

TEAM LEAD VERSION (DevOps-Week-4)



CLARUSWAY
WAY TO REINVENT YOURSELF

Meeting Agenda

- ▶ Icebreaking
- ▶ Microlearning
- ▶ Questions
- ▶ Interview/Certification Questions
- ▶ Coding Challenge
- ▶ Article of the week
- ▶ 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. You can't create multiple containers from the same image.

- A. True
- B. False

Answer: *B*

2. How many containers can run per host?

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

Answer: *D*

3. Which of the following is the native clustering for Docker?

- A. Docker Hub
- B. Docker Swarm
- C. Kubernetes
- D. Docker Compose

Answer: B

4. What happens if you attempt to perform a Docker build based on an image that has not been previously referenced on your machine? (Docker)

- A. Docker will return a 408: image not found message.
- B. Docker will return a 404: file not found message.
- C. Docker will pull the image from GitHub.
- D. Docker will pull the image from Docker Hub.

Answer: D

5. Where the docker volumes are stored?

- A. /var/lib/docker/volumes
- B. /ubuntu/user/docker/volumes
- C. /docker/volumes
- D. /desktop/volumes

Answer: A

Interview/Certification Questions

20m

1. What is Docker Compose? What can it be used for?

Answer:

Docker Compose is a tool that lets you define multiple containers and their configurations via a YAML or JSON file.

The most common use for Docker Compose is when your application has one or more dependencies, e.g., MySQL or Redis. Normally, during development, these dependencies are installed locally—a step that then needs re-doing when moving to a production setup. You can avoid these installation and configuration parts by using Docker Compose.

Once set up, you can bring all of these containers/dependencies up and running with a single docker-compose up command.

2. What is Docker Hub?

Answer:

Docker Hub is a service provided by Docker for finding and sharing container images. The default version of Hub is the cloud-based registry that hosts all the public docker images like Ubuntu, Linux, etc.

We need to create repositories to push and pull the docker images, allowing us to share container images within our team, organization, customers. In the case of public repositories, we can share the images with the entire Docker community.

Docker images are pushed to Docker Hub through the 'docker push' command. A single Docker Hub repository can hold many Docker images.

It also allows you to link repositories with GitHub in order to automate building, testing and deploying of our application images. It provides a centralized resource for container image discovery, distribution and change management, collaboration and workflow automation throughout the development pipeline.

We can also use third-party Repository tools like Nexus and JFrog Artifactory to store and manage docker images.

3. 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

4. Which AWS services can be used to host and scale an application, in which the NGINX load balancer used? (SELECT TWO)

- A.** AWS EC2
- B.** AWS Elastic Beanstalk
- C.** AWS RDS.
- D.** AWS ELB

Answer: A and B

NGINX is open-source software for web serving, reverse proxying, caching, content-based routing rules, auto-scaling support, and traffic management policies.

NGINX can be hosted on an EC2 instance through a series of clear steps- Launch an EC2 instance through the console. Connect to the instance over SSH and use the command `yum install -y Nginx` to install Nginx. Also, make sure that it is configured to restart automatically after a reboot.

It can also be installed with an Elastic Beanstalk service. To enable the NGINX proxy server with your Tomcat application, you must add a configuration file to .ebextensions in the application source bundle that you upload to Elastic Beanstalk.

More information is available at: [Link](#)

5. 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.

Article of the Week

10m

- [Automating Installation Of Kubernetes Cluster On AWS — Part 1](#)

Video of the Week

10m

- [Docker vs Kubernetes vs Docker Swarm | Comparison in 5 mins](#)

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: Fibonacci](#)

Case study/Project

10m

Case study should be explained to the students during the weekly meeting and has to be completed in one week by the students. Students should work in small teams to complete the case study.

- [Project-203: Dockerization Bookstore-api on Python-flask-mysql](#)

Closing

5m

-Next week's plan

-QA Session
