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MWC 2025: Intel Showcases Foundational Network Infrastructure with Xeon 6

Intel unveils silicon innovation to drive AI-powered next-generation networks.

NEWS HIGHLIGHTS

- Intel® Xeon® 6 system-on-chip (SoC) with integrated AI delivers up to 2.4x more radio access network (RAN) capacity[1] and up to 70% better performance-per-watt[2] compared with previous generations.
- Integrated AI acceleration boosts AI RAN performance by up to 3.2x over previous generations[3].
- Deep collaboration with 5G core solution partners accelerates the adoption of Intel® Xeon® 6 processors with Efficient-cores (E-cores) across the ecosystem.
- Independent validations for 5G core workloads confirm increased rack performance, reduced power consumption and enhanced energy efficiency.

BARCELONA, Spain--(BUSINESS WIRE)-- The telecommunications industry is undergoing a major transformation as AI and 5G technologies reshape networks and connectivity. While operators are eager to modernize infrastructure, challenges remain, such as high capital expenditures, security concerns and integration with legacy systems. At MWC 2025, Intel – alongside more than 50 partners and customers – will showcase groundbreaking solutions that deliver high capacity and high efficiency performance with built-in AI integration, eliminating the need for costly additional hardware and delivering optimized total cost of ownership (TCO).

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20250302532235/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 6 SoCs with P-core processors – power-efficient, edge servers with Intel vRAN Boost and media acceleration, and networking built in. (Credit: Intel Corporation)

“By leveraging cloud technologies and fostering close collaborations with partners, we are helping operators virtualize both 5G core and radio access networks – proving that the most demanding, mission-critical workloads can run efficiently on general-purpose silicon,” said Sachin Katti, senior vice president and general manager of the Network and Edge Group at Intel Corporation. “Through our Xeon 6 processors, we are enabling the future of AI-powered network modernization.”

Network Transformation and AI Acceleration

Nearly every commercial virtual radio access network deployment runs on Intel Xeon, and

now the new Xeon 6 SoC, purpose-built for network and edge applications, is setting a new benchmark for performance-per-watt. By integrating AI acceleration with Intel® Advanced Vector Extensions (AVX) and Intel® Advanced Matrix Extensions (AMX), the SoC boosts AI RAN performance by up to 3.2x over previous generations[4] and redefines performance without the need for discrete accelerators. Moreover, with eight integrated Ethernet ports and a total throughput of up to 200 gigabits per second (Gbps), the Intel Xeon 6 SoC provides robust connectivity.

More: Intel at MWC 2025 (Press Kit) | Intel Xeon 6 Processors (Press Kit)

This combination of optimized architecture and capacity gain means operators can dramatically reduce their server footprint, allowing them to deploy more capacity with fewer servers by enabling consolidation of multi-server open vRAN sites to a single-server footprint delivering optimized TCO. The Intel Xeon 6 SoC also includes the industry's first integrated media transcode accelerator, Intel® Media Transcode Accelerator, which delivers up to 14.25x performance-per-watt gain for video transcoding[5], helping video service providers offer near-real-time experiences for live sports, gaming and auctions while significantly reducing power consumption.

Comprehensive Security for Modern Networks

As data generation surges at the network edge, security remains a critical focus. Intel Xeon 6 SoC addresses this with its leading-edge security features that enable more secure, zero-trust connections across the edge-to-cloud ecosystem.

The Impact of Intel's Ecosystem with Partners and Customers

Intel is driving the next wave of vRAN and open RAN innovation, with significant enthusiasm from leading telecom operators:

- **Vodafone's** first OpenRAN deployments are demonstrating the competitiveness of networks built on Intel Xeon versus advanced legacy radio access networks (RAN).
- **AT&T** is teaming up with **Ericsson** and Intel to build the world's most open, programmable and reliable RAN network[6]. This year, AT&T will begin using Intel's Xeon 6 SoC, a high-capacity, programmable virtual RAN hardware platform, to enable ongoing AI advancements through seamless software updates.
- **Samsung** leverages Xeon 6 to enhance performance and energy efficiency, accelerating AI integration across RAN and supporting its TCO and AI objectives.
- **Verizon** has over 40% of its nationwide 5G RAN footprint virtualized, in addition to its entire 5G core and edge. Verizon is developing the next-gen high-compute-density vRAN server, based on Intel Xeon 6, to double RAN compute capacity and enable greater energy efficiency and multitenancy, and a lower TCO.
- **Ericsson** is industrializing Open RAN and AI RAN innovations with Xeon 6 SoC and has achieved its first Cloud RAN call on Xeon 6, powered by Dell servers.
- Operators including **Rakuten Mobile**, **Reliance Jio, SK Telecom and TELUS** are advancing 5G adoption and transforming network infrastructure using Intel Xeon processors for smarter, more flexible and energy-efficient networks.

Driving a More Sustainable Future with Intel Xeon 6

Intel® Xeon® 6 processors with E-cores, launched in 2024, are experiencing widespread adoption among 5G core solution vendors and telecom operators. The addition of Intel® Infrastructure Power Manager (IPM) software enhances energy efficiency and accelerates time-to-market for customers seeking to optimize infrastructure, reduce energy consumption and minimize hardware footprints while maintaining performance.

Partners are actively adopting Xeon 6-based solutions, helping optimize energy efficiency while delivering industry-leading performance. Partner sustainability success stories include:

- **Ericsson's** software optimizations have produced a 3.8x improvement in performance-per-watt[7] versus current CoSPs' deployed configurations.
- **Nokia** has leveraged Intel Xeon 6 processors to deliver a 60% reduction in run-time power consumption for its 5G Packet Core solution[8].
- **Samsung's** next-generation Cloud Native Core, expected in the second quarter of 2025, will feature Intel Xeon 6 processors with E-cores to achieve 3.2x better performance and density[9].

Advancements in Ethernet for Modern Networks

Intel recently introduced two new families of discrete Ethernet controllers and network adapters: the E830 and E610 product lines. The Intel® Ethernet E830 family supports up to 200 Gb of bandwidth and includes precision time measurement for real-time vRAN workloads, while the Intel® Ethernet E610 family offers 10GBASE-T connectivity, ideal for power-efficient control plane networking.

Join Intel and its global ecosystem of partners and customers at MWC 2025 to explore the transformative power of the Xeon 6 family, featuring RAN breakthroughs, media and edge advancements, security innovations, enterprise services, and commercial AI PC solutions.

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 [7ND21] at intel.com/processor claims: Intel® Xeon® 6. Results may vary.
[2] See [7ND22] at intel.com/processor claims: Intel® Xeon® 6. Results may vary.
[3] See [7ND34] at intel.com/processor claims: Intel® Xeon® 6. Results may vary.
[4] See [7ND34] at intel.com/processor claims: Intel® Xeon® 6. Results may vary.
[5] See [7ND32] at intel.com/processor claims: Intel® Xeon® 6. Results may vary.
[6] AT&T to Accelerate Open and Interoperable Radio Access Networks (RAN) in the United States through new collaboration with Ericsson.
[7] Testing by Ericsson as of February 2025, versus platform based on 2nd Generation Intel Xeon Processors. Results may vary.
[8] Tested with Nokia CMM application as of February 2025, 3rd Gen Xeon 6338N vs. Xeon 6

6780E. Results may vary.
[9] Testing by Samsung as of February 2025, 3rd Gen Xeon 6330N vs. Xeon 6 6780E. Results may vary.

Intel does not control or audit third party data. You should consult other sources to evaluate accuracy.

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.

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