

## IBM Virtualization Engine TS7510



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### Highlights

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- ***Virtual tape backup functionality with disk-based access speeds and rapid access to the most frequently used data***
- ***Part of a complete Information Lifecycle Management (ILM) solution to help efficiently manage critical data***

The IBM Virtualization Engine™ TS7510 (TS7510 Virtualization Engine) is the first member of the IBM Virtualization Engine TS7000 Series of virtual tape libraries. The TS7510 Virtualization Engine combines hardware and software into an integrated solution designed to provide tape virtualization for open systems servers connecting over Fibre Channel physical connections.

The TS7510 Virtualization Engine combines IBM server and disk technology, and is designed to virtualize, or emulate tape libraries, tape drives, and tape media. Real tape resources can then be attached to the TS7510 Virtualization Engine to help address information lifecycle management and business continuity. The TS7510 Virtualization Engine is designed to help customers achieve the following throughput efficiencies:

- *Reduce backup window*
- *Improve restore process*
- *Facilitate data sharing*
- *Lower total cost of ownership (TCO)*

One of the biggest problems with backup planning today is that the amount of data being backed up is growing, but the time allotted for a backup (the backup window) is shrinking or remaining static.

With backup windows extending, the margin for hardware failure has virtually disappeared. The TS7510 Virtualization Engine is designed to help address these issues by eliminating tape mechanical delays and providing fault tolerant architecture options for high availability.

When combined with physical tape resources for longer term data storage, the TS7510 Virtualization Engine is designed to provide an increased level of operational simplicity, a low cost of ownership, and increase reliability to provide significant operational efficiencies.

The TS7510 Virtualization Engine consists of three hardware machine types and a Virtualization Engine for tape software product. The IBM System Storage 3952 Frame Model F05 is an independent frame used to contain the components of the TS7510 Virtualization Engine.

The 3952 F05 frame can contain:

- *One or two IBM Virtualization Engine TS7510 Model CV5 servers*
- *Two IBM Virtualization Engine TS7510 Model SV5 cache controllers*

- *Up to six IBM Virtualization Engine TS7510 Model SX5 cache modules*

An adjacent 3592 frame can contain:

- *Up to eight additional TS7510 Model SX5 cache modules*

The TS7510 Virtualization Engine can provide up to 46TB of native cache capacity to satisfy data backup and recovery requirements. Each TS7510 SX5 cache drawer offers 3.5TB and cache drawers can be added singly or in multiple increments. A TS7510 Virtualization Engine with a single server provides up to 512 virtual tapes drives, up to 64 virtual tape libraries and up to 4096 virtual volumes. In a high availability (HA) configuration with dual TS7510 Virtualization Engine Model CV5 servers, twice as many virtual resources are available.

The TS7510 Virtualization Engine supports the following hardware and software:

#### **Servers**

- *IBM @server® pSeries®, RS/6000® and RS/6000 SP™ systems*
- *IBM @server zSeries® Linux®*

- *IBM @server xSeries® and Netfinity®*
- *Selected non-IBM servers, workstations, and personal computers*

#### **Tape storage systems**

- *TotalStorage® 3584 and 3494 Tape Libraries*
- *IBM TotalStorage Ultrium™ LTO™ gen 2, LTO gen 3 Tape Drive*
- *IBM TotalStorage 3592 Tape Drive Model J1A*

#### **Operating systems**

- *AIX 5L™ V5.1, or later*
- *Sun Solaris 8 or 9*
- *Microsoft® Windows® 2000*
- *Microsoft Windows 2003*
- *HP-UX 11.00, 11i (64 bit), 11.23i, and 11.23pi*
- *Linux distributions: Red Hat Enterprise Linux 3 (RHEL 3) and SUSE LINUX Enterprise Server 8 and 9 (SLES 8 and 9)*

A current list of supported open system configurations for the TS7510 Virtualization Engine is available at [ibm.com/servers/storage/tape](http://ibm.com/servers/storage/tape)

The TS7510 Virtualization Engine is designed to help enhance the tape backup and restore process, improve business continuity and simplify tape operations by virtualizing open systems tape drive and libraries.

It also introduces disk cache to provide another level of storage consistent with the Information Life Cycle Management (ILM) tiered storage model. The disk cache can provide rapid access to more frequently accessed backup data.

The TS7510 Virtualization Engine is designed to augment the tape backup and restore process. By giving the user disk-based access speeds for data written to or from the cached tape volume data, the backup and restore process can be improved.

In addition, by virtualizing the disk cache as “tape” the solution can help ease implementation when compared with other disk-based alternatives that rely on software backup.

The combination of the TS7510 Virtualization Engine, with the optional IP replication and failover features and IBM tape libraries is designed to provide a very high level of business continuity.

The IP replication feature is particularly attractive for companies looking to reduce the need for the physical transportation of tapes, while the failover/failback feature helps improve the availability of the virtualization systems.

The TS7510 Virtualization Engine is designed to assist with Infrastructure simplification by allowing multiple, disparate backup servers and applications to share the same virtual tape library. This can help reduce the need for multiple, disparate tape libraries and improve the overall utilization of the tape storage systems.

The TS7510 Virtualization Engine, when integrated into a total backup and restore solution with IBM TotalStorage 3584 and 3494 Tape Libraries and IBM TotalStorage Ultrium LTO gen 2, LTO gen 3 Tape Drive and IBM TotalStorage 3592 Tape Drive technology, is designed to provide a complete backup/restore/archive solution to help reduce requirements for tape drives, libraries, and tape volumes compared to stand-alone tape configurations.

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## IBM Virtualization Engine TS7510 at a glance

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<b>Form factor/height</b>	Frame dimensions are: 43.4" x 25.4" x 71" (WxDxH) One or two frames per system
<b>Processor (max)</b>	2 server nodes
<b>Native cache (max)</b>	46TB
<b>Connectivity</b>	4 FC ports per node 8 FC ports per system (two nodes)
<b>Network interface</b>	3 Ethernet ports, 1 for service, 2 for IP replication
<b>Hot-swap components</b>	Server Nodes, disk drives, HBA, power supplies
<b>RAID support</b>	RAID 5
<b>Systems management</b>	SNMP traps for integration into ISV software for error reporting
<b>Operating systems supported</b>	<ul style="list-style-type: none"><li>• AIX 5L V5.1, or later</li><li>• Sun Solaris 7, 8, or 9</li><li>• Microsoft Windows 2000</li><li>• Microsoft Windows 2003</li><li>• HP-UX 11.00, 11i (64 bit), and HP-UX 23pi</li><li>• Linux distributions: Red Hat Enterprise Linux 3.0 and 4.0 (RHEL 3.0 and 4.0 ) and SUSE LINUX Enterprise Server 8 and 9 (SLES 8 and 9)</li></ul>
<b>Limited warranty</b>	1 year

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## IBM Virtualization Engine TS7510

<b>Specification</b>	<b>Single Node</b>	<b>Dual Node</b>
<b>Virtual Drives</b>	512	1024
<b>Min / Inc / Max Virtual Libraries</b>	64	128
<b>Min / Inc / Max Virtual Volumes</b>	4096	8192
<b>Performance (~ max) MB/Sec</b>	500	600
<b>Native capacity (TB)</b>	23	46
<b>Max Number of Disk Drawers</b>	8	16
<b>Total FC ports</b>	8	16
<b>Total Ports to disk Cache</b>	4	8
<b>Total Host/Tape ports</b>	4	8
<b>Ethernet Replication Ports</b>	2	4
<b>Tape Drives Support via emulation</b>	LTO gen 2, LTO gen 3, 3592 J1A	LTO gen 2, LTO gen 3, 3592 J1A
<b>Tape Library Support</b>	3494 and 3584	3494 and 3584

## For more information

Contact your IBM representative or IBM Business Partner or visit:

- [ibm.com/totalstorage/tape](http://ibm.com/totalstorage/tape)
- [ibm.com/totalstorage/solutions/business\\_continuity](http://ibm.com/totalstorage/solutions/business_continuity)



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