SVG WHITE PAPERS

Unlocking the Potential of the Cloud Without the Commitment and Complexity

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Storing your data in an on-prem object storage system that has the same underlying architecture and speaks the same language as the cloud allows you to unlock the benefits of both private and public worlds.

> BACKGROUND

The growth and popularity of public cloud offerings from tech giants Amazon, Google, and Microsoft has put "the cloud" at the forefront of most technology decisions and that trend only seems to be increasing in 2019. We all know the public cloud providers would love for everyone to "lift and shift" the entirety of their infrastructure to the cloud without giving it a second thought, but there are often technological, operational, and/or fiscal considerations that prevent organizations from committing to such a strategy.

Within the Media & Entertainment — and specifically, sports video — industry, cloud adoption discussions tend to focus on real-time performance, workflow suitability, and, of course, cost. Some organizations conclude that the cloud is too expensive or too slow to fit their needs, while others opt to leverage a "hybrid-cloud" approach in which relevant cloud services are (hopefully seamlessly) blended with on-premises systems and workflows. The most forward-thinking organizations are evolving "hybrid-cloud" into "multi-cloud" in order to avoid lock-in and single-point-of-failure concerns that arise from utilizing a single public cloud vendor.

> ENTER OBJECT STORAGE!

Without getting into the gritty details, "object storage" is the type of storage technology behind massive products like AWS S3, Dropbox, and even Gmail. Object-storage systems can start as small as a few hundred terabytes in a single location and grow to many petabytes or even exabytes spread throughout the globe, all without any downtime or interruption to the users and applications interacting with them. This ability to scale out exponentially while maintaining a single global namespace is a key factor in the design and success of object storage.

You may be thinking that this all sounds great for the type of companies that need to store such a massive amount of data, but what is the relevance for sports video? Beyond the obvious data explosion that is currently underway as a result of UHD/HDR and the need to store that data more efficiently, utilizing an on-prem object storage system that speaks the same language as the cloud (namely HTTPS and the S3 API) allows cloud services to interact directly with your on-prem storage without first moving your data to the cloud. This is not possible with traditional storage technologies because they rely on file protocols (SMB/CIFS or NFS) or other forms of connectivity (like FibreChannel) that are not well suited for cloud interactivity.
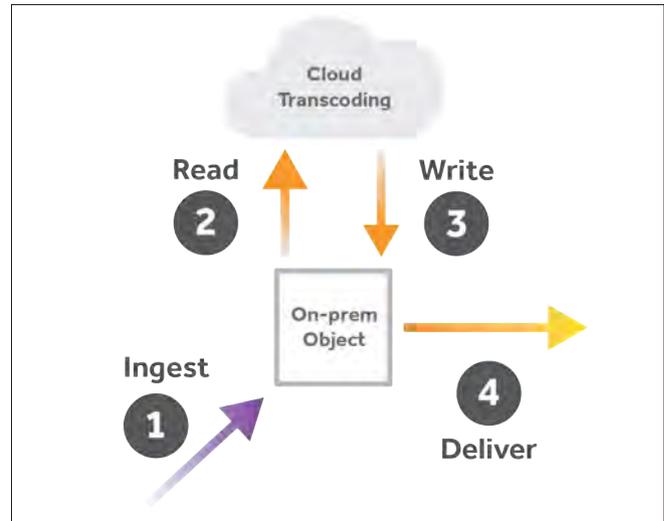
In addition to opening the door to cloudbursting (as described above), utilizing on-prem object storage can facilitate flexible strategies to take advantage of public cloud storage for things like sharing with partners, disaster recovery, and elasticity, while avoiding the high cost of egress and vendor lock-in. For example, an organization with their archive residing on object storage in a single location may choose to mirror that archive in its entirety up to the cloud for disaster recovery purposes. Some object storage vendors even provide the option to disable "delete propagation" to the cloud for extra security in case malicious or accidental deletion occurs.

> EXAMPLE WORKFLOWS

Some sports video organizations are already putting these strategies into practice, so let's take a closer look at how object storage can benefit real world workflows by providing some examples of common problems and solutions to those problems.

Other than the example discussed above, how can cloud accessibility benefit on-prem workflows? Use the cloud to elastically scale your compute and/or storage on-demand while maintaining your on-prem systems and workflows. Cloud services can be used effectively without the need to "lift and shift" all underlying systems.

Example 1:
Problem: On-prem transcoding or rendering servers are insufficient to meet the deadline of a large project.

Solution: Burst transcoding or rendering to cloud compute resources that read/write directly from/to on-prem object storage.

This can either be done via the internet or via a direct connect (DX) to the cloud provider. There are pros and cons to both options.

Example 2:

Problem: A large ingest is coming from a client, but on-prem storage is full.

Solution: Transparently expand/tier to cloud object storage while maintaining a single global object namespace. All applications will continue to function without interruption and without the knowledge that data is actually landing off-site with no reconfiguration required.
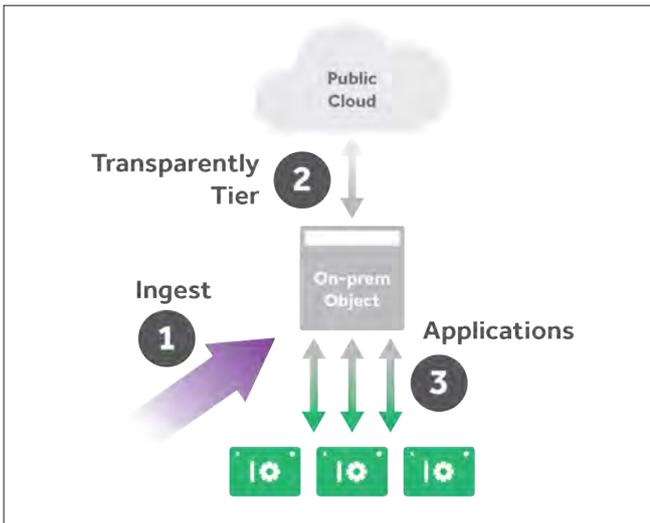
> OTHER BENEFITS OF PRIVATE OBJECT STORAGE

How do cloud strategies benefit on-prem systems? Utilizing on-prem object storage allows you to realize the same reliability, scalability, reduced complexity, and subsequent TCO benefits as the cloud providers do without paying them a premium or trusting them with your data.

Reliability: Because object storage is designed to scale huge and run on standard server hardware, failures are common and expected. Systems typically employ replication, erasure coding, or a combination of both in order to provide outstanding reliability measured in "number of nines" of durability. Even relatively small multi-region clusters are said to achieve 14+ 9's of reliability/uptime.

Scalability: Start small and scale huge on standard server and networking hardware.

Reduced complexity: "General purpose" is a common way to describe object storage because it can effectively store all kinds of unstructured data. This means that storage silos for things like ingest, delivery, archive, and backup can all be broken down into a single globally secure system accessed simultaneously by many apps and tools. Slow tape drives and unreliable offsite backups are

no longer an issue for organizations that migrate to multi-region object storage.

TCO benefits: Running on standard x86 hardware and high-capacity SATA disks forces commodity hardware vendors to compete and drives prices down. Object storage systems can be less than half the cost of traditional NAS systems because of their simple design and hardware neutrality.

> THINGS TO LOOK FOR WHEN SELECTING AN ON-PREM OBJECT STORAGE VENDOR

First, look for features that facilitate tiering and managing data in one or more public clouds — thus avoiding lock-in and allowing you to select the public cloud provider that offers the best service to meet the task at hand. This "tiering" should occur in real-time and be transparent to the application environment(s) in order to avoid any downtime or reconfiguration.

Second, the more closely the multi-cloud data management technology is integrated with the underlying storage technology, the better.

In addition to the above, consider the following criteria when selecting an on-prem object storage partner:
- High performance/massive parallel throughput
- Hardware neutrality and support for heterogeneous environments
- Utilization of erasure coding for data protection
- Multi-site/multi-region support
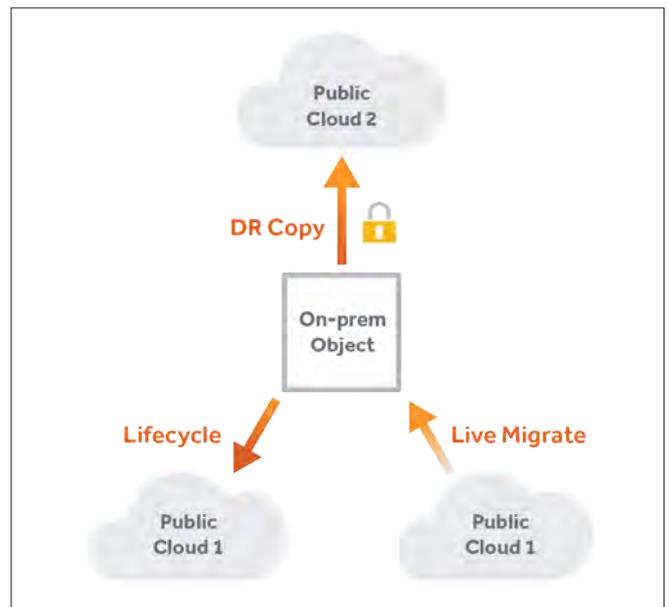
- Ability to expand, update, and reconfigure without downtime
- Frequent update cadence (AWS is constantly updating the S3 API)
- Strong track record and established customer base in relevant industry.   <