February 24, 2025

Intel Unveils Leadership AI and Networking Solutions with Xeon 6 Processors

Intel completes Xeon 6 portfolio of processors, delivering a CPU for the broadest set of workloads in the industry.

NEWS HIGHLIGHTS

- Intel launches new Intel® Xeon® 6 processors with Performance-cores, offering industry-leading performance across data center workloads and up to 2x higher performance in AI processing[1].
- New Xeon 6 processors for network and edge applications with built-in Intel® vRAN Boost deliver up to 2.4x the capacity for radio access network (RAN) workloads[2].

SANTA CLARA, Calif.--(BUSINESS WIRE)-- As enterprises modernize infrastructure to meet the demands of next-gen workloads like AI, high-performing and efficient compute is essential across the full spectrum – from data centers to networks, edge and even the PC. To address these challenges, Intel today launched its Xeon 6 processors with Performance-cores (P-cores), providing industry-leading performance for the broadest set of data center and network infrastructure workloads and best-in-class efficiency to create an unmatched server consolidation opportunity.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20250224348229/en/

Intel Xeon 6 processors deliver exceptional performance for the widest range of workloads and are engineered for efficiency and low total cost of ownership. On Feb. 24, 2025, Intel launched the Intel Xeon 6700P and 6500P series P-core processors with more cores, double the memory bandwidth and AI acceleration in every core. (Credit: Intel Corporation)

More: Ecosystem Achieves Power Efficiency Breakthrough on Xeon 6 with E-Cores | Intel Unveils High-Performance, Power-Efficient Ethernet Solutions | Intel Xeon 6 Processors (Press Kit)

“We are intensely focused on bringing cutting-edge leadership products to market that solve our customers’ greatest challenges and help drive the growth of their business,” said Michelle Johnston Holthaus, interim co-CEO of Intel and CEO of Intel Products. “The Xeon 6 family delivers the industry’s best CPU for AI and groundbreaking features for networking, while simultaneously driving efficiency and bringing down the total cost of ownership.”

Introducing New Intel Xeon 6 Processors

Intel’s latest Xeon 6 processors feature significant advancements in both data center and

networking portfolios.

- The **Intel® Xeon® 6700/6500 series processor with P-cores** is the ideal CPU for modern data centers, offering the perfect balance between performance and energy efficiency. Delivering an average of 1.4x better performance than the previous generation[3] across a wide range of enterprise workloads, Xeon 6 is also the foundational central processing unit (CPU) for AI systems, pairing exceptionally well with a GPU as a host node CPU. When compared to 5th Generation AMD EPYC processors, Xeon 6 provides up to 1.5x better performance in AI inference on chip using one-third fewer cores[4]. Xeon 6 processors also enable substantial performance-per-watt efficiency, allowing for 5:1 consolidation of a 5-year-old server on average[5], with potential for up to 10:1 in certain use cases, resulting in up to 68% savings in total cost of ownership (TCO)[6].
- The **Intel Xeon 6 for network and edge** is a system-on-chip (SoC) designed for high performance and power efficiency. It leverages Intel's built-in accelerators for virtualized radio access networks (vRAN), media, AI and network security, addressing the growing demand for network and edge solutions in an AI-driven world. Xeon 6 SoCs deliver up to 2.4x the RAN capacity[7] and a 70% improvement in performance-per-watt compared to previous generations[8] thanks to Intel vRAN Boost. Additionally, Xeon 6 is the industry's first server SoC with a built-in media accelerator — the Intel® Media Transcode Accelerator — enabling up to 14x performance per watt gain versus Intel Xeon 6538N [9].

The World's Best CPU for AI

As AI adoption continues to accelerate, organizations are projected to spend up to $153 billion on generative AI (GenAI) by 2027, with total spending for machine learning and analytics reaching $361 billion, according to IDC. Intel Xeon 6 is optimized to capture a significant share of this growing market, delivering leadership performance in traditional machine learning, smaller GenAI models and GPU-accelerated workloads in a host CPU capacity. Intel is collaborating with silicon, software and solution providers to enable the AI ecosystem, reinforcing Xeon 6 as the go-to CPU for AI systems.

Leadership Performance for Modern Telecommunications Networks

With 5G and AI poised to transform connectivity, traditional network optimization strategies are no longer sufficient. To unlock the full potential of next-gen networks and connectivity, telecom operators are adopting technologies like network slicing, AI-powered radio controllers and cloud-native architectures. By leveraging Intel's unified Xeon platform, operators can dynamically optimize workloads, reduce costs and build scalable, flexible networks that adapt in real time to changing customer demands, traffic patterns and market shifts.

Key performance highlights of the Intel Xeon 6 SoC include:

- Webroot CSI upload model inference is up to 4.3x faster than Intel Xeon D-2899NT[10].
- AI RAN performance per core is improved by up to 3.2x compared with the previous generation with vRAN Boost[11].

- A 38-core system supports int8 inferencing of up to 38 simultaneous camera streams on a video edge server[12].

New Advanced Ethernet Solutions

Intel also unveiled two new Ethernet controller and network adapter product lines to address the growing demands of enterprise, telecommunications, cloud, high performance computing (HPC), edge and AI applications. Initial availability includes dual-port 25GbE PCIe and OCP 3.0-compliant adapters, with additional configurations expected this year.

- The Intel® Ethernet E830 Controllers and Network Adapters deliver up to 200GbE bandwidth, flexible port configurations and advanced precision time capabilities, including Precision Time Measurement (PTM). These adapters are optimized for high-density virtualized workloads, offering robust security features and performance.
- The Intel® Ethernet E610 Controllers and Network Adapters provide 10GBASE-T connectivity optimized for control plane operations. The 610 series offers outstanding power efficiency, advanced manageability and robust security features that simplify network administration and ensure maximum network integrity.

The combination of Intel Xeon 6 processors and high-performance Ethernet connectivity forms a powerful foundation for businesses to accelerate innovation and gain a competitive advantage.

Broad OEM Partner and Ecosystem Adoption

Intel Xeon 6 processors have already seen broad adoption across the data center ecosystem, with more than 500 designs available now or in progress. Server systems, software solutions and services will be available around the globe from leading companies such as AT&T, Verizon, Cisco, Dell Technologies, Samsung, Ericsson, Hewlett Packard Enterprise, Lenovo, Microsoft, Nutanix, Nvidia, Oracle, Red Hat, SAP, Supermicro, Vodafone, VMware and Wind River, among many others.

About Intel

Intel (Nasdaq: INTC) is an industry leader, creating world-changing technology that enables global progress and enriches lives. Inspired by Moore's Law, we continuously work to advance the design and manufacturing of semiconductors to help address our customers' greatest challenges. By embedding intelligence in the cloud, network, edge and every kind of computing device, we unleash the potential of data to transform business and society for the better. To learn more about Intel's innovations, go to newsroom.intel.com and intel.com.

[1] See [7A29] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[2] See [7ND21] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[3] See [7G20] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[4] See [7A220] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[5] See [Geomean 7T21-7T26] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[6] See [7T21] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[7] See [7ND21] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.

[8] See [7ND22] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[9] See [7ND32] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[10] See [7ND30] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[11]See [7ND34] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.
[12] See [7ND20] at intel.com/processorclaims: Intel® Xeon® 6. Results may vary.

Notices & Disclaimers

Performance varies by use, configuration and other factors. Learn more on the Performance Index site.
Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure. Your costs and results may vary. Intel technologies may require enabled hardware, software or service activation.

© Intel Corporation. Intel, the Intel logo and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

View source version on businesswire.com:
https://www.businesswire.com/news/home/20250224348229/en/

Jordan Byrnes
1-602-689-9772
jordan.byrnes@intel.com

Source: Intel Corporation