



ACCELERATE PERFORMANCE

WITH 7TH GEN INTEL® CORE™ PROCESSOR FAMILY

All-new performance.
All-new experiences.
An all-new computer.

Are you amazed by the things you can do with your computer? If you bought your computer more than a handful of years ago, you're missing more than you know – uncompromised gaming, while you stream, chat and share with your community – stunning visuals of Ultra HD 4K HDR premium content – transport into a great VR experience. With premium performance and new & enhanced features, a desktop computer based on a 7th Gen Intel® Core™ processor is always ready for real-life productivity, creativity and entertainment. With a range of smart, stylish designs and sizes, there is a 7th Gen Intel Core processor-powered desktop computer to fit a wide range of budgets and needs.



PERFORMANCE ACROSS THE PORTFOLIO OF PROCESSORS

PERFORMANCE TO EXCITE

Leading the pack is the Intel® Core™ i7-7700K processor. Architected for performance, this processor packs 4 high-performing cores with core base frequency of 4.2GHz and 8MB of cache memory. Kick up the performance even higher with Intel® Turbo Boost Technology 2.0 to bump the max turbo frequency to an amazing 4.5GHz. Add Intel® Hyper-Threading Technology for 8-way multitasking to deliver the performance knockout punch. Not enough? For the enthusiast, this processor is unlocked, you can tweak the performance to its fullest potential.

The new 7th Gen Intel Core desktop processors deliver:

- An impressive portfolio of standard and unlocked processors, from Intel® Core™ i7 to Core™ i3, offering levels of performance for a broad range of usages.
- Intel® Optane™ memory with intelligent software provides performance improvements as well as fast app response times for system acceleration and responsiveness.¹
- Intel® Turbo Boost Technology 2.0 on Intel Core i7 and i5 processors to give that extra burst of performance when you need it.¹
- Intel® Hyper-Threading Technology¹ allows each processor core to work on two tasks at the same time, improving multitasking, speeding up the workflow, and accomplishing more in less time.
- Extends DDR4 RAM memory technology in the mainstream, allowing systems to have up to 64GB of memory and high transfer speeds at low power compared to DDR3 (DDR4-2400 MT/s @ 1.2V vs DDR3-1600 MT/s @ 1.5V).
- Enhanced full range base-clock settings¹ that provide more control, more granularity for overclocking⁴ your platform - when paired with the Intel® Z270 chipset, that also allows you to tune key aspects of your system including cores, power and memory.

EXPERIENCE TO AMAZE

7th Gen Intel Core processor-based desktop PCs are packed with new and enhanced features to deliver amazing experiences that a 5-year old PC can't handle.

Great VR experiences involve the entire platform – not just any one component. Processor, graphics, I/O connectivity, display, audio, are all involved. A high-performance processor is key to achieving a balanced platform to make a VR experience great. Attach your premium HMD to an Intel Core i7 or Core i5-based computer and prepare to be amazed.

Gaming experience today extends beyond smooth gameplay. Gaming today is about you and your community. Share your experience by live-streaming or recording, editing and posting your epic highlights. To be at your best, you need the best performance PC, powered by the Intel Core i7 processor that lets you live the ultimate gaming experience.

To play premium movie streams in stunning Ultra HD 4K, you'll need a computer that supports the latest media technologies. Desktop computers based on the 7th Gen Intel Core processor can support the latest media technologies required to enjoy premium high-quality content:

- HEVC 10-bit encode/decode, VP9 10-bit decode for:
 - Smooth streaming of premium 4K entertainment
 - Full-size screen, immersive viewing experiences with 4K video and 360° viewing
 - Incredible 4K video creation to share with ease
- Support for Rec.2020, delivering wide color gamut (WCG) for lifelike, deeper color¹
- Watch 4K HDR movies with Ultra HD Blu-ray for brilliant clarity and luminance¹
- Intel® Quick Sync Video technology accelerates most video capabilities, allowing users to create and share in real time and multitask without interruption.

**PREPARE
TO BE
AMAZED**



HARDWARE-BASED FEATURES MITIGATE THREATS

7th Gen Intel Core processors offer hardware-level security features that strengthen the protection of your enabled security software. Hardware-based security to help you compute with greater peace of mind. Security features include:

- Intel® Software Guard Extensions (Intel® SGX) that help applications protect your system and your data.
- Intel® Memory Protection Extensions help protect application's run time integrity.
- Intel® Device Protection Technology with BIOS Guard and Intel® Device Protection Technology with Boot Guard help protect your system during boot.
- Intel® Platform Trust Technology provides a critical component to help in protecting your system boot integrity.

**COMPUTE
WITH PEACE
OF MIND**





**VALUE TO
INVEST IN
YOUR
SUCCESS**

SCALABLE PORTFOLIO OF PROCESSORS

The 7th Gen Intel Core desktop processor family delivers significant value and is a great investment in your success. From the i7-7700K to the i3-7100, there is a processor to fit a wide range of budgets and needs, from the performance-hungry professionals to the first-time buyers. If form factor is your priority - the 7th Gen Intel Core desktop processor family offers a range of processors designed for PCs from the high-performance gaming towers to the sleek and stylish living room minis.

7th Gen Intel Core desktop processors are raising the bar with all-new performance and all-new experiences. Explore all the amazing things you and a new 7th Gen Intel Core-powered computer can do.

7TH GEN INTEL® CORE™ PROCESSOR FEATURES AT A GLANCE

FEATURES ¹	BENEFITS
Intel® Turbo Boost Technology 2.0¹	Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits.
Intel® Hyper-Threading Technology¹	Delivers two processing threads per physical core. Highly threaded applications can get more work done in parallel, completing tasks sooner.
Intel® HD Graphics	Play HD videos with exceptional clarity, view and edit even the smallest details of photos, and play today's modern games.
Intel® Quick Sync Video	Delivers excellent video conferencing capability, fast video conversion, online sharing, and fast video editing and authoring.
Intel® Clear Video HD	Visual quality and color fidelity enhancements for HD playback and immersive web browsing.
Integrated Memory Controller	Now supporting DDR4 offers stunning memory read/write performance through efficient prefetching algorithms, lower latency, and higher memory bandwidth as compared to previous generations.
Intel® Smart Cache	Dynamically allocates shared cache to each processor core, based on workload, reducing latency and improving performance.
Intel® Virtualization Technology¹	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.
Intel® Advanced Encryption Standard Instructions (Intel® AES)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. ¹
Intel® Power Optimizer & Processor C-States	Intel® Power Optimizer increases periods of silicon sleep state across the platform ingredients, including the CPU, chipset, and third-party system components, to reduce power.
CPU/Memory/Graphics Overclocking⁴	On select products, CPU/graphics and memory can be run at frequencies above the rated frequency of the part resulting in higher performance.
Intel® Secure Key¹	Security hardware-based random number generator that can be used for generating high-quality keys for cryptographic (encryption and decryption) protocols. Provides quality entropy that is highly sought after in the cryptography world for added security.
Intel® Transactional Synchronization Extensions (TSX)¹	TSX-NI is a set of instructions focused on enterprise-level multi-threaded performance scaling, making parallel operations more efficient via improved control of software threads and locks. This offers performance benefits for enterprise-level big data analytics/business intelligence and visualization apps, which involve multi-user collaboration. Available on the Core™ i7 and Core™ i5 processors with Intel® vPro™ technology and unlocked processors.
Intel® Advanced Vector Extensions 2.0² (Intel® AVX2)	AVX 2.0 is an extension of AVX 1.0 with new optimized instructions to deliver enhanced performance on floating point-intensive apps. AVX 2.0 adds 256 bit integer instructions and new instructions for FMA (Fused Multiply Add). FMA delivers better performance on media and floating point computations, including face recognition; professional imaging; high-performance computing; consumer video and imaging; compression; and encryption.

7TH GEN INTEL® CORE™ PROCESSOR FEATURES AT A GLANCE

FEATURES ¹	BENEFITS
Intel® Device Protection Technology with BIOS Guard¹	Intel BIOS Guard is an augmentation of existing chipset-based BIOS flash protection capabilities targeted to address the increasing malware threat to BIOS flash storage. It protects the BIOS flash from modification without platform manufacturer authorization, helps defend the platform against low-level DOS (denial of service) attacks, and restores BIOS to a known good state after an attack.
Intel® Device Protection Technology with Boot Guard¹	Hardware-based boot integrity protection that helps prevent unauthorized software and malware takeover of boot blocks critical to a system's function, thus providing added level of platform security based on hardware. Configurable boot types include: Measured Boot — measures the initial boot block into the platform storage device such as trusted platform module (TPM) or Intel® Platform Trust Technology (PTT). Verified Boot — cryptographically verifies the platform initial boot block using the boot policy key.
Intel® OS Guard¹	A hardware-based security feature that protects the OS (operating system) kernel. OS Guard helps prevent use of malicious data or attack code located in areas of memory marked as user mode pages from taking over or compromising the OS kernel. OS Guard is not application-specific and protects the kernel from any application.
Intel® Platform Trust Technology¹	A trusted element of the platform execution that provides enhanced security by verifying the boot portion of the boot sequence.
VMCS Shadowing	VMCS shadowing allows a Virtual Machine Manager (VMM) running in a guest (nested virtualization) to access a shadow VMCS memory area using the normal VMRead/VMWrite instructions. This technology reduces overhead for a more natural and responsive user experience. It also allows users to take control of their personal and professional data and apps while being protected by game-changing security.
Intel® Identity Protection Technology¹	Help protect your one-time-password (OTP) credentials and PKI certificates and add a layer of encrypted second-factor authentication for online transactions. Log into your system or make secure credit card purchases on your system using near-field communication (NFC)-enabled cards.
Intel® Optane™ Memory Technology¹	Provides performance improvements as well as fast app response times for system acceleration and responsiveness
PCI Express* 3.0 Interface	Offers up to 8 GT/s for fast access to peripheral devices and networking with up to 16 lanes. ³ PCI Express ports can be configured as x1, x2, x4, x8 and x16 depending on motherboard designs.
Green Technology	Manufactured with lead-free and halogen-free component packages.
Conflict Free	"Conflict-free" means "DRC conflict-free", which is defined by the Securities and Exchange Commission rules to mean products that do not contain conflict minerals (tin, tantalum, tungsten and/or gold) that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries.

7TH GEN INTEL® CORE™ PROCESSOR COMPARISON

	7 TH GEN INTEL® CORE™ i7 PROCESSOR	7 TH GEN INTEL® CORE™ i5 PROCESSOR	7 TH GEN INTEL® CORE™ i3 PROCESSOR
Maximum Processor Frequency (GHz)	Up to 4.5	Up to 4.2	Up to 4.2
Number of Processor Cores/Threads	4/8	4/4	2/4
Cache Size (MB)	8	6	Up to 4
Intel® Turbo Boost Technology 2.0 ¹	Yes	Yes	No
Number of Memory Channels ¹	2	2	2
Memory Type	DDR4-2133/2400@1.2V DDR3L1333/1600@1.35V	DDR4-2133/2400@1.2V, DDR3L1333/1600@1.35V	DDR4-2133/2400@1.2V, DDR3L1333/1600@1.35V
Intel® Hyper-Threading Technology ¹	Yes	No	Yes
Intel® Smart Cache	Yes	Yes	Yes
Intel® AES–New Instructions (AES–NI) ¹	Yes	Yes	Yes
Intel® Advanced Vector Extensions (AVX) 2.0 ²	Yes	Yes	Yes
CPU/Graphics/Memory Overclocking ⁴	Yes (on selected SKU)	Yes (on selected SKU)	Yes (on selected SKU)
Intel® Optane™ Memory ¹	Yes	Yes	Yes
Intel® HD Graphics ¹	630	630	630
Graphics Dynamic Frequency (GHz)	Up to 1.15	Up to 1.15	Up to 1.15
Intel® Quick Sync Video ¹	Yes	Yes	Yes
Intel Clear Video HD ¹	Yes	Yes	Yes
Intel® Virtualization Technology ¹ (Intel® VT)	Yes	Yes	Yes
Intel® TSX–NI ¹	Yes	Yes	Yes
Intel® Identity Protection Technology ¹	Yes	Yes	Yes
Intel® Software Guard Extensions (Intel® SGX) ¹	Yes	Yes	Yes
Intel® Boot Guard ¹	Yes	Yes	Yes
Intel® OS Guard ¹	Yes	Yes	Yes
Intel® BIOS Guard ¹	Yes	Yes	Yes
Conflict Free	Yes	Yes	Yes

For more information on the new 7th Gen Intel® Core™ processors, visit www.intel.com/products/desktop/processors

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. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at [intel.com]

2. Intel® Advanced Vector Extensions (Intel® AVX)* are designed to achieve higher throughput to certain integer and floating point operations. Due to varying processor power characteristics, utilizing AVX instructions may cause a) some parts to operate at less than the rated frequency and b) some parts with Intel® Turbo Boost Technology 2.0 to not achieve any or maximum turbo frequencies. Performance varies depending on hardware, software, and system configuration and you should consult your system manufacturer for more information. *Intel® Advanced Vector Extensions refers to Intel® AVX, Intel® AVX2 or Intel® AVX-512. For more information on Intel® Turbo Boost Technology 2.0, visit <http://www.intel.com/go/turbo>

3. 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.

4. WARNING: Altering clock frequency and/or voltage may: (i) reduce system stability and useful life of the system and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications. Intel assumes no responsibility that the processor, including if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. For more information, visit: <http://www.intel.com/consumer/game/gaming-power.htm>

Not all features available on all processors or chipsets. For more information on which processors support the capability, see ark.intel.com.

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 complete information visit www.intel.com/benchmarks.

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