WeCasa

Relational Storage Service DAR Report

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Relational Storage Service 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 business needs	12/07/2022
1.2	Content Improvements - Adjusted intervals for more precise scores	12/11/2022
1.3	Content Improvements - Changed technologies to managed and unmanaged RDBMs options - Updated metrics, evaluation	12/13/2022

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Business Needs & Metrics

Cost: WeCasa wants to reduce our technology costs to $0. So any relational storage solution that requires an upfront cost for at least the next 6 months is not ideal, and will be scored as a 0.
Setup time: Since our project plan does not allocate time for architecture setup, we need a solution that will take the least amount of time to set up.
Scalability: Since we plan to scale WeCasa to other markets in the future, we want the management of our database instance to be scalable. We will score this category based on the solution with the fastest rollout of changes and supports free autoscaling.
Storage limitations: Since our persistent data store is highly active handling transactions for all of our features, we need to ensure that the system can handle 10GB of storage per month. We also want data from our database to persist even if the instance were to stop running (system failure).
Database Accessibility: Our persistent data store needs to be accessible at all times by the system administrator. Any issues with accessibility by the system administrator will result in a lower score for this category.

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	Managed	Unmanaged
Cost - **1.5**	12 months free of single-AZ db.t3.micro instance running MariaDB with 750 hours per month (*Amazon Web Services Inc*, 2022) - **1**	12 months free of single-AZ t2/t3.micro instance with 750 hours per month (*Amazon Web Services Inc*, 2022) - **1**
Setup time- **1.5**	Minutes (Amazon.com) **- 1**	Could take hours for cloud beginners (*Tamimi*, 2021) - **0.8**
Scalability - **1**	The system can roll out changes within a few minutes, supports vertical and horizontal scaling at no additional cost (*Product*,	Scaling policies allow you to add instances if needed, have to pay for service fees from EC2 and CloudWatch (*Amazon Web Services Inc*,

	2021) - **1**	2022) - **0.8**
Storage limitations - **1**	20GB per month, stopping an RDS instance will store the data on the RAM of the DB instance (*Amazon Web Services Inc*, 2022) - **1**	T3.micro instances store data in EBS, which allows 30GB for 12 months for free. Any data on an instance store will be lost if the instance were to stop, hibernate, or terminate (*Storage - Amazon Elastic Compute Cloud*, 2022) - **0.6**
Database accessibility - **1.25**	Does not include a SUPER user to setup and maintain database, uses procedures to take care of DBA tasks (*Oles*, 2018) - **0.8**	Full control over disaster recovery and database configuration (*Product*, 2021) - **1**
Total	**6**	**5.35**

Recommendation

Since managing our relational database through a service scores higher when evaluated against our metrics, we will be using Amazon RDS as WeCasa's fully-managed relational database management service.

References

Create a DB instance - Amazon Relational Database Service. (2022). Amazon.com. https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_Tutorials.WebServerDB.CreateDBInstance.html

Oles, B. (2018, June 19). *Comparing RDS vs EC2 for Managing MySQL or MariaDB on AWS | Severalnines*. Severalnines. https://severalnines.com/blog/comparing-rds-vs-ec2-managing-mysql-or-mariadb-aws/

Product, P. (2021, February 17). *AWS PostgreSQL: Managed or Self-Managed?* Netapp.com; Netapp. https://bluexp.netapp.com/blog/aws-cvo-blg-aws-postgresql-managed-or-self-managed#H_H5

Tamimi, N. (2021, March 22). *Running MySQL Databases on AWS EC2 — A Tutorial for Beginners*. Medium; Towards Data Science. https://towardsdatascience.com/running-mysql-databases-on-aws-ec2-a-tutorial-for-beginners-4301faa0c247