

Overview - StoreEasy 3850 GBS

HPE StoreEasy 3850 Gateway Blade Storage

HPE StoreEasy 3850 Gateway Blade Storage is a new breed of optimized, efficient, secure, and highly available file services gateway to address the file storage challenges of customers' medium to large organizations and their SAN environments. HPE StoreEasy 3850 Gateway Blade Storage, built on industry leading HPE ProLiant DNA and Microsoft Windows Storage Server, integrates easily into new and existing SAN environments with a straightforward, consistent management experience for IT generalists or storage administrators. Using the HPE StoreEasy 3850 Gateway Blade, organizations can leverage unused block capacity for file serving and maximize their SAN investment.

What's New

- New SKU available for StoreEasy 3850 Gateway Blade Storage with Windows Storage Server 2016 Standard OS edition
 - Q0F53A – HPE StoreEasy 3850 WSS2016 Gateway Blade Storage
- New software SKU available to upgrade either from Windows Storage Server 2012 or Windows Storage Server 2012 R2 to Windows Storage Server 2016
 - Q0F57A – HPE WSS2016 Standard Edition Upgrade kit



Overview - StoreEasy 3850 GBS

Models

HPE StoreEasy 3850 Gateway Blade Storage

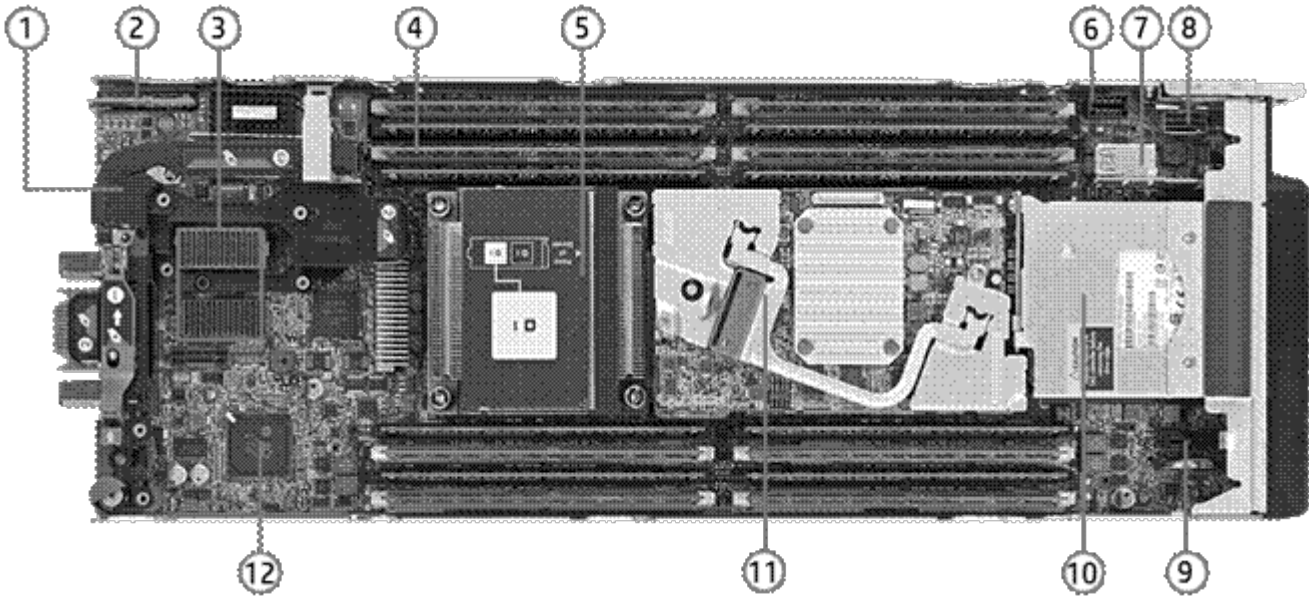
The HPE StoreEasy 3850 Gateway Blade Storage gives you the capability to add file services from your C3000 or C7000 Blade Enclosure to your array or Fibre Channel SAN. The StoreEasy 3850 is built upon a ProLiant BL460c Gen9 Blade server.

HPE StoreEasy 3850 Gateway Storage Blade

K2R72A

HPE StoreEasy 3850 WSS2016 Gateway Blade Storage

Q0F53A



StoreEasy 3850 Gateway Blade Storage – Internal View

- | | |
|--|---------------------------------|
| 1. FlexibleLOM adapter | 7. USB 3.0 and TPM |
| 2. Nand Flash & Micro SD | 8. Embedded SATA Connector |
| 3. Mezzanine Slots (x16 PCI 3.0) | 9. Solid State Device Connector |
| 4. Sixteen (16) DDR4 DIMM slots (8 per processor) | 10. Two hot-plug drive bays |
| 5. Up to two (2) Intel® Xeon® E5-2600 v3 family processors | 11. N/A |
| 6. HPE BLc 12W Smart Storage Battery connector | 12. iLO Management Engine |

Features and Benefits - StoreEasy 3850 GBS

Optimized: Built for enterprise-class file serving

The HPE StoreEasy 3850 Gateway Blade comes with pre-configured hardware and either Microsoft Windows Storage Server 2016 or 2012 R2. Get your file gateway out of the box and online fast with tools that simplify installation and curb common configuration errors.

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

Efficient: Saves you money and time

The HPE StoreEasy 3850 Gateway Blade supports large numbers of users and connected devices thanks to a high-performance file serving controller. Utilize a broad range of file access protocols, including iSCSI block access and Microsoft Hyper-V and SQL Server application storage over SMB.

Achieve an average of 50–60 percent space savings with granular data deduplication. In Windows Storage Server 2016-based StoreEasy 3850 Gateway Blades, an enhanced deduplication engine supports large files, up to 1 TB, and file systems up to 64 TB.

Built-in file sync and share enables employees, mobile workers and distributed teams to access their work files from any Internet-connected desktop, smartphone, or tablet. Organizations can apply policies to wipe devices remotely and enforce lock screen passwords to protect data on employee devices.

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

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

Secure: Protect your data always

The HPE StoreEasy 3850 Gateway Blade protects data while at rest with file system encryption, and while it is being transferred with SMB encryption and signing.

File Classification Infrastructure can dynamically identify files based on sensitivity and implement sophisticated access controls based on your organization's requirements using Active Directory Rights Management Services.

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 back up your file data to Microsoft Azure using your Azure subscription to protect against disasters and catastrophic failures. 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

The HPE StoreEasy 3850 Gateway Blade increases uptime with standard features such as near continuous health monitoring with HPE Active Health System, mirrored operating system solid-state drives (SSDs), and advanced memory protection.

Confidently deploy large file systems with file system online self-healing that reduces the need to take systems offline. With online verification and precise, rapid repair reduce downtime from file corruption from days or hours to minutes.

Features and Benefits - StoreEasy 3850 GBS

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

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

Standard Features - StoreEasy 3850 GBS

Operating System (s) Microsoft Windows Storage Server 2016 or 2012 R2, Standard Edition (depends on model) 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.
- HPE StoreEasy Dashboard consolidates all key status information such as capacity utilization, performance, and health in a single interface, reducing the need to navigate multiple tools and interfaces for system monitoring. Low capacity warning email alerts now available to minimize disruption.
- HPE StoreEasy Tools menu within Windows Server manager consolidates 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.
- Windows Storage Server 2016 includes a set of new and enhanced features, in addition to all of the existing WSS2012 R2 features for advanced security and data services. A StoreEasy 3850 Gateway Blade based on WSS 2016 has an improved deduplication engine that supports files up to 1TB and file systems up to 64TB. Additionally, new security and encryption technologies provide stronger protection against man-in-the-middle attacks.
- 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 (SMB/CIF and NFS) and block (iSCSI) protocols, allows for a flexible mix of configurations and includes advanced data management tools.
- WSS2016 or WSS2012 R2 leverages your Windows Server management skill sets and tools including Active Directory, PowerShell and System Center.
- Extensive file access protocol support: SMB (2.0, 2.1, 3.0, 3.02 and 3.1.1), NFS (v2, v3, v4.1), WebDAV, HTTP/HTTPS, FTP/FTPS, iSCSI.

NOTE: SMB 3.1.1. protocol only supported in WSS2016 with Windows 10 clients

- SMB 3.X.X protocol: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- SMB 3.1.1 protocol: Enhances security between SMB clients and StoreEasy. When both a client and StoreEasy connect over SMB 3.1.1, SMB signing and encryption protects against an attacker tampering with or eavesdropping on any network packets. SMB 3.1.1 with AES-128-GCM, the latest fixed cryptographic algorithm, showed a 2x performance improvement compared with SMB 3.0 using AES-128-CCM in certain scenarios such as copying large files over an encrypted SMB connection.
- SMB 3.X.X Multi-channel: Enable aggregation of network bandwidth and network fault tolerance when multiple paths are available between SMB clients and file servers.
- SMB 3.1.1. Multichannel and Multi-NIC Cluster Networks: Allows the use of multiple NICs on the same cluster network subnet and automatically enables SMB Multichannel. This allows customers to maximize throughput of SMB 3.1.1 network traffic.
- NFS v4.1: 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 by using the NFS v4.1 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

Standard Features - StoreEasy 3850 GBS

- glitches during failovers.
 - iSCSI: Some applications require block storage. iSCSI Target Server can provide these applications with continuously available block storage. Since the storage is remotely accessible it can also consolidate block storage for central or branch office locations. By using boot-capable NICs or a software loader, you can deploy hundreds of diskless servers. This is ideal for large deployments of identical operating system images, such as a Hyper-V server farm or High Performance Computing (HPC) clusters.
- File Server Resource Manager (FSRM): File Server Resource Manager is a set of features within the WSS2016 and 2012 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.
- Storage Quality of Service (QOS) within WSS 2016: WSS 2016 provides a way to centrally monitor and manage storage performance for virtual machines using Hyper-V and the Scale-Out File Server roles.
- Data Deduplication: Data deduplication enables Windows Storage Server 2016 and 2012 R2 to store more data in less physical space for greater storage efficiency. Data deduplication uses variable size chunking and compression, which deliver optimization ratios of 2:1 for general file servers and up to 20:1 for virtualization data. Evaluate your deduplication savings with the included deduplication evaluation tool which allows you to determine the expected savings that you would get if deduplication is enabled on a particular volume. The Deduplication evaluation tool supports local drives and mapped or unmapped remote shares.
 - Data deduplication within Windows Storage Server 2016 has specific improvements for deduping large volumes and large files - up to 64 TB and 1TB respectively. In WSS 2012 R2, it was recommended to run deduplication on volumes under 10TB in size. WSS 2016's deduplication engine will run multiple threads in parallel using multiple I/O queues on a single volume and thereby improve the performance for deduping large volumes.
- 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

Standard Features - StoreEasy 3850 GBS

sync share. You can specify a folder that already contains user data, which enables you to adopt Work Folders without migrating servers and data or immediately phasing out your existing solution. Work Folders is supported on Windows 10, Windows 8.1, Windows 8, Windows 7, Apple iOS, and Android. New for Windows Storage Server 2016 version of Work Folders, when a Windows 10 client makes any changes to a file those changes are immediately synced to Work Folders and the client notified.

- 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 3850 Gateway Blade Storage. Other clients who need the same content retrieve it directly from the Hosted Cache.
- 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.
- 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.
- 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.
- 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.
- Unlimited Client Access Licenses (CALs) included

NOTE: Windows Server 2016 and Windows Storage Server 2016 are built on the same code base. Windows Server 2012 R2 and Windows Storage 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 Server and Windows Storage Server have the same application frameworks, services and plumbing to support running the full breadth of Windows-compatible applications. Applications that rely upon certain roles that are removed from Windows Storage Server 2016 and 2012 R2, such as fax server, active directory domain controller or terminal services will not be able to leverage those roles. Independent Software Vendors (ISVs) ultimately decide what versions and editions of Windows Server or Windows Storage Server are supported by their products and users should review ISV compatibility and support information before purchasing. HPE 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 can join Active Directory domains, but cannot be a domain controller.

- More Information on Windows Storage Server 2016 can be found here:
<https://blogs.technet.microsoft.com/storageserver/2016/10/14/announcing-windows-storage-server-2016/>
- More information on Windows Storage Server 2012 R2 can be found here:
<http://technet.microsoft.com/en-us/library/jj643303.aspx>

Standard Features - StoreEasy 3850 GBS

Processor / Cache Memory Intel Xeon E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor (SKU K2R72A)
Intel Xeon E5-2609v4 (1.7GHz/8-core/15MB/85W) Processor (SKU Q0F53A)

Memory	Type	DDR4 Registered (RDIMM) standard
	Standard	32GB (4 x 8GB)
	DIMM Sockets	16

Network Controller NIC Ports 2
Controller One (1) FlexibleLOM connector providing a choice for one (1) of the supported 10Gb/20Gb FlexibleLOMs

NOTE: Supports FCoE, TCP/IP offload engine, hardware-based accelerated iSCSI, iSCSI boot, and autosensing 10Gb/1Gb Ethernet.

NOTE: Each port is autosensing the speed, and can interoperate with 1Gb HPE BladeSystem c-Class interconnect components. Both ports will operate at the same speed.

NOTE: FlexFabric capabilities require the use of an HPE Virtual Connect FlexFabric or Flex10/10D module.

Fibre Channel over Ethernet (FCoE) is supported with HPE interconnects. Learn more at:

<http://www.hp.com/go/bladeSystem/interconnects>

One (1) HPE FlexFabric 10Gb 2-port 536FLB FlexibleLOM
One (1) HPE FlexFabric 20Gb 2-port 650FLB FlexibleLOM

NOTE: FlexibleLOMs are not compatible with prior generation c-Class server blades

Standard iLO Network Controller:

One (1) 10/100 Mbps port for the HPE iLO 4 to Onboard Administrator link. The Onboard Administrator (with 10/100/1000 Mbps) to BladeSystem link is 1Gbps

Expansion Slots Two (2) I/O expansion mezzanine slots:

- x16 PCIe 3.0 Type A (supports Type A mezzanine cards - expansion slot 1).
NOTE: This expansion slot supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 4.
- x16 PCIe 3.0 Type B (supports Type A and Type B mezzanine cards - expansion slot 2).
NOTE: This expansion slot supports dual-port and quad-port mezzanine cards. For dual-port cards, one port is routed to interconnect module bay 5 and the other to bay 6. For quad-port cards, one port is routed to interconnect module bay 5, one to bay 6, one to bay 7, and one to bay 8.
NOTE: A second processor must be installed (in processor slot 2) to have access to the second expansion slot (expansion slot 2).

Mezzanine card options include:

- Dual-port 20Gb FlexFabric, Dual-port 10Gb FlexFabric, 10GbE options, and quad-port 1Gb Ethernet server adapter mezzanine options for additional network ports.
- Dual-port 16Gb Fibre Channel HBA for SAN connectivity.
- QDR and FDR InfiniBand for low latency and high bandwidth server interconnectivity.

Standard Features - StoreEasy 3850 GBS

Storage Controller	Controller RAID	HPE Dynamic Smart Array B140i Controller 0/1
NOTE: THE HPE 3850 Gateway Blade Storage has an integrated storage controller that is only used to connect to the two internal SSDs that contain the OS. External user storage is connected by Fibre Channel, SAS or iSCSI		
Storage	Hard Drives	
	Internal	Two 2.5" (Small Form Factor) hot-plug bays <ul style="list-style-type: none"> 2 x 6G SATA SFF SSDs containing factory installed OS. Configured as RAID1 mirrored pair.
	External	Designed to attach to Fibre Channel, SAS, or iSCSI based storage (iSCSI initiator included in OS)
Power Supply	Powered by c-Class Blade Enclosure	
System Fans	Within c-Class Blade Enclosure	
Form Factor	Half-height server blade that installs into the HPE BladeSystem c3000 and c7000 enclosures	

Optional Software - StoreEasy 3850 GBS

Double-Take Availability

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

SAN / Array Compatibility - StoreEasy 3850 GBS

Host Bus Adapter (HBA) HPE StoreEasy 3850 Gateway Blade Storage products are designed to be connected to a storage by adding a Fibre Channel HBA, SAS Controller, or by using an iSCSI initiator.

Support HBA/Controller selection will be based on existing infrastructure and/or desired array support. Please see compatible HBAs/Controllers listed in the 'Options' section below.

HPE SAN / Array Support	HPE 3PAR	http://h18006.www1.hp.com/storage/disk_storage/3par/index.html
	StoreServ	
	HPE StoreVirtual	http://h18000.www1.hp.com/products/QuickSpecs/13254_div/13254_div.html
	HPE P9000/XP	http://h18006.www1.hp.com/storage/xparrays.html
	HPE P6000/EVA	http://h18006.www1.hp.com/products/storageworks/eva/index.html
	HPE P2000/MSA	http://h18000.www1.hp.com/products/QuickSpecs/13551_na/13551_na.pdf

HPE StoreEasy 3850 Gateway Blade Storage products and third-party storage arrays/SAN interoperability statement

Hewlett Packard Enterprise will provide support for the HPE StoreEasy 3850 products when connected to third-party storage arrays, but Hewlett Packard Enterprise will not provide support on third-party storage arrays/SAN unless specifically called out in an HPE Support contract. Hewlett Packard Enterprise may support the third-party SAN environment attached to HPE StoreEasy 3850 product when specifically under contract with HPE, but that SAN coverage does not extend to supporting the SAN connectivity of the third-party array.

If you call HPE Services and the problem is determined to be caused by a third-party storage array or the storage arrays' connectivity into a non-Hewlett Packard Enterprise supported SAN, you will be directed to contact the third-party storage array supplier for support. Please refer to the third-party supplier for information relating to specific support of their storage arrays with Windows Storage Server 2016 and Windows Storage Server 2012 R2 Standard Edition.

Models (Pre-configured) - StoreEasy 3850 GBS

This model come with factory-installed drives and the Microsoft Windows Storage Server 2012 Standard Edition operating system pre-installed

Choose a Pre-configured Model

HPE StoreEasy 3850 WSS2016 Gateway Blade Storage

Q0F53A

Specifications

Operating System Microsoft Windows Storage Server 2016, Standard

Processor Intel Xeon E5-2609v4 (1.7GHz/8-core/15MB/85W) Processor

Memory 32 GB (4 x 8GB Single Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory)

Storage Controller HPE Dynamic Smart Array B140i Controller (used for OS drive only)

Internal Storage 2 x 6G SATA SFF SSDs for Operating System (connected to B140i and configured as RAID 1 mirrored pair)

Network Ports One (1) FlexibleLOM connector providing a choice for one (1) of the supported 2-port 10Gb/20Gb FlexibleLOMs

Expansion Slots 2 x PCIe 3.0 mezzanine

Form Factor Half-height C-class blade

HPE StoreEasy 3850 Gateway Storage Blade

K2R72A

Specifications

Operating System Microsoft Windows Storage Server 2012 R2, Standard

Processor Intel Xeon E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor

Memory 32 GB (4 x 8GB Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory)

Storage Controller HPE Dynamic Smart Array B140i Controller (used for OS drive only)

Internal Storage 2 x 6G SATA SFF SSDs for Operating System (connected to B140i and configured as RAID 1 mirrored pair)

Network Ports One (1) FlexibleLOM connector providing a choice for one (1) of the supported 2-port 10Gb/20Gb FlexibleLOMs

Expansion Slots 2 x PCIe 3.0 mezzanine

Form Factor Half-height C-class blade

Add a second processor

Intel Xeon E5-2609v4 (1.7GHz/8-core/15MB/85W) Processor

819837-B21

HP BL460c Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit

726997-B21

NOTE: A second processor must be installed (in processor slot 2) to have access to the second expansion slot (expansion slot 2).

Add More Memory

Models (Pre-configured) - StoreEasy 3850 GBS

Registered DIMMs (RDIMMs)

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
HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	728629-B21

NOTE: The above memory kits can be ordered only with HP StoreEasy 3850 Gateway Blade Storage (sku K2R72A)

HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21

NOTE: The above memory kits can be ordered only with HP StoreEasy 3850 WSS2016 Gateway Blade Storage (sku Q0F53A)

NOTE: The HPE StoreEasy 3850 Gateway Blade or HPE StoreEasy 3850 WSS2016 Gateway Blade comes standard with 32GB (4 x 8GB) of memory installed. For some installations, a customer may want to replace the 32GB memory that ships standard. The 8GB, 16GB and 32GB Memory kit SKUs listed are supported as shown and can be ordered as an option for field installation only.

NOTE: HPE memory from previous generation servers (DDR3) is not compatible with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen9. For additional information, please see the HPE SmartMemory QuickSpecs at: <https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111535>

Add additional options

FlexibleLOM Adapter

NOTE: The StoreEasy 3850 Gateway Blade supports one (1) FlexibleLOM that is installed in the FlexibleLOM connectors.

20Gb FlexibleLOM Adapters

HP FlexFabric 20Gb 2-port 630FLB Adapter	700065-B21
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NOTE: Please see QuickSpecs for technical specifications and additional information at <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04312719>

HP FlexFabric 20Gb 2-port 650FLB Adapter	700763-B21
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NOTE: Please see QuickSpecs for technical specifications and additional information at <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c0434734>

10Gb FlexibleLOM Adapters

HP FlexFabric 10Gb 2-port 536FLB Adapter	766490-B21
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NOTE: Please see QuickSpecs for technical specifications and additional information at <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347246>

HP Ethernet 10Gb 2-port 560FLB Adapter	655639-B21
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NOTE: Please see QuickSpecs for technical specifications and additional information at <https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111516>

NOTE: A 10 Gigabit Ethernet adapter supports linking at 1Gbps or 10Gbps when connected to an interconnect module with 10Gb Ethernet downlinks.

NOTE: A 10 Gigabit Ethernet adapter supports linking at only 1Gbps when connected to an interconnect module with 1Gb Ethernet downlinks.

NOTE: The 10 Gigabit Ethernet adapters on each server blade connect to a 10Gb

Models (Pre-configured) - StoreEasy 3850 GBS

interconnect in bays 3-6 (HPE BladeSystem c7000 Enclosure) or bays 2-4 (HPE BladeSystem c3000 Enclosure).

NOTE: The cards listed below are either Type A or Type B mezzanine cards. Type A must be installed in mezzanine expansion slot 1 on single processor systems. Type A can be installed in mezzanine expansion slot 1 or 2 on dual processor systems. Type B must be installed in mezzanine expansion slot 2. A second processor must be installed (in processor slot 2) to have access to the second mezzanine expansion slot).

Fibre Channel HBA	HP LPe1605 16Gb Fibre Channel HBA for BladeSystem c-Class	718203-B21
	NOTE: Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/getpdf.aspx/c04315132.pdf?ver=2	
	HP QMH2672 16Gb Fibre Channel Host Bus Adapter	710608-B21
Fibre Channel HBA	NOTE: Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04126962	
	HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class	659818-B21
	NOTE: Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04163733	
Storage Controllers	HP Smart Array P244br/1GB FBWC 12Gb 2-ports Int SAS Controller	749680-B21
	HP Smart Array P246br/1GB FBWC 12Gb 4-ports Int SAS Controller	726793-B21
20Gb Ethernet Mezzanine Cards	HP FlexFabric 20Gb 2-port 630M Adapter	700076-B21
	NOTE: This is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots). Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04312720	
	HP FlexFabric 20Gb 2-port 650M Adapter	700767-B21
20Gb Ethernet Mezzanine Cards	NOTE: This is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots). Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347342	
	HP FlexFabric 10Gb 2-port 534M Adapter	700748-B21
	NOTE: This is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots). Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347246	
10Gb Ethernet Mezzanine Cards	HP Ethernet 10Gb 2-port 560M Adapter	665246-B21
	NOTE: This is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots). Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111516	
	HP Ethernet 1Gb 4-port 366M Adapter	615729-B21
1Gb Ethernet Mezzanine Cards	NOTE: This is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots). Please see QuickSpecs for technical specifications and additional information at https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111456	
InfiniBand	NOTE: When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active	

Models (Pre-configured) - StoreEasy 3850 GBS

Mezzanine Cards	(regardless of operating mode). When installed in mezzanine slot 2, both ports are active. NOTE: InfiniBand QDR and FDR speeds are only supported on the HPE BladeSystem c7000 Enclosure. For additional information, please see the HPE BladeSystem c7000 Enclosure and InfiniBand QuickSpecs at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04126044 https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154440 NOTE: The QDR InfiniBand adapter may be installed in either mezzanine slot of the server.	
	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	764283-B21
	NOTE: The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in either mezzanine slot if operated in any other mode. HP InfiniBand FDR 2-port 545M Adapter	702213-B21
StoreEasy System Recovery DVD	HPE StoreEasy XX50 Recovery Software Media Kit	P4A92A
	HPE StoreEasy XX50 WSS2016 Recovery Software Media Kit The HPE StoreEasy XX50 Recovery Software Media Kits 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 3000 Administrator Guide for more information on performing a System Recovery. NOTE: If desired the StoreEasy XX50 Recovery Software can be downloaded from The HPE Software Depot at no charge, so that the user can create their own System Recovery DVD or System Recovery USB flash drive. The Recovery Software(s) are available here: https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=P4A92-11001 https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=Q0F58-11001 NOTE: For more information on how to perform a system recovery on a StoreEasy 3850 refer to the StoreEasy 3000 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. NOTE: 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.	Q0F58A
HPE Security	HP Trusted Platform Module Option	488069-B21
	HPE Trusted Platform Module 2.0 Kit NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Storage Server 2012 R2 or 2016. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that StoreEasy 3850 Gateway has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM .	745823-B21

Models (Pre-configured) - StoreEasy 3850 GBS

NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss. For more information about TPM, including a white paper, go to <https://www.hpe.com/h20195/v2/getpdf.aspx/4AA5-4782ENW.pdf>

Technical Specifications - StoreEasy 3850 GBS

StoreEasy 3850 Gateway Blade Storage

Dimensions (H x W x D) (with bezel)	7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm)	
Weight (approximate)	Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)	14.00 lb (6.33 kg)
	Minimum: one processor and 2 DIMMs installed	10.50 lb (4.75 kg)
Power Specifications	For power specifications including input requirements, BTU rating, and power supply output, please see the:	
	<ul style="list-style-type: none"> HPE BladeSystem c3000 Enclosure QuickSpecs at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04123379 HPE BladeSystem c7000 Enclosure QuickSpecs at https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04229580 	

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at <http://www.hp.com/go/hppoweradvisor>.

NOTE: For optimal cooling and system performance the BL460c Gen9 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

System Inlet Temperature	Operating	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 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight.
		Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed.
	Non-operating	System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
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)	
	NOTE: Qualifications for extended ambient configurations are detailed at:	
	https://www.hpe.com/servers/ASHRAE	

Relative Humidity	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
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Technical Specifications - StoreEasy 3850 GBS

	(non-condensing) Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3,050 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 (1,500 ft/min).
	Non-operating	9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
Acoustic Noise	For acoustic noise specifications, please see the HPE BladeSystem c-Class Enclosures QuickSpecs located at: HPE BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/QuickSpecs/12790_div/12790_div.html HPE BladeSystem c7000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/QuickSpecs/12810_div/12810_div.html	

HPE Dynamic Smart Array B140i Controller	Disk Drive Interface	6Gb/s SATA (Serial ATA)
	Server Interface	Embedded x4 PCIe 2.0
	SAS Connectors	2 internal SATA ports
	Cache Memory	None
	SAS Speed	6Gb/s SATA links
	Logical Drives Supported	Up to 10 logical volumes (2 physical drives)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	Hot Plug Support	Yes
	RAID Support	RAID 1 (Mirroring)
		RAID 0 (Striping)
Other	Upgradeable firmware with recovery ROM	

HPE FlexFabric 10Gb 2-port 536FLB FlexibleLOM	Type	Integrated dual-port KR 10Gb FlexibleLOM with FlexFabric (Flex-10, FCoE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosensing 1Gb/10Gb Ethernet capability)
	Network Processor	QLogic 57840S with integrated MAC/PHY
	Data Transfer Method	x8 PCI Express 3.0
	Network Transfer Rate	Two ports, each at 20Gbps full duplex; 40Gbps aggregate full duplex theoretical bandwidth NOTE: Each port is autosensing 1Gb/10Gb, and can interoperate with 1Gb or 10Gb HPE BladeSystem c-Class interconnect components. Both ports will operate at the

Technical Specifications - StoreEasy 3850 GBS

same speed.

NOTE: Each port on the 554FLB adapter transmits from the server at 20Gbps (theoretical) full duplex.

IEEE Compliance Standard Features	<p>802.1p, 802.1q, 802.1qau, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4) and 802.3x</p> <p>Full hardware offload of iSCSI and FCoE storage protocol processing for highest performance</p> <p>converged Ethernet data and storage networks.</p> <p>Dual-port 10GbE Flex-10 FlexibleLOM network adapter that provides the flexibility to choose the</p> <p>type of LOM to meet growing infrastructure needs</p> <p>Industry-leading throughput and latency performance</p> <p>Supports HPE's Flex-10 blade interconnect technology</p> <p>User configurable bandwidth settings when combined with the 10Gb Flex-10 Virtual Connect</p> <p>module. From 100Mb/s to 10Gb/s on up to four "Physical Function" NICs per port, in increments of</p> <p>100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 10 Gb.</p> <p>Up to 40Gb/s bi-directional near line rate throughput</p> <p>Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)</p> <p>Improved small packet performance</p> <p>Support for Preboot eXecution Environment (PXE)</p> <p>Integrated PHY and MAC</p> <p>Supports for SR-IOV</p> <p>Support for Network Partitioning (NPAR)</p>
HPE FlexFabric 20Gb Type 2-port 650FLB FlexibleLOM	<p>Integrated dual-port KR2 20Gb FlexibleLOM with FlexFabric (Flex-20, FCoE, RoCE, Tunnel Offload with VXLAN/NVGRE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosensing Ethernet speed capability)</p>

Network Processor	Emulex XE-104
Data Transfer Method	x8 PCI Express 3.0
Network Transfer Rate	Two ports, each at 40 Gbps bi-directional; 80 Gbps aggregate bi-directional theoretical bandwidth
IEEE Compliance	802.3ae, 802.1Q, 802.3x, 802.1p, 802.3ad/LACP, 802.1AB(LLDP), 802.1Qbg, 802.1Qbb, 802.1Qaz, 802.3ap
Standard Features	<p>Dual 20Gb ports provide up to 80Gb bi-directional per adapter</p> <p>Multi-speed adapter operates at either 20GbE or 10GbE</p> <p>Converges FCoE or RoCE with LAN traffic on a single Ethernet wire</p> <p>Tunnel Offload support for VXLAN and NVGRE</p>

Technical Specifications - StoreEasy 3850 GBS

RDMA over Converged Ethernet (RoCE) for greater server efficiency and lower latency (6125XLG only)

Advanced storage offload processing freeing up valuable CPU cycles

Supports UEFI and legacy boot options

Mixed Storage – supports NIC + FCoE on one port, and NIC + iSCSI on the other

Concurrent Storage – concurrently supports NIC, FCoE, and iSCSI storage functions on the same port (NIC + FCoE + iSCSI)

Industry-leading throughput and latency performance

Supports HPE's Flex-20 blade interconnect technology

Over eight million small packets/s, ideal for web/mobile applications, mobile messaging, and social media

User configurable bandwidth settings when combined with the 20Gb Flex-20 Virtual Connect module. From 100Mb/s to 10Gb/s on up to four "Physical Function" NICs per port, in increments of 100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 20 Gb/s.

Greater bandwidth with PCIe 3.0

Jumbo Frames support

Supports Wake On LAN (WOL)

Support for Preboot eXecution Environment (PXE)

Support for Microsoft Windows SMB Direct

Optimized host virtualization density with SR-IOV support

Summary of Changes

Date	Version History	Action	Description of Change
05-Feb-2018	From Version 18 to 19	Changed	Models Pre-configured section was revised.
07-Aug-2017	From Version 17 to 18	Changed	Changes made to the Standard Features Section
03-Apr-2017	From Version 16 to 17	Changed	Changes made to the Models Section
28-Nov-2016	From Version 15 to 16	Changed	Changes made to the entire document
		Deleted	Removed all SE 3840 references from the document
14-Oct-2016	From Version 14 to 15	Changed	Rebranding edition applied
28-Sept-2015	From Version 13 to 14	Changed	Changes made to the What's New and Models Sections
17-Jul-2015	From Version 12 to 13	Added	Added the 16Gb Ethernet Mezzanine Adapter
26-Jun-2015	From Version 11 to 12	Changed	Changed the name from "HP StoreEasy 3850 Gateway Blade" to "HP StoreEasy 3850 Gateway Blade Storage"
			Changes were made to the SAN Array Compatibility, Standard Features and Features and Benefits Sections.
01-Jun-2015	From Version 10 to 11	Changed	Added the HPE StoreEasy 3850 Gateway Blade
07-Nov-2014	From Version 9 to 10	Removed	Removed all HPE StoreEasy 3830 Gateway references. (obsolete).
22-Aug-2014	From Version 8 to 9	Changed	Updated the following: Models (Pre-configured) - added StoreEasy Windows Storage Server 2012 R2 Upgrade section
03-Jul-2014	From version 7 to 8	Changed	Optional software - replaced link in the HPE LiveVault section.
			The Update information (not content) from Version 6 to 7 was lost
03-Jul-2014	From Version 6 to 7	Changed	Optional Software was revised.
09-May-2014	From Version 5 to 6	Changed	Storage Controllers and Recommended Services were revised.
18-Apr-2014	From Version 4 to 5	Changed	Updated the following: Standard Features - Operating Systems - changed "SMB 3.0" to "SMB 3"; changed "16 terabytes" to "64 terabytes" in VHDX bullet; updated Data Depublication sub-section; updated HPE LiveVault sub-section; Models (Pre-configured) - added Infiniband Mezzanine Adapters section, 644160-B21, 644161-B22, 702213-B21 with notes and links; Storage Controllers - added P731m/512 FBWC, 698536-B21; HPE Fibre Channel - added LPe1605, 718203-B21 and note; removed Windows Storage Server 2012 R2 Upgrade; completely updated the HPE Networking section; Storage Controllers - added P731m 512FBWC, 698536-B21; added P731m 2GB RBWC, 698536-B21 and removed BC377A and BC390AAE; completely replaced HPE Fibre Channel section.
31-Mar-2014	From Version 3 to 4	Changed	Complete revision
10-Jun-2013	From Version 2 to 3	Changed	Changes were made in the following sections:
			Whats New- Updated Section Features and Benefits- Updates made to entire section

Summary of Changes

			Standard Features- Updated the Operating System section Optional Software- Changed the HPE Data Protector software and HPE Autonomy Live Valu
21-Dec-2012	From Version 1 to 2	Changed	Changes were made in the following sections: Models (Pre-Configured) : Step 1, Add a Processor and updated Storage Controllers.



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

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