STORAGE INDUSTRY

Convergence of Storage and Memory Developing the Needed Ecosystem



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Memory is the New Storage Opportunities for Storage SW Innovators

> SNIA. | SOLID STATE SSSI | STORAGE

Persistent Memory is Coming







Working Memory and Hot Storage Tier Merge

Evolving the Software Architecture





Starting with Today's Storage SW Stack

A Possible Next Evolutionary Step





SNIA NVM Programming Model + I/O-based Application APIs

The End State In-Place Working Storage





Eliminating the I/O Intercept Point

The Opportunity for Storage SW Innovators





Data Services for In-Place Working Storage

Kick-starting SW Innovation with the Open Source NVM Library





Write I/O Replaced with *Persist Points*





Join the Discussion



- Learn about the Persistent Memory programming model
 - http://www.snia.org/forums/sssi/nvmp
- Join the pmem NVM Libraries Open Source project
 - http://pmem.io
- Read the documents and code supporting ACPI 6.0 and Linux NFIT drivers
 - http://www.uefi.org/sites/default/files/resources/ACPI_6.0.pdf
 - https://git.kernel.org/cgit/linux/kernel/git/djbw/nvdimm.git/log/?h=nd
 - https://github.com/pmem/ndctl
 - <u>http://pmem.io/documents/</u>
 - <u>https://github.com/01org/prd</u>
- Intel Architecture Instruction Set Extensions Programming Reference
 - https://software.intel.com/en-us/intel-isa-extensions
- ♦ Intel 3D XPointTM Memory
 - http://www.intel.com/content/www/us/en/architecture-and-technology/nonvolatile-memory.html