

AEC use case guide

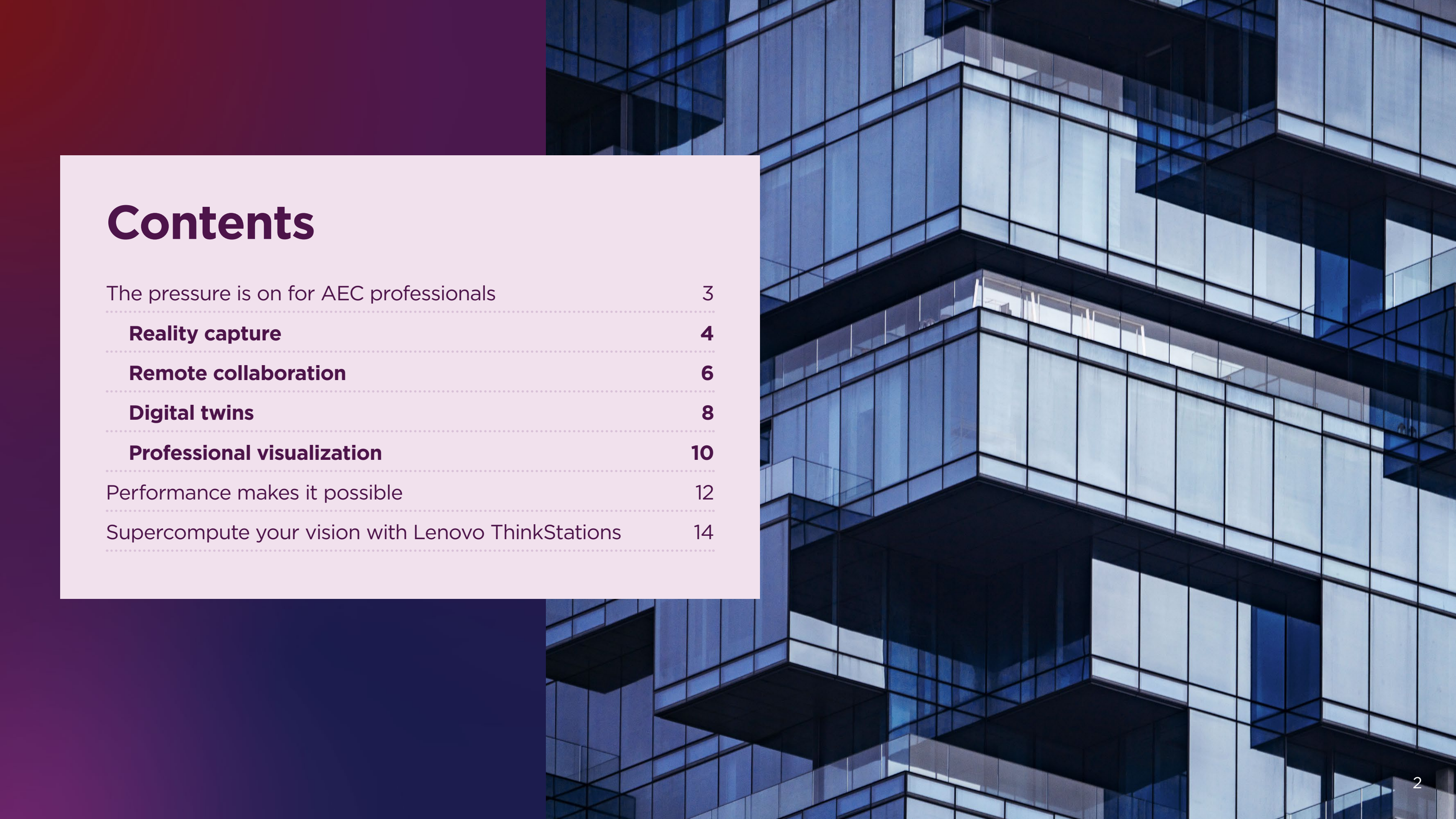
Four scenarios to supercompute your vision.

How Lenovo ThinkStations bring power and precision to AEC workflows.



Lenovo

ThinkPad P16s



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ThinkPad P16s

The pressure is on for AEC professionals.

Designers, architects and engineers are feeling the heat. File sizes are spiralling, workloads are becoming more complex by the day, and teams are increasingly scattered across countries and continents. And, of course, the pressure for ever faster delivery continues to rise.

To operate in this intense environment and come out on top, AEC professionals need tech with the power to keep pace and tools that are perfectly adapted to the demands of modern workflows.

In this guide, we'll explore four different scenarios:



Reality capture



Digital twins



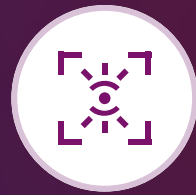
Remote collaboration



Professional visualization

For each scenario, we'll show you how, with the right tech setup, you can blast through heavy workloads, turbocharge project delivery and supercompute your work.

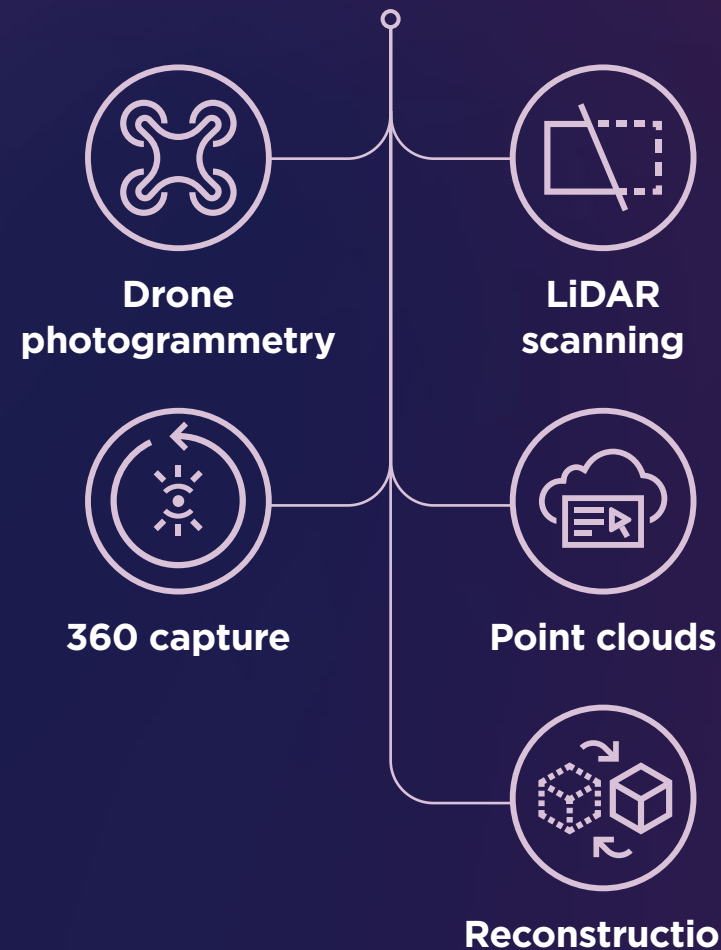
Supercompute your reality capture.



When everything goes to plan, reality capture gives you the power to bring any building or environment to life, virtually.

However, accuracy is paramount and dealing with colossal datasets and processor-hungry tools can easily derail deadlines. So how can you conquer these terabyte-scale workflows?

Your workflows:



Your tools:

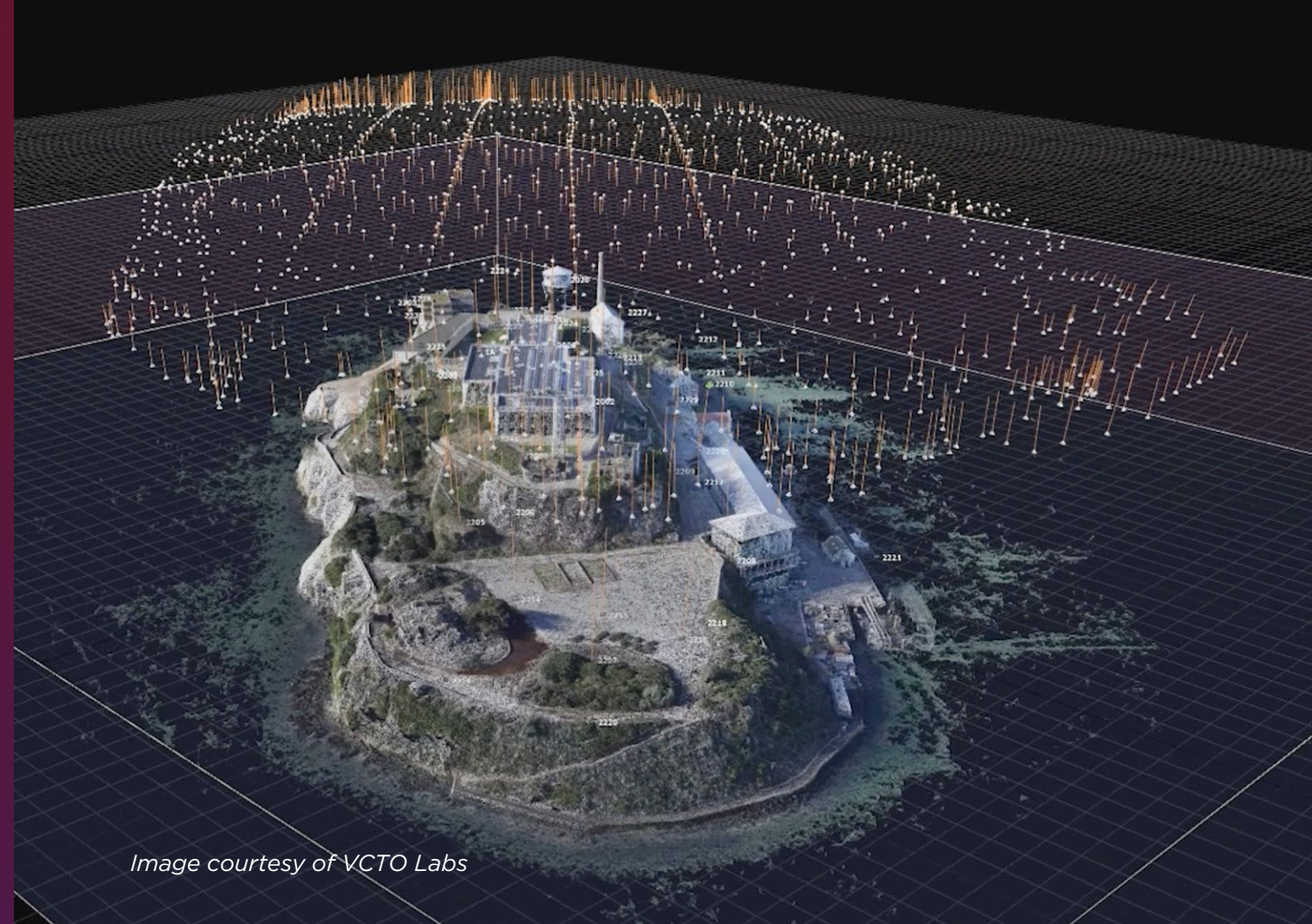


Image courtesy of VCTO Labs

Challenges:

Working with reality capture means handling multi-million-point datasets, so the CPU demands are extreme. Stitching models together, reconstructing and reviewing models also puts serious pressure on the GPU. When you're working with terabytes of data, your machine can easily become a bottleneck that puts deadlines at risk.

On top of this, if your reality capture project means scanning and working from remote locations, you might need to process locally without depending on the cloud and keep client data secure on the go.

YOUR IDEAL SETUP FOR REALITY CAPTURE:

Lenovo ThinkStation P8 at the edge Lenovo ThinkPad P16s in the field

The power to take on terabyte-scale workloads.

Power through demanding workloads with the ThinkStation P8 advanced by AMD Ryzen™ Threadripper™ PRO processors with up to 96 cores you can put to work in demanding reality capture workflows.

Multitasking mastery.

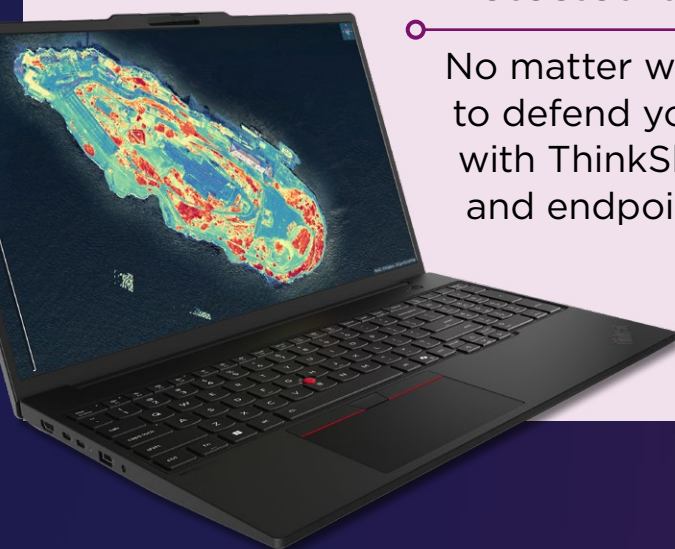
The ThinkStation P8's 96 cores give you more processing power to play with when it comes to multitasking or stacking multiple heavy applications to run at once. With workflows running at peak efficiency, you'll drive your projects forward.

Protected by design.

No matter where you're working, these machines are primed to defend your work against evolving threats in real time with ThinkShield AI-powered, predictive threat detection and endpoint protection built right into the hardware.



ThinkStation P8



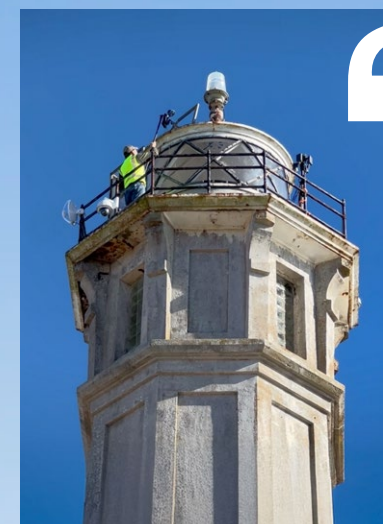
ThinkPad P16s

See them in action.

Digitally mapping Alcatraz. With Lenovo ThinkStation P8 and ThinkPad P16s.



When VCTO Labs had just three weeks to turn this infamous landmark into a detailed digital twin, the powerful Lenovo ThinkStation P8 and MIL-SPEC tested ThinkPad P16s made it possible.



“As soon as I saw the specs of the P8, I knew the project was going to work.”

Peter Kelsey, Founder,
VCTO Labs



Supercompute your remote collaboration.



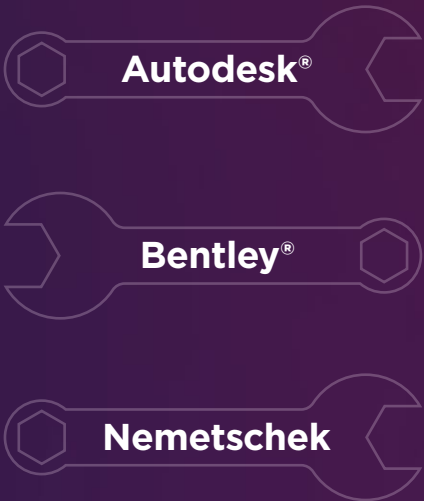
In an ideal world, collaboration would be effortless. You'd access BIM models with ease and markups and iteration would be a breeze—whether you were in the office or on site.

In reality, limited connectivity, rugged conditions and sluggish laptop performance can stall progress when every moment counts. Read on to see how you can get the durability, power, and remote file access you need to stay ahead.

Your workflows:



Your tools:



Challenges:

Whether you're working remotely or collaborating on-site, you need to stay productive or risk projects stalling. It means you need a machine that's portable enough to carry with you and gives you the performance to keep work moving forward. And you need reliable remote access to your BIM models—even when connectivity is limited.

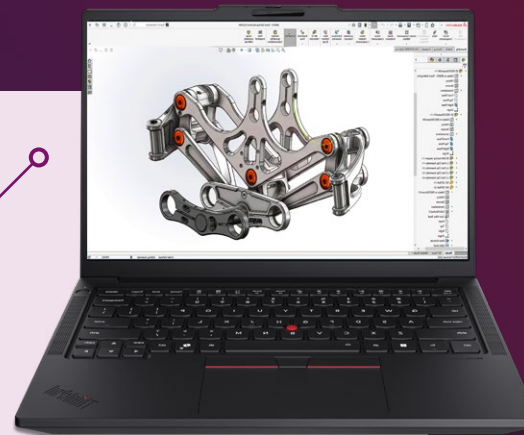
Finally, if your workstation can't handle wet, dusty, dirty site environments, and protect your work, wherever it takes you, then it's not the workstation for you.

YOUR IDEAL SETUP FOR REMOTE COLLABORATION:

Lenovo ThinkPad P16s or P14s on the go

Portable power.

All-day battery life, AI performance, powerful AMD Ryzen™ PRO processor and integrated professional-grade AMD Radeon™ graphics. All packed into a lightweight chassis you can bring with you anywhere.



ThinkPad P14s

Engineered for every eventuality.

The ThinkPad P16s and P14s are built with the rugged reliability and MIL-SPEC tested durability to handle extreme conditions. So, you can work with confidence in the office, on the move, in site trailers and in the field.



ThinkPad P16s



Access the full power of your workstation—from anywhere.

Lenovo Access brings workstation-class performance to virtually any device, anywhere you have an internet connection. Enjoy local-like responsiveness and full-turbo clock speeds so even graphics-intensive workflows run smoothly, no matter where you're working.



See it in action.

Built to handle conditions on Alcatraz: Lenovo ThinkPad P16s.

When the VCTO Labs team had to scan everything from the inside of 150-year old sewer to the island's inhospitable terrain and coastline, the ThinkPad P16s was up to the challenge.

“The spaces on Alcatraz are dark, dirty and wet and there's dust everywhere. The ThinkPad's MIL-SPEC capabilities met all those challenges.”

Peter Kelsey, Founder, VCTO Labs

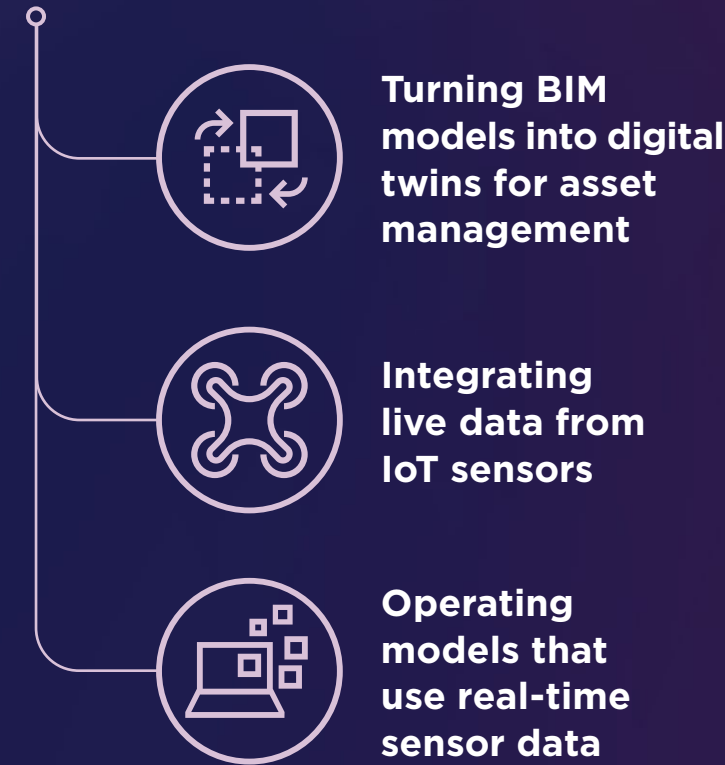
Supercompute your digital twins.



When your digital twins and smart buildings function flawlessly, real-time data flows seamlessly into detailed 3D models, driving insightful decisions.

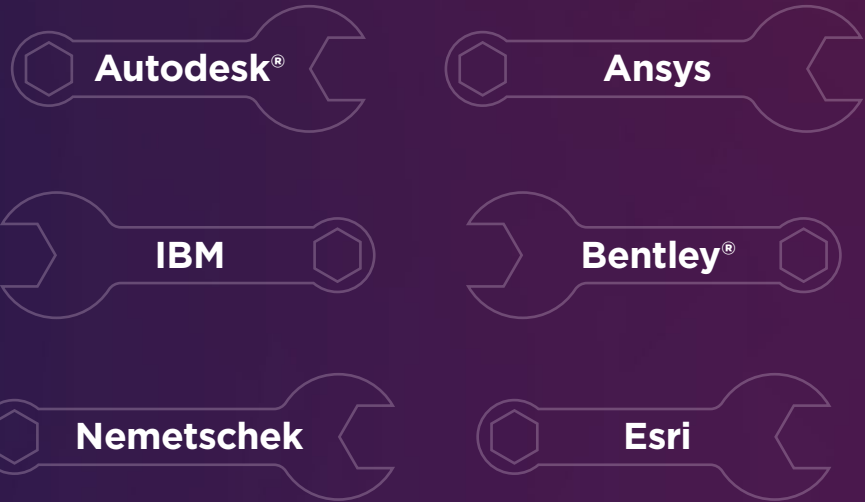
Yet with vast datasets and complex integrations, one misstep can throw your project off course. See how you can gain the power and precision you need to succeed.

Workflows you might use:



Your tools:

Simulation, IoT, AI, and analysis solutions from:



and many more.



Challenges:

Working with digital twins and smart buildings demands a lot of your tech. Vast datasets, complex integrations as you bring live data into highly detailed 3D models and intensive simulation workloads means having the right hardware can make or break your project. The success of your model depends on your ability to protect and handle fluctuating real-time data and maintain model fidelity even as things change in the real world.

YOUR IDEAL SETUP FOR DIGITAL TWINS:

Lenovo ThinkStation P8 in the office Lenovo ThinkPad P16s or P14s on the go

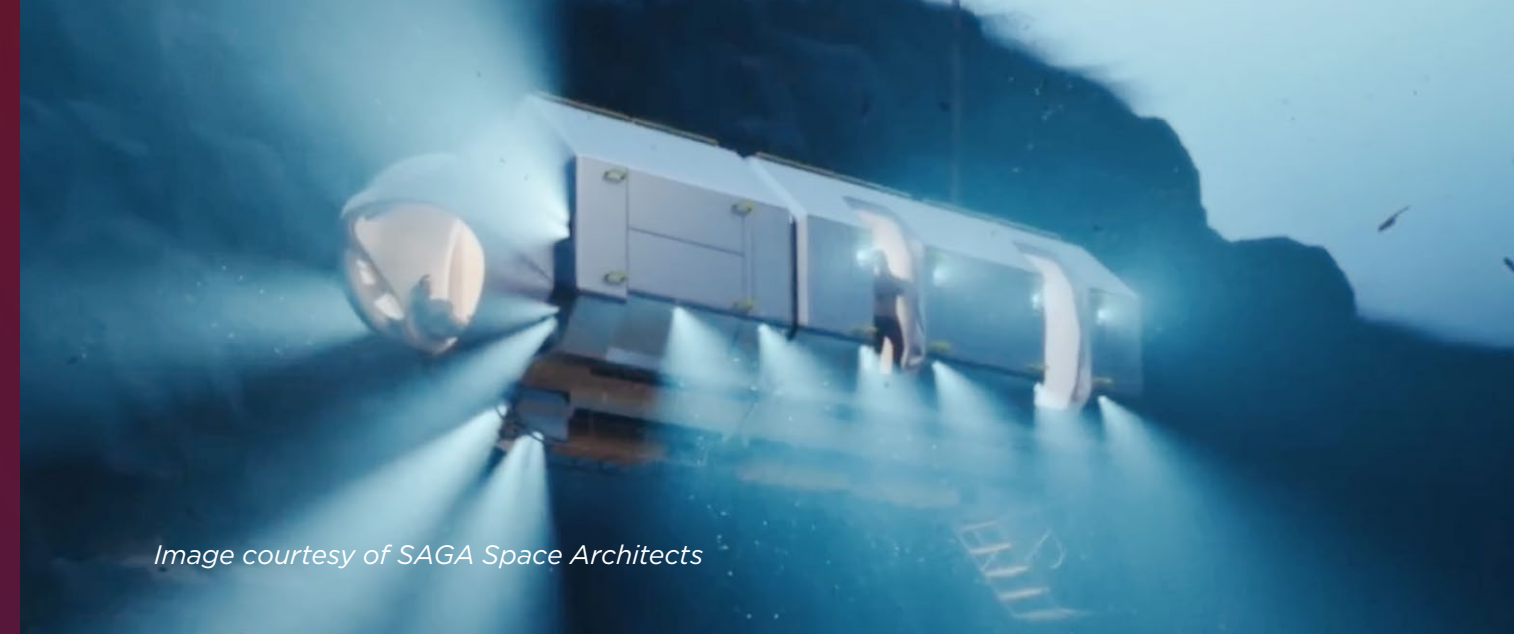


Image courtesy of SAGA Space Architects

Supercomputer performance, wherever you are.

Combine the ThinkStation P8 with the ThinkPad P16s or P14s and you can have the power of a supercomputer in your office and in your backpack. Get the CPU and GPU performance you need for BIM coordination and complex simulations.



ThinkStation P8

Expandable memory.

What if your workstation's memory could scale to match your project? It's possible with Lenovo ThinkStations. You can add up to 1TB RAM to the ThinkStation P8 and up to 96GB DDR5 to the ThinkPad P16s and P14s, making these machines ideal for multi-discipline BIM and digital twin workflows.



Top security.

Protecting the live data in your digital twins is paramount. The good news is, Lenovo ThinkShield brings total protection wherever and whenever work happens, with complete AI-powered endpoint security which keeps data secure from the operating system to the cloud. While AMD PRO Technologies Security embeds device security right into the hardware, OS, and system level.



ThinkPad P16s



ThinkPad P14s

See it in action.

Flawless precision when there's no margin for error: Lenovo ThinkStation P8.

SAGA Space Architects design structures that allow humans to survive in extreme environments, including underwater and in space. When simulating and designing for these high-stakes situations, their success depends on high performance, high precision workstations like the Lenovo ThinkStation P8.

“To push the frontiers of architecture, you need exceptional performance and reliability in your tools.”

Sebastian Aristotelis, Co-founder & Lead architect,
SAGA Space Architects

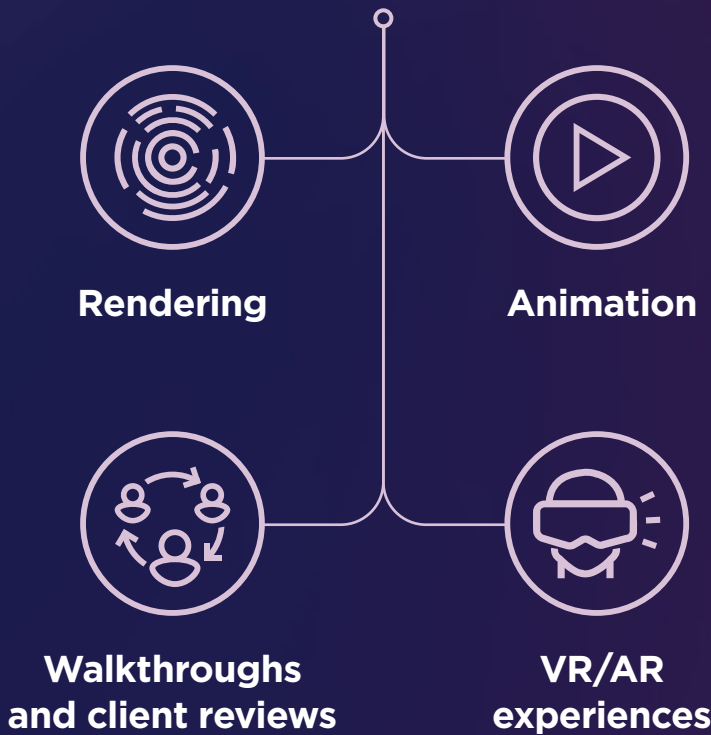
Supercompute your professional visualization.



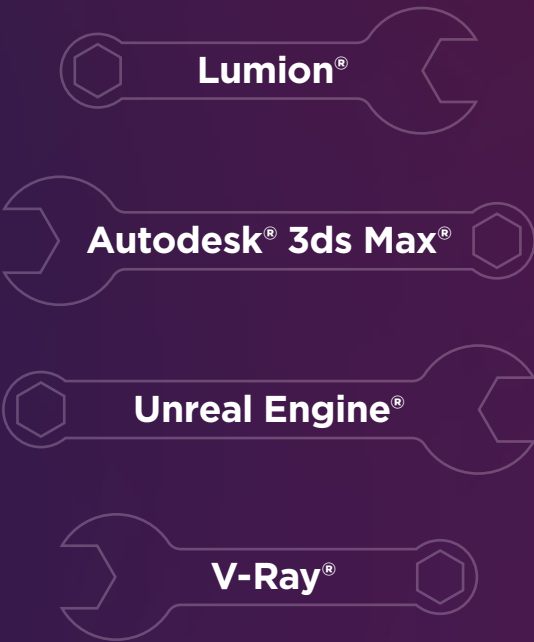
Visualization can bring every curve and contour of your project to life, captivating clients and inspiring stakeholders.

But the pressure on your processors is immense and stuttering frames or overheating hardware is a sure-fire way to kill the magic. Here's how you can present at peak performance and share your vision, flawlessly.

Your workflows:



Your tools:



Challenges:

There's no doubt about it: time is the biggest enemy of high-quality visualizations. Working within tight deadlines to create detailed, complex visualizations, the last thing you need is crashing and long render times. And when it comes to real-time rendering and interactive walkthroughs, success depends on the experience being smooth and lag-free. So there's no room for overheating hardware or stuttering visuals.



YOUR IDEAL SETUP FOR VISUALIZATION:

Lenovo ThinkStation P8 powering everything



ThinkStation P8

Undaunted by demanding workloads.

There's power. And then there are superpowers. That's what the ThinkStation P8 brings to your workflow. Primed with AMD Ryzen™ Threadripper™ PRO processors with up to 96 cores, this workstation is ready to make light work of heavy workloads including the reality modeling, multitasking, rendering and complex simulation that goes into creating pro visualizations.

Graphics that go the extra mile.

For real-time rendering and VR/AR experiences, you need GPU and CPU performance that can keep pace. The ThinkStation P8 delivers it, with 12-, 16- and 24-core processors and high-end graphics from NVIDIA, including support for 3 NVIDIA RTX™ 6000 Blackwell Max-Q GPUs as well as support for 1 RTX PRO 6000 Blackwell GPU.

Stay cool under pressure.

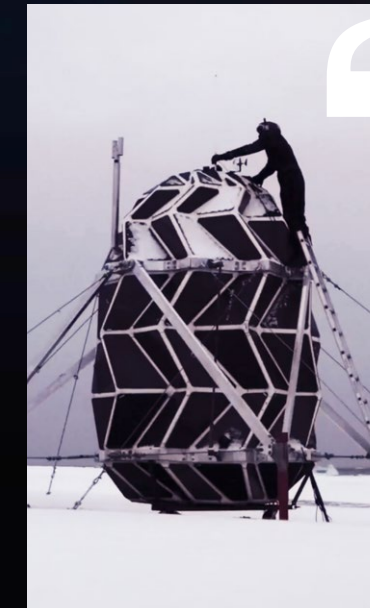
Whether you're working to tight deadlines or presenting to clients, the last thing you want is overheating hardware that sounds like it's feeling the strain. The ThinkStation P8 breezes through demanding AEC workflows, with cool, stable and quiet performance thanks to Lenovo's patented tri-channel cooling.



See it in action.

Simulating interstellar environments with the Lenovo ThinkStation P8.

When SAGA Space Architects set out to design a structure that would allow humans to thrive on the moon, they needed a machine with the power to visualize and simulate a lunar habitat. The CPU and GPU performance of the Lenovo ThinkStation P8 made it possible.



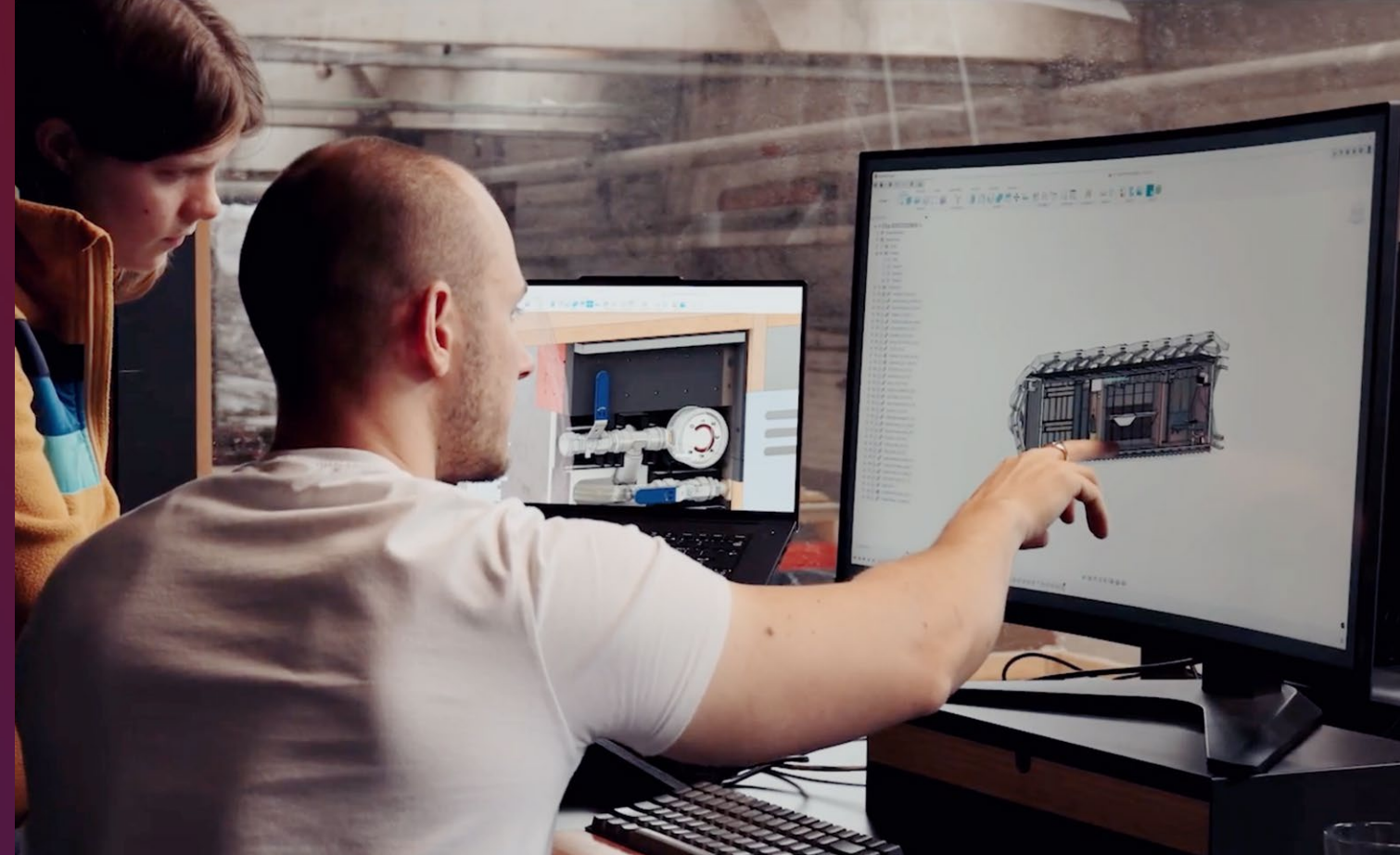
“I’m not working at the speed it allows. But it’s working at the speed I want. It’s a gamechanger.”

Simon Kristensen, Co-founder & CTO, SAGA Space Architects

Supercomputer performance makes it possible.

To perform at their best, architects, designers and engineers need a workstation that can keep pace with today's demanding workflows and remote collaboration.

Lenovo ThinkStations advanced by AMD are built to take your vision further. They give you the supercomputer performance and workstation precision to handle vast reality capture datasets, keep work moving no matter where you are, and bring intricate digital twins and real-time visualizations to life.



ThinkPad P16s

MIL-SPEC tested

AMD Ryzen™ PRO
processor

Integrated AMD
Radeon™ 890M GPU

ThinkStation P8

Up to 96 cores

AMD Ryzen™
Threadripper™
PRO processor

Up to 52TB storage





Push performance further.

Imagine, design, engineer and build the future faster. Get the processing power to blast through heavy workloads and the ability to adapt, expand and evolve with your workflow.

Lenovo ThinkStations, advanced by AMD, are built for AEC. AMD Ryzen™ Threadripper™ PRO processors with up to 96 cores accelerate rendering, simulation, and reality capture, while Radeon™ PRO graphics keep massive BIM, meshes and point clouds responsive, even at scale.



Work uninterrupted, wherever you are.

Keep projects moving from anywhere. In the studio, the ThinkStation P8 with AMD Ryzen™ Threadripper™ PRO processor powers co-ordination, rendering, and simulation and lets you multitask with ease. On site, AMD Ryzen™ PRO mobile CPUs register scans and run model walkthroughs without slowdown, so handoffs and deadlines stay on track.



Fine-tune for any AEC workflow.

Personalize performance for your mobile or desktop workflow, with modular designs, ISV optimization and the flexibility to upgrade and expand your machine. Configure your graphics, memory and storage to match the demands of your specific workflow.



Security that never stops.

Wherever you are, protect your IP and your clients' assets with Lenovo ThinkShield and AMD PRO security. Hardware, firmware, and encryption protections keep BIM models and reality-capture data local and secure.

Supercompute your vision with Lenovo ThinkStations.

See why Lenovo ThinkStations, advanced by AMD, give
AEC professionals the power to shape the future.



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