

CASE STUDY

Software Defined Infrastructure
Intel® Cloud Builders
ProphetStor StellarFlash HFA



Software Defined Infrastructure Driving Efficiency and Rapid Service Delivery

With ProphetStor StellarFlash HFA and Intel® Technology SCSK transitioned to a modern Software Defined Infrastructure (SDI) based data center.



Introduction to SCSK

SCSK Corporation, a Sumitomo company, is a top-tier IT service company, listed on Tokyo Stock Exchange (9719.TYO). The company operates in eight business segments and it offers the services of system integration, cloud computing, information security, and produces computer software in Japan and mostly for enterprises. The company is headquartered in Tokyo, Japan with 11,910 employees. In 2016, SCSK had a revenue of JPY329B.

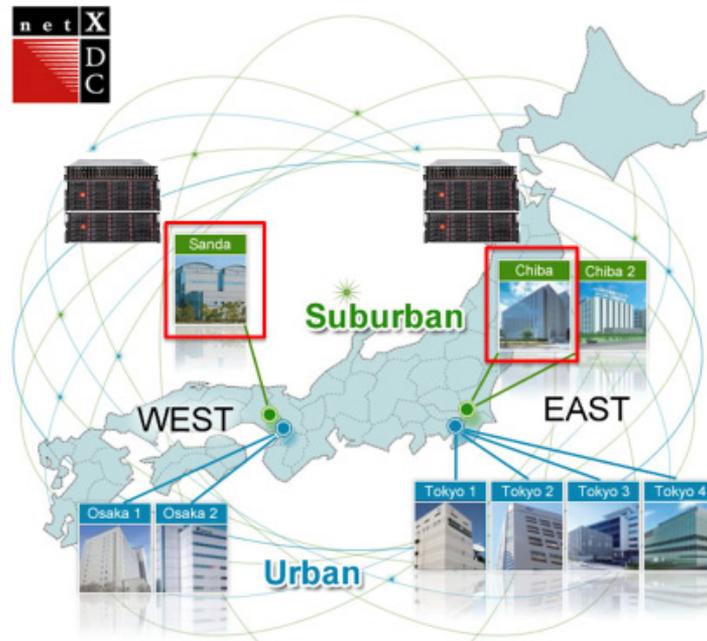
The Challenge

As with any cloud and service provider and operating 9 data centers in different locations within Japan – SCSK needs to cope with perennial data growth and provide efficient/reliable data services to its customers. In the past, SCSK used proprietary enterprise storage arrays from a leading vendor. However, after certain time and an uptick in demand, SCSK needed to find more efficient solutions than their existing infrastructure to keep up with the growing business needs and competitive offerings in most cost-effective manner. They needed a solution which could help scale their Virtual Server Infrastructure / Virtual Desktop Infrastructure (VSI/VDI) and effectively manage the data life cycle of their customers – providing SLAs for active data sets and archived data. In addition, they wanted to make sure that when new cloud services are provided to their customers, the storage will be able to handle many applications from various customers with the performance guarantees, avoiding the noisy-neighbor effect. They wanted a solution partner who could work with them though their transition to a modern Software Defined Infrastructure (SDI) based data center where they could effectively deploy, manage and orchestrate storage without facing propriety and vendor-locked-in hardware. While they are adding new revenue-generating features, such as analytics services, they would like to be able to leverage the underlying platform to fulfill the offering with easy API-based integration.

The Solution: ProphetStor StellarFlash HFA

SCSK began the process of scaling virtualization on its legacy disk array, but soon realized that the existing infrastructure would no longer support it. Fresh equipment, software and methodology was needed to get the job done. They initially thought of renewing with their existing vendor,

Locations of StellarFlash deployment



but to meet the demanding system management and budget requirements they realized the solution should begin with the transformation to SDI with standard, off-the-shelf hardware. Hence, SCSK ended up branching out and speaking with other vendors.

SCSK’s search eventually chose ProphetStor’s StellarFlash HFA based on the Intel® Xeon® processor family – mainly for its ability to provide the best combination of performance, enterprise data management features, and cost. ProphetStor and Intel assisted in building a Software Defined Storage (SDS) based new generation open server and storage platform made up of 2 physical nodes based on Intel® Xeon® processor E5 family and interconnectivity through Intel® Ethernet Converged Network Adapter X250. The server utilizes SSDs as elastic cache for the working set and is backed by HDDs as eventual store.

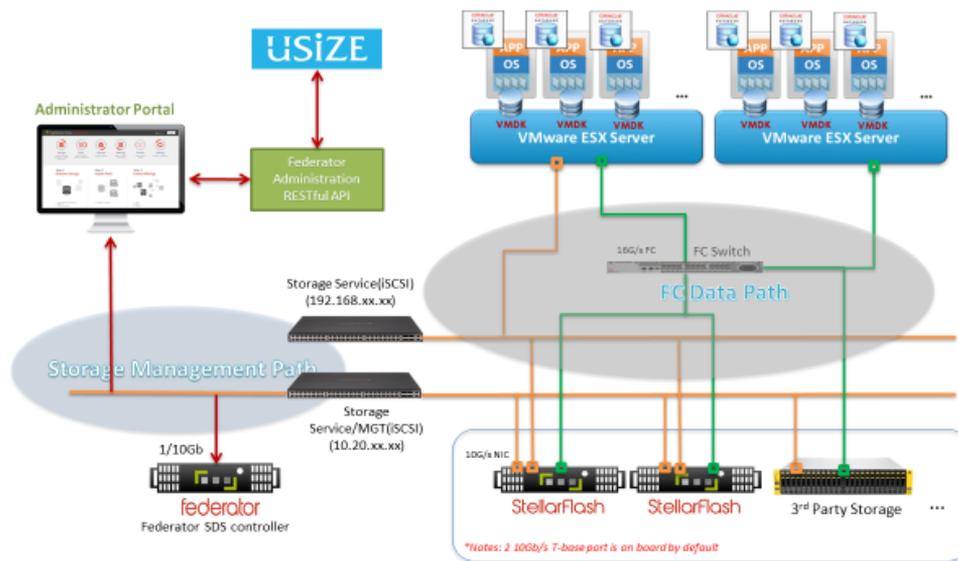
SCSK needs to run multiple mission critical applications on the storage arrays with different IOPS and latency requirements, which StellarFlash readily provides with its dynamic QoS features – Traffic Modeling Module (TMM) and Elastic Resource Control (ERC). These unique features leverage advanced big data analytics and machine learning technologies to analyze all I/O usage patterns and preemptively adjust available storage resources to optimize the overall system performance according to the administrator-defined policies. SCSK was challenged to provide the storage service to their customer at lowest cost and though all flash arrays (AFAs) to get the desired performance. StellarFlash HFA, with its patent pending Smart Cache technology, could provide the AFA-like performance while keeping the cost down by using a

minimal number of SSDs as cache and using low cost and denser HDDs for storage. Smart Cache provides virtual disk and volumes with different cache policies and resources on demand. By leveraging TMM/ERC, Smart Cache can predict the patterns of read and write for each workload, and dynamically assign the best cache policy, including size and pattern, to those virtual disks and volumes attached to the workload.

All this, coupled with best in class SPOG Federator cloud management and orchestration platform, SCSK can provision capacity with SLAs in a matter of a few clicks. Federator’s rich set of easy-to-use REST APIs allow the integration within their existing management and orchestration workflow.

StellarFlash has been deployed in two major data centers of SCSK, Chiba and Sanda cities in Japan. StellarFlash is used to support a large number of VMware ESXi* servers in the two data centers with data being replicated between Chiba and Sanda. In the first phase of the deployment, SCSK is using StellarFlash HFA for offloading and archiving data from the large number of VSI/VDI they have. Every StellarFlash Hybrid array can fully leverage the installed storage-side solid state drives to dynamically change the storage I/O throughput for an application – giving the performance of flash while storing data on less costly HDDs. Advanced data protection is built into every StellarFlash Hybrid array including frequent point-in-time snapshots, replication, active-active controller failover, on-wire encryption, and RAID maintaining the desirable business SLAs.

Federator with Multi-StellarFlash Architecture



The Result: Rapid Virtualization, Scalability, and Cost Savings

StellarFlash HFA delivered to SCSK the performance, features, and cost savings they were looking for from their new vendor. A combined solution from ProphetStor and Intel allowed SCSK to maintain a competitive edge on the market as it built a more open, efficient, and flexible system oriented toward next-generation cloud computing technologies for service providers, in the hope of actively responding to market competition with forward looking technical advantages. StellarFlash HFA has been in service for 1 year, and VMs of various sizes for computing and storage services have been running on Intel® Architecture (IA)- based physical servers.

Outside of the current requirements, as SCSK is building for the future, they see ProphetStor as their long-term technology partner to take them through their journey to the next generation of SDI data centers. StellarFlash and Federator SDS products provide SCSK the super customizable platform with their choice of commodity hardware to build on – freeing them from hardware lock-in. Addressing different application requirements, Federator SDS can deliver traditional scale-up or new scale-out storage architecture within the same management framework. Not only does it co-exists with existing infrastructure, Federator provides the umbrella to manage all different and separate storage systems as one large pool of capacity and data management services, hence increasing the utilization of all hardware resources. Federator SDS integrated with ProphetStor's patented analytics, machine learning, and prediction services ensures that all resources are monitored and disruption due to wear/tear is caught via predictive analytics early on to prevent unforeseen downtime.

Learn More

The Solutions Library on the Intel® Builders home page can help you find reference architectures, white papers, and solution briefs that can help you build and enhance your data infrastructure. <https://builders.intel.com/solutionslibrary>.

For more details about ProphetStor, visit www.prophetstor.com.

For more details about StellarFlash, visit <http://www.prophetstor.com/stellarflash/>.

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