

Supporting changing working needs with a renewed virtual infrastructure.

How **JVCKENWOOD** used Lenovo ThinkSystem SR650 and SN550 servers to improve performance of its extensive VMware Horizon® virtual desktop infrastructure, helping thousands of employees work effectively from anywhere.

Lenovo Infrastructure Solutions
for The Data-Centered

1

Background

JVCKenwood Corporation (JVCKENWOOD), is a Japanese multinational electronics company headquartered in Yokohama, Japan. It was formed in 2008 from the merger of Victor Company of Japan (JVC) and Kenwood Corporation.

Known globally for its car electronics, home audio, and wireless technologies, JVCKENWOOD operates through three core business segments: Automotive, focused on car navigation systems and drive recorders; Media Services, comprising professional video and audio equipment; and Public Services, which includes professional wireless and medical equipment. Recently, the company has added a fourth segment—its DX (Digital Experience) business—aimed at enhancing its products and solutions with digital technologies such as artificial intelligence and Internet of Things.

2

Challenge

From operating IT equipment to supporting new ways of working, JVCKENWOOD has a long history of using virtual desktop infrastructure (VDI) to meet the evolving needs of its business. In 2014, the company introduced VDI for company-wide use in order to efficiently operate PCs and other devices. The company deployed a virtual infrastructure capable of supporting up to 2,000 simultaneous users, one of the largest in Japan at the time.

Demand for VDI resources has grown steadily ever since, especially as JVCKENWOOD has expanded adoption of teleworking in response to work style reforms that began in 2017. The company saw a sharp rise in the number of concurrent users, as well as increased CPU and memory requirements. As a result, the performance of the existing VDI began to deteriorate, and the company made the decision to revamp the system.

Mr. Morikazu Kanzura, an expert in the IT department of JVCKENWOOD, elaborates: "When we introduced the VDI system in 2014, the resources allocated to the virtual machine were sufficient with one vCPU, 2 GB of memory, and Windows 7 (32-bit version). Later, however, performance became insufficient, so we increased the memory to 4 GB and Windows 7 to 64bit."

However, with the system near the end of its lifecycle, these improvements were not enough to sustain growing demand for VDI. JVCKENWOOD was keen to find a more sustainable solution and launched the search for a new hardware platform.

Mr. Kanzura comments: "In the end, we decided to go with Lenovo because of its three-tier configuration, reliability, past performance, and price."

A young man with dark hair and glasses is smiling broadly, showing his teeth. He is wearing a light-colored button-down shirt. The background is a server room with racks of equipment and a bright light fixture.

Why Lenovo? Right design at the right price.

JVCKENWOOD put together a request for proposals (RFP) and received responses from three companies, including Lenovo. After careful consideration, the company decided to move ahead with a joint solution from Lenovo and another provider, built around a three-tier architecture.

Mr. Kanzura recalls: "The solution incorporating hardware from Lenovo and another company was a three-tier virtualization infrastructure, while the other company's proposal used a hyperconverged infrastructure [HCI]. We decided that HCI was not cost-effective at the time because we would need to prepare a lot of equipment for spare resources if we wanted a configuration that would not degrade in performance due to resource loss in the event of a failure.

"Another reason we didn't choose HCI was that we had already hired Kanematsu Electronics Corporation [KEL] to operate the system, so we didn't need to consider the operational load of implementing it on pre-built servers and virtualization infrastructure."



“I used to be a VCR developer, and when I saw Lenovo's servers, I recognized that they have a much better heat exhaust design than other companies' products. Lenovo's servers may look a bit rugged, but I could see at a glance that the internal design was very well thought out. As a professional familiar with high-density hardware, I had trust in Lenovo's design features.”

Mr. Morikazu Kanzura
Expert, IT Department, JVCKENWOOD

Elevated performance for teams across the business.

To support its VDI, JVCKENWOOD deployed three Lenovo ThinkSystem SN550 servers and nine Lenovo ThinkSystem SR650 servers. It also leverages VMware Horizon® software for efficient virtual desktop and app management. The new VDI environment supports approximately 4,000 users and up to 3,000 simultaneous connections.

For general office users with relatively low resource demands, the company uses a basic virtual machine (VM) configuration of 3 CPUs and 6 GB of memory to make effective use of resources. In addition to this basic configuration, for engineers who use 3D CAD viewers with particularly heavy workloads, performance is improved with a virtual GPU (vGPU), supported by an NVIDIA GPU installed in Lenovo ThinkSystem SR650.

By shifting graphics-intensive CAD workloads to vGPUs and managing those workloads through VMware Horizon and VMware vSphere Enterprise Plus, JVCKENWOOD benefits from better price/performance compared to individual GPUs per CAD user.

Mr. Tetsuya Hori, Assistant Manager of JVCKENWOOD's IT Department, comments: "With the new infrastructure, we were able to achieve a practical operating environment. We believe that this is the result of the high performance of Lenovo's servers and KEL's expertise in building the system."

He adds: "We have been working with KEL for a long time, and we have always been able to rely on them to deliver results that exceed our expectations. KEL is an indispensable and reliable partner, as they have a wealth of experience in VDI, and can build and operate a solid system."

3

Results

With the new VDI platform in place, performance has improved dramatically and utilization has increased significantly, among both general business users and engineering teams.

“With the old infrastructure, one of the issues we had was the low utilization of VDI in the technical department,” notes Mr. Kanzura. “The utilization rate has now increased; we believe that this is due in large part to the VDI enhancements that we have made as a response to work style reform.”

With VMware Horizon, employees have remote access to a secure workspace environment from anywhere at any time on any device. Around six months after the VDI infrastructure was updated, JVCKENWOOD was able to support a sudden, major shift to telework following the outbreak of COVID-19. Thanks to VMware Horizon, employees were able to stay connected and productive from home.

Mr. Kanzura states: “We had 500 high-performance VMs with GPUs for the engineering department, but their utilization rate was close to 95% during the telework period. To reduce the load, we also made the basic configuration VMs available to other users of the engineering department who were not using the system for CAD purposes.”

In the next few years, JVCKENWOOD plans to replace the virtualization platform on which its core systems are running. The company is considering migrating to a private cloud environment as part of this move, as well as potentially introducing HCI further in the future.

Mr. Kanzura concludes: "For a company of our scale, a public cloud would be too expensive: the costs would be in the hundreds of millions. Considering this, I think the best practice at present is to prepare a virtual environment in a private cloud and operate it on our own. As the scale of our business exceeds our initial expectation, it will become more difficult for us to operate in a three-tier environment, so we are also considering the introduction of HCI."

JVCKENWOOD

- ✓ Scaled to support 2x more users than previous platform
- ✓ Improved VDI performance, even under increased utilization
- ✓ Enabled smooth transition to large-scale remote working during COVID-19



“Lenovo's ThinkSystem servers are well-balanced in terms of performance, quality and cost, and they seem to be actively working on HCI as well. I am confident that they will continue to provide us with the best solutions to support our VDI.”

Mr. Morikazu Kanzura
Expert, IT Department, JVCKENWOOD

What will you do with Lenovo client virtualization solutions?

The Data-Centered use Lenovo smarter infrastructure solutions, powered by VMware, to help employees work effectively from anywhere.

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