Complete everyday tasks faster

based on higher CrossMark and SYSmark 25 benchmark overall ratings*

Use team productivity tools more effectively

based on higher Procyon Office Productivity Benchmark overall ratings*

Unlock resource-intensive app potential

based on higher Procyon Photo Editing and Video Editing Benchmark overall ratings*

Optimize web-browsing capabilities

based on higher WebXPRT 4 benchmark overall scores*

Get a better user experience by upgrading to the new HP EliteBook 840 G9

Equipped with 12th Gen Intel Core i7 U Series or P Series processors

If your "new normal" is a hybrid workplace, chances are an older laptop could be slowing down remote collaboration. Video-conferencing services and cloud-based productivity apps can be resource hogs, some older laptops have Wi-Fi bandwidth limitations, and older processors may be feeling the strain.

To show the difference upgrading to current-gen tech can make, we tested two new HP EliteBook 840 G9 Notebook PCs powered by either U Series or P Series 12th Gen Intel® Core™ i7 processors and Wi-Fi 6E capabilities against a last-gen HP EliteBook 840 G8 powered by an 11th Gen Intel Core i7 processor and Wi-Fi 6 capabilities. We pitted the laptops against each other in a variety of system performance and responsiveness-based benchmark challenges.

In this report, we use our hands-on findings to illustrate how investing in the new HP EliteBook 840 G9 powered by 12th Gen Intel Core i7 processors can benefit a variety of users and use cases.

*In our comparisons, the EliteBook 840 G9 powered by an Intel Core i7-1265U processor performed better than the G8 model, and the EliteBook 840 G9 powered by an Intel Core i7-1280P processor generally performed better than both of the others.

About HP EliteBook 840 Notebook PCs

These Windows 11 business laptops include 12th Gen Intel Core i5 or i7 processors and Intel Iris® Xe Graphics, are AMT vPro® Technology enabled, support Wi-Fi 6E and Bluetooth 5.2 connectivity, and according to HP, provide "new conferencing capabilities powered by HP Presence, productivity, and security that is easily managed in hybrid work environments."[1]

What we tested

To get a good look at the performance advantages made possible with an EliteBook 840 G9 Notebook PC powered by 12th Gen Intel Core processors, we tested two identical G9 models with different 12th Gen Intel Core i7 processors against a G8 model with an 11th Gen Intel Core i7 processor. All three EliteBook 840 Notebook PCs were equipped with Intel Iris Xe Graphics, 16 GB of memory, and 512 GB of SSD storage. We also set each notebook's power level to "Best Performance" before we ran CrossMark™, SYSmark® 25, Procyon®, and WebXPRT benchmarks on each device.

Both current-gen HP EliteBook 840 G9 Notebook PC models contain 12th Gen (Alder Lake) Intel Core i7 processors:

- The Intel Core i7-1265U (U Series) processor in the first HP EliteBook 840 G9 is designed for on-the-go office productivity, according to Intel.[7] We purchased this G9 configuration for $2,289.19 on August 23, 2022.
- Intel notes that the Intel Core i7-1280P (P Series) processor in the second HP EliteBook 840 G9 is designed with more power for resource-intensive tasks that might bog down lesser machines.[8] We purchased this G9 configuration for $2,748.00 on August 23, 2022.

Our last-gen HP EliteBook 840 G8 Notebook PC was powered by an Intel Core i7-1165G7 processor, which was an upper mid-range 11th Gen Intel Core i7 processor and a top performer when it launched in 2020.[9] We purchased this G8 configuration for $1,187.27 on August 23, 2022.

About 12th Generation Intel Core processors

12th generation Intel Core mobile processors (those used in ultrathin laptops) are different from previous-generation Intel Core processors. They contain two types of cores: one to help maximize single-thread performance and responsiveness, and another to improve multi-thread performance and responsiveness.[2]

About the benchmarks

- CrossMark uses "common and relevant workloads that model the performance characteristics of real-world applications" to measure overall system performance and responsiveness.[3]
- SYSmark 25 uses real applications and real business user workloads to both stress the devices and reveal "how overall system performance impacts user experience."[4]
- Procyon is a suite of benchmarks designed to measure performance in a variety of specific professional use cases.[5]
- WebXPRT 4 is a browser benchmark that shows how well different devices handle web-based tasks.[6]

In this report, there are fictional scenarios based on the results of PT testing. Where we name specific people in this report, they are fictional characters in fictional scenarios based on the results of our testing.

Why it's not too soon to upgrade

The 2020 notebook we tested against might not seem old enough for a refresh, but the typical workplace has changed drastically since HP unveiled the EliteBook 840 G8. With the new G9 models, in addition to the significant performance improvements we found in testing, you get improved connectivity and conferencing abilities.[10]

Invest in what works, only better

June is a financial advisor, so she did her research when she bought her HP EliteBook 840 G5 powered by an Intel Core i7 processor a few years ago. It's been a great computer, but she's seeing some lag in video conferences, and she's ready to get something new. Our CrossMark and SYSmark 25 benchmark results show that if she upgrades to an HP EliteBook G9 Notebook PC powered by an Intel Core i7-1265U or an Intel Core i7-1280P processor, she could see a noticeable improvement when she's using anything from customer relationship and portfolio management tools to investment analytics software.

Up to 25.1% higher CrossMark overall ratings

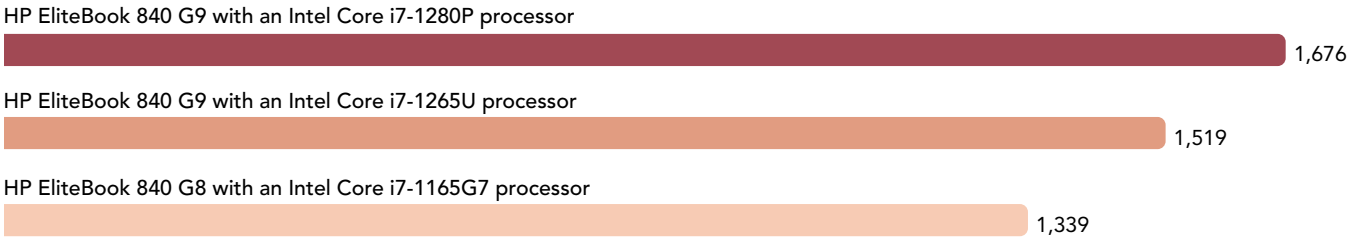

Figure 1: CrossMark overall ratings. Higher is better. Source: Principled Technologies.

Up to 12.2% higher SYSmark 25 overall ratings

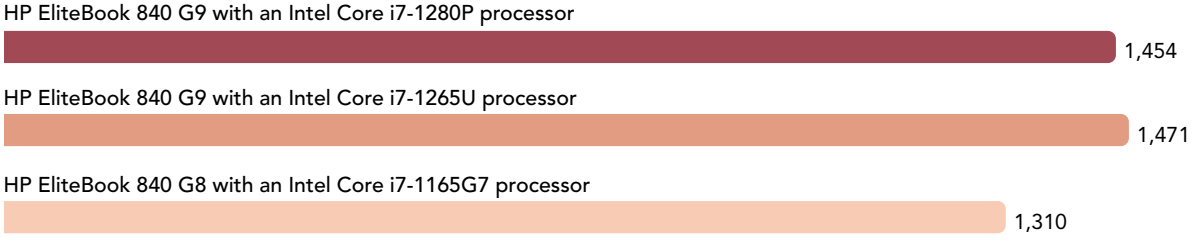

Figure 2: SYSmark 25 overall ratings. Higher is better. Source: Principled Technologies.

Up to 9.4% higher Procyon Office Productivity Benchmark overall ratings

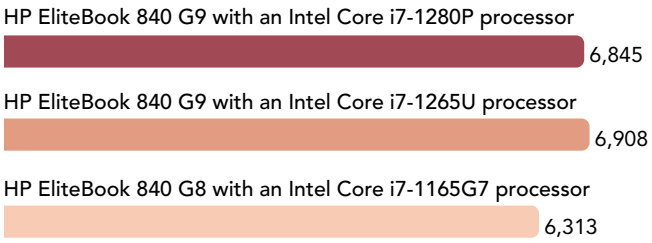

Figure 3: Procyon Office Productivity Benchmark overall ratings. Higher is better. Source: Principled Technologies.

Up to 18.4% higher Procyon Photo Editing Benchmark overall ratings

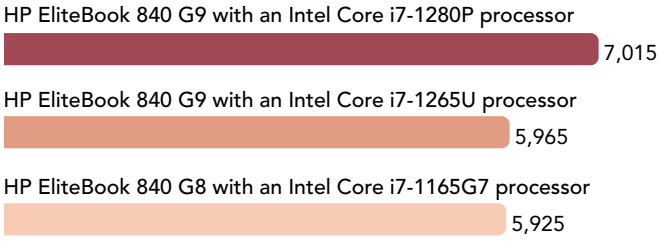

Figure 4: Procyon Photo Editing Benchmark overall ratings. Higher is better. Source: Principled Technologies.

Up to 29.3% higher Procyon Video Editing Benchmark overall ratings

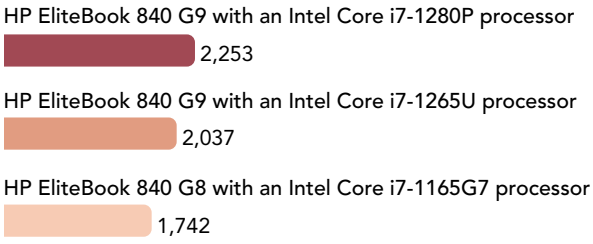

Figure 5: Procyon Video Editing Benchmark overall ratings. Higher is better. Source: Principled Technologies.

Get more of what you want a computer for

According to an online survey, 30- to 40-year-olds spend three to five hours multitasking every day.[11] And, while the study goes on to say that switching tasks can jeopardize the quality of their work, how many of us keep multiple tabs open because we "may need to reference that page later" or pipe music in while we work? Do we count that as multitasking? Not really—but there can be a lot of resource-intensive duck-paddling going on beneath the surface when your laptop is juggling tasks like sharing your screen during a video conference or tracking team conversations while you're crunching numbers for a monthly report.

Why our content creation benchmark scores matter to you

You may not edit photos or videos—but the Procyon resource-intensive benchmark scores allow you to compare overall system performance in a variety of ways. For example, higher office productivity scores can translate to speedier response times on demanding productivity apps and financial analysis tools. (Hello, SAP and Excel!) And higher photo or video editing scores can translate to speedier response times when using MATLAB scientific simulation software, computer-aided design (CAD) programs, product development and design software, or even graphics-intensive games (we won't tell if you don't!).

Improve your web-browsing experience

Hassan is an in-demand marketing consultant. Because he's helping companies all over the United States improve their conversion rates—by, among other things, monitoring web-browsing metrics—he's very aware of the importance of quick page loads. That's especially true when he's showing a client how prospective shoppers interact with their websites before and after he's worked his magic. By upgrading to an HP EliteBook G9 Notebook PC powered by an Intel Core i7-1280P processor, Hassan is as ready as possible to put his best web-browsing foot forward.

Up to 24.5% higher WebXPRT 4 overall scores

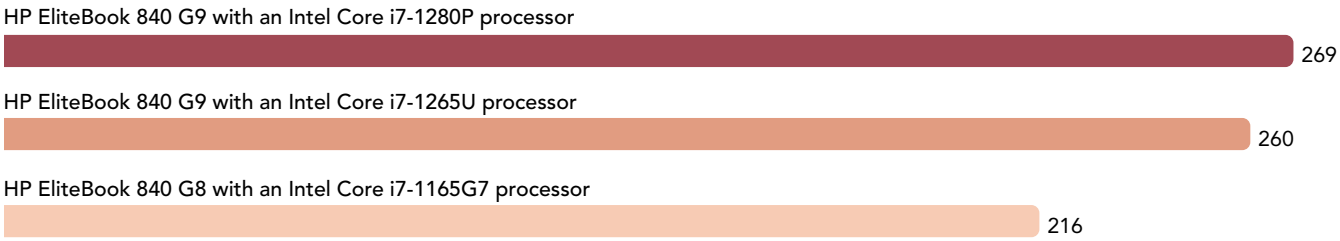

Figure 6: WebXPRT 4 overall scores. Higher is better. Source: Principled Technologies.

Conclusion

To see how much an older laptop could be slowing down remote collaboration in hybrid work environments, we ran CrossMark, SYSmark 25, Procyon, and WebXPRT 4 benchmarks on a two-year old HP EliteBook 840 G8 Notebook PC powered by an 11th Gen Intel Core i7 processor against two HP EliteBook 840 G9 Notebook PCs powered by different 12th Gen Intel Core i7 processors. We found that the current-gen HP EliteBook 840 G9 Notebook PCs powered by Intel Core i7-1265U or i7-1280P processors performed significantly better than their two-year-old predecessor. Our benchmark results suggest that investing in HP EliteBook 840 G9 Notebook PCs powered by 12th Gen Intel Core i7 processors has the potential to unlock enhanced productivity.

1. HP, "HP EliteBook 840 G9 Notebook Pc – Customizable," accessed September 1, 2022, https://www.hp.com/us-en/shop/pdp/hp-elitebook-840-g9-notebook-pc-customizable-4b849av-mb#pdpOverview.
2. Intel, "12th Gen Intel® Core™ Mobile Processors," accessed August 30, 2022, https://www.intel.com/content/www/us/en/products/docs/processors/core/12th-gen-core-mobile-processors-brief.html.
3. BAPCo, "CrossMark," accessed August 30, 2022, https://bapco.com/wp-content/uploads/2022/01/crossmark_white_paper_v1.2.pdf.
4. BAPCo, " SYSmark 25," accessed August 30, 2022, https://bapco.com/wp-content/uploads/2020/07/SYSmark25WhitePaper.pdf.
5. UL, "UL Procyon® benchmark suite," accessed September 20, 2022, https://benchmarks.ul.com/procyon.
6. Principled Technologies, "WebXPRT 4," accessed August 30, 2022, https://www.principledtechnologies.com/benchmarkxprt/webxprt/.
7. Intel, "12th Gen Intel® Core™ Mobile Processors," accessed August 30, 2022, https://www.intel.com/content/www/us/en/products/docs/processors/core/12th-gen-core-mobile-processors-brief.html.
8. Intel, "12th Gen Intel® Core™ Mobile Processors," accessed August 30, 2022, https://www.intel.com/content/www/us/en/products/docs/processors/core/12th-gen-core-mobile-processors-brief.html.
9. Intel, "Intel® Core™ i7-1165G7 Processor," accessed August 30, 2022, https://www.intel.com/content/www/us/en/products/sku/208662/intel-core-i71165g7-processor-12m-cache-up-to-4-70-ghz/specifications.html.
10. HP, "HP EliteBook 840 G9 Notebook Pc – Customizable," accessed September 1, 2022, https://www.hp.com/us-en/shop/pdp/hp-elitebook-840-g9-notebook-pc-customizable-4b849av-mb#pdpOverview.
11. What to become, "12 Unexpected Multitasking Statistics," accessed August 30, 2022, https://whattobecome.com/blog/multitasking-statistics/.

Read the science behind this report at https://facts.pt/NTWxQD9 ▶

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