Modernize Your Data Centers to Meet the Promise of AI

AI ambitions meet infrastructure realities

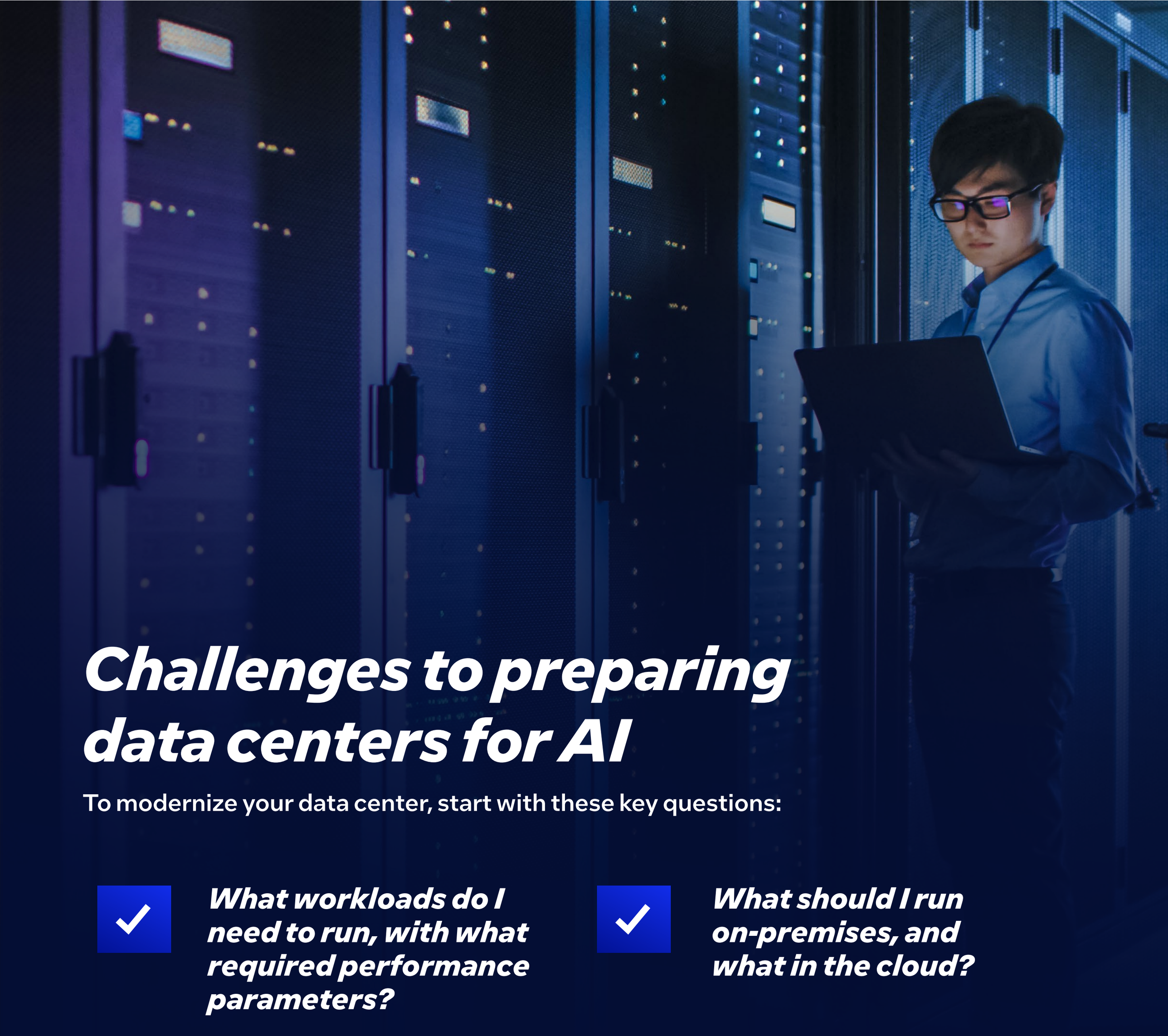
Business leaders are eager to harness the potential of AI to drive efficiency, innovation, and growth—but they need data centers that can support heavier AI workloads.

Older data centers can struggle to run increasingly complex models. That means most organizations face an existential dilemma: Prepare data centers for modern AI applications or get left behind by those better equipped to innovate.

CPU or GPU: Finding the optimal AI workload distribution

In the race to equip data centers for AI workloads, some architects default to the most powerful—and most expensive—solutions on the market. But this isn't always the right approach. By assessing your priorities and incorporating the right mix of compute, you can get a data center AI-ready while avoiding unnecessary costs.

CPU	CPU/GPU	GPU
Classical machine learning and deep learning	*Small model GenAI inference*	*Medium to large model GenAI training and inference*



Challenges to preparing data centers for AI

To modernize your data center, start with these key questions:

- ***What workloads do I need to run, with what required performance parameters?***
- ***What should I run on-premises, and what in the cloud?***
- ***How can I deliver peak performance and lower total cost of ownership (TCO)?***
- ***How do I protect sensitive data at the hardware level?***

Answering these questions will shed light on the potential issues ahead as you optimize your data centers.

Preparing for AI deployments will likely require strategic decisions in three broad categories.

Cost and resource intensity

Sophisticated AI applications need more energy and compute, which can require significant investment. But you can use Intel solutions to help maximize ROI.

When performance is a priority, deploy Intel® Xeon® 6 processors with P-cores. You can further accelerate AI capabilities with Intel® Advanced Matrix Extensions (Intel® AMX), which allows CPUs to handle AI tasks more efficiently, reducing power-hungry data transfers between CPUs and external devices.

Up to

44%

LOWER TCO

running a BERT-large LLM workload on Intel® Xeon® 6 compared to running on an AMD EPYC processor[1]

Data security and compliance

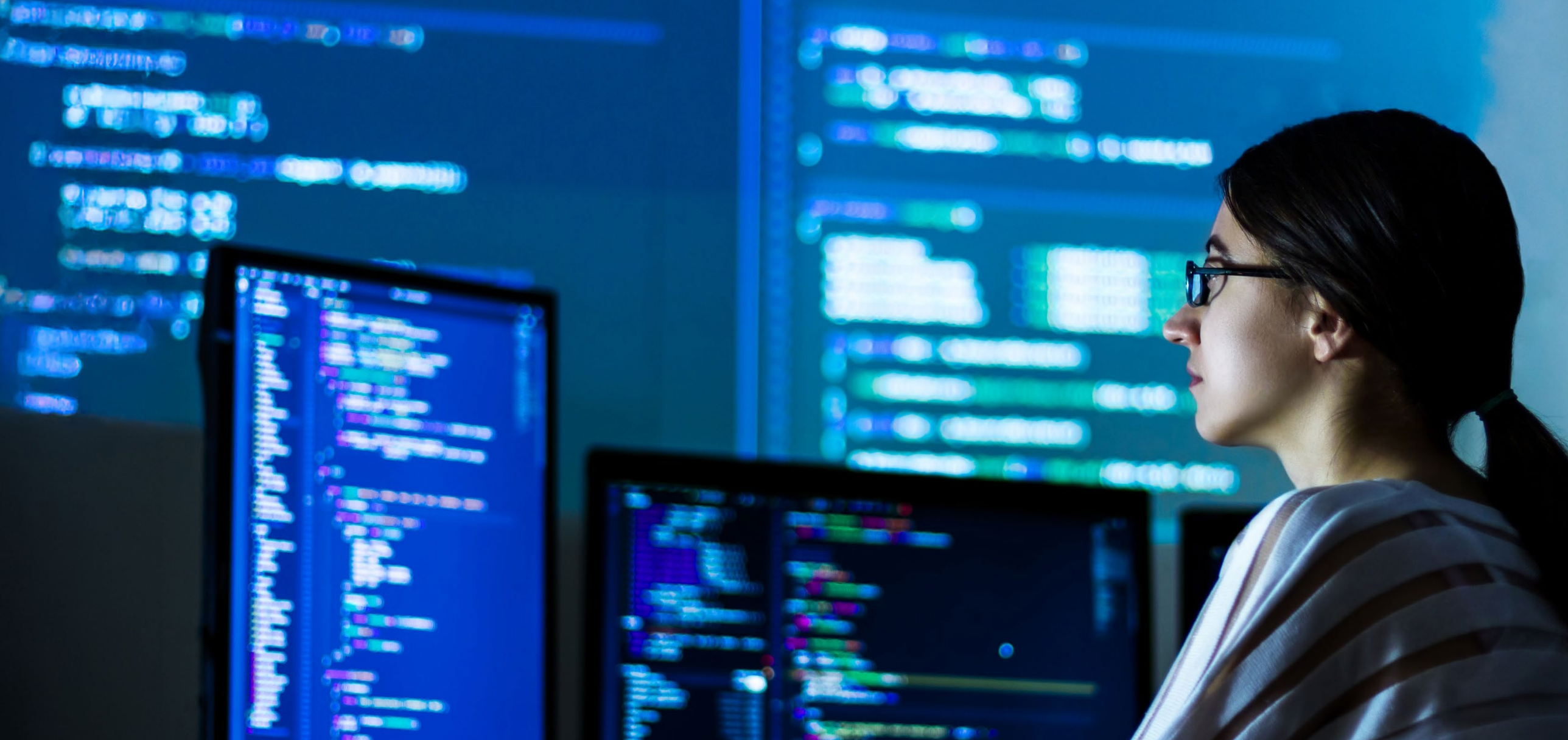
AI technologies can give rise to new threat surfaces. But they can also strengthen defenses by enabling faster threat detection and assisting with compliance efforts.

Intel® Xeon® 6 processors have built-in security powered by Intel® Security Engines. These enhanced security capabilities help make even the most sensitive data available for AI analysis, training, or processing—all while remaining private and confidential.

$1.9M

AVERAGE SAVINGS

by organizations that used security AI and automation extensively in prevention, compared to those that didn't[2]



Complexity and integration

AI workloads can lead to a sprawling ecosystem of tools, models, and frameworks that may require integration with legacy hardware. With the Intel® Xeon® 6 processor family, you can configure and deploy infrastructures that are purpose-built for your unique needs and workloads across private, public, and hybrid clouds.

Intel® Xeon® 6 processors can plug into existing frameworks and deliver a portfolio of products optimized for distinct workload characteristics. And Intel® Gaudi® 3 AI accelerators can further enhance compute across AI workloads.

Consolidate 5 racks into 1 with Intel® Xeon® 6 processors with P-cores

Consolidation of a five-year-old server, on average[3]

Drive growth with infrastructure built for AI

That's the power of Intel Inside®.

Intel and our partners are committed to helping businesses lead through AI-powered innovation. Together, we can help you:

- **Meet the growing data center demands of AI workloads** by deploying Intel® Xeon® 6 processors with P-cores, the ideal CPU for modern data centers.
- **Streamline complex integrations** with flexible processors that can enhance or consolidate existing server racks.
- **Maintain a sturdy privacy and security posture** with Intel® Xeon® 6 processors and confidential computing technologies like Intel® Software Guard Extensions (Intel® SGX).

Up to
30%
BETTER MEMORY BANDWIDTH PERFORMANCE
compared to
DDR5-6400 DIMMs[4]

Modernize for AI-readiness

Prepare your data center for tomorrow's AI workloads with solutions designed for security, flexibility, and ROI.

Explore Intel data center solutions ↗

1. See [9T221] at Xeon 6 Performance Index. Results may vary.
2. Cost of a Data Breach Report 2025, IBM.
3. Intel Unveils Leadership AI and Networking Solutions with Xeon 6 Processors, Intel Newsroom, 2025.
4. See [9G3] at Xeon 6 Performance Index. Results may vary.

Intel technologies may require enabled hardware, software, or service activation.

Performance varies by use, configuration, and other factors. Learn more at www.intel.com/performanceindex.

AI features may require software purchase, subscription or enablement by a software or platform provider, or may have specific configuration or compatibility requirements. Data latency, cost, and privacy advantages refer to non-cloud-based AI apps. Learn more at intel.com/AIPC.

No product or component can be absolutely secure.

Your costs and results may vary.