

# Shaping greener manufacturing operations with real-time data.

How **Weifang Special Steel Group Co., Ltd.** used a hyperconverged infrastructure from Lenovo and Nutanix, powered by 2nd Gen Intel® Xeon® Scalable processors, to accelerate its smart manufacturing initiative and reduce its environmental impact.

**Lenovo Infrastructure Solutions**  
for The Data-Centered



**Lenovo**

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## Background

Founded in 1972 in Shandong Province, China, Weifang Special Steel Group Co., Ltd. (WSSG) produces high-quality, industrial-grade products for the manufacturing sector and related industries. It specializes in iron and steel production, steel rolling, oxygen production, waste heat power generation, and the creation of new building materials. Employing more than 6,600 people, the company is one of the top-500 largest companies in China's manufacturing industry, and generates annual revenues equivalent to approximately US\$1.5 billion.

To supercharge China's economic development, the Chinese government has launched the "Made in China 2025" strategic plan. This state-led initiative aims to enhance domestic manufacturing capabilities in a wide range of sectors, including transport, energy, and agriculture.

Green technology is a key component of the Made in China 2025 plan, which also includes stringent requirements for manufacturers to reduce emissions and minimize waste. In Shandong Province, government leaders are engaging with leading enterprises in the region such as WSSG as they work toward super-low emission targets.

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## Challenge

To help it realize these goals, WSSG is targeting a far-reaching business transformation. On the factory floor, the company aims to embed technologies such as Industrial Internet of Things (IIoT) sensors to gain actionable insight into manufacturing in real time, and uncover opportunities to enhance efficiency. Real-time data will also play a critical role in other operational areas—from tracking the location of raw materials and finished goods throughout the extended supply chain to monitoring emissions from venting towers and chimneys.

Ju Jianbo, CIO at Weifang Special Steel Group, confirms: “The purpose of the smart manufacturing strategy at WSSG is to empower the group to make well-informed strategic decisions, sharpen our competitive edge, and protect the environment.”

To achieve these goals, WSSG plans to infuse IIoT data into its key business systems, including advanced planning and scheduling (APS) applications and manufacturing execution systems (MES). In the past, the company relied on a distributed server and storage environment to support these systems, but the company realized that they would be unable to accommodate the sharp increase in the volume and velocity of data as it progressed on its smart manufacturing journey.




“To support our business systems, we previously relied on three separate storage area networks running on heterogenous infrastructure. As well as making IT management complex and costly, this approach meant we were unable to efficiently scale out as our data grew—so we looked for a new solution.”

**Ju Jianbo**

CIO, Weifang Special Steel Group Co., Ltd.





## Why Lenovo ThinkAgile HX and Nutanix? Dependable performance in a compact footprint.

After reviewing offerings from a number of infrastructure providers, WSSG decided to replace its traditional three-tier architecture with a hyperconverged infrastructure platform from Lenovo and Nutanix, based on Lenovo ThinkAgile and Lenovo ThinkSystem solutions with 2nd Gen Intel® Xeon® Scalable processors and managed with Nutanix Prism.

“During the vendor evaluation process, what stood out about the Lenovo offering was its clear advantages around compute performance, storage capacity, and stability,” says Ju Jianbo. “By moving to a hyperconverged cluster, we also gain the benefits of reduced cost, lower maintenance, and a much smaller data center footprint compared to a traditional three-tier environment.”

He adds: “Although we are a large company, our IT team is relatively lean—comprising just 25 employees. Having a platform that is both dependable and easy to manage is therefore extremely important for WSSG, as it enables us to spend less time on routine tasks and instead focus on value-added areas such as digital transformation.”



“The high-availability Lenovo and Nutanix solution guarantees that we can deliver mission-critical digital capabilities to the business 24/7—helping us to cut the business risk of unplanned downtime.”

**Ju Jianbo**

CIO, Weifang Special Steel Group Co., Ltd.

## Enabling high availability.

To establish a unified computing and storage platform to drive its smart factory operations, WSSG implemented a four-node Lenovo ThinkAgile HX5520 Appliance powered by 2nd Gen Intel® Xeon® Scalable processors. The new platform supports the company's mission-critical MES and APS applications, as well as other important systems such as real-time environmental monitoring.

To support its big data analytics workloads, the company deployed a Lenovo ThinkSystem SR860 Server, also equipped with 2nd Gen Intel® Xeon® Scalable processors. Two Lenovo ThinkSystem DE6000H Hybrid Storage arrays—connected via two Lenovo Storage DX8200 Unified Storage gateways—provide a reliable, high-performance platform for the company's MES database and data warehouse, configured for high availability with active/active data replication.

“During the pre-sales stage, Lenovo engineers put forward excellent suggestions to help us achieve a high-availability architecture, including best practices for combining Oracle Real Application Clusters, hyperconverged technology, storage, and switches,” says Ju Jianbo. “In our server room, Intel® Data Center Manager delivers vendor-agnostic monitoring for all the key components of our architecture—including our hyperconverged infrastructure and virtual machines.”



“Since switching to a hyperconverged infrastructure, we’ve made our entire IT environment simpler and easier to manage. Crucially, our server virtualization and software-defined storage architecture help to eliminate the risk of a single point of failure in the data center.”

**Ju Jianbo**

CIO, Weifang Special Steel Group Co., Ltd.

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## Results

With the Lenovo and Nutanix hyperconverged infrastructure at the heart of its business, WSSG has the solid foundation to pursue its smart factory goal.

“Since moving to the Lenovo and Nutanix platform, we’ve reduced our overall IT operational and maintenance costs by 50%, and cut the physical footprint in our data center in half also<sup>1</sup>,” explains Ju Jianbo. “Even though our compute and storage requirements are growing, we gain the peace of mind that our business systems will be online around the clock thanks to the active/active replication of key data through our redundant storage gateway.”

When the time comes to scale out its IT environment, WSSG knows that adding extra compute or storage capacity is as simple as connecting a new node to the cluster. Ju Jianbo confirms: “By managing our compute and storage requirements using a central, virtualized pool, it will be far easier to scope our future requirements—avoiding the cost and risk of over- or under-purchasing.”



**50% lower IT  
operational and  
maintenance costs**



**50% reduction in  
data center footprint**



**24/7 availability  
cuts business risk**

<sup>1</sup> Data provided by Weifang Special Steel Group Co., Ltd.





“Moving to a hyperconverged infrastructure from Lenovo and Nutanix has improved the reliability of our key business systems, and is now helping us to accelerate our digital transformation. When it comes to technical support, after-sales services, and commitment to our success, Lenovo is the best vendor I’ve ever worked with.”

**Ju Jianbo**

CIO, Weifang Special Steel Group Co., Ltd.

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

The Data-Centered enable smart manufacturing with Lenovo smarter infrastructure solutions, powered by 2nd Gen Intel® Xeon® Scalable processors.

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Infrastructure Solutions**



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