TEAM LEAD VERSION (DevOps-Week-2)

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 command is used to remove all the stopped containers, all the networks that are not used, all dangling images and all build caches?

A. docker system prune
B. docker login
C. docker pull
D. docker rm

Answer: *A*

2. Which file is used to define dependency in Maven?

A. build.xml
B. pom.xml
C. dependency.xml
D. version.xml

Answer: B

3. What is this command used for? (Docker)

```
$ sudo docker run -i -t alpine /bin/bash
```

A. to stop the docker container
B. to see all running container in Docker
C. to run the image as a container
D. to copy the docker container

Answer: *C*

4. You can't create multiple containers from the same image?

A. True
B. False

Answer: *B*

5. How many containers can run per host?

A. 1
B. 100
C. 947
D. unlimited

Answer: *D*

Interview/Certification Questions 20m

1. What is difference between virtualization and containerization?

Answer:

Containers provide an isolated environment for running the application. The entire user space is explicitly dedicated to the application. Any changes made inside the container is never reflected on the host or even other containers running on the same host. Containers are an abstraction of the application layer. Each container is a different application.

Whereas in Virtualization, hypervisors provide an entire virtual machine to the guest(including Kernal). Virtual machines are an abstraction of the hardware layer. Each VM is a physical machine.

2. What are Docker Images?

Answer:
Docker image is the source of Docker container. In other words, Docker images are used to create containers. When a user runs a Docker image, an instance of a container is created. These docker images can be deployed to any Docker environment.

3. Explain Docker Architecture?

Answer:

Docker Architecture consists of a Docker Engine which is a client-server application with three major components:

- A server which is a type of long-running program called a daemon process (the docker command).
- A REST API which specifies interfaces that programs can use to talk to the daemon and instruct it what to do.
- A command line interface (CLI) client (the docker command).

The CLI uses the Docker REST API to control or interact with the Docker daemon through scripting or direct CLI commands. Many other Docker applications use the underlying API and CLI.

4. Your company has a set of applications that make use of Docker containers. There is a need to move these containers to AWS. Which option below is the BEST way to set up these Docker containers in a separate AWS environment?

A. Create EC2 Instances, install Docker, and then upload the containers.
B. Create EC2 Container registries, install Docker, and then upload the containers.
C. Create an Elastic Beanstalk environment with the necessary Docker containers.
D. Create EBS Optimized EC2 Instances, install Docker, and then upload the containers..

Answer: *C*

The Elastic Beanstalk service can be used to host Docker containers.

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.

For more information on using Elastic Beanstalk for Docker containers, please visit the following Link

Option B is incorrect because just creating the EC2 Container registries would not be sufficient. We need to incorporate some automated mechanism to take care of the function of the docker container if it fails in-between. An ElasticBeanStalk would be used for this purpose.

Note:* Option A could be partially correct as we need to install docker on EC2 instance. In addition to this, you need to create an ECS Task definition which details the docker image that we need to use for containers and how many containers to be used as well as the resource allocation for each container.*

But with Option C, we have this added advantage: If a Docker container running in an Elastic Beanstalk environment is crashed or killed for any reason, Elastic Beanstalk restarts it automatically.

In the given question, we have been asked about the best method to set up docker containers, hence Option C seems to be the most appropriate.

5. A company is planning on setting up a web-based application. They need to ensure that users across the world have the ability to view the pages from the web site with the least amount of latency. How can you accomplish this?

A. Use Route 53 with latency-based routing.
B. Place a cloudfront distribution in front of the web application.
C. Place an Elastic Load balancer in front of the web application .
D. Place an Elastic Cache in front of the web application.

Answer: *B*

Amazon CloudFront is a global content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to your viewers with low latency and high transfer speeds. CloudFront is integrated with AWS – including physical locations that are directly connected to the AWS global infrastructure, as well as software that works seamlessly with services including AWS Shield for DDoS mitigation, Amazon S3, Elastic Load Balancing or Amazon EC2 as origins for your applications, and Lambda@Edge to run custom code close to your viewers.

Option A is incorrect since this is used for latency-based routing between the sites

Option C is incorrect since this is used for fault tolerance for the web application

Option D is incorrect since this is used for caching requests in front of a database layer

For more information on AWS CloudFront, please visit the following Link

Video of the Week 10m

- What Is Maven? | What Is Maven And How It Works?

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: Trending Topic

Case study/Project 10m

- Project-202: Phonebook Application (Python Flask) deployed on AWS Application Load Balancer with Auto Scaling and Relational Database Service using Terraform

Closing 5m

-Next week's plan

-QA Session
