

Course Curriculum

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Amazon Web Services



Getting Started

- Introduction to the Course.
- Training Approach, tools used for training.
- AWS Account - Creation, Set up.
- Software Setup.

IT Architecture Overview.

- DataCenters, Networks & Virtualization.
- 3 Tier & n-Tier Architecture.
- Hosting Models.

AWS Overview

- AWS Global Infrastructure.
- Account, Organizations.
- AWS Services.
- AWS Physical & Networking Layer.
- Shared Security Responsibility Model.

Identity & Access Management

- Access Control Management, RBAC.
- AWS IAM overview.
- Understanding Permissions and Policies in AWS.
- Users, Groups.
- Roles.

Activities:

1. Create 3 Groups named Admin, DevOps , DevTeam with different Permissions listed in the table below.
2. Create 3 users and add them to the above Groups as listed below.

Group	Policies	User
Admin	Administrator Access	AdminA, AdminB
DevTeam	Read access to S3,Cloudwatch,EFS. Full access to RDS, Lambda, EFS	DevA

Group	Policies	User
DevOps	Full access to EC2, S3,Cloudwatch, RDS, Lambda, EFS	OpsA, OpsB

1. Create a Role for Ec2 with Full Access to S3 and Read Access to SNS

Storage

- Simple Storage Service(S3) Overview.
- S3 Features, Pricing & Use cases.
- Buckets, Objects, Keys.
- Access Control.
- Version Control.
- LifeCycle Management
- Security & Encryption.

Activities:

1. Create a Bucket with Public Access, refer the contents from a Web Server.
2. Create a Bucket with **Block Public Access** and create Access control to User A with Read access and User B with Write Access.

Network

- VPC overview.
- Choosing the right CIDR & Subnetting.
- Hands-on with VPC
- Routing, Gateways - Internet, NAT
- Security Groups & NACL
- VPC Peering, VPC Endpoints.

Activities:

1. Create a nondefault VPC and 2 Public Subnets 2 Private Subnets (1 subnet each for AZ) and create Route Tables.

Compute

- EC2 Overview.
- InstanceTypes, Categories, Pricing.
- EBS Volumes, Snapshots

- AMI - Overview, marketplace, Custom AMIs.
- Elastic Load Balancer - Classic & Application
- Autoscaling
- EC2 Container Services - Overview
- Load Balancer
- Elastic File System.

Activities:

1. Create Ubuntu ec2 & Centos instance with Security Group to allow SSH from your home IP.
2. Create Windows ec2 instance and ensure you have RDP access from your Home IP.
3. Use Custom-data to create ec2 instance with Apache pre-installed.
4. Create AMI with Apache installed on Ubuntu ec2 instance.
5. Create an ALB with 2 ec2 instances as
6. Create Autoscaling Group in a nondefault VPC with an ALB.

Automation:

- Overview of Programmatic Access.
- AWS CLI
 - Installation.
 - Configuration, Profiles.
 - Filters, Queries.
- CloudFormation.
 - Resources.
 - Parameters.
 - Outputs.
 - Nested Stacks.

Simple Notification Service

1. SNS - Overview, usecases
2. Topic, Subscription
3. Using with Other services.

Lambda

- Lambda Overview, use cases.
- Lambda Triggers, Functions
- Lambda Pricing.

Activities:

1. Create a Lambda Function to rename S3 objects and copy to a different bucket.

DNS management

- Understand DNS
 - How DNS works
 - Domain Name Registration
- Route53
 - Hosted Zones
 - DNS Records - Name Servers, A Records, Aliases.
 - Routing Policy

Activities:

1. Register a Free Domain name and configure Route53 as DNS resolver.
2. Create a web application and point it's A record to the website.

Databases

- Understand Database Engines.
- RDS
 - Instance Types
 - Storage Tiers
 - Serverless
- DynamoDB Overview

Activities:

1. Create a High Available Set up of RDS.

Management & Governance Services Overview.

Developer Services Overview.

Network & Content Delivery Serevices Overview.

Security, Identity & Compliance.

Well Architected Framework.

Cloud Best Practices.