

Smarter
technology
for all

Lenovo

Mythbusting

AMD Ryzen™ PRO processors

Discover the AMD Ryzen™ PRO processors and how they enable the modern business notebook.



MYTH:
System runs hot

FACT:
AMD systems are cool



PERFORMANCE IMPROVEMENT

Up to 320% Performance/Watt improvement.

(AMD Ryzen PRO vs. A-Series processors)



KEYBOARD TEMPERATURES

Up to 26°F lower keyboard temperature or
up to 14.5°C lower temperature during 3DMark® 11.²

(Notebook keyboard temperature on AMD Ryzen PRO vs. AMD A-Series notebooks)



SURFACE TEMPERATURE

Similar skin temperature to the competition
during 3D Mark 11 workload.³



MYTH:
Limited battery life

FACT:
AMD-based systems have an all-workday battery life



Up to 39% longer battery life on 2nd Gen Ryzen PRO mobile notebooks.⁴

(Lenovo ThinkPad™ T495 with Ryzen 7 PRO 3700U, 50Wh battery vs. Lenovo ThinkPad A485 with Ryzen 7 PRO 2700U, 48 Wh battery)



Up to 14.9 hrs battery life on a Lenovo ThinkPad T495 notebook.⁵

(AMD Ryzen™ 7 PRO 3700U Processor, 50 Wh battery)



Up to 16.4 hrs battery life on a Lenovo ThinkPad T495s notebook.⁵

(AMD Ryzen™ 7 PRO 3700U Processor, 57 Wh battery)

MYTH:
System is noisy

FACT:
AMD systems are quiet

Quieter than a library

UL conducted a test under active load, and a Ryzen processor-based notebook was quieter than a public library.*



*Based on AMD-commissioned research from UL Benchmarks, September 2018.
For the full report, see <https://benchmarks.ul.com/services/technical-marketing-services>.

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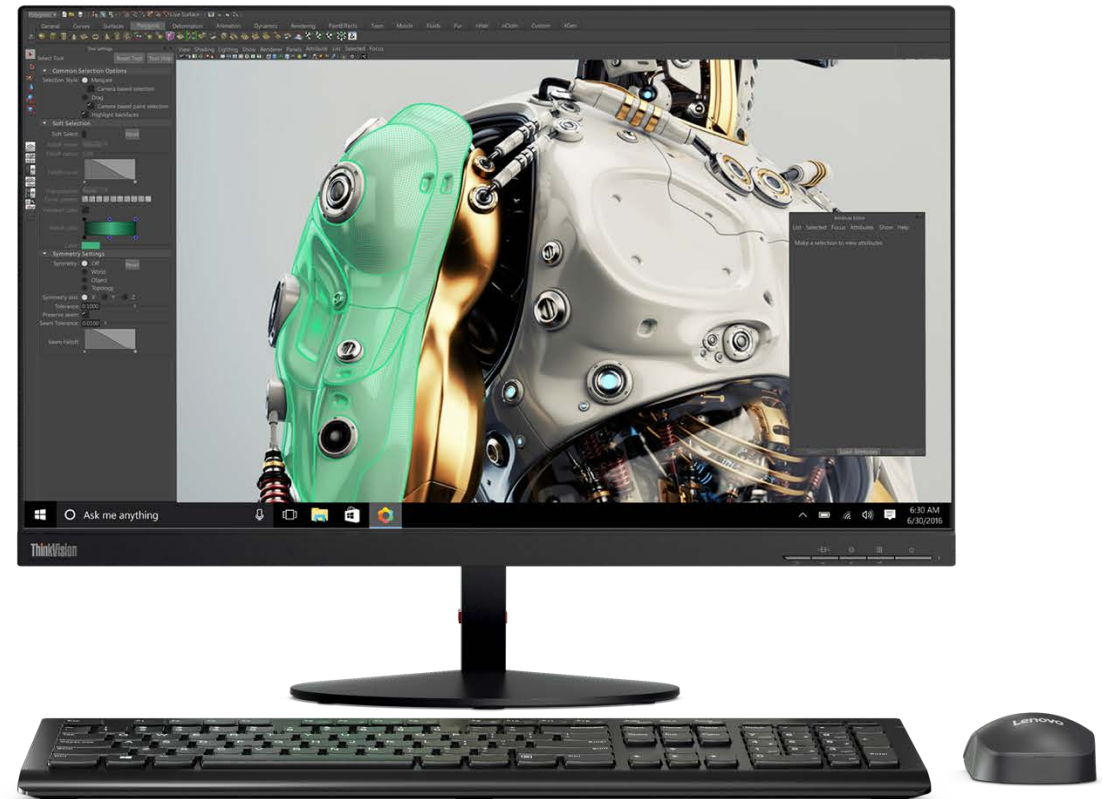
MYTH:
Supplies are low

FACT:
AMD systems are readily available

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Ready when you are

Notebooks and desktop business systems powered by AMD Ryzen™ PRO processors are readily available from multiple OEMs around the world.



MYTH:
Reduced manageability and
security features without vPro

FACT:
AMD PRO supports manageability
and security features

Commercial-grade support on all AMD PRO processors

AMD Ryzen™ 7/5/3 PRO processors provide the same manageability and security features, whereas Intel vPro is supported only on select i7 and i5 processors and is not supported on i3 or lower.

Source: ark.intel.com as of July 2019. Support for new features may be added only by exception process.

	AMD PRO	Intel vPro (i7 and i5 only)
Asset Inventory	✓	✓
KVM	✓	✓
Dedicated Security Co-Processor	✓ (on-chip)	✓ (off-chip)
Memory Guard	✓	No equivalent offering

MYTH:

System is vulnerable to security threats

FACT:

AMD PRO is built with security features in mind



Security features built in

AMD Ryzen™ PRO processors feature a built-in security co-processor running AMD GuardMI Technology.



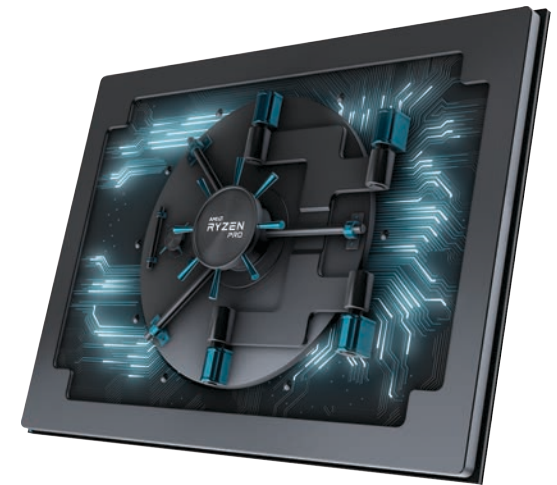
Recent threats

AMD takes security vulnerabilities very seriously. As is the case with Meltdown, AMD believes that AMD processors are not susceptible to the recent exploits of Foreshadow due to our hardware paging architecture protections.



AMD Memory Guard

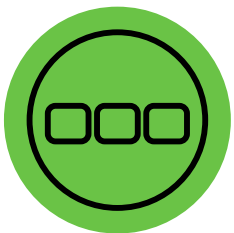
Help defend against attacks on your RAM (cold-boot attacks) with real-time encryption and decryption of all your system's RAM with AMD Memory Guard.



MYTH:
Deployment takes
too long

FACT:
Really? AMD takes about
the same time as Intel

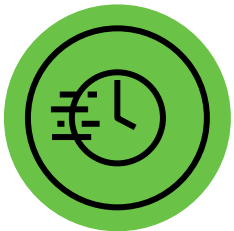
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FOLLOW THE SAME STEPS.

Follow 35 steps on both AMD and Intel notebooks for deployment.*

(Lenovo ThinkPad A275 vs. Lenovo ThinkPad X270)



DEPLOY IN ROUGHLY THE SAME TIME.

40 seconds total deployment time on AMD
versus 43 seconds on Intel.*

(Lenovo ThinkPad A275 vs. Lenovo ThinkPad X270)



*Study Commissioned by AMD. https://www.principledtechnologies.com/AMD/PRO_processors_image_deployment_competitive_0518.pdf

MYTH:
SYSmark performance score
is relevant and unbiased

FACT:
SYSmark performance score
is biased

Evaluate the benchmarks for your needs

Is the test relevant?



40% not relevant

40% of the SYSmark Score is built from PowerDirector and Lightroom application testing. How often does your workplace use these applications?

Source:
http://bapco.com/wp-content/uploads/2018/08/SYSmark_2018_White_Paper_1.0.pdf - Page 26

Is the test unbiased?

**From US Federal Trade
Commission, December 2009:**

Paragraph 66: "In truth and in fact, the benchmarks Intel publicized were not accurate or realistic measures of typical computer usage or performance, because they did not simulate 'real world' conditions, and/or overestimated the performance of Intel's product vis-à-vis non-Intel products. Therefore, the representations and omissions of material facts made by Intel..."

Source:
http://bapco.com/wp-content/uploads/2018/08/SYSmark_2018_White_Paper_1.0.pdf - Page 26

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Your source for tools, training, news, reviews, and much more!

To find out more about AMD Ryzen™ PRO Mobile Processors, please visit www.AMD.com/ryzenpro

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1. Testing by AMD Performance Labs as of February 21, 2017. PC manufacturers may vary configurations yielding different results. Performance may vary with drivers versions. FX 8300: AMD reference motherboard, 8GB dual channel DDR3-1600, AMD Radeon™ R9 290X GPU, Radeon™ Software 16.101.0.0, Windows 10 x64 (build 10586) A12-9800: AMD reference motherboard, 8GB dual channel DDR4-2400, AMD Radeon™ R7 Series graphics, Radeon™ Software 16.101.0.0, Windows 10 x64 (build 10586) Ryzen™ 7 1700: AMD reference motherboard, 8GB dual channel DDR4-2400, NVIDIA GeForce GTX 1070 6GB, GPU driver 21.21.13.7633, Windows 10 x64 (build 10586). Perf/W based on Cinebench R15 nT score divided by TDP of the AMD Ryzen™ 7 1700, AMD FX™ 8300 and AMD A12-9800 processors. Perf/W as Cinebench R15 nT scores/TDP: FX 8300 = 522/95W = 5.49; A12-9800 = 331/65W = 5.09; Ryzen 7 1700 = 1410/65W = 21.69. Relative power efficiency: 21.69/5.49 = 3.95x or 295% more and 21.69/5.09 = 4.26x or 326% more perf/W. RVM-15
2. Testing conducted by AMD Performance Labs as of Sept. 20, 2018, and February 2016. Tested with 3DMark 11. Temperatures in degrees Celsius and 100% Battery with adapter plugged in (AC Mode) at 21C ambient for minimum 2 hours. The measured temperatures on the keyboard of Ryzen™ 5 PRO 2500U were 25.3C at idle and 32.6C running 3DMark11, and the keyboard temperatures of the AMD PRO A12-8800B were 32.9C at idle and 47.1 running 3DMark11 for up to 7.6C (13.68F) less at idle and up to a 14.5C (26F) less running 3DMark 11 System Configurations: Ryzen™ 5 PRO 2500U – HP Elitebook 745 @ 15W, AMD Ryzen™ 5 PRO 2500U processor with Radeon™ Vega 10 graphics, 8GB DDR4-2400 RAM, Samsung 850 EVO 512GB SSD, Windows 10, Microsoft Windows 10 Professional (x64) Build 17134 graphics driver 23.20.841.1792, June 26, 2018, AMD PRO A12-8800B – HP Elitebook 745G3 @15W, AMD PRO A12-8800B with AMD Radeon R7 Series, 8GB DDR3-1600 RAM, 228GB SSD, Windows 10 PRO Microsoft Windows 10 Enterprise Build 10240, graphics driver OpenCL 1.2 AMD-APP (1800.8). Performance may vary based on use of latest drivers. RPM-57
3. Testing conducted by AMD Performance Labs as of Sept. 20, 2018, and Feb. 26, 2016. Tested with 3DMark 11. Temperatures in degrees Celsius and 100% Battery with adapter plugged in (AC Mode) at 21C ambient for minimum 2 hours. The measured temperatures of Ryzen™ 5 PRO 2500U relative to the i5-8350U are: Top Left +1.5, Key "F9" -0.6, Left Palm -0.2, Right Palm 0.0, Bottom cover left -0.9, Bottom cover right -0.3. Ryzen™ 5 PRO 2500U produced measured temperatures of: Top Left 36.3, Key "F9" 32.6, Left Palm 27.4, Right Palm 26.5, Bottom cover left 33.7, Bottom cover right 33.9. Intel i5-8350U produced measured temperatures of: Top Left 34.8, Key "F9" 33.2, Left Palm 27.2, Right Palm 26.5, Bottom cover left 32.8, Bottom cover right 34.2. System Configurations: Ryzen™ 5 PRO 2500U – HP Elitebook 745 @ 15W, AMD Ryzen™ 5 PRO 2500U processor with Radeon™ Vega 10 graphics, 8GB DDR4-2400 RAM, Samsung 850 EVO 512GB SSD, Windows 10 PRO, Microsoft Windows 10 Professional (x64) Build 17134 graphics driver 23.20.841.1792, June 26, 2018. Performance may vary based on use of latest drivers. RPM-56
4. As of June 2019. Battery life estimate is provided for informational purposes only and is based on OEM testing not independently verified by AMD. System Configuration: Lenovo ThinkPad T495, 2nd Gen Ryzen™ 7 PRO 3700U processor, 14" Display, up to 14.9 hour of battery life with 50Wh battery. <https://www.lenovo.com/ca/en/laptops/thinkpad/thinkpad-t-series/T495/p/22TP2TTT495> | Lenovo ThinkPad A485, 2nd Gen Ryzen™ 7 PRO 2700U processor, 14" Display, up to 10.7 hour of battery life with 48Wh battery. <https://www.lenovo.com/ca/en/laptops/thinkpad/thinkpad-a-series/ThinkPad-A485/p/22TP2TAA485> | 14.9 / 10.7 = 1.39 or 39% higher. Results may vary. PP-15
5. Battery life estimate is provided for informational purposes only and is based on OEM testing not independently verified by AMD. <https://www.lenovo.com/ca/en/laptops/thinkpad/thinkpad-t-series/T495/p/22TP2TTT495>
6. Battery life estimate is provided for informational purposes only and is based on OEM testing not independently verified by AMD. <https://www.lenovo.com/ca/en/laptops/thinkpad/thinkpad-t-series/T495s/p/22TP2TT495S>



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