Overview

Unbelievably simple. Uniquely affordable. Unquestionably reliable.

Rapid data growth of both unstructured file data and structured application data from database and e-mail means storage capacity requirements continue to evolve. The AiO SB600c provides flexible expansion of storage capacity within the BladeSystem enclosure. Combining iSCSI shared storage, NAS file serving, and integrated data protection provides efficient shared storage capacity for HP BladeSystem c-Class servers. The SB600c provides a simple, affordable, and reliable network storage solution that provides many of the management, consolidation, and data protection features typically reserved for higher-priced and more complex storage products.

Built on the ProLiant BL460c server and SB40c Storage Blade, the SB600c unifies internal shared storage options through the centralized HP AiO Storage Manager (ASM) interface. The SB600c internal shared storage solution provides:

- Application server storage (iSCSI SAN)
- Windows file serving (NAS)
- Centralized storage management and integrated data protection using HP AiO Storage Manager
- A fully integrated copy of HP StorageWorks Data Protector Express software for enhanced backup and recovery

Shared storage within the BladeSystem enclosure eliminates the complexity of attaching to external storage. The industry standard iSCSI interface provides the benefits of shared SAN storage within the enclosure by simply using the server's embedded NICs.

Radically simple management with HP AiO Storage Manager
Designed for IT generalists with no storage expertise, the AiO Storage Manager (ASM) eliminates complexity by automating storage tasks and presenting capacity in familiar application-centric terms, providing a simple way to control data growth.

The easy-to-use, All-in-One Storage Manager (ASM) interface reduces the time and expertise required to manage rapidly growing applications like Microsoft Exchange. ASM handles all underlying storage tasks and presents network storage in application-centric terms, giving the IT generalist newfound levels of control.

- Administrators can quickly and easily setup or expand data areas, migrate data from capacity constrained servers, implement disk and tape backup policies, and more.
- Data migration tools for Exchange 2003/2007 and SQL Server 2000/2005 include best practice recommendations which allow any IT generalist to look like a storage expert.
- Tools for hosting user defined applications enable flexible deployment in many different environments.

- Updated processor: Systems comes with One Quad-Core Intel® Xeon ® E5410 (2.33GHz, 1333FSB, 80w) processor pre-installed
- Choose the type and quantity of SFF hot plug drives to be pre-installed in the SB40c. Choose up to 6 Small Form Factor (SFF) hot plug drives:
    - 146GB 10K 3G SAS hot plug hard drives
    - 300GB 10K 3G SAS hot plug hard drives
    - 250GB 5.4k SATA hot plug hard drives

Highlights

HP StorageWorks SB600c All-in-One Storage Blade	Shared storage solution for HP BladeSystem c-Class application servers	Managed through a single interface, the AiO SB600c Storage Blade provides shared application storage (iSCSI SAN), file serving (NAS), and data protection below the cost of implementing these features using separate products. Built on the ProLiant BL460c server and SB40c Storage Blade, the AiO SB600c installs directly inside HP BladeSystem c-Class enclosures.
	Bring the efficiency of shared storage to your Bladesystem servers.	Sharing storage between servers is more efficient and costs less to manage over time when compared against adding additional drives to individual servers. The industry standard iSCSI interface provides the cost-saving benefits of shared SAN storage within the BladeSystem c-Class enclosure using the server's embedded NICs.
	Best Practice toolkit makes every IT Administrator look like a storage expert	The SB600c includes tools to easily migrate and manage data using best practice settings. For example, iSCSI storage for a Microsoft Exchange Storage Group can be expertly setup and migrated in fewer than 10 mouse clicks, saving you time and reducing the potential for error.
	Enhanced file serving for clients (NAS) to improve productivity and collaboration	The SB600c is tuned for faster file serving performance (beyond standard Windows servers). Single Instance Storage (SIS) de-duplication can improve capacity utilization by 30% or more by eliminating duplicate files within shared volumes. Full text search capabilities increase the speed of end-user search.
	Integrated data protection to ensure easy roll-back and disaster recovery	Provides an easy mechanism to manage disk based snapshots for easy rollback, integrated data protection software for offsite and archive, hot-plug disk drives (RAID), and hardware redundancy. Data can also be replicated to another system for enhanced disaster recovery.
	Ready to deploy- get up and running in minutes	Designed for IT generalists with no storage expertise, these systems can be setup and actively serving files in less than 30 minutes. Microsoft Windows Storage Server 2003 is pre-installed to speed deployment time. HP makes data migration easy by including optimization wizards for Microsoft Exchange and SQL Server. For Exchange environments, the SB600c configuration supports up to 500 mailboxes when using the Exchange ESRP implementation guidelines.
	Application-centric storage management from HP simplifies operation and lowers costs	The All-in-One Storage Manager uses terms and functions that are familiar to application administrators. Includes easy iSCSI storage management for 32-bit and 64-bit Windows Server 2003 application servers. Data migration and optimization wizards for Microsoft Exchange and SQL Server.
	Industry standard hardware ensures worry-free operation	Industry standard HP BladeSystem hardware is backed by a 3/3/3 hardware warranty and 1 year software support. HP's world class support organization and partner network ensures that you can quickly recover in the case of a problem.

Software Feature Specifications for the AiO SB600c Storage Blade	HP All-in-One Storage Management Interface	This single easy to use, integrated storage management tool can manage many aspects of the storage environment.

- Rapid startup tools for fast and easy installation and out-of-the box configuration
- Supports management and provisioning of iSCSI storage for 32-bit and 64-bit Windows Server 2003 hosts (NOTE: The MS iSCSI Software target can be used to manage iSCSI storage for non-Windows hosts)
- Application data hosting and migration wizard using HP and Microsoft

Highlights

'Best Practice' storage configurations for Microsoft Exchange 2003/2007 Storage Groups and Microsoft SQL Server 2000/2005 databases.

- Application data hosting and iSCSI Setup wizard for other 'User Defined' Application (Oracle, mySQL, etc…)
- File Share creation wizard with storage allocation and directory quota management.
- Data protection policy assignment (snapshots and backup) integrated into application migration and share creation wizards.
- Application-level capacity provisioning and online growth for shares, SQL Server and Exchange. SQL Server support includes data file and log directory provisioning and Exchange support includes Mailstore, Publicstore and log directory provisioning.
- Quota monitoring and alerting per share or application.
- Remote management via Microsoft Internet Explorer or Terminal Services.
- Support for setup and management of internal storage.

Shared Application Storage (iSCSI SAN)

- Microsoft iSCSI Storage Target is compliant with iSCSI industry standards for industry standard iSCSI initiators. Specific interoperability tests have been verified for SUSE Linux Enterprise Server 10, RedHat Enterprise Linux 5, and Qlogic 4050c.
- MMC based console to setup iSCSI Target storage. This console can be used to setup storage for non-Windows iSCSI initiators not supported within the All-in-One Storage Manager, including setting up iSCSI boot storage for VMWare.
- The Microsoft iSCSI Target can be used as target storage behind a Microsoft application cluster. For more information on this implementation read the whitepaper on this topic found at: http://www.hp.com/go/AiOStorage.
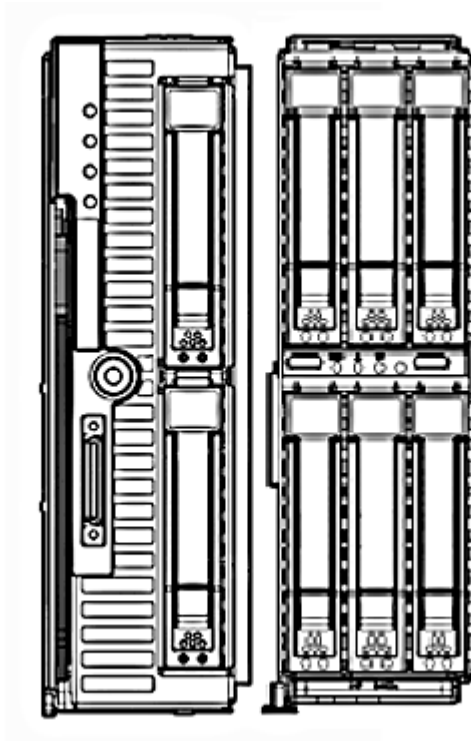
File/print serving (NAS)

- Native CIFS file serving support - Windows based file serving optimized for Windows clients
- Microsoft Services for Network File System (NFS)
- HP Enhanced, File Server Management Console
- Single Instance Storage (SIS) to eliminate duplicate files and maximize available capacity SIS can improve capacity utilization by 30% or more
- Full-text indexing to maximize productivity and allow for fast data retrieval.
- File Server Resource Manager for quotas, file screening and storage reporting
- Print Server management console with unlimited printer support
- Unlimited Client Access License (CAL) included
- Print Server support
  - Easy to use print management console
  - Unlimited printer support in Standard Edition

Integrated Data Protection

- RAID hard drive configurations (hot swappable drives)
- Disk-based snapshots for easy roll-back
  - Scheduled or ad-hoc by application
  - Managed through HP All-in-One Storage Manager
  - Exchange and SQL Server aware snapshots ensure consistent data sets for the applications.

Highlights

- 512 snapshots per independent iSCSI/Application volume. 64 snapshots for file share volumes. (NOTE: If iSCSI LUNs and file shares are on a common volume the iSCSI snapshot limit is 448.)
- A fully integrated copy of HP StorageWorks Data Protector Express software provides enhanced backup and recovery operations. (NOTE: This is the backup server LTU component of Data Protector Express and does not include any add-on licenses for features such as Bare Metal Recovery or Disk-to-Disk-to-Any functionality)
  - Automatic discovery of tape devices
  - Software based Virtual Tape functionality
  - Disk-to-disk-to-any data protection
- Microsoft Distributed File System Replication (DFS-R) to enable replication of files to an alternate HP All-in-One Storage System, including
  - DFS Management Console
  - Configuration and Diagnostic Tools
- Support for HP StorageWorks Storage Mirroring v4.5 (AiO Edition) to enable replication and failover of both files and iSCSI LUNs.
  - A 60-day trial version of HP StorageWorks Storage Mirroring software is included on most systems or can be downloaded from http://h18000.www1.hp.com/products/storage/software/sm/index.html

Operating System
- Microsoft Windows Storage Server 2003 Release 2, Standard Edition

HP AiO SB600c Storage Blade

QuickSpecs

Highlights

The AiO SB600c Storage Blade consists of two HP BladeSystem c-Class blade components; a server blade and a storage blade:

AiO SB600c server blade includes:	Processor	● One Quad-Core Intel® Xeon ® E5410 (2.33GHz, 1333FSB, 80w) processor, up to two supported ● 2x4MB Level 2 cache memory
	Memory	● 2 GB of PC2-5300 Fully Buffered DIMMs at 667 MHz, up to 4GB supported ● Advanced ECC memory support ● Supporting memory interleaving (2x1); memory mirroring and online spare capacity
	Storage Controller	● Integrated HP Smart Array E200i RAID controller with 128MB MB cache with battery-backed write-cache. Supports RAID 0,1.
	Internal Drive Support	● Two (2) Small Form Factor (SFF) 146GB 10K (SFF) SAS hot plug hard disk drives
	Network Controller	● Two (2) embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits ● One (1) additional 10/100 NIC dedicated to iLO 2 Management

	Mezzanine Support	● Two (2) additional I/O expansion slots via mezzanine card.
		● Supports up to (2) mezzanine cards
		  ○ Dual-Port Fibre Channel Mezzanine (4-Gb) options for SAN connectivity (Choice of Emulex or QLogic).
		  ○ Ethernet NIC Mezzanine options for additional network ports
		    ■ HP NC325m PCI Express Quad Port Gigabit Server Adapter for c-Class BladeSystem
		    NOTE: The NC325m must be installed in mezzanine slot 2 of a half-height server blade to provide connectivity on all four ports. If installed in mezzanine slot 1 of a half-height server blade, the NC325m will provide connectivity on 2 of the 4 ports.
		    ■ HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem
		    ■ HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
		
		  ○ 10GbE planned for future support

	Internal USB Support	● One (1) internal USB 2.0 connector for security key devices and USB drive keys
	Form Factor	● AiO SB600c server blade can be installed into a BladeSystem c7000 or c3000 enclosure ● Half-height
	Management	● Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (includes virtual KVM and graphical remote console at no additional cost)
	Operating Systems	● Windows Storage Server 2003 R2, Standard Edition pre-installed

QuickSpecs

Highlights

AiO SB600c storage blade includes:	Storage Controller	● Smart Array P400 RAID controller with 256MB cache, supports RAID 0/1/5/6 (ADG).
	Internal Drive Support	● Choose the type and quantity of SFF hot plug drives to be pre-installed in the SB40c. Choose up to six drives Small Form Factor (SFF) hot plug drives: ○ 146GB 10K SAS hot plug hard drives ○ 300GB 10K 3G SAS hot plug hard drives ○ 250GB 5.4k SATA hot plug hard drives
	Form Factor	● AiO SB600c storage blade can be installed into a BladeSystem c7000 or c3000 enclosure ● HP Storage Works BL AiO 600c Storage Blade occupies two side by side slots in the BladeSystem c7000 or c3000 enclosure

Warranty and software support	Warranty	● Protected by HP Services and a worldwide network of resellers and service providers. 3-year parts, 3-year Labor and 3-year on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. ● SATA SFF hot plug drives include a 1 year warranty.
	Software support	● Includes 1 year HP Software Support.

Optional Software to Enhance HP All-in-One Storage Systems

● **HP StorageWorks Storage Mirroring (AiO Edition)** - HP StorageWorks Storage Mirroring software offers a host-based application that performs remote copy over an IP LAN/WAN. Key features include asynchronous replication that can be scheduled to a fine granular level, Logical Unit Number (LUN), file or byte level. Other features include multiple replication configuration options including peer-to-peer and many-to-one. In addition, Storage Mirroring is a very cost effective disaster recovery alternative from one host to another within a LAN, storage center, or between direct attached storage in metro offices and regional centers. Additional configurations allow replication from small office environments to ensure business continuity without an outside IT staff.

    ○ NOTE: StorageWorks Storage Mirroring (SWSM) is required to replicate iSCSI target LUNs on the AiO SB600c to another system. The included replication feature in Windows Storage Server 2003 R2 called DFS-R, can only be used to replicate files shares to another system. (NOTE: That system must also have DFS-R capability).

    For more information:
    http://h18000.www1.hp.com/products/storage/software/sm/index.html

● **HP Data Protector Express optional extensions** - Data Protector Express delivers class leading features and reliability without compromising its ease of use. Features such as open file backup, D2D2Any backup and recovery and bare metal disaster recovery minimize the impact of backup and recovery operations. The D2D2Any feature extends the scale and capability of the D2D backup (Virtual Library) to allow backups to be moved or copied from disk to other media such as tape for longer term retention. Agents are available for the protection of networked file servers, application servers, HP Data Protection Storage Server and Windows desktops. High performance is delivered through the Data Protector Express three-tier architecture - unique in this class of product - and self-tuning parallel backup streams that allows multiple jobs to run concurrently.

The AiO SB600c Storage Blade includes the backup server LTU which enables the backup and recovery of file and iSCSI data on the SB600c and the setup and management of virtual libraries; you can consolidate the rest of your backup infrastructure and add advanced functionality by including any of the optional extensions such as D2D2Any, bare metal recovery, or network agents

Highlights

for backup of data stored locally on other servers.

For more information on Data Protector Express visit: http://www.hp.com/go/dataprotectorexpress

Click on the QuickSpec link for information on SKU's, options, and functional extensions.

- **HP StorageWorks File Migration Agent** - HP FMA is an automated solution designed to help simplify Windows-based file, web, and application server administration in small business to enterprise environments. This is accomplished through policy-based file migration and archive to popular storage targets, including HP StorageWorks Reference Information Storage System (RISS), HP StorageWorks File System Extender, and NAS, via Common Internet File System (CIFS).

  The following Windows Storage Server features or add-ons are currently NOT supported by HP File Archiving software:

  NOTE: Single Instance Storage (SIS) - (NOT SUPPORTED)
  NOTE: DFS-Replication (DFS-R) - (NOT SUPPORTED)
  NOTE: File Server Resource Manager (FSRM) - Content Filter, & File Screening - (NOT SUPPORTED)

  For more information:
  http://h18006.www1.hp.com/products/storage/software/fma/

- **HP Systems Insight Manager** - HP SIM 5.x is the first unified server and storage management platform. Now, from a single management console, administrators can manage their complete HP server and storage environment with a feature rich, extensible and secure management tool set.

  HP SIM also serves as a central access point for ProLiant Essentials, Integrity Essentials, and Storage Essentials software options that deliver targeted functionality for these platforms. For more information: http://h18013.www1.hp.com/products/servers/management/hpsim/index.html

- **Insight Management Agents** - Allow all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.

- **HP Storage Essentials NAS Manager** - Provides comprehensive Network Attached Storage (NAS) management capabilities for HP All-in-One Storage Systems. Visualize your distributed HP All-in-One Storage Systems and centrally manage their capacity, performance, events, and dependencies to ensure availability and performance and unify SAN and NAS management. For more information on the complete line of HP Storage Essential products go to:
  http://www.hp.com/go/storageessentials

Service and Support, HP Care Pack, and Warranty Information

HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy to buy, easy to use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For most HP products, including the AiO SB600c, post-warranty HP Care Pack Services are available when your original warranty has expired.

Why purchase an HP Care Pack service?	Your standard warranty protects against product defects during normal working hours. HP Care Pack Services help you extend this protection to more coverage hours and more days per week. This can increase uptime which can improve your productivity and profitability. These convenient service packages:

- Protect your investment in HP products
- Provide consistent, predictable levels of support across your entire department or business
- Ease budget planning with fixed-cost support that includes parts and labor
- Give you direct access to proven technical and problem-solving expertise
- Offer a choice of response-time and repair-time commitments
- Deliver prompt, measurable results
- Are available whenever and wherever you do business
- HP Care Pack availability may vary by country and product.

The breadth, depth, and quality of HP hardware and software support services can help you improve the performance of your IT support processes and resolve the complex software and hardware problems that tax user productivity. HP Care Pack services help you increase IT environment stability, efficiency, and agility from the desktop to the data center, and improve the productivity of your employees.

HP offers an optional migration service to assist the customer in moving to the newest product release. This may be in the form of a defined kit and service, or may alternatively be performed on a time & material basis.

HP Services allows the customer to leverage HP's experience in selecting and configuring the most widely used security features, and provides an environment that is immediately more available due to increased change control and significantly improved data security.
For more information on these and other service options, please contact any of our worldwide sales offices or visit our web site at: http://www.hp.com/hps/support

Warranty and Services Included with the Product

HP basic Software warranty provides that the Software media will be free of physical defects for a period of ninety (90) days from delivery. In addition to this basic Software warranty HP also includes, as part of the product, a 1 year, Software Support Carepack that provides phone in support for 9hrs/day, 5 days/week for all the bundled software including the WSS2003 R2 operating system including the iSCSI functionality, the Data Protector Express software, and the enhanced All-in-One Storage Manager (ASM) GUI. The AiO 600c product support can be uplifted to 24x7 for up to 5 years.

The AiO SB600c Storage Blade comes with a 3-3-3 hardware warranty (3 years parts exchange, 3 years labor, and 3 years on-site, next business day response) for product hardware. SATA SFF hot plug drives include a 1 yr warranty.

Service and Support, HP Care Pack, and Warranty Information

Available HP Care Pack Services

Extend your product warranty with a choice of cost-saving support packages.

HP Care Pack Services are sold by HP and HP authorized enterprise and commercial resellers. Services for customers purchasing via direct and enterprise resellers are quoted using HP order configuration tools.

- HP Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- HP Care Pack is not available for less than the product's warranty duration.
- HP Care Pack is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.
- HP Care Pack services are prepaid.

For additional information on Product Services and HP Care Pack, as well as orderable part numbers, please refer to the URL: http://www.hp.com/hps/carepack/.

If you have specific questions about availability or how to obtain services contact your local HP representative. Contact information for your local area can be found at: http://www.hp.com/services.

Installation Services

The Installation service deployment activities follow the AiO Quick Start Poster and include:

- Unpacking the product, performing initial inspection, rack mounting if required, and setting up product hardware and power connectivity and connecting customer provided cables
- Working with the customer to determine if access to the AiO will be DHCP or networking
- Configuring the AiO by running the Rapid Startup Wizard which sets such things as date, time, user name and password, setting up integrated Lights Out (iLO) and simple network management protocol (SNMP).
- The AiO "Create a Shared Folder" Wizard is run to configure the AiO to share files, and access is confirmed.

Finally, a product orientation of < 10 minutes provides a brief overview of how the product was set up, as well as how to find information within the product documentation.

Service and Support, HP Care Pack, and Warranty Information

Support Plus 24 CarePack

HP Support Plus 24 provides all the benefits of the regular Support Plus Care Pack, but HP Services engineers are available to work with your IT team to deliver onsite hardware support and over-the-phone software support around-the-clock 365 days per year.
Three years of HP Support Plus 24 x 7

- Improve coverage hours from 9x5 to 24x7
- Improve HW response time from warranty of next business day to 4hrs same day
- Extend coverage from 1 year to 3 years
- Includes both AiO hardware and software
- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources
- Enjoy consistent service coverage across geographically dispersed sites
- Access to patches for HP and selected third-party software and firmware

In short you enjoy all the benefits of HP Support Plus at any time or on any day you may need them. Choose Support Plus 24 when you not only need all of the benefits of Support Plus, but also require responsive hardware and software services available anytime.

Support Plus CarePack

HP Support Plus helps you increase the performance and availability of your IT infrastructure with comprehensive, consistent hardware and software services. HP Services engineers deliver onsite hardware support and over-the-phone software support 13 hours per day, 5 days per week.
Three years of HP Support Plus 13x5

- Extend basic coverage from 1 year to 3 years
- Improve HW response time from warranty of next business day to 4hrs same day
- Improve coverage hours from 9x5 to 13x5 (due to improved response time)
- Includes both AiO hardware and software
- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources
- Enjoy consistent service coverage across geographically dispersed sites
- Access to patches for HP and selected third-party software and firmware

Our Service coverage encompasses the HP AiO SB600c product, selected multi-vendor hardware and provides trouble-shooting software problems which in turn range from the Windows Storage Server 2003 operating system up to the available utilities. And Support Plus provides recovery and re-configuration assistance of the base HP AiO SB600c using the Quick Recovery disk and your saved configuration file (application recovery not included).

Choose Support Plus when you need to:

- Improve uptime with responsive hardware and software services.
- Enjoy consistent service coverage across geographically dispersed sites.
- Update HP and selected third-party software with tested and certified patches.

QuickSpecs

Service and Support, HP Care Pack, and Warranty Information

eSupport
HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit http://www.hp.com/support

Education Services
HP offers a variety of training methods to fit your needs including traditional instructor-led courses at one of our 120 training centers worldwide, onsite training customized to your needs, in your facility, or even Remotely Assisted Instruction Learning that combines the best of traditional classroom training (including its live instructor and labs) with the best of online training (no traveling required). And if you like learning on your own schedule, at your own pace, make use of e-learning opportunities on the award-winning HP IT Resource Center, a "learning community" with extensive on-demand resources that can be accessed 24x7. For more information on these services, contact your HP sales representative or visit: http://www.hp.com/learn and click on "HP StorageWorks".

Financial Services
HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, please contact your HP sales representative or visit: http://www.hp.com/go/hpfinancialservices

QuickSpecs

Product Configuration Wizard

In the following steps you will be guided through a series of steps to help you configure the best solution for your environment. You will also be supplied with information about complementary products that can be ordered at the same time. It is important to note that the AiO SB600c Storage Blade includes all of the software features and benefits listed above as standard features; this means that there are no expensive upgrades or options required to achieve this integrated storage functionality and data management.

NOTE: The steps outlined below are intended only as a guide for the options available. All options chosen will ship as separate components.

Step 1 - Order the HP StorageWorks All-in-One SB600c Storage Blade for your BladeSystem c-Class enclosure.

NOTE: The AiO SB600c Storage Blade consists of two BladeSystem c-Class components, a server blade and a storage blade.

HP StorageWorks AiO SB600c 1.16TB Storage Blade AG780B	Processor	(1) Quad-core Intel Xeon Processor E5410 (2.33 GHz, 1333 FSB, 80w)
	Cache Memory	2x4 MB Level 2 cache
	Memory	2 GB (2 x 1 GB) PC2-5300, FBD DDR2-667
	Operating System	Windows Storage Server 2003 Release 2, Standard Edition pre-installed
#OD1 -Factory Integration into c-class enclosure	Storage Controller	Smart Array E200i Controller with 128MB BBWC - in server blade Smart Array P400 RAID controller with 256MB cache, supports RAID 0/1/5/6 (ADG) - in storage blade
	Hard Drives	• 2 x 146GB 3G SAS 10K SFF SP HDDs - in server bladeTo choose the type and quantity of SFF hot plug drives to be pre-installed in the SB40c, see Step 2 below.
	Network Controller	Two (2) embedded NC373i Multifunction Gigabit NICs plus one (1) additional 10/100 NIC dedicated to iLO 2 Management
	Form Factor	Half-height c-Class
	Protocol Support	SMB/CIFS, NFS, NCP, AppleTalk, HTTP, FTP
	iSCSI Initiator Support	Compliant with iSCSI industry standards and compatible with industry standard iSCSI initiators. Interoperability has been verified for Windows 2000, Windows Server 2003, VMWare ESX Server 3, SUSE Linux Enterprise Server 10, Red Hat Enterprise Linux 5, and Qlogic 4050c.

Step 2 - Add up to 6 drives to the SB40c

Hard drives

Choose the type and quantity of SFF hot plug drives to be pre-installed in the SB40c (see Step 2 below). Choose up to six Small Form Factor (SFF) hot plug drives:

- 146GB 10K SAS hot plug hard drives 418367-B21
- 300GB 10K 3G SAS hot plug hard drives 492620-B21
- 250GB 5.4k SATA hot plug hard drives 460355-B21

NOTE:
RAID-0 requires at least 1 disk but does not afford any type of data protection.
RAID-1 requires an least 2 disks and also an even number of disks.
RAID-5 requires at least 3 disks.
RAID-6 requires at least 4 disks.
A RAID set cannot span different types of disks (e.g. you must us all SATA or all SAS for a RAID set).

Product Configuration Wizard

Step 3 - Add a second processor

Processor	Quad-core Intel Xeon Processor ZE5410 (2.33 GHz, 1333 FSB, 80w)	459493-B21

Step 4 - Add additional memory

Additional Memory	**NOTE:** Every AiO SB600c Storage Blade comes standard with 2 GB of memory and is expandable to OS limit of 4 GB. Memory must be installed in pairs.	
	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21

Step 5 - Add optional software

Data Protector Express extensions

NOTE: All AiO SB600c Storage Blades ship with a HP StorageWorks Data Protector Express Backup server LTU. No functional extensions are required to backup file or iSCSI block data but the following extensions can be added for advanced functionality.(**NOTE:** This is the backup server LTU component of Data Protector Express and does not include any add-on licenses for features such as Bare Metal Recovery or Disk-to-Disk-to-Any functionality)

For more information on HP Data Protector Express please visit: http://www.hp.com/go/dataprotectorexpress.

Optional extensions	HP Data Protector Express 4.0 Backup Server	BB117BA
	HP Data Protector Express Backup Server 4.0 Upgrade from Data Protector Express Single Server Edition	BB117BT

Storage Mirroring replication software	T5446A

HP StorageWorks Storage Mirroring software enables remote replication over an IP LAN/WAN between multiple All-in-One Storage Systems for both file (NAS) and block (iSCSI) data. Key features include asynchronous replication that can be scheduled to a fine granular level, Logical Unit Number (LUN), file or byte level. Other features include multiple replication configuration options including peer-to-peer and many-to-one. In addition, Storage Mirroring is a very cost effective disaster recovery alternative from one host to another within a LAN, storage center, or between direct attached storage in metro offices and regional centers. Additional configurations allow replication from small office environments to ensure business continuity without an outside IT staff.

Product Configuration Wizard

Step 6 - Add tape backup solution

NOTE: Connecting a FC-Based tape library to the AiO SB600c Storage Blade is only one method to back up the data. Other methods are available using an iSCSI or network connection. For more information look at the Whitepapers available at: http://www.hp.com/go/AiOstorage

NOTE: For more information on the complete HP StorageWorks tape backup portfolio, please visit: http://www.hp.com/go/tape. For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect. Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.

Tape Libraries		
	HP StorageWorks MSL2024 Tape Library	
	HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Library	AG325B

Step 7 - Add HP CarePack services

AiO SB600c CarePacks		
	HP 1y Support Plus AiO 600c SVC	UE981E
	HP 1y Support Plus24 AiO 600c SVC	UE982E
	HP 1y 6h 24x7 CTR AiO 600c HW Supp	UE983E
	HP 3y Support Plus AiO 600c SVC	UE984E
	HP 3y Support Plus24 AiO 600c SVC	UE985E
	HP 3y 6h 24x7 CTR AiO 600c HW Supp	UE986E
	HP 1y PW Support Plus AiO 600c SVC	UE987PE
	HP 1y PW Support Plus24 AiO 600c SVC	UE988PE
	HP Installation	UF285E

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
DIMM installation guidelines:

1. All DIMMs must be PC2-5300 Fully Buffered DIMMs at 667 MHz.
2. Both DIMM slots in a memory bank must be populated.
3. Banks must be populated in sequential alphabetic order, starting with bank A.
4. Both DIMMs in a memory bank must be identical. Install identical DIMMs as pairs only, starting with DIMM socket 1, bank A.
5. Multiple advanced memory protection (AMP) modes are supported, based on FBDIMM population and RBSU selection. The server blade defaults to Advanced ECC

AiO600c Storage

Standard Memory
2048 MB (2 x 1024 MB) (depending on model)of PC2-5300, FBD DDR2-667 ECC DIMMs

Standard Memory Plus Optional Memory
Up to 4096 MB of PC2-5300, FBD DDR2-667 ECC DIMMs. Memory is available with the installation of optional PC2-5300, FBD DDR2-667 DIMM memory expansion kits. OS limit of 4 GB.

Product Configuration Wizard

Memory		Slot							
		1A	2C	3A	4C	5B	6D	7B	8D
Standard	2048 MB	1024 MB	Empty	1024 MB	Empty	Empty	Empty	Empty	Empty
Optional	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB	Empty	Empty	Empty	Empty

Additional Specifications

AiO SB600c Server Blade	Dimensions	Height	2.207 in (5.61 cm)
		Depth	20.058 in (50.95 cm)
		Width	7.154 in (18.17 cm)
	Weight	Maximum	14.20 lb (6.44kg)
	Temperature Range*	Operating	10°Cto 35° C (50° to 95° F)
		Non-Operating	-40° to 60° C (-40° to 140° F)
		Storage	-20° to 60° C (-4 to 140° F)
		Maximum Wet Bulb Temperature	-30° C (86° F)
	Relative Humidity**	Operating	10% to 90%
		Shipping	10% to 90%
		Storage	10% to 95%

* All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048m (10,000 ft) or 70 Kpa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3 KPa/4.4 psia.
** Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

HP Smart Array E200i Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI)
		1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR-1/266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x4 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 64MB or 128MB cache: ECC protection, battery-backed, and transportable
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 5 (Distributed Data Guarding) requires 128MB BBWC option
		RAID1, 1+0 (Striping & Mirroring)
		RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware

QuickSpecs

Additional Specifications

Embedded NC373i Multifunction Gigabit Server Adapter	Network Processor	Broadcom 5708S
	Data Transfer Method	Four lane (x4) PCI Express
	Network Transfer Rate	1000 Mb/s
	IEEE Compliance	802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x
	Standard Features	

Standard Features:
- TCP/IP offload engine (TOE) for MS Windows
- Remote direct memory access (RDMA) for MS Windows via the optional HP ProLiant Essentials RDMA Pack
- Accelerated iSCSI for MS Windows via the optional HP ProLiant Essentials Accelerated iSCSI Pack - **NOTE:** Accelerated iSCSI is NOT supported at this time on the AiO SB600c Storage Blade
- Jumbo frames
- TCP/IP checksum offload (TCO)
- Large send offload (LSO)
- Interrupt coalescence
- Dual address cycles (DAC)
- Wake-on-LAN (WOL)
- Pre-boot execution environment (PXE)
- ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing
- Advanced teaming and Virus Throttle via the optional HP ProLiant Essentials Intelligent Networking Pack

AiO SB600c Server Blade	Dimensions (HxWxD)	2.19 x 7.154 x 20.058 in (5.56 x 18.17 x 50.95 cm)
	Weight (unloaded)	8 lb (3.63 kg)
	Weight (loaded)	11 lb (4.99 kg)
	Protocol Support	3Gb/s SAS 1.5Gb/s SATA
	LED Indicators	UID System Health LED
	Drive LED Indicators (on drive trays)	Drive LED (top) - On-line/Activity Drive Failure LED (bottom) - Drive Fault/Locate
	Relative Humidity (non-condensing)	Operating 10% to 90% Shipping 5% to 95%
	Temperature Range	Operating 50° to 94° F (10° to 35° C°) Shipping -22° to 140° F (-30° to 60° C)

NOTE: To maintain proper cooling and airflow, a drive blank or drive must occupy all bays during operation.

Additional Specifications

Smart Array P400 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI)
		1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with provides up to 4.2 GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache; ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	876GB (6 x 146GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding)
		RAID 5 (Distributed Data Guarding)
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature