

WeCasa

Relational Storage DAR Report

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Github Repository:

<https://github.com/githelsui/WeCasa>

Relational Storage DAR Version Table

| Version | Description | Date |
|------------|---|------------|
| 1.0 | Initial DAR <ul style="list-style-type: none">- Use Cases- Technologies, Metrics, Evaluation | 12/05/2022 |
| 1.1 | Content Improvements <ul style="list-style-type: none">- Reduced weights- Added more quantifiable metrics based business needs | 12/07/2022 |

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Business Needs & Metrics

Cost: WeCasa wants to reduce our technology costs to \$0. So any relational 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 (*Hypertec Direct*, 2022):

- Data encryption (at-rest and in-transit)
- Access control mechanism (role-based)
- Protection against viruses and other data corruption threats
- Infrastructure security (virtual network)

Support for approved database engines: Approved database engines for WeCasa are MySQL, MariaDB, and MSSQL. It is important for the relational storage service to support any of these engines, more importantly MariaDB.

Maximum concurrent connections: During development, we will have at least 7 connections to the data storage service at any given time (6 developers + 1 client. We scored the technologies based on which service allows the most concurrent connections without any cost.

General purpose/backup storage: Scores for these categories were based on which service provides the most amount of storage (in GB per month) with no cost.

Technology Comparison

Scale: 1-1.75, based on how influential that metric is in our decision making. Higher numbers indicate more importance.

Scores: 0-1, based on how well they match our desired use case.

| Metrics | Amazon RDS | Azure SQL Database | Google Cloud SQL |
|-------------------|--|--|---|
| Cost - 1.5 | 12 months free with 750 hours per month using db.t3.micro (Amazon Web Services Inc, 2022) - 1.5 | \$200 Azure credit for 30 days, free services for 12 months (microsoft.com, 2022) - 1 | \$300 credit for 12 months, once trial has expired then it costs \$0.0286 per hour (Google Cloud, 2022) - 1.25 |

| | | | |
|---|--|--|---|
| Security - 1.75 | Firewall, VNet, encryption at rest and in-transit, role-based authorization (Amazon Web Services Inc, 2022) - 1.5 | Firewall, VNet, encryption at rest and in-transit, RBAC (jaszymas, 2022) - 1.5 | Firewall, VNet, encryption at rest and in-transit, no RBAC in free tier (Google Cloud, 2022) - 1 |
| Support for approved database engines - 1.5 | MySQL, MariaDB, PostgreSQL, Microsoft SQL (Amazon Web Services Inc, 2022) - 1.5 | MySQL, MariaDB, PostgreSQL, Microsoft SQL (WilliamDAssafMSF T, 2022) - 1.5 | MySQL (no MariaDB), PostgreSQL, SQL Server (Google Cloud, 2022) - 0.5 |
| Maximum concurrent connections - 1 | 85 for t3.micro instance (SysAdminXpert, 2017) - 1 | 30 (Datadog, 2022) - 0.75 | 250 for MySQL f1-micro instance (Google Cloud, 2022) - 1 |
| General purpose storage within free tier - 1 | 20GB per month (Amazon Web Services Inc, 2022) - 1 | 250GB File storage for 12 months/ about 20GB per month (rajeshsetlem, 2022) - 1 | 100GB (Can, 2022) - 0.75 |
| Backup storage within free tier - 0.5 | 20GB per month (Amazon Web Services Inc, 2022) - 0.5 | No option - 0 | No option - 0 |
| Total | 9.375 | 8.125 | 6.125 |

Recommendation

Amazon RDS

Glossary

| Term | Definition |
|------|---------------------------|
| RBAC | Role-based access control |
| VNet | Virtual network |

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