**Assignment**

**Brief**

Presentation with your own group about which method that will you use to handle these case

**Case:**

* eCommerce
* Financial Institution
* Government
* Personal Static Website
* eMail Application

**Method:**

* Clustering
* Load Balancing
* Whitelisting
* Blacklisting

You may combine more than 1 method and give details what and why you do it.

I will choose Personal Static Website case and at the same time attached try attempt all cases.

Personal Static Website

Assumption used a 100% AWS solution/services design

Clustering - Set up a cluster of Amazon EC2 instances to host the static website. Use Amazon Elastic Container Service (ECS) or Amazon Elastic Kubernetes Service (EKS) to manage the cluster and ensure that it is highly available

Load balancer - Recommend Amazon Application Load Balancer (ALB) to distribute incoming traffic to your EC2 instances. The ALB can also perform whitelisting and blacklisting by allowing or blocking traffic from specific IP addresses or ranges.

Others appliances/services:

Use Amazon CloudFront for static website content to users. CloudFront is a content delivery network (CDN) that speeds up the delivery of static content by storing copies of it at locations around the world.

Use Amazon Route 53 to route traffic to your website. Route 53 is a domain name system (DNS) service that allows you to associate your domain name with your website's content.

Use Amazon CloudWatch to monitor the performance and availability of your website. CloudWatch can alert you if there are any issues with your website or if the load on your EC2 instances becomes too high.

Use Amazon S3 to store your static website content. S3 is an object storage service that can store and retrieve any amount of data, including website content.

Use Amazon Guard Duty to protect your website from malicious traffic. Guard Duty is a threat detection service that can identify and alert you to potential security threats, such as botnets or distributed denial-of-service (DDoS) attacks. [1.10.docx](https://github.com/su-ntu-ctp/6m-cloud-1.10-servers-networking-1/files/10348323/1.10.docx)

**Submission**

* Submit the URL of the GitHub Repository that contains your work to NTU black board.

Case : eCommerce

Objective - Set up a smart online commerce platform with an aim to achieve local and international growth.

Assumption - use AWS/Amazon tools for Design

Clustering - use [AWS Lambda](https://aws.amazon.com/lambda/) to **create workload-aware cluster scaling logic** and auto scale containerized applications on [Amazon Elastic Kubernetes Service](https://aws.amazon.com/eks/?whats-new-cards.sort-by=item.additionalFields.postDateTime&whats-new-cards.sort-order=desc&eks-blogs.sort-by=item.additionalFields.createdDate&eks-blogs.sort-order=desc) to provide highly available and secure clusters. AWS Lambda also plays an integral role in automating permissions and access control.

Elastic Loading Balancing (Application) is used to manage heavy workloads and achieve business outcomes through scalability and high availability architecture

[Amazon Elasticsearch Service](https://aws.amazon.com/elasticsearch-service/) - uses [Amazon Elasticsearch Service](https://aws.amazon.com/elasticsearch-service/) as the primary search engine on the backend and front end of its customers’ e-commerce sites. It allows to run Elasticsearch cost effectively at scale

Amazon ElasticCache - relies on Amazon ElasticCache to deliver fast response times to search especially for websites supporting visitors from different countries.

Amazon CloudFront - Using CloudFront as a secure content delivery network in enabling low latency across borders.

AWS Shield Advanced - Adopt AWS Shield Advanced to detect and mitigate sophisticated cyberattacks such as distributed denial-of-service (DDoS) attempts.

Amazon Fargate - Employ Amazon Fargate as a serverless compute engine for containers to further reduce the time to scale, as such, allow to allocate more workforce to feature development.

AWS Infrastructure Event Management - leverage AWS Infrastructure Event Management to support scaling in the run up to major events and fine-tuning its infrastructure, given budget and time constraints.