Academic Research | China

Driving advances in smart manufacturing

Henan University of Science and Technology

Supercharging research into smart manufacturing with an HPC cluster based on Lenovo ThinkSystem SR670 V2 servers, powered by 3rd Gen Intel® Xeon® Scalable processors.

1 Customer background

Who is Henan University of Science and Technology?

Henan University of Science and Technology (HAUST) is located in Luoyang, China. Founded in 1952 as the Beijing Tractor School, HAUST has grown into a well-known university that is playing a leading role in the national program to elevate Henan Province. It has been recognized for educational reform, innovation and entrepreneurship, and scientific and technological achievements. HAUST invests continually in its facilities to improve student experiences and to advance research efforts.

2 The challenge

HAUST is driving the transition from traditional manufacturing methods to smart and agile manufacturing techniques through cutting-edge research. The university supports this research with a high-performance computing (HPC) cluster that runs data-intensive simulations.

To accelerate breakthroughs, HAUST wanted to increase the performance and efficiency of its HPC cluster by upgrading the underlying technology. The university targeted a minimum 20% increase in performance, alongside high stability and more efficient job scheduling.

“Our HPC cluster needs to process massive amounts of data from a myriad of sources. We wanted a vendor to help us tune our new HPC resources to ensure we could use them to their full potential.”

Wang Lin

Director of the School of Information Engineering, Henan University of Science and Technology

3 The solution

Building the HPC architecture of the future

HAUST worked with Lenovo to deploy Lenovo ThinkSystem SR670 V2 nodes featuring 3rd Gen Intel® Xeon® Scalable processors.

The solution includes Lenovo Intelligent Computing Orchestration (LiCO) software, Lenovo's industry-leading smart computing platform, offering a one-stop shop for HPC and artificial intelligence (AI).

The Lenovo team provided expert skills to accelerate and de-risk the migration and optimize the configuration for maximum performance and resilience.

Hardware
Lenovo ThinkSystem SR670 V2 3rd Gen Intel® Xeon® Scalable processors

Software
Lenovo Intelligent Computing Orchestration (LiCO)

Software
Lenovo Deployment Services

“The Lenovo team were highly experienced and professional, delivering a smooth implementation. Our new HPC cluster is the ideal support for our smart manufacturing platform.”

Wang Lin

Director of the School of Information Engineering, Henan University of Science and Technology

4 The results

The new Lenovo HPC cluster over-delivered on HAUST's target, increasing performance by 30%. By accelerating research breakthroughs this helps to advance smart manufacturing innovation.

Through LiCO, HAUST automated job scheduling to boost resource utilization, increasing efficiency and speeding returns on investment (ROI). The university also benefits from higher availability for its HPC cluster, enabling it to offer consistently high levels of service. Combined, these factors all contribute to HAUST's appeal as a place to study and advance smart manufacturing knowledge.

- **30% increase in HPC performance accelerates research**
- **Optimizes resource utilization for greater efficiency and faster ROI**
- **Delivers ultra-high availability, enabling exceptional service continuity**

“With Lenovo and Intel technology powering our HPC cluster, we are accelerating research breakthroughs that will help realize the vision of smart manufacturing. This adds to the university’s reputation as a pioneering institution.”

Wang Lin

Director of the School of Information Engineering, Henan University of Science and Technology

Why Lenovo?

The HAUST team recognized the top-ranking presence of Lenovo in the Chinese Top 100 supercomputers and global TOP500 HPC lists. It was reassured by the renown of the Lenovo brand, especially in the fields of HPC and higher education. From other references, the team gained confidence in the trustworthiness of Lenovo technology and skills.

How can universities make smart manufacturing a reality?

Henan University of Science and Technology powers innovative research with an HPC cluster based on Lenovo and Intel® technology.

Explore Lenovo HPC Solutions