

Leading Gansu Province into a new age of supercomputing.

How **Zijin Cloud** used Lenovo ThinkSystem servers to build a high-performance computing (HPC) cluster that will empower digital development across China.

Lenovo Infrastructure Solutions
for The Data-Centered

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Background

Gansu Zijin Cloud Big Data Developing Ltd. Co. (Zijin Cloud) is a state-owned cloud services provider based in Gansu Province, China. Incorporated in 2017, the company's core business activities include data production, storage and processing, cloud computing, internet data center (IDC) services, and software development.

Zijin Cloud works primarily with government agencies, educational institutions, and state-owned enterprises; key clients include the Jiangsu Electric Power Investment Group and Xidian University.

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Challenge

China's digital economy is booming. However, an imbalance in computing facilities between east and west has threatened to stand in the way of technological progress. While most data centers have historically been concentrated in the country's eastern regions, these areas also face increasing shortages of land and energy resources. In contrast, the west has abundant room and renewable resources, but its digital industry is less developed.

Now, an ambitious government initiative, known as the east-data-west-computing project, aims to bridge this gap. Its objective is to send data gathered from the eastern regions of China to resource-rich western regions for storage, calculation, and feedback.

The project will involve constructing eight national computing hubs, including one in northwest China's Gansu Province. These hubs will develop data center clusters, carry out collaborative construction between data centers, cloud computing and big data analysis, and bridge the gap between eastern and western regions in computing resources.

Already operating a large-scale data center in Gansu, Zijin Cloud was a natural choice for one of the project's new clusters. The organization needed to massively scale up its computing capabilities, adding all-new high-performance computing (HPC) and big data storage resources to meet the project's demands.



“The Zijin Cloud HPC center will be an important infrastructure platform for developing both the digital economy in Gansu Province and supporting wider technological progress throughout the entire country.”

Spokesperson
Zijin Cloud



Why Lenovo? Proven HPC technology and experience.

To support its landmark project, Zijin Cloud looked for a partner with proven experience on large-scale HPC infrastructure deployments. After assessing offerings from various vendors, the organization selected Lenovo ThinkSystem server and storage solutions.

“Lenovo has a strong reputation in the HPC space, and many of our sister companies have had positive experiences working with Lenovo,” says a spokesperson from Zijin Cloud. “Lenovo was also one of the few vendors with the capacity to deliver the server and storage resources we required in a short timeframe.”



“We chose Lenovo because of the quality of their technology and their experience in delivering large-scale HPC projects.”

Spokesperson
Zijin Cloud

State-of-the-art supercomputing center.

Having chosen Lenovo as its strategic IT provider, Zijin Cloud moved ahead with a 1.065-billion-yuan supercomputing infrastructure development plan. Work on the new HPC center began and the initial project delivery, which took under a year to complete, involved the installation of over 2,500 computing cabinets.

Phase one of the project is now almost complete, giving Zijin Cloud an HPC footprint spread across two data centers, two power centers, and one control center, with a total area of 51,550 square meters.

Together with the Lenovo HPC Deployment Services team, Zijin Cloud has installed 100 Lenovo ThinkSystem SD630 V2 high-density rack computing nodes, featuring 3rd Gen Intel Xeon Scalable processors, and 50 Lenovo ThinkSystem SR670 V2 GPU nodes, each equipped with four NVIDIA A100 Tensor Core GPUs.

The organization has also implemented a highly parallel storage system, built on Lenovo Distributed Storage Solution for IBM Spectrum Scale, with a total capacity of close to 10 PB. The Lenovo servers and storage are connected with high-speed Mellanox InfiniBand HDR networking fabric.



“Our collaboration with Lenovo has been very positive. We faced considerable challenges due to the COVID-19 pandemic, and the Lenovo provided strong support despite the constraints, even managing to meet delivery targets when equipment was in shortest supply.”

Spokesperson
Zijin Cloud

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Results

With the establishment of its new supercomputing center, Zijin Cloud is ready to meet the HPC needs of customers in Gansu Province and beyond. The organization's Lenovo cluster has a total computing peak of 2.73 PFLOPS, giving users access to extremely high-performing compute resources.

Zijin Cloud has also taken an important step towards realizing the vision of the east-data-west-computing project. The HPC center brings much-needed compute and storage resources to help develop the north-western region's digital economy.

At the same time, Zijin Cloud will also give enterprises in eastern China access to powerful and flexible cloud computing services, helping them realize remote allocation of compute and storage resources. This will enable companies to process complex and data-intensive workloads rapidly and at lower cost, advancing cutting-edge research and development work.

Crucially, the Lenovo platform gives Zijin Cloud a scalable foundation on which it can continue to grow. In the near future, the organization plans to add a further 3 PFLOPS of computing power to the HPC cluster. This will increase peak computing performance to 5.7 PFLOPS, making it the largest supercomputing center for commercial applications in Northwest China.



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- ✓ 2.73 PFLOPS total computing peak
- ✓ Brings all-new HPC capabilities to the region, driving digital development
- ✓ Cloud delivery model gives customers access to powerful computing resources at less cost
- ✓ Scalable platform enables Zijin Cloud to easily meet future demand



“Our HPC center is the first real case of east-data-west-computing in China. We are proud to offer these pioneering computing capabilities in support of digital development across our region and the entire country.”

Spokesperson
Zijin Cloud

What will you do with Lenovo HPC solutions?

The Data-Centered answer the call for high-performance computing with Lenovo smarter infrastructure solutions.

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