

Features at a Glance

Feature	Benefit
Performance Hybrid Architecture ¹⁴	Integrates two all-new core microarchitectures into a single die, prioritizing and distributing workloads to optimize performance.
Intel® Thread Director ⁴	Optimizes workloads by helping the OS scheduler intelligently distribute workloads to the optimal cores.
NPU	A neural processing unit is a processor built for handling AI & machine learning tasks. Select Intel® Core™ Ultra processors include a CPU, a GPU, and an NPU.
TOPS ⁷	Trillions of operations per second. A calculated technical specification of the theoretical maximum an AI accelerator can achieve if it is 100% efficient with software and workload.
Intel® Graphics Featuring Xe LPG Graphics Architecture ⁵	A purpose-built graphics architecture optimized for lower wattage and higher performance per watt. Rich media and intelligent graphics capabilities enable amplified visual complexity, enhanced 3D performance, and faster image processing.
Intel® Smart Cache	CPU memory caching method for sharing among P-cores, E-cores, and processor graphics if applicable.
Intel® eXtreme Tuning Utility (Intel® XTU) ¹	A precision toolset for tuning and overclocking, featuring processor overclocking, so that new and experienced users can get more from their unlocked processors.
Intel® eXtreme Memory Profile (Intel® XMP) 3.0 ¹	Allows users to overclock compatible DDR5 memory modules to enhance the gaming features built into PCs with Intel® Core™ Ultra processors.
Intel® Speed Shift Technology	Gives your CPU finer control over its frequency, allowing a fast jump up to its maximum clock speed.
Intel® Turbo Boost Max Technology 3.0	Identifies the processor's fastest cores and directs critical workloads to them as power, heat, and workload allow.
Intel® Turbo Boost Technology 2.0	Accelerates processor and graphics performance for peak loads, automatically allowing processor cores to run faster than the rated operating frequency if they're operating below power, current, and temperature specification limits.
Intel® Dynamic Tuning Technology ¹⁵	Power optimization tools that intelligently adapt power policies based on usage mode and temperature, with a new policy that determines and directs application resource optimization in real time.

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Intel® Application Optimization ¹⁵	A software policy within Intel® Dynamic Tuning Technology (DTT) that determines and directs application resource optimization in real-time.
Intel® Deep Learning Boost	Significantly accelerates inference performance for deep-learning workloads optimized to use VNNI.
Intel® Thermal Velocity Boost	Opportunistically and automatically increases clock frequency of select Intel® Core™ Ultra Desktop processors by up to 100 MHz if the processor is at a temperature of 70°C or lower and turbo power budget is available.
Intel® Adaptive Boost Technology	Intelligently boosts the processor to run faster than its rated frequency as power, heat, and workload allow.
Intel® Gaussian and Neural Accelerator 3.5	Designed to process AI speech and audio applications such as neural noise cancellation while simultaneously freeing up CPU resources for overall system performance and responsiveness.
Thunderbolt™ 5 Technology	Next-generation universal cable connectivity for a simple, reliable connection that provides incredible performance.
Thunderbolt™ 4 Technology	An Intel-developed connectivity standard that delivers power, data, and a video signal over a single connection. The Thunderbolt™ technology certification establishes mandatory minimum requirements for cables, PCs, and accessories to help ensure greater reliability and interoperability across devices and vendors.
Thunderbolt™ Share ¹³	Unlocks ultra-fast PC-to-PC connectivity experiences.
Discrete Wi-Fi 7 Support ¹⁰	The next step in the evolution of wireless connectivity, helping provide extreme speed, responsiveness, and reliability.
Intel® Connectivity Performance Suite ¹¹	A software solution that improves PC networking performance by creating a personalized network experience based on each user's unique situation, automatically prioritizes high-priority traffic over lower-priority traffic.