

AWS

Introduction to Cloud Computing

- A Short history
- Client Server Computing Concepts
- Challenges with Distributed Computing
- Introduction to Cloud Computing
- Why Cloud Computing?
- Benefits of Cloud Computing Cloud Computing Deployment Models
- Private Cloud
- Public Cloud
- Hybrid Cloud Cloud Delivery Models
- Software as a Service (SaaS)
- Platform as a Service(PaaS)
- Infrastructure as a Service (IaaS) Introduction to AWS:
- Subscription to AWS
- AWS Free tier – Limits and usage
- Introduction to the AWS Management Console



Elastic Compute Cloud (EC2) Essentials

- Regions and Availability Zones – How to choose the right one
- Amazon Machine Images (AMI)
- Working with AMIs
- Choosing the right AMI
- Deciding what goes into an AMI
- Finding the right AMI
- Pricing model in EC2 instances
- Deciding between On-demand instances, Spot instances, Reserved instances, Scheduled Instances, Dedicated Hosts
- EC2 Reserved Instance
- AWS Marketplace

EC2 Instances

- Building an EC2 Windows instance & Linux Instance
- Setting up security
- Security via Key Pairs
- Working with the Security Group
- Different IPs assigned to an EC2 instance
- Assigning Elastic IPs
- Logging into the instance
- Creating your own AMI/Registering your own AMI
- What is a placement group and advantages of placement groups
- EC2 instance protection
- User Data Management

Elastic Block Store (EBS)

- Creating and deleting volumes
- Attaching and detaching volumes
- Mounting and Unmounting the attached volume
- Creating snapshots & Usage of snapshots
- Increasing the volume size
- Copying of volumes between regions

Elastic Load Balancer (ELB)

- Creating a load balancer
- Internal Load balancer
- External Load balancer
- Load balancing protocols
- Security groups for the load balancer
- Configure health check for the load balancer
- Adding multiple instances to the load balancer
- Cross-zone load balancing
- Connection Draining
- Stickiness

Auto Scaling:

- What is auto scaling?
- Auto scaling components
- Benefits of auto scaling
- Creation of launch configuration
- Different types of auto scaling
- Configuration of auto scaling policies based on the Load on EC2
- Advantages of using Auto scaling with Elastic Load balancer (ELB).

Simple Storage Service (S3)

- Creating and deleting buckets
- Adding objects to buckets
- Getting objects
- Deleting objects
- Creation of a static website using S3 storage
- Uses of S3 storage
- Working with Permissions of
- Life cycle management in S3
- Versioning and usage of versioning
- S3 Bucket Policies
- Accessing S3 storage via Tools

Glacier Storage:

- Creating Vaults
- Accessing the Glacier vault using tools
- Using Glacier for backups
- Retrieval period
- Different types of retrieval Identity and Access management (IAM)
- Creation of user accounts in AWS
- Setting up multi factor Authentication (MFA)

- Roles in IAM
- Groups in IAM
- Delegation of permissions for users
- Creation of custom policies for delegation
- Account settings
- Credential Report
- Connecting via CLI/Powershell
- Connecting via IDE's

Virtual Private Cloud (VPC)

- Overview of VPC
- Different types of networks that can be setup in AWS
- Creating a new VPC
- ACL & Security Groups
- Creation of Internet Gateway
- Connecting to instances in the gateway

Cloud watch

- Debugging cloud related issues
- Monitoring the AWS Service Health Dashboard
- Monitoring with Cloud watch
- Getting statistics for a specific EC2 instance
- Getting aggregated statistics
- Metrics for other AWS Services and related namespaces
- Setting up notifications

Simple Notification Services (SNS)

- Creation of a topic
- Subscribing to topic via Email
- Setting notification for EC2 instance changes

Simple Queue Service (SQS)

- Types of SQS
- Creation of a queue
- Sending messages to the queue
- Usage of SQS
- Parameters in SQS
- Retrieving messages from SQS

Route 53:

- Route 53 Overview
- Setup internal DNS Namespace
- Creating different records in Route 53
- Traffic management policies overview

Elastic Beanstalk

- Creation of Web apps using Elastic Beanstalk
- Environment overview
- Migrating content in different
- Modifying the properties of the
- Roll out policies

Relational Database Service (RDS)

- Overview of RDS
- Configuring the Database Engine
- Creating your Database
- Setting up automatic backups
- Authorizing access to the DB via DB Security Groups
- Snapshots and usage of snapshots Cloud Formation:
- Building AWS infrastructure as a code
- Utilization of Sample templates
- Introduction to JSON AWS- Analytics
- Kinesis overview
- Data stream
- Core services

API gateway

- Staging
- Resources
- Methods
- Invoke URLs AWS Lambda
- Console overview
- Creating a lambda functions
- Triggers
- Integration of Lambda functions with API Migration
- Migration methods
- Data migration
- Database migration
- Storage migration
- VM

Overview of other AWS Products (needs to discuss upfront)