Lenovo
ThinkStation | **ThinkPad**

Smarter
technology
for all

Lenovo

Rethinking what's possible in patient care and medical research

Lenovo ThinkStation guide for clinicians, researchers, and administrators

nVIDIA.

Healthcare and life sciences have entered a new era of expectations, experiences, and empowerment for patients, providers, and research scientists alike.

Healthcare and medical research organizations are modernizing their approach to patient care and treatment discovery in response to the changing expectations for convenience, flexibility, personalization, and digital access. Technology is at the forefront of this digital transformation, empowering healthcare systems and life sciences organizations to confidently embrace hybrid and remote delivery models while providing high-quality, efficient, and secure care with fewer resources.

Advancements in high-performance computing (HPC), artificial intelligence (AI), and other technologies promise to reshape what's possible in imaging, diagnostics, medical research, pharmaceutical development, and clinical and administrative workflows. Lenovo helps you navigate the possibilities with a broad array of workstation solutions and services.

Lenovo workstations are purpose-built with the power, performance, configurability, and reliability you need to transform today's workflows while powering an innovative future. Combined with Lenovo's AI strategy, infrastructure, and services, these AI-ready workstations are an essential tool to help your organization extend and transform clinical reach and capacity — and prepare for what's next.

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Delivering today on the promise of tomorrow

Lenovo ThinkStation® desktops and ThinkPad® mobile workstations are designed to perform in a fast-paced, data-intensive clinical environment. They meet the future demands of AI by allowing researchers and data scientists to access anonymized patient data safely behind a firewall, which allows for a faster path to greater productivity and efficiency.

Engineered for optimal application performance, these workstations can:

- Be custom configured for your in-house or third-party applications.

- Run small, large, and complex data sets locally.

- Handle large language models (LLMs) locally for secure generative AI (GenAI) analysis.

Lenovo offers the ability to deploy the most cutting-edge hardware to future-proof your technology investments — from pocket, to desktop, to data center, to edge.

Why Lenovo Health

Lenovo Health solutions are built for meaningful interactions, with patient, provider, and researcher needs and outcomes top of mind. Lenovo is paving the way for the changing care needs to support in-person and virtual care as well as evolving clinical and research environments. Together with industry-leading partners, we provide one-vendor hardware, software, services, and infrastructure solutions built on the quality and reliability of the global Lenovo brand.

Better Together with NVIDIA RTX Professional GPUs

NVIDIA RTX™ technology powers Lenovo ThinkStation desktops and ThinkPad mobile workstations, providing breakthroughs in GenAI, real-time rendering, advanced graphics, and the NVIDIA Clara healthcare-specific computing platform to tackle the most advanced workflows in drug discovery, pathology, medical imaging, and surgery. ThinkStation workstations powered by NVIDIA RTX Ada generation GPUs combine the latest generation of CPUs, PCIe Gen 5, multichannel memory, 10 GbE on board, and advance storage. Lenovo and NVIDIA provide a full range of solutions for you to realize your potential as you embark on your GenAI journey.

Embrace the future of radiology

Healthcare organizations are embracing teleradiology models in response to demographic changes, staffing shortages, virtual health trends, and a growing demand for 24/7 imaging services. To achieve these goals, they are equipping radiology workforces with workstations that ensure productivity and efficiency from anywhere.

With Lenovo workstations, you can:

- Support seamless remote radiology workflows that integrate worklists, PACS, voice recognition dictation, secure access to electronic health records, and operational support.

- Allow radiologists to analyze enhanced, highly detailed, high-fidelity images from anywhere.

- Use NVIDIA RTX Ada generation GPUs to drive FDA-certified diagnostic displays.

- Rely on Lenovo workstations' compatibility and certifications with the leading PACS providers.

Spotlight on
ThinkStation P5

Up to one Intel® Xeon® w7-2495X with 24 cores.

Supports up to two NVIDIA® RTX 5000 Ada generation or two NVIDIA® RTX A6000.

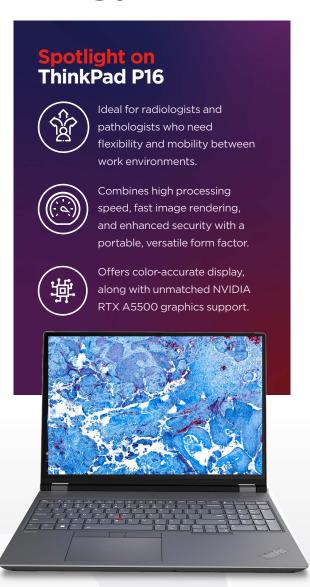Up to 512GB, 4 channel/8 DIMM slot memory.

Expand possibilities
with digital pathology

Digitizing pathology unlocks new possibilities for pathologists and hospitals that other departments, such as radiology and genomics, have been experiencing for years. Digital pathology enables pathologists to collaborate with peers across the world, accelerate time to insight, and improve care outcomes.

Lenovo workstations support your transition to digital pathology by:

- Allowing pathologists to view very large images (2-3 GB in size) on specialized, high-fidelity displays.

- Enabling clinicians to blaze through heavy workloads while executing precise calibration for crisp, clear images.

- Providing large and fast storage capacity and ECC memory to efficiently retrieve and analyze these large images.

- Leveraging the NVIDIA RTX GPU when incorporating AI workflows to assist in image analysis and pattern recognition.

Spotlight on
ThinkPad P16

Ideal for radiologists and pathologists who need flexibility and mobility between work environments.

Combines high processing speed, fast image rendering, and enhanced security with a portable, versatile form factor.

Offers color-accurate display, along with unmatched NVIDIA RTX A5500 graphics support.

NVIDIA

Lenovo

Transform delivery with digital twins

The field of digital twins can transform hospital design, patient care, and medical device utilization — and improve the life of entire patient populations. The technology is expanding rapidly with advances in real-time data feeds, machine learning, augmented reality (AR), and virtual reality (VR).
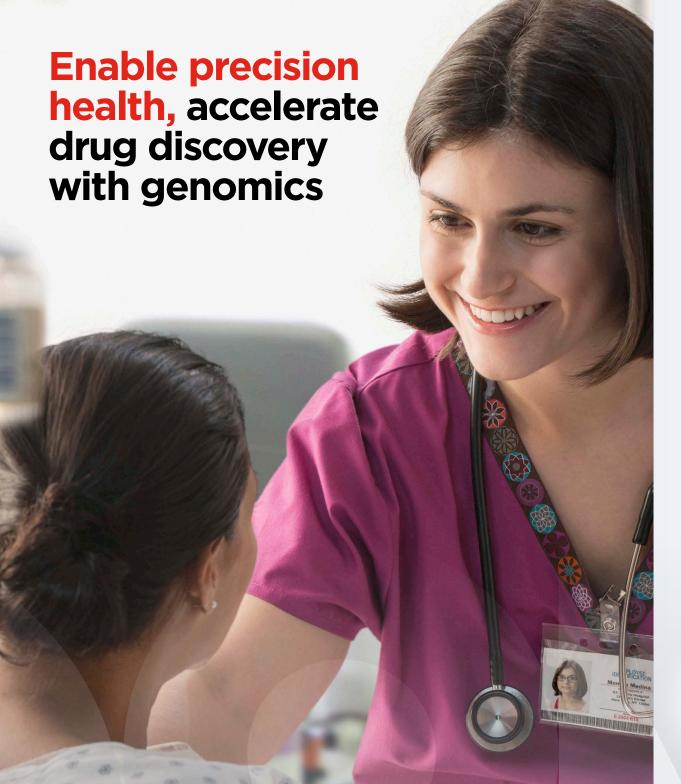
Lenovo workstations can help you:

- Create 3D models generated from medical modalities like CT, MRI, and ultrasound to accelerate training and improve prediction accuracy.

- Perform simulations and visualizations of high-fidelity medical device digital twins.

- Run NVIDIA CloudXR CPU-accelerated VR streaming platform, which allows clinicians to leverage NVIDIA RTX technology to wirelessly stream high-fidelity images to standalone VR headsets.

Spotlight on ThinkStation P7

Staggering power with Xeon W-3400 Series up to 56 Cores in a single processor.

Up to 11 drives (3x 3.5" SATA HDD + 8x M.2 SSD) or 9 drives (9x M.2 SSD), 3.5" HDD up to 12TB each.

8-channel memory and support for up to 1TB of DDR5-4800 memory.

Supports up to 3x NVIDIA RTX 6000 Ada generation GPUs.

Enable precision health, accelerate drug discovery with genomics

High-performance computing is fueling the advancement of genomics, empowering care providers to deliver precision medicine and medical researchers to accelerate drug discovery and research. Lenovo's Genomics Optimization and Scalability Tool (GOAST) is an optimized, user-friendly, multipurpose tool engineered to meet the demands of bioinformatics workloads.

GOAST can increase lab productivity, expedite data processing, and maximize profitability. Ideal for use cases such as predictive, diagnostic, and pharmacogenomic testing, the tool scales linearly from a single-node appliance to cluster implementation to serve the needs of labs of all sizes.

- Reduce execution time cost-effectively while using computational resources as efficiently as possible without cost-prohibitive GPUs and FPGAs or other specialty hardware.

- Run multiple workflows faster, including variant calling in genome sequencing.

- Go through multiple steps with open-source software and analyze massive amounts of data.

Spotlight on ThinkStation PX

Support the most extreme, complex workflows — running either locally or in a server environment — with dual CPUs, up to 120 cores, 16-channel memory, and large storage capacity.

Take advantage of up to 4X NVIDIA RTX 6000 Ada generation GPUs and arrive at insights faster with 48GB of GPU memory, 18,176 CUDA cores, and 568 Tensor cores.

Maintain system stability with dual redundant power supplies when running mission-critical applications.

Fast-track precision medicine, drug discovery with computational approaches

Clinical researchers increasingly rely on computational biology, computational chemistry, and molecular modeling to accelerate precision medicine treatment and advance drug discovery.

Computational biology, for instance, can help health researchers analyze an increasing amount of molecular and genomic data to gain new insights into how patients may respond to treatments. Computational chemistry techniques such as molecular dynamics simulations can provide more reliable drug binding results through calculations and predictions.

Lenovo workstations combine high core count CPUs and high memory bandwidth and support multiple NVIDIA RTX 6000 Ada generation GPUs for the ideal personal mini high-performance computer. Direct access to the workstations allows researchers to maintain control for running simulations and changing their parameters on the fly rather than waiting in line and getting delayed results in an HPC cluster.

- Run compute-intensive clinical workloads locally or in a racked server environment.

- Designed to run 24/7 with maximum uptime while executing mission-critical tasks.

- Lenovo workstations are cost effective compared to high-performance computers for small to medium calculations and can easily leverage Lenovo TrueScale to upgrade hardware faster than in an HPC environment.

Spotlight on ThinkStation P8

Game-changing power and speed needed for high-demand AI workloads, with up to 3x NVIDIA RTX 6000 Ada generation GPUs.

Up to 7 drives (HDD maximum, 3x3.5" HDD + 4x M.2 SSD), 8 drives (M.2 SSD maximum, 8x M.2 SSD), or 6 drives (U.3 SSD maximum, 2x U.3 SSD + 4x M.2 SSD).
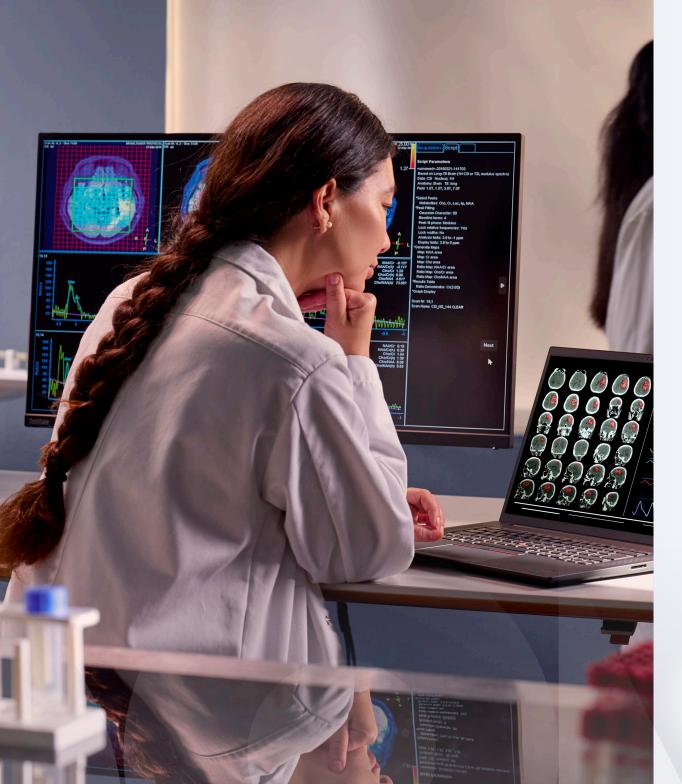
AMD Ryzen™ Threadripper™ Pro supports up to 96 cores in a single processor.

8-channel memory and support for up to 1TB of DDR5-4800 memory.

Bring drugs to market faster with **next-generation research**

Drug research and development (R&D) is an arduous process that can take 10-15 years and cost as much as $2 billion on average for a drug approved for clinical use.[1] Harnessing the huge volumes of disparate data to gain insights is especially challenging.

Life sciences organizations are embracing next-generation research techniques and technologies such as deep learning and AI to accelerate and optimize all stages of the R&D pipeline. Advances in GPUs and GPU-enabled algorithms are key to this progression.

Lenovo's end-to-end portfolio including ThinkStation, ThinkSystem™, and ThinkEdge, powered by NVIDIA RTX GPUs, helps biopharmaceutical researchers expedite every component — from phenotyping and medical imaging to clinical data processing and analysis — to reduce financial costs and time to insight.

Lenovo
ThinkEdge Servers

With Lenovo ThinkEdge servers, you can run AI applications in the cloud or on premises, with purpose-built server compute power closer to the source of the data.

Discover the potential of AI with AI-ready infrastructure

AI and its subfields of machine learning, deep learning, and GenAI show great potential for catalyzing medical innovation. The rapid development of GenAI is compelling innovative healthcare and life sciences organizations to seize this opportunity quickly.

A 2023 survey of biopharma executives, for instance, found that 46% are using GenAI to find potential disease targets, and 40% are already piping expected AI-related savings into their budgets.[2]

With Lenovo AI workstations, you can:

- Bring AI to your data locally when you need it, from pocket to cloud, with a hybrid approach.

- Achieve smarter data prep, cleanse, report and present, and visualization, as well as model selection and scoring, training, and tuning.

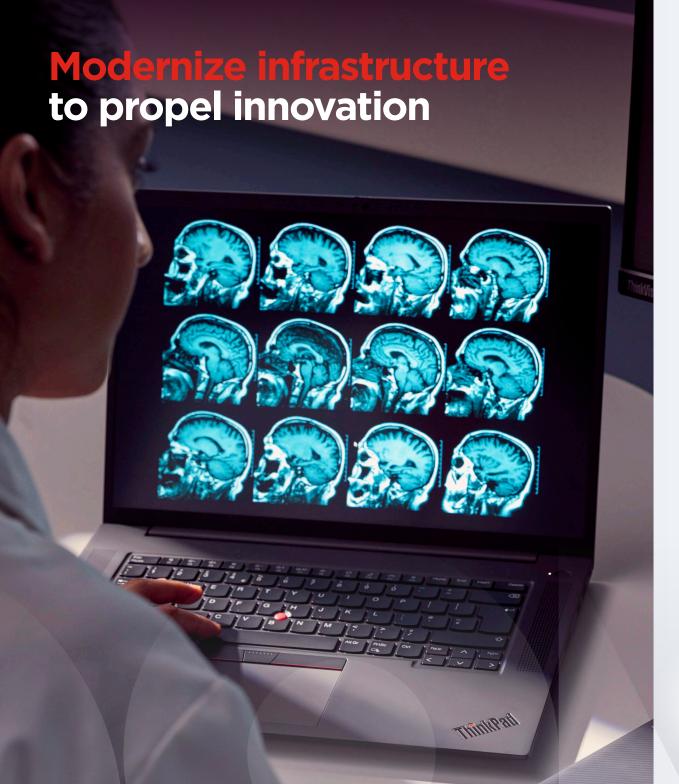- Take advantage of the CUDA cores and Tensor cores on the latest NVIDIA RTX Ada generation GPUs on your local system.

Adopt AI faster with Lenovo

Lenovo supports healthcare and life sciences organizations along their entire AI journey. Develop AI readiness for clinical workflows, patient care, medical research, revenue cycles, safety and security, supply chain, and knowledge management by leveraging Lenovo AI expertise and our AI Innovator partner ecosystem.

- Lenovo AI Discover Center of Excellence provides help with technical knowledge and access to AI experts, workshops, best practices, and strategies for infrastructure modernization.

- In partnership with more than 50 ISV partners, we offer certified AI platforms, applications, and services.

- Lenovo ThinkSystem AI-ready infrastructure increases the speed to develop AI applications and perform high-performance data analytics.

Spotlight on ThinkStation P3 Ultra

Provides the perfect mix of superior performance and flexibility in a chassis less than 4 liters in total volume.

Engineered for durability and reliability, with component access to allow the system to grow along with your organization.

Combines the latest processors and NVIDIA° RTX A5500 laptop GPU graphics with super-fast memory, cutting-edge storage, and legendary reliability (tested to 10 military grade requirements and more than 200 quality checks).

Modernize infrastructure
to propel innovation

Analysts estimate AI/ML-enabled research could translate into a $50 billion opportunity for biopharma over the next decade. Infrastructure modernization builds the foundation for AI innovation.

Lenovo's edge-to-core-to-cloud solutions power AI platforms, enabling you to:

- Deploy a reliable and secure infrastructure.

- Accelerate time to insight for clinical and administrative decision making.

- Improve operational efficiency with advanced automation and management capabilities.

Lenovo's infrastructure solutions portfolio encompasses the next generation of ThinkSystem, ThinkAgile™, and ThinkEdge servers and storage systems, recognized as the industry's most reliable and secure.

Keep data secure with Lenovo ThinkShield

Whether embarking on an AI journey, modernizing radiology and pathology, or running bioinformatics workloads, securing sensitive data is of vital importance. Lenovo workstations come with ThinkShield, a converged Zero Trust, end-to-end security portfolio that encompasses hardware-embedded features, software, and services.

Optimize technology investments with as-a-service solutions

The complexities of cloud pricing models, data egress costs, and other factors are forcing many healthcare delivery and research organizations to rethink their cloud strategy and consider reverse cloud migration. Lenovo TruScale offers an alternative to cloud subscription models that saves costs and delivers superior performance.

Lenovo TruScale

as-a-service options keep your organization on the cutting edge with the newest technology.

Device-as-a-Service

Designed with the modern clinical workplace in mind, Device-as-a-Service (DaaS) provides flexible options that are fully customizable to your organization's needs. DaaS enables you to modernize your remote or hybrid workplace and deploy the right mix of workstations and services.

Lenovo ThinkStation desktops and ThinkPad mobile workstations are a fraction of the cost of the public cloud, even when you factor in the cost of additional services such as hosting and management. With DaaS, you can equip your workforce with the latest high-performance workstations while simplifying IT.

- Flex from CapEx to OpEx while saving up to 95% compared to cloud subscription costs.[4]

- Streamline configuration and deployment.

- Save up to 87% per workstation over the cost of a dedicated cloud instance.[4]

Infrastructure-as-a-Service

Infrastructure-as-a-Service (IaaS) helps you quickly build and scale your IT infrastructure as you modernize your environment to fuel innovation. Created for hybrid and remote workplaces, Lenovo's IaaS model provides a cloud-like experience, which means you can benefit from the right solutions at the right time.

The pay-as-you-go model allows you to accurately predict your budget and optimize spend while you take advantage of hybrid environments, limitless storage, and high-performance computing.

- Scale your storage as your data grows while eliminating the need for additional CapEx.

- Meet data localization, regulatory, and audit requirements.

- Avoid overprovisioning and only pay for the capacity you use.

Meet sustainability goals

At Lenovo, we're committed to social responsibility and a sustainable future for us and our customers. Our technology supports your organization's sustainability goals by minimizing energy use, reducing e-waste, and extending device lifespan.

Committed to social responsibility

Our bio-based packaging is 100% renewable and biodegradable.

We're striving toward using 100% of post-consumer recycled content in our products by 2025.

We use circular economy principles to "reuse, reduce, recycle."
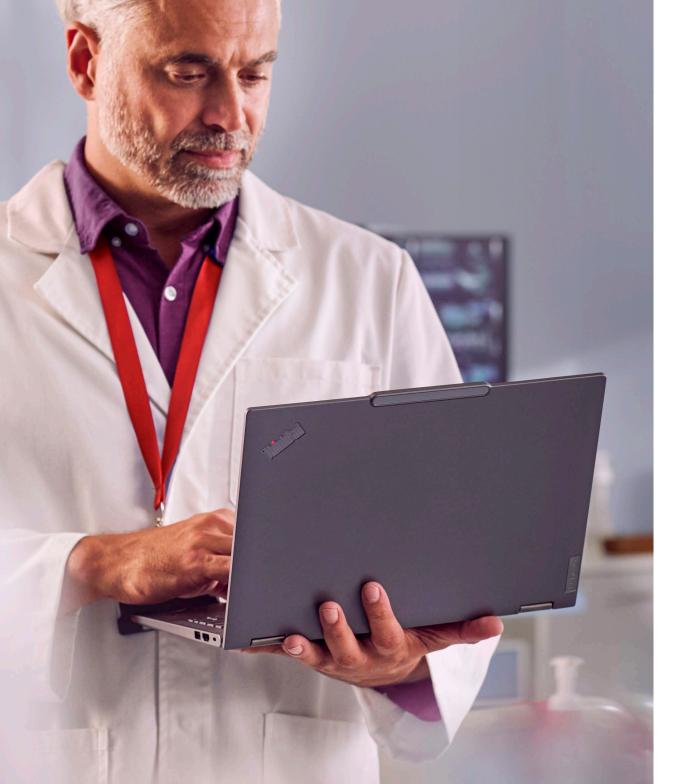
Our asset-recovery services can help you dispose of end-of-life products responsibly.

We're committed to achieving net-zero greenhouse gas emissions by 2050.

Achieve full return on investment with Lenovo services

Allow your clinicians, data scientists, and health researchers to focus on patient care and breakthrough discoveries — and turn ThinkStation desktops and ThinkPad mobile workstations into even more powerful tools — with Lenovo services.

Premier Support Plus

Maximize your return on investment by protecting your workstations.

Decrease IT downtime while removing the break/fix burden from IT teams.

Get 24/7/365 access to Lenovo support engineers for rapid fixes.

Device Intelligence and Device Intelligence Plus

Keep fleets operating optimally, improve the employee experience, and increase uptime with technology that fits your needs.

Predict and prevent workstation performance issues with an AI-enabled, SaaS solution.

Receive proactive insights and alerts, robust reports, and issue remediation recommendations.

Ready to innovate and embrace the future of clinical care and research?

Connect with Lenovo Health experts. We can help you modernize your organization and embrace the promise of breakthrough technologies like AI.

Contact your Lenovo Health Account Representative or local Business Partner.

Visit **www.lenovo.com/Healthcare**

1. "Why 90% of clinical drug development fails and how to improve it?," Acta Pharmaceutica Sinica B, Volume 12, Issue 7, July 2022 https://www.sciencedirect.com/science/article/pii/S2211383522000521?via%3Dihub#bib1
2. "How to Successfully Scale Generative AI in Pharma," Bain & Company, February 2024 https://www.bain.com/insights/how-to-successfully-scale-generative-ai-in-pharma/
3. "Why artificial intelligence could speed drug discovery," Morgan Stanley, September 2022 https://www.morganstanley.com/ideas/ai-drug-discovery
4. Internal Lenovo Health data

Smarter technology for all

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NVIDIA.