intel Core Ultra Desktop Processors User Guide

Contents

intel Core Ultra Desktop Processors

Specifications

- Platform: Desktop and entry workstation
- Processor Cores: Up to 24 P-cores and E-cores
- Connectivity: Best-in-class wired and wireless connectivity
- PCIe Support: PCIe 5.0 lanes for increased performance
- Power Consumption: Lower total system power while gaming
- AI Engine: Integrated NPU for AI tools and processes
- Thunderbolt Support: Thunderbolt Share for fast file management

Product Usage Instructions

Selling to Gamers
Gamers value performance, connectivity, and features. Here are some key points to highlight:

- Highlight the next-gen P-cores and E-cores for gaming performance.
- Show increased FPS and lower power consumption compared to previous generations.
- Emphasize features like fast Wi-Fi and overclocking capabilities.

Selling to Creators
Creators focus on multitasking, efficiency, and video editing. Here's how to pitch to them:

- Showcase the NPU for AI tasks and the E-cores for multitasking.
- Highlight Thunderbolt Share for quick file transfers.
- Demonstrate faster multitasking and video editing performance compared to competitors.

Selling to Professionals
Professionals seek powerful AI PCs with security and collaboration features. Here's what to emphasize:

- Point out the E-cores for multitasking across office applications.
- Discuss Thunderbolt technology for expandability and fast connectivity.
- Show lower power consumption during video calls and faster application performance.

FAQ

- **Q: How do I know which customer segment to target?**
  - A: Identify the customer's primary usage – gaming, content creation, or professional work. Tailor your pitch based on their needs and priorities.
- **Q: Are the performance claims consistent across all systems?**
  - A: Individual system results may vary based on use, configuration, and other factors. Refer to www.intel.com/PerformanceIndex for specific workloads and configurations.

How To Sell Guide

Intel® Core Ultra Desktop Processors (Series 2), Codenamed Arrow Lake-S are the ultimate desktop and entry workstation platform, engineered to unlock new levels of intelligent performance for the most demanding daily tasks.

On the following slides we'll show you how to sell to the following customers:

How to Sell to

Intel® Core Ultra desktop processors (Series 2) are architected for the enthusiast, offering your gaming customers the power, platform, and features they demand from their PCs.

Gamers

Gamer-Focused Conversation Starters:

- Up to 24 next-gen P-cores and E-cores give gamers the power to play today's most demanding games.
- Best-in-class wired connectivity,1 featuring increased CPU PCIe 5.0 lanes, increased chipset PCIe 4.0 lanes,

discrete Thunderbolt 5 port support with 80/120 Gbps bandwidth, and integrated Thunderbolt 4 technology.

- Intel® Killer Wi-Fi, discrete Intel® Wi-Fi 7 (5 Gig) support,2 and integrated Wi-Fi 6E support give social and competitive multiplayer gamers the connectivity they need.
- AI features let you get the most out of AI, like offloading streaming features to the NPU to free up better framerates from your GPU.3
- Optimized ReBAR support and improved Intel® Rapid Storage Technology (Intel® RST) drivers for high framerates on the latest games.
- Overclocking tuning controls have been resynthesized, with new features like dual BCLK tuning and 16.6 OC ratio granularity.4

- Up to 28% Higher FPS with Total War: Warhammer III5 vs. comp
- 165W Lower Total system power while gaming6 vs. previous generation

1. As measured by Total War: Warhammer III – Mirrors of Madness Benchmark on an Intel® Core Ultra 9 processor 285K vs. AMD Ryzen 9 9950X.
2. As measured by average system power while playing Warhammer: Space Marines 2 on an Intel® Core Ultra 9 processor 285K vs. Intel® Core i9 processor 14900K.

For footnotes 5,6: Individual system results may vary as power and performance are affected by use, configuration and other factors. See **www.intel.com/PerformanceIndex** for workloads and configurations.
For numbered references and configurations, see notices and disclaimers section.

What Do Gamers Do with Their PC?

- Esports
- AAA Gaming
- Simulations
- Social Gaming

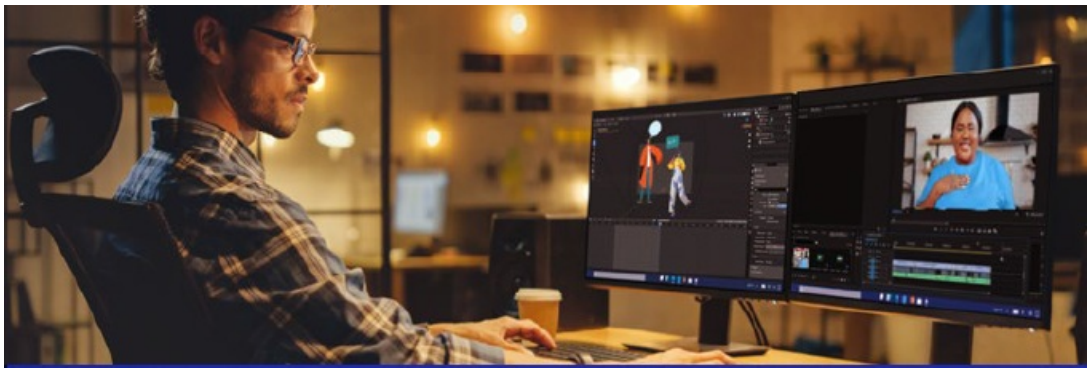
What Do Gamers Value Most?

- Performance
- Connectivity Features
- Fast Wi-Fi
- Overclocking4

Look for These Badges

Instruction for use

Creators
Creators are looking for AI PCs that will help them achieve their vision and overcome challenges. They are looking for the performance and features of Intel® Core Ultra desktop processors.



Creator-Focused Conversation Starters:

- NEW integrated NPU (neural processing unit) is a dedicated AI engine designed to handle the AI tools and processes that creators increasingly use to work.
- Powerful new E-cores handle background tasks and are perfect for multitasking creatives!
- Increased efficiency for lower power usage in a variety of creator applications.
- Thunderbolt Share7 helps quickly manage and move large files and workloads between Thunderbolt 4 technology- and Thunderbolt 5 technology-enabled systems.
- DDR5 support (up to 6400 MT/s)8 and Intel® Smart Cache technology help create and edit large files.
- Intel® Connectivity Performance Suite provides an optimized network experience.9
- Intel® Killer Wi-Fi, discrete Intel® Wi-Fi 7 (5 Gig) support,2 and integrated Wi-Fi 6E support for fast wireless connectivity to share, work, and download.

Up to 86% Faster creator multitasking performance10 vs. comp

Up to 6% Faster video editing performance11 vs. comp

What Do Creators Do with Their PC?

- Image Creation
- Video Production
- Music Production
- Game Development

What Do Creators Value Most?

- Productivity
- Connectivity
- Privacy and Security

- Application Compatibility

Professionals
Everyday professionals are looking for powerful and efficient AI PCs to achieve their business and educational goals. They require security while maintaining high levels of collaboration and app compatibility.

Creator-Focused Conversation Starters:

- NEW integrated NPU (neural processing unit) available on Intel® Core Ultra processors are built to work with the AI directly on the device for data security.
- Powerful new E-cores are perfect for multitasking across various office applications.
- Integrated Thunderbolt 4 and discrete Thunderbolt 5 technology for device expandability.
- Thunderbolt Share7 unlocks multiple PC connectivity with ultra-fast speeds for screen, peripheral, and file sharing.
- Intel® Killer Wi-Fi, discrete Intel® Wi-Fi 7 (5 Gig) support,2 and integrated Wi-Fi 6E support for fast wireless connectivity to share, work, and download.
- Intel vPro®12 eligible to enable powerful management tools for enterprise levels of AI, security, stability, and remote management.

Up to 58% Lower power during Zoom Video calls13 vs. previous generation

Up to 14% Faster mainstream application performance14 vs. comp

What Do Professionals Do with Their PC?

- Office Applications
- Connectivity
- Education
- Social Networking

What Do Professionals Value Most?

- Productivity
- Connectivity
- Privacy and Security
- Application Compatibility

Notices & Disclaimers

- Performance varies by use, configuration, and other factors. Learn more at **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. Results that are based on systems and components as well as results that have been estimated or simulated using an Intel Reference Platform (an internal example new system), internal Intel analysis or architecture simulation or modeling are provided to you for informational purposes only. Results may vary based on future changes to any systems, components, specifications, or configurations.
- No product or component can be absolutely secure. Your costs and results may vary. Intel technologies may require enabled hardware, software, or service activation.
- All Intel® Evo branded designs are verified based on specific hardware and other requirements and must meet demanding thresholds for key mobile user experiences. Details at **www.intel.com/performance-evo**.
- All versions of the Intel vPro® platform require an eligible Intel processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See **www.intel.com/PerformanceIndex** for details.
- AI features may require software purchase, subscription, or enablement by a software or platform provider, or may have specific configuration or compatibility requirements. Details at **intel.com/AIPC**.
- Intel is committed to the continued development of more sustainable products, processes, and supply chain as we strive to prioritize greenhouse gas reduction and improve our global environmental impact. Where applicable, environmental attributes of a product family or specific SKU will be stated with specificity. Refer to Intel Corporate Responsibility Report 2022-2023 or visit **www.Intel.com/2030goals** for further information.

1. **Best-In-Class Wired Connectivity:** See site for details: **https://edc.intel.com/content/www/us/en/products/performance/benchmarks/wired/**.
2. **Discrete Intel® Wi-Fi** 7 (5 **Gig):** While Wi-Fi 7 is backward compatible with previous generations, new Wi-Fi 7 features require PCs configured with Intel® Wi-Fi 7 solutions, PC OEM enabling, operating system support, and use with appropriate Wi-Fi 7 routers/APs/gateways. 6 GHz Wi-Fi 7 may not be available in all regions. Performance varies by use, configuration, and other factors. For details on performance claims, learn more at **www.intel.com/performance-wireless**.
3. **AI Experiences:** AI features may require software purchase, subscription, or enablement by a software or platform provider, or may have specific configuration or compatibility requirements. Details at **http://www.intel.com/AIPC**. Results may vary.
4. **Overclocking:** 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. **As measured by Total War:** Warhammer III – Mirrors of Madness Benchmark on an Intel® Core Ultra 9 processor 285K vs. AMD Ryzen 9 9950X.
6. As measured by average system power while playing Warhammer: Space Marines 2 on an Intel® Core Ultra 9 processor 285K vs. Intel® Core i9 processor 14900K.
7. Thunderbolt Share: Thunderbolt Share is required to be installed on both PCs. See the release notes via **intel.com** for supported hardware, what is new, bug fixes, and known issues.

8. Memory Support: Maximum memory speeds are associated with 1 DIMM per Channel (1DPC) configurations. Additional DIMM loading on any channel may impact maximum memory speed. Up to DDR5-6400 MT/s 1DPC CUDIMM 1Rx8, 1Rx16, 2Rx8. Maximum memory capacity is achievable with 2DPC configurations. For additional 2DPC configuration details, refer to the Arrow Lake-S and Arrow Lake-HX Processor External Design Specification (EDS), Doc ID 729037.
9. Intel® Connectivity Performance Suite: The Intel® Connectivity Performance Suite (ICPS) software application requires Microsoft Windows 11 operating system and enables automated network traffic prioritization and connection optimization for Intel PC platforms configured with Intel® Wi-Fi 7 (Gig+) products.
10. As measured by multitasking creator workflow featuring Adobe Premiere Pro and Blender on an Intel® Core Ultra 9 processor 285K vs. AMD Ryzen 9 9950X
11. As measured by Puget Bench for Creators Video Editing benchmark on an Intel® Core Ultra 9 processor 285K vs. AMD Ryzen 9 9950X.
12. **Intel vPro®**: Intel vPro® eligible when paired with an Intel® Q870 or W880 chipset.
13. As measured by average processor while running a Zoom Call on an Intel® Core Ultra 9 processor (285K) vs. Intel® Core i9 processor 14900K.
14. As measured by CrossMark Overall score on an Intel® Core Ultra 9 processor (285K) vs. AMD Ryzen 9 7950X3D.

Documents / Resources

	intel Core Ultra Desktop Processors [pdf] User Guide Core Ultra Desktop Processors, Ultra Desktop Processors, Desktop Processors, Processors

References

- intel Wired - 2 | Performance Index
- User Manual