# AWS Lab 8 – EKS Services & Pipeline

Please create AWS environment as following:

- Connect to the aws console and assume your Role for privileged access
- Create a **VPC** + 2 **Private Subnets (delete the default VPC)**
- Configure **Routes** and configure limited **SG's Ports Opened**
- Create **EKS** cluster version 1.30
  - **Only Private Subnets Allowed**
  - **Node Groups are NOT ALLOWED!**
- Implement load Balancer Controller (**NGINX || ALB or Both, as you wish)**.
- Configure SSL Termination on the ALB, (use self-signed certificate)
- Deploy any CD tool on the cluster (argo cd, Octopus deploy, Bamboo, as you wish)
- Write an application in any language , wrap it with Helm3 and deploy on the EKS Cluster
- Surfing the frontend service, should show "**Hello Lab-commit**" with 'X' String (X – app version number) ** Surfing only the **Secured URL** (Use Route53 Records & ACM)
- Create **RDS** MySQL/PostgreSQL and configure the backend service to select a **query** from DB and the frontend service will pull each X amount of time the values from backend service and present the value in the **HTTPS** response (Example "Hello Lab-commit 10")
- The service should be **not exposed** to the Internet.
- Create a record in R53 for that application – Lab-commit-task.<your-hosted-zone>
- Deploy an EC2 Windows 2019/2022 instance, connect to it via SSM (**no key-pair is allowed**) and surf your application via chrome.
  ** your service shouldn't be accessible publicly.
- Deploy on the EKS cluster some monitoring solution (you can pick anything, **CW agent is not allowed**) and expose it, so we can serf to it via the Windows instance and see the memory and cpu of your application.


- Store all of your code in **Codecommit**
- Create Pipeline with **CodePipeline** or (**Jenkins on EC2)** to deploy updated version of the frontend **application** (for example, will print "**Hello Lab-commit v1.0.1**" etc..)
- Create above infrastructure via **Terraform**
- Once ready, please update the README.md file in the codecommit with the appropriate instructions to review the solution.