What is NVDIMM?
A Non-Volatile Dual In-line Memory Module (NVDIMM) is a “persistent memory technology” that retains data in the event of a power loss or a system shut down.

So it's a storage device? or DRAM?
Both! NVDIMM(s) come in various volatile and non-volatile media combinations that can be block and/or byte addressable. You can use it as memory that is persistent or the fastest storage device in your application.

NVDIMM - N
Memory mapped DRAM with no system access to flash.
Attributes:
- JEDEC Standard
- Low-Capacity (2GB - 32GB)
- Very-low Latency (10s of nanoseconds)

NVDIMM - P
Memory mapped Flash and memory mapped DRAM with two access mechanisms: persistent DRAM (~N) and block-oriented drive access.
Attributes:
- High-Capacity (100GB - 1TB)
- Low Latency (100s of nanoseconds)

A NEW STORAGE PYRAMID

“moving storage closer to the CPU”

ISV Supported

Join SNIA SSSI today! and become part of the definition.
http://www.snia.org/member_com/join
The What(s) & Why(s) of NVDIMM Technology

**NVDIMM-N**
- A growing number of applications:
  - Require frequent access to large data sets
  - Are sensitive to down time
  - Have performance limitations due to I/O bottlenecks
- **NVDIMM-N provides**:
  - Low latency, high performance and near infinite endurance of DRAM
  - The persistence of NVM
- No impact to memory bus performance
- Fast recovery from system power loss
- Software overhead can be eliminated

**NVDIMM-P**
- NVDIMM-P interface specification targeting persistent memories and high capacity DRAM memory on DDR4 and DDR5 channels
- It extends the DDR protocol to enable transactional access
  - Host is decoupled from the media
  - Multiple media types supported
- Supports any latency (ns ~ us)
- JEDEC specification publication in 2018

Use Cases
- In Memory Database
- Traditional Database
- Enterprise Storage
- Virtualization
- High-Performance Computing
- NVRAM Replacement
- Financial & Real-time Transaction
- Object Store
- Unstructured Data
- Database & Big Data Analytics
- Virtualization
- Financial & Real-time Transaction
- Image-editing Systems
- Movie Rendering
- CAD Systems
- SAN appliances and Arrays
- Distributed Storage Systems
- Distributed Cache

Join SNIA SSSI today! and become part of the definition.
http://www.snia.org/PM