Getting ready to meet new healthcare needs.

How **Kindai University Hospital** uses a hyperconverged infrastructure platform from Lenovo and Nutanix, powered by 2nd Gen Intel® Xeon® Scalable processors, to simplify IT operations ahead of a major relocation.

Lenovo Infrastructure Solutions for The Data-Centered

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Lenovo

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Background

Kindai University Hospital is a teaching hospital located in Osaka Sayama City, Japan, and affiliated with the Kindai University School of Medicine. With 929 beds and 2,300 outpatients per day, it is the only university hospital in the southern part of Osaka Prefecture and has been supporting local medical care for many years.

To support patients, physicians, students, and administrative staff, Kindai University Hospital relies on an extensive IT infrastructure, comprising both clinical systems and back-office applications. Nine members of the Information System Section, IT Group, Medical School, and Hospital Administration Division plan, build, and operate these systems with the support of outside vendors.

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Challenge

Recently, Kindai University Hospital decided to relocate its medical school and hospital to new facilities. As part of the move, the hospital took the opportunity to rethink its approach to IT delivery.

Takamasa Nunoeda, Medical Informatics Engineer, Japan Institute of Medical Informatics, elaborates: “We want to use IT to create a healthcare system that will benefit medical students, healthcare professionals, and patients in a wide range of ways. That includes support for new patient services using smartphones and other devices, a 5G-enabled remote medical care model, an AI-driven clinical decision support system (CDS), and utilization of big data in education and healthcare.”

To support these future innovations and the smooth running of day-to-day operations at the new location, Kindai University Hospital knew it needed to make a departure from its traditional IT architecture.

"Up until now, each department in the hospital had introduced its own system, and the servers were scattered in various places in the hospital,” states Mr. Nunoeda. “If we didn't reduce the number of servers by organizing and consolidating them, the time and cost for relocation would increase, and the system design after the relocation would also become complicated."

> “Many of the departmental systems that we have operated up to now had poor cost performance due to insufficient use of physical server resources. With a hyperconverged infrastructure, we can flexibly set the amount of resources to be allocated to virtual servers, so we can make efficient use of IT resources.”

Mr. Takamasa Nunoeda
Medical Informatics Engineer, Japan Institute of Medical Informatics

Why Lenovo? Proven HCI platform from a trusted provider.

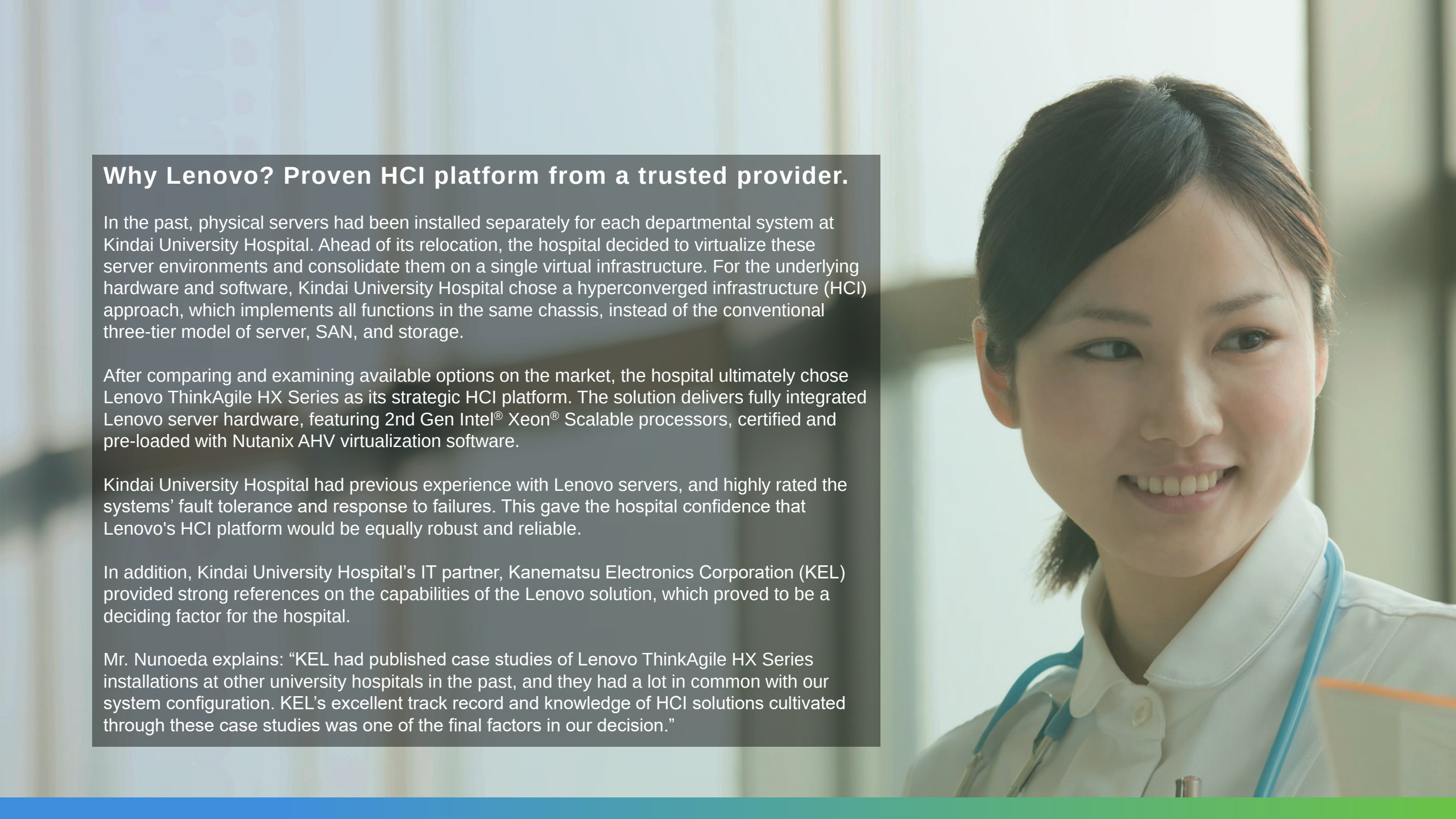
In the past, physical servers had been installed separately for each departmental system at Kindai University Hospital. Ahead of its relocation, the hospital decided to virtualize these server environments and consolidate them on a single virtual infrastructure. For the underlying hardware and software, Kindai University Hospital chose a hyperconverged infrastructure (HCI) approach, which implements all functions in the same chassis, instead of the conventional three-tier model of server, SAN, and storage.

After comparing and examining available options on the market, the hospital ultimately chose Lenovo ThinkAgile HX Series as its strategic HCI platform. The solution delivers fully integrated Lenovo server hardware, featuring 2nd Gen Intel® Xeon® Scalable processors, certified and pre-loaded with Nutanix AHV virtualization software.

Kindai University Hospital had previous experience with Lenovo servers, and highly rated the systems' fault tolerance and response to failures. This gave the hospital confidence that Lenovo's HCI platform would be equally robust and reliable.

In addition, Kindai University Hospital's IT partner, Kanematsu Electronics Corporation (KEL) provided strong references on the capabilities of the Lenovo solution, which proved to be a deciding factor for the hospital.

Mr. Nunoeda explains: "KEL had published case studies of Lenovo ThinkAgile HX Series installations at other university hospitals in the past, and they had a lot in common with our system configuration. KEL's excellent track record and knowledge of HCI solutions cultivated through these case studies was one of the final factors in our decision."



“The HCI system can be flexibly expanded by simply adding nodes, so we thought it would be suitable for a small start, where we first consolidate some departmental systems, and then expand the scale by increasing the number of systems in stages.”

Mr. Takamasa Nunoeda
Medical Informatics Engineer, Japan Institute of Medical Informatics

Leading a swift and successful migration.

Kindai University Hospital decided to officially adopt the Lenovo ThinkAgile HX platform. Working with Lenovo and KEL, it was able to set up the new HCI platform in just two weeks, an exceptionally fast time. The next step was to migrate applications from the hospital's existing physical server environment to the Lenovo ThinkAgile HX3320 private cloud environment, which also went extremely smoothly.

"Previously, we had to procure and set up a physical server every time we wanted to revamp our server environment, but now we can build our own server environment in a much shorter period of time," notes Mr. Nunoeda. "Once the virtual environment is built, we just need to spin up the virtual server environment for each application, and then we can start the migration and configuration work right away."

During the first stage of the consolidation process, Kindai University Hospital migrated 14 systems, including its ICU and operating department support systems, to the Lenovo ThinkAgile HX platform. Following the success of this initial migration, the hospital will continue to migrate more applications and systems to the HCI. It also plans to use the new Lenovo and Nutanix platform to support all-new peripheral systems and infrastructure functions, which will introduced alongside the relocation of the hospital.

"In the past, we had to check the operational status of physical servers scattered throughout the hospital individually. With the Lenovo ThinkAgile HX3320 cluster, we can centrally manage all virtual servers through Nutanix's integrated management tool Prism, which has greatly improved efficiency."

Mr. Takamasa Nunoeda
Medical Informatics Engineer,
Japan Institute of Medical Informatics

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Results

With its initial migration, Kindai University Hospital was able to shrink its hardware footprint from three racks of servers to four nodes and half a rack. As other systems are consolidated in the future, the savings in server installation space and running costs should increase even further.

In addition, since the server environment can be easily built and the specifications of the server environment can be easily changed once it has been built, it has become possible to respond more flexibly to users' requests for server specifications.

“The effects of server consolidation have exceeded our initial expectations,” says Mr. Nunoeda. “We are planning to expand the system by adding more Lenovo ThinkAgile HX3320 nodes to the cluster and consolidating other large-scale systems, including those in our ophthalmology and pharmaceutical departments.”

Looking even further into the future, the hospital plans to migrate its IT environment to the public cloud. It believes that virtualizing the server environment on the Lenovo ThinkAgile HX platform in advance will more easily facilitate the migration, and support more flexible service delivery at reduced cost.

KINDAI UNIVERSITY

- **>80% reduction in server footprint during initial migration phase[1]**
- **Enables efficient administration and management of server resources**
- **Supports more agile, cost-efficient IT operations**

[1] Data provided by Kindai University Hospital.

“With the HCI platform from Lenovo and Nutanix, we can strategically update and expand systems without being bound by hardware lifecycles, and reduce system procurement and operation costs. Through these efforts, we hope to provide services that benefit as many people as possible, including patients, local partner medical institutions, medical staff, and medical school students.”

Mr. Takamasa Nunoeda
Medical Informatics Engineer, Japan Institute of Medical Informatics

What will you do with Lenovo software-defined infrastructure solutions?

The Data-Centered use Lenovo smarter infrastructure solutions, powered by Intel® Xeon® Scalable processors, to reduce complexity and support new healthcare services.

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