



Industry Trends Perspective Update Newsletter

Information Technology and Data infrastructure

Cloud Virtual Physical Software Defined

Volume 15, Issue X - Industry Trends

Hello and welcome to this October 2015 [Server StorageIO update newsletter](#). Fall has arrived here in the northern hemisphere which means its spring in the southern hemisphere, and getting colder here. While fall means cooler out-door temperature with winter just around the corner, in the IT/ITC industry, particular the data infrastructure sector (server, storage, I/O networking, hardware, software, cloud, physical, software defined virtual) things are very hot. Sure the various industry and vendor focused conferences, road shows and mini-events with associated new product, technology or services announcements (PTSA. There are also the various merger and acquisitions (M&A) that have occurred throughout the year including the recent [Dell buying EMC](#), and Western Digital (WD) buying SANdisk among others.

This edition of the Server StorageIO update newsletter has a focus on industry trends perspectives including recent M&A and PTSA activity. In addition to industry fall industry M&A and PTSA activity, there also plenty of conference, seminars, workshops, webinars and other events some of which you can see here on the [Server StorageIO events page](#).

On a slightly different note, for those interested and not aware of the European Union (EU) ruling earlier this month on data privacy (e.g. [Safe Harbor](#)), [here](#) and [here](#) are a couple of links to stories discussing the new ruling changes between the EU and US (among other countries). The EU data privacy rulings involve personal data being moved out of EU countries to US data centers such as cloud and application services firms.

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

- [Feature Topic](#)
- [Industry Trends News](#)
- [Commentary in the news](#)
- [Tips and Articles](#)
- [StorageIOblog posts](#)
- [Videos and Podcasts](#)
- [Events and Webinars](#)
- [Recommended Reading List](#)
- [Industry Activity Trends](#)
- [Server StorageIO Lab reports](#)
- [New and Old Vendor Update](#)
- [Resources and Links](#)

Feature Topic - TBD

This months feature topic theme is industry trends perspectives including M&A activity.

Some M&A, IPO and divestiture activity includes:

- [Dell buying EMC](#) for \$67B USD while [EMC and VMware create public cloud](#) unit based on Virtustream that reports into VMware.
- HDD and SSD manufacturer [WD buying SANdisk](#) for \$19B USD following their acquisition earlier this year of [Amplidata \(Object Storage\)](#) and earlier bought HDD and SSD manufacturer [HGST](#) along with SSD PCIe card vendor [Virident](#) and [STEC](#) among others.
- HDD and SSD manufacturer [Seagate bought DotHill](#), keep in mind that Seagate last

- year [bought Xyratex](#) along with the [LSI flash business from Avago](#) who bought LSI.
- [Intel buying Altera](#) for \$16B USD, [Avago buys Broadcom](#) and [Skywords buying PMC Sierra](#) (NVMe, PCIe, SAS controllers, switches, RAID cards e.g. Adaptec).
 - [IBM buys Cleversafe](#) for cloud and [object storage](#) indicating the technology will be placed in its [Softlayer](#) cloud unit.
 - [HP and SANdisk partner](#) on ReRAM for Storage Class Memory aka NVM. Meanwhile [HP exiting public cloud market](#) (e.g. shutting down Helion). Keep in mind that [HP will also be splitting into two companies](#) in November one focused on PCs and printers (e.g. HP Inc.) and one on enterprise solutions (e.g. HP Enterprise).
 - Pure Storage (all flash array aka AFA SSD vendor) does an IPO ([here](#) and [here](#)).

Continue reading more about NVM, NVMe, NAND flash, SSD Server and storage I/O related topics at www.thessdplace.com as well as about I/O performance, monitoring and benchmarking tools at www.storageperformance.us.

StorageIOblog Posts

Recent and popular Server StorageIOblog posts include:

- [Dude, Dell is Getting \(Buying\) an EMC and VMware Deal](#)
- [Server StorageIO September 2015 Update Newsletter](#)
- [PACE your Server Storage I/O decision-making, its about application requirements](#)
- [Fall 2015 Server Storage I/O Cloud Virtual Seminars Going Dutch](#)

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:

- Amazon Web Service (AWS) Simple Storage Service (S3) [Infrequent Access \(IA\)](#) storage class for inactive data with immediate access vs. [Glacier](#) cold or frozen (dormant) data with slow or time delayed access. AWS also announced [Snowball](#) bulk data import/export 50TB appliance service in addition to their earlier offered capabilities.
- [EMC Rexray](#) (part of [EMCcode](#)) and [Mesosphere](#) (for [Mesos](#) data center operating system) have joined to enable [persistent Docker volumes](#) for Mesos (e.g. data center operating system platform).
- Microsoft Azure recent enhancements include [file access](#) of [cloud storage](#) (on-premise and within Azure cloud) leveraging SMB interfaces. [Here is a primer](#) on Azure cloud storage service offerings. View other recent Azure Cloud Storage, Compute, Database and Data Analytics [service offerings here](#). In addition to Microsoft Azure cloud offerings or Windows 10 desktop operating system, you can also download Windows Server 2016 Technical Preview 3 (TP3) and [see what's new here](#). Some of the features include Storage Spaces Direct (e.g. DAS storage) and replication among other features.
- OpenStack [scheduled release](#) Liberty ([release notes and what's new](#)).

View other recent [news and industry trends here](#)

StorageIO Commentary in the news



Recent Server StorageIO commentary and industry trends perspectives about news, activities tips, and announcements.

- [NetworkComputing](#): Dell buying EMC: The Storage Ramifications
- [EnterpriseTech](#): VMware Targets Synergies in Dell EMC Deal
- [HPCwire](#): Dell to Buy EMC for \$67B
- [EnterpriseStorageForum](#): Data Storage: Do We Really Need to Store Everything?
- [EnterpriseStorageForum](#): Why Hard Drives Are Here to Stay (For Now)
- [EnterpriseStorageForum](#): Top Ten Ways to Use OpenStack for Storage
- [EnterpriseStorageForum](#): Are We Heading for Storage Armageddon?

View more Server, Storage and I/O hardware as well as software trends comments [here](#)

Vendors you may not have heard of

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

- [Hedvig](#) - Converged server storage software management tools
- [Infinidat](#) - Another Moshe Yanai Storage System Startup
- [Mesosphere](#) - Mesos Data Center Operating System management tools
- [Plexxi](#) - Networking startup with former EMC executive Rich Napolitano as CEO
- [ScaleMP](#) - Scale-out server aggregation management tools

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:


- **Virtual Blocks (VMware Blogs):** [EVO:RAIL – What Is It And Why Does It Matter?](#)
This is the first of a multi-part series looking at Converged Infrastructures (CI), Hyper-Converged Infrastructures (HCI), Cluster in Box (CiB) and other unified solution bundles. There is a trend of industry adoption talking about CI, HCI, CiB and other bundled solutions, along with growing IT customer adoption and deployment. Different sized organizations are looking at various types of CI solutions to meet various application and workloads needs. [Read more here](#).
- **WServerNews.com:** [Cloud \(Microsoft Azure\) storage considerations](#)
Let's say that you have been tasked with, or decided that it is time to use (or try) public cloud storage such as Microsoft Azure. Ok, now what do you do and what decisions need to be made? Keep in mind that Microsoft Azure like many other popular public clouds provides many difference services available for fee (subscription) along with free trials. These services include applications, compute, networking, storage along with development and management platform tools. [Read more here](#).
- **NetworkComputing:** [Selecting Storage: Buzzword Bingo](#)
The storage industry is rife with buzzwords. Here are some of the popular ones storage buyers need to navigate carefully to find storage products that truly meet their needs. [Read more here](#).

InfoStor: [What's The Best Storage Benchmark?](#) It Depends...

- **EnterpriseStorageForum:** [NAND, DRAM, SAS/SCSI & SATA/AHCI: Not Dead, Yet!](#)

Check out [these resources and links](#) technology, techniques, trends as well as tools. View more [tips and articles here](#)

StorageIO Videos and Podcasts

StorageIO podcasts are also available via  and at StorageIO.tv

StorageIO Webinars and Industry Events

[Deltaware Emerging Technology Summit](#) November 10, 2015

[Dell Data Protection Summit](#) Nov 4, 2015 7AM PT

[Microsoft MVP Summit](#) Nov 2-5, 2015

[Server Storage I/O Dutch Workshop Seminar Series](#)
[Nijkerk Netherlands](#) October 13-16 2015

October 13 - Symposium: Software Defined Storage Management

October 14 - Server Storage I/O Fundamental Trends

October 15 - Symposium – Data Center Infrastructure Management (DCIM)

October 16 - "Converged Day" Server and Storage Decision making

Learn more and register at the [Brouwer Consultancy website here](#).

September 23 - [Webinar Redmond Magazine & Dell Data Protection](#)

The New World Order of Data Protection - Focus on Recovery

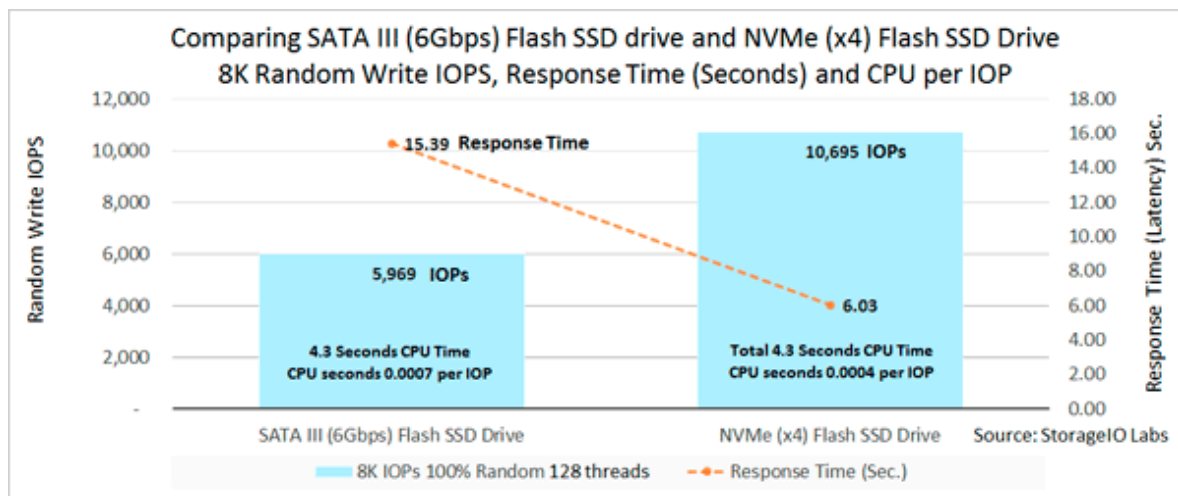
Learn more about the 9Rs of data protection and recovery

See more webinars and other activities on the [Server StorageIO Events page here](#).

From StorageIO Labs

Research, Reviews and Reports

Quick Look: SATA and NVMe Flash SSD Performance



Non-Volatile Memory (NVM) Express ([NVMe](#)) continues to evolve as a technology for enabling

and improving server storage I/O for NVM including nand flash SSD storage. NVMe streamlines performance enabling more work to be done (e.g. IOPs), data to be moved (bandwidth) at a lower response time using less CPU. The above figure is a quick look comparing nand flash SSD being accessed via SATA III (6Gbps) on the left and NVMe (x4) on the right. As with any server storage I/O performance comparisons there are many variables and take them with a grain of salt. While IOPs and bandwidth are often discussed, keep in mind that with the new protocol, drivers and device controllers with [NVMe](#) that streamline I/O less CPU is needed. Learn more about NVM, NVMe, flash, SSD and related topics at www.thessdplace.com.

View other StorageIO lab review reports [here](#)

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 my books.



[The Human Face of Big Data book review.](#) To say this is a big book would be an understatement, then again, big data is a big topic with a lot of diversity if you open your eyes and think in a pragmatic way, which once you open and see the pages you will see. This is physically a big book (11x 14 inches) with lots of pictures, texts, stories, factoids and thought stimulating information of the many facets and dimensions of big data across 224 pages. The [Human Face of Big Data](#) is more than a coffee table or picture book as it is full of with information, factoids and perspectives how information and data surround us every day. Open up a copy of The Human Face of Big Data and you will see examples of how data and information are all around us, and our dependence upon it. [Read more here.](#)

Server StorageIO Industry Resources and Links

Check out these useful links and pages:

storageio.com/links
objectstoragecenter.com
dataprotectiondiaries.com
storageperformance.us
thenvmeplace
thessdplace.com
storageio.com/raid
storageio.com/ssd

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