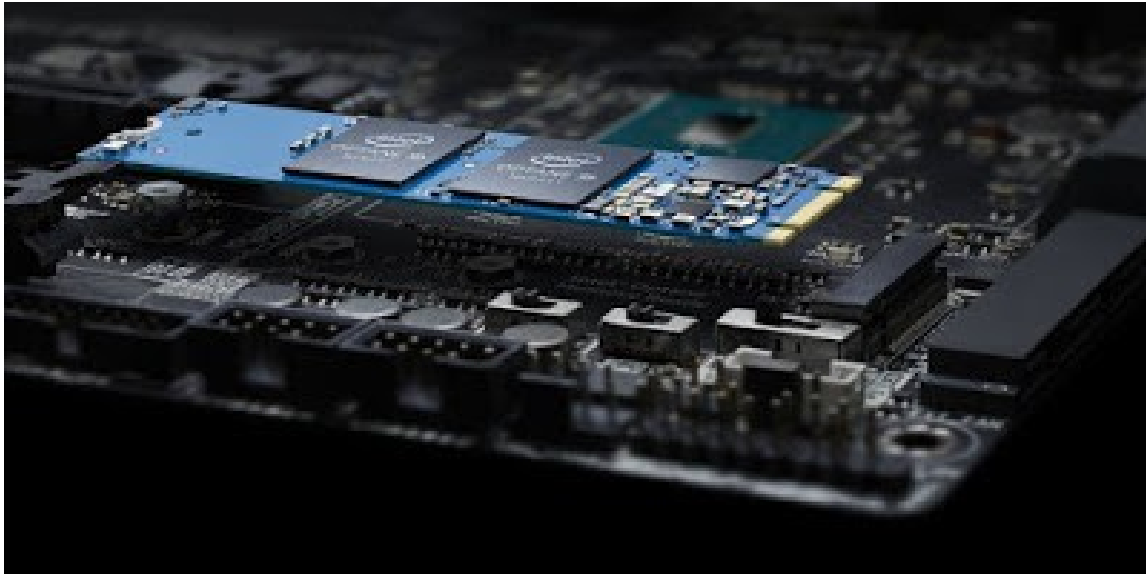


## *What is Optane Memory and Why Should It Matter to You*



### *Intel Optane Memory is Transformative Technology*

Many of you have been hearing the term Optane Memory and wondering what it is all about. Optane memory is a smart fast caching solution that speeds up any PC it is installed in that can accommodate it. Installing Optane memory can enable productivity apps to load up to 5.8X faster. Of interest to gamers is what effect Optane memory has on gaming, and for that Intel touts up to 67 percent faster game launches and up to 65 percent faster level loads. Optane Memory requires an X299 chipset motherboard paired with a Core X Series Processor in a system running Windows 10. All of [Psychsoftpc](#) Core X Series machines come with the capability of adding Intel Optane Memory and we are offering a chance to add 32 Gig of Optane Memory in all of our systems.

Here is an explanation of what Optane Memory does for your machine.

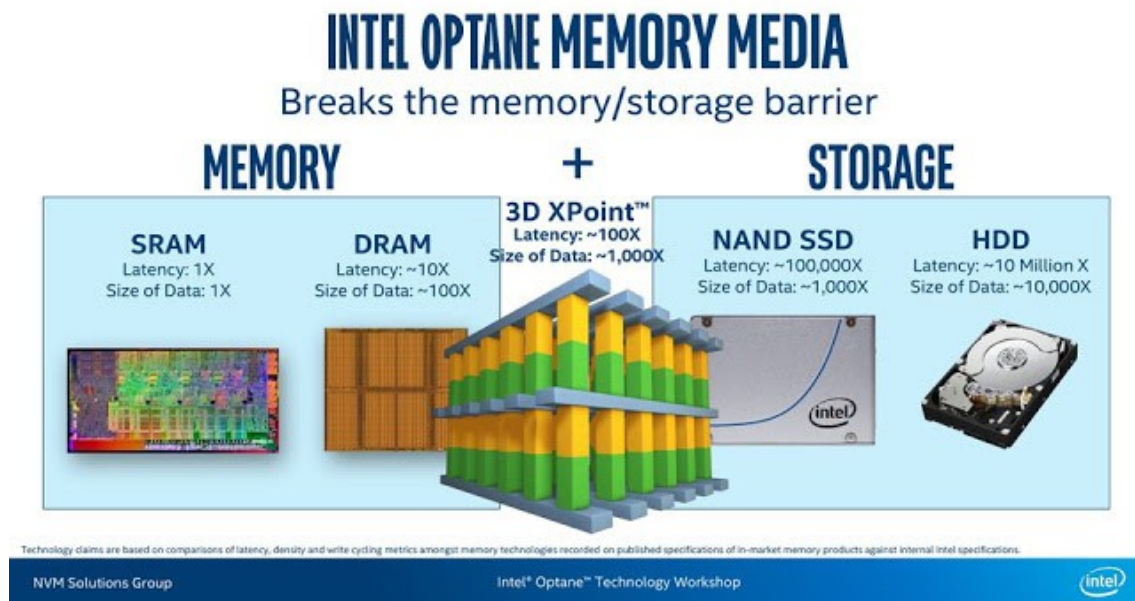
#### *What We Know*

Detailed descriptions from Intel of how Optane works are still sketchy but a basic picture is emerging from what Intel and Micron have said about the technology. The memory has a kind of three-dimensional lattice structure. Stackable layers have wires arranged in either rows or columns, and at the intersection of each row and column is the actual storage element which is an

unspecified material that can change its resistance to different values. The details of how it does this are unclear. While Intel has said it is not a phase-change material, it hasn't said exactly what it is.

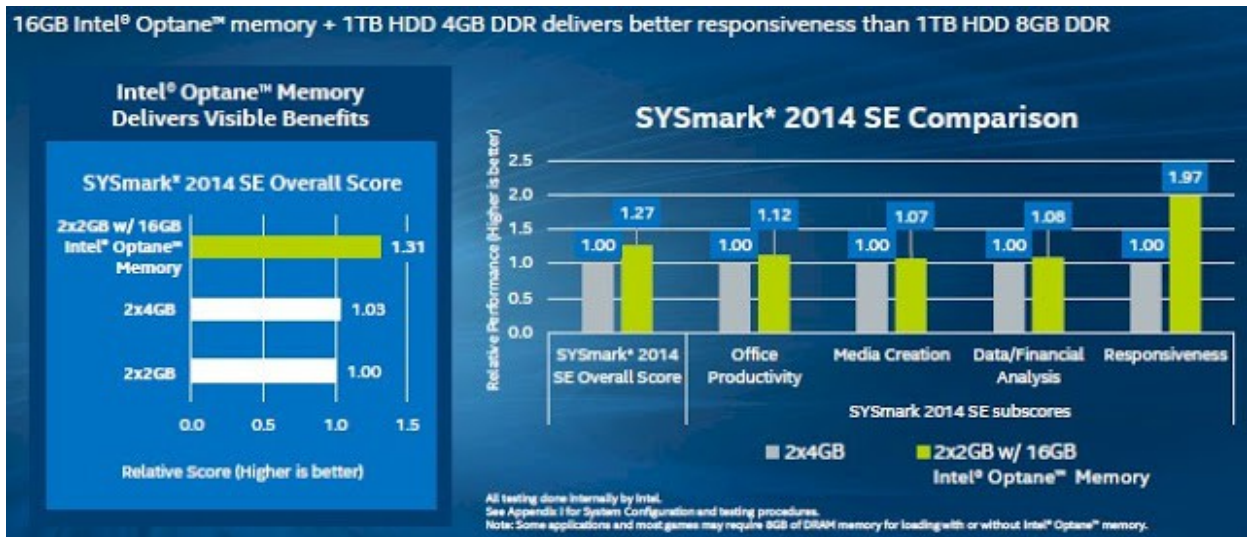
Most importantly, this resistance change is persistent meaning that once a cell has had its value set, it will continue to hold that value indefinitely, even if the system loses power or is shut down. While we don't know how the resistance change works, we do know that unlike DRAM, each data cell does not need any transistors, which means that Optane Memory is a lot denser than DRAM, from four to ten times as dense according to various reports.

The value stored in each data cell can also be written and rewritten relatively easily. NAND flash requires a very high voltage to erase each cell, which allows a cell to be written only once before it needs to be erased again. Optane Memory cells, however, can have their stored value updated between 1 and 0 and back again without needing any erasure step.



## *Revolutionizing Memory and Storage*

Intel Optane technology provides an unparalleled combination of high throughput, low latency, high quality of service, and high endurance. With the Intel Core X Series Processors and X299 chipset Motherboards computer are unleashing unprecedented possibilities on the desktop.



## Intel Optane Technology


This technology is 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.

## Intel Optane Memory Changes Everything

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

### WHAT IS INTEL® OPTANE™ MEMORY?

**3D XPOINT™ MEMORY MEDIA**




Scalability  
High Performance

↑ ↑


Cross Point Structure    Breakthrough Material Advances

**STANDARD M.2 CONNECTOR MODULAR FORM FACTOR**




PCIe® Gen 3.0x2 M.2 2280 Single-sided


**INTEL® RAPID STORAGE TECHNOLOGY**



The two physical devices are paired into a single volume




Files needed for important tasks are immediately recognized and accelerated



Over time, frequently used files and applications are monitored and accelerated as well


**INTEL® OPTANE™ MEMORY**



M.2 2280

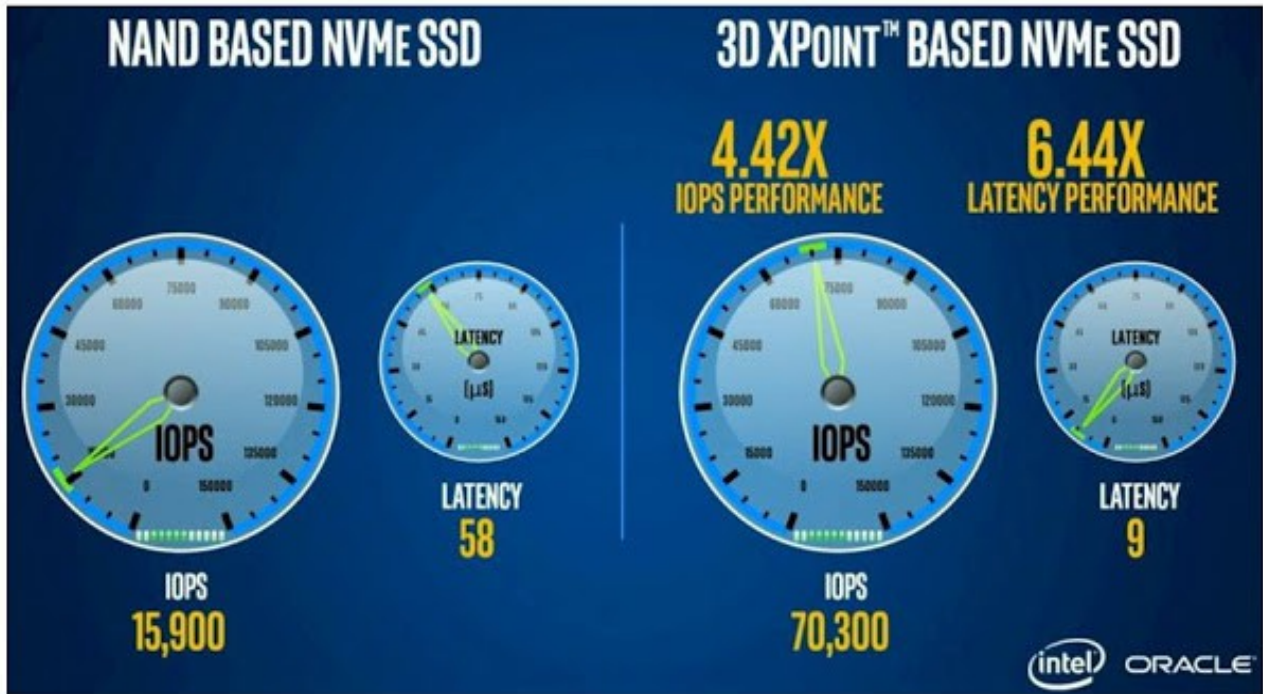
**16GB 32GB**

FOR 7<sup>TH</sup> GEN INTEL® CORE™ PLATFORM



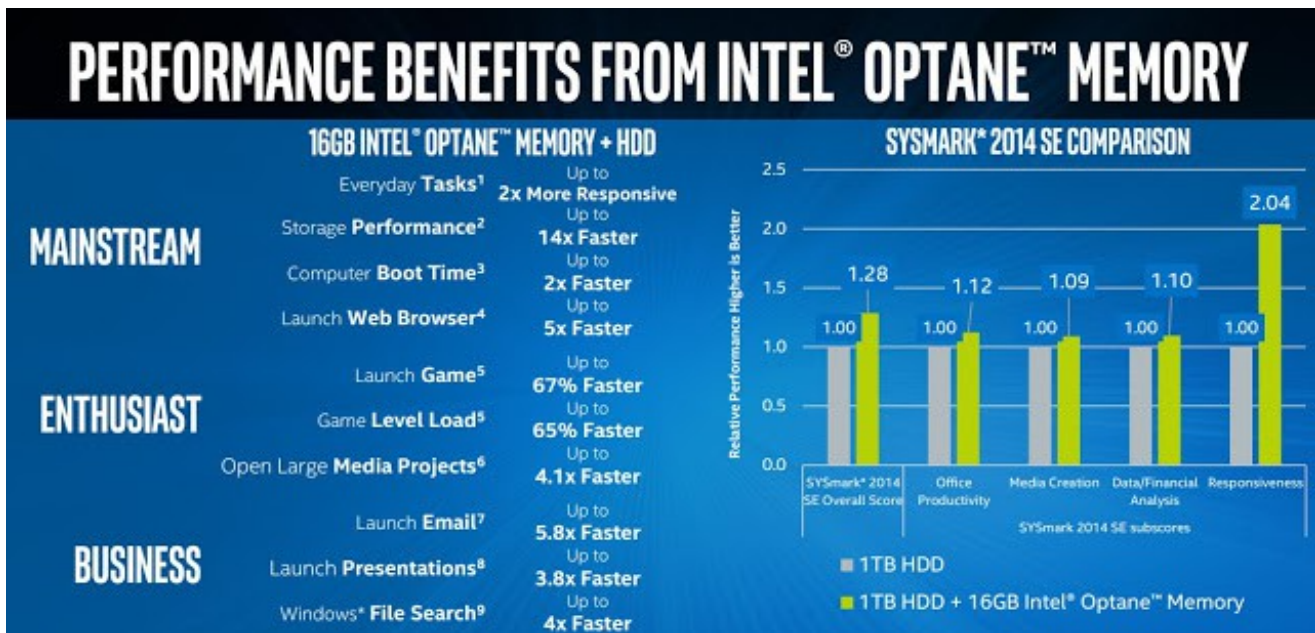
## Get the Speed. Keep the Capacity.

It is revolutionary – the first all-new class of memory in 25 years. Intel Optane memory creates a bridge between the DRAM and storage to deliver an intelligent, amazingly responsive computing experience.



## Accelerate Your Experience

This game-changing technology intelligently accelerates new Intel Core X processor-based systems like those made by [Psychsoftpc](#) while affordably maintaining mega-storage capacity, to deliver a responsive computer experience with short boot times, fast application launches, extraordinary gaming, and responsive browsing.



## Intelligent System Acceleration

Optimize your computer responsiveness with up to 2x faster boot, 5x faster web browser launch, and 67% faster game launch. Intel Optane memory is a smart and adaptable system accelerator that adjusts to your computing tasks

making everything you do faster, smoother, easier. Its intelligent software automatically learns your computing behaviors to accelerate frequent tasks and customize your computer experience.

## The World is Moving to high Performance Computing

With more and more demands being made by software, gaming, video streaming and office productivity and complex database searches, the demand for high performance computers like the ones that [Psychsoftpc](#) makes is increasing. Just this year alone it is expected to increase by 12%.

**PERFORMANCE COMPUTING IS GROWING**

**Top Purchase Drivers for Desktops<sup>1</sup>**

- Performance**
- Security** of personal information / data
- Storage Capacity**

**COMPUTING**

**7<sup>TH</sup> GEN INTEL® CORE™ PROCESSOR**  
8x Overclocking World Record Holder<sup>2</sup>

+

**STORAGE**

**INTEL® OPTANE™ MEMORY**  
Smart and adaptable system acceleration

**High-end PC gaming HW expected to grow ~12% YoY in 2017<sup>3</sup>**

Add to that worker productivity benefits of high end PCs in the office and you can see why a Core X Series System with an X299 chipset motherboard and Intel Optane Memory is the way to go

**ENHANCE THE PC EXPERIENCE WITH INTEL® OPTANE™ MEMORY**

Each day on average a typical user will...

Category	Consumer	IT User
GO THROUGH POWER CYCLES	~2 <sup>1,2</sup>	~2 <sup>2,7</sup>
LAUNCH UNIQUE APPLICATIONS	~11 <sup>3,4</sup>	~14 <sup>8,9</sup>
LAUNCH EACH APP DIFFERENT TIMES	~7 <sup>5,6</sup>	~8 <sup>10,11</sup>

**Consumer ~80 DISTINCT EVENTS**

**IT User ~114 DISTINCT EVENTS**

where the user will experience the benefits of Intel® Optane™ memory each day.

1) Source: Intel® Product Improvement Program (Q1'17: 112,670 systems, 243,400 desktop, 28,967 AIO) Windows 10™, Intel® Core™ processors.  
2) Power cycles include on, off, and sleep states.  
3) Source: Intel® Product Improvement Program (Q1'17: 1,281,148 systems). Average 11 apps opened per day. Minimum 10™, Intel® Core™ processors.  
4) Source: represents an average across distinct applications. Actual number of applications opened per day may be higher. For instance, if Chrome is opened 5 times a day it is counted only once in this calculation.  
5) Source: Intel® Product Improvement Program (Q1'17: 1,281,148 systems). Average 11 apps opened per day. Windows 10™, Intel® Core™ processors.  
6) Source: represents an average across all applications across all systems. This number can vary depending on the application. For instance, this number can be higher for an application like Chrome™ and much lower for an application like iTunes or Calculator, etc.  
7) Source: Intel® Product Improvement Program (Q1'17: 26,167 systems, Desktop/Laptop) in 1 Windows 10™, Intel® Core™ processors.  
8) Source: Intel® Product Improvement Program (Q1'17: 12,476 systems, Desktop/Laptop) in 1 Windows 10™, Intel® Core™ processors.  
9) Source: represents an average across distinct applications. Actual number of applications opened per day may be higher. For instance, if Chrome™ is opened 5 times a day it is counted only once in this calculation.  
10) Source: Intel® Product Improvement Program (Q1'17: 12,476 systems, Desktop/Laptop) in 1 Windows 10™, Intel® Core™ processors.  
11) Source: represents an average across all applications across all systems. This number can vary depending on the application. For instance, this number can be higher for an application like Chrome™ and much lower for an application like iTunes or Calculator, etc.

COG MARKETING \*Other names and brands may be claimed as the property of others.

The future of computing is high performance and people and companies that don't get on board now will be left behind. The days of the cheap PC are becoming a thing of the past as the home and workplace evolve to handle more data, live streaming, Virtual Reality, 4K displays and more complex applications and entertainment. Intel Optane Memory is a game changing technology that you should seriously consider when making your next computer purchase.

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