TRANSFORM YOUR DIGITAL WORLD

From the heart of the data center
To the edge, and back

2nd Generation Intel® Xeon® Scalable Processors

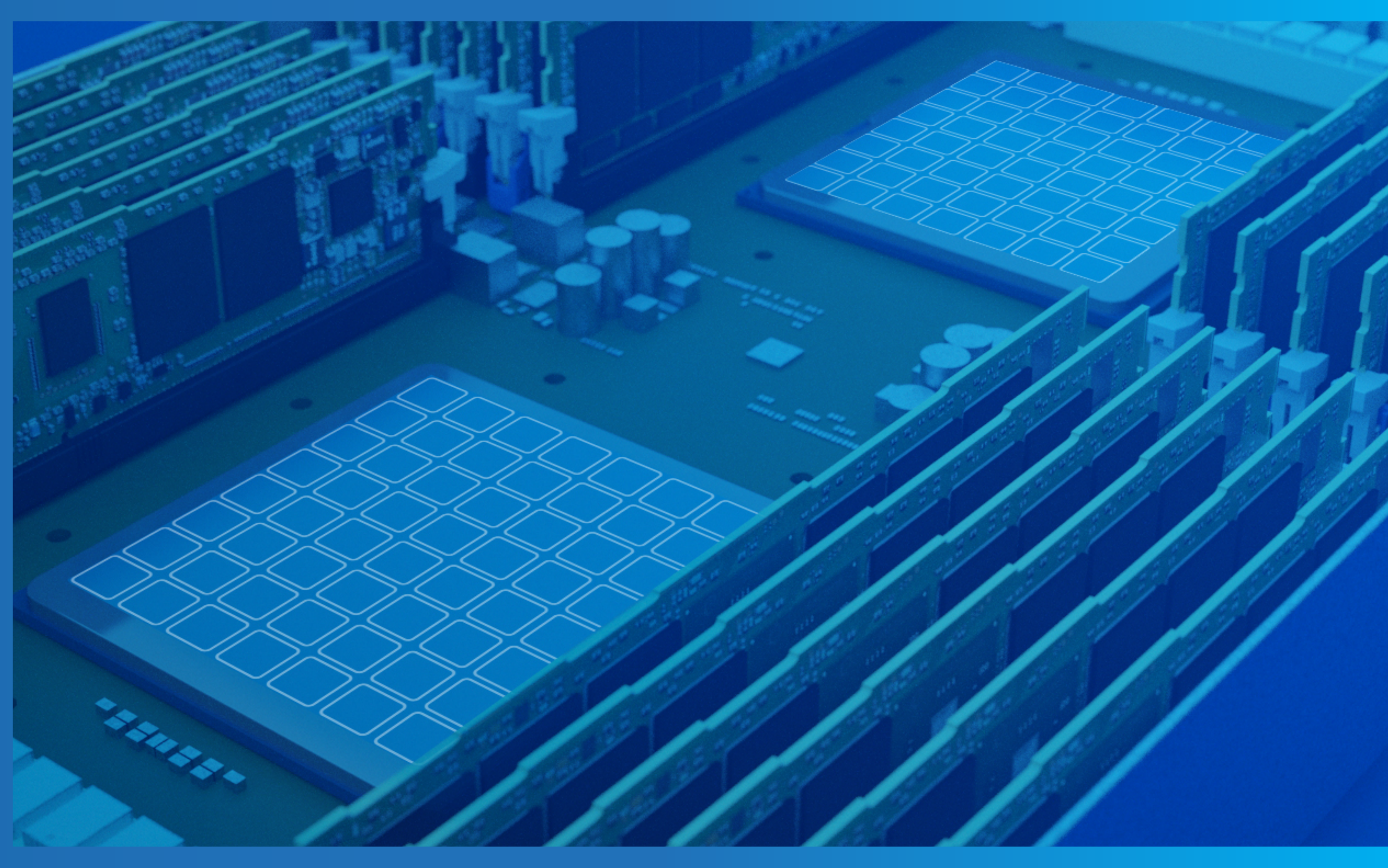
INTRODUCING NEW INTEL® XEON® PLATINUM 9200 PROCESSORS

A new class of advanced performance

Up to 112 cores in a two-socket system

Up to 3.8 GHz with Intel® Turbo Boost Technology

Highest native DDR4 bandwidth



Average of **2x** performance improvement[1]

PERFORMANCE TO PROPEL INSIGHTS

Average of 1.33x performance improvement over prior generation[2]

Built-in agility for evolving workloads with new Intel® Speed Select Technology

Available on select 2nd gen Intel® Xeon® Scalable processors

INFRASTRUCTURE-WIDE AI READINESS

New Intel® Deep Learning Boost with Vector Neural Network Instructions (VNNI)

Up to 30x AI performance improvement compared to prior generation[3]

BUSINESS RESILIENCE THROUGH MULTI-TENANT DATA PROTECTION

Hardware-enhanced security

New Intel® Security Libraries (Intel® ISecL-DC)

Featuring new Intel® Threat Detection Technology (Intel® TDT)[4]

GROUNDBREAKING MEMORY AND STORAGE INNOVATION

intel OPTANE DC PERSISTENT MEMORY

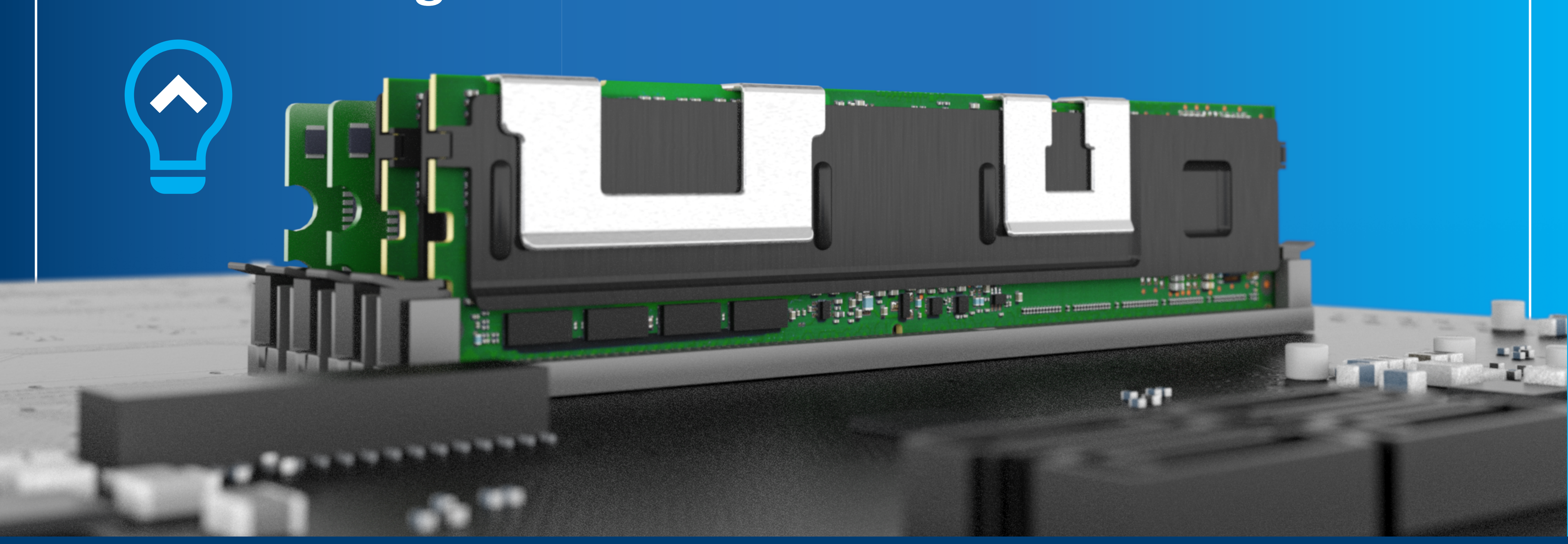
Delivers support for up to 36 TB system memory
(8-socket system with Intel® Optane™ DC persistent memory and DRAM combined)

For faster insights

Supporting reduced cost and enhanced TCO

2x memory capacity
Compared to Intel® Xeon® 8180 processor

Up to 36% more VMs per system[5]



INDUSTRY-LEADING STORAGE SOLUTIONS

intel OPTANE DC SOLID STATE DRIVE

New Intel® Optane™ DC D4800X SSD

Performance and resiliency for critical enterprise apps

Dual-port connections for 24x7 data availability and redundancy

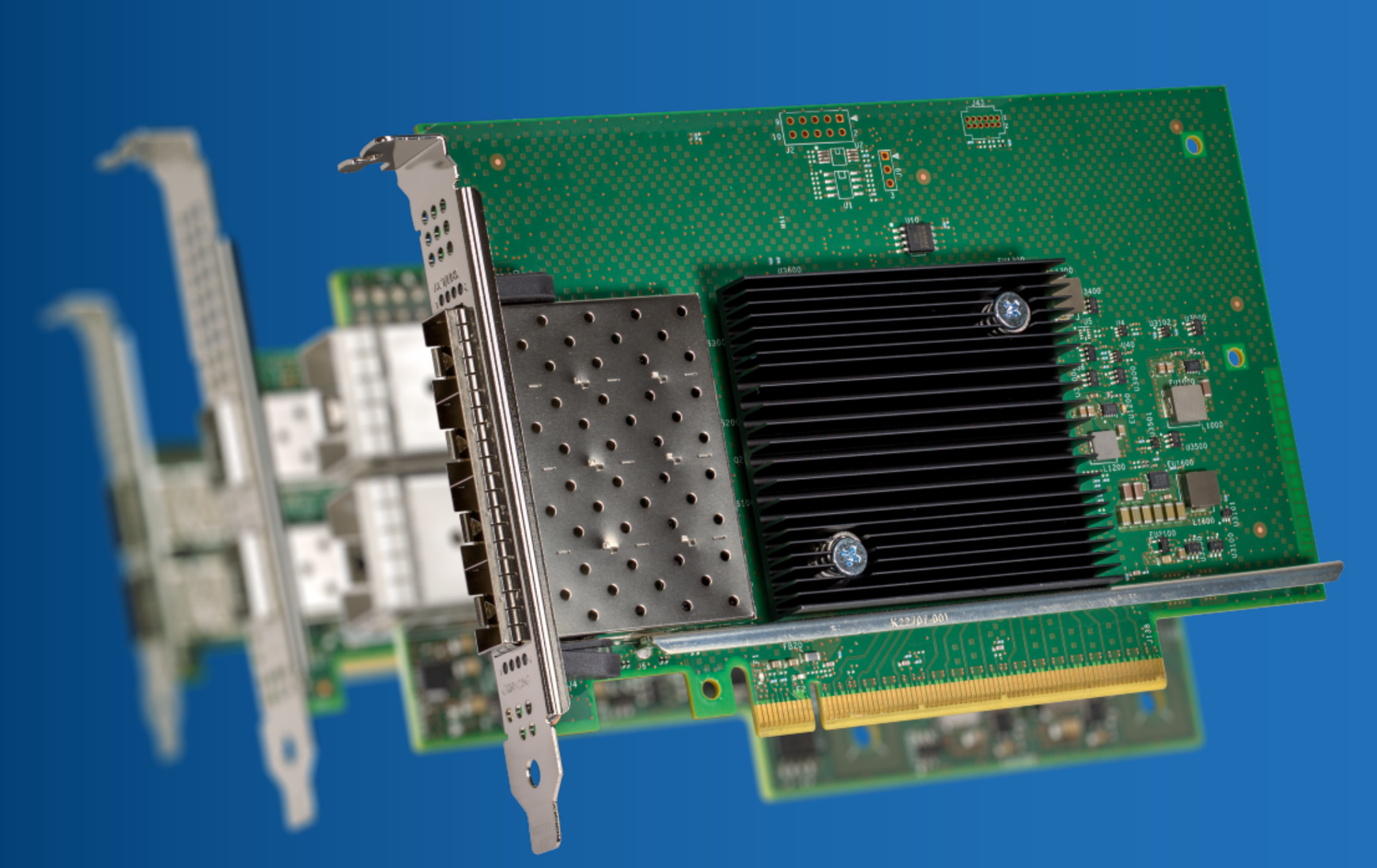
New Intel® SSD D5-P4326 E1.L "Ruler"

Up to 1 PB of storage capacity in 1U

Unprecedented data storage capacity and density

INTELLIGENT, FAST NETWORKING

New Intel® Ethernet 800 Series Network Adapters



Up to 100 GbE

Featuring Application Direct Queuing (ADQ)
Prioritizes data flow and workload acceleration

2ND GEN INTEL® XEON® SCALABLE PROCESSORS

The foundation for data-centric innovation

Discover more at www.intel.com/xeonscalable

1 2x Average Performance Improvement compared with Intel® Xeon® Platinum 8180 processor. Geo mean of estSPECrate2017_int_base, estSPECrate2017_fp_base, Stream Triad, Intel Distribution of Linpack, server side Java. Platinum 92xx vs Platinum 8180: 1-node, 2x Intel® Xeon® Platinum 9282 cpuon Walker Pass with 768 GB (24x 32GB 2933) total memory, ucode0x400000A on RHEL7.6, 3.10.0-957.el7.x86_65, IC19u1, AVX512, HT on all (off Stream, Linpack), Turbo on all (off Stream, Linpack), result: estintthroughput=635, estfpthroughput=526, Stream Triad=407, Linpack=6411, server side java=332913, test by Intel on 2/16/2019. vs. 1-node, 2x Intel® Xeon® Platinum 8180 cpuon Wolf Pass with 384 GB (12 X 32GB 2666) total memory, ucode0x200004D on RHEL7.6, 3.10.0-957.el7.x86_65, IC19u1, AVX512, HT on all (off Stream, Linpack), Turbo on all (off Stream, Linpack), result: estintthroughput=307, estfpthroughput=251, Stream Triad=204, Linpack=3238, server side java=165724, test by Intel on 1/29/2019.

2 Up to 1.33X Gen-on-Gen Performance Improvement compared to Intel® Xeon® Gold 5100 Processor: Geomeanof estSPECrate2017_int_base, estSPECrate2017_fp_base, Stream Triad, Intel Distribution of Linpack, server side Java. Gold 5218 vs Gold 5118: 1-node, 2x Intel® Xeon® Gold 5218 cpuon Wolf Pass with 384 GB (12 X 32GB 2933 (2666)) total memory, ucode0x4000013 on RHEL7.6, 3.10.0-957.el7.x86_65, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: estintthroughput=162, estfpthroughput=172, Stream Triad=185, Linpack=1088, server side java=98333, test by Intel on 12/7/2018. 1-node, 2x Intel® Xeon® Gold 5118 cpuon Wolf Pass with 384 GB (12 X 32GB 2666 (2400)) total memory, ucode0x200004D on RHEL7.6, 3.10.0-957.el7.x86_65, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: estintthroughput=119, estfpthroughput=134, Stream Triad=148.6, Linpack=822, server side java=67434, test by Intel on 11/12/2018

3 Up to 30X AI performance with Intel® DL Boost compared to Intel® Xeon® Platinum 8180 processor (July 2017). Tested by Intel as of 2/26/2019. Platform: Dragon rock 2 socket Intel® Xeon® Platinum 9282(56 cores per socket), HT ON, turbo ON, Total Memory 768 GB (24 slots/ 32 GB/ 2933 MHz), BIOS:SE5C620.86B.0D.01.0241.112020180249, Centos 7 Kernel 3.10.0-957.5.1.el7.x86_64, Deep Learning Framework: Intel® Optimization for Caffeversion: https://github.com/intel/caffe d554cbf1, ICC 2019.2.187, MKL DNN version: v0.17 (commit hash: 830a10059a018cd2634d94195140cf2d8790a75a),model: https://github.com/intel/caffe/blob/master/models/intel_optimized_models/int8/resnet50_int8_full_conv.prototxt, BS=64, No datalayerDummyData:3x224x224, 56 instance/2 socket, Datatype: INT8 vs Tested by Intel as of July 11th 2017: 2S Intel® Xeon® Platinum 8180 CPU @ 2.50GHz (28 cores), HT disabled, turbo disabled, scaling governor set to "performance" via intel_pstatedriver, 384GB DDR4-2666 ECC RAM. CentOS Linux release 7.3.1611 (Core), Linux kernel 3.10.0-514.10.2.el7.x86_64. SSD: Intel® SSD DC S3700 Series (800GB, 2.5in SATA 6Gb/s, 25nm, MLC). Performance measured with: Environment variables: KMP_AFFINITY='granularity=fine, compact', OMP_NUM_THREADS=56, CPU Freqset with cpupowerfrequency-set -d 2.5G -u 3.8G -g performance. Caffe: (http://github.com/intel/caffe/), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffetime --forward_only" command, training measured with "caffetime" command. For "ConvNet" topologies, dummy dataset was used. For other topologies, data was stored on local storage and cached in memory before training. Topology specs from https://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50),. Intel C++ compiler ver. 17.0.2 20170213, Intel MKL small libraries version 2018.0.20170425. Cafferun with "numactl-l".

4 No product or component can be absolutely secure.

5 Up to 36% more VMs per system: Tested by Intel on 1/31/2019. Config 1 (DRAM only), Intel Reference Platform, 1-Node, 2 sockets, Intel® Xeon® Platinum 8272L processor, HT: on, Turbo: on, BKC version: WW42, Intel Optane DC persistent memory FW version 5253, System DDR Mem Config: slots / cap / run-speed 24 slots / 32GB / 2666, Total Memory/Node (DDR, DCPMM) 768GB, 0, Storage – boot 1x Samsung PM963 M.2 960GB, Storage - application drives 7 x Samsung PM963 M.2 960GB, 4x Intel SSDs S4600 (1.92TB), NIC: xIntel X520 SR2 (10Gb), PCH: LBG QS/PRQ – T – B2, OS: Windows Server 2019 RS5-17763, Workload & Version: OLTP Cloud Benchmark. Config 2 (Intel Optane DC Persistent Memory), 1-Node, 2-Sockets, Intel® Xeon® Platinum 8272L processor, Intel Reference Platform, HT: on, Turbo: on, BKC version: WW42, Intel Optane DC persistent memory FW version 5253, System DDR Mem Config: slots / cap / run-speed 12 slots / 16 GB / 2666, System DCPMM Config: slots / cap / run-speed 8 slots /128GB / 2666, Total Memory Node: 192GB, 1TB, Storage-boot: 1x Samsung PM963 M.2 960GB, Storage-applications: 7x Samsung PM963 M.2 960GB, 4x Intel SSDs S4600 (1.92TB), NIC: 1x Intel X520 SR2 (10Gb), PCH: LBG QS/PRQ – T – B2, OS: Windows Server 2019 RS5-17763, Workload: OLTP Cloud Benchmark.

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Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. For more complete information about performance and benchmark results, visit http://www.intel.com/benchmarks.

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