EMC MirrorView

EMC® MirrorView™ provides highly available data storage across campus, across the state or across the globe. By maintaining synchronous or asynchronous data mirroring between Dell/EMC CX arrays, MirrorView helps ensure data availability for important business functions. MirrorView is an array based application, minimizing the impact to your server while maximizing data uptime. MirrorView also integrates with EMC SnapView™ point-in-time snapshot software. Together, MirrorView and SnapView provide a unique solution for online data availability and disaster recovery.

Gain productivity while maximizing data availability through advanced synchronous and asynchronous remote disaster recovery

MirrorView is easily configured and managed from within EMC’s Navisphere® management software. In a MirrorView/Synchronous (MirrorView/S) configuration, a server writes to the source array, which records the data and synchronously writes the same data to the target Dell/EMC array. An acknowledgement is sent back to the server once the data has been written to both the source and target arrays, ensuring a complete transaction record on both arrays.
In a MirrorView™/Asynchronous (MirrorView/A) configuration, a server writes to the source array, which immediately acknowledges the write. The data can then be written to the target Dell/EMC array in the background, decreasing the original write time and eliminating the distance requirements of MirrorView/S. The resulting mirror can be used for fast failover to the target site.

**Restore, rather than recover, with fast restart from disk MirrorView/S Option**

By creating a synchronous mirror between two Dell/EMC arrays, MirrorView/S maintains an exact byte-for-byte copy of your production data in a second location. The mirrored copy can be used for failover, online restore from backup and running backups against a SnapView™ snapshot of the remote mirror. MirrorView/S helps minimize exposure to internal issues and external disaster situations, and is designed to provide fast recovery time if a disaster does strike. Data is protected throughout the entire mirroring process.

Fracture logs track changes and provide a source for restoring modifications to source data in the event that the source array loses contact with the target array during a failure. When the target array returns to availability, the pending writes in the fracture log are written to the target array restoring its consistent state. A write-intent log is also kept in the unlikely event of a source array issue. Upon repair of a source array, MirrorView/S will access the write intent log to make any changes that were in process between the two arrays during the failure, to the source data. Then, a partial re-sync with the target array can take place to return to a consistent state between the source and target arrays.

MirrorView/S now offers a new feature called Consistency Groups, which helps ensure consistent remote copies of data from one or more applications for disaster recovery purposes. Inter-related LUNs stay in sync and are recoverable in the event of an outage at the primary site. All LUNs in Consistency Group must reside in same array. There can be up to 8 LUNs in a Consistency Group on a CX400 or CX500, and up to 16 LUNs in a Consistency Group on a CX600 or CX700.
MirrorView/A Option

MirrorView/A provides the ability to mirror data over long distances and help reduce network costs. Its ability to help reduce bandwidth requirements and minimize data exposure lies in the Delta Set architecture. MirrorView/A Delta Sets are disk-resident collections of writes that have occurred within a specific period of time. In addition to providing consistent restartable images at the target site, Delta Sets reduce the bandwidth needed between sites in two ways. First, if the same data is overwritten several times within a Delta Set, only the latest version of data is sent. Second is the ability to size your communication links to your average write workload rather than your peak workload. MirrorView/A also supports the array level Consistency Group feature.

Remote data replication and system-based software MirrorView operates on the Dell/EMC array. By off-loading the mirroring process from the server to the array, the server is free to service application I/Os, instead of managing the data replication process. Because the Dell/EMC arrays are redundant, MirrorView operation is protected from a server failure.

MirrorView can also be used to consolidate information to one centralized Dell/EMC array for centralizing remote processes such as backups, decision-support queries, simplified disaster failover and remote data bunkering.

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MirrorView™ allows you to mirror up to four source arrays to one target array. These source arrays and target arrays can be in different locations. MirrorView provides for bi-directional mirroring. That means each Dell/EMC array can be both a source and a target to other Dell/EMC arrays—helping to make information available wherever your business requires.

Concurrent mirroring capability of MirrorView/S enables you to synchronously mirror one source LUN to two different target Dell/EMC arrays. This is particularly helpful when business requirements dictate having a Gold Copy—not part of any other activities or processes—and another copy of the production data for parallel processing activities, such as backups or decision-support queries using SnapView™. (MirrorView/A supports only one target LUN per source LUN.)

Flexible choices for deploying MirrorView

MirrorView enables long-distance remote mirroring through the same Fibre Channel switch that you use for your hosts. Depending on the distance between your two sites, you can use several options for FC-based mirroring for distances up to 60 km: Short Wave GBICs, Long Wave GBICs, Optical Link Extenders or Dense Wave Division Multiplexers (DWDM).

DWDM extends MirrorView over Fibre Channel synchronous or asynchronous disaster restart capabilities up to 200 km. DWDM enables you to multiplex MirrorView sessions with other Dell/EMC arrays over a single redundant Fibre Channel path. In addition to the high throughput and low delays enabled by Fibre Channel, connectivity costs can be reduced in this configuration.

In addition, MirrorView/Asynchronous enables you to utilize existing WAN/IP bandwidth for maximum flexibility, fast time-to-deployment and virtually unlimited distances.