Technical Review

Lyve Cloud from Seagate: Object Storage Service Designed for Multicloud

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Abstract

This ESG Technical Review documents Lyve Cloud from Seagate's ability to reduce operational complexity and offer predictable performance, capacity, and cost.

The Challenges

According to ESG research, the vast majority (86%) of organizations are leveraging more than one public cloud infrastructure service provider.[1] This makes sense, considering that these organizations are subject to different regulatory environments, geographies, and support for applications. As such, it's not surprising that industries with high concentrations of organizations with multicloud strategies are financial services, healthcare, and manufacturing, which all have traits that require data locality. Financial services firms tend to have regulatory requirements that necessitate data locality. Healthcare organizations tend to have latency-sensitive applications that need to be closer to the user, such as PACS imaging systems. Manufacturing companies tend to be in countries with requirements or fears about data sovereignty, which is especially tricky with intellectual property.

Figure 1. Top Ten Challenges of Leveraging Multiple CSPs

Source: ESG, a division of TechTarget, Inc.

Not surprisingly, the most common challenges IT organizations see with multiple cloud service providers (CSPs) include organizational coordination (44%), security (36%), the time and effort required for migration of apps and data (32%),

[1] Source: ESG Research Report, *Application Infrastructure Modernization Trends Across Distributed Cloud Environments*, March 2022.

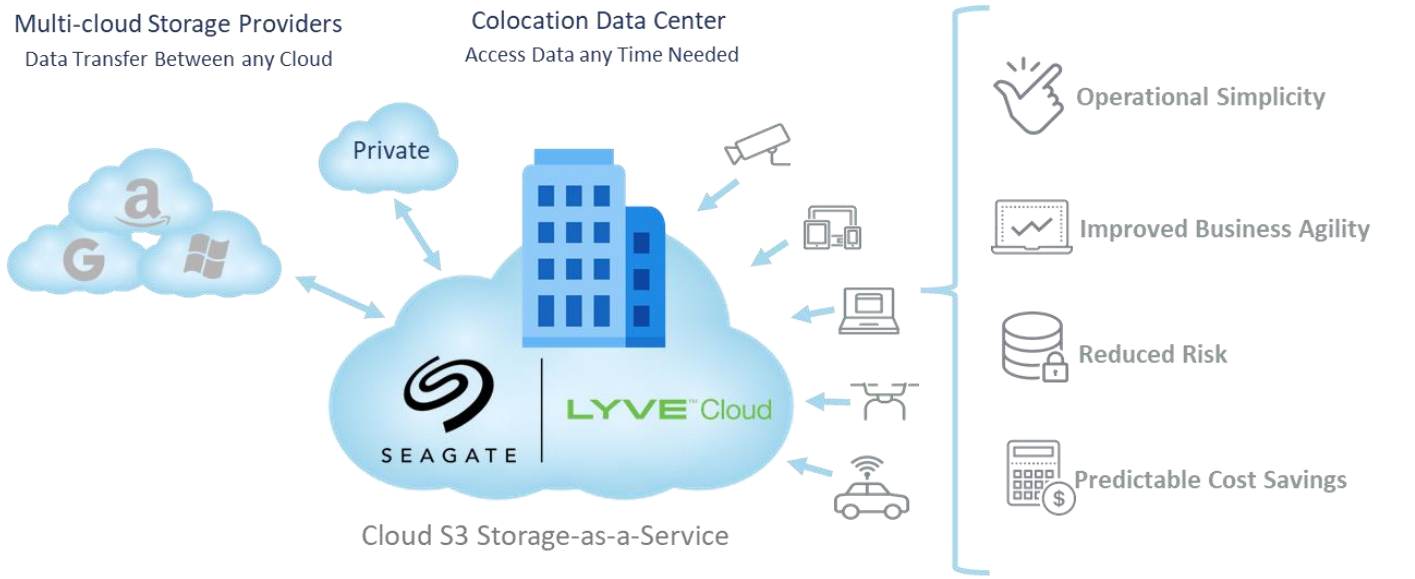
availability (32%), consistent application performance (31%), and data ingress/egress fees (26%) (see Figure 1).[2] These are critical considerations and areas to "plan" before you "do." Trying to adjust any of these factors after the fact is costly in terms of money, time, and employee satisfaction.

The Solution: Lyve Cloud from Seagate

Lyve Cloud is an object storage service designed for multicloud. It was engineered to provide S3 object storage at scale in multicloud environments and designed to be simple, trusted, and efficient and to meet high-level service level agreements (SLAs) for data availability and durability. Seagate partners with colocation facilities, including Equinix, to help organizations to position their data closer to both the original source of collection and to multiple public clouds. Lyve Cloud from Seagate aims to benefit customers by increasing availability, security, and speed, as well as direct connectivity and proximity to public clouds.

With Lyve Cloud's model, organizations can expect predictable monthly costs that only change as their storage use changes. Lyve Cloud has no ingress or egress fees and no API charges. This allows organizations to move their data across different clouds and environments without incurring additional charges.

Figure 2. Seagate Lyve Cloud Solution



Source: ESG, a division of TechTarget, Inc.

Other key features include:

- Geographic Replication Capabilities: By replicating data to different regions, organizations can meet compliance and regulatory requirements in the case of a regional outage.
- Multicloud: With organizations' large shift to storing data in multiple clouds, Lyve Cloud can connect to these distributed environments. In many cases, Equinix facilities can provide lower latency due to the facilities' proximity to public clouds.
- Data Durability: Lyve Cloud leverages advanced erasure coding to provide *11* nines of data durability—that's 99.999999999%—by default. Data durability is customizable and, according to Seagate, can be configured to provide up to *29* nines. The solution is located at Tier-4 data centers, designed for the highest levels of fault tolerance and redundancy for all components. Tier-4 data centers' expected uptime is 99.995% (26.3 minutes of downtime annually).

[2] Ibid.

- Infrastructure and Storage Resiliency: Data shards are spread across many storage nodes, which are in separate data center racks. In the case of an individual failure, data accessibility should not be affected.
- Fault Tolerance: Using predictive failure algorithms, organizations can monitor sectors that could potentially fail. In the case of failure, data is moved to other disk drives.

ESG Technical Review

ESG validated, through a hands-on product demonstration, the ease of operational tasks and the cost savings that customers can expect when storing and managing their data with Lyve Cloud from Seagate. ESG also audited their backup and data repository TCO calculators.

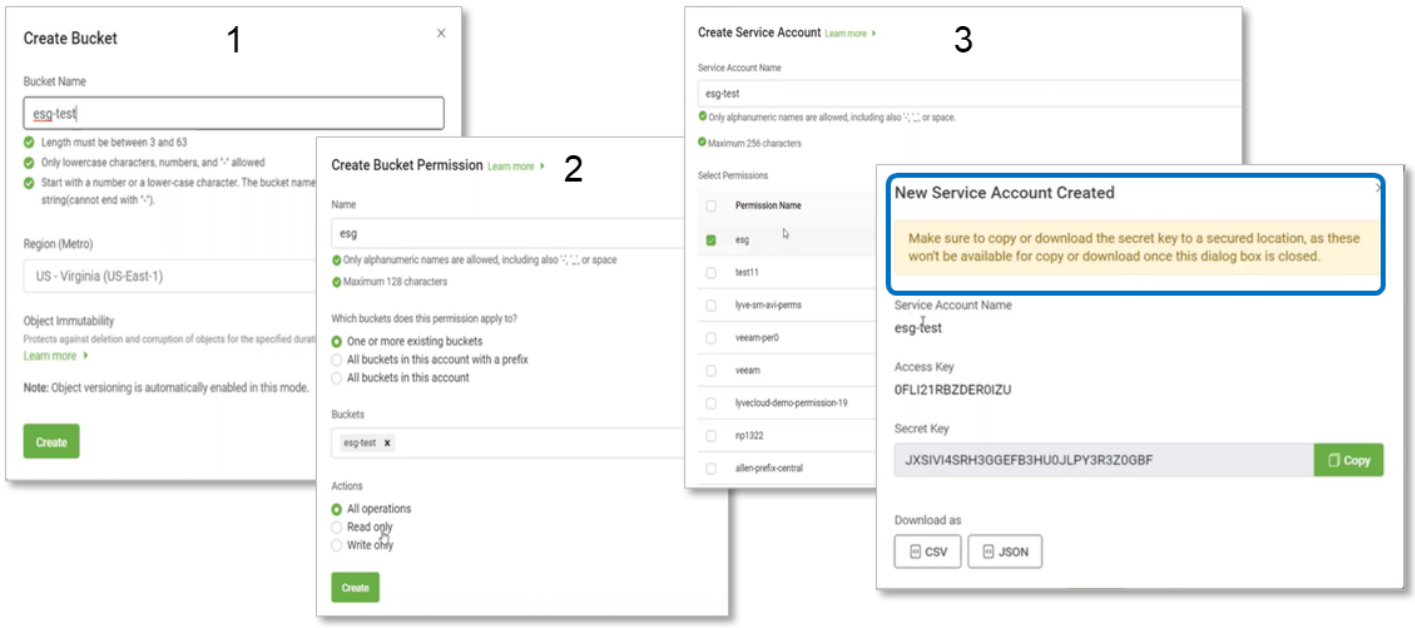
Reduced Operational Complexity

Easy Storage Provisioning

ESG validated the ease of provisioning of Lyve Cloud Storage in three steps by creating a bucket, a set of permissions, and a service account in the Lyve Cloud management portal.

1. Selected "Create Bucket" from the bucket menu, entered a name for the bucket and the preferred region (object immutability could be selected if needed).
2. Created permissions by entering a unique name for the permission, selected and applied permissions to the bucket, and allocated the actions desired: all operations, read only, or write only.
3. Created a service account, which included an access key and a secret key. These keys were used to access the new storage. By selecting "Create Service Account," entering a name for the account, and selecting the corresponding permission, the Access and Secret keys were kept safely. Without them, the bucket cannot be accessed, and they cannot be retrieved after the window is closed.

Figure 3. Lyve Cloud Storage Provisioning



Source: ESG, a division of TechTarget, Inc.

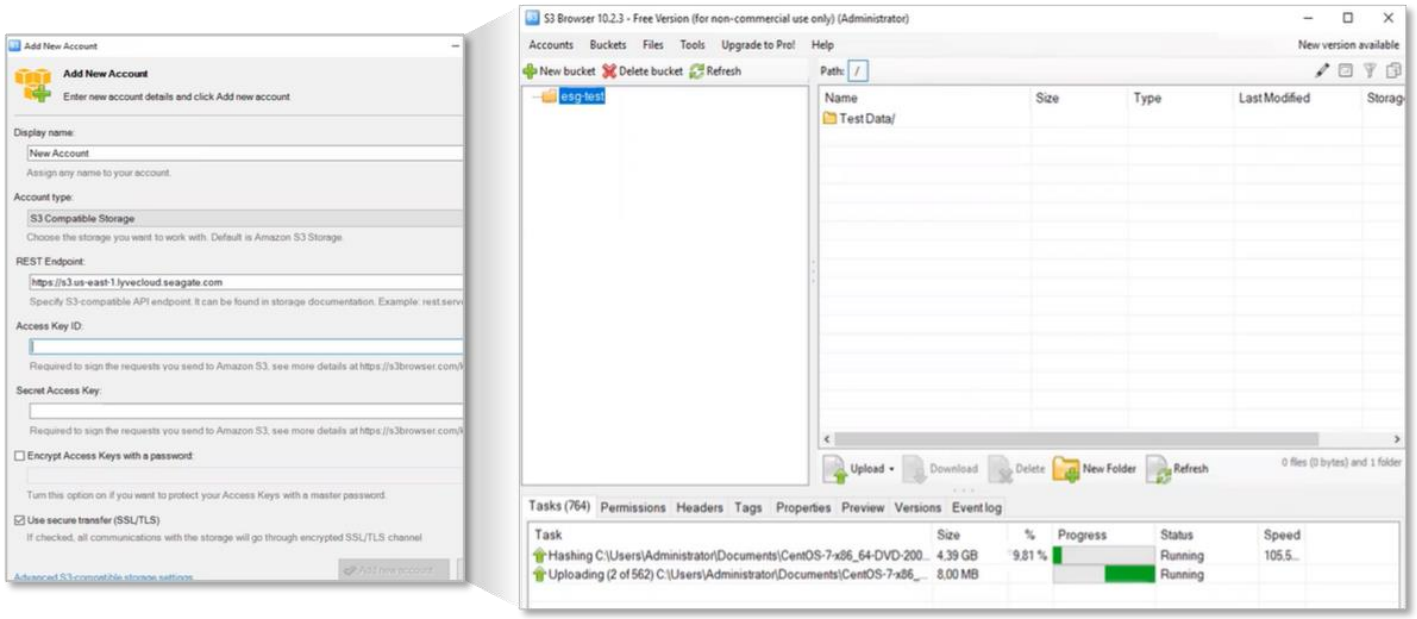
After these three steps, a bucket can be used to store any type of object, which enables uses such as storage for internet applications, backup and recovery, disaster recovery, data archives, and data lakes for analytics. Customers using Lyve Cloud

can integrate it for the needs of their existing infrastructure. Lyve Cloud S3 storage complements existing hybrid and multicloud environments with the standard S3 API integration.

Ease of Storage Management

ESG validated the ease of managing storage with Lyve Cloud from Seagate. As shown in Figure 4, customers only need to enter the unique bucket name and credentials that were created in the application software in an S3 browser, and then they are ready to transfer data in and out. ESG verified how data could be migrated easily without any training, so businesses could transfer critical data between private clouds and public clouds, distribute data sets to specialized data clouds, or simply use it for aggregation of edge data, backup and archive, or hosting an enterprise data link.

Figure 4. Lyve Cloud Storage Management



Source: ESG, a division of TechTarget, Inc.

Why This Matters

In ESG's *2022 Technology Spending Intentions Survey*, 46% of organizations reported that IT has gotten more complex over the last two years. Top reasons for this increased complexity include an increase in remote workers, an increase in the number and type of endpoint devices, and higher data volumes.[3] Organizations are also facing challenges with complexity around coordination between multiple cloud teams and traditional IT functional teams, as well as ensuring security across multiple cloud environments.[4]

Through a hands-on product demonstration, ESG validated Lyve Cloud's ease of use and storage provisioning, multicloud management, and the simplification and integration of operational tasks.

[3] Source: ESG Complete Survey Results, *2022 Technology Spending Intentions Survey*, November 2021.
[4] Source: ESG Research Report, *Application Infrastructure Modernization Trends Across Distributed Cloud Environments*, March 2022.

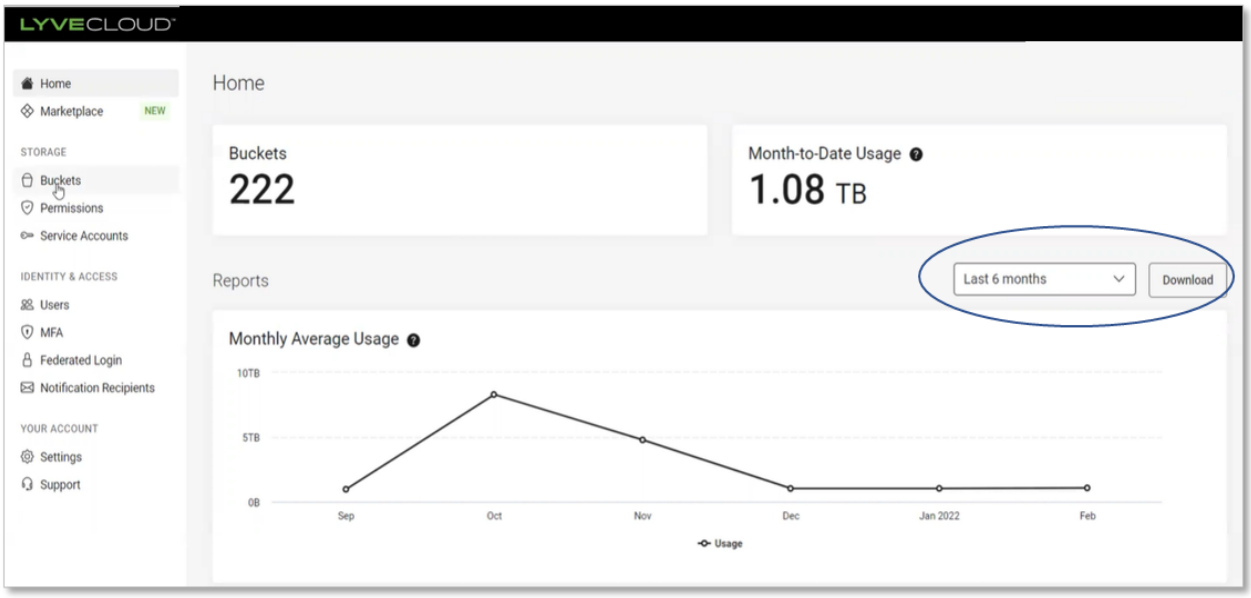
Predictable Performance, Capacity, and Price

Lyve Cloud is designed to provide organizations with predictable performance, capacity, and pricing. Customer data is available when it's needed, without having to wait for it to move to more responsive storage tiers, as is the case with other public S3 cloud storage services. Predictable cloud storage availability and performance is an important component of a multicloud strategy because it allows organizations to concentrate on their workloads and applications, without having to concern themselves with data movement.

ESG verified how Lyve Cloud's transparent pricing can help customers to redistribute their budget toward business innovation and growth. Exabytes of data can be stored and activated with predictable economics, as the pricing is based on capacity stored, and there are no additional charges for API calls or egress fees to use data or move data in and out of S3 buckets, allowing enterprises to keep control of their data.

As shown in Figure 5, customers can view the number of buckets they've configured and how much storage they are using over time.

Figure 5. Predictable Cloud Storage



Source: ESG, a division of TechTarget, Inc.

Simple scalability and long-term cost predictability make Lyve Cloud a complement to existing cloud strategies, enabling data to seamlessly flow to wherever it generates the most value.

Cost Savings: Backup TCO Calculator

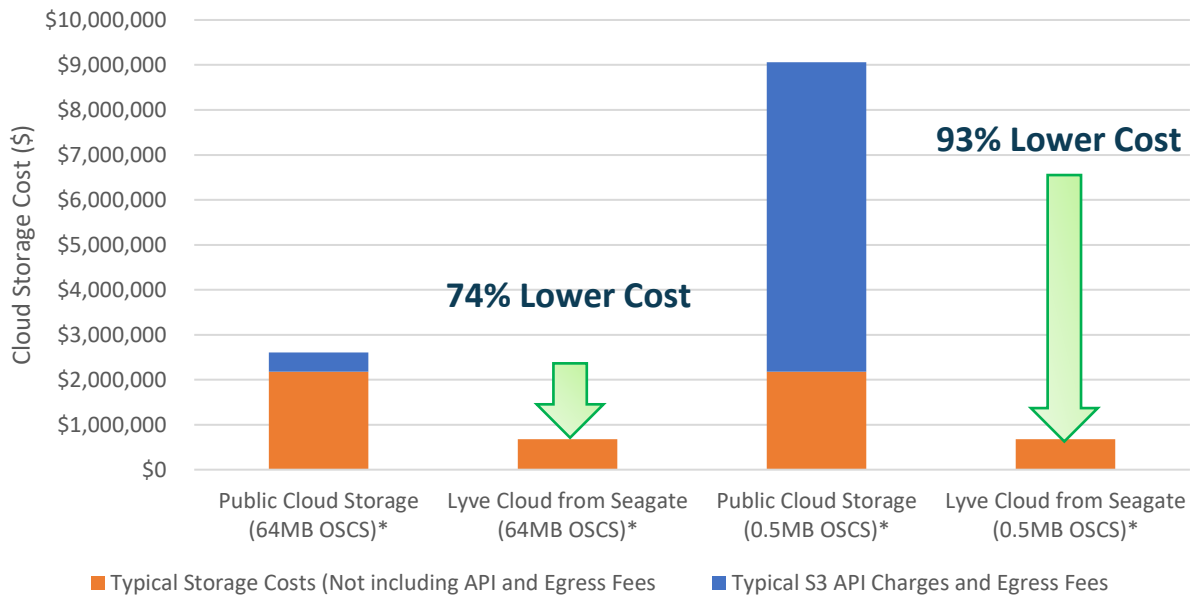
The ESG demo included a TCO analysis using Seagate's backup TCO calculator tool with a traditional 3:1 backup method with daily incremental backups and weekly and monthly full backups. In this example, 4 weekly full backups were kept for 4 weeks and then were overwritten. Changes were overwritten every week, and the monthly full backups were kept for as long as the retention period was specified. This backup calculator does not factor in data compression from the backup software.

This demo also created a backup scenario and filled in the different paraments in the calculator. One of the parameters that has a direct impact on the cost is the frequency of data access in the cloud. There were three options: workload, nearline, and archive. Workload is a standard tier for frequently accessed data, nearline is for data that is occasionally needed, and archive is a low-cost S3 storage class for data that rarely needs to be accessed. For our scenario, we chose workload access.

Object Storage Data Chunk Size in MB is a parameter that a system admin can tune when sending data to Lyve Cloud depending on their needs, performance requirements, network bandwidth, and application capability. This can help drastically reduce the number of API calls made, resulting in higher cost savings.

We used a typical public cloud's costs over four years for 1PB of data with full daily backups and four recovery points per day. A 5% daily change rate and a 5% data download—for restores—per month were used. The object storage data chunk size parameter was changed from 64MB to 0.5MB. This is important with backup applications that have a maximum data chunk size of 1MB and use compression to reduce those chunks to 0.5MB. Figure 6 shows Lyve Cloud costs compared to public cloud storage.

Figure 6. Lyve Cloud from Seagate Cost Savings Compared to Public Cloud Storage



Source: ESG, a division of TechTarget, Inc.

As seen in Figure 6, Lyve Cloud storage costs over four years are 74% lower than public cloud providers with a 64MB chunk size and 93% lower for a 0.5MB chunk size.

In addition to the base charge for capacity, public cloud storage providers charge additional fees for API access and data egress. This often has a significant impact on the cost of cloud storage. In our scenario, using a chunk size of 0.5MB caused egress and API fees to increase by 94% compared to 64MB chunk size.

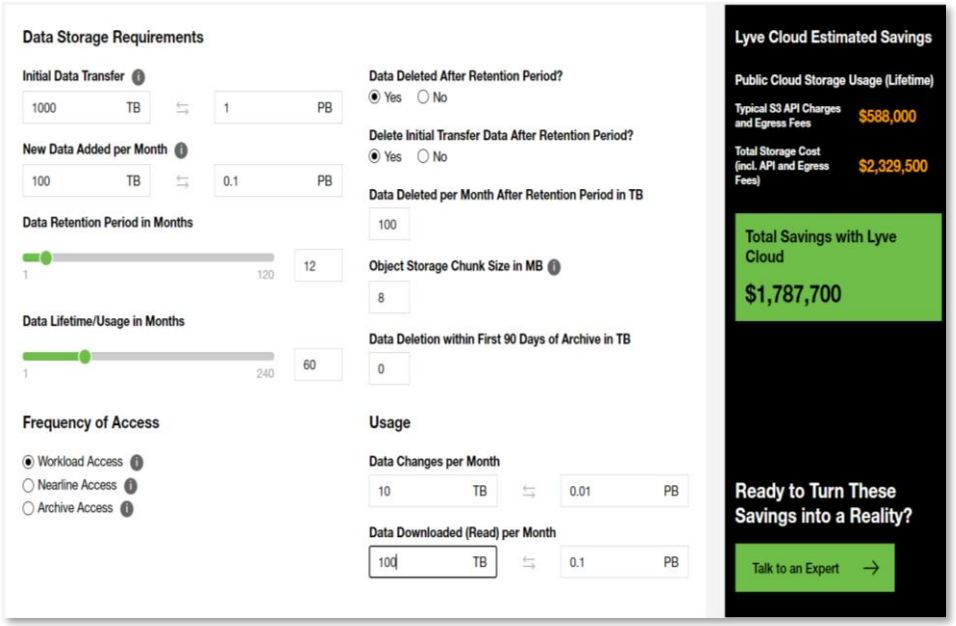
Data Repository TCO Calculator

ESG also audited Seagate's data repository calculator to determine the savings that customers can expect when storing their data in Lyve Cloud. The calculator helps customers to make an informed decision on whether Lyve Cloud is a good fit for them and whether they should use it for archiving or as an online repository that they need to access regularly.

ESG modeled a scenario in which a car manufacturer needed a data repository for autonomous vehicle analytics. The initial transfer of data into the cloud was set at 1PB, with an additional 100TB of data added per month with a 12-month sliding window of data retention. The change rate was set to 10TB per month with 100TB of data being downloaded from the cloud per month. The duration of the project was set to 60 months.

In Figure 7, we can see a $1.7M estimated cost savings when using Lyve Cloud compared to a public cloud storage provider.

Figure 7. Data Repository TCO Calculator



Source: ESG, a division of TechTarget, Inc.

As in previous examples, API and egress fees levied by the public cloud storage provider contribute greatly to the difference in costs.

Why This Matters

When asked what their organizations' biggest challenges are with leveraging multiple public cloud infrastructure services, 18% of respondents noted unpredictable costs as a top challenge.[5] When organizations don't know if their storage costs will match up with their budget, they risk spending more than they are able to.

ESG validated that Lyve Cloud from Seagate provides S3 object storage for modern and legacy applications with transparent and predictable pricing. ESG's analysis revealed more than $1.7 million in savings for a big data analytics application over five years, up to 93% lower costs for a backup and recovery workload.

[5] Source: ESG Research Report, *Application Infrastructure Modernization Trends Across Distributed Cloud Environments*, March 2022.

The Bigger Truth

It's difficult to predict ahead of time how much storage may actually be needed for a particular project or workload, especially with the rapid data growth of modern applications. CapEx infrastructure purchases can drain organizations' budgets all at once, which explains why more than half (51%) of organizations surveyed by ESG prefer to consume IT as-a-service, versus a traditional consumption model, because of the benefits that an OpEx model provides.[6]

Lyve Cloud from Seagate is built for massively scalable S3 object storage in multicloud environments. It is designed to be simple, trusted, and efficient, with high levels of data availability and durability. Seagate enables organizations to position their data closer to both the original source of collection and to multiple public clouds.

ESG validated that Lyve Cloud reduces operational complexity while providing predictable performance and costs with massive scalability for modern data sets. Organizations can use Seagate's TCO calculator to predict more easily what their costs will be upfront. ESG found that:

- Data can be easily migrated into and out of Lyve Cloud, allowing organizations to transfer data between distributed environments quickly and easily.
- Lyve Cloud can offer its customers up to 93% lower cost than public cloud providers for data protection workloads with sub 1MB data transfer chunk sizes.
- For modern data analytics workloads, ESG uncovered potential savings of more than $1.7 million over five years.

If your organization is looking to adopt an object storage solution that can reduce operational complexity with predictable performance and costs, then ESG recommends that you should take a close look at Lyve Cloud from Seagate.

[6] Source: ESG Research Report: *Data Infrastructure Trends*, November 2021.