WeCasa

Archive Storage DAR Report

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Date Submitted: December 11, 2022

Github Repository:

https://github.com/githelsui/WeCasa

Archive Storage DAR Version Table

Version	Description	Date
1.0	Initial DAR - Use Cases - Technologies, Metrics, Evaluation	12/05/2022
1.1	Content Improvements - Reduced weights - Added more quantifiable metrics based on business needs	12/07/2022
1.2	Content Improvements - Adjusted intervals for more precise scores	12/11/2022

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Business Needs & Metrics

Cost: WeCasa wants to reduce our technology costs to $0. So any archive storage service that requires an upfront cost for at least the next 6 months is not ideal, and will be scored as a 0.
Security: Security is a primary concern for the backend layer of our application. Scoring for this category will be based on whether the data storage includes the following protections in the free tier:

- Data encryption (at-rest)
- Infrastructure security (virtual network)

Data retrieval cost: WeCasa wants to reduce our technology costs to $0. So retrieving the data from the archival storage service should not incur any cost (0 if no, 1 if yes).
Minimum storage duration: Archived entries must be stored for a minimum number of days before being retrieved at the risk of penalty. The score for this category will be based on whether the service can meet this requirement (0 if no, 1 if yes).
Access Delay: The persistent data store must be accessible by the system, but the time it takes to access the data store is not a specific requirement. Since we want our system to be efficient, we will score technologies in this category by the shortest access delay time.

Technology Comparison

Scale: 1-1.75 with intervals of 0.25, based on how influential that metric is in our decision making. Higher numbers indicate more importance.
Scores: 0-1 with intervals of 0.2, based on how well they match our desired use case.
Total: Scores for each technology will be summed and multiplied by the metric scale.

Metrics	Amazon S3 Glacier Instant Retrieval	Azure Archive Storage - Archive Access Tier	Google Cloud Archive Storage Class
Cost - **1.5**	12 months free of 5 GB Amazon S3 standard storage, 20,000 Get Requests, 2,000 Put Requests, and 100 GB of data transfer out each month (*S3, 2022*) - ***1***	30 days free with $200 credit (Microsoft Azure, 2022) - **0.2**	90-day, $300 Free Trial (*Google Cloud, 2022*) - **0.4**

Security - **1.75**	Uses TLS, access keys, and secret access keys from IAM principals, and VPC endpoints. Data is protected at-rest using AES-256 (*Amazon S3 Glacier*, 2022) - **1**	Data is transferred using HTTPS and secured at rest using AES-256 (*Microsoft Azure*, 2022) - **1**	Uses server-side encryption, retention policies for bucket objects (*Google Cloud*, 2022) - **1**
Data retrieval cost - **1**	10 GB data retrieval per month free (S3 Glacier, 2022) - **1**	$0.02 per GB (Microsoft Azure, 2022) - **0.4**	$0.05 per GB (Google Cloud, 2022) - **0.2**
Minimum storage duration - **1**	180 days. Early deletions are charged $0.021 per day (*AWS billing, 2022*) - **0.8**	180 days. Early deletion fee equivalent the amount it would take to store that data archive for remaining days (Microsoft Azure, 2022) - **0.8**	365 days. Early deletions are charged 0.0001 USD per gibibyte per day (*Google Cloud, 2022*) - **1**
Access delay - **1**	Minutes (AWS, 2016) - **0.6**	Up to 15 hours (K.P., 2016) - **0.2**	Milliseconds (K.P., 2016) - **1**
Total	**5.65**	**3.45**	**4.55**

Recommendation

AWS S3 Glacier Instant Retrieval

Glossary

Term	Definition
AES-256	256-bit Advanced Encryption Standard
S3	Simple Storage Service
TLS	Transport Layer Security
VNet	Virtual network

References

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