EMC Cloud Division

Cloud Infrastructure Group

- Cloud Optimized Storage
- Storage as a Service
- Compute as a Service

Services

- Mozy
  - On-line backup
- piWorx
  - Information Bank

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Atmos is a multi-petabyte platform for content storage and global distribution
A New Approach for Content Stores

Disperse Copies Address Geographic Performance and Reliability

By Maintaining:

- 1 Copy

2 Copies

N Copies

- Susceptible to failures of the system, site, and network connectivity
- May not meet required performance because limits of device and or location of access
- Improves resilience to failures of the system, site, and network connectivity
- Potentially improves performance of remote access
- Greatly improves resilience to failures of the system, site, and network connectivity
- Greatly improves performance of remote access

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Supporting Hardware Configurations

5 kW Config
- 1:15 servers-to-disks
- 120 TB total capacity
- GbE or 10GbE

Capacity Config
- 1:60 servers-to-disks
- 360 TB total capacity
- GbE or 10GbE

Compute Config
- 1:15 Server-to-drive ratio
- 240 TB total capacity
- GbE or 10GbE
A Peek Inside The Cloud

software on dedicated servers…

… that intelligently stores content based on customizable meta data and policy rules…
A New Approach for Content Stores
Policy Driven Intelligence

- Each tenant has policies
  - Content distribution
  - Optimized performance
  - Information protection
  - Archiving

- Policies drive object placement constraints

- Constraints dictate locations and copies

- Policy automatically triggered by events
  - create
  - open
  - extend
  - close
  - delete

**Pseudo Example**

<table>
<thead>
<tr>
<th>CustType</th>
<th>ContentType</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>NewRelease</td>
<td>Bronze: Compressed, Green &lt;1&gt;:New Jersey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Global: AsyncReplica =100, &lt;&gt;:Fast</td>
</tr>
</tbody>
</table>
Cloud Optimized Storage - Features

- **Massively scalable infrastructure**
  - Petabyte scale
  - Global footprint

- **Intelligent data management**
  - Personalized by metadata and policy
  - Auto-configuring when capacity is added
  - Auto-healing when failures occur
  - Auto-managing content placement

- **All-in-one data services**
  - Replication, versioning
  - Compression, spin-down
  - De-duplication
  - Advanced metadata support
  - Powerful access mechanisms

- **Cost effective hardware**
  - Industry standard building blocks
  - Modular packaging
  - User-serviceable components
EMC’s Internet-delivered storage and compute services
Storage Service Overview – Atmos Online

• What is it?
  – Scalable EMC-hosted storage service delivered via the internet
  – Runs in EMC data centers

• Value proposition
  – Infinitely scalable
  – Pay as you go
  – No cap-ex
  – Additional capacity when you need it

• Top Features
  – Provides different SLAs and cost models
  – Provisioned on-demand with usage based billing to provide infinite scalability
  – Customers access storage via web services programmable API
Portal

Cloud Infrastructure Services
Harnessing the Power of the Cloud

Cloud computing is a technology paradigm whereby software and IT infrastructure are delivered as a set of services via the Internet. This network of infrastructure services operate like a utility whereby you obtain IT resources on an as-needed basis, and only pay for what you actually use. Enterprises and independent software vendors leverage this utility model to improve agility, lower costs and reduce time to market.

Early Access Program

Our on-line storage service is now operational and we're currently seeking participants for our early access program!

Just click here and complete the application form to be considered. You will be notified via email when your stage of testing begins. Thank you for your interest in this highly-anticipated storage utility.

Service Offerings

Put Your Data in the Clouds

EMC Storage Utilities is a scalable and secure, on-line storage service. It's ideal for web applications that need reliable access to unstructured content. Learn More

ISV Program

Looking to deliver cloud-based solutions to your customers? Our partner program is designed to enable you to deliver and deploy cloud-based solutions with faster time-to-market. Join now to get access to EMC's industry-leading cloud platform and services. Become a Partner

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Compute Service Overview

- **What is it?**
  - EMC-hosted compute infrastructure
  - Offered in conjunction with EMC’s Storage Service offering

- **Value proposition**
  - Efficient compute resource utilization with usage-based billing
  - Seamless federation between internal and external infrastructure

- **Top Features**
  - Flex in/out on the fly using business rules
  - Multi-tenancy
  - Application container and virtual resources management
  - Compute and data affinity
Building a Private Cloud with EMC Atmos

**Benefits**
- Quickly deliver cloud-based information services to market
- Improves operational efficiency
- Increase administrative productivity
- Effortlessly grow capacity

**Features**
- Designed for petabytes
- 100’s of sites
- Policy-based information management
- Replication, versioning, compression, de-duplication, spin-down
- Web services interfaces
- File system access
- Multi-tenancy
- **Federation to service providers**
### Atmos Partners

<table>
<thead>
<tr>
<th>Partner</th>
<th>Demo Summary</th>
<th>Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Atempo</strong></td>
<td>Atempo Digital Archive - large video and other digital images archived to cloud. Also show HSM (Hierarchical Storage Management), archiving data from disk to cloud after a defined period of time.</td>
<td>TME - Digital Image Archiving/HSM</td>
</tr>
<tr>
<td><strong>Fabrix</strong></td>
<td>The ingestion and playout of video streams related to cloud based personal/digital video recording (PVR/DVR). demo the ability to pause, fast forward, rewind and ad splicing.</td>
<td>TME - Video Streaming</td>
</tr>
<tr>
<td><strong>Signiant</strong></td>
<td>Fast content transfer; being used for transfer of entertainment media between production facilities. Demo will show nearline archive of media transcoded files on the cloud.</td>
<td>TME - Media Production</td>
</tr>
<tr>
<td><strong>TwinStrata</strong></td>
<td>A &quot;bridge&quot; product to allow access to cloud based storage for legacy business applications which commonly use fiber channel connected storage.</td>
<td>Storage Consolidation/Backup/Disaster Recovery</td>
</tr>
</tbody>
</table>
| **Networker** | **Enterprise** - Enterprise backup to cloud based storage  
**Consume** - Backup and restore of mobile device data including settings, applications and content using real and simulated mobile devices.                                                                                                       | Data Backup and Restore       |
| **LifeImage** | Personal storage "in the cloud" of medical images such as MRIs, CT scans and X-rays to name a few.                                                                                                                                                                                                                              | HealthCare - Medical Image Mgmt |
| **OSA/Acuo**  | DICOM formatted medical images stored in the cloud for global distribution.                                                                                                                                                                                                                                                          | HealthCare - Medical Image Mgmt |
| **DCTM - MaaS**| Backup of DCTM server to the cloud.                                                                                                                                                                                                                                                                                                      | Content Management - Backup    |
| **DCTM - SharePoint**| Store MSFT SharePoint content on Atmos.                                                                                                                                                                                                                                                                                                  | Content Management            |
| **Rainfinity**| HSM - using Rainfinity's File Management Appliance for data migration from Cellera to Atmos (could be on or off premise, demo will show to cloud).                                                                                                                                                                       | HSM                           |