

DEVOPS TECHNICAL EVALUATION

OS & Networking

1. SSH

What is the difference between a passphrase for an SSH key, and a keyless password based login via SSH?

- a. They're equivalently strong security measures, and we can use either.
- b. Passphrase key protection is an obsolete mechanism which was replaced with new 4096 bit RSA keys.
- c. The passphrase protects the key from being used if it is ever stolen, it is completely separate from password based authentication.

C

2. IP Address

What is the subnet mask of a class C network

- a. 0.0.0.0
- b. 255.255.255.0
- c. 255.255.0.0
- d. 0.255.255.255
- e. 0.0.255.255
- f. /24
- g. /16

B

3. FTP

FTP/S uses which of the following TCP ports by default?

- a) 20 and 21
- b) 139 and 445
- c) 443 and 22
- d) 989 and 990

A

4. Security

Vulnerability scanning is...

- a. Complete set of reports identifying vulnerabilities and recommending appropriate solutions to remove or mitigate each of the cyber risks
- b. Fully-automated scanning to identify and report on the complete range of potential weak points in your system
- c. Evaluating key factors such as staff awareness, access to information, adherence to policies, data disposal and incident reporting

B

- d. Using ethical hacking techniques to identify and report on how each weakness can be exploited

5. Shell CLI

What will be the output of the following shell script?

```
[" -eq "] && echo -n 'Hello' || echo -n 'World' || exit 1
```

- a. The script will print "Hello" without quotes and exit with status 1.
- b. The script will print "HelloWorld" without quotes and exit with status 1.
- c. The script will print "Hello" without quotes and exit with status 0.
- d. The script will print "HelloWorld" without quotes and exit with status 0.

C

DATABASES

6. SHARDING

What is data sharding?

- a. Partitioning data in a way that specific columns are held in separate tables
- b. Partitioning data in a way that individual rows are held separately
- c. Keeping copies of data in multiple places for high availability
- d. An architectural pattern for storing schemaless data

B

7. NORMALIZATION

What is normalization?

- a. The process of dividing data into tables to remove redundant data and improve data integrity.
- b. The process of combining multiple tables in order to reduce the time required to perform queries.

A

APPLICATION

8. General

The project keeps its server configuration in .env files. These configuration variables include PORT, DB_HOST, DB_USER, DB_PASSWORD. The values for these variables differ between the production, staging, and developer's machines.

What is the best approach with regards to keeping/not keeping the files in Git and taking into account the comfort of the new developers joining the project?

- a. Have 3 files in Git: .env.prod, .env.staging, .env.dev
- b. No env-related files are stored in Git
- c. Have a single .env file in git which contains the standard production config

- d. Have a single .env file in git which contains the standard developer config
- e. .env file is in .gitignore, .env-sample is in Git and contains the standard developer config
- f. .env file is in .gitignore, .env-sample is in Git and contains the standard production config

E

9. PYTHON CODE

What will be the output of the following code?

```
class Point():
    def __init__(self, x, y):
        self.x = x
        self.y = y

    def __str__(self):
        return f"{self.x} - {self.y}"

p = Point(1.0, 2.0)
print(p)
```

- a) 1.0 - 2.0
- b) <__main__.Point object at 0x...>
- c) It'll raise a ValueError
- d) f"{self.x} - {self.y}"

The output will be - "1.0 - 2.0"

10. MICROSERVICES

Which of the following claims are correct regarding micro-service architecture?

- a. If one of the services of the application does not work, the system will stop as a whole.
- b. Microservice architecture is a descendant of object oriented programming.
- c. Microservice architecture is a perfect choice for small and medium sized projects
- d. Debugging a microservice based application is a lot harder.
- e. Micro-Services are treated as independent components that can be easily replaced and upgraded
- f. Each service may run on a different system or cluster

E

Amazon Web Services - AWS

11. General

Which of the following services can help you manage multiple AWS accounts?

- a. IAM
- b. Cognito
- c. Organizations

C

12. EC2

Under the shared responsibility model, who is responsible for operating system patches and updates on EC2 instances?

- a. Customer
- b. AWS
- c. Both AWS and Customer

C

11. Workload

Which AWS service allows for automatic provisioning of additional resources based on workloads?

- a. AWS Auto Scaling
- b. AWS Compute Optimizer
- c. AWS CloudFormation
- d. AWS Managed Services

A

12. ELB

Which load balancer is best suited for HTTP/HTTPS load balancing traffic?

- a) Network load balancer
- b) Application load balancer

B

13. Route 53

Which features are available with Route 53?

- a) Health Checks, Routing Policy, Auto Scaling, DNS
- b) Load Balancing, DNS, Domain Registration, Monitoring
- c) Domain Registration, DNS, Health Checks, DDoS Protection
- d) Domain Registration, DNS, Health Checks, Routing Policy

D

14. WEB HOSTING

S3 does not support the https protocol when hosting static websites. Which AWS service can be used to enable the https protocol for static websites hosted in S3?

- a. CloudFront
- b. Route 53
- c. VPC
- d. PrivateLink

A

15. WAF

Which of the following design principles relate to achieving operational excellence in the cloud, according to the AWS Well-Architected framework? Select all that apply.

- a. Democratize advanced technologies
- b. Perform operations as code
- c. Use serverless architectures
- d. Make frequent and reversible change
- e. Experiment often
- f. Scale horizontally
- g. Anticipate failure
- h. Refine operation procedures

B,D,E,G,H

16. Terraform

Using Terraform IAC create the AWS architecture from figure 1.

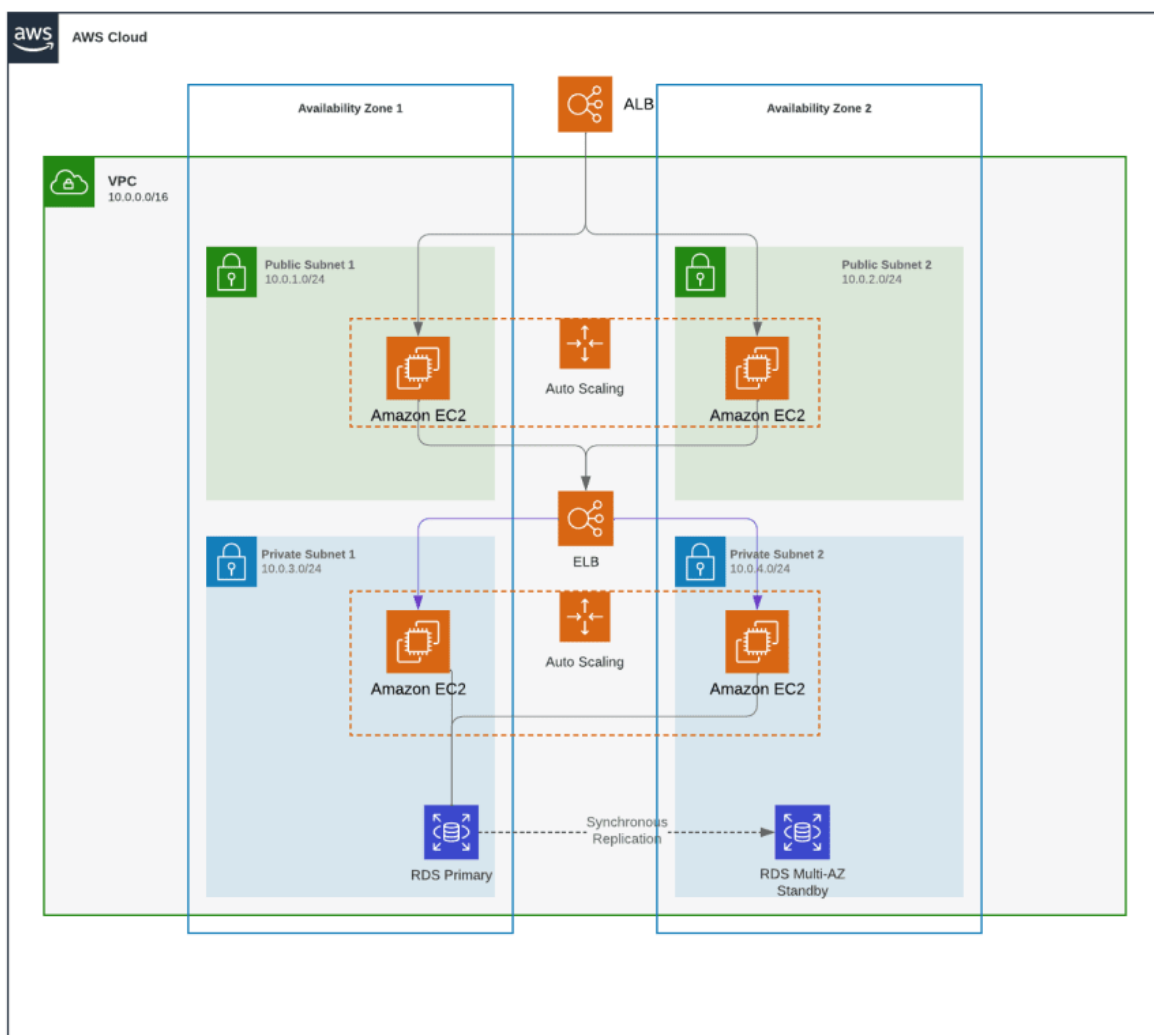


Fig.1. Sample Architecture

CI/CD

17. Azure DevOps or AWS CodePipeline

Using YAML to create Azure DevOps CI/CD pipeline or AWS CodePipeline for deploying a static website to S3 with CDN. Automate CloudFront distribution invalidation at each deployment.

