intel® XEON®

intel.

Innovate More. Spend Less.
Achieve greater innovation and efficiency while minimizing costs.

To secure a competitive advantage, your business needs a computing environment that can cost-effectively embrace new opportunities and growth. Increased performance and efficiency in every aspect of business—from day-to-day operations to long-term strategic shifts—are crucial to creating such an environment. The technology spend needed to achieve these goals is vital. Server refresh offers a path to meeting these challenges.

Refreshing with higher-performance servers allows you to consolidate AI, database, web serving, and other demanding workloads on fewer servers. The reduced server count opens opportunities for increased efficiencies and lower costs. Recent tests show that replacing older platforms with fewer of the latest Intel® Xeon® processor-based platforms allows you to lower your total cost of ownership (TCO) on a range of workloads while continuing to meet or even exceed your current performance requirements.[1]

Modernize your data center

With technology evolving rapidly, many systems from four or five years ago may not be capable of meeting today's demands. In some cases, the cost of maintaining existing equipment—reduced productivity, increased security risks, and lack of innovation—can be higher than the cost of modernizing. Upgrading to the latest Intel Xeon technology can help you maximize your technology investments, delivering increased performance and efficiency, flexibility, and AI-enabled capabilities to enable new opportunities, advanced security, and a reduced TCO.
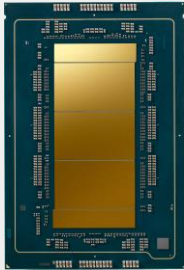
Replace existing servers with fewer new ones supporting the same workload capacity while consuming less space, power, software licenses, and other resources. Take advantage of new opportunities—many enabled by AI—to innovate, roll out new services, and stay ahead of your competition. Perhaps most critically, strengthen security. With the latest Intel technology, you can reduce the risk of a cybersecurity breach and the related costly impact in terms of time, money, and reputation.

Top 5 benefits of modernization with Intel

Delivering innovative business models and services often increases the demands on your business's IT infrastructure, pushing it beyond the scale it was originally designed to deliver. Invest in a modernized infrastructure with accelerated AI throughput and more performance per core to support new deployment models, achieve novel goals, and meet evolving application and workload demands.
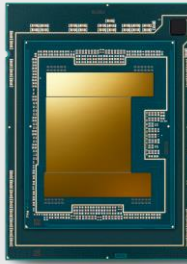
The power of choice: Enjoy performance and efficiency without compromise

Updating to the latest Intel® Xeon® technologies gives you versatility for diverse workload requirements. Select from a variety of processor families designed to meet your specific needs.

Intel® Xeon® 6 processors with Performance-cores (P-cores)

Intel Xeon 6 processors with Performance-cores (P-cores) are optimized for high performance per core. With more cores, double the memory bandwidth, and AI acceleration in every core, these processors provide twice the performance for the widest range of workloads, including AI and high-performance computing (HPC).[2,3]

Intel® Xeon® 6 processors with Efficient-cores (E-cores)

Intel Xeon 6 processors with Efficient-cores (E-cores) are optimized for high core density and exceptional performance per watt. These processors are ideal for cloud-scale workloads that demand high task-parallel throughput as well as places where power, space, and cooling are limited.

Use fewer servers and be more power efficient

Save power and money on new server purchases, deploying fewer Intel Xeon 6 processor-based servers to meet performance and TCO goals.[4]

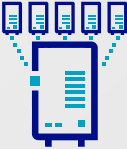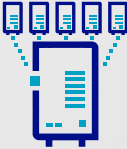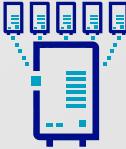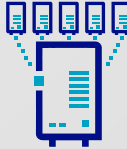|			
Number of 2nd Gen Intel Xeon processor-based servers	50 servers	50 servers	50 servers
Number of Intel Xeon 6 processor-based servers	10 servers	6 servers	15 servers
Reduce server count	Up to 80%	Up to 88%	Up to 70%
Reduce energy and CO_2	Up to 51% Intel Xeon 6700P with P-cores[4a]	Up to 69% Intel Xeon 6900P with P-cores[4b]	Up to 53% Intel Xeon 6700E with E-cores[4c]

Refresh aging infrastructure for great performance per dollar

Achieve great TCO for the workloads that matter most with Intel® Xeon® 6 processors. Refresh and consolidate 2nd Gen Intel Xeon servers with Intel Xeon 6700P servers and achieve **5:1 average server consolidation** and a nearly **40% average TCO savings**.

	Data Services MongoDB (1S)	HPC HPCG	Web Services NGINX TLS (1S)	AI-Image Classification ResNet 50
Performance Advantage per server	**5.42x**	**3.95x**	**9.7x**	**9.9x**
Less servers	1080 to 200 servers	480 to 120 servers	1940 to 200 servers	1000 to 100 servers
TCO Savings[5]	**$6.7M**	**$1.6M**	**$17.2M**	**$10.4M**
TCO % Savings[5]	**44%**	**22%**	**67%**	**68%**

Get more performance than with AMD

In new server deployments, Intel Xeon 6 processor beats competition with fewer servers and better performance on workloads that matter most to customers.

Performance advantage and TCO savings vs AMD EPYC 9005 servers[6]

6900P   6700P

AI Recommendation System DLRM	HPC CFD OpenFOAM		AI Vision Transformer	Web Services NGINX TLS (1S)
1.87x	**1.43x**	Performance Advantage per server	**2.09x**	**1.55x**
170 to 90 servers	126 to 90 servers	Less servers	289 to 140 servers	320 to 200 servers
46% savings	**28%** savings	TCO % Savings	**52%** savings	**41%** savings

Strengthen security and enhance privacy and control over your data

5

To protect data in use, the latest Intel® Xeon® 6 processors allow you to pick the Intel confidential computing solutions that best meet your business and regulatory requirements.

Intel Xeon processors are often used in data centers, cloud environments, and enterprise servers where they handle sensitive and critical data. Enhanced security features help protect this data from unauthorized access and breaches. Intel is actively collaborating with a broad ecosystem of partners to expand adoption of this invaluable security technology.

Most comprehensive Confidential Computing portfolio in the industry

App Isolation
Intel® SGX

Smallest trust boundary for greatest data protection & code integrity

VM Isolation
Intel® TDX

Most straightforward path to greater security, compliance & control for legacy apps

Trust Services
Intel® Tiber™ Trust Authority

Uniform, independent attestation of trustworthy environments

Encrypted Connection
Intel® TDX Connect

High-performance encrypted connection between CPU and PCIe devices

Intel® SGX = Intel® Software Guard Extensions, Intel® TDX = Intel® Trust Domain Extensions

Getting started

Find answers to your questions in the resources below.

For assistance with implementation, connect with solution providers through the Intel Partner Directory. This ecosystem offers a broad spectrum of solutions to deliver advanced features and capabilities for the enterprise.

To learn more about modernization and scalability, check out these resources:

- Intel® Xeon® Processor Advisor Suite lets you tailor product and solution recommendations for systems and instances, access up-to-date specifications, and calculate TCO and ROI for data center solutions.
- Through Intel Developer Zone, you can explore development topics, resources, and subscriptions, including programs, tools, documentation, training, technologies, events, and more.

[1]See [7T1] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.

[2]See [9A2] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.

[3]See [9H10] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary

[4]Based on US energy costs, estimated over 4 years. Performance varies by use, configuration and other factors. Please reference Intel Node TCO & Power Calculator.

[4a]Comparing 6230 vs. 6787P

[4b]Comparing 6240 vs. 6980P

[4c]Comparing 6252 vs. 6740E

[5]Estimated over 4 years. See [7T25, 7T22 , 7T26, 7T21] intel.com/processorclaims: Intel Xeon 6. Results may vary.

[6]Estimated over 4 years. See [9T223, 9T222, 7T223, 7T221] intel.com/processorclaims: Intel Xeon 6. Results may vary.

This offering is not approved or endorsed by OpenCFD Limited, producer and distributor of the OpenFOAM software via www.openfoam.com, and owner of the OPENFOAM® and OpenCFD® trademark.

Intel® SGX= Intel® Software Guard Extensions, Intel® TDX = Intel® Trust Domain Extensions