



AMD Ryzen™ AI PRO Processor Leadership and TCO Benefits

Migrating to AMD Ryzen™ AI PRO laptops can save enterprises millions of dollars in acquisition costs and employee time.

Ryan Shrout

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Contents

3	Introduction	9	Multi-tasking Performance
4	AMD Ryzen AI PRO 300 Series Processor Overview	11	Value Model Calculation
5	AMD Ryzen™ AI PRO Technologies	14	Conclusions
6	System Configurations	15	Important Information About this Report
7	Performance Testing	16	System Configurations & Applications

Introduction

Commercial enterprises and IT decision makers face frequent system refresh and employee fleet updates that offer both challenges and opportunities. Upgrading platforms can be a daunting task that includes system migrations, software updates, and new hardware to validate. However, it also offers companies the chance to increase productivity, enhance security, and improve the value of their IT investments simultaneously.

New platforms powered by AMD and the AMD Ryzen™ AI PRO 300 Series processors offer compelling reasons to dispel the myths around circular IT upgrades. This next generation of processors offers a combination of performance, efficiency, AI features, and an impressive cost benefit, putting them at the top of the list for any IT division looking to make purchasing decisions in 2025.

In our testing of the Lenovo T14s Gen 6 powered by the AMD Ryzen AI 7 PRO 360 processor, compared to a leading OEM laptop powered by the Intel Core Ultra 7 165U, several key outcomes Signal65 found were:

- The AMD Ryzen AI 7 PRO 360 system can save over \$50M in employee time-value¹
- The AMD Ryzen AI 7 PRO 360 processor was up to 70% faster in creation applications
- The AMD Ryzen AI 7 PRO 360 was up to 50% faster in multi-tasking value measurements



\$50M
IN SAVINGS

In this Signal65 Lab Insights report we will detail the performance testing and value benefit analysis that led us to these findings, while also highlighting the critical features and capabilities of AMD Ryzen AI PRO processors and the Lenovo ThinkPad T14s Gen 6. ITDMs that are looking at a new system refresh cycle with pressures on pricing and saving money will find the results highlighted here a compelling reason to consider AMD-based platforms.



AMD Ryzen™ AI PRO 300 Series Overview

The AMD Ryzen™ AI PRO 300 Series processors represent a significant leap forward in enterprise computing, ushering in a new era of AI-powered business PCs. These processors are designed to deliver exceptional performance, efficiency, and advanced AI capabilities, positioning themselves as the world's best processors for next-generation AI Enterprise PCs.

AMD Ryzen™ AI PRO 300 Series Processors

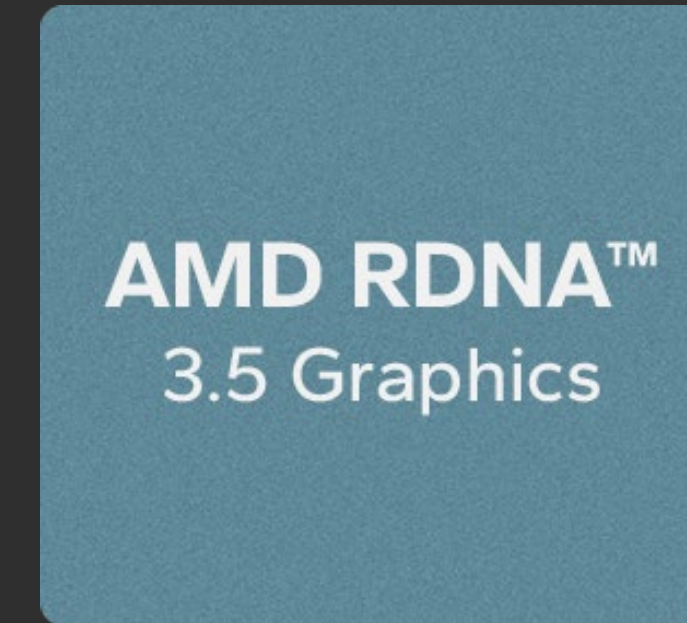
Performance. Efficiency. Next-Gen AI Experiences.



- Powerful CPU for enterprise
- Great Performance and battery life
- Increased core count
- Up to 12 cores and 24 threads



- Powerful NPU for enterprise
- Up to 5x more AI performance than previous generation
- Copilot+ enabled



- Powerful iGPU for demanding enterprise workloads
- Improved performance per watt
- Increased clock speeds and core units



- PRO Security
- PRO Manageability
- PRO Business Ready

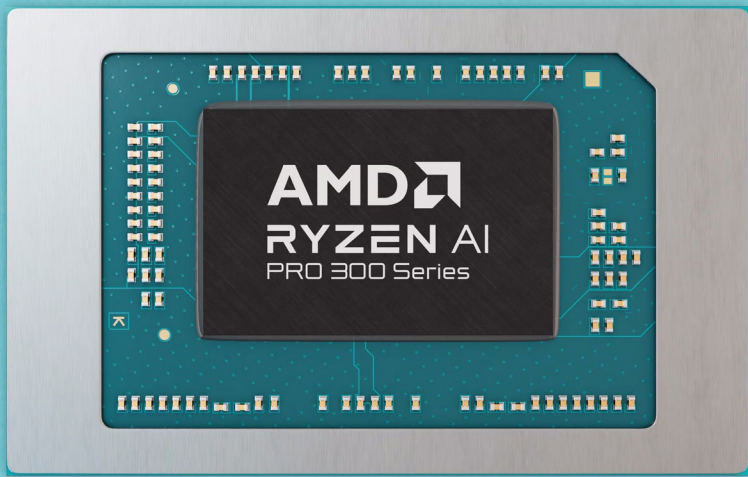
At the heart of the AMD Ryzen AI PRO 300 Processor Series is a next-generation CPU architecture featuring up to 12 cores and 24 threads. This increased core count, coupled with enhanced branch prediction accuracy and wider pipelines, results in substantial performance improvements across a wide range of enterprise workloads. The processors also boast a next-generation Neural Processing Unit (NPU) capable of delivering 50-55 TOPS (Trillion Operations Per Second) of AI performance, up to 5 times more powerful than first generation NPUs in AMD Ryzen processors.

The integrated GPU has also seen significant enhancements, with up to 16 compute units and increased clock speeds. This improvement not only boosts graphics performance but also contributes to AI acceleration and overall system efficiency. The refined memory access and power management features further optimize the performance-per-watt ratio, making these processors ideal for mobile enterprise solutions.

One of the key strengths of the AMD Ryzen AI PRO Processor 300 Series is its ability to

enable next-generation AI experiences in the enterprise environment. These processors are designed to work seamlessly with Microsoft's Copilot+, leveraging their powerful NPU to handle advanced AI models and tasks that other business PCs may struggle with. This capability opens up new possibilities for productivity enhancement, advanced collaboration, and improved efficiency in enterprise workflows.

AMD Ryzen™ AI PRO Technologies



AMD Ryzen™ AI PRO is a platform designed specifically for business and enterprise environments. It combines the powerful performance of the AMD Ryzen processor-based architecture with cutting-edge security features, robust manageability tools, and enterprise-grade reliability, along with a deep security collaboration with Microsoft resulting in a seamless out of the box experience.

AMD continues to innovate around unified, standardized deployment practices for IT machines, with reports showing up to a 41% faster deployment time on some AMD Ryzen™ PRO based laptops compared to the competition.

AMD Memory Guard²	Provides real-time memory encryption using 128-bit key to protect against physical attacks and secure data in RAM without requiring software modifications
Microsoft Pluton Security Processor³	A chip-to-cloud security technology with Zero Trust principles, offering hardware-based root of trust, secure identity, and additional security capabilities beyond TPM 2.0
AMD Secure Processor	Dedicated hardware security subsystem offering hardware root of trust, secure boot, cryptographic acceleration, and firmware TPM functionality to protect sensitive data and maintain system integrity
AMD Shadow Stack	Hardware-enforced stack protection feature that mitigates ROP attacks by maintaining a separate stack for return addresses and comparing them upon function return
Cloud-Based Remote Manageability	Enables IT teams to access and assist remote devices in real-time, performing system updates, deployment, imaging, and end-user support at scale, regardless of location
DASH (Desktop and mobile Architecture for System Hardware)	Offers multi-vendor manageability, allowing IT departments to manage PCs from various OEMs using a single set of tools, enhancing efficiency and flexibility
The AMD Manageability Processor	Enables wireless management of remote PCs, allowing IT teams to perform system updates, deployment, and imaging even when systems are powered off or unresponsive

Read more about AMD PRO Technologies: <https://www.amd.com/en/products/processors/technologies/pro-technologies.html>

2. 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.

3. 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.

System Configurations



Source: [Lenovo.com](https://www.lenovo.com), ThinkPad T14s Gen 6

The systems selected and our performance tests showcased on the following pages will allow us to show the steps to get to our value calculations highlighted on the opening pages. We will **start by looking at general platform and processor performance** across heavy single threaded and multi-threaded workloads, show general purpose office productivity benchmarks, and highlight key content creation and graphics results. **Next, we analyze multi-tasking scenarios**, looking at system performance when running multiple applications simultaneously, a very typical environment for commercial users. And finally, **we use that multi-tasking data to build a time-value calculation** emphasizing employee time saved and resulting enterprise cost savings.

Also critical to understand, the systems and testing performed for this report were done with an enterprise-class IT image installed. Rather than a clean, stock Windows 11 image, Signal65 thought it would be more real-world and beneficial to the audience to analyze the capabilities of these processors and laptops with IT tools and management applications installed. These systems had common services like CrowdStrike Falcon, Trellix DLP, and Skyhigh Client Proxy, installed and operational.

	LENOVO THINKPAD T14S GEN 6	COMPETITIVE COMMERCIAL SYSTEM #1	COMPETITIVE COMMERCIAL SYSTEM #2
CPU	AMD Ryzen™ AI 7 PRO 360	Intel Core i7-1365U	Intel Core Ultra 7 165U
Graphics	AMD Radeon™ 880M Graphics	Intel Iris Xe Graphics	Intel Graphics
RAM	32GB LPDDR5X-7500	32GB LPDDR5-4800	32GB LPDDR5X-6400
Storage	512GB Kioxia KXG8AZNV512G	512GB Western Digital SN740	512GB SK Hynix PVC10
Display	14" 1920x1200	14" 1920x1200	14" 1920x1200
System BIOS	1.08	1.18.1	1.9.0
Operating System	Windows 11 Enterprise 22H2.4460	Windows 11 Enterprise 22H2.4460	Windows 11 Enterprise 22H2.4460
Windows Power Mode	High Performance	High Performance	High Performance
Virtualization Based Security	Enabled	Enabled	Enabled

This means that the background load on these systems will be heavier than some other testing, and the impact on performance and characteristics of the systems could shift. But this also means that it more closely mimics the way an IT decision maker will deploy the system, and more closely represents the experience a commercial user will have with the processors and systems. It will tend to put a bit more emphasis on the multi-threaded capabilities and background function processing capabilities.



Benchmark Performance



Office App Performance



Multi-tasking Performance



Employee Time-Value Calculation

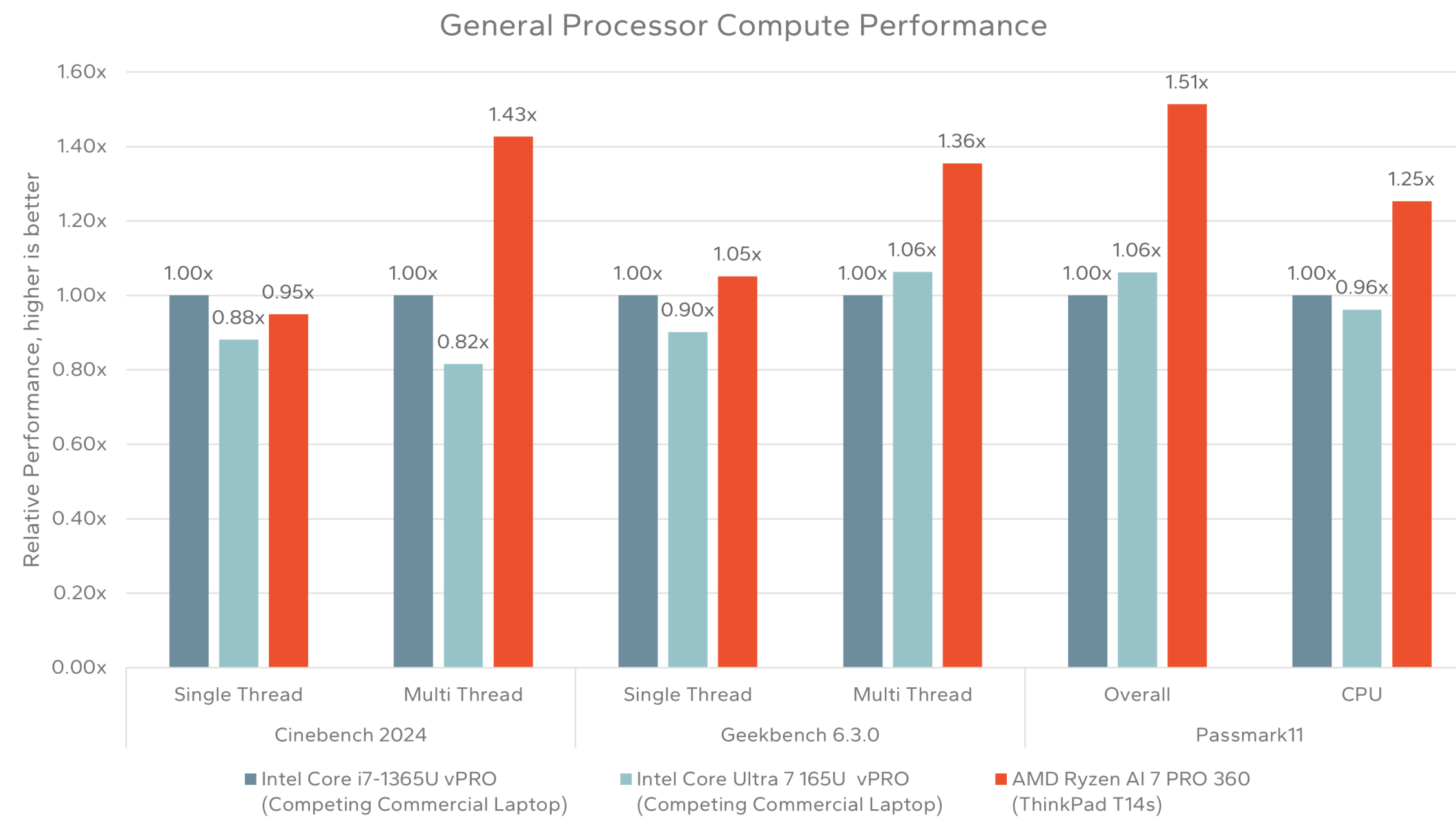


Performance Testing

AMD Ryzen™ AI 7 PRO 360 offers up to **43%** faster multi-threaded performance than competing commercial processors.

Overall System Performance

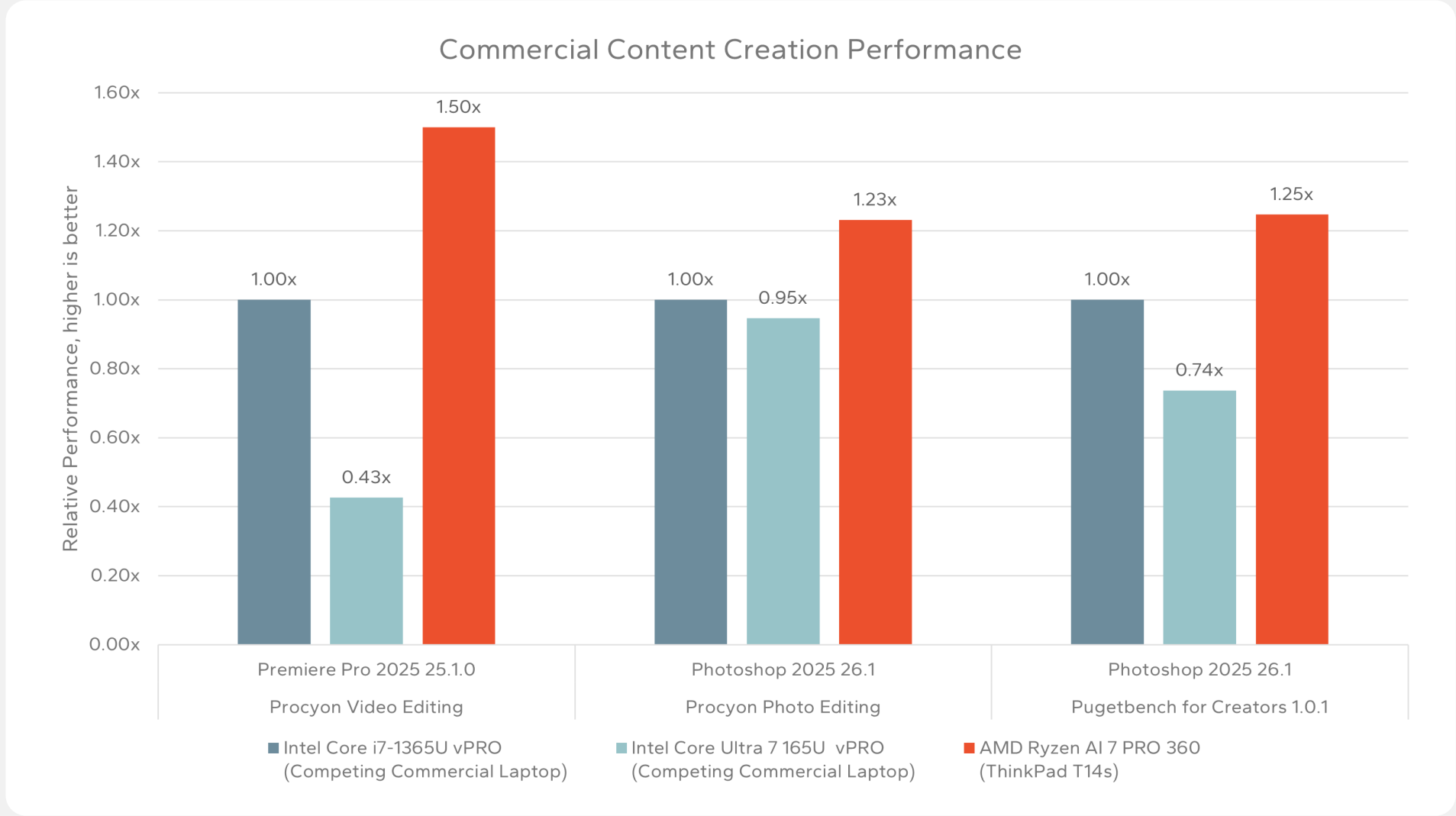
In this chart we compare performance on all platforms across the Geekbench, Cinebench, and Passmark family of tests. These help us understand the peak and sustained performance of the platforms, though of course real-world application tests add to the clarity and focus of any comparisons. Scores are shown relative to the performance of the previous generation Intel Core i7-1365U platform.



In the single and lightly threaded performance results in both Cinebench 2024 and Geekbench 6.3.0, the AMD Ryzen AI 7 PRO 360 is consistently faster than the Intel Core Ultra 7 165U and trades leads with the previous generation Core i7-1365U. In more heavily threaded workloads that can fully utilize the power of the “Zen 5” cores on the AMD Ryzen AI CPU, the ThinkPad T14s Gen 6 achieves up to a 51% performance leadership advantage.

It is interesting to see the current generation of Intel commercial processors falling slightly behind the previous generation in single threaded and multi-threaded tests in a few of our results. We will see that behavior in some of our other performance metrics so its worth keeping an eye on if you are considering an enterprise upgrade cycle.

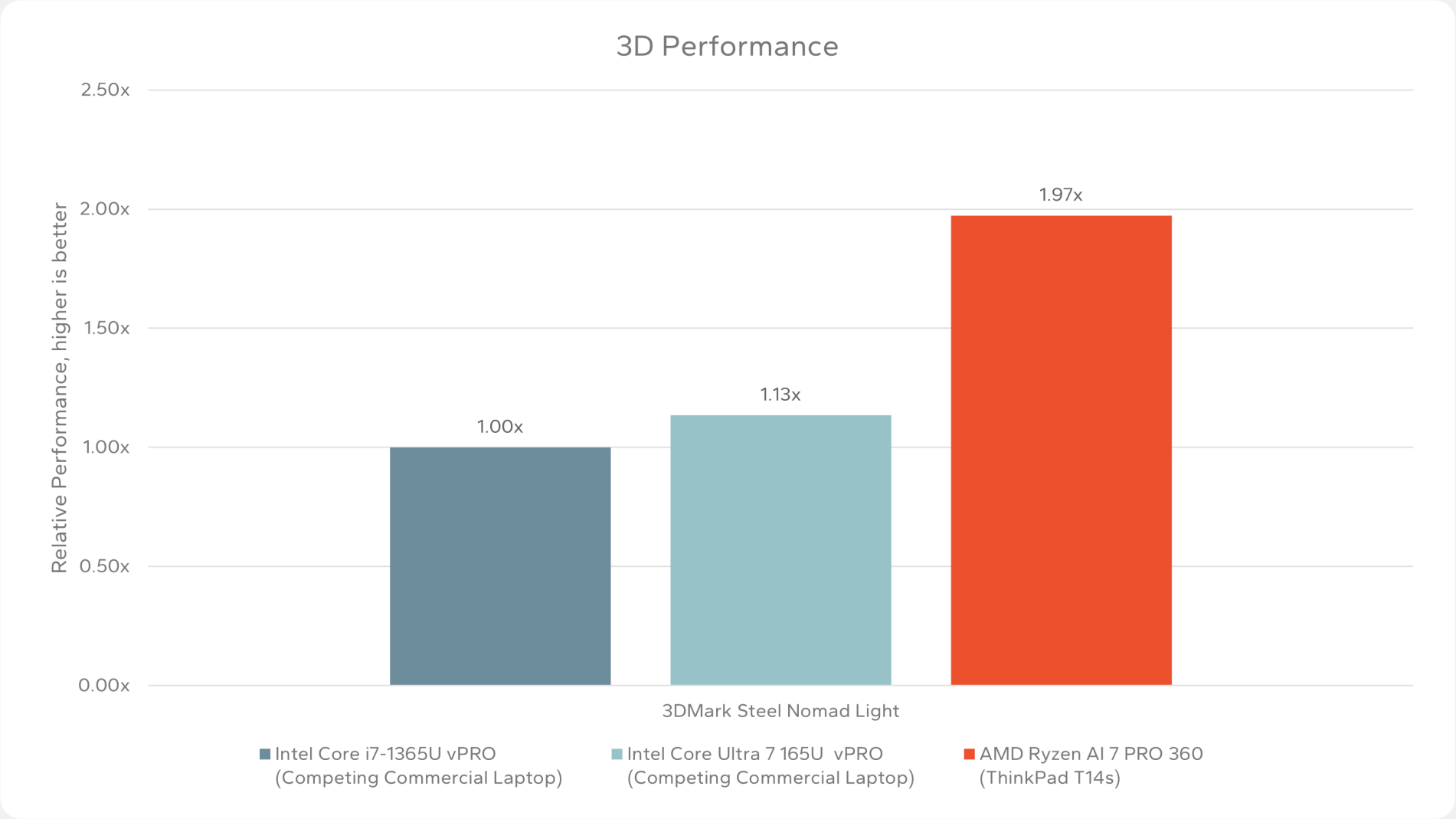
Performance Testing



Creation Performance (Procyon Video Editing, Photo Editing)

Using a pair of performance tools to measure it, we want to see the basic content creation performance of the three platforms in question. We are looking at both Adobe Premiere Pro and Adobe Photoshop, two of the most commonly used creation applications for commercial environments.

Thanks to both the multi-threaded performance of the AMD Ryzen™ AI CPU and the performance of its integrated graphics, the ThinkPad T14s Gen 6 shows significant advantages in performance across our results. In Premiere, where the integrated graphics has more of an impact, the AMD platform is 50% faster than the latest solution from Intel. And even in Photoshop, the AMD Ryzen AI 7 PRO 360 is 25% faster.



Graphics Performance (3DMark)

While the NPU and the CPU get a lot of attention in the new AMD Ryzen™ AI 300 Series processors, the value of high-performance integrated graphics is another key element. This graphics performance is relevant to mainstream gaming capabilities of course, but also is used by third-party applications for AI compute and for light commercial content and media creation tasks.

For the most recently available Intel commercial platforms, the company has limited the performance of its integrated graphics solutions. In contrast, the AMD Ryzen AI 7 PRO 360 has a much larger GPU, resulting in nearly a 2x advantage over the Intel machines. This translates into improved performance across a range of applications in content creation, AI, and 3D rendering fields.

Conclusion

Across a range of general-purpose tests, the AMD Ryzen AI 300 Series laptop offers impressive productivity and creative performance, outperforming the best commercial options from the competition. This translates into improved user experiences today and provides more future-looking headroom for the pending evolution of productivity with AI features and Copilot+ PCs.

The AMD Ryzen™ AI 7 PRO 360 is up to 50% faster in commercial content creation applications.

Multi-tasking Performance

One area we consistently get asked about with our customers is to how we can help measure performance in a more “real world” environment, simulating the experiences that consumers will have based on how they use their computers. For the commercial segment, one of the keys is a heavy dose of multi-tasking across what would generally be considered “light” tasks.

Signal65 setup two different software scenarios to see how the AMD Ryzen™ AI 300 Series processors compared to the competing laptop hardware from Intel.

This is the third step of our “data-to-value” progression model, moving from benchmarks to applications, and now to multi-tasking.

The two workloads under test are described here.



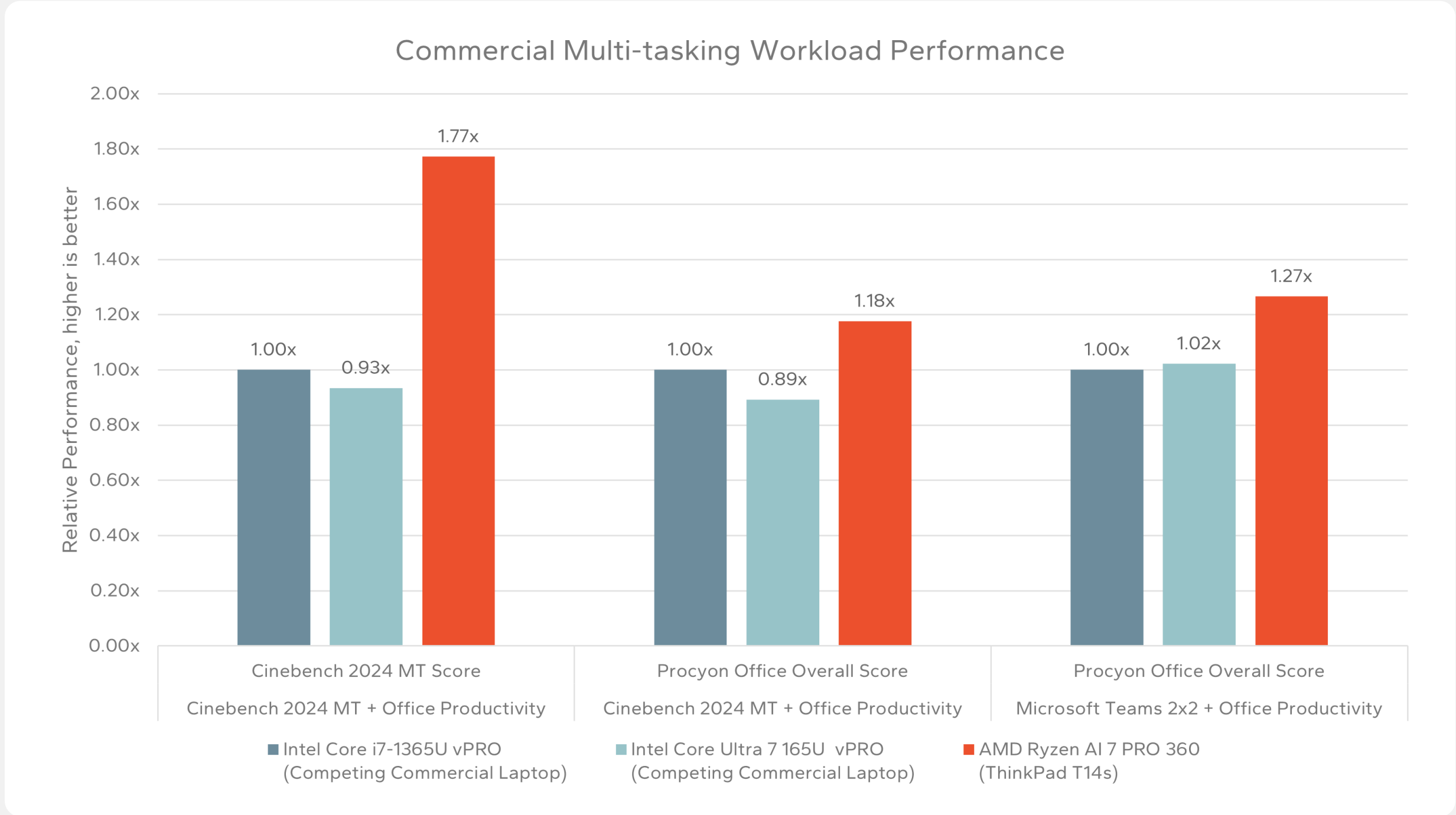
1: Office Productivity + Heavy CPU Load

This configuration measures productivity performance with Procyon Office Productivity while running a CPU-intense background operation, in this case we used the multi-threaded test of Cinebench 2024. This represents kind of a worst-case scenario, of a commercial user running a light render in the background while getting other Office work done, or maybe zipping/compressing a large file set with the same Office workload. In this scenario BOTH tasks are measurable and have scores compared below.

2: Office Productivity + Teams Call

In this scenario we combine the Procyon Office Productivity test with a Teams video conferencing call running the background. This is a more common use case that simulates the multi-tasking that information and office workers experience every day. In this testing, as long as the 2x2 Teams conference call has acceptable experience, the measurable performance comparator is only the Office Productivity score.

Multi-tasking Performance



The left and center sets of bars show results from scenario #1 described above. Office application performance is 18% faster on the ThinkPad T14s Gen 6 with the AMD Ryzen™ AI 7 PRO 360 compared to the Intel-based laptops, a significant shift from the basically equal performance we observed when running the office tests in isolation. This means that the AMD Ryzen AI processor improved performance in the operational office tasks relative to the Intel platforms by 20% or more when running in a multi-tasking setup.

Maybe more interestingly is that the heavy background workload, in this case Cinebench 2024, sees a 77% performance advantage for the AMD platform of its Intel competition. Running that workload individually in early data showed us that the AMD processor was 43% faster, another instance of AMD improving its competitive positioning vs Intel as the complexity of work on the laptops

increase. That means users see not only faster foreground work, but faster background work at the same time, thanks to the superior multi-core architecture. Note as well that in both of these workload portions that latest Intel Core Ultra 7 165U performs worse than the previous generation Core i7-1365U system, a regression in generational processor performance.

On the right we have the results of the Teams + Office testing, and the results are even more compelling. Despite the appearance of this as a much more common, and possibly light-weight multi-tasking scenario, the AMD Ryzen AI 7 PRO 360 system can offer 25%+ better performance than the Intel-based alternatives. This represents a significant absolute performance advantage for the AMD based system but also highlights the potential wide-scale advantages of having better multi-thread, multi-core performance for a range of multi-tasking scenarios.

AMD Ryzen AI PRO laptops provide best in class multi-tasking performance, with up to **27% better** performance in common user scenarios.

Value Model Calculation

Now we get to move on to the final portion of our “data-to-value” progression model, looking at costs and value that coalesce into potential savings for IT groups and enterprise customers.

While the multi-tasking performance results we showed on the previous page are compelling, there are several key additions we make to calculate the value of this performance delta between any two platforms. For IT decision makers that are looking to invest millions of dollars in new hardware each year, understanding the time-value or people-value of how performance metrics can translate into dollars is a significant indicator for purchases.

The Procyon Office Productivity benchmark quantifies performance in office functions across Microsoft Word, Excel, PowerPoint, and Outlook, measuring the time it takes to perform specific functions like adding an image to a Word document, exporting a file to a PDF, or creating a pivot table on a complex data set in Excel. These operation times can be used and mapped to a “typical workday” for enterprise clients, extrapolated out to time savings of days or years, to help us gauge the potential benefit of large-scale adoption of AMD Ryzen™ AI PRO systems.

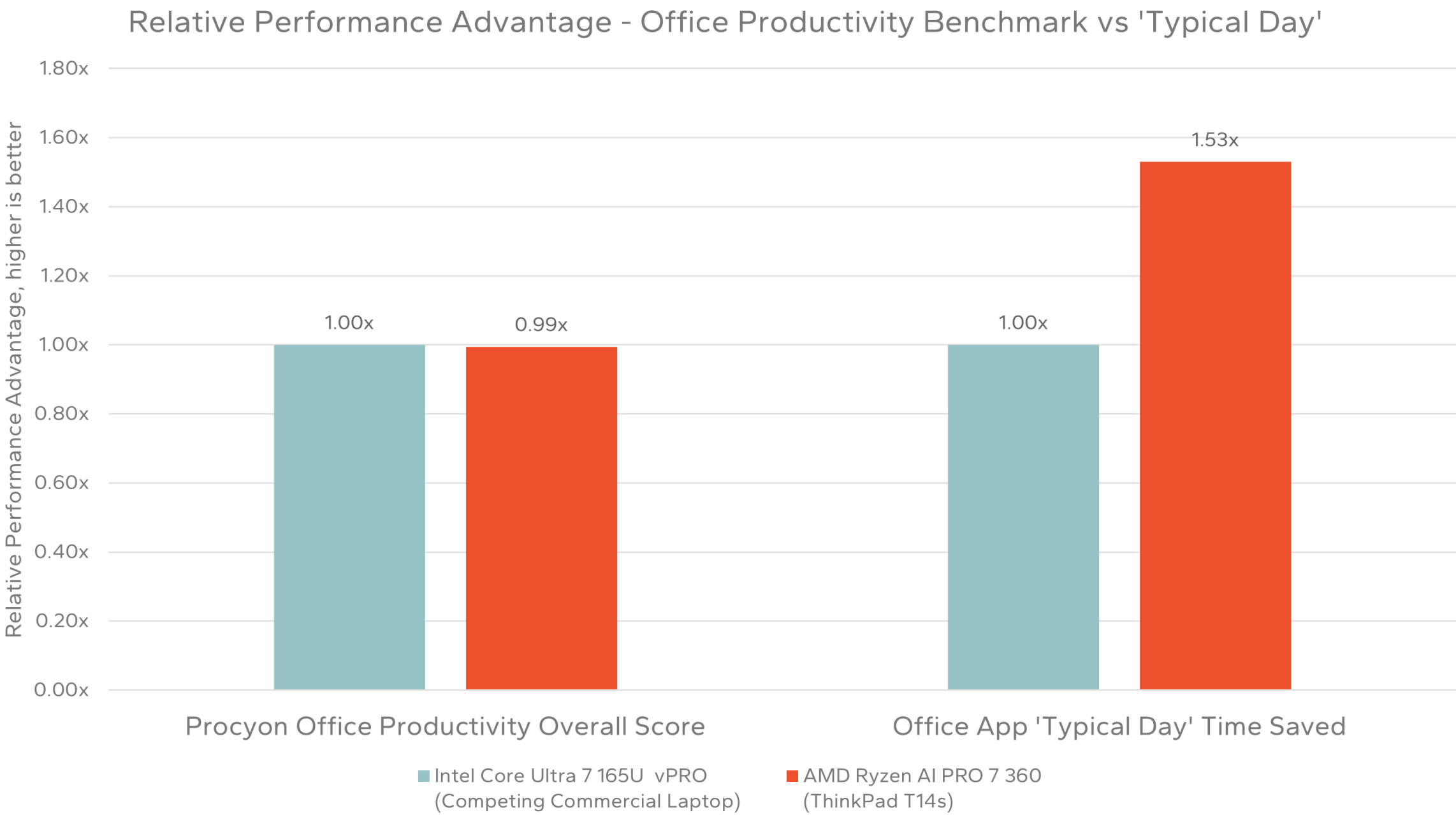
To the right is a table of measured operation completion times in our office productivity testing, along with the Signal65 calculated “typical day” that estimates how many times an individual user might perform these functions. We estimate that a typical office worker will copy/paste in Word maybe 25x per day, embed an image 5x per day, and scale those images each time too. In PowerPoint you might add a slide animation 15x per day, export a presentation to PDF for distribution 3x per day, etc.

While each company could attempt to calculate its employees “typical day” we found through discussions with our own teams and several other IT managers that this data above represents a reasonable starting point for this discussion and a typical office user.

	Operation	Functions/Day
Word Operations	Copy Paste	25
	Cut Paste	25
	Save	20
	Copy From Excel	10
	Find	10
	Add Image	5
	Embed File	5
	Image Effect	5
	Image Scale	5
	Load	5
	Accept Comparison	3
	Compare Documents	3
	Convert From PDF	3
	Export To PDF	3
	Table Of Contents	3
	Add Watermark	2
Excel Operations	Copy Paste	25
	Edit Cells	20
	Save	20
	Sort Column	20
	Modify Mortgage	15
	Solve Equations	10
	Vlookup	10
	Format Table	5
	Load	5
	Pivot Table	5
	Unique Pairs	5
	Voter Analysis	5
	Export To PDF	3
	Load Mortgage	3
	Save As CSV	2
PowerPoint Operations	Add Image	25
	Save	20
	Add Animation	15
	Copy From Word	10
	Load	5
	Merge	5
	Add Video	3
	Export To PDF	3
	Export Video	2
Outlook Operations	Write Mail	25
	Move Mails	15
	Search Mails	15
	New Appointment	5
	Save Attachments	5
	Backup	1

Value Model Calculation

When we apply these operation multipliers to the measured operation times from the benchmark, it changes the “performance” of each system in interesting ways. Functions that might be faster on any one platform, when multiplied by 3x or maybe 10x times per day, can weigh more heavily on the total time consumed by the function for each user. As a result, our tested systems comparing the AMD Ryzen™ AI PRO 7 360 and the Intel Core Ultra 7 165U processors that showed basically matching performance in the Procyon Office Productivity Overall scores, now can exhibit a much wider gap.



On the left you see the relative performance comparison between the AMD and the Intel powered commercial laptops; both are essentially offering the same performance results, aligning to our early testing. But the comparison on the right-hand side is what you see when you consider our “typical day” estimates and the operation times, translating into a “time saved” metric for commercial users each day when they would otherwise be waiting on their systems to complete functions.

Typical day usage in a commercial multi-tasking scenario shows up to a **53% time savings** on office application operations for the AMD Ryzen™ AI PRO processor.

Value Model Calculation

The next step is to convert this advantage into time (minutes and hours) so that we can map it to the value of employee time.

		Intel Core Ultra 7 165U vPRO (Competing Commercial Laptop)	AMD Ryzen AI PRO 7 360 (ThinkPad T14s Gen 6)
1	Total office app operation time in 'typical day' (min)	16.16	10.57
2	Time saved per 'typical day' vs 165U (min)	--	5.60
3	Time saved per year at 240 work days (hrs)	--	22.39
4	Average employee salary at professional firm (\$)	--	\$120,000
5	Average hourly implied value for employee time (\$)	--	\$62.50
6	Estimated time value saved per year per employee (\$)	--	\$1,400
--			
7	Initial system acquisition cost (as of 1/12/2025)	\$2,288	\$1,651
8	System acquisition cost savings per employee	--	\$637
--			
9	Total enterprise employee count and deployment		25,000
10	Total value for workforce with Ryzen AI PRO platform adoption		\$50,914,894

Enterprises can save up to **\$50M in employee time** and upfront acquisition costs in the first year with the adoption of systems using AMD Ryzen™ AI PRO processors.

1. Calculated total time of the above operations, where the user is actively waiting on a function to complete in our observed “typical day”.

2. The total time saved each day with the higher performing multi-tasking system, in minutes. Our measurements show users of an AMD Ryzen AI 7 PRO 360 can save more than five and a half minutes per day.

3. If we multiply that by 240 working days per year, this translates into 22.39 hours of potential saved time for AMD users.

4. We estimate a reasonable average information employee salary at \$120,000 per year.

5. That implies an hourly rate of \$62.50 based on 40 hours of work per week.
6. Multiplying that hourly rate by the estimated hours saved, we get nearly \$1400 per year per employee that can be attributed to our calculated “time value.”

7. As of this writing, the publicly available purchase price for these two laptops is as shown. We know that often enterprise purchases are done with different rebates and arrangements, but we are basing this only on data we can access publicly.

8. The additional cost savings per user is \$637 on the upfront acquisition cost.

9. We assume a large enterprise of 25,000 employees for this example.

10. We estimate with these assumptions that enterprises of this size can save more than \$50 million in the first year.

Conclusions



\$50M
IN SAVINGS

Summary

Commercial enterprises often undergo system refreshes and employee fleet updates, presenting both challenges and opportunities for corporate CIOs and ITDMs. While upgrading platforms can be daunting, it also provides companies with the chance to enhance productivity, bolster security, and improve the value of their IT investments simultaneously.

New platforms powered by AMD and the AMD Ryzen™ AI PRO 300 Series processors provide strong arguments to be considered by commercial buyers. This next generation of processors delivers a powerful mix of performance, efficiency, AI capabilities, and an impressive cost-benefit ratio, making them a top choice for any IT division planning their 2025 purchases.

Our value calculations based on multi-tasking scenarios and Office application measured performance show that systems using AMD Ryzen™ AI PRO processors can provide significant dollar advantages over competing solutions when looking at employee time. There are obviously other factors that come into a full TCO analysis for any enterprise deployment, but the

multi-threaded performance of the latest AMD CPU designs provide a strong data point to support Ryzen™ AI PRO platforms being considered.

If you are planning your next fleet upgrade with a focus on AI performance and Copilot+ support, the new AMD Ryzen AI PRO 300 Processor Series stands out for its comprehensive support for these new Windows 11 AI features such as Recall, AI-based search, image generation, and more. Additionally, the high-performance XDNA-based NPU ensures that systems purchased and implemented today will be well-prepared for future enterprise AI workloads in 2025 and beyond.

For more information on AMD Ryzen AI PRO processors, visit: <https://www.amd.com/en/products/processors/laptop/ryzen-for-business.html>

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Contact us if you would like to discuss this report and Signal65 will respond promptly.

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Signal65 exists to be a source of data in a world where technology markets and product landscapes create complex and distorted views of product truth. We strive to provide honest and comprehensive feedback and analysis for our clients in order for them to better understand their own competitive positioning and create optimal opportunities to market and message their devices and services.



System Configurations & Applications

	LENOVO THINKPAD T14S GEN 6	COMPETITIVE COMMERCIAL SYSTEM #1	COMPETITIVE COMMERCIAL SYSTEM #2
CPU	AMD Ryzen™ AI 7 PRO 360	Intel Core i7-1365U	Intel Core Ultra 7 165U
Graphics	AMD Radeon™ 880M Graphics	Intel Iris Xe Graphics	Intel Graphics
RAM	32GB LPDDR5X-7500	32GB LPDDR5-4800	32GB LPDDR5X-6400
Storage	512GB Kioxia KXG8AZNV512G	512GB Western Digital SN740	512GB SK Hynix PVC10
Display	14” 1920x1200	14” 1920x1200	14” 1920x1200
System BIOS	1.08	1.18.1	1.9.0
Operating System	Windows 11 Enterprise 22621.4460	Windows 11 Enterprise 22621.4460	Windows 11 Enterprise 22621.4460
Windows Power Mode	High Performance	High Performance	High Performance
Virtualization Based Security	Enabled	Enabled	Enabled

Applications Used

Geekbench 6.3.0	3DMark 2.30.8330	Adobe Premiere Pro 25.1.0.73
Cinebench 2024.0.1	Microsoft Office 365 2410	
Passmark PerformanceTest 11.0 (Build 1025)	Adobe Photoshop 26.1.0	
UL Procyon 2.9.1471	Adobe Lightroom Classic 14.0.1	



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