Editorial

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Contact Intel PR

By Lisa Spelman

Today is a big day, one of those “once-in-a-career” kind of days. Around the world, Intel launched the all-new Intel® Xeon® Scalable platform, our highest-performance, most versatile data center platform ever. We’ve been asked if this is really the biggest data center advancement in the industry in a decade, as we like to call it, and let me tell you that it most certainly is.

News Release: Intel Unveils Powerful Intel Xeon Scalable Processors, Bringing Next-Generation Business and Consumer Experiences to Life
Press Kit: Intel Xeon Scalable Processors

Digital transformation is accelerating. Every industry – transportation, retail, manufacturing, health care, professional services, even farming – is improving and streamlining through digital change. Highly adaptable, software-defined, on- or off-premise clouds are replacing fixed-function infrastructure. Data that would have been stored in the equivalent of digital shoe boxes, never to be seen again, is now activated with powerful analytics and artificial intelligence (AI), revealing new insights and opportunities. Autonomous vehicles will require teraflops of compute power every hour they are on the road, air or water. No matter the game, it is being changed.

Five years ago, I was in Intel IT. I could not have imagined that a single platform could have the versatility to cover compute, storage and communications in a modern data center – but our amazing engineers did it. With up to 28 of the highest-performance cores, the all-new Intel Xeon Scalable platform can support up to 4.2x more virtual machines[1] and up to 5x more transactions per second[2] than 4-year-old systems. Configured for storage, it delivers up to 5x more IOPS at up to 70 percent lower latency[3] to quickly commit data to storage or bring it forward for analysis. For communications, the Intel Xeon Scalable platform can power emerging 5G networks, offering up to 2.5x better performance for key networking applications.[4]

All the customers we serve – cloud and communications service providers, enterprises, HPC and AI engineers – can fuel their digital transformation with the Intel Xeon Scalable platform. Our early-ship customers are already seeing great results. For example, AT&T* is already running production traffic and has seen a major performance improvement using 25 percent fewer servers per cluster.[5] Customers on the Google* Compute Platform have seen up to 40 percent more performance, and more that 100 percent more performance when the application includes optimization for Intel® AVX-512 instructions.[6] And leading content creator Technicolor* reduced time to render virtual reality content by almost 3x,[7] freeing up valuable time for their most creative employees.

Beyond the hardware, something that makes Intel truly unique is our ability to align the data center ecosystem to fully

unleash the platform's performance and provide a jumping-off point for ongoing industry innovation. Over the past five years, we've worked with leading software companies, contributed to open source communities, and released tools and libraries that help developers take full advantage of the performance and security features of the Intel Xeon Scalable platform. Our Cloud, Fabric, Network and Storage Builders programs helped more than 480 companies accelerate and optimize their solutions and publish reference architectures. I believe Intel knowledge shared with the ecosystem is value unlocked for our customers.

The combined power of Intel platforms, ecosystem partnerships and performance engineering come together in another of today's announcements: Intel® Select Solutions. Intel Select Solutions are optimized hardware/software configurations targeting today's complex data center and communications network workloads. Specified and tested by Intel, these solutions can reduce IT's evaluation and testing burden, accelerate time to deployment, and increase confidence they will enjoy reliable solution performance.

This breakthrough platform took years of mind-bending work by thousands of brilliant people around the world, and I can't sign off this post without thanking the entire Intel team, along with the systems manufacturers, service providers and developers that invested so much energy to make all this possible. I heap superlatives upon you, for you have truly earned them.

Yes, today is a very big day, indeed.

I invite you to learn more about how the Intel Xeon Scalable platform family can transform your data center and take your business to new heights at www.intel.com/xeonscalable.

Lisa Spelman is vice president and general manager of Intel Xeon products and marketing in the Data Center Group at Intel Corporation.

Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to http://www.intel.com/performance/datacenter.

[1]Up to 4.28x more VMs based on server virtualization consolidation workload: Based on Intel® internal estimates 1-Node, 2 x Intel® Xeon® Processor E5-2690 on Romley-EP with 256 GB Total Memory on VMware ESXi* 6.0 GA using Guest OS RHEL6.4, glassfish3.1.2.2, postgresql9.2. Data Source: Request Number: 1718, Benchmark: server virtualization consolidation, Score: 377.6 @ 21 VMs vs. 1-Node, 2 x Intel® Xeon® Platinum 8180 Processor on Wolf Pass SKX with 768 GB Total Memory on VMware ESXi6.0 U3 GA using Guest OS RHEL 6 64bit. Data Source: Request Number: 2563, Benchmark: server virtualization consolidation, Score: 1580 @ 90 VMs. Higher is better

[2]Up to 5x claim based on OLTP Warehouse workload: 1-Node, 4 x Intel® Xeon® Processor E7-4870 on Emerald Ridge with 512 GB Total Memory on Oracle Linux* 6.4 using Oracle 12c* running 800 warehouses. Data Source: Request Number: 56, Benchmark: HammerDB, Score: 2.46322e+006 Higher is better vs. 1-Node, 4 x Intel® Xeon® Platinum 8180 Processor on Lightning Ridge SKX with 768 GB Total Memory on Red Hat Enterprise Linux* 7.3 using Oracle 12.2.0.1 (including database and grid)

[3]5x IOPS and 70 percent lower latency claims based on the following configurations.

Configuration	53. Skylake with 6x Optane + SPDK	50. Skylake w/ 4x P4600 no SPDK
CPU	2S Intel(R) Xeon(R) Platinum 8168 CPU @ 2.70GHz	2S Intel(R) Xeon(R) Platinum 8170 CPU @ 2.10GHz
Memory	196GB, 6x Memory Channels per socket, 1 16GB 2666 DDR4 DIMM per channel	196GB, 6x Memory Channels per socket, 1 16GB 2666 DDR4 DIMM per channel
Board	Intel Wolf Pass, BIOS: SE5C620.86B.01.00.0511.051220170820	Intel Wolf Pass, BIOS: SE5C620.86B.01.00.0511.051220170820
Storage	6x Intel P4800X 375GB 1 on socket 0 + 5 on socket 1	4x Intel P4600 1.6TB 2 on socket 0 + 2 on socket 1
OS	Ubuntu 16.04.1	Ubuntu 16.04.1
Linux Kernel	4.11.0_x86_64	4.11.0_x86_64
SPDK Commit	730a63d02b6	
DPDK	17.02	
Turbo	ON	ON
HT	Disabled	Disabled
C-States	Disabled	Disabled
Power & Performance	Performance	Performance
Speed Stepping	Enabled	Enabled
BenchMark	SPDK Perf	SPDK Perf
IODepth	32	128
Block Size	4096	4096
RunTime	300 sec	300 sec
No. of Runs	3 Times	3 Times
Num of Cores	Core 0 (Single Core)	Core 0 (Single Core)
IOPS – 4k random read	3207706	614531
IOPS – 4k random writes	3005696	588277
Lat – 4K random read	239	833
Lat – 4K random writes	255	870

[4]5X networking claim based on the following configurations, and measures IPSEC forwarding rate in Gbps

73. Upto 2.55x on IPSec Forwarding test	1-Node, 2 x Intel® Xeon® Processor E5-2658v4	1-Node, 2 x Intel® Xeon® Platinum 8180 Processor
IPSec Forwarding Rate @1420B packet (in Gb/s, Higher is better) Single Socket performance with Cores, NICs, and test memory used on only 1 socket	43.2 (2 cores used)	110.2 (3 cores used)
Processor	Intel® Xeon® Processor E5-2658 v4 (35 Cache, 2.3 GHz)	Intel® Xeon® Platinum 8180 Processor (39M Cache, 2.5 GHz)
Vendor	Intel	Intel
Nodes	1	1
Sockets	1	2
Cores Per Processor	14	28
Logical Processors	28	56
Platform	Grantley-EP (Wellsburg)	Purley-EP (Lewisburg)
Accelerator Used	Intel DH895XCC (Coleto Creek)	Intel Lewisburg in x24 link mode
Platform Comments	SuperMicro® X10DRX	Neon City
Memory DIMMs Slots used/Processor	4	6
Total Memory	64 GB	96 GB
Memory DIMM Configuration	16 GB / 2400 MT/s / DDR4 RDIMM	8 GB / 2400 MT/s / DDR4 RDIMM
Memory Comments	MTA36ASF2G72PZ-2G4AU, 16GB, 2Rx8	M393A1G43DB1-CRC, Samsung 32GB 2Rx8 PC4
Network Interface Cards	2x X710-DA4 Intel® Ethernet Controller, 6 10GbE ports used	3x X710-DA4 Intel® Ethernet Controller, 12 10GbE ports used
OS	Ubuntu15.0	Ubuntu 16.04.1
OS/Kernel Comments	4.2.0-16	4.4.0
Primary / Secondary Software	DPDK 16.11	DPDK 17.02
Other Configurations	Version 2.0. Revision: 5.6, P,C,Turbo state: Disabled, NUMA: Enabled, COD: Disabled	BIOS: PLYDCRB1.86B.0114.R11.16122119, IMC Interleaving - 1 way, CPU Power&Performance - Perf, P,C and C states disabled, NUMA Enabled
Computer Type	Server	Server
Benchmark	DPDK IPSec-secgw	DPDK IPSec-secgw

[5]Source: AT&T

[6]Source: Google

[7]Source: Technicolor

Tags: Data Center, Lisa Spelman, Xeon, Xeon Scalable Processors

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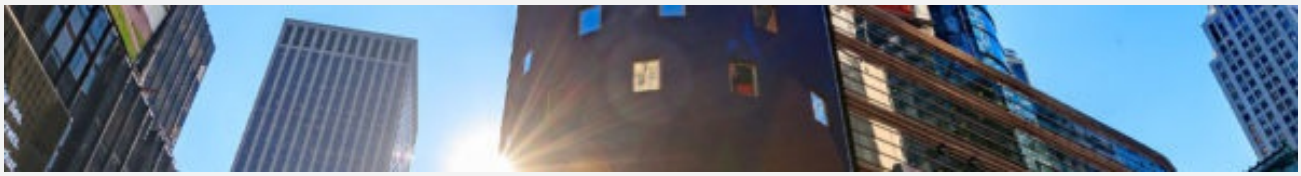

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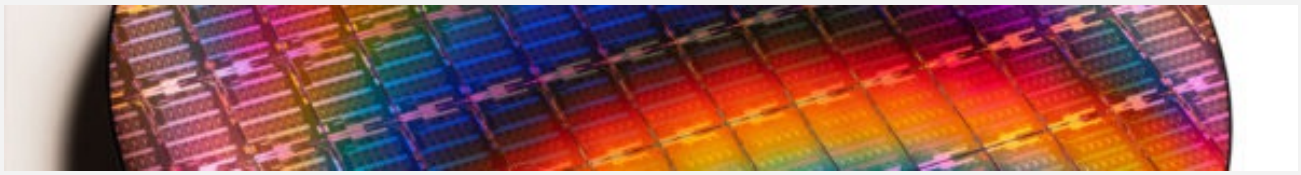

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