

AMD FOR BUSINESS

AMD RYZEN™ PRO 7000 SERIES PROCESSORS





DESKTOPS



BUSINESSES ARE LOOKING FOR SOLUTIONS

AMD RYZENTM PRO ADDRESSES ALL THE CHALLENGES



PRODUCTIVITY AND COLLABORATION MUST CO-EXIST

Immersive audio and video solutions

Collaboration on battery power will be important



MAXIMIZING ROI

Focus on refresh cycles and maximizing longevity

Reduce application support and compatibility expenses



BUSINESS MUST EXPECT THE UNEXPECTED

Use of AI technologies to increase productivity

Plan performance for future digital transformation initiatives



POWER EFFICIENCY AND SUSTAINABILITY

By 2024, 80% of G2000 companies to report their carbon footprint

Businesses looking for ways to reduce energy consumption



INTRODUCING

AMD RYZEN™ PRO 7040 SERIES PROCESSORS

POWERING THE BEST BUSINESS PCs IN THE WORLD





WORLD'S FASTEST AND MOST ADVANCED BUSINESS PROCESSOR





ULTRA POWER-EFFICIENT **BUSINESS LAPTOP PROCESSORS**



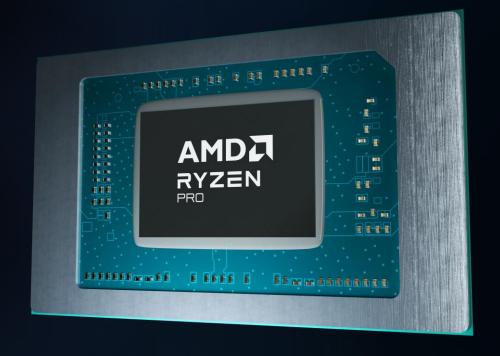


WORLD'S MOST POWERFUL INTEGRATED GRAPHICS

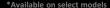




WORLD'S FIRST INTEGRATED AL **ENGINE IN AN X86 PROCESSOR***



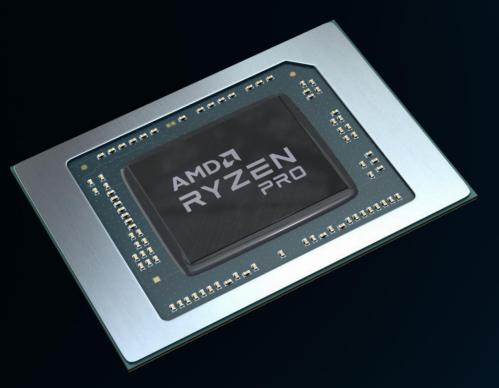
DESIGNED FOR UNCOMPROMISING INNOVATION, SPEED AND POWER





AMD RYZEN™ PRO 7040 SERIES

THE WORLD'S FASTEST ULTRATHIN PROCESSOR FOR PCS



Ryzen™ 9 PRO 7940HS

8-Core 16-Thread Up To 5.2 GHz 4.0 GHz

24MB Cache 35-54W TDP

Ryzen™ 7 PRO 7840U

Up To 5.1 GHz 3.3 GHz 16-Thread

8-Core

24MB Cache

15-28W TDP

Ryzen™ 7 PRO 7840HS

8-Core 16-Thread

Up To 5.1 GHz 3.8 GHz

35-54W **24MB** Cache **TDP**

Ryzen™ 5 PRO 7640U

Up To 4.9 GHz 6-Core 22MB 3.5 GHz Cache 12-Thread

15-28W **TDP**

FEATURING RYZEN™ AI

On select models

Ryzen™ 5 PRO 7640HS

6-Core 12-Thread Up To 5.0 GHz 4.3 GHz

22MB Cache

35-54W TDP

Ryzen™ 5 PRO 7540U

Up To 4.9 GHz 22MB 6-Core 3.2 GHz Cache 12-Thread

15-28W

TDP

AMD RYZEN™ PRO 7040: UNCOMPROMISED CAPABILITY

	EVERYDAY PRODUCTIVITY	SEAMLESS MULTITASKING	POWER EFFICIENT	LONG BATTERY LIFE
AMD RYZEN™ 7 PRO 7840U				
i7-1370P	✓	✓		
i7-1360P			*	*
i7-1365U	✓			
Intel Core™ i7-1355U	✓		*	*

Better Multi-tasking capabilities

Better Processor performance

Better Power efficiency

Better Collaboration battery life

ONE PROCESSOR
CHECKS ALL
THE BOXES

AMD RYZEN™ 7 PRO

7840U

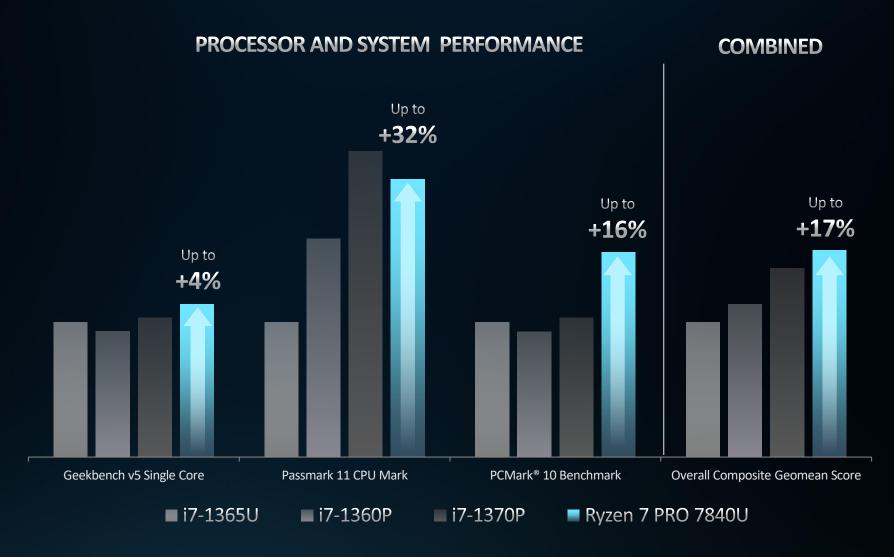
* Systems not tested



LEADERSHIP PERFORMANCE AMD RYZEN™ PRO UNCOMPROMISING SOLUTION

FASTER PERFORMANCE IN PREMIUM BUSINESS LAPTOPS

- Superior "Zen 4" architecture
- 8 high performance cores
- "U Series" provides
 performance and power
 efficiency for T&L systems
- Competes against higher power "P Series"





BEST-IN-CLASS PRODUCTIVITY AND VIRTUAL COLLABORATION

With 8 high-performance cores, the AMD Ryzen™ 7 PRO 7840U processor accelerates performance using MS Office apps while running Teams conference.

12% FASTER

15% LESS POWER

29% BETTER PERF/WATT



Teams Video Conference



(compared to Intel Core i7 1370P)

MICROSOFT TEAMS BATTERY LIFE (SYSTEM VS SYSTEM)

AMD x86 EFFICIENCY SETS THE STANDARD



Intel Core i7-1370P



Intel Core i7-1365U



Apple M2 Pro (10 core)



AMD Ryzen 7 PRO 7840U

4:00

Total Run Time

Battery Size: 54 Wh

4:18

Total Run Time

Battery Size: 54 Wh

6:13

Total Run Time

Battery Size: 69.6 Wh

6:48

Total Run Time

Battery Size: 51.3Wh

Baseline

P TO **+80**/

+55%

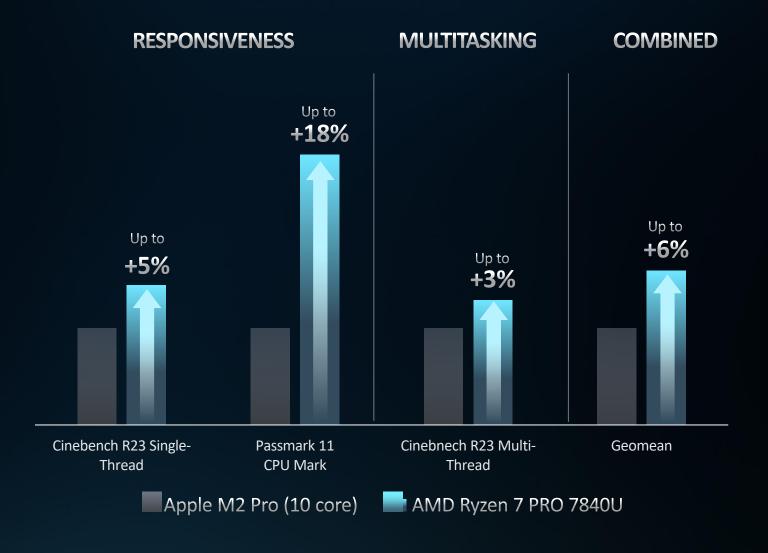
υ^{ρ το} **+70%**

LEADERSHIP CPU PERFORMANCE

COMPARED TO APPLE M2 PRO

FASTER CPU PERFORMANCE IN PREMIUM BUSINESS LAPTOPS

- Superior "Zen 4" architecture
- 4nm delivered as promised
- 8 high performance cores



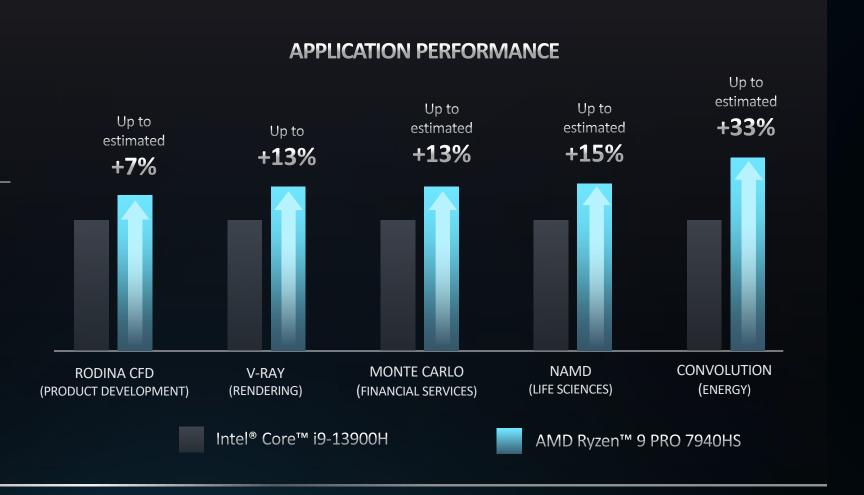


LEADERSHIP CPU PERFORMANCE FOR PROFESSIONALS

POWERFUL MOBILE WORKSTATION PERFORMANCE WITH AMD RYZEN™ 7040HS

PEAK PERFORMANCE ON-THE-GO FOR DEMANDING WORKFLOWS

- Tackle the most demanding professional applications with desktop-class performance
- Integrated Radeon™ PRO graphics driver for seamless design experiences

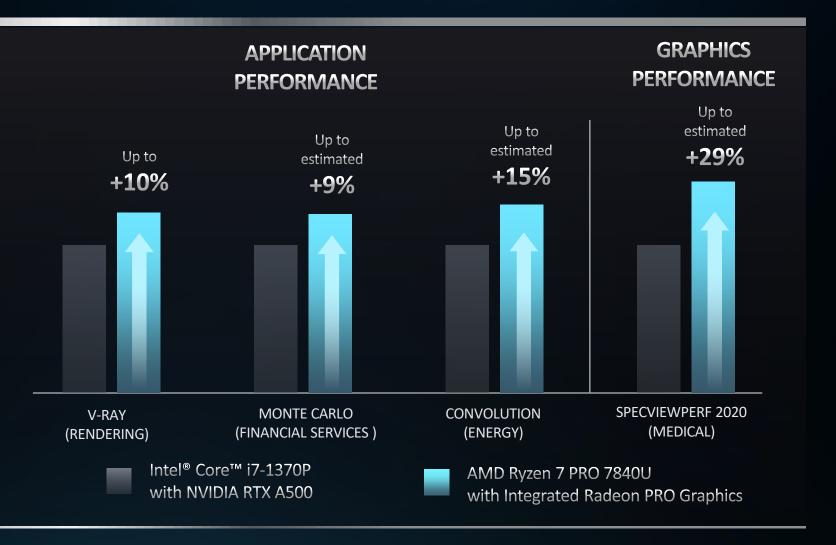


LEADERSHIP CPU PERFORMANCE FOR PROFESSIONALS

POWERFUL MOBILE WORKSTATION PERFORMANCE WITH THE AMD RYZEN™ 7040U

GET MORE DONE IN LESS TIME WHEREVER INSPIRATION TAKES YOU

- Thin and light designs to conquer demanding professional applications on-the-go
- Integrated RadeonTM PRO graphics driver for seamless design experiences





THE FUTURE STARTS NOW

FOR WINDOWS LAPTOPS
WITH AI TECHNOLOGY BUILT IN

Only with RYZEN AI



THE JOURNEY STARTS

WITH ADVANCED VIDEO COLLABORATION

Windows Studio Effects uses AMD Ryzen™ AI using the integrated camera



ENHANCED BACKGROUND BLURS

to help limit distractions while you are on a video call

AUTO FRAMING

so the camera follows you while you are multitasking on a video call

EYE GAZE CORRECTION

so that your audience knows you are focused on them



GET READY TO EXPLORE A NEW WORLD OF POSSIBILITIES WITH FUTURE WINDOWS APPLICATIONS



ACCELERATE DATA ANALYTICS

Work efficiently on data analysis, regression, and predictive modeling with your local data



HAVE A PERSONAL AI ASSISTANT

Get help building a presentation, writing email responses, managing your budget, and more



EXCEL IN COMPUTER VISION

Accelerate computation for object detection, image classification, and facial recognition



CREATE LIKE NEVER BEFORE

Deliver a responsive experience to enable creators to dream bigger



AMD AI SOLUTION LEADERSHIP

FROM CLOUD, EDGE TO THE CLIENT

AMD Xilinx Accelerators



Leading AI Compute Solutions

AMD Radeon™ Instinct Accelerators



Data Center
Deep Learning
Solutions

AMD EPYC™ Processors



Industry Leading Server Solution



UNLOCKING THE BENEFITS OF AI WITH CUTTING-EDGE SILICON FROM AMD AND LEADING SOFTWARE PARTNERSHIPS





















DAIMLER













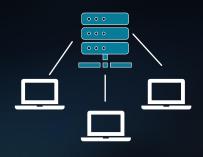


AMD PRO TECHNOLOGIES



AMD PRO Security

Layers of built-in security technology for chip-to-cloud protection against sophisticated attacks



AMD PRO Manageability

For simplified deployment and management that is compatible with your current infrastructure



AMD PRO Business Ready

Offering peace of mind by keeping your enterprise's availability and software stable

AVAILABLE ON EVERY RYZEN™ PRO PROCESSOR



AMD PRO SECURITY

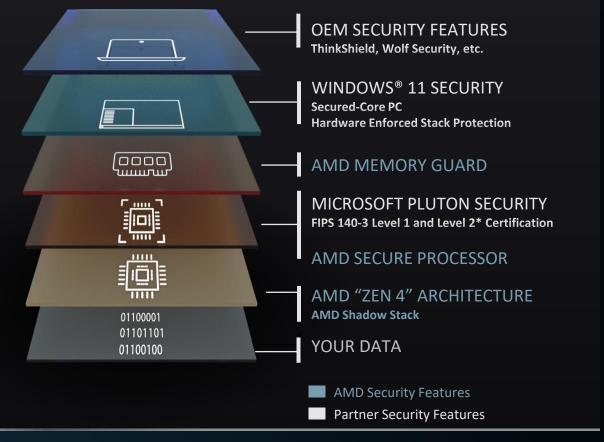
A MULTILAYERED SET OF SECURITY FEATURES AT THE HARDWARE, OS, AND SYSTEM LEVEL

AMD RYZEN™ PRO 7040 SERIES DELIVERING THE MOST MODERN SECURITY

Windows 11 PCs powered by Ryzen[™] PRO 7040 series processors come with integrated Microsoft Pluton security delivering chip-to-cloud protection

AMD Memory Guard helps protect company's sensitive business data when an employee's PC is lost or stolen

AMD offers outstanding silicon assisted security to enable critical security solutions from OS providers and OFMs



2023 AMD COMMERCIAL LAPTOP PORTFOLIO

POWERED BY AMD RYZEN™ PRO 7040 AND 7030 SERIES PROCESSORS





HP EliteBook 865/845/835 G10

AMD RYZEN™ PRO 7040 SERIES



HP EliteBook 645/655 G10

AMD RYZEN™ PRO 7030 SERIES AMD RYZEN™ 7030 SERIES



HP ProBook 445/455 G10 HP Pro x360 435 G10

AMD RYZEN™ 7030 SERIES



HP 245/ 255 G10 select availability by market

AMD RYZEN™ 7030 SERIES

Lenovo



THINKPAD Z13 / Z16

AMD RYZEN™ PRO 7040 AMD EXCLUSIVE



THINKPAD T14 / T14s / T16 / X13

AMD RYZEN™ PRO 7040



THINKPAD L13 / L13Y / L14 /L15

AMD RYZEN™ PRO 7030 AMD RYZEN™ 7030



THINKPAD E 14/16

AMD RYZEN™ PRO 7030 AMD RYZEN™ 7030



MOBILE WORKSTATION GROWTH







BUILT FOR PROFESSIONALS

AMD RDNA™3 **GRAPHICS**

HP ZBook Power G10 A

AMD RYZEN™ PRO 7040 HS-SERIES

Workstation-class performance for professional applications

AMD SOFTWARE: PRO EDITION

> Application optimized professional graphics

HP ZBook Firefly 14 G10 A

AMD RYZEN™ PRO 7040 HS-SERIES

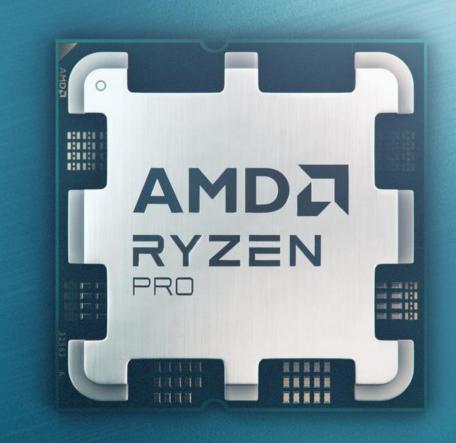
AMD RYZENTM PRO 7040 SERIES TOGETHER WE ADVANCE_PCs

	amd ryzen™ pro 6000 SERIES	AMD RYZEN™ PRO 7040 SERIES A		ADVANTAGE				
CPU ARCHITECTURE	"Zen 3+"	NEW	"Zen 4"		Up to 29% faster responsiveness, 23% faster multitasking for accelerated productivity			
PROCESS	6nm	NEW	4nm		Ultra cool and power efficient			
GRAPHICS	AMD RDNA™ 2	NEW	AMD RDNA™ 3	<u>/il</u>	Most powerful AMD integrated graphics ever with up to 19% faster graphics performance			
EXPERIENCES	Auto background noise cancellation Power Slider Optimizations	NEW	Integrated Ryzen™ AI		Experience AI everyday on business laptops with longer battery life, faster speed and near silent operation			
AMD PRO TECHNOLOGIES	Microsoft Pluton Security ProcessorAMD Manageability Processor	NEW	Cloud-Based Remote Manageability		New remote manageability solution ensures end-to-end compliance and protection with the most modern security			

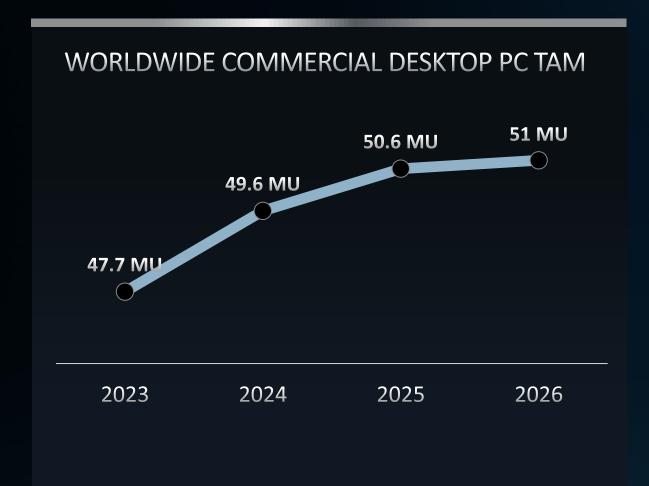


AMD RYZEN™ PRO 7000 SERIES PROCESSORS

FOR BUSINESS DESKTOPS



CONTINUED INNOVATION FOR BUSINESS DESKTOP PCS



GROW YOUR BUSINESS WITH AMD

- Focused roadmap supporting commercial and consumer client
- Leadership technologies
- Relentless optimization of power efficiency

Introducing

AMD RYZEN™ PRO 7000 SERIES DESKTOP PROCESSORS WITH RADEON™ GRAPHICS



Up To 12 High Performance "Zen 4" Cores



Integrated Radeon™ Graphics



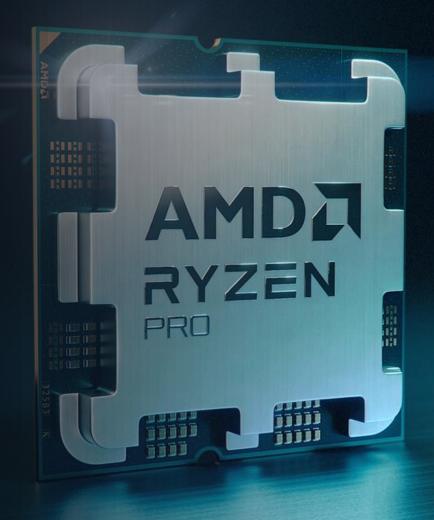
Power Efficient 65W TDP



Advanced Multilayered Security Features with full support for Microsoft Secured-core PC



AMD PRO Technologies



INTRODUCING AMD RYZEN™ PRO 7000 SERIES DESKTOP PROCESSORS

MODEL	CORES/ THREADS	COOLER	PLATFORM	FREQUENCY	L2 + L3 CACHE	ARCHITECTURE	PCle [®]	DRAM	GRAPHICS	NODE	L2 + L3 CACHE	TDP
AMD Ryzen™ 9 PRO 7945	12/24	Wraith Spire	AM5	Up to 5.4 / 3.7 GHz	76 MB	"Zen 4"	GEN 5	DDR5	ON-CHIP RADEON™ GRAPHICS	5nm	76 MB	65W
AMD Ryzen™ 7 PRO 7745	8/16	Wraith Spire	AM5	Up to 5.3 / 3.8 GHz	40 MB	"Zen 4"	GEN 5	DDR5	ON-CHIP RADEON™ GRAPHICS	5nm	40 MB	65W
AMD Ryzen™ 5 PRO 7645	6/12	Wraith Spire	AM5	Up to 5.1 / 3.8 GHz	38 MB	"Zen 4"	GEN 5	DDR5	ON-CHIP RADEON™ GRAPHICS	5nm	38 MB	65W

THE AMD RYZEN™ PRO 7000 SERIES 5-STAR PLATFORM:





AM5 (2025+SUPPORT)

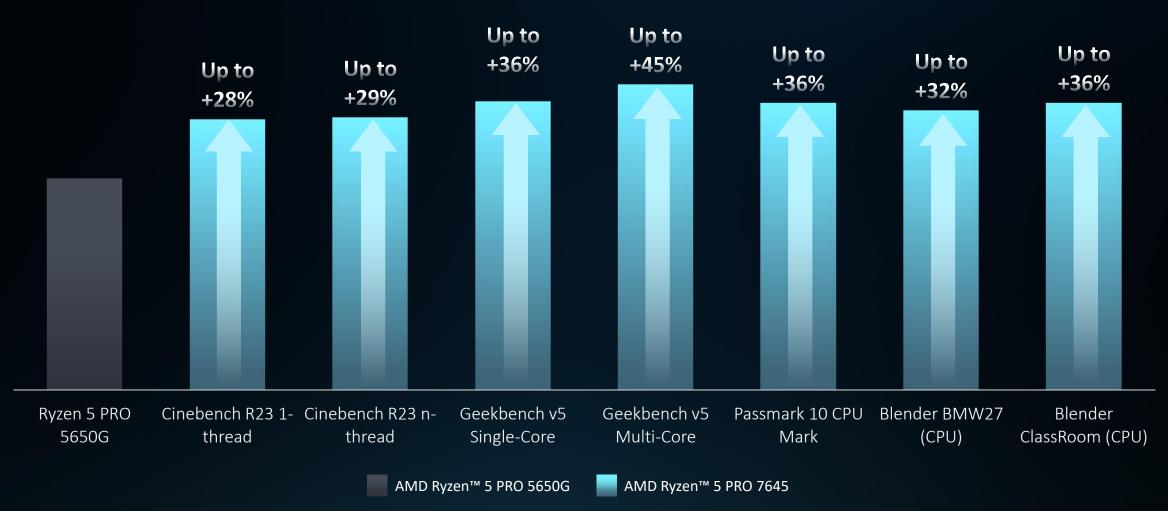
PCle® 5.0 (GPU & SSD)

★ DDR5

INCREASED PERFORMANCE FOR PRODUCTIVITY AND CREATION

RYZEN™ 5 PRO 7645 VS RYZEN™ 5 PRO 5650G

Desktop-class performance



AMD RYZEN™ 5 PRO DELIVERS OFFICE PRODUCTIVITY LEADERSHIP

RYZEN™ 5 PRO 7645 VS 13TH GEN CORE I5-13400



AMD SOCKET AM5 THE PLATFORM THAT GROWS WITH YOU

- ✓ Affordable: Motherboards starting from \$85 USD
- ✓ Easier Installation: 1718 pin LGA socket
- ✓ More Headroom: Up to 230W socket power delivery
- ✓ Latest technologies: DDR5 and PCIe® 5.0 for performance growth
- ✓ Compatibility: Works with AM4 coolers to ease platform transition
- ✓ Longevity: Socket AM5 support planned through 2025+



AMD RYZEN™ PRO 7000 SERIES PROCESSORS

AN UNWAVERING COMMITMENT TO PROFESSIONALS



THE ULTIMATE PROCESSOR FOR PRODUCTIVITY AND CONTENT CREATION

- World's most advanced 12 core business desktop processor
- Up to 5.4 GHz boost clocks enable excellent performance



UPGRADABLE FOR YEARS TO COME

 Brand new AM5 platform that supports processor upgrades for years to come

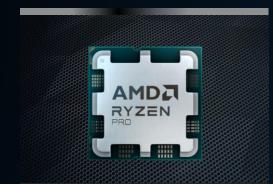


AMD PRO TECHNOLOGIES

 A full suite of enterprise-grade features for security, manageability, and reliability

* See endnotes: GD-203, GD-150

AMD RYZEN™ PRO 7000 SERIES DELIVERS MORE ACROSS DESKTOP AND MOBILE



AMD RYZEN™ PRO 7000 SERIES DESKTOP PROCESSORS

The World's most advanced x86 Desktop Processors



AMD RYZEN™ PRO 7040 SERIES MOBILE PROCESSORS

The World's First Integrated Al engine on an x86 Processor

CONTINUING A RELENTLESS PACE OF INNOVATION FOR HIGH-PERFORMANCE PROCESSORS





Q&A



[Confidential - Distribution with NDA]

END NOTES

- Based on a smaller node size of the AMD processor for an x86 platform, as of August 2022. GD-203. RYZEN 7000 SERIES PRO mobile: Based on a smaller node size of the AMD processor for a business-class x86 platform, as of January 2022. GD-203.
- As of August 2022, the Ryzen 7040 15W processors are projected to have the highest graphics performance of any PC processor, compared to Intel 12th Gen 15W mobile processors. PHX-2
- As of August 2022, select Ryzen™ 7040 processors for mobile with dedicated AI hardware are the only x86 PC processors with dedicated AI hardware. PHX-3
- Engineering projections are not a guarantee of final performance. Performance projection by AMD engineering staff based on expected battery life for video playback. Projections based on pre-silicon engineering analysis. Estimated battery life increases assume identically hardware and software configured systems. Specific projections are based on reference design platforms and are subject to change when final products are released in market. PHX-7
- Max boost for AMD Ryzen processors is the maximum frequency achievable by a single core on the processor running a bursty single-threaded workload. Max boost will vary based on several factors, including, but not limited to: thermal paste; system cooling; motherboard design and BIOS; the latest AMD chipset driver; and the latest OS updates. GD-150.
- Testing as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. System configuration for Intel Core i7 1365U: Dell Latitude 5440, 16GB RAM, 512GB NVMe SSD, Intel Integrated graphics, Windows 11 Pro using the following tests: Geekbench v5 Single Core, Cinebench R23 nT, Passmark 11 Overall, PassMark 11 CPU Mark, 3DMark Night Raid Graphics, Blender Bench CPU BMW, Blender Bench CPU Classroom. Laptop manufactures may vary configurations yielding different results. PHXP-10
- Testing as of 6/5/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. System configuration for Intel Core i7 1360P: Dell XPS 13+, 16GB RAM, 512GB NVMe SSD, Intel Integrated graphics, Windows 11 Pro using the following tests: Cinebench R23 nT and UL Procyon Office Productivity Overall Benchmark. Laptop manufactures may vary configurations yielding different results. PHXP-25
- Testing as of 6/5/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. System configuration for Intel Core i7 1355U: Dell Latitude 5540, 16GB RAM, 1TB NVMe SSD, Intel Integrated graphics, Windows 11 Pro using the following tests: Cinebench R23 nT and UL Procyon Office Productivity Overall Benchmark. Laptop manufactures may vary configurations yielding different results. PHXP-26
- Based on internal testing by AMD as of 6/3/23. Battery life results evaluated by operation of a nine-participant Microsoft Teams video conference on battery. System configuration for AMD/Intel systems run from power level 100% > 5% @150nits brightness and power mode set to "power efficiency." Apple system run from power level 100 > 0 @150nits brightness, and battery mode is set to "Low Power Mode.". System configuration for Apple M2 Pro 10 core: Apple MacBook Pro 14,integrated graphics, 16 GBytes RAM, 512GB NVMe SSD, MacOS 13.2 and 69.6Wh battery consuming. System configuration for Ryzen™ 7 7840U: HP EiteBook 845 G10, AMD Radeon Graphics, 16GB RAM, 1TB AMD FOR BURNESS I RYZEN™ PRO 7000 SERIES PROCESSORS I UNDER NDA UNITEL 19M ET JUNE 13#1 2023 AMD Radeon Graphics, 16GB RAM. TB NVMe SSD, Windows 11 Pro and 51.3Wh battery. System config for Intel Core 17 1365U, Dell Latitude 5440, 16GB RAM

and 1TR NVMe SSD. Intel integrated Graphics. Windows 11 Pro and 54 Wh hattery. System config for Intel core i7

- Testing as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing Dell Latitude 5440 with Intel Core i7 1355U processor, with Intel Integrated graphics, 16GB RAM 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1370P processor, Intel Integrated graphics, 16GB RAM, 256GB NVMe SSD and Windows 11 Pro, Dell XPS 13+ with Intel Core i7 1360P processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1365U processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD, Windows 11 Pro, HP EliteBook 845 G10 with Ryzen PRO R7-7840UU processor, Integrated Radeon Graphics, 16GB RAM 1TB NVMe SSD, Windows 11 Pro. Using the following tests: Geekbench v5 Single core, Passmark 11 CPU Mark, and PCMark 10 benchmark. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation. PHXP-27
- Testing as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing Dell Latitude 5440 with Intel Core i7 1355U processor, with Intel Integrated graphics, 16GB RAM 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1370P processor, Intel Integrated graphics, 16GB RAM, 256GB NVMe SSD and Windows 11 Pro, Dell XPS 13+ with Intel Core i7 1360P processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1365U processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD, Windows 11 Pro, HP EliteBook 845 G10 with Ryzen PRO R7-7840UU processor, Integrated Radeon Graphics, 16GB RAM 1TB NVMe SSD, Windows 11 Pro. Using the following tests: Geekbench v5 Single Core, Passmark 11 CPU Mark and PCMark 10 Benchmark. PC manufacturers may vary configurations yielding different results. Results may vary . PCMark® is a registered trademark of Futuremark Corporation. PHXP-28
- Testing as of 6/2/23 by AMD internal performance lab. System configuration for AMD Ryzen PRO 7840U: Lenovo ThinkPad T14s Gen 4, 32GB RAM, 2TB NVMe SSD, Integrated Radeon graphics, Windows 11 Pro running in Power Efficiency mode. System configuration for Intel Core i7 1370P: Dell Latitude 5440, 16GB RAM, 512GB NVMe SSD, intel integrated graphics, Windows 11 Pro running in Power Efficiency mode using the following tests: Teams + Procyon Overall, Teams + Procyon Word, Teams + Procyon Excel, Teams + Procyon Powerpoint, and Microsoft Teams + Procyon Wallpower consumed (watts). Each Microsoft Teams call consists of 9 participants (3X3) while running each individual benchmark. Laptop manufactures may vary configurations yielding different results. PHXP-24
- Testing as of 6/3/23/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. Testing as of 6/3/23/23 by AMD Internal Labs utilizing system configuration for Apple M2 Pro (10 core) processor: Apple MacBook Pro 14, 16GB RAM, 512GB NVMe SSD, Apple Integrated graphics, MacOs 13.2 using the following tests: Cinebench R23 1T, Cinebench R23 nT, Passmark 11 CPU Mark. Laptop manufactures may vary configurations yielding different results. PHXP-30
- Testing as of 6/3/23/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. Testing as of 6/3/23/23 by AMD Internal Labs utilizing system configuration for Apple M2 Pro (10 core) processor: Apple MacBook Pro 14, 16GB RAM, 512GB NVMe SSD, Apple Integrated graphics, MacOs 13.2 using the following tests: Composite Geomean. Geomean score is a composite average score of Cinebench R23 1T, Cinebench R23 nT, Passmark 11 CPU Mark benchmark reults. Laptop manufactures may vary configurations yielding different results. PHXP-31



END NOTES

- PHXP-14: Based on AMD performance lab testing as of 26 May, 2023 using the Chaos V-RAY benchmark to compare the performance of an AMD Ryzen™ 7 PRO 7840U reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel Core i7-1370P, NVIDIA RTX A500 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. System manufacturers may vary configurations, yielding different results. PHXP-14
- PHXP-15: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 Monte Carlo subtest to compare the performance of an AMD Ryzen™ 7 PRO 7840U reference system with integrated Radeon PRO graphics, 32GB RAM, XXGB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel® Core™ i7-1370P, NVIDIA RTX™ A500 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. System manufacturers may vary configurations, yielding different results. SPECworkstation® is a registered trademark of the Standard Performance Evaluation Corporation. Additional information about the SPEC® benchmarks can be found at gwpg.spec.org. PHXP-15
- PHXP-16: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 Convolution subtest to compare the performance of an AMD Ryzen™ 7 PRO 7840U reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel® Core™ i7-1370P, NVIDIA RTX™ A500 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. System manufacturers may vary configurations, yielding different results. SPECworkstation® is a registered trademark of the Standard Performance Evaluation Corporation. Additional information about the SPEC® benchmarks can be found at gwpg.spec.org. PHXP-16
- PHXP-17: Based on AMD performance lab testing as of 26 May, 2023 using the SPECviewperf® 2020 v3.1 medical-03 subtest to compare the performance of an AMD Ryzen™7 PRO 7840U reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel® Core™ i7-1370P, NVIDIA RTX™ A500 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. System manufacturers may vary configurations, yielding different results. SPECviewperf® is a registered trademark of the Standard Performance Evaluation Corporation. Additional information about the SPEC® benchmarks can be found at gwpg.spec.org. PHXP-17
- PHXP-18: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 Rodina (CFD) subtest metric to compare the performance of an Ryzen™ 9 PRO 7940HS reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel® Core™ i9-13900H NVIDIA RTX™ A2000 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. Results may vary. PHXP-18
- PHXP-19: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 NAMD subtest metric to compare the performance of an Ryzen™ 9 PRO 7940HS reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3480 with an Intel® Core™ i9-13900H NVIDIA RTX™ A2000 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. Results may vary. PHXP-19
- PHXP-20: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 Monte Carclo subtest metric to compare the performance of an Ryzen™ 9 PRO 7940HS reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3581 with an Intel® Core™ i9-13900H NVIDIA RTX™ A2000 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. Results may vary. PHXP-20
- PHXP-21: Based on AMD performance lab testing as of 26 May, 2023 using the SPECworkstation® 3.1 Convolution subtest metric to compare the performance of an Ryzen™ 9 PRO 7940HS reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3581 with an Intel® Core™ i9-13900H NVIDIA RTX[™] A2000 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. Results may vary. **PHXP-21**32 AMD FOR BUSINESS | RYZEN™ PRO 7000 SERIES PROCESSORS | UNDER NDA UNTIL 9AM ET JUNE 13[™] 2023

- PHXP-22: Based on AMD performance lab testing as of 26 May, 2023 using the Chaos V-RAY benchmark to compare the performance of an AMD Ryzen™ 9 PRO 7940HS reference system with integrated Radeon PRO graphics, 32GB RAM, 1TB SSD, Windows 11 PRO vs a DELL Precision 3581 with an Intel® Core™ i9-13900H NVIDIA RTX™ A2000 graphics card, 32GB RAM, 1TB SSD, Windows 11 PRO. System manufacturers may vary configurations, yielding different results. PHXP-22
- 'Most Modern Security' is defined as AMD CPUs with Microsoft Secured-core PC Modern Security technology enabled by the system manufacturer. Check with your system manufacturer prior to purchase. RMP-20
- The AMD Secure Processor is a dedicated on-chip security processor integrated within each system-on-a-chip (SoC) and ASIC (Application Specific Integrated Circuit) designed by AMD. It enables secure boot with root of trust anchored in hardware, initializes the SoC through a secure boot flow, and establishes an isolated Trusted Execution Environment. GD-72.
- Full system memory encryption with AMD Memory Guard is included in AMD Ryzen PRO, AMD Ryzen Threadripper PRO, and AMD Athlon PRO processors. Requires OEM enablement. Check with the system manufacturer prior to purchase. GD-206.
- Testing on the HP EliteBook 845 G10 as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing System configuration for AMD Ryzen 7 PRO 7840U:HP EliteBook 845 G10, 16GB RAM, 1TB NVMe SSD, Integrated Radeon Graphics, Windows 11 Pro. Testing on the HP EliteBook 845 G9 as of 5/31/23 by AMD internal performance lab. System configuration for AMD Ryzen PRO 6850U: HP EliteBook 845 G9, 16GB RAM, 1TB NVMe SSD, Integrated Radeon graphics, Windows 11 Pro using the following tests: Geekbench v5 single core, Geekbench v5 Multicore, and 3D Mark Firestrike Ultra. Laptop manufactures may vary configurations yielding different results. PHXP-23
- Engineering projections are not a guarantee of final performance. Performance projection by AMD engineering staff based on expected battery life for video playback. Projections based on pre-silicon engineering analysis. Estimated battery life increases assume identically hardware and software configured systems. Specific projections are based on reference design platforms and are subject to change when final products are released in market. PHX-7



END NOTES

- Max boost for AMD Ryzen and Athlon processors is the maximum frequency achievable by a single core on the processor running a bursty single-threaded workload. Max boost will vary based on several factors, including, but not limited to: thermal paste; system cooling; motherboard design and BIOS; the latest AMD chipset driver; and the latest OS updates. **GD-150**
- Microsoft Pluton is a technology owned by Microsoft and licensed to AMD. Microsoft Pluton is a registered trademark of
 Microsoft Corporation in the United States and/or other countries. Learn more at
 https://www.microsoft.com/security/blog/2020/11/17/meet-the-microsoft-pluton-processor-the-security-chip-designed-for-the-future-of-windows-pcs/. Microsoft Pluton security processor requires OEM enablement. Check with the OEM before
 purchase. AMD has not verified the third-party claim. GD-202.
- Based on a smaller node size of the AMD processor for an x86 platform, as of April 2023. GD-203.
- Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 7 7700X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, AMD AM4 Reference Motherboard with AMD Ryzen™ 7 5800X and DDR4-3600C16. Processors fixed to 4GHz frequency with 8C16 enabled and evaluated with 22 different workloads. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCle® Resizable Base Address Register ("ReBAR") ON, Virtualization-Based Security (VBS) OFF. Desktop configurations will vary, yielding different results. RPL-005
- Testing as of 15 November, 2022, by AMD Performance Labs using the following benchmarks: Cinebench R23 Single Thread,
 Cinebench R23 Multi Thread, Geekbench v5 Single-Core, Geekbench v5 Multi-Core, Passmark 10 CPU Mark, Blender BMW27

- (CPU), Blender ClassRoom (CPU). System configuration for AMD Ryzen 5 PRO 7645: AMD AM5 Reference Motherboard, 32 GB (2X16GB) DDR5-6000, Samsung SSD 980 PRO 1TB NVMe, Nvidia RTX 3090 dGPU (driver: 516.59 WHQL), AMD Wraith Prism Cooler, Windows® 11 Pro. System configuration Ryzen 5 PRO 5650G: AM4 Reference motherboard, 16GB (2x8GB) DDR4-3200 RAM, Samsung 970 Pro 512GB SSD, AMD Radeon UMA graphics (driver: 27.20.14528.9), Windows® 10 Pro, and AMD Wraith Prism cooler. ALL SYSTEMS configured with open air test bench, AMD Smart Access Memory OFF, Virtualization-Based Security (VBS) OFF. Results may vary. **RPL-51**
- Testing as of 5/31/23 by AMD Performance Labs using the following benchmarks: PassMark 10 CPU Mark, 3DMark Fire Strike Graphics, PCMark 10 Digital Content Creation, Procyon Office Productivity, Kraken, PCMark 10 App Start Up, Puget Adobe Photoshop, and PCMark 10 Productivity. System configuration for AMD Ryzen 5 PRO 7645: AMD AM5 Reference Motherboard, 32 GB (2X16GB) DDR5-6000, Samsung SSD 980 PRO 1TB NVMe, AMD Radeon graphics (driver version: 31.0.14040.3), AMD Wraith Spire Cooler, Windows® 11 Pro. System configuration for Intel Core i5-13400: MSI MS-7D30 motherboard, 32 GB (2X16GB) DDR5-6000, Samsung SSD 980 PRO 1TB NVMe, Intel(R) UHD Graphics 770 (driver: 31.0.101.4314), Windows 11 Pro, Intel Laminar RH1 cooler (stock). System manufacturers may vary configurations, yielding different results. RPL-52



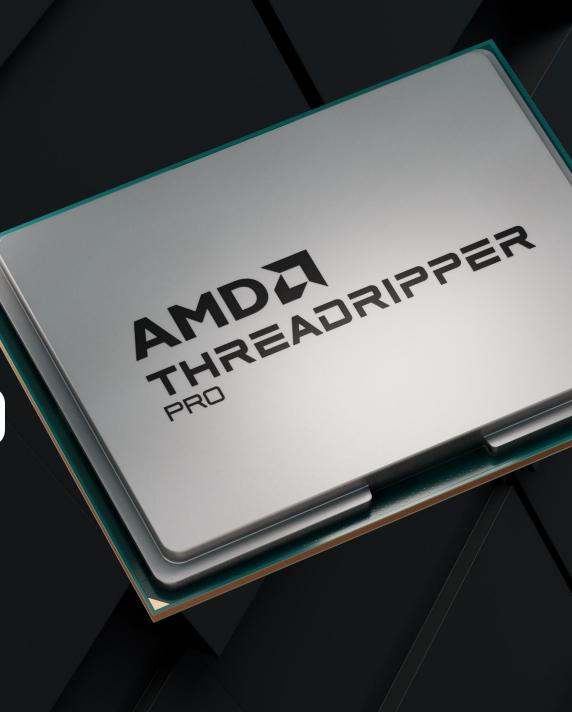


AMD Ryzen™

Threadripper™ PRO 7000 WX-Series

Design. Build. Advance.

On the ultimate workstation processor.



Ready to address evolving demands



Virtual production standard

18.2% CAGR from 2023 to 2032



Automotive simulation expansion

11.1% CAGR from 2023 to 2032



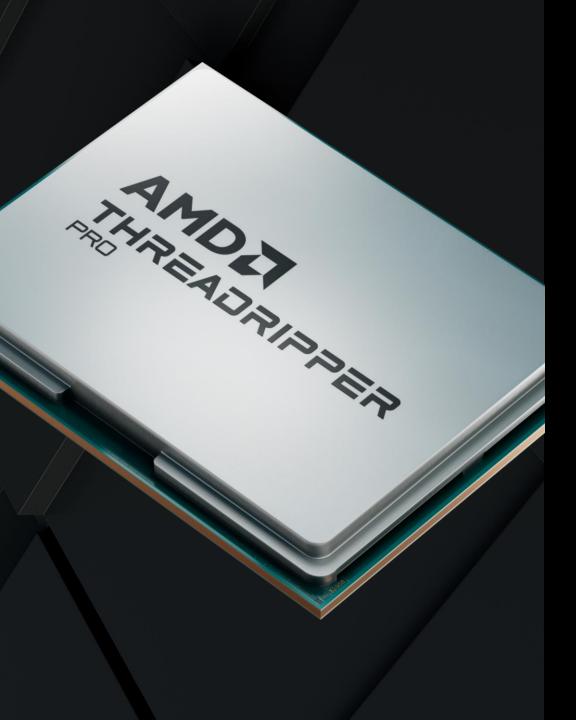
Aging infrastructure revamp

10.2% CAGR from 2023 to 2032

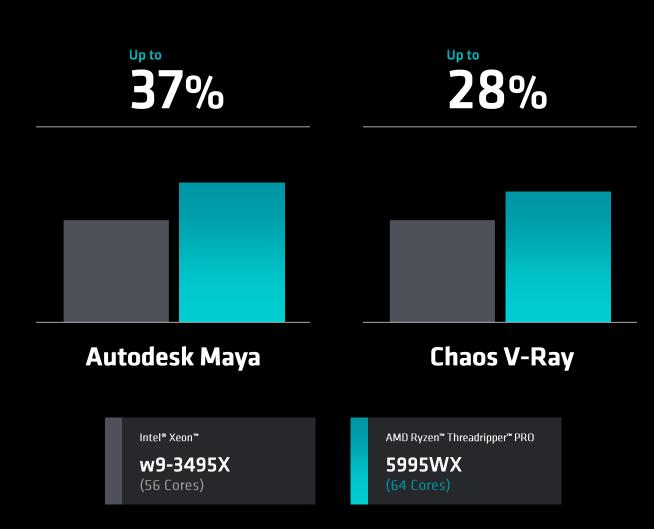


Artificial intelligence adoption

19% CAGR from 2023 to 2032



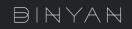
Sustained leadership performance



See endnote CGP-45

World class creative professionals rely on AMD Ryzen[™] Threadripper





















SONOS

Over **1,000 customer wins** and growing

*Based on internal AMD analysis



The fastest workstation processors in the world are about to get even faster



AMD Ryzen™ Threadripper™ PRO 7000 WX-Series

Design. Build. Advance.

On the ultimate workstation processor.

Leadership performance

Up to 96 high frequency "Zen 4" cores deliver full spectrum performance to help accelerate the world's most demanding creative workflows.

➤ Ultimate professional platform

Highly expandable platform with 128 PCle® Gen5 lanes to accelerate GPU compute and Al training.

Built for professionals

World-class security features, manageability, and reliability.

AMD Ryzen* Threadripper* PRO 7000 WX-Series Generational comparison

	AMD Ryzen™ Threadripper™ PRO 5000 Series	AMD Ryzen™ Threadripper™ PRO 7000 WX- Series	Benefit
Architecture	"Zen 3"	"Zen 4"	Improved power efficiency and overall performance
Cores / threads	Up to 64C/128T	Up to 96C/192T	Accelerated multithreaded workflows and multitasking
Max boost frequency	Up to 4.5GHz	Up to 5.3GHz	Improved performance in lightly threaded applications
PCle® generation	PCle 4.0	PCIe 5.0	Next gen GPUs and high-speed storage
L3 cache	256MB Total	384 MB Total	Faster, more responsive computing

AMD Ryzen[™] **Threadripper**[™] **PRO 7000 WX-Series**

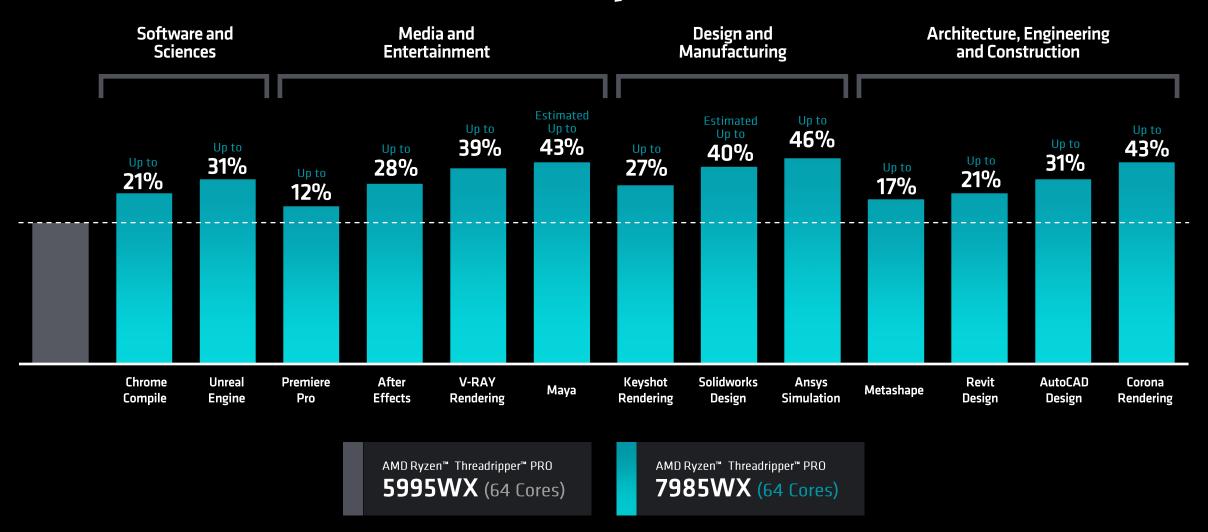
Generational comparison

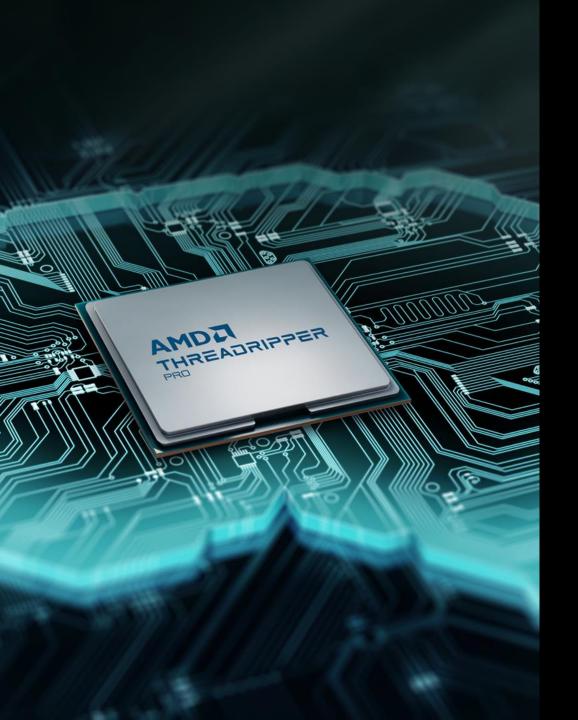
5000 WX- Series	Cores/Threads	Frequency (Boost*/Base)	TDP
	n/a		
5995 WX	64 / 128	Up to 4.5 / 2.7 GHz	280W
5975 WX	32 / 64	Up to 4.5 / 3.6 GHz	280W
5965 WX	24 / 48	Up to 4.5 / 3.8 GHz	280W
5955WX	16 / 32	Up to 4.5 / 4.0 GHz	280W
5945 WX	12 / 24	Up to 4.5 / 4.1 GHz	280W

7000 WX- Series	Cores/Threads	Frequency (Boost*/Base)	TDP
7995 WX	96 / 192	Up to 5.1 / 2.5 GHz	350W
7985 WX	64 / 128	Up to 5.1 / 3.2 GHz	350W
7975 WX	32 / 64	Up to 5.3 / 4.0 GHz	350W
7965 WX	24 / 48	Up to 5.3 / 4.2 GHz	350W
7955 WX	16 / 32	Up to 5.3 / 4.5 GHz	350W
7945 WX	12 / 24	Up to 5.3 / 4.7 GHz	350 W

AMD Ryzen[™] **Threadripper**[™] **PRO 7000 WX-Series**

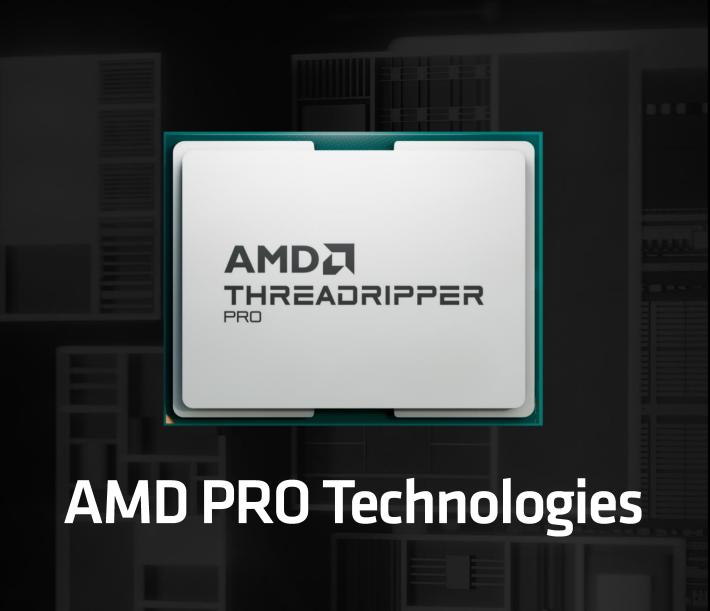
Generational performance





128 PCle[®] 5.0 lanes Ideal platform for Al development

- Advanced multi-GPU configurations
- Optimize and refine **AI algorithms** prior to scaling in the cloud
- Enables edge-based Al training and inference



> AMD PRO Security

Layers of built-in security technology to help protect your sensitive data.

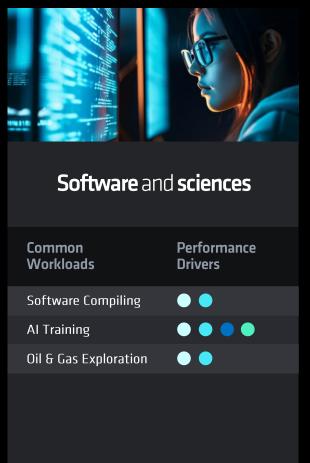
> AMD PRO Manageability

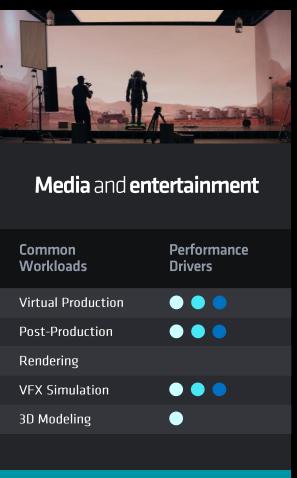
For simplified deployment and management that is compatible with your current infrastructure.

> AMD PRO Business Ready

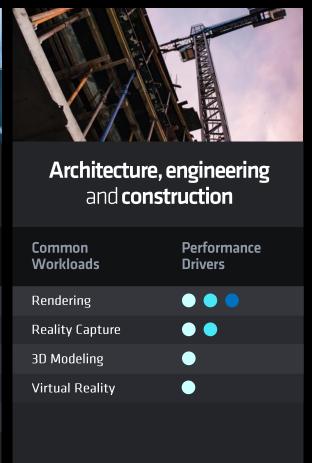
18 months of planned software stability brings peace of mind. 24 months of planned availability for a stable enterprise.

Workstation performance drivers



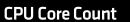
















Platform Expandability

Unrivaled full spectrum performance for peak productivity and multitasking

See endnote SPP-16, SPP-17, SPP-18, SPP-19



AMD Ryzen[™] **Threadripper**[™] **PRO 7000 WX-Series**

Competitive comparison

Architecture	Intel® Xeon™ W-3400 Series	AMD Ryzen™ Threadripper™ PRO 7000 WX- Series
Max Cores / Threads	56 / 112	96 / 192
Max Boost / Turbo Freq.	Up to 4.8GHz	Up to 5.3GHz
L3 Cache	Up to 105MB	Up to 384MB
PCle® 5.0 Lanes	112	128
Enterprise Class Feature Set	Included	Included

Software and **sciences**

Industry trends

- Increased demand for Al deployment and software development
- Software compilation is a multithreaded process
- AI/ML training can be accelerated on multiple GPUs
- Large datasets comprised of sensitive IP are common

7000 WX-Series benefits

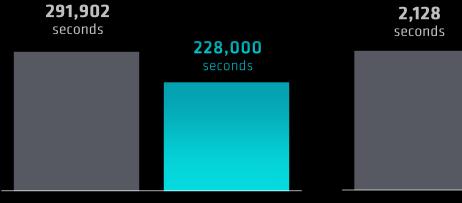
- Develop and compile software rapidly
- Massive memory capacity and bandwidth for large datasets
- Platform supports multiple GPUs for pre-scale AI/ML training
- AMD PRO security helps keep sensitive data secure





28% faster

50% faster



ChromiumCompile (seconds, lower is better)

Unreal Engine

1,417

seconds

Compile (seconds, lower is better)

Intel® Xeon™

w9-3495X

(56 Cores)

AMD Ryzen™ Threadripper™ PRO

7985WX

(64 Cores

Media and entertainment

Industry trends

- Virtual production is taking over the industry driving the need for high compute capability on-set
- More compute capability enables greater adoption of VFX simulation tools
- Improved look development tools drive need for greater multithreaded capability

7000 WX-Series benefits

- More creative iterations
- Enhanced multi-tasking
- Full spectrum performance
- Leading CPU core counts
- Unmatched expandability for Al training and GPU compute



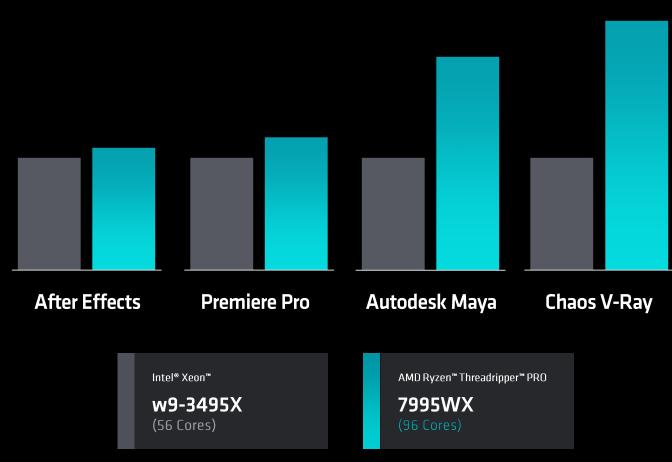


9% faster compositing

18% faster editing

91% faster creation

123% faster rendering



Design and manufacturing

Industry trends

- The use of generative design is expected to grow 15% from 2021-2026
- Global 3D CAD software market size is estimated to reach USD 15.41 billion by 2028, representing growth of 6.4%

7000 WX-Series benefits

- Leading core counts for multithreaded tasks
- Improved design insight through faster simulation iterations
- Optimized multi-tasking
- Improved CPU frequency for more seamless 3D modeling



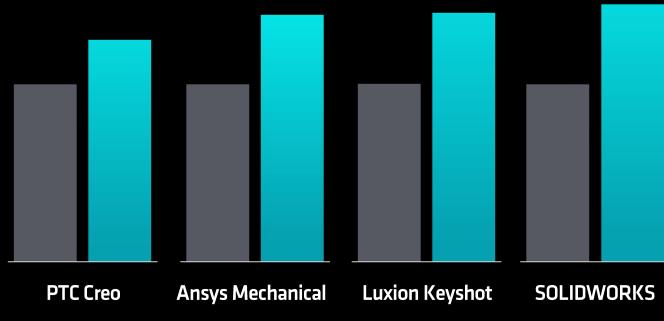


25% faster designing

39% faster simulation

4.4% faster rendering

45% faster designing



Intel® Xeon™

w9-3475X

(36 Cores)

AMD Ryzen™ Threadripper™ PRO

7975WX

(32 Cores)

Architecture, engineering and construction

Industry trends

- Aging commercial infrastructure is driving demand for new construction projects
- Digital twins in AEC is driving the need for incremental compute capability beyond traditional 3D modeling and design

7000 WX-Series benefits

- Full spectrum performance
- Seamless 3D modeling and design experience
- Rapidly visualize alternate design ideas
- Massive memory capacity for reality capture
- AMD PRO technologies to help with data security and manageability





20% faster 3D modeling

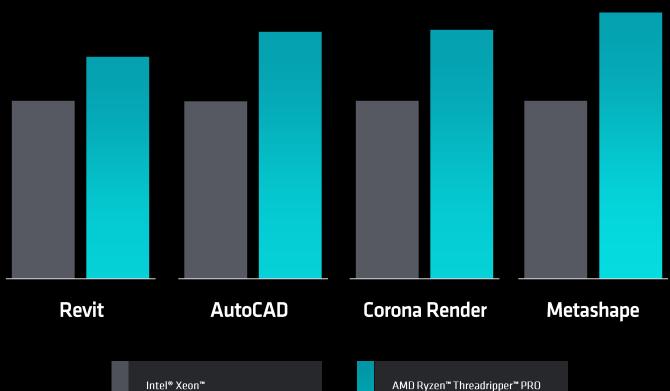
37% faster designing

w9-3475X

(36 Cores)

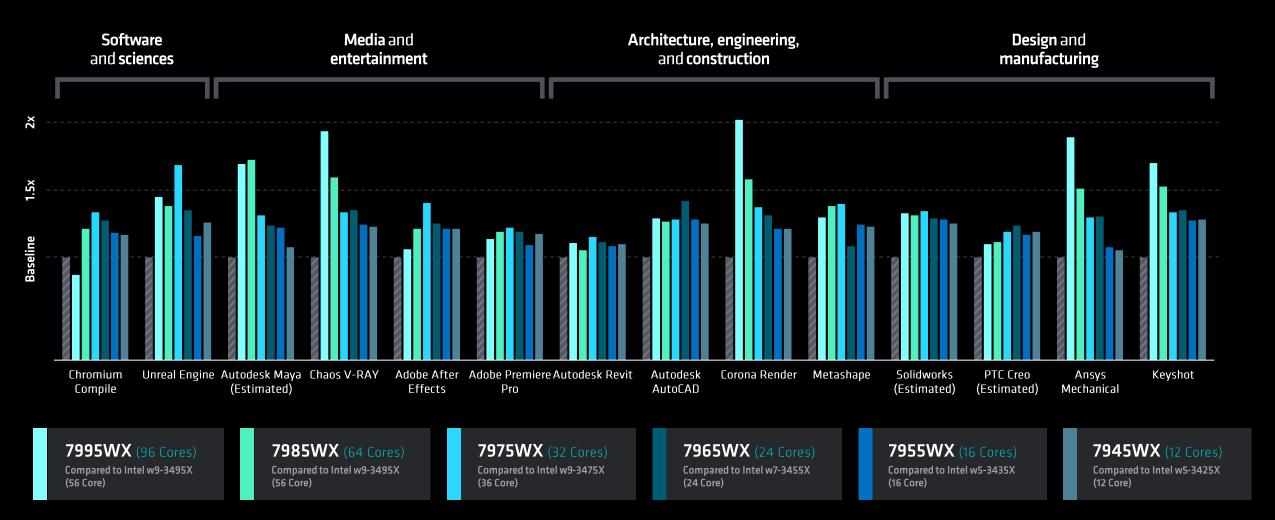
49% faster rendering

52% reality capture



7975WX

Unrivaled workstation performance across entire product stack



See endnote SPP-05, SPP-06, SPP-07, SPP-10, SPP-11



Optimizations and certifications

	Application	Certified	Optimized
	Adobe After Effects	✓	✓
	Adobe Illustrator	✓	
	Adobe InDesign	✓	
	Adobe Lightroom	✓	
	Adobe Media Encoder	✓	
	Adobe Photoshop	✓	
	Adobe Premiere Pro	✓	✓
	Adobe Substance		✓
4	AJA KONA	✓	
men	Autodesk 3ds Max		
tain	Autodesk Arnold		✓
nter	Autodesk Flame		
Media and Entertainment	Autodesk Maya	✓	✓
	Avid Media Composer	✓	✓
Med	BMD DaVinci Resolve	✓	✓
_	Blender		✓
	Boris FX		✓
	Embree		
	Filmworkz		✓
	Foundry Nuke		
	Pixar Renderman		✓
	Pixologic Zbrush		✓
	SideFX Houdini		✓
	Steinberg Cubase		✓
	Vizrt Digital Media	✓	
	Zero Density	√	

	Application	Certified	Optimized
	Altair AcuSolve		
	Altair Feko		
	Altair HyperWorks	✓	✓
	Altair Inspire		
	Altair OptiStruct		✓
	Ansys CFX		
	Ansys Discovery	✓	
	Ansys Fluent		
DN	Ansys HFSS	✓	✓
Design and Manufacturing	Ansys LS-DYNA		
fact	Ansys Mechanical	✓	✓
ann	Ansys SpaceClaim		
Σ D	Autodesk Alias	✓	
n ar	Autodesk Fusion 360		✓
esig	Autodesk HMSWorks		
	Autodesk Inventor		
	Autodesk VRED	✓	
	COMSOL		
	Dassault 3DEXPERIENCE		
	Dassault Abaqus		
	Dassault CATIA		
	Dassault CST Studio		
	Dassault ICEM Surf		
	Dassault PowerFLOW		
	Dassault SOLIDWORKS	✓	✓
	SOLIDWORKS Plastics		

Application	Certified	Optimized
SOLIDWORKS Simulation		
SOLIDWORKS Visualize		
Dassault Spatial		
Dassault Stellar		
Dassault XFlow		
HCL CAMWorks		✓
Hexagon Actran		
Hexagon BricsCAD		
Apex Generative Design		
Hexagon NASTRAN		✓
Luxion KeyShot		✓
MathWorks MATLAB		✓
PTC Creo	✓	✓
Rhino3D		✓
Siemens NX	√	
Siemens Parasolid		
Siemens Simcenter		
Siemens Solid Edge		
Siemens STAR-CCM+		✓
Simerics-MP+		✓

es	Application	Certified	Optimized
Scienc	Halliburton	✓	
e and	Schlumberger Petrel	✓	
Software and Sciences	UE Shader Compiler		✓
	UE Software Compiler		✓

	Application	Certified	Optimized
	Agisoft Metashape		✓
ba.	Autodesk AutoCAD	✓	
ıring	Autodesk Revit	✓	✓
factı	Bentley MicroStation	✓	
Design and Manufacturing	Chaos V-Ray	✓	
	Chief Architect		
	Corona Renderer		✓
	Epic Capturing Reality		✓
	Esri ArcGIS	✓	
	Leica Cyclone		✓
	Nemetschek ALLPLAN	✓	
	Vectorworks	✓	

Broad ecosystem of partners

Worldwide Partners









Regional Partners



































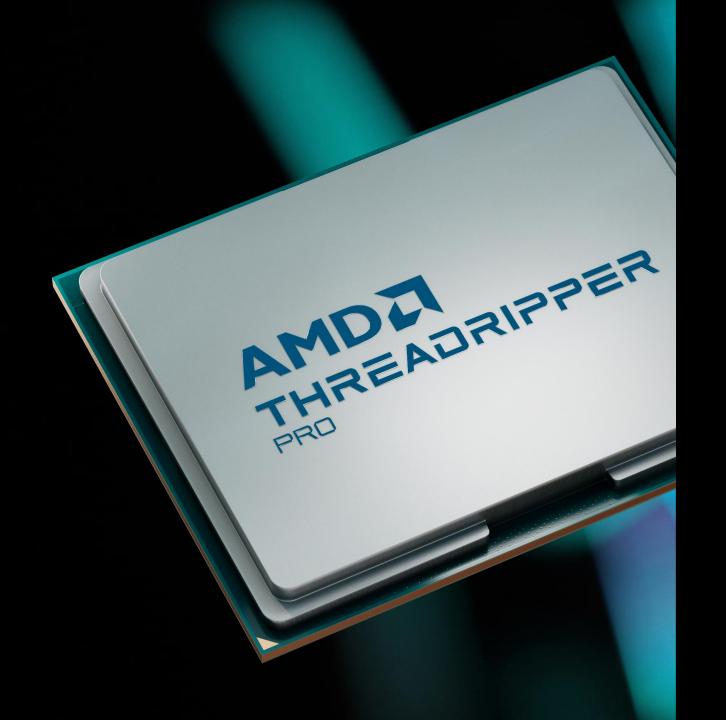








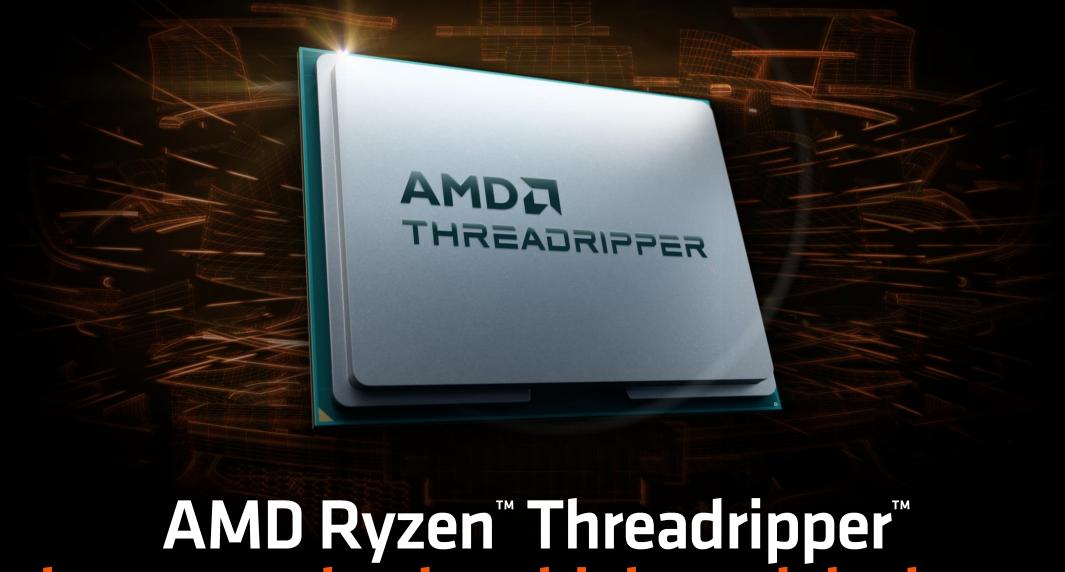




AMD Ryzen™ Threadripper™ PRO 7000 WX-Series

- Leadership performance
- Ultimate professional platform
- Built for professionals

Design. Build. Advance.
On the ultimate workstation processor.



AMD Ryzen[™] Threadripper[™] has come back to high-end desktop







Chipset

PRO Platform

HEDT Platform

PRO Manageability
Features





Memory Configuration 8-Channel overclockable RDIMM

4-Channel

PCle® Lanes (Total/Usable)

148/**144**

92/**88**

Overclocking Enabled





(not enabled on OEM systems)

Processor Support

PRO only

PRO and **HEDT**

AMD Ryzen[™] Threadripper[™] 7000 Series

For the ultimate prosumers that need the ultimate multiprocessing performance, but don't need PRO manageability, eight-channel memory, or 128 PCle® 5.0 lanes.



AMD Ryzen[™] Threadripper[™]

7000 Series

Available **November 21st, 2023**

Along with boxed 7000 Series PRO processors at etail

AMD Ryzen[™] Threadripper

7980X

64 core 128 thread

5.1 GHz

320 MB total cache

350 W

AMD Ryzen[™] Threadripper

7970X

32 core 64 thread **5.3 GHz** max boost

160 MB total cache

350 W

AMD Ryzen[™] Threadripper

7960X

24 core48 thread

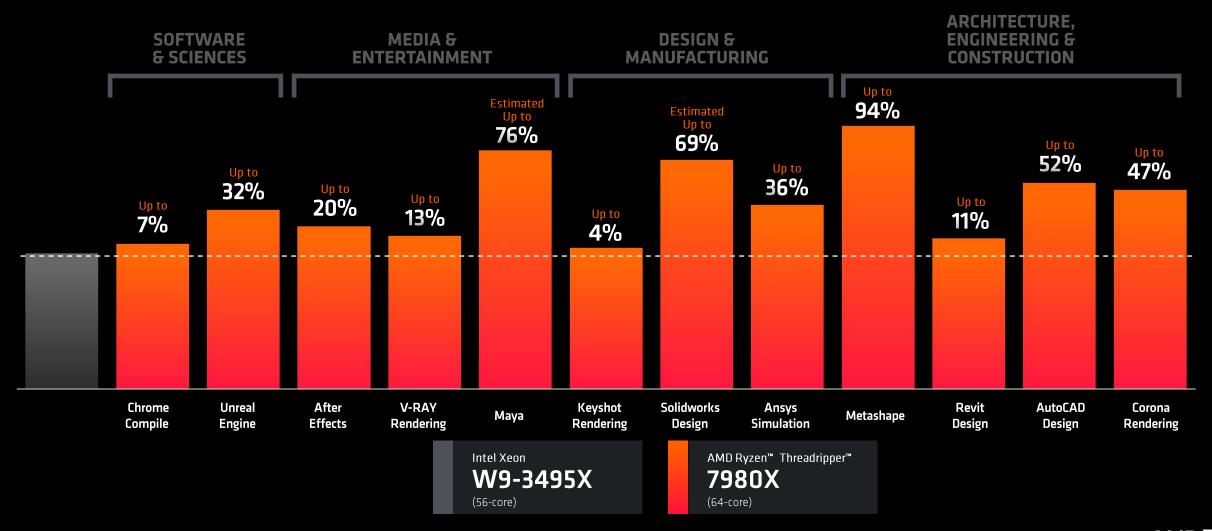
5.3 GHz

152 MB total cache

350 W TDP

AMD Ryzen[™] Threadripper[™] 7980X

The world's most powerful high-end desktop processor





One more thing...

Because the AMD TRX50 Chipset supports PRO processors, you can now build a high-end desktop with

COTES and 192 processing threads



Your time is valuable Don't waste it

save up to 27 minutes

for every hour of productivity vs. the competition

Based on average performance speedup of a 64 core Threadripper 7000 Series processor in a 3D modeling and rendering workflow. See endnote SPP-22

