

A HARD DRIVE AS FAST AS SSD? PAIR SEAGATE BARRACUDA WITH INTEL OPTANE MEMORY

It's a moment PC super users have been waiting for — the Intel® Optane™ memory module **has arrived!** Optane memory is an all-new premium class of memory that can change the ways we build and use computers.

A Seagate BarraCuda hard drive coupled with Intel Optane memory technology performs as fast as SSD, according to tests by Intel, Seagate and third parties. Offering a snappy PC experience that delivers high speed and responsiveness without compromising system storage capacity, it enables improved system performance, short boot times, fast application launches and an extraordinary gaming experience.



What PC users want

Here's the basic quandary for extreme PC users: SSDs are fast, but SSD prices are high. They can't touch the affordability of hard drives — even **best-in-class hard drives like BarraCuda Pro**. Of course hard-core users want the fastest system they can get, yet they love to have the huge capacity hard drives offer. The new Intel Optane memory technology lets you bridge that gap.



An upgrade to a BarraCuda or BarraCuda Pro hard drive combined with Intel Optane memory is ideal for gaming enthusiasts, creative professionals, and other PC users with high-workload desktop applications such as businesses running multiple applications that require increased levels of random read/write operations. You'll save time with a drive that boots and loads applications in seconds, not minutes — giving you the “instant on” experience you're looking for.

Intel Optane memory is on sale now as an add-in component in 16GB (MSRP \$44) and 32GB (\$77) capacities, for customers who want to install them in their Optane memory-ready motherboards or systems. Major PC makers will also start shipping PCs equipped with Intel Optane memory later this year.

What is Intel Optane memory?

Intel Optane memory is a smart, adaptable system accelerator for PCs with a 7th Gen Intel® Core™ processor. It provides uncompromising system responsiveness for large capacity storage drives, making everything you do fast, smooth and easy.

Intel Optane memory acts as a new tier of memory that operates between a system's main memory (RAM) and the system's main storage (the hard drive). It's a place where your most-used data and meta data will live, so it can be accessed much faster. Intel has been working on the 3D XPoint™ memory technology that underlies its Optane memory for quite a few years. The technology has random access

performance properties similar to DRAM but it's non-volatile, so it retains data even when system power is off. All told, Optane memory uses a unique combination of 3D XPoint memory media, Intel Memory and Storage Controllers, Intel Interconnect IP and Intel software. Together these building blocks deliver a revolutionary leap forward in decreasing latency and accelerating systems for workloads demanding large capacity and fast storage.

PC applications benefit most from quick bursts of performance to make the user experience feel quick and responsive. That's Optane memory's role — it makes that experience quicker than ever, and pairing it with a high-capacity BarraCuda hard drive still provides users all the room they need to store more: more and bigger games for gamers, more video, image, audio and other project elements for creative professionals, more of everything they want.

How much faster?

How much faster is a system using Seagate BarraCuda and Intel Optane memory together? Seagate and Intel have run numerous benchmarks, and they show system performance is improved 1.4x, while storage performance is 1.8x — that's comparable to SSDs on the market today.

Affordable System Acceleration with HDD Capacity			
Benchmarks	Seagate® Barracuda 2TB	Samsung 750 EVO 250GB	Seagate® Barracuda 2TB + Intel® Optane™ Memory 32GB
Storage Performance	1.0x	1.8x	1.8x
Gaming	1.0x	1.9x	2.0x
Adobe Creative Suite	1.0x	1.8x	1.8x
Microsoft Office	1.0x	1.9x	1.9x
System Performance	1.0x	1.4x	1.4x
Responsiveness	1.0x	2.3x	2.3x

As these benchmark tests show, the combination of Intel Optane memory and BarraCuda HDD delivers performance that's virtually identical to that offered by a SSD solution which has a higher price and a much lower capacity.

And it's not just our tests.

After running their own tests, tech-enthusiast website **TweakTown** said, "Who would have thought that just by adding a little 32GB Optane Memory module to cache an HDD you could actually get better system response in most scenarios than you will get from the best flash-based SSD?"

Tom's Hardware agreed, "The value proposition for a hard drive paired with Optane Memory is undeniable. The combination is very powerful, and for many users, a better solution than a larger SSD."

Even **The SSD Review** conceded: "A hard drive with Intel Optane [memory] will give you both performance and capacity. I must admit ... seeing a caching SSD work at speeds up to 1.4GB/s data transfer, as well as at 204MB/s low 4K read performance, leaves me in awe of what Intel just did ... and what they are now capable of."

Teamed with BarraCuda hard drives, the combination of Intel Optane memory in a system with the 7th Gen Intel Core processor means you can now upgrade to SSD-rivalling speed while still enjoying the benefits of huge HDD capacity — at a much lower cost-per-gigabyte than an SSD!

What now? Get breakthrough responsiveness, and uncompromised capacity

Now you can have the best of both worlds — all at a price that makes this upgrade more accessible than expensive SSD solutions:



Seagate BarraCuda coupled with Intel Optane memory provides affordable, SSD-like performance while maintaining HDD capacity.



Intel Optane memory is a 16GB or 32GB system acceleration solution that fits into the M.2 connector on Intel Optane memory-ready boards.



Purpose-built for gamers and creative professionals, Seagate BarraCuda 3.5-inch HDD offers up to 4TB, and BarraCuda Pro boasts up to 10TB.

Are you one of the many power-users eager for SSD performance, but you've hit the brakes because of the high cost and limited capacity of SSD solutions? Now we've got a whole new route to get you exactly where you want to go — put the pedal to the metal with the budget-friendly blend of Intel Optane memory and **Seagate BarraCuda HDDs**.