Hi,

As part of the interview phase, the DevOps task is described below.

**General Points**:

1. Create a GitHub Repository for this task.

2. You should create your terraform templates with any code editing tool of your choice. You will be able to deploy the templates within a dedicated resource group called “Your Name-**CANDIDATE\_RG”**.

**Task Details**:

1. Create and provision the following resources by using Terraform:

* Virtual Machine (VM)
  + Ubuntu OS =>Jenkins Server (with docker and git – You can choose if install it via ansible, local-exec user\_data/custom data. But it **must be fully automated**)
  + key vault
  + AKS – 1 node pool
* Azure Kubernetes Service (AKS)
  + Cert manager - (With external DNS + workload identity)
  + azure key vault integration (secret value for your application need to be injected form the key vault)
  + NGINX ingress Controller – (Static IP – when removing Ingress service, the public IP must remain + use DNS domain name for ingress).
  + HPA for CPU and Memory
  + Install redis bitnami sentinel on the cluster.
* Azure Container Registry (ACR)

**“Terraform apply” should create all above resources with its configuration.**

1. **Basic Web Application**

Write a simple and basic "hello world" web site that presents some content (for example: "Hello World") in your preferred language (NodeJs, Python, etc.)

**OR**

    Clone an open-source project (any project you want, for example: node hello world)

1. **Containerized**

* Write a Dockerfile you will use for building an image of the application
* Build an image using the Dockerfile you wrote
* Push the image you built to the ACR

Verification:

* + Run the application
  + Verify the app is running

1. **CI/CD**

* Create a Full CI/CD pipeline/s for your application (the application should be deployed on AKS).
* Pay attention, you should create an **Optimal and Detailed** CI/CD as possible.

1. **Orchestration**

* You will use the AKS as an orchestration
* By using Jenkins pipelines from previous step, deploy the web application on AKS.
* The application should be accessible over HTTP.

**Bonus:**

Use benchmark tool for the HPA functionality (Like ab) for testing the HPA on you application pod.

I am available for any question.

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Good Luck ! :-)