Intel® Core™ i9-9940X X-series Processor

19.25M Cache, up to 4.50 GHz

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Essentials

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Product Collection	Intel® Core™ X-series Processors
Code Name	Products formerly Skylake
Vertical Segment	Desktop
Processor Number	i9-9940X
Status	Launched
Launch Date	Q4'18
Lithography	14 nm
Included Items	Please note: The boxed product does not include a fan or heat sink

Performance

# of Cores	14
# of Threads	28
Processor Base Frequency	3.30 GHz
Max Turbo Frequency	4.40 GHz
Cache	19.25 MB SmartCache
Bus Speed	8 GT/s DMI3
# of QPI Links	0
Intel® Turbo Boost Max Technology 3.0 Frequency ‡	4.50 GHz
TDP	165 W

Supplemental Information

Embedded Options Available	No
Datasheet	View now

Memory Specifications

Max Memory Size (dependent on memory type)	128 GB
Memory Types	DDR4-2666
Max # of Memory Channels	4
ECC Memory Supported ‡	No

Expansion Options

Scalability	1S Only
PCI Express Revision	3.0
Max # of PCI Express Lanes	44

Package Specifications

Sockets Supported	FCLGA2066
Max CPU Configuration	1
Thermal Solution Specification	PCG 2017X
$T_{JUNCTION}$	88°C

Advanced Technologies

Intel® Optane™ Memory Supported ‡	Yes
Intel® Turbo Boost Max Technology 3.0 ‡	Yes
Intel® Turbo Boost Technology ‡	2.0
Intel® Hyper-Threading Technology ‡	Yes
Intel® Virtualization Technology (VT-x) ‡	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡	Yes
Intel® 64 ‡	Yes
Instruction Set Extensions	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2, Intel® AVX-512
# of AVX-512 FMA Units	2
Enhanced Intel SpeedStep® Technology	Yes

Security & Reliability

Intel® AES New Instructions	Yes
Execute Disable Bit ‡	Yes

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Refer to Datasheet for formal definitions of product properties and features.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

“Announced” SKUs are not yet available. Please refer to the Launch Date for market availability.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

See http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading for more information including details on which processors support Intel® HT Technology.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/content/www/us/en/processors/processor-numbers.html for details.