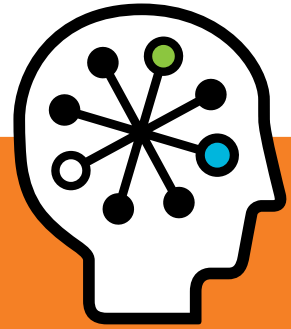




## HP Storage Blade family

Data sheet



HP StorageWorks All-in-One SB600c Storage Blade



HP StorageWorks SB40c Storage Blade



HP StorageWorks Ultrium 448c Tape Blade



HP StorageWorks SB920c Tape Blade



HP ProLiant SB460c SAN Gateway Storage Server

Now that you have realised the substantial benefits of owning an HP BladeSystem, look to HP for your storage and data protection needs. Easily integrate internal storage blades into HP BladeSystem c-Class enclosures and further expand your external storage capacity using your existing NAS or SAN deployments. HP StorageWorks has a broad range of solutions designed to address the specific storage challenges from small businesses to large organisations.

Exclusive to HP BladeSystem c-Class environments, HP StorageWorks SB920c Tape Blade and StorageWorks Ultrium 448c Tape Blade deliver versatile, integrated tape backup solutions that are ideal if you are looking for a data protection solution integrated into the blade enclosure.

### HP BladeSystem integrates storage and data protection – so you do not have to.

You have deployed an HP BladeSystem c-Class solution and successfully removed the barriers often found in 'racked, stacked and wired' data centres. Now you are looking at storage products and solutions that can meet your IT and business needs.

Turn to the broad product line of HP StorageWorks to get more storage capacity in the enclosure, helping you gain the full value from your investments. Moreover, there are additional connectivity options and external storage solutions that can help you increase the efficiency of your existing NAS or SAN infrastructure.

You can connect to the network and storage you use now and rely on the same standards you are familiar with. Moreover, you do not need to be a storage expert to add additional storage or data protection to your server infrastructure. You can add storage blades for shared file and application storage and integrated data protection without adding a single cable.

Deploy up to 1 TB of shared storage internally or expand externally and connect to the HP StorageWorks products range or any existing NAS or SAN deployments. We provide a product line of direct attached, NAS, iSCSI SAN, tape and external storage solutions for HP BladeSystem for all of your storage requirements.

### HP StorageWorks Ultrium Tape Blades

HP StorageWorks tape blades are the industry's first tape blades and are developed exclusively for the BladeSystem c-Class enclosures. Combined with scalability, high performance, numerous enterprise-class data protection features and a fully-integrated suite of centralised management tools, the SB920c and the 448c tape blades give you the protection and administrative control you need.

The HP StorageWorks SB920c Tape Blade and the HP StorageWorks Ultrium 448c Tape Blade are ideal for HP BladeSystem c-Class customers who need a data protection solution integrated inside the blade enclosure. Both are half-height tape blades, providing direct-attach data protection for the adjacent server and network backup protection for all data residing within the enclosure. The SB920c and the Ultrium 448c tape blades offer complete data protection, disaster recovery and archiving solutions for BladeSystem c-Class customers.

With third-generation LTO technology, the SB920c Tape Blade delivers a compressed storage capacity of 800 GB on a single data cartridge and a compressed transfer rate of 432 GB per hour. The HP Ultrium 448c Tape Blade delivers a compressed storage capacity of 400 GB and a compressed transfer rate of 173 GB per hour, using second-generation LTO technology.

## Technical specifications



HP StorageWorks SB920c Tape Blade



HP StorageWorks Ultrium 448c Tape Blade

<b>Recording Technology</b>	LTO-3 Ultrium	LTO-2 Ultrium
<b>Maximum Capacity (Compressed)</b>	800 GB	400 GB
<b>Sustained Transfer Rate (Compressed 2:1)</b>	432 GB/hr	173 GB/hr
<b>Buffer Size</b>	64 MB	64 MB
<b>Interface</b>	3 Gb/s SAS	3 Gb/s SAS
<b>WORM Capability</b>	Yes	No
<b>BladeSystem Supported</b>	HP BladeSystem c-Class	HP BladeSystem c-Class
<b>Maximum Blades per Enclosure</b>	8 (c7000), 4 (c3000)	8 (c7000), 4 (c3000)
<b>Form Factor</b>	Half-height BladeSystem c-Class blade form factor	Half-height BladeSystem c-Class blade form factor
<b>Warranty</b>	3-year, next-day, parts exchange, limited warranty, plus 9x5 phone support for the duration of the warranty	3-year, next-day, parts exchange, limited warranty, plus 9x5 phone support for the duration of the warranty
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.pdf">http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.pdf</a>	

These tape blade solutions ship standard with HP StorageWorks Data Protector Express Software Single Server Edition data protection software. In addition, they support HP One-Button Disaster Recovery (OBDR), which allows quick recovery of the operating system, applications and data from the latest full backup set.

### Key features and benefits

Based on your needs, you can choose from the HP StorageWorks SB920c Tape Blade and the HP StorageWorks Ultrium 448c Tape Blade, both of which include the following:

#### Integrated data protection solution for HP BladeSystem c-Class

- Server, storage and data protection integrated into the enclosure providing a 'data centre in a box' solution that is easy to deploy and maintain

#### Complete data protection and disaster recovery solution in the box

- Ships standard with HP StorageWorks Data Protector Express Software Single Server Edition data protection software
- Supports HP One-Button Disaster Recovery (OBDR), which allows quick recovery of operating system, applications and data from the latest backup set in the event of a hard drive failure

#### Versatile data protection solution for direct backup and network backup capability

- Provides direct-attach data protection of the adjacent server and network backup of all other data residing within the BladeSystem c-Class enclosure
- Protects both half-height and full-height BladeSystem c-Class server blades

The HP StorageWorks All-in-One SB600c Storage Blade efficiently combines file serving, shared storage and data protection to deliver outstanding value and utility. Simplified storage management makes it easy to manage and protect data within BladeSystem c-Class enclosures.

## HP StorageWorks All-in-One SB600c Storage Blade

Consider the benefits of a single solution that provides iSCSI shared storage for HP BladeSystem c-Class application servers, enhanced file serving (NAS) for end-user clients and software to protect the data on the device. These are the key functions of the HP StorageWorks All-in-One (AiO) SB600c Storage Blade.

A radically simple, shared storage solution, AiO SB600c Storage Blade enables small and mid-sized businesses to affordably manage growth and protect data without the complexity of 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.

Built on the ProLiant BL460c server and SB40c Storage Blade, the AiO SB600c unifies internal shared storage options through the centralised HP AiO Storage Manager (ASM) interface. With the AiO Storage Manager (ASM) you can easily expand data areas, migrate data from capacity-constrained servers, implement disk and tape backup policies and set up end-user file shares.

The AiO SB600c internal shared storage solution provides:

- Application server storage (iSCSI SAN)
- Windows file serving (NAS)
- Centralised 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

## Key features and benefits

### Unbelievably simple

- Provides NAS, iSCSI SAN and data protection in a single solution
- Enables application-centric management that hides storage complexity
- Includes a best practice toolkit, which is like having a 'storage expert in the box'
- Reduces complexity of attaching external storage through the use of 'in-the-enclosure' storage

### Uniquely affordable

- Allows shared storage across multiple servers to increase efficiencies
- Enables storage consolidation with iSCSI, using standard TCP/IP network
- Helps save space and reduce costs with the HP BladeSystem c-class form factor

### Unquestionably reliable

- Provides built-in data protection with no backup window using snapshots and other backup tools
- Offers reliability and support from over 145,000 HP channel partners
- Provides automatic problem notification and remote administration (with HP SIM and iLO)

## Technical specifications



HP StorageWorks All-in-One SB600c Storage Blade

<b>Integrated Application Data Storage (iSCSI connectivity)</b>	Yes
<b>Integrated File Serving (NAS)</b>	Yes
<b>Integrated Data Protection</b>	Yes
<b>Processor Name</b>	One Quad-Core Intel® Xeon® E5410 (2.33 GHz, 1333FSB, 80w)
<b>Standard Memory</b>	2 GB
<b>Storage Included</b>	292 GB 2 x 146 GB 10K SFF SAS pre-installed with Windows Storage Server 2003
<b>Storage Expansion Options</b>	<ol style="list-style-type: none"><li>1. Up to six (6) Small Form Factor (SFF) 146 GB 10K SAS hot plug hard disk drives</li><li>2. Up to six (6) Small Form Factor (SFF) 250 GB 5.4K SATA hot plug hard drives</li></ol>
<b>BladeSystem Supported</b>	c7000 and c3000 BladeSystem chassis
<b>Data Protection Features</b>	<ol style="list-style-type: none"><li>1. Hardware RAID (0/1/5)</li><li>2. Snapshots (448 per iSCSI/Application area. 64 for file shares. Assumes a common volume.)</li><li>3. Integrated Tape Backup Software (HP Data Protector Express)</li></ol>
<b>Replication Features</b>	<ol style="list-style-type: none"><li>1. File Share replication to 2nd SB600c using Microsoft DFS-R</li><li>2. iSCSI target replication to 2nd SB600c through optional HP StorageWorks Storage Mirroring</li></ol>
<b>File Serving Support</b>	CIFS, NFS, FTP, HTTP
<b>Microsoft Exchange Performance Sizing</b>	Can support up to 500 Exchange mailboxes under average workload
<b>Application Expansion Support (iSCSI Initiators)</b>	Compliant with iSCSI industry standards including iSCSI initiator support for Microsoft, Linux, BSD, AIX and Solaris
<b>Warranty</b>	3-year parts, 3-year labour and 3-year on-site limited global warranty, one-year HP Software Support
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12789_div/12789_div.pdf">http://h18000.www1.hp.com/products/quickspecs/12789_div/12789_div.pdf</a>

## Technical specifications



HP ProLiant SB460c SAN Gateway Storage Server

<b>Processor Name</b>	Two Quad-Core Intel® Xeon® E5430 2.66 GHz processors with 1333 MHz fsb, 80w
<b>Number of Processors (Standard/Installed)</b>	2
<b>Standard Memory</b>	8 GB
<b>Maximum Storage Capacity (Raw)</b>	144 GB 2 x 72 GB 10K SAS SFF internal drives with Microsoft Windows Unified Data Storage Server pre-installed
<b>External Expansion Support</b>	Virtually unlimited external storage capacity using iSCSI or FC connectivity
<b>Storage Controller</b>	Integrated HP Smart Array E200i RAID controller with 128 MB battery-backed write-cache
<b>Number of Users (maximum)</b>	1,000+
<b>Warranty (abbreviated description)</b>	3-year parts, 3-year labour and 3-year on-site limited global warranty, one-year HP Software Support
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13114_div/13114_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13114_div/13114_div.pdf</a>

## HP ProLiant SB460c SAN Gateway Storage Server

Do you have a proliferation of NAS devices that you need to consolidate, or tier-two applications that would benefit from centralised storage? If so, you need a flexible NAS/SAN gateway that increases the efficiency of your existing infrastructure.

The first internal blade NAS/SAN fusion gateway product available, the HP ProLiant SB460c SAN

A ready-to-deploy NAS/SAN gateway built on the BL460c BladeSystem server, the HP ProLiant SB460c provides consolidated file-serving access as well as cost-saving iSCSI connectivity, enabling businesses to make better use of their existing SAN storage infrastructure.

Gateway Storage Server is a flexible, ready-to-deploy NAS/SAN gateway solution for both enterprise and workgroup SAN environments.

The SB460c SAN Gateway is used to access SAN storage, translating file data from the server into blocks for storage. It allows you to centralise file serving onto a SAN to control proliferation of NAS devices while preserving your existing NAS storage investments. The SB460c SAN Gateway also enables hosting of application (block) storage, using less expensive iSCSI to connect to a SAN infrastructure or HP SWD Modular Smart Array

shared storage using iSCSI over the network, to increase the efficiency of your existing infrastructure.

## Key features and benefits

### Cost-effective flexibility

- Offers a flexible NAS gateway
- Provides iSCSI connectivity
- Enables use as a Windows print server
- Includes Microsoft Windows Unified Data Storage Server 2003 with:
  - iSCSI software target
  - Microsoft Cluster Server license

### Ready to deploy

- Saves time with Microsoft Windows Unified Data Storage Server 2003 factory-installed on local hard drives
- Simplifies and accelerates deployment with HP Rapid Start-up Wizard
- Provides centralised storage management tools with the HP-enhanced Microsoft Management Console (MMC)

### Intelligent storage management

- Allows efficient use of storage space through file de-duplicating Single-Instance Storage (SIS)
- Includes additional storage-specific tools such as Indexed Search, SharePoint® Services support, Quotas, File Screening, Storage Reporting and Distributed File System (DFS) Replication
- Enables deployment and central management of a wide range of heterogeneous file protocols

## Technical specifications



HP StorageWorks SB40c storage blade

<b>Hard drives</b>	36 GB 10K SFF SAS HDD 72 GB 10K SFF SAS HDD 146 GB 10K SFF SAS HDD 36 GB 15K SFF SAS HDD 72 GB 15K SFF SAS HDD 120 GB 5.4K SFF SATA HDD 250 GB 5.4K SFF SATA HDD
<b>Internal drive support</b>	Supports up to 6 SAS or SATA universal hot plug hard disk drives
<b>Protocol support</b>	3-Gbps SAS, 1.5-Gbps SATA
<b>Storage capacity</b>	Storage capacity Up to 876 GB SAS per storage blade (using 146 GB 10K SFF SAS hard disk drives), Up to 1.5 TB SATA per storage blade (using 250 GB 5.4K SFF SATA hard disk drives)
<b>RAID support</b>	RAID 0, 1+0, 5, 6 with Advanced Data Guarding
<b>Server blade support</b>	Supports all BladeSystem c-Class server blades Note: HP PCI Express Mezzanine Pass-Thru Card for HP BladeSystem c-Class is required to support HP BladeSystem c-Class full-height server blades.
<b>Form factor</b>	Fits into a half-height bay on the BladeSystem c3000 and c7000 enclosures
<b>Warranty</b>	3-year parts/3-year labour/3-year NDB on site
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html">http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html</a>

## HP StorageWorks SB40c storage blade

Designed to keep pace with your increasing need for storage capacity, the SB40c provides a simple way to add additional drive capacity. A half-height c-Class storage blade, it features support for up to six

HP StorageWorks SB40c storage blade provides direct-attach storage density for HP BladeSystem c-Class server blades. Now you can add storage to your blade servers without the cost of a storage area network (SAN).

hot-plug Small Form Factor (SFF) Serial Attached SCSI (SAS) or Serial ATA (SATA) hard disk drives. Using the onboard Smart Array P400, the SB40c provides high performance, availability and storage density to meet your most demanding and growing storage needs.

## Key features and benefits

### Affordable capacity in space-saving footprint

- Supports SFF SAS 36/72 GB/146 GB 10K, 36/72 GB 15K, as well as SFF SATA 120 GB/250 GB 5.4K hard disk drives – providing up to 1.5 TB of storage capacity in a half-height blade.

### Designed for easy deployment and management

- Simplifies configuration and setup with HP Array Configuration Utility (ACU)
- Allows easy maintenance and troubleshooting with industry-standard management tools including HP Systems Insight Manager

### Investment protection

- Provides a SAS architecture with the ability to mix and match SAS and SATA drives in the same storage blade
- Supports Universal Small Form Factor disk technology

## Warranty

HP warrants that the software media will be free of physical defects for a period of ninety (90) days from delivery. For more information about HP Global Limited Warranty and Technical Support, visit: [www.hp.com/products/storageworks/warranty](http://www.hp.com/products/storageworks/warranty)

## Service and support

### Factory Express

HP Factory Express is designed to help you get a better return from your IT investment by providing customisation, integration and deployment services along with your storage and server purchases. It provides predictable, trusted and tested IT solutions tailored to your business needs. We allow you to customise hardware to your exact specifications in the factory – helping to speed up deployment and free up internal resources. For more information on these services, please contact your HP representative or visit [www.hp.com/go/factoryexpress](http://www.hp.com/go/factoryexpress)

### Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a spectrum of training classes on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led classes at one of our 80 training centres worldwide to on-site training customised to your needs or on line. For more information on these services, please contact your HP representative or visit [www.hp.com/learn/storage](http://www.hp.com/learn/storage)

### Financial Services

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

## For more information

For more information about HP services and support, contact your HP sales representative or HP-authorized Channel Partner or visit [http://welcome.hp.com/country/us/en/contact\\_us.html](http://welcome.hp.com/country/us/en/contact_us.html)

## HP Services

When you buy an HP storage blade, it is also a good time to think about what level of service and support you may need. To help take the worry out of deploying and managing your environment, we have designed a range of service options that are as flexible, scalable and affordable as your storage.

### Recommended Services

- 3-Year HP Support Plus 24 Service: Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive on-site hardware support and over-the-phone software support around-the-clock.
- Installation and Startup service for HP c-Class Infrastructure: Provides basic hardware and software installation of your c-Class BladeSystem. This service includes service planning, deployment, Installation verification tests (IVT) and a customer orientation session.

### Related Services

- HP SAN Solution Service: A scalable service providing specialised expertise in storage area network planning and configuration. Service makes sure that your SAN is configured for high performance and availability and is integrated with your applications, management environment and business processes.
- HP Data Migration Service: The HP Data Migration Service provides migration of your data from one storage array technology to another within your data centre or throughout the globe.
- HP Proactive Blade Service: Provides proactive account services to improve the stability, availability and operational effectiveness of the entire BladeSystem environment.

For more information about HP services and support, contact your HP sales representative or HP-authorized Channel Partner or visit [www.hp.com/hps/storage](http://www.hp.com/hps/storage)

## Technology for better business outcomes

To learn more, visit [www.hp.com/go/storageblades](http://www.hp.com/go/storageblades)

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