

INTRODUCING THE NEW INTEL® CORE™ X-SERIES PROCESSOR FAMILY

THE ULTIMATE PLATFORM WITH UNPRECEDENTED SCALABILITY



THE INTEL® CORE™ I9 EXTREME EDITION PROCESSOR

The dawn of a new breed of extreme desktop processors is here, elevating everything you do to new heights. Powered by a massive 18 cores and 36 threads, this processor enables extreme single-threaded performance with the updated Intel® Turbo Boost Max Technology 3.0. This technology now identifies the two best performing cores to provide increased single and dual-core performance. The new Extreme Edition boasts 44 PCIe lanes and support for multiple discrete graphics cards, Thunderbolt™ technology, and high-speed storage like Intel® Optane Technology. And of course, it is fully unlocked² for extreme performance.



**SCALE
TO YOUR
PERFORMANCE
NEEDS**

INTEL® CORE™ X-SERIES PROCESSOR FAMILY

Something for every Enthusiast! The new X-series processor family is designed to scale to your performance needs by delivering options between 4 to 18 cores for extreme performance, the latest technological advancements and headroom for the future. This platform comes ready to install Intel® Optane™ memory and Intel® Optane™ SSDs for amazing system responsiveness. Support for immersive 4K visuals, four channel DDR4 2666 memory, Thunderbolt* 3 delivering a 40Gb/s bi-directional port for almost any peripheral you want to connect and up to 8 SATA ports for a RAID storage array makes this the ultimate desktop platform.

GAME, RECORD, STREAM.

Enter the realm of extreme performance where game play is so life-like it is difficult to tell where reality ends and the game begins. Surrounded by multiple high-res displays and premium audio sound, you are totally immersed in the action of your AAA game title or the latest virtual reality thriller. Play extreme, live extreme, game extreme on a computer with an unlocked² Intel® Core™ X-series processor. And because modern gaming extends beyond just gameplay, you want to simultaneously share your gameplay with the community and the world. Record all the action capturing that once in a life-time maneuver that brought you to victory, and convert your game play into a sharable format to immediately post on your social media page. That is extreme mega tasking and the power of the Intel® Core™ X-series processor.

**YOU ARE
TOTALLY
IMMERSED IN
THE ACTION**



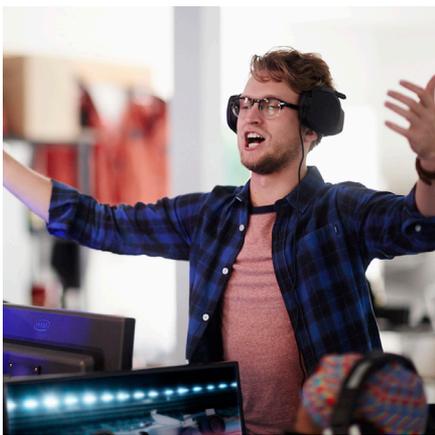
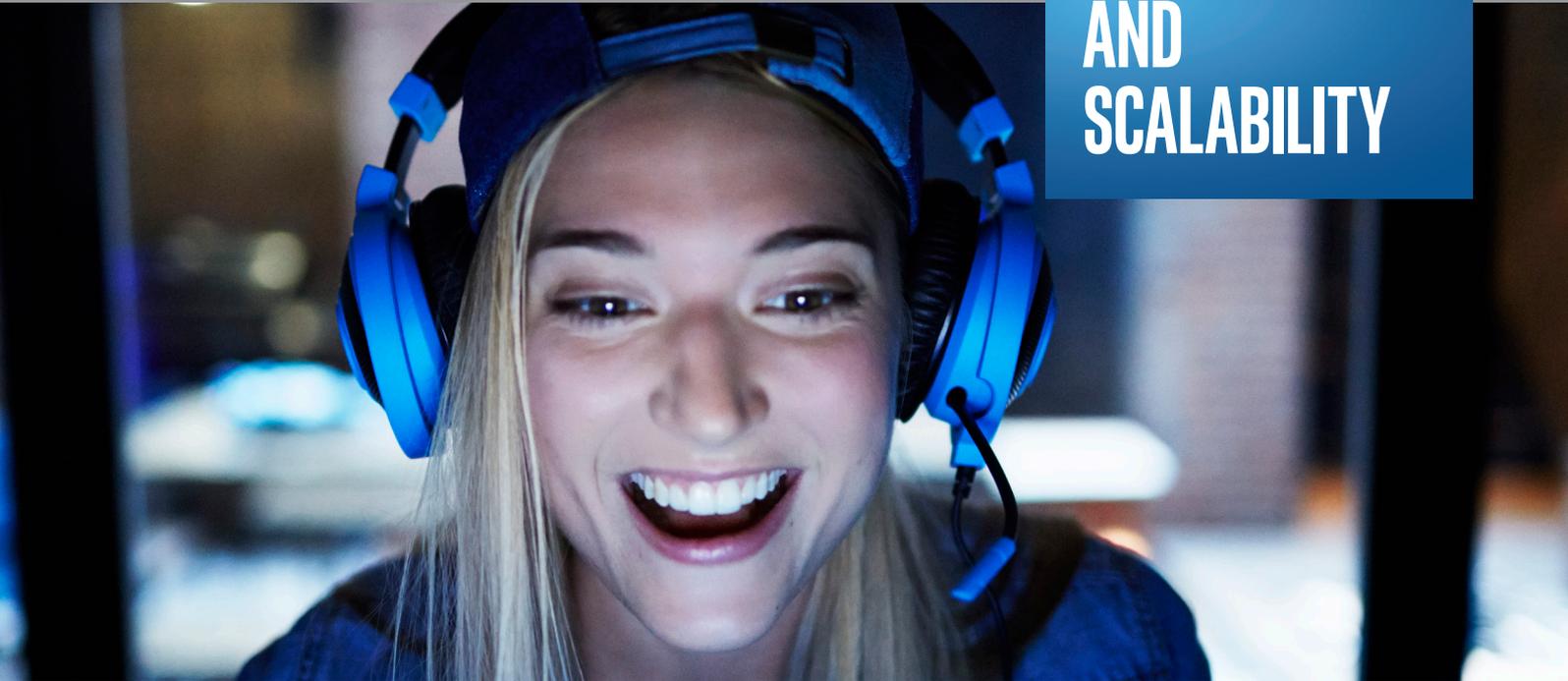
**UNLEASH YOUR ULTIMATE CREATIVE GENIUS NOW
WITH AN INTEL® CORE™ X-SERIES PROCESSOR**

Your creativity is limitless and once you are in the flow of ideas, you need a system that will keep up. You need the uncompromising performance in a PC powered by the Intel® Core™ X-series processor. The Intel® Core™ X-series processor family with 8, 12 or even 18 cores delivers amazing performance when multiple real-time workloads are stacked. Spend more time creating while your Intel Core X-series processor powered system simultaneously handles uploading massive 4K files, rendering effects and other compute intensive workloads in the background. And with the updated Intel® Turbo Boost Max Technology 3.0, you have the control to give priority to the apps that need the power of the two best performing cores. Quad channel memory also delivers improved responsiveness and decreases start up time when you are working with large files and content creation applications. With an Intel® Core™ X-series processor you can focus on creating with the confidence that your results will be as remarkable as you imagined.

QUAD CORE NEWCOMERS TO THE FAMILY

The new family of Intel Core X-series processors introduces two quad core processors for broader expandability of the platform. The Intel® Core™ i5-7640X and Intel® Core™ i7-7740X enable customers to invest in a more powerful enthusiast platform that provides more headroom and scalability up the X-Series stack when they are ready. These two processors will start with a slightly higher base frequency and provide all of the ingredients, like higher memory speed and larger socket, for better overclocking performance compared to their mainstream counterparts.

**MORE
HEADROOM
AND
SCALABILITY**



INTEL® X299 CHIPSET AND INTEL CORE™ X-SERIES PROCESSORS FOR THE ULTIMATE PLATFORM

The Intel® X299 chipset paired with the Intel® Core™ X-series processors provide a world class platform for gaming, content creation and overclocking. Whether it is responsiveness, expandability or performance you crave, this platform has you covered. Integrated USB 3.0 makes moving files to your tablet and smartphone blazing fast. The platform also provides RAID support on PCI Express* and Serial ATA storage devices, fast data transfers with support for PCIe 3.0 storage devices and finally, Intel® Optane™ Memory support. Want to push the envelope with overclocking? The Intel® X299 chipset and Intel® Core™ X-series processor family bring new unlocked base clock capabilities². Unlock your individual cores and memory frequencies to amazing levels while having the flexibility to keep other areas within specification. With support for Intel® Extreme Memory Profiles (XMP), Intel® Extreme Tuning Utility (XTU), and the Intel® Performance Tuning Protection Package Plan the capabilities of the Intel X299 chipset and new Intel Core X-series processors are a threat to every overclocking world record.

INTEL® CORE™ X-SERIES PROCESSOR FAMILY PRODUCT FEATURES

i9	INTEL® CORE™ i9-7980XE PROCESSOR EXTREME EDITION	INTEL® CORE™ i9-7960X PROCESSOR	INTEL® CORE™ i9-7940X PROCESSOR	INTEL® CORE™ i9-7920X PROCESSOR	INTEL® CORE™ i9-7900X PROCESSOR
Base Clock Speed (GHz)	2.6	2.8	3.1	2.9	3.3
Number of Processor Cores / Threads	18 / 36	16 / 32	14 / 28	12 / 24	10 / 20
Intel® Turbo Boost Max Technology 3.0	Yes	Yes	Yes	Yes	Yes
Intel® Turbo Boost Technology 2.0	Yes	Yes	Yes	Yes	Yes
Intel® Turbo Boost Frequency ² (GHz)	4.2	4.2	4.3	4.3	4.3
Memory Support	4 channels DDR4-2666	4 channels DDR4-2666	4 channels DDR4-2666	4 channels DDR4-2666	4 channels DDR4-2666
PCI Express Lanes	44	44	44	44	44
PCI Express 3.0	Yes	Yes	Yes	Yes	Yes
Unlocked Core Multiplier	Yes	Yes	Yes	Yes	Yes
Intel® Hyper-Threading Technology	Yes	Yes	Yes	Yes	Yes
Intel® Smart Cache	24.75 MB L3 shared	22 MB L3 shared	19.25 MB L3 shared	16.5 MB L3 shared	13.75 MB L3 shared
AES New Instructions (AES-NI)	Yes	Yes	Yes	Yes	Yes
Overclocking Enabled	Yes	Yes	Yes	Yes	Yes
Intel® Virtualization Technology	Yes	Yes	Yes	Yes	Yes
Recommended Intel® Chipset	X299	X299	X299	X299	X299
TDP	165W	165W	165W	140W	140W
Socket (LGA)	2066	2066	2066	2066	2066

1. NOTE: Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

2. Refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology 2.0



INTEL® CORE™ X-SERIES PROCESSOR FAMILY PRODUCT FEATURES

	i7	i5	INTEL® CORE™ i7-7820X PROCESSOR	INTEL® CORE™ i7-7800X PROCESSOR	INTEL® CORE™ i7-7740X PROCESSOR	INTEL® CORE™ i5-7640X PROCESSOR
Base Clock Speed (GHz)			3.6	3.5	4.3	4.0
Number of Processor Cores / Threads			8 / 16	6 / 12	4 / 8	4 / 4
Intel® Turbo Boost Max Technology 3.0			Yes	No	No	No
Intel® Turbo Boost Technology 2.0			Yes	Yes	Yes	Yes
Intel® Turbo Boost Frequency ² (GHz)			4.3	4.0	4.5	4.2
Memory Support			4 channels DDR4-2666	4 channels DDR4-2400	2 channels DDR4-2666	2 channels DDR4-2666
PCI Express Lanes			28	28	16	16
PCI Express 3.0			Yes	Yes	Yes	Yes
Unlocked Core Multiplier			Yes	Yes	Yes	Yes
Intel® Hyper-Threading Technology			Yes	Yes	Yes	No
Intel® Smart Cache			11MB L3 shared	8.25MB L3 shared	8MB L3 shared	6MB L3 shared
AES New Instructions (AES-NI)			Yes	Yes	Yes	Yes
Overclocking Enabled			Yes	Yes	Yes	Yes
Intel® Virtualization Technology			Yes	Yes	Yes	Yes
Recommended Intel® Chipset			X299	X299	X299	X299
TDP			140W	140W	112W	112W
Socket (LGA)			2066	2066	2066	2066

1. NOTE: Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

2. Refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology 2.0



INTEL® CORE™ X-SERIES PROCESSOR FAMILY FEATURES AT A GLANCE

FEATURES ¹	BENEFITS
Intel® Turbo Boost Max Technology 3.0	Identifies the two fastest cores on the processor die to provide improved single threaded performance on X-series processors. The driver provided along with the feature allows end users to direct workloads to the fastest core by setting priority to preferred applications ¹ .
Intel® Turbo Boost Technology 2.0 ¹	Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits.
Intel® Hyper-Threading Technology ¹	Delivers two processing threads per physical core. Highly threaded applications can get more work done in parallel, completing tasks sooner
Integrated Memory Controller	Supports up to 4 channels of DDR4-2666 memory with 1 DIMM per channel. Support for the Intel® Extreme Memory Profile (Intel® XMP) specification, revision 2.0 for DDR4.
Intel Optane™ Memory	Provides performance improvements as well as fast app response times for system acceleration and responsiveness.
Intel® Smart Cache	Up to 24.75MB of shared cache allows faster access to your data by enabling dynamic and efficient allocation of the cache to match the needs of each core significantly reducing latency to frequently used data and improving performance.
Overclocking Enabled ^{2,3}	Fully unlocked core multipliers, power, base clock and DDR4 memory ratios for amazing flexibility with overclocking
Chipset/Motherboard Compatibility	Supported by the Intel® X299 Chipset
Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) ¹	A fast, secure AES engine for a variety of encryption apps, including whole disk encryption, file storage encryption, conditional access of HD content, internet security, and VOIP. Consumers benefit from protected internet and email content, plus fast, responsive disk encryption.
Intel® Virtualization Technology ¹	Allows one hardware platform to function as multiple "virtual" platforms. Offers improved manageability by limiting downtime and maintaining productivity by isolating computing activities into separate partitions.
PCI Express* 3.0 Interface ⁴	Offers up to 8GT/S for fast access to peripheral devices and networking up to 40 lanes.
Green Technology	Manufactured with lead-free and halogen-free ⁶ component packages



**AMAZING
FLEXIBILITY
FOR
OVERCLOCKING**

For more information, visit www.intel.com/content

- 1 Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer or learn more at www.intel.com.
- 2 Altering clock frequency or voltage may damage or reduce the useful life of the processor and other system components, and may reduce system stability and performance. Product warranties may not apply if the processor is operated beyond its specifications. Check with the manufacturers of system and components for additional details.
- 3 Intel® Core™ i7 processors designated by "K" and "X" in the processor number are unlocked for performance tuning.
- 4 Actual number of ports available may vary by processor number and system configuration. Please refer to the specifications corresponding to the processor number of interest or consult your system vendor for more information.
- 5 Intel® Turbo Boost Technology: Requires a system with Intel® Turbo Boost Technology. Intel Turbo Boost Technology and Intel Turbo Boost Technology 2.0 are only available on select Intel® processors. Consult your PC manufacturer. Performance varies depending on hardware, software, and system configuration. For more information, visit <http://www.intel.com/go/turbo>

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