Global Financial Leader Consolidates Mainframe Storage and Reduces Costs With Hitachi Dynamic Tiering

Introduction
Companies with mainframes and mainframe storage face the same complex issues and desires as other businesses. They need to lower costs, reduce their storage footprint, boost performance and increase scalability, all with flat or declining budgets. And even as they make these improvements, companies also want to reduce operations costs and be freed from the overhead of continually tuning their environments for peak performance. They want and expect data to be moved to the appropriate tier and both capacity and performance to be optimized automatically.

To achieve these goals, a global financial leader decided to consolidate its test and development systems spread across the enterprise, and position test and development closer to production data. This action delivered benefits to applications run in close proximity and simplified creation of test and development data from production. The infrastructure team was able to use Hitachi Virtual Storage Platform with Hitachi Dynamic Tiering pools and a mix of flash and SAS drives to achieve its consolidation goal. At the same time, it cut response times nearly in half, increasing I/O by as much as 55%, and significantly reducing software, hardware and environmental costs.

Challenges
- Improve current performance levels.
- Reduce software and environmental costs.
- Reduce complexity of managing multiple environments.
- Increase scalability.
- Determine the value of incorporating flash-based storage.

Solution
- Hitachi Virtual Storage Platform or VSP G1000.
- A mix of solid-state disks (SSDs) and serial-attached SCSI (SAS) drives.
- Hitachi Dynamic Tiering (HDT).
- Implementation services for migration and HDT.

Benefits
- Gained excellent performance benefit with small number of flash drives.
- Achieved 2x better response times.
- Increased workload of up to 55% more I/O.
- Cut environmental costs in half.
- Significantly reduced software-licensing fees.
- Simplified performance management.
Challenges: High Costs, Limited Scalability

First and foremost, this financial leader needed to reduce the high costs of its mainframe environment. Efficiencies gained by consolidating its storage footprint resulted in fewer processor requirements and improved utilization of the consolidated systems, which saves on mainframe software licensing costs, too. It also reduced environmental and broadband network expenses.

Adding to the urgency of the consolidation was the company’s anticipated growth. The company is working to improve time to market for several projects, which will require more storage capacity in the years ahead. Existing Hitachi Universal Storage Platform V (USP V) systems were reliable and performed well, but they lacked the necessary scalability to address this significant growth. They also had high environmental and operating costs. In addition, unconsolidated growth would lead to increased management complexity, an issue the company wanted to avoid to contain costs and simplify storage management going forward.

Solution: Hitachi Virtual Storage Platform

Hitachi Virtual Storage Platform is a high-performance, large-capacity storage system that builds on and enhances the virtualization, performance, Hitachi Dynamic Provisioning (HDP) and replication capabilities of the previous-generation Hitachi Universal Storage Platform V.

The financial leader replaced 2 of its USP V solutions, which provided approximately 250TB of total storage, with a single 700TB VSP to handle existing and new test and development workloads. To match the increasing I/O load, Hitachi Dynamic Tiering pools were designed with a mix of flash drives, 300GB SAS and nearline drives.

Dynamic Tiering allows automated data placement in the test and development environment, ensuring higher performance and lower cost. A key feature of VSP and VSP G1000, HDT pools place the right data in the right place at the right time with no performance degradation. If desired, it supports considerable performance improvement.

The software manages tiering across both internally and virtualized external data, including storage on multivendor devices and mainframe data. By adding a bit more disk storage using dense capacity nearline SAS (NL-SAS) drives, the financial organization has been able to reduce MIPS-intensive HSM migrations. Administrators can avoid recall from tape, which saves processor cycles and eliminates restore wait times.

As part of the comprehensive solution, Hitachi Data Systems also provided migration, replication and support services, enabling the financial company to seamlessly migrate more than 600TB of data.

As the company’s continued growth requires even more capacity, it was important, looking forward, that there was a simple nondisruptive migration path to the next-generation VSP G1000. The company needed to ensure that the benefits of the new platform can reached with no application or user interruption.

Benefits: 2x Better Response Time, 50% Lower Environmental Costs

The financial leader successfully consolidated its development environment from multiple data centers to 1. The reduced footprint and environmental costs have already provided 6-figure savings in software, hardware and environmental costs.

Storage performance has also increased dramatically, supporting more responsive applications and an improved user experience. As is shown in Figure 1, the energy-efficient flash capacity is successfully improving performance for the company’s heaviest I/O requirements. Host response time is twice as fast, and the company is increasing its workloads with up to 55% more I/O without issue.

Performance management is automated and simple since Hitachi Dynamic Provisioning and Dynamic Tiering keep capacity usage...
and performance optimized on an ongoing basis. Hitachi Data Systems has provided performance monitoring and health checks showing that the performance is as reliable as expected.

The VSP solution with HDT provides high performance while scaling capacity to nearly 700TB of storage in a single system. Thanks to this capability the company has been able to free up and redeploy other VSPs in production environments without any additional capital expenditures.

Conclusion
Hitachi Data Systems was the 1st storage vendor to offer virtualized storage for mainframe environments. VSP and the new member of the Hitachi Virtual Storage Platform family, VSP G1000, continue Hitachi leadership in storage performance, virtualization and scalability for mainframe environments.

The VSP family provides mainframe users with a cost-effective, highly reliable and available storage platform that delivers outstanding performance, capacity and scalability. Using consolidation capabilities that are enabled by VSP, this financial company has greatly simplified its mainframe environment and ensured lower costs in the years ahead.

HIGHLIGHTS OF HITACHI VIRTUAL STORAGE PLATFORM FAMILY FOR MAINFRAME ENVIRONMENTS

- Powerful storage virtualization capabilities.
- Low power and cooling requirements.
- Seamless integration with mainframe technology.
- Industry-leading replication software.
- Automates data tiering and traditional storage management operations responsibilities.