Really Big Storage: A 10,000 Petabyte Storage Cloud

Chris Gladwin, CEO, Cleversafe

According to a recent McKinsey & Company report, “Big data: The next frontier for innovation, competition and productivity,” nearly 80 percent of the world’s data is unstructured, including file formats like Microsoft Word and PowerPoint, and non-textual content like graphics, video and audio files, and data storage is growing 10 times every five years. At scale, this explosive growth creates a lack of performance and security, putting organizations at risk for data loss. Chris will discuss the growing need for object-based storage solutions that address enterprise organization’s massive data storage needs (referred to as Big Data) while allowing for availability, security and scalability. Chris is the CEO of Cleversafe, a pioneering company in leveraging object based storage and Information Dispersal Algorithms (IDA) to offer a reliable cloud storage platform that can scale to Exabytes and beyond for companies managing Big Data.

Data-Intensive Storage Services on Clouds: The VISION Cloud Project

Simona Rubiniuchi-Gohari, IBM

The emergence of cloud environments has made feasible the delivery of Internet-scale services by addressing a number of challenges such as live migration, fault tolerance, and quality of service. However, current approaches do not tackle key issues related to cloud storage, which are of major importance given the amount of data produced by various sources (e.g., smart phones, cameras, social networks, etc.).

In this tutorial we will present VISION Cloud (Virtualized Storage Services for the Future Internet), a three year large-scale European Union (EU) integrated research project on cloud storage. VISION Cloud aims at addressing the challenges of providing optimized data-intensive storage services and enablers to meet them: VISION Cloud is building a scalable and flexible infrastructure facilitating a new data model to raise the abstraction level of storage, data mobility, computational and content-centric access to storage as well as mechanisms for cost-efficiency with provisions for QoS and security guarantees. The primary deliverables of the VISION Cloud project will be an architecture and a reference implementation of a cloud-based infrastructure, to be validated through use cases. The architecture and deliverables will be in line with open storage standards currently developed in the industry. SNIA Europe is involved as a partner in VISION Cloud.

Use of Storage Security in the Cloud

David Dodgson, Software Engineer, Unisys

Everyone is concerned with the security of their storage in the cloud, however, security in any particular case depends on what the user is trying to accomplish. Someone storing pictures of their children in the cloud will have a different idea of security than someone who is generating payroll information. Storage security needs to be implemented with an understanding of the different needs of different users. Enterprises will want to use secure private clouds that are customized to their individual security requirements, while individuals will want public clouds to address their needs. The most important security requirements will be those that satisfy the needs of the greatest number of users in a particular cloud environment.

Cloud Storage in a PaaS World

Susan Wu, Group Manager, Product Management, Systems Management Products Group, Oracle

Cloud storage has traditionally been seen as a component of Infrastructure as a Service (IaaS) offerings. But what about Platform as a Service (PaaS)? This talk will discuss what it takes to have a complete PaaS cloud stack that includes storage in many forms, including database as a service and middleware as a service. It will address what customers should look for in cloud offerings, and will cover the use cases and user requirements.

The progression of Cloud Storage: Hybrids, QoS, and Beyond

Henry Baltazar, Senior Analyst, Storage & Systems, The 451 Group

This session will go over The 451 Group’s market research data on cloud storage and the challenges for early adopters. With the evolving requirements of customers, hybrid cloud storage and QoS are becoming key ingredients for driving more data to clouds.
### Agenda

#### 7:30 - 8:30 am
**Breakfast and Registration**

#### 8:30 - 8:45 am
**Welcome Remarks:** Val Bercovici, CSI Chair

#### 8:45 - 9:30 am
**Apache Hadoop Today and Tomorrow**  
Eric Baldeschwiler, CEO, Hortonworks

#### 9:30 - 10:00 am
**The State of Cloud Storage - Some SNIA Perspectives**  
SNIA CSI Leadership Team

#### 10:00 - 10:15 am
**Break**

#### 10:15 - 10:45 am
**Storing in the Cloud: What You Need to Know**  
Brett Piatt, Director of Corporate Development, Rackspace

#### 10:45 - 11:30 am
**The State of Cloud Storage - Some SNIA Perspectives**  
Val Bercovici, Chairman, San Diego Supercomputer Center

#### 11:30 - 12:00 pm
**Why You Need an Enterprise-wide Cloud Strategy?**  
Adam Fore, Director of Solutions Marketing, NetApp

#### 12:00 - 1:00 pm
**Lunch/Networking**

#### 1:00 - 1:45 pm
**The Future of Cloud Storage**  
Hara Parekh, CTO and Co-Founder, Gluster

**Cloud-Powered Virtual Disaster Recovery**  
Ashar Bag, Chairman of the SNIA Cloud Backup Recovery and Restore (BURR) Special Interest Group (SIG)

#### 1:45 - 2:30 pm
**Cloud Storage’s “Organic” or Living Evolution**  
Marc Staimer, President & CEO, Dragon Slayer Consulting

**Really Big Storage:**  
A 10,000 Petabyte Storage Cloud  
Chris Gladwin, CEO, Cleversafe

#### 2:30 - 3:15 pm
**Data-Intensive Storage Services on Clouds: The VISION Cloud Project**  
Simona Rabinowici-Cohen, Research Staff Member, IBM

**Use of Storage Security in the Cloud**  
David Dodgson, Software Engineer, Unisys

#### 3:15 - 3:30 pm
**Break**

#### 3:30 - 4:15 pm
**The Challenges of Cloud Archive and Preservation - Moving and Retaining Your Digital Information over the Long Term**  
Moderator: Marc Staimer, Dragon Slayer Consulting

Panellists: Chad Thibodeau, Cleversafe, Inc; Don Post, IMERGE; Chris March, Spectra Logic; Thomas Rivera, BlueArc

#### 4:15 - 4:45 pm
**Cloud Storage in a Post World**  
Susan Wu, Group Manager, Product Management, Systems Management Products Group, Oracle

#### 4:45 - 5:30 pm
**The Progression of Cloud Storage: Hybrids, QoS, and Beyond**  
Henry Balsam, the 451 Group

#### 5:30 - 7:00 pm
**Cocktails and Networking**

### Presentation Descriptions

#### Apache Hadoop Today and Tomorrow
**Eric Baldeschwiler, CEO, Hortonworks**

Apache Hadoop is having a profound impact on the data industry because of its ability to store, process and analyze very large data volumes in a very cost-effective manner. Eric Baldeschwiler, CEO of Hortonworks and former VP of Hadoop Software Engineering for Yahoo! will provide some insights into how Apache Hadoop is being used today, how it fits into current enterprise data architectures and what’s planned for upcoming releases.

#### Storing in the Cloud: What You Need to Know
**Brett Piatt, Director of Corporate Development, Rackspace**

Your team has developed a new app that gives your organization a leg up on the competition, but what is the most optimal way to handle your company’s ever-increasing storage needs?

Three of our four U.S. CEOs surveyed by SNIA say they are already using or plan to use public cloud storage offerings. What are the factors that are leading to such a high adoption rate by today’s leaders?

The fact that some Cloud providers are able to make solutions available that previously might have taken a company IT staff many months to plan, finance and install has made this a no-brainer for many business leaders.

Rackspace’s Brett Piatt will discuss some of the new services and tools that Rackspace and other leading Cloud providers now offer to help companies manage their storage needs. Brett will also provide an update on OpenStack, a scalable open source cloud computing operating system supported by over one-hundred leading technology companies. He will also provide an update on cloud standards adoption, including the Cloud Data Management Interface (CDMI).

#### Why You Need an Enterprise-wide Cloud Strategy?
**Adam Fore, Director of Solutions Marketing, NetApp**

Cloud computing is experiencing strong, sustained growth across enterprises large and small. Proven benefits like flexibility, cost reduction and rapid provisioning of new applications and services are among the drivers. In this session we will address the questions of “Where do I start?” and “What’s the right approach for my organization?”

Marc Staimer, President & CEO, Dragon Slayer Consulting  

#### The Future of Cloud Storage
**Anand Babu Perumally, CTO and Co-Founder, Gluster**

Much of the innovation has happened only on the computing side, leaving storage behind as an afterthought. Storage is still in the mainframe era noodle-knot, hardware based and complicated. Cloud computing will drive the storage demands, forcing the storage industry to follow the cloud innovations. This will bring simplicity and scalability, commoditizing the whole storage ecosystem all together. Future of the cloud storage stack is going to look very much like the cloud computing stack, except the computing nodes will have more drives on each of them.

#### Cloud-Powered Virtual Disaster Recovery
**Ashar Bag, Chairman of the SNIA Cloud Backup Recovery and Restore (BURR) Special Interest Group (SIG)**

In case of a disaster, Business Continuity is dependent on how fast they can be back to normal IT operations. Today, most organizations rely on bare-metal-recovery (BMR) capability to restore from one hardware configuration to another different hardware configuration. BMR is performed without migrating software applications, patches, services, packs, etc. The reality is that the typical procurement times within most organizations range from 4 – 12 weeks. In case of a disaster, most organizations may not have the new hardware immediately available to restore the data that they backed up off site. In this session Virtual Disaster Recovery (VDR) is a lifesaver. Organizations who take advantage of this capability to restore physical servers to virtual servers (V2V) while preserving the granularity of restoring individual files can satisfy timely business continuity requirements of any organization. VDR is the game changer technology in DR and should be a key ingredient of any organizational data protection strategy.

#### Cloud Storage’s “Organic” or Living Evolution
**Marc Staimer, President & CEO, Dragon Slayer Consulting**

Most storage associated and co-located with cloud applications (a.k.a. software as a service or SaaS) is repurposed storage from the legacy paradigm of DAS, SAN, or NAS. These types of storage systems were designed for a different age, or an era where everything required advanced planning. Changes to the storage capacity or performance must be anticipated and planned. Flexibility is limited. The Cloud era changes everything. Flexibility, adaptability, reliability and resilience must be a much higher bar to attain. Workloads constantly vary, demands grow up and down continuously, and storage systems must adapt on the fly to meet them in real-time.

Cloud applications require the performance of DAS, SAN, or NAS systems, but cannot afford the cost or complexity they require.

Cloud computing is now running on commodity infrastructure, with the exception of the computing nodes. These computing nodes will have more drives on each of them.

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