

**SoftBank Corp.**, a Japan-based telecommunications provider, strives to stand out from its competitors in the telecommunication industry with its vision and commitment. SoftBank Corp. has upgraded its Virtual Desktop Infrastructure (VDI), one of the largest VDI deployments in Japan, on Pure Storage for employees and customers, which vastly boosts performance and operational efficiency.

## SoftBank

### BUSINESS TRANSFORMATION

The company can now provide new DaaS to customers by leveraging past successful deployments and through the operation of large-scale VDIs.

### GEO

Japan

### INDUSTRY

Telecommunications

“We selected Pure Storage for VDI especially for its deduplication technology and non-disruptive operation that were ahead of competitors.”

Toshio Takeuchi,  
Head of Service Promotion Office

### MIGRATION TO ALL-FLASH FOR LARGE SCALE VDI PAVED THE WAY TO OFFERING NEW DESKTOP SERVICES TO CUSTOMERS

With over 60,000 employees and a large corporate family, the SoftBank Group is a global technology player. By actively exploring new business opportunities and pursuing strategic investments, the SoftBank Group’s businesses continue to grow rapidly.

The SoftBank Group plays a significant role in the telecommunication industry in which large-scale infrastructure is increasingly in demand. SoftBank Corp. (‘SoftBank’) is a key player in the corporate family and has been engaged in a company-wide innovation program to nurture the diversity of employees’ work styles to improve operational efficiency and to strengthen the company’s competitiveness in the marketplace. SoftBank appointed and implemented VDI with VMware Horizon as a framework for supporting the work style innovation program for employees.

To deliver VDI performance, it was key to select the right storage platform. For that reason, SoftBank switched to Pure Storage’s all-flash storage. The operational expertise that SoftBank gained through implementing all-flash storage for VDI internally enabled it to renovate its White Cloud Desktop Service that provides cloud-based, secure desktops to external end-users. SoftBank rolled out services to its business customers in December 2015. SoftBank’s VDI is now one of the nation’s largest VDI deployments and serves more than 30,000 employees across their corporate family and their customers.

### COURAGEOUSLY EMBRACING VDI AS AN EVER-CHANGING COMPANY

The work style innovation program has been a corporate initiative for many years, but in 2011, SoftBank increased the program’s activity and began investing a significant effort in improving VDI development. After The Great East Japan Earthquake in March 2011, there arose an urgent need to reduce power consumption and enable employees to work from home as a way to maintain business continuity in disaster recovery situations. SoftBank made the decision right away to build a VDI large enough to serve 14,000 internal users and deployed it as quickly as possible — being put in operation by the summer of 2011. Implementing such a large-scale VDI in such a short time was truly exceptional.

SoftBank also deployed the VDI for its call centers. Since call centers are important contact points between business and customers, any voice quality issues like delays or breakups could immediately hinder customer satisfaction. At the same time, call centers handle a large amount of user information and strict security is required. While preventing

**COMPANY:**

SoftBank Corp.  
<http://tm.softbank.jp/>

**USE CASE:**

- VDI – VMware® Horizon

**CHALLENGES:**

- Eliminate storage bottlenecks for large Virtual Desktop Infrastructure.
- Accumulate operational expertise in all-flash storage technology for new services targeted to customers.

**IT TRANSFORMATION:**

- Significantly improved I/O performance by adopting all-flash storage.
- Reduced data by one-eighth with inline deduplication and compression.

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“Flash storage provides significantly better I/O performance than disk storage.”

Toshio Takeuchi,  
 Head of Service Promotion Office

information leaks is a typical reason for adopting VDI in call centers, SoftBank’s expectation goes beyond information security — they have also been successful in voice communication.

As the accommodation of work styles independent of time, place, and device and security issues become increasingly important, it means more business opportunities for SoftBank and heavier reliance on its VDI deployment.

**STORAGE SOLUTIONS CRITICAL TO STABLE VDI OPERATION AND BUSINESS EXPANSION**

While enthusiastically promoting the use of VDI and providing stable services for its employees and customers, learning how to prevent performance problems caused by storage became a major issue. Tatsuya Mori, Manager of Virtualization Technology for SoftBank, spoke to this point. “Storage is absolutely crucial to our VDI operation. With VDI, we must provide a good user experience at least the same level as PCs. Any delays in storage would directly impact the user productivity in a negative way. Operating VDI is about constantly trying to overcome storage bottlenecks.”

Various measures were tried, for example, adding controller memory for storage, and expanding the number of disks to avoid I/O performance degradation, however, they were not the fundamental solutions. Moreover, because changes and business expansions happen really fast at SoftBank, the implementation of new applications and the enhancement of security measures are constant. Consequently, storage requirements keep increasing.

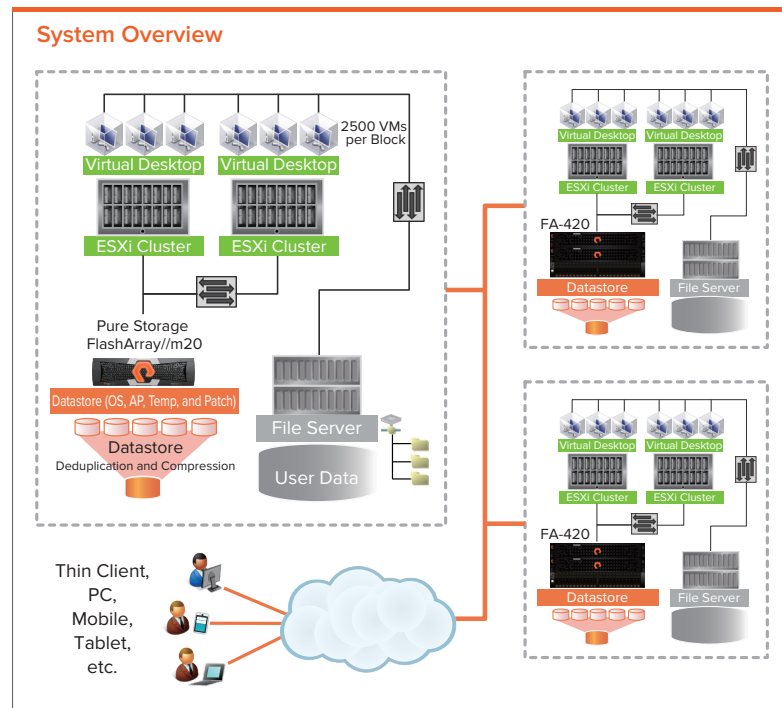
**PURE STORAGE SELECTED FOR ITS DEDUPLICATION TECHNOLOGY AND NON-DISRUPTIVE OPERATION**

In 2014, SoftBank was planning for a storage migration to improve performance and all-flash storage was selected after an evaluation. Toshio Takeuchi, Head of Service Promotion Office for SoftBank spoke about why they selected Pure Storage. “We were constantly looking for fast storage solutions. That was when all-flash storage technology began to attract people’s attention — it was a new technology, but seemed ready for practical use. We learned and evaluated the flash technology. Flash storage provides significantly better I/O performance than disk storage. We selected Pure Storage for VDI especially for its deduplication technology and non-disruptive operation that were ahead of competitors.”

**PURE STORAGE HELPED REDUCE DATA VOLUME AND SIMPLIFY MANAGEMENT**

Migration to a new storage base with Pure Storage began in March 2015, with plans for VDI to serve 5,000 users across the corporate family. Currently, two sets of Pure Storage FlashArray 420s are deployed, and run VMware’s Horizon VDI software. The VDI is operated with the linked-clone method in which a virtual machine (VM) is shared as the master image. In addition to the hypervisor-level data reduction, Pure Storage inline deduplication and compression features enable further reduction of data at the storage level by one-eighth of data volume. As a result, the number of racks needed for the VDI base has been reduced to half, which also reduces space requirements and power consumption.

As another benefit, administrator workloads have been lightened as well. As an example, the time needed for recreating master images, which is a requirement when operating VDI with linked-clone method, has been reduced to one quarter of what it used to take. The recreation is done once a month for all VMs, and in the past, such maintenance work was performed during the weekends and evenings to avoid interruption of users’ activity. Now the work can be done during normal business hours.



### CLOUD-BASED B2B DESKTOP SERVICES REVAMPED WITH ALL-FLASH STORAGE

In December 2015, SoftBank released its cloud-based B2B VDI services called White Cloud Desktop Service after being upgraded on Pure Storage's all-flash storage technology. While the response speed in VDI has been greatly improved with this service, the price to the customer is the same as that of the legacy services based on hard disk.

SoftBank has selected the Pure Storage FlashArray//m20 and implemented it as the platform for the new service. SoftBank plans to expand the storage with simple, non-disruptive upgrades according to the growth of service. SoftBank's VDI continues to evolve around the practical utilization for employees and quality services for customers. Mori noted, "I see the deployment of this new service for the customer as building momentum. We are accelerating the all-flash migration for internal VDI, and we are also considering switching to all-flash for all of our storage requirements."



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