Intel Core i7-5960X Extreme Edition
And Then There Were 8

Everyone knows that today's high-end applications are bigger, more complex, and more demanding of computer hardware than ever before. The days of simply ratcheting up a CPU's clock speed to make it more productive are long gone, however; today's PC workloads require a smarter solution.

Enter the latest member of Intel's Extreme Edition processor line, the Core i7-5960X. This CPU represents a number of firsts: It is Intel's first eight-core desktop processor, it is the first chip to incorporate 20MB of Intel Smart Cache on-die memory, and it is the first CPU to work in tandem with DDR4 memory, via Intel's X99 chipset.

Octopower

There are lots of notable innovations that make the Core i7-5960X unique, but the one that likely stands out the most is its eight-core design. Thanks to Intel's Hyper-Threading technology, this means that the 5960X is capable of simultaneously running an astounding 16 threads of code instructions. When running highly threaded applications such as photo- and video-editing programs, this translates into massive performance gains. For example, the Core i7-5960X edits 4K video up to 20% faster than the previous performance champ, the Core i7-4960X, using Adobe Premiere Pro CC.

Need to do some 3D rendering? If you use CINEBENCH 15 X, you'll enjoy up to a 32% increase in rendering speed (again, vs. the 4960X). What if you have some 4K video that you need to transcode to 1080p? If you use Handbrake, you'll see a 33% speed increase. Even game physics and AI performance get a boost from the 5960X vs. the previous generation Extreme Edition chip: Futuremark's 3DMark Fire Strike benchmark shows increases of up to 14%.
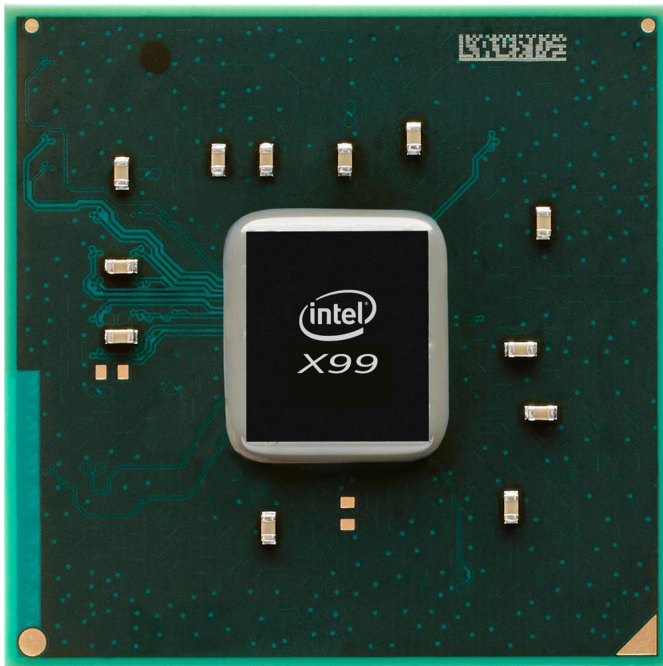
The real-world benefits of such performance boosts are obvious: Less waiting, increased productivity, and a better experience in games and multimedia entertainment. But the Core i7-5960X isn't just powerful; it's also highly efficient, requiring only a modest 10-watt increase in TDP (thermal design power) over the previous Extreme Edition processor. The Core i7-5960X's base clock speed is 3.0GHz, with a Turbo frequency of up to 3.5GHz.

X99

A CPU is only as good as the motherboard chipset that helps it run the rest of your PC, and the Core i7-5960X is in good hands. Intel's X99 chipset is the premiere platform for high-performance PCs, and provides several improvements over the last-generation X79 performance chipset.

For starters, X99 provides native USB 3.0 support (up to six ports, plus up to eight USB 2.0 ports; X79 provided 14 USB 2.0 ports but lacked USB 3.0 support) and includes support for as many as 10 6Gbps SATA 3.0 ports (X79 supported six ports). Both of these enhancements reduce production costs for motherboard

the Core i7-5930K and the Core i7-5820K at its PAX Prime launch event. The Core i7-5930K is a six-core chip with a base clock speed of 3.5GHz, a Turbo frequency of up to 3.7GHz, and 15MB of Intel Smart Cache. Like its eight-core sibling, the 5930K employs Intel Hyper-Threading technology, resulting in a total of 12 threads, and it provides the same 40-lane PCI-E 3.0 support and quad-channel DDR4 support. Also, as the "K" in its name suggests, the Core i7-5930K has an unlocked BCLK multiplier for easy overclocking.

Rounding out the Haswell-E family, the six-core/12-thread Core i7-5820K has a base clock speed of 3.3GHz and a Turbo frequency of up to 3.6GHz. It supports 28 PCI Express 3.0 lanes, but has the same 15MB shared L3 cache as the 5930K, the same memory support, and an unlocked multiplier.

Despite all of the new technology that Haswell-E and X99 represent and the considerable performance boosts they provide, the new CPUs are available at prices similar to their previous-generation counterparts. Pricing in the United States per 1,000 units is $999 for the Core i7-5960X, $583 for the Core i7-5930K, and $389 for the Core i7-5820K.

All three processors are compatible with Intel's TS13X all-in-one liquid-cooling unit, which was introduced in 2013 and is sold separately.

Apex Predator

The numbers don't lie; Intel's Core i7-5960X is far and away the most powerful desktop CPU on the market today, and with some fairly simple overclocking you can make it even more dominant. Harness all of this power to an X99-equipped motherboard, and you get the world's fastest desktop CPU working in tandem with the world's fastest desktop memory.

Whether you need more power for creating digital content, working with your video and pictures, or playing the latest high-end PC games—or if you just dig power for power's sake—Intel has the platform that will give it to you. ∎

manufacturers and streamline board design by reducing the number of feature-specific chips they need to add.

Additionally, X99 is the first desktop chipset to provide support for DDR4 memory. Motherboards equipped with X99 include quad-channel support for up to 64GB of 2,133MHz memory configured in four or eight 288-pin DIMM slots. Support for Intel XMP (Extreme Memory Profile) overclocking is present, as well, with initial speeds reaching 3,300MHz.

When combined with the Core i7-5960X, X99 will support up to 40 PCI-E 3.0 lanes; in multi-GPU configurations, X99 will support 2 x 16 (plus 1 x 8) or up to 5 x 8 setups. Of course, X99 also provides native support for eight PCI Express 2.0 lanes, the latest network configs, and Intel Rapid Storage Technology.

Meet The Family

The Core i7-5960X isn't the only "Haswell-E" CPU; Intel also introduced