

Are You Getting the Real Picture When Evaluating PCs for Business Use?

Test PCs with benchmarks that reflect the way your users work.



When evaluating PCs for your users, make sure you collect performance data from a variety of benchmarks.

How can you separate signal from noise when evaluating PCs that best meet your users' needs? By doing your own testing, of course. You know your users best, so diligent, specific tests should be part of your decision process when it comes to choosing business PCs.

But it is not always easy to get meaningful insights from tests and benchmarks. Benchmarks are not all created equal. If you're not careful, they can give you an incomplete or unrealistic picture of how PCs would perform in your business environment. At a high level, you can look at benchmarks as being either synthetic or realistic.

Synthetic benchmarks measure the theoretical performance of a platform. This approach can isolate and test the performance of individual pieces of a platform. However, this approach does not reflect how a user would experience performance on the device in the real world. PassMark PerformanceTest is an example of a synthetic benchmark. It features suites for testing the performance of computer components, including CPUs, video cards, disks, networking, and memory. It runs tests such as physics, integer math, and prime number calculations. However, this testing does not involve real usages that PC users would typically encounter. Therefore, it does not truly reflect what typical PC users do on their PCs.









Realistic benchmarks are based on real usages with apps that are commonly available to all PCs. For example, reading e-mail, writing documents, browsing the web, and touching up photos are common user tasks. You want a benchmark that tests those usages to better reflect what users do. SYSmark, CrossMark, Procyon, and WebXPRT are examples of these types of benchmarks. Some realistic benchmarks only measure performance in specialized use cases. For example, Cinebench focuses on evaluating a computer's ability to render a single 3D image.

Both synthetic and realistic benchmarks have a place in your system-evaluation toolbox. However, when used without consideration for how a system is actually used day to day, these benchmarks might give you an incomplete or irrelevant picture of a PC's overall performance. After all, how many of your users render complex 3D graphics scenes? To get a full picture of how a device will perform, you need benchmark scores that reflect the way most of your users actually work.

Benchmarks that reflect your users' work styles

With some obvious and notable exceptions, most business PC users are generalists, not specialists. These users use a set of core applications to do their jobs. For example, they use client or web applications to check messages and manage their calendars while working on spreadsheets, documents, or presentations. They rely on their Internet browser to stay productive, and they connect with colleagues through collaboration tools. They perform light video-editing or graphics-editing tasks while listening to their favorite playlists in the background. These workloads place demands on their computers that are very different from the demands generated by simulated workloads, such as those used in PassMark and Cinebench testing.

What are real and relevant PC usages?

| | | | |
|---|---------------------|---|----------------------|
|  | Play games |  | Edit videos |
|  | Manage home budgets |  | Touch up photos |
|  | Surf the web |  | Create presentations |
|  | Compose music |  | Do homework |

The Intel vPro® platform: built for business

The Intel vPro platform, powered by 13th Generation Intel® Core™ processors, features revolutionary architecture. It intelligently allocates workloads to the right thread on the right core at the right time based on real-time analysis. It does this efficiently and automatically, without any user configurations.

With Performance-cores (P-cores) for power when you need it and Efficient-cores (E-cores) for multitasking, users can be more productive based on how they actually use their PCs.

Visit the Intel [performance index](#) to learn more about how these processors perform based on real and relevant measurements.

Make it real, keep it relevant

For these reasons, when evaluating PCs for your users, ensure that you collect performance data from a variety of benchmarks. Look especially to those based on workloads and apps that reflect what users do with their devices. The most useful benchmarks are those that measure performance based on *real* applications running *relevant* scenarios.

CrossMark, SYSmark, Procyon, and WebXPRT 4 are benchmarks that meet these real and relevant criteria:

- **CrossMark:** CrossMark is a cross-platform benchmark that is based on real usages. The variety of new compute devices makes it difficult to compare them, especially when they use different operating systems and architecture platforms. CrossMark enables such comparisons because it can measure overall system performance and system responsiveness across operating systems and platforms. CrossMark supports devices running Windows, Android, iOS, and macOS.
- **SYSmark:** SYSmark measures system performance based on PC workloads such as editing videos, running Microsoft Office applications, and doing homework. SYSmark features metrics for productivity, creativity, and responsiveness scenarios. The productivity scenario has workloads and applications geared toward office-centric user activities. The creativity scenario contains photo-editing, photo-organization, and video-editing sub-scenarios. And the responsiveness scenario models potential pain points in the user experience, including application launches, file launches, web browsing with multiple tabs, multitasking, and background application installation.
- **Procyon:** Procyon, created by safety organization UL Solutions, is a family of benchmarks for professional PC users across industries. Each benchmark is designed for a specific use case and uses real applications where possible. For example, the Procyon Office Productivity Benchmark uses Microsoft Office apps to measure PC performance for office productivity work.
- **WebXPRT 4:** WebXPRT is a browser benchmark that compares the performance of almost any web-enabled device. It contains six HTML5, JavaScript, and WebAssembly-based scenarios that mirror everyday tasks: photo enhancement, organizing an album using artificial intelligence (AI), stock option pricing, encrypting notes and optical character recognition (OCR) scans using WebAssembly, sales graphs, and online homework.

By using benchmarks like these, you can gain a better understanding of how a given system will perform than you could gain by relying on synthetic or specialized benchmarks alone.

Choose wisely

You have many options when it comes to evaluating PC performance for your business users. Your users' productivity could suffer if you risk getting a limited or irrelevant view of the devices you are considering. When you expand your benchmarking toolbox to include real and relevant measurements, you can gain greater insight into how devices will perform in an actual business environment.

Learn more about real and relevant benchmarks by visiting the following resources:

- [CrossMark](#)
- [SYSmark](#)
- [Procyon](#)
- [WebXPRT](#)



¹ Performance hybrid architecture combines two core microarchitectures, Performance-cores (P-cores) and Efficient-cores (E-cores), on a single processor die. Select 13th Gen Intel® Core™ processors (i3 series) do not have performance hybrid architecture; they have only P-cores.

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