

Overview

HPE StoreOnce Systems

Does data growth leave you struggling with complex, distributed, and costly data protection? Do you have data that's not being protected because backup windows aren't long enough or backup jobs are failing? Do you want to use local and cloud-based storage to take advantage of hybrid data protection? Are you concerned about the threat from ransomware? Tackle the cost, risk and complexity of data protection with HPE StoreOnce; disk-based, deduplicating, cloud integrated, backup systems providing automated backup, data recovery and data retention for Hybrid IT.

Cut the cost of data protection with a single, unified deduplication architecture offering best in class price-performance across the range. HPE StoreOnce protects small, remote offices to enterprise data centers with highly scalable dedicated appliances and agile virtual appliances and with your choice of backup and recovery software to deliver robust, flexible enterprise-wide data protection. StoreOnce can reduce the amount of backup data you need to store by up to 95%. With our scalable architecture you can pay-as-you-grow to retain over a 100 PB (assuming 20:1 deduplication) of protected data on local and cloud storage, managed through a single console.

Reduce the risk with industry-leading backup speeds of up to 288 TB/hr* with an HA federated 8 node system using StoreOnce VSA so you can shrink backup windows and meet the most stringent SLAs. When it comes to backup, data recovery and data retention, HPE StoreOnce includes all the features you'd expect from disk backup including data encryption to secure your data at rest, data in flight** and data in the cloud.

Simplify and enable your hybrid infrastructure, with HPE's single StoreOnce deduplication technology. Managing the movement of backup data has never been easier. The backup-optimized HPE StoreOnce Catalyst interface enables deduplication where you choose; at the data source, on the StoreOnce System and in the cloud. Using Cloud Bank Storage to cloud-enable your current backup and business applications, HPE StoreOnce Systems provide even more flexibility to reduce your cost, risk and complexity. StoreOnce Catalyst prevents exposure of backup copies to ransomware.

*Assumes the use of HPE StoreOnce Catalyst. In all cases, 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 and storage configuration. Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

** Data in Flight encryption via IPsec is supported on HPE StoreOnce Catalyst only. In addition, write performance may be impacted, however performance improvements should be seen after first ingest.

Overview

What's New (October 2018)

- New StoreOnce single node systems based on Gen10 ProLiant technology.
- Addition of 8 TB drives in addition to 4 TB drives in the new StoreOnce 5250 and 5650.
- New choices for the flex I/O connectivity. In addition to the currently offered 10 GbE-T and 16 Gb Fibre Channel there is now the option of a 10/25 GbE-SFP combo card and 32 Gb Fibre Channel.
- The new generation of StoreOnce products move to an all-inclusive licensing structure where StoreOnce Catalyst and replication are included with the product at no additional charge (Encryption license at a nominal charge).
- Role Based Access Control (RBAC) which allows customers to assign different roles/permissions to users of their StoreOnce system.
- Federated Management. To allow customers to configure and monitor multiple Gen4 StoreOnce systems or VSA's in a single pane of glass, using a user-friendly Graphical User Interface GUI.
- Commvault support for catalyst/catalyst copy to enable deeper integration with StoreOnce.
- Support for RMC direct data path. Backup data is moved directly from 3PAR to StoreOnce without going through the RMC VM, reducing complexity and improving performance
- For StoreOnce VSA, up to 500 TB maximum capacity, a more flexible capacity licensing scheme with licenses added in 1 TB increments, HPE AutoPass License Server to manage licenses for dynamic and large StoreOnce VSA deployments and a 90 day evaluation period.

Legacy HPE StoreOnce Systems

For information regarding legacy HPE StoreOnce Systems including StoreOnce 6600, 5500, 5100, 3540, 3520, 3100 and VSA, please refer to the QuickSpecs link below:

<https://h20195.www2.hpe.com/v2/GetDocument.aspx?docname=c04328820&ver=28>

HPE StoreOnce Backup Models

Designed for protection of	Product options	Max usable capacity* (before dedupe) Max performance* with StoreOnce Catalyst
Enterprise data centers	HPE StoreOnce 5650 Systems	Scale from 36 to 1.7 PB usable local capacity* and up to 5.2 PB with Cloud Bank Storage. Backup speeds up to 47 TB/hr*
Mid-range to enterprise data centers	HPE StoreOnce 5250 Systems	Scale from 36 to 864 TB usable local capacity* and up to 2.56 PB with Cloud Bank Storage. Backup speeds up to 41 TB/hr*
	HPE StoreOnce 5200 Systems	Scale from 36 to 216 TB usable local capacity* and up to 648 TB with Cloud Bank Storage. Backup speeds up to 33 TB/hr*
	HPE StoreOnce 3640 System	Scale from 36 to 108 TB usable local capacity* and up to 324 TB with Cloud Bank Storage. Backup speeds up to 18 TB/hr*
Small to mid-range data centers and remote offices	HPE StoreOnce 3620 System	Scale from 16 to 31.5 TB usable local capacity* and up to 94.5 TB with Cloud Bank Storage. Backup speeds up to 14 TB/hr*
	HPE StoreOnce VSA	From 4 to 500 TB usable local capacity* depending on license and up to 1.5 PB with Cloud Bank Storage

The StoreOnce portfolio consists of a range of high performance, single node, physical and virtual data protection appliances. For help with choosing the most appropriate StoreOnce System for your specific environment, we recommend you talk to your Hewlett Packard Enterprise partner or sales advisor about using the HPE NinjaSTARS sizing tool which can be downloaded from the Downloads section at <https://saf.itcs.hpe.com/safdesktop/info/stars/>

*In all cases, 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 and storage configuration. Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

NOTE: Cloud Bank Storage is supported for use a Catalyst Copy target. The performance of object storage means it is not supported to use Cloud Bank Storage as a backup target.

Common Features and Benefits

The following features and benefits apply to all HPE StoreOnce products. Where differences exist between models, they are explained in the description of the benefit.

Scaling out capacity across the enterprise

Keeping pace with data growth, HPE StoreOnce Systems span from an entry level 16 TB model to an enterprise class model with 1.7 PB that can be expanded to 5.2 PB with Cloud Bank Storage.

Choose from dedicated backup appliances to match the capacity and performance requirements of larger offices and data center deployments or virtual appliances utilizing existing infrastructures for virtualized environments and smaller and remote offices.

StoreOnce deduplication can be extended across cloud storage to create a hybrid backup infrastructure. StoreOnce Catalyst can be scaled out over your choice of on premise or cloud object storage to increase capacity and reduce the cost of backup data that requires extended retention times.

NOTE: To optimize capacity utilization and in accordance with performance requirements, your capacity requirements should be planned following Recommended Configuration Guidelines.

Reducing your backup data storage needs

HPE 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 backup 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.

Meeting shrinking backup windows

Industry leading performance - protect large amounts of data within short backup windows with native high performance or the enhanced speed of HPE StoreOnce Catalyst.

Reduce the risk with industry-leading backup speeds of up to 288 TB/hr* with an HA federated 8 node system using StoreOnce VSA so you can shrink backup windows and meet the most stringent SLAs.

You can enhance performance by deduplicating anywhere; at the application source or at the backup server or at the target HPE StoreOnce System. Federated Deduplication means you can deduplicate where it makes sense for your business, not where technology vendor limitations mandate. Federated Deduplication is available across all HPE StoreOnce systems, in conjunction with all applications that support StoreOnce Catalyst.

NOTE: 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 and storage configuration. Note: Values may differ from those used in calculations in the sizer tool.

Reducing the time to restore data

High speed backup is important, but when system failure strikes being able to restore your data in the shortest time possible is critical to minimizing downtime. That's why Hewlett Packard Enterprise offers industry-leading restore speeds with its StoreOnce product line.

Freeing up your IT resources

Reduce the time spent managing multiple data protection devices and processes and free-up IT resources by consolidating and automating all of your backup data onto HPE StoreOnce systems.

For organizations that have branch and small offices, HPE StoreOnce helps you protect the data at remote sites. You can eliminate the need for dedicated hardware if you use StoreOnce VSA at these sites.

Common Features and Benefits

Lowering the cost of data protection

With a typical deduplication ratio of 20:1, more backup data can be stored in a smaller footprint meaning less capacity needs to be purchased. What's more, the highly scalable HPE StoreOnce portfolio allows you to pay-as-you grow.

HPE StoreOnce deduplication also enables network efficient offsite data replication. All HPE StoreOnce systems use StoreOnce Federated 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.

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.

Lowering the cost of long term backup data retention

Cloud Bank Storage extends the usable capacity of StoreOnce by combining low object storage costs with StoreOnce deduplication in a hybrid cloud solution. This massively reduces the storage costs of long term backup data retention and enables off site data protection without investing in offsite facilities. This is delivered by an extension to StoreOnce Catalyst that leverages public cloud and/or private object storage. This external object storage is used to provide capacity to the Catalyst Cloud Bank Store. This integrates seamlessly into existing workflows. Backup data is written to a Catalyst Store and then, within the policy of the writing application, all or some of this backup data is copied to the Catalyst Cloud Bank Store for long term retention.

NOTE: Cloud Bank Storage is supported for use a Catalyst Copy target. The performance of object storage means it is not supported to use Cloud Bank Storage as a backup target.

Reducing the risk to Data at Rest and Data in Flight**

With high-profile reports of data loss, and increasing levels of government legislation for data security, companies are increasingly seeking to encrypt their data. The HPE StoreOnce security provides for Data at Rest and Data in Flight encryption which prevents unauthorized access to data on disk that has been lost, stolen, or discarded, as well as, data being transmitted between devices. It also offers secure erase functionality. These functions can be configured on an application or store basis and are not restricted to the whole appliance. HPE StoreOnce security is available for all HPE StoreOnce products.

Data in flight encryption is intended to be used to secure links between data centers for StoreOnce Replication or Low Bandwidth Catalyst Copy operations.

Using Data In Flight Encryption for direct backup operations to the StoreOnce System over a local network is not supported due to the performance impact of the encryption.

****Data in Flight encryption via IPSec is supported on StoreOnce Catalyst only. In addition, write performance may be impacted, however performance improvements should be seen after first ingest.**

Seamlessly integrating into your environment

Flexible backup is available with NAS, (NFS, CIFS (SMB), iSCSI and FC virtual tape libraries (VTL) and StoreOnce Catalyst backup targets. This allows each StoreOnce system to be installed and used with all leading backup applications.

Flexible connectivity enables fast, easy integration into Fibre Channel (16 Gb and 32 Gb) and Ethernet (1 Gb, 10 and 25 GbE iSCSI) networks. HPE StoreOnce systems are easily rack-mounted in standard racks,

Extensive compatibility

Hewlett Packard Enterprise extensive compatibility testing program assures that your HPE Systems work with leading, operating systems, data protection software and business application. Please consult

<http://www.hpe.com/Storage/StoreOnceSupportMatrix> for specific compatibility information.

Common Features and Benefits

Delivering reliable backup and restore

In any storage system it is essential to ensure that the integrity of the data stored is maintained so data can be recovered exactly as it was written. There's nothing worse than discovering corrupted backups when you need to restore your data, consequently StoreOnce Systems include HPE StoreOnce Integrity Plus - industry leading patented technology to deliver data integrity throughout the lifecycle. With Integrity Plus you get inbuilt protection which not only checks data at many stages both in the backup process and when recovered, but also continually checks the data when at rest, correcting errors if necessary.

Additionally, HPE StoreOnce systems feature hardware RAID 6 to reduce the risk of data loss due to disk failure.

Protecting your primary storage directly

HPE StoreOnce Recovery Manager Central facilitates automated, efficient, non-intrusive backup and disaster recovery and provides converged data protection by integrating 3PAR StoreServ primary storage and StoreOnce System storage directly without the need for third-party ISVs. With Recovery Manager Central you get the simplicity and performance of snapshot-based protection to generate application-consistent recovery points combined with the reliability and efficiency of deduplicated backups for guaranteed recovery.

Protecting your remote offices

HPE StoreOnce systems are ideal for remote offices - providing a local backup target and efficient replication to an offsite location. If you are running a virtual server environment in our remote offices you can use the flexibility and simplicity of the HPE StoreOnce VSA.

With HPE StoreOnce Catalyst the movement of data between sites is configured and controlled using your backup application as a single interface for the data protection solution. StoreOnce Catalyst supports 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).

Eliminate complexity with effortless management

Reduce operational time, complexity and expense with a unified view of multiple StoreOnce systems, both on premises and in the cloud via Federated Management.

HPE StoreOnce VSA Backup

HPE StoreOnce VSA 4.1.0

The HPE StoreOnce VSA extends the deployment options for StoreOnce with the agility and flexibility of a virtual appliance, removing the need to install dedicated data protection hardware. All the features of the purpose built StoreOnce Systems are available in a software defined backup target of up to 500 TB usable capacity. This provides a flexible and a cost effective backup target for virtualized server environments as part of a pure software defined data protection solution or in conjunction with StoreOnce purpose-built appliances for mixed environments.

Editions & Licensing

StoreOnce VSA licensing is based on usable physical capacity, net of space saving from deduplication and compression. The purchased licenses include 3 years entitlement to HPE Pointnext technical support and software updates.

StoreOnce VSA

StoreOnce VSA starts with a 4 TB license to use. This is the minimum capacity configuration. This is extended in 1 TB increments using stackable 1 TB licenses. The 1 TB licenses can be added individually or in bulk. They can be added as part of the initial deployment or at any time after deployment. Up to 496 1 TB licenses can be added to give a maximum capacity of 500 TB.

StoreOnce VSA License Server

For environments with many StoreOnce VSA instances or a dynamic population of StoreOnce VSAs, the HPE AutoPass License Server adds flexibility and control over license management. In an AutoPass License Server deployment capacity licenses are added to the License Server in 100 TB increments. This creates a pool of capacity that is allocated to StoreOnce VSA instances as required. If a VSA instance is disconnected from the License Server the license capacity is returned to pool of capacity.

StoreOnce VSA Trialware

The StoreOnce VSA trialware enables a 90 day evaluation/demo of all StoreOnce VSA features and up to 500 TB capacity.

See <http://www.hpe.com/storage/TryStoreOnceVSA>.

NOTE: In demo mode up to 500 TB of capacity can be allocated. When licenses are added to continue using the StoreOnce VSA beyond the 90 day demo period the licensed capacity must be greater or equal to the configured capacity.

NOTE: The Trialware comes without entitlement to HPE Pointnext support or the ability to buy HPE Pointnext Support Services.

Demonstration ('Demo') License

The StoreOnce VSA has a built in 90 day demo license. The demo license is to enable customers to use or evaluate the StoreOnce VSA for up to 90 days without needing to add a license key. The demo period starts as soon as the StoreOnce VSA is first powered on and enables operation in demo mode. In demo mode all StoreOnce VSA functionality is available and up to 500 TB capacity can be configured. If no license is added before the end of the 90 demo period the StoreOnce VSA will cease to be operational.

There are demo licenses for the Cloud Bank Storage feature that enable it to be used for up to 90 days without the addition of a Cloud Bank Storage license as described above/below.

NOTE: Data at Rest Encryption and Data In Flight Encryption is not included in the demo license

Unlicensed Behaviour

A StoreOnce VSA moves to unlicensed mode if no license is added within 90 days of deployment. For the first 60 days in unlicensed mode the StoreOnce VSA operates in read only mode. It is not possible to create new encrypted stores in unlicensed mode. At any time during this 60 day 'unlicensed' period a license key can be added to resume full functionality.

When operating in unlicensed mode warnings are issued that the StoreOnce VSA will cease to be operational if no license is added before the end of the 60 day period. If no license key is added within 60 days of StoreOnce VSA going into unlicensed mode it will cease to be operational and be in a locked down state. For a StoreOnce VSA to return from a locked down state to an operational state requires HPE intervention and the addition of the required license(s).

HPE StoreOnce VSA Backup

Compatibility with StoreOnce VSA 3.x

There is no upgrade path from StoreOnce VSA 3.x to StoreOnce VSA 4.x. The StoreOnce VSA 4.x image can only be used for a new StoreOnce VSA installation or to upgrade an existing StoreOnce VSA 4.x installation.

There is no license compatibility between StoreOnce VSA 3.x and StoreOnce VSA 4.x. StoreOnce VSA 4.x licenses are required for StoreOnce VSA 4.x instances. Only StoreOnce VSA 4.x instances can connect to a StoreOnce VSA License Server.

StoreOnce VSA 3.x and StoreOnce VSA 4.x can be used in the same environment and there is replication compatibility between StoreOnce VSA 3.x and StoreOnce VSA 4.x instances. Only StoreOnce VSA 4.x instances can be managed using the StoreOnce Federated Management feature.

Product Specifications & Resource Requirements

As a software defined backup target, StoreOnce VSA can be configured to provide the capacity and performance needed to meet the data protection requirements. The table below shows the minimum StoreOnce VSA configuration and the resources that need to be added to increase capacity, performance, stream count and/or the number of backup targets up to the maximum configuration.

Minimum configuration, maximum configuration and resources needed to scale

Performance	Min Config	Max Config	To scale from minimum configuration
Local capacity ¹	4 TB	500 TB	100 MB vRAM per TB
Cloud Bank Storage capacity ²	-	1 PB	100 MB vRAM per TB
Max backup performance ³	2 TB/hr	36 TB/hr	1 vCPU + 300 IOPS per TB/hr
Max concurrency	16 streams	256 streams	500 MB vRAM per stream
Maximum backup targets	4 stores	32 stores	1 GB vRAM per store
Fan-in ratio Resource Requirements	8 sources	8 sources	n/a
Minimum vRAM	24 GB	320 GB	
Minimum CPU ⁴	2	36	
IOPS ⁵	600	10,800	
Dedicated hard drives ⁶	4	72	

HPE StoreOnce VSA Backup

Example configurations

Performance	Small backup target without Cloud Bank Storage	Medium backup target with Cloud Bank Storage	Large backup target with Cloud Bank Storage	Large high performance backup target without Cloud Bank Storage
Local capacity ¹	4 TB	150 TB	400 TB	500 TB
Cloud Bank Storage capacity ²	8 TB	150 TB	900 TB	-
Max backup performance ³	4 TB/hr	8 TB/hr	20 TB/hr	36 TB/hr
Max concurrency	24 streams	16 streams	64 streams	200 streams
Maximum backup targets	6 stores	8 stores	16 stores	20 stores
Maximum fan-in Resource Requirements	8 sources	8 sources	8 sources	8 sources
Minimum vRAM	29 GB	57 GB	189 GB	181 GB
Minimum CPU ⁴	4 vCPU	8 vCPU	20 vCPU	36 vCPU
IOPS ⁵	1,200	2,400	6,000	10,800
Dedicated hard drives ⁶	8	16	40	72

1. Usable capacity net of deduplication and compression.

2. Capacities shown are an example only. Cloud Bank Storage is an optional feature for StoreOnce Systems and a minimum configuration has zero Cloud Bank Storage capacity. Up to 2x the maximum local capacity is supported for Cloud Bank Storage. A StoreOnce VSA, with appropriate resource allocation can support from up to 1,000 TB of Cloud Bank Storage. See the Cloud Bank Storage section for more detail.

3. This is with StoreOnce Catalyst source side deduplication. Backup performance to a VTL target and restore performance is approximately 25% of this. The numbers quoted here are for VMware vSphere. For sizing StoreOnce VSA in Hyper-V environments; performance is up to 25% less than on VMware vSphere hosts.

4. CPU 1.5 GHz or faster. Additional vCPUs should be added in multiples of two.

5. The IOPS numbers stated in the table above are maximum numbers. The read/write mix, hypervisor caching and application caching may make the stated performance achievable with lower storage IOPS. Deploying a StoreOnce VSA provisioned with lower than the stated storage IOPS should only be done after validation of performance in a test environment.

6. Based on 7,200 rpm SAS hard drives and assuming 150 IOPS per HDD. The number is number of HDDs is net of RAID overhead and spares.

HPE StoreOnce VSA Backup

Host Support

StoreOnce VSA is supported to run on VMware vSphere and Microsoft Hyper-V. For detailed compatibility information see the [StoreOnce Support Matrix](#).

Fibre Channel Host Adapter Support

Fibre Channel connectivity is supported on VMware vSphere hosts with QLogic FC HBAs and VMDirectPath I/O Passthrough. The following FC Adapters are supported:

- HPE 82Q 8 Gb 2-port PCIe Fibre Channel HBA
 - HPE StoreFabric SN1000Q 16 Gb PCIe HBA
 - HPE StoreFabric SN1100Q 16 Gb HBA
 - HPE StoreFabric SN1600Q 32 Gb HBA
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StoreOnce VSA License Server

The HPE AutoPass License Server centralizes the license management for large StoreOnce VSA installations and dynamic populations of StoreOnce VSA. To centralize license management, multiple StoreOnce VSA instances are connected to a AutoPass License Server. License management is simplified by adding the license keys for capacity entitlement to the AutoPass License Server. This licensed capacity provides a pool of capacity which is used to allocate capacity, as needed, to StoreOnce VSA instances. Use of the AutoPass License Server also enables licensed capacity to be recycled from decommissioned StoreOnce VSA instances to new StoreOnce VSA instances.

NOTE: The decision to connect to a License Server must be made while the StoreOnce VSA is in demo mode. If the instance is licensed using a single instance license it cannot subsequently be connected to a License Server.

The license server does not require a license to activate it. Licenses are added to the AutoPass License Server to entitle capacity, in 100 TB increments, and features that can be subsequently allocated to connected StoreOnce VSA instances. Capacity and features are not allocated automatically to the connected VSA instances. Capacity and features are added and removed manually for VSA instances connected to the AutoPass License Server.

There are feature licenses for the License Server for Cloud Bank Storage and encryption. As with the capacity licenses these are held on the License Server and allocated to the StoreOnce VSA instances as required.

StoreOnce VSA instances that are allocated entitlement to capacity and features from the AutoPass License Server need to remain connected to the License Server. The capacity from disconnected StoreOnce VSA instances is returned to the capacity pool on the AutoPass License Server. The connected StoreOnce VSA instances are polled approximately each hour to check the connection.

When a StoreOnce VSA is disconnected from the AutoPass License Server, the capacity licenses allocated to the VSA are returned to the license server. The StoreOnce VSA remains in a licensed state for up to 7 days from the most recent connection. During these seven days if the StoreOnce VSA is reconnected to the license server, the capacity licenses are reallocated to the StoreOnce VSA, provided the License Server pool has sufficient license capacity.

If the StoreOnce VSA is disconnected for more than 7 days, or reconnected and the License Server does not have sufficient capacity licenses for the configured capacity, the VSA instance moves into an unlicensed state (see above).

To allow for recovery of StoreOnce VSAs after a failure or disaster, a StoreOnce VSA can be reconnected to an AutoPass License Server for up to 60 days after disconnection. Provided, the License Server pool has sufficient license capacity, licenses are allocated to match the configured capacity of the StoreOnce VSA. Once the licenses are allocated the StoreOnce VSA moves from unlicensed to licensed mode and full functionality resumes.

HPE StoreOnce VSA Backup

Requirements to run HPE AutoPass License Server

The StoreOnce VSA uses the HPE AutoPass License Server. The minimum resource requirements for this are:

- 1.6 GHz processor
- 1 GB RAM
- 300 MB storage (1 GB recommended)
- High Color (16-bit) Graphics card with 64 MB video memory
- HTTPS Protocol enabled
- Port 5814 accessible

The supported operating systems are:

- Windows 7, Windows 10
- Windows Server 2008 R2, Windows Server 2008 SP2
- Windows Server 2012 R2
- Red Hat Enterprise Linux 7.0
- CentOS 7.0

The minimum supported web browsers are:

- Mozilla Firefox 39
- Internet Explorer 11
- Google Chrome 40

NOTE: Data at Rest Encryption and Data In Flight Encryption is not included in the demo license

StoreOnce VSA Configuration Recommendations

- RAID protection should be used for the storage allocated to the StoreOnce VSA for resilience against hard disk failure.
- The storage used for StoreOnce VSA should not be shared with the storage used by the protected virtual machines, particularly if backup data replication is not used.
- Reserve all memory and CPU allocated to the Storeonce VSA. Overprovisioning memory or CPU can lead to insufficient resources available to deliver the expected performance. The CPU resource usage increases as more data streams are written/read in parallel, as used capacity approaches available capacity and as features such as data encryption and data compression are configured.
- Periodically monitor allocated CPU utilization and allocate additional vCPUs if the CPU resources are approaching saturation. Performance can be seen using hypervisor performance monitoring tools. These vary between VMware and Windows Hyper-V. Adding resources requires the StoreOnce VSA to be restarted so these upgrades should be done outside backup times.
- It is recommended that at least one virtual disk is allocated to the StoreOnce VSA before the first power on. Additional virtual disks can be added later to increase capacity up to the licensed capacity.
- Plan the addition of virtual disks to StoreOnce VSA because once a virtual disk is added it cannot be removed without destroying the StoreOnce VSA.

VMware Configuration Notes

- Typical Installation will take 20 minutes depending on the installation method used and the environment. Other factors that determine the installation time are the storage used, the host platform and the storage capacity configured.
- It is recommended that the virtual disks used to provide capacity for StoreOnce VSA are in a .vmdk format from a VMFS3, VMFS5 or VMFS6 data store. NFS data stores are supported but careful consideration of the performance implications should be made before deployment. RAW disks are not supported.
- If the VMware host has AMD CPUs some configuration is needed to run the StoreOnce VSA. It is necessary to create a single host cluster with the EVC (Enhanced vMotion Compatibility) mode set to AMD generation 3 or earlier.
- Thick and thin provisioned virtual disks are supported to provision storage for backup data. If thin provisioned virtual disks are selected, care should be taken to ensure that the datastore is backed by sufficient physical storage.
- StoreOnce VSA is supported for use with vMotion and Storage vMotion during backup and recovery operations. It is also supported in environments using High Availability (HA) and Distributed Resource Scheduler (DRS). Support for Fault Tolerance (FT) is limited to StoreOnce VSA configurations with a maximum of 8 vCPUs due to this VMWare FT maximum.

HPE StoreOnce VSA Backup

Hyper-V Configuration Notes

- Unzipping the virtual machine file can take up to 15 minutes. Installation time depends upon how heavily the Hyper-V Server is being used and how much capacity is configured.
- StoreOnce VSA requires NTFS storage. There is no support for NFS data stores or pass-through disks. StoreOnce VSA can run on all processors supported for Windows Server Hyper-V provided the performance and quantity meets the minimum requirements for the capacity of StoreOnce VSA configured.
- Fixed and dynamically expanding virtual hard disks (.VHDX or .VHD) are supported to provision storage for backup data. If dynamically expanding virtual hard disks are selected, care should be taken to ensure that the NTFS Logical Volume is backed by sufficient physical storage.
- StoreOnce VSA supports use of Hyper-V Live Migration during backup and recovery operations.

Purchasing information

When a StoreOnce VSA is deployed it is allocated a license directly or from a license server. If a StoreOnce VSA is allocated a license directly it cannot later connect to a license server. A StoreOnce VSA connected to an AutoPass License Server cannot become a discrete StoreOnce VSA instance.

StoreOnce VSA

Each StoreOnce VSA instance starts with a 4 TB Base LTU. Up to 496 Stackable 1 TB LTUs can be added to the base license for capacity of up to 500 TB per StoreOnce VSA instance. Multiple 1 TB LTUs can be activated and applied in a single transaction.

Description

	E-LTU Part
HPE StoreOnce VSA 4TB Base E-LTU	BC002AAE
HPE StoreOnce VSA Stackable 1TB E-LTU	BC003AAE
HPE StoreOnce Cloud Bank Storage Read/Write for Gen4 Systems 1TB E-LTU	BC012AAE
HPE StoreOnce Cloud Bank Storage Detach for Gen4 Systems 1TB E-LTU	BC013AAE
HPE StoreOnce Encryption E-LTU	BB994AAE

Description

	LTU Part #
HPE StoreOnce VSA 4TB Base LTU	BC002A
HPE StoreOnce VSA Stackable 1TB LTU	BC003A
HPE StoreOnce Cloud Bank Storage Read/Write for Gen4 Systems 1TB LTU	BC012A
HPE StoreOnce Cloud Bank Storage Detach for Gen4 Systems 1TB LTU	BC013A
HPE StoreOnce Encryption LTU	BB994A

HPE AutoPass License Server

Each HPE AutoPass License Server must start with a 100 TB License Server LTU. An unlimited number of Stackable 100 TB License Server LTUs can be added to increase capacity. Cloud Bank Storage licenses and encryption licenses are added as needed to enable this capability on the connected StoreOnce VSAs.

Description

	E-LTU Part #
HPE StoreOnce VSA Server 100TB E-LTU	BC005AAE
HPE StoreOnce VSA Server Stackable 100TB E-LTU	BC006AAE
HPE StoreOnce Cloud Bank Storage Gen4 for VSA Server 100TB E-LTU	BC015AAE
HPE StoreOnce Cloud Bank Storage Detach Gen4 for VSA Server 100TB E-LTU	BC016AAE
HPE StoreOnce VSA Server Encryption E-LTU	BC007AAE

HPE StoreOnce VSA Backup

Description	LTU Part #
HPE StoreOnce VSA Server 100TB LTU	BC005A
HPE StoreOnce VSA Server Stackable 100TB LTU	BC006A
HPE StoreOnce Cloud Bank Storage Gen4 for VSA Server 100TB LTU	BC015A
HPE StoreOnce Cloud Bank Storage Detach Gen4 for VSA Server 100TB LTU	BC016A
HPE StoreOnce Encryption for VSA License Server ¹	BB007A

This not the same encryption license as used for the individual StoreOnce VSAs or StoreOnce Systems. This license is for the HPE AutoPass License Server only and enables an unlimited number of connected StoreOnce VSA instances to be encryption enabled.

Physical LTUs and eDelivery eLTU Licenses

All part numbers ending in 'AAE' (xxxxxAAE) are for eDelivery. These are delivered via an email that contains a link to download the software and the Entitlement Order Number (EON) that is used to acquire the license key.

All products ending in 'A' (xxxxxA) are for physical delivery. Physical delivery takes several days. A paper letter is delivered with a link to download the software and the license key Entitlement Order Number (EON) that is used to acquire the license key. A DVD is also delivered containing the software.

Technical Support and Software Updates

All purchased StoreOnce VSA licenses include entitlement to HPE Pointnext 24x7 Same Business Day **Foundation Care** and access to software updates for 3 years from license activation. HPE Pointnext 24x7 Foundation Care gives you access to support services 24 hours per day, 7 days per week including holidays for assistance on resolving issues.

The included support can be upgrade to from Foundation Care to **Proactive Care**. The support entitlement can also be extended to 4 or 5 years. Support renewal services can be purchased up to 6 months from the end of the existing support entitlement to continue entitlement to Pointnext support.

The support entitlement starts from the date of the first license activation for the StoreOnce VSA. Adding more capacity to the StoreOnce VSA does not change the support entitlement start and end dates. The support entitlement for the Base licenses (BC002A, BC005A) entitles support for the VSA. No additional support coverage needs to be purchased with the Stackable capacity licenses (BC003A, BC006A) as this is entitled with the support for the Base licenses.

The trialware edition have self-service support only and no entitlement to access HPE technical support.

For more information on HPE Support Services see 'HPE Support Services and Warranty Information' below.

Related Services

StoreOnce VSA is a user installable product and there are no separate StoreOnce VSA installation & start-up services. StoreOnce VSA installation & start-up and integration are covered in the optional services for;

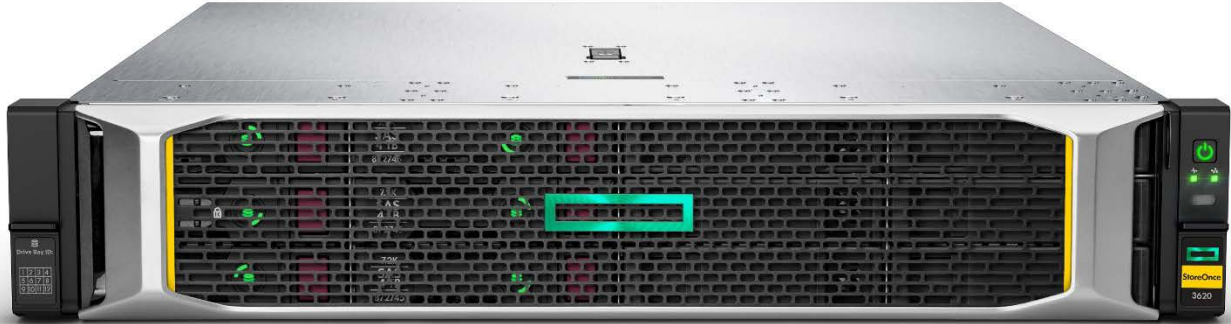
HPE StoreOnce Integration Service is designed to provide an integrated data protection solution for HPE StoreOnce systems. The StoreOnce Integration Service incorporates ISV backup applications and HPE best practices on HPE StoreOnce systems to deliver a unified backup-to-disk solution.

HPE StoreOnce single node Catalyst Start-up Service is an add-on to StoreOnce System deployment service to provide implementation and verification of the backup and remote copy features of HPE StoreOnce Catalyst.

HPE StoreOnce Catalyst Solution Service is a comprehensive service, available in three levels, for the design, implementation and verification of data protection solutions built around HPE StoreOnce Catalyst functionality.

HPE StoreOnce Systems

HPE StoreOnce 3620 System



HPE StoreOnce 3620 System

HPE StoreOnce 3620 delivers entry-level disk-based backup and disaster recovery, that's ideal for smaller remote or branch offices and data centers. This 2U Backup System offers 16 to 31.5 TB of usable local capacity, up to 94.5 TB with Cloud Bank Storage and speeds of up to 14 TB/hour* with StoreOnce Catalyst.

Overview Product Specifications

	StoreOnce 3620
Form Factor	2U Rack
Total capacity (raw)**	48 TB
Local usable capacity**	Up to 31.5 TB
Effective local usable capacity**	Up to 630 TB (with 20:1 deduplication)
Maximum Cloud Bank Storage usable capacity**	63 TB
Effective Cloud Bank Storage capacity**	1.26 PB (with 20:1 deduplication)
Effective total usable capacity**	1.9 PB (with 20:1 deduplication)
Maximum write performance*	6 TB/hour
Maximum Catalyst write performance*	14 TB/hour
Maximum fan-in/backup targets	24

NOTE: See Detailed Technical Specifications and Physical Dimensions later in this document for more details.

*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 and storage configuration. Note: Values may differ from those used in calculations in the sizer tool.

** Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

HPE StoreOnce Systems

Scalability

Start out with the HPE StoreOnce base unit at 2U with 16 TB usable**. When you're ready, simply purchase a capacity upgrade kit to increase available local capacity to a total of 31.5 TB usable*. Cloud Bank Storage can extend the maximum Catalyst capacity by 63 TB using external object storage for a total usable capacity of 94.5 TB.

Part-number	Description	Includes
BB954A	HPE StoreOnce 3620 24TB System with 16 TB of usable local disk storage	<ul style="list-style-type: none"> • HPE 3620 System (2U) with 6 x 4 TB disks • Easy Install Rail Kit • EAC Card • Accessory Kit featuring: <ul style="list-style-type: none"> • Start Here Poster • 2 x Ethernet cables (Cat 5e) 3m • 2 x Power cords (IEC 320 C13 Connector for Rack PDU)

Configuration notes

- HPE StoreOnce 3620 systems can be connected to the servers they protect via 1 GbE as well as 10 and 25 GbE, 16 and 32 Gb Fibre Channel when the appropriate optional hardware is installed.
- They are supported on all 10 GbE and 25 GB network interface cards (NICs) and switches, dependent on the optional network card installed. 1GbE network connections are also supported for sites without 10 or 25 GbE networks (with reduced performance).
- HPE StoreOnce systems 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.

Product name	Part-number	Description	Includes
HPE StoreOnce 3620 24 TB Capacity Upgrade	BB960A	HPE StoreOnce 3620 24TB Capacity Upgrade Kit	<ul style="list-style-type: none"> • 6 x 4 TB preconfigured disks • 1 x StoreOnce 3620 24 TB Capacity Upgrade License Entitlement Certificate (BB961A) • Capacity Upgrade Start Here Guide

HPE StoreOnce Systems

HPE StoreOnce 3640 System



HPE StoreOnce 3640 System

HPE StoreOnce 3640 delivers scalable backup and restore for small to midsize data centers, and provides an ideal replication target device for up to 36 remote and branch offices. This scalable 2U appliance offers from 36 to 108 TB* of usable local capacity using upgrade kits and up to 324 TB with Cloud Bank Storage, and provides a solution to shrinking backup windows with speeds of up to 18 TB/hour* using HPE StoreOnce Catalyst.

Overview Product Specifications

	StoreOnce 3640
Form Factor	2U Scalable Rack
Total capacity (raw)**	Up to 144 TB
Maximum local usable capacity**	Up to 108 TB
Effective local usable capacity**	2.16 PB (with 20:1 deduplication)
Maximum Cloud Bank Storage usable capacity**	216 TB
Effective Cloud Bank Storage capacity**	4.32 PB (with 20:1 deduplication)
Effective total usable capacity**	6.48 PB
Maximum write performance*	7 TB/hour
Maximum Catalyst write performance*	18 TB/hour
Maximum fan-in/backup targets	24

NOTE: See Detailed Technical Specifications and Physical Dimensions later in this document for more details.

*Actual performance depends on multiple factors including configuration, data type, data deduplication, data compression, number of data streams, number backup targets and concurrent tasks such as housekeeping or replication. Actual capacity depends on multiple factors including data deduplication, data compression, storage formatting, log file size, meta data size and housekeeping backlog.

** Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

HPE StoreOnce Systems

Scalability

Start out with the HPE StoreOnce 3640 48 TB base unit (raw) at 2U with 36 TB usable*. When you're ready, simply purchase up to 2 additional capacity upgrade kits to increase available local capacity to a total of 108 TB usable*. Cloud Bank Storage can extend the maximum Catalyst capacity by 216 TB using external object storage for a total usable capacity of 324 TB.

Configuration notes

- HPE StoreOnce 3640 systems can be connected to the servers they protect via 1 GbE as well as 10 and 25 GbE, 16 and 32 Gb Fibre Channel when the appropriate optional hardware is installed.
- They are supported on all 10 and 25 GbE network interface cards (NICs) and switches, dependent on the optional network card installed. 1GbE network connections are also supported for sites without 10 and 25 GbE networks (with reduced performance).
- HPE StoreOnce systems 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.

Purchasing information

Product name	Part-number	Description	Includes
HPE StoreOnce 3640 48 TB System	BB955A	HPE StoreOnce 3640 48 TB System with 36 TB of usable local disk storage	<ul style="list-style-type: none"> • HPE StoreOnce 3640 System (2U) with 12 x 4 TB disks • Easy Install Rail Kit • EAC Card • Accessory Kit featuring: <ul style="list-style-type: none"> • Start Here Poster • 2 x Ethernet cables (Cat 5e) 3m • 2 x Power cord (IEC 320 C13 Connector for Rack PDU)
HPE StoreOnce 3640 48 TB Capacity Upgrade	BB962A	HPE StoreOnce 3640 48 TB Capacity Upgrade Kit	<ul style="list-style-type: none"> • D3650 storage enclosure (2U) with 12 x 4 TB preconfigured disks, redundant power supplies and fan modules, 1 x integrated 12Gb SAS IO Module • Rack-mounting hardware kit • Accessory Kit featuring: <ul style="list-style-type: none"> • 1 x 0.5m mini-SAS cable • 2 x Power cords (IEC 320 C13 Connector for Rack PDU) • 1 x StoreOnce 3640 48 TB Capacity Upgrade License Entitlement Certificate (BB963A) • Capacity Upgrade Start Here Guide

NOTE: Also refer to the Software Options section of this QuickSpecs to add licenses for:

- HPE StoreOnce Encryption
- HPE Cloud Bank Storage

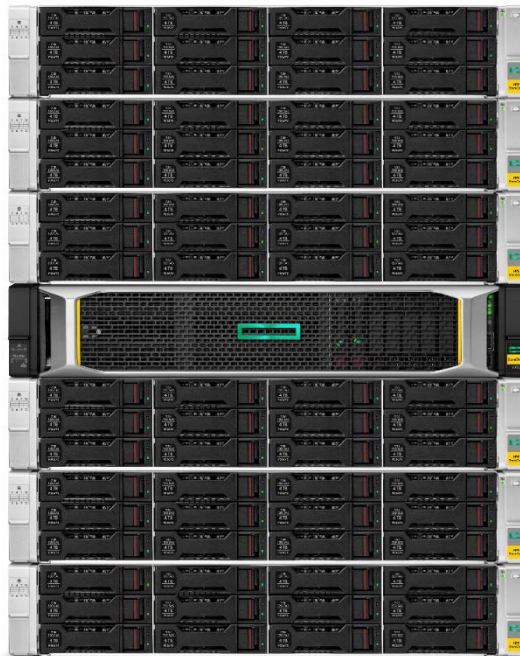
NOTE: Also refer to section detailing Network/Fibre Channel Cards:

- HPE StoreOnce 10 GbE-T Network Card
- HPE StoreOnce 16 Gb Fibre Channel Card
- HPE StoreOnce 10/25Gb
- HPE StoreOnce 32Gb

NOTE: A total number of 4 in any combination can be used.

HPE StoreOnce Systems

HPE StoreOnce 5200 System



HPE StoreOnce 5200 System

HPE StoreOnce 5200 delivers scalable backup and restore for small to midsize data centers, and provides an ideal replication target device for up to 64 remote and branch offices. This scalable 4U appliance offers from 36 to 216 TB* of usable local capacity using upgrade kits and up to 648 TB with Cloud Bank Storage, and provides a solution to shrinking backup windows with speeds of up to 33 TB/hour* using HPE StoreOnce Catalyst.

Overview Product Specifications

	StoreOnce 5200
Form Factor	4U Scalable Rack
Total capacity (raw)**	Up to 288 TB
Maximum local usable capacity**	Up to 216 TB
Effective local usable capacity**	4.32 PB (with 20:1 deduplication)
Maximum Cloud Bank Storage usable capacity**	432 TB
Effective Cloud Bank Storage capacity**	8.6 PB (with 20:1 deduplication)
Effective total usable capacity**	13 PB
Maximum write performance*	17 TB/hour
Maximum Catalyst write performance*	33 TB/hour
Maximum fan-in/backup targets	32

NOTE: See Detailed Technical Specifications and Physical Dimensions later in this document for more details.

*Actual performance depends on multiple factors including configuration, data type, data deduplication, data compression, number of data streams, number backup targets and concurrent tasks such as housekeeping or replication. Actual capacity depends on multiple factors including data deduplication, data compression, storage formatting, log file size, meta data size and housekeeping backlog.

** Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

HPE StoreOnce Systems

Scalability

Start out with the HPE StoreOnce 5200 base unit and first capacity upgrade kit at 4U with 36 TB* usable using D3650 storage enclosure with 12 x 4 TB disks. When you're ready, simply purchase up to 5 additional D3650 storage enclosure capacity upgrade kits to increase available local capacity to a total of 216 TB usable*. Cloud Bank Storage can extend the maximum Catalyst capacity by 648 TB using external object storage for a total usable capacity of 13 PB.

Configuration notes

- HPE StoreOnce 5200 systems can be connected to the servers they protect via 1 GbE as well as 10 and 25 GbE, 16 and 32 Gb Fibre Channel when the appropriate optional hardware is installed.
- They are supported on all 10 and 25 GbE network interface cards (NICs) and switches, dependent on. 1GbE network connections are also supported for sites without 10 and 25 GbE networks (with reduced performance).
- HPE StoreOnce systems 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.

Purchasing information

Product name	Part-number	Description	Includes
HPE StoreOnce 5200 System	BB956A	HPE StoreOnce 5200 Base System	<ul style="list-style-type: none"> • HPE StoreOnce 5200 System (2U) with no data disks • Easy Install Rail Kit • EAC Card • Accessory Kit Featuring: <ul style="list-style-type: none"> • Start Here Poster • 2 x Ethernet cables (Cat5e) 3m • 2 x Power cords (IEC 320 C13 Connector for Rack PDU)
HPE StoreOnce 5200 48 TB Capacity Upgrade	BB964A	HPE StoreOnce 5200 48 TB Capacity Upgrade Kit	<ul style="list-style-type: none"> • D3650 storage enclosure (2U) with 12 x 4 TB preconfigured disks, redundant power supplies and fan modules, 2 x integrated 12Gb SAS IO Modules • Rack-mounting hardware kit • SAS cabling included • Accessory Kit featuring: <ul style="list-style-type: none"> • 2 x Power cords (IEC 320 C13 Connector for Rack PDU) • 1 x StoreOnce 5200 48 TB Capacity Upgrade License Entitlement Certificate (BB965A) • Capacity Upgrade Start Here Guide

NOTE: Also refer to the Software Options section of this QuickSpecs to add licenses for:

- HPE StoreOnce Encryption
- HPE Cloud Bank Storage

NOTE: Also refer to section detailing Network/Fibre Channel Cards:

- HPE StoreOnce 10 GbE-T Network Card
- HPE StoreOnce 16 Gb Fibre Channel Card
- HPE StoreOnce 10/25Gb
- HPE StoreOnce 32Gb

NOTE: A total number of 4 in any combination can be used.

HPE StoreOnce Systems

HPE StoreOnce 5250 Systems



HPE StoreOnce 5250 Systems

HPE StoreOnce 5250 offers disk-based backup with deduplication for longer term on-site data retention and off-site disaster recovery with best-in-class scalability and performance for larger midsize and enterprise data centers. It also provides an ideal replication target for up to 64 remote or branch offices. This highly scalable 7U to 12U appliance delivers from 36 TB to 864 TB of usable local capacity up to 1.7 PB of Cloud Bank Storage capacity and easily tackles shrinking backup windows with backup speeds up to 41 TB/hour* using HPE StoreOnce Catalyst.

Overview Product Specifications

Overview Product Specifications	StoreOnce 5250
Form Factor	7U to 12U Scalable Rack
Total capacity** (raw)	Up 1120 TB
Total Maximum local usable capacity**	Up to 864 TB
Effective local usable capacity**	17.3 PB (with 20:1 deduplication)
Max Cloud Bank Storage usable capacity**	1.7 PB
Effective Cloud Bank Storage capacity**	34 PB (with 20:1 deduplication)
Maximum total usable capacity**	51 PB (with 20:1 deduplication)
Maximum write performance*	22 TB/hour
Maximum Catalyst write performance*	41 TB/hour
Maximum fan-in/backup targets	32/64

NOTE: See Detailed Technical Specifications and Physical Dimensions later in this document for more details.

*Actual performance depends on multiple factors including configuration, data type, data deduplication, data compression, number of data streams, number backup targets and concurrent tasks such as housekeeping or replication. Actual capacity depends on multiple factors including data deduplication, data compression, storage formatting, log file size, meta data size and housekeeping backlog.

** Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

HPE StoreOnce Systems

Scalability

Start with the HPE StoreOnce 5250 Base System plus one D6020 storage enclosure, for 36 TB (using 4TB) or 72 TB (using 8 TB) usable** capacity. As needed, add additional drive upgrade kits to a maximum of five, before purchasing an additional D6020 storage enclosure for a total maximum useable capacity of 864 TB**.

NOTE: It is possible to add a combination of either 4 TB or 8 TB populated storage enclosures to a base with either 4 TB or 8 TB disks, however it is not possible to mix the disk types within an enclosure. All must be either 4 TB or 8 TB disks and all existing enclosures must be fully populated before adding a new enclosure.

Cloud Bank Storage can extend the maximum Catalyst capacity by 1.7 PB using external object storage for a total usable capacity of 51 PB.

Configuration Notes

- The StoreOnce 5250 can only be installed in racks which provide a distance from the front mounting-rail of the rack to the rear rack-face (the vertical rack surface onto which the rear doors close, the depth of the doors themselves should not be included) of at least 920mm to allow sufficient clearance at the rear for cabling and to allow the hot-swapping of fan modules, PSU modules and I/O modules. Additionally, 35mm of space is required between the front mounting-rail and the nearest point on the inside surface of the front door of the rack to provide sufficient space for the front panels of the system components when the front door is closed. An additional 1U support shelf may be necessary in some installations, to ensure sufficient support is available for the high density JBOD.
- HPE StoreOnce 5250 systems can be connected to the servers they protect via 1 GbE as well as 10 and 25 GbE, 16 and 32 Gb Fibre Channel when the appropriate optional hardware is installed.
- They are supported on all 10 and 25 GbE network interface cards (NICs) and switches when configured with the 10GbE hardware option. Default 1Gb base-T Ethernet network connections are also supported for sites without 10 or 25 GbE networks (with reduced performance).
- HPE StoreOnce systems 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.

NOTE: The StoreOnce 5250 systems can support up to four of any combination of the 10 or 25 GbE 16 or 32 Gb FC connectivity hardware options.

Purchasing information

Product name	Part-number	Description	Includes
HPE StoreOnce 5250 System	BB958A	HPE StoreOnce 5250 Base System	<ul style="list-style-type: none"> • HPE StoreOnce 5250 System (2U) with no data disks • Easy Install Rail Kit • EAC Card • Accessory Kit featuring: <ul style="list-style-type: none"> • Start Here Poster • 2 x Ethernet cables (Cat 5e) 3m • 2 x Power cords (IEC 320 C13 Connector for Rack PDU)

HPE StoreOnce Systems

Product name	Part-number	Description	Includes
HPE StoreOnce 5250/5650 60 TB Drawer/Capacity Upgrade Kit	BB966A	HPE StoreOnce 5250/5650 storage enclosure and capacity upgrade kit, offering 36 TB of usable storage	<ul style="list-style-type: none"> • D6020 storage enclosure (5U) with 15 x 4 TB preconfigured data disks, 60 TB (RAW), redundant power supplied and fan modules. • Rack-mounting hardware kit • SAS cabling included • Accessory Kit featuring: <ul style="list-style-type: none"> • 4 x Power cords (with IEC 320 C13 plug for Rack PDU) • 1 x StoreOnce 5250/5650 60 TB Capacity Upgrade License Entitlement Certificate (BB967A) • Capacity Upgrade Start Here Guide
HPE StoreOnce 5250/5650 44 TB Capacity Upgrade Kit	BB974A	HPE StoreOnce 5250/5650 upgrade kit, offering an additional 36 TB of usable storage	<ul style="list-style-type: none"> • 11 x 4 TB preconfigured data disks • 1 x StoreOnce 5250/5650 44 TB (RAW) Capacity Upgrade License Entitlement Certificate (BB975A) • Capacity Upgrade Start Here Guide
HPE StoreOnce 5250/5650 120TB Drawer/Capacity Upgrade Kit	BB968A	HPE StoreOnce 5250/5650 storage enclosure and capacity upgrade kit, offering 72 TB of usable storage	<ul style="list-style-type: none"> • D6020 storage enclosure (5U) with 15 x 8 TB preconfigured data disks, 120 TB (RAW), redundant power supplied and fan modules. • Rack-mounting hardware kit • SAS cabling included • Accessory Kit featuring: <ul style="list-style-type: none"> • 4 x Power cords (with IEC 320 C13 plug for Rack PDU) • 1 x StoreOnce 5250/5650 120 TB Capacity Upgrade License Entitlement Certificate (BB969A) • Capacity Upgrade Start Here guide
HPE StoreOnce 5250/5650 88 TB Capacity Upgrade Kit	BB976A	HPE StoreOnce 5250/5650 upgrade kit, offering an additional 72 TB of usable storage	<ul style="list-style-type: none"> • 11 x 8 TB preconfigured data disks • 1 x StoreOnce 5250/5650 88 TB (RAW) Capacity Upgrade License Entitlement Certificate (BB977A) • Capacity Upgrade Start Here Guide

NOTE: Also refer to the Software Options section of this QuickSpecs to add licenses for:

- HPE StoreOnce Encryption
- HPE Cloud Bank Storage

HPE StoreOnce Systems

HPE StoreOnce 5650 Systems



HPE StoreOnce 5650 Systems

HPE StoreOnce 5650 offers disk-based backup with deduplication for longer term on-site data retention and off-site disaster recovery with best-in-class scalability and performance for larger midsize and enterprise data centers. It also provides an ideal replication target for up to 192 remote or branch offices. This highly scalable 7U to 22U appliance delivers from 36 TB to 1.7 PB of usable local capacity up to 3.5 PB of Cloud Bank Storage capacity and easily tackles shrinking backup windows with backup speeds up to 47 TB/hour* using HPE StoreOnce Catalyst.

HPE StoreOnce Systems

Overview Product Specifications	StoreOnce 5650
Form Factor	7U to 22U Scalable Rack
Total capacity** (raw)	Up 2240 TB
Total Maximum local usable capacity**	Up to 1.7 PB
Effective local usable capacity*	34 PB (with 20:1 deduplication)
Max Cloud Bank Storage usable capacity**	3.5 PB
Effective Cloud Bank Storage capacity**	70 PB (with 20:1 deduplication)
Maximum total usable capacity**	104 PB (with 20:1 deduplication)
Maximum write performance*	27 TB/hour
Maximum Catalyst write performance*	47 TB/hour
Maximum fan-in/backup targets	50/192

NOTE: See Detailed Technical Specifications and Physical Dimensions later in this document for more details.

*Actual performance depends on multiple factors including configuration, data type, data deduplication, data compression, number of data streams, number backup targets and concurrent tasks such as housekeeping or replication. Actual capacity depends on multiple factors including data deduplication, data compression, storage formatting, log file size, meta data size and housekeeping backlog.

HPE StoreOnce Systems

Scalability

Start with the 7U base, head unit with one D6020 storage enclosure, for 36 TB (using 4TB) or 72 TB (using 8 TB) usable** capacity. As needed, add additional drive upgrade kits to a maximum of five, before purchasing additional D6020 storage enclosures for a total maximum useable capacity of 1728 TB**.

NOTE: It is possible to add a combination of either 4 TB or 8 TB populated storage enclosures to a base with either 4 TB or 8 TB disks, however it is not possible to mix the disk types within an enclosure. All must be either 4 TB or 8 TB disks and all existing enclosures must be fully populated before adding a new enclosure.

Cloud Bank Storage can extend the maximum Catalyst capacity by 3.5 PB using external object storage for a total usable capacity of 5.2 PB

Configuration Notes

- The StoreOnce 5650 can only be installed in racks which provide a distance from the front mounting-rail of the rack to the rear rack-face (the vertical rack surface onto which the rear doors close, the depth of the doors themselves should not be included) of at least 920mm to allow sufficient clearance at the rear for cabling and to allow the hot-swapping of fan modules, PSU modules and I/O modules. Additionally, 35mm of space is required between the front mounting-rail and the nearest point on the inside surface of the front door of the rack to provide sufficient space for the front panels of the system components when the front door is closed. An additional 1U support shelf may be necessary in some installations, to ensure sufficient support is available for the high density JBOD.
- HPE StoreOnce 5650 systems can be connected to the servers they protect via a 10 or 25 GbE, 16 or 32 Gb Fibre Channel hardware options.
- They are supported on all 10 and 25 GbE network interface cards (NICs) and switches when configured with the 10GbE hardware option. Default 1Gb base-T Ethernet network connections are also supported for sites without 10 or 25 GbE networks (with reduced performance).
- HPE StoreOnce systems 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.

NOTE: The StoreOnce 5650 systems can support up to four of any combination of the 10 or 25 GbE, 16Gb and 32Gb FC connectivity hardware options.

Purchasing information

Product name	Part-number	Description	Includes
HPE StoreOnce 5650 System	BB959A	HPE StoreOnce 5650 Base System	<ul style="list-style-type: none"> • HPE StoreOnce 5650 System (no data disks) • Easy Install Rail Kit • EAC Card • Accessory Kit featuring: <ul style="list-style-type: none"> • Start Here Poster • 2 x Ethernet cables (Cat 5e) 3m • 2 x Power cords (IEC 320 C13 Connector for Rack PDU) • Start Here Poster

HPE StoreOnce Systems

HPE StoreOnce 5250/5650 60 TB Drawer/Capacity Upgrade Kit	BB966A	HPE StoreOnce 5250/5650 storage enclosure and capacity upgrade kit, offering 36 TB of usable storage	<ul style="list-style-type: none"> • D6020 storage enclosure (5U) with 15 x 4 TB preconfigured data disks, 60 TB (RAW), redundant power supplied and fan modules. • Rack-mounting hardware kit • SAS cabling included • Accessory Kit featuring: <ul style="list-style-type: none"> • 4 x Power cords (with IEC 320 C13 plug for Rack PDU) • 1 x StoreOnce 5250/5650 60 TB Capacity Upgrade License Entitlement Certificate (BB967A) • Capacity Upgrade Start Here Guide
HPE StoreOnce 5250/5650 44 TB Capacity Upgrade Kit	BB974A	HPE StoreOnce 5250/5650 upgrade kit, offering an additional 36 TB of usable storage	<ul style="list-style-type: none"> • 11 x 4 TB preconfigured data disks • 1 x StoreOnce 5250/5650 44 TB (RAW) Capacity Upgrade License Entitlement Certificate (BB975A) • Capacity Upgrade Start Here Guide
HPE StoreOnce 5250/5650 120 TB Drawer/Capacity Upgrade Kit	BB968A	HPE StoreOnce 5250/5650 storage enclosure and capacity upgrade kit, offering 72 TB of usable storage	<ul style="list-style-type: none"> • D6020 storage enclosure (5U) with 15 x 8 TB preconfigured data disks, 120 TB (RAW), redundant power supplied and fan modules. • Rack-mounting hardware kit • SAS cabling included • Accessory Kit featuring: <ul style="list-style-type: none"> • 4 x Power cords (with IEC 320 C13 plug for Rack PDU) • 1 x StoreOnce 5250/5650 120 TB Capacity Upgrade License Entitlement Certificate (BB969A) • Capacity Upgrade Start Here guide
HPE StoreOnce 5250/5650 88 TB Capacity Upgrade Kit	BB976A	HPE StoreOnce 5250/5650 upgrade kit, offering an additional 72 TB of usable storage	<ul style="list-style-type: none"> • 11 x 8 TB preconfigured data disks • 1 x StoreOnce 5250/5650 88 TB (RAW) Capacity Upgrade License Entitlement Certificate (BB977A) • Capacity Upgrade Start Here Guide

NOTE: Also refer to the Software Options section of this QuickSpecs to add licenses for:

- HPE StoreOnce Encryption
- HPE Cloud Bank Storage

Software Options

HPE StoreOnce Catalyst

HPE StoreOnce Catalyst is a data protection optimized interface unique to HPE StoreOnce Systems. It provides higher performance and more flexible control than traditional emulated tape (VTL) targets or NAS Shares. This means that you can benefit from:

- 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 StoreOnce systems and on multiple servers can optimize loading and utilization of backup hardware, network links and backup servers for faster deduplication and backup performance.
- Scale out with external object storage to augment the local System storage with the Cloud Bank extension to Catalyst.
- Faster time to backup to meet shrinking backup windows: up to 288 TB/hour* aggregate throughput.
- StoreOnce Catalyst prevents exposure of backup copies to ransomware.

Catalyst over Fibre Channel (CoFC) provides the same benefits as Catalyst over Ethernet (CoE) via a Fibre Channel fabric. Catalyst copy over Fibre Channel (CCoFC) utilizes Fibre Channel to transmit copies between StoreOnce Systems. CoFC and CCoFC are useful for customers that have invested in Fibre Channel infrastructure and/or do not want to expand their Ethernet capacity.

Cloud Bank Storage

Cloud Bank Storage is an extension to StoreOnce Catalyst that combines the low cost of object storage with the storage efficiency of StoreOnce deduplication. It connects to external object storage to provide capacity for the Catalyst Cloud Bank store. Using external storage in addition to the local System storage can triple the effective capacity of the StoreOnce System. Through cloud optimized data transfer and storage, Cloud Bank Storage minimizes cloud transfer and storage costs. The primary use case is to backup to a Catalyst Store and copy the backup data to a Cloud Bank store for low cost long term retention.

Many public cloud providers and on premise object storage systems are supported with Cloud Bank Storage.

See the [HPE StoreOnce Support Matrix](#) for details.

Cloud Bank Storage is available to extend all the current generation StoreOnce products covered in this QuickSpecs. It is not available for previous StoreOnce models.

Cloud Bank Storage is a licensed feature. The licenses are available in 1 TB increments. Licenses are added in any multiple of 1 TB up to the maximum Cloud Bank Storage capacity for that System. See the table below for the maximum supported Cloud Bank Storage capacities for each model. The licensed capacity is the capacity written to the all the Cloud Bank Storage after deduplication and compression.

Cloud Bank Storage Capacities

Cloud Bank Storage can treble the usable capacity of StoreOnce systems. The Cloud Bank Storage Detach option can further extend this, practically without limits, by enabling capacity to be recycled. System resources, particularly memory, are needed to support Cloud Bank Storage, in the same way that they are needed to support local storage. To use large capacities of Cloud Bank Storage a memory upgrade is required.

Software Options

Cloud Bank Storage Capacity

The maximum Cloud Bank Storage capacity that can be used is the maximum local storage capacity less the configured capacity as shown in the table below.

Model	Standard System Configuration	
	Maximum local storage	Maximum total usable Capacity using Cloud Bank Storage
StoreOnce 5650	1.7 PB	5.2 PB
StoreOnce 5250	864 TB	2.5 PB
StoreOnce 5200	216 TB	648 TB
StoreOnce 3640	108 TB	324 TB
StoreOnce 3620	31.5 TB	94.5 TB
StoreOnce VSA	500 TB	1.5 PB

Next generation products no longer require a memory upgrade

Cloud Bank Storage Detach Option

Many object storage vendors offer 'cold' tiers of that provide reduced cost. The performance of 'cold' tiers is not sufficient for Cloud Bank Storage operation. For Cloud Bank Storage Stores with backup data that will not need to be changed or updated the Store can be detached to enable it to be moved to a cold 'tier'.

The Cloud Bank Storage Detach option disconnects a Store from the host System and puts it into a read only state. It can then be moved, independently of StoreOnce or the backup application, to a 'cold' tier or other location for long term low cost retention. If the detached Store needs to be read for a restore, or other requirement, it has to be moved back to a supported storage tier and reconnected to a StoreOnce System. This can be the original StoreOnce System or to another StoreOnce.

Cloud Bank Storage Detach is a licensed feature. Licenses are available in 1 TB increments. Licenses are added, to a System with one or more Cloud Bank Storage licenses, in any multiple of 1 TB, with no upper limit. When a Store is detached, licenses equal to the capacity of the detached store are consumed and remain with detached Store. On detach the capacity of the detached store is available for other Cloud Bank stores.

Maximum Values for Cloud Bank Storage Licenses

Up to a total of 50 Cloud Bank Storage and Cloud Bank Storage Detach license keys can be added to a System. The capacity enabled by a license key is specified using the

<https://myenterpriselicense.hpe.com/cwp-ui/auth/login>.

The capacity is specified in 1 TB multiples. For the larger Systems, it is recommended to generate license keys with larger multiples of 1 TB to avoid this 50 license key limit becoming a constraint.

Cloud Bank Storage Support Entitlement

Support for Cloud Bank Storage is entitled as part of the HPE Support entitlement for the StoreOnce System the Cloud Bank Storage licenses are installed on. No additional HPE Support Services are available or required.

NOTE: *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 and storage configuration.
Note: Values may differ from those used in calculations in the sizer tool.

Software Options

HPE StoreOnce Catalyst StoreOnce Catalyst is supported by:

- HPE Data Protector (for supported versions see <http://www.hpe.com/Storage/StoreOnceSupportMatrix>)
- BridgeHead Software (for supported versions see <http://www.hpe.com/Storage/StoreOnceSupportMatrix>)
- Veritas NetBackup (via an HPE OST plug-in) available <http://www.hpe.com/storage/StoreOnce/VERITAS>
- Veritas Backup Exec (via an HPE OST plug-in) available <http://www.hpe.com/storage/StoreOnce/VERITAS>
- Oracle RMAN (via an HPE plug-in) available from <http://www.hpe.com/storage/StoreOnce/OracleRMAN>
- Microsoft SQL Server (via HPE plug-in) available from <http://www.hpe.com/storage/storeOnce/SQLServer>
- SAP HANA (via HPE plug-in) available from <http://www.hpe.com/storage/StoreOnce/SAP>

HPE StoreOnce Catalyst Cloud Bank Storage Ordering Information

Cloud Bank Storage is a licensed based on usable capacity. For all StoreOnce appliances and StoreOnce VSAs, 1 TB licenses are added, in any multiple of 1 TB, up to the maximum for that System.

For StoreOnce VSAs connected to an AutoPass License Server, licenses are added to the license server in 100 TB increments. This capacity is then allocated in 1 TB multiples to the StoreOnce VSAs connected to the license server.

The license entitlement is used to acquire the license key at: <https://myenterpriselicence.hpe.com/cwp-ui/auth/login>

For StoreOnce appliances and StoreOnce VSAs

License	E-LTU
HPE StoreOnce Cloud Bank Storage Read/Write for Gen4 Systems 1TB E-LTU	BC012AAE
HPE StoreOnce Cloud Bank Storage Detach for Gen4 Systems 1TB E-LTU	BC013AAE
License	LTU
HPE StoreOnce Cloud Bank Storage Read/Write for Gen4 Systems 1TB LTU	BC012A
HPE StoreOnce Cloud Bank Storage Detach for Gen4 Systems 1TB LTU	BC013A
For HPE AutoPass License Server (for allocation to connected VSAs)	
License	E-LTU
HPE StoreOnce Cloud Bank Storage Gen4 for VSA Server 100TB E-LTU	BC015AAE
HPE StoreOnce Cloud Bank Storage Detach Gen4 for VSA Server 100TB E-LTU	BC016AAE
License	LTU
HPE StoreOnce Cloud Bank Storage Gen4 for VSA Server 100TB LTU	BC015A
HPE StoreOnce Cloud Bank Storage Detach Gen4 for VSA Server 100TB LTU	BC016A
https://myenterpriselicence.hpe.com/cwp-ui/auth/login	

Catalyst Data Immutability

Catalyst Stores can be configured with a data immutability period. During the specified period, the backup application(s) accessing the Store will not be able to delete backups that have been retained for less than this specified period. This provides additional protection against malicious or unintended backup data deletion where the role of backup application administrator and StoreOnce System administrator are filled by different people.

See the [HPE StoreOnce Support Matrix](#) for backup software specific support for Catalyst data immutability.

Software Options

HPE StoreOnce Replication

Hewlett Packard Enterprise data replication feature includes replication bandwidth limiting functionality, constraining 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.

HPE Federated Management

The new GUI includes: Federated Dashboard, System Dashboard, Data Services (Catalyst, NAS, VTL), Event log, Reports, Settings (add user privileges, user preferences, Active Directory/LDAP, email notification, licenses, etc.) and help.

Federated Management provides drill-down reporting into deduplication ratio, capacity usage for StoreOnce Catalyst stores, VTL libraries, NAS shares, read/write throughput, replication throughput, stream count, CPU, memory, disk I/O and networking FC channel utilization, threshold alerts via email notification and CSV exporting capability for up to 20 Gen4 systems.

HPE StoreOnce REST API SDK

The StoreOnce REST API SDK provides a well-defined RESTful application programming interface (API) that customers can use for integrating and automating reporting/management capabilities with StoreOnce appliances. The SDK essentially delivers a programming interface for polling StoreOnce systems with reporting queries at a desired granularity, and the information extracted from the appliances can then be integrated with the customer's own reporting tool allowing for considerable flexibility in monitoring large StoreOnce environments. The SDK also allows customers to automate select management tasks such as creating and deleting backup targets (StoreOnce Catalyst stores, VTL libraries, NAS shares) and this capability can be integrated with the customer's own management tools. The StoreOnce SDK can be downloaded from

<https://hewlettpackard.github.io/storeonce-rest/index.html>

HPE StoreOnce Security/Encryption

HPE StoreOnce security provides a Data at Rest and Data in Flight encryption solution, secure Data Shredding features and Data Immutability for data privacy, confidentiality, and integrity of your critical business data while supporting compliance requirements. These are configurable on a by application or by store basis ensuring that you have maximum control over the data you are protecting.

- HPE StoreOnce systems and VSA use cryptographic algorithms and modules that have completed a FIPS 140-2 CAVP/CMVP (Cryptographic Algorithm Validation Program/Cryptographic Module Validation Program) validation. These validated modules are active when the product is configured in FIPS mode thus HPE StoreOnce meets your FIPS 140-2 requirements by:
 - Integrating NIST validated cryptographic module(s) into the product to ensure that critical cryptography uses the module(s) to provide cryptographic services;
 - Using FIPS-validated cryptographic ciphers/functions
- HPE StoreOnce Data at Rest encryption feature is a software-based solution which provides protection against unauthorized access to data through a stolen, discarded or replaced disk.
 - Encryption occurs after data has been deduplicated and prior to writing the data onto disk
 - Encryption is enabled on a per store basis (StoreOnce Catalyst, VTL, and NAS targets)
 - Meets compliance needs using industry standard Advanced Encryption Standard (AES)-256 encryption algorithm
 - It enables the StoreOnce System to request encryption keys from MicroFocus ESKM version 4.0 or greater or Gemalto SafeNet's KeySecure key manager using KMIP protocol for centralized encryption key management.
 - Local Key Management is included with the ability to backup and restore keys
- HPE StoreOnce Data in Flight encryption feature protects against unauthorized access of data being transferred over the wire between devices.
 - Data in Flight encryption via IPSec is supported on Low Bandwidth StoreOnce Catalyst Copy and Replication only. Encryption is enabled via IPSec. In addition, write performance may be impacted, however performance improvements should be seen after first ingest.
- HPE StoreOnce Secure Erase feature protects against unauthorized recovery of deleted data by allowing customers to securely and permanently shred confidential data.
 - Secure Erase can be carried out on all data backed up to a VTL, NAS or StoreOnce Catalyst Store
 - The HPE StoreOnce Secure Erase feature meets industry standards of NIST SP 800-88
 - Secure Erase can erase with 1-pass or multiple random overwrites of 3, 5 or 7 passes

Software Options

HPE StoreOnce Data Immutability mitigates risk with added protection against malicious or accidental backup data deletion (see Catalyst Data Immutability for more information)

NOTE: Federal Information Processing Standard 140-2 (FIPS 140-2), defines the technical requirements to be used by Federal Agencies when cryptographic-based security is required for protection of sensitive or valuable data.

For more details of the FIPS Security Policy please go to

<https://csrc.nist.gov/CSRC/media/projects/cryptographic-module-validation-program/documents/security-policies/140sp3018.pdf>

Ordering Information A license is required to enable the encryption capabilities for each HPE StoreOnce system or VSA. All other security features do not require a license.

Model / license for

HPE StoreOnce Encryption E-LTU

HPE StoreOnce VSA Server Encryption E-LTU

Model / license for

HPE StoreOnce Encryption LTU

HPE StoreOnce VSA Server Encryption LTU

Encryption License eLTU Part numbers

BB994AAE

BC007AAE

Encryption License

BB994A

BC007A

Technical Specifications

HPE 10GbE and 16/32Gb FC Connectivity

The following cables are recommended for HPE 10GbE and 16/32Gb Fibre Channel connectivity.

NOTE: Optical 16Gb FC, 32Gb FC, and 10GbE SFP transceivers are included in the StoreOnce kits. Separate purchase NOT required.

HPE 25GbE Connectivity

The following transceiver and cables are required for HPE 25GbE SFP connectivity.

HPE 25Gb SFP28 SR 100m Transceiver

845398-B21

NOTE: Optical 25GbE SFPs are NOT included in the StoreOnce 10/25GbE Network Card kits. Separate purchase required. Two(2) per card.

Fiber Optic Cables

The following cables are recommended for all 16/32Gb Fibre Channel and 10/25GbE SFP connectivity.

HPE OM3 Cables

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

HPE PremierFlex OM4 Fiber Optic Cables

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A

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

Direct Attach Copper Cables

The following cables are supported for 25GbE and 10GbE SFP direct attach copper connectivity.

25GbE SFP Connectivity

HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable	844477-B21
HPE 25Gb SFP28 to SFP28 5m Direct Attach Copper Cable	844480-B21

10GbE SFP Connectivity (New H3C switches)

HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C

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

Direct Attach CAT 6A Cables

The following cables are recommended for 10GBASE-T connectivity.

Direct Attach Cables

HPE Synergy Frame Link Module CAT6A 1.2m Cable	861412-B21
HPE Synergy Frame Link Module CAT6A 3m Cable	861413-B21

NOTE: Direct Attach Cable (DAC) must be purchased separately for CAT 6A twisted pair environments.

Technical Specifications

Flexible I/O Options – Network/Fibre Channel Cards

HPE StoreOnce Appliances enable users to choose up to four I/O optional interfaces from the following:

- 10/25Gb Ethernet
- 10GBaseT Ethernet
- 16Gb Fibre Channel
- 32Gb Fibre Channel

Any combination of interfaces can be selected but must be installed in the correct slots. All flexible I/O cards have dual ports. The interfaces are licensed and entitlement certificated are supplied with the product. Factory installed interfaces have licenses pre-installed. Interfaces are supported on StoreOnce 3620/3640/5200/5250 and 5650

Purchasing information:

HPE StoreOnce Gen4 10/25Gb SFP Network Card (**NOTE: 10Gb SFP only supplied with product.**)

BB982A

25GbE SFP (**required for 25GbE with BB982A**)

845398-B21

HPE StoreOnce Gen4 10GbE-T Network Card

BB984A

HPE StoreOnce Gen4 16Gb Fibre Channel Network Card

BB986A

HPE StoreOnce Gen4 32Gb Fibre Channel Network Card

BB990A

	StoreOnce VSA 4 TB – 500 TB	StoreOnce 3620	StoreOnce 3640	StoreOnce 5200	StoreOnce 5250	StoreOnce 5650
Form Factor	Virtual appliance	2U Rack	2U up to 6U	4U up to 14U	4U up to 14U	7U up to 22U
Total Capacity (RAW)	500 TB	48 TB	144 TB	288 TB	560 TB / 1120TB	1120 TB / 2240
Max Local Capacity (Usable***)	Up to 500 TB	31.5 TB	108 TB	216 TB	864 TB	1.7 PB
Max Cloud Bank Storage capacity	1 PB	63 TB	216 TB	432 TB	1.7 PB	3.5 PB
Max Total capacity	1.5 PB	94.5 TB	324 TB	648 TB	2.5 PB	5.2 PB
Logical capacity with 20:1 deduplication	30 PB	1.9 PB	6.48 PB	13 PB	50 PB	104 PB
Fan-in Max	8	24	24	32	32	50
Write Performance	13 TB/hr	6 TB/hr	7 TB/hr	17 TB/hr	22 TB/hr	27 TB/hr
	(max aggregated data transfer rate using VTL)					
Read Performance	9 TB/hr	5 TB/hr	6 TB/hr	17 TB/hr	18 TB/hr	18 TB/hr
	(max aggregated data transfer rate using VTL)					
StoreOnce Catalyst Performance	36 TB/hr	14 TB/hr	18 TB/hr	31 TB/hr	41 TB/hr	47 TB/hr
Emulation type	For D2DBS Generic Libraries, tape drive types emulated are Ultrium-VT, LTO-2 thru LTO-7 For EML and ESL E Series Libraries, tape drive types emulated are LTO-2 thru LTO-7 For IBM-TS3500 Libraries, tape drive types emulated are IBM, LTO-3 and LTO-5 For MSL G3 Series Libraries, tape drive types emulated are LTO-2 thru LTO-7					
Target types	HPE StoreOnce Catalyst, Virtual Tape Library (VTL) NAS (CIFS and NFS)					
Max targets (Catalyst, VTL NAS combined)	32	24	36	64	64	192
Max Drives per Appliance/Concurrent streams	256	128	192	512	512	1024
Max VTL Cartridges per Appliance	131,072	24,576	147,456	1,048,576	1,048,576	3,145,728

Technical Specifications

Max VTL cartridges per Library	4,096	1,024	4,096	16,384	16,384	16,384
I/O standard	n/a	4x 1GbitE				
Disk drives	4 TB	4 TB	4 TB	4 TB	4/8 TB	4/8 TB
Number of Disk Drives	n/a	6	12	0 in base/12	0 in base/70	0 in base/70

NOTE: *** Actual usable capacity for customer data storage is dependent upon drive formatting, log file meta data size, housekeeping backlog and may differ from that which is used in calculations in the sizer tool.

¹: See the <http://www.hpe.com/Storage/StoreOnceSupportMatrix>

StoreOnce VSA pages for more information.

Power Requirements StoreOnce 5650

			Qty				208V				220V				240V			
System	D6020	HDD	A	W	VA	BTU/hr	A	W	VA	BTU/hr	A	W	VA	BTU/hr				
Base	1	15	7.3	1486	1511	5066	7	1484	1520	5058	6.4	1485	1531	5064				
1 Enc Max	1	70	10.7	2207	2227	7526	10.2	2204	2227	7514	9.4	2204	2241	7516				
2 Enc Min	2	85	14.4	2954	2997	10070	13.7	2949	3008	10056	12.7	2951	3031	10063				
2 Enc Max	2	140	17.9	3675	3713	12531	16.9	3669	3715	12511	15.6	3671	3741	12516				
3 Enc Min	3	155	21.6	4421	4483	15076	20.5	4415	4495	15053	18.9	4418	4532	15063				
3 Enc Max	3	210	25	5143	5199	17536	23.7	5135	5202	17509	21.9	5137	5242	17516				
4 Enc Min	4	225	28.7	5889	5969	20081	27.2	5880	5982	20050	25.2	5884	6032	20063				
4 Enc Max	4	280	32.2	6610	6685	22541	30.5	6600	6690	22506	28.1	6603	6742	22516				

Worst case power usage when server and enclosure fans operate at max speed.

RAID Support	n/a	Hardware RAID 6												
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StoreOnce 5250

		Qty				208V				220V				240V			
System	D6020	HDD	A	W	VA	BTU/hr	A	W	VA	BTU/hr	A	W	VA	BTU/hr			
Base	1	15	6.8	1377	1402	4694	6.5	1375	1410	4687	6	1376	1422	4692			
1 Enc Max	1	70	10.2	2098	2118	7154	9.7	2095	2119	7143	8.9	2096	2192	7145			
2 Enc Min	2	85	13.9	2845	2888	9699	13.2	2840	2898	9684	12.2	2843	2923	9692			
2 Enc Max	2	140	17.4	3566	3604	12159	16.4	3560	3606	12140	15.2	3562	3633	12145			

Worst case power usage when server and enclosure fans operate at max speed.

Technical Specifications

StoreOnce 5200

System	Qty		208V				220V				240V			
	D3650	HD D	A	W	VA	BTU/hr	A	W	VA	BTU/hr	A	W	VA	BTU/hr
Base	1	12	4.3	877	891	2991	4.1	876	893	2987	3.8	877	900	2988
1 Enc Expansion	2	24	5.7	1140	1166	3888	5.4	1139	1171	3882	5	1140	1181	3886
2 Enc Expansion	3	36	7	1403	1442	4785	6.6	1401	1449	4778	6.1	1403	1464	4784
3 Enc Expansion	4	48	8.3	1666	1717	5681	7.9	1664	1727	5673	7.3	1666	1748	5681
4 Enc Expansion	5	60	9.6	1929	1992	6578	9.2	1927	2005	6569	8.5	1930	2032	6579
5 Enc Expansion	6	72	11	2192	2268	7475	10.4	2189	2283	7465	9.7	2193	2315	7477

Worst case power usage when server and enclosure fans operate at max speed.

StoreOnce 3640

System	Qty		208V				220V				240V			
	D3650	HDD	A	W	VA	BTU/hr	A	W	VA	BTU/hr	A	W	VA	BTU/hr
Base	0	12	3	625	626	2130	2.9	624	626	2126	2.6	624	626	2126
1 Enc Expansion	1	24	4.4	888	902	3026	4.1	886	903	3022	3.8	887	910	3024
2 Enc Expansion	2	36	5.7	1151	1177	3923	5.4	1149	1181	3917	5	1150	1194	3921

Worst case power usage when server and enclosure fans operate at max speed.

StoreOnce 3620

System	Qty		208V				220V				240V			
	HDD	A	W	VA	BTU/hr	A	W	VA	BTU/hr	A	W	VA	BTU/hr	
Base	6	2.7	544	546	1854	2.5	543	545	1851	2.3	543	546	1852	
1 Disk Pack Expansion	12	3	608	610	2074	2.8	607	609	2070	2.6	607	610	2070	

Worst case power usage when server fans operate at max speed.

Technical Specifications

Power Requirements (per power supply)

Range Input Voltage 100 to 120VAC
StoreOnce 3620/3640/5200/5250/5650 and base expansion 200 to 240VAC

Rated Input Frequency

StoreOnce 3620/3640/5200/5250/5650 and base expansion 50 to 60 Hz

Rated Input Current

StoreOnce 3620 Base configuration 3.0A (at 100VAC)
see table above for 240VAC

Rated Input Current

StoreOnce 3640 Base configuration 3.7A (at 100VAC)
see table above for 240VAC

Rated Input Current

StoreOnce 5200 - Base configuration 6.2A (at 100VAC)
StoreOnce 5200 - Max Configuration 17.3A (at 100VAC)
see table above for 240VAC

Rated Input Current

StoreOnce 5250 - Base configuration 7.4A (at 100VAC)
StoreOnce 5250 - Max configuration 26.3A (at 100VAC)
see table above for 240VAC

Rated Input Current

StoreOnce 5650 - Base configuration 8.7A (at 100VAC)
StoreOnce 5650 - Max configuration 48.7A
see table above for 240VAC

Acoustic Noise StoreOnce 3620/3640 Head unit

Idle LWAd 4.4B
(disks spinning) LpAm 31 dBA
Operating LWAd 4.5B
(random seeks to disks) LpAm 33 dBA

Acoustic Noise StoreOnce 5200/ 5250/5650

Idle LWAd 4.6B

Head unit

(disks spinning) LpAm 35 dBA
Operating LWAd 4.6B
(random seeks to disks) LpAm 35 dBA

Acoustic Noise StoreOnce 3620/3640

Idle	LWAd 4.4B
(disks spinning)	LpAm 31 dBA
Operating	LWAd 4.5B
(random seeks to disks)	LpAm 33 Dba

Acoustic Noise StoreOnce 5200

Idle	LWAd 4.6B
(disks spinning)	LpAm 35 dBA
Operating	LWAd 4.6B
(random seeks to disks)	LpAm 35 dBA

Physical Dimensions

Technical Specifications

StoreOnce System		3620	3640	5200	5250	5650
	Form factor	2U	2U	4U	7U	7U
Dimensions (H x W x D)	Out of box	8.73 x 44.55 x 73.02 cm (3.44 x 17.54 x 28.75 in)		17.46 x 44.8 x 67.94 cm (6.88 x 17.64 x 26.75 in)	30.83 x 44.7 x 89.12 cm (12.2 x 17.6 x 35.1 in)	
	Shipping	26 x 60 x 96 cm (10.4 x 24 x 38.4 in)		53.8 x 60 x 96 cm (21.53 x 34 x 38.4 in)	61 x 81 x 109 cm (24.1 x 31.9 x 43 in)	
Weight	Out of box	25 kg (55 lbs)	29 kg (64 lbs)	46.2 kg (102 lbs)	107 kg (236 lbs)	
	Shipping	36 kg (79.4 lbs)	40 kg (88.2 lbs)	56.2 kg (123.5 lbs)	130 kg (286.6 lbs)	
Environmental	Operating temperature	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).				
	Shipping temperature	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).				
	Operating humidity	8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing				
	Shock and vibration	Levels of shock the product can withstand with no damage being incurred. The values represent a peak input acceleration during an 11ms half-sine shock pulse. <ul style="list-style-type: none"> Operating: 2 G's Non-operating: 15 G's Levels of vibration the product can withstand with no damage being incurred. The values represent a flat random vibration input acceleration profile across the given frequency range. <ul style="list-style-type: none"> Operating: Random vibration at 0.000075 G²/Hz, 10Hz to 300Hz, (0.15 G's nominal). Non-operating: Random vibration at 0.0005 G²/Hz, 10Hz to 500Hz, (0.5 G's nominal). NOTE: Levels of shock and vibration are for base units/server only.				
StoreOnce System Upgrade Kits:		StoreOnce 3620 24 TB Capacity Upgrade Kit	StoreOnce 3640 48 TB Capacity Upgrade Kit	StoreOnce 5200 48 TB Capacity Upgrade Kit	StoreOnce 5250/5650 44 TB/88 TB Capacity Upgrade Kit	StoreOnce 5250/5650 60 TB/120 TB Drawer Upgrade Kit
Dimensions (H x W x D)	Form factor	3.5" LFF Disks	2U	2U	3.5" LFF Disks	5U
	Out of box	N/A	8.7 x 44.8 x 59.8 cm (3.44 x 17.64 x 23.54 in)	8.7 x 44.8 x 59.8 cm (3.44 x 17.64 x 23.54 in)	N/A	22.1 x 44.7 x 89.12 cm (8.8 x 17.6 x 35.1 in)

Technical Specifications

	Shipping	54.4 x 24.1 x 90.2 cm (23 x 9.5 x 35.5 in)	27.8 x 59.3 x 95.3 cm (11.13 x 23.75 x 38.12 in)	27.8 x 59.3 x 95.3 cm (11.13 x 23.75 x 38.12 in)	54.4 x 24.1 x 90.2 cm (23 x 9.5 x 35.5 in)	54 x 61 x 109 cm (21.3 x 24.1 x 43 in)
Weight	Out of box	4.5 kg (10 lbs)	26.2 kg (57.8 lbs)	27.2 kg (60 lbs)	11.4 kg (25.1 lbs)	88.1 kg (194.2 lbs)
	Shipping	7 kg (15.4 lbs)	34.4 kg (75.8 lbs)	35.4 kg (78 lbs)	14 kg (30.9 lbs)	106.1 kg (234 lbs)

Service and Support

HPE Pointnext Support Services and Warranty Information

Protect your business beyond warranty with HPE Support Services

HPE Pointnext Services delivers confidence, reduces risk and helps customers realize agility and stability. Our integrated portfolio of Services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. HPE Pointnext Services enable you to choose the right service level, length of coverage and response time as you purchase your new storage solution, giving you full entitlement for the support for need for your IT and business.

Warranty

Hewlett Packard Enterprise provides a 3 year parts exchange, 3 year labor, 3 year on site, normal business hours, next business day response for StoreOnce 3620, 3640, 5200, 5250 and 5650 systems, plus 9x5 phone support for the duration of the warranty.

Recommended Support Services StoreOnce 3620, 3640 and 5200

Optimized Care 3620, 3640 and 5200

HPE Proactive Care with 6 hour call-to-repair commitment, three year Support Service

HPE Proactive Care gives customers an enhanced call experience plus helps prevent problems and maintains IT stability by utilizing tailored, proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our highest level of hardware support - HPE's 24x7, six hour hardware call-to-repair. HPE is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable storage systems.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Standard Care 3620, 3640 and 5200

HPE Proactive Care with 24x7 coverage, three year Support Service

HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. <https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Basic Care

3620, 3640 and 5200

HPE Foundation Care 24x7, three-year Support Service

HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Recommended Support Services StoreOnce 5250 and 5650

Optimized Care 5250 and 5650

HPE Proactive Care Advanced - 24x7 coverage, three year Support Service + 20 service credits for 1st year

This services helps achieve a higher return on your product investment with personalized support from a local assigned Account Support Manager who will share best practice advice and personalized recommendations designed to help improve availability and performance to increase stability and reduce unplanned downtime. Leverage your system's ability to connect to HPE for pre-failure alerts, automatic call logging and parts dispatch. For business critical incidents, this service offers critical event management to reduce mean time to resolution. This recommendation provides 24x7 coverage with four-hour response for hardware and collaborative support that offers two-hour callback for supported software issues. Collaborative software management is included with independent software vendors unless you have your software support from HPE where we own all cases from start through to resolution.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA5-3259ENW&cc=us&lc=en>

Service and Support

Standard Care 5250 and 5650

HPE Proactive Care with 24x7 coverage, three year Support Service + 20 services credits for 1st year

HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. <https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Basic Care 5250 and 5650

HPE Proactive Care with 24x7 coverage, three year Support Service + 10 services credits per year

HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. <https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

HPE Support Service Credits

Service Credits offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to HPE. Achieve up to 77% reduction in down time, near 100% diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.

NOTE: HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

Discover, plan, and design

Choose from a rich portfolio of services to make the most of HPE StoreOnce Storage, so you can efficiently and affordably consolidate, manage, and extract value from unstructured data.

Start here to understand your data protection options. Next, develop a methodical plan and design the optimal HPE StoreOnce Storage solution that addresses your unique technology requirements.

HPE Backup Recovery Impact Analysis - Focus placed on service requirements and design as the key to success for gaining a clear understanding of the role of increasingly diverse data protection strategies.

<https://h20195.www2.hpe.com/V2/getpdf.aspx/4AA3-8083ENW.pdf>

Deploy and integrate

Implement HPE StoreOnce Storage correctly-right from the start-so you can count on reduced risk and accelerated deployment, while implementing a best-practice configuration from day one. Then move on to proactively leverage products, tools, and technology to avoid problems and optimize performance. In this way, you get the most out of your HPE StoreOnce Storage investment, as you keep your staff certified through project-based or residency services.

Service and Support

Flexible Installation and Startup SKU's and option bands

HPE StoreOnce 3620, 3640, 5200, 5250 and 5650 System Installation and Startup service

Flexible Service SKU	Description	Fixed service SKU
	HPE Storeonce 36xx Capacity Upgrade Startup Service	H7RC8E
	HPE Storeonce 36xx Capacity Upgrade Startup Service	H7RC8E
	HPE Storeonce 5200 Startup Service	H7RC9E
	HPE Storeonce 5200 Capacity Upgrade Startup Service	H7RD0E
Description		Flexible Service SKU
	HPE StoreOnce 36xx Stup SVC	HA124A1#5VF
	HPE StoreOnce 36xx Cap Upg Stup SVC	HA124A1#5VG
	HPE StoreOnce 5200 Stup SVC	HA124A1#5VL
	HPE StoreOnce 5200 Cap Upg Stup SVC	HA124A1#5VN
	HPE StoreOnce 52/5650 Stup SVC	HA124A1#5WQ
	HPE StoreOnce Addl 1 day Startup SVC	HA124A1#5V0
	HPE StoreOnce 52/5650 Drwr Upg Stup SVC	HA124A1#5WS
	HPE StoreOnce 52/5650 Cap Upg Stup SVC	HA124A1#5X2

Installation and Startup Service: <https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA2-9557ENW.pdf>

Advanced start-up services

HPE StoreOnce Catalyst and Replication Solution Service

HPE StoreOnce Catalyst Solution and Replication Solution Services. They provide a best practice configuration and verification service in the Customer environment to optimize the benefits of deploying Replication and/or Catalyst functionality. These service are available in 3 levels. Within the scope of the service, StoreOnce VSA configuration can be part of the solution service.

Description	Service SKU
HPE StoreOnce Catalyst solution service lvl1	HA124A1#5TY
HPE StoreOnce Catalyst solution service lvl2	HA115A1#5TZ
HPE StoreOnce Catalyst solution service lvl3	HA115A1#5UO
HPE StoreOnce Replication solution service lvl1	HA124A1#58E
HPE StoreOnce Replication solution service lvl2	HA115A1#58F
HPE StoreOnce Replication solution service lvl3	HA115A1#58G

NOTE: One service is required for each site when the appropriate licenses are ordered.

Catalyst Solution Service: <http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-4489ENN.pdf>

Replication Solution Service: <http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-3945ENW.pdf>

HPE StoreOnce single node Catalyst Startup Service

Combined with the HPE StoreOnce 36xx, 5200 and 52/5650 Installation and Startup Service, the HPE StoreOnce single node Catalyst Startup Service provides implementation and verification of the backup and remote copy features of HPE StoreOnce Catalyst. Within the scope of the service, StoreOnce VSA configuration can be part of the startup service.

Description	Service SKU
HPE StoreOnce single node Catalyst startup SVC	HA124A1#5T7

NOTE: One service is required for each site when the appropriate licenses are ordered.

Catalyst single node startup service: <http://h20195.www2.hpe.com/v2/GetPDF.aspx/4aa4-9988ENW.pdf>

Service and Support

HPE StoreOnce integration service

The StoreOnce Integration Services are intended to provide proven HPE best practice integration between the Customer's enterprise backup application and StoreOnce. This service helps customers utilize the advanced features of their backup software with StoreOnce for an optimized end-to-end solution.

Description	Service SKU
HPE StoreOnce Integration Level 1 SVC	H8E02A1
HPE StoreOnce Integration Level 2 SVC	H8E03A1

<https://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA6-3678ENW.pdf>

HPE StoreOnce Recovery Manager Central software installation and startup service

The HPE StoreOnce Recovery Manager Central software installation and startup service provides deployment of the HPE StoreOnce Recovery Manager Central software, with features designed to both help ensure proper installation in the storage environment and increase the benefit from the storage investment.

Description	Flexible (Fixed) Service SKU
HPE RMC for 3PAR and StoreVirtual VSA	HA124A1#5WD (U7PE6E)
HPE RMC-V for 3PAR	HA124A1#5WE (U7PE7E)
HPE RMC-S for 3PAR	HA124A1#5ZB (U7VG3E)
HPE RMC-O for 3PAR	HA124A1#5ZG (U7VG6E)
HPE RMC-E for 3PAR	HA124A1#5SD (U7VG2E)
HPE RMC-SH single node for 3PAR	HA124A1#5F0 (H2UT0E)
HPE RMC Soltn/SAP HANA on 3PAR Lvl1 SVC	H5UR7A1
HPE RMC Soltn/SAP HANA on 3PAR Lvl2 SVC	H7RF6A1
HPE RMC Soltn/SAP HANA on 3PAR Lvl3 SVC	H7RF7A1
HPE RMC Soltn/SAP HANA/3PAR Cust Sow SVC	H1WV1A1

Provides deployment of HPE RMC software with features designed to help enable proper installation in the customer's storage environment and increase the benefit from the storage investment

<http://h20195.www2.hpe.com/v2/GetPDF.aspx/4aa5-6254ENW.pdf>

HPE Recovery Manager Central (RMC) Solution for SAP HANA® on HPE 3PAR service is designed to assist in achieving a higher speed and lower cost backup in comparison to traditional backup applications

<https://www.hpe.com/h20195/v2/getpdf.aspx/a00016443enw.pdf>

Service and Support

HPE StoreOnce System Health Check Service

Proactive review of your HPE StoreOnce Storage solution or other HPE deduplication systems, including a review of operational, capacity, and performance data so you can rest assured that everything is operating effectively.

	Support	Per Event	Contractual
Description	Service SKU		
StoreOnce System Health Check Service	HM006A1	HM006AE	HM006AC

Proactive review of your HPE StoreOnce Storage solution or other HPE deduplication systems, including a review of operational, capacity, and performance data so you can rest assured that everything is operating effectively.

<https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA4-3821ENW.pdf>

HPE StoreOnce Firmware Analysis and Implementation Service

HPE Firmware Analysis and Update Implementation Services are technical services that provides the analysis and implementation of firmware updates, taking into account the relevant revision dependencies within the IT environment.

	Support	Per Event	Contractual
Description	Service SKU		
StoreOnce Firmware update analysis service	HM001A1	HM001AE	HM001AC
StoreOnce Firmware update implementation service	HM002A1	HM002AE	HM002AC

Provides the analysis and implementation of firmware updates, taking into account the relevant revision dependencies within the IT environment.

<http://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA4-7728ENW.pdf>

HPE Storage Data Migration Services - End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network or network attached storage environment and using innovative software to help you migrate to HPE storage quickly and efficiently.

For more information on HPE Services and Support

To learn more on HPE Storage Services, visit: <http://www.hpe.com/services/storage>

Or contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner

Summary of Changes

Date	Version History	Action	Description of Change
06-May-2019	Version 34	Changed	Overview, HPE StoreOnce Backup Models, Common Features and Benefits, HPE StoreOnce Systems, Technical Specifications and Service and Support sections were updated.
04-Mar-2019	Version 33	Changed	Technical Specifications section was updated.
04-Feb-2019	Version 32	Changed	HPE StoreOnce VSA Backup, Software Options and Technical Specifications sections were updated.
03-Dec-2018	Version 31	Changed	Overview, HPE StoreOnce Backup Models, Common Features and Benefits, HPE StoreOnce Systems, Software Options, Technical specifications and Service and Support sections were updated
15-Oct-2018	Version 30	Changed	Overview, HPE StoreOnce Backup Models, Common Features and Benefits, HPE StoreOnce Systems, Software Options, Technical specifications and Service and Support sections were updated
01-Oct-2108	Version 29	Changed	Overview, HPE StoreOnce backup, HPE StoreOnce system, Standard Features, HPE StoreOnce VSA backup, Software Options and Technical Specifications sections were updated
07-May-2018	Version 28	Changed	Entitlement Certificate was updated to Capacity Upgrade License Entitlement Certificate. Software options section was revised.
02-Apr-2018	Version 27	Changed	Technical Specifications was revised SKU descriptions were updated.
		Removed	Obsolete SKUs were removed.
05-Mar-2018	Version 26	Changed	The http://www.hpe.com/Storage/DAPRCompatibility URL was updated to: http://www.hpe.com/Storage/StoreOnceSupportMatrix .
05-Feb-2018	Version 25	Changed	Overview section was revised.
08-Jan-2018	Version 24	Changed	Changes made throughout the QuickSpecs.
04-Dec-2017	Version 23	Changed	Changes made throughout the entire document.
25-Sep-2017	Version 22	Changed	Changes made throughout the entire document.
07-Aug-2017	Version 21	Changed	Changes made throughout the entire document.
11-Jul-2017	Version 20	Changed	Changes made throughout the QuickSpecs.
05-Jun-2017	Version 19	Changed	Changes made throughout the entire document.
13-Feb-2017	Version 18	Changed	Changes made throughout the entire document.
26-Sep-2016	Version 17	Changed	Changes made throughout the entire document.
16-Sep-2016	Version 16	Changed	Changes made to the VSA Section.
27-May-2016	Version 15	Changed	Changes made to cover new perpetual StoreOnce VSA LTUs and the added 20 TB LTU. Clean up HP → HPE. Cleaned up units e.g. 20 TB → 20 TB (for consistency).
25-Apr-2016	Version 14	Changed	Changes made throughout the entire document.
31-Mar-2016	Version 13	Changed	Changes made throughout the entire document.
17-Dec-2015	Version 12	Changed	Fixed some typos from last version.
01-Dec-2015	Version 11	Changed	Changes made throughout the entire document.
24-Jul-2015	Version 10	Changed	Changes made throughout the entire document.
19-Jun-2015	Version 9	Changed	Changed made to the StoreOnce VSA Backup and the Software Options Sections.
08-May-2015	Version 8	Changed	Corrected some SKU numbers for the StoreOnce VSA and corrected some URLs.
06-Apr-2015	Version 7	Changed	Changed the version to 7 to match Product Bulletin.
30-Mar-2015	Version 6	Changed	Changes made throughout the entire document.
30-Jan-2015	Version 5	Changed	Edits made to 4900 support shelf, 6500 what's in the box contents and 'What's new' June '14 date removal.
09-Jan-2015	Version 4	Changed	Changes to the HPE StoreOnce 6600 purchasing information table.
15-Sep-2014	Version 3	Changed	Update the firmware version number of the 6500 model.
18-Aug-2014	Version 2	Changed	Changes were made throughout the Overview, Technical Specifications, and Software Options Sections. Product Descriptions Updated.
10-Jun-2014	Version 1	New	New QuickSpecs

Summary of Changes



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