

11th Gen Intel® Core™ Desktop Processors



The 11th gen Intel® Core™ desktop processor family puts your customers in control of their compute experience with intelligent engineering, immersive graphics, and enhanced tuning.

But how do we sell these processors to our customers? It depends on their pain points and what conversations they're having with you. We've broken out some common conversation threads below, with relevant talking points and supporting evidence you can use.

Are they talking about...

Cores | Threads | FPS

It's a Performance conversation.

See **page 2** for performance talking points.

Gaming | Streaming Multitasking

It's a Use Case conversation.

See **page 3** for talking points on where these processors excel for each customer type.

New Technology Peripherals

It's a Novelty conversation.

See **page 4** for more about the exciting new technologies that are enabled in these processors.

Compatibility | Supply

It's a Brand Trust conversation.

See **page 5** for how to help people understand why Intel products and partners are trusted to just work.

If you want more details on any of the products or technologies mentioned in this deck, please visit **Intel® Partner Alliance!** There you can find more sales resources including cards, briefs, and training.

New Core & Graphics Architecture

Intel's new core architecture means 11th gen Intel® Core™ processors represent a new era in computer performance and efficiency.

Featuring up to 19% IPC improvements and combined with enhanced Intel® UHD Graphics featuring Intel® Iris® Xe Graphics architecture, Intel® Turbo Boost Technology 2.0, and Intel® Deep Learning Boost for accelerated AI performance, 11th gen Intel® Core™ processors are a technological tour-de-force.^{P,1}

Stunning Visuals

Experience rich, stunning, seamless visuals with the high-performance graphics on 11th gen Intel® Core™ desktop processors. Enhanced Intel® UHD Graphics featuring Intel® Iris® Xe Graphics architecture offer up to 50% better integrated graphics performance, bringing your customers' virtual world to life.⁶

Get the best overclocking experience with an unlocked 11th gen Intel® Core™ processor.^{1,4,5}

- **Intel® Performance Maximizer** Hyper-intelligent automated overclocking.
- **Intel® Extreme Tuning Utility** An ideal all-in-one overclocking software solution.
- **Intel® Extreme Memory Profile** Lets users overclock memory using predefined and tested profiles.

Maximizing Performance

Intel processors come with a selection of performance-maximizing features enabled by default, without requiring the user to go into BIOS.

- **Intel® Thermal Velocity Boost** Automatically increases core frequency as processor temperature and turbo budget allow.
- **Intel® Turbo Boost Max Technology 3.0** Directs critical workloads to top-performing cores.
- **Intel® Turbo Boost Technology 2.0** Accelerates processor performance on peak loads.

¹ See source and performance disclaimers in Notices & Disclaimers for details. For workloads and configurations visit www.Intel.com/PerformanceIndex. Results may vary.

^{4,5,6} See source and performance disclaimers in Notices & Disclaimers for details. See backup for workloads and configurations. Results may vary.

^P IPC = Instructions Per Cycle/Clock and represents how many tasks a CPU can complete in each cycle.

¹ Unlocked features are present with select chipsets and processor combinations.

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

Use Case Conversations

11th Gen Intel® Core™ i9 Processor-Based Desktops



Massive Power, Perfectly Balanced

- **Enthusiast Gamers**
- **Professional Streamers**
- **Content Creators**
- **Megataskers**

High clock speed and core counts work seamlessly together to deliver amazing gameplay and uninhibited content creation.

Up to

48% more FPS
on Total War Three
Kingdoms: Dynasty⁷

11th Gen Intel® Core™ i9-11900K processor vs.
8th Gen Intel® Core™ i7- 8700K processor

11th Gen Intel® Core™ i7 Processor-Based Desktops



Power to Push the Limits

- **Enthusiast Gamers**
- **Multitaskers**

Play, record, and stream games with high FPS and effortlessly switch to heavy multitasking workloads.

Up to

17% more FPS
on GRID 2019⁸

11th Gen Intel® Core™ i7-11700K processor vs.
8th Gen Intel® Core™ i7- 8700K processor

11th Gen Intel® Core™ i5 Processor-Based Desktops



Built to Play

- **Mainstream Gamers**
- **Productivity**
- **General Use**

Optimized single-core performance with the clock speeds needed to play your favorite games.

Up to

27% more FPS
on Gears 5⁹

11th Gen Intel® Core™ i5-11500 processor vs.
7th Gen Intel® Core™ i7- 7700 processor

7,8,9 See source and performance disclaimers in Notices & Disclaimers for details. For workloads and configurations visit www.Intel.com/PerformanceIndex. Results may vary

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

What's new? It's really compelling for sales leads, which is why we're listing just a few of the most exciting new and expanded technologies in 11th gen Intel® Core™ desktop processors, along with a short description and a link to where you can learn more about them and many others.

NEW Core Architecture	A new core architecture providing up to 19% IPC improvement. ^{1,P}
NEW Enhanced Intel® UHD Graphics featuring Intel® Iris® Xe Graphics architecture†	Play AAA games and watch 4K HDR movies using the latest integrated processor graphics offering up to 50% better performance. ⁶
NEW Intel® Deep Learning Boost (VNNI)²	Accelerates AI inference—vastly improving performance for deep learning workloads. ²
Intel® Adaptive Boost Technology	Opportunistically allows higher multi-core turbo frequencies.
EXPANDED Memory overclocking	Memory overclocking now supported on Z590, H570, and B560 motherboards, delivering more value to more customers.
NEW Discrete Thunderbolt™ 4 technology support‡	Universal cable connectivity for a simple, reliable connection that provides incredible performance.
NEW Intel® Cryo Cooling Technology Support	New software helps push silicon further by keeping it cooler than ambient air or liquid.
NEW Discrete Intel® Wi-Fi 6E support	Enable the fastest wireless speeds for PCs, gaining more responsive performance with enhanced security and reliability.
NEW Intel® Optane™ memory H20 with SSD support†,3	Get compatibility with Intel's revolutionary smart, accelerated memory.

1,2,3,6 See source and performance disclaimers in Notices & Disclaimers for details. For workloads and configurations visit www.Intel.com/PerformanceIndex. Results may vary.

P IPC = Instructions Per Cycle/Clock and represents how many tasks a CPU can complete in each cycle.

† Available only on 11th gen Intel® Core™ desktop processors featuring integrated graphics.

‡ Discrete Thunderbolt™ 4 technology is only validated and supported from Intel® 500 Series Chipset PCIe lanes.

† Intel® Hybrid Storage devices such as H20 can't attach to CPU PCIe due to PCIe 2x2 requirement.

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

Brand Trust Conversations

Intel's immense ecosystem of hardware and software partners means that **the world builds their products to work well with Intel**. Our leadership with standards, certifications, and validation programs means that hardware, software, and OS developers work with Intel to help your customers avoid compatibility issues.



1 Claim: Up to 19% IPC performance improvement (gen over gen)

Disclaimer: Source: Intel estimates as of January 2021. Based on measurements on Intel Internal reference platforms running SPEC CPU 2017 1-copy rate on 11th gen Intel® Core™ i9-11900K vs 10th gen Intel® Core™ i9-10900K (running each at the same fixed frequency).

Configurations: Processor: 11th gen Intel® Core™ i9-11900K processor (RKL-S) PL1=125W TDP, 8C16T, Motherboard: Intel® Reference Platform, Memory: 32 GB (2x16GB) DDR4-2933 DDR4 SDRAM, Storage: Intel® SSD 760p, Display Resolution: 1920x1080, OS: Microsoft Windows 10 build 20H2. Processor: 10th gen Intel® Core™ i9-10900K processor PL1=125W TDP, 10C20T, Motherboard: Intel® Reference Platform, Memory: 64 GB (4x16GB) DDR4-2933 DDR4 SDRAM, Storage: Intel® SSD 760p, Display Resolution: 1920x1080, OS: Microsoft Windows 10 build 20H2. Workload Description: SPEC CPU® 2017 is published by the Standard Performance Evaluation Corporation (SPEC), a benchmarking consortium. SPEC CPU tests Compute Intensive Application Performance using integer and floating point subtests based on real programs. SPECspeed® 2017_int_base and SPECspeed2017_fp_base measure how fast a processor completes a single integer or floating point compute task. SPECrate® 2017_int_base and SPECrate2017_fp_base measure throughput, or how many integer or floating point compute tasks a processor can accomplish in a given amount of time. More information on the benchmark can be found at: <http://www.spec.org>.

2 Intel® Deep Learning Boost 'Up To 3X Average Inference Performance Gains': As measured by the geo mean across multiple deep learning framework workloads (Apache MXNet, TensorFlow, PyTorch, and Caffe). Results for 11th Gen Intel® Core™ desktop processors have been estimated based on measured data comparing dual-socket Intel® Xeon® Platinum 8280 processor using 8-bit integer operations with Intel® Deep Learning Boost on ResNet-50 vs. dual-socket Intel® Xeon® Platinum 8180 processor using 32-bit floating point operations. Test done by Intel, as of 3/1/2019.

3 Intel® Optane™ Memory Disclaimer: Intel® Optane™ memory requires specific hardware and software configuration. Visit intel.com/OptaneMemory for configuration requirements.

4 Overclocking Disclaimer: Unlocked features are present with select chipsets and processor combinations. Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

5 Based on enhanced overclocking ability enabled by Intel's comprehensive tools and unique architectural tuning capabilities. Your results may vary. Overclocking may void warranty or affect system health. For details see intel.com/overclocking.

6 11th gen Intel(r) Core(tm) processor S8+1 125W Configuration (Projected): Processor: 11th gen Intel® Core(tm) processor S8+1 PL1=125W PL2=250W, 8C16T, Memory: 4x16GB DDR4-2933 2Rx8, Storage: Intel® 660p M.2 PCIe NVMe SSD, Display Resolution: 1920x1080, OS: Windows 10 Build 20H1. Power policy set to AC / High performance for all benchmarks except SYSmark 2014 which is measured in AC / BAPCo mode. All benchmarks run in Admin mode and Tamper Protection Disabled / Defender Disabled, Graphics driver: N/A, Energy Efficient Turbo: Disabled for all performance measurements, Power Limit 1 Time Window (Tau): 56s, Temperature: Air Cooled Heat Sink for all Power and Performance projections.

Performance results are based on projections as of 08/06/2020 and may not reflect all publicly available updates. See configuration disclosure for details. No product can be secure. Based on Preliminary Performance Projections and are subject to change (+/- 15% Margin of Error).

7 Full Configurations:

Processor: 11th Gen Intel® Core™ i9-11900K processor PL1=250W, TDP = 125W, 8C16T; Motherboard: Pre- production Asus ROG Maximus XIII Hero; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4- 3200MHz; Storage: Intel SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; Bios version 85 (Beta)

Processor: 8th Gen Intel® Core™ i7- 8700K processor PL1=95W TDP, 6C12T, Motherboard: Asus Prime Z390-A; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4-2666 MHz; Storage: Intel(r) SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; Bios version 1802

8 Full Configurations:

Processor: 11th Gen Intel® Core™ i7-11700K Processor PL1=250W, TDP = 125W, 8C16T; Motherboard: Pre- production Asus ROG Maximus XIII Hero; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4- 2933MHz; Storage: Intel SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; BIOS version 9402

Processor: 8th Gen Intel® Core™ i7- 8700K processor PL1=95W TDP, 6C12T, Motherboard: Asus Prime Z390-A; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4-2666 MHz; Storage: Intel SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; Bios version 1802

9 Full Configurations:

Processor: 11th Gen Intel® Core™ i9-11900 processor PL1=65W TDP, 8C16T; Motherboard: Pre- production Asus ROG Maximus XIII Hero; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4-2933MHz; Storage: Intel SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; BIOS version 309

Processor: 7th Gen Intel® Core™ i7- 7700 processor PL1=65W TDP, 4C8T, Motherboard: Asus Prime Z390-A; Memory: G. Skill DDR4 CL 14-14-14-34, 2X 16 GB DDR4-2400 MHz; Storage: Intel SSD 905P 960GB; Display Resolution: 1920x1080; OS: Microsoft Windows 10 Pro 20H2 19042.685; Graphics card: NVIDIA RTX 3080 (XC3 Ultra), Graphics driver: 460.89; Bios version 1802

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.