TEAM LEAD VERSION (DevOps-Week-5)

TEAMWORK

CLARUSWAY
WAY TO REINVENT YOURSELF

Meeting Agenda

▶ Icebreaking

▶ 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. How do we list all the available charts under a Helm Repo? (Helm)

A. helm pull repo [namespace]
B. helm create repo
C. helm repo add
D. helm search repo [namespace]

Answer: *D*

2. It is a package consists of pre configured Kubernetes Resources? (Helm)

A. Release
B. Repository
C. Chart
D. Registery

Answer: *C*

3. It is a tool for communicating with a Kubernetes cluster's control plane, using the Kubernetes API. (Kubernetes)

A. kubeadm
B. kubelet

C. kubectl

D. minikube

Answer: *C*

4. Which command is used to display resource (CPU/memory) usage of pods. (Kubernetes)

A. kubectl get pod [NAME]

B. kubectl describe pod [NAME]

C. kubectl apply pod [NAME]

D. kubectl top pod [NAME]

Answer: *D*

5. Which command is used to mark a node as unschedulable.(Kubernetes)

A. set

B. cordon

C. replace

D. expose

Answer: *B*

Interview/Certification Questions   20m

1. Which of the following is a serverless compute offering from AWS?

A. AWS EC2

B. AWS Lambda

C. AWS SNS

D. AWS Config

E. AWS SQS

Answer: *B*

AWS Lambda is a compute service that lets you run code without provisioning or managing servers. AWS Lambda executes your code only when needed and scales automatically, from a few requests per day to thousands per second.
For more information, please refer to the Link

2. Your company is currently hosting a heavy load application on its On-premise environment. The company has developed this application in-house. Consulting companies then use this application via API calls. You now need to consider moving this application to AWS. Which of the following services would

best be suited in the architecture design, which would also help deliver a cost-effective solution? Choose 2 answers from the options given below.

A. AWS Lambda
B. AWS API Gateway
C. AWS Config
D. AWS EC2

Answer: *B and D*

Option A *might be a valid choice but the question specifies heavy load application which may lead to a need for time-out of API greater than 15min. As per AWS documentation, AWS Lambda can handle max time-out of up to 15 minutes. In this case, the application may take more time to run.*

Option B *is correct because Amazon API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale. With a few clicks in the AWS Management Console, you can create an API that acts as a "front door" for applications to access data, business logic, or functionality from your back-end services, such as workloads running on Amazon Elastic Compute Cloud (Amazon EC2), code running on AWS Lambda, or any web application.*

Option C *is incorrect since this is a configuration service available from AWS.*

Option D is correct because EC2 would fit for using API calls for the application.

For more information on AWS EC2 and the API gateway, please refer to the below URLs.
Link-1
Link-2

3. An organization runs several EC2 instances inside a VPC using three subnets, one for Development, one for Test and one for Production. The Security team has some concerns about the VPC configuration and requires to restrict the communication across the EC2 instances using Security Groups.

Which of the following options is true for Security Groups?

A. You can change a Security Group associated to an instance if the instance state is stopped or running.
B. You can change a Security Group associated to an instance if the instance state is stopped but not if the instance state is running.
C. You can change a Security Group only if there are no instances associated to it.
D. The only Security Group you can change is the Default Security Group.
E. The only Security Group you can change is the Default Security Group.

Answer: *A*

Option A is CORRECT because the AWS documentation mentions it in the section called "Changing an Instance's Security Group" using the following sentence: "After you launch an instance into a VPC, you can change the security groups that are associated with the instance. You can change the security groups for an instance when the instance is in the running or stopped state."

For more information Link

4. You are the architect of a custom application running inside your corporate data center. The application runs with some unresolved bugs that produce a lot of data inside custom log files generating time-consuming activities to the operation team who is responsible for analyzing them.

You want to move the application to AWS using EC2 instances, and at the same time, take the opportunity for improving logging and monitoring capabilities but without touching the application code.

What AWS service should you use to satisfy the requirement?

A. AWS Kinesis Data Streams
B. AWS CloudTrail
C. AWS CloudWatch Logs
D. AWS Application Logs

Answer: *C*

Option A is INCORRECT because in order to feed a Data Streams from custom logs you have to change the application code. AWS documentations describes this with the following sentence: "To put data into the stream, you must specify the name of the stream, a partition key, and the data blob to be added to the stream." Option B is INCORRECT because is unrelated to the scenario and custom log files. Option C is CORRECT because AWS CloudWatch Logs has the capability to reuse existing application logs increasing efficiency in operation with the ability to generate on them metrics, alerts and analytics with AWS CloudWatch Logs Insight.

As the application and custom log files are exactly as they were when the application was running on-prem you don't need to change any piece of application code that make them ingestible by AWS CloudWatch Logs

AWS official documentation in the FAQ section highlights the reusing capability with the sentence "AWS CloudWatch Logs lets you monitor and troubleshoot your systems and applications using your existing system, application and custom log files… so, no code changes are required."

You can also leverage CloudWatch Metrics, Alarms and Dashboards with Logs to get full operational visibility into your applications. This empowers you to understand your applications, make improvements, and find and fix problems quickly, so that you can continue to innovate rapidly.

Option D is INCORRECT because AWS Application Logs does not exist.

5. While reviewing the Auto Scaling events for your application, you notice that your application is scaling up and down multiple times in the same hour.

What changes would you suggest in order to optimize costs while preserving elasticity? (SELECT TWO)

A. Modify the Auto Scaling group termination policy to terminate the older instance first.
B. Modify the Auto Scaling group termination policy to terminate the newest instance first.
C. Modify the Auto Scaling group cool down timers.
D. Modify the Auto Scaling group to use Scheduled Scaling actions.
E. Modify the CloudWatch alarm period that triggers your Auto Scaling scale down policy

Answer: *C and E*

Here, not enough time is being given for the scaling activity to take effect and for the entire infrastructure to stabilize after the scaling activity. This can be maintained by increasing the Auto Scaling group CoolDown timers.

For more information on Auto Scaling CoolDown, please visit the Link

You will also have to define the right threshold for the CloudWatch alarm for triggering the scale down policy.

For more information on Auto Scaling Dynamic Scaling, please visit the Link

Article of the Week   10m

- Installation of a WordPress Page and a Database with Docker-Compose Using Secrets

Video of the Week   10m

- What is Helm?

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

- Watching Free Disk Space

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-206: Microservice Architecture for Phonebook Web Application (Python Flask) with MySQL using Kubernetes.

Closing   5m

-Next week's plan

-QA Session