



Migrating all mission-critical operations systems to a virtual infrastructure based on VMware vSAN, they build an agile system environment while significantly reducing costs and footprint.

### Challenges

- Reducing costs by consolidating and integrating systems dispersed throughout company
- Reducing burden of operating and managing the infrastructure as well as standardizing the management tools and processes
- Updating existing or building new IT infrastructure that supports sustainable growth of business

### Solutions

The company consolidated all systems that had been operated separately, including mission-critical business systems and information systems, onto a new virtual infrastructure using VMware vSAN. This has enabled the implementation of a low-cost, high-performance virtual storage environment without requiring the purchase of expensive, dedicated storage that was previously required. In addition, integrated management screens enable central control of servers and storage, reducing the burden of operating and managing systems, while improving the quality of management. This convergence has resulted in the establishment of a system infrastructure that helps utilize IT for future growth of the business.

### Effects of deployment

- New virtual infrastructure using vSAN reduced hardware by 75% of previous requirements, dramatically cutting data center costs like cooling and power.
- Increased storage specifications compared with previous storage groups achieved with very low investment
- Extremely high I/O performance and fast response enabled by all-flash storage
- New system dramatically reduced burden on operators and managers, providing more flexibility and agility to support business needs.

### Deployed Products

- VMware vSAN
- VMware vSphere

UTSUE VALVE SERVICE Co., Ltd. has been contributing to the Japanese energy infrastructure for about half a century as a valve maintenance company for power plants and a variety of other plant facilities. The company has been facing several IT management challenges, including a large number of servers, a mixture of old and new operating systems, and an increase in data center costs, as a result of the poor utilization of systems in individual departments and for individual tasks. In 2016, the company employed VMware's storage virtualization solution, VMware vSAN, and updated storage environments throughout the company. The new, virtual infrastructure has achieved a substantial reduction in hardware to a quarter of the previous size, as well as business agility.

### Integrating Silos of Internal Systems into a Infrastructure for Developing New Businesses

Since its founding, UTSUE VALVE SERVICE Co., Ltd. has provided valve maintenance services for nuclear power plants and other facilities of major power companies in Japan. After 2011, however, the company started finding new business areas by leveraging its valve maintenance technologies in response to the suspended operation of nuclear power plants as a result of the Great East Japan Earthquake. As part of these new business efforts, the company has faced the challenge of updating its IT infrastructure to support future growth as well as streamlining operations and increasing efficiency. Takayuki Moriie, leader of the Information Management Group in the General Affairs Department, recalls those days. "Previously, we had been employing necessary systems on an ad-hoc basis as requested by operation departments. But, as a result of the earthquake, we have been required to invest in IT according to an appropriate schedule and budget plan with an eye toward future new businesses, and the IT itself is also required to be flexible to support new business."

In 2008, UTSUE VALVE SERVICE performed server integration and domain integration processes using VMware vSphere. Since then, the company had been performing operations within its internal data center. However, it was damaged greatly by the 2011 Great Earthquake. Operations were resumed by migrating the environment to an external data center, but updating the fundamental system operation infrastructure in preparation for future disasters remained an on-going challenge. As one possible choice for this update, the company first considered migration to the cloud.

"When we made an estimate for migration to the cloud, we found that the expected reduction in deployment costs could be achieved. However, from the viewpoint of operational costs for five years after deployment, we found no obvious benefits as compared to on-premises. In addition, considering the migration tasks and man-hours for building the cloud environment, the total budget rose to three times the initial estimate. Therefore, we started considering methods other than the cloud and found that using VMware vSAN to reduce storage costs enabled us to consider the option of optimizing the on-premises environment," says Moriya.

### Deciding to Employ vSAN for Cost Savings and Scalability

UTSUE VALVE SERVICE looked at vSAN because it offered both of its original requirements, cost savings and flexibility. "We expected that it could simplify complicated server deployment and replacement management tasks while scaling to support expansion after deployment," recalls Moriya.

Virtual storage is easy to add or modify according to business needs. For a company developing various new businesses, vSAN's capability for fast and easy scalability made it the optimal choice. It also enables the user to set the service level for each virtual machine based on policies from a management screen shared with vSphere. As a result, it provides advanced operations management that can be achieved by a few administrators with reduced effort, which is a huge advantage.



UTSUE VALVE SERVICE Co., Ltd.  
Information Management Group, General Affairs Department  
Takayuki Moriie

**"The old system used a lot of high-performance storage products, so we were prepared for very high migration costs, but VMware vSAN has achieved a new system with higher performance at lower cost as compared with the old configuration."**

UTSUE VALVE SERVICE Co., Ltd.  
Takayuki Morie

### Customer profile

In 1969, the maintenance department of UTSUE VALVE Co., Ltd. was separated and established UTSUE VALVE SERVICE Co., Ltd. The company has been contributing to society as a group of professionals that assist in the stable operation of facilities and equipment through maintenance operations and the sale of products and parts, including valves and pipes, for nuclear and thermal power plants and petrochemical plants. In response to changes in Japanese energy policies due to the Great East Japan Earthquake in 2011, the company has been endeavoring to develop new business areas based on its high level of technological strength. These areas include the decontamination of regions as part of the Fukushima reconstruction projects and the introduction of high value-added technologies for diagnosing age-related changes from operating conditions data without disassembling valves.

"And, with respect to the state-of-the-art technologies, the proposals for storage other than vSAN were simply the same old system with a modified hardware configuration. In contrast, the proposal for vSAN's all-flash architecture satisfied our requirements with a smaller investment compared with when we deployed the old system. It was an innovative proposal that would achieve performance much higher than the previous system. The old system used a lot of expensive storage products, so we were prepared for a relatively high cost of migration. The cost effectiveness of vSAN was very attractive," says Moriya.

### Simultaneously Achieving Substantial Downsizing and Cost Reduction While Improving the Quality of Management

As a result of virtualizing a large number of systems dispersed throughout the company and migrating them to a new virtual infrastructure using vSAN, the current number of servers is 10 for the mission-critical business systems for the entire company and about 20 for other systems. "Before migration, we had two racks in the data center fully occupied, but after integrating vSAN-based infrastructure and network only, we can now house all systems in a half rack," asserts Moriya. "Simply considering the number of hardware devices and cost, we have reduced them to a quarter of those before migration."

In addition to reduction in costs and the system size, another noteworthy benefit is improved efficiency in system management. Previously, individual systems were dispersed throughout the company and engineers visiting the field were sometimes surprised to find alerts from management screens there. Along with the deployment of the vSAN-based infrastructure, the company integrated its systems into the virtual infrastructure using VMware vSphere and it can now determine the operating status of all systems at a glance on a single standardized management screen. That has substantially reduced the load, including the number of man-hours for management and stresses placed on administrators, resulting in the expected improvement in efficiency.

Migration included all the operations systems in the company, so the existing Oracle databases were also subject to migration. The fast snapshot and restore features provided by vSAN have also contributed to smooth migration of those databases.

"We assigned two people to operate the systems, but they were often too busy with daily maintenance and troubleshooting to address system proposals, improvements, and other high value-added tasks. We can now promote data analysis and other efforts that will contribute to the growth of our business from the perspective of information systems," says Moriya.

### Flexibility Meeting Business Requirements Opens Up Possibilities for VDI Deployment and Other Improvements

In July 2016, UTSUE VALVE SERVICE completed migrating all servers and storage to vSAN, hyper-converged infrastructure. "We have encountered no problems so far in this very large-scale system migration," says Moriya, praising vSAN for its high stability.

It has provided not only stability but also improved system responses and enabled scalable configuration modifications in accordance with changes in business. The company now has an information infrastructure for achieving its goals: developing new business areas and promoting the growth of its business.

"Actually, we received requests to urgently modify database memory configuration and capacity from some of our employees during the migration process, but we were able to respond quickly to such requests. I think that we now have a foundation for promptly meeting the field requirements with confidence as the information system department."

With a recent increase in tasks performed in visits to each site, Moriya says that he would like to proactively endeavor to achieve enterprise mobility using VMware AirWatch and advanced operations management using VMware vRealize Operations to provide secure and agile mobile work environments in the future. VMware solutions will provide powerful support to UTSUE VALVE SERVICE as it continuously seeks new growth business areas.

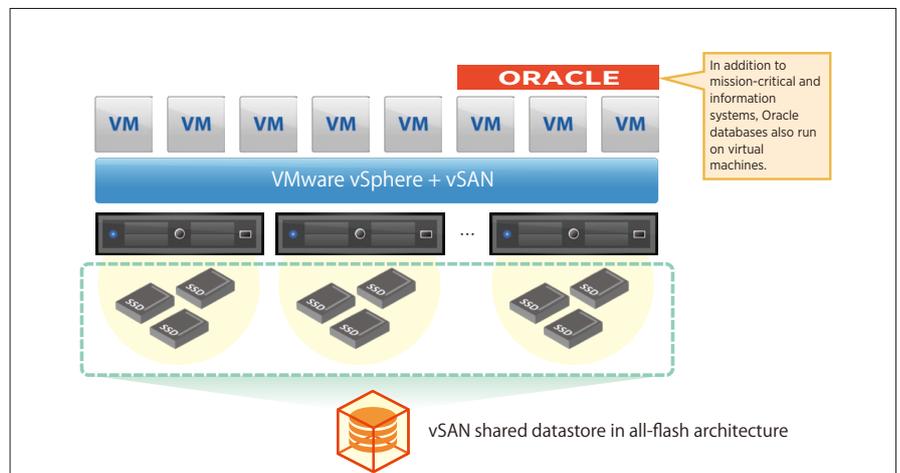


Figure: UTSUE VALVE SERVICE's new virtual infrastructure using vSAN

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