Industry Trends Perspective Update Newsletter
Information Technology and Data infrastructure
Cloud Virtual Physical Software Defined

Volume 16, Issue II

Hello and welcome to the February 2016 Server StorageIO update newsletter.

Even with an extra day during the month of February, there was a lot going on in a short amount of time. This included industry activity from servers to storage and I/O networking, hardware, software, services, mergers and acquisitions for cloud, virtual, containers and legacy environments. Check out the sampling of some of the various industry activities below.

Meanwhile, its now time for March Madness which also means metrics that matter and getting ready for World Backup Data on March 31st. Speaking of World Backup Day, check out the StorageIO events and activities page for a webinar on March 31st involving data protection as part of smart backups.

While your focus for March may be around brackets and other related themes, check out the Carnegie Mellon University (CMU) white paper listed below that looks at NAND flash SSD failures at Facebook. Some of the takeaways involve the importance of cooling and thermal management for flash, as well as wear management and role of flash translation layer firmware along with controllers.

Also see the links to the Google White Paper on their request to the industry for a new type of Hard Disk Drive (HDD) to store capacity data while SSD's handle the IOP's. The take away is that while Google uses a lot of flash SSD for high performance, low latency workloads, they also need to have a lot of high capacity bulk storage that is more affordable on a cost per capacity basis. Google also makes several proposals and suggestions to the industry on what should and can be done on a go forward basis.

Backblaze also has a new report out on their 2015 HDD reliability and failure analysis which makes for an interesting read. One of the take away's is that while there are newer, larger capacity 6TB and 8TB drives, Backblaze is leveraging the lower cost per capacity of 4TB drives that are also available in volume quantity.

Enjoy this edition of the Server StorageIO update newsletter and watch for new tips, articles, StorageIO lab report reviews, blog posts, videos and podcast's along with in the news commentary appearing soon.

Cheers GS

In This Issue

StorageIOblog Posts

Recent and popular Server StorageIOblog posts include:

- EMC DSSD D5 Rack Scale Direct Attached Shared SSD All Flash Array Part I and Part II – EMC DSSD D5 Direct Attached Shared AFA
  EMC announced the general availability of their DSSD D5 Shared Direct Attached SSD

(DAS) flash storage system (e.g. All Flash Array or AFA) which is a rack-scale solution. If you recall, EMC acquired DSSD back in 2014 which you can read more about here. EMC announced four configurations that include 36TB, 72TB and 144TB raw flash SSD capacity with support for up to 48 dual-ported host client servers.

- [Various Hardware (SAS, SATA, NVM, M2) and Software (VHD) Defined Odd's and Ends](#)
  Ever need to add another GbE port to a small server, workstation or perhaps Intel NUC, however no PCIe slots are available? How about attaching a M2 form factor flash SSD card to a server or device that does not have an M2 port, or, for mirroring two M2 cards together with a RAID adapter? Looking for tool to convert a Windows system to a Virtual Hard Disk (VHD) while it is running? The following are a collection of odd's and end's devices and tools for hardware and software defining your environment.

- [Software Defined Storage Virtual Hard Disk (VHD) Algorithms + Data Structures](#)
  For those who are into, or simply like to talk about software defined storage (SDS), API's, Windows, Virtual Hard Disks (VHD) or VHDX, or Hyper-V among other related themes, have you ever actually looked at the specification for VHDX? If not, here is the link to the open specification that Microsoft published (this one dates back to 2012).

- [Big Files and Lots of Little File Processing and Benchmarking with Vdbench](#)
  Need to test a server, storage I/O networking, hardware, software, services, cloud, virtual, physical or other environment that is either doing some form of file processing, or, that you simply want to have some extra workload running in the background for what ever reason?

View other recent as well as past [blog posts here](#)

Server Storage I/O Industry Activity Trends (Cloud, Virtual, Physical)

Some new Products Technology Services Announcements (PTSA) include:

- Tegile - [IntelliFlash HD Now Available To Enterprises Worldwide](#)
- Via Forbes - [Competitors and Cash Bleed Put Pressure on Pure Storage](#)
- Via HealthCareBusiness - [Philips and Amazon team up on cloud-based health record storage](#)
- Via Zacks - [IBM Advances Hybrid Cloud Object Based Storage](#)
- DataONstorage expands [Microsoft Hyper Converged Infrastructure platforms](#)
- Via ITBusinessEdge - [Nimble updates All Flash Array (AFA) storage](#)
- Carnegie Mellon University - [A Large-Scale Study of Flash Memory Failures](#)
- Cisco [Buys Cliqr Cloud Orchestration](#)
- Backblaze - [2015 Hard Drive Reliability Reports and Analysis](#)
- Via BusinessCloudNews - [Verizon Closing Down Its Public Cloud](#)
- Via BusinessInsider - [US Government Approves Dell and EMC Deal](#)
- EMC and VMware announce [new VCE VxRAIL Converged Solutions](#)
- EMC announces new IBM [zSeries Mainframe enhancements for VMAX](#)
- EMC announces new [DSSD D5 AFA](#) and [VMAX AFA](#) enhancements
- HPE [announces enhancements to StoreEasy 1650](#) storage
- Seagate now shipping worlds [slimmest and fastest 2TB mobile HDD](#)
- Via VMblog - [Oracle Scoops Up Ravello to Boosts Its Public Cloud Offerings](#)
- Via Investors - [SSD and Chinese Investments in Western Digital](#)
- [ATTO announces 32G (e.g. Gen 6) Fibre Channel adapters](#)

- Google to disk vendors: Make hard drives like this, even if they lose more data
- Google Disk for Data Centers White Paper (PDF Here)

View other recent news and industry trends here

Vendors you may not have heard of

Various vendors (and service providers) you may not know or heard about recently.

- SkySync - Enterprise File Sync and Share
- SANblaze - Storage protocol emulation tools
- OpenIT - DCIM and Data Infrastructure Management Tools
- Infinit.sh - Decentralized Software Based File Storage Platform
- Alluxio - Open Source Software Defined Storage Abstraction Layer
- Genie9 - Backup and Data Protection Tools
- E8 Storage - Software Defined Stealth Storage Startup

Check out more vendors you may know, have heard of, or that are perhaps new on the Server StorageIO Industry Links page here (over 1,000 entries and growing).

StorageIO Webinars and Industry Events

EMCworld (Las Vegas) May 2-4, 2016

Interop (Las Vegas) May 4-6 2016

NAB (Las Vegas) April 19-20, 2016

March 31, 2016 Webinar (1PM ET) - Smart Backup and World Backup Day

February 25, 2016 Webinar (11AM PT) - Migrating to Hyper-V including from Vmware

February 24, 2016 Webinar (11AM ET) - How To Become a Data Protection Hero

February 23, 2016 Webinar (11AM PT) - Rethinking Data Protection

January 19, 2016 Webinar (9AM PT) - Solve Virtualization Performance Issues Like a Pro

See more webinars and other activities on the Server StorageIO Events page here.

Server StorageIO Industry Resources and Links

Check out these useful links and pages:

storageio.com/links, objectstoragecenter.com, dataprotectiondiaries.com, thenvmeplace.com, thessdplace.com and storageio.com/performance among others.

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