

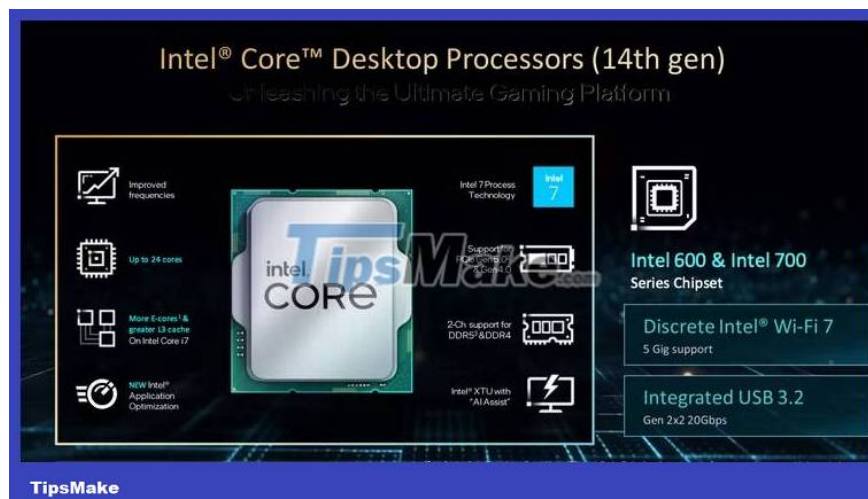
Intel launches 14th generation 'Raptor Lake-S Refresh' processor line

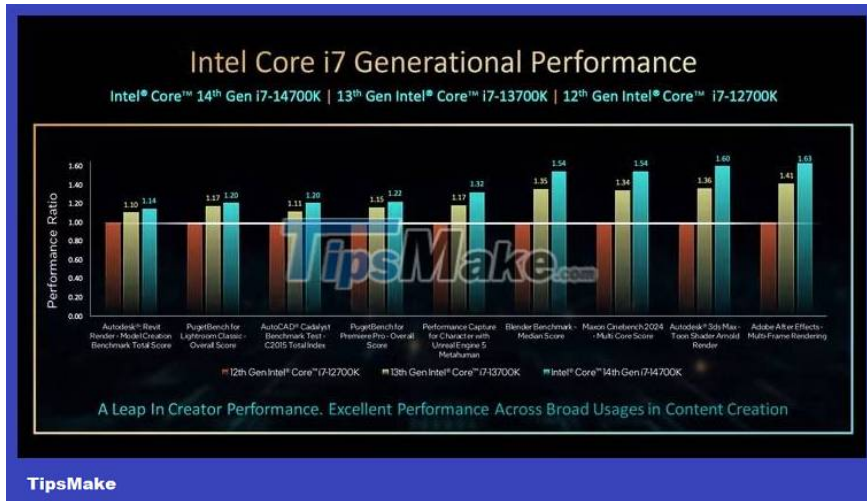
After countless rumors and leaked information, Intel has finally officially launched the 14th generation Core processor line codenamed 'Raptor Lake Refresh'.

With the goal of nothing more than maintaining competitiveness with new CPU models that are also being highly appreciated from Apple and AMD. Of course much of the attention is still on the more advanced Meteor Lake line that Intel is expected to launch in December, but Raptor Lake-S Refresh Gen 14 also contains a lot of interesting highlights.

First, it must be clear that these are not completely improved chips with a completely new architecture. They still use the same Intel 7 Process technology as the 13th generation, but Intel has made tweaks that promise a significant performance improvement. There are a total of 6 models in the new product line: 2 Core i5 variants, 2 Core i7 variants and 2 Core i9 variants. Intel said earlier this year that it would remove the 'i' from its processor names, but this plan will be applied first with Meteor Lake chips launching later in the year.

Go into detail. Standing in the lowest segment of the product line are Core i5-14600KF and Core i5-14600K. Both have a configuration of 6 high-performance cores (P cores), 8 power-saving cores (E cores), 20 threads and a maximum turbo clock of 5.3GHz on P cores. Next is Core i7- 14700KF and i7-14700K. Both have up to 8 P cores, 12 E cores, 32 threads and a slightly higher turbo clock of 5.6GHz. Finally, the Core i9-14900KF and Core i9-14900K will be the highest-end models in the product line, with configurations of 8 P cores, 16 E cores, 32 threads and 5.6GHz turbo clock. Intel says the Core i9 chip can reach 6GHz boost clock when equipped with a suitable cooling system.





Intel® Core™ 14th Gen Unlocked Desktop Processors

Processor Number	Processor Core (P/E)	Processor Threads	Intel® Smart Cache (KB)	Total L3 Cache	Intel® Thermal Velocity Boost Frequency (GHz)	Intel® Turbo Boost Max Technology 3.0 Frequency (GHz)	Process Max Turbo Frequency (GHz)	Event Max Turbo Frequency (GHz)	Event Max Turbo Frequency (GHz)	Event Base Frequency (GHz)	Processor Unlocked	Processor Graphics	Total PCIe Lanes	Max Memory (GB)	Memory Capacity	Processor Base Power (W)	Max Power (W)	TDP (W)
i9-14900K	24 (8+16)	32	36MB	32MB	Up to 6.0	Up to 5.8	Up to 5.6	Up to 4.4	3.2	2.4	✓	Intel® UHD Graphics 770	20	DDR5 5600 DDR4 3200	192GB	125	253	\$389
i9-14900KF	24 (8+16)	32	36MB	32MB	Up to 6.0	Up to 5.8	Up to 5.6	Up to 4.4	3.2	2.4	✓	n/a	20	DDR5 5600 DDR4 3200	192GB	125	253	\$364
i7-14700K	20 (8+12)	28	33MB	28MB	n/a	Up to 5.8	Up to 5.5	Up to 4.3	3.4	2.5	✓	Intel® UHD Graphics 770	20	DDR5 5600 DDR4 3200	192GB	125	253	\$409
i7-14700KF	20 (8+12)	28	33MB	28MB	n/a	Up to 5.8	Up to 5.5	Up to 4.3	3.4	2.5	✓	n/a	20	DDR5 5600 DDR4 3200	192GB	125	253	\$384
i5-14600K	14 (6+8)	20	24MB	20MB	n/a	n/a	Up to 5.3	Up to 4.0	3.5	2.6	✓	Intel® UHD Graphics 770	20	DDR5 5600 DDR4 3200	192GB	125	181	\$319
i5-14600KF	14 (6+8)	20	24MB	20MB	n/a	n/a	Up to 5.3	Up to 4.0	3.5	2.6	✓	n/a	20	DDR5 5600 DDR4 3200	192GB	125	181	\$294

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.

The only difference between K and KF processors is that the K chip has integrated graphics (Intel UHD Graphics 770 to be exact), while the KF chip does not have an integrated GPU. KF chips are slightly cheaper and are designed for use in dedicated gaming PC systems with discrete GPUs.

All Raptor Lake-S Refresh CPU models that Intel announced today support overclocking, 20 PCIe lanes, DDR5 5600 or DDR4 3200 memory, Wi-Fi 6 and 6E, Thunderbolt 4 40Gbps, Bluetooth 5.3 and RAM up to 192GB. They also have comparable power usage to last year's Raptor Lake chips. They all start at 125W, with the Core

i5 chip increasing to 181W under maximum load and the Core i5 and i7 maxing out at 253W.

Intel's continued support for DDR4 memory could be a pricing advantage, especially for lower-priced computers. However, this advantage has been significantly reduced due to the sharp decline in memory prices.

Intel promises up to 18% better multi-threaded performance on the new product line, and confidently claims the Core i9-14900K running at 6GHz is "the world's fastest desktop processor". Of course, we'll have to wait and see how the processor's performance holds up in independent tests. In addition, the emergence of the new Intel Extreme Tuning Utility technology, which is said to use an AI model to recommend overclocking settings, is also a factor to consider carefully.

The Core i9-14900K will cost \$589, the Core i7-14700K will cost \$409, and the Core i5-14600K will cost \$319. All three products have strong overclocking capabilities and will begin shipping on October 18.

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