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Intel Unveils Powerful Intel® Xeon® Scalable Processors, Bringing Next-Generation Business and Consumer Experiences to Life

Intel Data Center Platform Offers Industry's Highest Levels of Performance, Biggest Data Center Advancement in a Decade

NEWS HIGHLIGHTS

- Intel® Xeon® Scalable processors are uniquely architected for today's evolving data center and network infrastructure — offering businesses the industry's highest energy efficiency and system-level performance averaging 1.65x higher performance² over the prior generation. In growing workloads like AI, Intel Xeon Scalable processors deliver 2.2x performance³ over the prior generation.
- Designed to support an expanding range of existing and emerging data center, and network workloads, including [cloud computing](#), [high-performance computing](#) and [artificial intelligence](#).
- Features the richest suite of platform innovations and several integrated performance-boosting technologies including [Intel AVX-512](#), Intel Mesh Architecture, [Intel QuickAssist](#), [Intel Optane SSDs](#), Intel Omni-Path Fabric and more delivering up to 4.2x more virtual machines¹³ (VMs) versus a 4-year-old system leading to 65 percent TCO improvement.¹⁴
- Intel also announced Intel Select Solutions delivering a choice of optimized solution configurations to help speed evaluation and deployment of data center and communications network infrastructure.

SANTA CLARA, Calif.--(BUSINESS WIRE)-- Intel today launched its new [Intel® Xeon® Scalable processors](#), providing businesses with breakthrough performance to handle compute-hungry tasks including real-time analytics, virtualized infrastructure and high-performance computing. Today's launch marks the greatest set of data center and network processor advancements in a decade.

This Smart News Release features multimedia. View the full release here:
<http://www.businesswire.com/news/home/20170711005625/en/>

Intel Xeon Scalable processors are optimized for today's evolving data center and network infrastructure requirements. The scalable processor family provides businesses with breakthrough performance to handle system

"Data center and network infrastructure is undergoing

demands ranging from entry-cloud servers to compute-hungry tasks including real-time analytics, virtualized infrastructure and high-performance computing. (Credit: Intel Corporation)

massive transformations to support emerging use cases like precision

medicine, artificial intelligence and agile network services paving the path to 5G,” said Navin Shenoy, executive vice president and general manager of the Intel Data Center Group. “Intel Xeon Scalable processors represent the biggest data center advancement in a decade.”

Editorial: [The Intel Xeon Scalable – a Truly Big Day for the Data Center](#)

Press Kit: [Intel Xeon Processor Scalable Family](#)

Today’s general availability announcement follows Intel’s largest data center early ship program with more than 500,000 Intel Xeon Scalable processors already sold to leading enterprise, high-performance computing, cloud and communication services provider customers. Customers will benefit from a dramatic performance increase of 1.65x on average² over previous generation technology. With 58 world records and counting, Intel Xeon Scalable delivers industry leading performance across the broadest range of workloads.

Intel Xeon Scalable processors also provide businesses with the richest suite of platform feature innovations that deliver significant performance increases across key workloads. These include:

- **[Artificial Intelligence](#):** Delivers 2.2x higher deep learning training and inference³ compared to the previous generation, and 113x deep learning performance³ gains compared to a 3-year-old non-optimized server system when combined with software optimizations speeding delivery of AI-fueled services.
- **[Networking](#):** Delivers up to 2.5x increased IPsec forwarding rate²² for key networking applications compared to previous generation when using [Intel QuickAssist](#) and DPDK increasing the value derived from network transformation.
- **[Virtualization](#):** Operates up to an estimated 4.2x more virtual machines¹³ (VMs) versus a 4-year-old system for rapid service deployment, server utilization, lower energy costs and space efficiency spurring enterprise data center modernization.
- **[High Performance Computing](#):** Provides up to a 2x FLOPs/clock improvement¹ with Intel AVX-512 as well as integrated Intel Omni-Path Architecture ports, delivering improved compute capability, I/O flexibility and memory bandwidth to accelerate discovery and innovation.
- **[Storage](#):** Processes up to 5x more IOPS¹¹ while reducing latency by up to 70 percent¹¹ versus out-of-the-box NVMe SSDs when combined with [Intel® Optane™ SSDs](#) and Storage Performance Development Kit (SPDK), making data more accessible for advanced analytics.

The Intel Xeon Scalable processor features a new core microarchitecture, new on-die interconnects and memory controllers. The resulting platform optimizes performance as well as the reliability, security and manageability necessary in data centers and networking infrastructure.

- **Performance:** The Intel Xeon Scalable processors deliver an overall performance increase up to $1.65x^2$ versus the previous generation, and up to $5x^{19}$ OLTP warehouse workloads versus the current install base—accelerating today’s modern-day workloads including modeling and simulation, machine learning, HPC and digital content creation. These significant performance gains are enabled through new features such as [Intel Advanced Vector Extensions 512 \(Intel AVX-512\)](#), which boost performance of computationally intensive tasks, a new Intel Mesh Architecture for reduced system latency, [Intel QuickAssist Technology](#) for hardware acceleration of cryptography and data compression operations and integrated high-speed fabric with [Intel Omni-Path Architecture](#) for cost-effective deployment of HPC clusters.
- **Scalability:** Optimized to meet the wide range of performance demands in data centers and communications networks, the Intel Xeon Scalable processors offer up to 28 cores and up to 6 terabytes of system memory (4-socket systems), and scale to support 2-socket through 8-socket systems and beyond, powering entry-level workloads to the most mission-critical applications.
- **Agility:** Compute, network and storage performance and software ecosystem optimizations of the Intel Xeon Scalable processors make it ideal for software defined, TCO (total cost of ownership)-optimized, data centers that dynamically self-provision resources — on premise, through the network, and in the cloud — based on workload needs.
- **Security without Compromise:** Data protection through full encryption has long carried a significant performance overhead. Application can now run with less than 1 percent¹⁶ overhead with data-at-rest encryption turned on. The new Intel Xeon Scalable processor also delivers a $3.1x$ performance¹⁸ improvement generation-over-generation in cryptography performance. Intel has extended processor security features with Intel Key Protection Technology delivering enhanced protection to security key attacks. In addition Intel Xeon Scalable is designed to secure the platform with further advancements in hardware root of trust.

Foundation for Next-Generation Data Centers and Communications Networks

Intel also introduced [Intel Select Solutions](#), a solutions brand aimed at simplifying and speeding the deployment of data center and network infrastructure, with initial solutions delivery on Canonical Ubuntu*, Microsoft SQL 16* and VMware vSAN 6.6*. Intel Select Solutions is an expansion of the company’s deep investment in Intel Builders ecosystem collaborations and will deliver a choice of Intel-verified configurations to the market, enabling customers to speed return on investment in Intel Xeon Scalable processor-based infrastructure for user-prioritized workloads.

Uniquely architected to help customers accelerate the deployment of cloud infrastructure, transform communications networks and unleash artificial intelligence, the Intel Xeon Scalable platform is supported by 100s of ecosystem of partners, more than 480 Intel builders and more than 7,000 software vendors to drive software optimizations that take advantage of the platform. The Intel Xeon Scalable processor has received [broad support](#) from a variety of companies, including Amazon*, AT&T*, BBVA*, Google*, Microsoft*, Montefiore*, Technicolor* and Telefonica*.

Learn more about the innovations Intel is bringing to the data center with the new Intel Xeon Scalable processors, Intel Select Solutions, by visiting www.intel.com/xeonscalable, or visit <http://launchevent.intel.com> to experience a deep dive into the platform. Read an editorial published on today's news: [The Intel® Xeon® Scalable – a Truly Big Day for the Data Center](#)

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