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A PROPOSAL FOR INCITS FAST-TRACK PROCESSING

Storage Networking Industry Association (SNIA)
Multipath Management API Specification (MMA)

1. Source of the Proposed Project

1.1 Title: SNIA Multipath Management API Specification
1.2 Date Submitted: 7/12/2005
1.3 Proposer
Storage Networking Industry Association (SNIA). A list of the members is available at http://www.snia.org/about/member_list

2. Process Description for the Proposed Project

2.1 Project Type (D - Development)

This is a new standard. It is a complete specification submitted to INCITS

2.2 Type of Document

Standard

2.3 Definitions of Concepts and Special Terms

Multipath – a capability of some computer operating system drivers to utilize data paths through multiple host and device controllers to provide high availability and load balancing capabilities. This API is specifically addressing multipath as related to the SCSI I/O protocol. At the driver level, multipath may be based on SCSI standards defined by INCITS Technical Committee T10.

Multipath Management – the ability to manage multipath features such as high availability and load balancing.

API - Application Program Interface, API is a set of routines, protocols, and tools for building software applications.

2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.

Standards referenced by SNIA SMI-S are the Small Computer Systems Interconnect (SCSI) as maintained by the INCITS T10 work group and the Fibre Channel interface standard maintained by the INCITS T11 work group.

Portions of the planned update to ANSI INCITS Storage Management (INCITS 388-2004) are documented

2.5 Recommended INCITS Development Technical Committee (Existing or New)

No new committee is requested. The SNIA, as the sponsoring organization, will retain control of the specification throughout the Fast Track process. At the end of this process, the SNIA will license the SNIA SMI-S to INCITS for publication. The SNIA may offer future revisions to the specification, as needed, using the same Fast Track process.

Further, the SNIA has put in place an agreement with INCITS Technical Committee T11.5 (Draft Principles of Cooperation (Rev 3) between INCITS/T11.5 and The Storage Networking Industry Association (SNIA) for Consideration) to allow for T11.5 consideration of SNIA SMI-S standards in regard to various T11.5 projects, and specifically with regard to efforts between the two organizations to ensure the consistency of management information.

2.6 Anticipated Frequency and Duration of Meetings

N/A

2.7 Target Date for Initial Public Review (Milestone 4)

The SNIA Multipath Management API document is expected to be submitted for a public review conducted by SNIA shortly after acceptance of the MOU and Proposal by the INCITS EB.

2.8 Estimated Useful Life of Standard or Technical Report

Indefinite. Since this was developed by a large consortium, it is expected to have a relatively long life, with revisions planned to extend the standard to additional storage technologies.

3. Business Case for Developing the Proposed Standard or Technical Report

3.1 Description

Although multipath support has been possible for some time, it has become very common in storage network configurations where multiple computers and storage devices are connected via switches. In order to quickly address customer requests, multipath drivers have been provided by operating system, device, controller, and file system vendors – each with separate management tools. A customer with multiple computers may have separate multipath management software on separate servers and even multiple applications on a single server – meaning the administrators have to be familiar with multiple tools.

A common API creates an opportunity for creating management applications that operate against multiple multipath drivers – thus simplifying processes for

administrators. A common API could also be used by a management infrastructure providing remote access across a TCP/IP network. ANSI INCITS Storage Management (INCITS 388-2004) is an example of a framework that is being updated to use the Multipath Management API.

3.2. Existing Practice and the Need for a Standard

Customers with large or multiple server computers have multiple multipath drivers with different management tools. Each tool has a separate user interface which administrators needs o learn to use. Some of these tools can be used in scripts, but the scripts needs to be rewritten for use with different multipath drivers.

3.3. Implementation Impacts of the Proposed Standard

3.3.1 Development Costs

The costs are subsumed in developing updates to ANSI INCITS Storage Management (INCITS 388-2004); though the benefits will also be exploited by software that is not based on INCITS 388-2004.

3.3.2 Impact on Existing or Potential Markets

The impact is minimal on markets. The benefits are simplification of development of multipath management applications and indirectly, simplification of the experience of managing configurations supporting multipath.

3.3.3 Costs and Methods for Conformity Assessment

No conformity assessment considered at this time.

3.3.4 Return on Investment

This API will benefit developers of applications or frameworks that manage configurations with multipath device access. This includes software included by operating systems and frameworks such as ANSI INCITS Storage Management (INCITS 388-2004).

3.4 Legal Considerations

3.4.1 Patent Assertions

The proposer is not aware of any patent assertions that may be made at this time.

3.4.2 Dissemination of the Standard or Technical Report

The proposer is not aware of any IPR assertions that will hinder the distribution of this standard.

4. Related Standards Activities

4.1 Existing Standards

No other standards are known that address this problem area.

4.2 Related Standards Activity

This API specification is coupled with interfaces defined by INCITS T10 – particularly the SPC-3 standard.

4.3 Recommendations for Close Liaison

INCITS T11 - The SNIA liaison for T11.5 is Roger Cummings.

INCITS T10 – The SNIA liaison for T10 is Roger Cummings.

5. Units of Measurement used in the Standard

Not measurement sensitive.