Storage Networking Industry Association

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Executive Director

185 industry leading organizations

2,000 active contributing members

50,000 IT end users & storage pros worldwide

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Learn more: www.snia.org
The Importance of Standards and Industry Collaboration
What We Do

- **Standards Development and Adoption**
  - Spec development; submissions for International Standard ratification (ISO/IEC)
  - Open source software to accelerate adoption

- **Interoperability Assurance**
  - Plugfests & conformance testing

- **Technology Acceleration and Promotion**
  - Special Interest Groups to promote technologies
  - Vendor collaboration to accelerate adoption

- **Global Vendor-Neutral Education**
  - Peer-reviewed webcasts and tutorials
  - Conferences and presentations
  - White papers, articles, blogs, etc.
Areas of Focus

**PHYSICAL STORAGE**
- Connectors, Form Factors & Transceivers
- Solid State Storage
- Hyperscaler Storage
- Object Drives
- Computational Storage

**DATA MANAGEMENT**
- Protection
- Integrity
- Retention

**DATA SECURITY**
- Storage Security
- Privacy and Data Protection Regulations

**CLOUD STORAGE TECHNOLOGIES**
- Data Orchestration
- Data into and out of the Cloud

**PERSISTENT MEMORY**
- NVDIMMs
- Non-Volatile Memory Programming Model

**POWER EFFICIENCY MEASUREMENT**
- SNIA Emerald™ Power Efficiency

**NEXT GENERATION DATA CENTER**
- Software Defined Storage
- Composable Infrastructure
- Next Generation Storage Management API

**NETWORKED STORAGE**
- Data Access Protocols
- Networking Technologies for Storage

**STORAGE MANAGEMENT**
- Device and System Management
Why Standards Are Important
Standards are the industry tools…
You don’t want this…
Or this…
...but likely this starts to be OK
Meet the Storage Management Initiative

The Storage Management Initiative (SMI) unifies the storage industry to develop and standardize interoperable storage management technologies.

SMI programs and efforts include:
- Storage Management Lab Program
- Conformance Testing Program
- SNIA Technical Work Group Support
- Education

Ask about joining the SMI today!
SNIA Swordfish™ adds enterprise class storage management capabilities to the DMTF Redfish® standard.

Together, Redfish and Swordfish support a unified management approach for servers, fabrics and storage in today’s large scale data centers.
Persistent Memory
Fundamental Changes Require An Ecosystem

- Windows Server 2016
- Windows 10 Pro for Workstations
- Linux Kernel 4.2 and later
- VMware, Oracle, SAP HANA early enablement programs

- Multiple vendors shipping NVDIMMs
- SNIA NVDIMM Special Interest Group (formed Jan’14)
- Successful demonstrations of interoperability among vendors

- JEDEC JESD245B.01: Byte Addressable Energy Backed Interface (released Jul’17)
- JEDEC JESD248A: NVDIMM-N Design Standard (released Mar’18)
- SNIA NVM Programming Model (v1.2 released Jun’17)
- unfit ACPI NVDIMM Firmware Interface Table (v6.2 released May’17)

- All major OEMs shipping platforms with NVDIMM support
- Requires hardware and BIOS mods
Hierarchy of things

New Media

NVDIMM Types Are Complementary, Not Competing
Computational Storage
Speaking the Same Language

» Computational Storage ([https://snia.org/dictionary](https://snia.org/dictionary)):
  » Architectures that provide Computational Storage Services coupled to storage offloading host processing and/or reducing data movement.

» Two Foundational Constructs
  » Computational Storage Devices (CSx)
  » Computational Storage Services (CSS)

» Scope and path to universal usage model
  » Today: custom solutions…Tomorrow: Standard
Starting the Standards Work

- Multiple F2F sessions have been focused on what we can accomplish and what we will leave for later
- Management
- Security
- Operation

Computational Storage TWG Dictionary Submissions

- Computational Storage: Architectures that provide Computational Storage Services coupled to storage, offloading host processing or returing data movement.
- These architectures enable improvements in application performance and/or infrastructure efficiency through the integration of compute resources outside of the traditional compute and network architecture.
- The goal is to enable applications to run more efficiently on existing computing, memory, storage, and IO.
- Computational Storage Service (CSS): A service or information service that performs computation or data storage where the service and the data are associated with a storage device.
- Fixed Computational Storage Service (FSS): A fixed Computational Storage Service or a Programmable Computational Storage Service.
- Programmable Computational Storage Service (PCSS): A CSS that is able to be programmed to provide one or more CSSs. (CSS examples the service may have an operating system image, container, key, access policy, etc.)
- Computational Storage Device (CSD): A Computational Storage Drive, Computational Storage Processor, or Computational Storage Array.
- Computational Storage Drive (CSD): A storage element that provides Computational Storage services and persistent data storage.
- Computational Storage Processor (CSP): A component that provides Computational Storage service for an associated storage system without providing persistent data storage.
- Computational Storage Array (CSA): A collection of Computational Storage Devices, control software, and optional storage devices.
Get Involved with SNIA and Participate in the Industry

Key Resources
Newsletters, Education, Social Media

- SNIA Education - [https://www.snia.org/educational-library](https://www.snia.org/educational-library) (searchable)
- SNIA Dictionary - [https://www.snia.org/dictionary](https://www.snia.org/dictionary) searchable dictionary
- SNIA on YouTube - [https://www.youtube.com/user/SNIAVideo](https://www.youtube.com/user/SNIAVideo)
  Hundreds of Technology-focused presentations are available for free
- SNIA Webcasts on BrightTalk – view upcoming and on-demand webcasts at [https://www.brighttalk.com/channel/663/snia-webcasts](https://www.brighttalk.com/channel/663/snia-webcasts)
- SNIA Podcasts - [https://www.snia.org/events/storage-developer/podcasts](https://www.snia.org/events/storage-developer/podcasts)
- SNIA Mailing Lists - [https://www.snia.org/subscribe](https://www.snia.org/subscribe)
- SNIA on Storage Blog - [http://sniablog.org](http://sniablog.org)
- SNIA Standards: [https://www.snia.org/standards](https://www.snia.org/standards)
Newsletters, Education, Social Media

- SNIA on Twitter - https://twitter.com/SNIA
- SNIA on LinkedIn - https://www.linkedin.com/company/snia/
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Join SNIA and the Global Storage Community!

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snia.org/join