



Lifting cloud services to new heights of agility.

How **Paratera** used Lenovo TruScale Infrastructure Services, powered by AMD EPYC™ processors, to expand its cloud services infrastructure quickly and cost-effectively.

Lenovo Infrastructure Solutions
for The Data-Centered

Lenovo

1

Background

Paratera is one of China's top providers of high-performance computing (HPC) software and services. Founded in 2007, Paratera is headquartered in Beijing and operates from additional locations in Shanghai, Guangzhou, and Chengdu.

Paratera aggregates computing resources from major supercomputing centers across the country to provide leading-edge cloud services in the areas of HPC, artificial intelligence (AI), design simulation, and more.

Today, the company supports more than 180,000 users in over 20 industries. Its clients range from petroleum giants like PetroChina and Sinopec to universities, including the Chinese Academy of Sciences. Paratera has also collaborated with the China National Space Administration on multiple lunar exploration projects, as well as the country's first mission to Mars.

2

Challenge

China is one of the world's fastest-growing, highest-potential HPC markets. According to the National Development and Reform Commission (NDRC), the country's top economic planner, demand for computing power is expected to increase by more than 20% annually in the coming years.

To improve overall computing power and resource efficiency, China has started work on a mega project known as east-data-west-computing. It aims to build a new national computing network that integrates data centers, cloud computing, and big data.

Paratera was eager to get on board with the east-data-west-computing project and bring greater processing power and cloud resources to users with HPC needs across the nation. The company knew that it would have to massively expand its existing infrastructure to deliver on the new demands. Yet, as a relatively small service provider, it would be vital for Paratera to keep costs and complexity to a minimum.



“Efficiency, scale, and flexibility were key priorities for our new infrastructure.”

Liu Haichao

President and Resource System Director, Paratera

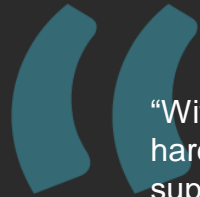


Why Lenovo and AMD? All-in-one, pay-as-you-go solution.

Paratera sought a high-performance infrastructure that could scale easily, and a flexible commercial model that would help to contain costs. It found both through Lenovo TruScale Infrastructure Services. With Lenovo TruScale, Paratera can deploy industry-leading servers, storage, and network hardware on premises at its data center, without the need for upfront capital expenditure. The company only pays for the infrastructure resources it uses.

Liu Haichao, Vice President and Resource System Director of Paratera, states: “Lenovo TruScale offers the same advantages as the public cloud model—simplicity, scalability, and cost-effectiveness—while being fully customizable to our needs and allowing us to maintain strong on-premises security features. We saw it as the best of both worlds and a useful option for our business.”

Additionally, with Lenovo handling the hardware deployment and configuration, Paratera could get the new infrastructure up and running rapidly, while keeping its team free to focus on managing regular operations. Once implemented, Lenovo Managed Services experts proactively monitor the system to ensure maximum uptime and efficiency, further reducing the administrative burden for Paratera.



“With Lenovo TruScale, we get a truly end-to-end service, covering everything from hardware procurement and deployment to system operation, maintenance, and support. It makes life much easier for our team.”

Liu Haichao

Vice President and Resource System Director, Paratera

Bringing greater flexibility to the data center.

Paratera has taken a two-stage approach to deploying its new data center infrastructure. In the first phase, the company worked with Lenovo to implement 400 Lenovo ThinkSystem SR645 servers powered by AMD EPYC™ CPUs. These servers are designed to take full advantage of the features of AMD EPYC 7002 processors, including high-performing 32-core processors, up to 3200 MHz memory, and PCIe Gen 4.0 support, for exceptional performance.

The company's entire HPC infrastructure has a total of 600,000 cores, with Lenovo ThinkSystem SR645 servers powered by AMD EPYC processors accounting for 25,600 cores. The cluster is capable of delivering a theoretical peak performance of 1 PFLOP.

In the second phase of the implementation, Paratera will expand on this already impressive landscape, adding thousands of Lenovo ThinkSystem servers over the course of a year. Once all of the new hardware is in place, Lenovo also plans to install a management dashboard at Paratera's data center. This will provide at-a-glance insight into the number of machines and cores in use, how much compute power is being consumed, and the overall asset utilization rate.



“We chose to deploy Lenovo ThinkSystem SR645 servers because of the excellent cost-performance ratio of the AMD EPYC 32-core processors.”

Liu Haichao

President and Resource System Director, Paratera

3

Results

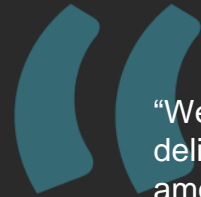
With Lenovo TruScale Infrastructure Services, Paratera has gained a highly cost-effective approach to growing its cloud services infrastructure. The solution's consumption-based model means that the company only has to pay for the compute resources it consumes, not the hardware itself. At the same time, Paratera gains the convenience of a transparent quarterly fee and avoids the burden of large upfront capital investment.

"Lenovo TruScale has helped us transform to a much more agile operating model," confirms Liu Haichao. "We can easily scale capacity and resources in line with actual client needs, reducing risk while maximizing our IT spend. What's more, moving to a quarterly expense structure doesn't just save us upfront costs now, it frees up valuable capital for the future, which we can allocate to other business priorities."

Paratera currently supports around 130,000 users on its HPC platform, and can keep expanding efficiently as client needs evolve and demand for cloud services increases. Meanwhile, with Lenovo handling infrastructure management, the company can dedicate more resources to data center and digital service innovation, ensuring that it's ready to respond to new demands well into the future.



- ✓ Flexible pay-as-you go model eliminates large upfront capital investments
- ✓ On-premises infrastructure maintains compliance with security and data protection standards
- ✓ Frees Paratera to focus on innovation and growth, rather than hardware management



“We like to compare our cooperation with Lenovo to that of a power production and delivery system. Lenovo is the power plant, delivering the hardware that generates huge amounts of computing power. Paratera is the power grid, distributing the computing power that organizations all over the country need to drive critical applications and processes.”

Liu Haichao

Vice President and Resource System Director, Paratera

What will you do with Lenovo TruScale Infrastructure Services?

Learn more about how Lenovo TruScale Infrastructure Services can meet your growing infrastructure needs with a pay-for-what-you-use data center.

[Explore Lenovo TruScale Infrastructure Services](#)



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