



## DevOps Interview Strategy

Discussion on offline assignments, profiles & projects, AWS (Basics and advanced), Security (IAM, VPC SG), Terraform, CloudFormation, Ansible, CI/CD (Jenkins, CircleCI), Docker, K8s, Linux/Shell scripting, Networking Basics, DBMS Basics, Generic questions

### Assignment:

1. Challenges
2. Assumptions
3. Code structure
4. Test & debug in real-time

### Projects:

1. Most challenging project and why it was complicated - [skills set, management problems, team skill set]
2. Select one project to explain - either the interviewer can select or the candidate to choose one they worked on most

### AWS:

1. What are the types of cloud services and what are the AWS tools/services built to use them? ([Answer](#))
2. What are the tools used to send logs to the cloud environment? ([Answer](#))
3. What are IAM Roles? How do you create /manage them? ([Answer](#))
4. How to upgrade or downgrade a system with zero downtime? (Answer)
5. What is infrastructure as code and how do you use it? ([Answer](#))



6. What is a load balancer? Give scenarios of each kind of balancer based on your experience. ([Answer](#))

### **AWS CloudFormation:**

1. What is CloudFormation and why is it used for?
2. Steps involved in CloudFormation?
3. Difference between AWS CloudFormation and AWS Elastic Beanstalk?
4. Elements of AWS CloudFormation templates? (Answer: Parameters, Output values, Data tables, Resources, File format version etc)
5. What are the possible reasons for failure while using the AWS CloudFormation stack? (Example: Maybe one of the resources in the stack couldn't be created successfully because it exceeded the limit of Elastic IP addresses or doesn't have access to an EC2 AMI)
6. How can we manage the dependencies in between the stacks?

### **AWS Security:**

1. What are the kinds of security attacks that can occur on the cloud? And how can we minimize them?
2. What are the security best practices for EC2/ECS/Lambda?
3. Can we recover the EC2 instance when we have lost the key?
4. How are the login credentials stored in AWS?
5. What is the best place to store 3rd party API keys?
6. How can we best monitor the cloud service?
7. What are the Password best practices?

### **Docker:**

1. Why and when to use Docker?
2. Explain the Docker components and how they interact with each other.
3. Explain the terminology: Docker Compose, Docker File, Docker Image, Docker Container?
4. In what real scenarios have you used Docker?
5. Docker vs Hypervisor?
6. What are the advantages and disadvantages of using docker?

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7. What is a Docker namespace?
8. What is a Docker registry?
9. What is an entry point?
10. How to implement CI/CD in Docker?
11. Will data on the container be lost when the docker container exits?
12. What is a Docker swarm?
13. What are the docker commands for the following:
  - view running containers
  - command to run the container under a specific name
  - command to export a docker
  - command to import an already existing docker image
  - commands to delete a container
  - command to remove all stopped containers, unused networks, build caches, and dangling images?
  - common docker commands you use every day

## **Kubernetes**

1. Docker vs **Kubernetes. Scenarios in real-time?**
2. What is a headless service?
3. What are the main components of Kubernetes?
4. Explain how the master node and worker nodes communicate with each other.
5. What are K8S security best practices?
6. How is load balancing done in K8S?
7. What types of K8S services have you worked on?
8. K8S Vs Docker?

## **Pipelines:**

1. What is your experience with data pipelines/orchestration engines like Airflow, MLFlow, EFi?

## **CI/CD:**

1. Which CI/CD tools are you familiar with? Give the real-time scenarios where you made use of the tool.



2. If we want to perform CI/CD operations on the pipeline code. How can we do that?
3. Any other DevOps tools you're familiar with?

### **Networking Basics:**

1. What is a gateway?
2. What is a VPC and subnet?
3. How to connect multiple sites to a VPC?
4. When you are verifying the security aspects of VPC, at what levels do you verify?  
( ans: security groups, ACL, logs etc)

### **DBMS & Data Storage Basics:**

1. What is the difference between the Amazon Rds, Dynamodb, and Redshift?
2. How to optimally maintain the storage space on the server? (Example answer: make use of auto-delete feature)
3. How can we perform scaling while running huge data pipelines?

### **Linux Basics:**

- Explain the Linux System architecture.
- What is a zombie process? How to kill it?
- Where to configure the bash profile in Linux?
- How to find the exact location of a file?
- write a simple script(one-liner) to search for all files in the current dir having the word 'wolf'?
- How to add the ssh keys?
- Commands to verify the default route and routing table?
- Commands used to verify a system failure? (ex: ping, netstat etc)
- How to check which ports are listening
- What is a run level? How to verify the default run level?
- What is the process management system calls in Linux?
- What are the commands used to verify memory?

### **GIT Basics:**

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- Please run git commands for the following in a shell:
  1. Create new git test repo
  2. Create a new branch
  3. Create a simple text file
  4. Create a script to search for 'wolf' and count the number of 'wolf' in each line in the above text file (use shell script/python)
  5. Add the text file and script to your branch
  6. Add a commit message
  7. Push the branch to master
  8. Pull the branch again
  9. Add another function in the script to count the number of lines in the text file (use shell script/python)
  10. Git push the changes
  11. How to revert the git commit that has been just pushed

## **Design thinking: (Zoom Whiteboard Design)**

- Design/architect a mobile app solution. What steps do you follow to debug when the app doesn't crash?
- Design/Architect a system to monitor the website metrics in real-time on AWS(Cloud)? What steps do you follow to debug when this system doesn't load?
- How can you schedule the FTP download of 500 files onto the cloud server at 2 AM every day?
- If you're playing a cloud architect role in your company:
  - How do you optimize the existing AWS Infrastructure?
  - How can you set privileges and assign roles to employees?
  - How can you maximize the AWS costs and usage over time?
  - How can you adjust the resources based on demand and ensure maximum performance and efficiency?

## **Terraform:**

- Any experience with Infrastructure as Code?
- How to provision AWS Infra with HCL files.
- Experience with Terraform Modules.



### Non-Technical:

- Any experience with Automation using Python or Java or shell scripting?
- Which testing tools have you worked on?
- What does your normal day look like? (tasks done during the whole day)
- What is the biggest contribution you made in your current role/ past role?  
Architecture
- What's the team size they have?
- What are you ideally looking for in the next role and company?
- How much time do you think you can work effectively in a day without distractions? (with the flexibility of your own schedule)
- If given a chance, are you willing to take full responsibility for subset projects?  
And how will you effectively handle it with strict deadlines and distributed team?
- Experience with any other dev ops tools or frameworks?
- Any experience with AWS ML frameworks?

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English LIVE Cohort	<a href="https://bit.ly/devops-english-batch">https://bit.ly/devops-english-batch</a>