Industry

Boosting CAD performance for cutting-edge development

AICHELIN Group

To break the cycle of costly CAD workstation refreshes, AICHELIN Group signed up for Lenovo TruScale Infrastructure as a Service. With virtual desktops running on Lenovo ThinkAgile VX Series nodes powered by AMD EPYC™ 73F3 Processors, the company can cut costs and scale seamlessly.

Lenovo

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Who is AICHELIN Group?

Headquartered in Mödling, Austria, AICHELIN Group is one of the largest manufacturers of heat treatment solutions worldwide. The company manufactures and markets its products from 11 locations in 7 countries, with a catalog that includes innovative, specialized solutions such as industrial furnaces, induction hardening plants, industrial gas burner systems, and control and automation systems. With roots dating back to 1868, AICHELIN Group is part of Berndorf AG and employs more than 1,100 people.

aichelin
group

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The
Challenge

Industrial furnaces are one of AICHELIN Group's key product lines. These huge and complex solutions can measure up to 80 meters in length and 100 tons in weight. Customers use the solutions for safety-critical applications, including hardening the metal fixtures and fastenings used in consumer and industrial products. To help these customers maintain safety, AICHELIN Group strives to ensure the highest quality from product development to production.

Christian Huber, Head of Global IT at AICHELIN Group, explains: "Designing heat treatment solutions is a complicated process. Our industrial furnaces must withstand large variations of temperature throughout their service lives, and many incorporate additional modules that allow users to harden their components in oils, salts or polymers—adding to the complexity of the product development process."

To stay at the cutting edge of its industry, AICHELIN Group employs engineering teams at five locations across Europe. Some products comprise more than 300,000 individual parts, and the company's employees rely on computer-aided design (CAD) software to help streamline the product development process and customize each order to meet specific business requirements.

" **"Processing and rendering a complex CAD project takes far longer on slower computers. To avoid performance-related challenges, we equip our teams with high-performance workstations. But to keep up with the latest versions of our CAD software, we found that we needed to refresh our workstations every three years—increasing our IT costs significantly."**

Christian Huber
Head of Global IT, AICHELIN Group

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In the past, each of our design teams used different systems, software and hardware for their CAD workstations, and there was no standard approach to configuration management. We saw an opportunity to break out of our costly three-year refresh cycle by standardizing on robust, scalable and high-performance solutions across our European business. This would also help engineers working in different countries to collaborate more closely—increasing productivity and speeding up the development of innovative solutions.

Christian Huber
Head of Global IT, AICHELIN Group

High performance for demanding workloads

To deliver dependable performance for its demanding CAD workloads, AICHELIN Group signed up for Lenovo TruScale Infrastructure as a Service. With a standardized, subscription-based service, the company avoids the need to purchase, configure, deploy, and manage individual workstations. Instead, Lenovo provides AICHELIN Group with a complete cluster solution for virtual CAD desktops. To ensure high availability, seamless maintenance operations and dynamic scalability, Lenovo always provisions additional backup capacity as part of its comprehensive Lenovo TruScale service.

Hardware
Lenovo ThinkAgile VX Series

NVIDIA A40 GPU

Software
Citrix Virtual Apps and Desktops

NVIDIA vGPU Manager

VMware vSphere

VMware vSAN

Services
Lenovo TruScale Infrastructure as a Service

Lenovo Managed Services

Lenovo Professional Services

Customer service **excellence**

"We are extremely satisfied with the Lenovo systems and services," adds Huber. "Lenovo TruScale with all operations and maintenance tasks handled by the Lenovo Managed Services team was a game-changer for our IT productivity. This level of service, quality and expertise is something we don't get from any other vendors we work with."

The new cluster is built on VMware vSphere virtualization and runs on ultra-efficient Lenovo ThinkAgile VX Series hyperconverged infrastructure with VMware vSAN storage, powered by high-performance AMD EPYC™ 73F3 Processors and NVIDIA® A40 GPUs. Fully managed by Lenovo, the new solution frees AICHELIN Group's IT team from low-level infrastructure management tasks while avoiding the high capital cost of frequent workstation refreshes. Following proven best practices, the Lenovo team takes care of hardware maintenance as well as Lenovo and VMware firmware updates.

"We evaluated cloud-based virtual desktop solutions from a number of vendors, but none could match the price/performance ratio of Lenovo TruScale," recalls Huber. "From the moment we engaged Lenovo, we were very impressed by their excellent customer service—they listened carefully to our requirements and worked diligently to make sure the solution addressed all our needs."

Optimized
for agility

Following a successful proof of concept, AICHELIN Group provisioned virtual CAD desktops for 32 users. Powered by Lenovo TruScale, the new virtual desktop environments use Citrix Virtual Apps and Desktops and are configured with 128 GB of memory per user and 8 GB vGPU memory for graphics acceleration, helping to ensure that CAD software runs smoothly for its designers. Due to the optimized solution design by Lenovo, AICHELIN Group achieves impressive performance density with up to 15 virtual CAD desktops per cluster node. To achieve this, the Lenovo team does not use dedicated GPUs for individual CAD desktops, but instead leverages the flexible NVIDIA vGPU Manager software. Thanks to this configuration, Lenovo can share the physical GPUs across multiple virtual machines, making the solution much more efficient and cost-effective.

"In the past, expanding our engineering teams required costly and labor-intensive hardware provisioning, but with Lenovo TruScale scaling is so much easier," confirms Huber. "We simply purchase extra seats from Lenovo, and new employees get the exactly same high-performance VDI environment as our existing engineers and designers. Thanks to the sophisticated capacity management by the Lenovo team, we can also add new VDI desktops almost instantly, without having to wait for hardware expansions, giving us more agility and flexibility to respond to new business requirements."

"Centralizing and standardizing on Lenovo TruScale has dramatically reduced the complexity of IT management and makes it easier for our engineering teams to work together. The new solution has been so successful that we're planning to onboard more than 16 product engineers in Germany and Slovenia soon."

Christian Huber
Head of Global IT, AICHELIN Group

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Results

By replacing its heterogeneous workstation environment with a standardized VDI experience for all product engineers, AICHELIN Group is enabling more effective knowledge-sharing—allowing engineers working in different countries to reuse CAD drafts, increasing overall productivity substantially.

"Since we switched to Lenovo TruScale, we've seen a marked decline in the number of IT support requests from our users," says Huber. "Our Lenovo TruScale virtual CAD desktops just run fast and reliably, which translates to increased productivity for our employees. We can now manage all our VDI desktops from a single point of control, saving us around 40 hours a month on IT maintenance."

✓ **80% lower cost than equivalent public cloud solutions**

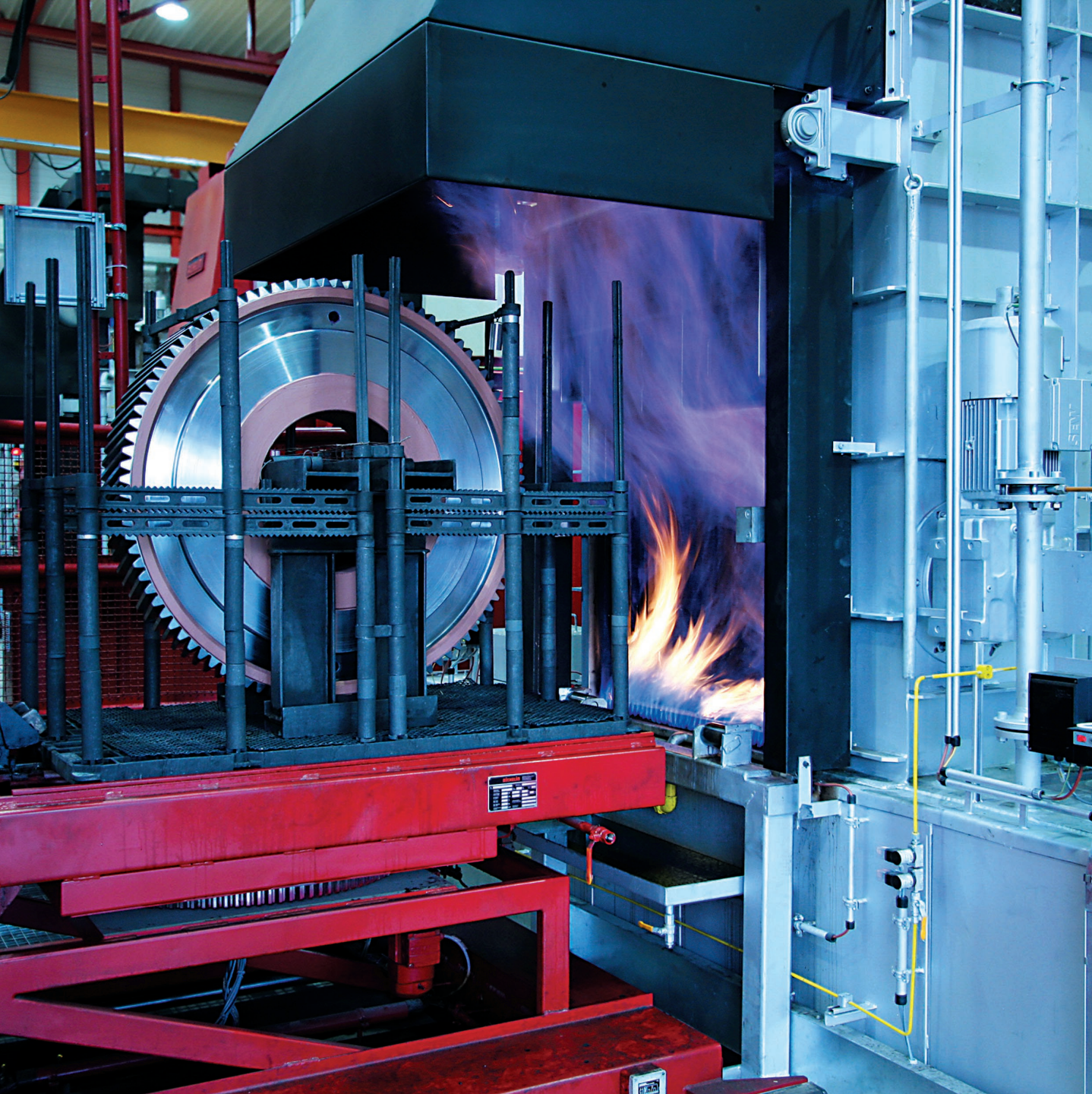✓ **40 hours/month saved on IT management**

✓ **Delivers high performance for demanding CAD workloads**

Exceptional cost savings

With Lenovo TruScale, AICHELIN Group can size each VDI environment based on the user's individual requirements, delivering guaranteed performance backed by AMD EPYC™ 73F3 Processors. And while performance has increased, the company is keeping operational costs lean thanks to Lenovo's competitive billing model.

"Lenovo's pricing model is simple and transparent, which our accounting team greatly appreciates," states Huber. "The price per seat we get with Lenovo TruScale is exceptional—it costs about 80% less than equivalent public cloud offerings. Lenovo delivered a private cloud solution with the added benefit that we choose the data center ourselves—improving our data security and guaranteeing that our European teams' data never leaves Austria. We're already thinking about extending the solution to our other teams around the world."

"Lenovo TruScale is opening up new opportunities for flexible, more collaborative working. Our employees can now take their laptops to on-site visits and walk customers through our construction plans directly in the CAD software—something that simply wasn't possible with our previous workstation environment."

Christian Huber
Head of Global IT, AICHELIN Group

Why Lenovo?

From the discovery phase and beyond, AICHELIN Group was delighted with the Lenovo team's commitment to finding the optimal VDI solution for its international business.

"We greatly value the advice Lenovo provided around sizing our environment to deliver high performance for CAD workloads at a competitive price point," says Huber. "We've also found Lenovo's technical support to be outstanding. The Lenovo team is very proactive and they're always quick to respond to our questions and requests."

Huber adds: "The combination of Lenovo ThinkAgile VX Series nodes and AMD EPYC™ 73F3 Processors delivers excellent performance. With Lenovo TruScale at the heart of our engineering process, we can run demanding CAD workloads without painful and expensive workstation refreshes."

How can engineering companies cut CAD costs?

AICHELIN Group signed up for Lenovo TruScale Infrastructure as a Service, switching to virtual desktops for CAD running on Lenovo ThinkAgile nodes powered by high-performance AMD processors.

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