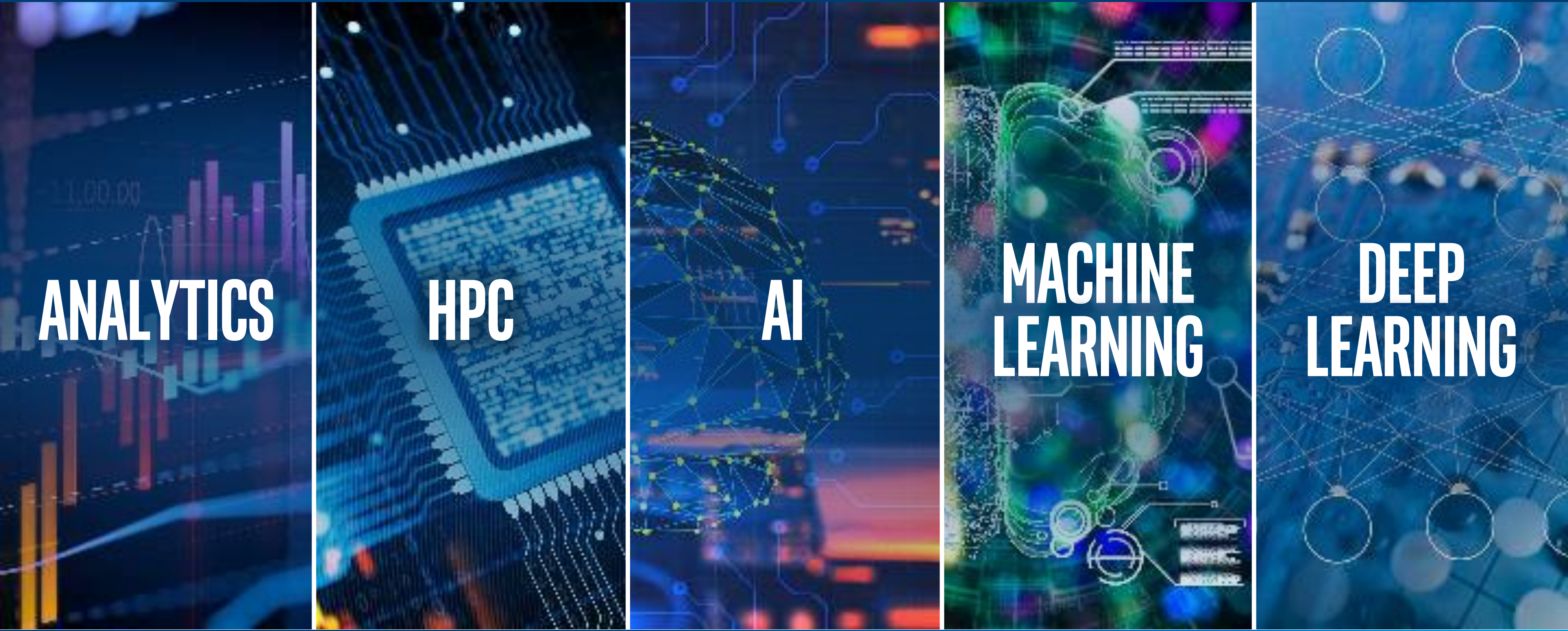
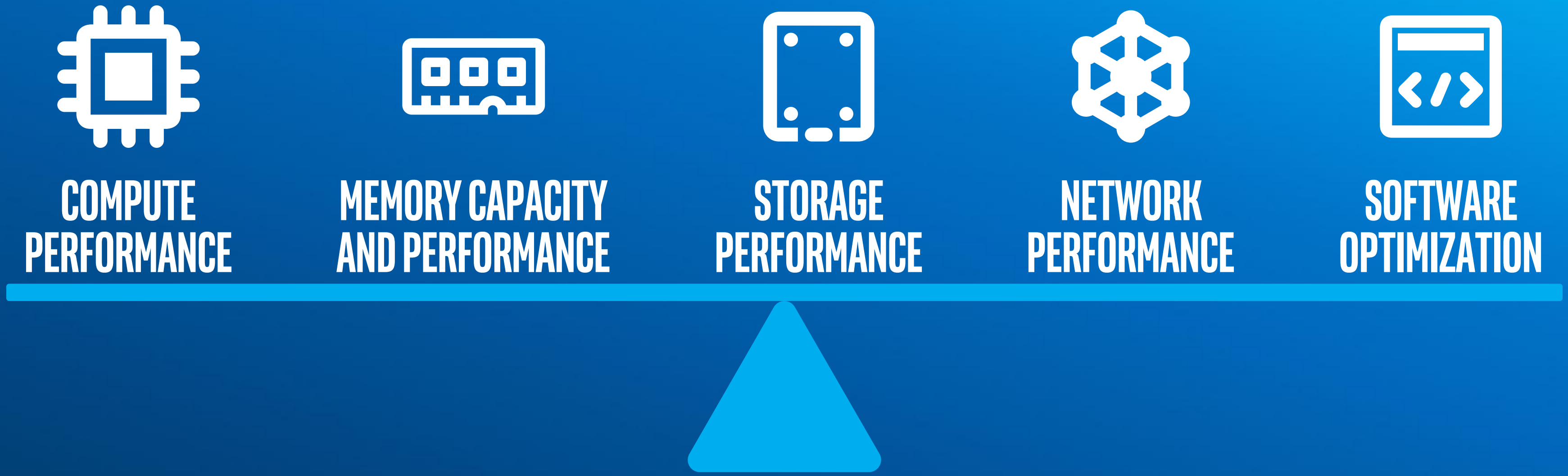
2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

ARE YOU READY FOR THE DATA-CENTRIC COMPUTING ERA?



DATA-CENTRIC COMPUTING REQUIRES BALANCED INFRASTRUCTURE PERFORMANCE



2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

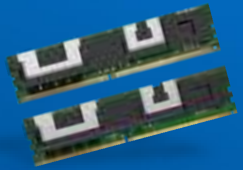
Unlocking new levels of insight from data-centric computing

- intel® XEON® PLATINUM inside™
- intel® XEON® GOLD inside™
- intel® XEON® SILVER inside™
- intel® XEON® BRONZE inside™

2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

End-to-end performance

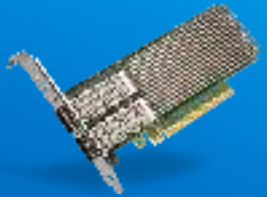
2nd Gen Intel® Xeon® Scalable processor



Intel® Optane™ DC persistent memory

Intel® Optane™ SSDs

Intel® QLC 3D NAND SSDs



Intel® Ethernet Adapters

Optimized software

HIGH PERFORMANCE

2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

Performance innovation

Up to 112 cores in a 2-socket platform
(Intel® Xeon® Platinum 9200 processor)

2x average performance improvement[1]
(Intel® Xeon® Platinum 9200 processor vs. Intel® Xeon® Platinum 8180 processor)

Expanded I/O – 48 lanes of PCIe* 3.0 throughput
(Intel® Xeon® Platinum 9200 processor)

New Intel® Deep Learning Boost Instructions
(Intel® Xeon® Platinum 9200 processor)

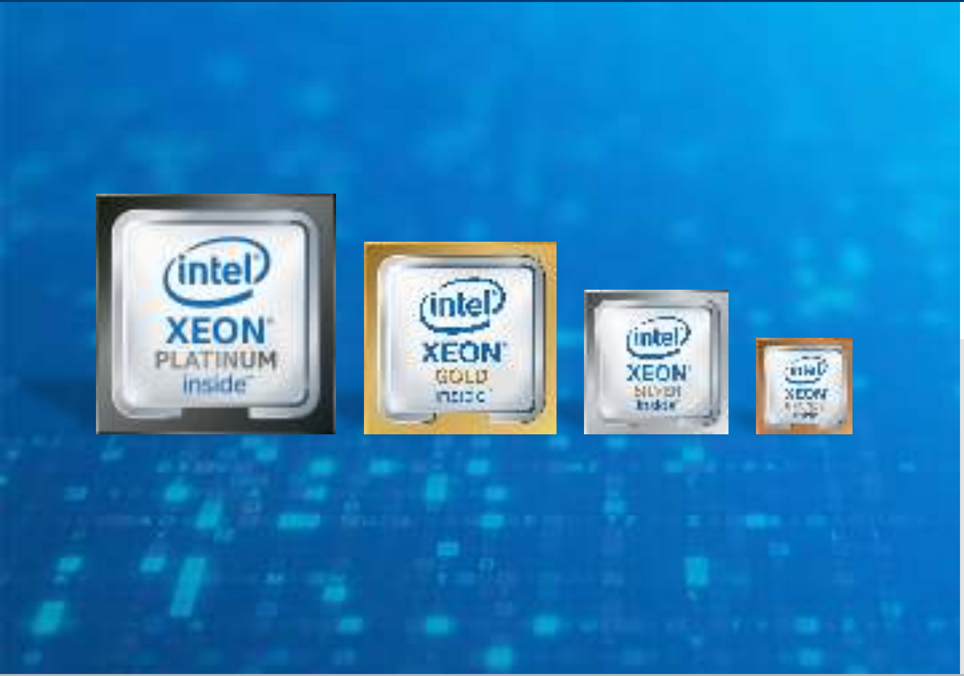
2x memory bandwidth[2]
(2nd Gen Intel® Xeon® Scalable Platinum processor)

Up to 4.4 GHz clock speed with Intel® Turbo Boost Technology 2.0
(2nd Gen Intel® Xeon® Scalable Platinum processor)

See Appendix I for footnotes 1 and 2.
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 www.intel.com/benchmarks. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

Hardware-enhanced security



Intel® Key Protection Technology (Intel® KPT) with Integrated Intel® QuickAssist Technology (Intel® QAT) and Intel® Platform Trust Technology (Intel® PTT):

Deliver hardware-enhanced data security# by providing efficient key and data protection at rest, in-use, and in-flight.

Intel® Trusted Execution Technology (Intel® TXT) with One-Touch Activation:

Enhanced platform security#, while providing simplified and scalable deployment for Intel® TXT[3].

See Appendix I for footnote 3.

#No product or component can be absolutely secure.

2ND GEN INTEL® XEON® SCALABLE PROCESSOR-BASED PLATFORMS

Performance by the numbers

Up to
3.5X performance improvement 5-year server refresh[4]

(VM density compared to
Intel® Xeon® E5-2600 v2 processor)

Up to
1.33X performance improvement[5]

(Compared to Intel® Xeon® Gold 5100 processor)

Up to
30X AI performance improvement[6]

(Intel® Xeon® Platinum 9200 processor vs.
Intel® Xeon® Platinum 8180 processor, July 2017)

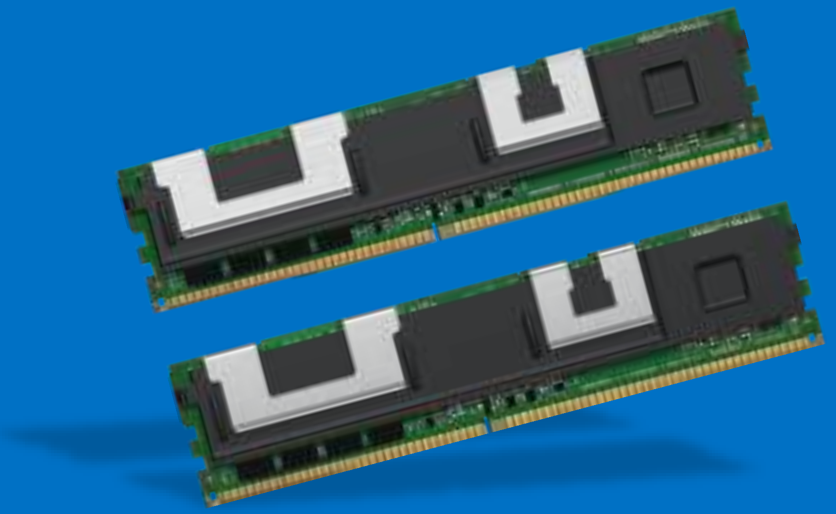
Up to
1.7X floating point performance per core[7]

(Compared to AMD* EPYC 7601)

See Appendix I for footnotes 4 and 5. See Appendix II for footnotes 6 and 7.

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 www.intel.com/benchmarks. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

INTEL® OPTANE™ DC PERSISTENT MEMORY



2X MEMORY CAPACITY[8]

(New 2nd Gen Intel® Xeon® Scalable processor for HPC vs. Intel® Xeon® Platinum 8180 processor)

Up to

36% MORE VMs PER PLATFORM[9]

(New 2nd Gen Intel® Xeon® Scalable processor with Intel® Optane™ DC persistent memory)

Up to

30% LOWER COST PER VM[10]

(New 2nd Gen Intel® Xeon® Scalable processor with Intel® Optane™ DC persistent memory)

See Appendix II for footnote 8. See Appendix III for footnote 9. See Appendix IV for footnote 10.

INTEL STORAGE INNOVATION

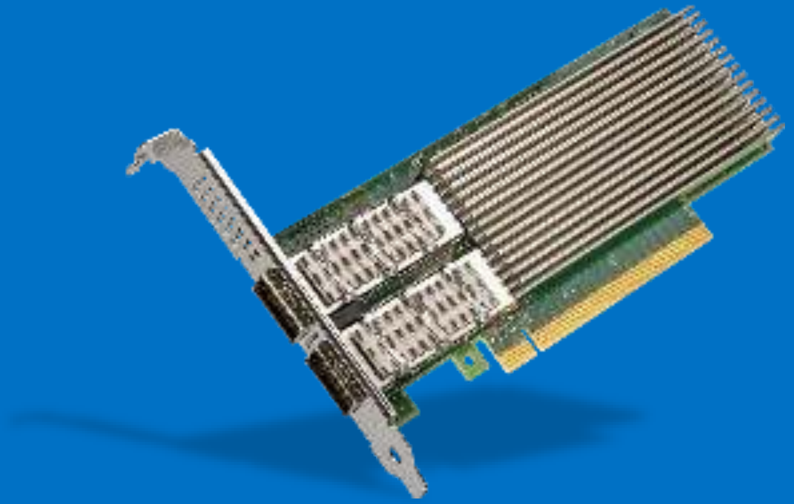
INTEL® OPTANE™ SSDs

Extraordinary storage performance
for hot data or fast cache

INTEL® QLC 3D NAND SSDs

Cost-optimized warm storage with
up to 1PB storage capacity in a 1u platform

INTEL NETWORK INNOVATION



INTEL® ETHERNET 800 SERIES

100 GB/S

> 45% LATENCY REDUCTION[11]

> 30% THROUGHPUT IMPROVEMENT[12]

See Appendix V for footnotes 11 and 12.
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 www.intel.com/benchmarks. Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

Legal Disclaimers

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 www.intel.com/benchmarks.

Performance results are based on testing as of dates shown in configuration and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No product can be absolutely secure.

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance.

Optimization Notice: Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice. Notice Revision #20110804

The benchmark results may need to be revised as additional testing is conducted. The results depend on the specific platform configurations and workloads utilized in the testing, and may not be applicable to any particular user's components, computer system or workloads. The results are not necessarily representative of other benchmarks and other benchmark results may show greater or lesser impact from mitigations.

Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced web site and confirm whether referenced data are accurate.

Performance results are based on testing/estimation/projection as of 6/2017 to 11/07/2018 and may not reflect all publicly available security updates. See configuration disclosure for details. No component or product can be absolutely secure.

Appendix I – Footnote and Configuration Details

1 2x Average Performance Improvement compared with Intel® Xeon® Platinum 8180 processor. Geomean of est SPECrate2017_int_base, est SPECrate2017_fp_base, Stream Triad, Intel® Distribution of Linpack, server side Java. Platinum 92xx vs Platinum 8180: 1-node, 2x Intel® Xeon® Platinum 9282 cpu on Walker Pass with 768 GB (24x 32GB 2933) total memory, ucode 0x400000A 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: est int throughput=635, est fp throughput=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 cpu on Wolf Pass with 384 GB (12 X 32GB 2666) total memory, ucode 0x200004D 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: est int throughput=307, est fp throughput=251, Stream Triad=204, Linpack=3238, server side java=165724, test by Intel on 1/29/2019.

2 Double the memory bandwidth with 12 memory channels per CPU and 24 memory channels per compute module, compared against Cascade Lake-SP product family with 6 memory channels per CPU.

3 No computer system can provide absolute security under all conditions. Intel® Trusted Execution Technology (Intel® TXT) requires a computer with Intel® Virtualization Technology, an Intel TXT-enabled processor, chipset, BIOS, Authenticated Code Modules and an Intel TXT-compatible measured launched environment (MLE). Intel TXT also requires the system to contain a TPM v1.s. For more information, visit www.intel.com/technology/security

4 Up to 3.50X 5-Year Refresh Performance Improvement VM density compared to Intel® Xeon® E5-2600 v6 processor: 1-node, 2x E5-2697 v2 on Canon Pass with 256 GB (16 slots / 16GB / 1600) total memory, ucode 0x42c on RHEL7.6, 3.10.0-957.el7.x86_65, 1x Intel 400GB SSD OS Drive, 2x P4500 4TB PCIe*, 2*82599 dual port Ethernet, Virtualization Benchmark, VM kernel 4.19, HT on, Turbo on, score: VM density=74, test by Intel on 1/15/2019. vs. 1-node, 2x 8280 on Wolf Pass with 768 GB (24 slots / 32GB / 2666) total memory, ucode 0x2000056 on RHEL7.6, 3.10.0-957. el7.x86_65, 1x Intel 400GB SSD OS Drive, 2x P4500 4TB PCIe*, 2*82599 dual port Ethernet, Virtualization Benchmark, VM kernel 4.19, HT on, Turbo on, score: VM density=21, test by Intel on 1/15/2019.

5 1.33X Average Performance Improvement compared to Intel® Xeon® Gold 5100 processor: Geomean of est SPECrate2017_int_base, est SPECrate2017_fp_base, Stream Triad, Intel® Distribution for LINPACK* Benchmark, server side Java. Gold 5218 vs Gold 5118: 1-node, 2x Intel® Xeon® Gold 5218 cpu on Wolf Pass with 384 GB (12 X 32GB 2933 (2666)) total memory, ucode 0x4000013 on RHEL7.6, 3.10.0-957.el7.x86_65, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: est int throughput=162, est fp throughput=172, Stream Triad=185, Linpack=1088, server side java=98333, test by Intel on 12/7/2018. 1-node, 2x Intel® Xeon® Gold 5118 cpu on Wolf Pass with 384 GB (12 X 32GB 2666 (2400)) total memory, ucode 0x200004D on RHEL7.6, 3.10.0-957.el7.x86_65, IC18u2, AVX2, HT on all (off Stream, Linpack), Turbo on, result: est int throughput=119, est fp throughput=134, Stream Triad=148.6, Linpack=822, server side java=67434, test by Intel on 11/12/2018.

Appendix II – Footnote and Configuration Details

6 Up to 30X AI performance with Intel® Deep Learning Boost (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 Caffe* version: https://github.com/intel/caffe d554cbf1, ICC 2019.2.187, MKL DNN version: v0.17 (commit hash: 830a10059a018cd-2634d94195140cf2d8790a75a), model:https://github.com/intel/caffe/blob/master/models/intel_optimized_models/int8/resnet50_int8_full_conv.prototxt, BS=64, No datalayer DummyData: 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_pstate driver, 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 Freq set with cpupower frequency-set -d 2.5G -u 3.8G -g performance. Caffe: (https://github.com/intel/caffe/), revision f96b759f71b2281835f690af267158b82b150b5c. Inference measured with "caffe time --forward_only" command, training measured with "caffe time" 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 fromhttps://github.com/intel/caffe/tree/master/models/intel_optimized_models (ResNet-50),. Intel C++ compiler ver. 17.0.2 20170213, Intel® Math Kernel Library (Intel® MKL) small libraries version 2018.0.20170425. Caffe run with "numactl -l".

7 Up to 1.7x better floating point perf/core using one copy SPECrate2017_fp_base* 2 socket Intel 8280 vs 2 socket AMD EPYC 7601. Xeon-SP 8280, Intel Xeon-based Reference Platform with 2 Intel® Xeon® 8280 processors (2.7GHz, 28 core), BIOS ver SE5C620.86B.0D.01.0348.011820191451, 01/18/2019, microcode: 0x5000017, HT OFF, Turbo ON, 12x32GB DDR4-2933, 1 SSD, Red Hat EL 7.6 (3.10.0-957.1.3.el7.x86_64), 1-copy SPECrate2017_fp_rate base benchmark compiled with Intel Compiler 19.0.1.144, -xCORE-AVX512 -ipo -O, executed on 1 core using taskset and numactl on core 0. Estimated score = 9.6, as of 2/6/2019 tested by Intel with security mitigations for variants 1,2,3,3a, and L1TF. AMD EPYC 7601, Supermicro AS-2023US-TR4 with 2S AMD EPYC 7601 with 2 AMD EPYC 7601 (2.2GHz, 32 core) processors, BIOS ver 1.1c, 10/4/2018, SMT OFF, Turbo ON, 16x32GB DDR4-2666, 1 SSD, Red Hat EL 7.6 (3.10.0-957.5.1.el7.x86_64), 1-copy SPECrate2017_fp_rate base benchmark compiled with AOCC ver 1.0 -Ofast, -march=znver1, executed on 1 core using taskset and numactl on core 0. Estimated score = 5.56, as of 2/8/2019 tested by Intel. Platinum 8280 vs Platinum 8180: 1-node, 2x Intel® Xeon® Platinum 8280M cpu on Wolf Pass with 384 GB (12 X 32GB 2933) total memory, ucode 0x400000A 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: est int throughput=317, est fp throughput=264, Stream Triad=217, Linpack=3462, server side java=177561, AIXPRT OpenVino/RN50=2324, test by Intel on 1/30/2019. vs. 1-node, 2x Intel® Xeon® Platinum 8180 cpu on Wolf Pass with 384 GB (12 X 32GB 2666) total memory, ucode 0x200004D 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: est int throughput=307, est fp throughput=251, Stream Triad=204, Linpack=3238, server side java=165724, AIXPRT OpenVino/RN50=1170, test by Intel on 1/29/2019.

8 2x system memory capacity determined by 50% of the memory channels populated with Intel® Optane™ DC persistent memory using products that are add up to twice the max capacity of all of the DRAM capacity. Example for 8S system that provides 96 memory slots: 36TB capacity = 48 slots populated with 512GB modules of Intel® Optane™ DC persistent memory, and 48 slots populated with 256GB DRAM DIMMs.

Appendix III – Footnote and Configuration Details

9 36% more VMs per node configurations:

	Config1-DDR4 (Similar Cost)	Config2-Intel® Optane™ DC Persistent Memory (Similar Cost)
Test By	Intel	Intel
Test Date	01/31/2019	01/31/2019
Platform	Confidential – Refer to M. Strassmaier if a need to know exists	Confidential – Refer to M. Strassmaier if a need to know exists
# Nodes	1	1
# Sockets	2	2
CPU	Cascade Lake B0 8272L	Cascade Lake B0 8272L
Cores/Socket, Threads/Socket	26/52	26/52
HT	ON	ON
Turbo	ON	ON
BKC Version – E.g. ww47	WW42	WW42
Intel® Optane™ DC Persistent Memory FW Version	5253	5253
System DDR Mem Config: Slots/Cap/Run-speed	24 slots/32 GB/2666	12 slots/16 GB /2666
System DCPMM Config: Slots/Cap/Run-speed		8 slots/128 GB/ 2666
Total Memory/Node (DDR, DCPMM)	768 GB, 0	192 GB, 1 TB
Storage – Boot	1x Samsung PM963 M.2 960 GB	1x Samsung PM963 M.2 960 GB
Storage – Application Drives	7 x Samsung PM963 M.2 960 GB, 4x Intel® SSDs S4600 (1.92 TB)	7x Samsung PM963 M.2 960 GB, 4x Intel® SSDs S4600 (1.92 TB)
NIC	1x Intel X520 SR2 (10Gb)	1x Intel X520 SR2 (10 Gb)
PCH	LBG QS/PRQ – T – B2	LBG QS/PRQ – T – B2
Other HW (Accelerator)		
OS	Windows Server 2019 RS5-17763	Windows Server 2019 RS5-17763
Kernel		
Workload & Version	OLTP Cloud Benchmark	OLTP Cloud Benchmark
Compiler		
Libraries		
Other SW (Frameworks, Topologies…)		

Appendix IV – Footnote and Configuration Details

10 30% lower estimated cost per VM configuration and costs:

	1- Baseline	2- Config Description
# of Systems	1	1
Memory Sub System Per Socket	DRAM- 384GB (12x32GB)	2GB (4X128GB AEP+6x16GB DRAM, 2-2-1, Memory Mode
CPU SKU|# Per System	8276 (CLX, Plat, 28 core) 2	8276 (CLX, Plat, 28 core) 2
Storage Description|Total Storage Cost	# of HDD/SDDs $7200	# of HDD/SDDs $7200
SW License Description| Cost Per System	SW Cost (per/core or per system) $0	SW Cost (per/core or per system) $1
Relevant Value Metric	22.00	30.00
Type of System	DRAM- Purley	AEP- Memory Mode
CPU & Platform Match	TRUE	TRUE
CPU Cost	2x 8276 (CLX, Plat, 28 core) $17,438	2x 8276 (CLX, Plat, 28 core) $17,439
Memory Sub System	Total Cap: 768GB (384 GB/socket) $8,993	Total Cap: 1024GB (512GB/socket) $7,306
DRAM	24x32GB $8,993	12x16GB $2,690
AEP	N/A $0	8x128GB $4,616
Storage	# of HDD/SDDs $7200	# of HDD/SDDs $7200
RBOM	Chassis; PSUs; Bootdrive etc. $1300	Chassis; PSUs; Bootdrive etc. $1300
SW Costs	SW Cost (per/core or per system) $0	SW Cost (per/core or per system) $0
Total System Cost	$34,931	$33,244
System Cost	1	0.951689
Indexed Value Metrics	1	1.36
Indexed Value/$	1	1.43

Appendix V – Footnote and Configuration Details

11 >45% latency reduction with open source Redis using 2nd Gen Intel® Xeon® Scalable processors and Intel® Ethernet 800 Series with ADQ vs. without ADQ. Performance results are based on Intel internal testing as of February 2019, and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. Tests performed using Redis Open Source on 2nd Generation Intel® Xeon® Scalable processors and Intel® Ethernet 800 series 100GbE on Linux 4.19.18 kernel. For complete configuration information see the Performance Testing Application Device Queues (ADQ) with Redis Solution Brief(http://www.intel.com/content/www/us/en/architecture-and-technology/ethernet/application-device-queues-with-redis-brief.html).

12 >30% throughput improvement with open source Redis using 2nd Gen Intel® Xeon® Scalable processors and Intel® Ethernet 800 Series with ADQ vs. without ADQ. Performance results are based on Intel internal testing as of February 2019, and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. Tests performed using Redis Open Source on 2nd Generation Intel® Xeon® Scalable processors and Intel® Ethernet 800 series 100GbE on Linux 4.19.18 kernel. For complete configuration information see the Performance Testing Application Device Queues (ADQ) with Redis Solution Brief(http://www.intel.com/content/www/us/en/architecture-and-technology/ethernet/application-device-queues-with-redis-brief.html).

CONTACT US

We can help you determine which 2nd Gen Intel® Xeon® Scalable processor-based solution is right for you.

INTEL® NUC 8 ENTHUSIAST / BUSINESS

BETTER, FASTER, STRONGER, SMALLER.

intel CORE i7 8th Gen

RADEON™ RX VEGA M

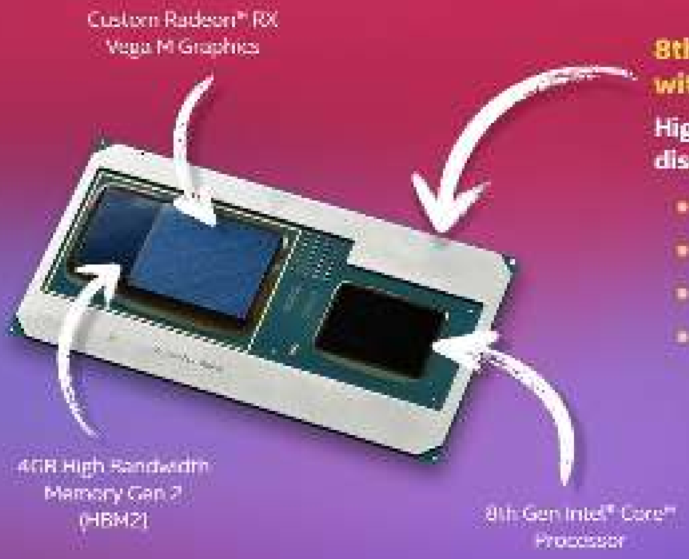
Windows 10

At the Heart of the Most Powerful Intel® NUC Ever...

Featuring the first-of-its kind

8th Generation Intel® Core™ processor
with Radeon™ RX Vega M Graphics

At the Heart of the Most Powerful Intel® NUC Ever...



8th Generation Intel® Core™ processor with Radeon™ RX Vega M Graphics

High-performance mobile processor and discrete graphics in one small package

- Reduced silicon footprint by over 50%[1]
- CPU and GPU z-height that is only 1.7mm slim
- Efficient power sharing across CPU & GPU
- Eight lanes of PCIe* Gen3 connecting CPU & GPU, providing necessary throughput to feed intense Gfx workloads

Meet the Most Powerful Intel® NUC Ever

NUC8i7HVK
Unlocked & VR Capable

NUC8i7HNK
Serious Performance

8th Generation Intel® Core™ i7-8809G
3.1 GHz - 4.2 GHz Turbo, Quad Core,
8MB Cache, **100W**

Radeon™ **RX Vega M GH** graphics,
1063 MHz – 1190 MHz

8th Generation Intel® Core™ i7-8705G
3.1 GHz - 4.1 GHz Turbo, Quad Core,
8MB Cache, **65W**

Radeon™ **RX Vega M GL** graphics,
931 MHz – 1011 MHz

What Can Enthusiasts Expect from These Powerful Intel® NUC Kits?

High-Performance Radeon™ RX Vega M Graphics

Space Saving and Portability

Built for VR

Extreme Connectivity

Support for Six Independent 4K Displays

Surprisingly Peaceful


INTRODUCING
THE ALL NEW
HADES CANYON
intel


Built for VR—Premium VR in Your Living Room
Travel to faraway destinations, brave zombie hordes, or soak up the excitement and energy of sporting events.
David
Enjoy premium VR in your living room with Intel's smallest VR-capable NUC mini PC.

Space Saving and Portability

At just 1.2 liters, the system packs all the performance of a desktop tower in a device that can sit in the palm of your hand.

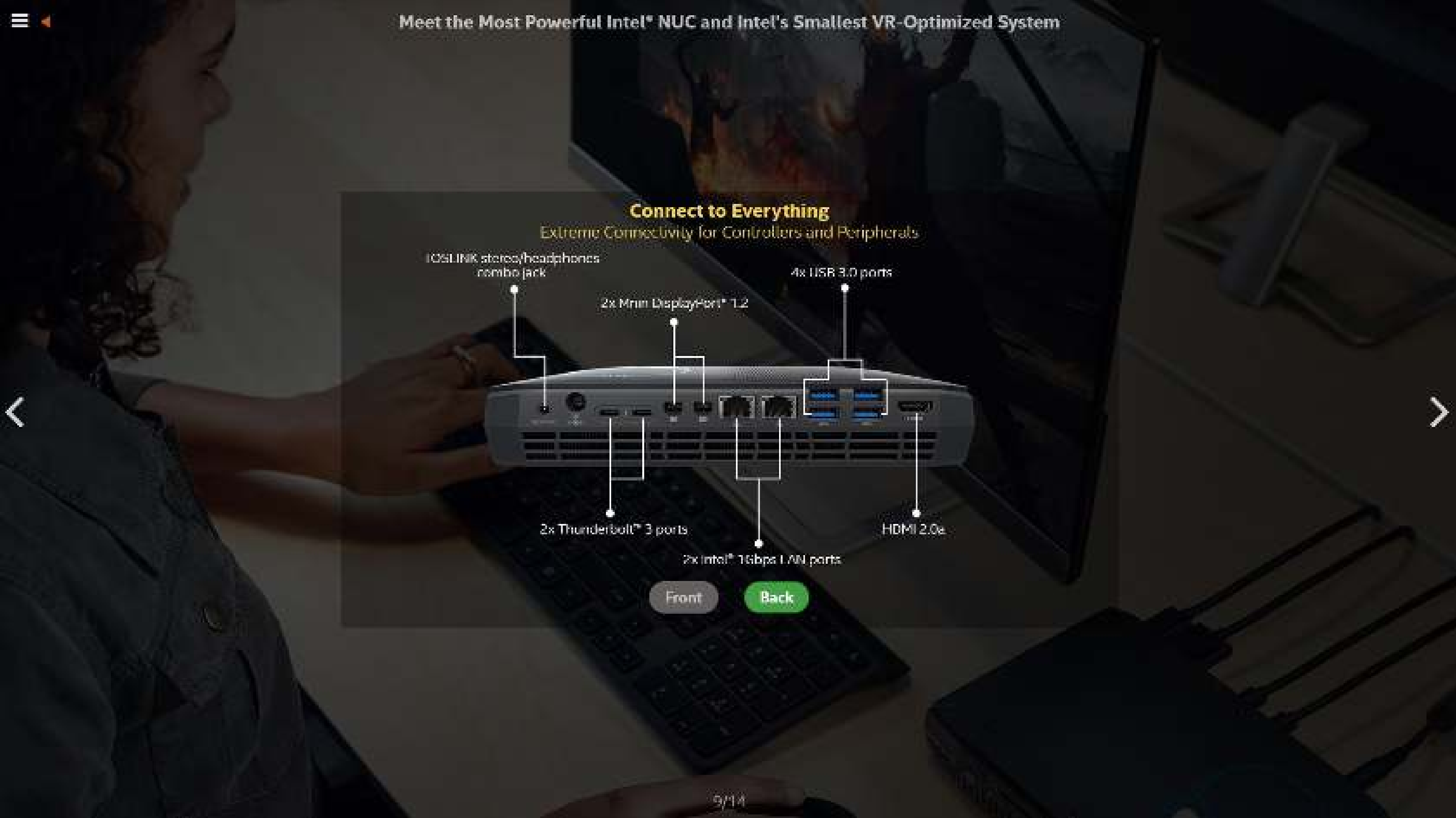
Quiet, low-key, and unobtrusive—the new Intel® NUC 8 Enthusiast is small enough to be placed anywhere or taken anywhere.

Connect to Everything

Extreme Connectivity for Controllers and Peripherals

Front

Back


Meet the Most Powerful Intel® NUC and Intel's Smallest VR-Optimized System
Connect to Everything
Extreme Connectivity for Controllers and Peripherals
TOSLINK stereo/headphones combo jack
2x Mini DisplayPort* 1.2
4x USB 3.0 ports
2x Thunderbolt™ 3 ports
2x Intel® 1Gbps LAN ports
HDMI 2.0a
Front
Back
9/14

Support for Six Independent 4K Displays

4K 4K 4K 4K 4K 4K

- 2x Mini Display Port™
- 2x HDMI
- 2x Type C Thunderbolt 3™

	NUC8i7HVK (100W)	NUC8i7HNK (65W)
1080 / HD support @ 60Hz	6 displays with any configuration of ports	
4K Support	Five 4K displays @ 60Hz + one 4K display @ 30Hz	Four 4K displays @ 60Hz + one 4K display @ 30Hz
5K Support ‡	Two 5K displays @ 60Hz †	One 5K display @ 60Hz †

‡ 5K not supported over single cable

Surprisingly Peaceful

Innovative Cooling Solution: Traditional cooling is not suitable for the Intel® NUC 8 Enthusiast, so we designed a new & innovative T-shaped vapor chamber.

Dual large-diameter fans
Larger fans mean more cooling at lower noise levels, oriented to maximize air movement around the CPU for the most efficient cooling.

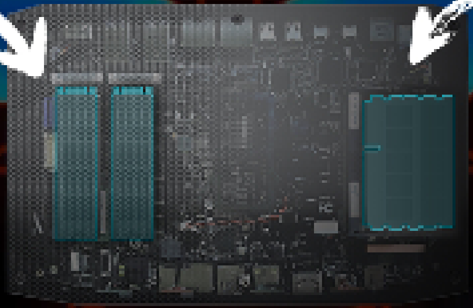
Selling the Intel® NUC 8 Enthusiast Kits

NUC8i7HVK and NUC8i7HNK are available as kits;
i.e., memory, storage, and operating system are required for full system.

Windows* 10 and Linux* support

Storage:

- Dual M.2 SSDs
- NVMe or SATA 3
- M.2 2242 and 2280



Memory:

- 2x SO-DIMM
- 1.2V or 1.3V DDR4
- 32GB Max total system memory
- Validated for 2400MHz

Great for: DIY enthusiasts who want to customize their ideal system.
System integrators who want to provide a range of customized solutions.

Closing Thoughts

Intel® NUC kit NUC8i7HVK and NUC8i7HNK are the most powerful NUC mini PCs ever. They are also Intel's smallest VR optimized systems that your enthusiast customers can buy today.

Smooth Enthusiast Gaming

Immersive Premium VR

Advanced Content Creation

Call your Intel® representative or local distributor today to learn more.

Drive sales with marketing support at http://intel.com/nucassets.