

AWS Solution Architect Syllabus

INTRODUCTION TO CLOUD COMPUTING

- What is Cloud?
- Cloud Service Models:
 - IAAS (Infrastructure As A Service)
 - PAAS (Platform As A Service)
 - SAAS (Software As A Service)
- Cloud Deployment Models:
 - Private Cloud
 - Public Cloud
 - Hybrid Cloud

INTRODUCTION TO AMAZON WEB SERVICES

- What is AWS?
- AWS Global Infrastructure & Components
- Regions, Availability Zones and Endpoints
- How to Subscribe for AWS account
- What are the AWS Free Tier Limits and Usage?
- Pillars of the AWS Well-Architected Framework
- AWS Certification paths
- Navigate AWS Console
- List of services given by AWS

AMAZON EC2

- What is EC2?
- Instance Types
- Instance lifecycle
- Security groups
- IP Addressing
- Assigning Elastic IP
- Security from Key pairs
- Pricing Model in EC2 Instances
- Understanding Reserved Instances
- Building Linux and Windows Instances
- Connecting Instances from Different Platforms
- Network Interfaces
- EIP
- EC2 Troubleshooting Scenarios

AMAZON MACHINE IMAGES (AMI)

- What is AMI?
- Managing AMI's
- Working with Linux and Windows AMI's
- Shared and Paid AMI's
- Web Server Configuration
- Creating own AMI's

- Making an AMI Public
- AMI Market place
- What is Virtualization?

AWS COMMAND LINE (AWS CLI)

- Introduction to AWS CLI?
- Useful features in AWS CLI
- Prerequisites for CLI
- Installing AWS CLI on Windows and Linux
- Generating Access Keys and Secret Key
- Configuring AWS CLI
- Running Commands

IDENTITY ACCESS MANAGEMENT (IAM)

- IAM initial setup and configuration
- What is a policy?
- Policies creation
- IAM Roles
- IAM Groups and Policies
- User and Group settings
- What is MFA
- How to configure MFA
- Cross account access

CLOUD TRAIL

- What is cloud Trail
- Tracking User Activity
- Benefits
- Trails

AMAZON SQS

- What is SQS?
- SQS benefits
- Types of messages

- Standard vs fifo

SIMPLE NOTIFICATION SERVICE (SNS)

- What is SNS?
- SNS Topics
- Subscriptions
- Subscribing topic via email
- Setting notification for EC2 instance changes

CLOUD WATCH

- Introducing cloud watch
- dashboards
- Cloud watch Architecture
- Monitoring the AWS service health dashboard
- Monitoring the cloud watch
- Getting statistics for a specific EC2 instance
- Setting up notifications

NETWORKING BASICS

- What is network?
- Network topologies
- OSI reference models
- Ipadresses and classes
- Difference between private and public ipaddress
- Description of Subnet, gateway, router...etc
- Different networking components
- Router, Gateway
- Subnets, CIDR

VIRTUAL PRIVATE CLOUD (VPC)

- What is Amazon VPC?
- VPC Essentials
- Default and Non-Default VPC
- VPC networking and ACL
- Security Groups
- Route Tables public and private
- DNS and DHCP options set
- VPC Peering and end points
- Subnets
- Subnet Routing
- VPC Internet Gateway
- Elastic IP addresses and network interfaces
- Extending on-premise networks with VPC
- VPC integration with other services
- Creating NAT Instance
- Configuring web application in VPC
- Trouble shooting scenarios
- Network monitoring with flow logs
- Endpoints
- DNS hostnames
- VPC Peering

NETWORK & SECURITY

- Security Groups
- ACLS
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces
- Secure VPN Connection
- Site to site VPN connection
- Tunneling
- Transit gateways
- Traffic mirroring
- VPC Trouble shooting

AMAZON ROUTE 53

- What is DNS?
- What is Hosted Zone and Record sets
- Route53 as your DNS service
- Route53 basics
- Domain Registration
- ELB Address Record
- Different types of routing policies
- Route53 and DNS failover for S3 bucket
- Health Checks

EC2 INSTANCE STORE & EBS

- What is Instance Store?
- How to launch instance with instance store volume
- What is EBS?
- EBS Performance
- Difference between instance store and EBS
- Features of Amazon EBS
- Amazon EBS Volumes
- EBS Ephemeral
- Managing EBS Volumes
- Creating and Deleting EBS Volumes
- Attaching and Detaching EBS Volumes
- Increasing EBS Volumes
- Amazon EBS Snapshots
- Automatic snapshots
- EBS Lifecycle
- Lifecycle Manager

SIMPLE STORAGE SERVICE (S3)

- What is object storage?
- What is bucket?
- Storage classes
- Creating and deleting buckets

- Getting an object
- Static website hosting with S3
- Uses of s3 storage
- S3 IAM and Bucket policies
- Working with permissions of S3
- Object versioning
- Object lifecycle
- Bucket cross Region

GLACIER STORAGE

- Introduction to glacier
- What are vaults
- Creating a glacier vault
- Storing archives in vaults

AMAZON EFS

- What is Elastic File System?
- What is NFS?
- How to configure in different AZ's
- Mounting Amazon EC2 Instances
- Difference between EBS and EFS
- Understanding Block storage and Object storage
- Understanding file storage and Block storage

SNOWBALL, SNOWBALL EDGE, SNOW MOBILE

- Data Migration & Transfer
- What is snowball
- How device difference
- Use cases
- Benefits
- Use Case Differences
- Storage Capacity

RELATIONAL DATABASE SERVICE (RDS)

- What is RDS?

- Working with the RDS
- Deploying database Engine
- RDS security Groups and Connecting to RDS from EC2
- Subnet Groups
- Group Parameters
- MySQL, PostgreSQL, Aurora and Maria DB on RDS
- Multi AZ's
- RDS Backups
- Snapshots
- Read Replicas

AMAZON DYNAMO DB

- What is NoSQL?
- Creating tables
- views
- Getting started with Dynamo DB
- Local and Global Secondary Indexes
- Dynamo DB overview and Limits
- Provisioned Throughput
- Backups

AMAZON ELASTIC CACHE

- Overview
- Types of caches
- Types of nodes
- Mem cache
- Redis

ELASTIC LOAD BALANCING (ELB)

- What is ELB?
- Creating a load Balancer
- Load balancer Types
- What is Classic and Application ELB
- Network Load Balancer
- Internal and External load balancer
- Load balancing protocols

- Health check for the load balancer
- Adding multiple instances to the load balancer
- ELB with Scaling
- Cross zone Load balancing

AUTO SCALING

- What is Auto Scaling?
- Auto Scaling Components
- CloudWatch metrics
- Benefits of Auto scaling
- Auto Scaling Use cases
- Creation of launch Configuration

LIGHTSAIL

- What is Lightsail?
- Manage instances
- Virtual private servers with LightSail
- Deploying LAMP stack
- Deploying other applications
- Connecting instances

LAMBDA

- What is a serverless?
- What is LABMDA?
- Serverless in aws
- Traditional vs serverless
- Which services do we need?
- Create function
- What Lambda supported languages

AMAZON CLOUD FORMATION

- What is code as Service

- CloudFormation components
- Cloud Formation Essentials
- Building AWS Infrastructure as a code
- Building an S3 bucket with cloud formation
- Deploying aws resources
- Deploying a website S3 bucket Configuration
- Deploying VPC

ELASTIC BEANSTALK

- Elastic Beanstalk Essentials
- Getting started with EB.
- Deploy, manage, scale an application
- Work flow of Elastic Bean Stalk
- Components and usage
- Create Application
- Launch Environment
- Manage Environment
- Creating application source bundle

SYSTEMS MANAGER

- What is systems manager
- Resource Groups
- Automation
- Managed instances
- State manager
- Patch Manager
- Session Manager

- RESUME PREPARATION ROLES & RESPONSIBILITIES