Deploying and Managing PCs Powered by Snapdragon® Processors

Laptops powered by Snapdragon X Series processors from Qualcomm Technologies are an exciting new addition to the HP portfolio. Snapdragon X Series processors combine powerful performance with efficiency leading to remarkable battery life. The Snapdragon X Series architecture is built to handle AI workloads and Copilot+ experiences[1] with a 45-TOPS NPU.[2]

Snapdragon's unique architecture has many advantages but is relatively new to PCs, especially for enterprise deployments. IT managers have questions about how to deploy, manage and secure HP laptops powered by Snapdragon processors. Answers are provided here.

Application Compatibility

Q: I'm concerned that my applications aren't compatible with Snapdragon.

A: Microsoft and Qualcomm Technologies have partnered to address application compatibility through expansive collaboration with the software ecosystem and development of the PRISM emulator. Based on Microsoft telemetry of application usage, over 90% of users' time is spent within native applications[3]. PRISM emulator design improvements delivers a substantial increase in gen/gen performance for multi-threaded workflows and addresses. As a real-world example, HP IT examined this issue and, excluding cyber tools, out of nearly 3000 applications detected in the environment, only 10 applications had compatibility challenges. For more information visit Windows 11 Apps | Snapdragon Emulation Apps | Qualcomm Technologies

Q: Is there a list of native applications for Snapdragon processors?

A: To view a subset of the most popular applications compatible with Snapdragon processors, see Windows 11 Apps | Snapdragon Emulation Apps | Qualcomm Technologies. Additionally, Microsoft and Qualcomm Technologies maintain a compatibility troubleshooter tool. Windows Program Compatibility Troubleshooter

Q: Will IT be responsible for packaging apps for each processor and variation?

A: Many software developers are creating smart installers and publish their applications to the Microsoft Store where the correct executables can be targeted automatically based on the processor. At HP, we use Microsoft Intune to manage our fleet of devices and distribute applications. To simplify application re-distribution, we configure Intune to use the Microsoft Store, eliminating the need for processor specific packages and targeting.

Q: I can't avoid emulation because I have some legacy apps. Is there more information on how emulation works?

A: Prism is the new emulator included with Windows 11 24H2 and is optimized and tuned specifically for Snapdragon processors. An application running in emulation will happen automatically upon application startup. The end-user does not need to perform any special steps. Emulation works as a software simulator, just-in-time compiling blocks of x86 instructions into Arm64 instructions with optimizations to improve performance of the emitted Arm64 code. For more information please visit: How emulation works on Arm | Microsoft Learn

Q: Why should IT spend time and effort accommodating Snapdragon platforms into our corporate fleet? What's the benefit?

A: When new technology is introduced, it requires some short-term effort for long-term benefits. Based on HP internal testing, HP laptops powered by Snapdragon X Series processors offer over a full day of battery life, even in demanding IT environments. They combine high-performance CPU and NPU capabilities for seamless multitasking and accelerated on-device AI. Designed for modern IT, they support advanced manageability, security integration, and enterprise-grade connectivity like Wi-Fi 7 and 5G. With ultra-quiet designs, and thermal efficiency, they enhance user experience while reducing power consumption.

Deployment

Q: Snapdragon platforms use Windows on ARM. What is different about it?

A: Although Windows features are the same for both Snapdragon and x64 platforms, Snapdragon-based devices use a version of Windows that is compiled differently.

Q: Where can I download Windows OS images for Snapdragon platforms?

A: Microsoft has a download link for Windows 11.

Q: Can I use Autopilot and Intune Management? Is a different installation/deployment process required?

A: Autopilot and Intune are both supported. These standard manageability tools can be used to manage a mixed fleet of Snapdragon, Intel and AMD devices. A different image is required if Autopilot is not used or in cases where a system issue requires a wipe and restore.

Q: Where can I get a factory recovery image for HP Snapdragon platforms?

A: The HP Cloud Recovery Tool is available to create an ISO image. HP Sure Recover is currently not available on HP Snapdragon platforms.

Q: Is there a different BIOS compared to x64 devices? Is it difficult to deploy it?

A: The BIOS on HP Snapdragon platforms is different from the BIOS used in commercial x64 platforms. The Snapdragon BIOS is packaged together with drivers as a single deliverable, while the x64 HP commercial BIOS is published as individual packages. BIOS settings, however, are accessible with HP tools and can be deployed with wipe-and-load or Autopilot can be used to update the existing BIOS.

Q: Is deployment supported by HP's Client Management Script Library?
A: Most CMSL commands are supported but others have x64 BIOS dependencies and are not supported. Consult with your HP Technical Consultant or Account Manager for specific requirements.

Q: Are the same factory services offerings being provided for Snapdragon as x64 devices?
A: Factory services are fully supported.

Manageability

Q: Are HP Manageability tools supported?
A: **Supported:** HP Image Assistant, BIOS Configuration Utility (BCU)
Partially Supported: Client Management Script Library. Some commands have x64 dependencies
Not Supported: Manageability Integration Kit (MIK) because it is approaching end of life.

Q: Does the HP Workforce Experience Platform offer the same support for Snapdragon as x64?
A: The HP Workforce Experience Platform works the same except for BIOS and driver policies which will be added in the future.

Security

Q: I've heard that Snapdragon-powered designs do not provide security features.
A: HP PCs powered by Snapdragon X Series feature a layered, hardware-rooted security architecture specifically designed for enterprise environments. At its core is the Trust Management Engine, which establishes a silicon-level Root of Trust to enable secure boot, firmware integrity verification, and cryptographic key isolation leveraging FIPS-certified hardware crypto cores. This architecture makes devices powered by Snapdragon resilient to attacks through defense-in-depth, utilizing an isolated, 256-bit strong subsystem with a very small Trusted Computing Base (TCB). The platform enforces Total Memory Encryption (TME) and supports integrity and replay protections, as well as TPM 2.0, ensuring data confidentiality and protection against physical and firmware-based attacks. Compliance with Microsoft Secured-core PC standards adds virtualization-based security, kernel isolation, and credential protection. PCs powered by Snapdragon X Series processors integrate with leading Endpoint Detection and Response (EDR) solutions such as Microsoft Defender for Endpoint and CrowdStrike to support enterprise threat detection and response workflows. Microsoft Pluton is a secure crypto-processor built into the CPU for security at the core to ensure code integrity and the latest protection with updates delivered by Microsoft through Windows Update. HP Snapdragon-powered systems do not have the HP Endpoint Security Controller.

Q: Which HP Wolf Security capabilities are included with Snapdragon-powered PCs?
A: Snapdragon X processor platforms have HP Wolf Security's basic Antivirus and Threat Containment (Sure Click) included in the HP standard factory image.

Q: What HP Wolf Security solutions are available as optional add-ons?
A: The Wolf Pro Security or Sure Click Enterprise subscription licenses are available as add-on solutions to enhance and expand protection from phishing, ransomware and other zero-day malware.

Battery Life

Q: I have heard that the Snapdragon platforms have great battery life, but apps running in emulation mode drain the battery.

A: While running apps in emulation can lead to slightly faster battery drain, over 93% of major applications now run natively on Snapdragon, so emulation is typically only needed for legacy software. Even then, HP devices powered by Snapdragon X Series processors offer exceptional power efficiency, delivering all-day battery life and often more on a single charge[4]. HP IT did a pilot test of HP EliteBooks powered by Snapdragon X Series processors and found that the most common user personas spend the vast majority of their time using native Windows and Microsoft 365 applications, minimizing the need for emulation.

Q: What is the battery "cost" of running in emulation mode?

A : Based on experiences reported from HP IT, the impact of running apps in emulation mode largely depends on your organization's software environment. For enterprises with a modern application portfolio, users (such as office workers and on the go workers) will see minimal impact on battery life, as emulation is rarely required. In more legacy-heavy environments, where critical workflows still depend on older x86 applications, you can expect a modest increase in power consumption when those apps are in use. However, even in these scenarios, devices powered by Snapdragon X Series processors maintain strong battery performance. Organizations should consider what applications each persona utilizes in their organization.

Printing

Q: Will my printers work?

A: Currently, over 8,000 modern printer models work with Snapdragon powered devices. Windows supports Mopria universal standards and solutions, eliminating the need to install additional software or drivers, allowing easy printing and scanning on Snapdragon-powered devices. Old or custom-made models may be incompatible due to the old versions of drivers. HP offers a smart universal print driver with broad architecture support including Snapdragon-based platforms.

Benchmarking Guidance

Q: I have heard that some benchmarks may not run on devices powered by Snapdragon. What benchmarks should be used to assess performance of Snapdragon-based systems?

A: Correct, some older benchmarks, like the PCMark 10 Standard, that are no longer developed or maintained by their providers and aren't supported on Windows on ARM. However, the industry has moved toward modern, fully supported tools like UL Procyon Suite. These benchmarks work seamlessly on PCs powered by Snapdragon and provide accurate, relevant performance insights. UL Procyon also works on IT images.

Q: I can't compare the results directly with our existing x86 benchmarks.

A: While legacy benchmarks may not provide direct or meaningful comparisons across architectures, cross-platform tools like UL Procyon are designed to reliably measure performance across devices powered by Snapdragon, Apple, Intel, and AMD. They offer a consistent framework for side-by-side evaluation.

Benchmarking tools comparison

Performance						
Benchmark	Works on ARM	Real Apps	Synthetic Workloads	Ease of Use	Time of Use	Additional Notes
Procyon	✓	Yes	No	Easy	Moderate	The successor of PCMark 10. Includes benchmarks for Office Productivity, Photo Editing, Video Editing.
PCMark 10 Standard	✗	Yes	No	Easy	Moderate	Legacy benchmark, no longer developed by UL. The predecessor of Procyon.
SysMark	✗	Yes	No	Difficult	Long	Focuses on business applications and productivity scenarios.
CrossMark	✓	Yes	No	Easy	Short	Measures performance and responsiveness using real-world applications.
Geekbench	✓	Yes	Yes	Easy	Short	Measures CPU and GPU performance with real-world and synthetic workloads.
PassMark	✓	Yes	Yes	Easy	Short	Benchmark for CPU, GPU, memory, and storage performance.
Cinebench	✓	Yes	Yes	Easy	Short	Evaluates raw CPU and GPU performance using Cinema 4D's rendering engine.
Battery Life						
Benchmark	Works on ARM	Real Apps	Synthetic Workloads	Ease of Use	Time of Use	Additional Notes
Procyon Battery Life	✓	Yes	No	Easy	Long	Designed to measure the real-world battery life across different scenarios.
MobileMark	✗	Yes	No	Difficult	Long	Focuses on business applications and productivity scenarios.

Support

Q: Who can I contact at Qualcomm Technologies for help with my issue? Are there specially trained pre-sales people with deep expertise of Snapdragon platforms available to advise on my exact situation?

A: For more information on Qualcomm support topics please visit Enterprise Support.

Q: Are there demo units available to test my image and apps?

A: Yes – contact your HP representative or partner for more information

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[1] Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Copilot is NOT available in China, Russia, Belarus, and embargoed regions Cuba, Iran, North Korea, Crimea

[2] Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

[3] Source: Microsoft. Based on a snapshot of aggregated app usage data as of August 2024 for Copilot+ PCs in US, UK, CA, FR, AU, DE, JP. https://blogs.windows.com/windowsexperience/2024/09/03/copilot-pcs-expand-availability-with-new-amd-and-intel-silicon/

[4] Based on HP internal testing

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