

Financial Proposal for DEPI Graduation Project

Project Overview:

The DEPI graduation project involves deploying a scalable infrastructure on AWS, which will run EC2 instances managed by an Auto Scaling Group. The project requires the infrastructure to run for approximately 4–6 hours per day, with a maximum monthly budget of \$60. The infrastructure will include:

- EC2 instances.
- EBS (Elastic Block Store) for storage.
- Auto Scaling capabilities to ensure the system scales according to demand.
- Other supporting AWS services like S3, CloudWatch, and data transfer.

Objective:

The primary objective of this proposal is to provide a cost-efficient, reliable, and scalable infrastructure on AWS while maintaining the project within the \$60 budget. The system will be designed to handle variable workloads and optimize resource usage through AWS's auto-scaling features.

Infrastructure Components and Cost Breakdown

1. EC2 Instances (Compute Costs)

- **Instance Type:** T3.medium (General Purpose)
- **Price per Hour:** \$0.0416
- **Daily Usage:** 6 hours/day

2. Auto Scaling Group (ASG)

- **Scaling Policy:** Scale between 1 and 3 instances based on CPU utilization.
- This feature ensures that we only pay for the necessary number of EC2 instances based on traffic/load. For a typical day, it is assumed that instances will scale between 1 to 2 instances, with occasional spikes to 3 instances.
- **Estimate:** Extra instance usage might add 50% more compute cost.
 - **Cost:** \$11.23 per month (with scaling)

3. EBS (Elastic Block Store)

- **Volume Type:** gp3 (General Purpose SSD)
- **Storage Size:** 20 GB
- **Price per GB:** \$0.08 per GB-month

- **Cost:** \$1.60 per month

4. S3 Storage (if applicable)

- **Storage for static content and assets:** Estimation of 5 GB.
- **Price per GB:** \$0.023 per GB
- **Cost:** ~\$0.12 per month (rounded up)

5. CloudWatch (Monitoring and Logs)

- **CloudWatch Basic Monitoring** is included, but additional custom metrics and alarms could add costs. Estimated additional logs stored for a small-scale project are around 1 GB/month.
- **Price per GB for logs:** ~\$0.50 per GB
- **Total Cost:** ~\$0.50

6. Data Transfer (Out to the Internet)

- AWS offers 1 GB/month of free data transfer. Additional data transfer costs \$0.09 per GB.
- Estimation: 10 GB/month of outbound data.
- **Cost:** ~\$0.81 per month

Total Estimated Monthly Costs:

Service	Estimated Cost (USD)
EC2 Instances (with scaling)	\$11.23
EBS (20 GB)	\$1.60
S3 Storage (5 GB)	\$0.12
CloudWatch Logs (1 GB)	\$0.50
Data Transfer (10 GB)	\$0.81
Total	\$14.26

Maximizing the Budget (\$40-\$60 Range):

Given your budget of up to \$60, there's plenty of room for additional usage or scaling:

- Increase storage (EBS or S3) if needed.
- Use **larger EC2 instances** (e.g., t3.large or c6g.large) for higher performance.

- Increase outbound data transfer or add custom CloudWatch monitoring.
- Plan for unexpected increases in usage, such as higher scaling needs.

With the current setup, you're only using **\$14.26** per month, leaving room for significant resource increases if necessary.

Conclusion:

This proposal presents a scalable and cost-effective AWS infrastructure solution that meets the needs of the DEPI graduation project while keeping costs well within the budget. The flexibility of Auto Scaling ensures that resource costs will dynamically adjust based on demand, optimizing both performance and cost.

This solution provides ample room for increased usage and unexpected demands while staying within the financial constraints.

If there are any additional features or modifications required, we can adjust the cost estimates accordingly.