



# Storage Networking Industry Association

## Technical Activities Update

February 2023

# SNIA Technical News: New SNIA Standard

- Smart Data Accelerator Interface (“SDXI”) Specification v1.0
  - Smart Data Accelerator Interface (SDXI) is a SNIA standard for a memory-to-memory Data Mover and acceleration interface.

# SNIA Technical News: New SNIA Standard

## ■ TLS Specification for Storage Systems v2.1

- This document specifies the requirements and guidance for use of the Transport Layer Security (TLS) protocol in conjunction with data storage technologies. The requirements are intended to facilitate secure interoperability of storage clients and servers as well as non-storage technologies that may have similar interoperability needs. This document was developed with the expectation that future versions of SMI-S and CDMI could leverage these requirements to ensure consistency between these standards as well as to more rapidly adjust the security functionality in these standards.

# SNIA Technical News: New Technical White Paper

- Storage Device-Level Power Efficiency Measurement for Cloud, Datacenter & Enterprise Storage
  - This technical white paper describes storage device-level (individual storage device) power efficiency test methodology, the device test harness, the capture and use of IO workloads, calculating power efficiency metrics, and reporting device test results. The test methods are applicable to HDD and solid state storage devices (SDD) that have industry standard interconnects. This white paper lays a foundation for a forthcoming 2023 technical specification. This specification will be complementary to the system-level ISO/IEC 24091:2019 IT Specification for Data Center Storage (ISO 24091) Standard based on the SNIA Emerald™ Power Efficiency Measurement Specification V3.0/V4.0.

# SNIA Technical News: New Technical White Paper

## ■ Multi-cloud White Paper

- As storing data in the cloud has become ubiquitous and mature, many organizations have adopted a multi-cloud strategy. Eliminating dependence on a single cloud platform is quite a compelling case with benefits of increased reliability, availability, performance, and the avoidance of vendor lock-in and/or specific vendor vulnerabilities, to name a few.
- SNIA Cloud Data Management Interface (CDMI™) v2.0 is an ISO/IEC standard, ISO/IEC 17826. CDMI enables cloud solution vendors to meet the growing need of interoperability for data stored in the cloud by providing a storage abstraction layer that insulates the application from the underlying cloud provider's interfaces which allows an application to be easily used with multiple clouds.

# SNIA Technical News: New Public Review Drafts

- **Swordfish NVMe SMART Metrics for Storage Controllers**
  - The Swordfish NVMe SMART Metrics for Storage Controllers Working Draft contains a proposal for exposing the comprehensive set of SMART Metrics for NVMe Controllers using the Redfish/Swordfish Telemetry Metrics capability.
- **Zoned Storage Models v0.9 rev 0**
  - This SNIA document defines recommended behavior for hardware and software that supports Computational Storage.

# SNIA Public Review Drafts

- Swordfish NVMe SMART Metrics for Storage Controllers
- Zoned Storage Models v0.9 rev 0
- Computational Storage API v0.8 rev 0
- DRAFT CDMI Extensions and Profiles
  - Capabilities Selection Extension v2.0
  - CORS Extension v2.0
  - Data Affinity Extension v2.0
  - Extended Child Listing v2.0
  - Jobs v2.0
  - Partial Upload Extension v2.0

**Check them out! - Provide Feedback!**  
***Participate in their development!***

<https://www.snia.org/publicreview>

# Storage Developer Podcast: Latest Episode



This week's highlighted Podcast:

**#180: SNIA SDXI Internals** by William Moyes, AMD Fellow,  
Advanced Micro Devices

Software memory copies have been the gold standard for applications performing memory data movement or operations in system memory. With new accelerators and memory types enriching the system architecture, accelerator-assisted memory data movement and transformation needs much-needed standardization. SNIA's SDXI (Smart Data Accelerator Interface) TWG is at the forefront of standardizing this and has been working towards a v1.0 since its formation in June 2020. In this talk, SNIA SDXI TWG members will summarize the SNIA SDXI specification's development journey, its various use cases, and features leading to SNIA SDXI v1.0. Further, this talk will shed some light on future directions for the specification.

Learning Objectives: 1) Learn from the experts designing a standard for memory to memory data movement and acceleration; 2) SDXI specification v1.0 internals; 3) SDXI Usecases; 4) Applicability to Accelerators, Persistent Memory, Computational Storage, CXL, and other industry trends.



# Storage Developer Podcast: Upcoming Episodes

- The latest Efforts in the SNIA Computational Storage Technical Work Group
- Computational Storage: How Do NVMe CS and SNIA CS Work Together?
- DNA Data Storage Alliance - an Overview
- The DNA Data Storage Rosetta Stone Initiative
- SMB3 Landscape and Directions
- The looming need for molecular storage
- More Than Just a Bucket of Bits: Cloud Object Storage turns Sweet Sixteen
- Open Industry Storage Management with SNIA Swordfish™
- Behind the scenes for Azure Block Storage unique capabilities

# 2023 SNIA Preview Videos On-Demand

Last month SNIA hosted its 2023 SNIA Preview. It was an inside look at the innovative technologies and exciting activities SNIA has planned for this year *where SNIA leaders highlighted the significant accomplishments and future plans of its Technical Work Groups, Forums and Initiatives, Committees, and Technology Affiliates.*

*Videos of all the presentations are now available on-demand.*

# Upcoming SNIA LIVE Webcast

## ■ Persistent Memory Trends

■ **Wednesday, March 1, 2023; 10:00 am PT / 1:00 pm ET**

- Where do companies see the industry going with regard to persistent memory? With the improvement of SSD and DRAM I/O over CXL, the overlap of CXL and NVMe, high density persistent memory, and memory-semantic SSDs, there is a lot to talk about! Our moderator and panel of experts from Intel, Marvell, Microchip, and SMART Modular will widen the lens on persistent memory, take a system level approach, and see how the persistent memory landscape is being redefined.

# Upcoming SNIA LIVE Webcast

## ■ Training Deep Learning Models in the Cloud

■ **Wednesday, March 15, 2023; 10:00 am PT / 1:00 pm ET**

- Industry analysts predict Deep Learning (DL) will account for the majority of cloud workloads. Additionally, training of deep learning models will represent the majority of server applications in the next few years. Among DL workloads, foundation models -- a new class of AI models that are trained on broad data (typically via self-supervision) using billions of parameters – are expected to consume the majority of the infrastructure.
- This webcast will discuss how Deep Learning models are gaining prominence in various industries, and provide examples of the benefits of AI adoption. We'll enumerate considerations for selection of Deep Learning infrastructure in on-premises and cloud data centers. Our presentation will include an assessment of various solution approaches and identify challenges faced by enterprises in their adoption of AI and Deep Learning technologies.

# Upcoming SNIA LIVE Webcast

## ■ **Cyberstorage and XDR: Threat Detection through a Storage Lens**

■ **Wednesday, April 4, 2023; 10:00 am PT / 1:00 pm ET**

- Cybercriminals have always been about data – stealing data, compromising data, holding data hostage. Businesses continue to respond with malware detection on laptops and networks to protect data and prevent breaches, so why should storage be left out? Storage houses what the bad actors are targeting - your data. Is there anything we can do from within the storage layer to further enhance defense in depth?
- Enter "Cyberstorage", a term coined by Gartner, which is defined as doing threat detection and response in storage software or hardware. A parallel, related trend in the security industry is eXtended Detection and Response (XDR) which shifts some of the threat detection from centralized security monitoring tools (SIEMs) down into each domain (e.g., endpoint, network) for faster detection and automated response. Factor in the growing impact of ransomware and all these forces are driving the need to find creative, new ways to detect malware, including from inside the storage domain.

# Recent SNIA Webcasts available on Demand

- An Introduction to the OPI (Open Programmable Infrastructure) Project
- Journey to the Center of Massive Data: Digital Twins
- What's in a Name? Memory Semantics and Data Movement with CXL™ and SDXI
- Kubernetes Trials & Tribulations: Cloud, Data Center, Edge
- EDSFF Taking Center Stage in the Data Center You've Been Framed! xPU, GPU & Computational Storage Programming Frameworks
- 15 Minutes in the Cloud: Kubernetes is Evolving, Are You?
- xPU Deployment and Solutions Deep Dive
- Kubernetes is Everywhere – What About Cloud Native Storage?
- Storage Life on the Edge: Accelerated Performance Strategies
- xPU Accelerator Offload Functions



SNIA STORAGE BASICS



# Geek Out on Data Privacy & Protection

## Understanding Ransomware

Data protection and data privacy have become Board level discussions as failing to secure sensitive information puts businesses at significant risk of being exploited by cybercriminals, and can lead to organizations facing enormous legal penalties. Geek Out here to learn best practices in data protection & data privacy, the storage security landscape, ransomware mitigation, and more.

Checkout past Geek Outs:

- Great Storage Debates
- NVMe over Fabrics
- Computational Storage
- SNIA Swordfish
- Storage Basics

# SDC 2022 Conference Sessions Available On-Demand



SNIA Storage Developer Conference (SDC '22) was an enormous success! This year's agenda was jam-packed with 100+ technical sessions. Our stellar experts provided first-hand insights on what's happening in technologies related to Cloud Storage, Computational Storage, CXL™, DPUs, Data Security, DNA Data Storage, NVMe®, SMB, Storage Resource Management and more. Now all these video presentations are available at <https://www.storagedeveloper.org>



# Important SNIA Links

- <http://www.snia.org/standards/>
- <http://www.snia.org/software/>
- <http://www.snia.org/publicreview/>
  - Draft SNIA Technical Work available for public review
- <http://www.snia.org/feedback/>
  - Public feedback submission form for draft SNIA Technical Work
- <http://www.snia.org/dictionary/>
  - Current SNIA Dictionary
- <http://www.snia.org/library>
  - Educational Library
- <http://www.snia.org/webcasts>
  - SNIA Webcasts
- <http://www.storagedeveloper.org>
  - SNIA Storage Developer Conference (SDC)
- <http://www.snia.org/podcasts/>
  - SDC Podcasts