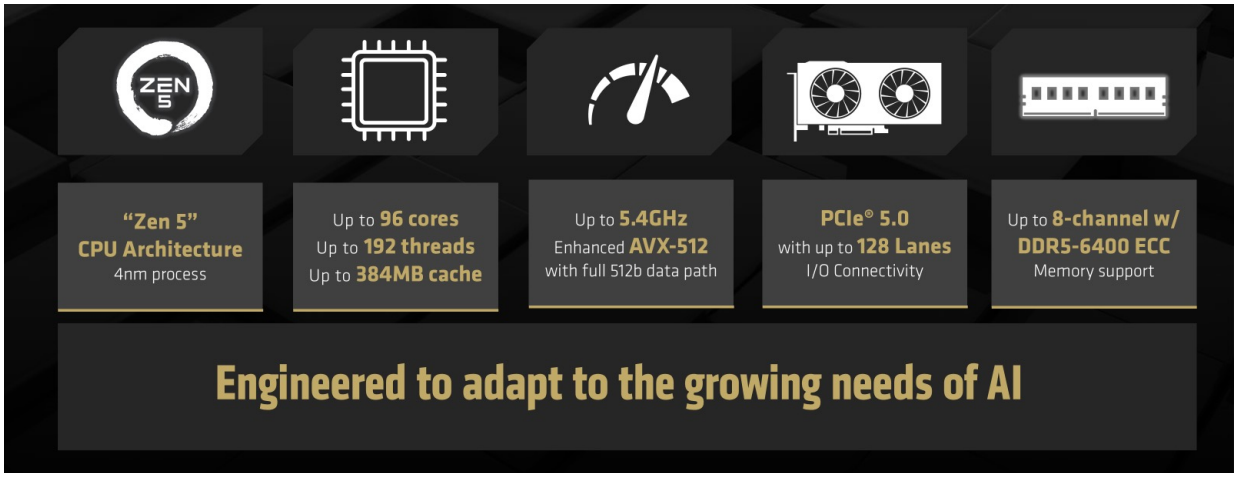
AMD RYZEN™ THREADRIPPER™ PRO 9000 WX-SERIES PROCESSORS

REDEFINING THE ART OF THE POSSIBLE

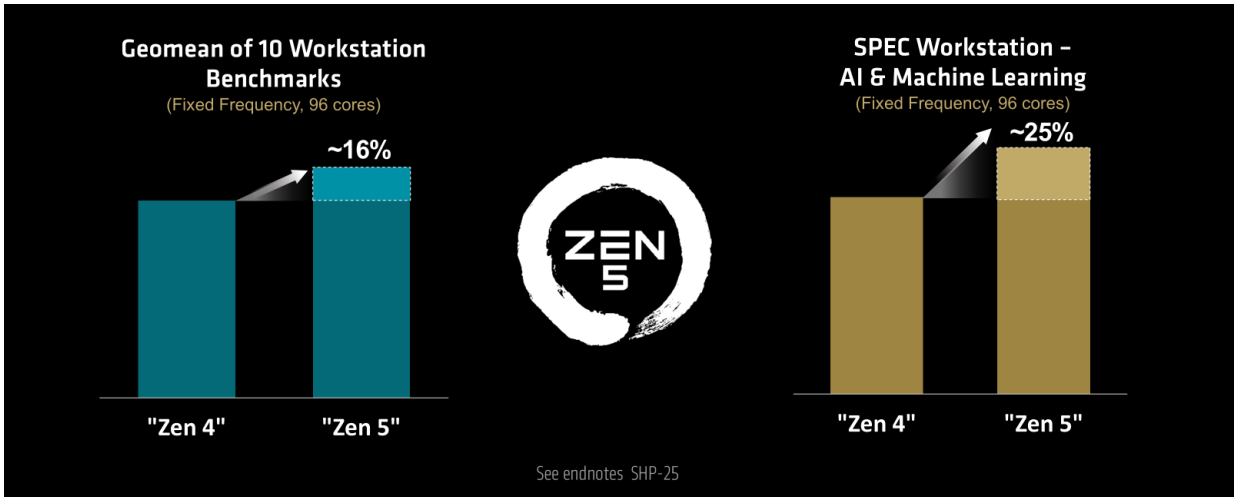
When every minute of render time costs money and a missed milestone risks reputational damage, application throughput becomes its own currency. This value transformation is a distinctive feature of workstations, which tend to emphasize applications in which machine performance is a larger limiting factor than human response time.

From the beginning, AMD Ryzen™ Threadripper™ PRO processors were designed to address the compute needs of customers and companies who were not well-served by the competitive workstations typical of the late 2010s. Each successive generation of CPU has built on the foundation AMD laid in 2020. Driven by Ryzen™ Threadripper™ PRO Series CPUs, AMD topped global share in the 12-core-and-higher premium desktop workstation segment over 2022–2023, as discussed in this IDC whitepaper. The new AMD Ryzen™ Threadripper™ PRO 9000 WX-Series processors debuting in 2025 are a further step forward for workstation performance, capability, and flexibility. From photogrammetry to 3D rendering, across video editing suites and advanced AI development, AMD workstation processors set the pace of workstation improvement and deliver the advantages top creative professionals rely on. It's a processor designed to stretch the imagination, and to push beyond the boundaries of what was previously possible.



INTRODUCING THE AMD RYZEN™ THREADRIPPER™ PRO 9000 WX-SERIES

AMD Ryzen™ Threadripper™ PRO 9000 WX-Series processors emphasize clock speeds, memory bandwidth, and core counts as critical components of higher performance. Total system memory bandwidth is 23% higher than its predecessor, thanks to support for eight-channel DDR5-6400 memory. Additionally, these new workstation CPUs leverage the AMD "Zen 5" microarchitecture, which delivers a geometric mean of 16 percent better performance relative to the "Zen 4" microarchitecture, as shown in the slide below.



One difference between the 2023 launch of the AMD Ryzen™ Threadripper™ PRO 7000 WX-Series and the Ryzen™ Threadripper™ PRO 9000 WX-Series debut in 2025 is the growing importance of AI. AI capabilities are being integrated into an increasing number of applications, including many of the products that content creation professionals use on a daily basis. Dedicated AI workstations are increasingly valued for their ability to fine-tune inference models as well as for prototyping and debugging new ideas.

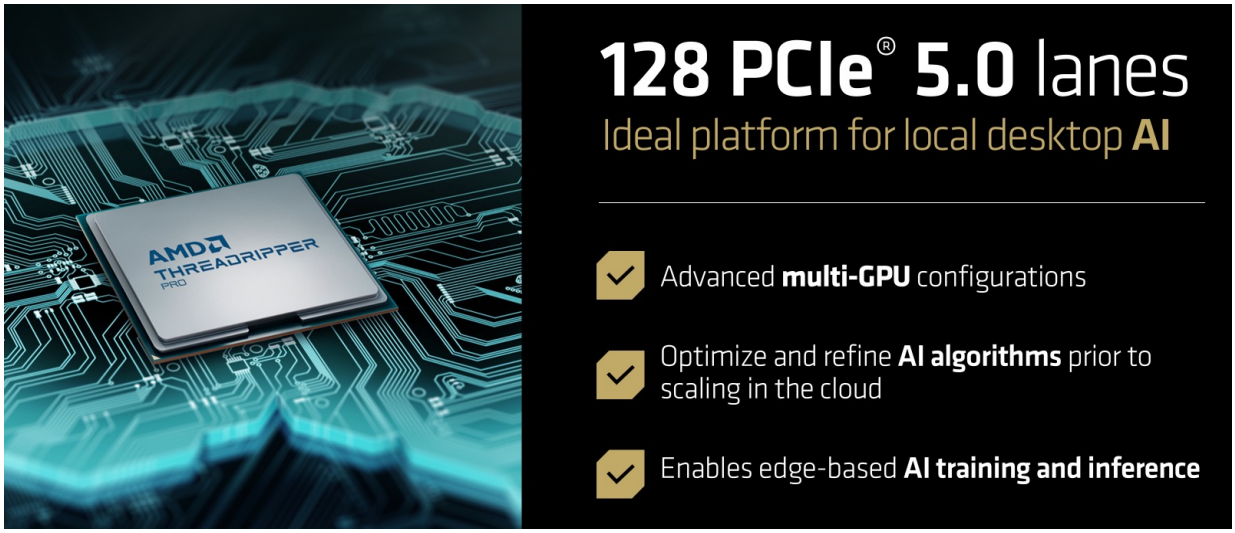
AMD Ryzen™ Threadripper™ 9000 WX-Series processors now include a full 512-bit data path for the AVX-512 ISA, which helps explain the 25% performance uplift AMD measured in the AI and machine learning section of SPEC Workstation against its own previous processor generation. Such microarchitectural enhancements can translate directly into faster performance in real-world scenarios, freeing content professionals to explore imaginative ideas and fresh approaches to existing problems without blowing past project deadlines.

Like its predecessors, the AMD Ryzen™ Threadripper™ PRO 9000 WX-Series also includes support for AMD PRO Technologies. AMD PRO Security and PRO Manageability provide customers with the tools they need to protect sensitive data and handle remote deployments, while AMD PRO Business Ready provides a guaranteed 18 months of platform software stability, 24 months of planned availability, and ISV stability certifications.

BUILDING AN ECOSYSTEM

Since 2020, AMD has steadily scaled up workstation CPU core count and memory bandwidth, while working with dozens of software vendors to optimize their applications for the large number of processors Ryzen™ Threadripper™ PRO CPUs provide in a single socket.

While there are a class of so-called 'embarrassingly parallel' applications that scale extremely well if given additional cores to work with, many programs respond best to a combination of core count, clock speed, and memory bandwidth. Rendering, editing, photogrammetry and AI workloads that lean on one or more GPUs often require an array of PCIe x16 slots to reach top speed.



Creating a top-end workstation platform that can scale to 96 cores, address terabytes of memory and reach clock speeds in excess of 5GHz starts with circuit design and layout optimization, but ultimately extends far beyond the system socket. Whitepapers and support documents tend to focus on speeds and feeds because core counts and clock rates are empirical references that imply a certain level of performance. Less visible -- but equally important -- is the work AMD does with various vendors to better understand their workloads and use cases.

AMD has worked with MathWorks and Ansys to integrate new math libraries, boosted SOLIDWORKS Plastics performance by optimizing how workload threads are assigned within the CPU, and collaborated with a number of other ISVs to enhance how their software works with Ryzen™ Threadripper™ PRO.

"Since their launch, Ryzen™ Threadripper™ PRO CPUs have delivered outstanding performance with Chaos' V-Ray and Corona renderers. Over the past five years, continuous advancements have allowed our users - 3D artists and architectural visualization professionals - to achieve even better results in less time."

VLADO KOYLAZOV, ACADEMY AWARD WINNER AND CO-FOUNDER, CHAOS

This ongoing process of refinement and improvement is a critical AMD workstation feature and a key part of the CPU's value proposition. Since 2020, AMD has worked with dozens of ISVs to win certification approval and to make certain their software ran well on its hardware.

Optimizing data flow and scheduling across nearly 100 cores is as important as the transistor-level tuning that helps ensure every workstation processor can reach high clocks in lightly-threaded workloads without exceeding its power budget.

WHEN EXCELLENCE IS NO ACCIDENT

Workstation workloads are vast and varied, but they can be classified into five buckets. Generally speaking, they depend on one or more of the following: Memory bandwidth, CPU core count, CPU clock speed, CPU execution efficiency, the total amount of peripheral connectivity available within the system, and/or the speed at which those peripherals communicate. Historically, many workstation processors were designed to focus on 1-3 of these areas, sometimes to the detriment of the others.

AMD Ryzen™ **Threadripper™** **PRO 9000 WX-Series**

9995WX	96 cores	192 threads	up to 5.4 GHz max boost*	2.5 GHz base	384 MB L3 cache	PCIe® 5.0	350W TDP
9985WX	64 cores	128 threads	up to 5.4 GHz max boost	3.2 GHz base	256 MB L3 cache	AMD PRO Technologies	
9975WX	32 cores	64 threads	up to 5.4 GHz max boost	4.0 GHz base	128 MB L3 cache	sTR5 Socket	
9965WX	24 cores	48 threads	up to 5.4 GHz max boost	4.2 GHz base	128 MB L3 cache		
9955WX	16 cores	32 threads	up to 5.4 GHz max boost	4.5 GHz base	64 MB L3 cache		
9945WX*	12 cores	24 threads	up to 5.4 GHz max boost	4.7 GHz base	64 MB L3 cache		

When AMD designed the first Ryzen™ Threadripper™ PRO processors, it targeted all five of these keystones simultaneously. The resulting processor was capable of scaling to high frequencies without sacrificing core count. It provided over 100 PCIe lanes as table stakes. It kicked maximum CPU core counts upwards by 2.3x, and it relied on an efficient, high-performance microarchitecture.

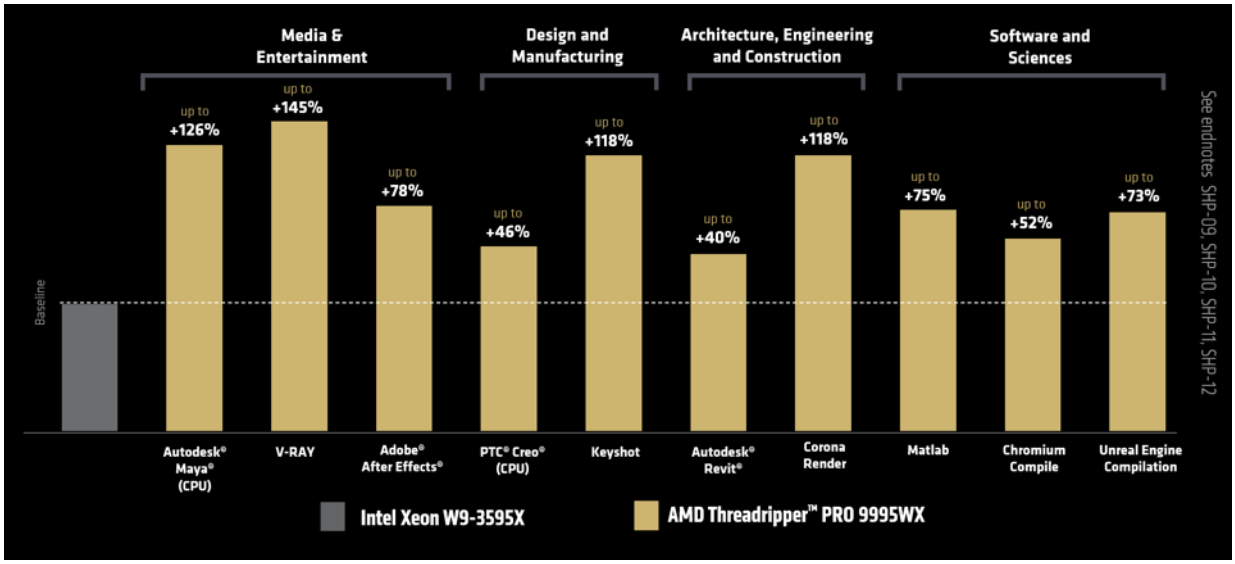
These improvements were enabled by advances in processor manufacturing and the decision AMD made to adopt a modular, chiplet-based approach for high core count CPUs rather than relying on a more typical monolithic design.

Over the last five years, AMD workstation processors doubled their RAM and peripheral bandwidth while growing CPU core counts a further 50%, from 64 to 96 cores. Threadripper™ PRO 9000 WX-Series processors offer all of the "Zen 5" microarchitecture's advantages, including improved branch prediction, higher L1 cache bandwidth, and a full 512-bit data path for the AVX-512 ISA. The chiplet architecture AMD favors allows far more CPU cores to be packed into a single socket. This gives OEMs the option to target smaller form factors at potentially lower prices than a dual-socket system allows.

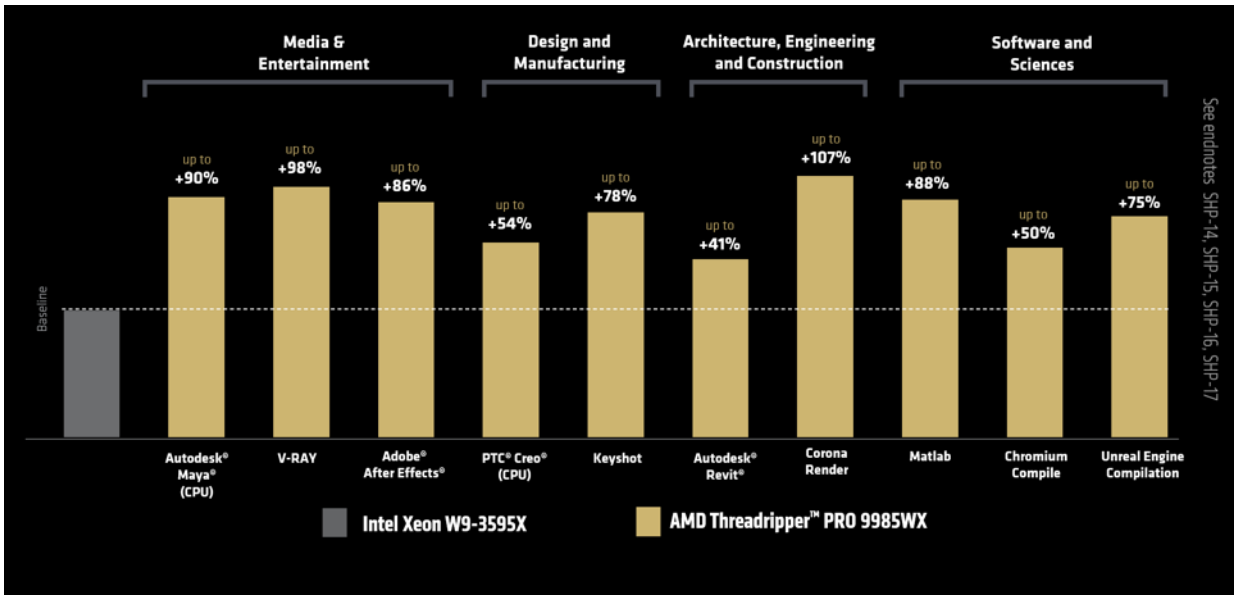
Combine a relentless focus on innovation at the system level with sustained developer partnerships and a wide range of satisfied customers, and the end result is even larger than the sum of its substantial parts.

THE VIEW FROM THE TOP

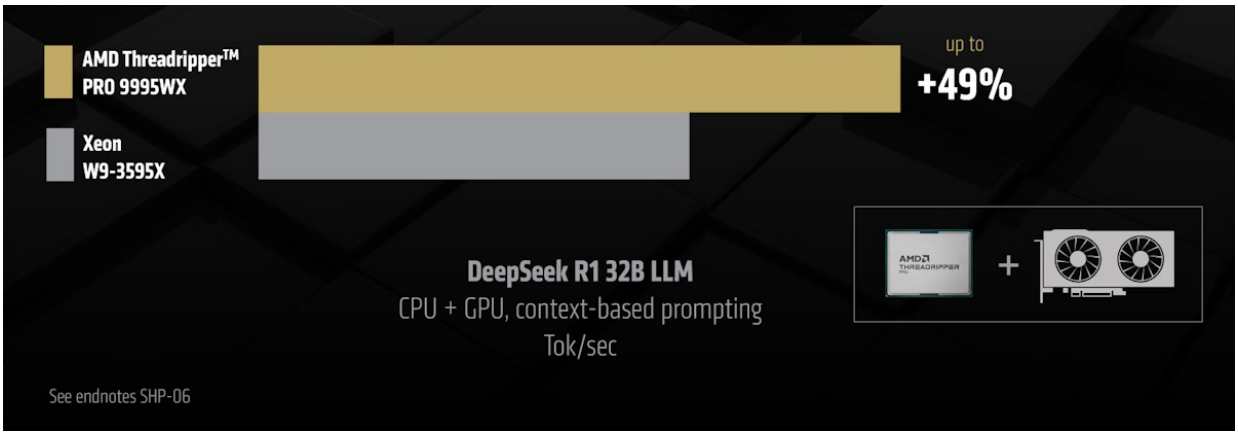
One of the hallmarks of the AMD Ryzen™ Threadripper™ PRO 9000 WX-Series is its competitive strengths against the Intel Xeon product family.

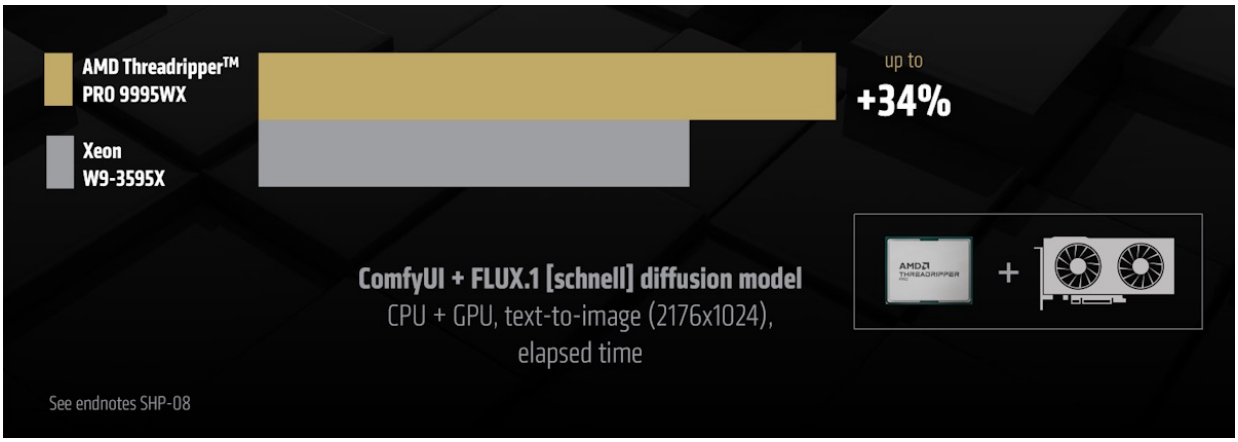


The Intel Xeon w9-3595X is decisively outstripped in a range of verticals, including video editing, 3D rendering, CAD/CAM applications, HPC tests, and software compilation, despite the Xeon processor's higher rated TDP. Importantly, these advantages are not strictly the result of the AMD Ryzen™ Threadripper™ PRO 9995WX's higher core count. A comparison between the 64-core AMD Ryzen™ Threadripper™ PRO 9985WX and the Intel Xeon w9-3595X shows large gaps between the two processors, even though the AMD processor enjoys only a 6.7% advantage in total cores (64 vs. 60).



The performance advantages AMD Ryzen™ Threadripper™ PRO 9000 WX-Series processors enjoy are not confined to traditional workstation applications. AI performance matters as well, both within traditional creative applications and emerging use-cases like locally run chatbots. The results here are just as unequivocal as the conventional data above.





Equip both systems with the highest-end GPUs currently available, and there's no comparison between the two. The AMD Ryzen™ Threadripper™ PRO 9995WX-Series processor exists in a performance class all of its own, above and beyond any competitor product in market today. The great strength of this product line is that the same principles and design choices that supercharge that specific processor are also available lower in the stack, at whatever core count will best address an end-user's needs.

CONCLUSION:

Ryzen™ Threadripper™ PRO 9000 WX-Series processors are designed not to force a hard tradeoff between the various bottlenecks that can limit workstation performance. By uniting the "Zen 5" core architecture, eight-channel DDR5-6400, a full-width 512-bit AVX-512 engine, and 128 PCIe 5.0 lanes, the Threadripper™ 9000 WX-Series delivers decisive gains in 3D rendering, simulation, AI, and video editing.

Add the advantages of AMD PRO Technologies and deep collaboration between AMD and its ISV partners, and the resulting advances translate directly into quicker iterations, the ability to handle more complex projects, and a faster time-to-market for creators, engineers, and researchers alike.

These new AMD workstation processors redefine single-socket performance leadership across a wide range of industries and market segments, in both conventional and AI-centric evaluations. They empower creators, engineers and researchers, help to turn visionary ideas into real-world profits and set a new high-water mark for professional content creation. The long-term success of the product family illustrates the enduring strength of a scalable, modular processor design that puts the needs of its users front and center.

AMD Ryzen™ Threadripper™ PRO 9000 WX-Series processors will be available in systems from Dell, HP, and Lenovo, as well as from vendors like Supermicro, Boxx and Puget Systems. Discover how AMD Ryzen™ Threadripper™ PRO can advance your next project.

Visit www.amd.com to explore systems today.

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V-Ray Benchmark 6 (CPU, ksamples), Keyshot Viewer 2024.2 benchmark, Corona Render (Rays/sec) benchmark 10, PugetBench Premiere Pro and After Effects, SPECapc Autodesk Maya 2024, SPECapc PTC Creo, Autodesk Revit, Unreal Engine 5.5 Compilation, Chromium Compilation 133.0.6868.0 and MATLAB benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured 7995WX, and a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-03

LM Studio + DeepSeek R1 (CPU/GPU) benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-06.

ComfyUI 0.3.34 + FLUX.1 [schnell] diffusion model test to compare the image generation performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-08.

SPECviewperf 2020 v3.1 Solidworks/Creo/CATIA/SNX, SPECapc Creo 9.1.0 (AA = On), SPECapc Solidworks 2024 (FSAA, 4K) and Keyshot Viewer 2025.1 benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-09.

PugetBench Adobe Premiere Pro, PugetBench Adobe After Effects, SPECviewperf 3ds Max, SPECapc Maya, Cinebench 2024 and V-Ray benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-10.

Autodesk Revit benchmark, Autodesk AutoCAD (Cadalyst) benchmark, Metashape and Corona Render benchmark to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-11.

Chromium Compilation benchmark, Unreal Engine 5.5 benchmark and MATLAB benchmark to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-12.

SPECviewperf 2020 v3.1 Solidworks/Creo/CATIA/SNX, SPECapc Creo 9.1.0 (AA = On), SPECapc Solidworks 2024 (FSAA, 4K) and Keyshot Viewer 2025.1 benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9985WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-14

SPECapc Maya, Cinebench 2024 and V-Ray benchmarks to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9985WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-15.

Autodesk Revit benchmark, Autodesk AutoCAD (Cadalyst) benchmark, Metashape and Corona Render benchmark to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9985WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-16.

Chromium Compilation benchmark, Unreal Engine 5.5 benchmark and MATLAB benchmark to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9985WX processor in a reference system configured with 8x 64GB DDR5 memory, Nvidia RTX PRO 6000 Blackwell graphics, 1TB SSD, Win 11 vs. a similarly configured BOXX workstation with the Intel® Xeon® W9-3595X processor. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-17.

SPEC Workstation, SPECapc PTC Creo, Revit Model Creation, V-Ray, Keyshot Viewer, Cadalyst AutoCAD and PugetBench for Adobe After Effects benchmark to compare the performance of the AMD Ryzen™ Threadripper™ PRO 9995WX with a fixed frequency of 3.2GHz in a reference system configured with 8x64GB DDR5 memory, 1TB SSD, Win 11 vs. a similarly configured reference system with the AMD Ryzen™ Threadripper™ PRO 7995WX processor also at the same fixed frequency. Workstation manufacturers may vary configurations, yielding different results. Results may vary. SHP-25.

Boost Clock Frequency is the maximum frequency achievable on the CPU running a bursty workload. Boost clock achievability, frequency, and sustainability will vary based on several factors, including but not limited to: thermal conditions and variation in applications and workloads. GD-150.

AMD

QUICK REFERENCE GUIDE:
AMD RYZEN™ THREADRIPPER™ 9000 SERIES

AMD RYZEN™ THREADRIPPER™ PRO 9000 WX-SERIES PROCESSORS (SOCKET sTR5)

Model	Socket	Cores /Threads	Frequency Boost[1] (up to) /Base	L3 Cache	Memory Channels	TDP	PCIe 5.0 Lanes	AMD PRO Technologies	Compared to[2]	Model	Socket	Cores /Threads	Frequency Boost/Base	Smart Cache	Memory Channels	TDP	PCIe 5.0 Lanes	Intel vPro
AMD Ryzen™ Threadripper™ PRO 9995WX	sTR5	96/192	5.4/2.5GHz	384MB	8	350W	128	✓	⇨	Intel® Xeon® w9-3595X	FCLGA4677	60/120	2.0/4.8GHz	112.5MB	8	385W	112	YES
AMD Ryzen™ Threadripper™ PRO 9985WX	sTR5	64/128	5.4/3.2GHz	256MB	8	350W	128	✓	⇨	Intel® Xeon® w9-3595X	FCLGA4677	60/120	2.0/4.8GHz	112.5MB	8	385W	112	YES
AMD Ryzen™ Threadripper™ PRO 9975WX	sTR5	32/64	5.4/4.0GHz	128MB	8	350W	128	✓	⇨	Intel® Xeon® w9-3575X	FCLGA4677	44/88	2.2/4.8GHz	97.5MB	8	340W	112	YES
AMD Ryzen™ Threadripper™ PRO 9965WX	sTR5	24/48	5.4/4.2GHz	128MB	8	350W	128	✓	⇨	Intel® Xeon® w7-3555	FCLGA4677	28/56	2.7/4.8GHz	75MB	8	325W	112	YES
AMD Ryzen™ Threadripper™ PRO 9955WX	sTR5	16/32	5.4/4.5GHz	64MB	8	350W	128	✓	⇨	Intel® Xeon® w5-3535X	FCLGA4677	20/40	4.8/2.9GHz	52.5MB	8	300W	112	YES
AMD Ryzen™ Threadripper™ PRO 9945WX	sTR5	12/24	5.4/4.7GHz	64MB	8	350W	128	✓	⇨	Intel® Xeon® w5-3525	FCLGA4677	16/32	3.2/4.8GHz	45MB	8	290W	112	YES

AMD RYZEN™ THREADRIPPER™ 9000 SERIES PROCESSORS (SOCKET sTR5)

Model	Socket	Cores /Threads	Frequency Boost[1] (up to) /Base	L3 Cache	Memory Channels	TDP	PCIe 5.0 Lanes	AMD PRO Technologies	Compared to[2]	Model	Socket	Cores /Threads	Frequency Boost/Base	Smart Cache	Memory Channels	TDP	PCIe 5.0 Lanes	Intel vPro
AMD Ryzen™ Threadripper™ 9980X	sTR5	64/128	5.4/3.2GHz	256MB	8	350W	80	N/A	⇨	Intel® Xeon® w9-3595X	FCLGA4677	60/120	2.0/4.8GHz	112.5MB	8	385W	112	YES
AMD Ryzen™ Threadripper™ 9970X	sTR5	32/64	5.4/4.0GHz	128MB	8	350W	80	N/A	⇨	Intel® Xeon® w9-3575X	FCLGA4677	44/88	2.2/4.8GHz	97.5MB	8	340W	112	YES
AMD Ryzen™ Threadripper™ 9960X	sTR5	24/48	5.4/4.2GHz	128MB	8	350W	80	N/A	⇨	Intel® Xeon® w7-3555	FCLGA4677	28/56	2.7/4.8GHz	75MB	8	325W	112	YES

1. Max boost for AMD Ryzen, Ryzen Pro, Ryzen Threadripper, Threadripper Pro, 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
2. This chart illustrates competitive product positioning, is not necessarily an indication of relative performance and may not be to scale for any performance metric. GD-75

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