

FlashD2D™ - Automated Disk-to-Disk Backup

INTRODUCTION

FlashDisk VX Series disk arrays offers a low-cost “Storage Services” license option which includes replication, snapshots and mirroring which in combination create what is called FlashD2D backup. FlashD2D is implemented using FlashDisk Global Manager.™ It provides a unique capability to schedule and automate zero-downtime backups that also offer substantial storage savings by mirroring primary storage to low cost secondary storage. FlashD2D uses a highly efficient combination of snapshots and mirroring plus volume splitting and resynchronization to achieve zero-downtime, low, impact, low cost disk-to-disk backup that is ideal for today’s 24x7 operations while also enabling off-line backup to tape.

FlashD2D is a big boost to productivity to both the IT administrator through automation and to the user community through continuous and full speed availability of the applications. For 24x7 environments that run applications including e-mail, database, e-commerce, this is a very liberating set of benefits that enables all the stakeholders in the application to be free of long-standing and traditional constraints and burdens of backup.



FlashD2D automates disk-to-disk backups.

Zero Downtime Backup

FlashD2D enables zero downtime backup by periodically copying incremental changes in the primary data to a secondary store with little or no impact on productivity. In the event of a disruption to the primary data, the secondary data can be promoted to primary storage by a simple reassignment.

Automated

Backups are scheduled to run automatically. It is as easy as just selecting the source and target volumes and setting the schedule. All changed blocks are copied. The initial volume copy may take many hours and a priority setting lets administrators minimize the impact of the copying on the primary applications.

WHY FlashD2D

- Unique tiered disk-to-disk backup - duplicates primary to secondary storage - cutting storage costs
- Scheduled and automated zero-downtime backup
- Copies incremental changes only - as scheduled
- Works with key applications: SQL, Exchange, Oracle
- Little or no impact on primary application performance
- Easy to install and manage
- Low cost

REQUIREMENTS

- Need simple, low cost, reliable backup
- Need tape archive for off-site
- Need fast data recovery
- Need duplicate volume for testing, development, reporting

TYPICAL ENVIRONMENTS

- No backup window available
- Tapes take too long to backup
- 24x7 operation

BENEFITS

- Fast, reliable, low cost backup
- Fast file or volume data recovery
- Save storage costs
- Save administrator time

Simple

Setup is easy. Just install the server agents, select source and target volumes and then set the schedule and relax. Administrator time is minimized, leaving time for other duties.

Data Recovery

Selected data can be recovered by mounting the target volume and copying selected files. A target volume can replace a source volume if the source volume is corrupted or failed by simply dismounting the source volume and remounting the target volume in its place.

Backup Volume: Tape Archive, Reports, Testing

A backup volume can be mounted and used as a source for a disk-to-tape backup. Since the backup volume is a point in time and mountable copy of the original, it can be used for reporting, testing and other applications. Use of the backup volume places no direct load on the source volume. However, since the backup volume is managed by the same RAID controller set, tape backups or intense applications are best run when primary activity levels are low.

For backups with zero-downtime, low impact, low cost and utmost data integrity, FlashD2D features:

Tiered Storage

FlashDisk VX Series disk arrays support tiered storage so that the source data that is typically stored on high performance and more expensive storage such as SAS disks running at 15k rpm can be backed up to less expensive SATA storage for remarkable cost savings and increased total capacity.

Coherent Snapshots

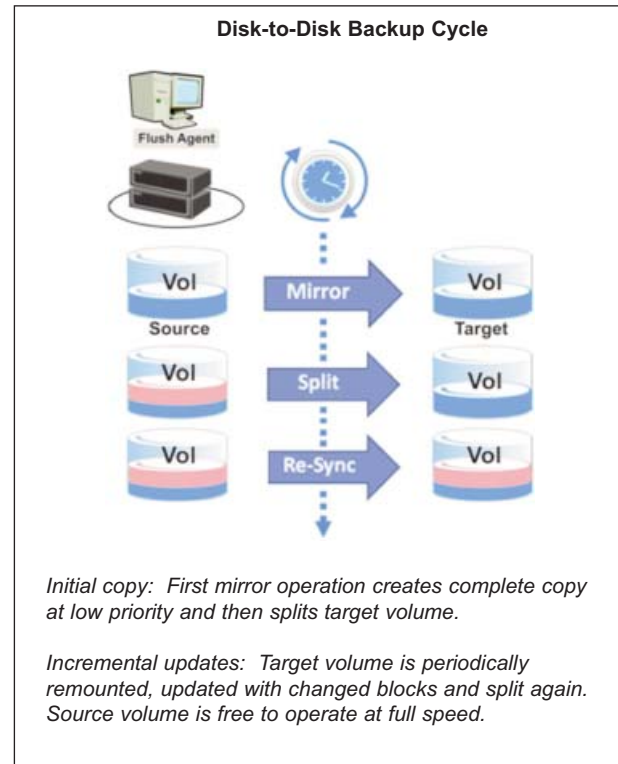
For transaction oriented applications such as SQL, Exchange and Oracle, server agents take “application aware” snapshots to ensure that entire transactions are backed up as single units of data and that backup images are thus coherent and restorable images.

Incremental Changes

Snapshots save only changed data and are thus by design incremental, minimizing data transfer to just the blocks changed since the last backup. Typically only a few percent of the blocks on the primary disk are changed between backups, so data transfer is minimized.

High Performance

The source and target volumes reside under the same set of tiered controllers thus the data traffic is local to the disk array and does not burden the local network with bulk data transfers. All transfers occur at full disk to disk speed. Since the data is incremental changes only, this is very fast.



When the operational simplicity of FlashD2D is combined with its performance, reliability and affordability, FlashD2D offers a compelling method for backups today.

HOW IT WORKS

Initialization

1. Select primary volume
2. Select secondary volume
3. Mirror primary to secondary volume
4. Set mirror priority
5. Initiate primary to secondary mirror
6. Await completion

Schedule backups

1. Specify dates and times, usually daily
2. When backing up databases such as SQL, Exchange, Oracle, specify “snapshot” option

Run backup

1. Snapshot Primary Volume
Take coherent, “application aware” snapshot of primary volume

2. Mirror (“Resynchronize”) Volumes

Copy changes only to secondary volume, often less expensive storage

3. Split Volumes

Primary volume is “split” from secondary and runs standalone at full speed until next backup. Secondary volume is dismounted but available for independent use.

Mount Secondary Volume

1. Mount backup volume
2. Run disk-to-tape backup or perform reporting, testing or other applications.
3. Recover lost or damaged files
4. Reassign volume to replace damaged primary