**CLOUDSPACE INTERVIEW CHEATSHEET**

**TECHNICAL QUESTIONS**

# **AMAZON WEB SERVICES**

## **INTRODUCTION TO CLOUD COMPUTING**

What is Cloud Computing?

What is AWS?

What is the advantage of cloud computing? What is the disadvantage of cloud computing?

Can we share our server resources with others? How?

What are the commands to troubleshoot a DNS server?

What is virtualization?

How does virtualization work?

What is a Hypervisor?

What is the Client Server Architecture?

What are the types of Cloud Computing?

What is SAAS, PAAS, IAAS?

What are the criteria to choose a region?

What are the customer responsibilities in the cloud?

What are the AWS responsibilities in the cloud?

Who is responsible for Patching? (Think about both AWS and Customer. Who is responsible for what part?)

What are the different ways to access AWS resources?

What are the components of AWS?

Can you name AWS services that are not region specific?

# **SOLUTIONS ARCHITECT**

## **IAM**

What is IAM?

What is a Root user?

What is an IAM Role?

How to create a role for EC2?

How many roles can a service have?

How many permissions can you add to a role?

What’s the difference between IAM Role and IAM user?

What is an IAM Policy?

What does E A R have to do with IAM policies?

Difference between managed and in-line policy?

What are policies and what are the types of policies?

For day-to-day activities what type of user account do you use? And why?

What are some best practices to manage access to AWS resources?

How do you protect your root account? Or best practice in securing a root account?

What are Access Keys?

How many roles can one service have?

What is AWS Cross-Account? When do you use it?

What is a policy generator?

What are the two types of access that you can provide when you are creating users?

## **NETWORKING**

What’s a CIDR block?

What is Networking?

What are the types of networks? (LAN, MAN, WAN, VLAN)

What is an IP address?

How do you find your IP address on Linux? or Windows? [ what command do you use ]

What’s an IP address used for?

Can you assign the same IP to multiple devices?

What’s the difference between IPv4 and IPv6?

What are the types of IP addresses?

What is protocol | port number?

What’s HTTP and what port does it use?

What’s HTTPS and what port does it use?

What is the difference between TCP/UDP and at what layer do they operate?

At what layer does an IP address work and what does it do/used for?

How does DNS work?

Know the OSI Model Table and function:

| Layer | Name | Function | Ex |
| --- | --- | --- | --- |
| 7 | Application | * Layer that user interact with * provides network services to the end user. * Supply data to and received data from presentation layer | * http * https |
| 6 | Presentation | * syntax processing . Converting data from 1 format to another. * description |  |
| 5 | Session | * construction, direction, and conclusion of connection between devices. * authentication, and reconnection |  |
| 4 | Transport | * transmission of data across network connection | -TCP (Transmission Control Protocol)  - UDP (User Datagram Protocol) |
| 3 | Network | * handles the routing of the data | IP |
| 2 | Data Link | * most complex * divide in two: MAC (Media Access Control), And LLC ( Logical Link Control) * check transmission |  |
| 1 | Physical |  |  |

What’s a subnet?

Difference between private and public subnets?

## **VPC**

What is VPC?

By default how many VPC per region? Can you increase that number and how?

Tell me some service that does not run in the VPC?

What is subnet?

Difference between private and public subnet?

Can the network traffic in your VPC be monitored?

What is an Internet Gateway? Are there any bandwidth limitations for internet gateways?

IGW are created at what level? VPC level is the answer

What does IGW need in order for it to be public?

Where do route tables need to be pointing to in order to be public? IGW is answer

What is Nat Gateway? When do you need it?

What is a Route Table? What route is mandatory in a RT?

What is VPC peering? Why do you need it?

What are the challenges with VPC peering?

Can resources/EC2 in connecting VPC’s in VPC peering share IGW or NAT device?

What is the difference between VPC peering and VPC endpoint?

What is a Transit Gateway?

What is a use case scenario for a Transit Gateway?

Have you configured a Transit Gateway?

How can you control the security of your VPC?

What is a NAT gateway?

What is a NACL?

At what level do we set up the NACL?

What is a Security Group?

At what level do we set up the SG?

When troubleshooting accessibility what are the 3 things to check for?

What is Stateful vs Stateless?

What is the protocol of HTTP/HTTPS?

Differences between HTTP and HTTPS

## **EC2**

What is the difference between Security Groups vs NACL?

Private VS Public subnet?

Tell me the steps of launching an EC2 instance?

What is the pricing model of EC2 instances?

What are key-pairs?

Instead of EC2, what other solution would you use to host your application?

What is the AWS marketplace?

What is the difference between Bastion host and AWS SSM session manager?

What is User Data?

What does yum update – y do?

What does yum install – y do?

What does Yum install -y httpd do?

Why can’t I connect to a website that is hosted on my EC2 instance?

If you try to launch a service in a region but you do not see it there, what could be the issue?

You have an application that normally works and the user complains they cannot access the application. What troubleshooting steps can you take to make sure the user resumes access to the application?

How do you resize an EBS volume?

What do you understand by stopping and terminating an EC2 Instance?

What is an Amazon Machine Image (AMI)?

You have launched a Linux instance in AWS EC2. While configuring security group, you

Have selected SSH, HTTP, HTTPS protocol. Why do we need to select SSH?

What is the difference between HTTP & HTTPS?

What does this command do [ cat/etc/\*release ]

When launching an EC2 on what volume is the OS installed?

What’s the name of the lifecycle policy to do our backup/snapshot everyday?

## **S3 SIMPLE STORAGE**

What is S3?

What is Amazon S3 used for?

What are the different storage classes in S3? And What is the default storage class in S3?

How can you secure the access to your S3 bucket?

What are the things we need to remember while creating the s3 bucket?

How does S3 ensure data durability and availability?

How do you create an S3 bucket?

Explain S3 bucket policies and its significance?

What is versioning in S3?

How can you secure data transfer to and from an S3 bucket?

How can you encrypt data stored in an S3 bucket?

How do you troubleshoot objects not being accessible in an S3 bucket?

How do you log and monitor S3 access?

Explain Amazon s3 lifecycle rules?

What is the purpose of S3 lifecycle policies?

How can you optimize costs with infrequently accessed data in S3?

What should be considered when transitioning objects between storage classes?

How does S3 work with AWS CloudFront?

What is the relation between Amazon S3 and AWS KMS?

What is the function of cross region replication in Amazon S3?

What are the types of volumes in EBS?

Differentiate Block storage and File storage?

What is the minimum and maximum size of individual objects that you can store in S3

What’s the difference between S3, EBS and EFS?

What are the different types of storage gateway?

## **MONITORING**

Have you worked with a monitoring tool?

How does monitoring work?

What about monitoring tools? What are the different monitoring tools you have knowledge on and are using currently?

How do you manage monitoring? Example: if something goes wrong with an application or one of the resources how do you get notified and take action?

How do you monitor on-premise resources using CloudWatch?

What is the easiest way - you would have tens of logs - how do you segregate/group the logs? How do you know which log group to check or needs to be checked? What is the easiest way - Let's say an application service stopped working - how do you check when it stopped and what was causing it?

So I want to check some of the logs from my instance - how can I do that? Let's say I want to export the logs from the day before or the last 6 hours or 10 hours. How do I do that? I’m interested in all the steps: I'm interested in the steps on how to get the logs from my EC2 instance. How can I filter this information for example in cloudwatch?

Cloudwatch is not something like Excel - I have to use something to filter the information out - how can i do that?

How do you monitor network traffic in your VPC?

CloudWatch vs CloudTrail?

## **LOAD BALANCERS**

What is load balancing?

What is the purpose of a load balancer?

What type of load balancer do you know?

What type of load balancer can show us the source IP?

Describe a project in which you used a load balancer and explain why you chose that specific type of ELB?

What are some advantages of ELB?

Have you ever configured an AWS ELB?

What is an Application load Balancer?

Can you explain the difference between a hardware and software load balancer?

Why would you choose application load balancer vs network load balancer?

Based on the above question, were you the one deciding or came onboard and made that decision? Based on what?

Name two types of load balancing algorithms?

What is the difference between Layer 4 and Layer 7 load balancing?

Is it possible to combine multiple load balancers in the same tool to access the same application?

After configuring ELB, you need to ensure that the user requests are always attached to a

Single instance. What setting can you use?

How does a load balancer contribute to scalability?

Explain how load balancing enhances high availability?

What is session persistence, and why is it important in load balancing?

How do health checks work in the context of load balancing?

How can a load balancer contribute to security?

## **AUTO SCALING**

What is auto-scaling and what are the benefits of auto scaling?

What does scaling mean?

What is EC2 Autoscaling?

Can you explain the difference between manual and automatic scaling?

What are the key components of Auto Scaling and how do they interact with one another?

How to plan Auto scaling?

What is an Auto Scaling group and how does it work?

How do you create an Auto Scaling group in AWS?

What is the significance of cooldown periods in Auto Scaling?

Describe the difference between scaling out and scaling in?

How can you scale based on custom metrics with AWS Auto Scaling?

How will change the instance give type for the instances, which are the running in your

applications tier and Then using Auto Scaling. Where will you change it from areas?

Can you provide an example of an application that would benefit from implementing Auto Scaling? How would you implement it in that specific context?

What are some challenges you might face when implementing Auto Scaling for a distributed system, and how would you address those challenges?

How do you determine the appropriate scaling policies for a specific application? What factors should be considered?

How does Auto Scaling incorporate monitoring and metric-based analysis for optimal decision-making?

How can you ensure that an Auto Scaling system is secure, given the dynamic nature of its infrastructure?

What are the potential drawbacks or limitations of using Auto Scaling, and how can they be mitigated?

Can you provide an example of a situation where you had to troubleshoot an issue related to Auto Scaling? How did you approach the problem and what was the resolution?

How do you handle data persistence, backup, and recovery in an Auto Scaling environment?

How does Auto Scaling integrate with Elastic Load Balancing [ELB]?

What role does Amazon EC2 Auto Scaling plain in maintaining application availability?

## **DNS-ROUTE53**

What is Route 53?

How does Route 53 facilitate domain registration?

Explain the purpose of hosted zones in Route 53?

Name three common types of DNS records in Route 53?

What are the types of routing policies in route53 and provide a scenario for when you would choose each routing policy?

Explain the difference between simple and weighted routing policies?

How can you use health checks on Route 53?

What is the purpose of failover routing policy?

How does Amazon Route53 provide high availability and low latency?

How does Amazon Route 53 ensure DNS resolution and low latency globally?

Can you explain the difference between private hosted zones and public hosted zones in Amazon Route 53 and provide a use case for each?

How do health checks work in Amazon Route 53, and what types of health check configurations are available?

How would you migrate an existing DNS infrastructure to Amazon Route 53 while maintaining zero downtime?

Can you explain Amazon Route 53 resolver rules and how you would use them to route traffic between different VPCs within an organization?

Can you describe a scenario where you’ve used Amazon Route 53 alias records in a project and why you chose to use them?

How would you use Amazon Route 53 to create a disaster recovery plan for a web application?

Can you discuss the limitations of using Amazon Route 53 as your DNS service and how you would mitigate those limitations if necessary?

How does Route 53 integrate with AWS services like Elastic Load Balancing [ ELB [?

Can you explain the concept of alias records in Route 53?

## **RDS**

What is RDS?

What are the database types in RDS?

What is a redshift?

What is multi-AZ RDS?

Why use Multi vs Read Replica?

Why use Read Replica vs Multi - AZ?

What makes EC2 RDS?

What are the types of backups in the RDS database?

Is it possible to stop a RDS instance, how can I do that?

How can I restore RDS?

Which statements are suitable for Amazon DynamoDB?

How does a NoSQL Database work?

When to use NoSQL DB vs RDS DB?

## **HA AND FAULT TOLERANCE**

What are the objectives of HA and Fault Tolerance?

What are a few differences between HA and Fault Tolerance?

What are advantages and disadvantages of a 2 - tier application?

What are the 3 tier architecture layers of an application?

Explain the Presentation Tier/ Logic Tier/ Data Tier of a 3 Tier application?

What are the advantages of a 3 Tier Architecture?

What is a drawback of a 3 Tier Architecture?

What is Data at Rest?

What is Data in Transit?

## **CLOUDFRONT**

What is cloudfront?

How does CloudFront enhance website performance?

What are edge locations?

How do you create a CloudFront distribution?

How does CloudFront enhance security?

How do you monitor CloudFront usage and performance?

What is CloudFront access logging, and why is it useful?

How do you troubleshoot slowness in your application?

What protocol does EFS use?

# **DEVOPS**

What is DevOps ?

Why is the need for DevOps in current times?

What are the core components of DevOps?

What are the top DevOps tools that you are aware of?

What benefits can arise by using DevOps?

What is the role of a DevOps engineer?

Is there any difference between DevOps and Agile? If yes, please elaborate.

What is Continuous Integration (CI) in AWS DevOps?

What is Continuous Delivery (CD) in AWS DevOps?

What will DevOps help to accomplish?

What is the difference between classic automation and orchestration?

What are the top reasons for using AWS for DevOps?

Name the key components of AWS applied in DevOps

Describe a use case for Amazon Elastic Container Service (ECS) in DevOps

## **LINUX**

What Linux distribution have you used in the past?

Provide 5 Linux commands with their functions.

## **GIT**

What is a local repo?

Walk me through using git for a project

What’s your preferred version control system? Why?

What's the benefit of using version control?

## **DOCKERS - CONTAINERS**

What is a container?

What is the difference between VM and Container?

What is the docker workflow?

ECS vs. EKS?

What is virtualization?

What is Hypervisor?

How and where do you save your previous Docker image used for roll back in case of issue?

What is the main difference between Type 1 and Type 2 hypervisors?

What is the command to scale up containers in Docker?

What is a Dockerfile and how does it work?

How do you containerize an application?

Walk me through how to create a docker image

What is a Docker volume?

What is the difference between VM and a Container?

## **JENKINS**

What is Jenkins?

What are the benefits of using Jenkins?

## **CI/CD**

What is continuous integration?

What is Continuous Delivery?

What is the difference between continuous deployment and continuous delivery?

What are the CI/CD tools you used in the past?

What are CI/CD codepipeline Actions?

Can you explain Code Commit in AWS DevOps?

Highlight some of the key benefits of AWS Code Build in AWS DevOps

What is AWS CodePipeline?

What is CI/CD Pipeline?

Which languages and frameworks are compatible with AWS CodeBuild?

Give examples on how CI/DC applies in real life? Provide examples:

## **ANSIBLE**

How do you set up ansible?

How do you make the controller talk to the client?

What would you say is the difference between Ansible and Cloudformation?

What are the Ansible tasks?

Have you worked on Ansible Modules?

How do you connect to the controller and how do you run the management in Ansible?

How do you maintain the SSH credentials in Ansible?

How can you generate a key for the first time when you do not have access to the server ?

## **INFRASTRUCTURE AS CODE**

## **CLOUDFORMATION**

What is IaC?

What are the benefits of IaC?

Describe the AWS cfn stacks you have used in the past.

Why did you use CloudFormation instead of Terraform?

Explain the concept – “Infrastructure as Code” (IaC)

How can IaC be implemented by using AWS?

What are Microservices in AWS DevOps?

What do you understand about AWS CloudFormation in AWS DevOps?

What’s the difference between AWS CloudFormation and AWS Elastic Beanstalk?

What is a cross stack?

I have a stack that does something [anything] and I would like you to do/build your stack in such a way that you would reference things in my stack - how would you do that?

Nested VS cross stack and when would you use them?

## **SECURITY**

How do you ensure security in your CloudFormation template and in your application as a whole?

Talking about 3 tier architecture, how would you secure every layer?

What is the difference between Nat Instance and Nat Gateway?

What is the difference between Security Groups vs NACL?

Best practice: Restrict SSH or RDP access to the required entities. [ golden rule ] only provide the needed access

How do you assign permissions to a user on Linux?

Name a few cloud security best practices

How do you mitigate a Zero Day attack in your application?

## **KUBERNETES**

What is Kubernetes? What is it used for?

What is the main point of running an application on Kubernetes?

How do you manage security on kubernetes regarding communication between nodes?

What is on the control plane?

How to do maintenance activity on the K8 node?

What is the role of Load Balance in Kubernetes?

Describe the kubernetes architecture

How do containers communicate in Kubernetes?

## **TERRAFORM**

Tell me similarities between CloudFormation and Terraform?

What is the difference between the Resource block and the data block in terraform

What is the main difference between Terraform and CloudFormation?

What configuration management tools are compatible with AWS?

## **MIGRATION**

## **DEPLOYMENT**

What are the different types of deployments and tell me the advantages and disadvantages of each of them

## **TROUBLESHOOTING**

If you find out something is wrong in your team, how do you relate it to stakeholders?

How do you troubleshoot containers and find the edit code

How does Kubernetes work?

Describe the SSL handshake

If your client reaches out to you that he can't SSH, what will you do?

If you turn on your laptop and dont have an IP, what would you check/ how would you troubleshoot?

If you have a system that is constantly rebooting, slow, etc what do you do? What commands to check the disk usage?

How to troubleshoot DNS if customers can't reach the web application

If a client wants to deploy his application to 100 servers, what would you advise him?

If a pipeline is successful and the web application is not running, what would you advise the developers team?

How do you troubleshoot a DNS server?

**BEHAVIORAL QUESTIONS**

Tell me about yourself.

Give me an example of a goal you’ve set and how you achieved it.

Tell me about a time you failed. How did you handle it?

Tell me about a time you exceeded expectations

Tell me about a time someone criticized you on something

Tell me about a time you took a business decision that impacted the company.

Tell me about a time you did something you were not asked to do.

Tell me about a time you had to learn something to do your job.

Tell me about a time you took a job that was out of your domain

Tell me about a time you had a difficult interaction with a customer

Tell me about a time you solved a complex problem with a simple solution

Tell me about a time you had a disagreement with your manager

Can you describe a time people didn’t see things your way?

Tell me about 3 strengths and 3 weaknesses of yours.

Tell me about a time when you worked well with a team.

Tell me about a time you said no to a customer

Why do you want to work for us?

Why should we hire you?

What are your weaknesses?

Can you share a time when you’ve had to juggle multiple priorities at work?

Tell me about your role at your current company

What does your day-to-day life look like at your current company?

Tell me a situation when you noticed something within your team and related it to your manager or stakeholders

Tell me about a time a customer wanted something but you knew they want something else

Tell me a time you had to investigate using logs to fix an issue

Tell me a time you had an issue with your boss

Tell me a time you handled a difficult customer?

Tell me a time you had an opinion about something, how did you go about it?

Tell me a time when a project did not go as planned

Tell me a time you had to work out of your comfort zone

Tell me a time you had to learn something new to complete a project

Tell me about EtcD

Do you have any questions for me?

**SCENARIO BASED QUESTIONS**

***SOLUTION ARCHITECT***

How would you set up a highly available web application in AWS using EC2, ELB, and Auto Scaling?

Can you explain the steps to configure a VPC with public and private subnets, including network access control and security group rules?

How would you implement a disaster recovery solution in AWS using RDS, EC2, and S3?

How would you use AWS S3, CloudFront, and Route 53 for a scalable and highly available static website?

Can you describe the process of setting up a continuous delivery pipeline in AWS using CodePipeline and CodeBuild?

How would you use Amazon SNS and SQS for asynchronous communication and message processing in a microservices architecture?

How would you use AWS CloudTrail and CloudWatch to monitor and log AWS resource activity and events?

How would you use AWS Lambda and API Gateway to build a serverless REST API?

Can you describe a scenario in which you would use AWS Elastic Beanstalk to deploy an application?

You have an application that normally works and the user complains they cannot access the application. What troubleshooting steps can you take to make sure the user resumes access to the application?

Have you run Linux commands on windows?

We have a situation here. We have a bunch of VPC and because business kept growing and now we have outgrown and need to interconnect there VPCs’ to each other - this has been difficult to manage the connection between these VPCs is there a way you would recommend to us that we could use with connectivity between these VPCs’?

How would you troubleshoot a webpage that can’t access the database? How to troubleshoot why you can’t access a web page server?

How do you troubleshoot an application that is not accessible?

Did you set up any CI/CD Pipeline for a project - if yes what was the requirement there and how did you build it?

I have an EC2 instance which has data volume attached to it - something attached to an instance and that instance is down. I want to get that data or whatever is attached to it. What are my options to be able to get it? If yes, what are my options?

Let’s say I have a snapshot of a volume - how do I restore from that snapshot? If something goes wrong how are you going to get that back?

Last week the website was down and we spent lots of time restoring it. The application is running on AWS without being a technical person I’m not sure but based on this scenario if you were in this situation being down affecting 500,000 users how would you go about troubleshooting this? What considerations would you take to restore this application?

I see you have Ansible projects. Clouloudformation etc - walk me through scenarios where you leverage Cloudformation or Ansible?

How do you upgrade or downgrade the system with zero downtime?

Can you describe the process of using AWS Glue and Athena for data lake analytics and ad-hoc queries?

You’re tasked with designing a highly available architecture for a critical application. How would you ensure fault tolerance and minimal downtime in this scenario?

A company is experiencing performance issues with its EC2 instances. How would you identify the root causes and optimize the performance of these instances?

Imagine you’re responsible for securing sensitive data stored in S3. Outline a comprehensive security strategy, including encryption, access controls, and monitoring.

Your organization is planning to migrate a large on-premises database to Amazon RDS. How would you plan and execute this migration, ensuring minimal disruption?

You’ve been tasked with setting up a disaster recovery plan for a critical workload in AWS. Describe the architecture and steps you would take to ensure data integrity and rapid recovery.

You’re responsible for managing costs in an AWS environment. How would you monitor and optimize costs while ensuring optimal resource utilization?

A security breach has been detected in an AWS environment. Describe the steps you would take to investigate the breach, mitigate the damage, and strengthen security measures.

Your team needs to deploy a serverless application using AWS Lambda. What considerations would you take into account when designing and deploying this application?

An application you manage experiences a sudden surge in traffic. How would you auto-scale resources to handle the increased load efficiently?

Highlight a real-life or industry scenario where DevOps can be implemented

What challenges arise while creating DevOps pipelines? How to deal with them?

Briefly explain how you will handle revision control?

How can you build a hybrid cloud?

Explain how you solved a challenge related to creating a DevOps pipeline

Why can ECS be a better choice than Kubernetes?

What’s the impact of microservices on operations?

What ticketing system do you use?

**TAKE-HOME PRACTICE TEST**