

Get the Windows® Experience You Expect.

Choose a PC architecture that meets your expectations.

A Tale of Two Architectures

You can run Windows® on a PC with x64 or Arm® architecture. But is the experience the same?

Prowess Consulting performed research and testing to find out. For our testing, we compared a Microsoft Surface® Pro 9 on x64 architecture to a Microsoft Surface® Pro 9 on Arm®-based SQ3 architecture.

Application Support

- Systems built on x64 architecture: Apps run in native mode.
- Systems built on Arm®-based architecture: Apps run in native mode, emulation mode, or not at all.

Popular Windows® applications (business and consumer)

Application	Supported on Intel® x64-based architecture	Supported on Arm® architecture
Microsoft® Office	✓	✓ ¹
Microsoft Edge®	✓	✓ ²
Microsoft Teams®	✓	✓ ³
Microsoft® Power BI® Desktop	✓	! ⁴
Google Workspace™	✓	! ⁵
Google Chrome™	✓	! ⁶
Google Drive™	✓	✗ ⁷
Google Meet™	✓	✗ ⁷
Slack®	✓	! ⁸
Zoom®	✓	✓ ²
Adobe® Reader®	✓	! ⁹
Adobe® Photoshop®	✓	✓ ²
Adobe® Lightroom®	✓	✓ ¹⁰

✓ Supported natively
! Supported partially
✗ Not supported

on Intel® x64-based architecture versus Arm® architecture (as of June 2, 2023)

Performance

In our testing, Intel® x86/x64-based systems outperformed Arm®-based systems even when the Arm®-based systems were running native apps.¹¹

Web browsing—Google Chrome™

217%

better

Web browser: As measured by WebXPRT4—Overall (Google Chrome™) and WebXPRT4—Overall (Microsoft Edge®)

Web browsing—Microsoft Edge® (native)

40%

better

Overall performance

121%

better

Overall: As measured by CrossMark®—Overall; Office productivity: As measured by PCMark® 10, Applications—Overall

Office productivity

52%

better

Application Support and Usability

Peripherals and utilities

- Windows® experience apps¹⁴
- Third-party antivirus apps¹⁴
- Windows® Fax and Scan¹⁴

x64



Fully supported

Arm®



Partially or not supported

Gaming support

- OpenGL® 3.3 or higher¹⁴
- Non-native "anti-cheat" drivers¹⁴

x64



Fully supported

Arm®



Not supported

User experience and satisfaction

x64



Smooth experience

Arm®



- Glitches and freezes¹⁵
- Sluggish actions in user interface (UI)¹²

Battery life^{13,16}

x64



All-day (9+ hours)

Arm®



More than all day (11+ hours)

Windows® on Intel® x64 Architecture: The Best Choice for Most Users

Our findings show that Windows® on x64 architecture provides better performance, supports more applications and peripherals, and offers a better user experience than Windows® on Arm® architecture.

[Read the Report](#)

¹ Microsoft. "Microsoft 365 and Office Resources." Accessed July 2023.
² Android Authority. "What is Windows on Arm? Everything you need to know." January 2023.
³ Microsoft. "Deploy, manage, and service ARM-based Surface devices." April 2023.
⁴ Microsoft system requirements include only x86 and x64 platforms. For more information, see: Microsoft. Power BI download center webpage. Accessed July 2023. Users report emulation issues on online forums. For example, see: Microsoft Power BI Community. "Power BI R visuals do not work on windows on ARM." November 2022.
⁵ Google Workspace™ is partially supported depending on individual service if accessed through the Microsoft Edge® browser. Note that Google Chrome™ and Google Drive™ are not supported on Arm® architecture. For more details, see: Google. "Chrome browser system requirements." Accessed July 2023. Also see: Google. "Service-specific Google Workspace requirements." Accessed July 2023.
⁶ Google. "Chrome browser system requirements." Accessed July 2023.
⁷ Adobe. "Service-specific Google Workspace requirements." Accessed July 2023.
⁸ Slack® system requirements do not call out Arm® architecture. Online articles indicate performance issues. For more information, see: CNN. "The Surface Pro 9 is a great 2-in-1 laptop — if you get the right model." November 2022.
⁹ Adobe. "Reader runs in 32-bit emulation mode on Arm® architecture." Source: Adobe. "ARM processor support | Adobe Acrobat and Acrobat Reader on Windows." May 2023.
¹⁰ Adobe. "Will Adobe apps work on Windows computers that use ARM processors?" November 2022.
¹¹ Based on testing performed by Prowess Consulting in May 2023. For more information, see the technical research report: Prowess Consulting. "x64 or Arm?: Which Architecture Provides the Best Windows® Experience?" Commission by Intel. August 2023.
¹² CNN. "The Surface Pro 9 is a great 2-in-1 laptop — if you get the right model." November 2022.
¹³ "All-day battery life" defined as "9.5 or more hours of real-world battery life on laptops with full HD display." Source: Intel. "Overview of Intel® Evo™ Platform in Intel® Laptops." July 2023.
¹⁴ Microsoft. "ARM-based Surface devices FAQ." January 2023.
¹⁵ The Verge. "Microsoft Surface Pro 9 (SQ3) review: Windows on Arm is not ready." November 2022.
¹⁶ Tom's Guide. "Microsoft Surface Pro 9 Intel vs ARM benchmarks: This is a huge difference." October 2022.