

## SOLUTION BRIEF

# Enhancing Disk-to-Disk (D2D) Backup with Data Deduplication

*Easy-to-use network-based data deduplication with tight Symantec OpenStorage (OST) integration enhances backup speed and reliability while dramatically reducing data storage consumption*

## Highlights

**The FalconStor® File-interface Deduplication System (FDS) provides the following benefits for D2D backup:**

- > Simple-to-deploy, easy-to-manage LAN-based solution
- > High-speed data deduplication with integrated WAN-optimized replication
- > Reduces storage capacity by as much as 95%
- > Global deduplication reduces WAN bandwidth requirements by as much as 99%
- > Integration with Symantec OST
- > High-performance data ingest rates, up to 1.5 GB/sec (5.4 TB/hr), using 10GbE and Symantec OST connectivity
- > 150:1 multi-site data replication with real-time monitoring, folder-level policy management, and statistical analysis
- > No single point of failure
- > Flexible post-process or concurrent deduplication

The performance and reliability benefits of D2D backup are readily apparent. Faster backup speeds, reduced backup windows, and more reliable data restores make D2D backup a valuable option for data management. The main challenge is cost.

By its nature, the backup process creates multiple copies of the same information over time. The same stores of data are moved again and again, including files, databases, and virtual machine (VM) images, and most of the information remains unchanged from week to week. The result is a huge accumulation of duplicate data that consumes disk resources at an ever-increasing rate.

In one sense this is desirable for restore purposes, because it is extremely useful to have months' worth of information readily at hand. Users often request versions of a file that are several weeks old. Database administrators need past instances of data for development efforts. Legal and compliance teams routinely seek past emails that have long since been deleted from primary storage.

In an ideal situation, the IT staff would keep everything readily available on disk. However, the cost of doing this can be considerable and prohibitive. Today's storage environments need a way to keep data intact without consuming corresponding disk storage. The FalconStor® File-interface Deduplication System (FDS) is the solution.

## Keep your data while reducing your storage

Sometimes you need one technology to compensate for the weaknesses of other technologies. Data deduplication works in precisely this way. It takes direct advantage of the most inefficient aspect of the backup process: the creation of large volumes of duplicate data.

FalconStor FDS examines data at the block level and removes all repeated instances of a given data block, keeping only one copy on disk. To understand the effectiveness of this, imagine a very colorful digital photo consisting of millions of small colored pixels. Then imagine that you could store that photo by keeping only one pixel of each color. You could reduce those millions of pixels down to a handful. To take it one step further, imagine that you could store many similar photos in a sequence, the same way you have many instances of the same file or database with only minor variations between them. The accumulated savings are even greater.

With FalconStor FDS, disk storage utilization is reduced by as much as 95% or more, enabling you to store several months of data in the same space that you currently store only several days' worth. The restore process is fast and reliable, letting you quickly satisfy data retrieval needs across your company.

## Easy to use and deploy

FalconStor FDS offers non-disruptive integration using a LAN-based file interface (CIFS or NFS network share) or the Symantec OST protocol over IP for Symantec Media Servers. Using 10GbE and Symantec OST, up to 5.4 TB/hr of aggregated throughput can be transferred to a FalconStor FDS appliance for deduplication and replication to a centralized DR site. An easy-to-use file interface maximizes compatibility with source data through seamless integration with all major backup software, database utilities, archiving applications, virtual machine data, and even manual file copies, with little or no changes to existing D2D backup applications or file and data archiving processes.

## Symantec OST integration

Symantec OST enables a Symantec Media Server to manage an optimized, high-performance connection with FalconStor FDS, enabling you to control the data protection process from end to end through a single integrated management console. Tight integration between these technologies provides data awareness and catalog control regardless of where data is located, be it in a local deduplication repository or at a DR site. Additional benefits include:

- > Transparent failover
- > Support for 10GbE offering backup performance of 1.5 GB/sec (5.4 TB/hr)
- > Multi-site remote management with global deduplication
- > Optimized deduplication with catalog and data lifecycle management

## WAN-optimized replication for multi-site DR

Managing tape backups at remote offices is often a challenge due to a lack of appropriate resources. FalconStor FDS eliminates the need to have qualified personnel to manage tape at remote offices, eliminating costs and security concerns about tape handling, shipping, and storage. FalconStor FDS supports efficient block-level deduplication at the remote site for local capacity optimization and fast restore while supporting replication with global deduplication at the data center.

A wizard-based management console enables real-time visibility, performance monitoring, and management of up to 150 remote sites at once. Various policies and schedules can be applied to replication with folder-level granularity, defining a flexible data retention model for fast restore and DR. In addition, data can be encrypted during the replication process to minimize risks and enhance security.

Built-in WAN-optimized replication ensures that only globally unique blocks of data are transmitted. Integration with Symantec OST further reduces WAN bandwidth needs for Symantec NetBackup and Backup Exec while maintaining a single pane of management and a consistent catalog of data regardless of the location: tape, local deduplication repository, or remote DR site.

## Convenience and cost reduction

FalconStor FDS is a multi-purpose, easy-to-deploy capacity optimization solution that brings immediate cost savings to any IT organization that needs high-performance access to data. Its open, integrated architecture provides flexible and reliable backup and restore, ensuring that tight backup windows and service level agreements (SLA) are met.

## About FalconStor

FalconStor Software, Inc. (NASDAQ: FALC), the provider of TOTALLY Open™ Data Protection solutions, delivers the most comprehensive suite of products for data protection and storage virtualization. Based on the award-winning IPStor® platform, products include the industry-leading Virtual Tape Library (VTL) with deduplication, Continuous Data Protector (CDP), File-interface Deduplication System (FDS), and Network Storage Server (NSS), each enabled with WAN-optimized replication for disaster recovery and remote office protection, and the HyperFS® file system. Our solutions are available from major OEMs and solution providers and are deployed by thousands of customers worldwide, from small businesses to Fortune 1000 enterprises.

For more information, visit [www.falconstor.com/FDS](http://www.falconstor.com/FDS) or contact your local FalconStor representative.

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