

2020 ANNUAL MEMBERS MEETING

October 22, 2020
8AM Pacific / 11AM Eastern – Teleconference
(See Next Page for Dial-in and Zoom Instructions)

Conference Call Dial-in and Zoom Info

https://www.snia.org/annualmeeting

Link will start Zoom meeting – afterwards, redirects to copy of the presentation materials

Teleconference/Zoom coordinates:

Zoom Meeting ID: 988 4674 5668 Passcode: 102220

https://zoom.us/j/98846745668?pwd=SW5BUzAxdUJZVDFhTmhPS2VNd0FKZz09

One tap mobile

- +16699009128,,98846745668#,,,,,0#,,102220# US (San Jose)
- +13462487799,,98846745668#,,,,,0#,,102220# US (Houston)
- +16465588656,,98846745668#,,,,,0#,,102220# US (New York)

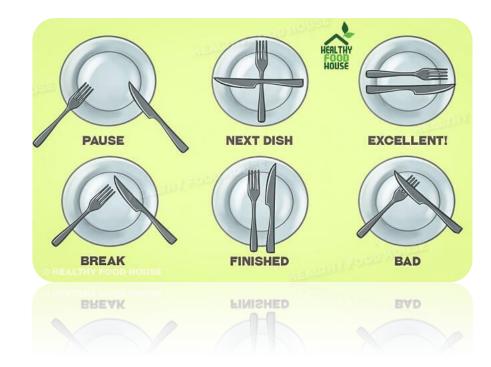


Find your local number: https://zoom.us/u/aekOw6XZjj



Zoom Format – Attendee Guidance

- Enter Name (Company) on your Zoom Login/Attendee Info
- Everyone will be on Mute, except the Moderator/Speaker
- You can <u>unmute yourself if you would like to say</u> <u>something</u>
 - Voting Member Company Primary/Alternate representatives, please identify yourself when joining
- Remain on Mute when not speaking
- Use the <u>Chat Icon</u> to text message the group or a particular person
- Use Raised Hand function under "participants" icon





2020 Annual Members Meeting Agenda

- Greetings and Roll Call Michael Oros, Executive Director
- FY2019: Annual Report published
 - Motion to Approve 2019 Meeting Minutes Jim Pappas, SNIA Secretary
 - Fiscal Report (2019 Annual Report) Sue Amarin, SNIA Treasurer
- FY2020: SNIA update and achievements to date Michael Oros, Executive Director
- FY2021: What's ahead for SNIA J Metz, Ph.D, SNIA Chairman
 - Special Guest Speakers:
 EPA: Ryan Fogle; DMTF: Jeff Hilland; NVM Express: Amber Huffman
- Announcement of the 2020 Board and Technical Council Election Results – Michael Oros, Executive Director
- Questions and Answers Members and SNIA Board Members
- Adjourn





Roll Call and Approval of 2019 Minutes

- Roll Call of Voting Member Companies
- Primary Representatives of Voting Member Companies
 - Please identify yourselves during Roll Call
- If you work for a Voting Member Company and do not hear your primary representative, please identify yourself during roll call
 - Proxy representation is Accepted at Annual Members Meeting
- Vote to approve 2019 Meeting Minutes will take place upon quorum being met





Roll Call: Roster of Voting Companies and Primary/Voting Representatives

- Rob Peglar, Advanced Computation and Storage
- Leah Schoeb, AMD
- Neil Werdmuller, ARM
- Steve Wilson, Broadcom
- Dan Hanson, Cisco
- Cuong Le, Data Dynamics
- Bill Elliott, Dell Inc.
- Paul Von-Stamwitz, Fujitsu America Inc.
- Curtis Ballard, HPE
- Tim Lofink, Hitachi Data Systems
- Yolanda Fang, Huawei Technologies
- Michelle Tidwell, IBM
- Jim Pappas, Intel Corporation

- Mark Carlson, Kioxia Corporation
- Ted Vojnovich, Lenovo
- Wang Zhenhao, MacroSAN
- John Maroney, Micron
- Lee Prewitt, Microsoft Corporation
- Chris Lueth, NetApp
- Scott Shadley, NGD Systems
- Martin Petersen, Oracle Corporation
- Rob (Barkz) Barker, Pure Storage
- J Metz, Rockport Networks
- Bill Martin, Samsung
- Xuemei Qiu, Sichuan Huafeng Enterprise Group Co. Ltd.
- Artem Ikoev, YADRO

Quorum is 14 of 26



SNIA FY2019 Annual Report



Motion: Approve 2019 Meeting Minutes

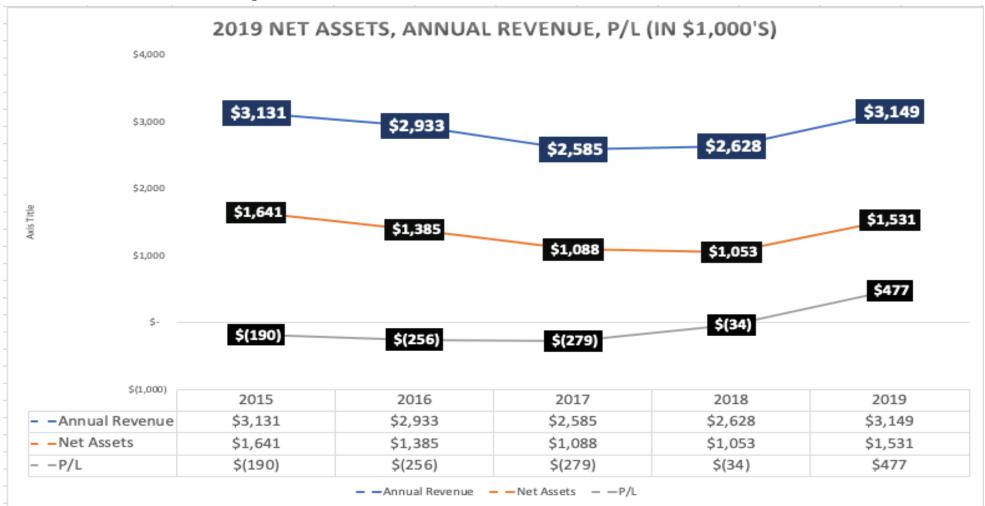
FY2019 annual report posted on SNIA website:

(https://www.snia.org/about/corporate_info/documents)

https://www.snia.org/sites/default/files/corp-docs/AnnualReport19.pdf



SNIA Fiscal Report: 2019



Note: P/L numbers include allowances for bad debt, depreciation and vacation accrual. For details, refer to our 2019 annual report at: http://snia.org/about/corporate_info/documents





FY2020



SNIA Vision and Mission

Vision Statement

 Be the globally recognized and trusted authority for storage leadership, standards, and technology expertise.

Be "all things storage."

Mission Statement

 Lead the storage industry worldwide in developing and promoting vendorneutral architectures, standards and educational services that facilitate the efficient management, movement and security of information.

Lead the storage ecosystem



SNIA Focus for 2020



- Technical Focus
 - Updated Specifications
 - Updated Standards
 - Marketing initiatives
- Stable membership focus on retention and member satisfaction with SNIA programs
- Alliances and Partnerships
 - Engage our existing Strategic Alliances and grow them; establish new ones
 - Enhance partnerships with other SDOs and open source community
 - Execute on collaborative work registers and foster new areas of collaboration
 - Strong focus on next-generation technologies and infrastructures
- Execute online education objectives
 - Strong webcast agenda; more structured engagement with press, analyst and blogger community
 - Develop modern education library and organize our content/Dictionary in easily searchable manner
 - Monitor and evaluate SNIA Storage Certification
- Balanced budget



2020 New Technical Work Groups

Blockchain Storage TWG

- The Blockchain Storage TWG is created for the purpose of establishing architectures and software for blockchain storage. This TWG creates software and standards that enable specific features for these devices that meet the requirements of stakeholders with these Blockchain Storage needs.
- https://www.snia.org/blockchain

Smart Data Accelerator Interface (SDXI) TWG

- The SDXI TWG develops and standardizes an extensible, forward-compatible memory to memory data movement and accelerator interface that is independent of actual data movement and data acceleration implementations and underlying I/O interconnect technology.
- https://www.snia.org/sdxi



2020 Achievements – Technical Publications



SNIA Technical Positions

- Cloud Data Management Interface (CDMI) v2.0.0
- Key Value Storage API Specification v1.1
- Native NVMe-oF Drive Specification v1.0.1
- SNIA Emerald[™] Power Efficiency Measurement Specification v4
- Storage Management Initiative Specification (SMI-S) v1.8r5
- TLS Specification for Storage Systems v1.1
- Swordfish Scalable Storage Management API Specification v1.2.1
 - Membership Vote active, to be published November 2020



2020 Achievements – SNIA ISO Standards

Linear Tape File System (LTFS) Format Specification v2.5

- Approved as ISO/IEC 20919:2020
- ISO publication in process

Storage Management Initiative Specification (SMI-S) v1.8r5

- ISO ballot currently active (ISO/IEC DIS 24775)
- Ballot closes November 17, 2020



2020 Achievements – Public Review Drafts

- SNIA Swordfish v1.2.1a
- Computational Storage Architecture and Programming Model v0.5 rev 1
- SNIA Swordfish Storage Profiles Bundle v1.2
- NVMe to RF/SF Model Mapping
- Persistent Memory Performance Test Specification White Paper v0.7.3
- CDMI Extensions and Profiles



2020 Achievements – SFF TA TWG

- SFF-8071 v1.1
 - SFP+ 1X 0.8mm Card Edge Connector
- SFF-9639 v2.1
 - Multifunction 6X Unshielded Connector Pinouts
- SFF-TA-1002 v1.3
 - Protocol Agnostic Multi-Lane High Speed Connector
- SFF-TA-1005 v1.3
 - Universal Backplane Management
- SFF-TA-1006 v1.4
 - Enterprise and Datacenter 1U Short SSD Form Factor (E1.S)
- SFF-TA-1017 v1.0a
 - Vertical SFF-TA-1002 Connector SI Test Board Specification
- SFF-TA-1018 v1.0
 - Right Angle SFF-TA-1002 Connector SI Test Board

Specification

- SFF-TA-1019 v1.0
 - Straddle Mount SFF-TA-1002 Connector SI Test Board Specification
- SFF-TA-1020 v1.0
 - Cables and Connector Variants Based on SFF-TA-1002
- SFF-TA-1021 v1.0
 - PCIe Enclosure Compatible Form Factor (PECFF)
 Specification
- SFF-TA-1022 v1.0
 - PCIe Enclosure Compatible Form Factor (PECFF) Thermal Reporting Specification
- REF-TA-1012 v1.0
 - Pin Assignment Reference for SFF-TA-1002 Connectors



2020 Achievements – Membership

Membership:

- 85 core members (+10 new members YTD)
- 72 SFF members
- 27 Educational Institution members
- 25 non-core Regional Affiliate Members





- \$1,000/year non-voting membership
- In business for less than 4 years and annual revenue <\$10M/year</p>
- Can join SNIA for up to 4 consecutive years in the membership class
- Contact membership services to join or with questions: membership@snia.org
 https://www.snia.org/member.com/join/join_now





2020 Achievements – Marketing/PR

Promotion of Technical Work

- SNIA Matters monthly newsletter reaches more than 41,000 subscribers globally
- Marketing Campaigns:
 - Launched 2 Geek Out Campaigns Jan 2020
 - New, fun and contemporary look and feel for SNIA; new life for existing content
 - Integrated program with email blasts, social media and website
 - SNIA Weekend Watch series April 2020
 - 2020 presented opportunity to capture and educate a Stay in Place audience
 - New playlists to make existing content more digestible generated over 2,400 views







PR Engagement/Collaboration – Regarded as a Trusted Authority

- Media continue to reach out to SNIA as a vendor-neutral technical authority for comments, quotes, opinions and graphics to be included in their articles: EE Times, SearchStorage, TechTarget, SemiEngineering, AFCOM Journal
- 10 briefings and 27 SNIA mentions (pick-ups)
- Communication across SNIA Groups and Strategic Alliances



2020 Achievements – Education

SNIA. EDUCATIONAL LIBRARY

SNIA Education Delivered

30 educational webcasts (average of 400+ views on BrightTalk)

BrightTALK™

- SNIAVideo / YouTube channel
 - Expanded reach and audience beyond SNIA's traditional educational channels
 - Added BrightTalk webcasts to the SNIAVideo channel
 - 43% of webcast views are now coming from SNIAVideo channel
 - 3,800 subscribers and an average of over 11,000 views per month



Website streamline and new content

- Created SNIA What Is... pages generating 60,000 unique page views https://www.snia.org/education/what-is
- Enhanced online searchable Educational Library and Dictionary https://www.snia.org/education/online-dictionary (>2,000 terms)







2020 Achievements – Events and Regions

Raising SNIA industry leadership profile

Events

- Technical Symposium (Jan)
- Persistent Memory Summit (Jan)
- PM Hackathons throughout the year
- Plugfest: SMB3 (Sept. virtual)
- Two Storage Developer Conferences
 - SDC EMEA (Feb: Tel Aviv, >100 attendees)
 - SDC Global (Sept: Virtual, 43 countries, nearly 1,000 participants)

Regions

- ♦ SNIA EMEA Regional Affiliate
 - Successful SDC EMEA event in Tel Aviv; SMB3 Plugfest and education; added Swordfish workshop
- SNIA Japan Regional Affiliate
 - Ongoing technical storage seminars, end user surveys and industry engagements
- SNIA India Regional Affiliate
 - SDC India event in Bangalore moved to virtual conference in December; sustained Meet-up program
- SNIA South Asia Regional Community
 - SMinimal activity
- SNIA Malaysia Regional Community
 - Community led by Chin-Fah Heoh, with blogs, meet-ups, and educational briefings
- SNIA Brazil Regional Community
 - Translated book and 2nd edition dictionary released in digital format (Portuguese); Career Talk MeetUp
- SNIA China Regional Community
 - Organizing to increase local participation and activity





FY2021



Goals From the Chair

- Simplicity & Accountability
 - Vendor Neutrality
 - Technology Neutrality
- Create an agile "Global Ecosystem"
 Organization
 - Balance process/agility
 - Improve efficiency and responsiveness
 - Create parity within and without SNIA



2021 - SNIA Focus Areas

Internal Refocusing:

- Theme: Simplicity and Accountability
- Better communication among groups
- Consistency is key; need to rely on strong patterns
- Proactively reinforce technology synergies between groups

Process Improvements:

- Mechanisms for simplifying uniform processes
- Establish consistent and simplified documentation
- Introduce gating processes that ensure dependencies are met
- Improve liaison/communication
- Establish LifeCycle Management milestones for all groups



Perform as an orchestra; not just 100 soloists!



LifeCycle Management



- Establish expectations at groups' lifecycle status
 - Creation
 - Well-defined scope
 - Measurable impact and influence
 - Expectations of growth and achievement
- Parity for all groups at appropriate point in timeline
- Planned membership revival/expansion
- Preparation for group dissolution



2021 - SNIA Strategic Focus Areas

• Maintain successes (don't fix what ain't broke!)

Internal Refocusing

- Creation of Communications Steering Committee (CSC)
- Begin programs of efficiency across groups within SNIA
- Apply uniform metrics of evaluation to all activities

External Refocusing

- Contribute expertise to government organizations' RFIs and regulations/guidance
- Strengthen alliance relationships



Join the Technical Work Groups – Participate in their development!



Communication Steering Committee (CSC)

- Expanded Coverage of Communication, not just 'Marketing'
- Responsible for all internal and external communication
 - 1. Communications inclusive of Marketing why the CSC
 - 2. Prime example Member Email Header "SNIA: "
 - a. Longer term planning efforts
 - 1. Better intra member/TWG communication focus

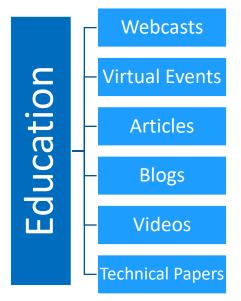
Chair: Scott Shadley
Feel free to email! comsteer-chair@snia.org

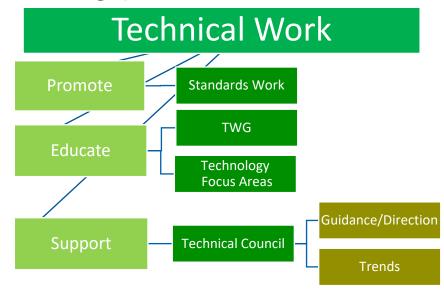


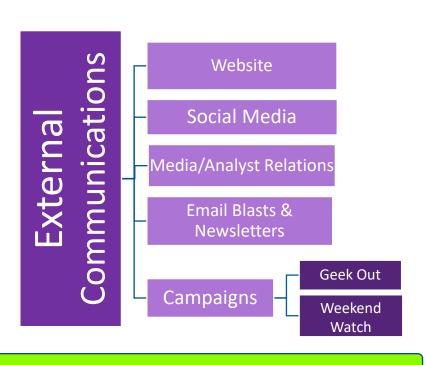
2021-2022 CSC Aligned Objectives

Raise the visibility of SNIA as a trusted authority on all things storage

Framework for marketing plan







Internal Communications

- Cross-collaboration between all groups
- Intersection of technology
- Integration of cohesive messaging between all groups

Analytics & Metrics

Marketing Dashboard & Reports



Strategic Alliances



























Ryan Fogle **ENERGY STAR Datacenter Product Development and Marketing Manager**





ENERGY STAR and SNIA

- EPA and the SNIA Green TWG have enjoyed an excellent working relationship over the past 9 + years, of which the Agency is very appreciative.
- The ENERGY STAR data center storage specification is arguably the most complex product category that the program has worked on and this would not be possible without the working relationship between the two organizations.
- Both organizations have benefited greatly from this collaboration in terms of learning about the products and how to promote efficiency within this category, where the emphasis has been on other largely performance-only based metrics in the past.
- The Version 1.0 data center storage program has 228 products listed from 13 partners, which we see as a great success given the complexity of the product category.





Successes of the Data Center Storage Program

- Version 1.0 was a result of industry interest in covering this category and the development, together, of a test method to test the efficiency.
 - Program was a first of its kind and an ambitious effort.
- The result was a great deal of data on how these products consume power and ideas on how to improve the efficiency of the products. This laid the groundwork for Version 2.0, where we were able to:
 - Better differentiate the top performing products in the market in terms of their work/watt.
 - Simply the testing structure to make it easier to test products.
- ENERGY STAR is looking forward to working on ways to continue driving efficiency in this market and increase the number of ENERGY STAR certified products that are sold to customers.



Strategic Alliance – DMTF





Jeff Hilland, DMTF President

DMTF & SNIA – A Strong Alliance

- SNIA & DMTF Alliance partnership is a cornerstone to infrastructure management standardization
 - Alliance Partnership extends back nearly two decades
 - Continue to align Redfish & Swordfish
 - Ensures optimization of client management use cases
 - Delivered on 3 way partnership with NVMe in Redfish 2020.3
 & Swordfish 1.2
 - Covers NVMe & NVMeoF with Redfish & Swordfish
 - Continue to work closely on an ongoing basis







Strategic Alliance – NVM Express





Amber Huffman, NVM Express President



NVMe® and SNIA® Better Together





AMBER HUFFMAN
PRESIDENT
NVM Express, Inc.

| | | | _ |
|-----|---------|-----------------------|---|
| | ADOLLE | COLLABORATIONS | |
| IVI | ARGUEE | LANI ABURAIKINS | |
| | MINGOLL | OCEADORALION | |

Marketing

DMTF, Redfish, and NVMe® Management Interface

Key Value

Computational Storage

| NVM Express Growth | | | | | |
|---------------------------|--------|--------|---------|--|--|
| Units (Ku) | 2016 | 2018 | 2020* | | |
| Enterprise | 364 | 1,069 | 4,067 | | |
| Cloud | 2,051 | 10,369 | 18,982 | | |
| Client | 33,128 | 82,587 | 202,348 | | |

^{*} Projections provided by Forward Insights Q2'20



New Alliances









2021 - Technical Work Focus Areas

- Computational Storage Architecture and Programming Model v1.0
- LTFS Tape Image Format Specification v1.0
- LTFS Compliance Test Specification v1.0
- Native NVMe-oF Drive Specification Version 1.1
- NVM Programming Model v1.3
- Persistent Memory (PM) Storage Performance Test Specification v1.0
- SNIA Emerald™ Power Efficiency Measurement Specification 4.1
- Swordfish Scalable Storage Management API v1.2.2
- Transport Layer Security (TLS) v1.2

Join the Technical Work Groups - Participate in their development!



SFF TA TWG Standards in Development

- SFF-8024 v4.7.1
 - SFF Module Management Reference Code Tables
- SFF-8472 v12.3.1
 - Management Interface for SFP+
- SFF-8613 v3.5.1
 - Mini Multilane 4/8X Unshielded Connector (HDun)
- SFF-8614 v3.4.1
 - Mini Multilane 4/8X Shielded Cage/Connector (HDsh)
- SFF-TA-1008 v1.0.6
 - Enterprise and Datacenter
 SSD Form Factor (E3)

- SFF-TA-1009 v2.0.2
 - Enterprise and Datacenter SSD Pin and Signal Specification
- SFF-TA-1016 v0.0.3
 - Internal Un-shielded High Speed Connector System
- SFF-TA-1023 v0.0.1
 - Enterprise Device Form Factor Thermal Requirements
- SFF-TA-1024 v0.0.1
 - SFF-TA-1016 Test Specification





2020-2021 Elected Board of Directors

- Cody Hosterman Pure Storage *
- PK Gupta Dell **
- Chris Lionetti HPE *
- Chris Lueth NetApp ***
- J Michel Metz Rockport Networks *
- Jim Pappas Intel Corporation **
- Scott Shadley NGD Systems **
- Shalom Shefa Cisco *
- Paul von Stamwitz Fujitsu *
- Tatsuya Tanaka Kioxia **
- Michelle Tidwell IBM **
- Board Advisors:
 - Michael Oros SNIA Executive Director
 - 2020-2021 Technical Council Chair(s) (TBD)



^{*} Directors elected to a new 2-year term. ** Directors serving year-2 of elected or appointed term. *** Serving elected seat term through October 2021. Please note: SNIA Officer elections take place October 22nd. Two (2) Appointed Seats and Five (5) Advisor Seats on Board of Directors are Available.



2020-2021 Elected Technical Council

- Curtis Ballard HPE *
- Alan Bumgarner Intel Corporation **
- Mark Carlson Kioxia *
- Glen Jaquette IBM **
- Fred Knight NetApp *
- Bill Martin Samsung **
- Leah Schoeb AMD *
- Tom Talpey **
- TC Advisors:
 - Arnold Jones, SNIA, TC Managing Director





^{*} Members elected to a new 2-Year Term as Voting Members. ** Serving Year-2 of Term in elected seat. Three (3) Appointed Voting Seats and 14 Advisor Seats are Available.

SNIA Staff and Contractors

(as of October 1, 2020)

- Executive Director: Michael Oros
- Operations and Business Services
 - Michael Meleedy, Business Operations Director
 - Kelli Martin, Business Services Coordinator
 - Andee Wilcott, Web Manager (Contractor)
- Marketing
 - Kristin Hauser, Diane Marsili and Denise Ridolfo (Contractors)
- Membership Services and BizDev
 - Erin Weiner, Membership Services Manager

- SNIA Emerald
 - Dave Thiel, Program Director (Contractor)
- Education and Global Programs
 - Paul Talbut, Global Education and Regional Program Director (Contractor)
- Technology and Technology Center
 - Arnold Jones, Technical Council Managing Director
 - Contractor support model for TC and Lab
- SMI Management and Program Support (Includes F&I Programs)
 - Tom Mancuso, Senior Technical Operations Manager
 - Linda Capcara, SMI Marketing (Contractor)

Note: SNIA has Contractor Agreements with additional industry and subject matter experts in various functions and Forums and Initiatives (F&Is)



2021 – SNIA Events

- SNIA Annual Members Symposium
 - January (TBD), Virtual
- Persistent Memory Summit
 - 1H'21 (TBD), Virtual
- Persistent Memory Hackathons | https://www.snia.org/pmhackathon
- SDC EMEA | 1H'21 (TBD) | https://www.snia.org/sdcemea
- SNIA Members Symposium | April (TBD), Virtual
- SDC India | 1H'21 (TBD) | https://www.snia.org/sdcindia
- SNIA Members Symposium/APTS | July 26-30, 2021, Portland, OR
- SDC North America | Sept. 20-23, 2021 Santa Clara, CA | https://www.snia.org/sdc
- SNIA Members Symposium | October (TBD)





Acknowledgement

- We could not do the work of SNIA without our dedicated volunteers.
 You are consistently the greatest asset for the organization and industry!
- Feedback on how we are doing and new initiatives to start/consider is always encouraged
- The support of all SNIA member companies, SNIA staff and contractors is deeply appreciated





Questions

Your Feedback is encouraged and always appreciated.





Thank you

We look forward to your active participation in SNIA throughout the upcoming year.





Backup



Newsletters, Education, Social Media

- <u>SNIA Matters</u> Newsletter subscribe: https://www.snia.org/news_events/news/snia_matters
- SNIA Education https://www.snia.org/educational-library (searchable)
- SNIA Dictionary https://www.snia.org/dictionary searchable dictionary
- SNIA on YouTube 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
- SNIA Podcasts https://www.snia.org/events/storage-developer/podcasts
- SNIA Mailing Lists https://www.snia.org/subscribe
- SNIA on Storage Blog http://sniablog.org
- SNIA Standards: https://www.snia.org/standards
- SNIA on Twitter https://twitter.com/SNIA
- SNIA on LinkedIn https://www.linkedin.com/company/snia/
- SNIA on Facebook https://www.facebook.com/SNIA.ORG



SNIA Gold Deck

SNIA Introductory and Overview Presentation

https://www.snia.org/about



SNIA Educational Resources



SNIA's library of recent presentations, videos, tutorials, white papers, and more are now accessible through our <u>Educational</u> <u>Library</u>.



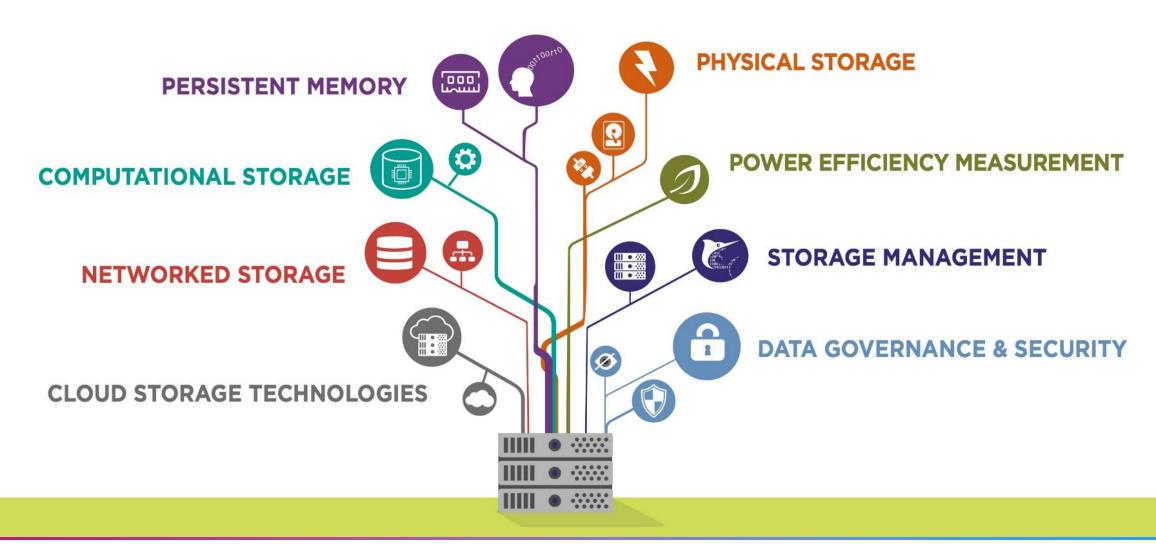
The <u>SNIAVideo YouTube channel</u> features hundreds of videos covering a vast array of storage topics. From Persistent Memory to Cloud, Data Management to Power Efficiency-plus coverage from our global events--our channel offers news, education and insights for all levels of storage professionals.



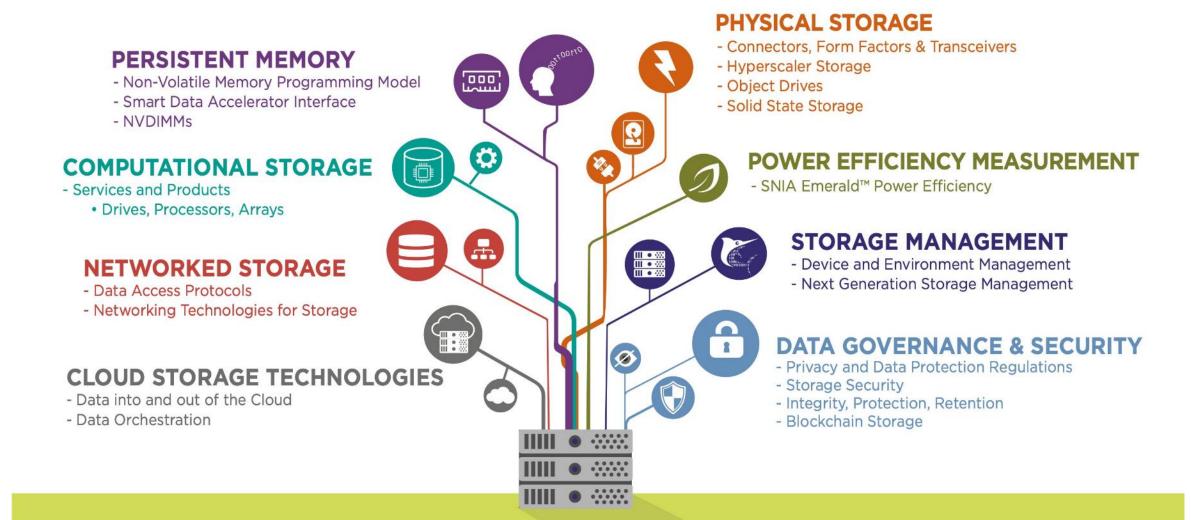
The <u>SNIA Dictionary</u>, which contains terms and definitions related to storage and other information technologies, is the storage networking industry's most comprehensive effort to arrive at a common body of terminology for the technologies it represents.



SNIA's Current Technology Global Focus Areas



SNIA's Technical Work Driven by Each Focus Area





Work Accomplished Through SNIA

Standards Development and Adoption

- Accepted and Ratified spec development process
- Submissions for International Standard ratification (ISO/IEC)
- Develop open source software to accelerate adoption

Technology Acceleration and Promotion

- Special Interest Groups to promote emerging technologies
- Multi-vendor collaboration to accelerate adoption
- Cross-Industry alliances and engagements

Global Vendor-Neutral Education

- Host worldwide storage developer conferences
- Organize storage technology summits
- Deliver vendor-neutral webcasts and technical podcasts
- Publish technology white papers, articles and blogs
- Vendor neutral plugfests, hack-a-thons, conformance and interoperability testing
- SNIA GitHub open source repositories





























The Real Value to SNIA Membership



INFLUENCE

- Influence storage technologies important to the marketplace
- ✓ Amplify your vendor storage expertise and reputation
- ✓ Participate in the development of international standards



COLLABORATE

- ✓ Participate in multi-vendor interoperability activities
- ✓ Gain insight into disruptive industry trends
- ✓ Form strategic alliance partnerships
- Develop relationships throughout the industry



LEAD THE INDUSTRY

- Educate on all things storage
- ✓ Drive standards development and adoption
- **✓** Align strategic business objectives with worldwide standards

