SNIA®

Storage Networking Industry Association

Technical Activities Update

October 2022

SNIA Technical News: New SNIA Standard

- Computational Storage Architecture and Programming Model v1.0
  - This SNIA document defines recommended behavior for hardware and software that supports Computational Storage.

https://www.snia.org/csarch

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SNIA Technical News: New Public Review Draft

- Smart Data Accelerator Interface (“SDXI”) Specification v0.9.7
  - Smart Data Accelerator Interface (SDXI) is a proposed standard for a memory-to-memory Data Mover and acceleration interface.

https://www.snia.org/publicreview

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SNIA Technical News: New Public Review Draft

- 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.

https://www.snia.org/publicreview

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SNIA Technical News: New Public Review Draft

- Computational Storage API v0.8 rev 0
  - This SNIA Draft Standard defines the interface between an application and a Computational Storage device (CSx). For each CSx there will need to be a library that performs the mapping from the APIs in this specification and the CSx on the specific interface for that CSx.

https://www.snia.org/publicreview

SNIA Public Review Drafts

- Smart Data Accelerator Interface (“SDXI”) Specification v0.9.7
- TLS Specification for Storage Systems v2.1
- Computational Storage API v0.8 rev 0
- Blockchain Interoperability Specification v0.5 rev 0.1
- 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

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Storage Developer Podcast: Latest Episode

This week's highlighted Podcast:

#175: SNIA SDXI Roundtable by Shyamkumar Iyer, Distinguished Engineer, Dell.

Smart Data Accelerator Interface (SDXI) is a proposed standard for a memory to memory data movement and acceleration interface. Software memcpy is the current data movement standard for software implementation due to stable CPU ISA. However, this takes away from application performance and incurs software overhead to provide context isolation. Offload DMA engines and their interface are vendor-specific and not standardized for user-level software. SNIA's SDXI TWG is tasked with developing and standardizing an extensible, forward-compatible memory to memory data mover and acceleration interface that is independent of actual data mover implementations and underlying I/O interconnect technology. In this panel discussion, experts and representatives of SDXI TWG member companies will talk about their motivations in joining this industry-standard effort.

Learning Objectives: 1) Learn from the experts desigining a standard for memory to memory data movement and acceleration; 2) Learn about the use cases of interest to SDXI TWG member companies; 3) Learn about the ecosystem being developed by SDXI member companies for data movers and accelerators.

https://www.snia.org/podcasts

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Storage Developer Podcast: Upcoming Episodes

- CSI Driver Design: Bringing a Parallel File System to Containerized Workloads
- Computational Storage Architecture Simplification and Evolution
- Emerging Computer Architectures Powered by Emerging Memories

https://www.snia.org/podcast

Next SNIA LIVE Webcast

- **15 Minutes in the Cloud: Kubernetes is Evolving, Are You?**
  - **Tuesday, October 11, 2022. 10:00 am PT / 1:00 pm ET**
    - **Wide-spread adoption of Kubernetes over the last several years has been remarkable and Kubernetes is now recognized as the most popular orchestration tool for containerized workloads. As applications and workflows in Kubernetes continue to evolve, so must the platform and storage.**
    - **So, where are we today, and where are we going? Find out in this "15 Minutes in the Cloud" session, where we'll discuss:**
      - **Persistence - From ephemeral to persistent - what has putting persistence in the mix done to applications?**
      - **Business Continuity - What's needed for business continuity, backup & recovery and DR?**
      - **Deployment - Kubernetes delivered as a service, in the cloud, on-premises, data center and edge. How is that different in each case?**
      - **Performance/Scalability – How do you scale and still ensure performance?**
      - **Trends – What are the business drivers and what does the future hold?**

https://www.snia.org/webcasts

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Upcoming SNIA LIVE Webcast

- **You've Been Framed! xPU, GPU & Computational Storage Programming Frameworks**
  - **Wednesday, October 26, 2022. 10:00 am PT / 1:00 pm ET**
    - **With the emergence of GPUs, xPUs (DPU, IPU, FAC, NAPU, etc) and computational storage devices for host offload and accelerated processing, a panoramic wild west of frameworks are emerging, consolidating and vying for the preferred programming software stack that best integrates the application layer with these underlying processing units.**
    - **This webcast will provide an overview of programming frameworks that support (1) GPUs (CUDA, SYCL, OpenCL, oneAPI), (2) xPUs (DASH, DOCA, OPI, IPDK), and (3) Computational Storage (SNIA computational storage API, NVMe TP4091 and FPGA programming shells).**
    - **We will discuss strengths and challenges and market adoption across these programming frameworks as we untangle the alphabet soup of new frameworks that include:**
      - **AI/ML: OpenCL, CUDA, SYCL, oneAPI**
      - **xPU: DOCA, OPI, DASH, IPDK**
      - **Core data path frameworks: SPDK, DPDK**
      - **Computational Storage: SNIA Standard 0.8 (in public review), TP4091**

https://www.snia.org/webcasts

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Recent SNIA Webcasts available on Demand

- 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
- Is the Data Really Gone? A Primer on the Sanitization of Storage Devices
- SmartNICs to xPUs – Why is the Use of Accelerators Accelerating?
- Storage Life on the Edge: Security Challenges
- Data Protection considerations for Cloud-native containerized applications

https://www.snia.org/webcasts

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GEEK OUT ON STORAGE

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

http://www.snia.org/geekout

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SDC 2022 Conference Sessions Available On-Demand

SNIA Storage Developer Conference (SDC) 2022 was an enormous success! If you were not able to travel to SDC this year, here's a special offer: Register for just $95 and get access to the presentations and videos for 100+ technical sessions presented during the 4-day conference.

The stellar list of experts at this year's conference 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. *Register today for instant access to this content.*

Note: On-site SDC'22 registrants still have full access to this content with their SDC'22 credentials.

https://storagedeveloper.org

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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

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