

Amazon Web Services (AWS) Solution Architect.

Introduction to Cloud Computing

- A Short history
- Client Server Computing Concepts
- Challenges with Distributed Computing
- Introduction to Cloud Computing
- Introduction to AWS Devops
- Why Cloud Computing?
- Benefits of Cloud Computing

Cloud Computing Deployment Models

- Private Cloud
- Public Cloud
- Hybrid Cloud

Cloud Delivery/Service Models

- Software as a Service(SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a service (IaaS)

Linux basics

- Linux basic Commands
- Linux basic Administration

Amazon Web Services (AWS)

- Introduction to AWS services
- Amazon Elastic Compute Cloud (EC2)
- Amazon Simple Storage Service (S3)
- Elastic Block Storage(EBS)
- Elastic Load Balancing (ELB)
- Amazon Relational Database Service (RDS)
- Amazon Dynamo DB
- Auto Scaling
- Amazon ElastiCache
- Identity and Access Management (IAM)
- Virtual Private Cloud (VPC)
- Cloud Formation
- Simple Email Services (SES)
- Simple Queue Services(SQS)

- Simple Notification Services(SNS)
- Server less computing (Lambda)
- Import/Export (Snowball)
- Code Commit
- Cloud Trail
- Elastic Beanstack
- Cloud Front
- Route-53
- Glacier
- Key Management Service (KMS)

Introduction to AWS

- Subscription to AWS
- Introduction to the AWS Management Console

Elastic Compute Cloud (EC2) Essentials

- Regions and Availability Zones-Choose the right Region
- 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
- On demand,Reserved,Scheduled,Spot instances,Dedicated Hosts
- EC2 Reserved Instance Marketplace
- Importing and Exporting instances

EC2 Instances

- Building an EC2 Windows instance & Linux Instance
- Boot strapping with user-data
- Setting up security
- Security with Key Pairs
- Working with the Security Group
- Different IPs assigned to an EC@ instance
- Assigning Elastic IPs
- Login/Access to the instance
- Creating your own custom AMI,Registering &Granting access to the AMI
- Placement groups
- EC2 instance protection
- Instance Roles
- Importing and Exporting instances

- Elastic Network interfaces (ENIs)
- Resources and Tags
- Accessing Meta-Data & use cases.

Elastic Block Store (EBS)

- EBS volume Types
- EBS Encryption
- EBS Performance
- Instance Store Volumes
- Instance Store Available on instance Types
- Instance Store Usage Scenarios
- Adding instance Store Volumes to an AMI
- Optimizing Disk Performance
- Creating and deleting volumes
- Attaching and detaching volumes
- Mounting and Unmounting the attached volume
- Increasing the volume size
- Creating snapshots
- Creating Volumes & AMI From Snapshots
- Cross-Region snapshot copy & use cases.

Elastic Load Balancer (ELB)

- What Is Elastic Load Balancing
- How Elastic Load Balancing Works
- Classic & App ELB types
- Creating load balancer
- Internal & External Load balancers
- Load balancing protocols
- Listener Configurations
- SSL negotiation Configurations
- Attach & Detach Subnets
- Security groups for the load balancer
- Configure health check for the load balancer
- Adding multiple instance to the load balancer
- Custom Domain Names
- Cross-Zone Load Balancing
- DNS Failover
- Sticky Sessions
- Monitoring and Logging

- DNS Failover
- Sticky Sessions
- Monitoring and Logging
- Cross-Zone and balancing
- Connection Draining
- ELB traffic logging

Auto Scaling

- What is auto Scaling
- Auto Scaling components
- Benefits of Auto Scaling
- Creating launch configuration, and its prerequisites
- Creating Auto Scaling Groups (ASG)
- Attach & Detach EC2 Instance in ASG
- Configuration of Auto Scaling policies based on the load on EC2 instances
- Using Auto Scaling with Elastic load balancer (ELB)
- Temporarily Removing Instances
- Suspend and resume Process
- Shut Down Your Auto Scaling Process
- Monitoring Your Auto Scaling Instances
- Health checks
- Getting Notifications when your Auto Scaling Group Changes

Simple Storage Service (S3)

- Creating and Deleting Buckets
- Adding Objects to Buckets
- Getting Objects
- Deleting Objects
- Notifications
- Uses of s3 storage
- Working with Permissions of S3, Access Control Bucket policy
- S3 Data encryption types
- Enable Versioning, logging for S3 objects
- Lifecycle rules in s3
- Accessing S3 storage with tools
- Hosting a static website
- Cross-Origin Resource Sharing
- Cross-region replication
- Audit logging with AWS cloud trail

Glacier Storage

- Creating Vaults
- working with Archives
- Accessing the Glacier vault using tools
- Using Glacier for backups
- job operations
- Data Retrieval Policy Operations

Identify and Access management (IAM)

- Creation of user accounts
- Setting up multi factor Authentication(MFA)
- Roles in IAM
- Groups in IAM
- Delegation of Permissions for users
- Creation of custom policies for delegation
- using Identify providers
- Cross-Account Access
- Account settings
- credential Report
- Encryption -key Management Services(KMS)

Virtual private Cloud (VPC)

- Different types of networks that can be setups in AWS
- Creating a Custom VPC
- NACLs & Security Groups
- Creation of Internet Gateway(IGW)
- Connecting to instances in the gateway
- Subnets, Route Tables & Association
- NAT instances & NAT-Gateways
- DHCP Options Sets & DNS
- VPC Peering
- VPN overview & components

Route 53

- Configuring Amazon Route 53 as Your DNS Services
- Registering a Domain Name and Configuring Amazon Route 53 as the DNS service
- Migrating DNS service for an Existing Domain to Amazon route 53
- Creating a subdomain That Uses Amazon 53 without Migrating the Parent Domain
- Working with public Hosted Zones
- Working with private Hosted Zones
- Working with Resources Record sets

- Health Checks and DNS Failover
- Creating, updating, and Deleting Health Checks
- Transferring a Domain from a Different AWS Account or Registrar
- Using IAM to control Access to Amazon Route 53 Resources.

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)

- Creation of a queue
- Sending messages to the queue
- Sending SNS to SQS
- Retrieving Messages from SQS

Simple Email Services (SES)

- Setting up Email domain
- Limits of SES
- Test Email setup

Elastic Beanstalk

- Creation of web-App using Elastic Beanstalk
- Building a sample application using Beanstalk
- Modifying the Properties of the deployment

Relational Database Services (RDS)

- DB instances
- Selecting the DB-Engine
- Configuring the Database server
- Creating Your Database
- Setting up automatic backups, snapshots & restores
- Authorizing access to the DB with RDS Security Groups

- DB Instance Replication
- Security: Using IAM to Manage Access to Amazon RDS Resources
- RDS Limits
- Managing MySQL Database server
- DB instance Life Cycle: Renaming a DB Instance
- Deleting or Rebooting a DB instance
- Working with Storage Types
- Upgrading a DB instance
- Working with Option Groups & DB Parameter Groups
- Working with Reserved DB instances
- Monitoring
- Database Log Files

Cloud Front

- How CloudFront Delivers Content
- Working with Distributions
- Working with web Distributions
- Working with Objects
- Request and Response Behavior
- Serving Private Content through CloudFront
- Using an HTTPS Connection to Access Your Objects.
- Using IAM to control Access to cloud Front Resources
- Monitoring Cloud Front Activity Using Cloud Watch

ElastiCache

- Elastic Cache Terminology and Concepts
- Backup and Restore
- Clusters Explanation (Memcached and Redis)
- CloudWatch Metrics with ElastiCache
- Managing ElastiCache
- Managing Replication Groups
- DNS Names and Underlying IP

Cloud Formation

- Building AWS infrastructure as a code
- Utilization of Sample templates
- Introduction to JSO

Use Cases

- Cloud Architecture Best Practices
- Cost Optimization
- Security Considerations
- Cost Calculation

- AWS CLI& use case to check instance, ELB, EBS states
- Building a simple Web application in the AWS cloud
- Certification Track & guidance.

Terraform

- Introduction of Terraform
- Understand the syntax to developing Terraform templates
- Integrates AWS with Terraform
- Running Terraform templates
- Variables with Terraform
- Expressions and choices in Terraform
- Live Project with Terraform

ECS (Elastic Container Services)

- Introduction to Docker
- Introduction to Docker Containers
- Working with Docker Cluster
- Create Docker Cluster using ECS.