SNIA Europe UK Committee

Progress on solid state, ethernet and green storage

An update on the work of some of SNIA's Technology Communities.

Introducing SNIA's Workload I/O Capture Program

SNIA Solid State Storage Initiative

SNIA's Solid State Storage Initiative (SSSI) recently rolled out its new Workload I/O Capture Program, or WIOCP, a simple tool that captures software applications' I/O activity by gathering statistics on workloads at the user level (IOPS, MB/s, response times queue depths, etc.)

The WIOCP helps users to identify "Hot Spots" where storage performance is creating bottlenecks. SNIA hopes that users will help the association to collect real-use statistics on workloads by uploading their results to the SNIA website.

Using this information SNIA member companies will be able to improve the performance of their solid state storage solutions, including SSDs and flash storage arrays.

How it works

The WIOCP software is a safe and thoroughly-tested tool which runs unobtrusively in the background to constantly capture a large set of SSD and HDD I/O metrics that are useful to both the computer user and to SNIA. Users simply enter the drive letters for those drives for which I/O operations metrics are to be collected. The program does not record anything that might be sensitive, including details of your actual workload (for example, files you've accessed.) Results are presented in clear and accessible report formats.

How can WIOCP help you?

Users can collect (and optionally display in real time) information reflecting their current environment and operations with the security of a tool delivered with digital authentication for their protection.
The collected I/O metrics will provide information useful to evaluate an SSD system environment. Statistics from a wide range of applications will be collected, and can be used with the SSS Performance Test Specification to help users determine which SSD should perform best for them.

How can your participation help SNIA and the SSSI?

The WIOCP provides unique, raw information that can be analyzed by SNIA's Technical Work Groups (TWGs) including the IOTTA TWG to gain insights into workload characteristics, key performance metrics, and SSD design tradeoffs. The collected data from all participants will be aggregated and publicly available for download and analysis. No personally identifiable information is collected – participants will benefit from this information pool without comprising their privacy or confidentiality.

Downloading the WIOCP

Help SNIA get started on this project by clicking going to:
www.hyperio.com/hIOmon/hIOmonSSSIworkloadIOcaptureProgram
and using the "Download Key Code": SSSI52kd9A8Z.
The WIOCP tool will be delivered to your system with a unique digital signature. The tool only takes a few minutes to download and initialize, after which users can return to the task at hand!

If you have any questions or comments, please contact:
SSSI_TechDev-Chair@SNIA.org

Ethernet storage:

2012 review and what to expect in 2013

AS WE COME to a close of the year 2012, I want to share some of our successes and briefly highlight some new changes for 2013. Calendar year 2012 has been eventful and the SNIA-ESF has been busy. Here are some of our accomplishments:

- **10GbE:** With virtualization and network convergence, as well as the general availability of LOM and 10GBASE-T cabling, we saw this is a "breakout year" for 10GbE. In July, we published a comprehensive white paper titled "10GbE Comes of Age." We then followed up with a Webcast "10GbE – Key Trends, Predictions and Drivers." We ran this live once in the U.S. and once in the U.K. and combined, the Webcast has been viewed by over 400 people!
- **NFS:** has also been a hot topic. In June we published a white paper "An Overview of NFSv4" highlighting the many improved features NFSv4 has over NFSv3. A Webcast to help users upgrade, "NFSv4 – Plan for a Smooth Migration," has also been well received with over 150 viewers to date. A 4-part Webcast series on NFS is now planned. We kicked the series off last month with "Reasons to Start Working with NFSv4 Now" and will continue on this topic during the early part of 2013. Our next NFS Webcast will be "Advances in NFS – NFSv4.1 and pNFS." You can register for that here.
- **Flash:** The availability of solid state devices based on NAND flash is changing the performance efficiencies of storage. Our September Webcast "Flash – Plan for the Disruption" discusses how Flash is driving the need for 10GbE and has already been viewed by more than 150 people.

We have also added to expand membership and welcome new membership from Tonian and LSI to the ESF. We expect with this new charter to see an increase in membership participation as we drive incremental value and establish ourselves as a leadership voice for Ethernet Storage.

As we move into 2013, we expect two hot trends to continue – the broader use of file protocols in datacenter applications, and the continued push toward datacenter consolidation with the use of Ethernet as a storage network. In order to better address these two trends, we have modified our charter for 2013. Our NFS SIG will be renamed the File Protocol SIG and will focus on promoting not only NFS, but also SMB / CIFS solutions and protocols. The iSCSI SIG will be renamed to the Storage over Ethernet SIG and will focus on promoting data center convergence topics with Ethernet networks, including the use of block and file protocols, such as NFS, SMB, FCoE, and iSCSI, over the same wire. This modified charter will allow us to have a richer conversation around storage trends relevant to your IT environment.

So, here is to a successful 2012, and excitement for the coming year.

SNIA Emerald specification V2.0 introduces "hot band" workload testing for storage array testing

THE STORAGE NETWORKING INDUSTRY ASSOCIATION (SNIA) Green Storage Initiative (GSI) has announced the availability of the SNIA Emerald™ Power Efficiency Measurement Specification V2.0 and the SNIA Emerald™ User Guide V2.0. The revised specification includes a new active workload IO profile named hot band, commonly called "hot-banding." In combination, the SNIA Emerald specification provides a vendor-neutral power efficiency test measurement set of methods and the SNIA Emerald Program provides an industry-wide repository of measured test data.

"SNIA continues to focus on the importance of Energy Efficiency in the data center by improving the SNIA Emerald program and its test methods," said Patrick Stanko, chair of the SNIA Green Storage Technical Work Group. "The "hot band" IO profile is a result of many months of test measurements and analysis by members of the SNIA."
The new SNIA Emerald "hot band" IO profile provides a workload that considers the contribution of read caching. This workload consists of a mix of different IO sizes and access patterns with a skewed access across a range of blocks. This skewed access tends to hold data in cache and creates "cache hits" for improved throughput and reduced power consumption. Many storage array deployments today feature larger cache sizes than a few years ago. The SNIA Emerald specification also retains the random and sequential read/write workloads.

The SNIA Emerald Power Efficiency Measurement Specification consists of the four elements: Taxonomy, Test Methodology, Test Metrics - Idle Measurement Test, and Test Metrics - Active Measurement Test. The V2.0 specification adds the "hot band" IO profile to the Active Measurement Test for Online and Near-online storage system taxonomy classification.

The SNIA Emerald Program website provides the industry with the resources needed to learn about, evaluate, test and submit storage system power usage and efficiency test results acquired by using the SNIA Emerald Power Efficiency Measurement Specification.
SNIA will conduct a multi-day training class and lab in Q2 2013 at the SNIA Technology Center in Colorado Springs. The training will cover the SNIA Emerald test setup, data collection, and reporting with storage systems in a lab environment. Skilled professionals that should attend include test engineers, independent test labs, test auditors and certifying bodies. The training is open to the industry. Interested parties should send an email to emerald@snia.org and follow the SNIA Emerald website for more details.

Storage system manufacturers and industry testing labs can download the new SNIA Emerald Power Efficiency Measurement Specification V2.0 from the SNIA Emerald website. SNIA also recommends downloading the SNIA Emerald User Guide V2.0 that provides step-by-step guidance on how to setup a test and measurement environment for a storage system under test, and then submit measured test results to the SNIA Emerald Program. Once submitted test results are approved for public posting, manufacturers will obtain a SNIA Emerald Program logo to highlight their program participation. In turn, the industry at large can view the posted test results of various storage systems and review products that met and undergone the SNIA Emerald testing requirements.