Oracle Global Leaders, Winter Americas

Future Data Center Innovations

Andrea Carbajal, Intel Sales Development Manager

Bringing the best of our partnership

Oracle and Intel partner at each and every level of hardware and software development

The Data-Centric World

Over half the world's data
was created in the last 2 years.
Less than 2% has been analyzed

Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere,

Unleashing the Potential of Data

Move Faster

BAREFOOT NETWORKS | an Intel company

intel ETHERNET

intel SILICON PHOTONICS

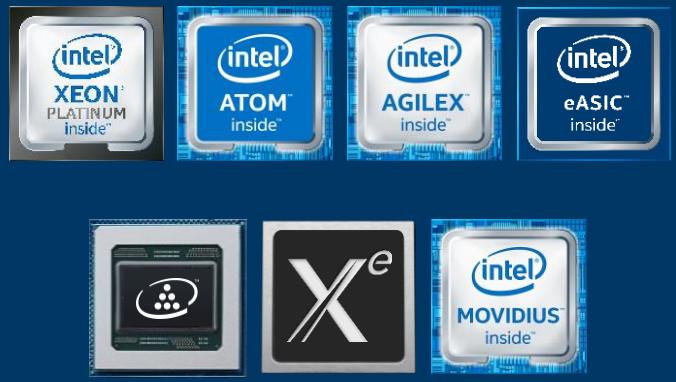
Store More

intel OPTANE™ PERSISTENT MEMORY

intel OPTANE™ SSD

intel 3D NAND SSD

Process Everything



Software & System Level Optimized

3rd Gen Intel® Xeon® Scalable Processor (Ice Lake)

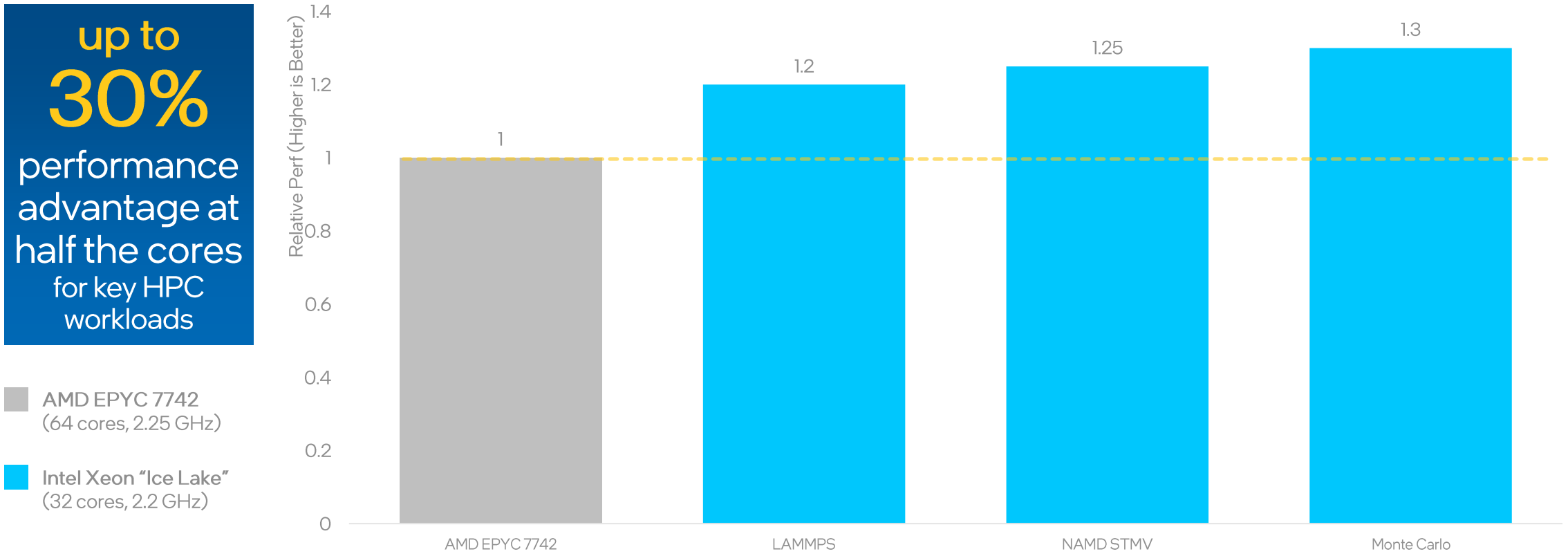
Optimized for an outstanding HPC and AI experience

- Higher memory bandwidth: 8 DDR4 channels & 3200MT/s
- Better performance per core via new architecture
- Faster I / O with PCIe Gen 4
- Supporting exascale storage with up to 6TB memory / socket and Intel® Optane™ PMem
- Security Innovations Intel® SGX & crypto acceleration

Ice Lake Leadership Performance

Upcoming 3rd Gen Xeon Scalable processors perform better at half the cores for key Life Sciences and Finance workloads

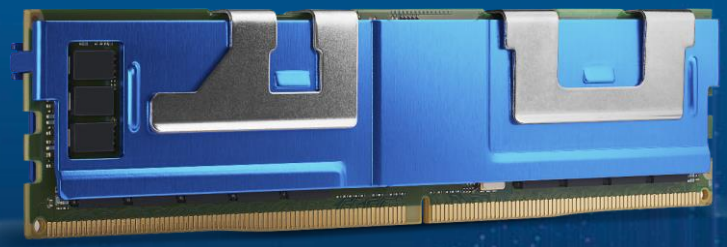
up to 30% performance advantage at half the cores for key HPC workloads



Results estimated based on testing on pre-production parts. See backup for configuration details. Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex

Accelerate Insight and Innovation

Intel® Optane™ persistent memory (PMem) 200 series fills the DRAM gap



intel®
OPTANE™
PERSISTENT MEMORY

Extract more from larger datasets. Expand your memory pool in persistent memory and support near-real-time data analysis; deliver deep insights, improve operations, or create new revenue streams.

Lower overall total cost of ownership (TCO).[3] Do more with each server—increase CPU utilization, in-memory database capacity, throughput, virtual machine (VM) density, and services for users on a consolidated footprint.

Protect data automatically. Help secure all data at rest in persistent memory with application-transparent AES-256 encryption, which enhances security without code changes.

High performance. High capacity. Hardware-enhanced security.

[3] Supports for more than 1.2x more VMs than the previous generation. Based on testing by Intel as of April 27, 2020 (Baseline) and March 31, 2020 (New). For details, see Endnotes slides.

Thank you!

Notices and Disclaimers

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

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.

Intel technologies may require enabled hardware, software or service activation.

Configuration Details

NAMD STMV:

2S 3rd Gen Intel Xeon Scalable processor (Ice Lake): 1-node, 2x pre-production 3rd Gen Intel Xeon Scalable processor (Ice Lake - 2.2GHz, 32cores per socket), Intel reference platform, 256GB, 16x16GB 3200MHz DDR4, HT=on, TURBO=on, SNC=disabled, SSDSC2KG96 960GB, BIOS SE5C6200.86B.0017.D92.2007150417, microcode 0x8c000140, CentOS Linux 7.8, 3.10.0-1127.18.2.el7.crt1.x86_64, compiled with Intel C Compiler 2020u2, Intel MKL, NAMD: 2_15-Alpha1, tested by Intel on 9-17-2020. 2S AMD EPYC 7742: 1-node 2x AMD EPYC 7742 (2.25GHz, 64cores per socket), Supermicro platform, 16x16GB 3200MHz DDR4, SMT on, Boost on, NPS=4, SSDSC2KG96 960GB, BIOS2.0b dt 11/15/2019, microcode 0x8301025, CentOS Linux 7.7.1908, 3.10.0-1127.13.1.el7.crt1.x86_64, compiled with AOCC 2.2, Intel MKL, NAMD: 2_15-Alpha1, tested by Intel on 9-10-2020.

Monte Carlo:

2S 3rd Gen Intel Xeon Scalable processor (Ice Lake): 1-node, 2x pre-production 3rd Gen Intel Xeon Scalable processor (Ice Lake - 2.2GHz, 32cores per socket), Intel reference platform, 256GB, 16x16GB 3200MHz DDR4, HT=on, TURBO=on, SNC=disabled, SSDSC2KG96 960GB, BIOS SE5C6200.86B.0017.D92.2007150417, microcode 0x8c000140, CentOS Linux 7.8, 3.10.0-1127.18.2.el7.crt1.x86_64, compiled with Intel C Compiler 2020u2, Intel MKL 2020u2, Monte Carlo FSI Kernel workload developed by Intel, tested by Intel on 10-9-2020. 2S AMD EPYC 7742: 1-node 2x AMD EPYC 7742 (2.25GHz, 64cores per socket), Supermicro platform, 16x16GB 3200MHz DDR4, SMT on, Boost on, NPS=4, SSDSC2KG96 960GB, BIOS2.0b dt 11/15/2019, microcode 0x8301025, CentOS Linux 7.7.1908, 3.10.0-1127.13.1.el7.crt1.x86_64, compiled with Intel C Compiler 2020u2, Intel MKL 2020u2, Monte Carlo FSI Kernel workload developed by Intel, tested by Intel on 7-17-2020.

LAMMPS (Geomean of Atomic Fluid, Copper, Liquid Crystal, Polyethylene, Protein, Stillinger-Weber, Tersoff, and Water):

2S 3rd Gen Intel Xeon Scalable processor (Ice Lake): 1-node, 2x pre-production 3rd Gen Intel Xeon Scalable processor (Ice Lake - 2.2GHz, 32cores per socket), Intel reference platform, 256GB, 16x16GB 3200MHz DDR4, HT=on, TURBO=on, SNC=disabled, SSDSC2KG96 960GB, BIOS SE5C6200.86B.0017.D92.2007150417, microcode 0x8c000140, CentOS Linux 7.8, 3.10.0-1127.18.2.el7.crt1.x86_64, compiled with Intel C Compiler 2020u2, Intel MKL 2020u2, LAMMPS 03/03/2020, tested by Intel on 10-9-20202S AMD EPYC 7742: 1-node 2x AMD EPYC 7742 (2.25GHz, 64cores per socket), Supermicro platform, 16x16GB 3200MHz DDR4, SMT on, Boost on, NPS=4, SSDSC2KG96 960GB, BIOS2.0b dt 11/15/2019, microcode 0x8301025, CentOS Linux 7.7.1908, 3.10.0-1127.13.1.el7.crt1.x86_64, compiled with AOCC 2.2, LAMMPS 07/21/2020, tested by Intel on 8-19-2020