Introducing a new memory tier
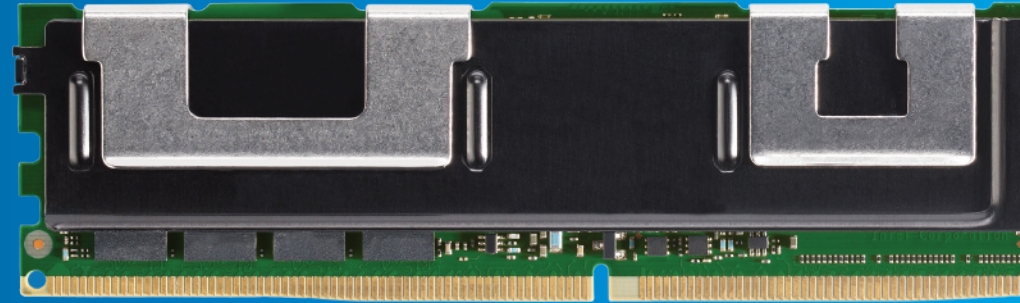
intel OPTANE »»
PERSISTENT MEMORY

As data demands evolve, Intel and Cisco have partnered to fill the gaps in the memory and storage hierarchy with alternatives that **combine the positive value of storage and memory** in a range of affordable, high-performance solutions.

Intel® Optane™ persistent memory

Larger in-memory working datasets

- Addresses the **memory capacity shortfall** by **extending available memory** and **adding persistence**
- Attaches to memory bus for **extremely low latency**

Keywords: *SAP HANA*, Oracle*, Microsoft SQL Server*, Microsoft Hyper-V*, VMware vSphere*, HCI, memory, storage, latency, restart time*

Ordering guide

Cisco UCS* servers featuring Intel Optane persistent memory deliver ultra-fast persistent storage, improved TCO, increased memory size, and improved system performance for SAP HANA* in-memory analytics, Microsoft SQL Server* database, and VMware* virtualization and consolidation workloads.[1]

CISCO* SERVERS SUPPORTING INTEL OPTANE PERSISTENT MEMORY

- Cisco UCS B200 M5 Blade Server
- Cisco UCS B480 M5 Blade Server
- Cisco UCS C220 M5 Rack Server
- Cisco UCS C240 M5 Rack Server
- Cisco UCS C480 M5 Rack Server

INTEL OPTANE PERSISTENT MEMORY MODULES

MEMORY CAPACITY	CISCO* PART NUMBER
128GB	UCS-MP-128GS-A0
256GB	UCS-MP-256GS-A0
512GB	UCS-MP-512GS-A0

Why upgrade

SAVE MORE

- Displace costly DRAM in large-memory systems
- Improve TCO for workloads that need large/persistent memory[1]
- Support more customers without skyrocketing costs[1,2]

DO MORE

- Extract more value from larger datasets than previously possible
- Consolidate workloads with up to 36% more VMs per node[3]
- Scale delivery of services while maintaining QoS

GO FASTER

- Break I/O bottlenecks in read-heavy workloads
- Reduce latency and data access time
- Provide compelling application-level performance

Say this to your customer

"Would your workloads benefit from **large-capacity memory** servers at an affordable price?"

"Imagine how efficient your services will be when you **move from three 9s to five 9s of availability with data persistence**."

"Are the **TCO, server footprint, and complexity associated with storage scale-up** preventing you from upgrading your infrastructure?"

"Have your applications and data outgrown your **current DRAM capacity**?"

"What could your organization do with **lower-latency reads for database or virtualization workloads**?"

Two configurations to meet data center demands
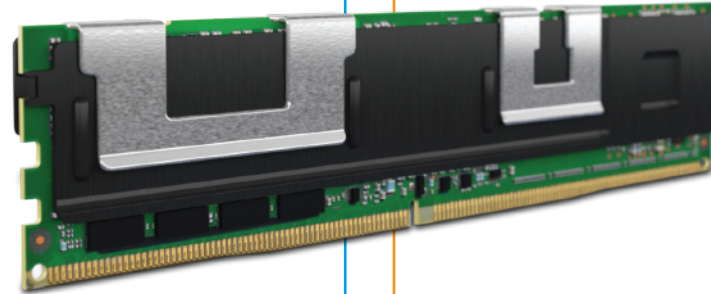
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Memory mode

Affordable, large, volatile memory for memory-constrained workloads. Intel Optane persistent memory functions as **volatile memory**, while DRAM functions as cache.

IDEAL FOR:
- High-capacity virtualization
- Content delivery networks
- In-memory database
- Infrastructures with system memory >500GB

BENEFITS:
- High-capacity memory
- Lower cost per GB compared to DRAM[3]
- Ease of adoption[4]
- No software changes required

App Direct mode

Software and applications communicate directly with Intel Optane persistent memory, which functions as **persistent memory**—while DRAM functions as volatile memory (requires software changes).

IDEAL FOR:
- In-memory database
- Super-fast storage
- Caching layers

BENEFITS:
- Data persistence with higher capacity than DRAM[5]
- Byte addressable
- High availability, minimal downtime
- Higher endurance and greater bandwidth compared to NAND SSDs

intel XEON GOLD inside™   **intel XEON PLATINUM inside™**

Intel Optane persistent memory works on systems powered by **2nd Generation Intel Xeon Platinum or Gold processors**.

Help businesses extract actionable insights from their data with Cisco servers featuring **Intel Optane persistent memory.**
Contact your Intel representative or visit **intel.com/optane**