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1. How much additional time is required?

Considering the additional business requirements. of High availability, ability to handle failovers, and Daily Backups. Which would be an additional 6-7 User Stories. Since they are major features

The allocated time for 200 User stories is 4 months, which is roughly 2 user stories per day.

Considering the developers would have to learn the new technology and implement testing, I would assign an additional 1 user story for 3 days. which would make the additional time required as 30 days

Hence, the total time would be 5 months.

https://www.leadingagile.com/2015/05/agile-story-points-how-many-user-stories-per-sprint-rules-of-thumb/#:~:text=Most%20user%20stories%20shouldn't,in%201%20to%203%20days.

https://devm.io/testing/time-estimation-for-software-testing-128078

2. What application deployment changes are required?

Considering the feature of 30 minutes of downtime per week on Sundays for maintenance.

The developers can schedule the sprints considering the weekly Sunday maintenance.

Due to the additional time added of one month. 2 additional sprints of 2 weeks each can be added to the schedule. Giving the developers sufficient time to incorporate all the features with sufficient testing.

Considering the Ability to handle failovers The use of Kubernetes and containers will make it easier to deploy and manage the application across servers. Additionally, the use of Amazon ECS provides built-in capabilities for load balancing, auto-scaling, and failover.

https://aws.amazon.com/blogs/apn/making-application-failover-seamless-by-failing-over-your-private-virtual-ip-across-availability-zones/

https://avinetworks.com/glossary/failover/

https://pm.stackexchange.com/questions/2309/how-do-you-schedule-maintenance-work-in-scrum

https://medium.com/swlh/types-of-software-maintenance-2b0503848b43

3. What additional team resources, if any, are required?

The additional team resources required are hiring an additional AWS Certified developer to assist with the setup of the system.

Since the business requires two major features High availability and Daily backups

The tools required to achieve this considering we are using Amazon ECS :

AWS Backup, to manage the daily back ups

tps://aws.amazon.com/backup/

We have two options considering High availability the pay as you go plan provided by AWS or the Amazon EC2 Dedicated Hosts for high availability

https://aws.amazon.com/ecs/

https://aws.amazon.com/ec2/dedicated-hosts/pricing/

4. How would you calculate the additional cost to the project?

To calculate the additional costs of the project.

We consider the total additional task, from which we get the additional duration which is 1 month

The cost amount is then added by dividing the number of hours spent of each task by hourly rate of each team member.

In addition to that we would also consider the pricing to run the system on AWS backup

This is the pricing chart that AWS provides for data back up to understand how much

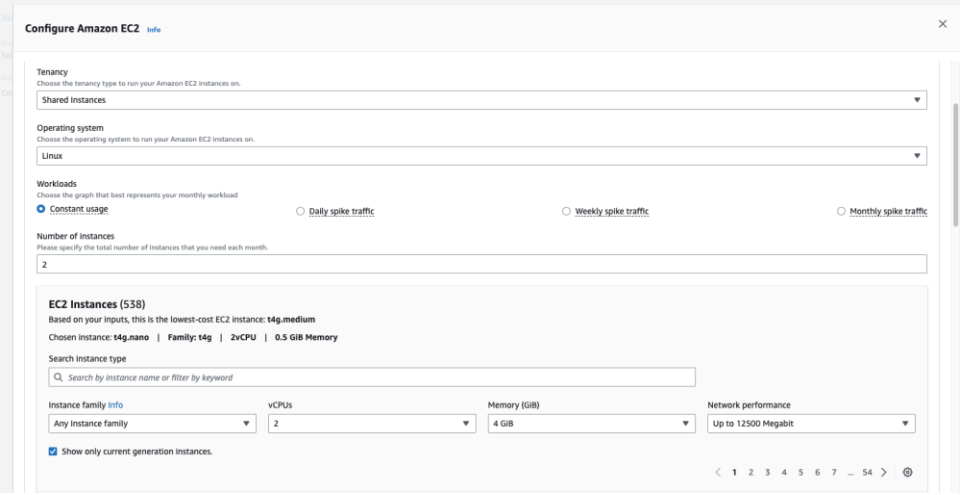
Region: AWS GovCloud (US-East)

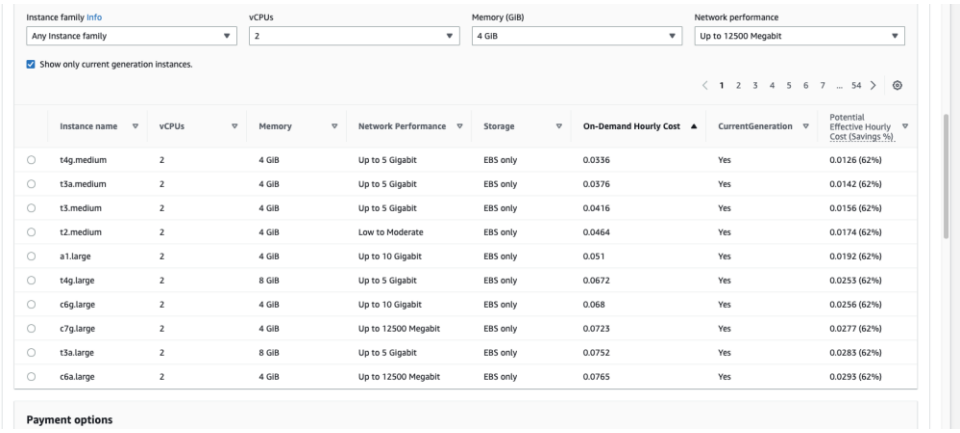
Resource Type	Warm Storage	Cold Storage ^^
Amazon EFS File System Backup†	$0.06 per GB-Month	$0.012 per GB-Month
Amazon EBS Volume Snapshot	$0.066 per GB-Month	n/a*
Amazon RDS Database Snapshot	$0.095 per GB-Month	n/a*
Amazon Aurora Cluster Snapshot	$0.036 per GB-Month	n/a*
Amazon DynamoDB Table Backup	$0.12 per GB-Month	$0.036 per GB-Month**

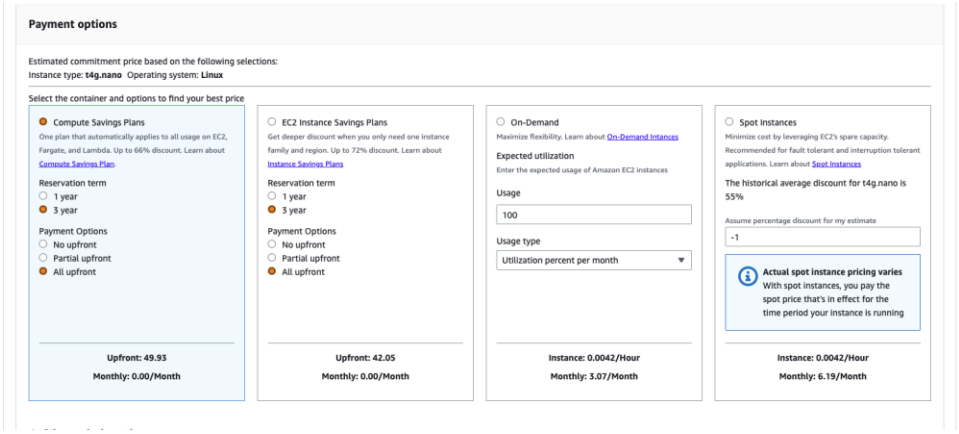
tps://aws.amazon.com/backup/

https://www.farmerp.com/agricultural-data-collection-understanding-agritechs-role-in-gathering-farm-data#:~:text=The%20integration%20of%20high%2Dprecision,from%20anywhere%20with%20higher%20accuracy.

We also consider the hosting prices for AWS ECS







https://docs.aws.amazon.com/AmazonECS/latest/bestpracticesguide/capacity-availability.html