Introduction to Cloud

upGrad

Session: Introduction to AWS

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Introduction to AWS

SESSION INTRODUCTION

AWS Management Console

Identity and Access Management

Compute Services

Storage

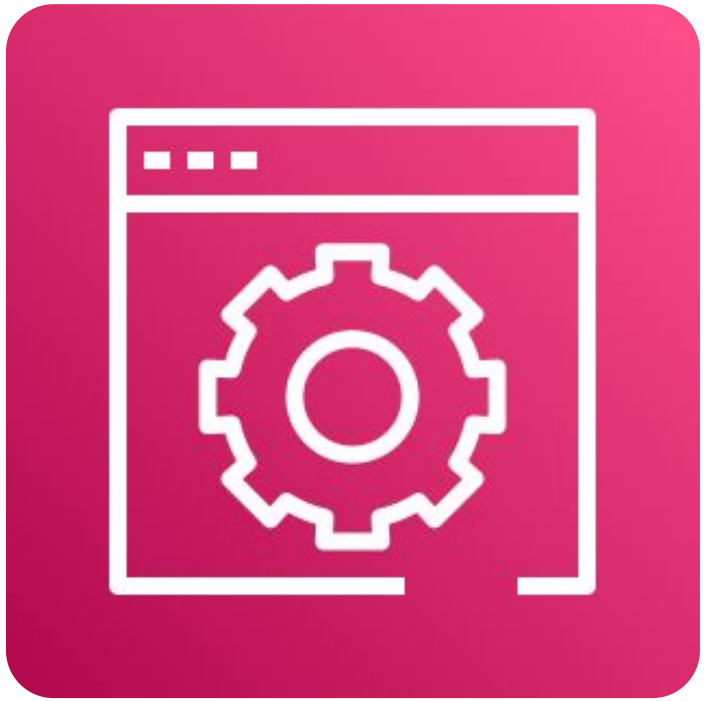
Database

Networking and Security

AWS Management Console

AWS MANAGEMENT CONSOLE

- **Securely login** to your AWS account using your AWS or IAM account credentials
- Discover and experiment with over **150 AWS services**
- Simplified and automated **workflows and wizards** make it easier to test and build with AWS services
- **Visually discover** and get hands-on quickly with the functionality of a service
- **Manage and monitor** users, service usage, health, and monthly billing
- **Bookmark** most frequently used services as **favourites**



AWS Management Console

Security, Identity and Compliance

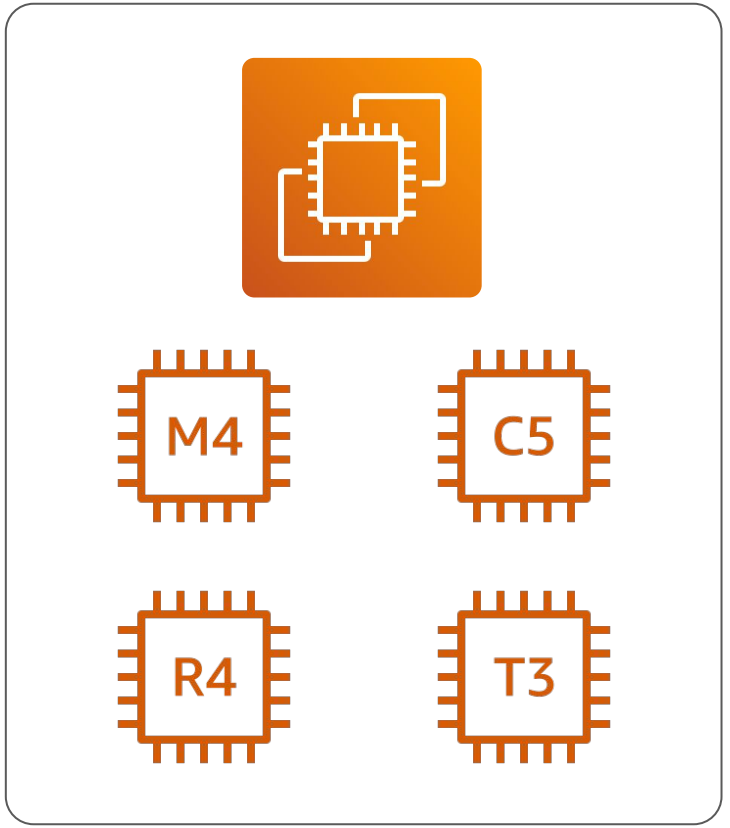
IDENTITY AND ACCESS MANAGEMENT

- AWS Identity and Access Management (IAM) enables you to **manage access** to AWS services and resources securely.
- Helps create and manage AWS **users and groups**, and use **permissions** to allow **and deny** their **access** to AWS resources.
- Enables your users to control access to AWS service APIs and to specific resources.
- IAM helps you **analyse access** across your AWS environment.
- Helps create users, groups, roles, policies and permissions to manage access.

Compute

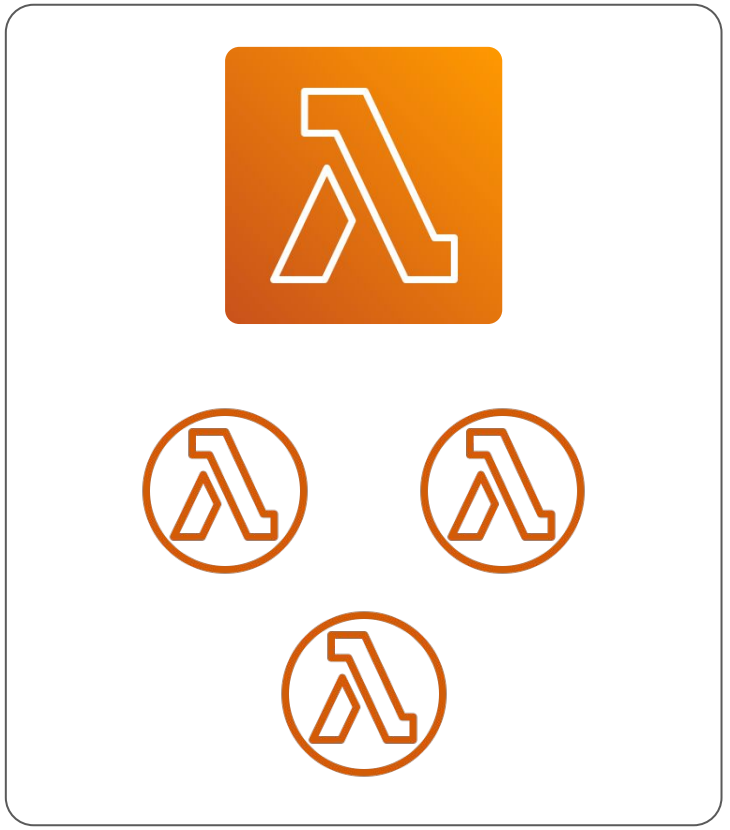
ELASTIC CLOUD COMPUTE

- A web service that provides secure, resizable **compute capacity** in the cloud
- Various virtual computing environments, known as **instances**
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as **instance types**
- Support for both temporary storage (**instance store volumes**) and persistent storage (**Amazon EBS volumes**)
- Static IPv4 addresses for dynamic cloud computing, known as **Elastic IP addresses**



LAMBDA

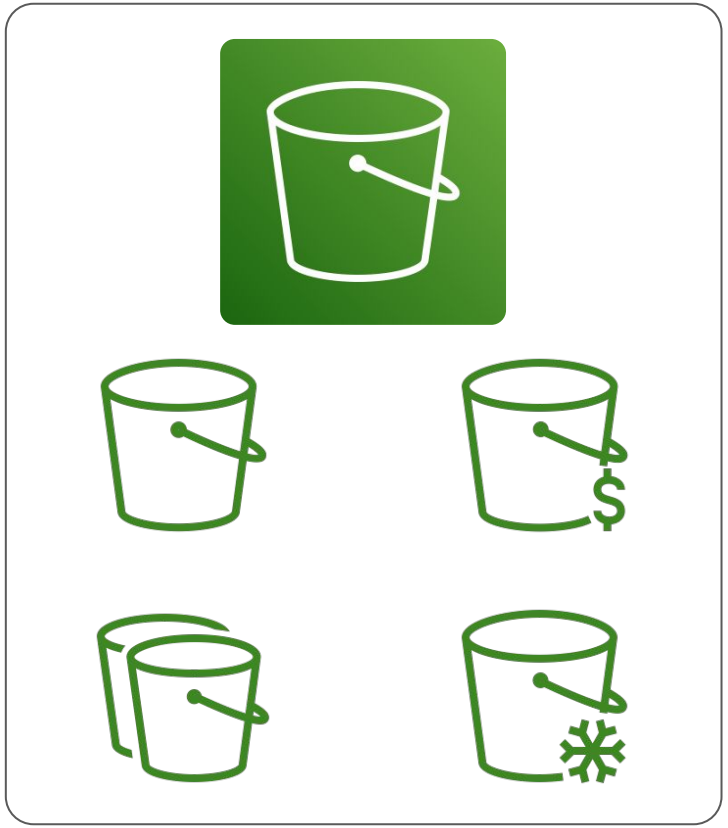
- **Serverless** compute service that lets you automatically run code without provisioning or managing infrastructure
- Run code for **any type of application** or backend service
- Support **multiple languages** such as Node.js, Python, Go, and Java
- Write inline code, or upload it to Lambda either as a **ZIP** file or **container image**
- **Automatically scale** your application by running code in response to events
- Charged for every **millisecond** the code executes



Storage

SIMPLE STORAGE SERVICE

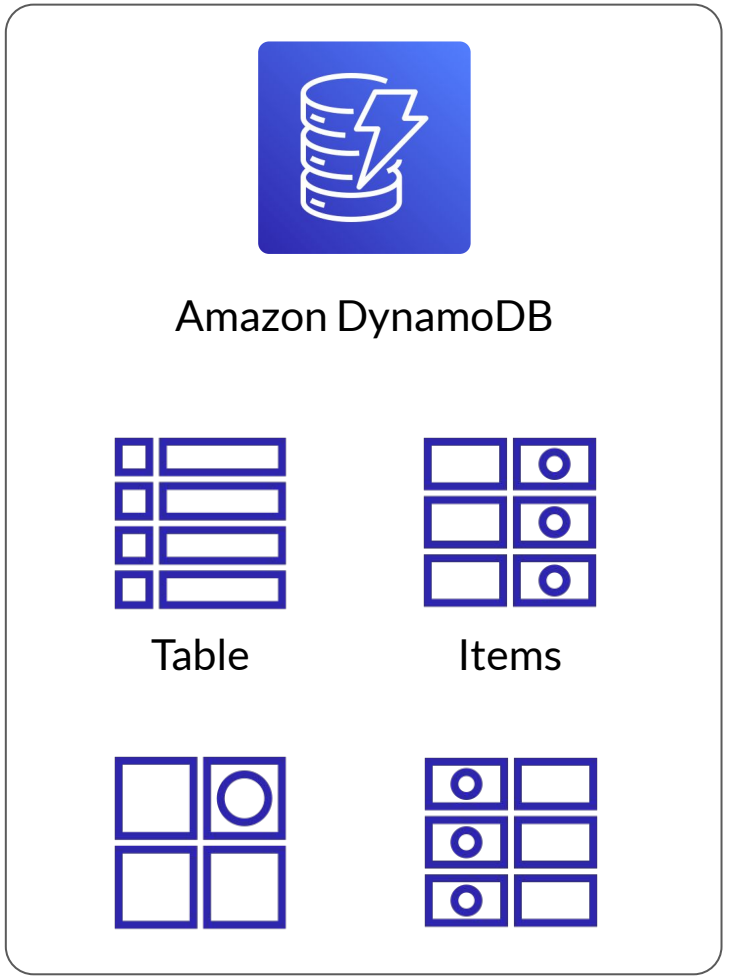
- **Object storage service** allows to store and retrieve any amount of data, at any time, from anywhere
- Support use cases such as data lakes, websites, mobile applications, backup and restore, archive, enterprise applications, IoT devices, and big data analytics
- Designed for **99.999999999%** (total eleven 9's) of data durability
- Multiple **storage classes** with different **pricing** and **access patterns**
- Strong **encryption** features and **access management** tools to secure data from unauthorised access



Database

AMAZON DYNAMODB

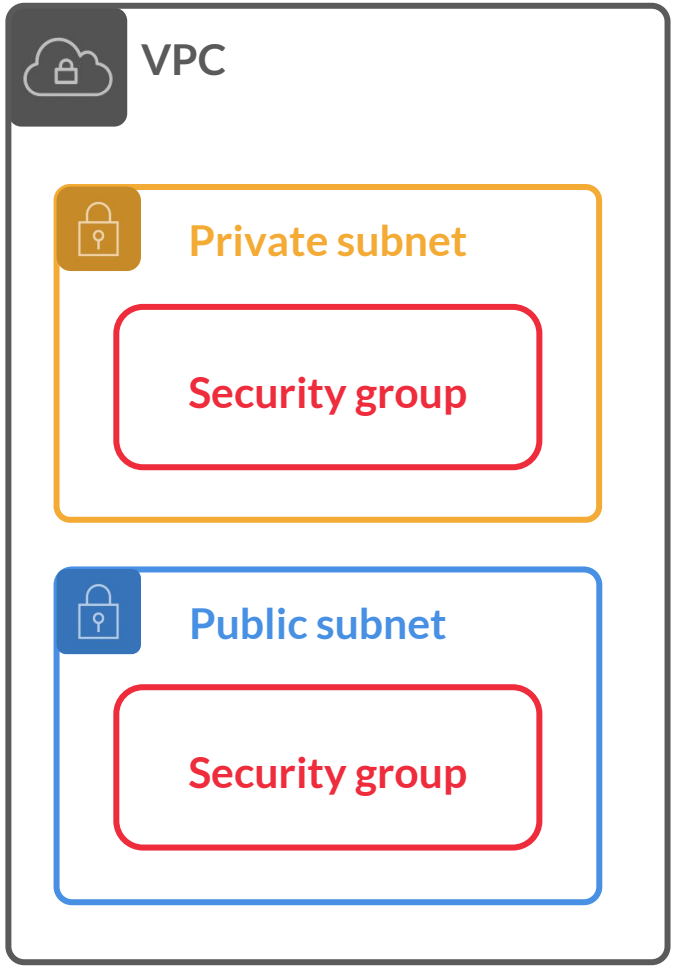
- **Fully managed NoSQL** database with fast **performance** and seamless **scalability**
- Store and retrieve any amount of data and serve any level of traffic
- Automatically spreads the data and traffic over **multiple servers** to handle traffic and storage requirements
- **Delete** expired items **automatically** to reduce storage usage and cost
- Data is stored on **Solid-State Disks (SSDs)** to provide fast access
- Provides **encryption at rest** to protect sensitive user data



Networking and Security

VIRTUAL PRIVATE CLOUD

- **Networking layer** for Amazon EC2
- Enables you to launch AWS resources into a **logically isolated virtual network**
- Create **subnets** within your VPC that define a **range of IP addresses** in your VPC
- **Route tables:** Used to determine where network traffic is directed within a VPC and among different VPCs
- **Security groups:** Act as a **firewall** for associated Amazon EC2 instances, controlling both **inbound and outbound** traffic at the instance level.



Summary

SUMMARY

- **AWS** Management Console
- **IAM:** Users, groups, roles and policies
- **Compute**: EC2 and Lambda
- **Storage:** Simple Storage Service (S3)
- **Database:** DynamoDB
- **Networking and Security:** VPC, Subnets and Security Groups

Module Summary

MODULE SUMMARY

- Basics of **Cloud Computing**
- **Virtualisation** and **Containerisation**
- **Cloud Architectures**: Monoliths, microservices and event-driven
- **Compute, storage, databases** and **network**
- AWS services **introduction** and **demonstration**