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HP Storage Blade family

Data sheet

Now that you have realized 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' broad portfolio of solutions is designed to address specific storage challenges of organizations, regardless of its size.



HP StorageWorks
IO Accelerator for
BladeSystem c-Class



HP StorageWorks
SB40c Storage Blade



HP StorageWorks
D2200sb Storage Blade



HP StorageWorks
X1800sb G2 Network
Storage Blade



HP StorageWorks
X3800sb G2 Network
Storage Gateway Blade



HP StorageWorks
Ultrium Tape Blades



HP BladeSystem integrates storage and data protection—so you don't have to

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

Turn to the broad portfolio of HP StorageWorks to get more storage capacity in the enclosure, helping you gain 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. What's more, 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 7.2 TB of shared storage internally or externally and connect to the HP StorageWorks products portfolio or any existing NAS or SAN deployment. We provide a portfolio of direct attached, NAS, iSCSI, SAN, tape, and external storage solutions for HP BladeSystem, encompassing all your storage requirements.



HP StorageWorks IO Accelerator for BladeSystem c-Class

Is your business facing constant bottlenecks in application performance? Are you concerned about real-time data access?

The HP Storage Works IO Accelerator for BladeSystem c-Class is the latest device from HP and is part of a comprehensive solid state storage portfolio. It is targeted for markets and applications requiring high transaction rates and real-time data access that will benefit from application performance enhancement. The HP StorageWorks IO accelerator for BladeSystem c-Class offers the equivalent storage performance of multiple disks. It also brings high I/O performance and low latency access to storage, with the reliability of solid state.

Key features and benefits

Higher performance

- Provides high read and write performance and accelerated application performance (up to 100K IOPs) for customers with high I/O requirements that buy large arrays in order to get the performance from large number of drives
- Offers high speed, (up to 800 MB/s) augmenting existing NAS/SAN HDD-based solutions, for customers with applications requiring high transaction rates and real-time data access
- Provides enhanced productivity for customers with local data high speed access (~50 microseconds)

HP StorageWorks IO Accelerator for BladeSystem c-Class enhances application performance with superior storage I/Os, and read/write performance for businesses with high transaction rates requiring real-time data access.



Technical specifications

HP StorageWorks IO Accelerator for BladeSystem c-Class



Capacity	320 GB Native maximum, depending on model
BladeSystem supported	HP BladeSystem c3000 and c7000
Servers supported	BL2x220c G5, BL2x220c G6, BL260c G5, BL280c G6, BL460c G6, BL460c G7, BL490c G6, BL490c G7, BL465c G5, BL465c G6, BL465c G7, BL480c, BL495c G5, BL495c G6, BL680c G6, BL685c G5, BL685c G6, BL685c G7
Maximum IOPS	140,000 IO/sec
OS supported	Red Hat Enterprise Linux 4, Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 10, SUSE Linux Enterprise Server 11, Microsoft Windows Server 2003 (x86_64-bit only) SP2, Microsoft Windows Server 2008 (x86_64-bit only) R1 with SP2 or higher, Microsoft Windows Server 2008 (x86_64-bit only) R2, VMware ESX 4.0 Update 1 Note: <ul style="list-style-type: none">• VMware ESX Partner supported.• VMware ESX CIM provider or SNMP provider are currently not available. Important: All operating systems must be 64-bit architecture.
Warranty (parts-labor-onsite)	3-year parts only

Low power consumption

- Unlike traditional hard drives, the HP IO Accelerator uses Solid State Disk Drives (SSDs). SSD's can shift to very low power modes quickly and return to full performance, without the penalty of delays associated with waiting for a disk to spin back up
- Implementing HP IO Accelerator SSD's lower average power consumption reduces the demands on the data center to cool systems
- High performance NAND storage has different availability characteristics when compared to HDD based solutions, but superior IOPs performance, lower power consumption, and rack space requirements

Enhances business-critical applications

- Enables faster performance with rapid response where output must be a few seconds or less
- Reduces rendering time by achieving real-time rendering
- Data mining in customer relationship management applications can contribute significantly to the bottom line. Contact customers with high likelihood of responding to an offer

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 supports for up to six 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.

Use HP StorageWorks P4000 Virtual SAN Appliance (VSA) software to turn the SB40c into an iSCSI SAN for use by all servers in the enclosure and any server on the network. HP VSA software is installed in a virtual machine on a VMware ESX host server adjacent to the SB40c. HP VSA features storage clustering for scalability, Network RAID for storage failover, thin provisioning, snapshots, remote replication, and cloning. Expand capacity within the same enclosure or to other BladeSystem enclosures by adding additional SB40c Storage Blades and HP VSA licenses. A bundle of the SB40c Storage Blade and a HP VSA license makes purchasing convenient.

Note:

- Includes the SB40c Storage Blade and a single LeftHand P4000 VSA license. LeftHand VSA software is installed in a virtual machine on a VMware ESX host server adjacent to the SB40c.

- Includes 1-year 9x5 software support for LeftHand P4000 VSA software.
- LeftHand P4000 VSA is supported on VMware ESX 3.0.2, 3.5, and ESX i version 3.5

For detailed deployment information, please see the HP LeftHand P4000 VSA in an HP BladeSystem environment solution guide: <http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01729139/c01729139.pdf>

Key features and benefits

Affordable capacity in space-saving footprint

Supports SFF SAS, SFF Midline SAS and as well as SFF SATA hard disk drives—providing up to 3.6 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



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).

Technical specifications

HP StorageWorks SB40c Storage Blade



Hard drives	<p>SAS Hot Plug SFF Enterprise Drives</p> <ul style="list-style-type: none">HP 600 GB 6G SAS 10K SFF DP HDDHP 450 GB 6G SAS 10K SFF DP HDDHP 300 GB 6G SAS 10K SFF DP HDDHP 300 GB 3G SAS 10K SFF DP HDDHP 146 GB 6G SAS 10K SFF DP HDDHP 146 GB 3G SAS 10K SFF DP HDDHP 146 GB 6G SAS 15K SFF DP HDDHP 146 GB 3G SAS 15K SFF DP HDDHP 72 GB 6G SAS 15K SFF DP HDDHP 72 GB 3G SAS 15K SFF DP HDD <p>Midline SAS Hot Plug SFF Drives</p> <ul style="list-style-type: none">HP 500 GB 6G SAS 7.2K SFF DP HDD <p>SFF SATA Hot Plug Entry Drives</p> <ul style="list-style-type: none">HP 500 GB 3G SATA 7.2K SFF MDL HDDHP 160 GB 3G SATA 7.2K SFF MDL HDDHP 250 GB 3G SATA 5.4K SFF ETY HDDHP 120 GB 1.5G SATA 5.4K SFF ETY HDD
Internal drive support	Supports up to 6 SAS or SATA universal hot plug hard disk drives
Protocol support	Connects to adjacent Server Blade using PCIe
Storage capacity	Storage capacity up to 3.6 TB SAS per storage blade (using 600 GB 10K SFF SAS hard disk drives), Up to 3.0 TB SATA per storage blade (using 500 GB 5.4K SFF SATA hard disk drives)
RAID support	RAID 0, 1+0, 5, 6 with Advanced Data Guarding
Server blade support	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
OS supported	Microsoft Windows Server 2003, 2008 HP-UX 11i v3, HP-UX 11i v2 (when configured to HP Integrity Server Blades only) OpenVMS (when configured with HP Integrity Server Blades only) Red Hat Enterprise Linux SUSE Linux Enterprise Server VMware Solaris
Form factor	Fits into a half-height bay on the BladeSystem c3000 and c7000 enclosures
Warranty	3-year parts, 3-year labor, 3-year NBD onsite
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html

HP StorageWorks D2200sb Storage Blade

Do you need a direct attached or shared storage solution within your BladeSystem enclosure?

The HP StorageWorks D2200sb Storage Blade delivers high speed entry-level direct attached or shared storage for HP c-Class BladeSystem while delivering up to 7.2 TB of storage, with features normally found in enterprise data centers.

Designed with an onboard Smart Array P410i controller with 1 GB flash-backed write cache, the D2200sb provides increased performance and data protection. The enclosure backplane provides a PCI Express connection to the adjacent c-Class server blade and enables high performance storage access, without any additional cables.

The D2200sb when paired with the HP P4000 Virtual SAN Appliance Software (VSA) turns into an iSCSI SAN, for use by all servers in the enclosure and any server on the network. The D2200sb can be also paired with the HP StorageWorks X1800sb Network Storage Blade to provide file serving iSCSI shared storage, inside the BladeSystem enclosure.

Note:

- Includes the D2200sb Storage Blade, a Smart Array Advanced Pack License, and a single P4000 VSA license. VSA software is installed in a virtual machine on a VMware host server adjacent to the D2200sb.
- Includes 1-year 9x5 software support for P4000 VSA software.

For detailed deployment information, please see the HP LeftHand P4000 VSA in an HP BladeSystem environment solution guide: <http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01729139/c01729139.pdf>

Key features and benefits

High-performance direct attached storage

- Supports twelve universal small form factor hot-plug SAS hard disk drives that expands the spindle count for the adjacent blade server
- Provides peak DAS performance through a high-speed PCI Express (PCIe) connection to adjacent c-Class server blade
- Includes an HP Smart Array P410i controller 1 GB flash-backed write cache, for increased performance and data protection



Providing direct attached storage for c-Class servers, the D2200sb Storage Blade supports up to twelve universal hot-plug SFF SAS hard disk drives. Pair it with the HP P4000 Virtual SAN Appliance Software (VSA) to turn the D2200sb into an iSCSI SAN for use by all servers in the enclosure and any server on the network.

Technical specifications

HP StorageWorks D2200sb Storage Blade



Hard drives	SAS Hot Plug SFF Enterprise Drives HP 600 GB 6G SAS 10K SFF DP HDD HP 450 GB 6G SAS 10K SFF DP HDD HP 300 GB 6G SAS 10K SFF DP HDD HP 146 GB 6G SAS 10K SFF DP HDD HP 146 GB 6G SAS 15K SFF DP HDD HP 72 GB 6G SAS 15K SFF DP HDD
Internal drive support	Supports up to 12 SAS universal hot plug hard disk drives
Protocol support	Connects to adjacent c-Class Server Blade using PCI Express
Storage capacity	Storage capacity Up to 7.2 TB SAS per storage blade (using 600 GB 10K SFF SAS hard disk drives)
RAID support	RAID 0, 1+0, 5, 6 with Advanced Data Guarding
Server blade support	Supports all BladeSystem c-Class server blades (except BL680 G7) 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
Form factor	Fits into a half-height bay on the BladeSystem c3000 and c7000 enclosures
OS supported	Microsoft Windows 2003 Microsoft Windows 2008 Red Hat Linux SUSE Linux VMware ESX
Warranty	3-year parts, 3-year labor, 3-year NBD onsite
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13714_div/13714_div.pdf

Internal shared storage

- Build scalable internal shared storage with the D2200sb Storage Blade and HP P4000 Virtual SAN Appliance Software (VSA). Storage can scale within the same c-Class BladeSystem enclosure or across enclosures via iSCSI
- The HP P4000 Virtual SAN Appliance (VSA) provides a scalable iSCSI SAN based on a clustered storage architecture, and includes remote replication capabilities, thin provisioning, and snapshots
- Expand capacity by adding D2200sb and HP P4000 Virtual SAN Appliance (VSA) within the same enclosure or to additional enclosures

Compact yet flexible

- The D2200sb Storage Blade plugs directly into any c-Class enclosure without any additional cables, providing dedicated storage for the adjacent server blade

- The Smart Array P410i controller supports RAID 0, 1, 1+0, 5, and 6 with Advanced Data Guarding (ADG), for a choice of RAID options
- Supports twelve drive bays with SAS technology, enabling you choose from a range of SAS small form factor (SFF) drives

Familiar ProLiant management

- Use the browser-based Array Configuration Utility (ACU) to configure your array, add additional disk drives to an existing configuration, or completely reconfigure your disk drive array
- Manage the D2200sb to receive hard drive pre-failure alerts through HP Systems Insight Manager
- Manage your D2200sb remotely using the adjacent blade server's Integrated Lights-Out (iLO) technology

HP StorageWorks X1800sb G2 Network Storage Blade

Have your storage requirements rapidly increased? Do you need a flexible and powerful way to manage and control this growth?

HP StorageWorks X1800sb G2 Network Storage Blade is a flexible storage server solution for BladeSystem environments. Combine the X1800sb G2 with the SB40c Storage Blade to enable file serving and iSCSI shared storage inside the BladeSystem enclosure.

The flexibility of the X1800sb G2 extends to external storage as well. The X1800sb G2 can also be used as a low cost SAN gateway to provide consolidated file serving access to Fibre Channel, SAS, or iSCSI SANs.

Key features and benefits

Connect to internal or external Storage flexibly

- The X1800sb G2 Network Storage Blade can be paired with an SB40c Storage Blade to provide file serving (NAS) and shared application storage (iSCSI SAN) inside the enclosure
- The X1800sb G2 Network Storage Blade can also be used as an affordable gateway to consolidate file and block storage onto a centralized Fibre Channel, SAS, or iSCSI SAN

Provide simple storage management

- Create, migrate, manage, and protect file shares (NAS) and application storage (iSCSI Target) without

the need for storage expertise. Automated “best practice” logic setup storage without your needing to know industry-established best practices. HP ASM is like having a storage expert in the box

- Enable quick file serving in less than 30 minutes by using X1000 Automated Storage Manager with the X1800sb G2. Protocol support includes: CIFS/SMB 2.1, NFS, WebDAV, HTTP, and FTP
- Provide centralized storage management tools with the HP-enhanced Microsoft® Management Console (MMC): Get Quotas, File Screening, Storage Reporting, Volume Shadow Copy Service (VSS) snapshots, and Distributed File System (DFS) Replication—all at no extra cost

Enable faster deployment

- Speed up deployment time with Microsoft Windows® Storage Server 2008 R2, Standard Edition, which is pre-installed in X1800sb G2
- Add block storage capability and create a single platform that delivers file, print, and application storage services, all over existing Ethernet networks
- Take advantage of the X1800sb G2 blade platform. It is built on the HP ProLiant BL460c G7 Server Blade that is backed by a 3/3/3 hardware warranty and one year software support. Our world class support organization and partner network is your resource in the case of a problem



Enables flexible expansion of storage capacity. You can use the X1800sb G2 with the SB40c or D2200sb storage blade for internal file serving and shared storage. Also, use it as an affordable gateway to external Fibre Channel, SAS, or iSCSI SAN.

Technical specifications

HP StorageWorks X1800sb G2 Network Storage Blade



Drive description	2SFF SAS (2) drives included for O/S mirror
Drive type	2 x 146 GB 6G 15K SFF SAS
Processor	One Intel® Xeon® E5640 (2.66 GHz)
Processor cache	12 MB L3
Memory	6 GB PC3-10600R-9 DIMMs, included
Capacity	292 GB raw internal SAS 0 GB usable Combine with the SB40c Storage Blade for up to 3.2 TB internal storage, D2200sb Storage Blade for up to 7.2 TB internal storage or use as a gateway to virtually unlimited external storage
Storage expansion options	SB40c Storage Blade, D2200sb Storage Blade or use as a gateway to attach to EVA, MSA, XP, and P4000 arrays/SANs
BladeSystem supported	c7000 and c3000 BladeSystem chassis
Maximum blades per enclosure	Up to 16 X1800sb in a c7000 enclosure and up to 8 X1800sb in a c3000 enclosure
Network controller	One 10GbE NC553i FlexFabric
Storage controllers	One Smart Array P410i/256 MB BBWC
Expansion slots	Two I/O expansion mezzanine slots
Supported operating systems	Windows Storage Server 2008 R2 x64, Standard Edition installed
Management	HP X1000 Automated Storage Manager Software (HP ASM), MMC-based management interface accessible via HTTPS, Remote Desktop, Integrated Lights-Out 3 remote
Number of users	Range: 100–3300
Form factor	HP BladeSystem c-Class half-height blades
Warranty	3-year parts, 3-year labor, 3-year onsite
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13840_div/13840_div.pdf

HP StorageWorks X3800sb G2 Network Storage Gateway Blade

Do you have islands of storage that you need to consolidate, or tier-two applications that would benefit from centralized storage? You need a flexible SAN gateway that increases the efficiency of your existing infrastructure.

The HP StorageWorks X3800sb G2 Network Storage Gateway Blade is a flexible ready to deploy SAN gateway solution for both enterprise and workgroup SAN environments.

The X3800sb G2 Network Storage Gateway Blade is used to access SAN storage, translating file data from the server into blocks for storage. Centralize file serving onto a SAN to control proliferation of storage devices. Connect to Fibre Channel, SAS, or iSCSI storage to increase efficiency of your existing infrastructure. Microsoft Storage Server 2008, Enterprise Edition is pre-installed on a HP ProLiant BL460c G7 Server Blade; Microsoft Cluster Server (MSCS) license and Microsoft iSCSI Software Target software are also included.

Key features and benefits

A centralized SAN for file and block storage consolidation

- Enable application servers to access a range of SAN storage to leverage existing storage infrastructures

- Use the HP StorageWorks X3800sb G2 Network Storage Gateway Blade as a clusterable SAN gateway to access SAN storage, translating file data from the server into blocks for storage
- Get the flexibility of heterogeneous support for additional protocols like NFS, HTTP, FTP, and Web-based Distributed Authoring and Versioning (WebDAV)
- Host a variety of storage management applications, including HP StorageWorks Command View EVA Software. After you add an X3800sb G2 for file/iSCSI services, it's like getting an array or SAN manager for free
- Use the HP StorageWorks X3800sb G2 Network Storage Gateway Blade as a Windows print server, where the integrated print management console allows multiple printers to be managed from a single interface

Time-saving installation and deployment

- Save configuration time with Microsoft Windows Storage Server 2008 R2, Enterprise Edition factory-installed on local hard drives
- Simplify and accelerate new device deployment with HP Initial Configuration Task Wizard that walks you through basic system settings step-by-step



Flexible SAN gateway built for HP BladeSystem, consolidates file-serving access onto Fibre Channel, SAS, or iSCSI storage and increases efficiency of existing SAN infrastructure.

Technical specifications

HP StorageWorks X3800sb G2 Network Storage Gateway Blade



Drive description	2 SFF SAS, included Mirrored OS image pre-installed
Drive type	2 x 146 GB 6G 15K SFF SAS
Processor	One Intel Xeon Processor E5640 (2.66 GHz)
Processor cache	12 MB L3
Memory	6 GB PC3-10600R-9 DIMMs, included
Capacity	292 GB raw internal SAS 0 GB usable Internal drive capacity for OS mirror only, X3800sb G2 is designed to utilize external array/SAN storage
Storage expansion options	Attach to P2000/MSA, P4000, EVA, and P9500/XP arrays
BladeSystem supported	HP BladeSystem c3000 and c7000 enclosures
Maximum blades per enclosure	Up to 16 X3800sb G2 per c7000 enclosure and up to 8 X3800sb per c3000 enclosure
Network controller	One 10GbE NC553i FlexFabric
Storage controllers	One Smart Array P410i/256MB BBWC
Expansion slots	Two I/O expansion mezzanine slots
Supported operating systems	Windows Storage Server 2008 R2 x64, Enterprise Edition installed
Management	MMC-based management interface accessible via HTTPS, Remote Desktop, Integrated Lights-Out 3 remote
Number of users	Range: 100–3300
Form factor	Half-height BladeSystem c-Class
Warranty	3-year parts, 3-year labor, 3-year onsite
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13842_div/13842_div.pdf

- Take advantage of the X3800sb G2 architecture. It is built on the HP ProLiant BL460c G7 Server Blade that is backed by a 3/3/3 hardware warranty and 1-year software support. Our world class support organization and partner network is your resource in the case of a problem
- Benefit from Microsoft Cluster Server (MSCS) license and Microsoft iSCSI Software Target

Intelligent storage management

- Make more efficient use of storage space using the file deduplicating Single-instance Storage (SIS) capability by recovering up to 35 percent of your disk capacity by reducing the number of redundant files
- Benefit from additional storage-specific tools like Indexed Search, SharePoint Services support, Quotas, File Screening, Storage Reporting, and DFS Replication
- Take advantage of Windows environment that integrates natively into your Active Directory and DFS, and runs your favorite antivirus, backup, and storage management applications

HP StorageWorks Ultrium Tape Blades

Exclusive to HP BladeSystem c-Class environments, HP StorageWorks LTO-5 SB3000c Tape Blade, HP StorageWorks SB1760c Tape Blade, HP StorageWorks SB920c Tape Blade, and HP 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.

These half-height tape blades provide direct-attach data protection for the adjacent server and network backup protection for all data residing within the enclosure. They offer a complete data protection, disaster recovery, and archiving solution for BladeSystem c-Class customers.

With HP TapeAssure customers can be confident that their data is safe by monitoring drive and media utilization, operational performance, and life/health information for drive and media. In addition, each tape blade supports HP One-Button Disaster Recovery (OBDR), which allows quick recovery of the operating system, applications, and data from the latest full backup set. HP Ultrium Tape Blades are the industry's first tape blades and are developed exclusively for HP BladeSystem c-Class enclosures.

Key features and benefits

Integrated data protection solution:

- Tape-based data protection solution that integrates in the enclosure and utilizes enclosure management tools such as Onboard Administrator (OA)
- HP Ultrium Tape Blades protect data by occupying only a single half-height slot

Complete data protection and disaster recovery solution:

- HP Ultrium Tape Blades ship standard with HP Data Protector Express Basic software
- HP TapeAssure offers customers the ability to make the best use of their investment and be confident that their data is safe by monitoring drive and media utilization, operational performance, and life/health information for drive and media, allowing the switch from reactive to proactive management
- LTO-5 SB3000c and LTO-4 SB1760c Tape Blades offer AES 256-bit hardware data encryption, providing easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges



Integrates and protects all data residing in the enclosure and provides increased data security with hardware encryption capability.

Technical specifications



**HP StorageWorks LTO-5
SB3000c Tape Blade**

**HP StorageWorks
SB1760c Tape Blade**

**HP StorageWorks
SB920c Tape Blade**

**HP StorageWorks Ultrium
448c Tape Blade**

	HP StorageWorks LTO-5 SB3000c Tape Blade	HP StorageWorks SB1760c Tape Blade	HP StorageWorks SB920c Tape Blade	HP StorageWorks Ultrium 448c Tape Blade
Recording technology	LTO-5 Ultrium	LTO-4 Ultrium	LTO-3 Ultrium	LTO-2 Ultrium
Maximum capacity (Compressed)	3 TB	1.6 TB	800 GB	400 GB
Sustained transfer rate (Compressed 2:1)	1 TB/hr	576 GB/hr	432 GB/hr	173 GB/hr
Buffer size	256 MB	128 MB	64 MB	64 MB
Interface	6 Gb/sec SAS	3 Gb/sec SAS	3 Gb/sec SAS	3 Gb/sec SAS
Worm capability	Yes	Yes	Yes	No
Encryption capability	AES 256-bit	AES 256-bit	No	No
BladeSystem supported	HP BladeSystem c-Class			
Maximum blades per enclosure	Max configuration of 8 tape blades with 8 half-height server blades in an HP BladeSystem c-Class c7000 enclosure. Max configuration of 4 tape blades with 4 half-height server blades in an HP BladeSystem c-Class c3000 enclosure.			
Form factor	Half-height BladeSystem c-Class blade form factor			
Warranty	3-year parts only			
QuickSpec URLs	http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.pdf			

- With LTO-5 SB3000c Tape Blade and HP LTFS tapes can become self-describing, file-based, and easy-to use, providing users with the ability to use standard file operations on tape media for accessing, managing and sharing files with an interface that behaves just like a hard disk. In addition, LTFS provides the ability to share data across platforms, as you would with a USB drive or memory stick. Simply load a tape into the drive, mount it into the file system, and it becomes visible as a disk.
- HP Ultrium Tape Blades support HP 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:

- HP Ultrium Tape Blades provide direct attach data protection of adjacent server and network backup of all other data residing within the BladeSystem c-Class enclosure. They protect both half-height and full-height BladeSystem c-Class server blades.
- An HP Data Protector Express Basic Software copy is provided with HP Ultrium Tape Blades, which includes support for hardware data encryption and OBDR, cables, and documentation.

Warranty

HP warrants that the software media will be free of physical defects for a period of 90 days from delivery. For more information about HP Global Limited Warranty and Technical Support, visit:

www.hp.com/products/storageworks/warranty

HP Factory Express

HP Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping to speed deployment. www.hp.com/go/factoryexpress

Customer technical training

We offer a variety of training courses on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities—from traditional instructor-led courses at one of our 80 training centers worldwide to online and/or onsite training. www.hp.com/learn/storage

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help you acquire, manage, and ultimately retire your HP solutions. www.hp.com/go/hpfinancialservices

HP Services

HP Technology Services—consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, no matter what. Boost availability and avoid downtime, trust our expertise to optimize your HP solution.

Recommended Services

3-Year HP Support Plus 24

For a higher return on your server and storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response onsite hardware support and software updates.

HP Install Storage Blade Service

For smooth startup and better business outcomes, this service provides initial hardware installation of your product into your technology environment (system configuration is not included).

HP Proactive Select Service

Provides a flexible way to purchase HP consultancy and services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months.

Related Services

HP BladeSystem c3000 Infrastructure (ICE + OS)

Installation and Startup

Provides for the installation and startup of a BladeSystem c3000 Infrastructure in a single blade enclosure including hardware and software (HP SIM, RDP, RDP deployment of OS, PMP, and VPM).

HP Entry Storage Data Migration Service for Windows

Provides deployment services for HP StorageWorks Storage Mirroring Data Migration software

For more information about HP services and support, visit www.hp.com/hps/storage



Turn to the broad portfolio of HP StorageWorks to get more storage capacity in the enclosure, helping you gain full value from your investments. For more information, please visit: www.hp.com/go/storageblades



Get connected

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Current HP driver, support, and security alerts
delivered directly to your desktop

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