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

Volume 16, Issue IV

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

April is a busy time of the year, both at work and in the industry, as well as at home. Needless to say that there is a lot going on as you will see in this April 2016 edition of the Server StorageIO Update newsletter. Highlights at a glance include:

- OpenStack Mitaka release (see other release information here)
- Ceph 10.2.0 aka Jewel released including CephFS for NAS file serving
- Micron announces new NVM flash-based SSD including NVMe, SAS and SATA
- Intel announces new faster Broadwell based processors enabling new servers
- Ubuntu 16.04 LTS released including Ceph, OpenStack and other updates
- Windows Server 2016 Tech Preview 5 (TP5) is now available, get the bits here

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

Cheers GS

StorageIOblog Posts

Recent and popular Server StorageIOblog posts include:

- **Which Enterprise HDDs to use for a Content Server Platform**
  Even though Non-Volatile Memory (NVM) including NAND flash solid state devices (SSDs) have become popular storage for use internal as well as external to servers, there remains the need for HDD's Like many of you who need to make informed server, storage, I/O hardware, software and configuration choice decisions, time is often in short supply.

  This post is the first in a multi-part series based on a white paper hands-on lab report I did compliments of Servers Direct and Seagate that you can read in PDF form here. The focus is looking at the Servers Direct (www.serversdirect.com) converged Content Solution platforms with Seagate Enterprise Hard Disk Drive (*HDD*'s). I was given the opportunity to do some hands-on testing running different **application** workloads with a 2U content solution platform along with various Seagate Enterprise 2.5" HDD's handle different *application workloads.* This includes Seagate's Enterprise Performance HDD's with the enhanced caching feature.. Read more here.

- **Happy Earth Day 2016 Eliminating Digital and Data e-Waste**

For those involved in data management or data infrastructures, the following are five tips to help cut the overhead and resulting impact of digital e-waste and later physical e-waste. Most conversations involving e-waste focus on the physical aspects from disposing of electronics along with later impacts. While physical e-waste is an important topic, lets expand the conversation including other variations of e-waste including digital. By digital e-waste I'm referring to the use of physical items that end up contributing to traditional e-waste. Read more here.

- vSphere Beta, Something free from VMware (other than your time)
  VMware is looking for candidate beta test sites and environments for an upcoming vSphere release. Target audience or environments are those who have deployed vSphere 5.5 and 6.0 in your environment and looking to test the new software (e.g. bits).

  What VMware is looking for For this private community:

  vSphere beta, VMware is looking for participants with expectations including:

  - Online acceptance of the Master Software Beta Test Agreement will be required prior to visiting the Private Beta Community
  - Install beta software within 3 days of receiving access to the beta product
  - Provide feedback within the first 4 weeks of the beta program
  - Submit Support Requests for bugs, issues and feature requests
  - Complete surveys and beta test assignments
  - Participate in the private beta discussion forum and conference calls

  Read more here including how to signup.

- Cloud Constellation SpaceBelt – Out Of This World Cloud Data Centers?
  A new startup called Cloud Constellation (aka SpaceBelt) has announced and proposes converge space terrestrial satellite technology with IT information and cloud related data infrastructure technologies including NVM (e.g. SSD) and storage class memory (SCM). While announcing their Series A funding and proposed value proposition (below), Cloud Constellation did not say how much funding, who the investors are, or management team leading to some, well, rather cloud information. Read more about this out of this world flash SSD space based cloud storage here.

- Server StorageIO March 2016 Update Newsletter

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:

Arista takes on Cisco and Juniper with routing. Amazon Web Services (AWS) announced new application discovery services, increased speed and capacity of Simple Storage Solution (S3) Snowball data migration appliances among other enhancements. Brocade buys data center automation startup StackStorm and Ceph 10.2.0 aka Jewel released including CephFS for NAS file serving while Compuverde announces new storage management solutions enhancements.

Dell sells Perot systems to NTT to free up cash for upcoming EMC acquisition. In other news, Dell announced new Converged Infrastructure (CI) and Hyper-Converged Infrastructure (HCI) solutions. These include enhancements to existing Dell based solutions, partnering with Nutanix, as well as reselling EMC VCE based offerings. Read more here.

FalconStor releases new software defined storage management tools, while Gridstore changes CEO after catching some cash funding earlier this year. HDS announces native NAS and cloud storage tiering to Virtual Storage Platform, while HPE adds persistent memory to servers stepping stone to true Storage Class Memory (SCM). In other news HPE announces Proliant Gen9 servers.

IBM announces new FlashSystems including A9000 and A9000R that have data footprint reduction (DFR) capabilities including global deduplication, real-time compression, thin-provisioning and space saving snapshots along with encryption. These are in addition to all flash array (AFA) DS8888 based storage systems and existing FlashSystem 900 and V9000 solutions.

Intel announces new faster Broadwell based processors enabling new servers, Internap announced bare metal as a service (BMaaS), Lenovo announces new Intel based servers.

Micron announces new NVM flash-based SSD products including SAS, SATA and NVMe. These include PCIe based NVMe Add in Card (AiC) and U.2 (8639) drives for the data center with the 9100 series, U.2 (2.5" 8639 interface drives) and M.2 mini card 7100 series, as well as 12Gb SAS SSD drives. Micron also announced NVM SSD based accelerated storage solutions with Ceph, Nexenta Edge and VMware VSAN. Micron also gave an update on the progress of 3D XPoint development.

OpenStack updates release schedules including Mitaka (current) which follows Liberty, Kilo and Juno among others. Upcoming releases include Newton under development, as well as future Octa release. RVtools has a new version for VMware vSphere along with new VMware fling such as html5 web client.

Seagate announces worlds first USB powered desktop HDD.
Did anybody else catch that announcement and say hmm, thinking about the USB powered and connected HDDs they have used for years if not decades? So here's what's new and why context is important. While there have been USB connected large capacity form factor drives (e.g. 3.5") for years, those have relied upon external power via power cord or from an enclosure chassis. Likewise, there have been small form factor 2.5" USB connected drives for well over a decade that get their power via the USB connector such as for laptop external storage etc.

What Seagate has now announced is a 3.5" form factor drive such as an 8TB model that not only connects to a USB port, it also draws its power from the USB port. Granted there are caveats such as type of USB port and how much power your USB port has so check out the speeds and feeds. Just think, now you can have an 8TB HDD attached to your laptop or tablet that has 1TB NVM NAND Flash SSD internal storage, or something like that.

Spectralogic announces new tape solutions for backup, data protection and big data. Ubuntu 16.04 LTS released that includes OpenStack and Ceph support among other enhancements. By the way, if you were not ware, Ubuntu 16.04 LTS runs native on IBM zSeries mainframe in addition to standard Intel, AMD and ARM processors. Virtual Instruments and Load Dynamix merge while CEO John Thompson exits, while Western Digital Enhances Its Data center Portfolio With WD Gold Hard Drives, and wrapping up the news for this month ZStor announces all flash array (AFA) over fabric using NVMe.

The above is a sampling of some of the various industry news, announcements and updates for this April. Watch for more news updates in May coming out of EMCworld among other events along with more on OpenStack, NVM/Flash/SSD, WIndows, VMware, CI/HCI/CiB, software defined and related topics.

View other recent news and industry trends here.

StorageIO Commentary in the news

Recent Server StorageIO and Greg Schulz industry trends perspectives commentary in the news.

Cloud and Virtual Data Storage Networking: Various comments and discussions

StorageIOblog: Additional comments and perspectives

EnterpriseStorageForum: Comments on Looking Beyond the Hype at Hyperconvergence in Storage

EnterpriseStorageForum: Comments on What Does Everything's a Service Mean for Storage?

CDW Digital: Comments on Transitioning Data Centers To Hybrid Environment

SearchDataCenter: Comments on EMC, VCE, CI and Hyper converged vs. Hyper-small

ChannelproSMB: Comments on NVMe (and SSD) and server storage I/O

ChannelproSMB: Comments on SMB IT technology trends

View more Server, Storage and I/O hardware as well as software trends comments here

Vendors you may not have heard of (or heard from lately)

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

Badu - WiFi network acceleration tools

CloudEndure - Cloud migration and disaster recovery

Containerx - Container software

Denodo - Data virtualization software management tools

Diamanti - formerly known as Datawise.io emerges from stealth for container management

Elasticbox - Adaptive cloud delivery

IOsafe - Rugged and resilient NAS appliances

iTernity - CAS and object bulk storage

Newrelic - Software Analytics tools for applications and clouds

Openio.IO - Secure scalable bulk software defined storage including object

Spacebelt and Cloud Constellation - Space based cloud storage startup

Workspot - VDI solutions and management software

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 Tips and Articles

Recent Server StorageIO articles appearing in different venues include:

Redmond Magazine: Data Protection Trends Evolving from Data Protection to Data Resiliency

Check out these resources techniques, trends as well as tools. View more tips and articles here

StorageIO Videos and Podcasts

StorageIO podcasts are also available via iTunes and at StorageIO.tv

StorageIO Webinars and Industry Events

Brouwer Storage (Nijkerk Holland) June 9-15, 2016 - Various in person seminar workshops

June 15: Software Defined Data center with Greg Schulz and Fujitsu International

June 14: Round table with Greg Schulz and John Williams (General manager of Reduxio) and Gert Brouwer. Discussion about new technologies with Reduxio as an example.

June 10: Hyper converged, Converged , and related subjects presented Greg Schulz

June 9 : Industry and new Trends session presented by Greg Schulz, learn more about the above sessions organized by www.brouwerconsultancy.com.

Simplify and Streamline Your Virtual Infrastructure - May 17 webinar

Is Hyper-Converged Infrastructure Right for Your Business? May 11 webinar

EMCworld (Las Vegas) May 2-4, 2016

Interop (Las Vegas) May 4-6 2016

Making the Cloud Work for You: Rapid Recovery April 27, 2016 webinar

OpenStack Summit April 26, 2016

Backup with Brains - March 31, 2016 free webinar (1PM ET)

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

From StorageIO Labs
Research, Reviews and Reports

NVMe is in your future, resources to start preparing today for tomorrow

Why NVMe Should Be in Your Data Center - Preparing for Tomorrow's Data Center Today (StorageIO Guest Post Via Micron.com)

Why NVMe Should Be in Your Data Center

Why Micron NVMe SSDs

New Path to *Storage* I/O Performance and Resiliency With NVMe

How NVMe Will Revolutionize **Server** and Storage I/O

How to Prepare for the NVMe *Server* Storage I/O Wave

View related items at our thenvmeplace.com and thessdplace.com micro sites.

Server StorageIO Recommended Reading List

The following are various recommended reading including books, blogs and videos. If you have not done so recently, also check out the Intel Recommended Reading List (here) where you will also find a couple of mine as well as books from others.

For this months recommended reading, it's a blog site. If you have not visited Ray Lucchesi (@raylucchesi) site you should. Ray has a great recent post that looks at Erasure Code, Reed Solomon, and Local Reconstruction Code (LRC) such as those used by Microsoft Azure. Check out Ray's post on LRC and related information here.

Server StorageIO Industry Resources and Links

Check out these useful links and pages:

storageio.com/links - Various industry links (over 1,000 with more to be added soon)
objectstoragecenter.com - Cloud and object storage topics, tips and news items
dataprotectiondiaries.com - Various data protection items and topics
thenvmeplace.com - Focus on NVMe trends and technologies
thessdplace.com - NVM and Solid State Disk topics, tips and techniques
storageio.com/performance.com - Various server, storage and I/O performance and benchmarking

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