

### Industry Trends Perspective Update Newsletter

Information Technology and Data infrastructure Cloud Virtual Physical Software Defined

# Volume 15, Issue IV

Hello and welcome to this April 2015 Server and StorageIO update newsletter.

Thus this months newsletter has a focus on object • Tips and Articles storage for archiving, bulk data, unstructured data, big • StoragelOblog posts data, archiving and protection among other scenarios.

Enjoy this edition of the Server and StoragelO update • Server StoragelO Lab reports newsletter and watch for new tips, articles, StorageIO lab . Resources and Links report reviews, blog posts, videos and Podcasts along with in the news commentary appearing soon.



### **StoragelOblog posts**

April StoragelOblog posts include:

- Cloud conversations: <u>AWS EFS Elastic File System</u> (Cloud NAS) First Preview Look
- Blog and Podcast <u>S3motion Buckets Containers</u> Objects AWS S3 Cloud and EMCcode
- Data Protection Gumbo (Blog & Podcast) Protect Preserve and Serve Information
- In case you missed it, March 2015 Server StoragelO Newsletter

View other recent as well as past blog posts here

## **April Newsletter Feature Theme Cloud and Object Storage Fundamentals**

There are many facets to object storage including

#### In This Issue

- Industry Trends Perspectives News
- · Commentary in the news

- Events and Webinars
- StoragelOblog posts

#### **Industry News and Activity**

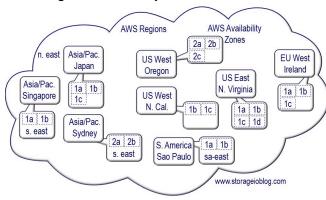
Recent Industry news and activity

- GovTech: Storage Costs Cloud Police Cam
- Via BostonHerald: Booting Up: Storage costs cloud police cam issue
- Via ComputerWorld: Amazon offers network file storage in the cloud
- Via ComputerWeekly: <u>HGST marries helium</u> HDD's and Himalaya in object storage
- Via GoogleCloudPlatform Blog: GCS Nearline Online storage at Offline price
- Via MarketWatch: Global Data Center Provider CyrusOne Announces Direct Connectivity to Google Cloud Platform
- Via PRNewsWire: Quantum Announces New Archive Solutions Designed To Reduce **Unstructured Data Storage Costs**
- Via StoragelOblog: <u>AWS S3 Cross Region</u> Replication storage enhancements
- Via StreetInsider: Western Digital (WDC) to Acquire Object Storage Software Amplidata
- Via Enterprise Storage Forum: Dell Invests in Object Storage Startup Exablox
- Via Enterprise Storage Forum: Introducing s3motion (S3 and object access docker based appliance)
- Via Computerworld: Quantum enhances their cloud and object storage management with new StorNext software version
- ScaleOut Software Releases Version 5.2 of Its In-Memory Computing Platform
- HP Inks Global Reseller Agreement With Object Storage Startup Scality
- NetApp Introduces Software-Defined Object Storage for the Hybrid Cloud
- Via InsideHPC: <u>Deploying Hadoop on Lustre</u>

technology implementation, products, services, access and architectures for various applications and use scenarios. The following is a short synopsis of some basic terms and concepts associated with cloud and object storage.

# Common cloud and object storage terms

- Account or project Top of the hierarchy that represent owner or billing information for a service that where buckets are also attached.
- Availability Zone (AZ) can be rack of servers and storage or data center where data is spread across for storage and durability.



Example of some AWS Regions and AZ's

- · Bucket or Container Where objects or sub-folders containing objects are attached and accessed. Note in some environments such as AWS S3 you can have sub-folders in a bucket.
- · Connector or how your applications access the cloud or object storage such as via an API, S3, Swift, Rest, CDMI, Torrent, JSON, NAS file, block of other access gateway or software.
- Durability Data dispersed with copies in multiple locations to survive failure of storage or server **EMCworld** - May 4-6 2015 (Las Vegas) hardware, software, zone or even region. Availability = Access + Durability.
- End-point Where or what your software, application or tool and utilities or gateways attach to for accessing buckets and objects.
- Ephemeral Temporary or non-persistent
- Eventual consistency Data is eventually made consistency, think in terms of asynchronous or deferred writes where there is a time lag vs. synchronous or real-time updates.
- Immutable Persistent, non-altered or write once read many copy of data. Objects generally are not BrightTalk Webinar - June 23 2015 updated, rather new objects created.

- Storage: Lessons Learned and Best Practices
- Via Yahoo Engineering Blog: <u>Yahoo Cloud</u> Object Store - Object Storage at Exabyte Scale
- Via the Platform: Inside The Ceph Exascale Storage At Yahoo
- Va Swift Summit: Taking the Mystery out of Erasure Codes: A Swift Implementation
- Enterprise Storage Forum: Lustre buying guide

View other recent industry activity here

#### **StorageIO Commentary in the news**



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

CyberTrend: Comments on Software Defined Data Center and Virtualization

View more trends comments here

#### **StorageIO Tips and Articles**

Check out these resources and links on server storage I/O performance and benchmarking tools. View more tips and articles here

#### **Various Industry Events**

Interop - April 29 2015 (Las Vegas) Presenting Smart Shopping for Your **Enterprise Storage Strategy** 

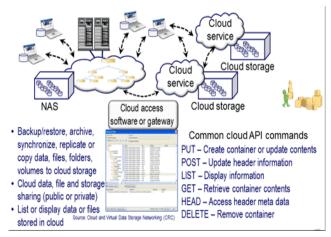
View other recent and upcoming events here

#### **Webinars**

Server Storage I/O Innovation Update

View other webinars here

#### **Videos and Podcasts**



Via Cloud Virtual Data Storage Networking (CRC)

- Object Byte (or bit) stream that can be as small as one byte to as large as several TBytes (some solutions and services support up to 5TByte sized objects). The object contains what ever data in any organization along with meta data. Different solutions and services support from a couple hundred KBytes of meta-data to MBytes worth of meta-data. In terms of what can be stored in an object, anything from files, videos, images, virtual disks (VMDK's, VHDX), ZIP or tar files, backup and archive save sets, executable images or ISO's, anything you want.
- OPS Objects per second or how many objects accessed similar to a IOP. Access includes gets, puts, list, head, deletes for a CRUD interface e.g. Created, Read, Update, Delete.
- Region Location where data is stored that can include one or more data centers also known as Availability Zones.
- Sub-folder While object storage can be accessed in a flat name space for commonality and organization some solutions and service support the notion of sub-folder that resemble traditional directory hierarchy.

Learn more about cloud, object storage and adjacent storage I/O tool box for working with cloud and themes in <u>Cloud and Virtual Storage Networking</u> (CRC) object storage along with others such as and <u>www.objectstoragecenter.com</u>

Cloudberry, <u>S3fs</u>, Cyberduck, S3 browser



# OpenStack Manila (e.g. Folders and Files)

# Data Protection Gumbo Podcast Protect Preserve and Serve Data

In this episode, Greg Schulz is a guest on <u>Data Protection Gumbo</u> hosted by Demetrius Malbrough(@dmalbrough). The conversation covers various aspects of data protection which has a focus of protect preserve and serve information, applications and data across different environments and customer segments.

While we discuss enterprise and SMB data protection, we also talk about trends from Mobile to the cloud among many others tools, technologies and techniques. Check out the podcast here.

# Springtime in Kentucky With Kendrick Coleman of EMCcode Cloud Object Storage S3motion and more

In this episode, <u>@EMCcode</u> (Part of <u>EMC</u>) developer advocate Kendrick Coleman (<u>@KendrickColeman</u>) joins me (e.g. Greg Schulz) for a conversation.

Conversation covers what is <a href="EMCcode">EMCcode</a>, <a href="EMCcode">EMC EMC EMCCODE</a>, <a href="EMCcode">Cloud</a> Foundry, <a href="clouds">clouds</a>, <a href="object">object</a> storage, <a href="buckets">buckets</a>, <a href="containers">containers</a>, <a href="objects">objects</a>, <a href="mailto:node.js">node.js</a>, <a href="Docker">Docker</a>, <a href="OpenStack">OpenStack</a>, <a href="AWS">AWS</a></a></a> <a href="mailto:s3motion">S3motion</a> tool Kendrick developed.

S3motion is a good tool to have in your server storage I/O tool box for working with cloud and object storage along with others such as Cloudberry, <u>S3fs</u>, Cyberduck, S3 browser among many others. You can <u>get S3motion for free from git hub here</u> Check out the <u>companion blog post for this podcast here</u>.

StoragelO podcast's are also available via



From StorageIO Labs
Research, Reviews and Reports

**AWS S3 Cross-Region Replication** 

AWS recently announced their new cloud based Elastic File Storage (EFS) to compliment their existing Elastic Block Storage (EBS) offerings. However are you aware of what is going on with cloud files within <a>OpenStack</a>?

For those who are familiar with OpenStack or simply talk about it and Swift object storage, or perhaps Cinder block storage, are you aware that there is also a file (NAS or Network Attached Storage) component called Manila?

In concept Manila should provide a similar capability to what AWS has recently announce with their Elastic File Service (EFS), or depending on your perspective, perhaps the other way around. If you are familiar and have done anything with Manila what are your initial Moving and Replicating Buckets/Containers, thoughts and perspectives.

#### What this all means

People routinely tell me this is the most exciting and interesting times ever in servers, storage, I/O networking, software, backup or data protection, performance, cloud and virtual or take your pick too which I would not disagree. However, for the past several years (no, make that decade), there is new and more interesting things including in adjacent areas.

I predict that at least for the next few years (no, make that decades), we will continue to see plenty of new and interesting things, questions include.

However, what's applicable to you and your environment vs. simply fun and interesting to watch?

Ok, nuff said, for now

Cheers gs



Sub folders and Objects (Click on Image to read about AWS Cross-Region Replication)

View other StorageIO lab review reports here

#### **Resources and Links**

- Cloud conversations: If focused on cost you might miss other cloud benefits
- AWS overview and primer
- Avoid Cloud Storage Pricing Surprises
- Are more than 5 nines of availability possible?
- · Primary storage clouds vs cloud for backup
- storageio.com/links
- objectstoragecenter.com
- dataprotectiondiaries.com
- storageperformance.us
- thessdplace.com
- storageio.com/raid

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