

Cost-effective solution that unifies tape and disk-based backup models - delivering a single backup and recovery platform designed to enhance the reliability, speed, and availability of backups, while consolidating the management and provisioning of backup resources

## **Why FalconStor VTL?**

### **Real business benefits...**

- Reliability** • Ensures backup/restore success by eliminating media & mechanical errors and manual intervention
- Availability** • Remote offsite replication of virtual tapes provides disaster protection
- Consolidation** • Reduces costs by centralizing management & consolidating backup resources
  - Supports tape-based backup procedures to virtual tape
  - Facilitates continuous disk-based backup to disk managed by the VTL appliance
  - Consolidates backups from dispersed branch offices to central data center(s)
- Speed** • Rapid data recovery with minimum downtime
  - Support for multiple concurrent backup sessions
  - Disk-to-disk is faster than traditional tape backup
  - Supports remote boot via FC or iSCSI HBA or PXE
- Archiving** • Data export to tape for archiving purposes
- Fast Deployment** • Integrates seamlessly with existing backup software or policy
  - Easy to deploy — comparable to adding a new tape drive or library to your environment
  - Preserves investment in backup policy and IT staff's know-how

With today's dwindling IT budgets, administrators and other IT professionals are aggressively searching for ways to maximize investments in their existing storage infrastructure. This fact, coupled with shrinking backup windows, and escalating data growth, and the growing need for a cost effective, reliable, business continuity solution are pushing the limits of internal resources.

**There is a solution:** FalconStor's unique VirtualTape Library (VTL) solution consolidates the management of backup resources while enhancing the reliability of backup operations and accelerating the speed of recovery. FalconStor VTL leverages industry standard high speed disk to provision virtual tape drives and libraries to backup servers attached to an iSCSI/IP or Fibre Channel (FC) storage area network (SAN), without the need to change existing backup software configurations and therefore preserving the investment in backup policy and IT staff's operating knowledge.

## **Maximizes Backup Speed and Reliability**

FalconStor VTL increases the speed and reliability of existing third party backup applications by using disks to emulate industry standard tape libraries.

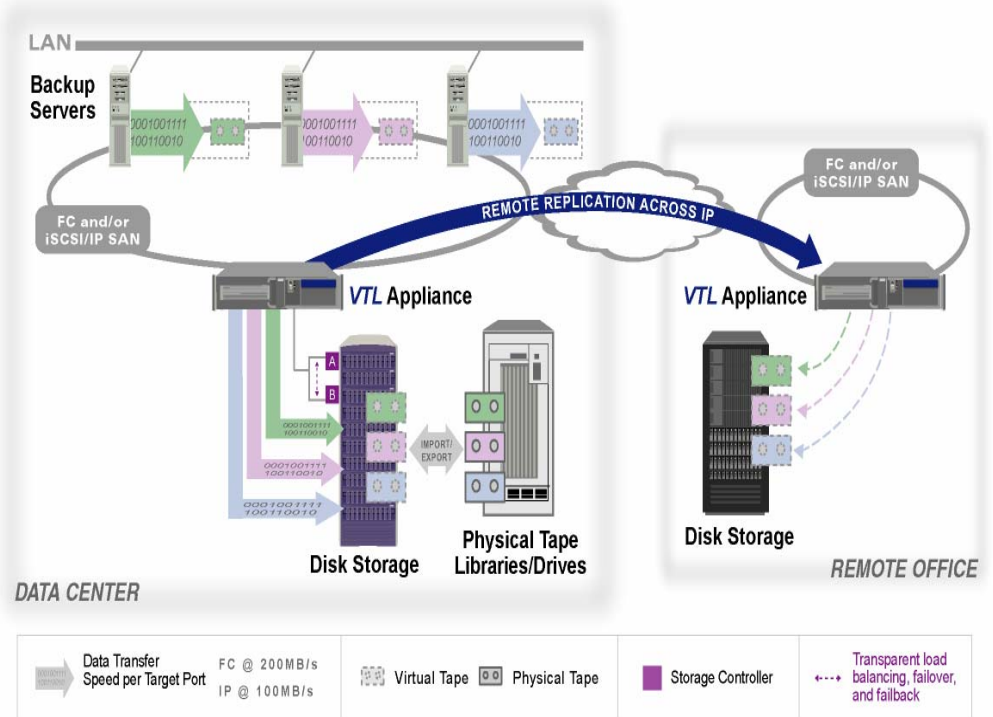
FalconStor VTL leverages the Fibre Channel (FC) or IP protocol to transfer data to and restore data from disk-based virtual tape at ultra high speeds. And, FalconStor VTL maximizes reliability, and improves backup and restore success rate, by eliminating robotic mechanical failures and physical tape media errors.

Availability and performance are always critical IT concerns, and users of FalconStor's VTL solution can benefit from

storage controller-aware I/O load balancing and leverage the transparent failover and fail-back capabilities of a vast array of intelligent storage systems. Users also have the ability to configure two VTL appliances as an *active-active cluster* to maximize service availability.

## Reduces Material and Administrative Costs of Backup

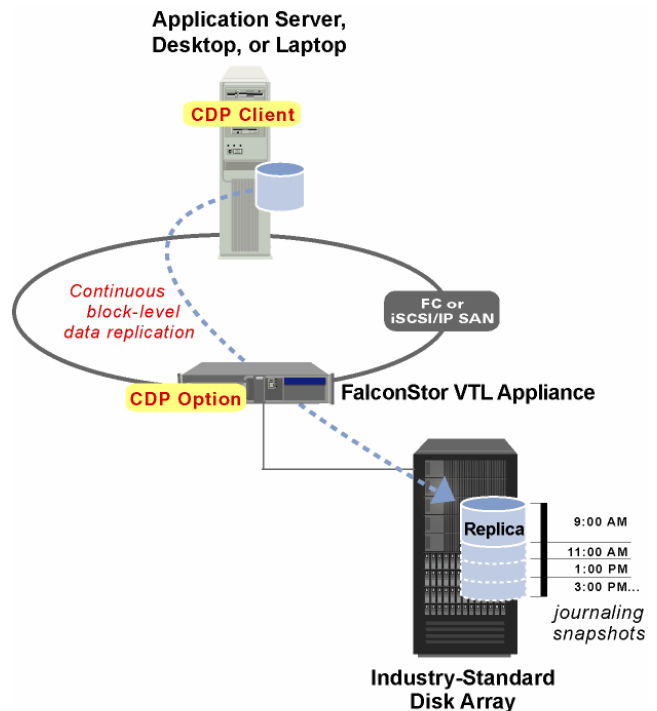
Adding to the FalconStor VTL's inherent ability to aggregate and provision backup resources and virtual tape drives/libraries over FC or IP SAN, this unique solution offers a new level of centralized management via the IP-based delta replication option, which replicates virtual tapes over IP in a peer-to-peer or many-to-one configuration, based on policy. FalconStor VTL significantly reduces the administrative burden placed on IT managers and staff by empowering users to initiate full disk or file recovery through rollback or mounted snapshots. FalconStor VTL also eliminates the need to rely on a library sharing option to coordinate access to a FC tape drive/library.



## Delivers Continuous Data Protection

In addition to addressing the backup window challenge by leveraging the speed and multi-stream capabilities of disk, FalconStor VTL offers a **Continuous Data Protection (CDP)** option. CDP transforms FalconStor VTL into a *single platform for tape-based paradigm and disk-based backup* delivering rapid, reliable data recovery with reduced data loss and minimal downtime to help customers achieve recovery point and recovery time objectives.

With CDP, VTL is put into a disk-based backup, allowing incoming information to be continuously replicated and journaled in order to provide numerous known-good points in time for data rollback. The resulting replica contains application, database and email data in a stable state, and allows users to quickly recover business critical data as needed. CDP also expands FalconStor VTL's comprehensive range of rapid data recovery capabilities to include remote boot recovery through an iSCSI or Fibre Channel HBA or PXE, as well as full system restore via a recovery CD.



## Supports Online and Offline Tape Duplication

Since it is disk-based, VTL backup to virtual tape is inherently faster than traditional tape backup, enabling backups to be completed comfortably within your allotted backup window. While this solves a critical challenge for backup administrators, compliance and long-term archiving mandates require many companies to keep a redundant copy of backed up data, on disk or physical tape (or both).

FalconStor VTL is a one-stop solution: in addition to backup and restore, it enables data to be easily replicated from one disk to another or exported from virtual to physical tape for onsite tape duplication and offsite tape vaulting.

### Tape Duplication

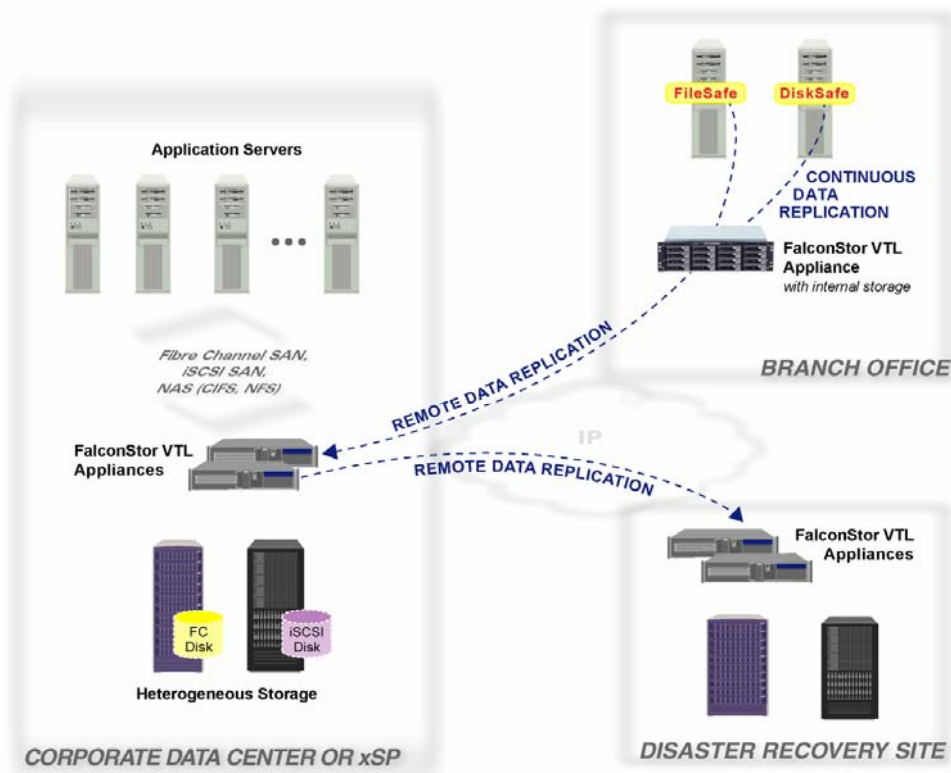
Using the FalconStor VTL console, virtual tapes can be exported automatically (via policy) or on demand. FalconStor VTL also allows data to be copied to physical tapes using your backup application's copy function. Either way, data movement between virtual tapes and physical tapes occurs offline, in the background, allowing the process to be completed at any convenient time without impacting the performance of production application servers.

### Tape Vaulting

For tape vaulting purposes, VTL can replicate data to a remote site where it can be stored as disk-based virtual tape or can be exported to physical tape. The replication process is efficient, occurring independently of production servers and using a bandwidth-conserving delta-based algorithm to copy data via IP – across any distance – to a remote offsite location.

## Centralizes and Simplifies Branch Office Backup

FalconStor VTL is a cost effective solution for remote office backup. It simplifies and consolidates backup of data at dispersed locations to a central data center for enterprise-wide data protection. FalconStor VTL enables remote backup servers to access virtual tape drives/libraries over IP, enabling them to use the backup equipment at the central data center. Offsite backup delivered by VTL eliminates the need for backup storage at each site and provides another layer of data protection for remote offices. And, because backups are centralized, they are easy to administer and provide reliable enterprise-wide data archiving.



## Delivers Seamless Integration with Existing IT Environments

FalconStor's ongoing interoperability testing with leading hardware and software solutions ensures seamless integration of VTL into an existing IT environment, while optimizing the overall performance and functionality of VTL and other technologies used by FalconStor customers today.

For a complete, current list of FalconStor Certified Devices please visit: [http://www.falconstor.com/certification\\_matrix\\_active.asp](http://www.falconstor.com/certification_matrix_active.asp)

**FalconStor currently offers a Standard and Enterprise Edition of the VTL solution running on Sun Solaris 10, RedHat or SuSE Linux platforms. Specifications are as follows:**

### VirtualTape Library – Standard Edition

- **IP Version** – Intel or AMD64-based Appliance with up to 2 CPUs and up to 2 Ethernet ports
- **FC Version** - Intel or AMD64-based Appliance with up to 2 CPUs and up to 2 FC target ports

#### Each version supports up to:

- 8 concurrent backup hosts
- 32 concurrent backup or restore sessions over FC or iSCSI
- 16 virtual tape libraries and up to 128 virtual tape drives over FC or IP
- 128 virtual tapes (expandable up to 2048 virtual tapes)

### VirtualTape Library – Enterprise Edition

- Intel or AMD64-based Appliance with up to 4 CPUs, 4 Ethernet ports and 4 FC target ports\*
- Supports both FC and iSCSI host connections

#### Supports up to:

- 16 concurrent backup hosts\*\*
- 64 concurrent backup or restore sessions over FC or iSCSI
- 64 virtual tape libraries and up to 512 virtual tape drives over FC or IP
- 512 virtual tapes (expandable up to 4096 virtual tapes)

\* *Support avail. for an additional 4 FC target port*

\*\**Support avail. for additional backup hosts on a per FC port basis*

### Software Options Available for FalconStor VirtualTape Library

<b>IP-Based Replication Option</b>	Replicates virtual tapes, based on policy, over IP in a peer-to-peer or many-to-one configuration.
<b>Compression Option</b>	Compresses the data stream during IP-based replication to maximize bandwidth utilization.
<b>Encryption Option</b>	Encrypts the data stream during IP-based replication to ensure end-to-end security/privacy.
<b>Continuous Data Protection Option &amp; Client</b>	Provides continuous or scheduled replication as well as user initiated backup and file/system recovery for high availability, reduced data loss and minimal downtime.
<b>Secure Tape Transport Option</b>	Highly secure, easy to use tape encryption service, based on Advanced Encryption Standard (AES), allows VTL to encrypt virtual tapes for export to physical tapes. This prevents unauthorized access to data on the tapes and protects against information theft.
<b>Tape Library Caching</b>	Simplifies export of data from virtual tapes to physical tapes by allowing users to set up a policy that will trigger the data migration automatically, based on criteria, such as the number of days that the data has been on the virtual tape or the amount of used space.
<b>CallHome Option</b>	Monitors the health of the storage infrastructure managed by the VTL Appliance. Potential system failures are automatically identified and IT administrators are notified of potential problems in order to take corrective action and ensure optimum uptime and availability while maximizing IT productivity at their site.
<b>Active/Active Failover Option</b>	Enables two VTL appliances to be configured as an active-active cluster to maximize service availability via transparent failover and fail-back capabilities. <i>VTL Enterprise Edition required.</i>
<b>Hosted Backup Enabler Option</b>	Allows certified backup applications to be installed directly onto the same appliance as VTL, eliminating the need for a dedicated backup server. <i>VTL Enterprise Edition is required.</i>
<b>NDMP Backup Support Option</b>	Allows certified backup applications and industry standard NAS appliances to perform backup and restore using the VTL NDMP protocol over an IP network. <i>VTL Enterprise Edition is required.</i>
<b>ACSL Shared Library Option</b>	Enables the VTL appliance to work with ACSLS-managed tape libraries, allowing the system to share ACSLS-managed libraries among the VTL appliance and backup servers for the purpose of importing/exporting virtual tapes from/to physical tapes. <i>VTL Enterprise Edition is required.</i>
<b>IBM 3494 Library Support Option</b>	Enables a VTL appliance to connect to and manage IBM 3494 tape libraries for import and export of virtual tapes from/to physical tapes. <i>VTL Enterprise Edition required.</i>
<b>IBM iSeries Support Option</b>	Allows IBM iSeries and AS/400 systems to connect to a VTL appliance. <i>VTL Enterprise Edition required.</i>

FalconStor has sales and support offices worldwide. Please contact us for more information about FalconStor and our IPStor solutions.

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