, select the drives for factory integration.

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

StoreEasy 1850 configuration information

StoreEasy 1850 Storage   K2R19A

NOTE: This model does not include pre-configured data drives. It does include 2 x120GB 6G SATA Value Endurance SFF (2.5-inch) SC Solid State Disk (SSD) drives factory configured as RAID 1 with OS pre-installed (the OS drives are in the two rear SFF bays). Data drives can be added for factory integration

Specifications   Same as the StoreEasy 1850 pre-configured models listed above

Step2 : Choose required internal Storage and optional external storage options

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

StoreEasy 1850 SFF Drive Bundles

HP StoreEasy 7.2TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle   K2R23A
NOTE: Bundle contains 4 x HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive (SKU 791034-B21)

HP StoreEasy 4.8TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle   E7W93A
NOTE: Bundle contains 4 x HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive (SKU 718162-B21)

HP StoreEasy 3.6TB SAS SFF(2.5in) Smart Carrier 4-pack HDD Bundle   E7W92A
NOTE: Bundle contains 4 x HPE 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive (SKU 652589-B21)

HPE Drive options(The following options are applicable only for the external storage drives)

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

HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21

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

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

StoreEasy 1850 configuration information

HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21

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

HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779176-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779172-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779164-B21
HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802578-B21
HP 400GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802582-B21
HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802586-B21
HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802891-B21

12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21

6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	757339-B21
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21

6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value G1 Solid State Drives

HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756657-B21

6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value M1 Solid State Drives

HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764929-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764927-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764925-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764923-B21

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

HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21

D3000 or D6000 Disk Enclosures

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

Step 3 : Choose optional external storage controller

SAS Controllers

StoreEasy 1850 configuration information

HPE Smart Array Controllers

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

HPE Smart Host Bus Adapters

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

Step 4 : Choose optional second Network Adapter

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

1 Gigabit Ethernet adapters

Intel chipset-based with RSS, I/0 AT, VMQ, VMWNQ, VMDq, MSI-X,EEE features[1]

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

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

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

10 Gigabit Ethernet adapters

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

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

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter (RDMA and I/0 AT features are also available with this NIC)	716591-B21

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

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

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

HP Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HP Ethernet 10Gb 2-port 557SFP+ Adapter	788995-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

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

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter (RDMA and I/0 AT features are also available with this NIC)	700699-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

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

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22

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

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

StoreEasy 1850 configuration information

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

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter   779799-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.hp.com/go/ProLiantNICs

HP InfiniBand FDR 2-port 545QSFP Adapter   702211-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter   764284-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter   764285-B21
HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR+QSFP Adapter   764286-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA   583211-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:
 http://h18006.www1.hp.com/storage/saninfrastructure/hba.html.

Emulex Fibre Channel HBAs

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

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter   AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter   AJ764A

StoreEasy 1850 configuration information

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A

Converged Network Adapter

HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
HP StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A

Step 6: Choose optional second Processor

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

I/O Expansion Option

HP 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

Registered DIMMs (RDIMMs) for E5-2600v3 Series

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

Step 8: Choose optional Security option

HP Trusted Platform Module Option	488069-B21

Step 9 : Choose optional System Recovery option

HP StoreEasy XX50 Recovery Software Media Kit	P4A92A

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 is available here:
 https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11002

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.hp.com/support** . 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
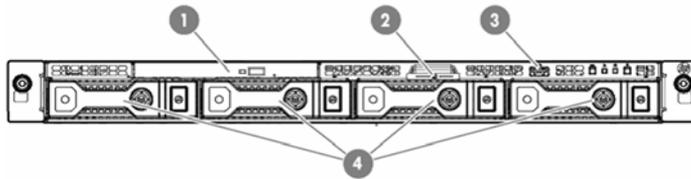
Front View

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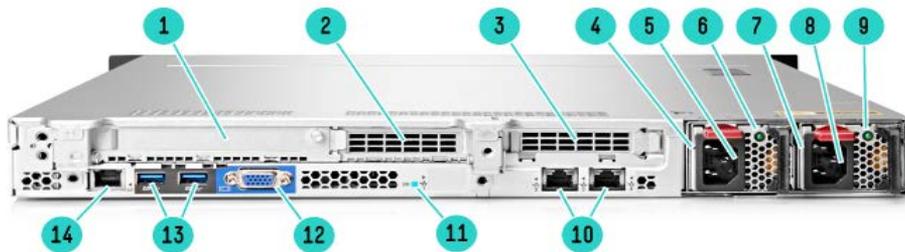
Rear view

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

Different Views of StoreEasy 1000 models
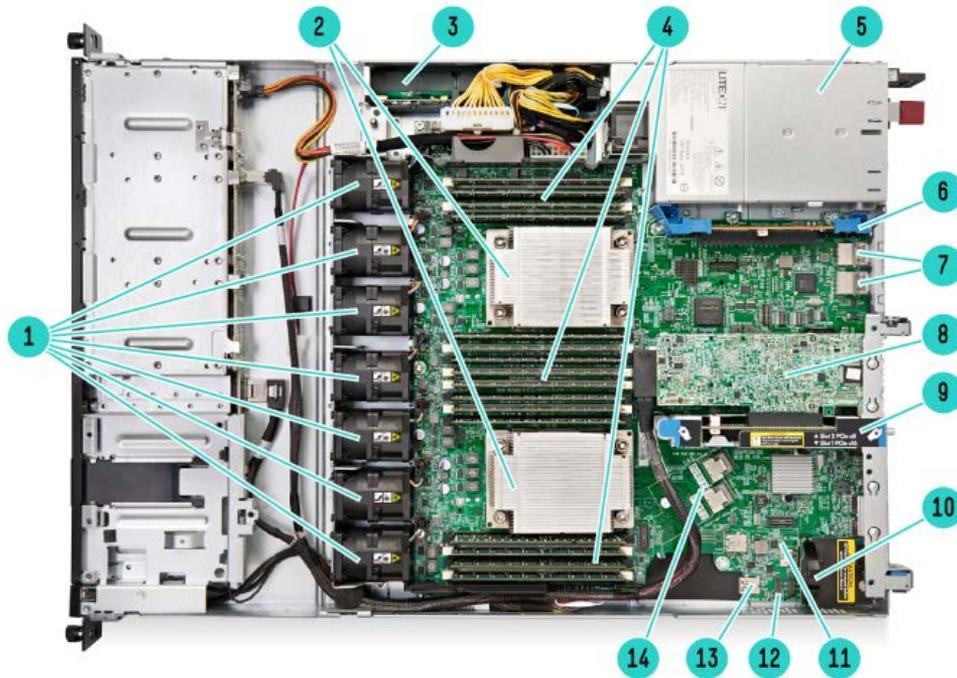
Internal View

1. Hot Swappable fans (up to 7)

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

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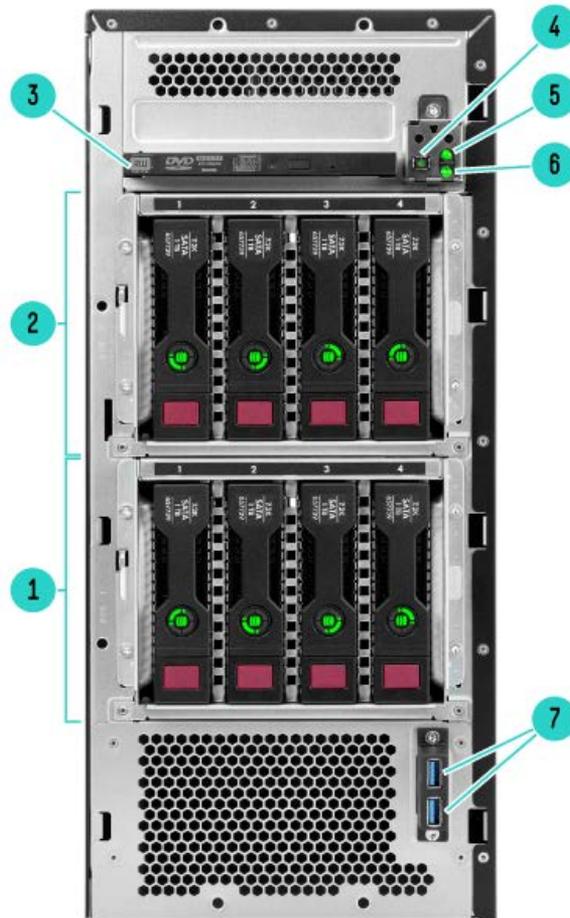
Front View

1. Drive cage
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
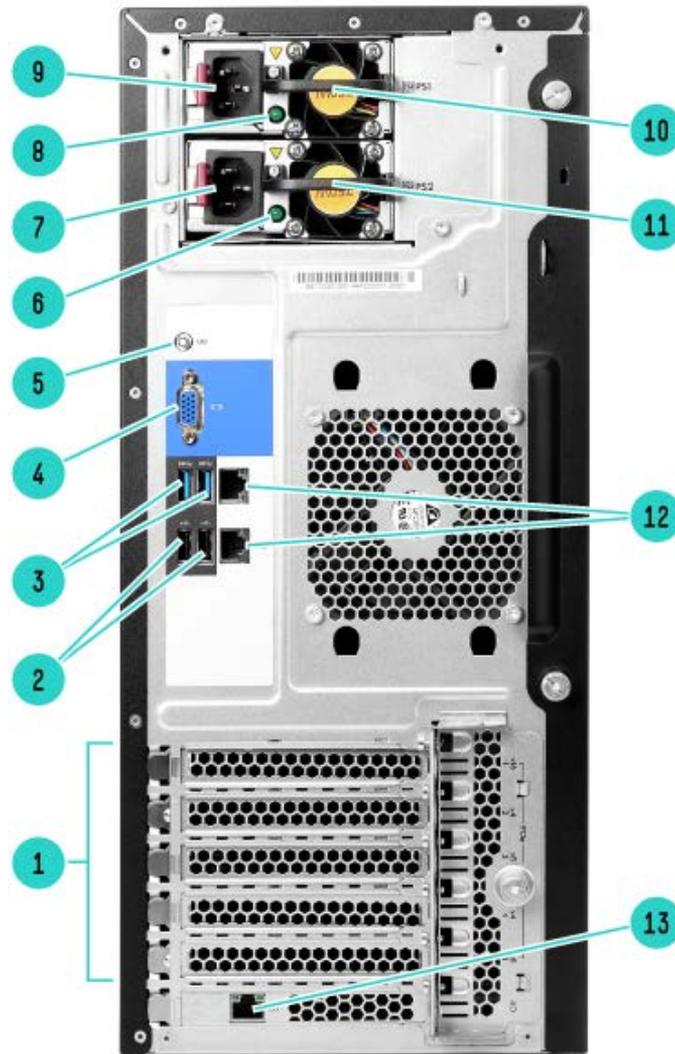
Rear View

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
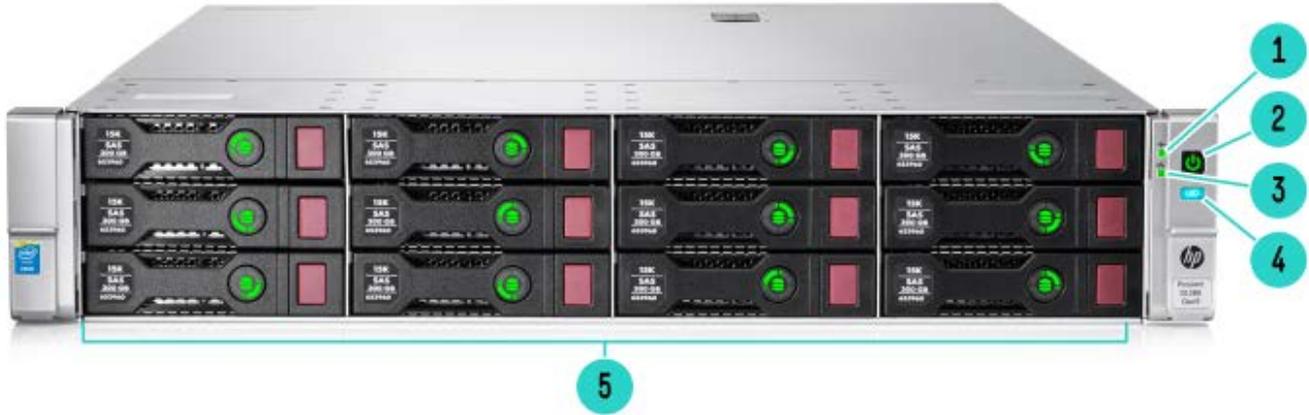
Front View

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
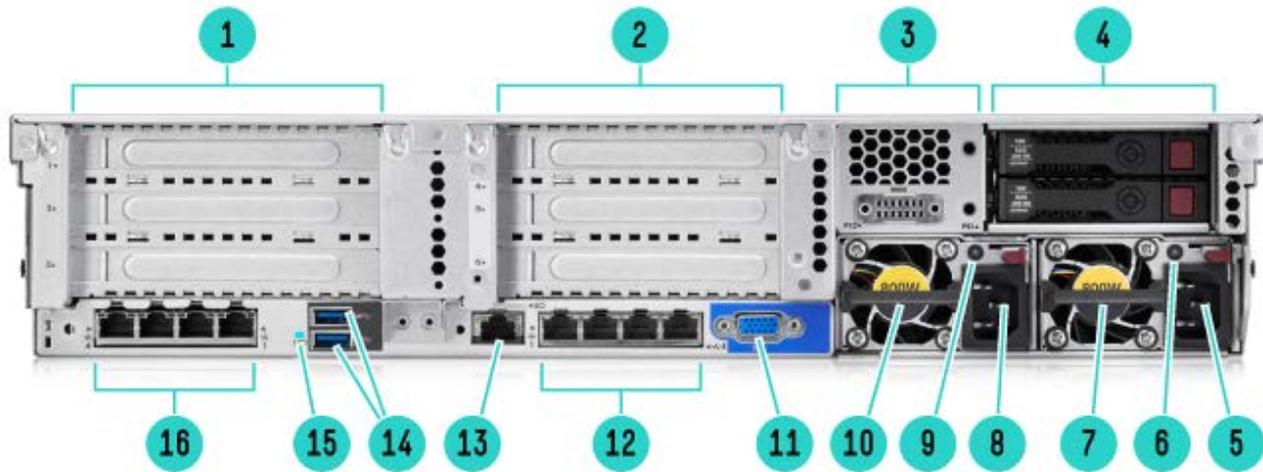
Rear view*

1. PCI Slots (Slots 1-3 top to bottom, riser shipped standard)
   PCI Slots (Slots 4-6 top to bottom, requires optional second
2. riser card and second processor; not available on SE1650 90TB SKU# M0S97A)

3. Optional serial port

4. Rear 2 SFF drive slots (SE1650 90TB SKU# M0S97A has 3 LFF drives in rear – see Note below)

9. Power supply Power LED

10. Power supply Power connection

11. VGA connector

12. Embedded 4x1GbE Network Adapter

Different Views of StoreEasy 1000 models

5. HPE Flexible Slot Power Supply bay 1 (800w shown)

6. Power supply Power LED

7. Power supply Power connection

8. HPE Flexible Slot Power Supply bay 2 (800w shown)

13. Dedicated iLO connector

14. USB 3.0 connectors (2)

15. Unit ID LED

16. Optional FlexibleLOM ports (Shown: 4x1GbE)
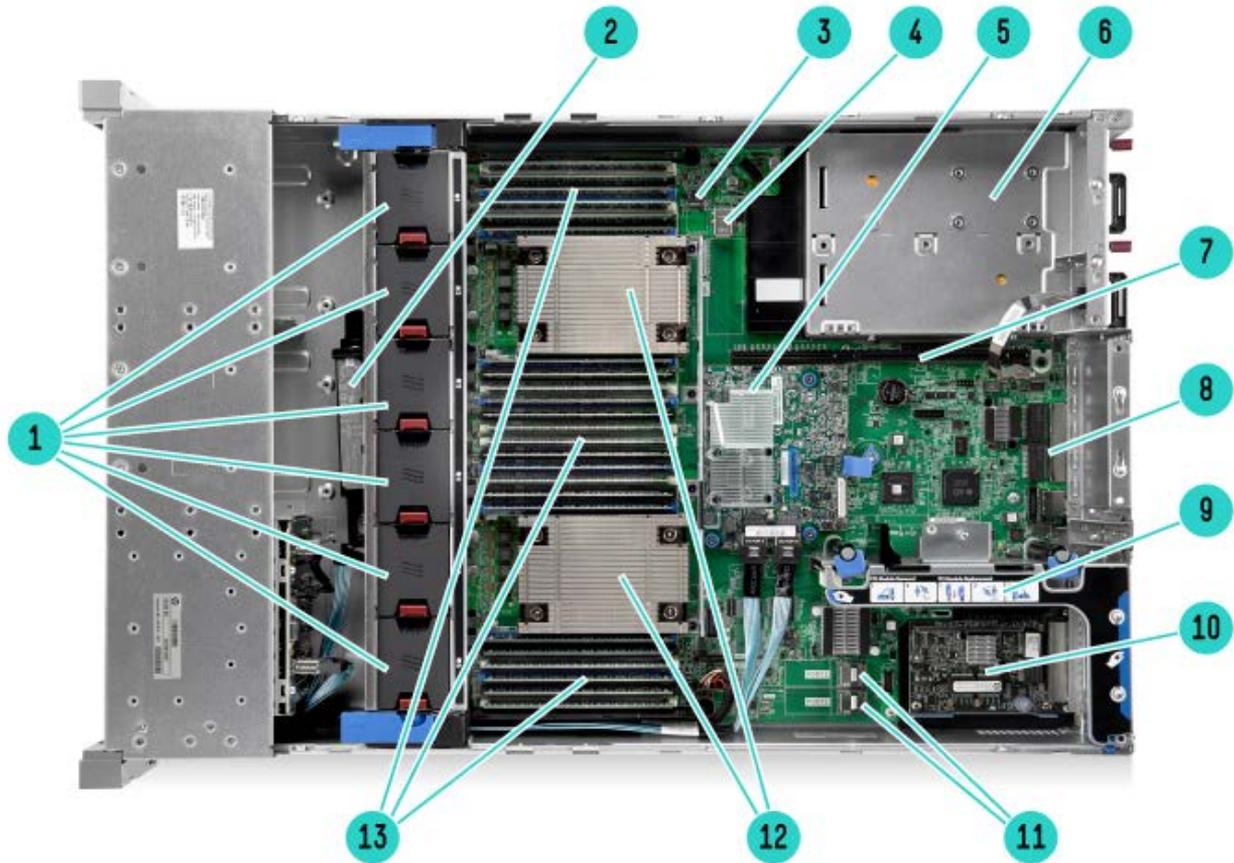
Internal View

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)
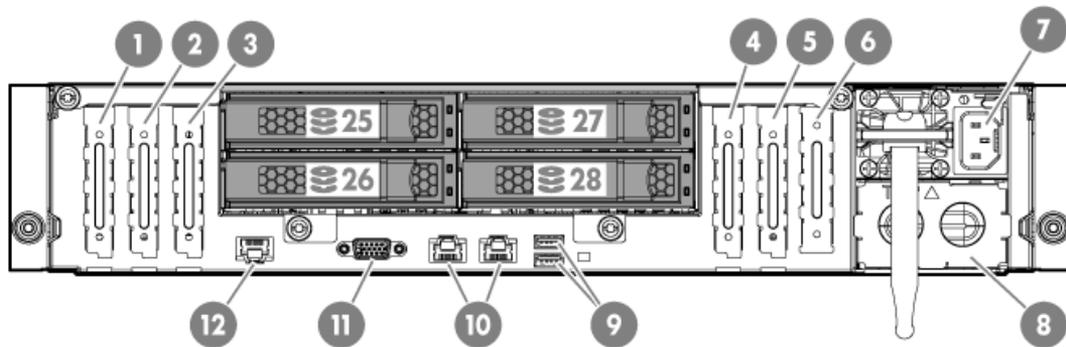
StoreEasy 1650 Expanded

Different Views of StoreEasy 1000 models
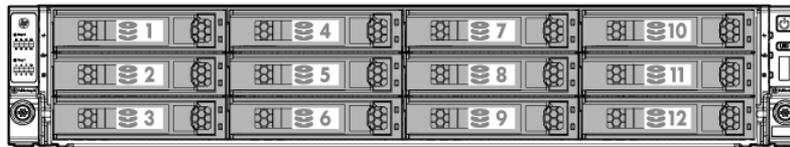
Front View

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

Different Views of StoreEasy 1000 models

Rear view

1. PCI Slot 7
2. PCI Slot 6
3. PCI Slot 5
4. Dual 120GB Value Endurance Solid State M.2
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
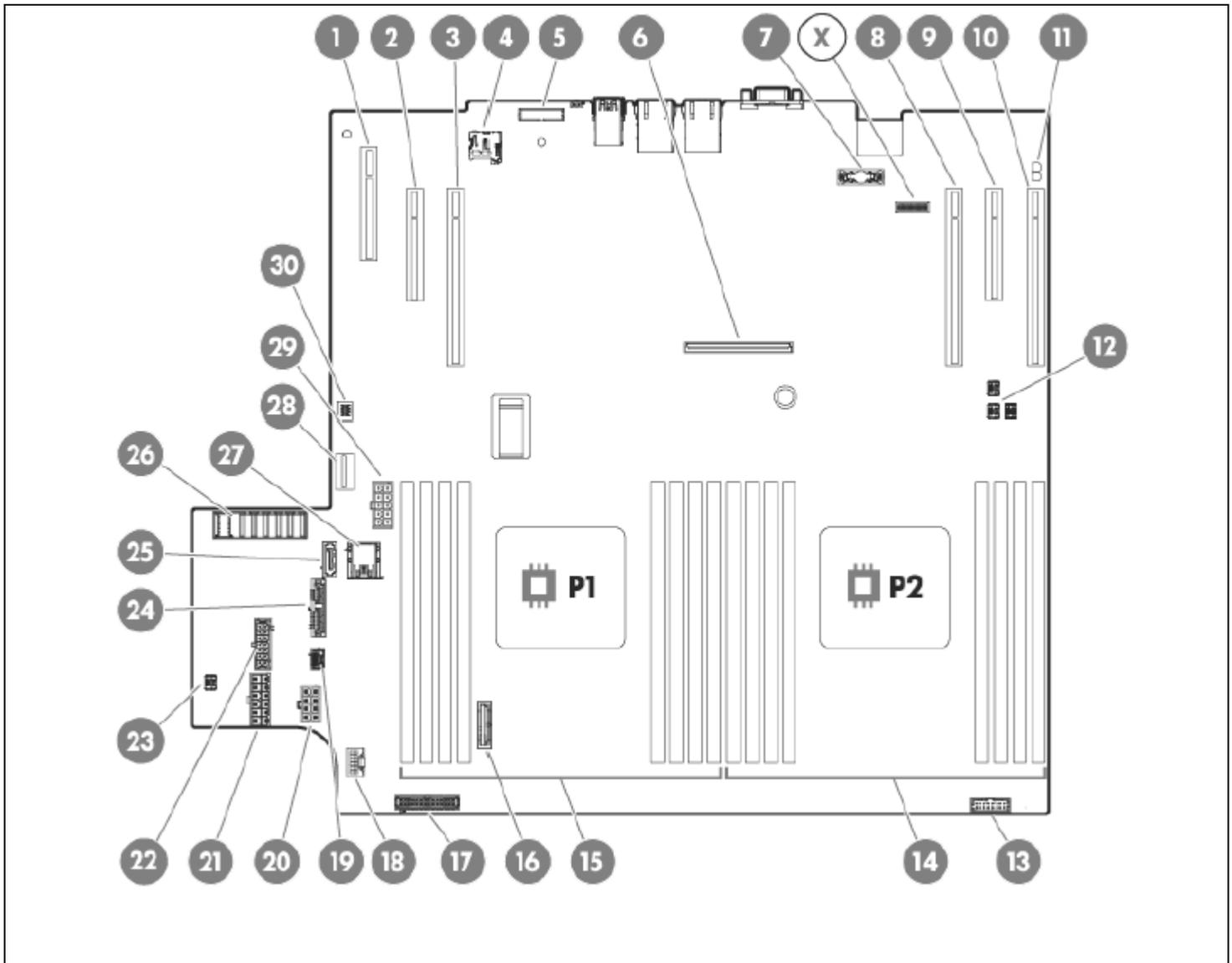
Internal View

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

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

Different Views of StoreEasy 1000 models

11.   NMI header   27.   Internal USB 3.0 connector

StoreEasy 1850

Front View

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

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

Technical Specifications

StoreEasy 1450	**Dimensions** (H x W x D)	4 LFF - 1.7 x 17.1 x 23.9 inches (4.29 x 43.46 x 60.76 cm)
	Weight (approximate)	Maximum: (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, 550W 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: **http://www.hp.com/go/proliant-energy-efficient** or **http://www.hp.com/go/hppoweradvisor** - 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	For approved hardware configurations, the supported system

Technical Specifications

	Operating Support	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.hp.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.hp.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

Technical Specifications

	L pAm	Performance 5.6 B Entry 36.3 dBA Base 36.2 dBA Performance 39.7 dBA
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22; K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
	NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

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

HPE Embedded Dual Port 361i Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T

Technical Specifications

		IEEE 802.3ab 1000Base-T		
		IEEE 802.3u 100Base-TX		
		IEEE 1588, IEEE 802.1AS		
		IEEE 802.3az - Energy Efficient Ethernet (EEE)		
	Data Transfer Method	PCI Express v 2.0, 5.0 GT/s, two lanes (x2)		
	Controller	Intel I350 Powerville		
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined	
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined	
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined	
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined	
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined	
	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)	

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)

Technical Specifications

Tower Weight	Minimum:	27.56lb (12.5kg)
	Maximum:	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: **http://www.hp.com/go/proliant-energy-efficient** or **http://www.hp.com/go/hppoweradvisor** - Click on the system of interest.
Power Supply Output	Rated Steady-State Power	For 550 W Power Supply:550 W (at 100 VAC),550 W (at 200 VAC),
	Maximum Peak Power	For 350 W Power Supply:350 W (at 100 VAC),350 W (at 200 VAC),
System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°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.hp.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.hp.com/servers/ashrae**.

Technical Specifications

		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).

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	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003;

Technical Specifications

	Standards	CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

HPE Dynamic Smart Array B140i Controller	**Number of PCI links**	Four
	PCI link rate	4Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data 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	
	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

Technical Specifications

	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.hp.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.hp.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.

Technical Specifications

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 (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.

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

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

Technical Specifications

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

HPE Smart Array P440ar	**Dimensions** (excluding bracket)	Flexible Smart Array Form Factor 5.3 x 4.1 x 1.2 in	Low Profile PCIe Form Factor 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 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm) **NOTE: Dimensions without Bezel.**	
	Input Requirements (per power supply)	Range Line Voltage	100 to 120 VAC 200 to 240 VAC
	BTU Rating	Maximum	For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only
	Power Supply Output	Rated Steady-State Power	For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only

Technical Specifications

(per power supply)	Maximum Peak Power	For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (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.hp.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.hp.com/servers/Ashrae** System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.
(non-condensing)	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise		Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).
	Idle	

Technical Specifications

	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
	Number of SAS/SATA links	10 links

Technical Specifications

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

	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)	
HPE Ethernet 1Gb 2-port 36li Adapter	**Controller**	BCM5719	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined
		1000Base-TX (Full-Duplex)	2000Mb/s per port, 8000 Mb/s combined
	Connector	Four RJ-45	
	Cable Support	10 Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

Service and Support, HPE Care Pack, and Warranty Information

Warranty

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

Services Included with the Product	One year of Hewlett Packard Enterprise Software Support for the Windows Storage Server OS, standard 9x5 business hours (software advisory and remedial software telephone support, and media and documentation distribution service).
Service and Support	**Services to accelerate time to results** Hewlett Packard Enterprise Storage Services bring you a rich portfolio of consulting and support services designed to add value to our core storage products and solutions. We have the know-how and experience to put storage technology to work for you. We work closely with you as your strategic partner, leveraging our full services portfolio to make sure that everything works to optimize your enterprise. Choose from services aligned to our storage product offerings and lifecycle. From mission-critical onsite services to innovative web-based remote support, you choose the precise level of attention and support your business demands.
Discover, plan, and design	Choose from a rich portfolio of services to make the most of HPE StoreEasy Storage, so you can efficiently and affordably consolidate, manage, and extract value from unstructured data. **Hewlett Packard Enterprise Services can help you discover needs and create a plan for simplifying the environment, reducing risk, and maximizing your storage investments** **HPE Backup Recovery Efficiency Analysis -** Assessment of how efficiently backup components are being used as the amount of data to be backed up continues to grow exponentially via analysis intelligence and a snapshot of your current backup environment. **http://h20195.www2.hp.com/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. **http://h20195.www2.hp.com/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. **http://h20195.www2.hp.com/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	**We can help you configure, set up, and efficiently use your HPE StoreEasy Storage, as well as help**

Service and Support, HPE Care Pack, and Warranty Information

integrate	**migrate data, improve capacity utilization, and establish information management standards used across backup, replication, and archiving needs.**

HPE StoreEasy 1000/3000 Storage S Installation and Startup Service -Expert system installation and setup by an 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.
http://h20195.www2.hp.com/v2/GetDocument.aspx?cc=us&doclang=EN_US&docname=4AA2-6112ENW&doctype=data%20sheet&lc=en&searchquery=&jumpid=reg_r1002_usen_c-001_title_r0004

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.
http://h20195.www2.hp.com/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.
http://h20195.www2.hp.com/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.
http://h20195.www2.hp.com/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
http://h20195.www2.hp.com/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.
http://h20195.www2.hp.com/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.
http://h20195.www2.hp.com/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.
http://education.hp.com/curr-storsan.htm

Service and Support, HPE Care Pack, and Warranty Information

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

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.
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4676ENW.pdf

http://h18004.www1.hp.com/products/servers/management/insight-remote-support/overview.html

For more information

http://www.hp.com/services/storage
To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner
HPE Care Pack Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from Hewlett Packard Enterprise or an enterprise reseller are quoted using Hewlett Packard Enterprise order configuration tools.
- Customers purchasing from a commercial reseller can find HPE Care Pack Services at **http://www.hp.com/go/lookuptool**

Summary of Changes

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

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

Summary of Changes

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

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