

Overview

HPE StoreVirtual VSA Software

For developing converged compute and storage solutions in virtualized environments, HPE StoreVirtual VSA Software delivers high performance shared storage on your choice of servers and SSD or HDD media. Built on proven data services technology, HPE StoreVirtual VSA delivers software-defined storage by virtualizing up to 50TB of disk capacity per server running VMware vSphere, Microsoft Hyper-V or Linux KVM. The HPE StoreVirtual VSA eliminates the need for external shared storage required to implement advanced hypervisor features.

HPE StoreVirtual VSA uses scale-out, distributed clustering to provide a pool of storage with enterprise storage features and simple management at reduced cost. Multiple StoreVirtual VSAs running on multiple servers create a clustered pool of storage with the ability to make data highly available by protecting volumes with Network RAID. Adding more StoreVirtual VSAs to the cluster grows the storage pool. With Network RAID, blocks of data are striped and mirrored across multiple StoreVirtual VSAs, allowing volumes and applications to stay online in the event of disk, storage subsystem or server failure. iSCSI connectivity on HPE StoreVirtual VSA supports the use of the storage pools by hypervisors as well as other applications. HPE StoreVirtual VSA fully supports 1GbE and 10GbE environments for connections to both virtual and physical hosts.

Leverage existing converged infrastructure with StoreVirtual VSA and enable higher levels of protection for business critical data services. Easy to use installation wizards assist in the deployment of HPE StoreVirtual VSA on VMware vSphere or Microsoft Hyper-V. Using the Centralized Management Console, StoreVirtual VSA can be deployed at remote sites and managed centrally as a virtual storage system.

What's New

- HPE StoreVirtual VSA Ready Nodes offer tested reference configurations with ProLiant DL servers
 - Integration with HPE Recovery Manager Central (RMC) for seamless data movement to StoreOnce Backup appliances & StoreOnce VSA, and bi-directional replication with 3PAR StoreServ arrays (Peer Copy)
 - 4TB, 10TB and 50TB no-term licenses with 3 years of 7x24 technical support embedded
 - Integration with HPE VM Explorer for centrally managed backup and replication for virtual environments
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Standard Features

Benefits

- Gain the benefits of an array without requiring a physical storage infrastructure by virtualizing storage resources in a server – reduces cost, footprint, power and cooling
- Take advantage of hypervisor advanced features such as vMotion and Live Migration without purchasing external storage system
- Create a storage pool which is available to hypervisors and other applications via iSCSI
- Comes complete with all storage management features - no additional software needed
- Easily build a clustered, highly available converged storage pool on existing servers
- Utilize internal (SATA, MDL, SAS, SSD, PCIe Flash) and external (iSCSI, FC, SAS) storage options supported by VMware, Microsoft or Linux as back end storage
- Enable disaster recovery (DR) solutions for remote or branch offices that do not have budget, space, or power for servers and a traditional array
- Easily replicate volumes between StoreVirtual VSA and 3PAR with Peer Copy
- Reduce cost and complexity with integrated backup to HPE StoreOnce systems using HPE RMC software

Product Features

- Easy to deploy and manage with the HPE StoreVirtual Centralized Management Console
- Installs easily on any x86 server supported by VMware vSphere, Microsoft Hyper-V or Linux KVM with few system requirements
- Scale storage by clustering disks in multiple servers into single pool of storage
- Network RAID synchronous replications protects data across systems for redundancy
- Asynchronous replication for data replication to remote sites
- Peer Motion and Peer Copy data mobility across systems and sites
- Application integrated snapshots and Smart Clones
- Adaptive Optimization auto-tiering
- Multi-site stretch clusters with transparent failover
- Remote Copy with VMware Site Recovery Manager integration
- Thin Provisioning and Space Reclamation for efficient storage utilization
- Certified SAN/Storage on the VMware Certified Compatibility Guide
- Qualified iSCSI storage on the Microsoft Windows Server Catalog
- Certified with VMware Site Recovery Manager for a simple and affordable DR solution
- Certified as VMware Metro Storage Cluster

HPE StoreVirtual VSA Ready Nodes for reference configurations

Realizing the benefits of software-defined storage and optimized outcomes with the flexibility of the HPE ProLiant server portfolio does not have to be challenging. With the new reference configurations for StoreVirtual VSA, virtualization solutions that converge compute and storage into a simple building block are made easy. StoreVirtual VSA Ready Nodes are HPE tested configurations that provide customers and partners with a solid starting point for their project. The four StoreVirtual VSA Ready Node reference configurations target a range of use cases that can be addressed with StoreVirtual VSA: from small retail locations and larger remote offices to data centers with more demanding application and large-scale server virtualization.

StoreVirtual VSA Ready Nodes support all StoreVirtual VSA features and deliver highly available storage within the same HPE ProLiant server that runs your virtualized workloads, converging the components of the solution stack. Whether it is a single site cluster or stretched across racks or data centers, StoreVirtual VSA Ready Nodes simplify the process from selecting the server configuration to the roll-out of the virtualization solution.

More details about the configurations can be found in the Installation and Configuration Guide:

https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-c05049837&docLocale=en_US

Standard Features

All-inclusive feature set enables enterprise array functionality

- **Storage Clustering simplifies scalability**
Storage Clustering allows a customer to consolidate multiple StoreVirtual VSAs into pools of shared storage. All available capacity and performance is aggregated and available to every volume in the cluster. As storage needs increase, HPE StoreVirtual can scale performance and capacity online.
- **Network RAID delivers higher levels of data availability**
Network RAID stripes and protects multiple copies of data across a storage cluster, eliminating single points of failure. Applications have continuous data availability in the event of a disk, server, storage subsystem, power, network, or site failure. Match the appropriate Network RAID level for each volume in the cluster based on capacity and performance needs.
- **Thin Provisioning reduces costs by increasing storage efficiency**
Thin Provisioning allocates space only as data is actually written without requiring pre-allocation of storage. This raises the overall utilization and efficiency of HPE StoreVirtual Storage, reduces costs and ultimately increases the ROI.
- **Application Integrated Snapshots for VMware and Windows simplify data protection**
Snapshots create thinly provisioned, instant point-in-time copies of data on a per-volume basis. Administrators access snapshots to recover individual files from the volume, or rollback an entire volume. Built-in application integration provides automated quiescing for VMware and Hyper-V VMs and Microsoft VSS applications.
- **Remote Copy reduces costs for disaster recovery**
Remote Copy replicates snapshots between two StoreVirtual-based systems. Copies are thinly provisioned with no space reservation required. Remote Copy enables centralized backup and disaster recovery on a per-volume basis and leverages application integrated snapshots for faster recovery.

Superior availability and disaster recovery

- **Integrated replication for disaster recovery**
HPE StoreVirtual VSAs includes integrated replication simplifying management with simple failover and failback.
- **Integration with HPE's Recovery Manager Central (RMC) and HPE StoreOnce Systems**
RMC software combines the performance of snapshots and replication with the protection of backups to enable fast, efficient, reliable and simple protection for business-critical applications.
- **Change configurations without incurring downtime**
Administrators can add capacity, increase performance, grow and migrate volumes between HPE StoreVirtual clusters on the fly with no application downtime.

Scalable Performance

- **Purchase only what you need today**
Avoid up-front cost and the potential performance constraints. Purchase only what's needed today, then grow the performance, capacity, and redundancy of your StoreVirtual array online as storage requirements evolve. Buying storage only when needed simplifies planning and relieves budget pressures.
 - **Scale performance and capacity simultaneously**
Each time a storage node is added to the StoreVirtual cluster, the capacity, performance, and redundancy of the entire storage solution increases.
 - **Automated tiering**
Adaptive Optimization provides two storage tiers and balances blocks of data transparently between them accelerating unpredictable and changing workloads in virtualized environments. Adaptive Optimization allows cost-effective combinations of rotational media and Flash storage.
 - **Avoid disruptive upgrades**
Add resources to the StoreVirtual cluster non-disruptively as capacity and performance requirements increase. Applications remain online during maintenance events (adding nodes, updating software or firmware) for best in class availability.
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Standard Features

Easy to manage storage for virtualized environments

- **Centralized Management Console**
Multiple data centers and sites can be managed from an all-inclusive "single pane-of-glass". All StoreVirtual storage features are managed from the Centralized Management Console (CMC) for easy management.
- **Business continuity with integrated HA and DR**
StoreVirtual includes integrated synchronous and asynchronous replication at no additional cost. This reduces costs and simplifies management of high availability/fault tolerant and disaster recovery storage solutions.
- **Industry leading VMware integration**
vStorage API for Array Integration (VAAI) offload integration, HPE OneView for vCenter, vSphere native MPIO support, Site Recovery Adapter for Site Recovery Manager (SRM).
- **Peer Copy for bi-directional volume replication between StoreVirtual VSA and 3PAR**
Eliminates the need to use host specific or hypervisor specific or expensive out of band network-based appliances to replicate volumes between 3PAR and StoreVirtual VSA.
- **Best practice analyzer**
Ensuring best-in-class operation with built-in best-practice analyzer which automatically recommends storage best practices and how to implement those.
- **Fast VM backup and restore with HPE VM Explorer**
Use HPE VM Explorer with StoreVirtual VSA for simple, affordable and reliable VM backup and replication for VMware vSphere and Microsoft Hyper-V environments.

Performance

Benchmark Performance Results

Single SSD tier on a 3 node cluster were tested in a laboratory setting to produce these results. Actual performance attained will vary due to several factors, including number of nodes, drive type, number of drives, RAID type, Network RAID type, host interconnect, block size, workload type, etc.

StoreVirtual VSA Performance	VMware ESX 6.5 hypervisor	Windows Server HyperV 2016 hypervisor
Random Reads 8KB (IOPS)	55,000	23,000
Random Writes 8KB (IOPS)	15,000	5,000
Random 50% Read / Write 8KB (IOPS)	22,000	8,000
Segmented Reads 256KB (MBps)	1,600	1,000
Segmented Writes 256KB (MBps)	200	60

Benchmark Setup

3 nodes with StoreVirtual VSA Release 12.7, single SSD tier, average latency: 7ms

Additional information online

- HPE StoreVirtual software and documentation <http://www.hpe.com/storage/downloads/storevirtual> downloads
 - HPE StoreVirtual VSA – 1TB free version <http://www.hpe.com/storage/tryVSA>
 - HPE home page <http://www.hpe.com>
 - HPE Storage products home page <http://www.hpe.com/storage>
 - HPE Services home page <http://www.hpe.com/services>
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Standard Features

Hardware Prerequisites

HPE StoreVirtual VSA Software requires a vSphere, Hyper-V or KVM licensed server with the following:

- Server supported to run Hyper-V, vSphere or KVM
 - Microsoft Windows Server 2019, 2016, 2012 R2 (supported by StoreVirtual OS 12.8 or later)
 - VMware vSphere 6.0 (supported by StoreVirtual OS 12.5 or later), VMware vSphere 6.5 and 6.7 (supported by StoreVirtual OS 12.7 or later)
 - Linux CentOS 6.6/6.7/7.0, RedHat Enterprise Linux 6.6/6.7/7.0, UBUNTU 18.04, 16.04, 14.04
- Supported block storage option on Windows Server Catalog or VMware Compatibility Guide
- Up to 50TB total per StoreVirtual VSA (see license options below)
- Reservation of 2 virtual CPUs with 2GHz
- Memory requirements for StoreVirtual depend on virtualized storage capacity and use of Adaptive Optimization and/or Space Reclamation
- A virtual switch with dedicated at least 1GbE connectivity. Full support for 10GbE.
- For detailed hardware prerequisites, go to <http://www.hpe.com/storage/docs/storevirtual> and review the “HPE StoreVirtual VSA Installation and Configuration Guide” document.

HPE Storage recommends HPE ProLiant Servers for best results.

Total virtualized capacity (TB)	Total memory required (GB)	Total memory required with Adaptive Optimization and Space Reclamation (GB)
Up to 4 TB	5	5
4 TB to 10 TB	7	8
10 TB to 20 TB	9	12
20 TB to 30 TB	12	17
30 TB to 40 TB	15	21
40 TB to 50 TB	18	26

Service and Support

Services Included with the Product

HPE StoreVirtual VSA includes HPE Software Support that includes phone support (software technical support and software product and documentation updates) and a 90 day media replacement only warranty.

Including software updates and comprehensive support enhances the performance and availability of your software. Experienced Response Center engineers provide trustworthy advice on issues such as software features and use, problem diagnosis and resolution, and software defect identification.

Software Licensing Terms

Some HPE StoreVirtual VSA licenses and upgrade licenses come with a three or five year term license. License keys enable all features of the HPE StoreVirtual VSA, including storage clustering, managed snapshots and Remote Copy. Each individual StoreVirtual VSA instance requires a license key; license packs come with the specified number of license keys.

For increased uptime, productivity and ROI - HPE Support packaged services for Storage

These days, you need to get the most out of your storage investment-you can't afford not to. When you buy HPE storage products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your storage. Unlike storage-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HPE Support packaged services for Storage

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts-but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime- but not the business. By using a standard approach to warranty uplifts, such as HPE Support Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HPE Support Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HPE Pointnext operational services

For cost-effective upgrading or extending your standard warranty, HPE Support Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HPE Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HPE Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HPE Support services for Storage assures help when you need it most. And for many products, post-warranty HPE Support Services are available when your original warranty has expired.

Service and Support

HPE Storage Services: Offering reliability, flexibility and value-just like your storage

HPE Storage Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HPE Factory Express provides customization, integration and deployment services for turnkey solutions. HPE Education offers flexible, comprehensive training on storage networking, disk storage systems, and storage software to help your IT staff get the most out of your investments. And HPE Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HPE Storage Services, the trusted business technology experts who manage your technology in action, because when technology works, business works.

<http://www.hpe.com/services/storage>

NOTE: Support Services availability may vary by product and country.

HPE Support Services are sold by HPE and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.

Customers purchasing from a commercial reseller can find HPE Support Services at: <http://www.hpe.com/services/ssc>

Recommended HPE Support Services for optimal satisfaction with your HPE product

Recommended Services

HPE Foundation Care 24x7 – 3 year extended service

For a higher return on your storage investment, HPE Foundation Care 24x7 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HPE Technology Services - customers can trust the services professionals at HPE to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HPE software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps

<http://www8.hp.com/us/en/business-services/it-services/foundation-care-services.html>

HPE Installation and Startup Service for StoreVirtual VSA Software

For smooth startup and better business outcomes, HPE Installation and Startup Service for StoreVirtual VSA Software - provides installation and configuration of your product. In today's new era of business technology - customers can trust the services professionals at HPE to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Provides increased virtual storage capacity without increasing needs for additional hardware
- Allows your IT resources to stay focused on their core tasks and priorities
- Reduces installation time, impact and risk to your storage environment
- Helps you effectively utilize HPE product by knowledge gained during onsite delivery of the service

Additional implementation services can be ordered for StoreVirtual VSA in conjunction with this service including:

- HPE StoreOnce Recovery Manager Central Startup Service – this service provides configuration of StoreOnce Recovery Manager Central software.

HPE StoreOnce Recovery Manager Central with VMware Startup Service

Service and Support

HPE Proactive Select Service

HPE Proactive Select Service improves your IT performance and manageability through the use of cost effective flexible services. Hewlett Packard Enterprise provides technical expertise and best practices to accelerate ROI of your technology investment. Selectable proactive services span a wide range of technology and process services - a flexible way to purchase proactive services that fit your particular environment and situation.

HPE Proactive Select Service is technology agnostic and purchased in addition to your choice of underlying reactive support.

- Access to a list of flexible and customizable proactive service activities
- Enhance customers' in-house IT team with complementary assistance from HPE
- Improved time to solution
- Reduce business risk and project costs by accessing HPE specialists
- Simplify IT operational procedures by leveraging HPE best practices

<http://www.hpe.com/support>

Optional HPE Support Services that will enhance your HPE product experience

Optional Services

HPE Proactive Support – 3 year proactive care

As an alternative to our recommended support level, for customers who want enhanced operational effectiveness and proactive problem identification:

HPE Proactive Care and Proactive Care Advanced (PC / PCA) integrates hardware and software support to help you improve the stability and operational effectiveness of your IT environment. An HPE Account Manager acts as your primary point of contact to ensure that HPE meets your support needs effectively.

PC / PCA provides the maximum value when multiple technologies in the environment (e.g. servers, storage, SAN and the network), are all covered. It provides an environment-wide view and consistent support of all of these components which affect stability of your key applications.

Choose Proactive Care services when you want to:

- Partner with technical experts who help coordinate support, provide hands-on assistance, and share knowledge with your staff
- Rapidly access support and expertise spanning your environment
- Obtain personalized services tailored to your business environment and critical success factors
- Anticipate necessary change - and execute it correctly the first time
- Efficiently manage infrastructure resources to meet your performance objectives

<https://www.hpe.com/us/en/services/proactive-care-services.html>

Service and Support

eSupport

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

Support Portal

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

Features include:

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

Access to certain features of the support portal requires an HPE service agreement. To access the support portal, visit <https://www.hpe.com/us/en/services/it-support.html>

Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HPE storage solution. Hewlett Packard Enterprise offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to on-site training customized to your needs or online.

<https://www.hpe.com/us/en/services/it-education-training.html>

HPE Services Awards

HPE Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information

For more information about HPE Support Services for Storage, please visit: <http://www.hpe.com/services/storage>
If you have specific questions, contact your local HPE representative. Contact information for a representative in your area can be found at "Contact HPE" <http://www.hpe.com>

Configuration Information

HPE StoreVirtual VSA SKUs

The StoreVirtual VSA SKUs are licensed by server node and virtualized capacity. External initiators do not need to be licensed. For example, 5 servers, each with 8TB built-in storage, requires five 10TB licenses.

HPE StoreVirtual VSA Software

Model Description

SKU

HPE SV VSA 2014 SW 4TB 3-pack LTU

Q5T60A

- 3 licenses for HPE StoreVirtual VSA Software
- Up to 4TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Multiple 3 packs may be used in the same cluster and management group to extend beyond 3 VSA nodes
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

HPE SV VSA 2014 SW 4TB 3-pack E-LTU

Q5T60AAE

- 3 licenses for HPE StoreVirtual VSA Software
- Up to 4TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Multiple 3 packs may be used in the same cluster and management group to extend beyond 3 VSA nodes
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

HPE StoreVirtual VSA 2014 10TB LTU

Q0J77A

- 1 license for HPE StoreVirtual VSA Software
- Up to 10TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

Configuration Information

Model Description

SKU

HPE StoreVirtual VSA 2014 10TB E-LTU

Q0J77AAE

- 1 license for HPE StoreVirtual VSA Software
- Up to 10TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

HPE StoreVirtual VSA 2014 50TB LTU

Q0J78A

- 1 license for HPE StoreVirtual VSA Software
- Up to 50TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

HPE StoreVirtual VSA 2014 50TB E-LTU

Q0J78AAE

- 1 license for HPE StoreVirtual VSA Software
- Up to 50TB capacity per StoreVirtual VSA
- Includes Adaptive Optimization feature
- Not stockable by the channel, must order as drop ship and have single end-user quantities represented on the order
- Installable on vSphere, Microsoft Hyper-V or Linux KVM
- Installation media and documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>
- Includes 3 years of software support for each license

NOTE: For system requirements, see [Hardware Prerequisites](#).

HPE StoreVirtual VSA Software –

HPE StoreVirtual VSA 1TB

HPE StoreVirtual VSA 1TB (3 year limited free version)

- Up to 1 TB capacity per StoreVirtual VSA
- If deployed in production environment, sufficient capacity is required
- Support not included
- Download at <http://www.hpe.com/storage/tryVSA>
- Complete documentation downloadable from <http://www.hpe.com/storage/downloads/storevirtual>

NOTE: For system requirements, see [Hardware Prerequisites](#).

Summary of Changes

Date	Version History	Action	Description of Change
04-Nov-2019	Version 19	Changed	Added support for the new StoreVirtual OS 12.8
11-Jun-2018	Version 18	Changed	Minor Corrections made to the document.
06-Nov-2017	Version 17	Changed	Changes made to the document
16-Oct-2017	Version 16	Changed	Clarifications on 4TB 3 pack licenses
25-Sept-2017	Version 15	Changed	Added 4TB 3pack no-term SKU Updated for term license conversion program
07-Aug-2017	Version 14	Changed	Added performance benchmark results for VMware and Windows Hypervisors
12-Jun-2017	Version 13	Changed	Updated hypervisor versions for release 12.7
03-Apr-2017	Version 12	Changed	Added StoreVirtual VSA Ready Nodes and integration with RMC/StoreOnce
26-Sept-2016	Version 11	Changed	Changes made to the Ordering System Section
19-Feb-2016	Version 10	Changed	HPE Rebranding and software feature update
10-Jun-2014	Version 9	Changed	SKU's Descriptions Updated Changes were made throughout.
30-Sep-2013	Version 8	Changed	Changes were made throughout.
01-Sep-2013	Version 7	Changed	Correction was made to the title.
01-Sep-2012	Version 6	Changed	Change made to URL in Service and Support, HPE Pointnext operational, and Warranty Information section.
01-Sep-2011	Version 5	Changed	Changes made throughout the QuickSpecs.
09-Jun-2011	Version 4	Removed	Mentions of StorageWorks were removed.
27-Sep-2010	Version 3	Changed	LeftHand was replaced with StorageWorks NOTE the title has changed Service and Support, HPE Pointnext operational, and Warranty Information were completely revised HPE P4000 management software and compatibility information and trial software were added to Additional information online
19-Jun-2009	Version 2	Added	vSphere to the Introduction section Up to 4.5 TB capacity per Virtual SAN Appliance (VSA) to HPE LeftHand P4000 Virtual SAN Appliance Software - Demo and Evaluation Versions in the Models section ESX 3.5 or ESX 4 to Hardware Prerequisites in the Models section
		Removed	Infrastructure from VMware throughout the QuickSpecs HPE LeftHand P4000 Virtual SAN Appliance Software for Integrators only from the Models and Ordering Information sections
20-Apr-2009	Version 1	New	New QuickSpecs.

Summary of Changes



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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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