SNIA

Solid State Storage Initiative

www.snia-europe.org

SNIA and flash

By members of SNIA's Solid State Storage Initiative.

AS NAND Flash becomes an increasingly common component in storage systems, SNIA is clearly well positioned in the industry to help drive this technology forward, to educate the industry from a vendor neutral point of view, and to support the Solid State Storage vendor community by promoting the value and benefits of this technology to the industry. Several SNIA groups are focused on solid state storage technologies.

The Solid State Storage Initiative (SSSI) is dedicated to fostering the acceptance and growth of Solid State Storage in the marketplace. To achieve these goals, the SSSI provides education, performs market outreach, and influences and promotes standards. The SSSI also has two special interest groups focused on PCIe-connected Flash and NVDIMM.

The Peripheral Component Interconnect Express (PCIe) SSD group provides guidance to the marketplace on PCIe SSDs. This can take the form of educational materials such as technical position papers, best practices documents, and standards. PCIe has been widely utilized as a system bus for years, and is now also a high performance SSD interface.

The NVDIMM Special Interest group was formed to accelerate awareness and adoption of Non-Volatile Dual In-line Memory Modules (NVDIMMs) in the marketplace by providing education on how system vendors can "design-in" NVDIMMs, communicating

existing industry standards, and identifying areas for vendor differentiation. This group also helps technology and solution vendors whose products integrate NVDIMMs to communicate their benefits and value to the greater market. It also develops vendor-agnostic user perspective case studies, best practices, and vertical industry requirements to help end user customers understand how products and solutions can meet their performance, cost, and efficiency goals.

The Solid State Storage Technical Work Group (SSS TWG) drives efforts to define a performance test process that assures consistent results and fair product comparisons. The SSS TWG has developed methodologies, which enable manufacturers to set, and customers to compare, the performance specifications of Solid State Storage devices, which are evolving with the state of the technology.

Two specifications developed by the SSS TWG have been approved as SNIA technical documents and available for complimentary download to manufacturers and the general public:

- **Performance Test Specification – Enterprise**
  This Enterprise Performance Test Specification (PTS-E) 1.1 is intended to be used to obtain reliable and comparative measurement of NAND Flash based SSDs for enterprise applications.
- **Performance Test Specification – Client**
  This Client PTS-C 1.1 differs from its

companion Enterprise PTS-E 1.1 in the preparation of the SSD for steady state performance measurement and in the amount and type of test stimulus applied, characteristic of a typical client user workload.

For further reading on this subject, visit http://www.snia.org/tech_activities/standards/curr_standards/pts

The Solid State Storage System Technical Work Group addresses the unique performance behavior of a category of solid state storage systems commonly known as all-Flash arrays. This newly formed TWG and its volunteer members develop specifications, which provide guidance to accurately measure the performance of enterprise arrays as opposed to devices.

One objective of this working group is to communicate the need to accurately measure the performance of solid state storage systems and their unique behavior. Aggregating the goals of SNIA members provides an opportunity to get solid state storage array vendors in agreement on how to accurately measure performance of this technology, with goal of accelerating the availability of a broad range of solid state storage array solutions to customers

This group also acts as the primary technical entity for SNIA to identify, develop, and coordinate system performance standards for solid state storage systems and produce a comprehensive set of specifications.

The SNIA NVM Programming Technical Work Group has developed the Non-Volatile Memory Programming Model.

NVM features and performance are outgrowing the existing storage model. Treating NVM as a traditional disk doesn't allow software to fully utilize the unique features of NVM. NVM is evolving to be less like storage, more like memory. The SNIA NVM Programming Model defines new software programming models for NVM, enabling designers to develop APIs that take advantage of NVM features and performance. This model will be a key contributor to an expected convergence, made possible by NVM, of system memory and storage into a single, unified "persistent memory" entity.

For additional information on this topic, please visit: http://www.snia.org/tech_activities/standards/curr_standards/npm

We hope from reading this article you have learned a bit more about SNIA and its

technology programs that contribute to one of today's hottest Storage industry topics. SNIA is well positioned in the industry to help drive the technology forward, to promote the value and benefits of Flash, and to provide IT education materials. SNIA has an extensive and up-to-date repository of tutorials on solid state storage related topics.

For more information on SNIA's Solid State Storage activities at the Data Storage Innovation conference and the Flash Memory Summit, please visit www.snia.org/forums/sssi, and get involved in the Flash conversation at http://twitter.com/SNIASolidState