

C A S E S T U D Y



Intelsat®

Migrating Data for a Complex, Mission-Critical Storage Environment



Summary

Customer Requirements

- *Outsource migration of 4.3 terabytes of SAN data and 4.2 terabytes of NAS data from an enterprise storage array to a new NetApp FAS3070 system within limited migration windows.*
- *SAN Migration to include data from 29 clustered and single-CPU HP-UX and Windows servers, 240 data LUNs, and 10 boot LUNs.*
- *Entire project to be managed under turnkey, third party services with minimal support demands on internal IT staff.*

Results

- *Data was migrated problem-free during six separate, limited-duration migration windows.*
- *Two migrations were accomplished locally, while another four were performed remotely across the U.S.*
- *Servers were brought up under NetApp 3070 following six problem-free cutovers.*

Introduction

Founded in 1965, Intelsat established the world's first global commercial satellite communications system. Today, Intelsat is the global leader in satellite communications systems with over \$2B in annual revenues. The company maintains a global fleet of over 50 satellites and eight teleports and terrestrial facilities that deliver video, data and voice connectivity to approximately 200 countries and 1,800 customers across the globe. Customers include major media and communications companies, multinational corporations, Internet service providers and government/military organizations.



In 2008, the company purchased NetApp FAS3070 storage systems to replace its existing enterprise storage arrays that stored data from a mix of HP-UX and Windows servers.

Challenges

Before putting the NetApp FAS 3070 storage systems into use, Intelsat needed a solution to migrate SAN and NAS data that resided on its current enterprise arrays. As part of the SAN infrastructure migration, 10 boot LUNs for both clustered and non-clustered Windows servers would need to be migrated, an inherently complex task. The migration would also involve migration of 240 LUNs for 17 HP-UX and 12 Windows servers, and 4.2 terabytes of NAS data.

Further complicating the task, the applications that run on these servers are mission-critical requirements for Intelsat's 24 x 7 business. Extended downtime would be unacceptable. As a result, Intelsat placed a greater priority on system availability than speed during migration; only small migration windows were permitted.

Finally, Intelsat expected migration services to be an integral part of its storage purchase, with minimal requirement for support from the company's busy IT staff.

Overall, the requirements for this data migration thus included:

- Non-disruptive migration 4.3 terabytes of SAN data, 200 SAN data LUNs and 10 boot LUNs for clustered and non-clustered Windows servers, and 4.2 terabytes of NAS data.
- Data migration for 17 HP-UX and 12 Windows 2000/2003 servers, both clustered and single-CPU.

- Maximum, per-server migration windows of 0.5 to 2.5 hours.
- Turnkey, third party services and management for the entire migration project.

Solution: Simple, Fast, Guaranteed Data Migration

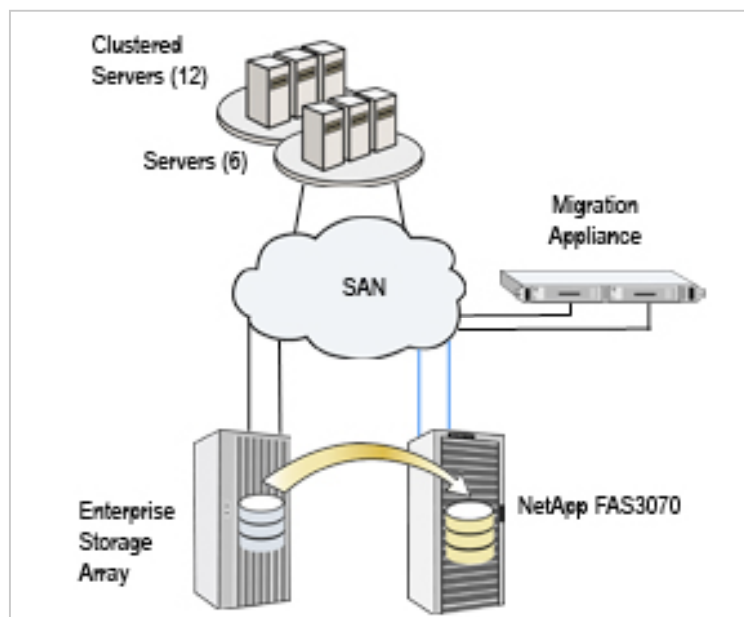
As the storage system provider, NetApp's Professional Services team proposed Vicom Systems for migration of the SAN data, based on the company's SAN appliance technology and methods. Not only would Vicom assume responsibility for the migration from start-to-finish, but also its block-level virtualization technology would enable straightforward replication of the Intelsat SAN topology onto the NetApp storage with minimal disruption. A key advantage of Vicom's migration method was its ability to address Intelsat's limited migration windows, while also providing a failsafe fallback option in the event problems arose during the migration.

Intelsat gave its approval, and NetApp and Vicom proceeded with the data migration.

Under Vicom's turnkey DMS (Data Migration Service), Vicom migration specialists handle the entire migration process from planning to server cutover, and back each engagement with a money-back guarantee of on-time completion. Vicom is able to guarantee its migrations because company specialists use a migration appliance and automated discovery tools that dramatically simplify the migration task. The appliance is a SAN-based, block-level data migration hardware tool that has been used in the delivery of hundreds of enterprise SAN migrations. SAN virtualization and software automation eliminate much of the manual labor involved in setup and configuration of host software-based migrations, while the Vicom appliance moves data at a fast, up to one terabyte per hour, performing block-by-block replication between the source and new storage. All data written to the new storage system is error-checked from end-to-end.

Seasoned Vicom specialists oversee each of the migrations, which are typically delivered during weekend or planned maintenance windows. A proven process, developed in the delivery of over 500 enterprise data migrations and a 100-percent success record, maps and verifies the migration plan and provides customer checkpoints at key steps during the operation.

Figure 1. Data Migration Configuration



Migration Operation. Following a pre-migration planning session and onsite installation of the data migration appliances as shown above, the assigned Vicom migration specialist initiated the process on by

first mapping and checking the customer's SAN connections against plans. Upon receiving approval from Intelsat, the first migration (30 LUNs, 280 Gigabytes and 3 servers) was initiated and completed on a Thursday in July 2008. Upon completion, the migration data was verified and servers were cut over to the NetApp system.

This initial session was followed by four remote migrations from Vicom's headquarters in Redwood City, California and one onsite migration over the next two months.

Results

All six migrations and cutovers of all 29 servers were completed on time and according to schedule. All migrations were problem-free and Intelsat computing services continued uninterrupted. Including time for installing NetApp applications (not part of the actual migration), individual server outage time averaged less than 1.6 hours, and in no case exceeded 3 hours.

While the project was completed according to schedule, data migration for two of the servers exceeded Vicom's migration projections, neither of which was due to Vicom's migration process. First, the enterprise storage system was used to perform backup during the migration, which at times, reduced the overall migration speed. Second, applications for the new storage system were installed during the planned server outages, requiring extension of the scheduled migration windows.

Overall, NetApp system installation and migration services were deemed a success. "Data Migration though a critical part of the project, is integral to the storage solutions, and we did not want to invest scarce IT resources in this onetime activity," said Radha Chandran, Director of IT Operations and Engineering at Intelsat. "We counted on NetApp and Vicom to provide on-time, turnkey migration services, and they delivered," he said.