

AWS Cloud – Complete Content

1. Cloud Computing Fundamentals

- What is Cloud Computing?
- On-Premise vs Cloud
- Types of Cloud
 - Public
 - Private
 - Hybrid
- Cloud Service Models
 - IaaS
 - PaaS
 - SaaS
- Advantages & Disadvantages of Cloud
- Shared Responsibility Model

2. AWS Global Infrastructure

- AWS Regions
- Availability Zones (AZ)
- Edge Locations
- Regional vs Global Services
- Choosing the right Region

3. AWS Account & IAM (VERY IMPORTANT)

AWS Account Setup

- AWS Free Tier
- Root User vs IAM User
- AWS Management Console
- AWS CLI
- AWS SDK

IAM – Identity and Access Management

- Users
- Groups
- Roles
- Policies (Managed & Inline)

- IAM Best Practices
- MFA
- Assume Role
- IAM vs Resource-based policies

4. Compute Services

Amazon EC2

- What is EC2?
- Instance Types
- AMI
- Key Pairs
- Security Groups
- Elastic IP
- User Data
- Auto Scaling
- EC2 Pricing Models
 - On-Demand
 - Reserved
 - Spot

AWS Lambda (Serverless)

- What is Serverless?
- Lambda Architecture
- Triggers
- Lambda Limits
- Use Cases
- Pricing

5. Storage Services

Amazon S3 (VERY IMPORTANT)

- Buckets & Objects
- Storage Classes
- Versioning
- Lifecycle Policies
- Encryption
- Bucket Policies
- S3 vs EBS vs EFS

Block & File Storage

- EBS
 - Volume Types
 - Snapshots
- EFS
 - Use cases

6. Database Services

RDS

- Supported Engines
 - MySQL
 - PostgreSQL
 - Oracle
 - SQL Server
- Multi-AZ
- Read Replicas
- Backups & Snapshots

DynamoDB

- NoSQL basics
- Tables, Items, Attributes
- Primary Keys
- Indexes
- Capacity Modes

Other Databases

- Aurora
- Redshift (Data Warehouse)
- ElastiCache (Redis)

7. Networking Services (VERY IMPORTANT)

VPC

- What is VPC?
- CIDR
- Subnets (Public & Private)
- Route Tables
- Internet Gateway
- NAT Gateway
- Security Groups vs NACL

Load Balancers

- Application Load Balancer (ALB)
- Network Load Balancer (NLB)
- Classic Load Balancer (CLB)

DNS

- Route 53
- Hosted Zones
- Routing Policies

8. Security & Compliance

- Shared Responsibility Model
- Encryption at Rest & In Transit
- KMS
- Secrets Manager
- WAF
- Shield
- CloudTrail
- GuardDuty
- Inspector

9. Monitoring & Logging

- CloudWatch
 - Metrics
 - Logs
 - Alarms
- CloudTrail
- AWS Config
- X-Ray

10. Deployment & Management

Infrastructure as Code

- CloudFormation
- Terraform (Overview)

Deployment Services

- Elastic Beanstalk
- CodeCommit
- CodeBuild
- CodeDeploy
- CodePipeline

11. Containers & Orchestration

- Docker on AWS
- ECS
- ECR
- EKS (Kubernetes Overview)
- Fargate

12. Messaging & Integration

- SNS
- SQS
- EventBridge
- Step Functions

13. Serverless Architecture

- API Gateway
- Lambda
- DynamoDB
- S3
- Real-time serverless use cases

14. High Availability & Scalability

- Auto Scaling
- Load Balancing
- Multi-AZ vs Multi-Region
- Disaster Recovery Strategies
 - Backup & Restore
 - Pilot Light
 - Warm Standby
 - Multi-Site

15. Cost Management

- AWS Pricing Models
- Free Tier
- Cost Explorer
- Budgets
- Savings Plans
- Best Practices to reduce cost

16. DevOps on AWS

- CI/CD pipelines
- Blue-Green Deployment
- Canary Deployment
- Monitoring deployments

17. Real-Time AWS Architectures

Example Architectures

1. Web Application Architecture
2. Microservices Architecture
3. Serverless Application
4. Data Analytics Pipeline

18. AWS for Developers

- Hosting Spring Boot apps
- Hosting Angular / React apps
- Connecting RDS from EC2
- S3 for static websites

19. AWS Certifications (Optional)

- AWS Cloud Practitioner
- AWS Solutions Architect – Associate
- AWS Developer – Associate

- AWS DevOps Engineer

20. AWS Interview Questions

- EC2 vs Lambda
- S3 vs EBS
- Security Group vs NACL
- ALB vs NLB
- IAM Role vs User
- RDS vs DynamoDB

21. Best Practices

- Least privilege access
- Use Multi-AZ
- Automate everything
- Monitor & alert
- Regular backups

22. Tools & Utilities

- AWS Console
- AWS CLI
- SDKs
- CloudShell