MODULE 3: AWS Global Infrastructure

1. AWS Global Infrastructure

AWS global infrastructure is designed and built to deliver a flexible, reliable, scalable and secure cloud computing environment with high quality global network performance.

AWS Regions:
- Geographical area
- Data replications across regions is controlled by you
- Communication between regions uses AWS backbone network infrastructure
- Each region provides full redundancy and connectivity to the network.
- A region typically consist of two or more AZ

Factors while selecting regions:
- Data governance and legal requirements
- Proximity to customers
- Services available within the region
- Costs which varies by regions

Availability Zones:
- Each regions has multiples AZ
- Each AZ is fully isolated partitioned of the AWS infrastructure
- AZ consist of discrete data centres, they are design for fault isolation
- They are connected with other AZ
- AWS recommends replicating data and resources across AZ for resiliency

AWS Data Centres
- They are designed for security
- Has typically 50k to 80-k physical servers

Features of AWS infrastructures
- Elasticity and scalability
- Fault tolerance
- High availability

2. AWS Services and Service category

AWS foundational services
- Compute
- Networking
- Storage

AWS storage services category:
- S3
- EBS
- EFS
- S3 Glacier

AWS compute services category:
- EC2
- Auto Scaling
- Elastic Container Service
- EC2 Container Registry
- Elastic Beanstalk
- Lambda
- Elastic kubernetes services
- Fargate

AWS databases services category:
- RDS
- Aurora
- Redshift
- DynamoDb

AWS networking and content delivering services category:
- VPC
- Elastic Load balancing
- CloudFront
- AWS transit gateway
- Route 53
- AWS Direct connect
- AWS VPN

AWS security, identity and compliance services category:
- IAM
- AWS organisation
- AMAZON cognito
- AWS artefact
- AMAZON KMS
- AWS shield

AWS cost management services category:
- AWS cost usage report
- AWS budget
- AWS cost explorer

AWS management and governance services category:
- AWS management console
- AWS config
- Amazon CloudWatch
- AWS Auto Scaling
- AWS CLI
- AWS trusted advisor
- AWS CloudTrail
- AWS Well architectured tool