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AMAZON WEB SERVICES (AWS)

SECTION1: INTRODUCTION TO CLOUD COMPUTING

- What is Cloud?
- Why Cloud?
- Future of Cloud Technologies
- Advantages and Disadvantages of Cloud
- Cloud Delivery 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

SECTION2: INTRODUCTION TO AMAZON WEB SERVICES

- What is AWS?
- How to Subscribe for AWS account
- What is the AWS Free Tier Limits and Usage
- Navigate AWS Console
- List of services given by AWS

SECTION3: AWS GLOBAL INFRASTRUCTURE

- Describing Regions
- Availability Zones and Endpoints
- Managing services in an Availability zones
- AWS Free tier (12 Months)
- Account Creation

SECTION4: CLOUD ARCHITECTURE

- How Cloud Computing Working
- Virtualization
- Storage
- Networking
- Management Console

SECTION5: LINUX ESSENTIALS

- Basic Commands
- SSH

- Networking Commands
- Filters with Patterns
- File Permissions
- Remote Connections
- Remote Copy

SECTION6: ELASTIC COMPUTE CLOUD (EC2)

- What is Amazon EC2?
- Features of Amazon EC2
- Managing the EC2 Infrastructure
- EC2 Dashboard
- Pricing for Amazon EC2
- Private and Public Ip addresses
- Billing

SECTION7: EC2 INSTANCES

- Instance Types
- Instance lifecycle
- Difference between reboot, stop and terminate
- Security groups
- IP Addressing
- Assigning Elastic IP
- Elastic Block Storage (EBS)
- Launching and using an EC2 Instance
- EC2 Essentials
- Ec2 Instance Protection
- Security from Key pairs
- Pricing Model in EC2 Instances
- Understanding Reserved Instances
- Understanding AWS Storage Types
- Increasing IOPS Performance
- EBS Volumes and Snapshots
- Building Linux and Windows Instances
- Connecting Instances from Different Platforms
- Setting up Security
- Network Interfaces
- EC2 Troubleshooting Scenarios

SECTION8: 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

SECTION9: AWS COMMAND LINE (AWS CLI)

- What AWS CLI?
- Installing AWS CLI on Windows and Linux
- Generating Access Keys and Secret Key
- Configuring AWS CLI
- Running Commands

SECTION10: IDENTITY ACCESS MANAGEMENT (IAM)

- IAM initial setup and configuration
- IAM Best practices for new accounts
- IAM Policies
- API keys and roles
- IAM Groups and Policies
- IAM Roles • What is MFA
- How to configure MFA

SECTION11: SIMPLE NOTIFICATION SERVICE (SNS)

- SNS basics
- SNS Essentials and usage
- Subscribing topic via Email
- Setting notification for EC2 instance changes
- SNS message data

SECTION12: CLOUD WATCH

- Introducing cloud watch
- Cloud watch basics
- Cloud watch Architecture
- Monitoring the AWS service health dashboard
- Monitoring the cloud watch
- Getting statistics for a specific EC2 instance
- Getting aggregated statistics
- Metrics for the AWS services and related namespaces
- Setting up notifications
- Getting cloud watch alarms
- Log files integration

- Instance Status Checks

SECTION13: VIRTUAL PRIVATE CLOUD (VPC)

- What is Amazon VPC?
- VPC Essentials
- Default and Non-Default VPC
- VPC networking and ACL
- Security Groups
- 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
- VPC Peering

SECTION14: NETWORK & SECURITY

- Security Groups
- ACLS
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces
- Secure VPN Connection

CLOUD STORAGE

SECTION15: EC2 INSTANCE STORE & EBS

- What is Instance Store?
- How to launch instance with instance store volume
- What is EBS?
- 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

SECTION16: SIMPLE STORAGE SERVICE (S3)

- What is object storage?
- What is bucket?
- Managing Buckets
- Storage classes
- Creating and deleting buckets
- Getting an object
- Event Notifications
- 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

SECTION17: GLACIER STORAGE

- Introduction to glacier
- What are vaults
- Creating a glacier vault
- Storing archives in vaults
- Accessing the glacier vault using tools

SECTION18: 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

SECTION19: AWS STORAGE GATEWAY

- What is Storage Gateway?
- How AWS Storage Gateway works
- Plan your AWS storage gateway Deployment
- Integration between on-premises and off-premises

SECTION20: DIRECTORY SERVICE

- What is AD?
- How to create AD
- How to map AD with FSx
- Cloud Directory

SECTION21: FSx

(THIRD-PARTY FILE SYSTEMS)

- What is FSx?

- How it works
- Creating File system
- Amazon FSx for Windows File Server
- Amazon FSx for Lustre

SECTION22: AWS BACKUP

- What is Backup plan?
- Create backup plan
- Start from an existing plan
- Build a new plan

SECTION23: SNOWBALL, SNOWBALL EDGE, SNOW MOBILE

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

SECTION24: AUTO SCALING

- What is Auto Scaling?
- Auto Scaling Components
- Benefits of Auto scaling
- Auto Scaling Use cases
- Creation of launch Configuration
- Configuration of auto scaling policies

SECTION25: 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
- Security group for the load balancer
- Health check for the load balancer
- Adding multiple instances to the load balancer
- ELB with Scaling
- Cross zone Load balancing
- ELB Trouble shooting scenario

SECTION26: 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

SECTION27: CLOUDFRONT

- What is Cloud Front?
- Create distribution
- Distribution settings
- Delivery method
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CLOUD DATABASE

SECTION28: 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
- RDS Backups
- Snapshots
- Read Replicas

SECTION29: 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

SECTION30: AMAZON ELASTIC CACHE

- Overview
- Mem cache
- Redis
- What is Red shift?

SECTION31: LIGHTSAIL

- What is Lightsail?
- Manage instances

- Virtual private servers with lightsail
- Connecting instances

SECTION32: LAMBDA

- What is Serverless?
- How Lambda is working
- Create function
- What Lambda supported languages
- Execution

SECTION33: AMAZON CLOUD FORMATION

- Cloud Formation Essentials
- Building AWS Infrastructure as a code
- Building an S3 bucket with cloud formation
- Deploying EC2 Resources
- Deploying a website S3 bucket Configuration
- Deploying VPC
- Cloud Former

SECTION34: CLOUD TRAIL

- What is cloud Trail
- Tracking User Activity
- API Usage
- Benefits

SECTION35: 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

SECTION36: OVERVIEWS

- DOCKER
- ECR (ELASTIC CONTAINER REGISTRY)
- ECS (ELASTIC CONTAINER SERVICE)
- EKS (ELASTIC KUBERNETES)

SECTION37: BONUS LECTURES

SECTION38: RESUME PREPARATION

- Resume Explanation
- Roles and Responsibilities

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