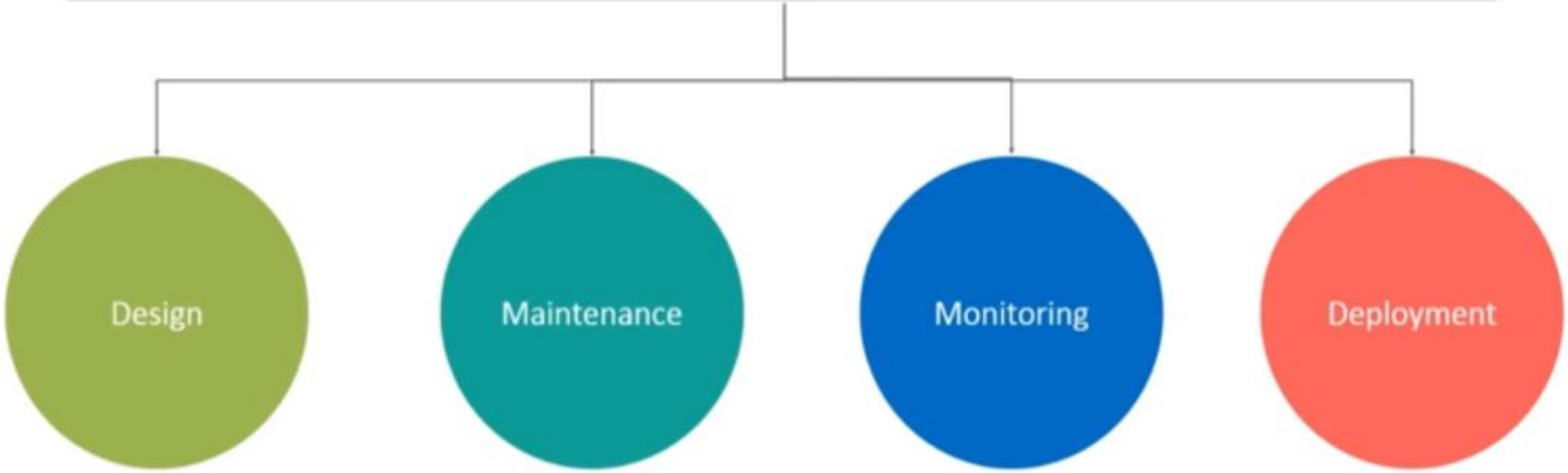
# Cloud Engineer :
## Roles, Responsibilities And Skills

# Who Is A Cloud Engineer?

*Cloud Engineer is an IT professional responsible for performing technological responsibilities concerning Cloud Computing. He or She is mainly responsible for:*



# What is a Cloud Engineer Role?

A Cloud Engineer takes care of all **the technical duties which are related with Cloud Computing**. Involves planning, architecting, managing, monitoring and also support cloud-based applications.

# Cloud Architect

1. A **Cloud Architect** is an IT specialist who develops a company's computing strategy.

2. This strategy incorporates **cloud** adoption plans, **cloud** application design as well as **cloud** management and monitoring.

3. Additional **responsibilities** include support for application **architecture** and deployment in **cloud** environments.

# Roles & Responsibilities

- Compute Services: EC2, Lambda, AutoScaling
- Storage Services: EBS, S3, EFS, Glacier
- Databases: RDS, DynamoDB
- Networking: VPC, CloudFront, Route53, ELB
- Management Tools: CloudWatch, CloudTrail, Trusted Advisor, CloudFormation.
- Other Services: IAM, CertificateManager, SNS, VPN


AWS Day to Day
Activity

# EC2

- Providing EC2 instances
- Bootstrapping EC2 instances while launching.
- Hardening EC2 instance with security patches after launching.
- Modifying EC2 instance Security groups to open or close port numbers
- Recovering EC2 instance keypair.
- Modifying instance type in case of demanding more/less resources (CPU/Memory).
- Providing list of instances information
- Shutting down unused instances as per customer confirmation
- Taking AMI of instances if any activity/change scheduled

# VPC

- Creating VPC, Subnets, Route tables, Internet Gateways, NACLs etc.. For new environment
- Creating public and private subnets
- Creating NAT instances, NAT Gateways.
- Disabling ports in NACLs
- Enabling VPC peering between Test, QA and Prod VPCs
- Enabling VPC flowlogs to monitor network related issues.
- Creating and configuring OpenVPN server to connect instances security.
- Creating new users in openVPN server

# ELB, AutoScaling

- Creating ELBs
- Requesting SSL certificate for new domains in Certificate Manager (ACM).
- Configuring SSL certificates on ELBs.
- Troubleshooting in case of instances are "OutOfService" in ELB.
- Enabling and analyzing ELB access logs
- Creating Launch configuration and Auto Scaling Groups.
- Adding new LC to ASG when AMI updated.

# EBS, S3, EFS, Glacier

- Creating new EBS volumes, modifying existing volume sizes or volume types.
- Taking volume snapshots for backup.
- Coping volumes from one Availability Zone (AZ) to other AZ if requested.
- Migration date from one EC2 instance to other.
- Enabling encryption on EBS and S3 bucket objects.
- Creating S3 buckets and granting requested permissions through IAM
- Enabling life cycle policies to transfer data from one storage class to other.
- Creating EFS and mounting it in multiple instances.

# IAM

- Creating IAM users and granting with minimal permissions.
- Generating or modifying IAM policies as per requirement.
- Creating roles to access one AWS service with other.
- enforcing users to use secure password and MAF

# CloudWatch, CloudTrail, TrustedAdviser

- Monitoring instance resource utilization through cloudwatch.
- Creating alarms, events and custom matrix in cloudwatch
- Enabling CloudTrail and analyzing logs in case of any event occurred.
- Collecting trusted Adviser reports timely manner and analyzing reports for cost optimization.
- Working with AWS support in case of any help needed.

# Route53

- Creating Route53 hosted zones to map with public or private domain.
- Creating record sets to map with EC2 instances/ELBs.
- Using routing policies if necessary.
- Mapping domain from domain registers (like godaddy) to route53

# CloudFormation, Lambda

- Writing CloudFormation templates to deploy infrastructure as a code.
- Wraiting templates to create VPCs, EC2 instacnes, ELBs, S3 buckets, etc..
- Modifying existing templates as per requirement.
- Analyzing change sets before modifying stack.
- Automating snapshot backups through Lambda functions.
- Enabling schedule stop and start, using Lambda functions.

# RDS

- Creating RDS instances as per database team requirement.
- Enabling Multi-AZ, read replicas as per demand
- Taking snapshots and restoring from snapshots.