

Electronics

Powering **next-level** product development

Yongji Electric

Gearing up to elevate design and engineering efficiency with a HPC cluster built on Lenovo ThinkSystem servers featuring 3rd Gen Intel® Xeon® Scalable processors.

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Lenovo

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Who is Yongji Electric?

CRRC Yongji Electric Co., Ltd. (Yongji Electric) is an electronics systems manufacturer based in China. It specializes in developing high-end chips, key components, and system integration solutions for use in transportation and energy equipment. Headquartered in Yongji, Shanxi Province, the company also operates a research and development (R&D) center in Xi'an, and overseas joint ventures in India and South Africa.

Yongji Electric is a core subsidiary of CRRC Corporation Limited, the world leader in design, engineering, and manufacturing of advanced passenger rail vehicles and high-speed trains.


 **CRRC YONGJI ELECTRIC CO., LTD.**

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The Challenge

Electronics components from Yongji Electric can be found in everything from motorcycle and train transmissions to wind turbines. These products are often safety or mission-critical—making it a must for the company to maintain the highest standards of quality and safety.

Yongji Electric makes extensive use of computer-aided design (CAD) and computer-aided engineering (CAE) software to develop, test, and refine its product designs, ensuring they stand up to strict performance and compliance requirements. This software is incredibly demanding, requiring large amounts of both processing power and storage capacity.



Previously, the company relied on dedicated workstations to support engineering, simulation, and analytics workloads. But, as time went on, these systems struggled to keep up with ever-rising demand for compute and storage resources. The result? Frustrated R&D teams and slower project cycle times, which threatened to hamper Yongji Electric's agility and profitability.



“To strengthen technical capability and accommodate future R&D needs, it was clear that we needed a more robust computing infrastructure—one that offered excellent performance, easy expansion, and simplified management.”

Zhu Xuan

Technical Manager, Yongji Electric


Tapping the potential of HPC

To improve performance for critical design and engineering workloads, Yongji Electric decided to introduce a new high-performance computing (HPC) platform, built on Lenovo ThinkSystem servers.

The company is now working with Lenovo to implement a central HPC cluster, comprising 15 Lenovo ThinkSystem SR650 V2 nodes and two Lenovo ThinkSystem SR850 V2 nodes. The Lenovo servers are based on the 3rd Gen Intel® Xeon® processor Scalable family and support the Intel® Optane™ Persistent Memory 200 Series for advanced in-memory database applications. Once completed, the HPC cluster will feature a total of nearly 1,000 computing cores and over 8.7 TB of total memory capacity.

Hardware

Lenovo ThinkSystem SR650 V2
Lenovo ThinkSystem SR850 V2
Lenovo ThinkSystem DE6000H
Hybrid Storage Array
3rd Gen Intel® Xeon® Scalable
processors



For storage, Yongji Electric will make use of the Lenovo ThinkSystem DE6000H hybrid storage array. Offering more than 240 TB total capacity, the Lenovo system supports the complete range of data storage requirements, from highly used applications to high-capacity, low usage applications.



“Our experience with Lenovo has been very positive so far. The pre-sales team have been helpful and professional; when we’ve had questions or asked to test certain components, they’ve been ready to react without delay.”

Zhu Xuan

Technical Manager, Yongji Electric

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Results

Yongji Electric expects to see a big boost to available compute power and storage capacity once the Lenovo and Intel HPC platform is up and running. Instead of relying on individual workstations, design and engineering team members will be able to tap into a much larger pool of shared HPC resources.

That includes two to three times more memory capacity and 240 TB of additional storage. On top of that, the new cluster is expected to provide total CPU double-precision floating-point computing capacity of more than 44.9 TFLOPS, along with GPU single-precision floating-point computing capacity of more than 48.9 TFLOPS.

- ✓ >44.9 TFLOPS total CPU power
- ✓ >48.9 TFLOPS total GPU power
- ✓ 2-3x increase in memory capacity
- ✓ 240 TB of newly available storage capacity

¹ Data provided by Yongji Electric.



Backed by these powerful HPC resources, Yongji Electric will be well-positioned to meet the ever-growing computing needs of its R&D teams. Lenovo and Intel solutions deliver consistently high throughput, low latency, and strong stability, providing an ideal foundation for even the most demanding workloads. It will enable the company to run ever-more-complex simulations and produce more iterations of highly detailed designs in less time—accelerating project timelines while helping Yongji Electric strengthen its hard-won reputation for product excellence.



“Lenovo and Intel deliver the computing power and reliability we need to keep pushing design and engineering work further, so we can continue to deliver leading core components for our customers.”

Zhu Xuan

Technical Manager, Yongji Electric

Why **Lenovo**?

Yongji Electric was drawn to Lenovo early on, because of the company's strong standing in the HPC space and an extensive range of use cases in manufacturing. That initial impression was reinforced by the company's positive experience with the Lenovo pre-sales team, who took the time to understand Yongji Electric's requirements and build up a rapport with the business.

Extensive testing helped seal the deal, proving that Lenovo HPC solutions could deliver the high levels of performance and reliability that the company required.



How do you stay at the leading edge of a competitive market?

Accommodating future R&D needs with
Lenovo and Intel® technology.

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