April 6, 2021

Intel Launches Its Most Advanced Performance Data Center Platform

Intel Showcases New 3rd Gen Intel Xeon Scalable – the Only Data Center Processors with Built-In AI; Delivering on Average 46% Increased Performance

NEWS HIGHLIGHTS

- New 3rd Gen Intel® Xeon® Scalable processors — combined with Intel's portfolio of Intel® Optane™ persistent memory and storage, Ethernet adapters, FPGAs and optimized software solutions — deliver performance and workload optimizations across hybrid-cloud, high performance computing (HPC), networking and intelligent edge applications.
- New 3rd Gen Intel Xeon Scalable processors feature a flexible architecture with integrated artificial intelligence (AI) acceleration with Intel® DL Boost technology, plus advanced security capabilities to protect data and application code with Intel® Software Guard Extension (Intel® SGX) and Intel® Crypto Acceleration.
- New 3rd Gen Intel Xeon Scalable processors are rapidly ramping, having shipped more than 200,000 units for revenue in the first quarter of 2021 with broad industry adoption across all market segments, including the world's top cloud service providers set to deploy services; more than 250 design wins within 50 unique OxM partners; more than 15 major telecom equipment manufacturers and communications service providers readying POCs and networking deployments; and over 20 HPC labs and HPC-as-a-service environments leveraging our latest Xeon Scalable processors.

SANTA CLARA, Calif.--(BUSINESS WIRE)-- Intel today launched its most advanced, highest performance data center platform optimized to power the industry's broadest range of workloads — from the cloud to the network to the intelligent edge. New 3rd Gen Intel Xeon Scalable processors (code-named "Ice Lake") are the foundation of Intel's data center platform, enabling customers to capitalize on some of the most significant business opportunities today by leveraging the power of AI.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20210406005302/en/

Intel's 3rd Gen Intel Xeon Scalable processors (code-named "Ice Lake") are the foundation of Intel's most advanced, highest performance data center platform optimized to power a broad range of workloads. Intel introduced the new processors and the platform they power on April 6, 2021. (Credit: Intel Corporation)

More: Press Kit: 3rd Gen Intel Xeon Scalable Launch | News Byte: New Intel Processors Accelerate 5G Network Transformation | News Byte: Intel Teams with Leidos, Fortanix to Accelerate Clinical Trials | News Byte: Intel Xeon Advances Nasdaq's Homomorphic Encryption R&D | Product Fact Sheet: 3rd Gen Intel Xeon Scalable Platform | SKU Stack

New 3rd Gen Intel Xeon Scalable processors deliver a significant performance increase compared with the prior generation, with an average 46% improvement on popular data center workloads.[1] The processors also add new and enhanced platform capabilities including Intel SGX for built-in security, and Intel Crypto Acceleration and Intel DL Boost for AI acceleration. These new capabilities, combined with Intel's broad portfolio of Intel® Select Solutions and Intel® Market Ready Solutions, enable customers to accelerate deployments across cloud, AI, enterprise, HPC, networking, security and edge applications.

"Our 3rd Gen Intel Xeon Scalable platform is the most flexible and performant in our history, designed to handle the diversity of workloads from the cloud to the network to the edge," said Navin Shenoy, executive vice president and general manager of the Data Platforms Group at Intel. "Intel is uniquely positioned with the architecture, design and manufacturing to deliver the breadth of intelligent silicon and solutions our customers demand."

3rd Gen Intel Xeon Scalable Processors

Leveraging Intel 10 nanometer (nm) process technology, the latest 3rd Gen Intel Xeon Scalable processors deliver up to 40 cores per processor and up to 2.65 times higher average performance gain compared with a 5-year-old system.[2] The platform supports up to 6 terabytes of system memory per socket, up to 8 channels of DDR4-3200 memory per socket and up to 64 lanes of PCIe Gen4 per socket.

New 3rd Gen Intel Xeon Scalable processors are optimized for modern workloads that run in both on-premise and distributed multicloud environments. The processors provide customers with a flexible architecture including built-in acceleration and advanced security capabilities, leveraging decades of innovation.

- **Built-in AI acceleration:** The latest 3rd Gen Intel Xeon Scalable processors deliver the AI performance, productivity and simplicity that enable customers to unlock more valuable insights from their data. As the only data center CPU with built-in AI acceleration, extensive software optimizations and turnkey solutions, the new processors make it possible to infuse AI into every application from edge to network to cloud. The latest hardware and software optimizations deliver 74% faster AI performance compared with the prior generation and provide up to 1.5 times higher performance across a broad mix of 20 popular AI workloads versus AMD EPYC 7763 and up to 1.3 times higher performance on a broad mix of 20 popular AI workloads versus Nvidia A100 GPU.[3]
- **Built-in security:** With hundreds of research studies and production deployments, plus the ability to be continuously hardened over time, Intel SGX protects sensitive code and data with the smallest potential attack surface within the system. It is now available on 2-socket Xeon Scalable processors with enclaves that can isolate and process up to 1 terabyte of code and data to support the demands of mainstream workloads. Combined with new features, including Intel® Total Memory Encryption and Intel® Platform Firmware Resilience, the latest Xeon Scalable processors address today's most pressing data protection concerns.
- **Built-in crypto acceleration:** Intel Crypto Acceleration delivers breakthrough performance across a host of important cryptographic algorithms. Businesses that run encryption-intensive workloads, such as online retailers who process millions of customer transactions per day, can leverage this capability to protect customer data

without impacting user response times or overall system performance.

Additionally, to accelerate workloads on the 3rd Gen Intel Xeon Scalable platform, software developers can optimize their applications using oneAPI open, cross-architecture programming, which provides freedom from technical and economic burdens of proprietary models. The Intel® oneAPI Toolkits help realize the processors' performance, AI and encryption capabilities through advanced compilers, libraries, and analysis and debug tools.

Intel Xeon Scalable processors are supported by more than 500 ready-to-deploy Intel® IoT Market Ready Solutions and Intel Select Solutions that help to accelerate customer deployments — with up to 80% of our Intel Select Solutions being refreshed by end of year.

Industry-Leading Data Center Platform

Intel's data center platforms are the most pervasive on the market, with unmatched capabilities to move, store and process data. The latest 3rd Gen Intel Xeon Scalable platform includes the Intel Optane persistent memory 200 series, Intel Optane Solid State Drive (SSD) P5800X and Intel® SSD D5-P5316 NAND SSDs, as well as Intel Ethernet 800 Series Network Adapters and the latest Intel® Agilex FPGAs. Additional information about all these is available in the 3rd Gen Intel Xeon Scalable platform product fact sheet

Delivering Flexible Performance Across Cloud, Networking and Intelligent Edge

Our latest 3rd Gen Xeon Scalable platform is optimized for a wide range of market segments — from the cloud to the intelligent edge.

- **For the cloud:** 3rd Gen Intel Xeon Scalable processors are engineered and optimized for the demanding requirements of cloud workloads and support a wide range of service environments. Over 800 of the world's cloud service providers run on Intel Xeon Scalable processors, and all of the largest cloud service providers are planning to offer cloud services in 2021 powered by 3rd Gen Intel Xeon Scalable processors.
- **For the network:** Intel's network-optimized "N-SKUs" are designed to support diverse network environments and optimized for multiple workloads and performance levels. The latest 3rd Gen Intel Xeon Scalable processors deliver on average 62% more performance on a range of broadly-deployed network and 5G workloads over the prior generation.[4] Working with a broad ecosystem of over 400 Intel® Network Builders members, Intel delivers solution blueprints based on 3rd Gen Intel Xeon Scalable processor "N-SKUs," resulting in accelerated qualification and shortened time-to-deployment for vRAN, NFVI, virtual CDN and more.
- **For the intelligent edge:** 3rd Gen Intel Xeon Scalable processors deliver the performance, security and operational controls required for powerful AI, complex image or video analytics, and consolidated workloads at the intelligent edge. The platform delivers up to 1.56 times more AI inference performance for image classification than the prior generations.[5]

For more details, see the 3rd Gen Intel Xeon Scalable SKU table.

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 [125] at www.intel.com/3gen-xeon-config. Results may vary.
[2] See [25] at www.intel.com/3gen-xeon-config. Results may vary.
[3] See [123, 43, 44] at www.intel.com/3gen-xeon-config. Results may vary.
[4] See [91] at www.intel.com/3gen-xeon-config. Results may vary.
[5] See [121] at www.intel.com/3gen-xeon-config. Results may vary.

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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.

Intel contributes to the development of benchmarks by participating in, sponsoring, and/or contributing technical support to various benchmarking groups, including the BenchmarkXPRT Development Community administered by Principled Technologies.

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Source: Intel Corporation