

**SCHOOL OF INFOCOMM TECHNOLOGY**

Diploma in CSF, DS, IT

**Cloud Architecture and Technologies (CAT)**

**April 2023 Semester**

**Assignment 1**

**25% of CAT Module – (Individual 100%)**

**08 May – 21 May 2023 (Weeks 4 & 5)**

**Deadline for submission:**

**SOFTCOPY:** Submit in BrightSpace by 21 May 2023, 23:59 SGT

**Penalty for late submission:**

* **10%** of the marks will be deducted for each day (inclusive of Saturdays, Sundays and public holidays) after the deadline for softcopy submission.

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# **Network Diagram**

A picture containing text, screenshot, diagram, number

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# **Explanation of Solution**

My network diagram consists of an AWS Cloud which has a VPC (Virtual Private Cloud) in the AWS N. Virginia region, this VPC acts as an isolated virtual network for me to deploy my subnets in. The VPC also has an internet gateway for users accessing the internet into my VPC to connect to an EC2 (Elastic Compute Cloud) instance on their local devices. Inside my VPC are 3 different availability zones: us-east-1a, us-east-1b, and us-east-1d. This is to ensure that my EC2 instances would be resistant to natural disasters by ensuring that if one availability zone is compromised due to a natural disaster e.g., a tornado, earthquake, or cyclone, the EC2 can be rerouted to the other 2 availability zones and continue to work as per normal conditions. Thus, my EC2 web service will be resilient to natural disasters and continue to function normally. Within the 3 availability zones in my network diagram, there is an auto-scaling group that can auto-scale from 2 EC2 Web servers to 3 when there are higher traffic demands within the 3 availability zones. Within the availability zones, there are public subnets that host my EC2 web servers which are accessible to the public for users accessing the internet to access my EC2 web servers. My EC2 Instances in my network diagram are t2.micro which have 1 vCPUs (Virtual central processing unit), 1.0 GiB RAM (Random-access memory), and 6 Credits/hr CPU (Virtual central processing unit). In my network diagram, I have also implemented a private Amazon S3 (Simple Storage Service) bucket for private access named ameliaquek.internal. I also have a Public Amazon S3 bucket in my network diagram that is public for the public to access named ameliaquek.marketing. Lastly, in my network diagram, I have an Amazon DynamoDB NoSQL database with the fields Username, Password, and Email address where I can input data.

# **NoSQL Database**

A screenshot of a computer

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# **Auto-Scaling video**

