



2017 ANNUAL MEMBERS MEETING

October 12, 2017

8:00 A.M. PT – Teleconference

(See Next Page for Dial-in and WebEx Instructions)

Conference Call Dial-in and WebEx Info



Teleconference/WebEx coordinates:

- Go to: snia2.webex.com
- Click on the meeting name: **SNIA Annual Members Meeting**
- Type in your name, email address, and **meeting password: 2017**
- Click "Join Now"
- **If you are calling in using VoIP** then click on "Call Using Computer" or "Use the Internet"
- **If you are calling in using a phone** then click on "I will Call In". This will display the phone number, access code and Attendee ID number you need to use to join the meeting. Once you have this information:
 - ◆ Dial the Toll Number: 415-655-0002
 - ◆ Enter the meeting access code 668 734 018#
- When asked for Attendee ID number just press the <Attendee ID> followed by '#'.

2017 Annual Members Meeting Agenda



- Greetings and Roll Call (for Quorum) – Michael Oros, Executive Director
- FY2016 Annual Report published
 - ◆ Motion to Approve 2016 Meeting Minutes – Thomas Rivera, SNIA Secretary
 - ◆ Fiscal Report (2016 Annual Report) - Al Zmyslowski, SNIA Treasurer
- FY2017
 - ◆ Announcement of 2017 Board and Technical Council Election Results
The 2017-2018 Board and TC Members - Michael Oros, Executive Director
 - ◆ SNIA update and achievements to date – David Dale, SNIA Chairman
- FY2018 – what’s ahead for SNIA: vision and call for participation
- Questions and Answers - Members and SNIA Board Members
- Adjourn

Roll Call and Approval of 2016 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
- Motion for a Vote to approve 2016 Meeting Minutes will take place upon quorum being met.

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



- ◆ Craig Carlson, Cavium
- ◆ J Metz, Cisco
- ◆ Tim Hudson, Cryptsoft
- ◆ George Ericson, Dell Computer Corp.
- ◆ Camberley Bates, Evaluator Group
- ◆ Al Zmyslowski, Fujitsu America Inc.
- ◆ Doug Voigt, HPE
- ◆ Eric Hibbard, Hitachi Data Systems
- ◆ Yolanda Fang, Huawei Technologies
- ◆ Michelle Tidwell, IBM
- ◆ Jim Pappas, Intel Corporation
- ◆ Ted Vojnovich, Lenovo
- ◆ Wang Zhenhao, MacroSAN
- ◆ Paul Suhler, Micron
- ◆ Tom Talpey, Microsoft Corporation
- ◆ David Dale, NetApp
- ◆ Jim Williams, Oracle Corporation
- ◆ Lou Lydiksen, Pure Storage
- ◆ Bill Martin, Samsung SSI
- ◆ Rob Peglar, Symbolic IO
- ◆ Charles Goldberg, Thales e-Security
- ◆ Mark Carlson, Toshiba
- ◆ Peter Murray, Virtual Instruments
- ◆ Artem Ikoev, YADRO

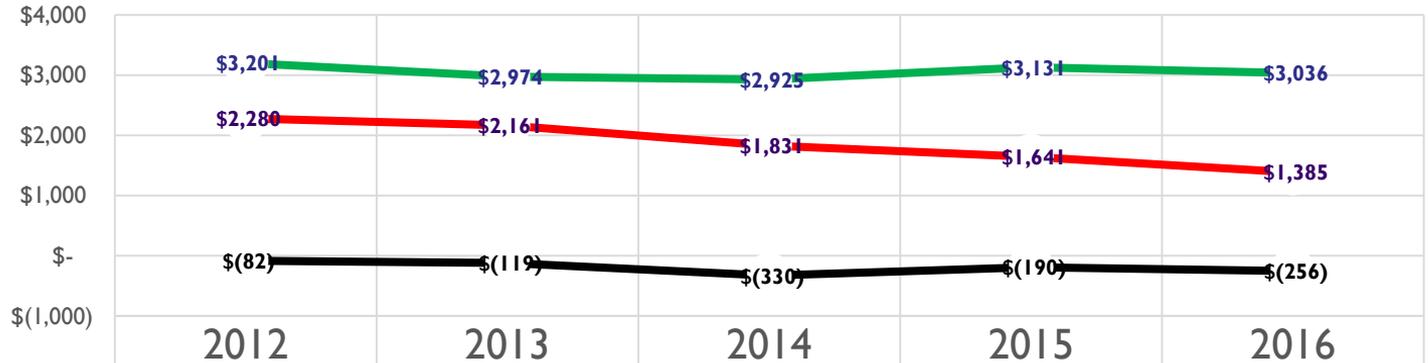
- Full FY2016 annual report posted on SNIA website:

https://www.snia.org/sites/default/files/corp-docs/AnnualReport16_final.pdf

SNIA Fiscal Report: FY2016



NET ASSETS, ANNUAL REVENUE, P/L (IN \$1,000'S)



- Annual Revenue	\$3,201	\$2,974	\$2,925	\$3,131	\$3,036
- Net Assets	\$2,280	\$2,161	\$1,831	\$1,641	\$1,385
- P/L	\$(82)	\$(119)	\$(330)	\$(190)	\$(256)

— Annual Revenue — Net Assets — P/L

Note: P/L numbers include allowances for bad debt, depreciation and vacation accrual. For details, refer to our 2016 annual report at:

http://snia.org/about/corporate_info/documents

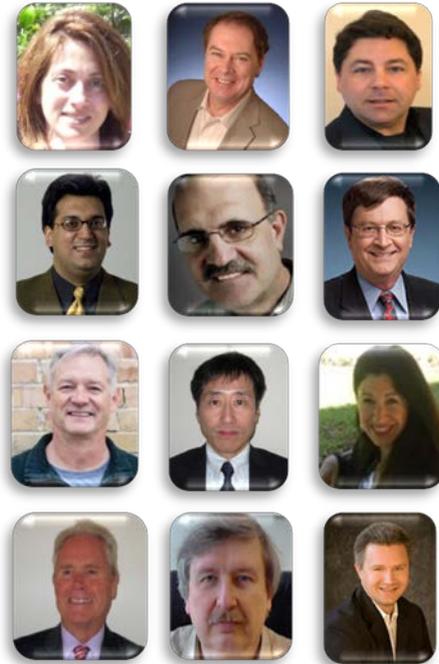


FY2017

Announcing 2017-2018 Board of Directors



- ◆ Sue Amarin – Micron Corporation *
- ◆ David Dale – NetApp, Inc *
- ◆ J Michel Metz – Cisco Systems **
- ◆ Rupin Mohan – HPE **
- ◆ Jim Pappas – Intel Corporation *
- ◆ Rob Peglar – Symbolic IO **
- ◆ Hubbert Smith – Samsung ***
- ◆ Tatsuya Tanaka – Toshiba Corporation *
- ◆ Michelle Tidwell – IBM **
- ◆ Jim Williams – Oracle Corporation *
- ◆ Al Zmyslowski – Fujitsu **
- ◆ Board Advisors:
 - ◆ Michael Oros – SNIA Executive Director
 - ◆ 2017-2018 Technical Council Chair(s) (TBD)



* Directors elected to a new 2-year term. ** Directors serving year-2 of elected term. *** Serving Appointed Seat term.

Please note: SNIA Officer elections take place October 12th. Two (2) Appointed Seats and (5) Advisor Seats on Board of Directors are Available.

Announcing 2017-2018 Technical Council



- ◆ Alan Bumgarner – Intel Corporation *
- ◆ Mark Carlson – Toshiba **
- ◆ Fred Knight – NetApp **
- ◆ Bill Martin – Samsung SSI *
- ◆ David Pease – IBM *
- ◆ Tom Talpey – Microsoft *
- ◆ Doug Voigt – HPE **
- ◆ 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.
- Two (2) Appointed Seats are Available. 14 Advisor Seats are Available.

SNIA Staff and Contractors

(as of October 1, 2017)



- ◆ **Executive Director:** Michael Oros
- ◆ **Operations and Business Services**
 - ◆ Michael Meleedy, Business Operations Director
 - ◆ Kelli Martin, Business Services Coordinator
- ◆ **Marketing**
 - ◆ Serena White, Online Programs & Web Manager
 - ◆ Kristin Hauser, Diane Marsili and Denise Ridolfo (Contractors)
- ◆ **Membership Services and Sales**
 - ◆ Erin Weiner, Membership Services Manager
 - ◆ Marty Foltyn, Business Development Manager (Contractor)
- ◆ **SNIA Emerald and KMIP Programs**
 - ◆ Dave Thiel, Program Director (Contractor)
- ◆ **Education and Global Programs**
 - ◆ Paul Talbut, Global Education and Regional Affiliate Program Director (Contractor)
- ◆ **Technology and Technology Center**
 - ◆ Arnold Jones, Technical Council Managing Director
- ◆ **SMI Management and Program Support (Includes F&I Programs)**
 - ◆ Tom Mancuso, Senior Technical Operations Manager
 - ◆ James Rigger, Conformance Test Programs 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)

Vision Statement

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

Mission Statement

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

Top 3 Reasons to Join



INFLUENCE

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

COLLABORATE

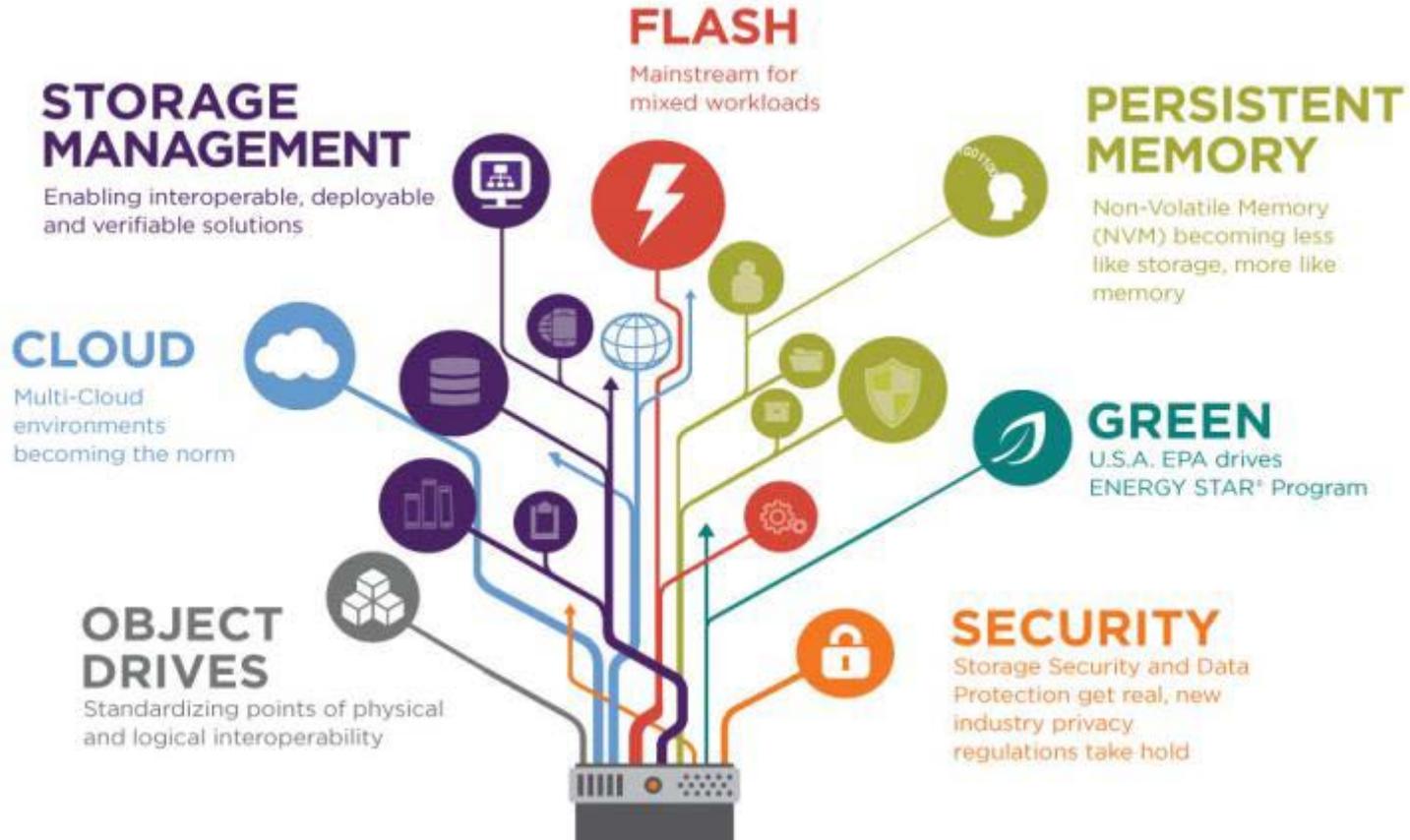
- ✓ Participate in multi-vendor interoperability activities
- ✓ Gain insight into disruptive industry trends
- ✓ Form strategic alliance partnerships
- ✓ Develop relationships throughout the industry



LEAD THE INDUSTRY

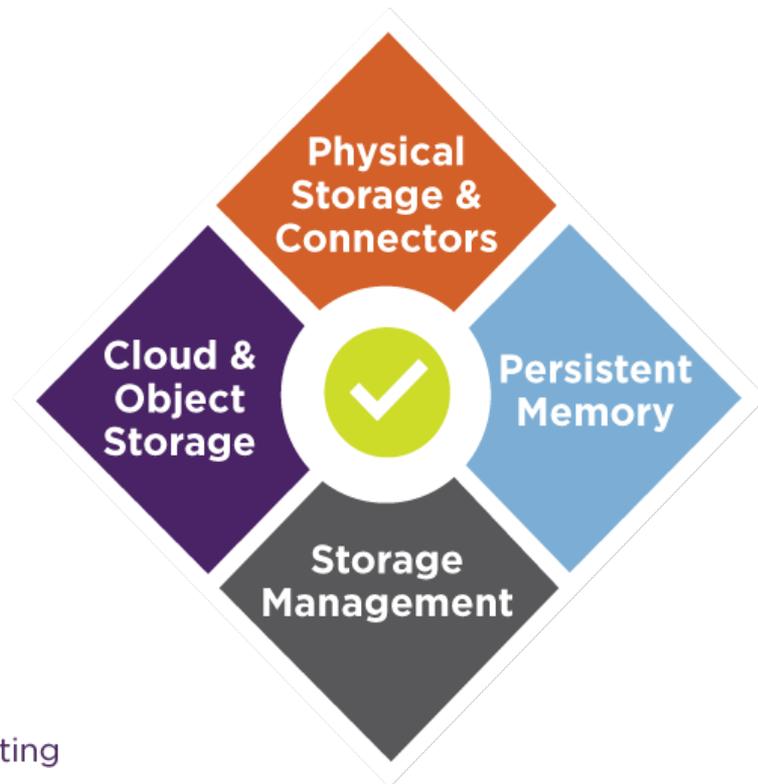
- ✓ Educate on all things storage
- ✓ Drive standards development and adoption
- ✓ Align strategic business objectives with worldwide standards





20 YEARS of Standards Development

- ✓ ISO & ANSI Standards
- ✓ Storage Standards
- ✓ Best Practices & Security
- ✓ Interoperability & Conformance Testing



SNIA Technical Work Groups Drive Important Storage Specifications



- ✓ Non-Volatile Memory Programming Model (NVM)
- ✓ Object Drive IP-Based Management Specification
- ✓ SNIA Emerald™ Power Efficiency Measurement Specification
- ✓ Storage Management Specification (SMI-S)
- ✓ SNIA Swordfish Specification
- ✓ Transport Layer Security (TLS) Specification for Storage Systems
- ✓ Solid State Storage Performance Test Specification (PTS)
- ✓ Linear Tape File System (LTFS) Format Specification
- ✓ LTFS Bulk Transfer Technical Position
- ✓ Self-contained Information Retention Format (SIRF)
- ✓ Device level connectors, interfaces, and form factors (SFF)

SNIA Focus for 2017

- **Streamline the organization and improve efficiency**
 - ◆ Improve member services, business development and operations functions
- **Broaden technical agenda**
 - ◆ Bring in new technical projects
 - ◆ Enable faster spec development, external review, and new implementation enablement tools
- **Strengthen partnerships with other SDOs and open source community**
 - ◆ Renew collaborative work registers with particular focus on emerging standards
 - ◆ Strong focus on next-generation technologies and infrastructures
- **Renewed focus on online education materials**
 - ◆ Strong webcast agenda
 - ◆ More structured engagement with analyst and blogger community
- **Balanced budget**

2017 Achievements – Technical Work



- SNIA Emerald™ Power Efficiency Measurement Specification v3
- NVM Programming Model v1.2
- IP-Based Drive Management Specification 1.0
- Self-contained Information Retention Format (SIRF) Specification 1.0
- Swordfish Scalable Storage Management API Specification 1.0
- [Linear Tape File System \(LTFS\) Format Specification Version 2.4.0 Rev 5](#) [out for vote]
- Whitepaper: [Persistent Memory Atomics and Transactions](#)
- SNIA Draft Technical Work available for Public Review
 - ◆ [Persistent Memory Hardware Threat Model v0 rev 3](#)
 - ◆ [RWSW IO Capture & Test Specification for Datacenter Storage Version 1.0.3](#)
 - ◆ [Linear Tape File System \(LTFS\) v2.4](#)
 - ◆ [SMI-S v1.8.0r1](#)
 - ◆ [Swordfish Scalable Storage Management API v1.0.4](#)
 - ◆ [Simple IP Based Drive Mockup-4](#)
 - ◆ [IP Based Drive Array Mockup-2](#)

2017 Achievements – Webcasts



Date	Title	Viewings
1-Nov-17	Understanding Real World Storage Workloads	Upcoming
31-Oct-17	Transactional Models & Their Storage Requirements	Upcoming
17-Oct-17	SNIA's New 100-Year Archive Survey: Ten Years Later	Upcoming
28-Sep-17	Everything You Wanted to Know About Storage - Cyan: Storage Management	125
26-Sep-17	Cloud Object Storage and the Use of Gateways	233
19-Sep-17	Understanding Real World Storage Workloads	318
1-Aug-17	Everything You Wanted To Know About Storage-Turquoise: Where Does My Data Go	367
27-Jul-17	Containers and Persistent Memory	513
20-Jul-17	The State of Cloud Security	543
6-Jul-17	Everything You Wanted To Know About Storage: Programming & Networking Had a Baby	525
22-Jun-17	Casting the Net to Manage your Storage: Redfish and Swordfish Concepts	214
22-Jun-17	Everything You Wanted To Know About Storage But Were Too Proud To Ask/Chartreuse	704
9-May-17	Everything You Wanted To Know about Storage: Getting from Here to There	259
3-May-17	How Many IOPS? Users Share Their 2017 Storage Performance Needs	686
20-Apr-17	IP-Based Object Drives Now Have a Management Standard	436
19-Apr-17	Architectural Principles for Networked Solid State Storage Access - Part 2	801
5-Apr-17	Rockin' and Rollin' with SMB3	492
15-Mar-17	What Does Hyperconverged Mean to Storage	941
2-Mar-17	Everything You Wanted To Know about Storage But Were Too Proud To Ask: iSCSI Pod	601
16-Feb-17	Long-term Data Retention: Challenges, Standards and Best Practices	414
14-Feb-17	Everything You Wanted To Know about Storage But Were Too Proud To Ask: Buffering	953
24-Jan-17	Introduction to Swordfish: Scalable Storage Management	410
10-Jan-17	NVDIMM - Applications are Here	709
7-Dec-16	Containers: Best Practices and Data Management Services	598
1-Dec-16	2017 Ethernet Roadmap for Networked Storage	966

11,808 Total unique views this year!!

2017 Achievements – Events



- **Persistent Memory Summit**
 - ◆ 300+ attendees/at-capacity ballroom and livestreamed event; demo/sponsor area for NVDIMM technologies

- **Storage Developer Conference**
 - ◆ 100+ sessions with >400 attendees; 3 successful plugfests collocated with event; SNIA 20th Anniversary celebration

- **Storage Field Days**
 - ◆ 3 events covering SNIA, SDC, Storage for Hyperscalers, SNIA Swordfish, Persistent Memory, SNIA Emerald

- **DMTF/SNIA Alliance Partners Technical Symposium**
 - ◆ SNIA Swordfish keynote, well attended Technology Work Group meetings and cross meetings with DMTF/RedFish

2017 Achievements – Collaboration



◆ DMTF

- ◆ SNIA Swordfish as extension to DMTF RedFish spec

◆ Open Fabrics Alliance

- ◆ Cross-marketing and education/meeting participation on Persistent Memory over Fabrics

◆ JEDEC

- ◆ Collaboration on NVDIMM technology; Flash Memory Summit conference Best of Show Award in the Most Innovative Flash Memory Technology category.

◆ T11 & FCIA

- ◆ Renewed collaboration agreements

2017 Achievements – Membership

- Membership level holding
- Voting membership increased to 24
- Startup Membership category launched (non-voting) - \$1,000/year
 - ◆ In business for less than 4 years
 - ◆ Can join SNIA for up to 4 consecutive years in the membership class
 - ◆ Annual revenue <\$10M/year
 - ◆ Contact membership services to join or with questions: membership@snia.org
https://www.snia.org/member_com/join/join_now

2017 Achievements – Regional Groups



➤ Regional Groups and highlights:

- ◆ SNIA Europe Regional Affiliate
 - › Celebrated their 18th Birthday in London on Sep. 28th; Approved the budget and plans for SDC Israel
- ◆ SNIA Japan Regional Forum (Affiliate)
 - › Ongoing technical storage seminars, 11th end user survey being developed
 - › Continuing collaboration to standardize 'Top Runner Program' - power-consumption measurement of storage subsystems in Japan
- ◆ SNIA India Regional Affiliate
 - › SDC and technical initiatives are the primary focus
 - › New members coming in and some joining the Board
- ◆ SNIA South Asia Regional Affiliate
 - › Reclassifying to Community
- ◆ SNIA Malaysia Regional Committee
 - › Blogs, meet-ups, and educational briefings
- ◆ SNIA China Regional Community
- ◆ SNIA Brazil Regional Community
 - › Educational focus, relationship with New Horizons to pilot online SNIA courses; Translating dictionary and ESF tutorials into Portuguese



FY2018

2018 - Technical Work Focus Areas

- Cloud Data Management Interface (CDMI) Specification v2.0
- CDMI Reference Implementation 1.0
- SNIA Emerald™ Power Efficiency Measurement Specification 3.1
- ISO version of SNIA Emerald™ Power Efficiency Measurement Specification 3.0 (or 3.1)
- TGG / SNIA Emerald Storage Point-of-View
- LTFS Format Specification v3.0
- Object Drive Key Value API Specification v1.0

2018 - Technical Work Focus Areas

- NVM Programming Model v1.3
- Persistent Memory Hardware Threat Model v1.0
- NVM PM Remote Access for High Availability
- SMI-S v1.8
- Swordfish v1.1
- Solid State Storage Performance Test Specification (PTS) 2.0.1
- Real World Storage Workload (RWSW) IO Capture & Test Specification for Datacenter Storage Version 1.0.3

2018 - Key Technology focus areas Forum, Initiatives & Committees



➤ CSI

- Hybrid Cloud
- Open Source Community
- Adoption of CDMI

➤ DPCO

- Promote data protection for Big Data (IoT, video surv.)
- Promote data protection as it relates to Solid State/Flash/Persistent memory and encryption
- Promote awareness of the EU-General Data Protection Regulations (GDPR) and it's business/tech impacts.

➤ ESF

- File, block & object protocols from Ethernet perspective
- Ethernet transports (NVMe-oF, PM over fabrics) – Consequences as bus architectures overlap w/ Ethernet transports and the impact on storage networking
- RDMA, iWARP, RoCE, iSER, TCP/IP - Comparison and application development considerations

➤ GSI

- Continue roll-out of SNIA Emerald V3.0 to industry
- Continue Collaboration with The Green Grid
- V4.0 SNIA Emerald Specification development

➤ SMI

- SNIA Swordfish™
- Storage Management Initiative-Specification (SMI-S)
- SMI-S Conformance Testing Program (CTP)
- SMI-Lab program
- PyWBEM

➤ SSSI

- Persistent Memory and persistent memory over fabrics
- Storage Workloads
- Performance

➤ SFF

- Connectors, Transceivers and Form Factors

2018 – SNIA Events

- ▶ January 22-26
Annual Members Symposium and Persistent Memory Summit
www.snia.org/events/symp and www.snia.org/pm-summit
- ▶ February
SDC EMEA (in Israel for 2018)
- ▶ May 24-25
SDC: India - www.snia.org/sdcindia
- ▶ September 24-27 - www.snia.org/sdc
SDC (Santa Clara)



- ◆ SNIA Europe is pleased to announce the launch of the Storage Developer Conference in Israel
 - ◆ Location: Tel Aviv
 - ◆ Date: One-day conference in late February 2018
 - ◆ Target audience: 150 Storage developers and storage technology start-ups
 - ◆ Agenda: Will comprise of submitted presentation papers and technical sessions from participating sponsors
 - ◆ For further information please contact Paul Talbut (paul.talbut@snia.org)

Acknowledgement

- We could not do the work of SNIA without our dedicated volunteers. You are consistently our greatest asset
- Feedback on how we are doing and new initiatives to start/consider is always welcomed
- 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.

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➤ Bullet

- ◆ Bullet
 - > Bullet