Overview

Timeline	5 days
Note	The focus of this task must be on an understanding of a cloud production system, the components needed and its infrastructure. If all tasks cannot be completed in the given timeline, the most important aspects should be tackled first

Company XYZ has finished development of its new web services and is ready to deploy them to production. The process must include automated and continuous deployment, incorporate automated tests, and enable other teams to utilize internal stable releases of the services without being impacted by new development updates that have not yet been tested.

There are three essential components for the entire system to operate successfully:

cinemo-public	Primary and public API
cinemo-internal	Accessed from *cinemo-public* only, and must be inaccessible from outside the network
MongoDB	Accessed from *cinemo-internal*, and must also be inaccessible from outside the network

The web services are written in Javascript and use Node.js, and the source and configuration files have been included in the attachments provided. The services should be containerized using Docker before being deployed.

Minimal tests cases (2 is sufficient) must be written to validate the *cinemo-public* API and integrated into the build pipeline.

A duty manager should be able to monitor the system at all times and be notified at relevant thresholds.

Service Documentation

cinemo-public

Method	Endpoint	Request Body	Description
GET	/api/health		Determines the stability of the service
GET	/api/customers/{customerId}		Returns customer details
POST	/api/customers	{"name": "<customer_name>"}	Adds a new customer and returns the customerId

1. Endpoints accept a trace token in the *X-Trace* header, which causes logs to be written when set.
2. The following metrics are written:
    a. Counts when a customer is created: [attempt, success, fail].
    b. Counts when a customer is read: [attempt, success, fail]

cinemo-internal

Method	Endpoint	Description
GET	/api/health	Determines the stability of the service
GET	/api/cache/{cacheId}	Returns the cache item
POST	/api/cache	Adds a new cache item and returns the cacheId

Additional Information

Expected Monthly-Active-Users	10,000 with a peak of 10% once a day at 17:00
Diagnostics	*cinemo-public* writes logs and metrics to an AWS Kinesis endpoint which can be configured in the service config file
Configuration	Both services can be configured using their respective *package.json* file

Expected Outcome

An architecture diagram and description of the entire cloud setup and infrastructure should be provided.
Implementation of the architecture on the provided AWS account as per the overview above.
Documented cost and performance optimization.