Future Proofing Data Archives with Storage Migration From Legacy to Cloud

ABSTRACT

This white paper explains how EMC® Elastic Cloud Storage (ECS™) Appliance and Seven10's Storfirst software enable organizations to future-proof their application data archives while simultaneously leveraging low-cost, cloud-enabled storage. This strategy enables the management of long-lived data across multiple tiers or generations of hardware without disrupting production applications.

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EXECUTIVE SUMMARY

Organizations in regulated industries such as healthcare, finance, manufacturing, and education must accommodate the dual requirements for cost-effective long-term data archiving and prompt delivery of requested data. Medical images, non-medical images, and documents are excellent examples of such data.

These organizations rely on a wide variety of existing production applications that store terabytes of unstructured archival data. This data is usually written once, read occasionally, and retained unchanged until the end of the data's lifecycle.

The majority of these file-based production applications are archiving unstructured data on many different legacy file-based storage devices and file system gateways using standard NAS protocols. These devices are aging and becoming increasingly expensive to operate.

Most organizations would prefer to store their data in a cloud-based storage infrastructure that centralizes and transforms storage into a simple, extensible, and open platform. The challenge is to move existing data from legacy to cloud storage in a manner that is as minimally intrusive and transparent to the production applications as possible.

That is what EMC Elastic Cloud Storage (ECS) Object Based Cloud Storage and Seven10's Storfirst software bring to the table: the ability to transparently migrate or synch data from any storage tier to any other storage tier—including from legacy storage tiers to ECS—and enable existing file-based applications to leverage all forms of storage—object or otherwise.

NON-DISRUPTIVE INNOVATION

In the compliance environment, the useful life of data is far greater than the useful life of any given technology used to store it. While needing the flexibility to keep pace with innovations in storage technologies, companies and organizations have little tolerance for disruption to production applications.

Seven10's Storfirst software delivers a layer of technology that helps you easily transition from legacy technology to the latest advancements in the storage hardware layer. This is accomplished when application data is abstracted from the physical hardware layer in a manner that is not dependent on application vendor storage-management capabilities, data migrations, and storage solution validations. In this way, applications and application data are future-proofed from the inevitable aging and evolution of storage technologies.

Before taking a closer look at Seven10's Storfirst migration and management software, let's explore the capabilities of EMC Software-defined Storage using ECS Appliance.

EMC SOFTWARE-DEFINED STORAGE

EMC Software-Defined Storage helps organizations lower traditional storage costs by abstracting hardware and software resources to allow compute and storage resources to scale independently. This paves the way for rapid deployment of modern scale-out storage architectures.

EMC ECS APPLIANCE

A turnkey, software-defined object storage cloud platform, ECS Appliance integrates powerful software on EMC-certified commodity hardware. It combines the cost advantages of commodity infrastructure with the reliability, availability, and serviceability of traditional arrays. The ECS Appliance uses multiple data types and access protocols to support the broadest range of applications on a single platform.

ECS Appliance also provides a single management view of a globally distributed infrastructure. What's more, it supports multi-tenancy and detailed metering so enterprises and service providers can easily deploy Storage as a Service. Other features include:

- Provides up to 65% lower TCO than public cloud storage services through a complete, turnkey commodity hardware platform with enterprise-level reliability, availability, and serviceability
- Assures the broadest application support—object and HDFS—from a single platform
- Delivers an unmatched combination of storage efficiency and global access to data with patent-pending object storage engine
- Sustains flexibility and control to scale-out as dictated by business need with terabyte-to-exabyte architecture
- Cloud-storage-in-a-box enables seamless management, multi-tenancy, metering, and self-service access

INCREASE SPEED TO MARKET

As EMC's next-generation Object Storage Platform, ECS provides rich in-band Object Data Services'(ODS) via object storage protocols including Amazon S3, OpenStack Swift, EMC Atmos REST, and Centera CAS. This allows customers to quickly adopt the new storage platform whether for legacy applications or for the most modern new object applications. Seven10 storage software enables existing file-based applications to leverage the flexibility of ECS Object Storage by adapting and migrating data to ECS using the object API's listed above. This speeds the time to deployment for any application that is selected for migration.

SEVEN10 STORAGE SOFTWARE

The challenge in moving from file- to object-based storage is that file-based production applications are usually reading and writing to legacy storage via standard NAS file-based protocols such as SMB/CIFS and NFS. These applications typically do not use the object protocols that ECS Object Data Services (ODS) offer nor do they support the migration capabilities to move that data from the existing file data to ECS ODS or vice versa.

Seven10's purpose-built software design enables you take advantage of all the features and functionality of ECS Object Based Cloud Storage while providing the convenience of a file system gateway and integrated data migration services.

SEVEN10 STORFIRST GATEWAY

Storfirst Gateway is the first cloud-integrated file system designed to help your business evolve by managing migrations from legacy storage while also providing proven and scalable SMB or NFS support for your new storage platforms. Storfirst is the original enterprise cloud storage gateway and it is the first software designed to provide a seamless transition to a modern cloud-as-a-tier storage infrastructure.

In environments where applications are reading and writing to legacy file storage and want to transition to EMC ECS, users can deploy Storfirst Gateway to inventory data on legacy storage while simultaneously serving up newly adopted storage. The re-exposed Storfirst file system offers a unified view of legacy storage and new storage while the software performs behind-the-scenes, automated data migration.

During the transition to new storage, Storfirst Gateway provides uninterrupted on-demand access to the legacy data for any of the applications in use. New data coming in can be immediately written directly to the new storage platform while capping the growth of data stored on legacy storage.

Other key features of Storfirst Gateway include:

- Universal acceptance of application integration with a standard CIFS/SMB/NFS presentation layer
- Support for multiple tiered storage volumes where each volume has multiple tiers of file/object/tape/cloud storage
- Ability to be layered as a 'Single Name Space' between the application and multiple tiers of just about anything including legacy file-based storage devices, onsite short-term NAS copies, or another copy on ECS
- Support for encryption of data in flight via cloud protocols
- Configuration of any tier of storage for encryption of data at rest
- Ensured compliance by preventing the alteration or deletion of archived files until the expiration of a configurable file-retention period set by the administrator

SEVEN10 STORFIRST MIGRATION

Seven10 Storfirst Migration is enterprise data migration software that provides a low-touch, transparent way to move from legacy storage to traditional or hybrid-cloud storage environments. Storfirst Migration eliminates data loss concerns with a simple five-step repeatable and proven process that

1. Analyzes existing data set to be migrated
2. Inventories the legacy file system
3. Starts synch from source to target
4. Provides complete audit of files and directories migrated
5. Offers a final verification match before cutting over to new storage platform

At the same time, Storfirst migrates existing data while presenting the ECS environment as a highly scalable CIFS/SMB/NFS read/write platform. When all the files have been migrated, legacy storage may be decommissioned at the customer's convenience.

Figure 1. CIFS/NFS Storfirst Gateway to EMC ECS

SUCCESSFUL MIGRATIONS

The table below presents some examples of successful Seven10 migrations of medical imaging and document management systems. Similar success would result using ECS Appliance.

Examples of Successful Seven10 Customer Environment Migrations		
Environment	**From**	**To**
▪ Large Philips Xcelera cardiology PACS	Multiple CUA/Centera devices	Enterprise Atmos storage solution [REST API]
▪ 7 Agfa IMPAX cardiology PACS systems ▪ McKesson Horizon Patient Folder Document Management System	Centera DX/Centera	Enterprise Atmos storage solution [REST API]
▪ Agfa IMPAX CV Cardiology PACS ▪ Agfa IMPAX radiology PACS ▪ Philips Xcelera cardiology PACS ▪ Other applications including Nexus, HIMCharts, HRImages, ICSImages, and WChildArc	CUA/Centera	Enterprise Atmos storage solution [REST API]
▪ Agfa Vendor Neutral Archive supporting many hospitals and diagnostic PACS	CUA/Centera	Next Gen Centera [CAS] and NAS

CONCLUSION

EMC is a constant source of innovation and new storage technology. Each new generation of storage is faster, more secure, easier to operate, and cheaper to run. Organizations would like to take advantage of this technology but are hampered by the necessity of migrating application data archives.

Seven10's Storfirst Gateway and Migration software delivers the ability to future-proof application data archives while simultaneously leveraging low-cost, cloud-enabled storage with EMC ECS Appliance.

This strategy enables the management of long-lived data across multiple tiers or generations of hardware without disrupting production applications. This capability eliminates the need for your company or organization to ever again undertake complex and expensive data migrations from legacy storage to new technology.