



## Volume 16, Issue I - Beginning of Year (BoY) Edition

Hello and welcome to the January 2016 [Server StorageIO update newsletter](#).

Is it just me, or did January disappear in a flash like data stored in non-persistent volatile DRAM memory when the power is turned off? It seems like just the other day that it was the first day of the new year and now we are about to welcome in February. Needless to say, like many of you I have been busy with various projects, many of which are behind the scenes, some of which will start appearing publicly sooner while others later.

In terms of what have I been working on, it includes the usual of performance, availability, capacity and economics (e.g. PACE) related to servers, storage, I/O networks, hardware, software, cloud, virtual and containers. This includes NVM as well as NVMe based SSD's, HDD's, cache and tiering technologies, as well as data protection among other things with Hyper-V, VMware as well as various cloud services.

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

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### Feature Topic - Microsoft Nano, Server 2016 TP4 and VMware

This months feature topic is virtual servers and software defined storage including those from VMware and Microsoft. Back in [November](#) I mentioned the 2016 Technical Preview 4 (e.g. TP4) along with Storage Spaces Direct and Nano. As a reminder you can download your free trial copy of Windows Server 2016 TP4 from [this Microsoft site here](#).

Three good Microsoft Blog posts about storage spaces to check out include:

- Storage Spaces Direct in Technical Preview 4 ([here](#))
- Hardware options for evaluating Storage Spaces Direct in Technical Preview 4 ([here](#))
- Storage Spaces Direct - Under the hood with the Software Storage Bus ([here](#))

As for [Microsoft Nano](#), for those not familiar, it's not a new tablet or mobile device, instead, it is a very light weight streamlined version of the Windows Server 2016 server. How streamlined? Much more so than the earlier Windows Server versions that simply disabled the GUI and desktop interfaces. Nano is smaller from a memory and disk storage space perspective meaning it uses less RAM, boots faster, has fewer moving parts (e.g. software modules) to break (or need patching).

Specifically Nano removes 32 bit support and anything related to the desktop and GUI interfaces as well

as removing the console interface. That's right, no console or virtual console to log into, Wow is gone, access is via Powershell or Windows Management Interface tools from remote systems. How small is it? I have a Nano instance built on a VHDX that is under a GB in size, granted, its only for testing. The goal of Nano is to have a very light weight streamlined version of Windows Server that can run hundreds (or more) VMs in a small memory footprint, not to mention supports lots of containers. Nano is part of Windows TP4, learn more about Nano [here in this Microsoft post](#) including how to get started using it.

Speaking of VMware, if you have not received an invite yet to their Digital Enterprise February 6, 2016 announcement event, [click here to register](#).

## StorageIOblog Posts

Recent and popular Server StorageIOblog posts include:

- [RIP Windows SIS \(Single Instance Storage\), or at least in Server 2016](#)
- [Garbage data in, garbage information out, big data or big garbage?](#)
- [Little data, big data and very big data \(VBD\) or big BS?](#)
- [Modernizing Data Protection = Using new and old things in new ways](#)
- [Water, Data and Storage Analogy](#)
- [The NVMe Place \(Non Volatile Memory Express\)](#)
- [Server StorageIO October 2015 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:

- EMC [announced](#) Elastic Cloud Storage (ECS) V2.2. A main theme of V2.2 is that besides being the 3rd generation of EMC object storage (dating back to Centera, then Atmos), is that ECS is also where the functionality of Centera, Atmos and other functionality converge. ECS provides object storage access along with HDFS (Hadoop and Hortonworks certified) and traditional NFS file access.

Object storage access includes Amazon S3, OpenStack Swift, ATMOS and CAS (Centera). In addition to the access, added Centera functionality for regulatory compliance has been folded into the ECS software stack. For example, ECS is now compatible with SEC 17 a-4(f) and CFTC 1.3(b)-(c) regulations protecting data from being overwritten or erased for a specified retention period. Other enhancements besides scalability, resiliency and ease of use include meta data and search capabilities. You can download and try ECS for non-production workloads with no capacity or functionality limitations [via this link](#).

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. In case you missed them from last month:

- [TheFibreChannel.com](#): Industry Analyst Interview: Greg Schulz, StorageIO
- [EnterpriseStorageForum](#): Comments Handling Virtual Storage Challenges
- [PowerMore \(Dell\)](#): Q&A: When to implement ultra-dense storage

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.

- [Datrium](#) - DVX and NetShelf server software defined flash storage and converged infrastructure
- [DataDynamics](#) - StorageX is the software solution for enabling intelligent data migration, including from NetApp OnTap 7 to Clustered OnTap, as well as to and from EMC among other NAS file serving solutions.
- [Paxata](#) - Little and Big Data management solutions

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:


- **InfoStor**: [Data Protection Gaps, Some Good, Some Not So Good](#)

And in case you missed them from last month

- **IronMountain**: [5 Noteworthy Data Privacy Trends From 2015](#)
- **Virtual Blocks (VMware Blogs)**: [Part III EVO:RAIL – When And Where To Use It?](#)
- **InfoStor**: [Object Storage Is In Your Future](#)
- **InfoStor**: [Water, Data and Storage Analogy](#)

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

EMCworld (Las Vegas) May 2-4, 2016

Interop (Las Vegas) May 4-6 2016

NAB (Las Vegas) April 19-20, 2016

TBA - March 31, 2016

Redmond Magazine Gridstore (How to Migrate from VMware to Hyper-V) February 25, 2016 Webinar (11AM PT)

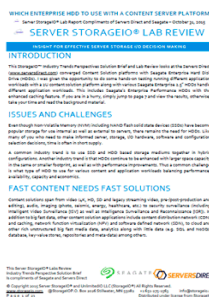
TBA - February 23, 2016

[Redmond Magazine and Dell Foglight](#) - Manage and Solve Virtualization Performance Issues Like a Pro ([Webinar 9AM PT](#)) - January 19, 2016

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

## From StorageIO Labs Research, Reviews and Reports

### Quick Look: What's the Best Enterprise HDD for a Content Server?



#### [Insight for Effective Server Storage I/O decision-making](#)

This StorageIO® Industry Trends Perspectives Solution Brief and Lab Review (compliments of Seagate and Servers Direct) looks at the Servers Direct ([www.serversdirect.com](http://www.serversdirect.com)) converged Content Solution platforms with Seagate ([www.seagate.com](http://www.seagate.com)) Enterprise Hard Disk Drive (HDDs).

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" HDDs handle different application workloads. This includes Seagate's Enterprise Performance HDDs with the enhanced caching feature.

[Read more in this Server StorageIO industry Trends Perspective white paper and lab review.](#)

Looking for NVM including SSD information? Visit the Server StorageIO [www.thessdplace.com](http://www.thessdplace.com) and [www.thenvmepplace.com](http://www.thenvmepplace.com) micro sites. View other StorageIO lab review and test drive 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 mine as well as books from others. For this months recommended reading, it's a blog site. If you have not visited Duncan Eppings ([@DuncanYB](#)) [Yellow-Bricks](#) site, you should, particular if you are interested in virtualization, high availability and related topical themes.



Granted Duncan being a member of the VMware CTO office covers a lot of VMware related themes, however being the author of several books, he also covers non VMware related topics. Duncan recently did a really good and simple post about rebuilding a failed disk in a VMware VSAN vs. in a legacy RAID or erasure code based storage solution.

One of the things that struck me as being important with what Duncan wrote about is avoiding apples to oranges comparisons. What I mean by this is that it is easy to compare traditional parity based or mirror type solutions that chunk or shard data on KByte basis spread over disks, vs. data that is chunk or sharded on GByte (or larger) basis over multiple servers and their disks. Anyway, check out Duncan's [site and recent post by clicking here](#).

## Server StorageIO Industry Resources and Links

Check out these useful links and pages:

[storageio.com/links](http://storageio.com/links)

[objectstoragecenter.com](http://objectstoragecenter.com)

[dataprotectiondiaries.com](http://dataprotectiondiaries.com)

[storageperformance.us](http://storageperformance.us)

[thenvmeplace](http://thenvmeplace)

[thessdplace.com](http://thessdplace.com)

[storageio.com/performance.com](http://storageio.com/performance.com)

[storageio.com/raid](http://storageio.com/raid)

[storageio.com/ssd](http://storageio.com/ssd)

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