

New Scale-Out,
Educational Information
Technology Solution Delivered
On-Time and Within Budget



Uozu City Board of Education Builds Stable ICT Platform on Nutanix Enterprise Cloud

CHALLENGE

The Uozu City Board of Education oversees the city's elementary and middle schools, museums, libraries, and food services center. In February 2017, the City's Board of Education formulated its comprehensive Uozu Education Computerization Basic Plan. This innovative plan provides a framework for deploying various ICT equipment and wireless LAN in the schools, and lays the foundation for the computerization of education in the city's elementary and middle schools.

To accomplish the plan objectives, the Board of Education had to quickly create a new server environment that would support their goals. "We needed to set up a server environment that would act as the foundational infrastructure for our elementary and middle schools, and then create an information sharing platform that would be useful for teachers. At the same time, we wanted to deploy a wireless LAN environment that was planned for the future, and a platform to strengthen security, including network separation," explained Yuji Yonezawa, General Affairs Manager of the Uozu City Board of Education's Education General Affairs Section.

Director Syuya Kikuchi, also of the Education General Affairs Section, was involved in selecting the new infrastructure platform. "We already had a plan to deploy groupware in educational settings, but during our discussions for the new infrastructure project, we realized there was also a need to create an authentication platform and improve security. In other words, we needed to build the environment from the ground up," said Kikuchi, recalling the situation at the time.

Kikuchi's goal was to create an environment in which the server platform could be flexibly scaled up in the future. "Servers would be necessary for any type of new solution, and we also needed the ability to conform to network separation and other stipulations in the Ministry of Education's guidelines. We also required a framework that could be flexibly operated in a virtual environment on a limited budget," said Kikuchi. It was then that Kikuchi took notice of Nutanix's Enterprise Cloud OS, which met all of these requirements.

SOLUTION

"We would need to install about 50 servers to build the new environment according to the basic plan. The environment would also be challenging to build in a single fiscal year due to budget constraints, so we needed the ability to scale up flexibly," said Kikuchi. "In addition, with our physical space limitations, it would have been difficult to deploy the new ICT solution using a 3-tier configuration and conventional SAN storage." Kikuchi realized that a virtualized environment and framework with a highly efficient use of space would overcome the limitations of a 3-tier approach.

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— Syuya Kikuchi, Director,
Uozu City Board of Education's Education
General Affairs Section

“We also needed to put the entire environment together on a limited budget, including the servers, the anti-virus software, URL filtering, security features such as WSUS (Windows Server Update Services), DNS and Active Directory environment, and groupware. Including migration, it was a very tight budget,” said Kikuchi. The AHV hypervisor that comes bundled standard from Nutanix can significantly reduce costs associated with licensing and maintenance, and Kikuchi said that was another reason for their decision to use Nutanix.

Another hurdle was the ability to deploy the system over summer vacation when all of the teachers were on vacation. “To do everything from equipment procurement to construction of the environment, it would have been difficult to complete the project on time with a conventional 3-tier configuration,” said Kikuchi. After also considering a thin client environment for network separation that would require future environment modifications, Kikuchi included system responsiveness as a requirement in the bid. Ultimately, Nutanix was selected as the server platform for the new ICT solution.

RESULTS

Fast Deployment

The project bid was conducted in June of 2017, and construction of the entire environment was completed by the end of August, reaching full operational status within just 2.5 months. “Everything, including construction of the security environment as well as groupware settings and training, was completed within the appointed time. Of course this was partly due to the efforts of the system integrator, but it probably wouldn’t have been possible to build this in such a short time period with a conventional 3-tier environment based on SAN storage. We were able to accomplish this because of Nutanix, with its simple configuration and ability to quickly set up virtual servers,” said Kikuchi glowingly.

In addition to the groupware, other environments (including anti-virus, URL filtering, DNS server, ID management system, and WSUS) are now running on the Nutanix NX Series systems, serving approximately 300 students and teachers. AHV is being used as the hypervisor, and the system has continued to operate stably without any problems.

Simple Management

Kikuchi himself tends to the daily operation and management of the system, and he explains that there are many opportunities to use the management tool Prism. “Previously, we had to outsource this task due to the complexity of the hardware and software, so now it’s a big thing that someone like myself, without expert knowledge, can use it. The Nutanix Prism console is extremely easy to use. Because all of the various functions are displayed on one screen, the entire situation can be discerned just by looking at the main screen. I have never before experienced a level of ease-of-use in which operations can be managed with a single click,” said Kikuchi. Even when there are questions from educational users at the schools, operational status can be confirmed with a single glance in Prism and the source of the problem can be quickly identified.

Stable Operations

The Nutanix platform continues to operate with no major problems for the City Board of Education. "It's more difficult actually to find something that will become an issue," Kikuchi said, "As for AHV, which has contributed to the stable operation, settings and operation can be managed easily from Prism."

Easy Scalability

The biggest benefit from constructing the Nutanix platform has been the ability to scale up flexibly. "We are already considering adding a thin client environment in the near future, and we will need to build separate environments for official business and our learning applications. Because we will also need to install a learning support system, it will be difficult to secure the budget for everything at once. But with Nutanix—which supports simple expansion of various resources including CPU, memory, and storage by simply adding nodes—we will be able to efficiently scale up our ICT environment annually according to plan. This type of scalability would have been difficult to achieve with a 3-tier configuration," said Kikuchi.

NEXT STEPS

Since the Education Computerization Basic Plan platform is now complete, Kikuchi says they are now planning on rounding out the education environment with the addition of tablets and electronic blackboards. As for servers, they will be able to flexibly construct the environment by adding additional Nutanix nodes as needed.

"While keeping a firm eye on the nation's policies, we will continue to build the environment we need. As for the Basic Plan, the mayor wants to focus on education, with a policy of accelerating the five-year plan into three years. The priority, of course, is the learning environment for the children, but we also want to move forward with building the teachers' environment, so that the public affairs workload can be decreased," said Kikuchi.

For the next fiscal year and beyond, discussions are also taking place on building a BYOD environment that will improve how teachers work, with the idea that the environment would be further enhanced into a working platform. Kikuchi says that he wants to continue to use Nutanix for all those system enhancements.



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COMPANY

Uozu is a city in the eastern part of Toyama Prefecture of Japan, known for its pristine rivers and mountain ranges.

INDUSTRY

Local Government, Board of Education

BUSINESS NEED

Needed infrastructure for a new educational information communication technology (ICT) platform that was easy to deploy and scale, and subject to limited annual budgets and short implementation timeframes.

SOLUTION

- › Nutanix Enterprise Cloud, NX series
 - Acropolis, including AHV virtualization
 - Prism management

BENEFITS

- › Built new educational ICT platform in just 2.5 months
- › Increased system stability
- › Simplified operation and management using Prism
- › Gained the ability to easily scale, within a limited budget

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

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