SNIA
Storage Management Initiative

Please Forward Within Your Organization

The SNIA Storage Management Initiative (SMI, www.snia.org/smi/) exists to unify the storage industry on an extensible, interoperable, open, and highly functional interface for storage management. The SMI brings together the resources of the SNIA to deliver this interface, called the *SMI Specification* or *SMI-S*.

Feedback or comments regarding this report may be directed to Tom Mancuso, Senior Program Manager, at tom.mancuso@snia.org.

SMI Program Report
February 2010

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SMI at the **SNIA** Tech Center Grand Re-opening

On February 10, 2010, the SNIA held its Grand Re-Opening and Ribbon-Cutting Ceremony for the [SNIA Technology Center](). There were speeches, technology demonstrations, guided tours, food, and drinks—and SMI. Several of the speeches mentioned SMI-S and the importance of standards. The event showcased the new SNIA facility located in 8,600 square feet of the LSI Corporation's ArrowsWest complex in Colorado Springs.

SMI had a strong presence at the opening. SNIA staff who support SMI were there, as were the SNIA Technical Council and members of the SMI Governing Board and Technical Working Group members.

Tom Mancuso, Senior Program Mgr., SMI, talks with Doug Voigt, SMI Governing Board Treasurer, after the ribbon cutting.

SMI Demonstration Stations

Tom Mancuso, SNIA, and Kurt Krems, Olocity, manned the SMI demo stations.

Opening day included 12 technology demonstrations. Two of those were about SMI:

- Interoperability Lab and Conformance Testing for the SMI-S Standard, hosted by Tom Mancuso. This demo included the Web Flash segments that highlight SMI, SMI-Lab, CTP, and SMI-S. A basket of "suckers" gave the SMI-S message to demo visitors (see below).

- Storage Resource Management Solution with SMI-S Standard led by Kurt Krems of Olocity, demo'd an SRM application based on SMI-S.

Mike Walker, SMI Governing Board, was in virtual attendance in an SMI video.

SMI-Lab and Conformance Testing

Tours showed off the 1,500 sq. ft. of Interoperability test labs, 1,500 sq. ft. of meeting space, and 11 technical workbenches. They will be available for Plugfests and CTP testing. The Tech Ctr. also houses SNIA staff offices.

The upcoming SMI-Lab Plugfest will be at the relocated Tech Center:

February 22–26, 2010: SMI-Lab 10 Plugfest #1

James Rigger, Conformance Testing Programs Manager, *shows Jerry Duggan, former SMI-Lab Chair,*

Some More Images

Alan Yoder, NetApp, and Don Deel, EMC, SMI Governing Board members, attended SNIA Board meetings between grand opening sessions.

Pike's Peak from the SNIA Technology Center

"Proprietary management is for suckers!"

Initiative Updates

SMI Technical Steering Group (TSG)

In October, the TSG produced the "Implementation" draft of SMI-S 1.5. This included all items to be in the 1.5 release. The plan is to make it available for review by SNIA membership in December.

In addition to completion of work items scoped for SMI-S 1.5, the release includes a number of items that resulted from "content reviews" of existing material in the standard. This is part of the "specification tightening" aspect of the "customer driven SMI-S" initiative.

Testing on SMI-S 1.4 is continuing, and a number of Errata have been written against the Final Draft of SMI-S 1.4. A SNIA Technical Position will be created from the Final Draft plus Errata in December.

Planning is proceeding for SMI-S 1.6, but this effort is just entering the "scoping phase." An initial draft of this release is planned for next year.

Conformance Testing Program (CTP)

The Conformance Testing Program (CTP) has been working on a number of items both new and old since the last update to this report.

December marked the initial release of the 1.4 SMI-Provider test. Several vendors have already passed for Array and one vendor for HBA. Results are posted on the SNIA web site. A number of vendors have been testing Array, Host Hardware RAID Controller, and Storage Virtualizer, so more vendors are expected to pass CTP over the next few months. The 1.4 test has a number of changes, the most dramatic of which is the separation of the test into three levels: PASSIVE, ACTIVE and EVENT DRIVEN.

- **PASSIVE** testing is a read-only test and offers an entry point for providers to prove their implementation of SMI to the most basic level.

- **ACTIVE** testing is a read-write test for the providers and adds provisioning testing onto the PASSIVE level.

- **EVENT DRIVEN** testing is the highest level of testing and the most complex. EVENT DRIVEN testing will exercise the use of Indications to a greater degree and add additional model validation after an ACTIVE event has been executed on the provider.

The 1.3 SMI-Provider test has been undergoing continuing maintenance. Upgrades to the test have been provided—or are planned—for Array, HBA, HDR, and Storage Media Library testing. The Conformance Committee is currently waiting to close a few more issues for 1.3 and expects to provide a bulk release for 1.3 sometime this winter.

Lastly, the 1.2 version of the test has been undergoing continuing maintenance to address areas such as Storage Media Library, Fabric, and Switch. The Conformance Committee expects to maintain this test for the foreseeable future due to its popularity.

Please contact James Rigger, Manager, Conformance Testing Programs at 719-884-8901 or james.rigger@snia.org if you have questions about the Conformance Testing Program or are interested in CTP testing of your company's products.

For additional information on CTP, see http://www.snia.org/ctp/.

SMI-Lab Program

The next two SMI-Lab Plugfests are scheduled for February 22 – 26 and May 24 – 27.

Topics planned for the February plugfest will include plugfest resources for Client Pull Operations, SLP and CIM error handling as well as an overview of what currently exists to deliver Event-driven tests for the Conformance Test Program.

SMI-Lab is the SMI's interoperability lab (SMI-Lab), which is focused on vendors wishing to accelerate and pre-test their SMI-S implementations. The Lab resides at the SNIA Technology Center in Colorado Springs, CO. The Technology Center enables SMI-Lab participants to remotely access other participating vendors' equipment to perform interoperability testing. Face-to-face plugfests are also held at the SNIA Technology Center and offer SMI-S vendors the ability to directly interact with each other in a vendor-neutral setting.

See http://www.snia.org/forums/smi/tech_programs/lab_program/ for more information about plugfests and SMI-Lab.

SMI Marketing

The SMI Marketing Committee met face-to-face at the recent SNIA Winter Symposium in San Jose, CA. Each year during this time the SMI reviews the previous year's goals and seeks to refine them or establish new ones. As a result, the Committee reached unanimous consensus on the direction of the following major themes over the next 6 to 12 months

Promotion - Focus on promoting the Conformance Testing Program rather than the SMI-S Specification. An emphasis will be placed on SMI Client activities and interaction.

Results - Greater emphasis on the most current sets of CTP results from SMI Provider vendors. A matrix highlighting vendors who have recently tested, coupled with what they plan to support, will be created.

Myth busting – Efforts to dispel the myth that developers and implementers must "consume the entire elephant" (i.e., Spec) to be successful will be undertaken this year.

The SMI Marketing Committee meets regularly on Thursdays at 9:00 AM Pacific Time. Meetings are open to staff from all SMI member companies. If you have comments or questions about SMI's marketing effort or would like more information, please contact Troy Biegger, Interim Marketing Chair at smimarketing-chair@snia.org or Tom Mancuso, Sr. Program Manager, SMI, at tom.mancuso@snia.org.

Key Milestones

SNIA Members may access detailed SMI-S production schedules for each version by visiting **SMI-S Central** at: http://www.snia.org/members/smis/.

SMI-S Spec		SMI-S 1.5 Final Draft Completed April 2010	>	SMI-S 1.6 Scoping Completed May 2010	>	SMI-S 1.6 Initial Draft Completed June 2010
SMI CTP		CTP for SMI-S 1.5 Provider Test "First Official Release" September 2010	>	CTP for SMI-S 1.5 Provider Test "Final Release" January 2011	>	CTP for SMI-S 1.6 Provider Test "First Official Release" TBD
SMI-Lab		Plugfest #1 Feb 22-26, 2010	>	Plugfest #2 May 24 – 28, 2010	>	Plugfest #3 August 16–20, 2010
SMI Marketing Events		Storage Networking World (SNW) Orlando, FL April 12-15, 2010	>	Storage Developer's Conference (SDC) Santa Clara, CA September 20-23, 2010	>	Storage Networking World (SNW) Dallas, FL October 11-14, 2010

SMI-S Track at the SNIA Winter Symposium 2010

During the recent SNIA Winter Symposium, Jan. 25-28 in San Jose, CA, the SMI-S Technical Steering Group (TSG) held Face-to-Face meetings each day, led by Steve Quinn and Mike Walker.

The SMI-S authors and editor presented, and there were many lively discussions. The SMI Governing Board and Marketing Committee also held meetings.

An SMI-S Track Face-to-Face meeting is also planned for the March15-18 Technical Symposium in San Antonio, TX.

SMI-S Track Face-to-Face meeting

We Love our Volunteers!

At the SNIA Winter Symposium, many of our volunteers received awards. SNIA—and the SMI—thanks them for their many contributions to SMI.

SNIA Board-presented Awards

Two of our very active SMI-S authors received awards presented by Wayne Adams, Chair of the SNIA Board of Directors.

Steve Quinn, Hitachi Data Systems, the Chair of the SMI Technical Steering Group (TSG), took home several awards on Tuesday night. Among these was the **2009 SNIA Unsung Hero Award**.

Mike Walker, individual member, self-titled "Farmer Mike," received the **2009 DMTF Star Award**.

Steve Quinn, pictured with Wayne Adams, is no longer "unsung."

SMI Awards

Mike Hadavi with Don Deel and Mike Walker of the SMI Governing Board

After several other groups presented awards, Mike Walker, SMI Governing Board Member, took the floor. Don Deel, SMI Governing Board Chair, helped him hand out awards to ensure that our hard-working SMI contributors received the recognition they deserve. Here are the winners of SMI awards for 2009:

- **SMI Distinguished Engineer Award:**
  Mike Hadavi (EMC)
  Steve Quinn (Hitachi Data Systems)

- **SMI Distinguished Leader Award:**
  Steve Quinn (Hitachi Data Systems)

- **SMI Outstanding Contributor Award:**
  Scott Baker (Olocity)
  Troy Biegger (WBEM Solutions)
  Tony Fiorentino (EMC)
  Mike Hadavi (EMC)
  Steve Peters (PMC-Sierra)
  Rich Roscoe (EMC)

Calendar of Upcoming SMI-Related Events

Dates	Location	Event
February 28, 2010	NA	Deadline for SMI-Lab Membership Commitments & 2009 VPN access.
Feb 22-26, 2010	SNIA Tech Center Colorado Springs, CO	SMI-Lab Plugfest #1
March 15-18, 2010	San Antonio, TX	SNIA Technical Symposium
April 12-15, 2010	Orlando, FL	Storage Networking World (SNW) http://www.snwusa.com

List of Vendors Conformant to SMI-S

Many vendors have passed SNIA-CTP SMI-Provider and SMI-Client conformance tests for SMI-S v1.0.2 to 1.3.0. Over the life of CTP, 27 different companies have successfully run CTP against 52 different software products (clients and agents) covering over 500 device products.

For more information on the statistics for CTP, see: http://www.snia.org/forums/smi/tech_programs/ctp/ctp_statistics.

To learn more about SNIA-CTP and vendor's products that have passed SNIA-CTP, please visit: http://www.snia.org/forums/smi/tech_programs/ctp/.

Vendors with Products Conforming to SMI-S 1.4

EMC Corporation	Hitachi Data Systems
Hewlett-Packard Company	Hitachi Limited

Vendors with Products Conforming to SMI-S 1.3

EMC Corporation	Hitachi Data Systems
Hewlett-Packard Company	Hitachi Limited

Vendors with Products Conforming to SMI-S 1.2

Brocade Communication Systems, Inc.	Hitachi Data Systems
Compellent	Hitachi Limited
EMC Corporation	IBM
Hewlett-Packard Company	NetApp

3PAR	IBM
ADIC	LSI Corporation, Engenio Storage Group
Brocade Communication Systems, Inc.	McDATA Corporation
Cisco Systems	NEC Corporation
EMC Corporation	NetApp
Emulex	Pillar Data Systems
Fujitsu Limited	QLogic
Hewlett-Packard Company	Quantum
Hitachi Data Systems	Xyratex
Hitachi Limited	

SMI-related Groups and Committees

The groups and individuals listed below provide guidance and direction within SMI; they are on a careful path, managing the components and infrastructure of the SMI Program.

Some key web links to SMI information are:

Conformance Testing Program	http://www.snia.org/ctp/
SMI-S Developers Group	http://groups.google.com/group/smi-s-developers-group
SMI Specification	http://www.snia.org/tech_activities/standards/curr_standards/smi/
SMI-Lab Program	http://www.snia.org/forums/smi/tech_programs/lab_program/
SMI-S Central	http://www.snia.org/members/smis/

SMI Governing Board

The SMI Governing Board is comprised of an elected set of volunteer governing members and a contingent of (non-voting) representatives from SMI-related groups and SNIA staff. The SMI Governing Board establishes the strategic direction of the initiative, establishes SMI policies and procedures, and oversees SMI's various committees and taskforces.

> Chair: Don Deel, EMC smiboard-chair@snia.org
> Co Chair: Steve Quinn, HDS
> Treasurer: Doug Voigt, HP
> Secretary: Alan Yoder, NetApp
> Mike Walker, IBM (Individual Member)
> Paul von Behren (Individual Member)

Conformance Testing Program (CTP)

CTP provides conformance test standards for the SNIA SMI Specification and assists in developing programs to support launch of SMI-S certification for companies developing products conformant to SMI-S.

> Chair: Steve Quinn, HDS, smiconformance-chair@snia.org
> Program Manager: James Rigger, SNIA, james.rigger@snia.org
> Website: http://www.snia.org/ctp

SMI-Lab Program (SMI-Lab)

The SMI-Lab program is an industry-wide collaborative program that helps companies accelerate the development and implementation of SMI-S based Client and Provider products from SNIA member companies.

Chair: Paul von Behren, smiimplement-chair@snia.org

Website: http://www.snia.org/forums/smi/tech_programs/lab_program

Plugfest Registration Link: https://www.snia.org/apps/SMI_Lab_Plugfest_Registration/register.php

SMI Technical Steering Group (TSG)

The Storage Management Initiative (SMI) Technical Steering Group (TSG) is a sub-group of the SNIA Technical Council (TC). Its primary purpose is to provide a single storage management focus by guiding and managing the SNIA technical efforts for the creation, maintenance, and evolution of a SNIA Storage Management Initiative Specification (SMI-S). This standard will allow storage management systems to reliably and securely identify, monitor, and control physical and logical resources, enabling multi-vendor management interoperability.

Chair: Steve Quinn, HDS tsg_smi-chair@snia.org

Website: www.snia.org/apps/org/workgroup/techcouncil/tsg_smi/

Technical Work Groups

The Technical Work Groups (TWGs) function under the direction of the SMI TSG.

Technical Work Group	Title	Contact	Company	Email
Disk Resource Management TWG	Chair	Scott Baker	Olocity	snia-drm-chair@snia.org
Fibre Channel TWG	Chair	John Crandall	Brocade	snia-snmwg-fc-chair@snia.org
File Systems Management TWG	Co-Chairs	Gary Steffens Mike Thompson	Pillar Data EMC	fsmtwg-chair@snia.org
Host TWG	Chair	Steve Peters	PMC-Sierra	hosttwg-chair@snia.org
SMI-S Core TWG	Co-Chairs	John Crandall Paul von Behren	Brocade Individual	smiscoretwg-chair@snia.org
Storage Media Library TWG	Chair	Dr. Krishna Harathi	IBM	snia-sml-chair@snia.org