

Supporting world-class manufacturing by boosting infrastructure performance and scalability.

How laptop manufacturer **LCFC** increased its operational agility with a hybrid cloud platform powered by hyperconverged infrastructure from Lenovo and Nutanix, helping to meet a huge surge in global demand for laptops.

Lenovo Infrastructure Solutions
for The Data-Centered

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Background

A subsidiary of Lenovo, LCFC (Hefei) Electronics Technology Co., Ltd. manufactures one out of every eight laptops sold worldwide at its facilities in Anhui Province, China. LCFC is Lenovo's largest research and development (R&D) and production base globally, and the company has sold more than 180 million units since it was founded in 2011. In 2020, LCFC reported annual revenues of RMB 101.6 billion (USD 15.8 billion), making it the first-ever 100-billion-yuan enterprise in Hefei. This success is helping to drive the city's booming tech industry.

LCFC operates an intelligent manufacturing strategy, harnessing automation, intelligent construction technologies, and digital tools to support production. Its manufacturing sites are capable of processing 5,000 orders a day—80% of which are multi-configuration orders. With more than 2,000 components available, LCFC has the potential to deliver tens of thousands of unique customizations.

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Challenge

With more people working and learning remotely because of the COVID-19 pandemic, sales of laptops have soared. LCFC was quick to ramp up production to meet this surge in demand. But increasingly heavy application workloads placed huge strain on the company's traditional three-tier infrastructure.

While most of LCFC's workloads are deployed in a private cloud environment, the company runs its most critical business applications—manufacturing execution systems (MES) and R&D applications—on premises because of the demanding CPU, RAM, storage, and IOPS requirements.

While the legacy on-premises infrastructure was highly performant, it lacked flexibility: making it difficult to scale out quickly to support increased business volumes. Hong Xiaojun, Senior Engineer at LCFC, confirms: "Our existing three-tier infrastructure proved difficult and costly to expand. We wanted easy scalability without sacrificing performance or stability."

A worker in a cleanroom, wearing a white protective suit, a blue face mask, and a white hairnet, is using a soldering iron to work on a circuit board. The background shows other workers in similar attire working at a production line in a cleanroom environment.

Why Lenovo and Nutanix? All-in-one HCI appliances.

To achieve seamless growth, LCFC chose to replace its three-tier data environment with Lenovo ThinkAgile HX Series solutions—a hyperconverged infrastructure (HCI) platform powered by Nutanix.

“HCI offers the best of both worlds: public-cloud-like automation and flexibility, and performance from on-premises infrastructure,” says Hong Xiaojun. “The simplicity of the Lenovo ThinkAgile HX platform appealed to us. It’s an all-in-one solution that comes fully integrated and validated, and with the Nutanix hybrid cloud software pre-loaded.”

The Lenovo ThinkAgile HX platform eliminates the need to purchase standalone storage arrays, lowering total cost of ownership versus the traditional three-tier architecture.

Another key consideration for LCFC was software licensing. Lenovo ThinkAgile HX appliances include a bundled Life-of-Device license that remains with the appliance for its lifetime, making HCI more cost-effective in the long term. And by using Nutanix AHV as opposed to other virtualization and hyperconverged solutions, LCFC saves 20% in licensing costs.

Overhauling IT across the business.

First, LCFC worked with Lenovo to implement 12 Lenovo ThinkAgile HX5520 appliances, configured as two separate six-node clusters, at its primary site in Hefei, China. One cluster supports MES workloads and the second runs R&D applications.

Next, the company implemented an additional three-node cluster at its Tapei site to support R&D activity there.

“The deployment went very smoothly at both sites,” says Hong Xiaojun. “We were impressed with the professionalism of the Lenovo team, which helped to ensure that everything was completed on schedule.”

The Lenovo ThinkAgile HX platform supports the company’s heavy MES and R&D application workloads with ease. The largest MES application alone requires 64 GB memory and 16 cores at maximum peak demand.



“Lenovo acts as the single point of support for both the appliance hardware and Nutanix hybrid cloud software, so we can always be sure of a timely response.”

Hong Xiaojun
Senior Engineer, LCFC

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Results

With MES and R&D workloads now running on Lenovo ThinkAgile HX, LCFC can quickly and easily scale resources as application demands increase.

“Nutanix Prism gives us visibility and control over our virtualized compute and storage resources, which we can allocate dynamically to meet peaks and troughs in demand,” says Hong Xiaojun. “It takes just 10 seconds to launch a new virtual machine—53% faster than before. If we need to expand capacity, it’s as simple as connecting a new node to the cluster. And we can even integrate our HCI with public cloud providers such as Amazon or Alibaba to meet new business needs.”

As well as boosting business agility, LCFC increased the performance of its core MES and R&D applications by 30% by moving to the Lenovo ThinkAgile HX platform, and significantly reduced licensing costs too.

✓ 30% performance increase

✓ 53% faster to provision new virtual machines

✓ 20% lower licensing costs



“By deploying Lenovo ThinkAgile HX hyperconverged infrastructure, we have the performance, scalability, and stability needed to support manufacturing on a massive scale.”

Hong Xiaojun
Senior Engineer, LCFC

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

The Data-Centered keep manufacturing operations running smoothly with Lenovo smarter infrastructure solutions, powered by Nutanix.

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