

## PRODUCT FLASH

### EMC's Atmos: Making Rain in the Cloud

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#### IN THIS PRODUCT FLASH

This IDC Flash assesses EMC's newly introduced Atmos storage solution, designed to address the requirements of companies building private and/or public cloud computing environments. It also discusses the major challenges that traditional IT systems suppliers will face as they target this emerging market sector.

#### SITUATION OVERVIEW

On November 10, 2008, EMC announced the official introduction of the EMC Atmos platform. This integrated hardware/software platform (formerly under the code names Maui and Hulk) is designed to be a multipetabyte platform for supporting large, geographically dispersed content depots and cloud computing environments.

The major differentiator in this product launch, according to EMC, is the advanced software environment (formerly know as Maui) that enables a wide range of advanced services:

- ☒ Policy-based system and data management that uses an object-based metadata repository to enable ad hoc data management, intelligent content distribution, search, retention, and migration
- ☒ A unified namespace that extends across multiple, geographically dispersed systems
- ☒ A suite of embedded data services for replication, versioning, data deduplication, compression, and disk spin down (for power conservation)
- ☒ Support for traditional file-based access (CIFS, NFS, IFS) and Web services APIs (REST/SOAP)
- ☒ Automated systems configuration, management, and self-healing
- ☒ Support for multitenancy and add-on services through the use of embedded server virtualization

In this initial introduction, Atmos is based on a storage hardware platform (formerly referred to as Hulk) that comes in three versions — each designed for different deployment scales or workloads:

- ☒ **WS1-120:** A single 40U rack with up to 8 dual processor, multicore rackmount servers individually connected via SAS to 1 of 8 (15 1TB SATA drive disk trays) for 120TB of raw capacity
- ☒ **WS1-240:** A special 44U and 43in. deep rack with up to 16 dual processor, multicore rackmount servers individually connected via SAS to 1 of 16 (15 1TB SATA drive disk trays) for 240TB of raw capacity (This system uses harmonic 3U drawers that hold two trays in each 3U space.)
- ☒ **WS1-360:** A special 44U and 43in. deep rack for archival storage, with 6 multicore servers, each individually connected via SAS to 4 of 24 (15 1TB SATA drive disk trays) for 360TB of raw capacity (This system also uses harmonic 3U drawers that hold two trays in each 3U space.)

The hardware used in Atmos is based on industry-standard components (including optional 10Gbps Ethernet support on the WS1-240 and WS1-360). EMC is offering standard one-year hardware warranty and 90-day software warranty, as well as high-level support services. Given the high-profile target customers for these systems (telecommunications, media, Web 2.0, and cloud); however, IDC expects EMC will tend to provide integration and support services that go well beyond traditional programs.

#### FUTURE OUTLOOK

EMC's introduction of the Atmos product line for massive, "cloud oriented" storage environments is another clear example of recent developments in the creation of "universal storage systems." The confluence of trends in server design (multicore and blades), disk storage (SAS), and virtualization, along with new file- and content-centric business models, will drive over \$2.5 billion in storage systems spending in 2009 while spurring a fundamental shake up in storage system designs.

IDC expects more introductions of "universal" storage systems built on basic IT building blocks and packaged in consolidated racks or even larger containers. The design focus will be on system density, dynamic allocation of compute capacity, and flexible interconnect between the two (this last is an area on which EMC will need to focus as the current version of Atmos uses a fixed server/disk interconnect ratio). The development of universal storage platforms will place great stress on existing system development and cost/profit models for today's leading storage systems suppliers (e.g., EMC). It will also open up opportunities for companies at earlier points in the value chain as many customers in the cloud and content depot markets are choosing, so far, to establish more direct business relationships with underlying component suppliers.

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This shifting competitive environment makes EMC's bundling of an advanced, object-based software facility for enabling massive, global data sets a vital addition. To date, most of the leading builders of cloud and content depots created massive, highly scalable role-based data and content repositories based on a mix of standard, open source components and custom software. EMC needs (and its competitors need) to prove to existing cloud builders as well as newer entrants (e.g., telecommunications, hosting, and media companies) that EMC can deliver more cost-effective and flexible solutions as these massive systems expand and evolve.

The Atmos software package is a solid first step in meeting this objective. By leveraging virtualization and object-based metadata technologies, Atmos delivers a solid foundation for logically partitioning data and compute resources to address a wide range of different information requirements. It will also make it easier for EMC to establish an ecosystem of specialty services (e.g., data format/reformat, advanced search/index, and analytics). Establishing this diverse ecosystem is the next major task for EMC, as it must decide which services to build itself, acquire directly, or enable from a third-party expert.

IDC expects EMC and its competitors to continue engaging in significant acquisition and partnership activities as they all seek to round out their portfolio of advanced file, object, replication, and information management portfolios. Some recent investments that highlight the scope of this investment cycle include IBM's acquisition of XIV and HP's planned acquisition of LeftHand (both scalable and virtualized storage), Sun's acquisition of Lustre and MySQL (clustered file systems and metadata repositories), and EMC's acquisition of Yotta Yotta (geographically dispersed replication).

The biggest long-term challenge for EMC and other major IT systems providers that want to establish a foothold in this emerging market is deciding exactly where to play in the competitive matrix. With Atmos, EMC is explicitly positioning itself as a supplier to current and future "cloud" builders (acting as the arms merchant, so to speak). Through its Mozy online backup service, however, EMC is also a potential cloud service provider itself (acting as combatant). At first blush, this apparent conflict would lead one to think EMC and other major IT system suppliers will have a difficult time attracting existing cloud and content depot businesses, and this may be true for pioneers like Amazon, Google, or even Microsoft.

The cloud computing and service market, however, is quickly evolving into a multilayered industry with some organizations setting themselves up as wholesale providers of basic services and others repackaging this wholesale capacity to address a specific business requirement or customer group (see *Storage in the Cloud: What, How, and Who?* IDC #215052, November 2008).

Given this circumstance, IDC believes that many potential "cloud providers" in areas such as SaaS, telecommunications, and media will actually prefer a range of options. Some will want to buy standard products, while others will want to enter into hosted services contracts where a company like EMC owns and operates the underlying datacenters. This increasingly sophisticated market development makes Atmos more than just a new product line; it is also the foundation for EMC's entry into a new market segment.

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