Storage Networking Industry Association (SNIA)

Technical Activities Update

December 2019

SNIA Emerald™ Power Efficiency Measurement Specification v3.0.3

- ISO publication complete, available now as ISO/IEC 24091:2019

Swordfish Scalable Storage Management API v1.1.0a

- The Swordfish Scalable Storage Management API ("Swordfish") uses RESTful interface semantics and a standardized data model to provide a scalable, customer-centric interface for managing storage and related data services.

Storage Management Initiative Specification (SMI-S) v1.8.0 rev 4

- SMI-S defines a method for the interoperable management of a heterogeneous Storage Area Network (SAN) and describes the information available to a WBEM Client from an SMI-S compliant CIM Server and an object-oriented, XML-based, messaging-based interface designed to support the specific requirements of managing devices in and through SANs.

Native NVMe-oF Drive™ Specification Version 1.0k

- This document describes the features and functions of a storage device class known as Native NVMe-oF Drives. It includes a taxonomy covering the scope of involved device capabilities.

http://www.snia.org/publicreview

Swordfish Storage Profiles Bundle v1

- This bundle contains all the Swordfish profiles. The Swordfish Core Profiles define the set of features and the corresponding detailed profiles required to implement Swordfish. Swordfish uses advertised Features and corresponding Profile definitions to clearly define what functionality an implementation supports, and to assure interoperability. For example, the IOPerformance Feature and corresponding profile together specify that when an implementation advertises SNIA.Swordfish.Block.IOPerformance, any instances of Volumes and StoragePools will implement a fully populate IOStatistics object.

- The EnergyStar for Storage Profile formalizes the requirements from the ENERGY STAR Data Center Storage Version 1.1 Updated Program Requirements – April 1, 2019 on storage products. The profile indicates what properties Swordfish implementations need to support in order to properly instrument EnergyStar reporting capability. This functionality is intended to support EnergyStar data gathering requirements as part of the EnergyStar certification process.

http://www.snia.org/publicreview

SNIA Public Review Drafts

http://www.snia.org/publicreview

- Native NVMe-oF DriveTM Specification Version 1.0k
- Swordfish Storage Profiles Bundle v1
- Persistent Memory (PM) PTS v1.0 rev 0.02 Preamble
- DRAFT CDMI Extensions and Profiles

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

Storage Developer Podcast:
Latest Episode

This week's highlighted Podcast:

#115: Accelerating RocksDB with Eideticom's NoLoad® NVMe-based Computational Storage Processor by Stephen Bates, CTO, Eideticom

RocksDB, a high performance key-value database developed by Facebook, has proven effective in using the high data speeds made possible by Solid State Drives (SSDs). By leveraging the NVMe standard, Eideticom's NoLoad® presents FPGA computational storage processors as NVMe namespaces to the operating system and enables efficient data transfer between the NoLoad® Computational Storage Processors (CSPs), host memory and other NVMe/PCIe devices in the system. Presenting Computational Storage Processors as NVMe namespaces has the significant benefit of minimal software effort to integrate computational resources.

In this presentation we use Eideticom's NoLoad® to speed up RocksDB. Compared to software compaction running on a Dell R7425 PowerEdge server, our NoLoad®, running on Xilinx's Avleo U280, resulted in 6x improvement in database transactions and 2.5x reduction is CPU usage while reducing worst case latency by 2.7x

http://www.snia.org/podcasts

Storage Developer Podcast: Upcoming Episodes

- Persistent Memory Programming Made Easy with pmemkv
- Developments in LTO Tape Hardware and Software
- Linux NVMe and block layer status update
- Squeezing Compression into SPDK
- What Happens when Compute meets Storage?
- Storage Applications in Blockchain
- 10 Million I/Ops From a Single Thread
- The NVRAM Standard, Bringing Coherence to the Crazy World of Persistent Memory
- Standardization for a Key-Value Interface underway at SNIA and NVM Express

http://www.snia.org/podcasts

Took place on **September 23-26, 2019** in Santa Clara, CA, SNIA's Storage Developer Conference (SDC) was the destination for technical discussions and education on the latest storage technologies and standards

Check out the ***100+ presentations*** that were presented by developers at companies like eBay, on topics including Computational Storage, Persistent Memory, NVM Express, and more. Presentations available for download.
Videos now live!

www.storagedeveloper.org

Co-located with the

SMB3 Interoperability Lab, February 2-6, 2020

Plan to attend*!*

SNIA Persistent Memory Summit

PERSISTENT MEMORY
SNIA PM SUMMIT
JANUARY 23, 2020 | SANTA CLARA, CA

The keynote speaker for the 2020 Persistent Memory Summit and Symposium will be Andy Bechtolsheim, Chief Development Officer and Co-Founder of Arista Networks. Andy was a Founder and Chief System Architect at Sun Microsystems, where most recently he was responsible for industry standard server architecture.

Summit includes sessions on emerging medias, interconnects, applications, why companies are excited about working with PM, and how PM is changing the infrastructure for cloud, orchestration, micro services, and serverless environments.

https://www.snia.org/pm-summit

Upcoming SNIA Meetings and Events

◆ SNIA Annual Members Symposium

  ◆ January 20-24, 2020; Santa Clara, CA

◆ SNIA Persistent Memory Summit

  ◆ January 23, 2020; Santa Clara, CA

◆ SNIA SDC EMEA

  ◆ February 4-5, 2020; Tel Aviv, Israel

◆ SNIA SDC EMEA SMB3 Interoperability Lab

  ◆ February 2-6, 2020; Tel Aviv, Israel

Important SNIA Links

- http://www.snia.org/standards/

- http://www.snia.org/software/

- http://www.snia.org/publicreview/

- http://www.snia.org/feedback/
  - Public feedback submission form for draft SNIA Technical Work

- http://www.snia.org/dictionary/
  - Current SNIA Dictionary

- http://www.sniacloud.org
  - Latest news on SNIA Cloud activities

- http://www.storagedeveloper.org
  - SNIA Storage Developer Conference (SDC)

- http://www.snia.org/podcasts/
  - SDC Podcasts