QuickSpecs

Overview

Longing to take the pain out of backup and disaster recovery across your enterprise? You need a scale-out disk backup solution that reduces management overheads, cuts storage costs and keeps pace with data growth.
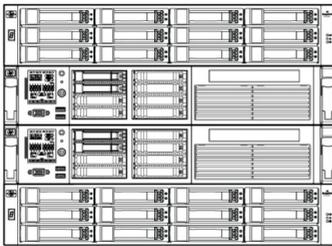
HP StoreOnce B6000 Backup takes HP StoreOnce across the enterprise, providing efficient disk backup with data deduplication for cost effective on site data retention, remote office data protection and off site disaster recovery. Highly scalable, the B6200 offers up to 768 TB of capacity and achieves speeds of up to100 TB/hr* with StoreOnce Catalyst to match enterprise performance requirements and meet ever shrinking backup windows. HP StoreOnce B6000 Backup also offers rapid data recovery, to provide fast access to data.

Integrating seamlessly into your current IT environment, you can simplify data movement across the enterprise with the StoreOnce Catalyst backup target. Manage multi site data protection, or backup over the WAN from a single pane of glass.
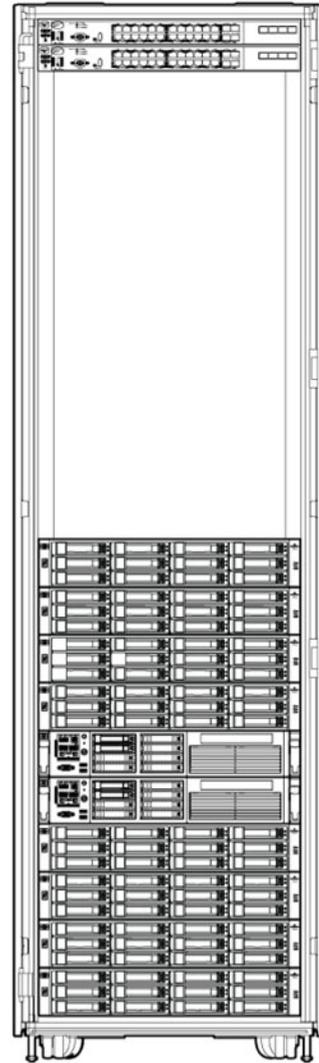
Part of HP's Converged Storage platform it is designed with autonomic restart , no single point of failure, and hot add capability, you can be confident in a highly available system and the availability of your backup.

* Actual performance is dependent upon configuration, data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

Overview

HP StoreOnce B6200 48TB Backup

HP StoreOnce B6200 48TB Backup in a 42U rack with HP StoreOnce B6200 Switch Assembly and 3x B6200 Upgrade Kits

What's New

- HP StoreOnce Catalyst for up to 100TB/hr performance* and simple and seamless management of data movement via a single pane of glass for remote and multisite data protection.
- HP Data Protector 7, delivering HP StoreOnce and StoreOnce Catalyst functionality for smaller offices and server-only installations

*Actual performance is dependent upon configuration data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

Features and Benefits

For more detail please refer to the special features section below.

Scale out capacity for the enterprise
Scale your backup to keep pace with data growth. Scale-out from 48TB out to 768TB of raw capacity (32TB to 512TB usable), by using a simple capacity upgrade for a lower cost alternative to purchasing additional systems.

Industry-leading performance to meet shrinking backup windows
Backup big data within short backup windows with the HP StoreOnce B6200's high performance multi-streaming capability. Consolidate multiple parallel backup streams via standard Ethernet or Fibre Channel network to a single disk-based system to achieve industry-leading aggregate backup speeds of up to 100TB* per hour with HP StoreOnce Catalyst.

*Actual performance is dependent upon configuration data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

Reduce your backup data storage needs with HP StoreOnce deduplication
HP StoreOnce deduplication reduces the disk space required to store backup data sets by typically 20x without impacting backup performance. Retaining more backup data on disk for longer, enables greater data accessibility for rapid restore of lost or corrupt files and reduces impact on business productivity while providing cost savings in disk storage, IT resource, physical space, and power requirements. Using HP StoreOnce deduplication with a fully configured HP StoreOnce B6200, can provide extended data retention on the same disk footprint for up to 10 PBs of backup data.

Consolidate and automate daily backup to free-up IT resources
Consolidate and automate your backup processes using a single HP StoreOnce B6200, allowing you to reduce the time spent managing multiple data protection devices and processes. The HP StoreOnce B6200, can span multiple enterprise network platforms to consolidate your backup in one. With HP StoreOnce Catalyst movement of deduplicated data across the enterprise is simple, and seamlessly controlled by your backup application.

Lower the cost of disaster recovery and remote office data protection
HP StoreOnce deduplication also enables network efficient offsite data replication. The HP StoreOnce B6200 uses StoreOnce data deduplication to significantly reduce the amount of data that needs to be replicated, enabling the use of lower bandwidth, lower cost links to transmit data offsite.
With StoreOnce Catalyst you can use your backup application to control data movement between StoreOnce powered systems in its deduplicated state, no need to rehydrate the data.

StoreOnce enabled replication opens the way to cost-effective centralized backup from remote sites or branch offices, and delivers a consolidated disaster recovery solution for the data center.

Reliable remote office data protection
Centralize the backup of multiple remote sites, The HP StoreOnce B6200 allows a fan-in of up to 384 backup streams to a single target system at the data center. With HP StoreOnce Catalyst the movement of data between sites is seamlessly controlled by your backup application, supporting a range of flexible configurations that enable the concurrent movement of data from one site to multiple sites, and the ability to cascade data around the enterprise (sometimes referred to as multi-hop).

Replication licensing requirements grow as your system grows. Purchasing either a Replication license, or a StoreOnce Catalyst license (which include replication), is on a per target backup system basis. Unlike competitor offerings, you won't add to the cost no matter how many remote offices you need to replicate to a single HP StoreOnce B6200.

Features and Benefits

Highly available solution increases backup reliability	Autonomic restart and no single point of failure in your backup process and redundancy at every level:

- Autonomic restart and node failover - simply swap to the other node in the couplet if one node fails. The backup application will continue to retry backup jobs.
- Built-in hardware redundancy - dual path disk arrays, dual path internal network, dual power supplies throughout.
- Dual fabric support for the backup jobs to the system via bonded Ethernet connections and dual fibre channel ports per node.
- Hot add server nodes and storage without the need to have scheduled maintenance.
- Includes hardware RAID 6 to reduce the risk of data loss due to disk failures.

Simplify remote management	The HP StoreOnce B6200 offers an intuitive web-based browser interface allowing you to monitor your backup systems, locally or remotely, to view results or change settings across the enterprise. This self-managing device also reduces your routine maintenance. StoreOnce Catalyst enables seamless control of data movement across the enterprise via your backup application.
Seamlessly integrates into your environment	The HP StoreOnce B6200 offers virtual tape library (VTL), NAS and StoreOnce Catalyst targets for backup applications allowing for ease of use and integration in to existing IT environments. The HP StoreOnce B6200s are pre-integrated into HP extended depth 42U racks for efficient use of space in the data center and remote offices. Supported by all leading backup applications, this allows each Backup System to be installed and used without additional investment in software.

Special Features

Scale-out, future-ready design to deliver leading capacity and performance	The HP StoreOnce B6200s are designed to deliver a resilient solution to provide enterprise wide data protection. Scale-out capacity and performance to keep pace with shrinking backup windows, reliable disaster recovery, simplified protection of remote offices and rapid file restore to meet today's SLAs. Customers can start out by purchasing one HP StoreOnce B6200 48TB system consisting of two nodes connected in failover configuration as a couplet. This is delivered pre-integrated into HP extended depth 42U racks which also contains the necessary networking capabilities for future expansion within the entire rack using an HP StoreOnce B6200 switch assembly. To scale-out in terms of capacity, simply add up to 3 capacity upgrade kits to each couplet. Each upgrade kit comprises 2 shelves which are added symmetrically, both sides of the couplet. Each shelf contains 12x 1TB or 2TB disks, giving 24TB or 48TB raw capacity (16- 32TB usable), allowing up to a maximum of 192TB raw capacity (128TB usable) associated with the original node. Capacity upgrade kits can be added to the couplet while the Backup System is online in order to reduce unnecessary downtime. A fully configured couplet with 3 capacity upgrade kits, can be managed as a single file system of up to 192TB raw capacity (128TB usable), however to optimize performance within a couplet, capacity usage should be balanced across both nodes within a couplet. To scale-out in terms of performance, add in one more HP StoreOnce B6200 48TB system and again scale

Features and Benefits

up by adding capacity upgrade kits. This gives you a maximum configuration of two fully configured HP StoreOnce B6200 48TB system of two couplets with a total capacity of 384TB raw capacity (256TB usable) in a single rack.

To scale-out to 768TB raw (514TB usable) purchase a second rack with expansion switch assembly, and populate as before.

HP StoreOnce deduplication - extend data retention on disk	Data deduplication is a method of reducing storage needs by eliminating redundant data so that over time only one unique instance of the data is actually retained on disk. As a result, typically 20x more backup data can be retained in the same disk footprint.

Adding data deduplication to disk-based backup delivers a number of benefits:

- A cost effective way of keeping your backup data on disk for a number of weeks or even months. More efficient use of disk space effectively reduces the cost-per-gigabyte of storage and the need to purchase more disk capacity.
- Making file restores fast and easy from multiple available recovery points. By extending data retention periods on disk, your backup data is more accessible for longer periods of time, before archiving to tape. In this way, lost or corrupt files can be quickly and easily restored from backups taken over a longer time span.
- Ultimately, data deduplication makes the replication of backup data over lower bandwidth WAN links financially viable (providing offsite protection for backup data) as only changed data is sent across the connection to a second device (either a second identical device or one that comes from this product family).

HP StoreOnce deduplication

HP StoreOnce deduplication software simplifies the deployment of deduplication technology across IT infrastructures. With explosive data growth driving IT sprawl, deduplication technology is quickly becoming a requirement for many customers to help reduce the capacity required to store information.

- Traditional deduplication technologies tend to approach the problem from a fragmented perspective and this results in multiple deduplication methodologies being deployed adding to the management complexity of the infrastructure. HP StoreOnce is different; as a next generation deduplication architecture, it is not sold as standalone software, but rather is a portable engine that can be consistently embedded in multiple products, eliminating the complexity of first generation deduplication. HP StoreOnce uses patented innovation and features designed by HP Labs to maximize backup and restore performance while minimizing management and hardware overhead.

How it works

Deduplication works by examining the data stream as it arrives at the storage appliance, checking for blocks of data that are identical and eliminating redundant copies. If duplicate data is found, a pointer is established to the original set of data as opposed to actually storing the duplicate blocks, removing or "deduplicating" the redundant blocks from the volume. The key here is that the data deduplication is being done at the block level to remove far more redundant data than deduplication done at the file level where only duplicate files are removed.

Data deduplication is especially powerful when it is applied to backup, since most backup data sets have a great deal of redundancy. The amount of redundancy will depend on the type of data being backed up, the backup methodology and the length of time the data is retained.

Features and Benefits

Example. Backing up a large customer database that gets updated with new orders throughout the day. With the typical backup application you would normally have to back up, and store the entire database. Even incremental backups will result in storing the full database to disk once again, taking up increasing amounts of disk space with almost identical backup data sets. With block-level deduplication, you can backup the same database to the device on two successive nights and, due to its ability to identify redundant blocks, only the blocks that have changed will be stored. All the redundant data will have pointers established.

The HP approach to deduplication
HP StoreOnce deduplication software simplifies the deployment of deduplication technology across IT infrastructures. With explosive data growth driving IT sprawl, deduplication technology is quickly becoming a requirement for many customers to help reduce the capacity required to store information.

Traditional deduplication technologies tend to approach the problem from a fragmented perspective and this results in multiple deduplication methodologies being deployed adding to the management complexity of the infrastructure. HP StoreOnce is different; as a next generation deduplication architecture, it is not sold as standalone software, but rather is a portable engine that can be consistently embedded in multiple products, eliminating the complexity of first generation deduplication. HP StoreOnce uses patented algorithms and features designed by HP Labs to maximize backup and restore performance while minimizing management and hardware overhead.

HP Backup systems feature HP StoreOnce deduplication which uses an optimized in-line process to provide enhanced performance and is architected to be portable to other HP products in the future.

NOTE: The HP VLS product family uses a post-process, object-level data deduplication scheme for increased performance in large scale Fibre Channel deployments. StoreOnce and VLS deduplication platforms are not compatible. They use different technologies that cannot be used together.

For more information on HP StoreOnce deduplication refer to the white papers available on http://www.hp.com/go/StoreOnce

What deduplication ratio can I expect?
The actual data deduplication ratio you can expect will depend on a number of factors including: the type of data, the backup methodology used, and the length of time you retain your data. However, assuming standard business data mix and extended on disk retention (periods of more than 12 weeks) you could expect to see 20:1 deduplication ratio assuming a weekly full and daily incremental backup model

Is there likely to be any impact on performance?
The actual performance achieved using an HP StoreOnce B6200 is dependent upon a number of factors including data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as backup and deduplication, housekeeping, and replication. In general, the more process steps, the longer it may take. Consequently, when compared to backup without deduplication, a reduced amount of data will be backed up AND replicated within the same timeframe.

For help with choosing the most appropriate HP StoreOnce B6000 configuration for your specific environment, we recommend you talk to your HP partner or sales advisor about using the HP storage Sizing Tool which can be downloaded from the Downloads section of www.hp.com/go/d2dsizer

Making use of the backup systems ability to run multiple backups in parallel can substantially improve aggregate throughput. This and a number of other best practices can help you to optimize the

Features and Benefits

performance of a StoreOnce Backup System, Please refer to: "Best Practices for configuring HP StoreOnce B6200"/documentation which will be available in Spring 2012 at:
http://bizsupport2.austin.hp.com/bc/docs/support/SupportManual/c03121413/c03121413.pdf

For more information on achieving deduplication ratios go to: www.hp.com/go/deduplication

Data replication - network efficient disaster recovery	Data replication is the process of making a duplicate copy of a data set across a network to a "target site". It is generally used to transmit backup data sets off-site to provide disaster recovery (DR) protection in the event of catastrophic data loss at the "source site"
	Replicating large volumes of data backup over a typical WAN is expensive. However, today's products with data deduplication have made it possible to replicate data over lower bandwidth links for a more cost-effective, network efficient replication solution that provides a practical disaster recovery solution and an ideal solution for centralizing the backup of remote offices.
	Data deduplication shrinks the amount of backup data that needs to be replicated from the source HP appliance, and as a result significantly reduces replication bandwidth requirements. Once a replica of the data backup set has been created on a remote HP target appliance all that is required to keep the replica identical to the source is the automatic, periodic copying and movement of the new data segments which are created during each backup. With such small amounts of data being transmitted asynchronously, lower bandwidth networks offer sufficient performance and a much lower cost solution.
	NOTE: Replication of data can only occur between devices within the same product family ie. D2D and HP StoreOnce B6200, but not VLS.
	HP's data replication feature includes replication bandwidth limiting functionality, restricting the amount of bandwidth being used when replicating data for even more network-efficient replication. Without replication bandwidth limiting, a replication job could use as much bandwidth as is available, potentially making other network activities unresponsive. Replication bandwidth limiting is customer configurable at the appliance level via the graphical user interface and is set as a percentage of the available network bandwidth.
	HP delivers replication by license, either as a standalone replication solution, or as part of the HP StoreOnce Catalyst licensing (see the following section below). For the HP StoreOnce B6200, a total of 96 source appliances can replicate to a single HP StoreOnce B6200 48TB target, this increases to 384 when 4 couplets are used. Once licensing has been applied, configuring and using replication is made straightforward by the graphical user interface and configuration wizard on the HP appliance.
	Replication licensing requirements grow as you system grows. Licensing is per target backup system, so you won't add to the cost no matter how many remote offices you need to replicate to a single HP StoreOnce B6200 Backup. Each couplet being used as a replication target within the backup system requires a replication license.
	See the 'Related Options - Replication licenses' section of these QuickSpecs for more details.
HP StoreOnce Catalyst - seamless data movement across the enterprise	HP StoreOnce Catalyst brings the HP StoreOnce vision of a single, integrated enterprise-wide deduplication algorithm a step closer. It allows the seamless movement of deduplicated data across the enterprise to other StoreOnce Catalyst systems without rehydration. This means that you can benefit from:

Features and Benefits

- Simplified management of data movement from a single pane of glass: tighter integration with your backup application to centrally manage file replication across the enterprise.
- Seamless control across complex environments: supporting a range of flexible configurations that enable the concurrent movement of data from one site to multiple sites, and the ability to cascade data around the enterprise (sometimes referred to as multi-hop).
- Enhance performance: distributed deduplication processing using StoreOnce Catalyst stores on the B6200 and on multiple servers can optimize loading and utilization of backup hardware, network links and backup servers for faster deduplication and backup performance.
- Faster time to backup to meet shrinking backup windows: up to 100TB/hour *aggregate throughput, 4x faster than backup to a NAS target

*Actual performance is dependent upon configuration data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

HP StoreOnce Catalyst is currently available for customers of the HP StoreOnce B6200 with HP Data Protector 7 or Symantec Backup Exec and NetBackup software via OST. The license means that you can now select StoreOnce Catalyst as a backup target, in a similar way to NAS or VTL. A StoreOnce Catalyst license is required wherever it is used. It enables you to both store and replicate data to StoreOnce Catalyst stores, i.e. a separate replication license is not required.

Replication licensing requirements grow as you system grows. Replication licensing is per target backup system, so you won't add to the cost no matter how many remote offices you need to replicate to a single HP StoreOnce B6200. HP StoreOnce B6200 can support a total of 96 source appliances replicating to a single HP StoreOnce B6200 48TB target, this increases to 384 when 4 couplets are used. Electronic licenses are available and delivered via http://www.webware.hp.com

HP Replication Manager

HP StoreOnce Replication Manager 2.0 is available with HP StoreOnce B6200 Replication licenses. It allows users to monitor, report and manage multiple StoreOnce backup systems' GUI's through a single management console. Replication Manager 2.0 provides an easier way to monitor backup targets, showing trends analysis, enhanced topology view and email alert notification for up to 400 StoreOnce backup systems, being replicated to a central site. Replication Manager 2.0 provides basic trends analysis of capacity usage, replication up times and utilization analysis. This analysis can be exported in CSV format. Replication Manager 2.0 includes real time graphical views (with auto refresh), active directory group setting, firmware identification, and a Command Line Interface. Replication Manager 2.0 supports windows 32 and 64 bit support.

Replication Manager software is available with the following replication license (EJ026A) .

In order to benefit from Replication manger, StoreOnce backup systems require the latest firmware, which can be obtained via a free firmware upgrade by following the "Support & Drivers" link on www.hp.com/go/B6000 or by following the "HP Support & Drivers" link from: www.hp.com

Features and Benefits

Highly Available data protection	HP StoreOnce B6200s are highly available solutions designed with no single point of hardware failure. The hardware of the HP StoreOnce B6200's couplet handles any one component failing. This means the following high availability features:

- Autonomic Restart and node failover
- RAID storage, with RAID6 as the minimum redundancy level (so each RAID set can survive a double disk failure)
- The front-end controllers (nodes) within a couplet are configured in failover mode so that if one controller fails all critical non-replaceable aspects of that controller are transparently moved to another controller and the failed controller is disabled.
- Dual storage controllers (RAID and JBOD), with cache mirroring between the RAID controllers (so that if a controller fails the data is preserved and is still written to media by the other controller)
- Dual paths to the disk drives
- Power failure protection for all caching within the storage
- Dual power supplies, such that the hardware will continue operating at full performance if one power supply is offline.
- Redundant fans, such that the hardware will continue operating at full performance if one fan is offline
- Mirrored system disks in each controller (node) to store the device operating system and software
- Front-end high availability (dual fabric support): each controller will have at least two front-end ports per port type to support the customer's external LAN/SAN fabrics. Thus if any external fabric fails there is still full access to every node in the device.
- Hot add additional storage or server nodes without scheduled downtime.
- A single GUI/CLI interface is presented from any one node in the system, if that controller fails then the GUI will automatically move to a different controller whilst still being presented at the same network address.

Data protection for complex and heterogeneous environments	HP StoreOnce B6200s are capable of supporting VTL, NAS and StoreOnce Catalyst targets for backup applications on a single platform. The device will present standard NAS protocols over the front-end 10Gb LAN ports of the device, thus providing a LAN backup target (with deduplication) that can be used transparently with qualified enterprise backup application

Models

For help with configuring the most appropriate HP StoreOnce B6200 for your specific environment, we recommend you talk to your HP partner or sales advisor about using the HP Storage Sizing Tool which can be downloaded from the Downloads section of www.hp.com/go/d2dsizer

HP StoreOnce B6200 48TB Backup	HP StoreOnce B6200 takes HP StoreOnce to the enterprise, providing disk based backup with deduplication for cost effective, longer term on site data retention and off site disaster recovery. These highly scale out solutions offer from 32TB to 512TB of usable capacity and industry-leading aggregate speeds of up to 100TB/hr*with StoreOnce Catalyst to match enterprise performance requirements and meet ever shrinking backup windows. *Actual performance is dependent upon configuration, data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

Compatibility

HP extensive compatibility testing program assures that your HP Backup Systems work with leading servers, operating systems, and backup applications, including those not manufactured by HP.

Server Compatibility   HP StoreOnce B6200s are supported on servers that use Microsoft Windows or Linux operating systems, including HP ProLiant, HP Integrity Servers and a variety of third-party servers.

For compatibility details on specific servers, refer to our website for the latest hardware compatibility information: http://www.hp.com/go/ebs

OS Support   HP StoreOnce B6200s are supported with Microsoft Windows, Linux, HP-UX and Solaris operating systems.

For more details, refer to our website for the latest information: http://www.hp.com/go/ebs

Software Support   HP StoreOnce B6200s are supported by a range of popular backup applications, including HP Data Protector software.

HP StoreOnce B6200s with StoreOnce Catalyst are supported on HP Data Protector 7 and Symmantec BackupExec and NetBackup software with an OST.

For details of specific backup application compatibility, refer to our website for the latest information: http://www.hp.com/go/ebs

Network Compatibility   For the best performance, HP StoreOnce B6200s should be connected to the servers it protects via a 10Gb (gigabit) Ethernet network. It is supported on all 10Gb Ethernet network interface cards (NICs) and switches, dependent on product. 1Gb Ethernet network connections are also supported for sites without 10Gb Ethernet networks (with reduced performance)

HP StoreOnce B6200s are also supported on 100 base-T Ethernet networks, for connection for the Web GUI and CLI access, such as a management network in a Data Centre.

This product is not supported on networks using slower Ethernet technology.

SAN Compatibility   HP StoreOnce B6200s support a variety of Fibre Channel switches and HBAs.

For more details of SAN compatibility, refer to our website for the latest information: http://www.hp.com/go/ebs

Tape compatibility - migrating data to Tape   HP StoreOnce B6200s are an excellent solution for regular and daily backup with data deduplication allowing more data to be retained on disk for longer, and enabling network-efficient data replication to deliver a cost-effective off-site disaster recovery solution.

Using the device should enable a significant reduction in the amount of data stored on physical tape, so that for example, there is no longer any need to store daily incremental backups on tape. However, HP still recommends periodic off-load to tape as the most cost-effective, energy efficient and robust solution for:

1. Long-term archival of data to meet regulatory requirements
2. Or off-site storage for disaster recovery where data replication is not an option

Compatibility

HP StoreOnce B6200s7 do not support direct attach to tape. However, there are two methods available to migrate data to tape:

For highest performance, create a separate physical tape backup. This uses the backup application to create a completely separate tape backup from the server to a physical tape drive or library in parallel to the D2D backup. However, this will require the user to periodically manage two separate backup processes (D2D on a daily basis, and both D2D and Tape where archival is being prepared).

For a straight-forward and easier to manage solution, and where performance is less of an issue, use backup application copy. This uses the backup application to copy cartridges or NAS file shares that have been backed up to the target device to a physical tape drive or library that is connected elsewhere in the storage network either directly connected to a media server or on a Fibre Channel SAN. This method may have a performance impact, as the data has to be re-assembled on the backup system for copy and performance depends on the number of streams read/copied in parallel.

Service and Support, HP Care Pack, and Warranty Information

Service and Support	**Technology Services for increased uptime, productivity and ROI** TRUST HP storage technology experts for every level of service and support. Our integrated portfolio of Services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. Capitalizing on HP Storage Systems' capabilities requires a service partner who understands your increasingly complex environment. Team with the people who know HP infrastructure hardware and software best-the experienced professionals at HP Services. **Protect your business beyond warranty** Warranty protects against manufacturer defects, however warranty uplifts, such as HP Care Pack Services protect the business-by reducing downtime risks and providing operational consistency for mission-critical and standard business computing. **What HP Storage Technology Services can do for you** HP Storage Technology Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. HP storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. **Choose the right level of support, deployment and integration services** HP support recommendations are designed to help you enhance technology operations and lower risk-and make it easier for you to seek the right balance between affordability and service-level commitments. Depending on your individual support needs, choose from three levels of care that cover the entire lifecycle to better address your needs-Optimized Care, Standard Care, and Basic Care. If none of our support recommendations meet your needs, we can tailor a service solution for your unique support requirements. Only HP brings together deep expertise, proactive and business critical support and a strong partner network-plus, a full set of infrastructure services designed to power a Converged Infrastructure.
Optimized Care- delivers best performance and stability through deployment and proactive management practices	**HP Proactive Care 24x7-** for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized/x86 infrastructure. Plus,40 credits per year, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education.
Standard Care-maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support	**HP Proactive Care 24x7-** for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized/x86 infrastructure. Plus, 10 credits per year, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education.
Basic Care-Minimum recommended support	**Support Plus 24**-For a higher return on your server and storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure. **Plus, 10 credits per year,** select from an extensive menu of consultancy and technical services, such as

Service and Support, HP Care Pack, and Warranty Information

	onsite firmware upgrades, health checks, assessments, and education
Implementation	**Installation:** HP B6000 StoreOnce Backup System Installation and Startup Service Provides planning, service deployment, installation verification testing (IVT), and an orientation session to facilitate deployment of the features and functionality of HP B6000 Backup Systems. Data sheet: http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-7608ENW.pdf
Additional services to meet your needs	**HP Backup and Recovery Solution Service.** Professional backup and recovery planning that aligns with customer's business needs and implementation. Benefits-HP's expertise with backup helps to reduce project executive time and lower risk to the storage environment. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-7442EN.pdf **HP Storage technical assistance (HK947A1)** **HP Proactive Select:** Accelerate the ROI of your technology investment HP Proactive Select is a flexible way to purchase services to fit your particular environment or situation. Working with an HP Account Support Manager, you select a 'package' of services, from a wide range of proactive services offered by HP spanning many technologies and processes-- such as onsite firmware upgrades, health checks, assessments, and education. You tailor the service delivery to improve time-to-production, optimize performance, or build in continuous improvements The link to the datasheet is as follows: http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-3842ENW.pdf
Remote Support Tools	**HP Insight Remote Support-** Available at no additional cost to all warranty, HP Care Pack Service and service agreement customers, uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnosis and problem resolution. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4676ENW.pdf
For more information	To learn more on HP Storage Services, please contact your HP sales representative or HP Authorized Channel Partner HP Care Pack Services are sold by HP and HP Authorized Service Partners: • Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools. • Customers purchasing from a commercial reseller can find HP Care Pack Services at www.hp.com/go/lookuptool

Configuration Information

Step 1 - Select a Configuration

The HP StoreOnce B6000 StoreOnce Backup Planning Guide helps you select the correct options for power and connectivity for your data centre environment. It will also help you plan for a successful and smooth installation of the B6200.

It can be downloaded from: http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c03116530/c03116530.pdf

Select one:

	Part Number
HP StoreOnce B6200 48TB Backup	EJ022A

HP StoreOnce B6200 with 48 TB of disk storage
Contents:
HP B6200 Processing Nodes (2 off)
HP B6200 Storage Controllers (2 off)(each with 12 * 2TB HDDs)
8 * 0.5m Mini SAS cables
8 x Power cords (with IEC 320 C13 plug for Rack PDU)
Installation Guide

	Part Number
HP StoreOnce B6200 24TB Upgrade Kit	EJ024A

HP StoreOnce B6200 24TB upgrade kit, offering additional 24 TB of disk storage
Contents:
HP B6200 Storage JBODs (2 off)(each with 12 * 1TB HDDs)
4 * 0.5m Mini SAS cables
4 x Power cords (with IEC 320 C13 plug for Rack PDU)
Installation Guide
HP B6200 24TB Capacity Upgrade License Entitlement Certificate
HP B6200 Storage JBODs (2 off)(each with 12 * 1TB HDDs)
4 * 0.5m Mini SAS cables

	Part Number
HP StoreOnce B6200 48 TB Upgrade Kit	EJ025A

HP StoreOnce B6200 48TB upgrade kit, offering additional 48 TB of disk storage
Contents:
HP B6200 Storage JBODs (2 off)(each with 12 * 2TB HDDs)
4 * 0.5m Mini SAS cables>>
4 x Power cords (with IEC 320 C13 plug for Rack PDU)
Installation Guide
HP B6200 24TB Capacity Upgrade License Entitlement Certificate
HP B6200 Storage JBODs (2 off)(each with 12 * 2TB HDDs)
4 * 0.5m Mini SAS cables

Step 2 - Related Options

		Part Number
Replication Licenses	HP B6200 StoreOnce Replication LTU	EJ026A
	HP B6200 StoreOnce Replication E-LTU	EJ026AAE

Configuration Information

- These licenses enable an appliance to host replication targets. (No license is required for appliances which only act as replication sources)
- Licensing is "per couplet" i.e. A single license is required to enable a couplet to host it's replication targets
- A total of 96 source appliances can replicate to a single HP StoreOnce B6200 48TB target. This increases to 384 when a 4 couplet configuration is used.
- Each couplet being used as a replication target within the backup system requires a replication license.
- Licenses are delivered via www.webware.hp.com and are node-locked by appliance serial number (and are not transferable)
- Licenses include an account providing authorization to download the HP StoreOnce Replication Manager 2.0 which provides an easier way to monitor backup targets showing trends analysis, enhanced topology view and email alert notification for up to 400 StoreOnce backup systems, being replicated to a central site.
- Download instructions of the HP StoreOnce Replication Manager 2.0 are included when the replication license is downloaded

HP StoreOnce Catalyst License	HP StoreOnce Catalyst OST E-LTU for StoreOnce B6200	TC396AAE
	HP StoreOnce Catalyst DP E-LTU for StoreOnce B6200	TC397AAE

- StoreOnce Catalyst is a licensed feature, every B6200 that uses StoreOnce Catalyst requires a license
- Licenses enable a B6200 to create StoreOnce Catalyst targets for backup.
- StoreOnce Catalyst also provides seamless control of data movement across the organization and better utilization of servers, network bandwidth.
- The license type is linked to the backup application being used
- Currently 2 are supported:
  - HP B6200 StoreOnce Catalyst OST E-LTU (enables use of catalyst with Symantec NetBackup and BackupExec)
  - HP B6200 StoreOnce Catalyst DP E-LTU (enables use of catalyst with Data Protector)

10GbE Connectivity		
10GbE Fibre Optic Modules	HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option	455883-B21
	NOTE: Fibre transceivers and cables must be purchased separately for fibre-optic environments - 4 transceivers are required for each couplet.	

HP ProCurve 10GbE Connectivity	The following cables are recommended for 10GbE connectivity with HP ProCurve network switches	
Direct Attach Copper Cables	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A

Configuration Information

NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments. They do not require fibre optic modules

Fiber Optic Cables	HP .5m Premier Flex LC/LC 1 Pack Optical Cable	BK837A
	HP 1m Premier Flex LC/LC 1 Pack Optical Cable	BK838A
	HP 2m Premier Flex LC/LC 1 Pack Optical Cable	BK839A
	HP 5m Premier Flex LC/LC 1 Pack Optical Cable	BK840A
	HP 15m Premier Flex LC/LC 1 Pack Optical Cable	BK841A
	HP 30m Premier Flex LC/LC 1 Pack Optical Cable	BK842A
	HP .5m Premier Flex LC/LC 1 Pack Optical Cable	BK837A

NOTE: Fibre transceivers and cables must be purchased separately for fibre-optic environments.

The following cables are available for connectivity with other 10GbE switch environments

Direct Attach Cable	HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable	487649-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable	487652-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable	487655-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable	537963-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 7m 10GbE Copper Cable	487658-B21

NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments.

Fiber Optic Cables	2M LC-SC Cable Kit (2Gb to 1Gb)	221691-B21
	5M LC-SC Cable Kit (2Gb to 1Gb)	221691-B22
	15M LC-SC Cable Kit (2Gb to 1Gb)	221691-B23
	2m LC-LC FC Cable Kit	221692-B21
	5m LC-LC FC Cable Kit	221692-B22
	15m LC-LC FC Cable Kit	221692-B23
	30m LC-LC FC Cable Kit	221692-B26
	50m LC-LC FC Cable Kit	221692-B27
	HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
	HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
	HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.

Configuration Information

HP B6000 StoreOnce Backup Systems Configurations -
NOTE: THE STORAGE SIZER TOOL MUST ALSO BE USED TO CORRECTLY SIZE A DEDUPLICATION AND REPLICATION ENABLED SYSTEM!

Use the steps below as a guide, but TO PLACE ACTUAL ORDERS USE WATSON and CLIC TO CONFIGURE A SYSTEM

THIS IS ESPECIALLY TRUE FOR THE CUSTOMERS 1st or 3rd B6200 (EJ022A) WHICH REQUIRES MANDATORY FACTORY EXPRESS INTEGRATION INTO THE EXTENDED DEPTH 42U RACK WHICH DOES NOT NEED TO BE ORDERED SEPARATELY, BUT IS AUTOMATICALLY ADDED THE ORDER CONFIGUARTION WHEN THE ASSOCIATED EJ021A OR EJ027A SWITCH KITS ARE ORDERED.

WHEN WISHING TO EXPAND AN EXISTING SYSTEM THE CUSTOMERS 2ND or 4TH B6200 (EJ022A) IS NOT FACTORY INTEGRATED AND CAN BE ORDERED WITHOUT THE #0D1 OPTION OR SWITCH KITS, AS THE 1ST AND 3RD B6200S ARE ALREADY HOUSED IN THE 42U RACKS AND HAVE BEEN FACTORY INTEGRATED WITH SWITCH KITS REQUIRED.

The HP StoreOnce B6000 StoreOnce Backup Planning Guide helps you select the correct options for power and connectivity for your data centre environment. It will also help plan for a successful and smooth installation of the B6200.

It can be downloaded from: http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c03116530/c03116530.pdf

Step 1 - Configurations (Option #0D1 must be added to products listed for essential factory integration, I.E. THE CUSTOMERS 1ST AND 3RD B6200)

NOTE: The B6200 MUST be factory integrated into the 42U extended depth rack. Non factory integration into a standard 42U rack, is not supported.

For the most accurate sizing of the solution necessary for your environment please be sure that your sales rep or partner utilizes the HP Sizer tool. This is especially important when considering deduplication and replication.

StoreOnce B6000 Configurations - (EJ022A) based configurations

Factory Integrated Clusters

	Couplet 1		Couplet 2		Couplet 3		Couplet 4	
Switch kit (required)	**Qty 1 - EJ021A**		**Not required**		**Qty 1 - EJ027A**		**Not required**	
42U extended depth rack	**not to be ordered separately, but is automatically added to Config when EJ021A ordered)**				**(not to be ordered separately, but is automatically added to Config when EJ027A ordered)**			
StoreOnce B6200 48TB Backup	**Qty 1 - EJ022A#0D1**		**Qty 1 - EJ022A#0D1 FOR 1ST CONFIGURATION ONLY**		**Qty 1 - EJ022A#0D1**		**Qty 1 - EJ022A#0D1 (FOR 1ST CONFIGURATION AND WHEN ADDING COUPLETS 3&4 TO AN EXISITNG SYSTEM**	
Add capacity	**Qty 1 EJ024A 24TB**	**Qty 1 EJ025A 48TB**	**Qty 1 EJ024A 24TB**	**Qty 1 EJ025A 48TB**	**Qty 1 EJ024A 24TB**	**Qty 1 EJ025A 48TB**	**Qty 1 EJ024A 24TB**	**Qty 1 EJ025A 48TB**

QuickSpecs

Configuration Information

Add capacity	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB
Add capacity	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB	Qty 1 EJ024A 24TB	Qty 1 EJ025A 48TB
Replication license	Qty 1 - EJ026A		Qty 2 - EJ026A		Qty 3 - EJ026A		Qty 4 - EJ026A	

Factory Integrated Clusters
Form Factors

	Couplet 1		Couplet 2		Couplet 3		Couplet 4	
Switch kit (required)	2U				2U			
StoreOnce B6200 48TB Backup	8U		8U		8U		8U	
Add capacity 24TB/48TB	4U	4U	4U	4U	4U	4U	4U	4U
Add capacity 24TB/48TB	4U	4U	4U	4U	4U	4U	4U	4U
Add capacity 24TB/48TB	4U	4U	4U	4U	4U	4U	4U	4U
Standard Rack	42U		42U		42U		42U	

Step 2 - Select appropriate Services/Support (optional)

- Determine whether you require services via HP direct/HP authorized enterprise resellers or HP authorized commercial resellers.
- Choose Installation or Installation and Startup service desired. HP recommends Installation and Startup. (Details of specific part numbers in service section.)
- Choose support uplift type. There are different service uplifts uplifting years of service, hours of availability and response time. HP recommends three year 24X7 support uplifts. (Details of specific part numbers in service section.)

QuickSpecs

Technical Specifications

StoreOnce B6200 maximum RAW capacity TB				
	1 couplet	2 couplet	3 couplet	4 couplet
Base couplet	48	96	144	192
1 24TB expansion kit	72	144	216	288
2 24TB expansion kit	96	192	288	384
3 24TB expansion kit	120	240	360	480
Or…				
1 48TB expansion kit	96	192	288	384
2 48TB expansion kit	144	288	432	576
3 48TB expansion kit	192	384	576	768

NOTE: A mixture of 24 or 48TB expansion kits can be used up to a maximum of 3 per couplet.

StoreOnce B6200 maximum usable capacity TB				
	1 couplet	2 couplet	3 couplet	4 couplet
Base couplet	32	64	96	128
1 24TB expansion kit	48	96	144	192
2 24TB expansion kit	64	128	192	256
3 24TB expansion kit	80	160	240	320
Or…				
1 48TB expansion kit	64	128	192	256
2 48TB expansion kit	96	192	288	384
3 48TB expansion kit	128	256	384	512
Data Deduplication Usable capacity using data deduplication at 20:1*	2.5 PB	5.1 PB	7.7 PB	10.2 PB

Actual results of data deduplication will vary with data type, change rates over time and backup methodologies used. Assuming standard business data mix and extended on-disk retention, typically a 20:1
NOTE: A mixture of 24 or 48TB expansion kits can be used up to a maximum of 3 per couplet

Replication　　Supports data replication. Replication is automatic and appliances may function as both replication targets and sources simultaneously with licensing only being required for any appliance acting as a target.

Replication of data can occur between devices within the same product family i.e. between D2D and HP StoreOnce B6200s.

HP StoreOnce Catalyst is available to license, providing seamless control of data movement across the organization and better utilization of servers, network bandwidth and the HP StoreOnce B6200 for optimum backup performance.

Targets for backup applications　　HP StoreOnce Catalyst, Virtual Tape Library (VTL) and NAS

Technical Specifications

Maximum aggregate performance by configuration	B6200 EJ022A	
1 Base couplet*	Up to 10 TB/hr	2776 MB/s
2 Base couplet*	Up to 20 TB/hr	5552 MB/s
3 Base couplet*	Up to 30 TB/hr	8328 MB/s
4 Base couplet*	Up to 40 TB/hr	11104 MB/s
	B6200 EJ022A with StoreOnce Catalyst Licenses TC396AAE TC397AAE	
1 Base couplet with StoreOnce Catalyst	Up to 25 TB/hr	7000 MB/s
2 Base couplet with StoreOnce Catalyst	Up to 50 TB/hr	14000 MB/s
3 Base couplet with StoreOnce Catalyst	Up to 75 TB/hr	21000 MB/s
4 Base couplet with StoreOnce Catalyst	Up to 100 TB/hr	28000 MB/s

* Assumes VTL target for backup and use of maximum upgrade kits to achieve maximum performance. Actual performance is dependent upon configuration, data set type, compression levels, number of data streams, number of devices emulated and number of concurrent tasks, such as housekeeping or replication.

To optimize the performance of a StoreOnce Backup System, Please refer to: "Best Practices for configuring HP StoreOnce B6200" documentation: http://bizsupport2.austin.hp.com/bc/docs/support/SupportManual/c03121413/c03121413.pdf

HP StoreOnce B6200 Backup			
	per node	per couplet (2x nodes)	per cluster (4x couplets)
Number of Virtual Tape Libraries and NAS backup targets (combined)	48	96	384
Maximum number of cartridges emulated per Virtual Tape Libraries	16384		
Maximum number of source appliances per target appliance (fan in)	48	96	384
Number of Virtual Tape Drives	192	384	1536
Maximum Number of Cartridges Emulated	786432	1572864	6291456
Targets for backup	N/A	VTL, NAS and StoreOnce Catalyst	VTL, NAS and StoreOnce Catalyst
Tape Devices Emulated (check)	N/A	HP LTO- 2 Ultrium Tape Drive /LTO-3 Ultrium Tape Drive/LTO-4 Ultrium Tape Drive/LTO-5 Ultrium Tape Drive in, MSL2024 Tape Library, MSL4048 Tape Library, MSL8096 Tape Library, HP D2D Backup System Generic Library with HP Ultrium D2D Generic tape drive	
Interface	N/A	8x 1Gb Ethernet Ports per couplet, plus	N/A

QuickSpecs

HP StoreOnce B6200 Backup

Technical Specifications

		4x 10Gb Ethernet Ports per couplet, plus 4x 8Gb Fibre Channel Ports per couplet	
RAID Level	**RAID 6**		

Power Consumption by component

HP StoreOnce B6200 48TB Backup System - EJ022A	3312 W
HP StoreOnce B6200 24TB StoreOnce Upgrade Kit - EJ024A	912 W
HP StoreOnce B6200 48TB StoreOnce Upgrade Kit - EJ025A	912 W
HP StoreOnce B6000 Switch Assembly for StoreOnce B6200 Backup - EJ021A	396 W
HP StoreOnce B6000 Expansion Switch Assembly for StoreOnce B6200 Backup - EJ022A	748 W

Dimensions and Physical Characteristics

NOTE: The B6200 MUST be factory integrated into the 42U extended depth rack. All dimensions shown below are for the Backup Systems and capacity Upgrade kits not the 42U rack which is required to house them.

The HP StoreOnce B6000 StoreOnce Backup Planning Guide helps you select the correct options for configuration. It will also help plan for a successful and smooth installation of the B6200.

It can be downloaded from: http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c03116530/c03116530.pdf

HP StoreOnce B6200 48TB Backup EJ022A	Form Factor	8U	
	Dimensions (server x2)	**Physical Dimensions** (HxWxD)	14.4 x 30 x 19.6 in (36 x 75 x 49cm)
		Shipping (HxWxD)	41.6 x 54.4 x 41.6 in(104 x 136 x 104 cm)
	Weight (server x2)	**Out of Box Weight**	328 lb (149Kg)
		Shipping Weight	361 lb (164Kg)
	Dimensions (expansion shelf x2)	**Physical Dimensions** (HxWxD)	7.2 x 24 x 19.6 in (18 x 60 x 49cm)
		Shipping (HxWxD)	27.2 x 42.4 x 29.2 in (68x106x73cm)
	Weight (expansion shelf x2)	**Out of Box Weight**	141 lb (64 Kg)
		Shipping Weight	154 lb (70 Kg)
HP StoreOnce B6200 24TB Upgrade Kit - EJ024A	**Form Factor**	4U	
	Dimensions	**Physical Dimensions** (HxWxD)	7.2 x 19.6 x 24in (18 x 49 x 60cm)
		Shipping (HxWxD)	27.2 x 42.4 x 29.2 in (68x106x73cm)
	Weight	**Out of Box Weight**	141 lb (64 Kg)
		Shipping Weight	154 lb (70 Kg)

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Technical Specifications

HP StoreOnce B6200 48TB Upgrade Kit - EJ025A	Form Factor	4U	
	Dimensions	Physical Dimensions (HxWxD)	7.2 x 19.6 x 24 in (18 x 49 x 60cm)
		Shipping (HxWxD)	27.2 x 42.4 x 29.2 in (68x106x73cm)
	Weight	Out of Box Weight	141 lb (64 Kg)
		Shipping Weight	154 lb (70 Kg)

Environmental	Operating temperature range	50°F to 95°F (10°C to 35°C)
	Shipping temperature range	-40°F to 150°F (-40°C to 66°C)
	Operating Humidity (non-condensing)	15 to 80% Relative Humidity
Worldwide Product Safety and EMC Approvals	Safety: Worldwide compliance to 60950-1	

NOTE: For country specific compliance contact your local sales representative