Time-Sensitive, Multi-Site Data Migration

KEY HIGHLIGHTS

Location: Multiple sites across the United States

Industry: Government

The Challenge

- Migrate 37 terabytes of SAN data for existing MS Exchange clusters, Oracle, and other applications on mid-range enterprise storage arrays to new NetApp 6070 filers

- Perform migration at four different sites for 57 attached servers and complete the entire project in four consecutive weekends.

Vicom Data Migration Service Benefits

- Turnkey migration service with guaranteed, on-time completion

- Quick, automated migration planning, configuration, and pre-migration testing

- Fast, appliance-powered migration

Introduction

Headquartered on the East Coast of the United States with major field locations across the U.S. and locations worldwide, this federal agency and NetApp customer oversees government services and contracts for the federal government. Each year, the organization's employees provide government liaison, management, and monitoring of government suppliers across the country and around the world.

Challenges

In winning a major bid for SAN storage with the customer, NetApp had not only sold four clustered, NetApp 6070 filers, but also committed its Professional Services team to migrate existing data from old to new storage systems. At each of four sites around the U.S., the Customer uses VMware to consolidate multiple Windows applications including Exchange, Oracle, and others onto fewer server platforms. In turn, the backend storage for the VMware servers had been consolidated on mid-range enterprise storage arrays at each site. Upon acquiring its new filers, the Customer had decided to upgrade its storage with the faster, larger capacity, high-availability Fibre Channel storage available offered by NetApp's 6070 systems.

While network file migrations were stock-and-trade for the federal Professional Services team, the Customer's SAN data migration imposed a tight timeline. Moreover, time was of the essence: NetApp's Professional Services team would have only two months to install the filers in four different cities, migrate the data from the older arrays to the new filers, verify that all applications functioned properly with the migrated data, and then shut down the legacy storage systems.

Of particular concern for NetApp service team was the storage for the dual-node Exchange clusters, which require specific disk signatures to work correctly. Moreover, migration problems at any of the sites could easily create cascade, causing delays in the deployment schedule. The team decided to outsource services to data migration specialist Vicom Systems, a NetApp CDP (Continuous Data Protection) partner.

Solution

NetApp installed the 6070 filers at four of the Customer's U.S. sites in November. In the same month, Vicom performed an initial 3TB test migration at the California site to verify that the migrations could be accomplished as planned. Using Vicom's data migration appliance, the company projected one of its migration specialists could migrate up to 20 terabytes per weekend at a single site. In addition to the actual

migration, this included a Friday pre-migration regimen of automated SAN mapping, work list creation, and migration connection testing. Thus, the NetApp Professional Services plan called for migration per site to be performed every week, except for the last two weeks of December.

Figure 1. Data Migration Configuration at Each Site
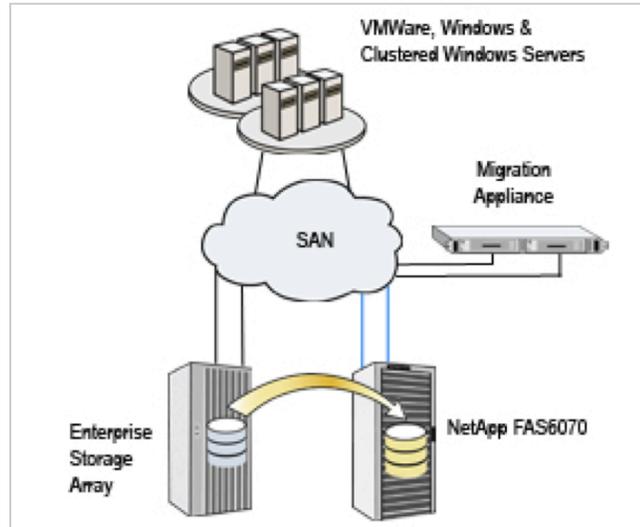
As shown in Table 1 below, Vicom delivered the migrations as promised — on-time and problem-free migration of 37 terabytes of data for 57 servers at four different sites — over four consecutive weekends excluding holidays. The single process exception was a single LUN at the California site, in which Vicom's verification testing showed that data had not been moved to the new filer. The migration was quickly re-initiated for the LUN, completing the migration precisely as planned. Average migration speed was ½ terabyte per hour, but as migrations illustrated, the real benefit offered by the Vicom approach was the assurance of on-time, problem-free delivery.

Table 1. DCMA Data Migrations

Date	Site	Data Migrated,TB	Servers	Time,hr.
Test Migration				
Nov 13	California	3	3	7.5
Production Migrations				
Dec 4	Ohio	3	2	8.5
Dec 11	Virginia	4	5	11.0
Jan 1	Massachussetts	14	24	26.0
Jan 8	California	13	23	24.0
	TOTAL	37	57	77.0

Key to Success: Data Migration Appliance. Vicom's ability to tackle complex migrations are made possible by a unique combination of high-speed SAN appliance design and migration automation software tools. Each appliance is an autonomous data mover that can move data online or offline. Appliance-based software tools simplify the migration process by automating labor-intensive management tasks, while also eliminating human error.

Virtualization technology enables the appliance to serve as a "SAN connection platform" to enable migration among any host or storage systems. Transparent connection eliminates time-consuming configuration by enabling between any host to any storage device, without modification of host OS, drivers, Fibre Channel switch, or even type of connection (FC or SCSI). In addition, specially designed appliance hardware moves data from point-to-point with a minimum of overhead, at data transfer rate of 1.2 terabytes per hour, which is more than is needed for most migrations, even with enterprise storage systems.

Furthermore, clustered appliance design enables multiple appliances to move data cooperatively, delivering multiple terabytes per hour of throughput if required.

Complementing the appliance are unique software tools designed to deliver problem-free migration in heterogeneous enterprise environments with only a few hours of preparation. These environments range in size from tens to hundreds of servers and storage systems — with potentially thousands of LUNs. Vicom's software migration tools automate the migration process and collapses the migration preparation and migration time from weeks or months to just hours. Moreover, because the migration operations are transparent with no system or disk signatures, every migration has a built-in fall-back option of reverting to original, pre-migration configuration if needed.

Results

Both the Customer and NetApp Professional Services were extremely pleased with the data migration results. The Customer was able to use its new 6070 filers on schedule, providing immediate productivity payoff. The NetApp Professional Services team enjoyed a profitable engagement by delivering, installing, and bringing all systems online on time, and on budget — further solidifying the Company's reputation with a major Federal government customer.