About AWS

Why AWS?

1. AWS global cloud computing market share is 31%
2. Server capacity is very high compare to other competitors. That is 6 times higher than others
3. It has flexible pricing.

What is AWS (Amazon Web Services)?

1. AWS is a cloud service from Amazon.
2. AWS is a secure cloud services platform, offering compute power, Database storage, content delivery and other functionality to help businesses scale and grow.

-: Domains in AWS:-

AWS services are divided into Domains they are, each domain have some services

1	Compute	EC2 (Elastic Compute Cloud), Lambda, Elastic Beanstalk, Amazon LightSail
2	Storage	S3 (Simple Storage Service), Elastic Block Store, Glacier, Snowball
3	Database	Amazon Aurora, Amazon RDS, Amazon DynamoDB, RedShift
4	Migration	AWS database Migration Service, AWS SnowBall
5	Network and Content Delivery	Amazon Route 53, AWS CloudFront
6	Management Tools	CloudWatch, CloudFomation, AWS CloudTrail, Ops Work, Trusted Advisor
7	Security & Identity Compliance	AWS IAM, AWS KMS, AWS Shield
8	Messaging (Application Services)	Amazon SQS, Amazon SNS, Amazon SES, Amazon Pinpoint

What is the differences b/w AWS and File system (S3)?

1. AWS can't include ur executable files. Ex: Image files, so store in S3.
2. S3 is a object based file system in which u have buckets in the objects.

What is content delivery?

How do you sign up on AWS?

1. **Step 1:** Go to aws.amazon.com and click on **Create an AWS Account**.
2. **Step 2:** Click on 'I am a new customer' option, enter your email address and at last click on Sign In.
3. **Step 3:** On the next page, fill-in all the relevant information (Login Credentials) and click on Create Account.
4. **Step 4:** On the next page, fill in your personal details and click on Create Account.
5. **Step 5:** You would be asked to enter your credit or debit card details on this page, once you do that, proceed by clicking on continue.
6. **Step 6:** Next Step would be to verify your phone number, enter the details and click on Call me now.
7. **Step 7:** You will get a call from AWS and will be asked to enter a pin, next up you will be selecting your plan for AWS, but before that click on Next.

8. **Step 8:** You shall select a plan, which suits you, I will be going with a basic plan since this account would be for personal use
9. **Step 9:** Congrats! Your AWS Account is ready to be used! Go sign in and play!

Explain about Compute Domain?
It is used to process data on the cloud by making use of powerful processors which serve multiple instances at a time.
AWS Compute Services are EC2, LAMBDA, Elastic Beanstalk, Elastic Load Balancer, and Auto Scaling

EC2 (Elastic Compute Cloud):-
1. EC2 is a most important service in the hole of the compute Domain.
2. LAMBDA and Elastic Beanstalk are the advanced version of the EC2.
3. EC2 is a raw server.
4. It is a web service which provides re-sizable compute capacity in the cloud.
5. It has resizable compute capability in the cloud, which can be customized according to your need.

LAMBDA:-
1. It is used to execute background tasks without worrying about the underlying architecture, you just upload the code and it runs.
2. It is not for hosting an application.

Elastic Beanstalk:-
1. It is used to you quickly deploy and manage applications in AWS without worrying about the underlying infrastructure.
2. Deploy your application without worrying about the underlying hardware.

When would u use EC2 and Elastic Beanstalk?
Elastic Beanstalk has limited no.of environments.

Elastic Load Balancer (ELB):-
1. It is used to distribute the workload on the other deployed instances in case of an instance failure.

Auto Scaling:-
1. It is used to Scale up and scale down automatically as and when required..
2. Elastic Load Balancer and Auto Scaling using together.

Security-Group: it is used to control the inbound and outbound of the server traffic.

Explain about STORAGE domain?
The storage as the name suggests, is used to store data in the cloud, this data can be stored anywhere but content delivery on the other hand is used to cache data nearer to the user so as to provide low latency.
Storage domain has S3, EFS, Glacier, and Storage Gateway services.

S3:- (Simple storage Service):-

1. S3 stands for simple storage service; it is used for storing data in the form of objects in the AWS Cloud.
2. In this objects are stored in to a path (root folder) that path is called BUCKET. Files are called objects. Here objects are stored into a bucket.
3. S3 is a file system. It is an object oriented file system.


Cloud Front:-
1. Cloud Front is a content delivery network; It is used to cache data to an edge location which reduces latency.
2. Server near to your location that server is called edge location.

Elastic Block Storage (EBS):-
1. Amazon EBS is a storage service wherein each block of storage acts like a separate hard drive.
2. It is basically like a Hard Drive for EC2.
3. EBS is backup of EC2. EBS is used with EC2 not vice versa, that is EC2 connect to multiple EBS volumes but Multiple EBS volumes can't connect to EC2.
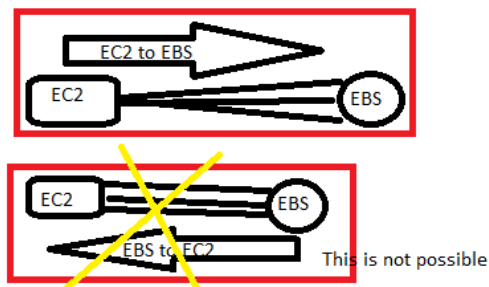
Glacier:-
1. Glacier is an archiving service offered by Amazon, which offers low cost data archiving.
2. It is Backup data from your S3.They use Magnetic tapes. we can retrieve the backup data from Glacier.

Snowball (Import/Export):-
1. It offers physical transfer of data between user's location and AWS data centers, the device which is used to transfer the data is called Snowball.

Storage Gateway:-
1. It is used to provide seamless integration with data security features between your on premise software appliance and AWS Cloud.
2. It is used b/w Data center and Amazon Cloud. It is keep on taking snapshot of Datacenter data and store into Cloud.

3. If any DB is corrupted , storage gateway took snap shot of DB and restore the data into DB using snap shots.

Explain about DATABASE Domain?
The database domain is used to provide reliable relational and non-relational database instances managed by AWS.
Database domain has RDS, DynamoDB, Aurora, RedShift and ElastiCache services.

RDS (Relational Database Management Service):-
1. Amazon RDS is a managed relational database service which does routine database tasks in 6 familiar databases like Amazon Aurora, MySQL, MariaDB, Oracle, Microsoft SQL Server, and PostgreSQL.
2. RDS is not a DB, it is DB management services. It manages relational Databases. ex:- Sql Server, My sql, Oracle... etc.
3. It updates DB engines automatically and update patches, securities automatically, update everything automatically in RDS.

Aurora:-
1. It is a relational database engine that combines the speed and reliability of high-end commercial databases and the cost effectiveness and simplicity of open-source databases.
2. It is a DB which is developed by Amazon itself. It is included RDS.

Difference between RDS and Amazon Aurora.?
Amazon Aurora is based on My Sql, but better performance than My Sql. Auroa is 5 times faster than My Sql. There is no code change in My Sql when you want to use Aurora.

Dynamo DB:-
1. It is a fully managed No-SQL database service. It is known for extremely low latencies and scalability.
2. Here everything is updated automatically there is no manual interaction.
3. It is a Non-Relational DB Management service. We don't have to specify the storage, it is automatically increased.

Difference b/w RDS and Dynamo DB.?
RDS is Relation database service and DynamoDb is No Relational database service. We are storing un-structure data in Dynamo DB.

ElastiCache:-
1. It is a web and caching service that makes it easy to set up, manage and scale a distributed cache-in environment in the cloud.
2. Frequently searched results from the site that result is stored in ElastiCache for feature to get the result. That means it is reduce the load on the DB.

Redshift:-
1. RedShift is a Data Warehouse service.
2. It get data form RDS and DynamoDB and it is a analyze tool and it used to analyze the data.
3. Amazon Redshift is a fully managed petabyte-scale data warehouse service in the cloud.

Explain about NETWORKING Domain?
It includes services which provide a variety of networking features such as security, faster access etc.
Networking Domain has VPC, Cloud Front, Route 53, API Gateway, Direct Connect services.

VPC: - Virtual Network where u launch your AWS resources.
1. VPC is virtual Private Cloud. It provides security. It makes AWS network communication easy and it also connect your private data centers in AWS infrastructure.
2. Amazon VPC lets you launch AWS resources in a virtual network that you define. It closely resembles a traditional network that you'd operate in your data center.

Route 53:-
1. Route 53 is a highly scalable and highly available Domain Name System by Amazon AWS. The name is in reference to the TCP and UDP's port 53 where DNS requests are addressed.
2. Route 53 is a Domain name System. Which convert the URL into IP Address, IP Address of the server on which you website hosted?

Direct Connect:-
1. It helps you establish a private connection between your premises and AWS, therefore giving better network performance and throughput than an Internet based connection.
2. It is replaced to Internet connection. Direct connect is a leased line using which you can directly connect to the AWS Infrastructure.

Explain about AWS Management Domain?
It includes services which can be used to manage and monitor your AWS instances
This domain has Cloud Watch, Cloud Formation, Cloud Trail and Ops Work and Trusted Advisor services.

Cloud Watch:-
1. It is a monitoring tool by AWS which is used to keep a track on the AWS resources and the applications you run on Amazon AWS.
2. Like instance usage reached 90% you will get notifications.

Cloud Formation:-
1. It is a service which helps you setup and model your Amazon AWS resources so that you can spend less time managing these resources and more time focusing on the development.
2. This service is used to templatize the AWS infrastructure. It is used build the same infrastructure in different environment.
3. Take the snapshot of that infrastructure, templatize that and use it other environment like test environment.

Cloud Trail:-
1. AWS Cloud Trail is a logging service which records the API calls to your Amazon AWS account and delivers them to you.

How logs are stored?
Cloud Trail will generate the logs and will store in S3 which File system is provided by AWS.

AWS Command Line Interface Tool (CLI):-
1. It is an all in one tool to manage all your AWS services, by downloading and configuring only one tool you can manage all the AWS services through the command line.
2. CLI is a command line Interface tool which is a replacement to the GUI of AWS.

Ops Works:-
1. It is a configuration management tool that helps configure and operate applications of all size and shapes using Chef.
2. It is an AWS configuration management tool. It consists of 2 parts they are STACK and LAYERS.
3. Layers are the different AWS services and they are combined together. This combined service is called Stack.

Where we would need Configuration Management Tool?

Trusted Advisor:-
1. Trusted Advisor is a customized cloud monitoring tool, that analyzes your AWS environment and gives insights on the expense, performance improvement, security gaps and reliability.
2. Trusted Advisor is a personal assistant to you in the AWS Infrastructure.
3. It advices you like on monthly expenses.

Explain about Security domain?
It includes services for user authentication or limiting access to a certain set of audience on your AWS resources.
This domain has IAM, Key Management Services and AWS Shield services.

Identity and Access Management (IAM):-
1. It is an AWS service that helps you control access to your AWS resources for your users.
2. IAM is Identification and Authentication Management tool.

KMS (Key Management Service):-
1. It is a managed service that helps you create and control encryption keys which is used to encrypt your data, and uses Hardware Security Modules to protect the security of your keys.
2. Create and manage encryption keys to encrypt your data. It has public key and private key.

Explain about Application domain?
It includes simple services like notifications, emailing and queuing.
This domain has SQS, and SNS services.

Simple Queue Service (SQS):-
1. It is a fast, reliable and scalable message queuing service; it can be used to transmit any volume of data at any level of throughput, without losing any messages or without the use of any other service.
2. Queuing service which acts as a buffer. It fallows FIFO order.

Simple Notification Service (SNS):-
1. It is a web service offered by AWS that manages the delivery of messages to subscribed endpoints or clients.
2. Notification service based on triggering. It is send notification to the related AWS Service.

Explain about Customer Engagement domain?
This domain has SES, Pinpoint and amazons connect services.

Simple Email Service (SES):-
1. It is a cost effective emailing service which is built on the scalable and reliable infrastructure of Amazon.com
2. It is a bulk emailing service. Send the bulk emails to n no.of users.

Explain about AWS Pricing?
AWS has these modules, they are
1. Pay as you Go: - AWS offers, pay as you go model that is only pay what you use.
2. Pay less by using more: - It's true. AWS bills you for the hour. The more AWS resources you use, the less the hourly rates become.
3. Save when you reserve:-In service like AWS EC2 and RDS, you have an option of reserving your instances for a specific time frame. You are charged less significantly up to 75% less.

What are the top 10 reasons To Learn AWS?
1. Pricing
2. Flexibility & Scalability
3. Global Architecture
4. PaaS Offerings
5. Consistency & Reliability
6. Scheduling
7. Customization
8. Recovery
9. Security
10. API