



Government

Bringing the cloud **in-house**

KOMSCO

Public company KOMSCO migrates to a hyperconverged infrastructure based on Lenovo ThinkAgile VX servers with VMware vSAN™ software for higher performance, enhanced availability, and lower costs.

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Who is KOMSCO?

Based in Daejeon in the Republic of Korea, KOMSCO is the Korea Minting and Security Printing Corporation. Established in 1951, this state-owned company is the sole manufacturer of Korea's physical currency, both banknotes and coins. As a specialist in anti-counterfeiting technology, KOMSCO also handles the secure printing of passports and ID cards. The organization's in-house Technology Research Institute continues to work on cutting-edge design and engraving techniques, as well as investigating the potential for blockchain-based systems of trust.


KOMSCO

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The Challenge

To support key business services, including the creation and management of new digital offerings, KOMSCO was using computing and storage resources from a public cloud service provider in Korea. Service levels were falling as the underlying hardware aged, yet at the same time the fees were rising beyond expectations.

The public cloud environment offered limited visibility of the current status of resources, and it was difficult for KOMSCO to add or reallocate resources during operation. What's more, the organization's four distinct workloads—internal network, external network, databases, and blockchain—were mixed together and competing for the same resources.



KOMSCO wanted to reduce its costs while increasing the flexibility, manageability, availability, and scalability of its mission-critical workloads. Its requirements for a new platform included: multiple levels of physical redundancy; the constant availability of virtual resources for assignment to new or growing workloads; high performance for compute, storage and network resources; and a reliable automated disaster recovery option.



“Lenovo’s proposed hyperconverged solution with VMware vSAN gave us the combination of flexibility and robustness that we needed, wrapped up in an easy-to-manage environment.”

Lim Do-Hyun
CIO, KOMSCO

Unifying compute, storage, and network resources

KOMSCO chose an on-premises private cloud solution based on Lenovo ThinkAgile VX 7000 Series hyperconverged appliances with integrated VMware vSAN™ software, and Lenovo ThinkSystem DE and DM Series storage.

The solution features 23 ThinkAgile VX7520 nodes across four groups: four in its external network group, five for development, four for DR, and ten for production. The ThinkAgile VX7520 nodes integrate VMware vSAN technology into the hypervisor at the kernel level, completely unifying the compute and storage elements to assure stable operations. Mirrored all-flash storage offers exceptional data performance, and redundant high-speed network components round out the solution.

Hardware


Lenovo ThinkAgile VX7520
Lenovo ThinkSystem DE Series Storage
Lenovo ThinkSystem DM Series Storage

Software

Lenovo XClarity
VMware vCenter®
VMware vSAN™
VMware Site Recovery Manager™

Services

Lenovo Implementation Services
Lenovo Migration Services



The Lenovo and VMware solution includes automated resource scheduling that intelligently balances physical resources between virtual machines as workload demands change, helping to guarantee stable performance.



“Lenovo ThinkAgile VX Series offers stable high performance, seamless scalability, and easy management. We can access support for the entire stack—including both hardware and software—from a single unified source, which gives us confidence that the solution will continue to meet our needs.”

Lim Do-Hyun
CIO, KOMSCO

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Results

The Lenovo hyperconverged solution with VMware has enhanced the performance and stability of KOMSCO's systems while improving the ease of operation. KOMSCO benefits from a private-cloud model; the ongoing fees are considerably lower than those for the previous public-cloud solution.

Thanks to VMware's advanced software-defined storage and vSAN capabilities, KOMSCO can flexibly assign and re-assign resilient, high-performance storage resources without incurring the full cost of an enterprise SAN. The solution also enables the migration of live virtual machines from one physical node to another, providing automated protection for services that require high availability. VMware vCenter® integrates with Lenovo XClarity to provide a convenient single point of control for the entire HCI.

Using the solution, KOMSCO has introduced local blockchain currency services used by more than 60 local government organizations, as well as a blockchain-based mobile driving license. In the near future, this environment will grow to include mobile passports and resident registration cards.

Lim Do-Hyun concludes: “The Lenovo and VMware private-cloud solution meets our current requirements and offers considerable scope for expansion as we develop new digital offerings.”



Improved performance and availability for mission-critical services



Reduced complexity in administration and management



Lower fees for a more reliable, flexible, and scalable private cloud environment

Why Lenovo?

Lenovo's proposed HCI solution made it possible for KOMSCO to achieve the flexibility and convenience of cloud combined with the security and peace of mind of an on-premises solution.

Migration to the on-premises HCI platform ran smoothly thanks to a detailed migration plan from Lenovo. The existing virtualized systems were migrated from KVM/OpenStack in the public cloud to VMware without modification using the QEMU tool.

How do you support new digital offerings cost-effectively?

Enhancing the performance and stability of key systems with an on-premises private cloud built on Lenovo and VMware technology.

Explore Software-Defined Infrastructure Solutions

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