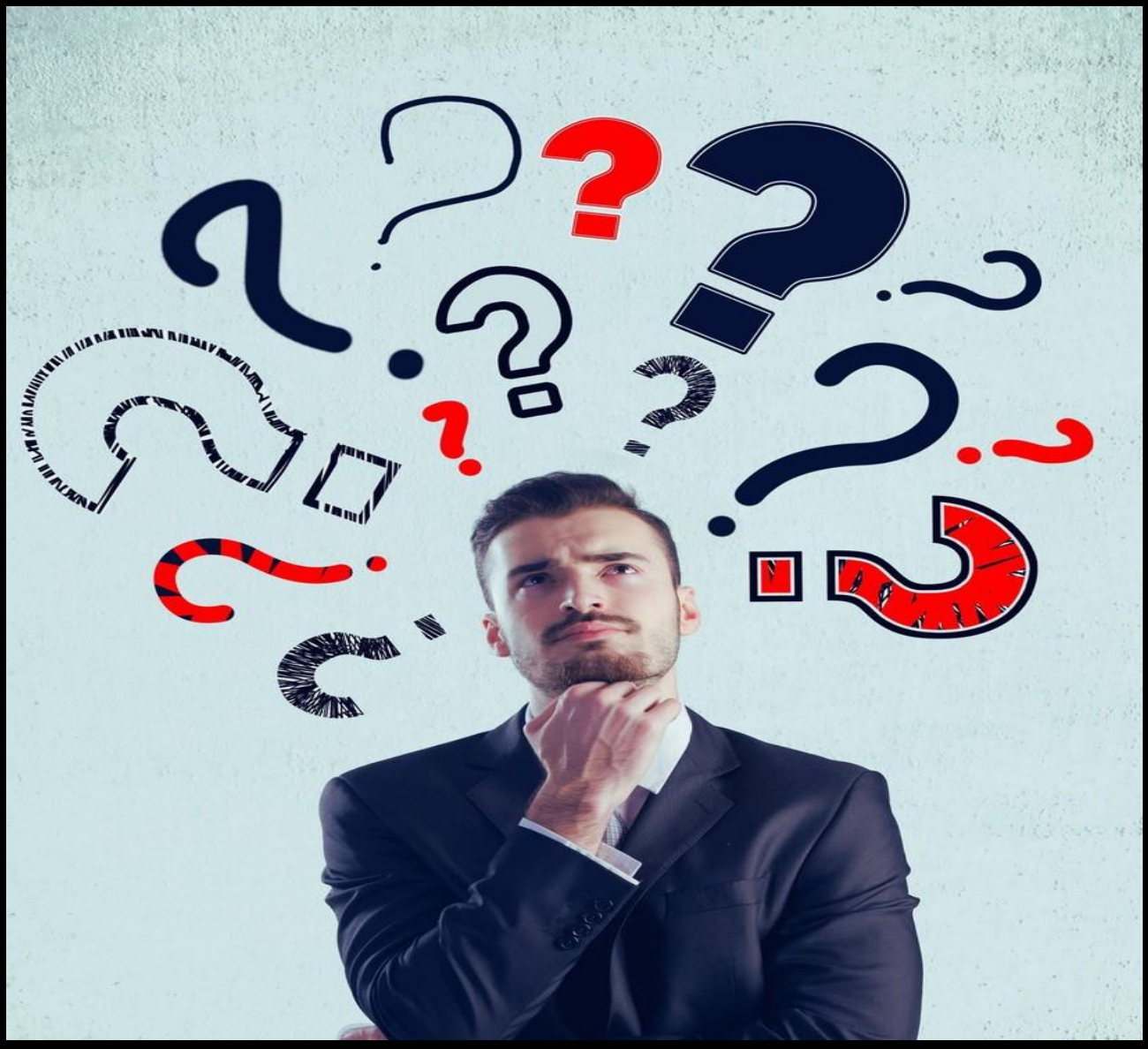
AWS DEVOPS

INTERVIEW QUESTIONS AND ANSWERS



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1. **What is Cloud Computing? Can you talk about and compare any two popular Cloud Service Providers?**

For a detailed discussion on this topic, please refer our Cloud Computing blog. Following is the comparison between two of the most popular Cloud Service Providers:

Amazon Web Services Vs Microsoft Azure

Parameters	AWS	Azure
Initiation	2006	2010
Market Share	4x	x
Implementation	Less Options	More Experimentation Possible
Features	Widest Range Of Options	Good Range of Options
App Hosting	AWS not as good as Azure	Azure Is Better
Development	Varied & Great Features	Varied & Great Features
IaaS Offerings	Good Market Hold	Better Offerings than AWS

2. **What is Auto-scaling?**

Auto-scaling is a feature that allows you to provision and launch new instances based on demand. It enables you to automatically raise or reduce resource capacity in response to demand.

3. What is geo-targeting in Cloud Front?

Geo-targeting is a concept in which businesses may deliver customized information to their audience depending on their geographic location without altering the URL. This allows you to produce personalized content for a specific geographical audience while keeping their demands in mind.

4. Define and explain the three initial orders of all services and the AWS products erected on them.

There are three primary types of cloud services: computing, storage, and networking.

Then there are AWS products built based on the three orders of all services. Computing services such as EC2, Elastic Beanstalk, Lambda, Auto-Scaling, and Light sail are exemplifications. S3, Glacier, Elastic Block Storage, and the Elastic File System exemplify the storage. VPC, Amazon Cloud Front, and Route53 are exemplifications of networking services.

5. What are the steps involved in a Cloud Formation Solution?

- Create a new Cloud Formation template or utilize an existing one in JSON or YAML format.
- Save the code in an S3 bucket, which will act as a repository for it.
- To call the bucket and construct a stack on your template, use AWS Cloud Formation.
- Cloud Formation scans the file and understands the services that are called, their sequence, and the relationships between the services before provisioning them one by one.

6. What are the main features of Cloud Computing?

Cloud computing has the following key characteristics:

- Massive amounts of computing resources can be provisioned quickly.
- Resources can be accessed from any location with an internet connection due to its location independence.
- Unlike physical devices, cloud storage has no capacity constraints which makes it very efficient for storage.
- Multi-Tenancy allows a large number of users to share resources.
- Data backup and disaster recovery are becoming easier and less expensive with cloud computing.
- Its Scalability enables businesses to scale up and scale down as needed with cloud computing.

7. Explain AWS.

AWS is an abbreviation for Amazon Web Services, which is a collection of remote computing services also known as Cloud Computing. This technology is also known as IaaS, or Infrastructure as a Service.

8. Name some of the non-regional AWS services.

- Some of the non-regional AWS services.
- Cloud Front
- IAM
- Route 53
- Web Application Firewall

10. What are the different layers that define cloud architecture?

The following are the various layers operated by cloud architecture:

- CLC or Cloud Controller.
- Cluster Controller
- SC or Storage Controller
- NC, or Node Controller
- Walrus

11. 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?

You may ensure that you are paying the proper amount for the resources you use by utilizing the following resources:

- Check out the Top Services Table- It is a dashboard in the expense management interface that displays the top five most used services. This will show you how much money you are spending on the resources in question.
- Cost Finder- There are cost explorer programs accessible that will allow you to see and evaluate your consumption expenditures over the previous 13 months. You may also receive a cost prediction for the next three months.
- AWS Budgets- This helps you create a budget for the services. It will also allow you to see if the current plan suits your budget and the specifics of how you utilize the services.
- Cost Allocation Labels- This aids in determining the resource that has cost the most in a given month. It allows you to categorize your resources and cost allocation tags in order to keep track of your AWS charges.

12. What are the various layers of cloud computing? Explain their work.

Cloud computing categories have various layers that include

- Infrastructure as a Service (IaaS) is the on-demand provision of services such as servers, storage, networks, and operating systems.
- Platform as a Service (PaaS) combines IaaS with an abstracted collection of middleware services, software development, and deployment tools.
- PaaS also enables developers to create web or mobile apps in the cloud quickly.
- Software as a Service (SaaS) is a software application that has been delivered on-demand, in a multi-tenant model
- Function as a Service (FaaS) enables end users to build and execute app functionalities on a server less architecture.

9. What are the various Cloud versions?

There are several models for deploying cloud services:

- The public cloud is a collection of computer resources such as hardware, software, servers, storage, and so on that are owned and operated by third-party cloud providers for use by businesses or individuals.
- A private cloud is a collection of resources owned and managed by an organization for use by its employees, partners, or customers.
- A hybrid cloud combines public and private cloud services.

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

The following will help you in logging into AWS resources:

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

11. What are the native AWS Security logging capabilities?

Most AWS services provide logging capabilities. AWS Cloud Trail, AWS Confit, and others, for example, have account level logging. Let's look at two specific services:

- AWS Cloud Trail This is a service that gives a history of AWS API calls for each account. It also allows you to undertake security analysis, resource change tracking, and compliance audits on your AWS environment. The nice aspect about this service is that you can set it to send notifications via AWS SNS when fresh logs are provided.
- AWS Setup This helps you comprehend the configuration changes that occur in your environment. This service offers an AWS inventory that contains configuration history, configuration change notification, and links between AWS resources. It may also be set to send notifications via AWS SNS when fresh logs are received.

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

DDoS is a cyber-attack in which the culprit visits a website and creates several sessions, preventing genuine users from accessing the service. The following native tools will help you in preventing DDoS attacks on your AWS services:

- AWS Shield
- AWS WAF
- Amazon Cloud Front
- Amazon Route53
- ELB
- VPC

13. List the pros and cons of server less computing.

Advantages:

- Cost-effective
- Operations have been simplified.
- Improves Productivity
- Scalable

Disadvantages:

- This can result in response latency
- Due to resource constraints, it is not suitable for high-computing operations.
- Not very safe.
- Debugging can be difficult.

17. What characteristics distinguish cloud architecture from traditional cloud architecture?

The characteristics are as follows:

- In the cloud, hardware requirements are met based on the demand generated by cloud architecture.
- When there is a demand for resources, cloud architecture can scale them up.
- Cloud architecture can manage and handle dynamic workloads without a single point of failure.

14. What are the featured services of AWS?

AWS's key components are as follows:

- Elastic compute cloud (EC2): It is a computing resource that is available on demand for hosting applications. In times of uncertain workloads, EC2 comes in handy.
- Route 53: It is a web-based DNS service.
- Simple Storage Device S3: This is a storage device service that is widely used in AWS Identity and Access Management.
- Elastic Block Store: It allows you to store constant volumes of data and is integrated with EC2. It also allows you to persist data.
- Cloud watch: It allows you to monitor the critical areas of AWS and even set a reminder for troubleshooting.
- Simple Email Service: It allows you to send emails using regular SMTP or a restful API call.

15. How is stopping and terminating an instance different from each other?

Starting, stopping and terminating are the three states in an EC2 instance, let's discuss them in detail:

- Stopping and Starting an instance: When an instance is stopped, the instance performs a normal shutdown and then transitions to a stopped state. All of its Amazon EBS volumes remain attached, and you can start the instance again at a later time. You are not charged for additional instance hours while the instance is in a stopped state.
- Terminating an instance: When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon EBS volumes are deleted unless the volume's deleteOnTermination attribute is set to false. The instance itself is also deleted, and you can't start the instance again at a later time.

16. How is a Spot instance different from an On-Demand instance or Reserved Instance?

First of all, let's understand that Spot Instance, On-Demand instance and Reserved Instances are all models for pricing. Moving along, spot instances provide the ability for customers to purchase compute capacity with no upfront commitment, at hourly rates usually lower than the On-Demand rate in each region. Spot instances are just like bidding; the bidding price is called Spot Price. The Spot Price fluctuates based on supply and demand for instances, but customers will never pay more than the maximum price they have specified. If the Spot Price moves higher than a customer's maximum price, the customer's EC2 instance will be shut down automatically. But the reverse is not true, if the Spot prices come down again, your EC2 instance will not be launched automatically, one has to do that manually. In Spot and On demand instance, there is no commitment for the duration from the user side, however in reserved instances one has to stick to the time period that he has chosen.

17. How to use the processor state control feature available on the c4.8xlarge instance?

The processor state control consists of 2 states:

- The C state – Sleep state varying from c0 to c6. C6 being the deepest sleep state for a processor
- The P state – Performance state p0 being the highest and p15 being the lowest possible frequency.

Now, why the C state and P state. Processors have cores, these cores need thermal headroom to boost their performance. Now since all the cores are on the processor the temperature should be kept at an optimal state so that all the cores can perform at the highest performance. Now how will these states help in that? If a core is put into sleep state it will reduce the overall temperature of the processor and hence other cores can perform better. Now the same can be synchronized with other cores, so that the processor can boost as many cores it can by timely putting other cores to sleep, and thus get an overall performance boost. Concluding, the C and P state can be customized in some EC2 instances like the c4.8xlarge instance and thus you can customize the processor according to your workload.

18. What kind of network performance parameters can you expect when you launch instances in cluster placement group?

The network performance depends on the instance type and network performance specification, if launched in a placement group you can expect up to

- 10 Gaps in a single-flow,
- 20 Gaps in multiflow i.e. full duplex
- Network traffic outside the placement group will be limited to 5 Gaps (full duplex).

19. To deploy a 4 node cluster of Hadoop in AWS which instance type can be used?

First let's understand what actually happens in a Hadoop cluster, the Hadoop cluster follows a master slave concept. The master machine processes all the data, slave machines store the data and act as data nodes. Since all the storage happens at the slave, a higher capacity hard disk would be recommended and since master does all the processing, a higher RAM and a much better CPU is required. Therefore, you can select the configuration of your machine depending on your workload. For e.g. – In this case c4.8xlarge will be preferred for master machine whereas for slave machine we can select i2. large instance. If you don't want to deal with configuring your instance and installing Hadoop cluster manually, you can straight away launch an Amazon EMR (Elastic Map Reduce) instance which automatically configures the servers for you. You dump your data to be processed in S3, EMR picks it from there, processes it, and dumps it back into S3.

20. Where do you think an AMI fits, when you are designing an architecture for a solution?

AMIs (Amazon Machine Images) are like templates of virtual machines and an instance is derived from an AMI. AWS offers pre-baked AMIs which you can choose while you are launching an instance, some AMIs are not free, therefore can be bought from the AWS Marketplace. You can also choose to create your own custom AMI which would help you save space on AWS. For example, if you don't need a set of software on your installation, you can customize your AMI to do that. This makes it cost efficient, since you are removing the unwanted things.

21. How do you choose an Availability Zone?

Let's understand this through an example, consider there's a company which has user base in India as well as in the US. Let us see how we will choose the region for this use case:

Regions	• Mumbai/N Virginia
Instance Type (Reserved Instance)	• e.g. amazon ec2- m4.4xlarge 16(vCPU), 64 GB RAM
Pricing(1 Year)	• Mumbai - $691/monthly - $0.9 hourly • N Virginia - $480/monthly - $0.6 hourly
Latency	• From USA to India - Low • From India to USA - High

So, with reference to the above figure the regions to choose between are, Mumbai and North Virginia. Now let us first compare the pricing, you have hourly prices, which can be converted to your per month figure. Here North Virginia emerges as a winner. But, pricing cannot be the only parameter to consider. Performance should also be kept in mind hence, let's look at latency as well. Latency basically is the time that a server takes to respond to your requests i.e. the response time. North Virginia wins again! So concluding, North Virginia should be chosen for this use case.

22. Is one Elastic IP address enough for every instance that I have running?

Depends! Every instance comes with its own private and public address. The private address is associated exclusively with the instance and is returned to Amazon EC2 only when it is stopped or terminated. Similarly, the public address is associated exclusively with the instance until it is stopped or terminated. However, this can be replaced by the Elastic IP address, which stays with the instance as long as the user doesn't manually detach it. But what if you are hosting multiple websites on your EC2 server, in that case you may require more than one Elastic IP address.

23. What are the best practices for Security in Amazon EC2?

There are several best practices to secure Amazon EC2. A few of them are given below:

- Use AWS Identity and Access Management (IAM) to control access to your AWS resources.
- Restrict access by only allowing trusted hosts or networks to access ports on your instance.
- Review the rules in your security groups regularly, and ensure that you apply the principle of least
- Privilege – only open up permissions that you require.
- Disable password-based logins for instances launched from your AMI. Passwords can be found or cracked, and are a security risk.

24. Mention and explain the many types of Amazon EC2 instances.

The various instances available on Amazon EC2 General-purpose Instances:

- They are used to compute a wide range of tasks and aid in allocating processor, memory, and networking resources.
- Instances optimized for computing: These are suitable for compute-intensive workloads. They can handle batch processing workloads, high-performance web servers, machine learning inference, and a wide range of other tasks.
- Memory-optimized: They process and provide tasks that manage massive datasets in memory.
- Computing speed: It accelerates the execution of floating-point number calculations, data pattern matching, and graphics processing.
- Optimized Storage: They conduct operations on local storage that need sequential read and write access to big data sets.

25. What's the Amazon EC2 root device volume?

The image used to boot an EC2 instance is saved on the root device slice, which happens when an Amazon AMI launches a new EC2 case. This root device volume is supported by EBS or an instance store. In general, the lifetime of an EC2 instance does not affect the root device data stored on Amazon EBS.

26. What exactly do you mean by 'changing' in Amazon EC2?

Amazon EC2 now provides the option for customers to move from the current 'instance count-based constraints' to the new 'vCPU Based restrictions.' As a result, when launching a demand-driven mix of instance types, usage is assessed in terms of the number of vCPUs.

27. Your application is running on an EC2 instance. When your instance's CPU consumption reaches 80%, you must lower the load on it. What method do you employ to finish the task?

Setting up an auto scaling group to deploy new instances when an EC2 instance's CPU consumption exceeds 80% and distributing traffic among instances via the deployment of an application load balancer and the designation of EC2 instances as target instances can do this.

28. How do you recover/log in to an EC2 instance for which you have lost the key?

If you have lost your key, follow the procedures below to recover an EC2 instance:

- Step 1. Verify that the EC2Config service is operating.
- Step 2. Detach the instance's root volume.
- Step 3. Connect the volume to a temporary instance.
- Step 4. Change the configuration file
- Step 5. Restart the original instance.

29. What exactly is Amazon S3?

Explanation S3 stands for Simple Storage Service, and Amazon S3 is the most extensively used storehouse platform. S3 is an object storehouse service that can store and recoup any volume of data from any position. Despite its rigidity, it's basically measureless as well as cost-effective because it's on- a demand storehouse. Away from these advantages, it provides new situations of continuity and vacuity. Amazon S3 aids in data operation for cost reduction, access control, and compliance.

30. What Storage Classes are available in Amazon S3?

Explanation: The following Storage Classes are accessible using Amazon S3:

- Storage class Amazon S3 Glacier Instant Retrieval
- Amazon S3 Glacier Flexible Retrieval Storage Class (Formerly S3 Glacier)
- Glacier Deep Archive on Amazon S3 (S3 Glacier Deep Archive)
- Storage class S3 Outposts
- Amazon S3 Standard-Occasional Access (S3 Standard-IA)
- Amazon S3 One Zone-Only Occasional Access (S3 One Zone-IA)
- Amazon S3 Basic (S3 Standard)
- Amazon S3 Storage with Reduced Redundancy
- Intelligent-Tiring on Amazon S3 (S3 Intelligent-Tiring)

31. How do you auto-delete old snapshots?

Explanation: Here's how to delete outdated photos automatically:

- Take snapshots of the EBS volumes on Amazon S3 in accordance with process and best practices.
- To manage all of the snapshots automatically, use AWS Ops Automat or.
- You may use this to generate, copy, and remove Amazon EBS snapshots.

32. Can S3 be used with EC2 instances, if yes, how?

Yes, it can be used for instances with root devices backed by local instance storage. By using Amazon S3, developers have access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. In order to execute systems in the Amazon EC2 environment, developers use the tools provided to load their Amazon Machine Images (AMIs) into Amazon S3 and to move them between Amazon S3 and Amazon EC2.Another use case could be for websites hosted on EC2 to load their static content from S3. For a detailed discussion on S3, please refer our S3 AWS blog.

33. How can you speed up data transfer in Snowball?

The data transfer can be increased in the following way:

- By performing multiple copy operations at one time i.e. if the workstation is powerful enough, you can initiate multiple cup commands each from different terminals, on the same Snowball device.
- Copying from multiple workstations to the same snowball.
- Transferring large files or by creating a batch of small file, this will reduce the encryption overhead.
- Eliminating unnecessary hops i.e. make a setup where the source machine(s) and the snowball are the only machines active on the switch being used, this can hugely improve performance.

34. What's the distinction between EBS and Instance Store?

EBS is a type of persistent storage that allows data to be recovered at a later time. When you save data to the EBS, it remains long after the EC2 instance has been terminated. Instance Store, on the other hand, is temporary storage that is physically tied to a host system. You cannot remove one instance and attach it to another using an Instance Store. Data in an Instance Store, unlike EBS, is lost if any instance is stopped or terminated.

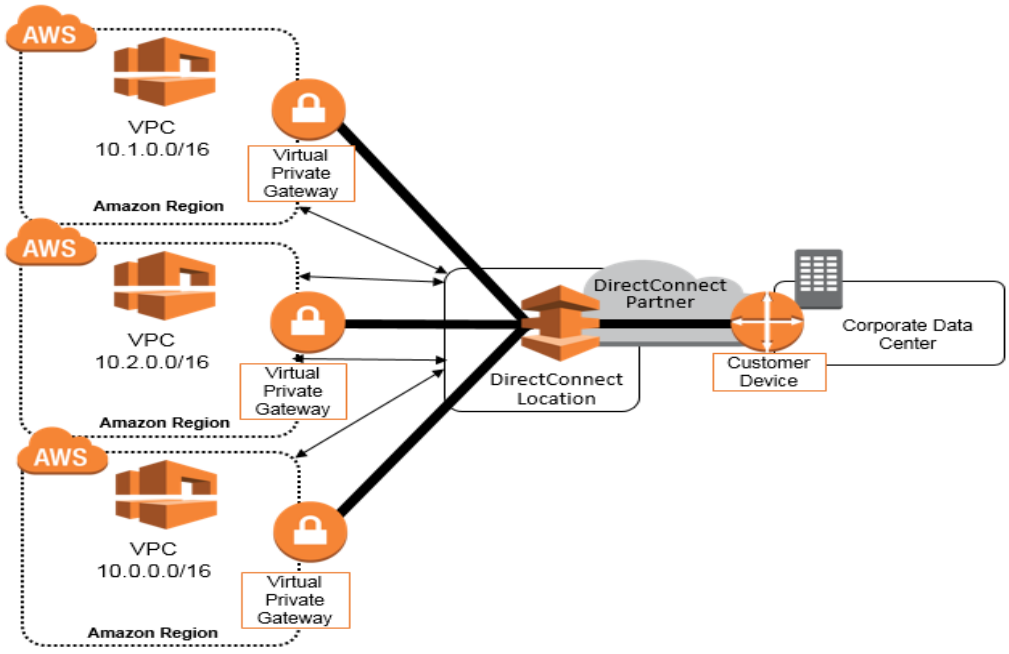
35. How can you use EBS to automate EC2 backup?

To automate EC2 backups using EBS, perform the following steps:

- Step 1. Get a list of instances and connect to AWS through API to get a list of Amazon EBS volumes that are associated to the instance locally.
- Step 2. List each volume's snapshots and give a retention time to each snapshot. Create a snapshot of each volume afterwards.
- Step 3. Remove any snapshots that are older than the retention term.

36. How do you connect multiple sites to a VPC?

If you have numerous VPN connections, you may use the AWS VPN Cloud Hub to encrypt communication across locations. Here's an illustration of how to link different sites to a VPC:



37. What are some of the security products and features offered in VPC?

Here are some security products and features:

- Security groups – serve as a firewall for EC2 instances, allowing you to regulate inbound and outgoing traffic at the instance level.
- Network access control lists – It operates as a subnet-level firewall, managing inbound and outgoing traffic.
- Flow logs – capture inbound and outgoing traffic from your VPC's network interfaces.

38. Can I connect my corporate datacentre to the Amazon Cloud?

Yes, you can do this by establishing a VPN (Virtual Private Network) connection between your company's network and your VPC (Virtual Private Cloud), this will allow you to interact with your EC2 instances as if they were within your existing network.

39. Is it possible to change the private IP addresses of an EC2 while it is running/stopped in a VPC?

Primary private IP address is attached with the instance throughout its lifetime and cannot be changed, however secondary private addresses can be unassigned, assigned or moved between interfaces or instances at any point.

40. If my AWS Direct Connect fails, will I lose my connectivity?

If a backup AWS Direct connect has been configured, in the event of a failure it will switch over to the second one. It is recommended to enable Bidirectional Forwarding Detection (BFD) when configuring your connections to ensure faster detection and failover. On the other hand, if you have configured a backup IPsec VPN connection instead, all VPC traffic will failover to the backup VPN connection automatically. Traffic to/from public resources such as Amazon S3 will be routed over the Internet. If you do not have a backup AWS Direct Connect link or a IPsec VPN link, then Amazon VPC traffic will be dropped in the event of a failure.

41. If I'm using Amazon Cloud Front, can I use Direct Connect to transfer objects from my own data centre?

Yes. Amazon Cloud Front supports custom origins including origins from outside of AWS. With AWS Direct Connect, you will be charged with the respective data transfer rates.

42. Given that the RDS instance replica is not promoted as the master instance, how would you handle a situation in which the relational database engine routinely collapses as traffic to your RDS instances increases?

For managing high amounts of traffic, as well as creating manual or automatic snapshots to restore data if the RDS instance fails, a bigger RDS instance type is necessary.

43. Which scaling method would you recommend for RDS, and why?

Vertical scaling and horizontal scaling are the two forms of scaling. Vertical scaling allows you to scale up your master database vertically with the click of a button. A database can only be scaled vertically, and the RDS may be resized in 18 different ways. Horizontal scaling, on the other hand, is beneficial for copies. These are read-only replicas that can only be performed with Amazon Aurora.

44. How is Amazon RDS, Dynamo DB and Redshift different?

- Amazon RDS is a database management service for relational databases, it manages patching, upgrading, backing up of data etc. of databases for you without your intervention. RDS is a Db management service for structured data only.
- Dynamo DB, on the other hand, is a NoSQL database service, NoSQL deals with unstructured data.
- Redshift, is an entirely different service, it is a data warehouse product and is used in data analysis.

45. Can I run more than one DB instance for Amazon RDS for free?

Yes. You can run more than one Single-AZ Micro database instance, that too for free! However, any use exceeding 750 instance hours, across all Amazon RDS Single-AZ Micro DB instances, across all eligible database engines and regions, will be billed at standard Amazon RDS prices. For example: if you run two Single-AZ Micro DB instances for 400 hours each in a single month, you will accumulate 800 instance hours of usage, of which 750 hours will be free. You will be billed for the remaining 50 hours at the standard Amazon RDS price. For a detailed discussion on this topic, please refer our RDS AWS blog.

46. Can I retrieve only a specific element of the data, if I have a nested JSON data in Dynamo DB?

Yes. When using the Get Item, BatchGetItem, Query or Scan APIs, you can define a Projection Expression to determine which attributes should be retrieved from the table. Those attributes can include scalars, sets, or elements of a JSON document.

47. What happens to my backups and DB Snapshots if I delete my DB Instance?

When you delete a DB instance, you have an option of creating a final DB snapshot, if you do that you can restore your database from that snapshot. RDS retains this user-created DB snapshot along with all other manually created DB snapshots after the instance is deleted, also automated backups are deleted and only manually created DB Snapshots are retained.

48. What is an Amazon RDS maintenance window? Will your database instance be available during maintenance?

You may plan DB instance updates, database engine version upgrades, and software patching using the RDS maintenance window. Only upgrades for security and durability are scheduled automatically. The maintenance window is set to 30 minutes by default, and the DB instance will remain active throughout these events, but with somewhat reduced performance.

49. How can I load my data to Amazon Redshift from different data sources like Amazon RDS, Amazon Dynamo DB and Amazon EC2?

You can load the data in the following two ways:

- You can use the COPY command to load data in parallel directly to Amazon Redshift from Amazon EMR, Amazon Dynamo DB, or any SSH-enabled host.
- AWS Data Pipeline provides a high performance, reliable, fault tolerant solution to load data from a variety of AWS data sources. You can use AWS Data Pipeline to specify the data source, desired data transformations, and then execute a pre-written import script to load your data into Amazon Redshift.

50. What is the difference between Scalability and Elasticity?

Scalability is the ability of a system to increase its hardware resources to handle the increase in demand. It can be done by increasing the hardware specifications or increasing the processing nodes. Elasticity is the ability of a system to handle increase in the workload by adding additional hardware resources when the demand increases (same as scaling) but also rolling back the scaled resources, when the resources are no longer needed. This is particularly helpful in Cloud environments, where a pay per use model is followed.

51. How can an existing instance be added to a new Auto Scaling group?

To add an existing instance to a new Auto Scaling group, follow these steps:

- Step1. Launch the EC2 console.
- Step2. Select your instance from the list of Instances.
- Step3. Navigate to Actions -> Instance Settings -> Join the Auto Scaling Group
- Step4. Choose a new Auto Scaling group.
- Step5. Join this group to the Instance.
- Step6. If necessary, modify the instance.
- Step7. Once completed, the instance may be successfully added to a new Auto Scaling group.

52. When should I use a Classic Load Balancer and when should I use an Application load balancer?

A Classic Load Balancer is ideal for simple load balancing of traffic across multiple EC2 instances, while an Application Load Balancer is ideal for micro services or container-based architectures where there is a need to route traffic to multiple services or load balance across multiple ports on the same EC2 instance.

53. What is Cloud trail, and how does it interact with Route 53?

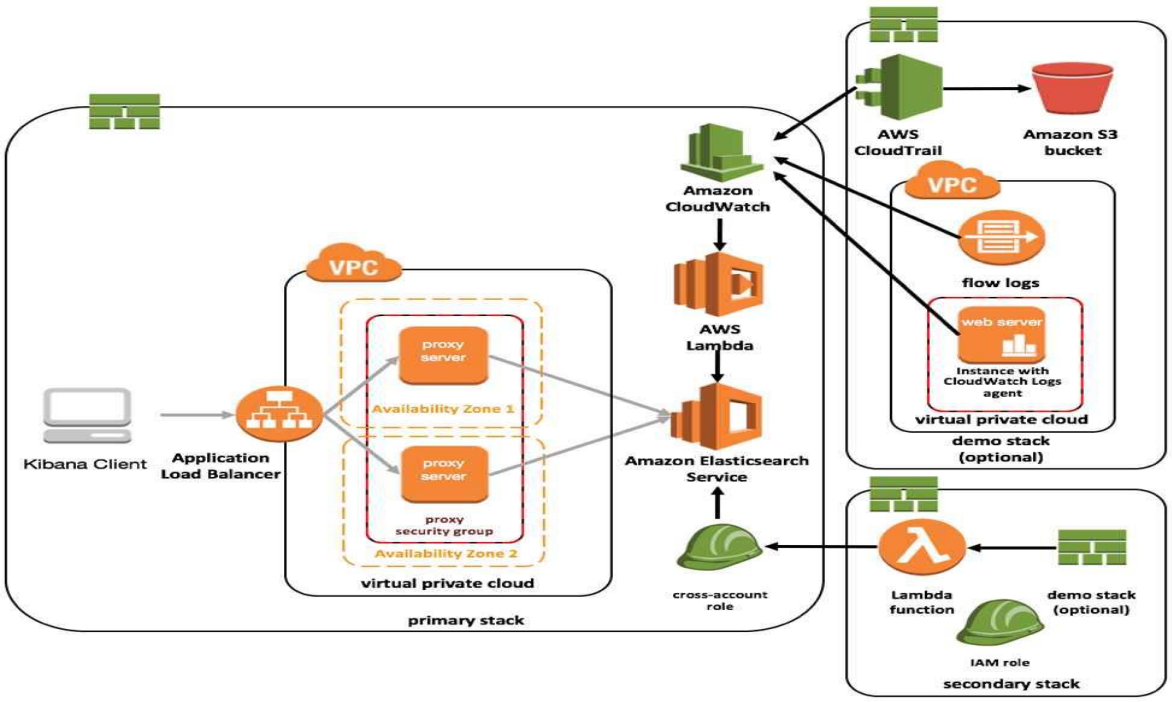
Cloud Trail is a service that logs every request made to the Amazon Route 53 API by an AWS account, including those made by IAM users. Cloud Trail stores these requests' log files to an Amazon S3 bucket. Cloud Trail collects data on all requests. Cloud Trail log files contain information that may be used to discover which requests were submitted to Amazon Route 53, the IP address from which the request was sent, who issued the request, when it was sent, and more.

54. How does AWS configuration interact with AWS Cloud Trail?

AWS Cloud Trail logs user API activity on your account and provides you with access to the data. Cloud Trail provides detailed information on API activities such as the caller's identity, the time of the call, request arguments, and response elements. AWS Confit, on the other hand, saves point-in-time configuration parameters for your AWS resources as Configuration Items (CIs). A CI may be used to determine what your AWS resource looks like at any given time. Using Cloud Trail, on the other hand, you can instantly determine who made an API request to alter the resource. Cloud Trail may also be used to determine if a security group was wrongly setup.

55. What services are available for implementing a centralised logging solution?

The most important services you may utilise are Amazon Cloud Watch Logs, which you can store in Amazon S3 and then display using Amazon Elastic Search. To transfer data from Amazon S3 to Amazon Elastic Search, you can utilise Amazon Kinesis Firehose.



56. How do I transfer my existing domain name registration to Amazon Route 53 without disrupting my existing web traffic?

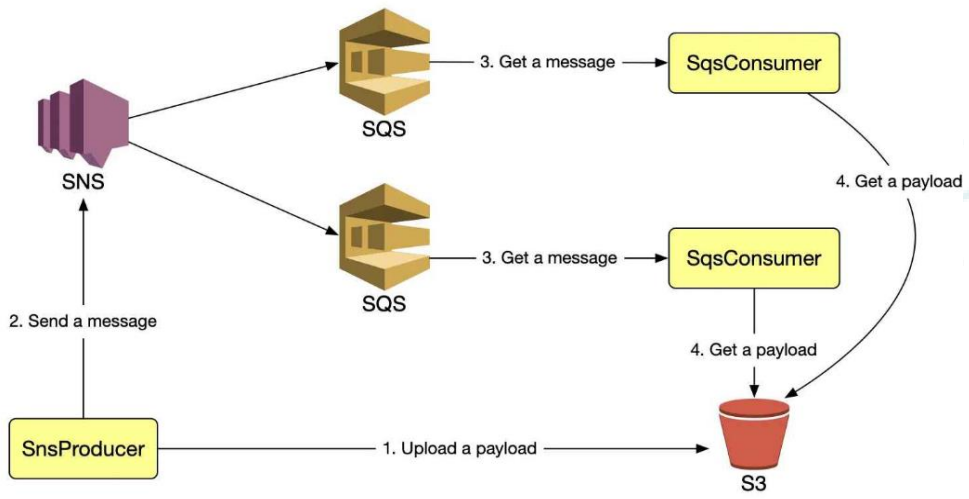
You will need to get a list of the DNS record data for your domain name first, it is generally available in the form of a "zone file" that you can get from your existing DNS provider. Once you receive the DNS record data, you can use Route 53's Management Console or simple web-services interface to create a hosted zone that will store your DNS records for your domain name and follow its transfer process. It also includes steps such as updating the name servers for your domain name to the ones associated with your hosted zone. For completing the process, you have to contact the registrar with whom you registered your domain name and follow the transfer process. As soon as your registrar propagates the new name server delegations, your DNS queries will start to get answered.

57. What happens if Cloud Trail is turned on for my account but my Amazon S3 bucket is not configured with the correct policy?

Cloud Trail files are delivered according to S3 bucket policies. If the bucket is not configured or is misconfigured, Cloud Trail might not be able to deliver the log files.

58. WHAT EXACTLY ARE SNS AND SQS?

Amazon Simple Notification Service (SNS) is a web service that manages user notifications sent from any cloud platform. From any cloud platform, manage and distribute messages or notifications to users and consumers. Amazon Simple Queue Service (SQS) administers the queue service, which allows users to move data whether it is running or active.



59. How is AWS Elastic Beanstalk different than AWS OpsWorks?

AWS Elastic Beanstalk is an application management platform while OpsWorks is a configuration management platform. Beanstalk is an easy to use service which is used for deploying and scaling web applications developed with Java, .Net, PHP, Node.js, Python, Ruby, Go and Docker. Customers upload their code and Elastic Beanstalk automatically handles the deployment. The application will be ready to use without any infrastructure or resource configuration. In contrast, AWS Opsworks is an integrated configuration management platform for IT administrators or DevOps engineers who want a high degree of customization and control over operations.

60. What happens if my application stops responding to requests in beanstalk?

AWS Beanstalk applications have a system in place for avoiding failures in the underlying infrastructure. If an Amazon EC2 instance fails for any reason, Beanstalk will use Auto Scaling to automatically launch a new instance. Beanstalk can also detect if your application is not responding on the custom link, even though the infrastructure appears healthy, it will be logged as an environmental event (e.g. a bad version was deployed) so you can take an appropriate action.

61. What happens if my application in Beanstalk stops responding to requests?

AWS Beanstalk apps provide a built-in method for preventing infrastructure problems. If an Amazon EC2 instance dies for whatever reason, Beanstalk will instantly start a new instance using Auto Scaling. Beanstalk can detect if your application is not responding to the custom link.

62. How is AWS OpsWorks different than AWS Cloud Formation?

OpsWorks and Cloud Formation both support application modelling, deployment, configuration, management and related activities. Both support a wide variety of architectural patterns, from simple web applications to highly complex applications. AWS OpsWorks and AWS Cloud Formation differ in abstraction level and areas of focus. AWS Cloud Formation is a building block service which enables customer to manage almost any AWS resource via JSON-based domain specific language. It provides foundational capabilities for the full breadth of AWS, without prescribing a particular model for development and operations. Customers define templates and use them to provision and manage AWS resources, operating systems and application code. In contrast, AWS OpsWorks is a higher level service that focuses on providing highly productive and reliable DevOps experiences for IT administrators and ops-minded developers. To do this, AWS OpsWorks employs a configuration management model based on concepts such as stacks and layers, and provides integrated experiences for key activities like deployment, monitoring, auto-scaling, and automation. Compared to AWS Cloud Formation, AWS OpsWorks supports a narrower range of application-oriented AWS resource types including Amazon EC2 instances, Amazon EBS volumes, Elastic IPs, and Amazon Cloud Watch metrics.

63. What happens when one of the resources in a stack cannot be created successfully in AWS OpsWorks?

When an event like this occurs, the "automatic rollback on error" feature is enabled, which causes all the AWS resources which were created successfully till the point where the error occurred to be deleted. This is helpful since it does not leave behind any erroneous data, it ensures the fact that stacks are either created fully or not created at all. It is useful in events where you may accidentally exceed your limit of the no. of Elastic IP addresses or maybe you may not have access to an EC2 AMI that you are trying to run etc.

64. What automation tools can you use to spin up servers?

Any of the following tools can be used:

- Roll-your-own scripts, and use the AWS API tools. Such scripts could be written in bash, Perl or other language of your choice.
- Use a configuration management and provisioning tool like puppet or its successor Opcode Chef. You can also use a tool like Scalar.
- Use a managed solution such as Right scale.

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