CLOUD COMPUTING

Interview Guide

Lead the Cloud Computing Revolution

If you're pursuing a career in cloud computing, you're making a smart move. Cloud computing is becoming the norm in the business world as organizations realize they can be more efficient and lower costs with this model. Spending on public cloud services is expected to reach $302.5 billion by 2021.

This increase in spending means rapid job growth in the field, with LinkedIn reporting that "cloud and distributed computing" topped the list of sought-after skills in 2017. Job postings for cloud computing grew by 121 percent

between 2013 and 2017, according to Burning Glass Technologies, and the money is there for those who are qualified for the jobs. According to Indeed, the average salary for a cloud engineer is $116,820. What does that mean for you? Plenty of potential in the cloud computing space!

Preparing for Cloud Interview Questions

Are you preparing to make your next cloud computing move? If so, read on for cloud computing questions and answers, and prepare ahead of time. Be ready to make your best first impression by preparing for that interview.

General AWS Questions

Q. Define and explain the three basic types of cloud services and the AWS
    products that are built based on them?

A: The three basic types of cloud services are:

- ✅ Computing
- ✅ Storage
- ✅ Networking

Here are some of the AWS products that are built based on the three cloud service
types:

Computing - These include EC2, Elastic Beanstalk, Lambda, Auto-Scaling, and
Lightsat.

Storage - These include S3, Glacier, Elastic Block Storage, Elastic File System.

Networking - These include VPC, Amazon CloudFront, Route53

Q. What is the relation between the Availability Zone and Region?

A: AWS regions are separate geographical areas, like the US-West 1(North
    California) and Asia South (Mumbai). On the other hand, availability zones are
    the areas that are present inside the regions. These are generally isolated zones
    that can replicate themselves whenever required.

Q. What is auto-scaling?

A: Auto-scaling is a function that allows you to provision and launch new instances whenever there is a demand. It allows you to automatically increase or decrease resource capacity in relation to the demand.

Q. What is geo-targeting in CloudFront?

A: Geo-Targeting is a concept where businesses can show personalized content to their audience based on their geographic location without changing the URL. This helps you create customized content for the audience of a specific geographical area, keeping their needs in the forefront

Q. How do you upgrade or downgrade a system with near zero downtime?

A: You can upgrade or downgrade a system with near zero downtime using the following steps of migration:

- Open EC2 console
- Choose Operating System AMI
- Launch an instance with the new instance type
- Install all the updates
- Install applications
- Test the instance to see if it's working
- If working, deploy the new instance and replace the older instance
- Once it's deployed, you can upgrade or downgrade the system with near zero downtime.

Q. What are the tools and techniques that you can use in AWS to identify if you are paying more than you should be, and how to correct it?

A: You can know that you are paying the correct amount for the resources that you are using by employing the following resources:

The different types of Tableau filters are:

- **Check the top services table -** It is a dashboard in the cost management console that shows you the top five most used services. This will let you know how much money you are spending on the resources in question.

- **Cost explorer -** There are cost explorer services available which will help you to view and analyze your usage costs for the last 13 months. You can also get a cost forecast for the upcoming three months.

- **AWS Budgets -** This allows you to plan a budget for the services. Also, it allows you to check if the current plan meets your budget and the details of how you use the services.

- **Cost allocation tags -** This helps in identifying the resource that has cost more in a particular month. It lets you organize your resources and cost allocation tags to keep track of your AWS costs.

Q. Is there any other alternative tool to log into the cloud environment other than console?

A: The that can help you log into the AWS resources are:

- Putty
- AWS CLI for Linux
- AWS CLI for Windows
- AWS CLI for Windows CMD
- AWS SDK
- Eclipse

Q. What services can be used to create a centralized logging solution?

A: The basic services that you can use are Amazon CloudWatch Logs, store them in Amazon S3, and then use Amazon Elastic Search to visualize them. You can use Amazon Kinesis Firehose to move the data from Amazon S3 to Amazon ElasticSearch.
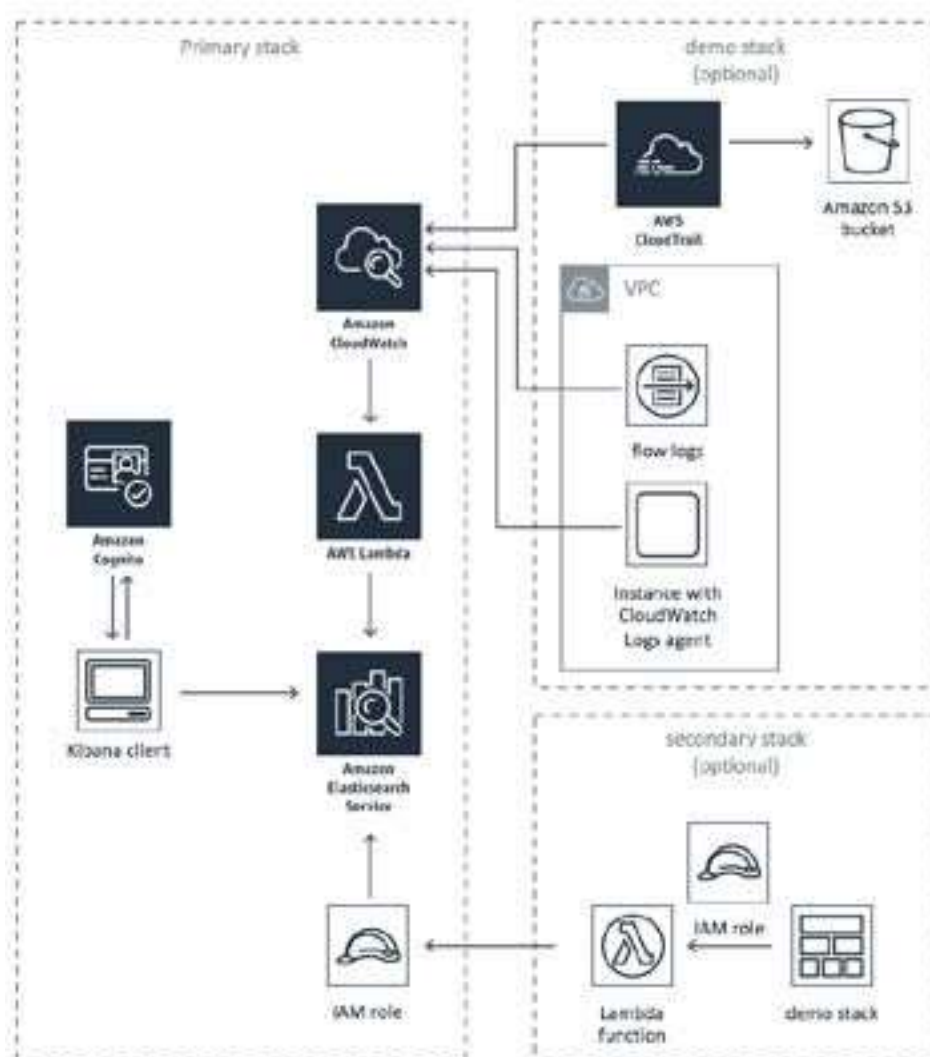
Q. What are the native AWS Security logging capabilities?

A: Most of the AWS services have their own logging options. Also, some of them have account-level logging, like in AWS CloudTrail, AWS Config, and others. Let's take a look at two services in specific:

- **AWS CloudTrail -** This is a service that provides a history of the AWS API calls for every account. It lets you perform security analysis, resource change tracking, and compliance auditing of your AWS environment as well. The best part about this service is that it lets you configure it to send notifications via AWS SNS when new logs are delivered.

- **AWS Config -** This helps you understand the configuration changes that happen in your environment. This service provides an AWS inventory that includes configuration history, configuration change notification, and relationships between AWS resources. It can also be configured to send notification via AWS SNS when new logs are delivered.

Q. What is a DDoS attack and what services can minimize them?

A: DDoS is a cyber-attack in which the perpetrator accesses a website and creates multiple sessions so that the other legitimate users cannot access the service. The native tools that can help you deny the DDoS attacks on your AWS services are:

- AWS Shield
- AWS WAF
- Amazon Route53
- Amazon CloudFront
- ELB
- VPC

Q. You are trying to provide a service in a particular region but you are not seeing the service in that region. Why is this happening and how do you fix it?

A: Not all Amazon AWS services are available in all regions. When Amazon initially launches a new service, it doesn't get immediately published in all the regions. They start small and then slowly expand to other regions. So, if you don't see a specific service in your region, chances are the service hasn't been published in your region yet. However, if you want to get the service that is not available, you can switch to the nearest region that provides the services.

Q. How do you set up a system to monitor website metrics in real-time in AWS?

A: Amazon CloudWatch helps you to monitor application status of various AWS services and custom events. It helps you to monitor:

- State changes in Amazon EC2
- Auto-scaling lifecycle events
- Scheduled events
- AWS API calls
- Console sign-in events

Q. What are the different types of virtualization in AWS and what are the differences between them?

A: The three major types of virtualization in AWS are:

- **Hardware Virtual Machine (HVM) -** It is a fully virtualized hardware, where all the virtual machines act separate from each other. These virtual machines boot by executing a master boot record in the root block device of your image.
- **Paravirtualization (PV) -** Paravirtualization-GRUB is the bootloader which boots the PV AMIs. The PV-GRUB chain loads the kernel specified in the menu.
- **Paravirtualization on HVM -** PV on HVM actually helps operating systems take advantage in storage and network I/O available through the host.

Q. Name some of the AWS services that are not region specific

A: AWS services that are not region specific are:

- IAM
- Route 53
- Web Application Firewall
- CloudFront

Q. What are the differences between NAT Gateways and NAT Instances?

A: **Heat Maps**

A: While both NAT Gateways and NAT Instances serve the same function, they still have some key differences.

The following are the key differences between NAT Gateway and NAT Instance:

Feature	NAT Gateway	NAT Instance
Availability	High	High
Bandwidth	Up to 45 Gbps	Depends on instance bandwidth
Maintenance	Managed by AWS	Managed by you
Performance	Very Good	Average
Cost	Number of gateways, duration and amount of usage	Number of instances, duration, amount and type of usage
Size and load	Uniform	As per your need
Security Groups	Cannot be assigned	Can be assigned

Q. What are the factors to consider while migrating to Amazon Web Services?

A: Here are the factors to consider during AWS migration:

- Operational Costs - These include the cost of infrastructure, ability to match demand and supply, transparency, and others.
- Workforce Productivity
- Cost avoidance
- Operational resilience
- Business agility

Q. What is RTO and RPO in AWS?

RTO or Recovery Time Objective is the maximum time your business or organization is willing to wait for a recovery to complete in the wake of an outage. On the other hand, RPO or Recovery Point Objective is the maximum amount of data loss your company is willing to accept as measured in time.

34. If you would like to transfer huge amounts of data, which is the best option among Snowball, Snowball Edge, and Snowmobile?

AWS Snowball is basically a data transport solution for moving high volumes of data into and out of a specified AWS region. On the other hand, AWS Snowball Edge adds additional computing functions apart from providing a data transport solution. Snowmobile is an exabyte-scale migration service that allows you to transfer data up to 100 PB.

Microsoft Azure Questions

1.Why did you choose a career in Cloud Computing?

These types of Azure interview questions require a thoughtful, honest response. By thinking through your answer ahead of time, you'll be ready to say something your interviewer will approve of. Show that you care about the field and that you have a passion for cloud computing and the problems it can solve.

2. Why did you choose Microsoft Azure and not AWS?

Your response to this question is based on your own background and experience. Maybe you come from a developer background, so Azure appealed to you. Maybe your first cloud computing role just happened to be with Azure. As with the question above, the key here is to be ready to give an intelligent answer to the question.

3. How does Microsoft Azure Compare to AWS?

This might be a matter of opinion for you, so answer as you see fit. In general, people say Azure is a better choice because it's a Microsoft product, making it easier for organizations already using Windows Server, SQL Server, and Exchange to move to the cloud. In addition, because of Microsoft's deep knowledge of developer tools, Azure offers multiple app deployment options for developers, which makes it stand out against AWS.

4. How Did You Learn Azure?

Did you learn Azure through a certification? Through on-the-job experience? A little of each? However you learned it, make sure to demonstrate to the interviewer that you have practical experience (if you're new to the field) and that you are continuing to learn.

5. Share a Problem You Solved at Your Prior Job.

This is something to spend some time on when you're preparing responses to possible Azure interview questions. As a cloud architect, you need to show that you are a good listener and problem solver, as well as a good communicator. Yes, you need to know the technology, but cloud computing does not usually involve sitting isolated in a cubicle. You'll have stakeholders to listen to, problems to solve, and options to present. When you answer questions like these, try to convey that you are a team player and a good communicator, in addition to being a really good Azure architect.

6. What are the Different Storage Options with Azure?

Should your interview start to get technical, there are countless questions you might be asked. You can't predict them. We can't predict them. So we've brainstormed some possible Azure interview questions and answers for you to study, prepare for, and practice. Do this, and you'll walk into your interview with much more confidence! Now, onto the different storage options with Azure. These options include a blog, table, and queue options. Be prepared to expand on the benefits of each as well.

7. What is the benefit of the Azure CDN?

The Content Delivery Network (or CDN) in Azure offers the same benefits as other CDNs: it can be used to reduce load times and bandwidth as well as speed up responsiveness.

8. What is Azure Virtual Network?

Azure Virtual Network enables Azure resources like Virtual Machines to securely communicate with each other, with the Internet and with on-site networks. It lets you implement multiple virtual networks, as well as a filter or even route network traffic, and to connect virtual networks to each other.

9. What are Azure Virtual Machines used for?

Speaking of virtual, Azure Virtual Machines are used in the same way any virtual machines are used: to add computing power without adding hardware. Azure supports Windows Server (of course), Linux, SAP, Oracle, IBM, and SQL Server.

10. What is Azure Cloud Service?

Azure Cloud Service lets you deploy a multi-tier web application in Azure, with multiple roles to distribute processing and enable flexible scaling of your application. It lets you support more complex multi-tier architectures.

11. What is Azure Active Directory?

Azure Active Directory is an Identity and Access Management system, similar to other active directories. It lets you grant employee access to specific products and services within your network.

12. What Is Powershell, and how Is It used?

Windows PowerShell has been around for a long time. It can be used to automate tedious tasks. Azure PowerShell is used to manage and administer Azure resources from the command line, as well as to build automation scripts for use with the resource manager.

13. Explain HdInsight.

Azure HDInsight is a cloud service that makes it easy, fast and cost-effective to process massive amounts of data using open-source frameworks like Hadoop, Spark, Hive, LLAP, Kafka, Storm and R. HDInsight can enable a broad range of scenarios, including ETL, data warehousing, and Machine Learning, to name a few.

14. How Do You Stay Current on Microsoft Azure?

Technology is rapidly changing, especially in the cloud computing space, and Microsoft regularly makes updates to Azure. How do you stay on top of it all? Your interviewer will want to know that if you're hired for the job, you'll stay current. If you've earned a certification, definitely mention that. But also look into forums, user groups, and other resources for staying current, and be ready to talk about them when answering Azure interview questions.

The Next Steps

There you go, these were some of the most common Cloud computing (both AWS and Azure) interview questions that you might come across while attending an interview for a Cloud Architect, or related roles. As a Cloud maven you must have in-depth knowledge of platforms, and services they provide and these Cloud interview questions will help you get some knowledge about some of these aspects. However, gaining a certification is also a plus point to be doubly sure and to stay one step ahead of the curve. Some of the top courses and certifications we provide:

- Cloud Architect Master's Program

- AWS Cloud Architect Master's Program

- Azure Cloud Architect Master's Program

Turbocharge your cloud career now!

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