Memory Technologies Today = Tradeoffs

Today’s Technology

- NAND
- DRAM
- 3D XPoint™ Technology

New

- Speed
- Cost
- Volatility

With today’s memory technologies, you can get incredible performance, but only if you spend a lot per MB and you don’t mind your data going away when the power does.

Or, you can keep costs reasonable if you’re willing to sacrifice speed.

Ideally, you want memory that’s fast, inexpensive and non-volatile.

3D XPoint™ Technology: An Innovative, High-Density Design

Cross Point Structure

Perpendicular wires connect submicroscopic columns. An individual memory cell can be addressed by selecting its top and bottom wire.

Selector

Unlike DRAM requires a transistor at each memory cell—making it big and expensive—the amount of voltage sent to each 3D XPoint™ Technology selector enables its memory cell to be written to or read without requiring a transistor.

Stackable

These thin layers of memory can be stacked to further boost density.

Non-Volatile

3D XPoint™ Technology is non-volatile—which means your data doesn’t go away when your power goes away—making it a great choice for storage.

High Endurance

Unlike other storage memory technologies, 3D XPoint™ Technology is not significantly impacted by the number of write cycles it can endure, making it more durable.

Transforming the Memory Hierarchy

For the first time, there is a fast, inexpensive and non-volatile memory technology that can serve as system memory and storage.

Transforming the Memory Hierarchy

1000x Faster

1300x Faster

10x More Performance

3D XPoint™ Technology delivers up to 10x more performance than NAND across a PCIe* NVMe* interface.

Unprecedented Storage Performance

In the time it takes a hard drive to sprint the length of a basketball court...

NAND could finish a marathon...

...and 3D XPoint™ Technology could circle the globe!

If storage devices were sprinters...

PCle* NVMe*

NAND

3D XPoint™ Technology

Hilbertcurve

Memorial

Tangled

Demenowich

Latency measurements by technology

- 1000x Faster

- 1300x Faster

- 10x More Performance

1Technology claims are based on comparisons of latency, density and write cycling metrics amongst memory technologies recorded on published specifications of in-market memory products against internal Intel specifications.

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

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INTEL INSIDE.

ENDLESS POSSIBILITIES OUTSIDE.

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