TEAM LEAD VERSION (DevOps-Week-6)

TEAMWORK

CLARUSWAY
WAY TO REINVENT YOURSELF

Meeting Agenda

- ▶ Icebreaking
- ▶ Questions
- ▶ Interview/Certification Questions
- ▶ Coding Challenge
- ▶ Video of the week
- ▶ Retro meeting
- ▶ Case study / project

Teamwork Schedule

Ice-breaking 5m

- Personal Questions (Stay at home & Corona, Study Environment, Kids etc.)
- Any challenges (Classes, Coding, AWS, studying, etc.)
- Ask how they're studying, give personal advice.
- Remind that practice makes perfect.

Team work 10m

- Ask what exactly each student does for the team, if they know each other, if they care for each other, if they follow and talk with each other etc.

Ask Questions 15m

1. Which one is used to help restricting the service within the cluster? (Kubernetes)

A. LoadBalancer
B. NodePort
C. ClusterIP
D. kubectl

Answer: *C*

2. _____ runs on each node and ensures containers are running in a pod. (Kubernetes)

A. Kubelet
B. Etcd
C. Scheduler
D. Pod

Answer: *A*

3. Which is the intended use for etcd? (Kubernetes)

A. To store all the cluster data, maintain its state and provide access to critical data
B. To link a unique identifier to a value
C. To encrypt cluster data and send it to a secrets manager
D. To authenticate cluster data

Answer: *A*

4. Generally, what is a proxy service used for? (Kubernetes)

A. To supplant an authentic webpage in a search engine's index and search page results
B. To connect external parties and route data between internal and external containers
C. To act as an intermediary between an endpoint device and another server
D. To relay connection requests for inbound network traffic

Answer: *C*

5. _____ manages the assigning nodes to pods depending on resource availability. (Kubernetes)

A. Etcd
B. Kubectl
C. Scheduler
D. Flannel

Answer: *C*

Interview/Certification Questions 20m

1. Your company is planning on hosting an application that will be based on Docker containers. They need to setup an orchestration service that would automatically scale based on the load. As much as possible , the company does not want the burden of managing the underlying infrastructure. Which of the following can assist in this scenario?

A. AWS ECS with service Auto Scaling
B. Use an Elastic Load Balancer in front of an EC2 Instance. Use Docker containers on the EC2 Instance.
C. Use Auto Scaling with Spot Instances for the Orchestration Service.
D. Install and use Kubernetes on the EC2 Instance

Answer: *A*

Your Amazon ECS service can optionally be configured to use Service Auto Scaling to adjust its desired count up or down in response to CloudWatch alarms. Service Auto Scaling leverages the Application Auto Scaling service to provide this functionality. Service Auto Scaling is available in all regions that support Amazon ECS.

Amazon ECS publishes CloudWatch metrics with your service's average CPU and memory usage. You can use these service utilization metrics to scale your service out to deal with high demand at peak times, and to scale your service in to reduce costs during periods of low utilization.

Options B is incorrect because load balancer won't help scale up, but Auto Scaling can be used with a load balancer which is not mentioned in the question. Moreover, if all the things are in place then also this architecture would involve a lot of manual maintenance.

Option C is incorrect since Spot Instances are volatile and should not be used for the orchestration service

Option D is incorrect since this would involve a lot of manual maintenance

2. You are launching the AWS ECS instance. You would like to set the ECS container agent configuration during the ECS instance launch. What should you do?

A. Set configuration in the ECS metadata parameter during cluster creation.
B. Set configuration in the user data parameter of ECS instance.
C. Define configuration in the task definition.
D. Define configuration in the service definition.

Answer: *B*

When you launch an Amazon ECS container instance, you have the option of passing user data to the instance. The data can be used to perform common automated configuration tasks and even run scripts when the instance boots. For Amazon ECS, the most common use cases for user data are to pass configuration information to the Docker daemon and the Amazon ECS container agent.

3. You work for a big company having multiple applications that are very different from each other. These applications are built using different programming languages. How could you deploy these applications as quickly as possible?

A. Develop all the apps in a single Docker container and deploy using Elastic Beanstalk.
B. Create a Lambda function deployment package consisting of code and any dependencies.
C. Develop each app in a separate Docker container and deploy using Elastic Beanstalk.
D. Develop each app in separate Docker containers and deploy using CloudFormation.

Answer: *C*

Elastic Beanstalk supports the deployment of web applications from Docker containers. With Docker containers, you can define your own runtime environment. You can choose your own platform, programming language, and any application dependencies (such as package managers or tools), that aren't supported by other platforms. Docker containers are self-contained and include all the configuration information and software your web application requires to run.

Option A is incorrect because the requirement is to deploy multiple apps that are very different from each other and developed with different programming languages.
Option B is ideally used for running code and not packaging the applications and dependencies.
Option D is incorrect as Deploying Docker containers using CloudFormation is also not an ideal choice.

4. What is Kubectl?

Answer:

Kubectl is a Kubernetes command-line tool that is used for deploying and managing applications on Kubernetes. Kubectl is especially useful for inspecting the cluster resources, and for creating, updating, and deleting the components.

5. You own a MySQL RDS instance in AWS Region us-east-1. The instance has a Multi-AZ instance in another availability zone for high availability. As business grows, there are more and more clients coming from Europe (eu-west-2) and most of the database workload is read-only. What is the proper way to reduce the load on the source RDS instance?

A. Create a snapshot of the instance and launch a new instance in eu-west-2.
B. Promote the Multi-AZ instance to be a Read Replica and move the instance to eu-west-2 region.
C. Configure a read-only Multi-AZ instance in eu-west-2 as Read Replicas cannot span across regions.
D. Create a Read Replica in the AWS Region eu-west-2.

Answer: *D*

Read Replica should be used to share the read workload of the source DB instance. Read Replica can also be configured in a different AWS region. Refer to Link

Option A is incorrect: Because Read Replica should be configured to share the read traffic. You should not launch a totally new instance.
Option B is incorrect: Because a Multi-AZ instance cannot be promoted to be a Read Replica.
Option C is incorrect: Because a Read Replica can be launched in another region for RDS MySQL.
Option D is CORRECT: Users can quickly configure a Read Replica in another region.

Video of the Week 10m

- Create Kubernetes cluster on Amazon EKS

Retro Meeting on a personal and team level 10m

Ask the questions below:

- What went well?
- What could be improved?
- What will we commit to do better in the next week?

Coding Challenge 5m

- Coding Challenge: Calculator

Case study/Project 10m

- Project-205: Jenkins Pipeline for Dockerized Phonebook Application (Python Flask & MySQL) Deployed on Docker Swarm

Closing 5m

-Next week's plan

-QA Session
