

StorageTek Virtual Storage Manager System 7

The way you manage your business-critical data affects your top-line growth and bottom-line efficiency. Your ability to manage and store data simply and reliably—taking into account its value, the cost of storage, and retrieval speed—helps you efficiently manage operations, get data growth under control, enhance disaster recovery, and lower your total cost of ownership (TCO). With Oracle's new VSM 7, you can leverage public cloud economics for deep archives combined with on-premise virtual storage for both mainframe and heterogeneous systems data.



Figure 1. StorageTek Virtual Storage Manager System 7 helps you optimize mainframe tape storage operations.

KEY FEATURES

- **Cloud tiering**—Efficiently manage data and storage resources by offloading inactive data to low cost, off-site cloud storage
- **Tapeless or with physical tape**—Flexible configuration options meet the needs of multiple and diverse applications, workloads, and use cases. From high-performance “disk only” or massively scalable “disk + tape” workloads
- **Enhanced disaster recovery**—

Simple Data Management for Mainframe Data Centers

Oracle's StorageTek Virtual Storage Manager System 7 (VSM 7) makes data management simple for mainframe data centers. It's simple to deploy, simple to manage, and simple to scale to a nearly unlimited storage pool with native cloud tiering. StorageTek Virtual Storage Manager System deploys as a single, preintegrated and preoptimized system that minimizes implementation schedules and brings applications online faster.

Automated and policy-based management simplifies day-to-day operations and enables you to automate tasks that were previously handled manually. Policy-driven data and system management from a single point of control simplifies operations while helping you to efficiently and effectively meet application requirements. With optional, disk, tape, or cloud storage tiering, VSM 7 is the only architecture supporting multiple tiers of storage under a single pane of glass.

With VSM 7, keeping up with your enterprise's growing data is simple. The system keeps things simple with nondisruptive, on-demand scaling. Start small and grow to 825 TB of native disk storage in a single rack. Then add more VSM 7 systems to manage up to 211 PB of disk storage in a single VSM 7 tapeplex. Simple, seamless migration to physical tape and/or Oracle Storage Cloud extends system capabilities to provide nearly unlimited capacity to meet your enterprise's long-term data retention and compliance needs.

Native Tiering to the Cloud

With integrated, seamless support for public cloud storage, VSM 7 represents a new era in mainframe storage. VSM 7 is the first mainframe virtual storage system to provide native, automated tiering to the cloud. VSM 7 is architected to seamlessly integrate with Oracle Storage Cloud Service and Oracle Storage Cloud Service—Archive Storage. You can set policies to automatically copy or migrate files from StorageTek Virtual

multiple DR configurations including one-to-one and one-to-many multisite configurations

- **High availability**—Active/active, clustered controllers with sub-second failover. Triple parity RAID protects against multiple, simultaneous drive failures
- **High performance and security**—Powered by Oracle's breakthrough SPARC M7 processor, VSM 7 delivers wide-key encryption for data-at-rest and on removable tape media without performance compromise and also utilizes Silicon Secured Memory for data protection
- **Heterogeneous Systems**—Support brings mainframe-class data protection capabilities to heterogeneous systems environments, including Windows, Linux and Unix

KEY BENEFITS

- **Simple**—Efficiently manage data and storage resources according to your rules. Automated, policy-driven management simplifies both deployment and ongoing storage operations—on-premise and in the cloud
- **Flexible**—Engineered with flexibility in mind, VSM 7 can be deployed to meet each enterprise's unique business requirements. From high-performance "disk only" or massively scalable "disk + tape" configurations to single site, multisite, and built-in cloud support for nearly unlimited capacity
- **Reliability**—Reduce exposure to your business with superior data protection, end-to-end high-availability and closed-loop data integrity checking.
- **Low TCO and Investment Protection**—Low asset acquisition cost combined with high-density data center footprint and energy-efficient design. Full compatibility with existing systems protects your investments.

Storage Manager to low-cost, off-site cloud storage. Off loading capacity to cloud storage optimizes utilization of on-premise VSM resources and reduces overall cost while adding capabilities, such as a simple, secondary data protection option without the need for expensive remote site operations and resources.

Oracle Storage Cloud Service

Oracle Storage Cloud Service and Oracle Storage Cloud Service—Archive Storage are enterprise-class, secure, elastic, and highly durable public cloud storage solutions. You can use the Oracle Storage Cloud as a cost-effective remote solution for protecting and archiving enterprise data and applications without incurring the large capital expenditures necessary for acquiring and maintaining secondary storage hardware. Oracle supports VSM 7 and Oracle Storage Cloud Service with end-to-end visibility, with diagnostics both on-prem and in the public cloud, providing customers with support and ease-of-use across the entire data path. For more information on Oracle Storage Cloud Service, visit https://cloud.oracle.com/en_US/storage.

Flexibility to Meet the Unique Needs of Your Data Center

Not all workloads are the same, so flexibility is a key ingredient in the VSM 7 architecture. VSM 7 meets the needs of multiple and diverse applications, workloads, and use cases. From high-performance "disk only" or massively scalable "disk + tape" workloads to single site, multisite, and cloud-based support, VSM 7 can be deployed to meet all the needs of your enterprise's unique mainframe environment. Use VSM 7 in a disk-only configuration for midsize mainframe environments or test sites, or deploy it with physical tape for large-scale operations. The flexibility of the VSM 7 architecture extends to disaster recovery (DR) scenarios, as well. VSM 7 offers multiple DR configurations including one-to-one and one-to-many multisite configurations that leverage Oracle's StorageTek Virtual Library Extension (VLE) and/or StorageTek tape storage or cloud-based DR leveraging Oracle Storage Cloud Service.

The system's support for multiple tiers of storage, including cloud storage, provides the flexibility to balance speed, capacity, and availability so that the right data is on the right storage tier at the right cost. And no matter how you choose to deploy VSM 7 to meet your unique enterprise needs, its inherent flexibility allows all system resources to be managed from a single pane of glass.



Figure 2. Store even more on your StorageTek Virtual Storage Manager System with the optional StorageTek Virtual Library Extension, an economical second tier of disk.

Reliable System Design Reduces Business Risk

Your mainframe powers your business. System outages and unplanned downtime can lead to lost revenue and profits. Consequently, overall system availability is an imperative for mainframe applications. The VSM 7 architecture provides the highest levels of system availability through:

- Active/active, redundant processing nodes with high-speed interconnect
- Fully redundant disk communication paths
- Automatic failover of all critical system components
- Hot-swappable componentry
- Triple parity RAID
- “On-the-fly” dynamic job recovery upon hardware failure

But having access to data doesn’t guarantee the accuracy of the data. “Always on” access to data is of little value without concurrent assurance that the stored data is error free. VSM 7 employs multiple levels of data integrity checking including read/write CRC on every tape block and after each compress/decompress cycle. With StorageTek Virtual Storage Manager System, virtual tape blocks are protected by at least one CRC at all times.

VSM 7 delivers the highest levels of overall system reliability through its high-availability design and extreme data integrity features.

Low Total Cost of Ownership and Investment Protection

IT operating budgets aren’t getting any bigger these days. With VSM 7, you get low total cost of ownership and investment protection. In the era of big data, maximizing the value of storage investments is top of mind for CIOs and data center managers. VSM7’s support for tiered storage combined with policy-driven data management enables you to

better align storage capabilities to application requirements, thereby eliminating overprovisioning and underutilization of storage resources and delivering the most value from your IT budget. It's about having the right data available on the right resource at the right cost and being able to adapt that equation based on the changing value of your business-critical information. With Oracle's VSM 7, you can work smarter, not harder.

VSM 7 protects your storage investment by providing a unique balance between a powerful new architecture and compatibility with legacy systems:

- Coexists and provides full data interchange with legacy models of Oracle's StorageTek Virtual Storage Manager System
- Seamlessly supports all existing VSM data management policies
- Offers compatibility with legacy StorageTek Virtual Library Extension second-tier disk and StorageTek Virtual Library Extension-to-StorageTek Virtual Library Extension replication capabilities
- Can be deployed to take advantage of existing StorageTek enterprise-class physical tape drives and tape libraries
- Is the first mainframe virtual storage system to provide native, seamless integration with the public cloud

Simple, Flexible, Reliable, and Fiscally Responsible

Oracle's VSM 7 is a highly flexible and scalable storage solution for the most demanding mainframe environments. Extreme system flexibility supports multiple deployment scenarios from single site to multisite to full cloud integration. And with up to four tiers of storage including VSM resident disk storage, Virtual Library Extension second tier disk storage, physical tape and cloud storage, VSM 7 has the flexibility to support the unique needs of every business.

Engineered with 40 years of tape solutions expertise, VSM 7 ensures the highest degrees of system and data reliability. The high-availability design and extreme end-to-end data integrity validation provide you with the confidence that your mainframe data will always be available and error free.

VSM 7 is an investment in your business' success. An investment that will be protected for many years to come while delivering the highest value from your mainframe budget dollars.

Broad New Capabilities for Heterogeneous Systems

Many heterogeneous systems environments are underserved by current virtual storage solutions, and lack the industry-hardened capabilities—such as high availability, mission-critical enterprise reliability and a massive scale-out design—that the VSM has demonstrated to Fortune 500 customers worldwide. Now companies can leverage the same enterprise-proven data protection capabilities available for their mainframe environments across their heterogeneous systems environments as well, with support for Windows, Linux and Unix operating systems now available with VSM 7.

Oracle Advanced Customer Support for Oracle Storage

Oracle Advanced Customer Support for Oracle storage provides deep product knowledge during the installation, configuration, monitoring, and continual improvement phases of your IT infrastructure. With intimate knowledge of Oracle best practices, tools

and technology, Oracle Advanced Support engineers provide the right knowledge at the right time to help mitigate risk and to maximize the value of your Oracle storage technology investment.

From annual services that deliver faster problem resolution and improved stability to predictive monitoring and support that provide a quality-of-service demanded by the mission-critical needs of your business, Oracle Advanced Customer Support delivers a highly personalized, strategic relationship dedicated to your business success.

STORAGETEK VIRTUAL STORAGE MANAGER SYSTEM SPECIFICATIONS

Capacity	StorageTek Virtual Storage Manager System 7	StorageTek Virtual Library Extension
Capacity	150 TB, 375 TB, 600 TB, 825 TB	50 TB, 100 TB, 150 TB, 200 TB, 250 TB, 300 TB, 350 TB, 400 TB
Max. capacity (256 systems)	211 PB	102 PB
Channels (Host)	Mainframe: 8 x 16Gb FICON Heterogenous: 4 x 16GB Fibre Channel	N/A
Channels (Data Replication)	4x 10GbE	8 x 10GbE
Virtual tape drives	Mainframe: 512 Heterogenous: 256	N/A
Management		
Minimum software requirements	Mainframe:HSC 7.2/VTCS 7.2, z/OS 2.2+ Heterogenous: Commvault Simpana v10+, Veritas Netbackup v7.7+, Tivoli Storage Manager 7.1+ VSM console 1.0+	
Mechanical		
Height	78.7 in. (197 cm)	78.7 in. (197 cm)
Depth	47.2 in. (118 cm)	47.2 in. (118 cm)
Width	23.6 in. (60 cm)	23.6 in. (60 cm)
Weight	1324 lb. (600 kg)	1,299 lb. (585 kg)
Service clearance	36 in. (76.2 cm)	36 in. (76.2 cm)
Environmental		
Temperature (operating)	+60°F to +90°F (+16°C to +32°C)	
Maximum wet bulb temperature	+73°F (+23°C)	
Relative humidity	20% to 80%	

(operating)		
Power		
Voltage	200 V–240 V AC @ 50Hz–60 Hz	200 V–240 V AC @ 50 Hz–60 Hz
Power consumption/dissipation	18.4 minimum kBTU/hr 28.8 maximum kBTU/hr	9.1 minimum kBTU/hr. 21.8 maximum kBTU/hr.
kVA	5.4 minimum/8.4 maximum	2.6 minimum/5.7 maximum

CONTACT US

For more information about Oracle's StorageTek Virtual Storage Manager System, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Integrated Cloud Applications & Platform Services

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