

STORAGE SWITZERLAND BRIEFING REPORT

TRIBUTARY SYSTEMS INC. STORAGE DIRECTOR V3.0



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Backups are frequently thought of as important, but not mission critical, meaning if one is occasionally missed or incomplete it's attended to promptly, but the business still runs. In certain industries - often those which employ mainframe systems - regulations require strict service level agreements or SLAs. The financial services industry as an example, can require that backups be completed before other business processes can continue. Similarly, for many platforms that these organizations rely on, access to applications must be suspended or performance degraded during the backup process. This means that the backup operation, which runs sometimes every night, becomes a critical path for the business.

[The Tributary Systems Inc.](#) (TSI) Storage Director is a [backup virtualization](#) appliance which integrates multiple backup applications and consolidates their operation and storage infrastructures. On the front end, it provides connectivity to backup servers that run on most standard OSs as well as less common platforms like IBM AS400 and HP NonStop. Storage Director presents a disk cache to capture multiple backup jobs from these various hosts simultaneously. On the back end, new and existing tape

libraries are provisioned to support the 'virtual tapes' created in the disk cache and provide a target for streaming data off to physical tape. The result is a hybrid data protection solution, one which leverages the benefits of both disk and tape while maintaining support for legacy applications, on both open systems and mainframes.

The Future of Backup Virtualization

Advanced Recovery Option (ARO)

TSI Storage Directors can now be set up in an active-passive failover mode to provide fault tolerance for the backup process. The system has a new and unique capability called Advanced Recovery Option (ARO) that can auto-detect a failure and start active processing on the second node. In our "[Large Regional Bank Case Study](#)" Storage Switzerland interviewed one such organization that relies on a Storage Director using ARO to keep the data protection process running and on time. With this solution their business doesn't wait for backup jobs to complete or be re-run because of a device failure.

Similar to high availability, off-site data protection or DR is a requirement for companies in industries which have to deal with regulatory compliance. Getting a data set safely to an off-site location is part of the data protection process, a process which for many companies must also be completed before business can resume. This adds the replication window to the list of 'critical path' operations and makes bandwidth efficiency a key requirement.

WAN optimized replication

Storage Directors now provide enhanced site-to-site replication for the flexibility to better support off-site data migration. With many-to-one and one-to-many replication it supports branch office data consolidation to a central data center and other strategies. While the prior version of the product could move data off-site it had to copy the entire backup job, requiring a much larger WAN connection, which was under-utilized most of the time. With WAN optimized 'backup vaulting', the block-level replication process enhances movement of virtual backups or vTapes, from site to site while maintaining full utilization of available bandwidth. This network efficiency helps to contain costs and to reduce the overall timeframe of the replication process, which can be critical for remote offices that have reduced bandwidth connectivity.

Any to Any Backup

Data protection is essentially insurance against data loss, and as insurance, it must be comprehensive to be effective. Backup must be done 'first time, every time'; part time insurance is worthless. To this end, Storage Director has been designed to help consolidate the entire data protection infrastructure and backup virtualization is a key component of that solution. In order to consolidate the 'backup islands' that are common in mainframe environments, Storage Director uses virtualization to abstract the backend storage infrastructure from the front

end compute hardware and applications. This abstraction can enable the 'any to any' support that's needed to consolidate new platforms or new generations of hardware and software to new and existing or legacy storage assets that are deployed in the environment.

Storage Director supports most major storage infrastructure components: storage arrays, RAID controllers, network adaptors, servers, and network generations like 8Gb FC (with 16Gb coming) and 10Gb Ethernet. This upgraded connectivity is essential to enable the Storage Director to continue to provide 'any to any' connectivity for data protection components in the environment.

In addition to Fibre, iSCSI and NAS systems are now supported for more options on both the front end cache and the backend storage target. With this flexibility, more types of new storage platforms can be folded into the virtualized backup system to provide disk cache capacity options and more existing storage components can be assimilated, to reduce cost. Again, this provides more support for a true 'any to any' solution as well as leveraging hardware-specific desirables like deduplication, power managed or WORM disk systems.

LTO5 and encryption

Tape as a storage medium increases capacity by introducing new generations. This requires new hardware and new media, but also support of the front end applications that use them. So in order for LTO5 to be used the backup software and/or the operating system must also support it. The Storage Director uses backup virtualization to abstract the physical storage devices, like LTO5 drives, from the backup applications and operating systems that use them. In this way, legacy backup systems can take advantage of LTO5's 2x per-tape capacity increase over LTO4, and its increase in throughput as well.

Native AES data encryption is supported by Storage Director, without a separate FIPS encryption add-on. The system can compress and encrypt data at ingestion and store it on the disk cache and write it off to tape, encrypted. Or it can decrypt and decompress data and write it to tape in the native backup application's format.

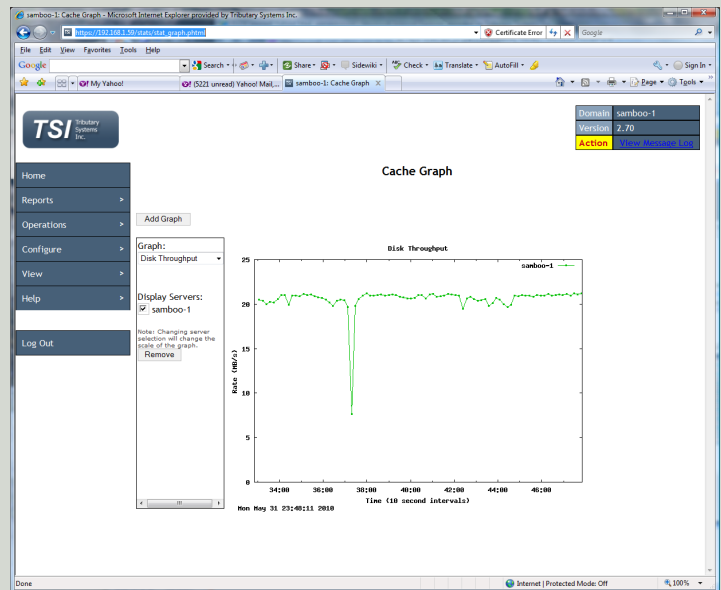
It's important for a consolidation solution to bring state of the art technology to systems that don't currently support it, something that requires a strong history and a roadmap for the future. Storage Director previously supported IBM and Sun/Oracle tape libraries, but has added support for HP's EML library and Open VMS platform on the host connect side. Now, through an alliance with Quantum, the Storage Director also supports the DXi data deduplication systems and the entire iScalar family of tape libraries, including the new i6000.

In addition to hardware, TSI supports OEM branding of the controller, another example of the strength of the partnerships that are in place with these industry leaders. This should provide confidence for customers who expect stability from their 'insurance provider' and should be a top consideration for primary storage system vendors looking to solve more of their customers problems as we discussed in our article "[Adding Disk Backup Intelligence To Primary Storage](#)".

Web-based GUI

Storage Director is now controlled by a Web-based GUI for easy deployment, easy operation and less potential disruption of the environment. Unlike other backup systems, no Java or flash applications must be installed on the server or desktop to control the backup virtualization

system. This is an important detail for companies that have restrictions around downloading or installing agents or clients. The Storage Director GUI can be run from any standard browser, even from a smartphone that supports internet connectivity.



Storage Switzerland's Take

Backup is a critical path operation for many organizations. For them, delays in completion of scheduled data protection processes do have a serious impact on the business - even if a restore is never required. Historically, TSI's Storage Director has provided a boost in efficiency and performance through it's ability to virtualize backup resources and consolidate backup applications. With the introduction of Advanced Recovery Option and WAN optimized replication, Storage Director can now provide a high-availability, low bandwidth, 'any to any' backup solution for open system and mainframe environments.

About Storage Switzerland

Storage Switzerland is an analyst firm focused on the virtualization and storage marketplaces. For more information please visit our web site: <http://www.storage-switzerland.com>

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