Day 1 – Introduction to AWS and Console Basics

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1. What is Cloud Computing?

Cloud Computing is the delivery of computing services (like servers, storage, databases, networking, software) over the Internet (“the cloud”).

Key Features:

- On-demand availability
- Pay-as-you-go model
- Scalable & flexible
- Accessible from anywhere

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2. AWS Overview

Amazon Web Services (AWS) is the most widely used cloud platform, offering over 200 services including:

- Compute (EC2)
- Storage (S3, EBS)
- Databases (RDS, DynamoDB)
- Networking (VPC, ELB)
- IAM (Identity Access Management)
- Monitoring (CloudWatch)

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3. Creating an AWS Free Tier Account

✅ Requirements:

- Email ID
- Phone number
- Credit/Debit card (No charges on Free Tier)

✅ Steps:

1. Go to https://aws.amazon.com/
2. Click **Create an AWS Account**
3. Fill in details (Email, password, account name)
4. Choose **Personal Account**
5. Add card details and verify
6. Choose **Basic Support – Free**
7. Login to AWS Console

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4. AWS Global Infrastructure

📍 Key Components:

- **Regions**: Physical locations (e.g., Asia Pacific (Mumbai))
- **Availability Zones (AZs)**: Multiple data centers within a region
- **Edge Locations**: Used for content delivery (CDN)

Example: Region = `ap-south-1` (Mumbai)

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5. Introduction to AWS Management Console

The **AWS Management Console** is a browser-based interface to access and manage AWS services.

Explore:

- Service Search Bar
- Global Region Selector (Top-right)
- Recently visited services
- Navigation Panel
- Billing Dashboard

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6. Introduction to EC2 (Elastic Compute Cloud)

EC2 allows you to run virtual machines (instances) in the cloud.

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7. Lab 1: Launch your First EC2 Instance

Step-by-step Guide:

Region: **Asia Pacific (Mumbai)**

1. Go to **EC2 Service** in Console
2. Click **Launch Instance**
3. **Name:** `my-first-ec2`
4. **AMI (Amazon Machine Image):** Choose **Amazon Linux 2**
5. **Instance Type:** `t2.micro` (Free Tier eligible)
6. **Key Pair (Login):**
    - Create new key pair
    - Type: RSA

    - Download `.pem` file and save securely
7. **Network Settings:**
    - Select **Create Security Group**
    - Allow **SSH (port 22)** and **HTTP (port 80)**
8. **Storage:** Default 8 GB is fine
9. Click **Launch Instance**
10. Click **View Instances** to see your instance

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8. Connect to EC2 using SSH (Windows)

Method 1: Using Git Bash

1. Open **Git Bash** on Windows
2. Use command:

```
chmod 400 my-key.pem
ssh -i my-key.pem ec2-user@<your-public-ip>
```

Find your Public IP:

- Go to EC2 Dashboard → Instances → Select instance → Check **Public IPv4**

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9. Install Apache Web Server (Optional)

```
sudo yum update -y
sudo yum install httpd -y
sudo systemctl start httpd
sudo systemctl enable httpd
```

Visit your public IP in browser – You should see Apache test page

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10. Key Concepts

Concept	Description
AMI	Pre-configured OS images
Instance Type	Hardware specification
Key Pair	SSH credentials
Security Group	Acts as firewall
Public IP	Accessible from internet
Private IP	Internal AWS communication

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11. Terminology Simplified

- **Instance** = Virtual server
- **AMI** = Operating system for your server
- **Key Pair** = Your login access (like a password)
- **Security Group** = What ports you open to the world
- **Region** = Country / Data Center Location
- **Availability Zone** = Backup zones in same region
