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**Model 1 : Elastic Cloud Computing (EC2)**

* **EC2**
* **EBS**
* **ELB**
* **ALB**
* **Cloud Watch**
* **SNS**
* **Auto Scale**
* **R53**
* **EFS**
* **EC2 CLI**
* **Price optimization**

**Model 2 :Networking**

* **Basic Networking**
* **VPC**
* **Subnet**
* **Rout table**
* **NAT**
* **SG,NACL**
* **Peering connection**
* **VPN**
* **Cloud Formation**
* **Vpc CLI**
* **Vpc Cloud Formation**
* **Price optimization**

**Model 3 :Storage and permissions**

* **S3**
* **Storage Classes**
* **Version**
* **Object Lifecycle**
* **Statistic webhost**
* **IAM users**
* **IAM groups**
* **IAM roles**
* **IAM Policies**
* **S3 CLI**
* **Price optimization**

**Model 4 :Database**

* **RDS,**
* **Replica**
* **MAZ**
* **Private RDS**
* **Dynamo DB**
* **RDS CLI**
* **Price optimization**

**AWS introduction**

**Model 1: Elastic Compute Cloud (EC2)**

* **EC2 Basics**
* **Amazon Machine Images (AMIs)**
* **Instance types**
* **Elastic Block Store (EBS)**
* **Security Groups**
* **IP Addressing**
* **Launching and using an EC2 instance**
* **EC2 Essentials**
* **Understanding Reserved Instances**
* **Selecting and Building EC2 Instances**
* **Working with public and private IP Addresses**
* **Cloud-initUserdata and Metadata**
* **CloudWatch and EC2**
* **EC2 Placement Groups o Serving Traffic to Private Web Servers**
* **Working with Elastic Block Storage** 
  + **Understanding AWS Storage Types**
  + **Increasing IOPS Performance**
  + **Configuring Optimized Instances**

**EBS Volumes And Snapshots:**

* **EBS Snapshots and Replication** 
  + **EBS Snapshots Characteristics**
  + **Working with Snapshots in the AWS Management Console**
* **AWS Command Line Interface** 
  + **Working with EC2 using CLI**
* **EC2 Troubleshooting Scenarios**

**Monitoring and Metrics**

* **Understanding AWS Instance types, Utilization and Performance**
* **EC2 Instance and System Status Checks**
* **Creating Cloud Watch Alarms**
* **Installing and Configuring Monitoring Scripts for EC2 Instances**
* **Dedicating an instance to monitoring**
  + **Monitoring EBS for performance and availability**

**Auto Scaling:**

* **Basics**
* **Using Auto Scaling**
* **Auto Scaling Troubleshooting scenarios**
* **Auto Scaling Features**
* **How Auto Scaling Works**
* **Configuring Auto Scaling**

**Elastic File Storage:**

* **Demonstrate ability to create backups for different services**
* **Overview of Backup Services on AWS and Services that Include Backups**
* **Creating and Scripting Automation for EC2 Snapshots**

**Route 53 :**

* **Route 53 Basics**
* **Using Route 53**
* **Route 53 and DNS Failover**
* **Weighted Routing Policies In Route 53**
* **Configuring DNS with Route 53** 
  + **Where we are in the reference architecture**
  + **The role of DNS in a distributed cloud system**
  + **Using Route 53 with ELB, CloudFront, S3**
  + **Configuring Route 53**
  + **Route 53 Best Practices**

**Billing:**

* **AWS Billing and linking AWS Accounts**
* **AWS Billing Dimensions and metrics for Cloud Watch**
* **Cost Optimizing**
* **Using the AWS Price List API and Cost Explorer**

**Cloudwatch:**

* **Creating Cloud Watch Alarms for EC2 Monitoring**
* **Creating custom cloudwatch metrics**
* **Configuring Alarms**

**AWS EC2 CLI**

* **Creation and management of EC2 resources using CLI**

**Model 2 :Virtual Private Cloud (VPC)**

* **AWS Global Infrastructure**
* **VPC Basics**
* **Internet Gateways(IGW)**
* **Route Tables (RTs)**
* **Network Access Control Lists (NACLs)**
* **Subnets o Availability Zones**
* **Introduction to VPC and AWS Networking o Building A VPC From Scratch** 
  + **VPC Networking**
  + **VPC Security**
* **Configuring a NAT Instance**
* **DB Subnet Groups**
* **Elastic IP Addresses and Elastic Network Interfaces**
* **Configure a Web Application In VPC**
* **Extending the VPC to On-Premise Networks**
* **VPC Peering o Troubleshooting scenarios**
* **Network and Data Security o Network Monitoring with Flow Logs**

**Extending On-Premise Networks with VPN :**

* **Using Directory Service to Connect Hybrid Architectures**
* **Security Zones**
* **Understanding AWS IP Subnet Reservations**
* **Hybrid Cloud AWS**
* **Overview**
* **AWS Hybrid Cloud Scenario**
* **Network Integration in to AWS VPC** 
  + **Best Practices**
  + **AWS VPC Wizard Creation**
  + **Creating an OpenVPN Instance for Client Connections**

**Cloud Formation:**

* **Cloud Formation Essentials**
* **Creation and deployment of VPC Using CloudFormation**

**Billing :**

* **Cost Optimizing**

**AWS VPC CLI:**

* **Creation and management of VPC resources using CLI**

**Model 3: S3, IAM**

**Simple Storage Service (S3)**

* **S3 Basics**
* **Buckets and objects**
* **Storage Classes**
* **Object Lifecycles**
* **Permissions**
* **Object Versioning**
* **S3 Essentials**
* **S3 Bucket/Object Versioning and Policies**
* **Website Hosting with S3**
* **AWS Command Line Interface** 
  + **Working with S3 using CLI**
* **Introduction To S3 Developer Requirements**
* **Creating a static hosting Website with S3**
* **S3 IAM & Bucket Policies**

**Glacier :**

* **Overview**
* **Introduction to Glacier**
* **Creating a Glacier Vault**
* **Storing Archives in Glacier**
* **Understanding Glacier's Retrieval Pricing**
* **Restoring Archives from Glacier**

**Billing:**

* **Cost Optimizing**

**AWS S3 CLI:**

* **Creation and management of s3 resources using CLI**

**Identity access management (IAM)**

* **What is IAM**
* **Create User**
* **Create Groups**
* **Roles**
* **Polices**
* **Custom polices**
* **Create/Set an IAM Policy for an IAM User**

**Model 4: Relational Database Service (RDS)Dynamo DB**

**RDS:**

* **Overview**
* **Essentials**
* **Working with RDS**
* **Subnet Groups**
* **Security Options**
* **RDS Security Groups and Connecting to RDS from EC2**
* **Monitoring RDS for performance and availability**
* **MySQL and Maria DB on RDS**
* **Replica& MAZ**
* **Private RDS**

**Amazon Dynamo DB:**

* **Getting Started with Dynamo DB**
* **Local and Global Secondary Indexes**
* **Dynamo DB overview and Limits**
* **Dynamo DB Multi-Region Replication**

**Billing**

* **AWS Billing and linking AWS Accounts**
* **AWS Billing Dimensions and metrics for Cloud Watch**
* **Cost Optimizing o Using the AWS Price List API and Cost Explorer**

**AWS CLI**

* **Creation & Managing EBS & EFS using CLI**
* **Creation and Management of DB Services using CLI**