

# SMI Program Report

## November 2008



### **Please Forward Within Your Organization**

The SNIA Storage Management Initiative (SMI, [www.snia.org/smi/](http://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 Paul von Behren, SMI Chairman, at [smiboard-chair@snia.org](mailto:smiboard-chair@snia.org).

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### **A general note to our current SMI and SMI-Lab Members re MEMBERSHIP RENEWALS:**

In the coming weeks you will be receiving membership renewal notices via e-mail. The Storage Management Initiative and the development of the Specification are 100% funded through your membership dollars and volunteer contributors. We are looking forward to your continued support through 2009 and beyond. Please contact Tom Mancuso at [tom.mancuso@snia.org](mailto:tom.mancuso@snia.org) if you have any questions about this process or your options for joining SMI or SMI-Lab.

## SMI Announces New Levels of Testing for CTP

### CTP Provider Testing for SMI-S 1.4

There are several enhancements being introduced with CTP testing of providers for 1.4. Included in the plans are changes due to specification tightening activities. Four specific enhancements that the SMI would like to point out in this article are:

- **Levels of Testing** – CTP will be able to test a profile at one of three levels, rather than one level of testing.
- **Pricing** – The price to take a CTP test will be graduated across these three levels of testing.
- **Discounted pricing for SMI-Lab participation** – CTP will be offered at a lower price for SMI-Lab participating vendors and SMI members.
- **Test Reporting** – CTP results will be reported in “end-user” terms, rather than just in terms of component profiles.

Benefits to vendors and end users from each of these four changes are described below.

#### Levels of Testing

Starting with the CTP testing for 1.4, CTP will be offered at three different levels:

- **Passive** – These are test cases that support discovery of devices and their configuration. This test is intended to demonstrate that an implementation supports basic discovery of device information and its configuration.
- **Active** – These are test cases that are designed to exercise methods for configuring a device using SMI-S.
- **Event-driven** – These are test cases to exercise an implementation’s ability to report changes in the device via the SMI-S Indications mechanism.

CTP listings for providers that are conformant will clearly identify which level of the standard has been tested and verified as conformant. End users will be able to tell from the listing whether the test verified discovery (Passive) capability, configuration (active) capability or event-driven capability. Vendors will be able to “enter” the CTP program at any of these three levels.

#### Pricing

Pricing for CTP starting with 1.4 providers testing will be graduated based on the Level of Testing. For a sample of the CTP pricing for 1.4, see <http://www.snia.org/forums/smi/about/member/fees/>.

This new pricing schedule offers a range of prices that allow more vendors to participate in CTP on the low end of the spectrum. The increased costs for the active and event-driven testing is intended to recover the costs of developing the tests for these levels of testing. Vendors that only require discovery (passive) functions will be able to get listed at the passive level and need to pay only for that part of the testing. Similarly, vendors that support conformant configuration (active testing) methods will be able to be listed as conformant to the active tests. The event-driven tests are a new set of test cases that exercise conformant implementations on the indications mechanism. The result is a CTP test that is priced based on the function supported and should be more inclusive to the vendor community.

#### Discounts

With CTP testing for SMI-S 1.3, a discounted price was available to SMI Strategic Member companies only. With CTP testing for SMI-S 1.4, the CTP discount is being spread between SMI Strategic Membership and SMI-Lab participants to give SMI-Lab participants the added benefit of reduced cost of CTP testing. This is recognition that without the participation in SMI-Lab we can never release an official CTP test. With the new pricing, vendors contributing to test suite debugging receive a benefit for their efforts.

## Test Reporting

Starting with the CTP testing for 1.4, CTP results will be reported in “end-user” meaningful terms; this report replaces a list of component profiles tested.

A CTP listing for conformant provider implementations will list the top-level profile supported (e.g., Array or Fabric) and then list profile discovery elements (for PASSIVE testing), and configuration functions supported (for ACTIVE testing) and reported events (for EVENT-DRIVEN testing).

The purpose of this change is to provide end users a better understanding of the specific functions and capabilities covered by the testing.

For example, when reporting that an Array supports the Block Services profile, CTP will list several features supported at each level of the test. For Block Services, an implementation might receive a CTP listing such as:

- **Passive Test**  
Volume discovery, Pool Discovery
- **Active Test**  
Configuration of Pools, Configuration of Volumes, Volume Expansion
- **Event-driven Test**  
Volume Creation events, Volume Deletion Events

## Program Updates

### SMI Technical Steering Group (TSG)

TSG has initial dates for SMI-S 1.5 review drafts. The past few SMI-S releases have been approximately one year apart; SMI-S 1.5 will follow V1.4 by 18 months.

There are several motivations for the longer schedule. Application developers have given us feedback that they are having a tough time keeping up with the 12-month release schedule. We are conducting additional reviews of the most-used SMI-S profiles looking for consistency in the standard and whether CTP is adequately covering the core functionality of these profiles. The longer schedule gives SMI-S developers more time to complete these reviews and to complete fixes to issues surfaced in the reviews.

TSG is making steady progress on these reviews. Over half of the prioritized profiles have been reviewed and over a quarter have been updated. In addition, several of the remaining profiles with new implementations have been reviewed and updated.

Here are the major SMI-S 1.5 review draft dates:

- Initial draft - February 2, 2009 (was 12/05/08)
- Implementation draft - Aug 20, 2009 (was 07/07/09)
- Final draft - March 29, 2010 (was 02/05/10)

### Conformance Testing Program (CTP)

In October, SMI released the first official SMI-Provider 1.3 test suite. The release covered the functional areas of Array and many of its component profiles. Four companies have tested their Array products with the 1.3 test: EMC Corporation, Hewlett-Packard Company, Hitachi Data Systems, and Hitachi Limited.

Additional functional areas will be released for testing over the next few months, so please contact the Program Manager, James Rigger, at [james.rigger@snia.org](mailto:james.rigger@snia.org) if you have software you would like to test which is not covered. Please see <http://www.snia.org/ctp> for a full history of the companies that have tested and what they have tested.

This committee is currently working on the CTP-Provider test suite for SMI-S 1.3 in the areas of host profiles and fabric profiles. The priority of the work is based on implementations that come forward to help debug the test suites for their profiles. Also note that CTP supports an “Early Adopter” program where vendors that help us debug experimental profiles can get listed on a webpage attached to the CTP page for the vendor.

Vendors who intend to utilize the 1.3 CTP Provider tests are encouraged to take advantage of the SMI plugfests. The next plugfest that will support debugging of SMI-S 1.3 test suites is planned for February 2009. This will be the last plugfest before we start early testing with CTP for SMI-S 1.4.

The Conformance Testing Program for SMI-S is run by the SMI Conformance Committee. This committee is composed of a dedicated set of volunteers from SMI Initiative member companies and the CTP Program Manager. This committee is responsible for producing the testing methodologies and test suites used to validate conformance of software products to the SMI-S. The SMI Conformance Committee is currently working on test plans for the CTP Provider Test for SMI-S 1.4. See [SMI Announces New Levels of Testing for CTP](#) for extensive details about the test.

The SMI Conformance Committee has two regularly scheduled conference calls each week:

- Conformance Committee business meeting  
Tuesdays at 1:00 P.M. Pacific, lasting approximately 2 hours.  
Please see [www.snia.org/apps/org/workgroup/smiconformance/](http://www.snia.org/apps/org/workgroup/smiconformance/) if you are interested in joining this call.
- Bug and Operations call  
Tuesdays at 11:00 A.M. Pacific, lasting approximately 1 hour.  
Telephone number: 866-704-2476. Pass code: 238029  
This meeting concerns the issues associated with tracking SMI-Provider test suite issues and educating users about use of the test suite.

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

### SMI-Lab Program

The SMI Implementation Committee oversees the SMI's interoperability lab (SMI-Lab) 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. SMI is extremely pleased to welcome Compellent and Microsoft as new participants in plugfests.

The SMI-Lab program conducts five plugfests per year. One of the major activities at plugfests is validating the CTP SMI-Provider test suite. In addition, each plugfest includes activities that focus on testing topics important to the SMI community; examples are new profiles, interoperability, scalability, usability, or installation issues.

Here are some past and future SMI-Lab plugfest highlights:

- The October 2008 plugfest focused on testing of host profiles and "Fabric ScaleFest." Host profile testing includes FC HBA, FC Initiator Ports, and Host Discovered Resources. Host Discovered Resources has been in SMI-S for some time, but this was the first time it was tested under CTP. Fabric ScaleFest looked at existing Fabric and Switch models and the new Fabric View classes, which help clients in very large configurations.
- The February 23-27 2009 plugfest will focus on vendor-contributed test cases. These test cases can include new/planned functionality in a client application, prototypes, or code intended for the new vendor test case capability of CTP. In addition, we will start testing new SMI-S 1.4 profiles.
- The April 27 – May 1 plugfest will revisit indications testing, including testing standard alerts.
- The June 8 – 12 plugfest will revisit Array ScaleFest, adding client pull operation testing. In addition, we will be looking at tape library view classes.

## SMI Marketing

The SMI Marketing Committee continues to meet weekly to strategize on ways to advance the adoption of SMI-S for both storage vendors and their customers.

**Key Marketing Priorities Identified** - Recently, the Committee was surveyed to gain insight into what each member felt was a priority marketing work item for SMI in FY2009. From a wish list of 14 key items, four were selected as having the highest priority and are noted below. As the Committee moves forward, these items will be identified in an integrated marketing plan for SMI.

- Brand recognition – education on the value of SMI
- Establishing relationships with analysts
- Developing SMI collateral
- Re-engaging end users

One example of information we envision creating is an FAQ to help vendors at events (such as Storage Networking World) provide information about how SMI-S is integrated into their products as well as the benefits of purchasing products using a standardized storage management interface like SMI-S. The teams supporting these events may be flooded with technical details about products. This FAQ should help them articulate key information about SMI-S.

**Marketing SMI Goals** – The SMI Marketing Committee provides a leadership role ensuring that the goals, objectives and emerging SMI goals are clearly communicated to their various target audiences. This includes tapping into and motivating all of the resources—internal (initiatives, volunteers, etc.) and external (press, media, partners, end users, etc.)—necessary for making it happen. New activities in SMI provide numerous opportunities for the SNIA and the SMI to re-engage vendors, end users and analysts, etc. to help deliver a highly function standardized interface that will enable the applications and tools administrators use to easily manage storage resources in a heterogeneous environment.

Like many other volunteer-driven activities within the SNIA, the SMI Marketing Committee is resource constrained, but we do have champions signed up for each of the four high-priority work items noted above. We are always looking for additional volunteers with marketing experience to help lead and drive our projects or to simply provide valuable input on proposed items.

### SMI Marketing Committee Weekly Meetings

Wednesdays at 8:00 a.m. 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 Paul von Behren, Interim Marketing Chair at [Paul\\_von\\_Behren@symantec.com](mailto:Paul_von_Behren@symantec.com) or Tom Mancuso, Sr. program Manager, SMI, at [tom.mancuso@snia.org](mailto:tom.mancuso@snia.org).

## SMI ANSI/ISO Standards

The Standards Committee, along with the assistance of the SMI, continues to coordinate and manage the standardization of SMI-S versions as ANSI and ISO standards. The most recent developments toward standardization of SMI-S are noted below. SMI-S version 1.2 will not be submitted for standardization, mainly due to the timing of its release. SMI-S version 1.3 is planned for submission to INCITS in the first quarter of 2009. Status of SMI-S standards for 2008 are:

- SNIA submitted SMI-S v1.1.1 to ISO for international standardization in August, 2008, and it is in the ISO "fast-track" review process.
- INCITS accepted SMI-S v1.1.1 as an American standard, *INCITS 388:2008* in June, 2008.

## Calendar of Upcoming SMI-S Related Events

<b>Dates</b>	<b>Location</b>	<b>Event</b>
Jan 20 – 23, 2009	San Jose, CA	SNIA Winter Technical Symposium <a href="http://www.snia.org/members/eventcentral">http://www.snia.org/members/eventcentral</a>
Feb 23 – 27, 2009	Colorado Springs, CO	SMI-Lab9 Plugfest #1 “Recipefest” <a href="http://www.snia.org/forums/smi/tech_programs/lab_program/smi_plugfest_reg">http://www.snia.org/forums/smi/tech_programs/lab_program/smi_plugfest_reg</a>
Apr 06 – 09, 2009	Orlando, FL	SNW Spring 2009 <a href="http://www.snwusa.com">http://www.snwusa.com</a>
Apr 27 – 30, 2009	Colorado Springs, CO	SMI-Lab9 Plugfest #2 “Indicationsfest 2” <a href="http://www.snia.org/forums/smi/tech_programs/lab_program/smi_plugfest_reg">http://www.snia.org/forums/smi/tech_programs/lab_program/smi_plugfest_reg</a>
May 12 – 15, 2009	Chicago, IL	SNIA Technical Symposium <a href="http://www.snia.org/members/eventcentral">http://www.snia.org/members/eventcentral</a>

## Key Program Milestones

The matrix below shows SMI-Specification development milestones as they relate to all versions of the spec in the development or standardization pipeline. SNIA Members may access detailed production schedules for each version by visiting SMI-S Central at: <http://www.snia.org/members/smis/>.

Storage Management Initiative Outlook			
SMI TSG	SMI-S 1.3 Technical Position Completed Q4 2008	>	SMI-S 1.4 Technical Position Completed Q1 2009
		>	SMI-S 1.5 Initial Draft Completed Q1 2009
SMI CTP	CTP for SMI-S 1.3 Final Provider Test Released Q1 2009	>	CTP's First Official SMI-S 1.4 Provider Test Released Q3 2009
		>	CTP for SMI-S 1.4 Final Provider Test Released Q1 2010
SMI-Lab	SMI-Lab Membership Renewal Period 12/01/09 to 2/01/09	>	Plugfest #1 "Recipefest" 02/23/09 to 02/27/09
		>	Plugfest #2 "Indicationsfest 2" 04/27/09 to 04/30/09
SMI Marketing	FY2009 Marketing Plan Review 01/22/09	>	SNW Spring 2009 04/06/09 – 04/09/09
ANSI/ISO	SMI-S 1.3 Submission to INCITS Pending Q1 2009		

## List of Vendors Conformant to SMI-S



Many vendors have passed SNIA-CTP SMI-Provider and SMI-Client conformance tests from 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 statistic for CTP, see [http://www.snia.org/forums/smi/tech\\_programs/ctp/ctp\\_statistics](http://www.snia.org/forums/smi/tech_programs/ctp/ctp_statistics).

To learn more about SNIA-CTP and the vendor's products that have passed SNIA-CTP please visit: [http://www.snia.org/forums/smi/tech\\_programs/ctp/](http://www.snia.org/forums/smi/tech_programs/ctp/).

### 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 Limited
EMC Corporation	IBM
Hewlett-Packard Company	NetApp
Hitachi Data Systems	

### Vendors with Products Conforming to SMI-S 1.1

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

### Vendors with Products Conforming to SMI-S 1.0

Brocade Communication Systems, Inc.	Hitachi Limited
Cisco Systems	IBM
CNT	LSI Corporation, Engenio Storage Group
Dell Computer	McDATA Corporation
EMC Corporation	NetApp
Emulex	QLogic
Fujitsu Limited	Silicon Graphics
Hewlett-Packard Company	StorageTek
Hitachi Data Systems	Sun Microsystems, Inc.

## 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	<a href="http://www.snia.org/ctp/">http://www.snia.org/ctp/</a>
SMI-S Developers Group	<a href="http://groups.google.com/group/smi-s-developers-group">http://groups.google.com/group/smi-s-developers-group</a>
SMI Specification	<a href="http://www.snia.org/tech_activities/standards/curr_standards/smi/">http://www.snia.org/tech_activities/standards/curr_standards/smi/</a>
SMI-Lab Program	<a href="http://www.snia.org/forums/smi/tech_programs/lab_program/">http://www.snia.org/forums/smi/tech_programs/lab_program/</a>
SMI-S Central	<a href="http://www.snia.org/members/smis/">http://www.snia.org/members/smis/</a>

### 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.

Chairperson: Paul von Behren, Symantec [smiboard-chair@snia.org](mailto:smiboard-chair@snia.org)

Co-Chairperson: Jerry Duggan, HP [smiboard-chair@snia.org](mailto:smiboard-chair@snia.org)

Treasurer: Don Deel, EMC

Secretary: Mike Walker, IBM

Vincent Franceschini, HDS

### 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.

Chairperson: Mike Walker, IBM [smiconformance-chair@snia.org](mailto:smiconformance-chair@snia.org)

Program Manager: James Rigger, SNIA [james.rigger@snia.org](mailto: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.

Chairperson: Paul von Behren, Symantec [smiimplement-chair@snia.org](mailto:smiimplement-chair@snia.org)

Co-Chairperson: Eddie Houston, HP [smiimplement-chair@snia.org](mailto:smiimplement-chair@snia.org)

Website: [http://www.snia.org/forums/smi/tech\\_programs/lab\\_program](http://www.snia.org/forums/smi/tech_programs/lab_program)

Plugfest Registration Link:

[https://www.snia.org/apps/SMI\\_Lab\\_Plugfest\\_Registration/register.php](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 Interface 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 Peters, HP

Website: [www.snia.org/apps/org/workgroup/techcouncil/tsg\\_smi/](http://www.snia.org/apps/org/workgroup/techcouncil/tsg_smi/)

<b>Technical Work Group</b>	<b>Title</b>	<b>Contact</b>	<b>Company</b>	<b>Email</b>
<b>Disk Resource Management TWG</b>	Co-Chair	Steve Peters	HP	snia-drm-chair@snia.org
<b>Disk Resource Management TWG</b>	Co-Chair	Scott Baker	Olocity	snia-drm-chair@snia.org
<b>Fibre Channel TWG</b>	Chair	John Crandall	Brocade	snia-snmwg-fc-chair@snia.org
<b>File Systems Management TWG</b>	Co-Chair	Gary Steffens	Pillar Data	fsmtwg-chair@snia.org
<b>File Systems Management TWG</b>	Co-Chair	Mike Thompson	EMC	fsmtwg-chair@snia.org
<b>File Systems Management Regional TWG</b>	Chair	Narsimha Reddy Challa	HP	fsmrtwg-chair@snia.org
<b>Host TWG</b>	Co-Chair	Duane Baldwin	IBM	hosttwg-chair@snia.org
<b>Management Application TWG</b>	Co-Chair	Duane Baldwin	IBM	maptwg-chair@snia.org
<b>Management Application TWG</b>	Co-Chair	Kurt Krems	Olocity	maptwg-chair@snia.org
<b>Management Protocol TWG</b>	Co-Chair	Mike Walker	IBM	protocoltwg-chair@snia.org
<b>SMI-S Core TWG</b>	Co-Chair	John Crandall	Brocade	smiscoretwg-chair@snia.org
<b>SMI-S Core TWG</b>	Co-Chair	Paul von Behren	Symantec	smiscoretwg-chair@snia.org
<b>Storage Media Library TWG</b>	Co-Chair	Dr. Krishna Harathi	IBM	snia-sml-chair@snia.org
<b>Storage Media Library TWG</b>	Co-Chair	Steve Peters	HP	snia-sml-chair@snia.org