storageDNA®

Data Decisions. Data Services

Cloud Based Storage – 2023, Q1 Quarterly Cost Report

Introduction

The cloud storage pricing report is a quarterly cost report comparison of cloud storage across multiple providers and tiers. The purpose of this report is to provide the reader with deeper insights into how cloud providers charge for storage while enabling end users to make better decisions when selecting a cloud provider and tier that matches their data and usage scenario.

Currently, the following cloud storage options are analyzed in this report:


Avid-EOD-Nexis

AWS


Azure


Backblaze


FrameIO


Google


LucidLink

LyveCloud


Symply-Nebula


Wasabi

The DNAfabric Cost Calculator

We utilize the "DNAfabric Cost Calculator" to contrast and compare multiple cloud providers and tiers. The DNAfabric cost calculator is a free tool that helps users build and compare cost models across multiple providers and tiers of storage.

For the purposes of this report, we rely on the cost calculator tool to build models across user data type, access scenarios, and cloud storage options.

The DNAfabric cost calculator tool is free to use and can be found at this link.

DNAfabric: The Unstructured Data Management Platform

Along with the cost calculator, DNAfabric is a cloud-optimized, unstructured data management platform that offers multiple unstructured data management services. These services range from backup, archive, verification and synchronization services.

More information about DNAfabric can be found here.

Understanding The Cost Comparisons Below

Variables Used In Computing Cost

For the purposes of this report, we have taken a few different variables into account. While many more variables affect cloud price, the following three have the largest impact:

- **Type of data (Small vs Large Files)**: Small files result in far more API calls and IOs to be performed. This means that the same amount of data in GB will cost more if the file sizes are smaller. Hence it is important to consider file size when we are predicting cloud costs.

- **Data access frequency (Hot vs Cold Data)**: Cloud storage data access frequency refers to the rate at which data stored in a cloud storage service is accessed or retrieved by users or applications.

  Factors that can impact data access frequency include the number of users accessing the data, the types of applications and workloads using the data, and the overall performance of the cloud storage service itself.

- **Data egress (In-Cloud vs Out-of-Cloud):** Cloud storage data egress refers to the transfer of data out of a cloud storage service to a different location or system. This can include data being downloaded to a local device or system, data being transferred to another cloud storage service or to a different network location, or data being backed up to an external storage system.

  Data egress can be a significant factor in the cost of using a cloud storage service, as many providers charge for data transferred out of their service.

Table Layout Below

In each comparison table below, we present the highest and lowest cost for that provider across all the tiers of storage they offer.

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	JP-EAST	$3,563,520

The Highest price point for Avid EOD across all regions and tiers for this workload

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	US-WEST-2	$3,563,520

The Lowest price point for Avid EOD across all regions and tiers for this workload

Cloud Pricing Comparison

1. Large Files, Hot Access, In-Cloud/No Egress

- In this section, we compare a 1 PB dataset consisting of large files (average size 1 GB) for hot data access (75% access/month).
- Data is assumed to be accessed within the cloud, essentially negating the egress costs across all providers.

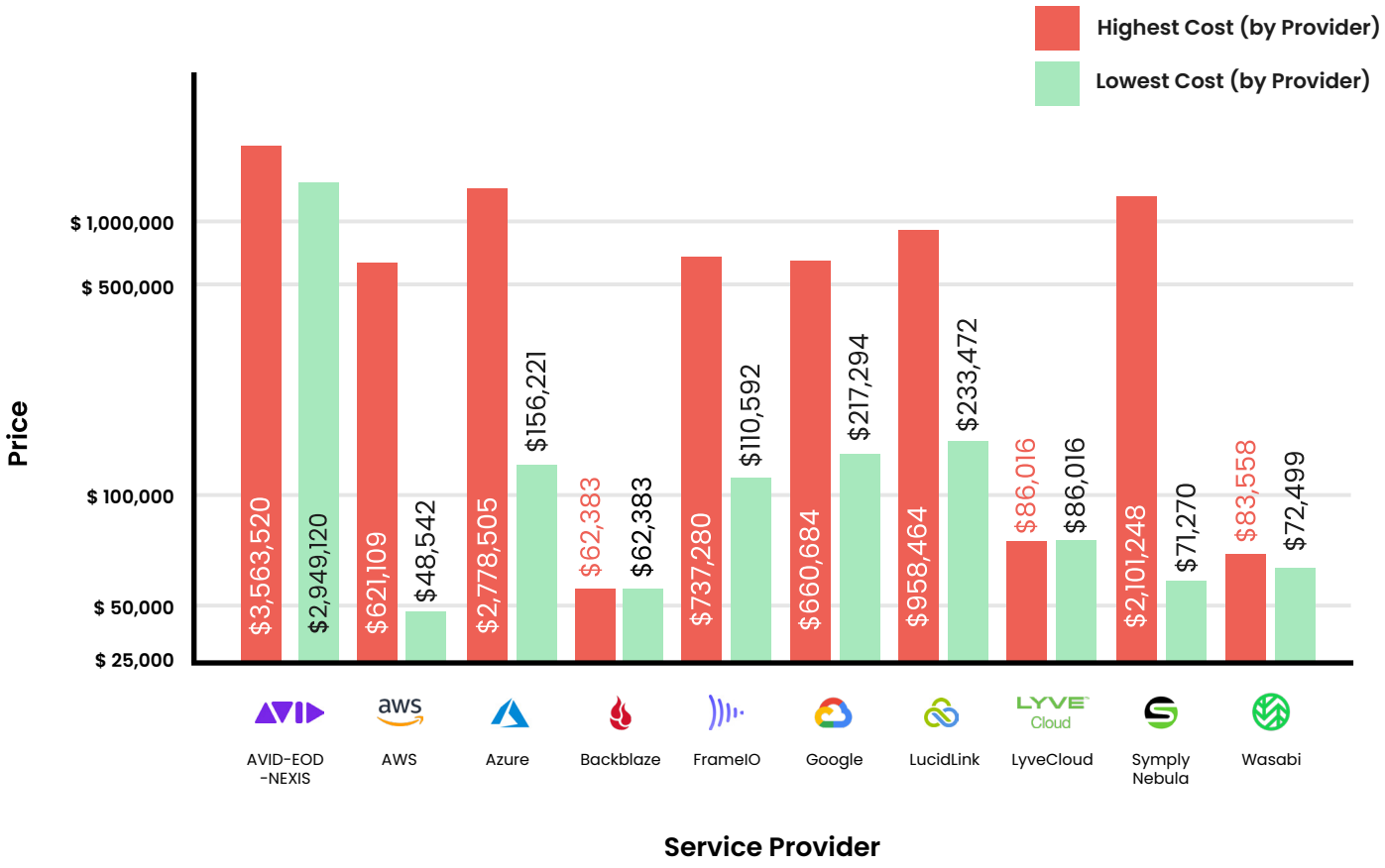
  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 1 GB
  - Total Time: 12 months

Dataset 1 - Large Files, Hot Data, In-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	JP-EAST	$3,563,520
AWS	SAOPAULO : GLACIER : EXPEDITED	$621,109
Azure	ZA-WEST : ARCHIVE : HIGH	$2,778,505
Backblaze	US-WEST	$62,383
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : ARCHIVE	$660,684
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	US-WEST-2	$2,949,120
AWS	OREGON : GLACIERDEEP-ARCHIVE : BULK	$48,542
Azure	US-WEST-3 : COOL : NORMAL	$156,221
Backblaze	US-WEST	$62,383
FrameIO	ARCHIVE	$110,592
Google	MULTIREGION-US : NEARLINE	$217,294
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	US-WEST-1 : STANDARD	$71,270
Wasabi	US	$72,499

Dataset 1 - Large Files, Hot Data, In-Cloud



2. Large Files, Hot Access, Out-of-Cloud/With Egress

- In this section, we compare a 1 PB dataset consisting of large files (average size 1 GB) for hot data access (75% access/month).
- Data is assumed to be accessed outside the cloud e.g. on-premise thus requiring an egress.

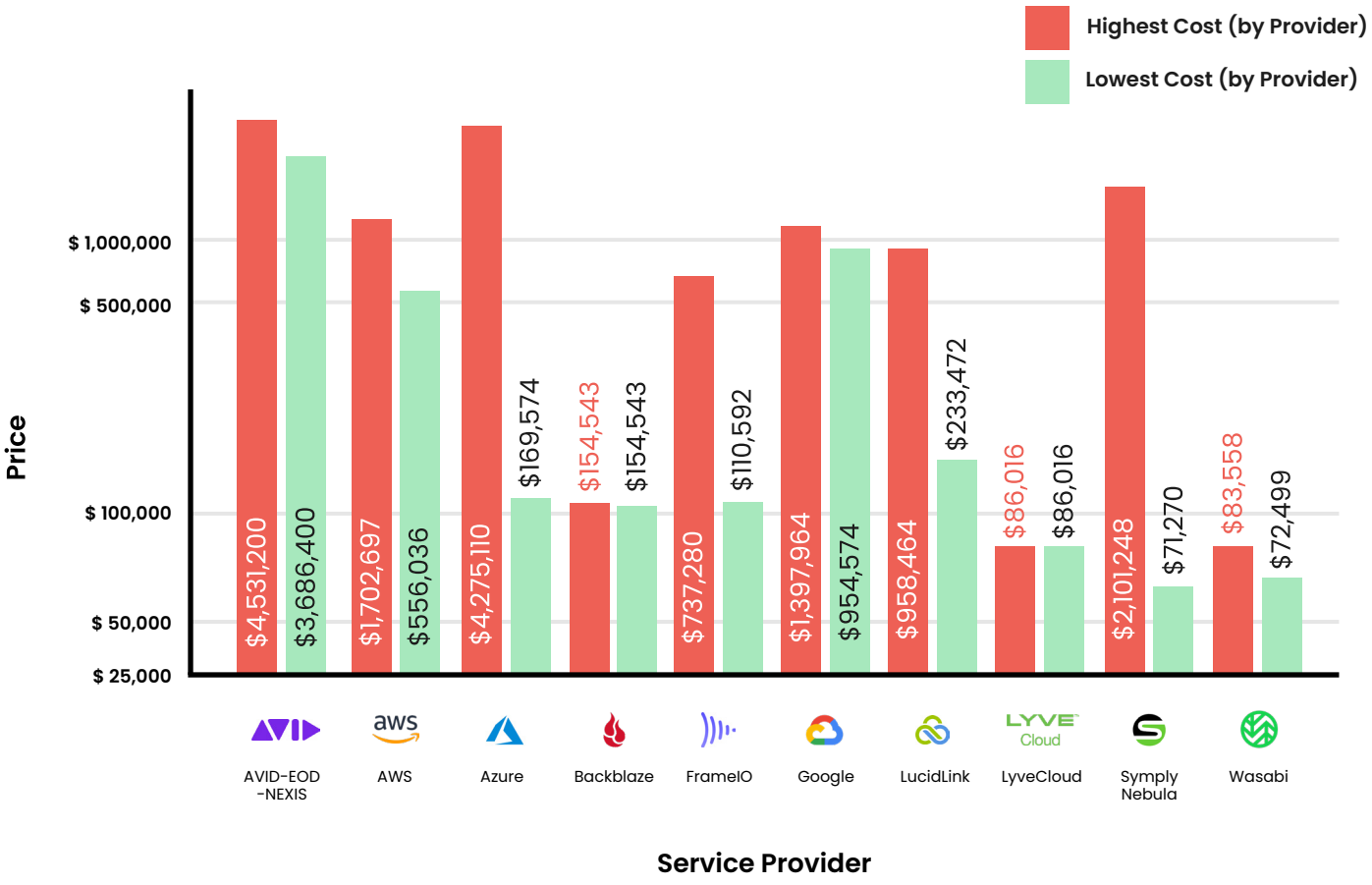
  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 1 GB
  - Total Time: 12 months

Dataset 2 - Large Files, Hot Data, Out-of-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$4,531,200
AWS	SAOPAULO : GLACIER : EXPEDITED	$1,702,697
Azure	ZA-WEST : ARCHIVE : HIGH	$4,275,110
Backblaze	US-WEST	$154,543
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : ARCHIVE	$1,397,964
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	US-WEST-2	$3,686,400
AWS	OREGON : GLACIERDEEP-ARCHIVE : BULK	$556,036
Azure	US-GOV-AZ : COOL : NORMAL	$169,574
Backblaze	US-WEST	$154,543
FrameIO	ARCHIVE	$110,592
Google	MULTIREGION-US : NEARLINE	$954,574
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	US-WEST-1 : STANDARD	$71,270
Wasabi	US	$72,499

Dataset 2 - Large Files, Hot Data, Out-of-Cloud



3. Large Files, Cold Access, In-Cloud/No Egress

- In this section, we compare a 1 PB dataset consisting of large files (average size 1 GB) for hot data access (10% access/month).
- Data is assumed to be accessed within the cloud essentially negating the egress costs across all providers

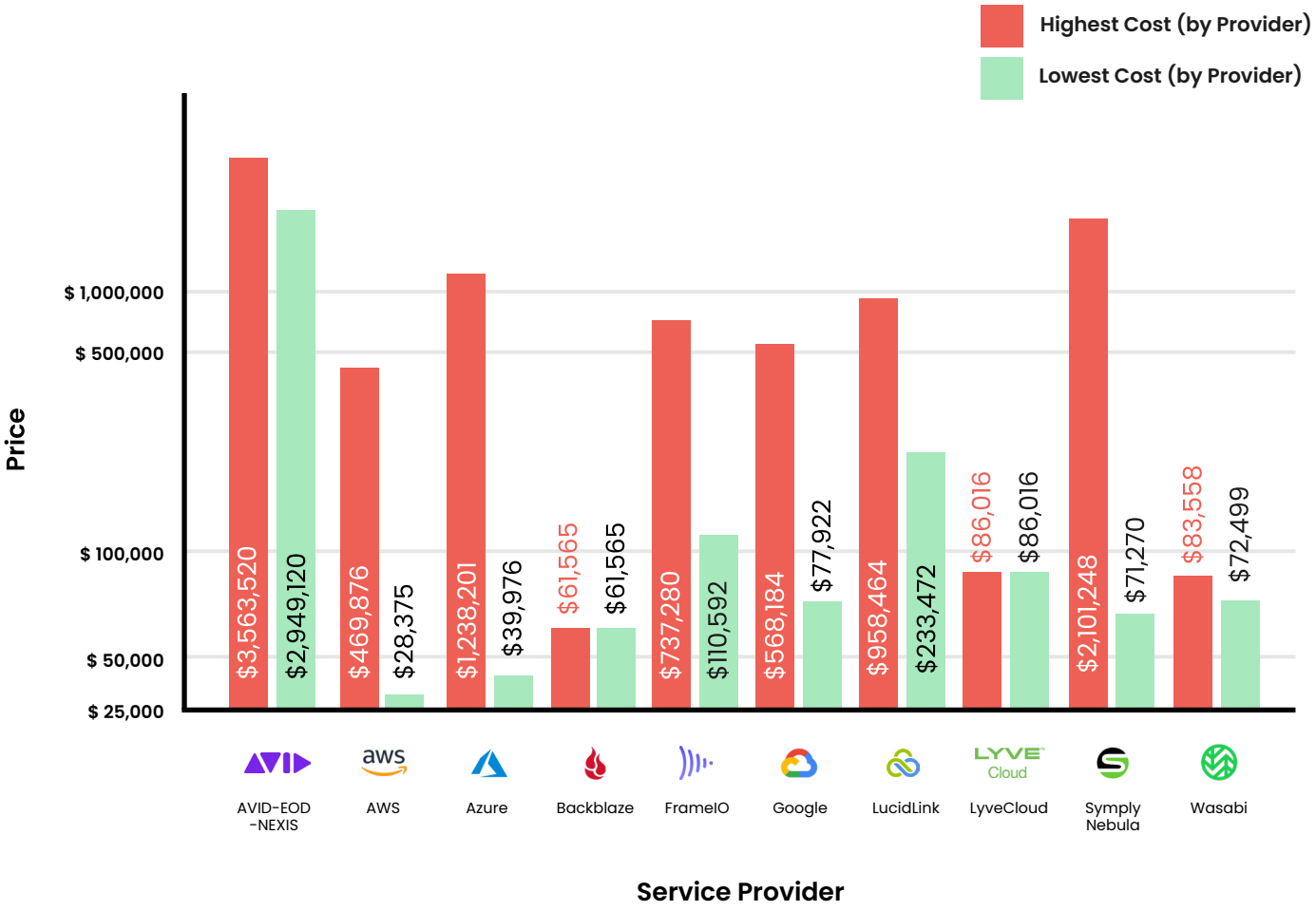
  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 1 GB
  - Total Time: 12 months

Dataset 3 - Large Files, Cool Data, In-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$3,563,520
AWS	SAOPAULO : STANDARD : STANDARD	$469,876
Azure	BR-SOUTHEAST : HOT : NORMAL	$1,238,201
Backblaze	US-WEST	$61,565
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : DRA	$568,184
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	EU-WEST	$2,949,120
AWS	NVIRGINIA : GLACIERDEEPARCHIVE : BULK	$28,375
Azure	US-EAST : ARCHIVE : NORMAL	$39,976
Backblaze	EU-CENTRAL	$61,565
FrameIO	ARCHIVE	$110,592
Google	US-WEST-1 : COLDLINE	$77,922
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	US-WEST-1 : STANDARD	$71,270
Wasabi	US	$72,499

Dataset 3 - Large Files, Cool Data, In-Cloud



4. Large Files, Cool Access, Out-of-Cloud/With Egress

- In this section, we compare a 1 PB dataset consisting of large files (average size 1 GB) for hot data access (10% access/month).
- Data is assumed to be accessed outside the cloud e.g. on-premise thus requiring an egress.

  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]

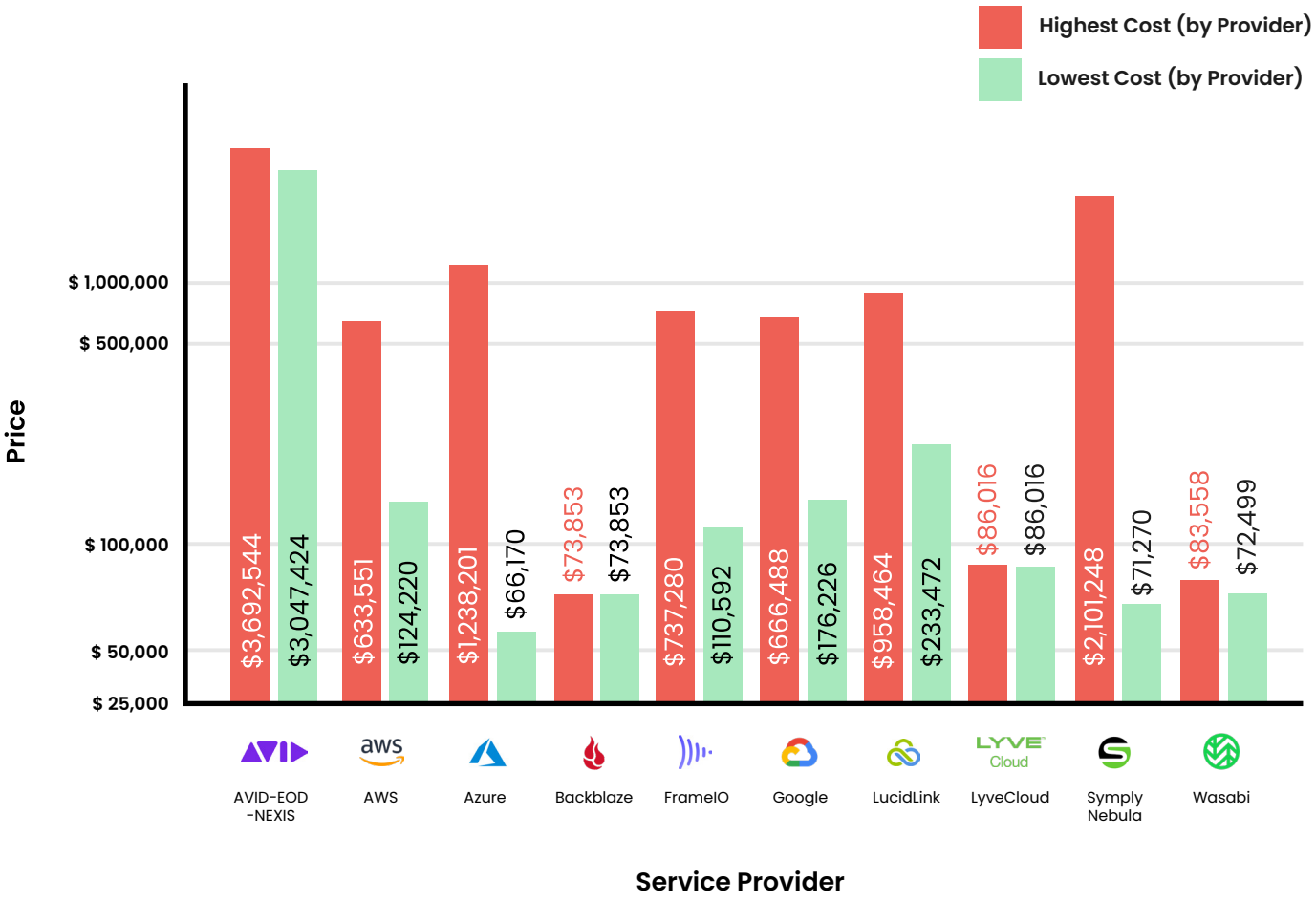
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 1 GB
  - Total Time: 12 months

Dataset 4 - Large Files, Cool Data, Out-of-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$3,692,544
AWS	SAOPAULO : STANDARD : STANDARD	$633,551
Azure	BR-SOUTHEAST : HOT : NORMAL	$1,238,201
Backblaze	US-WEST	$73,853
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : DRA	$666,488
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	US-WEST	$3,047,424
AWS	NVIRGINIA : GLACIERDEEPARCHIVE : BULK	$124,220
Azure	US-GOV-AZ : ARCHIVE : NORMAL	$66,170
Backblaze	EU-CENTRAL	$73,853
FrameIO	ARCHIVE	$110,592
Google	US-WEST-1 : COLDLINE	$176,226
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	US-WEST-1 : STANDARD	$71,270
Wasabi	US	$72,499

Dataset 4 - Large Files, Cool Data, Out-of-Cloud



5. Small Files, Hot Access, In-Cloud/No Egress

- In this section, we compare a 1 PB dataset consisting of small files (average size 10 MB) for hot data access (75% access/month).
- Data is assumed to be accessed within the cloud essentially negating the egress costs across all providers.

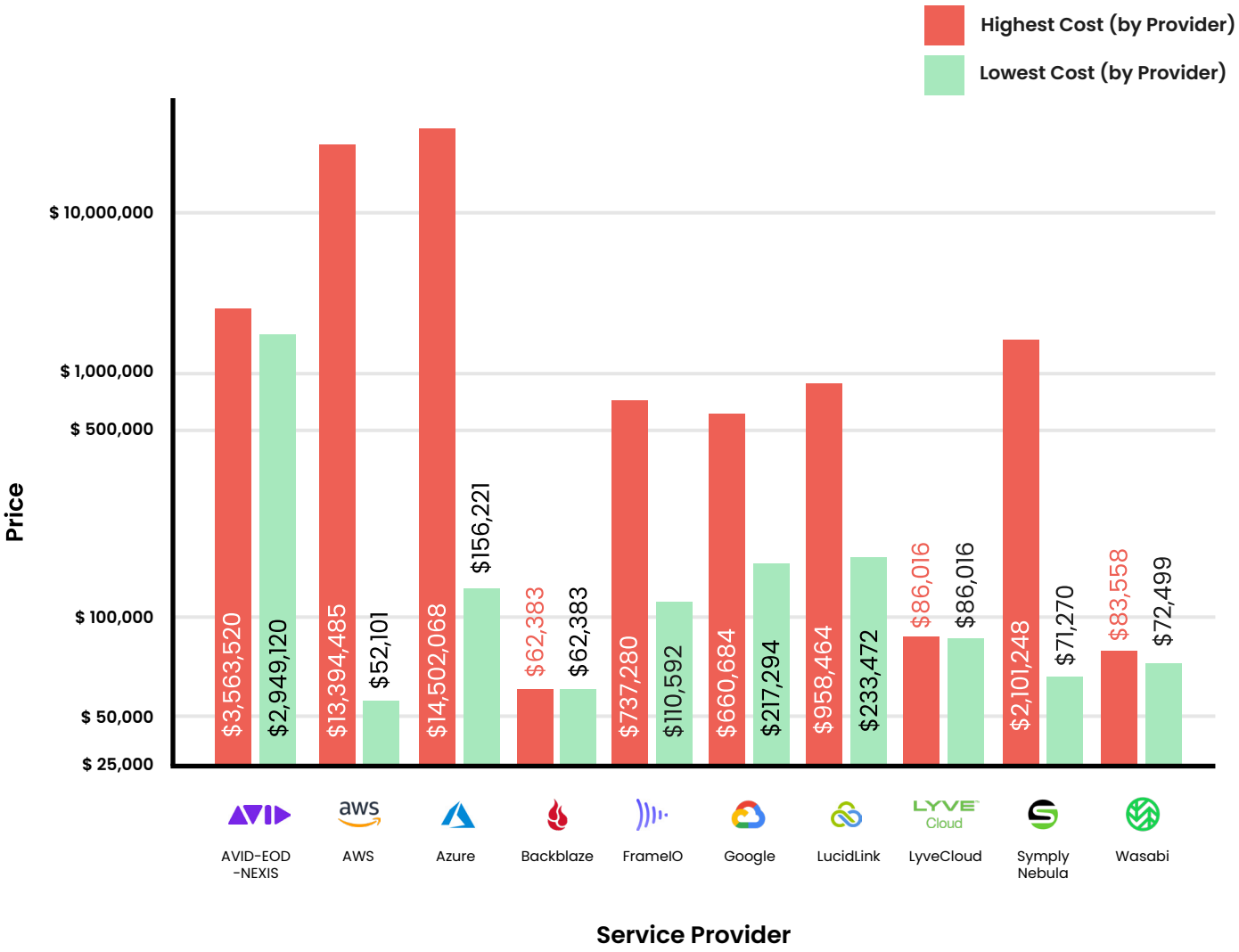
  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 10 MB
  - Total Time: 12 months

Dataset 5 - Small Files, Hot Data, In-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$3,563,520
AWS	SAOPAULO : GLACIER : EXPEDITED	$13,394,485
Azure	BR-SOUTHEAST : ARCHIVE : HIGH	$14,502,068
Backblaze	US-WEST	$62,383
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : ARCHIVE	$660,684
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	EU-WEST	$2,949,120
AWS	EAST-NVIRGINIA : GLACIER : BULK	$52,101
Azure	US-WEST-3 : COOL : NORMAL	$156,221
Backblaze	EU-CENTRAL	$62,383
FrameIO	ARCHIVE	$110,592
Google	ASIA : NEARLINE	$217,294
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	UK-1 : STANDARD	$71,270
Wasabi	EU	$72,499

Dataset 5 - Small Files, Hot Data, In-Cloud



6. Small Files, Hot Access, Out-of-Cloud/With Egress

- In this section, we compare a 1 PB dataset consisting of small files (average size 10 MB) for hot data access (75% access/month).
- Data is assumed to be accessed outside the cloud e.g. on-premise thus requiring an egress.

  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]

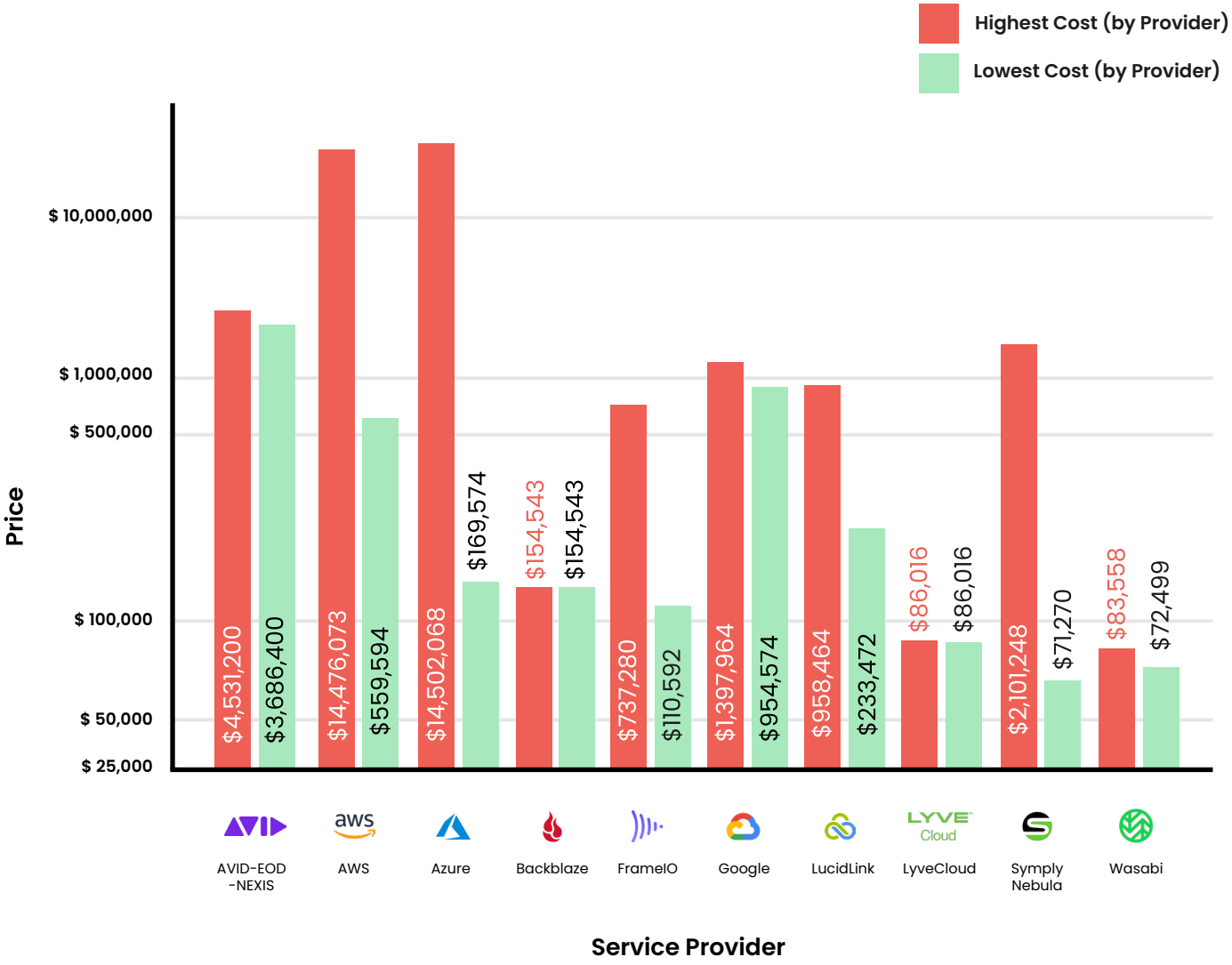
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 10 MB
  - Total Time: 12 months

Dataset 6 - Small Files, Hot Data, Out-of-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$4,531,200
AWS	SAOPAULO : GLACIER : EXPEDITED	$14,476,073
Azure	BR-SOUTHEAST : ARCHIVE : HIGH	$14,502,068
Backblaze	US-WEST	$154,543
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : ARCHIVE	$1,397,964
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	EU-WEST	$3,686,400
AWS	NVIRGINIA : GLACIER : BULK	$559,594
Azure	US-GOV-AZ : COOL : NORMAL	$169,574
Backblaze	EU-CENTRAL	$154,543
FrameIO	ARCHIVE	$110,592
Google	ASIA : NEARLINE	$954,574
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	UK-1 : STANDARD	$71,270
Wasabi	EU	$72,499

Dataset 6 - Small Files, Hot Data, Out-of-Cloud



7. Small Files, Cool Access, In-Cloud/No Egress

- In this section, we compare a 1 PB dataset consisting of small files (average size 10 MB) for hot data access (10% access/month).
- Data is assumed to be accessed within the cloud essentially negating the egress costs across all providers.

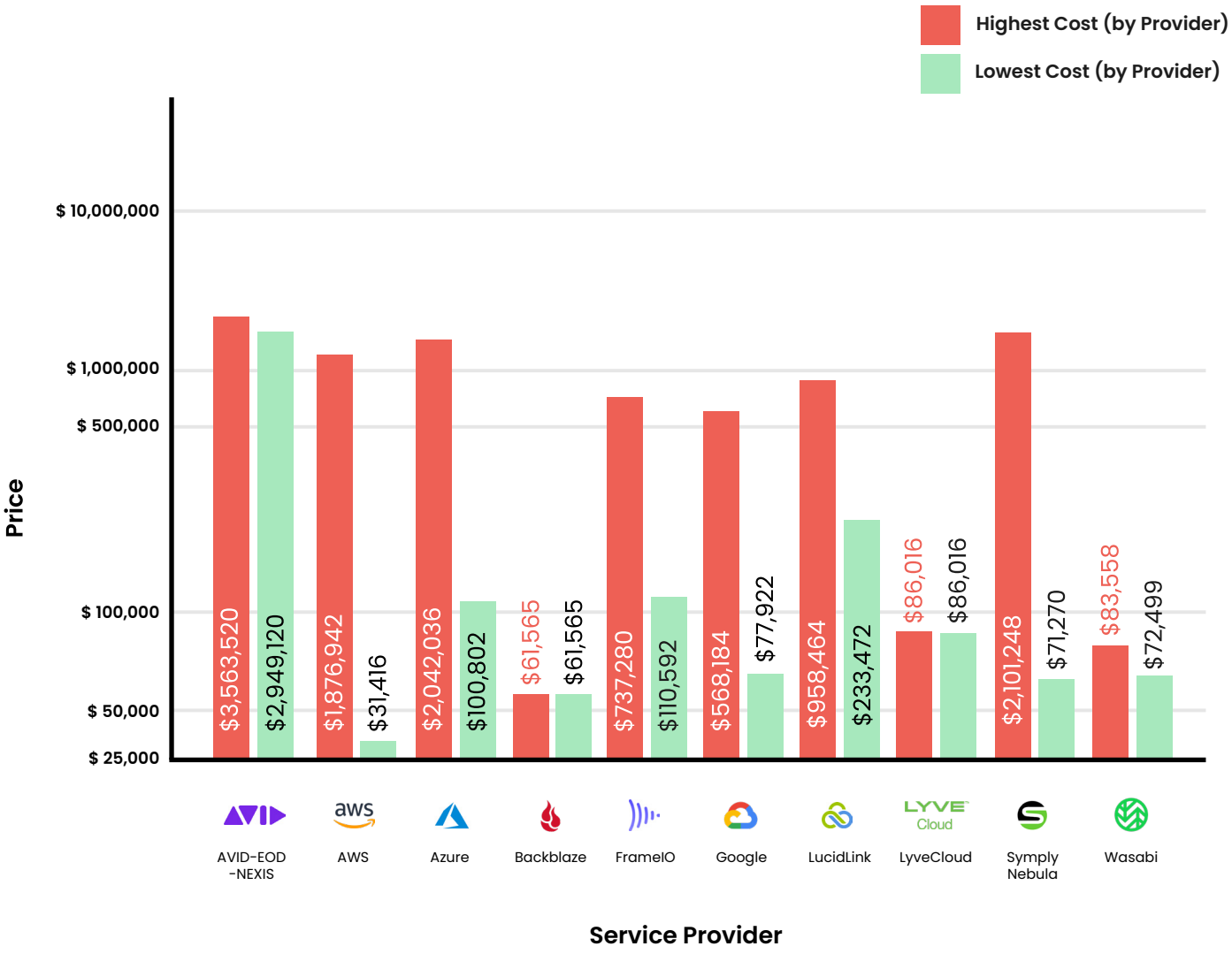
  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 10 MB
  - Total Time: 12 months

Dataset 7 - Small Files, Cool Data, In-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$3,563,520
AWS	SAOPAULO : GLACIER : EXPEDITED	$1,876,942
Azure	BR-SOUTHEAST : ARCHIVE : HIGH	$2,042,036
Backblaze	US-WEST	$61,565
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : DRA	$568,184
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	EU-WEST	$2,949,120
AWS	NVIRGINIA : GLACIERDEEPARCHIVE : BULK	$31,416
Azure	US-EAST : ARCHIVE : NORMAL	$100,802
Backblaze	EU-CENTRAL	$61,565
FrameIO	ARCHIVE	$110,592
Google	ME-WEST-1 : COLDLINE	$77,922
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	UK-1 : STANDARD	$71,270
Wasabi	EU	$72,499

Dataset 7 - Small Files, Cool Data, In-Cloud



8. Small Files, Cool Access, Out-of-Cloud/With Egress

- In this section, we compare a 1 PB dataset consisting of small files (average size 10 MB) for hot data access (10% access/month).
- Data is assumed to be accessed outside the cloud e.g. on-premise thus requiring an egress.

  NOTE: *Access costs (where applicable) are still computed. [Access costs are a separate cost to egress costs charged by some providers. Refer to the Cost Calculator for more details.]

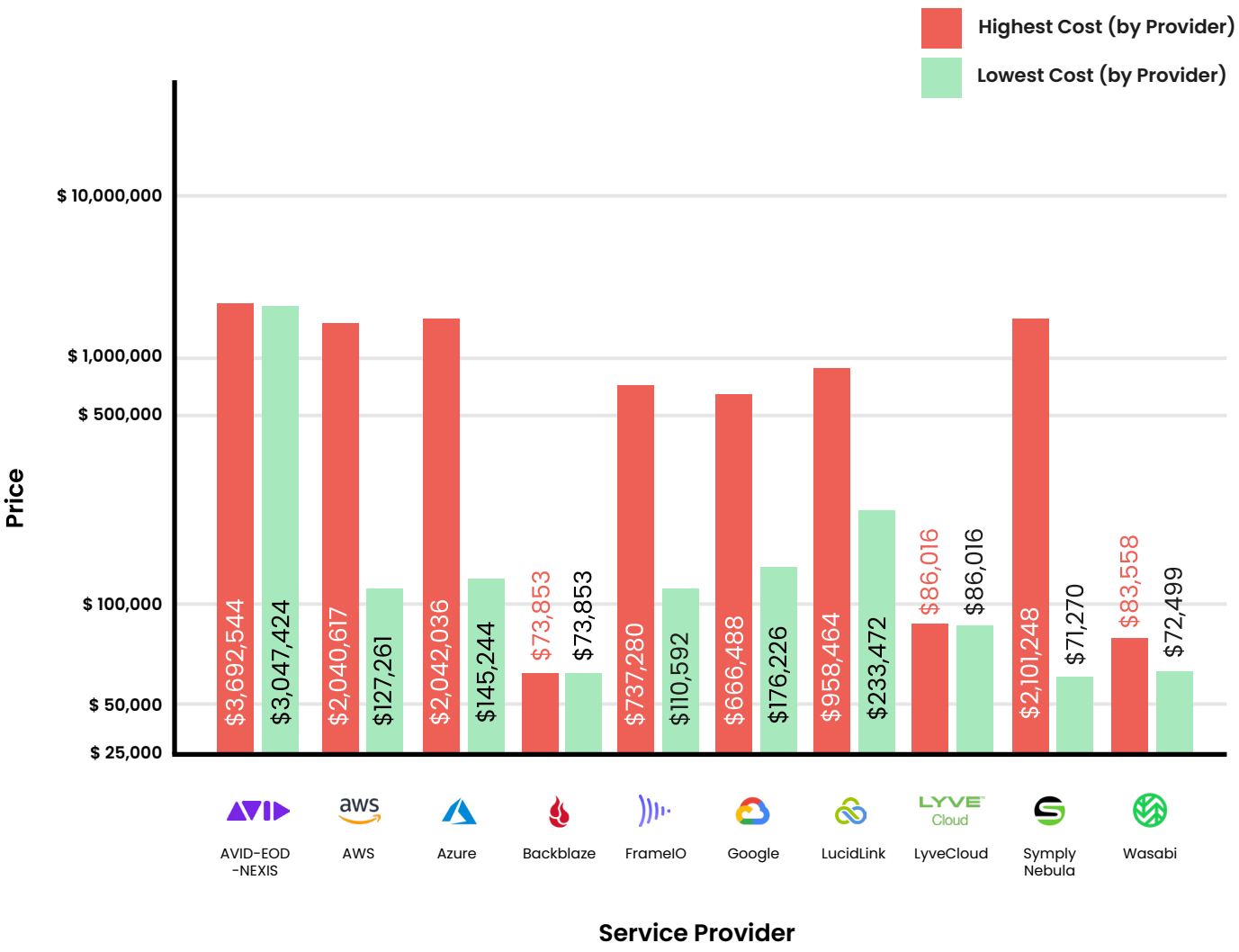
- Inputs used for the DNAfabric Cost Calculator:
  - 1 PB
  - Avg File Size: 10 MB
  - Total Time: 12 months

Dataset 8 - Small Files, Cool Data, Out-of-Cloud

Highest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (inUSD)**
AVID-EOD-NEXIS	JP-EAST	$3,692,544
AWS	SAOPAULO : GLACIER : EXPEDITED	$2,040,617
Azure	BR-SOUTHEAST : ARCHIVE : HIGH	$2,042,036
Backblaze	US-WEST	$73,853
FrameIO	ACTIVE	$737,280
Google	ASIA-1 : DRA	$666,488
LucidLink	ADV	$958,464
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	SYD-1 : FLEX	$2,101,248
Wasabi	APAC	$83,558

Lowest Cost (by Provider)		
Provider	**Region/Tier**	**Amount (in USD)**
AVID-EOD-NEXIS	EU-WEST	$3,047,424
AWS	NVIRGINIA : GLACIERDEEPARCHIVE : BULK	$127,261
Azure	US-GOV-AZ :ARCHIVE : NORMAL	$145,244
Backblaze	EU-CENTRAL	$73,853
FrameIO	ARCHIVE	$110,592
Google	ME-WEST-1 : COLDLINE	$176,226
LucidLink	BASIC	$233,472
LyveCloud	US-WEST-SF	$86,016
Symply-Nebula	UK-1 : STANDARD	$71,270
Wasabi	EU	$72,499

Dataset 8 - Small Files, Cool Data, Out-of-Cloud



Thoughts and Tips

AWS S3 Glacier Deep and Azure Blob Archive Are The Lowest Cost Way to Store Data

OBSERVATION: If you are looking for the most cost effective way to store your data long term, then AWS Deep Glacier and Azure Blob Archive are the most cost effective option. However, note that if you download data out of the data center, egress charges can make these options less cost-effective.

QUICK TIP: Utilize the cost calculator to compare at what level of access do these options no longer make sense. Note that the switch point is dependent on file size, file count, and access %.

Zero Egress Providers Are Important (Symply, LyveCloud, Wasabi)

OBSERVATION: A number of providers are offering zero egress cloud storage offerings (Symply Nebula, Seagate LyveCloud, Wasabi). This is important as hybrid workflows continue to be popular. In these scenarios where data needs to be egressed to on-premise locations, a zero-egress provider is critical to control costs.

QUICK TIP: Utilize the cost calculator to compare zero-egress providers. DNAfabric can then tier and backup between any on-premise storage to a number of zero-egress cloud options.

Backblaze Beats Out Some Zero Egress Providers In Some Cases

OBSERVATION: Backblaze while not offering zero egress often beats out zero egress providers due to its lower per GB storage costs.

QUICK TIP: Utilize the cost calculator to compare zero-egress providers with Backblaze. DNAfabric can then help migrate between object providers including migrating data to and from Backblaze.

Avid EOD - Expensive But Tiering Can Help

OBSERVATION: Avid EOD is an expensive way to store data. This is not surprising as it is designed on high-performance Azure Blob storage. So it is important to have a tiering strategy for data on Avid EOD.

QUICK TIP: Utilize the cost calculator to understand your Avid EOD versus the cost of storing the data on long-term object storage e.g. Azure Blob Archive. Then utilize DNAfabric to tier data out of Avid EOD to a number of lower-cost options including Azure Blob Archive, Seagate Lyve Cloud, and Symply Nebula.

Expedited Retrievals are Best Avoided

OBSERVATION: AWS Glacier, Glacier Deep, and Azure Blob Archive all support some form of expedited retrievals. However, expedited retrievals can be prohibitively expensive.

QUICK TIP: Rely on expedited retrievals only when you have no other option! It is better to understand your data characteristics beforehand and utilize the cost calculator to pick the correct storage tier.

Frame.IO Archive Is Your Friend!

OBSERVATION: Frame.IO active storage can be far more expensive that their archival offerings (7x more expensive). It is important to move data periodically to the archive tier.

QUICK TIP: Frame.IO only provides archival of an entire workspace. Hence it is important to plan your workspaces appropriately.

For LucidLink, Archival and Tiering Must Be Considered

OBSERVATION: LucidLink advanced will be needed for media workflows. LucidLink is far more expensive than cool or archival tiers (e.g. AWS S3 Glacier, Azure Blob Archive, Symply Nebula, Wasabi, LyveCloud).

QUICK TIP: Utilize the cost calculator to compare the cost of storing data on LucidLink vs lower cost, cooler tier. DNAfabric can enable seamless tiering between LucidLink to/from any 3rd party object storage.