StorageTek™ Virtual Storage Manager (VSM) System

Business resumption now!

The way you manage your data affects your top-line growth and bottom-line efficiency. Your ability to move and store data fast and reliably—taking into account its value, the cost of storage, and retrieval speed—helps you manage business risk, optimize operations, enhance disaster recovery, and lower total cost of ownership (TCO).

Highlights

- **Manage massive data growth –** Support your legacy and growing business applications by dramatically increasing the amount of data typically stored on each cartridge
- **Protect your investment –** Meet changing tape workloads without adding more libraries, drives, or media
- **Enhance data protection –** Automatically create copies and transparently migrate critical business information to offsite venues. Reduce business risk with increased data protection, through either physical migration or electronic vaulting, or both. Accelerate disaster recovery through tape cartridge optimization.
- **Maintain or improve service levels –** Retrieve data at the speed of disk. Respond to peak demands with up to 256 virtual tape drives. Reduce or eliminate drive allocation problems.
- **Simplify your tape management –** Move your data simply and predictably according to your rules, and help streamline your tape operations

When you want to maximize the use of storage resources in support of data protection and archive applications, consider the market-leading virtual tape solution. A fifth generation, entry level StorageTek™ VSM system, StorageTek VSM 5e, is designed to highly a scalable, sharable, high-performance storage solution for most, if not all, of your sequential files. The fifth generation of Sun StorageTek Virtual Storage Manager (VSM) system offers significantly enhanced disk-to-disk-to-tape functionality to help enable revenue-generating activities and reduce costs.

Capture the benefits of virtual

The Virtual Storage Manager system consists of a server, disk storage, and software that together provide a buffer or cache between the mainframe servers and the tape storage systems. Instead of writing directly to a physical drive, mainframe workloads read and write to virtual drives created and maintained by the virtual tape solution.

When you're ready, you can have data moved predictably to real tape drives, where co-located data sets enable full cartridge utilization. Without virtual tape, you may be hampered by poor cartridge utilization, significant capital investment, and complex, inconsistent backup/restore activities.

With the StorageTek VSM system, you can accomplish a lot more while maximizing storage resources. You can:

- Set user-determined policies to create a storage hierarchy based on data value to help you balance storage costs with access requirements
- Tap into enormous capacity with fewer tape mounts and cartridges, saving time and improving reliability. Reduce manual intervention related to data replication, migration, and recall
- Streamline tape operations and handle additional new business requirements with improved performance, accuracy, efficiency, and scalability

- Increase configuration flexibility and ease transitions to new media, drive, and library technologies
- Minimize or eliminate drive allocation recovery and delays with 256 virtual tape drives per StorageTek VSM system

Lower total cost of ownership

When you optimize your tape environment, productivity soars and costs drop. Attain compelling TCO with attention to:

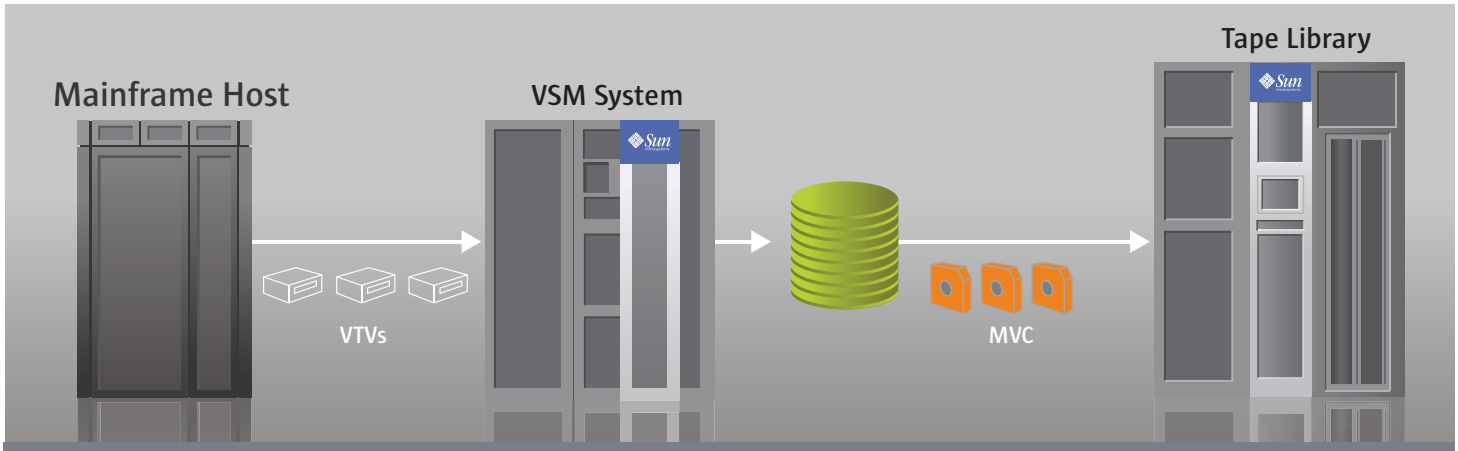
- **Automation –** The StorageTek VSM system is a simple, single, integrated solution that is 100 percent automated, independent of the processor, to help you postpone CPU upgrades
- **Cartridge utilization –** The StorageTek VSM system can help you store more data in less space, especially using the large capacity tape cartridges available today. The StorageTek VSM system is designed to use 100 percent of each cartridge so you receive full value for your purchase. As a result, you can reduce cartridge count dramatically—from thousands to hundreds or even tens
- **Scalability –** You can connect multiple StorageTek VSM systems non-disruptively to expand capacity dramatically and boost performance cost effectively and efficiently
- **Throughput –** With the StorageTek VSM system, you can move data fast and efficiently. Designed for FICON, but also available with both ESCON and native IP support, StorageTek VSM 5 system transfers data approximately four times faster than ESCON

Bolster backup and disaster recovery

After you optimize your tape environment, you realize significant benefits in resources, cost, space, and time. Now consider your backup/restore and disaster recovery objectives. Unlike competitive approaches, the StorageTek VSM system gives you the flexibility to choose a selection of physical and electronic migration options—local and remote.

With StorageTek VSM system, you can build a foundation for effective disaster recovery:

- Gain a simplified disaster recovery process. With reduced data volume, high transfer rates, and fewer tapes to manage, the implementation of disaster recovery plans is easier, more predictable, and more reliable
- Enable automatic data migration. The StorageTek VSM system's fast data replication capability copies data and migrates it offsite quickly and efficiently, without intervention
- Protect data integrity. When you restore data, it must be usable data. High system availability consistently leads to successful job completion. You can set up the StorageTek VSM system to automatically protect your data by duplexing, triplexing, or quadplexing data volumes and reduce your exposure to media errors
- Achieve value-based data storage and protection. The StorageTek VSM system's powerful management tools help you work within budget by automatically placing your tape data on the right level of storage device according to the rules you define
- Reduce manual intervention related to data replication, migration, and recall
- Streamline tape operations and handle additional new business requirements with improved performance, accuracy, efficiency, and scalability
- Increase configuration flexibility and ease transitions to new media, drive, and library technologies
- Minimize or eliminate drive allocation recovery and delays with 256 virtual tape drives per StorageTek VSM system
- With the clustered VTSS feature, provides both synchronous and asynchronous replication options



How does the VSM work? Data directed to a tape by a mainframe application is written to a virtual tape disk buffer. The application is then able to continue with other processing while the virtual tape system manages and, based on user-established policy, controls the creation of physical tapes. When an application requests data from a tape, the virtual tape system serves up the virtual tape (if it is still in the disk buffer) or a physical tape is mounted and read, transparent to the application.

Balance speed, capacity, access, and cost

With the StorageTek VSM system, you can work smarter, not harder. Within a storage hierarchy, you store the right data on the right device at the right price—and help protect your business-critical information based on its changing value.

- Improve performance of tape workload by increasing throughput and reducing the impact of real tape drives on front-end activity
- Increase capacity substantially and efficiently as data storage requirements grow
- Grow and change as media, drive, and library technologies evolve without disrupting your environment
- Mix and match transparently Sun's high-capacity T10000 and fast-access T9840 tape drives, both of which are encryption ready, to meet varied storage and data needs

Transform your business

Contribute to the top-line revenue growth and bottom-line efficiency of your business. The Virtual Storage Manager system helps you optimize tape storage operations, which lowers TCO and improves backup and disaster recovery practices. The StorageTek VSM system makes it easier for you to operate cost effectively yet accommodate growing demands for data storage.

Engage the storage experts

Sun's StorageTek service professionals help you address storage challenges by delivering integrated services and solutions that optimize and manage storage performance over the life your data. Our implementation services address utilization, availability, capability planning, and management efficiency, helping you quickly realize the benefits from your investment.

Our storage industry veterans can pinpoint ways to better allocate and consolidate data across a tiered storage architecture, which is a critical component of effective virtualization. Utilizing Sun's dedicated storage service professionals can help you gain and sustain measurable results with the reliability and flexibility that you require.

Virtual Storage Manager (VSM) System Specifications

	VSM 5e	VSM 5
Performance data		
Disk performance	15,000-rpm disk drives	15,000-rpm disk drives
Physical cache	8 GB	32 GB
Effective cache (4:1 compression)	32 GB	128 GB
Non-volatile storage (average 4:1 compression before storage)	256 MB	256 MB
Effective non-volatile storage (4:1 compression)	1024 MB	1024 MB
Capacity		
Capacity	800 GB, 1.25 TB	**VSM 465:** 1.25 TB, 2.5 TB, 5.0 TB, 7.5 TB, 11 TB, 14 TB; **VSM 465:** 16 TB, 18 TB, 21 TB; **VSM 465:** 23 TB, 25 TB, 28 TB; **VSM 450:** 45 TB, 68 TB, 90 TB
Channels	8 FICON or 16 ESCON FICON/ESCON only; not both 4 Ethernet IP support (between VTSS)	4 FICON (upgradeable to 16) 16 ESCON (upgradeable to 32) 4 Ethernet IP support (between VTSS)
Virtual tape drives	256	256
Management		
Minimum software requirements	HSC 6.1/VTCS 6.1, z/OS 1.1+	HSC 6.1/VTCS 6.1, z/OS 1.1+
Mechanical		
Height	59.7 in. (154.94 cm)	59.7 in. (154.94 cm)
Depth	30.4 in. (77.1 cm)	30.4 in. (77.1 cm)
Width	36.3 in. (92.1 cm)	36.3 in. (92.1 cm)
Weight	982 lb (445 kg)	982 lb (445 kg)
Service clearance	21.3 in. (54.1 cm)	21.3 in. (54.1 cm)
Environmental		
Temperature (operating)	+60° to +90° F (+16° to +2° C)	+60° to +90° F (+16° to +2° C)
Maximum wet bulb temperature	+73° F (+23° C)	+73° F (+23° C)
Relative humidity (operating)	20 to 80 percent	20 to 80 percent
Power		
Voltage	200–240 VAC @ 50–60 Hz	200–240 VAC @ 50–60 Hz
Power consumption/dissipation	8.6 minimum kBTU/hr 12.4 maximum kBTU/hr	8.6 minimum kBTU/hr 12.4 maximum kBTU/hr
kVA	2.6 minimum/3.8 maximum	2.6 minimum/3.8 maximum

Learn More.

Talk to your Sun representative about ways in which you can capture the benefits of virtual storage with the StorageTek VSM system or visit **sun.com/storagetek**

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