



SKY Perfect JSAT Corporation

SKY Perfect JSAT Adopts Nutanix Enterprise Cloud for Satellite Control System

Cornerstone development in enabling scalability and futureproof hardware investments in satellite and server operations

INDUSTRY

Satellite broadcasting industry

BENEFITS

- Ability to scale easily and keep up with the long lifespan of satellites
- Improved availability of business applications

SOLUTION

Nutanix NX Series
Nutanix Enterprise Cloud

APPLICATIONS

- Satellite control system
- Orbit analysis software
- Ground antenna and RF control system

BUSINESS BENEFITS

- Achieved flexibility in scaling hardware infrastructure to match the increasing number of long-lifespan of satellites
- Increased availability of business applications
- Substantially reduced power consumption and utilities bill
- Reduced the data footprint size by approximately 50%



“With Nutanix we can scale out by simply adding nodes, so we don’t have to worry.”

- Hiroaki Nagai, General Manager, Satellite Operations Division, Satellite Planning & Operations Group



“We can achieve easy scalability across distributed nodes. It is easy to upgrade and renew, and Nutanix provides redundancy even during system failures.”

- Tatsuya Watanabe, Assistant Manager of Operations System Engineering Team, Satellite Operations Division, Satellite Planning & Operations Group



“We have built a flexible infrastructure that enables us to respond and deploy quickly from system construction to operations in a cost-efficient manner. With this upgrade, we were able to develop a satellite operation service.”

- Atsushi Mizunuma, Assistant Manager of Operations System Engineering Team, Satellite Operations Division, Satellite Planning & Operations Group



CHALLENGES

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 17 satellites, and Japan's only provider of both multi-channel pay TV broadcasting for a total of 3 million subscribers. It also provides satellite communications services in Japan, rest of Asia, and many other countries, and plays a vital role in supporting safety, security and convenience for society as a whole.

Hiroaki Nagai, General Manager of Satellite Operations Division, Satellite Planning & Operations Group, Engineering & Operations Unit, gives a brief overview of the business. "In addition to commercial satellites, we are engaged in a variety of other businesses, including participation in the optical data communications business, orders for low-orbit satellite local bureau services, and commissioned operation of satellites owned by other companies."

Natural Disasters Highlighted Importance of Satellite Communications

After the merger of the 3 companies in 2008, the number of satellites to be managed increased. The 2011 Tohoku earthquake and tsunami also highlighted the importance of satellite communications to the management team and Sky Perfect JSAT started its operations system engineering (SE) team with a goal to create an environment that can be operated in-house.

Inability to Scale Easily and Keep Up with Long Lifespan of Satellites

In 2014, the team reviewed their challenges and decided to embark on the journey of virtualization. Atsushi Mizunuma, assistant manager of the operations SE team, spoke about some of their challenges, "Our problem was that the shorter lifespan of IT equipment cannot last as long as the longer lifespan of our satellites, which can last over 15 years. Take for example our systems which typically needs a complete refresh every 5 years, so we decided on virtualization on the right system which we foresee can help us move in a more agile manner to match our business needs and address various challenges regarding the system update."

We started testing in virtualization of 3 tier architecture configuration. However, issues emerged such as:

- Single storage configurations not being replicated
- Tedious and manual operational issues, such as having to shut down system when a problem occurred to the storage controller

After this short experiment, the Sky Perfect JSAT team was clearer in defining their end goals as such:

- create a scalable and flexible environment
- achieve stability in backup recovery to ensure business continuity
- create an environment that can minimize disk space with deduplication and compression functions.

SOLUTION

Nutanix Enterprise Cloud caught the attention of Watanabe. "We can achieve easy scalability across distributed nodes. It is easy to upgrade and renew, and Nutanix provides redundancy even during system failures," he said.

"Nutanix is one of the leading vendors in the HCI market, and its extensive track record based on high market evaluation made it a major draw," Watanabe added. "After trying out a few products, we feel that the quality of the Nutanix solution was very good. I was very impressed with The Nutanix Bible and other technologies, as well as the high level of user satisfaction and the quality of support. I also appreciated the sophistication of Prism, Nutanix's management tool," says Watanabe.

CUSTOMER OUTCOME

Future Proof Infrastructure Meets Ease of Management

The distributed storage environment of Nutanix allows us to implement our environment in a way that improves our availability and scalability. “For a small group like us taking care of the entire IT infrastructure, it is a great advantage now that we no longer have to worry about complex storage configuration and siloed environment.” says Watanabe. The backup was unstable in the previous environment, but now it’s working stably. “With Nutanix we can scale out by simply adding nodes, so we don’t have to worry.” says Nagai.

Now that we have Nutanix, it’s easier to meet Sky Perfect JSAT’s business needs. “We have built a flexible infrastructure that enables us to respond and deploy quickly from system construction to operations in a cost-efficient manner. With this upgrade, we were able to develop a satellite operation service.” says Mizunuma.

Great Customer Support

“While HCI has many benefits, there are areas we have yet to learn so we feel that the quality of support was important. When we contacted Nutanix, the support team immediately provided us feedback via online in a matter of minutes and we were very impressed with their technological expertise and a support system that can respond so quickly,” says Watanabe.

Improving Environmental Efficiency

Moving to the new virtual and Nutanix Enterprise Cloud environments has not only significantly reduced the burden of server maintenance, but has also helped increase space efficiency in the server room by reducing more than 10 racks. This also led to a significant reduction in electricity consumption. “The management department has reported that the amount of electricity used has been drastically reduced, a clear indication that Nutanix has played a role in reducing it.” says Nagai. Moreover, Nutanix’s storage efficiency features including compression have reduced the data footprint size by approximately 50% in SKY Perfect JSAT’s case.

Plan to migrate more workloads into Nutanix

Satellite control systems, orbit analysis software, and ground antenna and RF control systems are operating as workloads. Systems running on different server groups, such as Zabbix and other IT-based monitoring systems, as well as Active Directory and other authentication systems, will be integrated into Nutanix’s platform in the future.

NEXT STEPS

Nagai says that Nutanix is considering integrating the systems operated by different centers into Nutanix, and that the services provided to customers will be integrated into Nutanix as needed. “We can easily back up, make redundant and scale out by moving our current numerous file servers to Nutanix. If possible, I would like to try Nutanix Files which can be used for file servers.” says Watanabe.



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