CirrusData®

"Finally, with pMotion you can retire old assets without requiring final cutover at the same time, this is especially useful when leases are nearing expiration or when the source storage is experiencing failures."

THE CHALLENGE

A major global accounting firm recently faced a critical storage refresh challenge. It needed to immediately upgrade an aging storage infrastructure to avoid the risk of outage and to correct performance issues. Unfortunately, the downtime that is typically required for a storage migration was not available until many months later. The company needed a high performance, real-time, and non-disruptive method to migrate from their legacy EMC VNX to their new storage platform choice, HPE 3PAR FlexCapacity, but also needed to defer the cutover downtime for several months.

The most difficult part of both planning and executing any data migration is the final server cutover to the new storage. The downtime typically required for this migration must generally be scheduled far ahead of time. In this case, the old storage was putting the application service levels required at risk, which required immediate action. The planning and execution efforts using previous methods would not only add to the time, resources, and risks required to move the data and complete the data migration but would also require immediate downtime.

What if there was a solution that allowed the business to retire its old storage systems and defer the final cutover downtime for several months? What if the solution could be deployed transparently, at high speed, and eliminate the need for any host, FC/SAN, or source storage configuration changes—processes which could result in months of risk analysis and change approval?

THE SOLUTION

Holding on to old production storage can incur hefty leasing extension fees, can pose unacceptable risk to data availability, and can even result in data loss. CDS premier partner realized the client needed a solution that would allow them to quickly retire their old VNX storage assets and migrate to 3PAR FlexCapacity while deferring cutover downtime. HPE experts were quick to recommend Cirrus Data's Cirrus Migrate On-Premises (CMO) with its unique pMotion capabilities which

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allows using the new storage to stand-in for the old storage indefinitely—before final cutover. pMotion is particularly useful in scenarios when source storage is failing, lease expiration is imminent, or the maintenance contract is expiring and downtime for cutover is not available in required service windows.

This is how pMotion works:

The CMO appliance pair is placed into the FC fabric using Cirrus Data's patented TDI technology, which allows SAN insertion without downtime and without making any changes to any host, the FC switch zones, or the production storage. Upon insertion, the source LUNs are automatically discovered and new LUNs are created automatically using the CMO storage plugin for the destination storage and paired with each source LUN. Migration sessions are then created and enabled based on the priority established by the customer. In this instance, migration performance was over 1GB/sec. Once the initial copy is completed, the pMotion feature is triggered, effectively retiring the old source LUNs and redirecting all the read/writes to the new storage.

CMO emulates the decommissioned storage; the application servers and FC switches still "see" the old storage and datapaths, avoiding the need for downtime to reconfigure each host to see the new storage. The pMotion migration process is a totally transparent action and does not impact the production environment. This solution makes it possible to defer the final server cutover for weeks or even months, as long as the CMO appliances continue to be deployed.

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There were additional CMO features that added to the ease and simplicity of the entire migration project. CMO's auto-discovery functionality identified the source storage's LUN-to-host mapping, even for the mission critical clusters. In this case, the client used auto-discovery to overcome limited documentation on the source storage SAN configuration, with CMO providing a completely accurate picture of the entire SAN immediately after insertion. Another useful feature was auto-provisioning which simplified and accelerated the pre-cutover preparation by automatically setting up the same LUN-to-host mapping (LUN masking) on the destination storage. Utilizing both the auto-discovery and auto-provisioning features eliminated the need for many hours of normally tedious and error-prone tasks.

CMO's intelligent QoS (iQoS) feature allowed the maximum use of all the available bandwidth for copying data without impacting production I/O quality. iQoS functions by monitoring the actual load on each source LUN, automatically pausing migration when the LUN is too busy, then resuming migration when traffic on the LUN decreases.

With CMO's simple and intuitive operation, HPE and its client were ready to migrate using CMO in just hours (not days or weeks). Apart from a brief time spent installing/inserting two CMO appliances at the customer site, the actual migration and cutover

were handled remotely. CDS technicians worked with the client's IT staff and HPE migration experts to provide a seamless migration from start to finish. CDS partner support was available globally 24x7 to help with migration and to answer any questions or issues that arose.

This deployment proved that CMO provides the flexibility of a single solution that can meet any client's migration requirements with or without the use of pMotion, while reducing or eliminating the complexity and risks of moving from any legacy storage to any next generation storage, regardless of storage vendor.

CHALLENGES

- No downtime available until months after migration deadline
- Limited information on existing environment
- No changes to the source VNX storage were allowed due to known risks
- Short implementation timeframe

SOLUTION

- Using TDI patented technology, CMO was inserted into path totally transparent to the hosts, FC switches, and the VNX storage
- CMO auto-discovered all hosts, source LUNS, and paths
- Maintained compatibility with PowerPath even after pMotion and I/O were going solely to the 3PAR array
- Maintained compatibility for boot from SAN

RESULTS

- Eliminated risk of changes and application outage that are usually associated with using standard migration tools (host or appliance)
- Delivered on-time migration with predictability with full control over infrastructure and migration process
- pMotion allows old storage to be removed without affecting the host by emulating the old storage using the new storage
- No dependencies on other software, OS, storage array, applications versioning, or SAN array changes—allowed the migration to move forward without requiring remediation until final cutover

QUICK FACTS

Customer Type
Global Accounting Firm

Source Storage
EMC VNX

Target Storage
HPE 3PAR

Number of Hosts
1488 hosts, many were clustered

Host Types
Windows and Linux

Host Applications
Varied

Migration Type
Local

Number of CMO and model
1 pair of CMO2000P for each VNX

Insertion Method
Logical Storage-side Intercept

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The best tools for moving, accelerating,
and protecting your SAN storage

ABOUT CIRRUS DATA

Cirrus Data Solutions Inc. is a leading technology provider of next-generation solutions for data mobility, specializing in block data migration and protection. The company distributes its solutions through systems integrators, managed service providers, channel resellers, and partners including HPE, IBM, Dell Technologies, Microsoft Azure, AWS, Hitachi, NetApp, Pure Storage, Infinidat, AEBS, AHEAD, CDW, SHI, Park Place, Presidio, ePlus, Insight, Computacenter, Sirius, WWT and many others. Cirrus Data Solutions is headquartered in Syosset, New York and has offices located in Dublin, Ireland, and Nanjing with sales and support offices in Boston and Chicago.

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