IT 334 – DevOps Engineering on AWS Cloud

[PROJECT]
BUILDING A HIGHLY AVAILABLE, SCALABLE WEB APPLICATION

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Overview

Building a Highly Available, Scalable Web Application

Our goal

- Design and implement a new hosting architecture;

- Pay attention to the user experience while using our website;

- When designing and implementing, we had to pay special attention to high availability, scalability, load balancing, security, and performance;

Plan

- Implementation through 4 phases;

- Take care of the budget;

- Use code provided by AWS academy;

- Enable publicly accessible website without authentication;

Requirements

- Functional;

- Cost optimized;

- Load Balanced;

- Scalable;

- Secure;

- Highly Available;

- High Performing;

Problems

Secret Manager

Upon creation of the RDS instance, we have checked the option for using the Secret Manager, which in turn created a completely new secret. After creating a new secret using the provided script, we then needed to manually change the credentials which it held.

Phase 1

Contact your AWS representative: **Contact Sales** [↗]

Export date: **6/1/2023**

Language: **English**

ⓘ

Estimate title: **My Estimate**

Estimate URL: **https://calculator.aws/#/estimate?id=a0f314492c4d56ee0bb3406e4b50678e89f1de7c**

Estimate summary

Upfront cost	Monthly cost	Total 12 months cost
0.00 USD	46.09 USD	553.13 USD
		Includes upfront cost

Detailed Estimate

Name	Group	Region	Upfront cost	Monthly cost
Amazon EC2	No group applied	US East (N. Virginia)	0.00 USD	46.09 USD

Status: –
Description:
Config summary: Tenancy (Shared Instances), Operating system (Linux), Workload (Daily, (Workload days: Monday, Tuesday, Wednesday, Thursday, Friday, Baseline: 1, Peak: 4, Duration of peak: 9 Hr 0 Min)), Advance EC2 instance (t3.medium), Pricing strategy (On-Demand), Enable monitoring (disabled), DT Inbound: Not selected (0 TB per month), DT Outbound: Not selected (0 TB per month), DT Intra-Region: (0 TB per month)

Name	Group	Region	Upfront cost	Monthly cost
Amazon Virtual Private Cloud (VPC)	No group applied	US East (N. Virginia)	0.00 USD	0.00 USD

Status: –
Description:
Config summary: Working days per month (22)

Acknowledgement

Estimated Costs

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Language: **English**

ⓘ

Estimate title: **My Estimate**

Estimate URL: **https://calculator.aws/#/estimate?id=70c46effe30eead0bf80897cac85f1c6ab2ebbb9**

Estimate summary

Upfront cost	Monthly cost	Total 12 months cost
0.00 USD	76.21 USD	914.51 USD
		Includes upfront cost

Total: $76.21

Architecture diagram of the solution

Phase 1

Phase 3

Phase 4

VPC

Public Subnet

Public Security Group

172.16.0.0
172.16.1.0
172.16.2.0
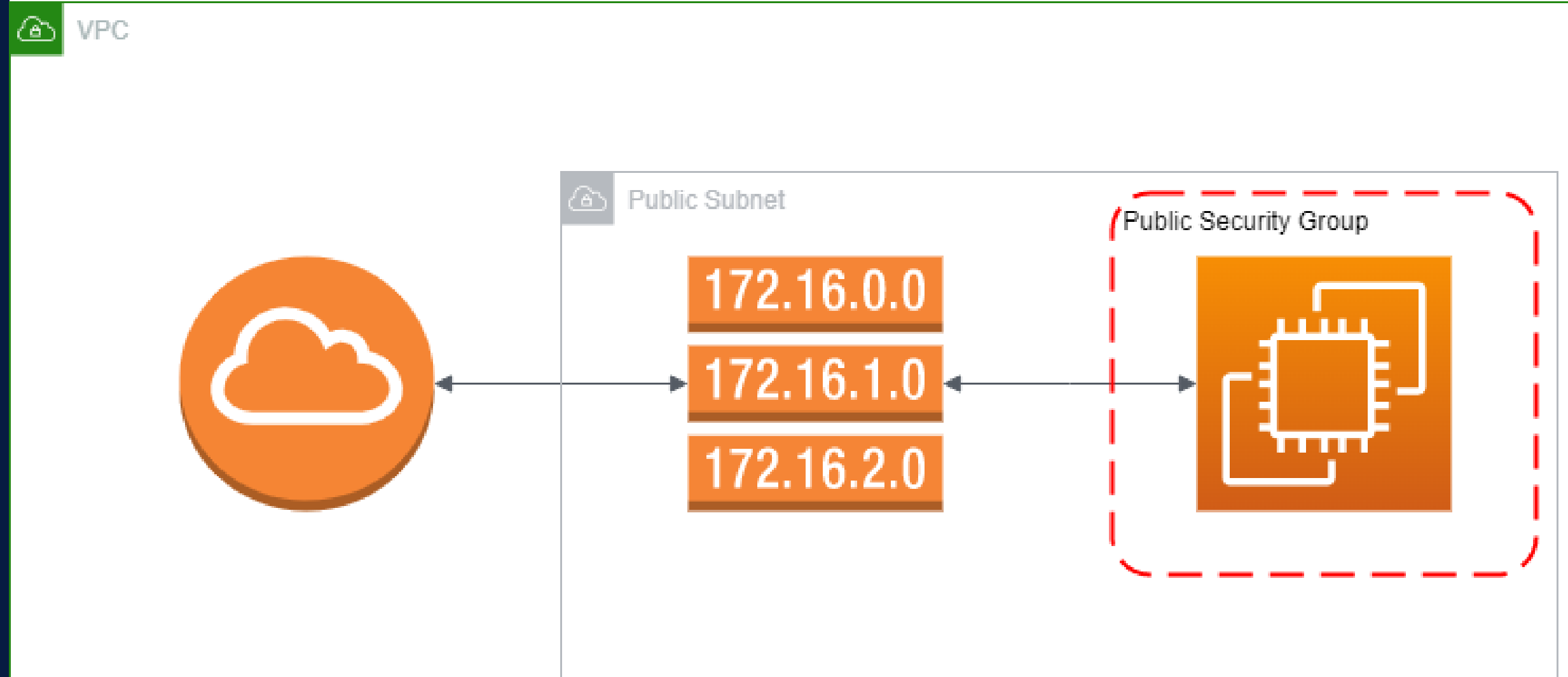
- internet gateway
- route table
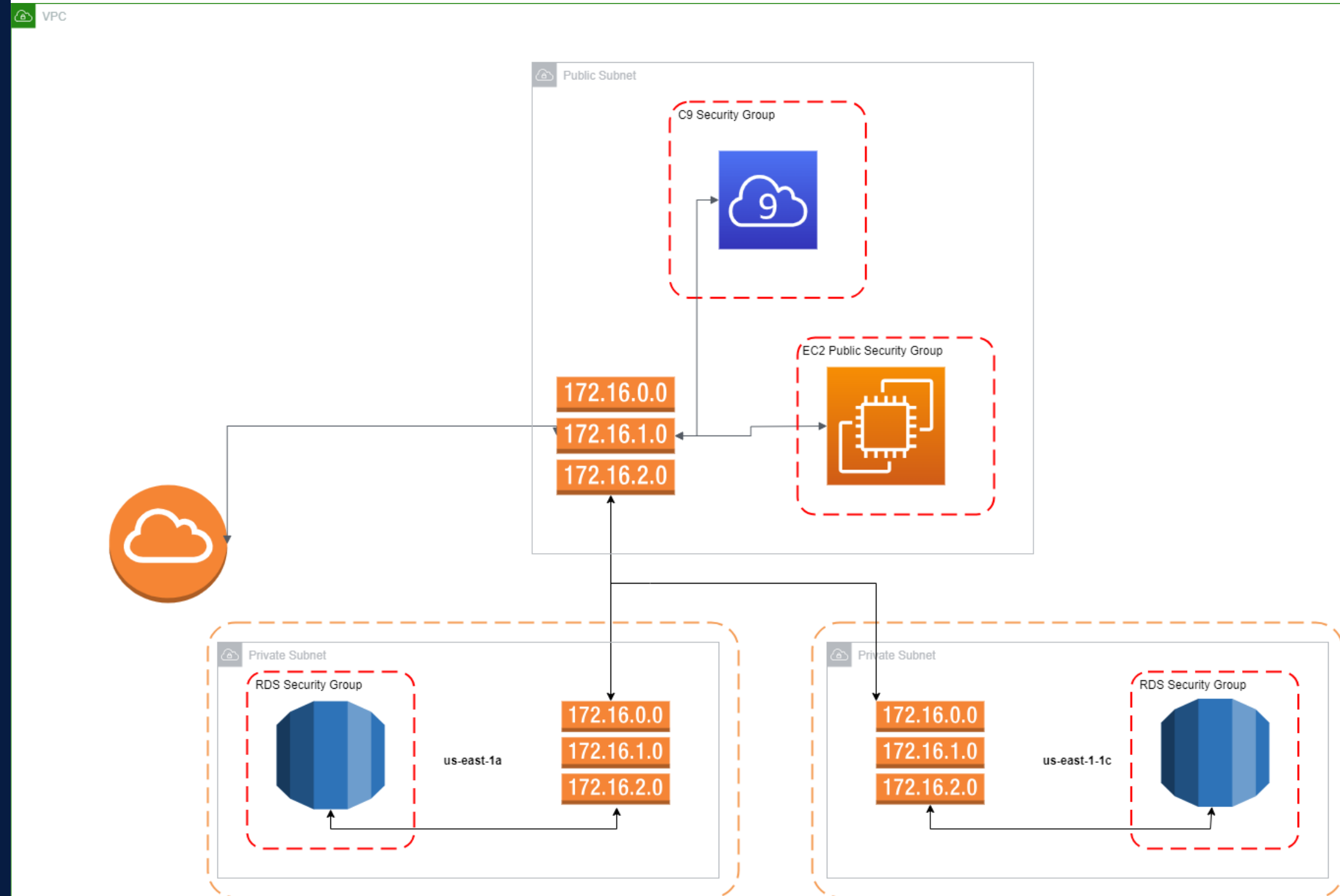- EC2

Architecture diagram of the solution

Phase 1

Phase 3

Phase 4
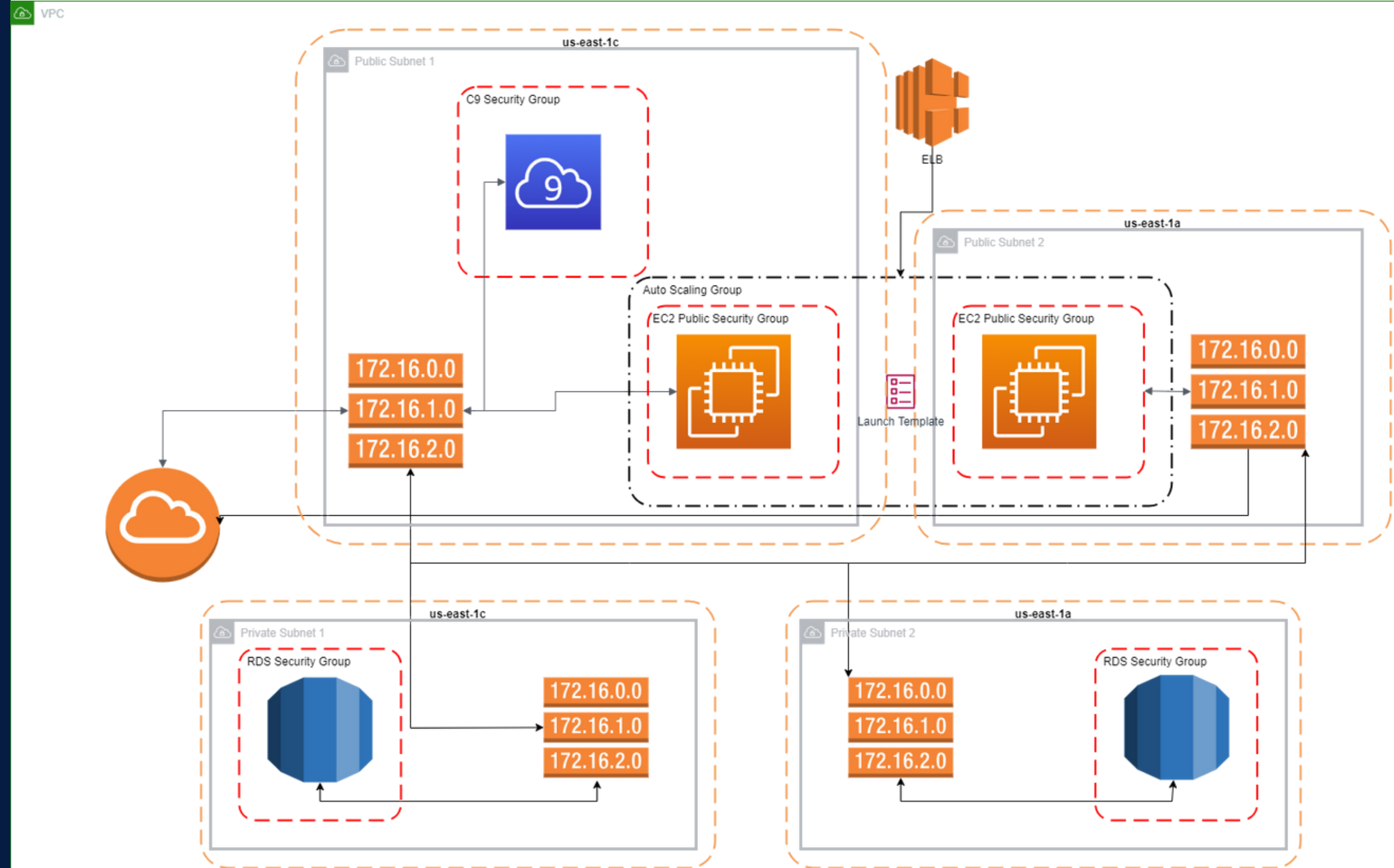

- RDS
- Cloud9
- RDS

Architecture diagram of the solution

Phase 1

Phase 3

Phase 4

DEMO

THANK YOU !

Do you have any questions?