

DESKTOP USERS GET BIG STORAGE WITH HIGH PERFORMANCE

Intel® Optane™ memory H10 with solid state storage delivers the capacity and reliability of an SSD plus the responsiveness needed by demanding desktop users.

Whether at home or the office, creating documents, editing videos, or playing games, you need fast data access, with large capacity, efficient data storage. A revolutionary storage option from Intel can help you get there. Intel® Optane™ memory H10 is designed to meet the high demands of professional content creators, home or work multitaskers, productivity hounds, and gamers.

Intel Optane memory H10 with solid state storage helps you strike the right balance between storage capacity and performance. This innovative storage device combines Intel Optane memory media with an Intel® quad-level cell (QLC) 3D NAND technology–based solid state drive (SSD) on an M.2 2280 form factor designed to accommodate desktop devices from small all-in-one devices to full-size towers.

Intel Optane memory H10 takes a unique approach to handling and accelerating access to data. The module uses an intelligent caching algorithm that recognizes your most frequently used applications and data. It dynamically and automatically moves that data from the NAND media to the faster Intel Optane memory media for quick and reliable access. This innovative architecture provides a significant performance boost for everyday applications and workloads, along with higher-capacity storage to handle your growing collection of large files.

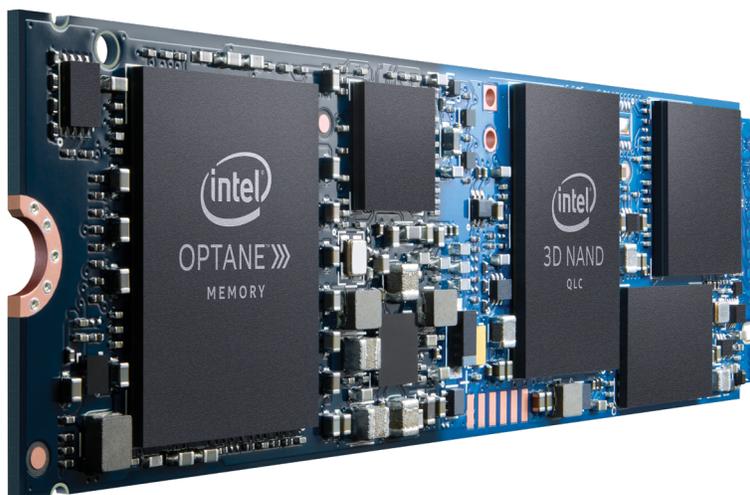


Figure 1. Intel® Optane™ memory H10 combines Intel Optane memory media with Intel® QLC 3D NAND technology on a single M.2 device

High Performance and Capacity in a Single Solution

Modern PC users look for a perfect combination of high-capacity storage along with high read/write performance at a reasonable price. They need plenty of storage space for videos, photos, games, and other files—and modern apps rely on fast storage to keep up with the high-performing processors found in many desktop PCs. Storage speed is even more of an issue during multitasking, like copying photos from an external SD™ card while editing a document or playing a PC video game or running a full virus scan while listening to music and editing a graphics-rich presentation.

The innovative architecture of Intel Optane memory H10 with solid state storage offers users the benefits of high-capacity storage while maintaining high performance, especially for the workloads that need it most.

Intel Optane memory H10 takes a unique approach to handling and accelerating access to data using an intelligent caching algorithm that recognizes your most frequently used applications and data. It dynamically and automatically moves that data from the NAND storage to the Intel Optane memory media for quick and reliable access.

The reliability of a NAND drive, coupled with the unique caching ability of Intel Optane memory H10, provides a significant performance boost for demanding applications and workloads.

Intel® Optane™ memory H10 with solid state storage is available in a variety of memory/storage capacities to meet different needs:

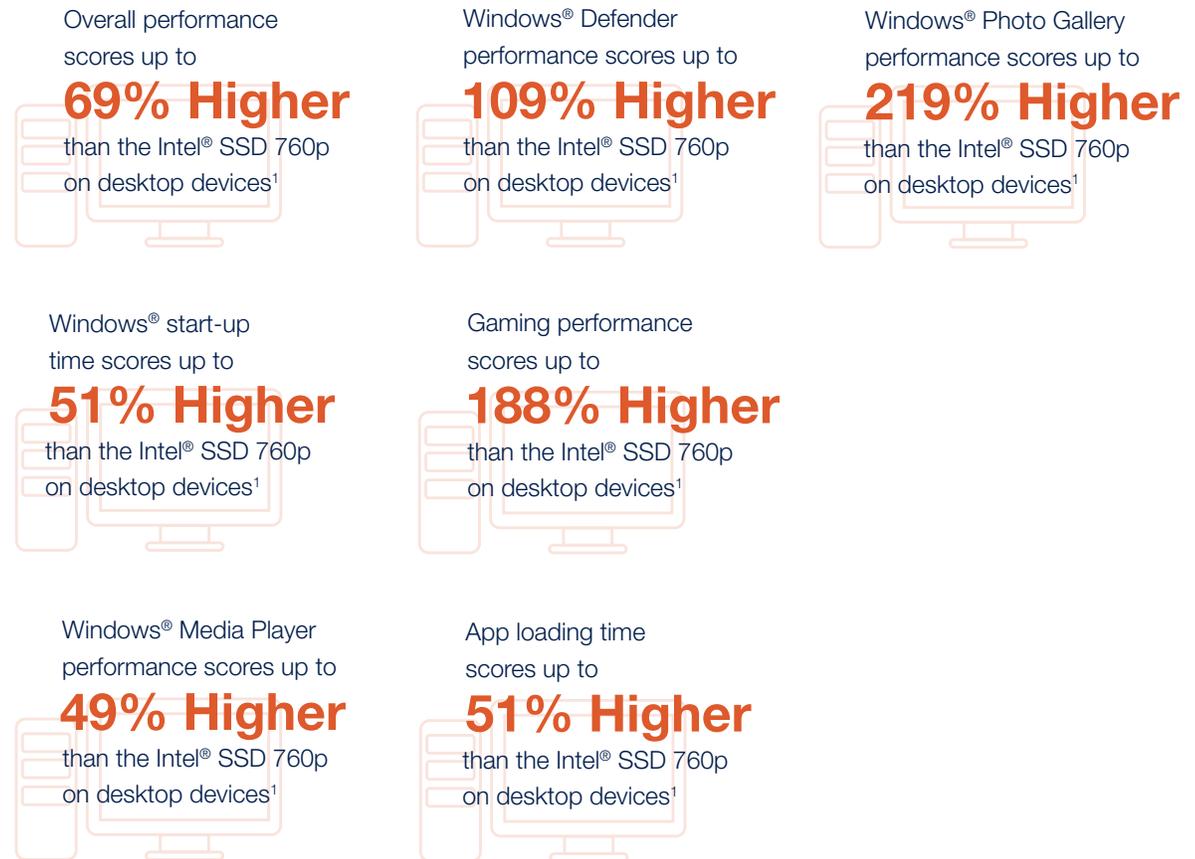
- 16 GB Intel Optane memory + 256 GB Intel® QLC 3D NAND technology
- 32 GB Intel Optane memory + 512 GB Intel QLC 3D NAND technology
- 32 GB Intel Optane memory + 1 TB Intel QLC 3D NAND technology

Putting Intel Optane Memory H10 to the Test

To see if Intel Optane memory H10 lives up to its potential, Prowess Consulting performed benchmark tests to compare its performance to an Intel SSD 760p triple-level cell (TLC) drive.^{1,2} We selected the Intel SSD 760p for comparison because it is representative of mainstream-performance NAND SSDs commonly found in modern devices.

PCMark® Vantage HDD Suite Results

The PCMark® Vantage HDD Suite is a collection of synthetic test sets simulating real-world application usage. This benchmark also includes a specific hard disk drive (HDD) test focusing on storage performance. Benchmark test results showed remarkable performance for Intel Optane memory H10:



Capacity Meets Performance in a Single Drive

By pairing a high-capacity NAND SSD with Intel Optane memory, Intel Optane memory H10 offers an effective way to provide higher performance where it's needed most, while maintaining the benefits of high-capacity storage. High performance means desktop users see faster app start-up times and are able to seamlessly multitask.

Learn More

To learn about our Intel Optane technology performance testing, get the white paper, “Intel® Optane™ Memory H10: Is It a PC Performance Game Changer?” at www.prowesscorp.com/intel-optane-h10-testing.

To learn more about Intel Optane memory H10, visit www.intel.com/optanememory.

¹ Prowess. “Intel® Optane™ Memory H10: Is It A PC Performance Game Changer?” July 2019. www.prowesscorp.com/intel-optane-h10-testing. Testing completed by Prowess Consulting in April 2019. Configurations: Mobile: HP® Spectre x360 Convertible 13-ap0xxx powered by an Intel® Core™ i7-8565U processor (1.80 GHz) with 16 GB 2,400 MHz DDR dual-channel DRAM and Intel® UHD Graphics 620 and running Windows® 10; BIOS: AMI, B.25, 12/07/2018 (microcode version: 0x9A); operating system (OS) build 17763.316; storage devices compared: Intel® Optane™ memory H10, Intel® SSD 760p, Samsung® SSD 970 EVO, and Intel SSD 660p. Desktop: MSI® MPG Z390 GAMING PLUS powered by an Intel Core i7-9700K processor (3.60 GHz) with 16 GB 1,066 DDR4 dual-channel DRAM and Intel UHD Graphics 630 and running Windows 10; BIOS: American Megatrends® Inc. 1.3T, 11/12/2018 (microcode version: 0xA2) and American Megatrends Inc. 1.10, 8/22/2018 (microcode version: 0x98); OS build 17763.316; storage devices compared: Intel Optane memory H10, Intel SSD 760p, Samsung SSD 970 EVO, Intel SSD 660p, and Intel SSD 545s Serial ATA (SATA). Benchmark tests: PCMark® Vantage 1.2.0.0, PCMark 10 5.10.676, PCMark 8 5.9.665, SYSmark® 2018 1.0.0.39, and Iometer 1.1.0. See the full paper for complete test results and details.

² Benchmark testing on the performance of Intel® Optane™ memory H10 with solid state storage was commissioned by Intel and performed by Prowess Consulting in April 2019.



Software and workloads used in performance tests may have been optimized for performance only on Intel® microprocessors. Performance tests are measured using specific computer systems, components, software, operations, and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

Performance results are based on testing by Prowess Consulting as of April 2019 and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

The analysis in this document was done by Prowess Consulting and commissioned by Intel. The software licenses involved belong to Intel and were used by permission for this testing and analysis.

Results have been simulated and are provided for informational purposes only. Any difference in system hardware or software design of configuration may affect actual performance.

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