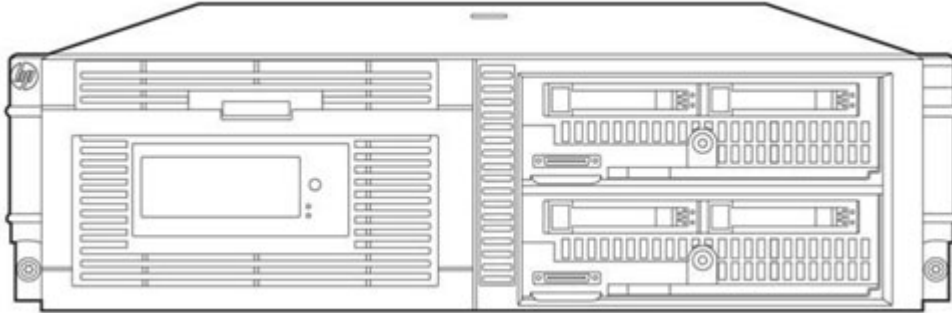


Overview

HP StoreEasy 5000 Storage is a new breed of efficient, secure, and highly available storage to simply address the file and application storage challenges of customers' medium to large business and branch office environments. StoreEasy 5000 Storage, built on industry leading ProLiant DNA and Microsoft Windows Storage Server, integrates easily into new and existing environments with a straightforward, consistent management experience for IT generalists.



- Now running the Windows Storage Server 2012, Standard Edition Operating System

HP StoreEasy 5000 Storage

With features like two storage controllers with automatic failover, multipath I/O, RAID data protection, redundant power and cooling, you can be sure that data stored on the HP StoreEasy 5000 will be available when your users need it.

HP StoreEasy 5530 10TB LFF 7.2K Storage

B7E02A

HP StoreEasy 5530 20TB LFF 7.2K Storage

B7E03A

HP StoreEasy 5530 30TB LFF 7.2K Storage

B7E04A

HP StoreEasy 5530 10.8TB SFF 10K Storage

B7E05A

HP StoreEasy 5530 16.2TB SFF 10K Storage

B7E06A

HP StoreEasy 5530 32.4TB SFF 10K Storage

B7E07A

Features and Benefits

Efficiently Enhance Your Resources While Saving Money

The HP StoreEasy 5000 Storage systems support large numbers of users concurrently accessing their files thanks to high performance file serving controllers and a range of drive media.

Increase capacity use with non-intrusive data deduplication that provides an average 50-60% in space savings.

Leverage advanced data management to automatically enhance resource use, enable compliance with data retention policies, and apply added protection to sensitive files.

Consolidate multiple workloads and roles 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 support for services such as print, DNS, and DHCP.

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

Security is Built-in with On-board Data Protection

Install and run endpoint protection such as antivirus on the system itself - eliminating the cost and complexity of connecting an external endpoint protection server.

Prevent against data loss with Volume Shadow Copy Service online snapshots and support for agent based backup software, and leverage the optional HP Autonomy LiveVault for highly secure and efficient policy driven offsite backup to the cloud.

Protect data while at rest with file system encryption and BitLocker Drive Encryption, and while it is being transferred with SMB 3.0 encryption and signing.

Highly Available, Reliable and Robust Platform

Increase uptime with such standard feature as mirrored operating system disks, hot plug redundant fans and power, advanced memory protection, and a 3-year onsite warranty.

Confidently deploy large volumes leveraging improved file system self-healing, file system online analysis, and greatly reduced downtime for corruption correction.

Standard Features

Operating System

Microsoft Windows Storage Server 2012, Standard Edition

- Windows Storage Server 2012 (WSS2012) includes a robust range of file serving and storage capabilities. It addresses heterogeneous environments and it enables more efficient storage utilization. WSS2012 delivers a similar level of performance and reliability as more expensive storage solutions and it offers support for both file (SMB and NFS) and block (iSCSI) protocols, allows for a flexible mix of configurations and includes advanced data management tools. WSS2012 leverages your Windows Server management skill sets and tools including Active Directory, PowerShell and System Center.
- SMB 3.0: Leverage high performance continually available file shares to deliver feature-rich storage for business-critical applications and virtual servers using advanced new functionality.
- New VHDX Standard: Deploy larger capacity virtual storage that can grow to 16 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.
- SMB 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, 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 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.
- **Data Deduplication:** Data deduplication enables Windows Storage Server 2012 to store more data in less physical space and achieve storage efficiency that is significantly higher than was possible in previous releases of Windows Storage Server that used Single Instance Storage (SIS) or NTFS file system compression. 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 - When the deduplication feature is installed, the Deduplication Evaluation Tool (DDPEval.exe) is automatically installed to the \Windows\System32\ directory. This tool can be copied from any Windows Server 2012 installation to systems running Windows Server 2012, Windows Server 2008 R2, or Windows 7 . You can use it to determine the expected savings that you would get if deduplication is enabled on a particular volume. DDPEval.exe supports local drives, and it supports evaluating mapped or unmapped remote shares.
- Volume Shadow Copy Service, which 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.
- **Hosted Branch Cache** - Using client/server architecture, Windows 7 client computers can cache content on the local network via the Hosted Cache running on the StoreEasy 5000 Storage. Other clients who need the same content retrieve it directly from the Hosted Cache.

Standard Features

- **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.
- **File Server Resource Manager (FSRM):** File Server Resource Manager is a set of features that allow you to manage and classify data that is stored on file servers. File Server Resource Manager includes the following features:
 - 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.
- **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.
 - Quota management: 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 management: 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.
 - Initial Configuration Tasks Wizard: Simplifies and accelerates new device deployment by presenting basic system settings on your first boot.
 - Server Manager
 - **Print Management Console:** Manage multiple printers (license for unlimited printer support) from single console, whether locally or over the WAN
 - Unlimited Client Access Licenses (CALs) included

More information on Windows Storage Server 2012 Standard Edition can be found here:
<http://www.microsoft.com/en-us/server-cloud/windows-storage-server/default.aspx>

Standard Features

StoreEasy 5000 System Enclosure

Nodes per Enclosure (2) 5530 Storage Controllers (built with HP ProLiant BL460c G7 Server Blades)

Blade Storage Controller P1210m 6 Gbps SAS controller + 1GB FBWC (one per 5530 Storage Controller)

Enclosure Storage Hot Plug MDL SAS Maximum of 16 LFF drives or 36 SFF drives
or
Hot Plug Enterprise SAS

5530 Storage Controller

Processor Intel® Xeon® Processor E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.
NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active (on four-core processors) or with 6, 5, 4, 3, 2, and 1 cores active (on six-core processors).
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
NOTE: For the Intel Xeon 5500 and 5600 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

| | | |
|---------------|------------------|--|
| Memory | Type | DDR3 Registered (RDIMM) |
| | Standard (RDIMM) | 24GB (3 x 8GB), per 5530 Storage Controller |
| | Maximum | 96GB (12 x 8GB), per 5530 Storage Controller |

Networking Four 10GbE ports (two per 5530 Storage Controller) via:
Integrated NC553i Dual Port FlexFabric 10Gb Adapter supporting autosensing 10Gb/1Gb Ethernet, FCoE, Flex-10, TCP/IP offload engine, hardware-based accelerated iSCSI, and iSCSI boot (one per 5530 Storage Controller)

Ten 1GbE ports (Five per 5530 Storage Controller) via:
HP NC365T 4-port Ethernet Server Adapter per 5530 Storage Controller
HP NC382m Dual Port 1GbE Multifunction BL-c Adapter per 5530 Storage Controller
NOTE: only one port per NC382M available for use

Integrated Manageability HP Integrated Lights-Out 3 (iLO 3) management processor

| | | |
|---------------------------|------|--|
| Storage Controller | Type | P410i 256MB cache, no battery (one per 5530 Storage Controller, used for internal 450GB SFF HDDs) NOTE: internal blade drives are configured as RAID-1 and used only for the operating system and supported applications such as anti-virus. |
|---------------------------|------|--|

Standard Features

P1210m 6 Gbps SAS controller + 1GB FBWC (one per 5530 Storage Controller, to connect to Enclosure Storage drawer for user data) - support RAID levels 0, 1, 1+0, 5 and 6

| | | |
|-------------------------|--------------|---|
| Internal Storage | Hot Plug SAS | 2 x 450GB 10K 6G 2.5 SAS DP HDD (per 5530 Storage Controller) |
|-------------------------|--------------|---|

| | |
|-----------------|--|
| Graphics | Integrated Matrox G200, 32 MB video memory |
|-----------------|--|

| | | |
|--------------------------------------|-------------------------|--|
| Graphics Resolution Supported | Resolution Color Depths | 1600 x 1200, 64K, 256, 16 1280 x 1024, 16.7M, 64k, 256, 16 1024 x 768, 16.7M, 64k, 256, 16 800 x 600, 16.7M, 64k, 256, 16 640 x 480, 16.7M, 64k, 256, 16 |
|--------------------------------------|-------------------------|--|

NOTE: Maximum resolution available via HP Integrated Lights-Out 3 (iLO 3) remote console is 1280 x 1024.

| | | |
|---------------------------------------|-----------------------|---|
| HP Insight management software | HP Insight Foundation | Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. |
|---------------------------------------|-----------------------|---|

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: <http://www.hp.com/go/foundation>

The foundation pack includes:

- HP SmartStart
- HP Management
- HP ProLiant Firmware Maintenance

SmartStart version supported (minimum): SmartStart 8.7.

<http://www.hp.com/servers/smartstart>

NOTE: The StoreEasy 5000 does not support installing ProLiant Support Packs (SPPs) from SmartStart. StoreEasy 5000 SPPs will be installed through Service Release only.

NOTE: The StoreEasy 5000 does not support ProLiant Firmware updates from SmartStart. Firmware updates will be downloadable via the web and install using the StoreEasy 5000 firmware update tool.

| | |
|--------------------------------|---|
| HP Integrated Lights-Out (iLO) | HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: |
|--------------------------------|---|

Standard Features

| | |
|----------------------------------|---|
| HP Insight Control | <p>www.hp.com/go/iLO</p> <p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.</p> <p>Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight</p> |
| HP Insight Dynamics for ProLiant | <p>HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.</p> |

NOTE: For more information, visit: <http://www.hp.com/go/insightdynamics>

5530 Storage Controller Availability

- Two (2) hot-plug SAS/SATA hard drive bays and integrated RAID (HP Smart Array P410i Controller)
- Redundant ROM
- Advanced ECC Memory

Industry Standard Compliance

ACPI 2.0 Compliant
PCI 2.2 Compliant
WOL Support
Microsoft® Logo certifications
USB 2.0 Support

Standard Features

Security

- Power-on password
 - Administrator's password
 - Integrated Lights-Out 3 has 12 customizable user accounts and SSL encryption
 - Integrated Lights-Out 3 can be disabled via a Global Setting
-

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as HP Storage products.

For more information on Factory Express services on your specific server model please contact your sales representative or go to:

<http://h71028.www7.hp.com/enterprise/cache/97688-0-0-225-121.html>

HP Enterprise Configurator

The HP e-Configure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance or go to: <http://www.hp.com/products/configurator>

Warranty

The HP StoreEasy 5000 Storage is covered by a global limited warranty. Warranty includes 3 years parts exchange, 3 years labor and 3 years next business day on-site hardware response. Also includes 1 year of 24 x 7 telephone support for the operating system.

Customers may upgrade to higher support levels or extended durations. See the Ordering Support Care Packs section.

Related Options

HP Storage Management Pack for Microsoft System Center

The HP Management Pack for Systems Center Operations Manager provides seamless integration with Microsoft Systems Center Operations Manager and now System Center Essentials by integrating predefined discovery and state monitoring policies, event processing rules and tasks, and diagram and topology views for the storage system.

For more information:

http://h18000.www1.hp.com/products/quickspecs/14202_div/14249_div.html

HP Storage Management Pack can be downloaded free from the following website:

<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=SCOM>

HP Data Protector Software

HP 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 HP Data Protector:

<http://h18006.www1.hp.com/products/storage/software/dataprotector/index.html>

HP Autonomy LiveVault

HP Autonomy LiveVault enables organizations to protect their critical application data and manage their long-term retention needs in the cloud. The LiveVault agent that is installed on HP StoreEasy Storage encrypts all data before transferring it. All data remains encrypted at HP Autonomy's secure, offsite, underground data centers - as well as on the optional TurboRestore(TM) appliance which resides in the customer data center. To ensure the physical security and availability of stored data, the LiveVault service mirrors all data to a second, geographically dispersed data center for full failover and redundancy. Visit www.autonomy.com/StoreEasy

Models

NOTE: Each StoreEasy 5000 system includes two 5530 Storage Controllers. Specifications below (except Enclosure Storage) are for one 5530 Storage Controller.

| Blade Server | Description | Notes |
|---------------------------------------|-----------------------------------|---|
| Processor type | Intel® Xeon® Processor E5620 | 2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor |
| Memory | 24GB | (3) 8GB DIMMs |
| Internal blade storage | (2) 450GB SFF SAS | OS disks only, (WSS2012, Standard pre-installed on RAID 1 mirrored drive pair) |
| Blade storage controller | P410i | 256MB cache, no battery - used for OS drives |
| Enclosure storage controller | P1210m | 6 Gbps SAS controller 1GB Flash Back Write Cache (FBWC) - RAID 0,1,1+0, 5 and 6 |
| Networking | NC553i NC365T NC382m | (2) NC553i Dual Port FlexFabric 10Gb Adapter (2) NC365T Quad Port 1GbE Adapter (1) NC382m 2-port 1Gb Ethernet (NOTE: only one port available for use) |
| Enclosure storage by sku model | | |
| B7E02A (10TB LFF) | (10) 1TB 6G 7.2K LFF MDL SAS HDD | (6) open internal LFF HDD slots for expansion |
| B7E03A (20TB LFF) | (10) 2TB 6G 7.2K LFF MDL SAS HDD | (6) open internal LFF HDD slots for expansion |
| B7E04A (30TB LFF) | (10) 3TB 6G 7.2K LFF MDL SAS HDD | (6) open internal LFF HDD slots for expansion |
| B7E05A (10.8TB SFF) | (18) 600GB 6G 10K SFF ENT SAS HDD | (18) open internal SFF HDD slots for expansion |
| B7E06A (16.2TB SFF) | (18) 900GB 6G 10K SFF ENT SAS HDD | (18) open internal SFF HDD slots for expansion |
| B7E07A (32.4TB SFF) | (36) 900GB 6G 10K SFF ENT SAS HDD | No open slots |

Service and Support, HP Care Pack, and Warranty Information

Service and Support

Technology Services for increased uptime, productivity and ROI

TRUST HP storage technology experts for every level of service and support. Our integrated portfolio of Services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. Capitalizing on HP Storage Systems' capabilities requires a service partner who understands your increasingly complex environment. Team with the people who know HP infrastructure hardware and software best—the experienced professionals at HP Services.

Protect your business beyond warranty

Warranty protects against manufacturer defects, however warranty uplifts, such as HP Care Pack Services protect the business—by reducing downtime risks and providing operational consistency for mission-critical and standard business computing.

What HP Storage Technology Services can do for you

HP Storage Technology Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. HP storage lifecycle support services offers a full spectrum of customer care—from technology support to complex migrations to complete managed services.

Choose the right level of support, deployment and integration services

HP support recommendations are designed to help you enhance technology operations and lower risk—and make it easier for you to seek the right balance between affordability and service-level commitments. Depending on your individual support needs, choose from three levels of care that cover the entire lifecycle to better address your needs—Optimized Care, Standard Care, and Basic Care. If none of our support recommendations meet your needs, we can tailor a service solution for your unique support requirements. Only HP brings together deep expertise, proactive and business critical support and a strong partner network—plus, a full set of infrastructure services designed to power a Converged Infrastructure.

Optimized Care—delivers best performance and stability through deployment and proactive management practices

HP Critical Advantage Level 2 Service - Choose this service when you need an end-to-end infrastructure support solution encompassing server, OS/hypervisor, storage, and network. It's the level of support well suited for business critical applications running on virtualized/x86 infrastructures. (Includes 20 HP Critical Advantage credits.)

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-1772ENW.pdf>

Standard Care—maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support

3-Year HP Proactive 24 Service - This is the right choice for environments where some downtime is acceptable. HP helps manage your IT environment for improved performance, stability, and availability. Your incidents are addressed 24x7, with a maximum 4-hour onsite response 365 days a year.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9842EN.pdf>

Plus:

HP Proactive Select - Choose from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education. (10 Proactive Select flexible credits.)

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf>

Basic Care—Minimum recommended support

3-Year Support Plus 24 - For a higher return on your server and storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. <http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf>

Service and Support, HP Care Pack, and Warranty Information

Plus:

HP Proactive Select - Choose from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education. (10 Proactive Select flexible credits.)
<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf>

Implement right from the start

HP Insight Remote Support - Available at no additional cost to all warranty, HP 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>

Remote Support Tools

HP Insight Remote Support: Count on proven technology to deliver secure, reliable 24x7 remote monitoring, diagnosis, and problem resolution, all available at no extra charge if you have an existing warranty, service agreement, or HP Care Pack Service with HP.
<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4676ENW.pdf>

Additional services to meet your needs

HP Storage Data Migration-Proven expertise and tools help you migrate data across your data center or around the globe.
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-4107EN.pdf>

For more information

www.hp.com/services/storage

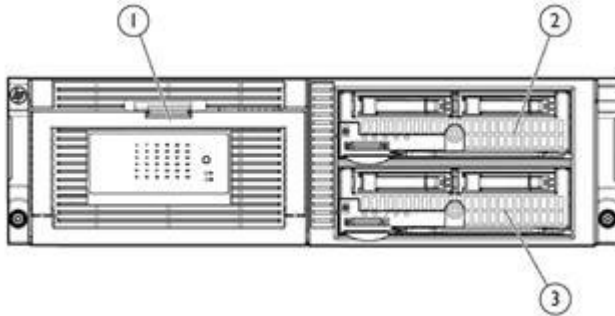
To learn more on HP Storage Services, please contact your HP sales representative or HP Authorized Channel Partner

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at www.hp.com/go/lookuptool

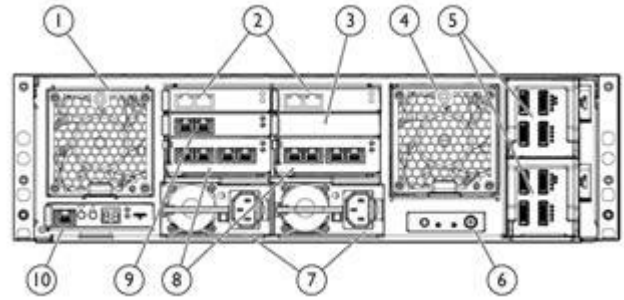
Configuration Information

HP StoreEasy 5000 Storage



Front View:

1. Disk enclosure
2. 5530 Storage Controller, Bay 1
3. 5530 Storage Controller, Bay 2



Rear View:

1. Fan
2. 10GbE LOM I/O Module (2)
3. Intraconnect Module
4. Fan
5. SAS I/O Module (2)
6. Power Button
7. Power Supply (2)
8. 1 GbE NICs (NC365T)
9. 1 GbE NIC (NC382M)
10. iLO3 Management Port

Step 1 - StoreEasy 5000 Base Configuration - choose a model that best fits your needs

| System Configuration | Model Description | Part Number |
|----------------------|--|-------------|
| | HP StoreEasy 5530 10TB LFF 7.2K Storage | B7E02A |
| | HP StoreEasy 5530 20TB LFF 7.2K Storage | B7E03A |
| | HP StoreEasy 5530 30TB LFF 7.2K Storage | B7E04A |
| | HP StoreEasy 5530 10.8TB SFF 10K Storage | B7E05A |
| | HP StoreEasy 5530 16.2TB SFF 10K Storage | B7E06A |
| | HP StoreEasy 5530 32.4TB SFF 10K Storage | B7E07A |

Step 2 - Add additional storage

| Drives | Model Description | Part Number |
|--------|--|-------------|
| | HP StoreEasy 6TB LFF Drive Bundle NOTE: This bundle contains (6) 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive | B7E11A |
| | HP StoreEasy 12TB LFF Drive Bundle NOTE: This bundle contains (6) 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive | B7E12A |
| | HP StoreEasy 18TB LFF Drive Bundle NOTE: This bundle contains (6) 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive | B7E13A |

Configuration Information

| | |
|--|--------|
| HP StoreEasy 5.4TB SFF Drive Bundle | B7E14A |
| NOTE: This bundle contains (9) 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | |
| HP StoreEasy 8.1TB SFF Drive Bundle | B7E15A |
| NOTE: This bundle contains (9) 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | |

Enclosures

| | |
|---|--------|
| HP StoreEasy 12 LFF Disk Enclosure | B7E08A |
| NOTE: This enclosure is the HP D2600 Disk Enclosure. For more information see: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html | |
| NOTE: The 12 LFF Disk Enclosure will support (2) of the LFF Drive Bundles (B7E11A, B7E12A, or B7E13A). If less than 12 drives are required, individual LFF drives can be ordered from those listed below. | |
| NOTE: Though it is not required, HP recommends using all of the same capacity LFF drives within the enclosure. | |
| HP StoreEasy 25 SFF Disk Enclosure | B7E09A |
| NOTE: This enclosure is the HP D2700 Disk Enclosure. For more information see: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html | |
| NOTE: The 25 SFF Disk Enclosure will support (2) of the SFF Drive Bundles (B7E14A, B7E15A). If between 19 and 25 SFF drives are needed in the enclosure, individual SFF drives can be ordered from those listed below. | |
| NOTE: Though it is not required, HP recommends using all of the same capacity SFF drives within the enclosure. | |
| NOTE: For the above enclosures you can connect any combination of up to (4) HP StoreEasy 12 LFF enclosures or StoreEasy 25 SFF enclosures. | |

HP Hard Drives

| | |
|---|------------|
| SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives | |
| HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive | 625031-B21 |
| HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive | 507616-B21 |
| HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive | 507614-B21 |
| SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives | |
| HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 516828-B21 |
| SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives | |
| HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 619291-B21 |
| HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 581286-B21 |
| HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 581284-B21 |

Cables

Cables used for connecting the HP StoreEasy 5000 Storage to external Disk Enclosures.

Configuration Information

These cables are only needed if the .5M cables included standard with the Disk Enclosures are not long enough for your installation. You must order a quantity of two cables for each enclosure connection to the StoreEasy 5000.

| | |
|-------------------------------|------------|
| Mini SAS 4x 2M Cable All | 407339-B21 |
| HP External Mini SAS 4m Cable | 432238-B21 |
| HP External Mini SAS 6m Cable | 432239-B21 |

Step 3 - Other StoreEasy 5000 Options

| 5530 Storage Controller Processor | Model Description | Part Number |
|-----------------------------------|---|-------------|
| | HP BL460c G7 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit NOTE: If adding a second processor to the X5460sb G2, two of the above kits are required, one kit for each blade in the X5520 system. | 612127-B21 |

| | | |
|--------------------------------|--|------------|
| 5530 Storage Controller Memory | HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit NOTE: Each 5530 Storage Controller in a StoreEasy 5000 has 12 DIMM slots, three are occupied (8GB x 3) and 9 are open. HP recommends adding memory in 8GB increments per blade. When ordering the above 8GB DIMM kit you must order in multiples of two to ensure the same amount of memory is added simultaneously to each 5530 Storage Controller in the system. | 500662-B21 |
|--------------------------------|--|------------|

| 10GbE Connection Options | NOTE: Verify that the cable/transceiver is supported with the connecting device | Part Number |
|--------------------------|--|-------------|
| | Copper Cables | |
| | HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable | 487649-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable | 487652-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable | 487655-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable | 537963-B21 |
| | NOTE: Only the Copper Cables listed above are supported with the StoreEasy 5000 | |

SFP+ Modules

| | |
|-------------------------------------|--------|
| HP X132 10G SFP+ LC SR Transceiver | J9150A |
| HP X132 10G SFP+ LC LR Transceiver | J9151A |
| HP X132 10G SFP+ LC LRM Transceiver | J9152A |

NOTE: Only the SFP+ Modules listed above are supported with the StoreEasy 5000

Optical Cables

| | |
|---|--------|
| HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable | AJ833A |
| HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable | AJ834A |
| HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable | AJ835A |
| HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable | AJ836A |
| HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable | AJ837A |
| HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable | AJ838A |

Configuration Information

HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable AJ839A
NOTE: For other length Optical Cables, the use of OM3 or better Fiber Optic Cable is required.

FC HBAS

NOTE: The HBAs would be used for a direct or SAN connected tape backup. Adding these HBAs require removal of the 1GbE NICs that come factory standard in the PCIe slots. There is not an option to ship the X5520 with FC HBAs instead of 1GbE NICs from the factory. For compatible tape backup information see the EBS Support Matrix at: <http://h18006.www1.hp.com/products/storageworks/tapecompatibility.html>

HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AP770A
 HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763A
 HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A

HP Security

HP Trusted Platform Module Option 488069-B21
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. 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 a StoreEasy 5000 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.
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.
NOTE: The TPM option should be ordered in pairs, one for each 5530 Storage Controller.

HP X5000 G2 WSS2012 OS Upgrade

HP X5000 G2 Upgrade to Windows Storage Server 2012 Standard Edition TC393A
 X5000 G2 Network Storage Servers with the Microsoft Windows Storage Server 2008 R2, Enterprise Edition Operating System are eligible for a Software-Only Pay -for- Upgrade to the Microsoft Windows Storage Server 2012 Standard Edition operating system:
 This upgrade is performed as a clean install and all system configuration will be lost including share configurations, so a full backup of the data should be done prior to upgrading
NOTE: Some expansion cards, including HBAs and NICs, may not be supported by Windows Storage Server 2012. Check Windows Server 2012 driver availability before purchase and installation. All original components that were standard on the X5000 G2 are supported.
NOTE: Check for HP and 3rd-party software qualification with the Windows Storage Server 2012 operating system before purchase and installation.
 HP X5000 G2 WSS2012 Upgrade Software TC393A
NOTE: A quantity of two (2) TC393A upgrade kits are needed to upgrade a single X5000 G2. One upgrade kit is required for each of the two storage controllers (BL460c G7 blades).

Technical Specifications

| | | | | |
|---|--|--|--|--|
| STOREEASY 5000 System Enclosure | Dimensions (H x W x D) (with bezel) | 5.19 x 17.64 x 34.01 in (13.18 x 44.80 x 86.38 cm) | | |
| | Weight (approximate) | Maximum | 126.4 lb. (57.36kg) | |
| | | (16 LFF hard drives, power supplies, and blades installed) | | |
| | | Maximum | 120.1 lb. (54.5kg) | |
| | (36 SFF hard drives, power supplies, and blades installed) | | | |
| | Input Power Requirements (both power supplies) | Minimum | 96.9 lb. (43.96 kg) | |
| | | (no drives, all power supplies, and blades installed) | | |
| | | Rated Line Voltage | 90 - 132 VAC, 180 - 264 VAC | |
| | | Rated Input Current (nominal) | 5.2 A (at 120 VAC), 2.5 A (at 240 VAC) | |
| | | Rated Input Current (maximum) | 6.7 A (at 120 VAC), 3.1 A (at 240 VAC) | |
| Rated Input Frequency | | 47 to 63 Hz | | |
| Rated Input Power (nominal) | | 620 W (at 120 VAC), 600 W (at 240 VAC) | | |
| Rated Input Power (maximum) | 800 W (at 120 VAC), 740 W (at 240 VAC) | | | |
| BTU Rating | Nominal | 2116 BTU/hr (at 120 VAC) 2047 BTU/hr (at 240 VAC) | | |
| | Maximum | 2730 BTU/hr (at 120 VAC) 2525 BTU/hr (at 240 VAC) | | |
| 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 1000 ft) above sea level to a maximum of 3050 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 | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr). | | |
| Relative Humidity (non-condensing) | Operating | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. | | |

Technical Specifications

| | | |
|-----------------------|--|---|
| Altitude | Non-operating | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing. |
| | 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). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. | |
| | Idle | 2 server blades |
| | <i>LWAd</i> | 7.3 B |
| | <i>LpAm</i> | 55 dBA |
| | Operating | |
| | <i>LWAd</i> | 7.4 B |
| <i>LpAm</i> | 56 dBA | |

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