



## Save time on key tasks while multitasking\*

-  Open large presentations in up to **60% less time**
-  Open GIMP projects in up to **59% less time**
-  Launch Dota 2 in up to **38% less time**



**HP ProBook 640**



**HP EliteBook 840**



**HP EliteBook x360 1030**

Executive summary

## Launch key apps faster with new Intel Optane memory

### Intel Optane Memory H10 with Solid State Storage enabled three HP notebooks to launch projects and apps faster than the same notebooks without the technology

Responsive devices can deliver a better user experience and less frustration than devices that take a long time to perform tasks such as opening large documents and copying large files. One way to improve a device's responsiveness is to install more RAM. However, it's not the only way.

Intel claims their Intel® Optane™ technology can improve system responsiveness even without purchasing additional RAM.<sup>1</sup> At Principled Technologies, we tested this claim by measuring the time it took for the following HP notebooks to launch projects and apps while simultaneously copying a large file to the system desktop:

- HP ProBook 640
- HP EliteBook 840
- HP EliteBook x360 1030

We tested pairs of each system, with the only difference being that one notebook had Intel Optane memory and the other lacked it. We found that launching the projects and apps took less time with the notebooks that had Intel Optane memory. Customizing a notebook with Intel Optane memory H10 with solid state storage could enable users to achieve better performance from their machines on the apps they use every day.

\*In our tests, we defined multitasking as the act of copying a 41.8GB file to the desktop while launching the app in question.

## How we tested

Each of the notebooks we tested contained 16 GB of RAM and 512 GB of storage. The Intel Optane memory modules had 32 GB of capacity. We measured the time each notebook required to launch documents and projects in various office productivity and content creation apps. Additionally, we launched games via the Steam game launcher.

Because users rarely ever do just one thing with their computers, we mimicked real-world multitasking by launching each project and app while the system simultaneously made a copy of an approximately 40GB file on the desktop.

### HP ProBook 640

The HP ProBook 640 with Intel Optane memory required less time to launch projects in apps—including Microsoft Word and Adobe® Photoshop®—compared to the same device without Intel Optane memory. When launching a file in Microsoft Word, the HP ProBook 640 with Intel Optane memory saved 7.8 seconds, or 60 percent of the time of the same notebook without Intel Optane memory.

#### Launch a large Word file

while a large file is being copied to desktop (time in seconds)

HP ProBook 640 with Intel Optane memory

5.2

HP ProBook 640 without Intel Optane memory

13.0

Figure 1: Time to launch a ~90MB Word file while the system copied a large file to the desktop on an HP ProBook 640 system with and without Intel Optane memory. Time (sec). Lower is better. Source: Principled Technologies.

### HP EliteBook 840

The EliteBook 840 with Intel Optane memory saved time on eight tasks, including launching an approximately 180MB PowerPoint presentation while the system copied a large file to the desktop. The biggest time difference we observed was in launching an approximately 85MB sample project in the image-manipulation application GIMP.

#### Launch a GIMP project

while a large file is being copied to desktop (time in seconds)

HP EliteBook 840 with Intel Optane memory

18.3

HP EliteBook 840 without Intel Optane memory

44.8

Figure 2: Time to launch a ~85MB GIMP project while the system copied a large file to the desktop on an HP EliteBook 840 system with and without Intel Optane memory. Time (sec). Lower is better. Source: Principled Technologies.

### HP EliteBook x360 1030

The HP EliteBook x360 1030 with Intel Optane memory saved time on seven tasks compared to the same device without Intel Optane memory. When launching a project in Microsoft PowerPoint, the HP EliteBook x360 1030 saved 3.1 seconds over the same device without Intel Optane memory, or 36 percent.

#### Launch a large PowerPoint presentation

while a large file is being copied to desktop (time in seconds)

HP EliteBook x360 1030 with Intel Optane memory

5.5

HP EliteBook x360 1030 without Intel Optane memory

8.6

Figure 3: Time to launch a ~180MB PowerPoint presentation while the system copied a large file to the desktop on an HP EliteBook x360 1030 system with and without Intel Optane memory. Time (sec). Lower is better. Source: Principled Technologies.

## Conclusion

Dealing with slow load times on a device can be frustrating and interrupt a user's flow. To help users save time and provide a better experience, consider configuring your devices with Intel Optane memory.

Read the report at <http://facts.pt/eLPfXpr>



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