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Seamlessly Integrate and Tier to the Cloud with F5 ARX and EMC Atmos

Enterprise organizations facing rapid data growth are increasingly looking to the cloud to help reduce their storage and storage management costs. EMC® Atmos® provides a scalable and cost-effective storage solution, available as both a private cloud storage system and as a public cloud storage service through select service providers. Organizations are looking for a solution to easily integrate cloud storage offerings such as Atmos, which use object storage to increase scalability and manageability, into existing file storage environments. In addition, the nature of remote storage inherently presents additional cost and performance considerations over local file storage systems.

F5® ARX® and ARX Cloud Extender™ solutions address these concerns by enabling organizations to seamlessly integrate Atmos-based public or private clouds into existing file storage environments. ARX solutions preserve user access and eliminate the disruption associated with moving files between existing file storage resources and Atmos. ARX devices then provide automated storage tiering policies to quickly and easily migrate appropriate file data to Atmos to reduce the cost of storage.

Key benefits

Seamlessly Integrate Atmos

Deploy Atmos into existing environments and alongside local storage infrastructure, completely transparent to users or applications.

Enable True Data Mobility

Move data between local and cloud storage resources for any reason and at any time, without downtime or disruption.

Migrate the Right Data to the Cloud

Automatically migrate appropriate files to Atmos clouds based on customizable criteria such as file age, type, size, and more.

Preserve Access to Files in the Cloud

Maintain transparent access to files for users and applications, regardless of their location in the data center or the cloud.

Ensure Data Security

Automatically encrypt sensitive business data to ensure security while being tiered to and stored in the cloud.

Lower Total Cost of Ownership

Realize the cost benefits of cloud storage without having to manually identify and migrate appropriate data sets.

Challenges

Organizations are faced with the following challenges as they expand into the cloud.

File Access

Cloud storage offerings are typically built on an object storage platform, and require data access to be performed through a SOAP- or REST-based web services API. This presents a challenge for enterprise organizations that wish to use cloud storage in their file storage environment, where users and applications typically access file data through the CIFS protocol.

Performance

Most cloud deployment scenarios require users and applications to access data at a remote location. Depending on the configuration, this remote access may occur over considerable distances as well as a public wide area network (WAN). This can result in unpredictable network latency and negatively impact the user experience.

Network Costs

Remote data access can also incur additional network costs. Organizations may need to increase the network bandwidth available from their facilities to accommodate additional data traffic to the cloud data center. In addition, some public cloud storage providers levy an additional charge for network bandwidth used while moving data into and out of the cloud data center.

Data Security

Using cloud storage typically entails storing business data at a remote data center, which increases the risk to data security. Organizations must take appropriate precautions while transmitting any type of data over a public network. In addition, certain types of business data may be too sensitive to store in a public cloud, which is managed by third-parties.

Solution

The joint solution from F5 and EMC simplifies the integration of cloud storage and maximizes the benefits of the cloud while minimizing any additional costs or performance impact.

EMC Atmos combines a flexible, efficient, and scalable cloud storage platform with ease of management. Depending on the requirements, organizations can utilize Atmos solutions in one of two deployment configurations:

- A public cloud storage service offered by a cloud storage service provider.
- A private cloud storage platform that is located on-premises and self-managed.

F5 ARX simplifies management of file storage environments comprised of both traditional and cloud storage devices. ARX solutions create a virtualization layer to seamlessly integrate Atmos into the existing file storage infrastructure. ARX uses the ARX Cloud Extender to translate CIFS-based user file access to the Atmos web services API. The virtualization layer then decouples logical access to files from the physical location of those files. With this layer in place, data is free to move and storage resources are free to change, without the disruption previously associated with these actions.

Next, ARX devices provide data management policies that automate the movement of files between traditional file storage devices and the Atmos platform. ARX policies determine

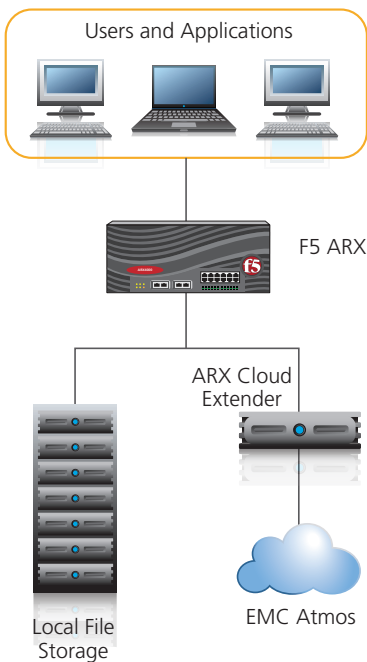


Figure 1: ARX solutions integrate and tier to Atmos-based clouds

Reduce Hidden Costs

ARX solutions can reduce the hidden costs of cloud storage by moving only appropriate types of data to the cloud. ARX devices provide automated, customizable storage tiering policies. These policies can help ensure that only the most inactive data is tiered to the cloud.

the business value of individual files, based on various characteristics such as age, type, and size, and then match those files to the most appropriate storage platform. Organizations can customize these policies based on their storage requirements and the specifics of their Atmos configuration.

Benefits and F5 value

F5's Application Ready Solution for EMC Atmos provides the following benefits to organizations, and their end users.

Seamlessly Integrate Atmos

ARX solutions allow organizations to seamlessly integrate Atmos into existing storage environments. With the ARX, users and applications access files through virtual file systems comprised of capacity from both local and cloud storage resources. ARX and ARX Cloud Extender can integrate Atmos deployed as both private cloud storage platforms or public cloud storage services. This allows organizations to easily incorporate new cloud-based storage capacity from Atmos without affecting users and applications.

Enable True Data Mobility

After deploying Atmos, organizations still face the arduous task of having to migrate data to the cloud from their existing locations in the data center. Data migrations using traditional tools and processes can be both time-consuming and labor-intensive as organizations manage the impact of disruption and business downtime. ARX solutions decouple the logical access to files from their physical locations to enable the transparent movement of file data between different types of storage. With ARX, data can be moved for any reason and at any time, without disruption for users and applications, to remove a major operational hurdle in deploying new storage systems and tiering to the cloud.

Migrate the Right Data to the Cloud

Atmos and other cloud storage solutions can dramatically reduce the costs of storing certain types of data. With inappropriate data, however, it can also increase the costs of accessing it. Data stored in the cloud must be accessed over the wide area network (WAN), which means users and applications may experience additional latency when recalling files from the cloud to be read or written. In addition, accessing a large number of files from the cloud can consume unexpected amounts of bandwidth, with additional corresponding network costs.

ARX solutions can reduce the hidden costs of cloud storage by moving only appropriate types of data to the cloud. ARX devices provide automated storage tiering policies that can be customized according to each organization's business needs, based on flexible criteria such as file age (last modified or last accessed), file type, file size, etc. These policies can help ensure that only the most inactive data is tiered to the cloud.

Preserve Access to Files in the Cloud

ARX solutions provide transparent access to all data, regardless of its physical location. The ARX hides the physical details of underlying storage resources from users and applications, so client systems are not exposed to the physical location of their data. ARX Cloud Extender presents a local file system front end to translate CIFS access to any files stored in the cloud. With ARX and ARX Cloud Extender, users and applications continue to access their data in the same manner as before, whether that data is in the data center or the cloud. Transparent access ensures that business is never disrupted, making it easier than ever to tier to the cloud.

Ensure Data Security

To minimize the data security risk associated with cloud storage, ARX Cloud Extender automatically encrypts every file with Advanced Encryption Standard (AES) algorithms before migrating it into the cloud. This ensures the security of business data both while stored in the cloud data center as well as while being transmitted over public networks.

Lower Total Cost of Ownership

While cloud storage can reduce the costs of managing storage for the majority of inactive data, there remains significant operational costs of manually identifying and physically migrating appropriate types of data to the cloud. ARX solutions can help organizations further reduce the operational costs of tiering to the cloud through the combination of non-disruptive data movement and automated tiering policies. And with ARX, users and applications can continue to access their data, whether it resides within the data center or in the cloud, without any additional IT overhead. Together, ARX and Atmos enable the tiering of file data to the cloud and lower the total cost of ownership for storage.

More Information

To learn more about F5 and EMC Atmos, use the search function on F5.com to find these and other resources.

Deployment Guides

[Deploying the F5 ARX with the ARX Cloud Extender](#)

Product Overviews

[ARX Series](#)

[ARX Cloud Extender](#)

Datasheets

[ARX Series](#)

[ARX Cloud Extender](#)

White Papers

[Got Files? Get Cloud!](#)

[File Virtualization - A Bridge to the Cloud](#)

Whiteboard Conversations

[Simplify Data Management with File Virtualization](#)

[Reduce Storage Costs through Automated Storage Tiering](#)

[Optimize Backups to Reduce Backup Windows and Costs](#)

[Maximize the Value of Existing Storage Assets](#)

[Hassle-free NAS Consolidation and Data Migration](#)

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