



6TH GEN INTEL® CORE™
**POWERFUL POSSIBILITIES
FOR NEXT GENERATION
DESKTOP PCs**



LOOKING FOR AN AMAZING PROCESSOR

for your next desktop PC? Look no further than 6th Gen Intel® Core™ processors. With amazing performance and stunning visuals, PCs powered by 6th Gen Intel Core processors will help take things to the next level and transform how you use a PC. The performance of 6th Gen Intel Core processors enable great user experiences today and in the future, including no passwords and more natural user interfaces. When paired with Intel® RealSense™ technology and Windows* 10, 6th Gen Intel Core processors can help remove the hassle of remembering and typing in passwords.



THAT EXTRA BURST OF PERFORMANCE

RESPONSIVE PERFORMANCE

- New architecture and design in 6th Gen Intel Core processors for desktops bring:
 - Support for DDR4 RAM memory technology in mainstream platforms, allowing systems to have up to 64GB of memory and higher transfer speeds at lower power when compared to DDR3 (DDR4 speed 2133 MT/s at 1.2V vs DDR3 speed 1600 MT/s at 1.5).
- 6th Gen Intel Core i7 and Core i5 processors come with Intel® Turbo boost 2.0 Technology which gives you that extra burst of performance for those jobs that require a bit more frequency.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. With the Intel Core i7 processor you can have up to 8 threads running at the same time.

STUNNING VISUALS

- Videos come to life in Ultra HD 4K, so users can enjoy amazing and vibrant multimedia experiences on Ultra HD and 4K display (up to 4096x2304 resolution).¹ To deliver this experience, Intel® Core™ i7, i5 and i3 processors incorporate support for HEVC, VP8 and VP9.
- Intel® Quick Sync Video technology accelerates most video capabilities, allowing users to create and share in real-time and multi-task without interruption.
- 6th Gen Intel Core i7 and Core i5 processors support graphics programmability features such as OpenCL 2.0 so programmers can easily take advantage of the graphics compute capabilities.
- With native support for the new DirectX 12⁵ API, 6th Gen Intel Core processors can provide a better experience for gaming and graphics that take advantage of DirectX 12.

AMAZING
AND
VIBRANT
MULTIMEDIA



INCREASED SECURITY

6th Gen Intel® Core™ processors offer hardware-level security features such as:

- Intel® Software Guard Extensions (Intel® SGX) that help protect your system and your data.¹
- Intel® Memory Protection Extensions¹ that help protect an application's run-time integrity.
- Intel® Device Protection Technology with BIOS Guard 2.0¹ and Intel® Device Protection Technology with Boot Guard help protect your system during boot.

Whether you use your PC for gaming, rendering, editing or creating, the 6th Generation Intel® Core™ processor family (S-series) delivers a great PC experience.

6TH GEN INTEL® CORE PROCESSOR™ FEATURES AT A GLANCE

FEATURES ¹	BENEFITS
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.
Intel® Built-In Visuals	<p>Intel® HD Graphics — Play HD videos with exceptional clarity, view and edit even the smallest details of photos, and play today's modern games.</p> <p>Intel® Quick Sync Video — Delivers excellent video conferencing capability, fast video conversion, online sharing, and fast video editing and authoring.</p> <p>Intel® Clear Video HD—Visual quality and color fidelity enhancements for HD playback and immersive web browsing.</p>
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 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.
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. ⁷
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 Overclocking ⁴	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 Key ⁸	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.

6TH GEN INTEL® CORE PROCESSOR™ FEATURES AT A GLANCE

FEATURES ¹	BENEFITS
Intel® OS Guard ¹	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.
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® Ready Mode Technology ¹	Provides quick access to your PC with applications that are up-to-date and constantly connected.
Intel® Identity Protection Technology ³	<p>Help protect your One Time Password (OTP) credentials and PKI certificates and add a layer of encrypted second factor authentication for online transactions.</p> <p>Log into your system or make secure credit card purchases on your system using near-field communication (NFC)–enabled cards.</p>
PCI Express* 3.0 Interface ¹	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 1x16, 2x8, or 1x8 and 2x4 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.

**HELPS
PROTECT YOUR
SYSTEM AND
YOUR DATA**



6TH GEN INTEL® CORE PROCESSOR™ COMPARISON

PROCESSOR NUMBER	SOCKET 1151 95W		SOCKET 1151 STANDARD POWER						SOCKET 1151 LOW POWER			
	CORE i7 6700K	CORE i5 6600K	CORE i7 6700	CORE i5 6600	CORE i5 6500	CORE i5 6400	CORE i3 6300	CORE i3 6100	CORE i7 6700T	CORE i5 6600T	CORE i5 6500T	CORE i5 6400T
Base Frequency (GHz)	4	3.5	3.4	3.3	3.2	2.7	3.8	3.7	2.8	2.7	2.5	2.2
Total Cache	8M	6M	8M	6M	6M	6M	4M	3M	8M	6M	6M	6M
Cores/Threads	4/8	4/4	4/8	4/4	4/4	4/4	2/4	2/4	8 APR	4 APR	4 APR	4 APR
Memory Type	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L	DDR4/DDR3L
Memory Speed Support (DDR4/DDR3L)	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600	2133/1600
Unlocked ⁴	X	X	-	-	-	-	-	-	X	X	X	X
Intel® Turbo Boost Technology	X	X	X	X	X	X	-	-	X	X	X	X
Intel® Turbo Boost Technology maximum single core turbo frequency (GHz)	4.2	3.9	4	3.9	3.6	3.3	-	-	3.6	3.5	3.1	2.8
Graphics	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530	Intel® HD Graphics 530
Dynamic Frequency (MHz)	1150	1150	1150	1150	1150	950	1150	1050	1100	1100	1100	950
Integrated Memory Controller	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch	2 ch
Thermal Envelope (W)	130	130	65	65	65	65	65	65	35	35	35	35



ACCOMPLISH MORE IN LESS TIME

For more information, visit <http://www.intel.com/content/www/us/en/processors/core/6th-gen-core-family-desktop-brief.html>

- 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 warrant, 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.

- 5 Other names and brands may be claimed as the property of others

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