

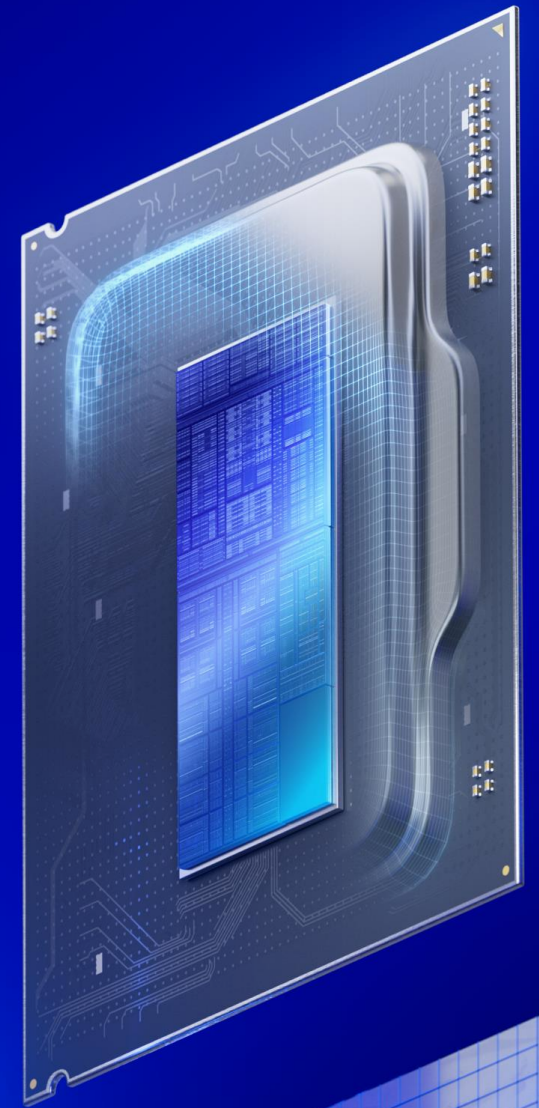
Intel® Core™ Ultra Desktop Processors Launch Briefing

Roger Chandler

Vice President,
Client Computing Group
General Manager,
Enthusiast PC & Workstations

Robert Hallock

Vice President,
Client Computing Group
General Manager,
AI & Technical Marketing





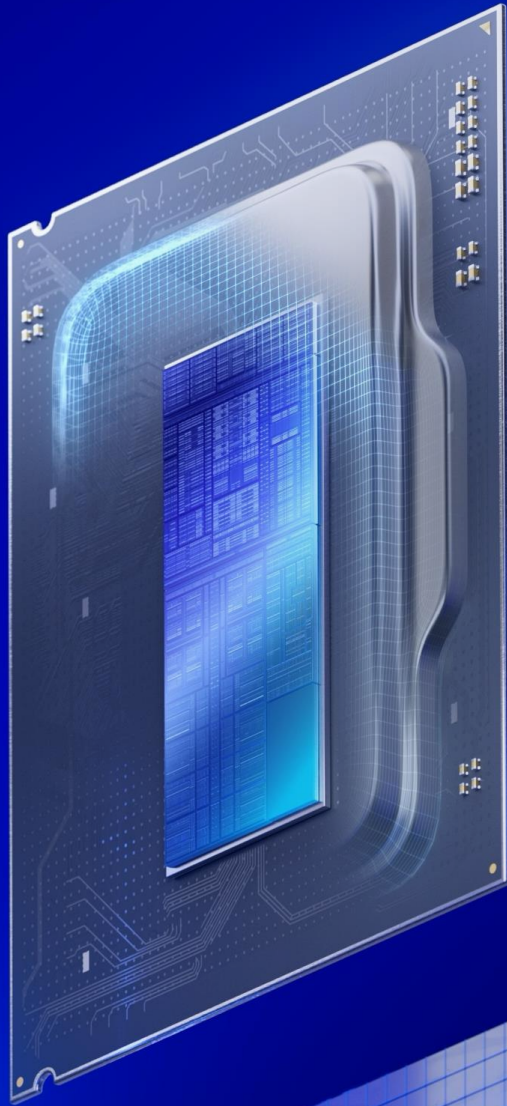
INTRODUCING

Intel[®] Core[™] Ultra Processors

200S SERIES

Arrow Lake

Program Goals



Performance
per Watt

Reduce
package
power by
~40%

Deliver >15%
generational
multithreaded
performance

...while
maintaining
gaming
performance

User
Experience

Expand AI
acceleration
to enthusiast

Integrate Xe-
LPG for latest
media support

Reduce
package
temps ~10°C
while gaming

Arrow Lake

The Cooler and More Efficient Gaming CPU

Same performance at half the power of Raptor Lake-R

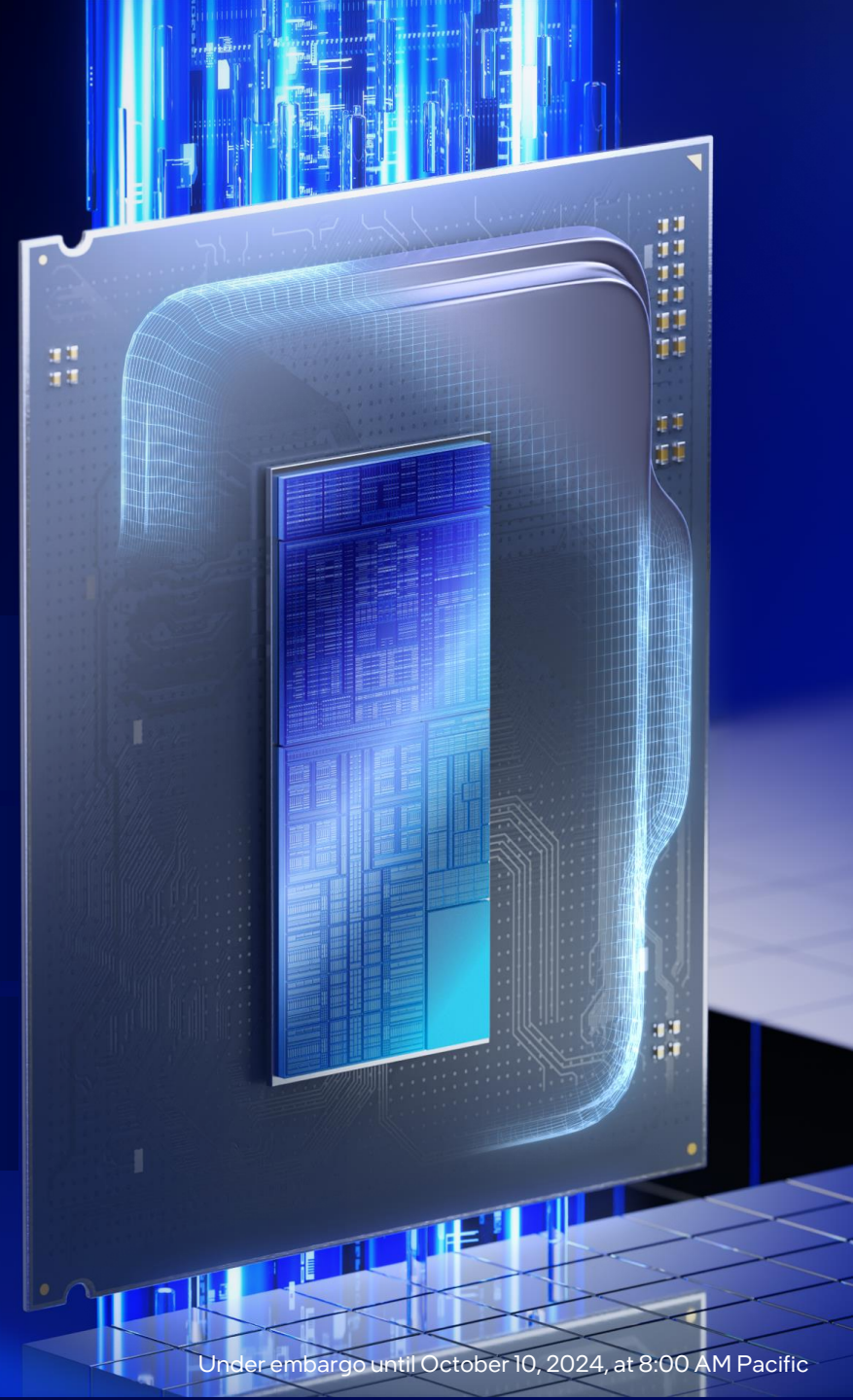
Skymont, Lion Cove, and Foveros team up for impressive perf/W gains

Highest multithread performance

Up to 24 cores for industry-leading compute throughput on desktop PCs¹

Feature-rich enthusiast experience

Xe-LPG for new codecs; ~36 TOPS for desktop AI PC; integrated Thunderbolt™ 4



¹ As of October 2024, among desktop processors targeting ~125W TDP. For more information, go to intel.com/performanceindex. Results may vary.

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32%

IPC uplift over previous gen (vs. Gracemont)

2x

L2 cache bandwidth

Skymont E-core

E-core efficiency meets P-core performance

Lion Cove P-core

The fastest performance core for desktop PCs

Up to **36MB** shared LLC

9%

IPC uplift over previous gen (vs. Raptor Cove)



Scalable & flexible

across multiple implementations



Deeper queueing

for better parallelism



AI-based power management



Split out of order engine



2x

AI throughput

from 4x 128-bit FP & SIMD vector

Enhanced prediction

to find instructions faster

Wider allocation & retire

ALLOCATE

RETIRE

4MB

shared L2 cache

16.67MHz

Finer clock intervals

8x

Wider predict

Wider scheduling

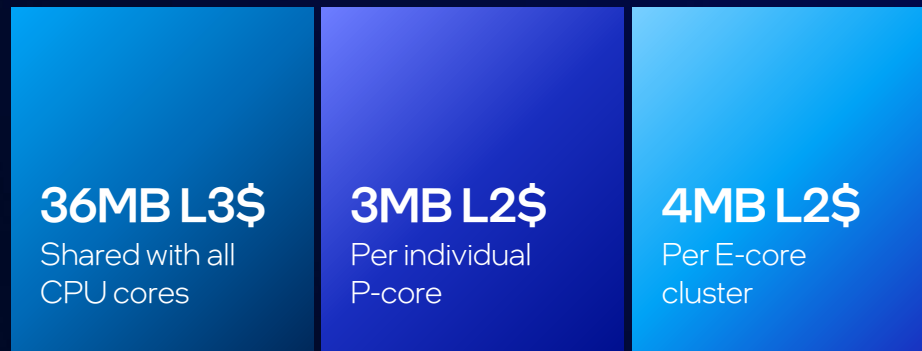
ALLOCATE / RENAME / MOVE ELIMINATION / ZERO IDIOM (8-WIDE)

Enhanced memory subsystem

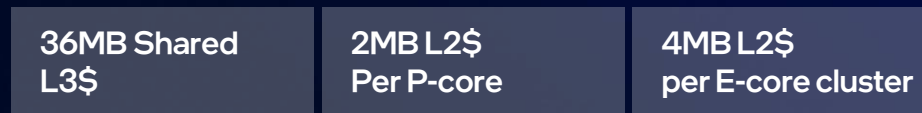
with 3MB L2 Cache

Bringing L3\$ to Skymont

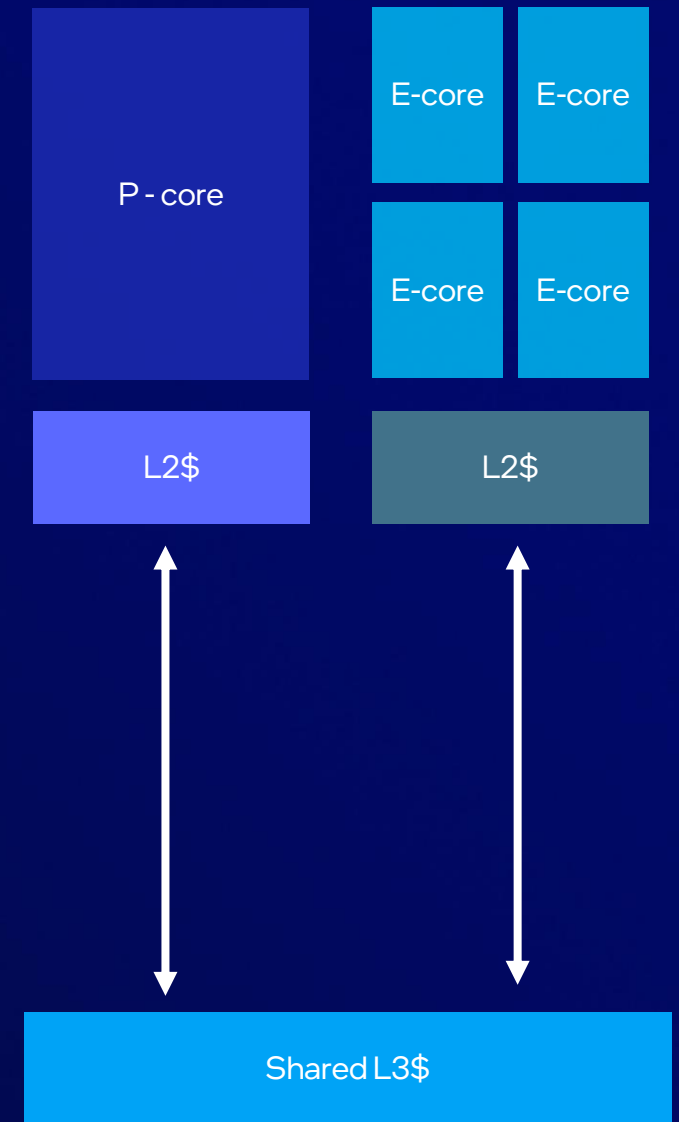
Intel® Core™ Ultra 200S Series processors cache hierarchy



Raptor Lake-R Configuration



Compute Tile Floorplan

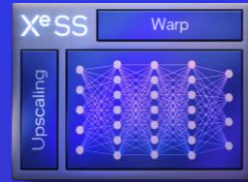


Intel Core Ultra 200S

Xe GPU

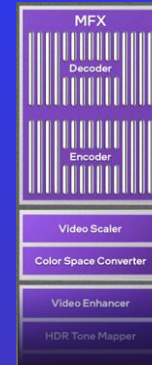
Built with Xe-LPG graphics architecture

XeSS support



Xe Media Engine

Encode/decode



intel ARC™

Software stack



4 Xe-cores

Xe core

XVE	XVE
XVE	XVE
XVE	XVE
XVE	XVE
XVE	XVE
XVE	XVE

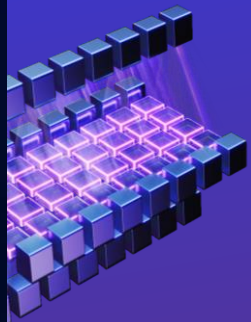
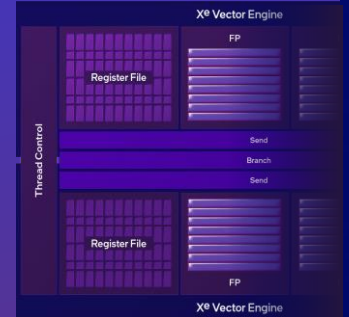
Full support for

DirectX

XIII ULTIMATE



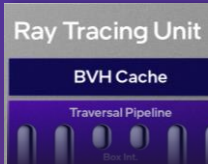
Xe vector engines



DP4a

AI acceleration instructions

4 Ray tracing Units



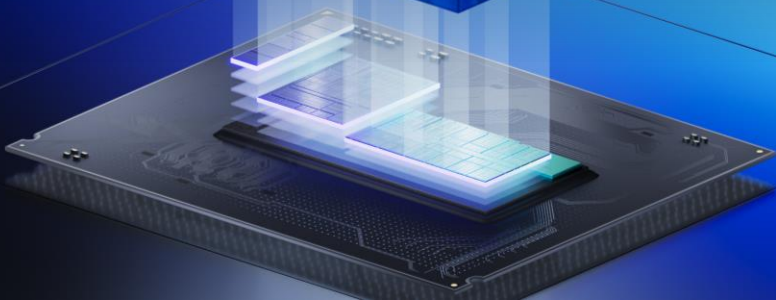
Up to 8 TOPS

4MB L2 cache

AI Sized to Balance with Enthusiast Configurations

Intel Core Ultra 200S Series

Up to **36** platform TOPS



GPU

Up to **8** int8 TOPS

Xe

DP4a Instructions

Compact tile assumes discrete GPU

Intel's 1st for enthusiasts

NPU

Up to **13** int8 TOPS

NPU3

MAC Arrays

Sized for agents, media, and SLMs

CPU

Up to **15** int8 TOPS

Skymont Lion Cove

AVX - VNNI

Always available and low latency

+

Intel® Arc™ A770 Example



dGPU

Up to **260** int8 TOPS*

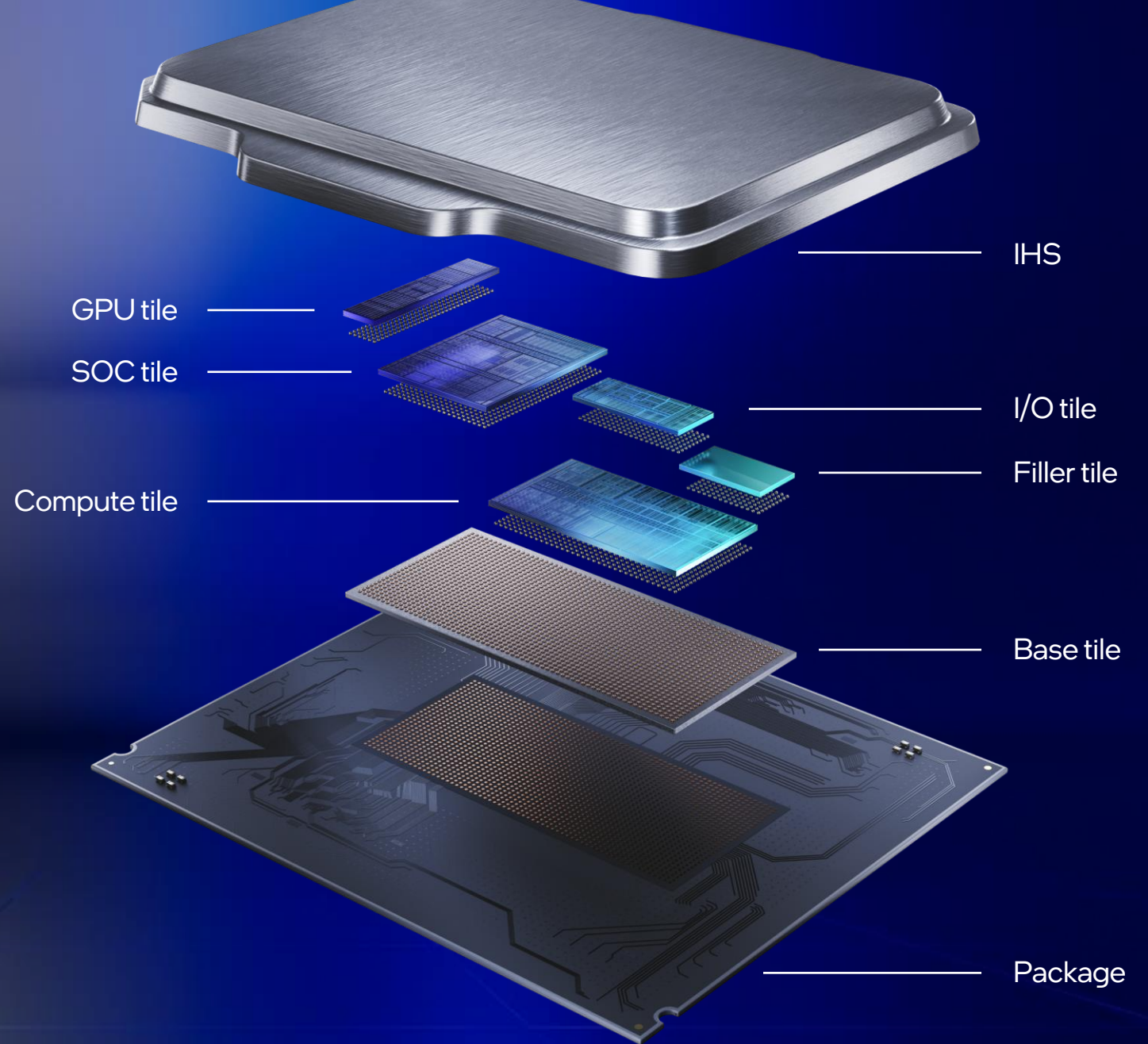
Xe

XMV Instructions

Game AI, agents, creation, and more

Scaling Skymont and Lion Cove to Gaming PCs

Enabled by Foveros Advanced 3D packaging technology



Intel® Core™ Ultra 200S Series

All-new architecture for high-performance desktops



Intel® Core™ Ultra 9 285K	24 Cores (8P+16E)	24 Total threads	4 GPU cores	13 TOPS NPU	5.7 Max GHz
Intel® Core™ Ultra 7 265K	20 Cores (8P+12E)	20 Total threads	4 GPU cores	13 TOPS NPU	5.5 Max GHz
Intel® Core™ Ultra 7 265KF	20 Cores (8P+12E)	20 Total threads	- GPU cores	13 TOPS NPU	5.5 Max GHz
Intel® Core™ Ultra 5 245K	14 Cores (6P+8E)	14 Total threads	4 GPU cores	13 TOPS NPU	5.2 Max GHz
Intel® Core™ Ultra 5 245KF	14 Cores (6P+8E)	14 Total threads	- GPU cores	13 TOPS NPU	5.2 Max GHz

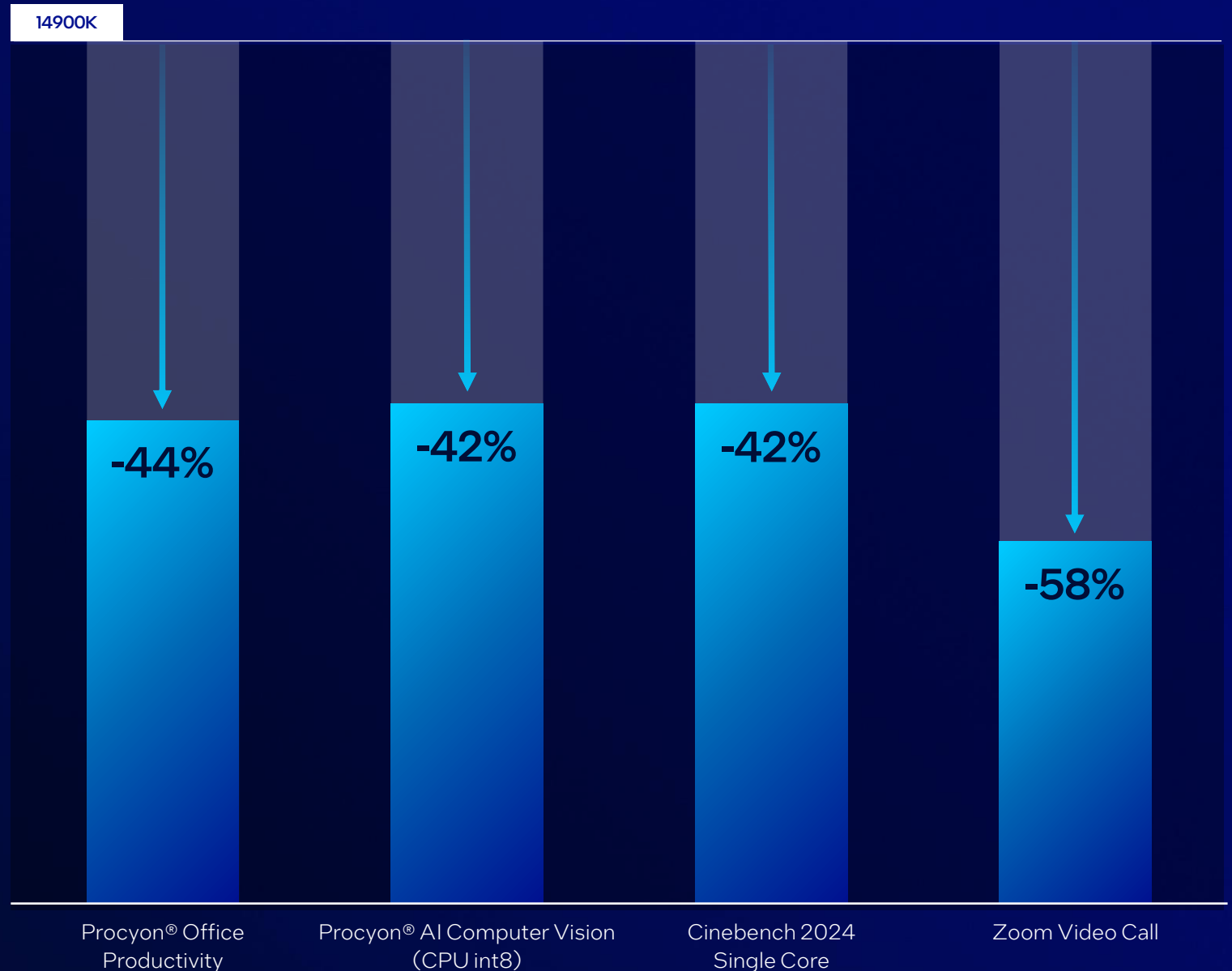


A **Landmark**
Reduction in Power

Leadership
Core Performance

Arrow Lake Halves Productivity Power Consumption

Up to **58%** lower package power
in lightly-threaded work
compared to Raptor Lake-R



Intel® Core™ Ultra 9 285K

Comparison of Intel Core Ultra 200S series processors against prior generation enthusiast desktop processors targeting ~125W TDP, based on average CPU package (SoC) power measured in watts across measured benchmarks and representative workloads. Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.



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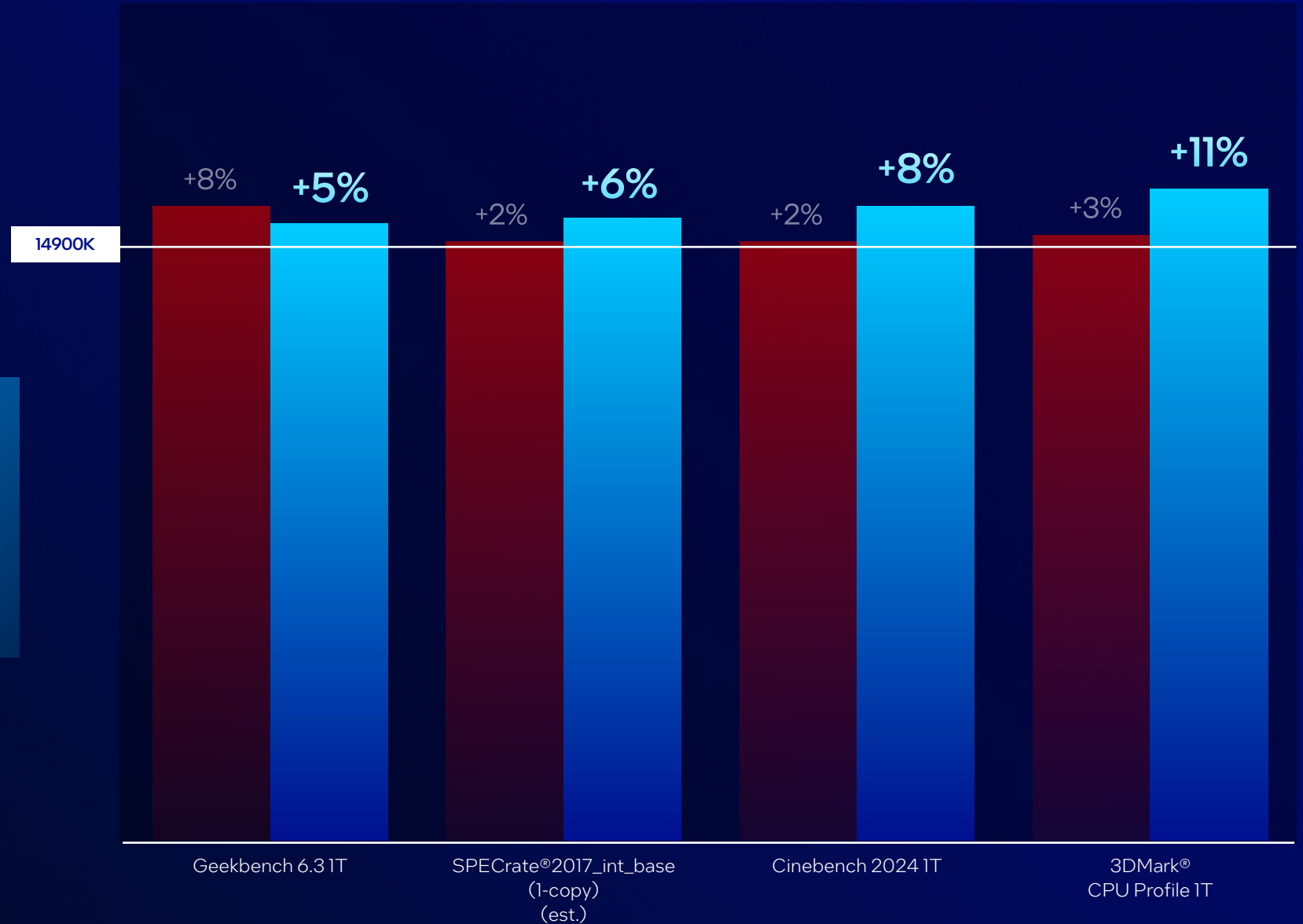
Leadership Core Performance

Geomean
~8% faster
IT performance
vs. prior gen

Geomean
~4% faster
IT performance
vs. competition

Intel® Core™ Ultra 9 285K

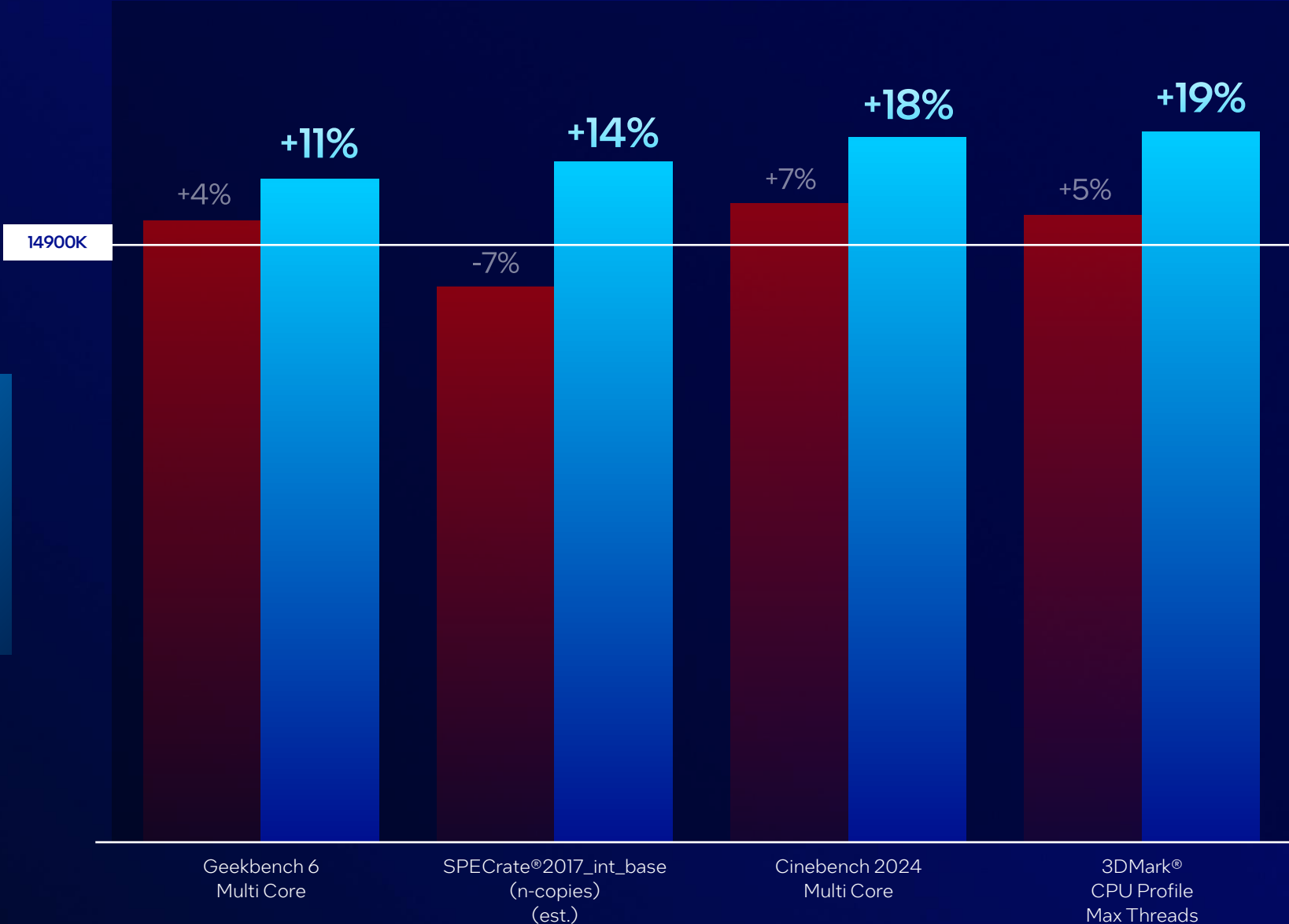
AMD 9950X



Arrow Lake Sets the Bar for CPU Compute

Geomean
15% faster
nT performance
vs. prior gen

Geomean
13% faster
nT performance
vs. competition



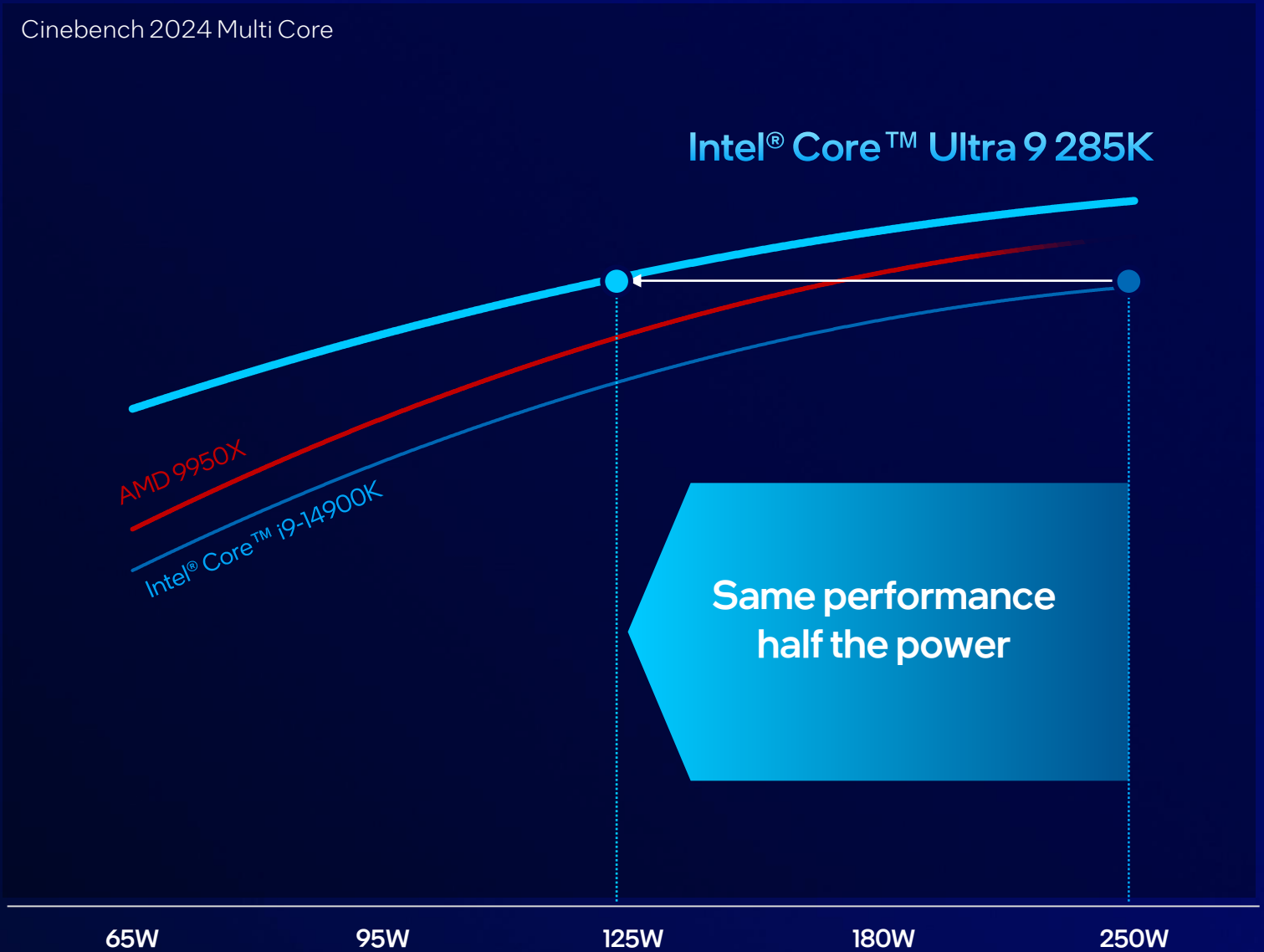
Intel Core Ultra 9 285K (24 Threads)

AMD 9950X (32 Threads)

Relative performance (higher is better)

Energy Efficiency Leadership From Low to High

Leadership performance per
watt in multithreaded CPU
compute



As of October 2024, among desktop processors targeting ~125W TDP.
See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details. Results may vary.

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Arrow Lake Delivers Exceptional Energy Efficiency

Perf

**Leadership CPU
Core Performance**

in enthusiast desktop

Up to

19% more nT perf

vs. previous gen

Power

Up to

**58% lower
package power**

in lightly-threaded use cases

Up to

**Same performance
at ½ the power**

in sustained nT vs. previous gen

As of October 2024, among desktop processors targeting ~125W TDP; SPECrate®2017_int_base (1-copy) performance is estimated. See intel.com/performanceindex for details. Results may vary.

intel.

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Elite Gaming Experience

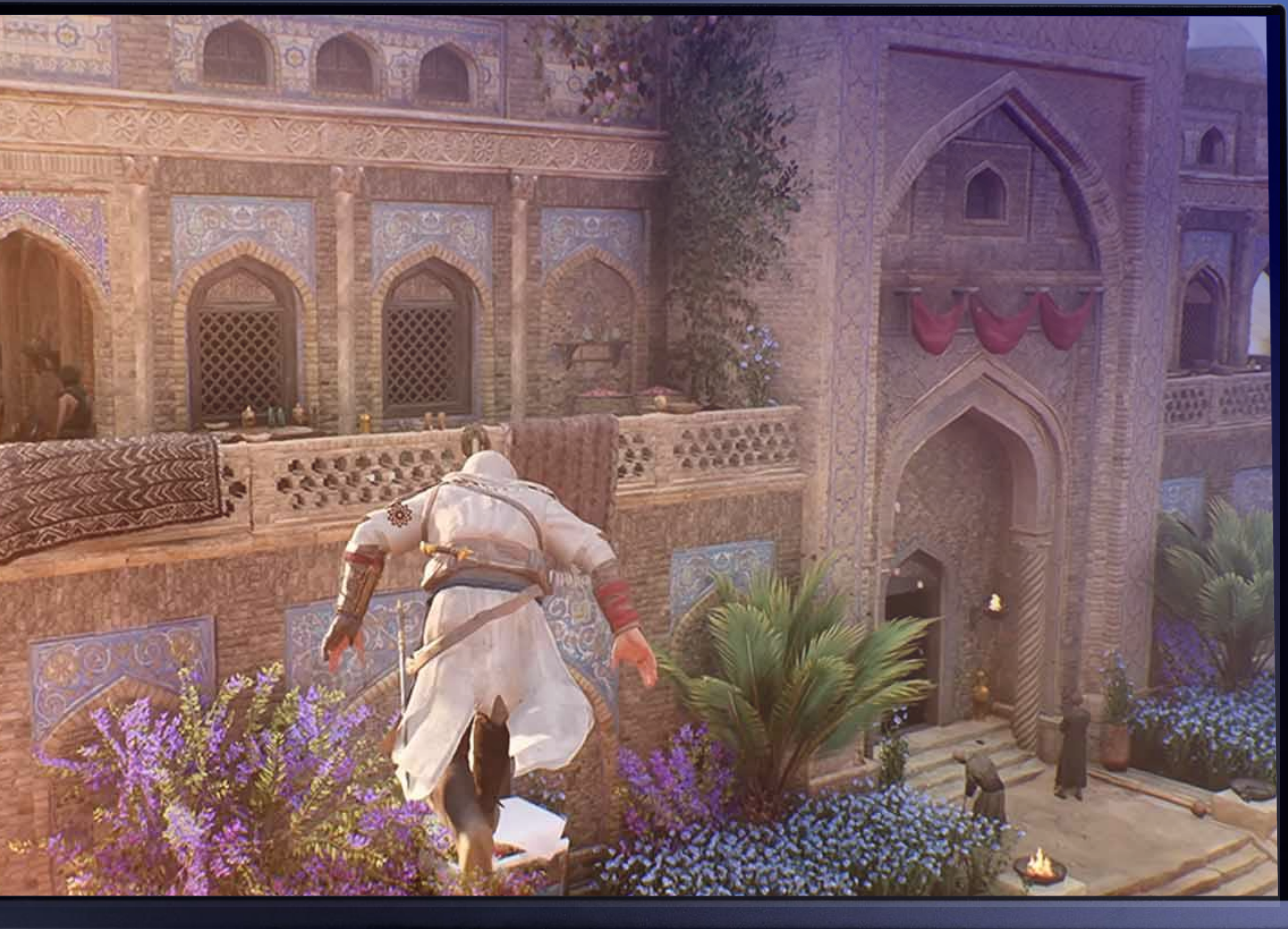


One Giant Leap in Gaming Perf/W

Same framerates as Raptor Lake-R at up to **~165W** lower system power



intel *Intel APO enabled. On par is +/-3%. See intel.com/performanceindex for details. Results may vary.



ASSASSIN'S
CREED
MIRAGE

DEMO

Intel® Core™ i9-14900K

Intel® Core™ Ultra 9 285K

~264 FPS



PAR

Average FPS



~261 FPS

~527 W

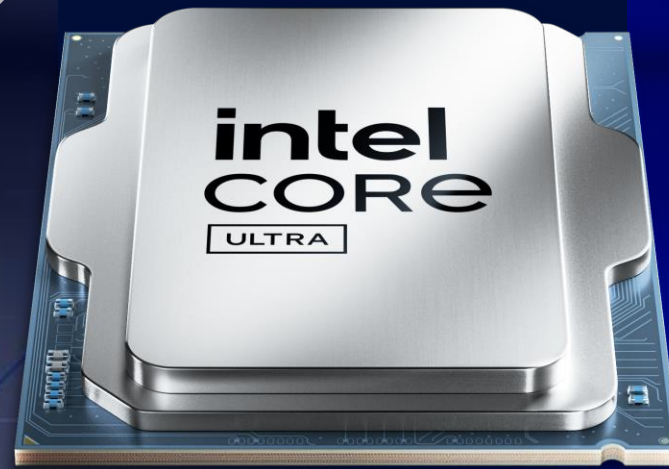


↓ 80W

System power



~447 W



Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

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Arrow Lake Slashes Gaming Power

Up to **~165W** lower total system power than Raptor Lake-R under same conditions



Intel® Core™ Ultra 9 285K

Intel® Core™ i9-14900K (baseline)

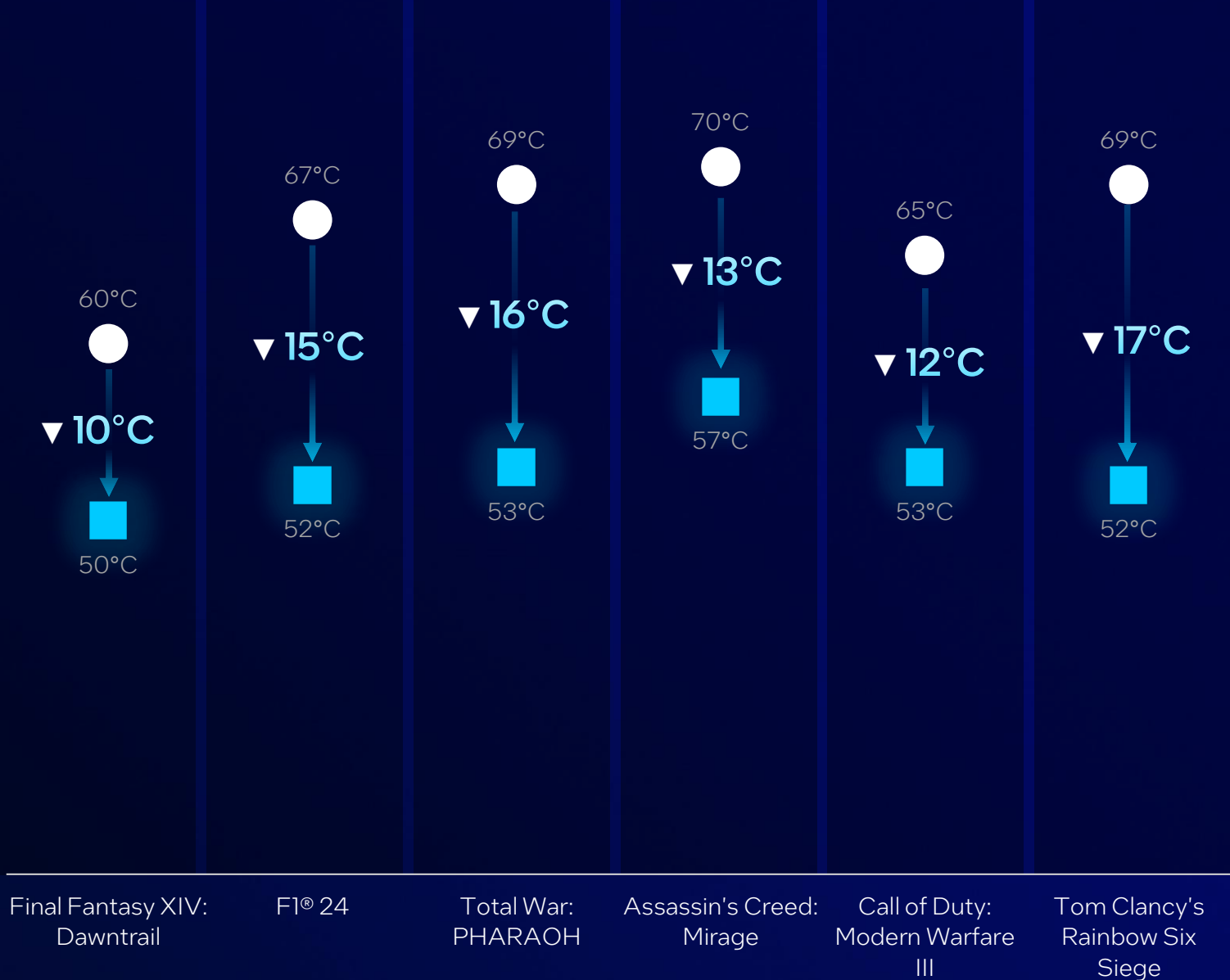
Cooler and Quieter Gaming with Arrow Lake

Averaging ~13°C cooler package temps vs. Raptor Lake-R

Average CPU Package Temp, 1080p Gaming, 360mm AIO Cooler

Intel® Core™ Ultra 9 285K

Intel® Core™ i9-14900K



Average CPU package temp



Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

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Battle of the Titans

Gamers win when competition is fierce



1080p High Image Quality (Relative Performance)

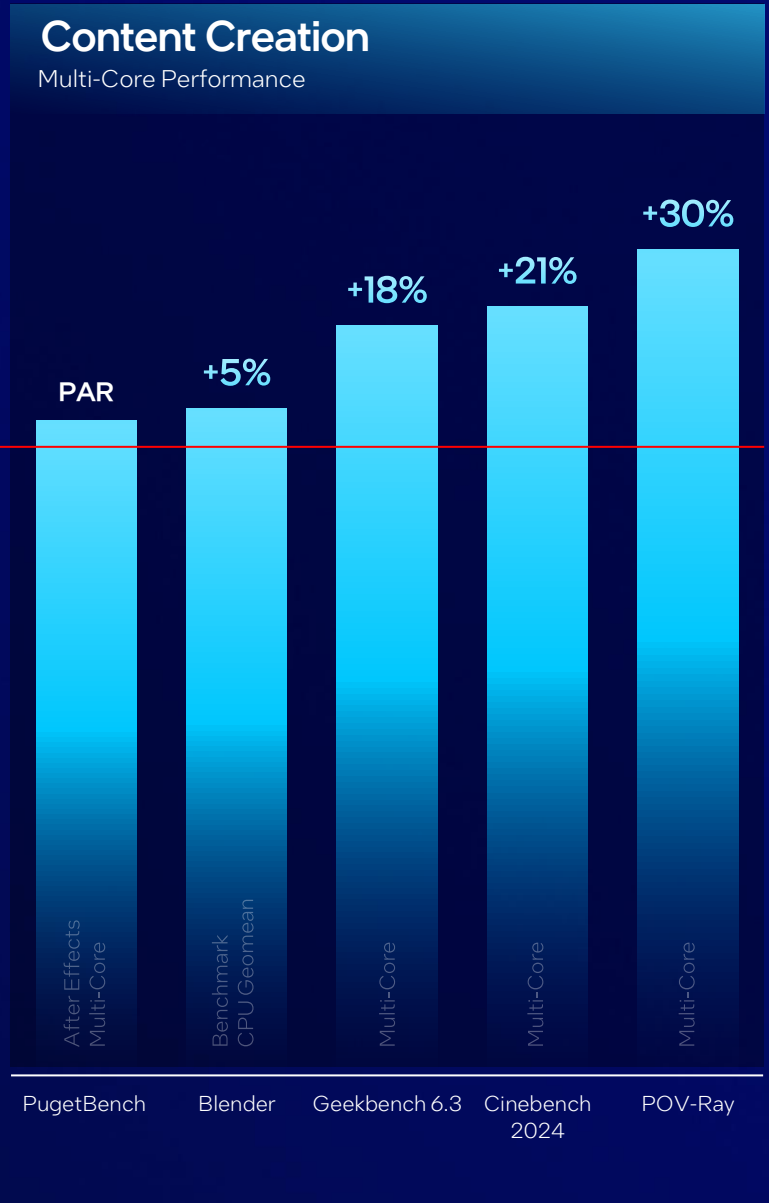
Intel® Core™ Ultra 9 285K

intel. *Intel APO enabled. On par is +/-3%. See intel.com/performanceindex for details. Results may vary.

A Balanced Enthusiast Experience

Strong gaming and superior content creation in one package

Intel® Core™ Ultra 9 285K



Arrow Lake Perf/W Delivers **Awesome** **Scaling** for Efficient Gaming

Consistent performance when
tuned for compact gaming PCs

7 Titles Represented

Assassin's Creed: Mirage
Call of Duty: Modern Warfare III
F1® 24
Red Dead Redemption 2
Tom Clancy's Rainbow Six Siege
Total War: PHARAOH
Age of Mythology: Retold



Intel® Core™ Ultra 9 285K

Relative performance, geomean of 6 titles @ 1080p High

A Cooler and Quieter Flagship Experience

Intel® Core™ Ultra 7 265K
vs. Intel® Core™ i9-14900K



Geomean
-5%
gaming perf

Geomean
15°C
lower temp

Up to
188W
lower system
power



Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

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Gaming Elevated.

The complete package
for PC enthusiasts

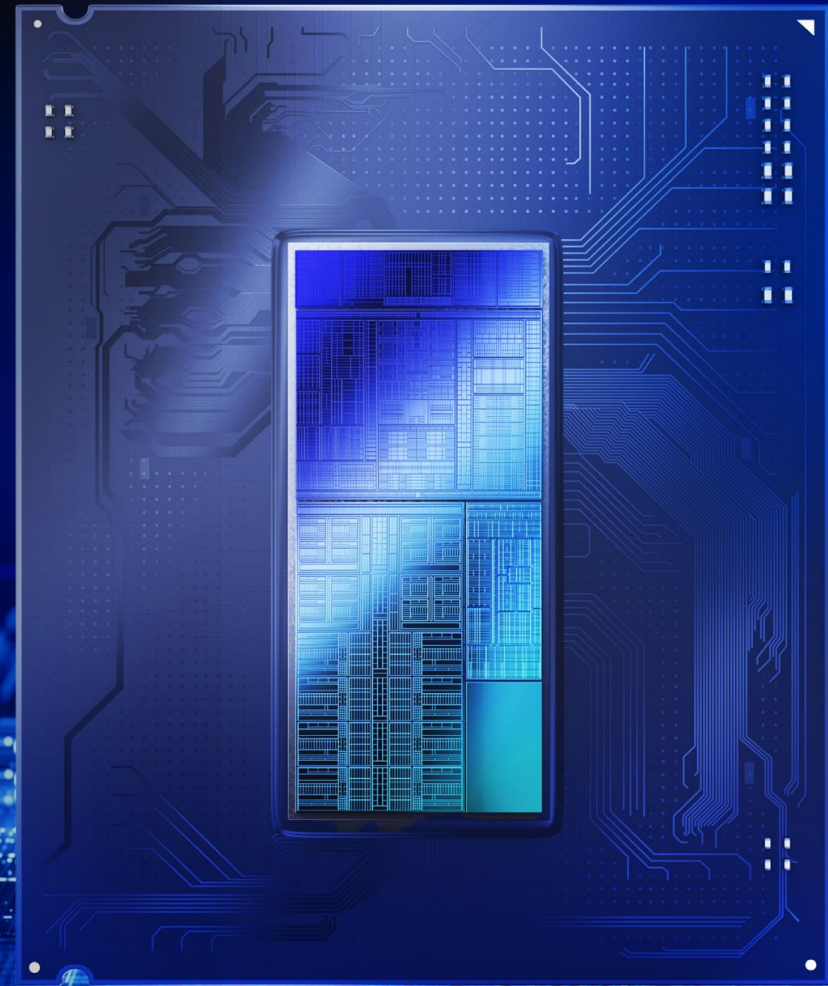
intel
CORE
ULTRA 9

Core i9 performance at up to 188W
lower system power while gaming

intel
CORE
ULTRA 7

Essential performance
for pure gaming rigs

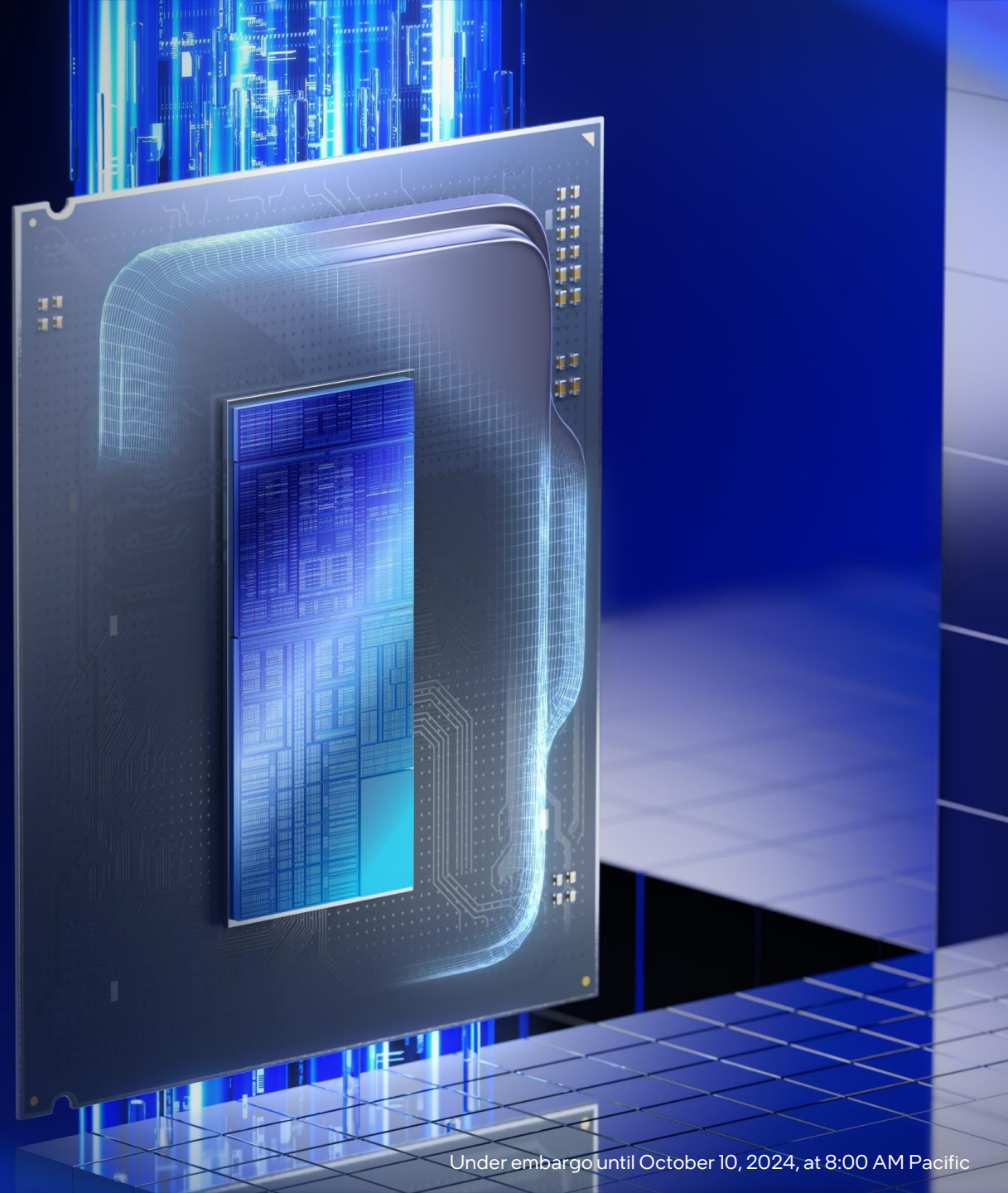
intel
CORE
ULTRA 5



Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

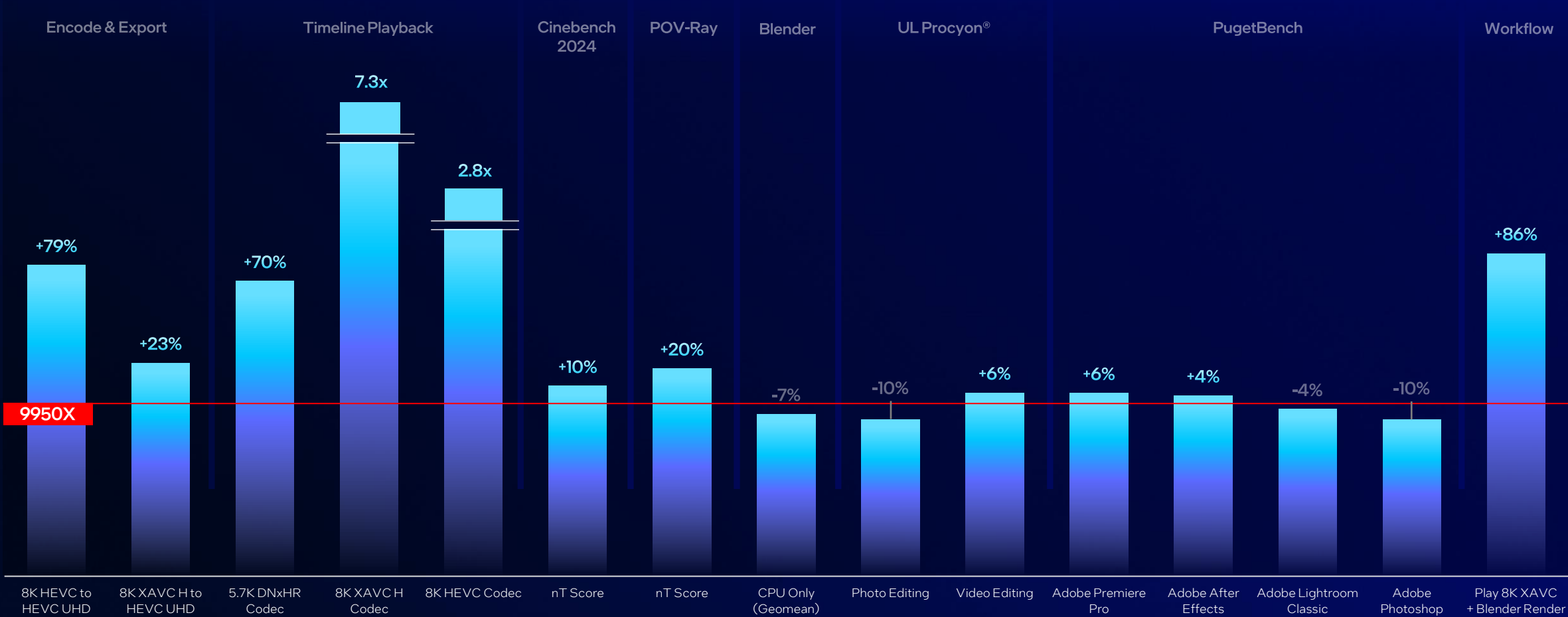
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Powerhouse Creation and AI



Top-Tier Performance for Creators

Faster render times and hardware support for professional codecs



Intel® Core™ Ultra 9 285K

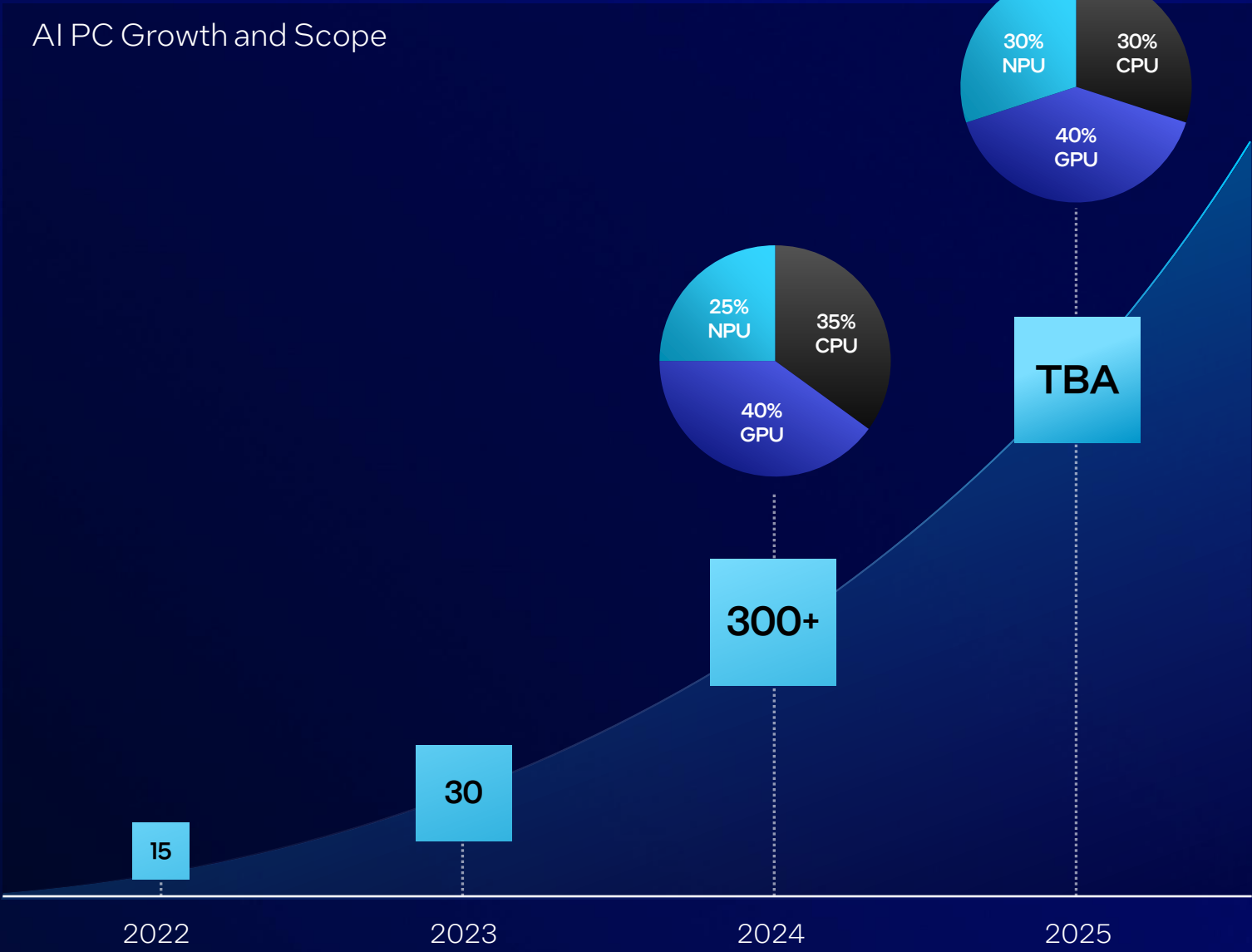


As of October, 2024 among enthusiast desktop processors targeting ~125W TDP. Results may vary. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

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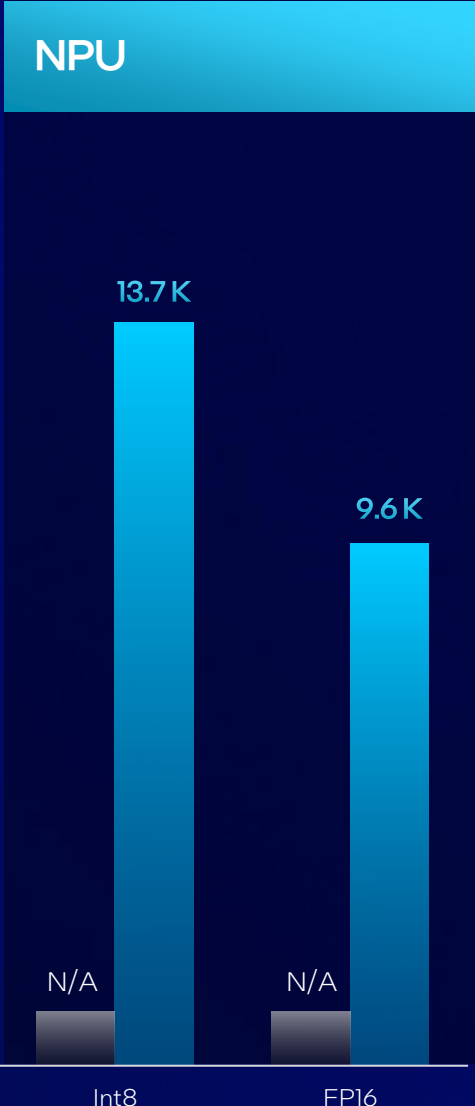
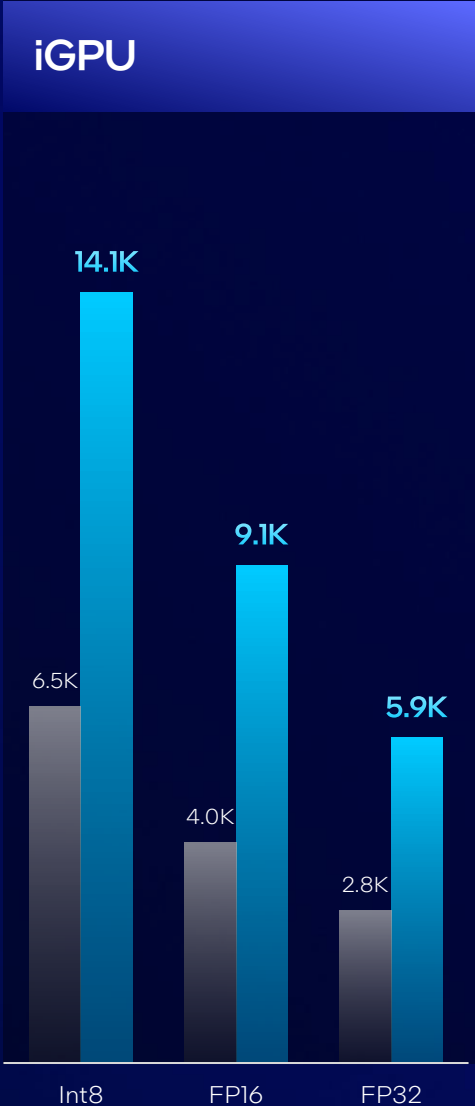
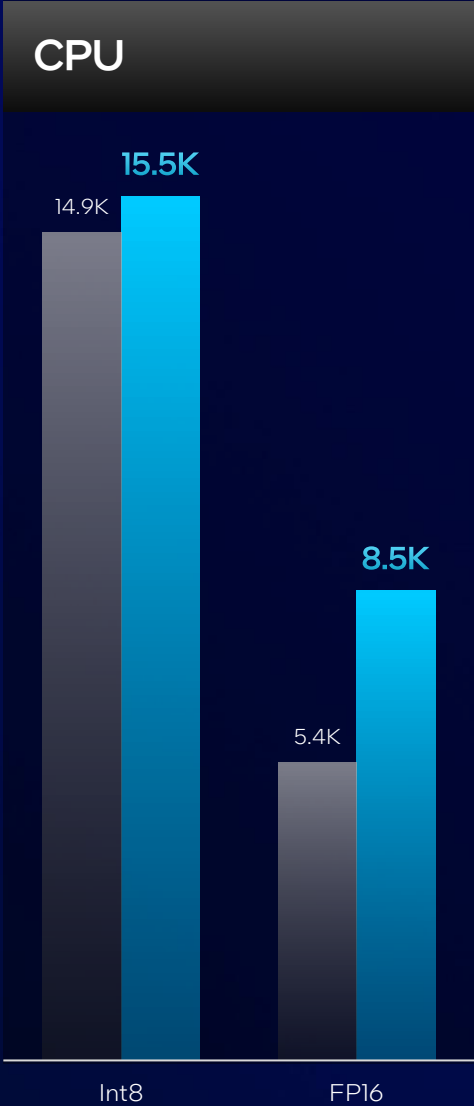
AI Feature Growth & Engine Adoption

- Significant ISV appetite**
New perf/W to drive new features and functionality
- Rapid growth**
Widespread AI integration over next 18-24 months
- Multi-engine roadmaps**
ISVs already depend on multiple accelerators
- GPU leads in feature share**
ISV roadmaps are counting on robust GPUs



Geekbench AI Performance

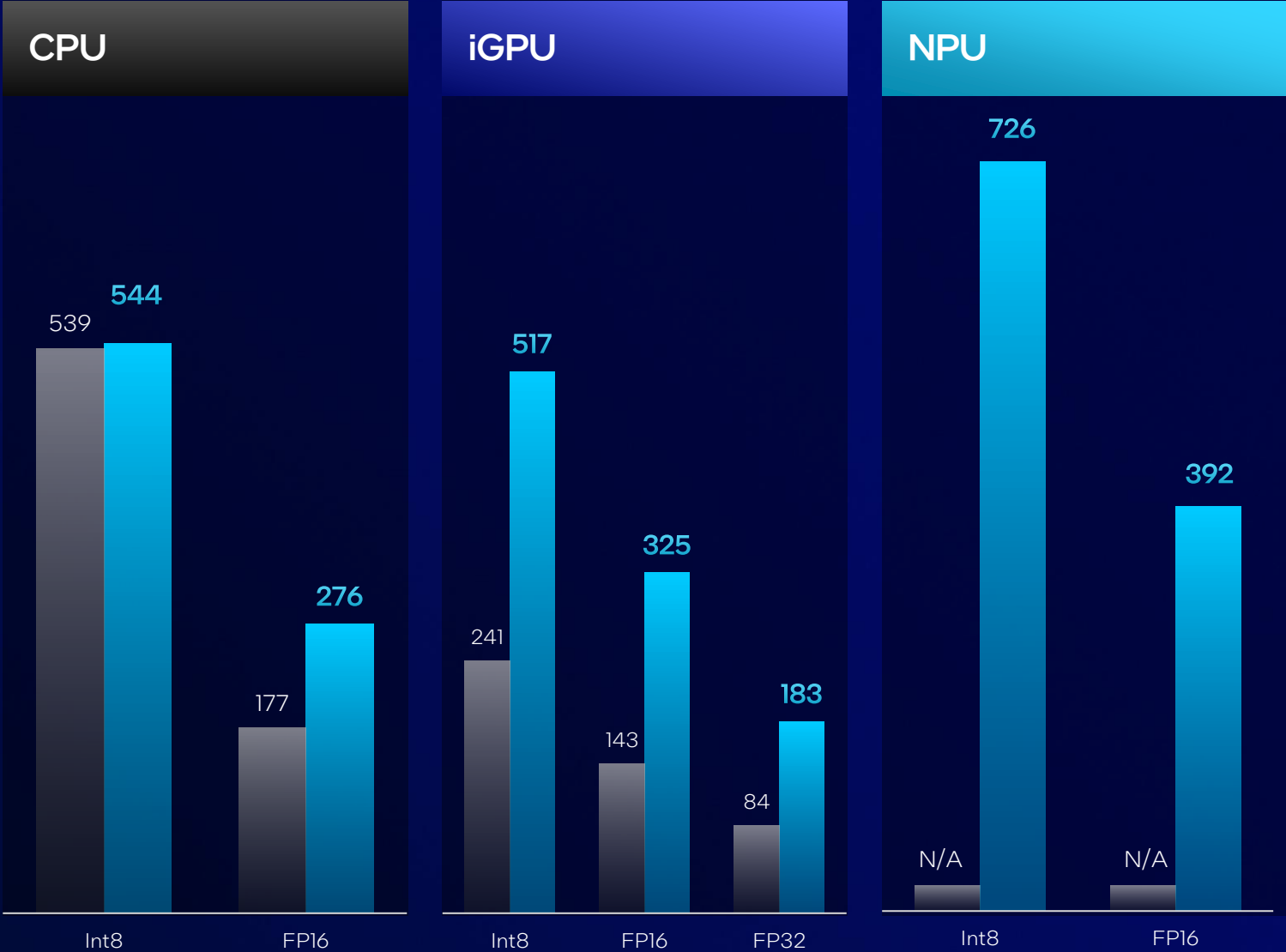
Up to **~2x** the performance of Raptor Lake-R, plus NPU3 for new perf/W opportunities



- Intel Core™ Ultra 9 285K
- Intel Core™ i9-14900K

UL Procyon[®] AI Computer Vision Performance

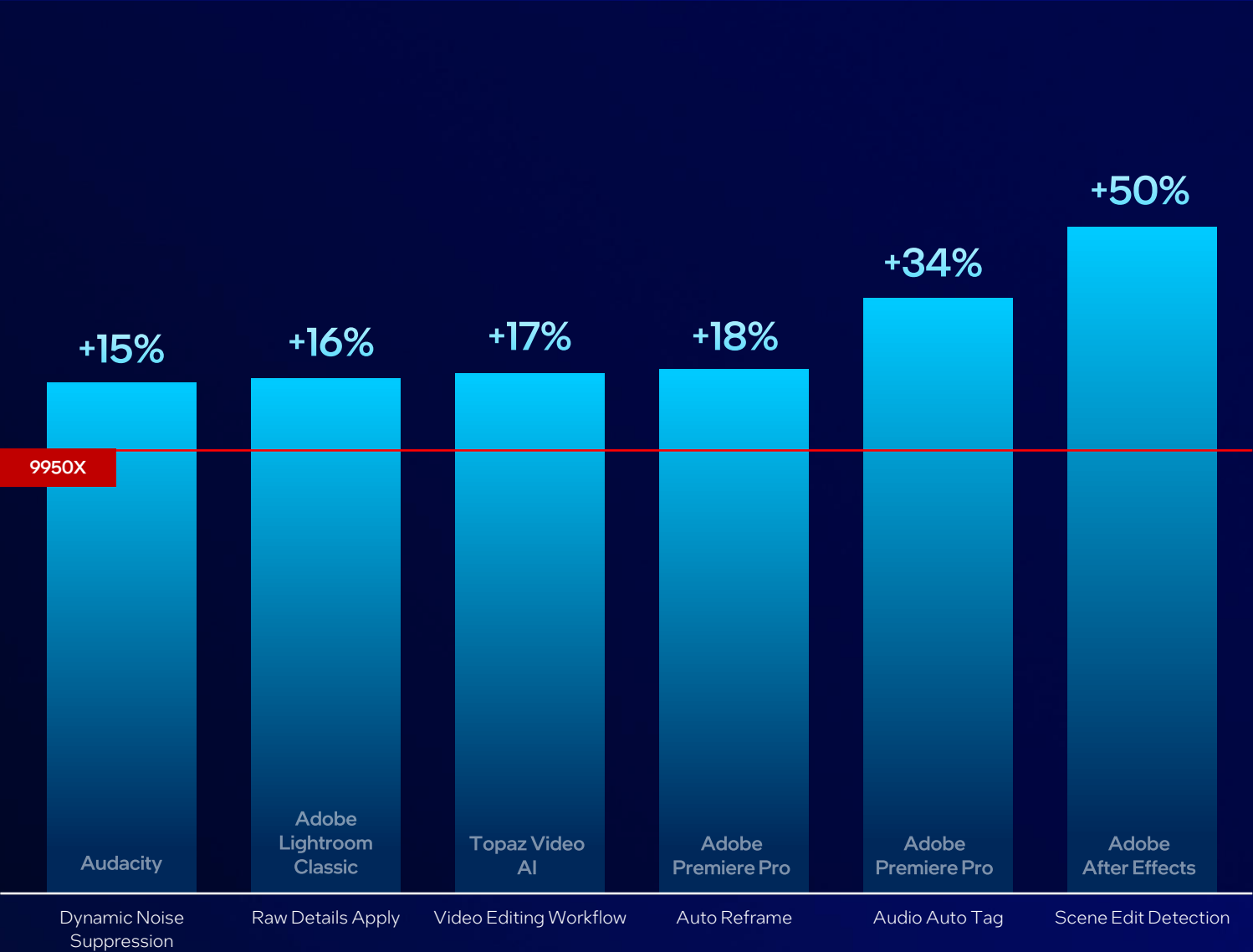
Predictable performance on
multiple engines, data types, and
models



■ Intel Core™ Ultra 9 285K
■ Intel Core™ i9-14900K

Intel AI Optimization Fuels Winning Performance

Up to **50%** faster AI performance vs. competing flagship processors



Intel Core™ Ultra 9 285K



Results may vary based on use, configurations, and other factors. See intel.com/performanceindex for details.

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Moves Digital Interaction Beyond Keyboard & Mouse



Head
Motion



Voice
Controls & Dictation



Facial
Expressions



Virtual
Buttons



Switch
Control



Tilt
Controls



DEMO



Computer vision to run "hotkeys" and macros with gestures & voice

Adds six new input types in games

Works with any game

OpenVINO AI Framework

CPU, GPU, and NPU support

Features



Tilt Controls



Facial Expressions



Head Motion



Virtual Buttons



Switch Control



Voice Controls & Dictation

Engine Utilization

Before AI Offload

CPU

10%

iGPU

30%

After

NPU

~5%



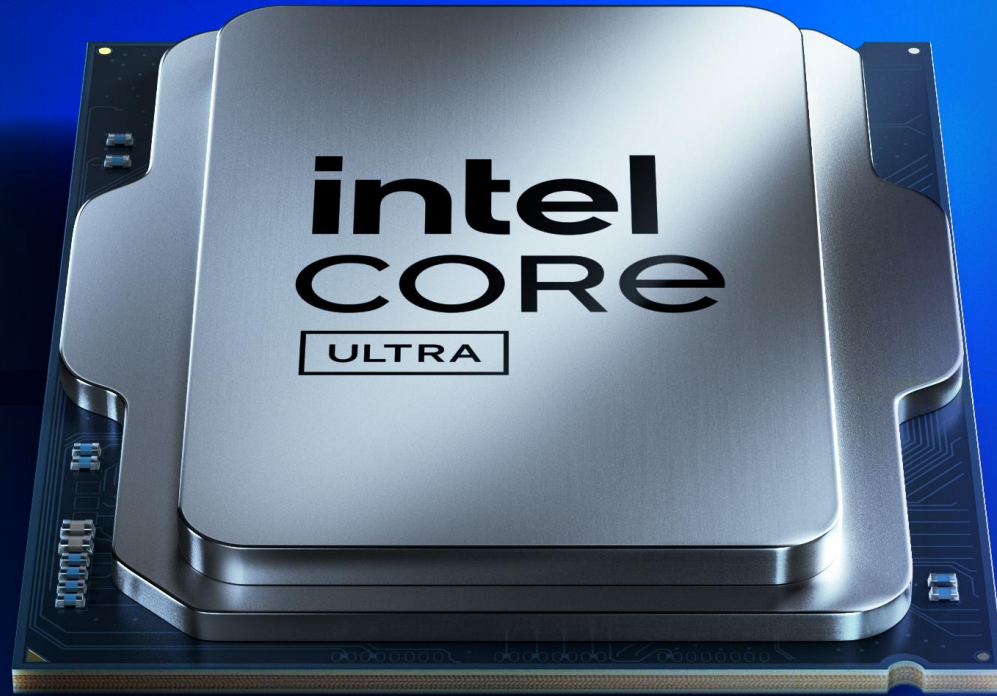
Balanced AI Performance

Up to
50% faster creator AI

AI-assisted video editing vs. AMD 9950X

Intel's first Desktop AI PC

With full hardware AI support



Intel® Core™ Ultra 200S Series

Great Creator Performance

Up to
8x faster timeline playback
of pro video codecs vs. AMD 9950X

Up to
20% faster rendering
Ray-traced rendering vs. AMD 9950X



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The Most Modern Platform for Enthusiasts



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intel®

800 Series Chipset

Fantastic platform I/O for LGA1851

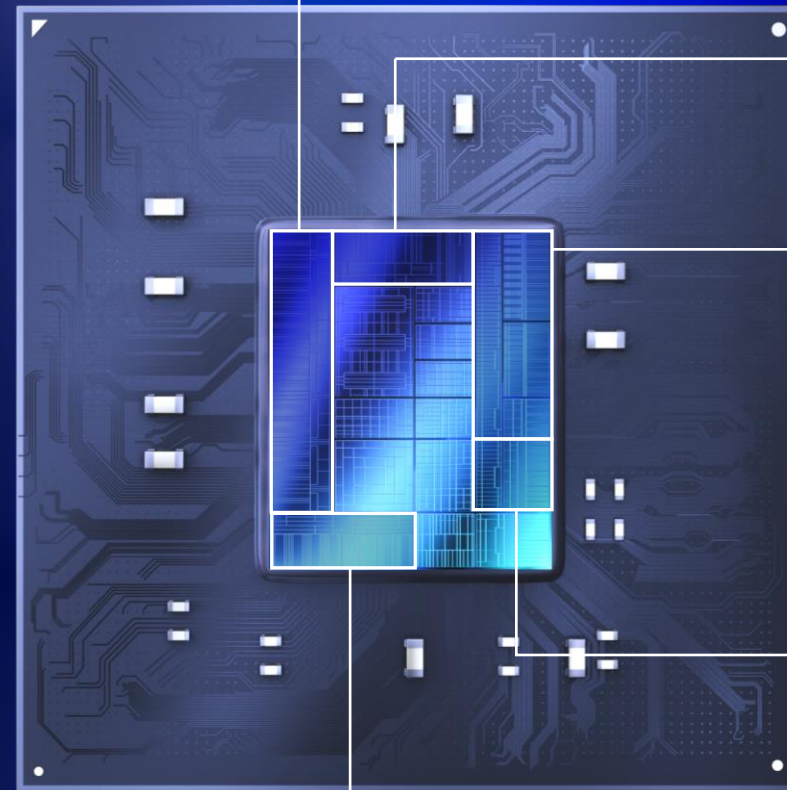
CPU + Chipset

48x

PCIe lanes

20x

PCIe 5.0



Up to
24x PCIe® 4.0

Up to
4x eSPI

Up to
10x USB 3.2

5x 20G option

10x 10G option

10x 5G option

Up to
14x USB 2.0

Up to
8x SATA 3.0

intel.

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Uncompromised Platform Connectivity

The latest connectivity including Thunderbolt™ 4 integrated on desktop for first time

	 Thunderbolt™	 Thunderbolt™ Share	 Wi-Fi™	 Bluetooth®	 Ethernet
Integrated	Up to 2 ports Thunderbolt™ 4	PC to PC screen sharing Peripherals and storage sharing	intel KILLER Wi-Fi 6E (Gig+)	Bluetooth 5.3 Bluetooth LE	1 GbE
Discrete	Up to 4 ports Thunderbolt™ 5	Fast and secure file transfer Quick data migration to new PC	intel KILLER Wi-Fi 7 (5 Gig)	Bluetooth 5.4 Bluetooth LE	2.5GbE



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Overclocking Overhauled

New overclocking functionality with fine grain control

							
<p>Granular core clock</p> <p>Top turbo frequency in 16.6 MHz steps for P-cores and E-cores</p>	<p>Dual base clock</p> <p>Run an independent BCLK for SoC and compute tiles</p>	<p>Tile-to-Tile & fabric OC</p> <p>Can apply a static/BIOS ratio and supports dynamic ratio changes for fabric</p>	<p>DLVR bypass</p> <p>Bypass the internal voltage management using external supply for extreme OC</p>	<p>Intel eXtreme tuning utility</p> <p>New features including automated OC enhancements</p>	<p>Memory overclocking</p> <p>New memory controller supports new XMP and CUDIMM DDR5</p>	<p>P & E-core overclocking</p> <p>P-core per-core V/f control, and E-core per-cluster V/f control</p>	<p>Low temperature overvolting</p> <p>Increasingly bypass voltage limits as the chip gets colder</p>

Room to Max Out Memory

Run the largest and toughest apps, models and scenes

Up to
**DDR5
6400**

Up to
**48GB
per DIMM**

Up to
**192GB max
capacity**

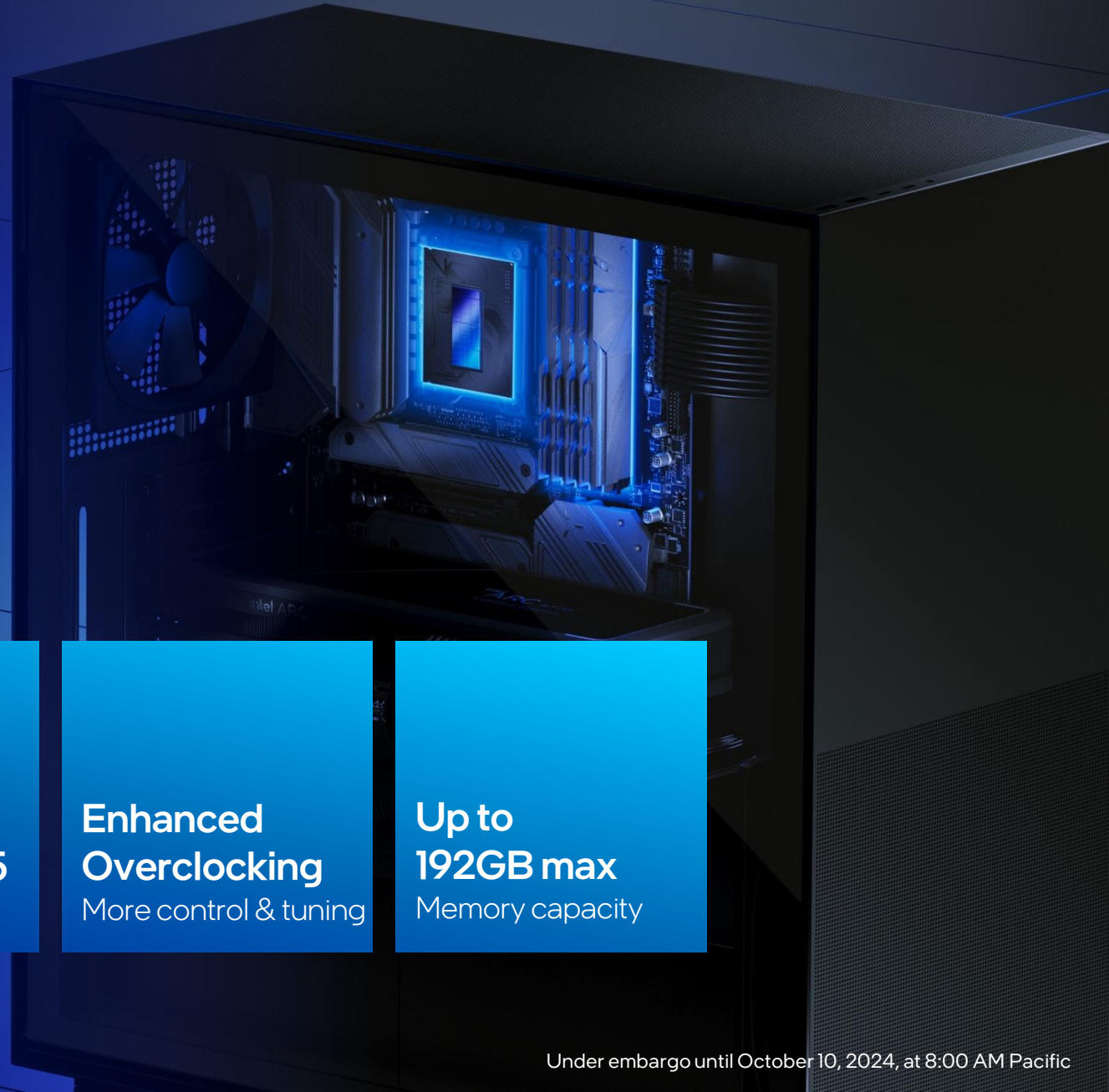
ECC
support

Dual
channel

UDIMM
CUDIMM
SODIMM
CSODIMM



The Intel Platform Advantage



The Latest Connectivity
for Enthusiasts

Wi-Fi 6E & Thunderbolt 4
Integrated

Wi-Fi 7 & Thunderbolt 5
Discrete

Enhanced Overclocking
More control & tuning

Up to 192GB max
Memory capacity



Results may vary based on use, configurations, and other factors. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details.

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Intel Core Ultra 200S Series

The complete enthusiast solution

Enthusiast
Gaming

Flagship
Gaming
FPS

Parity vs. Intel® Core™ i9-14900K
and AMD Ryzen™ 9 9950X,
geomean 31 games

Fastest
Multithread

up to **+13%**

Faster CPU
compute perf

vs. AMD Ryzen™ 9 9950X,
average of four nT workloads

Cooler and
Quieter

up to **17°C**

Lower CPU package
temperatures

vs. Intel® Core™ i9-14900K
during active PC gaming

Ultra Efficient
Gaming

up to **165W**

Lower system
power

vs. Intel® Core™ i9-14900K
during active PC gaming

Expanding
AI PC to Desktop

36

Platform
TOPS

Across the platform with VNNI,
DP4a, and NPU acceleration



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Intel Core Ultra 200S Series Processors

Sales and
Pre-orders Start

Oct
24



Intel® Core™ Ultra 200S Series

Launch SKUs and Pricing



Intel® Core™ Ultra 9 285K	24 Cores (8P+16E)	24 Total threads	4 GPU cores	13 TOPS NPU	5.7 Max GHz	\$589 USD Suggested eTail Price
Intel® Core™ Ultra 7 265K	20 Cores (8P+12E)	20 Total threads	4 GPU cores	13 TOPS NPU	5.5 Max GHz	\$394 USD Suggested eTail Price
Intel® Core™ Ultra 7 265KF	20 Cores (8P+12E)	20 Total threads	-- GPU cores	13 TOPS NPU	5.5 Max GHz	\$379 USD Suggested eTail Price
Intel® Core™ Ultra 5 245K	14 Cores (6P+8E)	14 Total threads	4 GPU cores	13 TOPS NPU	5.2 Max GHz	\$309 USD Suggested eTail Price
Intel® Core™ Ultra 5 245KF	14 Cores (6P+8E)	14 Total threads	-- GPU cores	13 TOPS NPU	5.2 Max GHz	\$294 USD Suggested eTail Price



Intel Core™ Ultra 200S Series

Ecosystem that delivers



Intel Core Ultra 200S Series Processors (K-SKUs)

		Intel® Core™ Ultra 9 285K	Intel® Core™ Ultra 7 265K	Intel® Core™ Ultra 7 265KF	Intel® Core™ Ultra 5 245K	Intel® Core™ Ultra 5 245KF
CPU	Cores (P+E) ¹	24(8+16)	20(8+12)		14(6+8)	
	Threads	24	20		14	
	Intel® Smart Cache	36	30		24	
	Total L2 Cache	40	36		26	
	Intel® Thermal Velocity Boost Frequency (GHz) ²	5.7	N/A		N/A	
	Intel® Turbo Boost Max Technology 3.0 Frequency (GHz) ²	5.6	5.5		N/A	
	P-core Max Turbo Frequency (GHz) ³	5.5	5.4		5.2	
	P-core Base Frequency (GHz) ³	3.7	3.9		4.2	
	E-core Max Turbo Frequency (GHz) ³	4.6	4.6		4.6	
E-core Base Frequency (GHz) ³	3.2	3.3		3.6		
GPU	Processor Graphics	Intel® Graphics	Intel® Graphics	N/A	Intel® Graphics	N/A
	Xe Cores	4	4	N/A	4	N/A
	GPU Max Frequency	2 GHz	2 GHz	N/A	1.9 GHz	N/A
	GPU Base Frequency	300 MHz	300 MHz	N/A	300 MHz	N/A
NPU	Neural Compute Engines	2x Gen3				
	NPU Peak TOPS	13 TOPS				
Mem & I/O	CPU PCIe Lanes	24 lanes				
	Maximum JEDEC DRAM Speed	DDR5-6400				
	Memory Channels	2ch				
	Maximum Memory Capacity ⁵	192GB				
Power	Processor Base	125W				
	Maximum Turbo Power	250W	250W		159W	
Features	Reliability, Availability & Serviceability ⁶	Enabled	Enabled	Disabled	Enabled	Disabled
	Intel® SIPP	Yes	Yes	No	Yes	No
	Intel® vPro	Yes	Yes	No	Yes	No
	Intel® ISM	Yes				

Coming Soon
Intel Core Ultra
H & HX Series

Arriving
1Q25

Enthusiast mobile performance at lower power

Intel's first ever mobile AI PC for gamers & creators

Maximized control & connectivity



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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 www.intel.com/AIPC.

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/performance-vpro for details.

Codec capabilities may vary by device and configuration. Contact your manufacturer to understand the enabled hardware acceleration and codec capabilities for individual devices.

Performance hybrid architecture combines two core microarchitectures, Performance-cores (P-cores) and Efficient-cores (E-cores), on a single processor die first introduced on 12th Gen Intel® Core™ processors. Select 12th Gen and newer Intel® Core™ processors do not have performance hybrid architecture, only P-cores or E-cores, and may have the same cache size. See ark.intel.com for SKU details, including cache size and core frequency.

Built into the hardware, Intel® Thread Director is provided only in performance hybrid architecture configurations of 12th Gen or newer Intel® Core™ processors; OS enablement is required. Available features and functionality vary by OS.

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6GHz Wi-Fi 6E operation requires use of Intel® Wi-Fi 6E (Gig+) products in conjunction with operating systems and routers/APs/Gateways that support Wi-Fi 6E, together with regional spectrum allocation and required regulatory certifications. Visit intel.com/performance-wireless for details.

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.

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Learn more at intel.com/overclocking.

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Claim # & Statement

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Claim # & Statement	Slide # & Title/Details
	Slide 5: Program Goals
1. Reduce package power by ~40%	As measured by Cinebench 2024 Single Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K. Individual system results may vary as power and performance are affected by use, configuration and other factors. Details at intel.com/performanceindex
2. Deliver >15% generational multithreaded performance	As measured by SPECrate®2017_int_base (n-copies) performance estimates on Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
3. Reduce package temps ~10°C while gaming	As measured by Final Fantasy XIV: Dawntrail, F1® 24, Total War: PHARAOH - Campaign Benchmark, Assassin's Creed: Mirage, Call of Duty: Modern Warfare III, and Tom Clancy's Rainbow Six Siege, on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K. Performance results are based on testing as of October 2024. Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On
	Slide 6: The Cooler and More Efficient Gaming CPU
4. Same performance at half the power of Raptor Lake-R	As measured by Cinebench 2024 Multi Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K. Individual system results may vary as power and performance are affected by use, configuration and other factors. Details at intel.com/performanceindex Performance results are based on testing as of October 2024. Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=125W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

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5. Highest multi-thread performance

Slide 6: The Cooler and More Efficient Gaming CPU

See below.

As of October 2024, refers to Intel Core Ultra 200S series desktop processors, based on multi-thread/core performance, as measured by: Multi-thread/core focused benchmark performance, including SPECrate®2017_int_base (n copy), Cinebench 2024 Multi-Core Score, Cinebench R23 Multi-Core Score, and 3DMark CPU Profile Max Threads.

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Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Slide 7: E-core and P-core Overview

6. 32% IPC uplift over previous gen (Gracemont)

Versus Intel's previous gen. Iso frequency benefit estimated and calculated geometric mean across components of SPECrate® 2017_int_base and SPECrate® 2017_fp_base (both estimated) running 1 copy; Results are based on Intel's internal/projections/estimates as of April 2024 (+/- 10% Margin of Error). Results may vary. For more information, go to intel.com/performanceindex.

Testing as of April 2024.

Processor: Intel® Core™ Ultra 9 285K Processor, 24C24T (8P + 16E); Memory: 2x16GB DDR5-5600MHz; OS: Linux Ubuntu 22.04 Desktop; Motherboard: Intel RVP

Processor: Intel® Core™ i9-14900K Processor, 24C32T (8P + 16E); Memory: 2x16GB DDR5-5600MHz; OS: Linux Ubuntu 22.04 Desktop; Motherboard: Intel RVP

7. 9% IPC uplift over previous gen (Raptor Cove)

Versus Intel's previous gen. Iso frequency benefit estimated and calculated geometric mean across components of SPECrate® 2017_int_base and SPECrate® 2017_fp_base (both estimated) running 1 copy, Cinebench R23 Single Core, Cinebench 2024 Single Core, Geekbench 6.3.0 Single-Core, WebXPRT 4, Speedometer. Results are based on Intel's internal/projections/estimates as of August 2024 (+/- 10% Margin of Error). Results may vary. For more information, go to intel.com/performanceindex.

Performance results are based on testing as of August 2024.

Processor: Intel® Core™ Ultra 9 285K Processor, 24C24T (8P + 16E); PL1 = PL2 = 250W; Memory: 2x32GB DDR5-6400MHz; Storage: Samsung PM9A1 512GB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 OS Build 26100.1; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; Motherboard: Intel RVP; BIOS Version: MTLFSFW11.R00.4305.D80.2407261840; Power Plan set to Ultimate Performance; VBS Enabled, Defender Enabled, and Tamper Protection Enabled.

Processor: Intel® Core™ i9-14900K Processor, 24C32T (8P + 16E); PL1 = PL2 = 253W; Memory: 2x32GB DDR5-5600MHz; Storage: Samsung PM9A1 512GB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 OS Build 26100.1; Integrated Graphics: Intel® UHD Graphics; Integrated Graphics Driver: 32.0.101.554; Motherboard: Intel RVP; BIOS Version: RPLFSFW11.R00.5045.A00.2401260733; Power Plan set to Ultimate Performance; VBS Enabled, Defender Enabled, and Tamper Protection Enabled.

8. Leadership Core Performance

See below.

As of October 2024, refers to Intel Core Ultra 200S series desktop processors, based on single thread/core performance, as measured by:

Single thread/core focused benchmark performance, including estimated SPECrate[®]2017_int_base (1 copy), Cinebench 2024 Single Core Score, Cinebench R23 Single Core Score, and 3DMark CPU Profile 1 Thread.

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Processor: Intel[®] Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel[®] Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

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	Slide 14: Arrow Lake Halves Productivity Power Consumption
9. Up to 58% lower package power in lightly-threaded work compared to Raptor Lake-R	As measured by average processor power during 1x1 Zoom call with background blur on NPU on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
10. Up to 44% less processor power while running UL Procyon® Office Productivity	As measured by average processor power while running UL Procyon® Office Productivity benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
11. Up to 42% less processor power while running Procyon AI Computer Vision CPU Integer	As measured by average processor power while running UL Procyon® AI Computer Vision CPU Integer benchmark using OpenVINO on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
12. Up to 42% less processor power while running Cinebench 2024 Single Core	As measured by average processor power while running Cinebench 2024 Single Core benchmark using OpenVINO on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
13. Up to 58% lower processor power during a Zoom call with AI background effects	As measured by average processor power during 1x1 Zoom call with background blur on NPU on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
	Performance results are based on testing as of October 2024.
	Processor: Intel® Core™ Ultra 9 285K Processor, 24C24T (8P + 16E); PL1 = PL2 = 250W; Memory: 2x16GB DDR5-6400MHz; Storage: Samsung 980 Pro 500GB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 OS Build 26100.1457; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; Motherboard: Intel RVP; BIOS Version: MTLFSWI.R00.4165.D02.2404300646; NPU Driver: 32.0.100.2540; Power Plan set to High Performance; VBS Enabled, Defender Enabled, and Tamper Protection Enabled.
	Processor: Intel® Core™ i9-14900K Processor, 24C32T (8P + 16E); PL1 = PL2 = 253W; Memory: 2x16GB DDR5-5600MHz; Storage: Samsung 980 Pro 500GB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 OS Build 26100.1457; Integrated Graphics: Intel® UHD Graphics; Integrated Graphics Driver: 31.0.101.5537; Motherboard: Intel RVP; BIOS Version: RPLSFVII.R00.5045.A00.2401260733; Power Plan set to High Performance; VBS Enabled, Defender Enabled, and Tamper Protection Enabled.

Claim # & Statement

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	Slide 15: The Fastest Cores for Desktop Enthusiasts
14. Leadership Core Performance	See Claim 8.
15. Geomean ~8% faster 1T performance vs. prior gen	As measured by the geomean of Geekbench 6.3 Single-Core benchmark, estimated SPECrate [®] 2017_int_base (1 copy) benchmark, Cinebench 2024 Single Core benchmark, and 3DMark CPU Profile 1 Thread benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. Intel [®] Core™ i9 processor 14900K.
16. Up to 11% faster 1 Thread CPU Profile performance vs prior gen	As measured by 3DMark CPU Profile 1 Thread benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. Intel [®] Core™ i9 processor 14900K.
17. Up to 8% faster Cinebench 2024 Single Core performance vs prior gen	As measured by Cinebench 2024 Single Core benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. Intel [®] Core™ i9 processor 14900K.
18. Up to 6% faster single thread performance vs prior gen	As estimated by SPECrate [®] 2017_int_base (1 copy) on an Intel [®] Core™ Ultra 9 285K processor vs. Intel [®] Core™ i9 processor 14900K.
19. Up to 5% faster Geekbench 6.3 Single-Core performance vs prior gen	As measured by Geekbench 6.3 Single-Core benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. Intel [®] Core™ i9 processor 14900K.
20. Geomean ~4% faster 1T performance vs. competition	As measured by the geomean of Geekbench 6.3 Single-Core benchmark, estimated SPECrate [®] 2017_int_base (1 copy) benchmark, Cinebench 2024 Single Core benchmark, and 3DMark CPU Profile 1 Thread benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
21. Up to 8% faster 1 Thread CPU Profile performance vs competition	As measured by 3DMark CPU Profile – 1 Thread benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
22. Up to 5% faster Cinebench 2024 Single Core performance vs competition	As measured by Cinebench 2024 Single Core benchmark on an Intel [®] Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
23. Up to 3% faster single thread performance vs competition	As estimated by SPECrate [®] 2017_int_base (1 copy) on an Intel [®] Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.

Performance results are based on testing as of October 2024.

Processor: Intel[®] Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel[®] Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

Slide # & Title/Details

Claim # & Statement	Slide # & Title/Details
	Slide 16: Arrow Lake Sets the Bar for CPU Compute
24. Geomean 15% faster nT performance vs. prior gen	As measured by the geomean of Geekbench 6.3 Multi-Core benchmark, estimated SPECrate [®] 2017_int_base (n-copies) benchmark, Cinebench 2024 Multi Core benchmark, and 3DMark CPU Profile Max Threads benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. Intel [®] Core [™] i9 processor I4900K.
25. Up to 19% faster Max Thread CPU Profile performance vs prior gen	As measured by 3DMark CPU Profile Max Threads benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. Intel [®] Core [™] i9 processor I4900K.
26. Up to 18% faster Cinebench 2024 Multi Core performance vs prior gen	As measured by Cinebench 2024 Multi Core benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. Intel [®] Core [™] i9 processor I4900K.
27. Up to 14% faster multi-threaded performance vs prior gen	As estimated by SPECrate [®] 2017_int_base (n-copies) on an Intel [®] Core [™] Ultra 9 285K processor vs. Intel [®] Core [™] i9 processor I4900K.
28. Up to 11% faster Geekbench 6.3 Multi-Core performance vs prior gen	As measured by Geekbench 6.3 Multi-Core benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. Intel [®] Core [™] i9 processor I4900K.
29. Geomean 13% faster nT performance vs. competition	As measured by the geomean of Geekbench 6.3 Multi-Core benchmark, estimated SPECrate [®] 2017_int_base (n-copies) benchmark, Cinebench 2024 Multi Core benchmark, and 3DMark CPU Profile Max Threads benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. AMD Ryzen [™] 9 9950X.
30. Up to 22% faster multi-threaded performance vs competition	As estimated by SPECrate [®] 2017_int_base (n-copies) on an Intel [®] Core [™] Ultra 9 285K processor vs. AMD Ryzen [™] 9 9950X.
31. Up to 13% faster Max Thread CPU Profile performance vs competition	As measured by 3DMark CPU Profile Max Threads benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. AMD Ryzen [™] 9 9950X.
32. Up to 10% faster Cinebench 2024 Multi Core performance vs competition	As measured by Cinebench 2024 Multi Core benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. AMD Ryzen [™] 9 9950X.
33. Up to 7% faster Geekbench 6.3 Multi-Core performance vs competition	As measured by Geekbench 6.3 Multi-Core benchmark on an Intel [®] Core [™] Ultra 9 285K processor vs. AMD Ryzen [™] 9 9950X.

Performance results are based on testing as of October 2024.

Processor: Intel[®] Core[™] Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel[®] Core[™] i9 processor I4900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel[®] UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen[™] 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon[™] Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

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34. Same Performance Half the Power vs prior gen

Slide 17: Energy Efficiency Leadership From Low to High

As measured by Cinebench 2024 Multi Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

35. Leadership CPU Core Performance in enthusiast desktop

Slide 18: Arrow Lake Delivers Exceptional Energy Efficiency

See Claim 8

36. Up to 19% more nT perf vs previous gen

See Claim 25

37. Up to 58% lower package power in lightly-threaded use cases

See Claim 9

38. Same performance at ½ the power in sustained nT vs. previous gen

See Claim 34

Claim # & Statement

Slide # & Title/Details

Claim # & Statement	Slide # & Title/Details
39. Same framerates as Raptor Lake-R at up to ~165W lower system power	Slide 20: One Giant Leap in Gaming Perf/W See Claim 55.
40. Up to 15% higher FPS with F1® 23 with an Intel® Core™ Ultra 9 285K	As measured by F1® 23 vs. Intel® Core i9 processor 14900K.
41. Up to 11% higher FPS with Sid Meier's Civilization VI: Gathering Storm with an Intel® Core™ Ultra 9 285K	As measured by Sid Meier's Civilization VI: Gathering Storm vs. Intel® Core i9 processor 14900K.
42. Up to 6% higher FPS with Age of Mythology: Retold with an Intel® Core™ Ultra 9 285K	As measured by Age of Mythology: Retold vs Intel® Core i9 processor 14900K.
43. Up to 4% higher FPS with Warhammer: Space Marines 2 with an Intel® Core™ Ultra 9 285K	As measured by Warhammer: Space Marines 2 vs Intel® Core i9 processor 14900K.
44. On par FPS with Tom Clancy's Rainbow Six Siege with an Intel® Core™ Ultra 9 285K	As measured by Tom Clancy's Rainbow Six Siege vs. Intel® Core i9 processor 14900K.
45. On par FPS with Black Myth: Wukong with an Intel® Core™ Ultra 9 285K	As measured by Black Myth: Wukong vs. Intel® Core i9 processor 14900K.
46. On par FPS with Cyberpunk 2077 with an Intel® Core™ Ultra 9 285K	As measured by Cyberpunk 2077 vs. Intel® Core i9 processor 14900K.
47. On par FPS with Metro Exodus with an Intel® Core™ Ultra 9 285K	As measured by Metro Exodus vs. Intel® Core i9 processor 14900K.
48. On par FPS with Total War: PHARAOH with an Intel® Core™ Ultra 9 285K	As measured by Total War: PHARAOH - Campaign Benchmark vs. Intel® Core i9 processor 14900K.
49. On par FPS with Shadow of the Tomb Raider with an Intel® Core™ Ultra 9 285K	As measured by Shadow of the Tomb Raider vs. Intel® Core i9 processor 14900K.
50. On par FPS with Red Dead Redemption 2 with an Intel® Core™ Ultra 9 285K	As measured by Red Dead Redemption 2 vs. Intel® Core i9 processor 14900K.
51. On par FPS with F1 24 with an Intel® Core™ Ultra 9 285K	As measured by F1 24 vs. Intel® Core i9 processor 14900K.
52. On par FPS with Final Fantasy XIV: Dawntrail with an Intel® Core™ Ultra 9 285K	As measured by Final Fantasy XIV: Dawntrail vs. Intel® Core i9 processor 14900K.
53. On par FPS with Far Cry 6 with an Intel® Core™ Ultra 9 285K	As measured by Far Cry 6 vs. Intel® Core i9 processor 14900K.

Performance results are based on testing as of October 2024.

Intel Application Optimization (APO) enabled for Intel® Core™ Ultra 9 285K and Intel® Core™ i9 processor 14900K.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

Slide # & Title/Details

Slide 22: Demo Summary

54. On par FPS at up to 80W lower total system power while playing Assassin's Creed: Mirage

As measured by average system power while playing Assassin's Creed: Mirage on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

Slide # & Title/Details

Claim # & Statement	Slide # & Title/Details
	Slide 23: Arrow Lake Slashes Gaming Power
55. Up to 165W lower total system power than Raptor Lake Refresh under same conditions	As measured by average system power while playing Warhammer: Space Marines 2 on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
56. Up to 79W lower total system power while playing Assassin's Creed: Mirage	As measured by average system power while playing Assassin's Creed: Mirage on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
57. Up to 54W lower total system power while playing Call of Duty: Modern Warfare III	As measured by average system power while playing Call of Duty: Modern Warfare III on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
58. Up to 57W lower total system power while playing F1 24	As measured by average system power while playing F1 24 on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
59. Up to 58W lower total system power while playing Total War: PHARAOH	As measured by average system power while playing Total War: PHARAOH - Campaign Benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
60. Up to 136W lower total system power while playing Age of Mythology: Retold	As measured by average system power while playing Age of Mythology: Retold on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
61. Up to 34W lower total system power while playing Black Myth: Wukong	As measured by average system power while playing Black Myth: Wukong on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
62. Up to 165W lower total system power while playing Warhammer: Space Marines 2	As measured by average system power while playing Warhammer: Space Marines 2 on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

Slide # & Title/Details

Claim # & Statement	Slide # & Title/Details
	Slide 24: Cooler and Quieter Gaming with Arrow Lake
63. Averaging ~13°C cooler package temps vs. Raptor Lake-R	As measured by the average of Claims 64-69.
64. Up to 10 degrees Celsius lower package temperature while playing Final Fantasy XIV: Dawntrail	As measured by average package temperature while playing Final Fantasy XIV: Dawntrail on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
65. Up to 15 degrees Celsius lower package temperature while playing F1® 24	As measured by average package temperature while playing F1® 24 on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
66. Up to 16 degrees Celsius lower package temperature while playing Total War: PHARAOH	As measured by average package temperature while playing Total War: PHARAOH- Campaign benchmark on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
67. Up to 13 degrees Celsius lower package temperature while playing Assassin's Creed: Mirage	As measured by average package temperature while playing Assassin's Creed: Mirage on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
68. Up to 12 degrees Celsius lower package temperature while playing Call of Duty: Modern Warfare III	As measured by average package temperature while playing Call of Duty: Modern Warfare III on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.
69. Up to 17 degrees Celsius lower package temperature while playing Tom Clancy's Rainbow Six Siege	As measured by average package temperature while playing Tom Clancy's Rainbow Six Siege on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

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70. Up to 28% higher FPS with Total War: Warhammer III - Mirrors of Madness Benchmark with an Intel® Core™ Ultra 9 285K

As measured by Total War: Warhammer III - Mirrors of Madness Benchmark vs. AMD Ryzen™ 9 9950X.

71. Up to 11% lower turn time with Sid Meier's Civilization VI: Gathering Storm with an Intel® Core™ Ultra 9 285K

As measured by Sid Meier's Civilization VI: Gathering Storm vs AMD Ryzen™ 9 9950X.

72. Up to 6% higher FPS with Age of Mythology: Retold with an Intel® Core™ Ultra 9 285K

As measured by Age of Mythology: Retold vs. AMD Ryzen™ 9 9950X.

73. Up to 4% higher FPS with Tom Clancy's: Rainbow Six Siege with an Intel® Core™ Ultra 9 285K

As measured by Tom Clancy's: Rainbow Six Siege vs. AMD Ryzen™ 9 9950X.

74. On par FPS with Metro Exodus with an Intel® Core™ Ultra 9 285K

As measured by Metro Exodus vs. AMD Ryzen™ 9 9950X.

75. On par FPS with Star Wars Outlaws with an Intel® Core™ Ultra 9 285K

As measured by Star Wars Outlaws vs. AMD Ryzen™ 9 9950X.

76. On par FPS with Shadow of the Tomb Raider with an Intel® Core™ Ultra 9 285K

As measured by Shadow of the Tomb Raider vs. AMD Ryzen™ 9 9950X.

77. On par FPS with Far Cry 6 with an Intel® Core™ Ultra 9 285K

As measured by Far Cry 6 vs. AMD Ryzen™ 9 9950X.

78. On par FPS with Black Myth: Wukong with an Intel® Core™ Ultra 9 285K

As measured by Black Myth: Wukong vs. AMD Ryzen™ 9 9950X.

79. On par FPS with Total War: PHARAOH with an Intel® Core™ Ultra 9 285K

As measured by Total War: PHARAOH - Campaign Benchmark vs. AMD Ryzen™ 9 9950X.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: Balanced; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

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80. Up to 15% lower turn time with Sid Meier's Civilization VI: Gathering Storm with an Intel® Core™ Ultra 9 285K

Slide # 26: A Balanced Enthusiast Experience
As measured by Sid Meier's Civilization VI: Gathering Storm vs AMD Ryzen™ 9 7950X3D.

81. On par FPS with Tom Clancy's: Rainbow Six Siege with an Intel® Core™ Ultra 9 285K

As measured by Tom Clancy's: Rainbow Six Siege vs. AMD Ryzen™ 9 7950X3D.

82. On par FPS with Assassin's Creed: Mirage with an Intel® Core™ Ultra 9 285K

As measured by Assassin's Creed: Mirage vs. AMD Ryzen™ 9 7950X3D.

83. Up to 30% faster POV-Ray Multi-Core performance

As measured by POV-Ray Multi-Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 7950X3D.

84. Up to 21% faster Cinebench 2024 Multi Core performance

As measured by Cinebench 2024 Multi Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 7950X3D.

85. Up to 18% faster Geekbench 6.3 Multi-Core performance

As measured by Geekbench 6.3 Multi-Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 7950X3D.

86. Up to 5% faster CPU Cycles render performance

As measured by Blender CPU Cycles benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 7950X3D.

87. On par PugetBench After Effects Multi-Core performance

As measured by PugetBench After Effects Multi-Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 7950X3D.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 7950X3D 16C32T; Memory: G.Skill 2x16GB 5200MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Plan: Balanced (for gaming), High Performance (for benchmarks); Power Supply: EVGA 1200P2 Supernova; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

Slide # & Title/Details

88. Arrow Lake Perf/W Delivers Awesome Scaling for Efficient Gaming

27. Radical efficiency improvements unleash low power gaming

As measured by the geomean performance comparisons of Assassin's Creed: Mirage, Call of Duty: Modern Warfare III, F1® 24, Red Dead Redemption 2, Tom Clancy's Rainbow 6 Siege, Total War: PHARAOH, Campaign benchmark, and Age of Mythology: Retold on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor I4900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=175W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=125W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor I4900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor I4900K 24C32T; PL1=175W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor I4900K 24C32T; PL1=125W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Claim # & Statement

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89. Geomean of 15 degrees C lower temperature while gaming

28: A Cooler and Quieter Flagship Experience

As measured by average package temperature while playing Assassin's Creed: Mirage, Avatar: Frontiers of Pandora, Call of Duty: Modern Warfare III, Cyberpunk 2077, F1 24, Final Fantasy XIV: Dawntrail, Hitman 3: Darmoor, Metro Exodus, Red Dead Redemption 2, Shadow of the Tomb Raider, Sid Meier's Civilization VI: Gathering Storm AI, Tom Clancy's Rainbow Six Siege, and Total War: PHARAOH – Campaign benchmark on an Intel® Core™ Ultra 7 265K processor vs. Intel® Core™ i9 processor 14900K.

90. Up to 188W lower total system power while gaming

As measured by average system power while playing Warhammer: Space Marines 2 on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024.

Processor: Intel® Core™ Ultra 7 265K 20C20T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; PL1=PL2=253W; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

29: Gaming Elevated

91. Core i9 performance at up to 188W lower system power while gaming

See Claim 90.

Claim # & Statement

Slide # & Title/Details

Claim # & Statement	Slide # & Title/Details
	31. Leadership Performance for Creators
92. Up to 86% faster multitasking performance for creators	As measured by Multitasking Creator workflow on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
93. Up to 6% faster video editing performance	As measured by UL Procyon® Video Editing benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
94. Up to 6% faster video editing performance	As measured by PugetBench for Creators Premiere Pro benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
95. Up to 4% faster video editing performance	As measured by PugetBench After Effects benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
96. Up to 20% faster POV-Ray multi-core performance	As measured by POV-Ray multi-core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
97. Up to 10% faster Cinebench 2024 Multi Core performance	As measured by Cinebench 2024 Multi Core benchmark on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
98. Up to 2.8x faster 8K HEVC playback performance	As measured by Adobe Premiere Pro 8K HEVC playback workload on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
99. Up to 7.3x faster 8K XAVC-H playback performance	As measured by Adobe Premiere Pro 8K XAVC-H playback workload on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
100. Up to 70% faster 5.7K DNxHR playback performance	As measured by Adobe Premiere Pro 5.7K DNxHR playback workload on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
101. Up to 23% faster 8K XAVC-H export performance	As measured by Adobe Premiere Pro 8K XAVC-H export workload on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
102. Up to 79% faster 8K HEVC export performance	As measured by Adobe Premiere Pro 8K HEVC export workload on an Intel® Core™ Ultra 9 285K processor vs. AMD Ryzen™ 9 9950X.
	Performance results are based on testing as of October 2024.
	Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On
	Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

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103. Up to ~2x the performance of Raptor Lake-R

33. Geekbench AI Performance

Geekbench AI performance score estimates shown for OpenVINO CPU, iGPU, and NPU, targeting Int8, FP16, and FP32 subtests, on an Intel® Core™ Ultra 9 285K processor vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

104. UL Procyon® AI Computer Vision score estimates

34. UL Procyon® AI Computer Vision Performance

UL Procyon® AI Computer Vision score estimates shown for OpenVINO CPU, iGPU, and NPU, targeting Int8, FP16, and FP32 subtests. As measured by UL Procyon® AI Computer Vision OpenVINO subtests vs. Intel® Core™ i9 processor 14900K.

Performance results are based on testing as of October 2024

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

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105. Up to 50% faster AI performance vs. competing flagship processors

35. Intel AI Optimization Fuels Winning Performance

As measured by Adobe After Effects AI Scene Edit Detection workload vs. AMD Ryzen™ 9 9950X.

106. Up to 50% faster performance using Adobe After Effects AI Scene Edit Detection feature with an Intel® Core™ Ultra 9 285K

As measured by Adobe After Effects AI Scene Edit Detection workload vs. AMD Ryzen™ 9 9950X.

107. Up to 34% faster performance using Adobe Premiere Pro AI Audio Auto Tag feature with an Intel® Core™ Ultra 9 285K

As measured by Adobe Premiere Pro AI Audio Auto Tag workload vs. AMD Ryzen™ 9 9950X.

108. Up to 18% faster performance with Adobe Premiere Pro AI Auto Reframe feature with an Intel® Core™ Ultra 9 285K

As measured by Adobe Premiere Pro AI Auto Reframe feature vs. AMD Ryzen™ 9 9950X.

109. Up to 17% faster AI video editing performance using Topaz Video AI video editing with an Intel® Core™ Ultra 9 285K

As measured by Topaz Video AI video editing workload vs. AMD Ryzen™ 9 9950X.

110. Up to 16% faster performance using Adobe Lightroom Classic AI Raw Details feature with an Intel® Core™ Ultra 9 285K

As measured by Adobe Lightroom Classic Raw Details feature vs. AMD Ryzen™ 9 9950X.

111. Up to 15% faster performance with Audacity Dynamic Noise Suppression feature with an Intel® Core™ Ultra 9 285K

As measured by Audacity Music Generation vs. AMD Ryzen™ 9 9950X.

Performance results are based on testing as of October 2024

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; PL1=PL2=250W; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

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112. Up to 50% faster creator AI AI-assisted video editing vs. AMD 9950X

38. Balanced AI Performance, Great Creator Performance

See Claim 105.

113. Intel's first Desktop AI PC

Refers to Intel® Core™ Ultra 200S Series processors, based on new and extensive AI capabilities and experiences, broad compatibility, unique architecture, and impressive performance that combine to deliver Intel's first desktop processor for AI PC, in comparison to prior generation enthusiast processors. AI features may require additional purchase or specific compatibility requirements. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details. Results may vary.

Performance results are based on testing as of October 2024

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Plan: High Performance; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

114. 8x faster media playback of pro video codecs vs. AMD 9950X

See Claim 99.

115. 20% faster Ray-traced rendering vs. AMD 9950X

See Claim 96.

39. The Complete Enthusiast Solution

116. The Most Modern Platform for Enthusiasts

Refers to Intel® Core™ Ultra 200S Series processors, based on new and extensive AI capabilities and experiences, broad compatibility, unique architecture, and impressive platform level performance which combine to deliver the most modern platform for desktop enthusiasts, in comparison to prior generation enthusiast processors. AI features may require additional purchase or specific compatibility requirements. See [intel.com/performanceindex](https://www.intel.com/performanceindex) for details. Results may vary.

Performance results are based on testing as of October 2024

Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On

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	<p>45. Intel Core Ultra 200S Series. The complete enthusiast solution</p> <p>Performance results are based on testing as of October 2024</p> <p>Processor: Intel® Core™ Ultra 9 285K 24C24T processor; PL1=PL2=250W; Memory: G.Skill 2x16GB 6400MHz 32-39-39-102 DDR5; Motherboard: ASUS ROG MAXIMUS Hero Z890; BIOS: 8001; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® Graphics; Integrated Graphics Driver: 32.0.101.5866; NPU Driver: 32.0.100.2820; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On</p>
117. Flagship Gaming FPS, Parity vs. Intel® Core™ i9-14900K and AMD Ryzen™ 9 9950X, geomean 31 games	<p>Processor: Intel® Core™ i9 processor 14900K 24C32T; PL1=PL2=253W; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG MAXIMUS Hero Z790; BIOS: 2503; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: Intel® UHD Graphics 770; Integrated Graphics Driver: 32.0.101.5866; Power Supply: EVGA 1200P2 Supernova; Power Plan: High Performance; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On</p> <p>Processor: AMD Ryzen™ 9 9950X 16C32T; Memory: G.Skill 2x16GB 5600MHz 28-34-34-89; Motherboard: ASUS ROG CROSSHAIR X670E Hero; BIOS: 2401; Storage: Samsung SSD 980 PRO 1TB; Display Resolution: 1920x1080; OS: Microsoft Windows 11 Pro 24H2 26100.1591; Discrete Graphics Card: Nvidia RTX 4090; Discrete Graphics Driver: 32.0.15.6094; Integrated Graphics: AMD Radeon™ Graphics; Integrated Graphics Driver: 32.0.11037.4004; Power Supply: EVGA 1200P2 Supernova; Power Plan: Balanced; Resizable BAR: On; Trusted Platform Module: On; VBS: On; Defender: On</p>
118. Up to 13% faster CPU compute performance vs AMD Ryzen™ 9 9950X, geomean of four nT workloads	See Claim 29.
119. Up to 17 degrees Celsius lower CPU package temperatures vs. Intel® Core™ i9-14900K during active PC gaming	See Claim 69.
120. Up to 165W lower system power vs. Intel® Core™ i9-14900K during active PC gaming	See Claim 55.