
amazon
web services™
EC2

What is Amazon EC2?

What is Amazon EC2?

- EC2 stands for Amazon Elastic Compute Cloud.
- Amazon Elastic Compute Cloud (Amazon EC2) provides on-demand, scalable computing capacity in the Amazon Web Services (AWS) Cloud.
- Using Amazon EC2 reduces hardware costs so you can develop and deploy applications faster.
- You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage.
- You can add capacity (scale up) to handle compute-heavy tasks, such as monthly or yearly processes, or spikes in website traffic. When usage decreases, you can reduce capacity (scale down) again.


AMAZON MACHINE IMAGE
INTRODUCTION

- What is AMI?

- What is AMI?
- Amazon Machine Image (AMI) is a special type of virtual appliance that is used to create a virtual machine within the Amazon Elastic Compute Cloud ("EC2"). It serves as the basic unit of deployment for services delivered using EC2.

Amazon Machine Image (AMI)

- AWS AMI or Amazon Machine Image (AMI) is a way to launch a virtual machine in the AWS cloud.
- You can launch several instances at a time in case you want multiple instances with the same configurations.

AWS Cloud Storage

A consistent, scalable and safe location for your data

❑ What is cloud storage?

What is cloud storage?

- Cloud storage is a cloud computing model that enables storing data and files on the internet through a cloud computing provider that you access either through the public internet or a dedicated private network connection. The provider securely stores, manages, and maintains the storage servers, infrastructure, and network to ensure you have access to the data when you need it at virtually unlimited scale, and with elastic capacity. Cloud storage removes the need to buy and manage your own data storage infrastructure, giving you agility, scalability, and durability, with any time, anywhere data access.

- What is cloud storage?

- Cloud storage is a cloud computing model that enables storing data and files on the internet through a cloud computing provider that you access either through the public internet or a dedicated private network connection. The provider securely stores, manages, and maintains the storage servers, infrastructure, and network to ensure you have access to the data when you need it at virtually unlimited scale, and with elastic capacity. Cloud storage removes the need to buy and manage your own data storage infrastructure, giving you agility, scalability, and durability, with any time, anywhere data access.

- Why is cloud storage important?

❑ What is cloud storage?

❑ Cloud storage is a cloud computing model that enables storing data and files on the internet through a cloud computing provider that you access either through the public internet or a dedicated private network connection. The provider securely stores, manages, and maintains the storage servers, infrastructure, and network to ensure you have access to the data when you need it at virtually unlimited scale, and with elastic capacity. Cloud storage removes the need to buy and manage your own data storage infrastructure, giving you agility, scalability, and durability, with any time, anywhere data access.

❑ Why is cloud storage important?

- Cost effectiveness
- Increased agility
- Faster deployment
- Efficient data management
- Virtually unlimited scalability
- Business continuity

AWS Storage

Types & Benefits

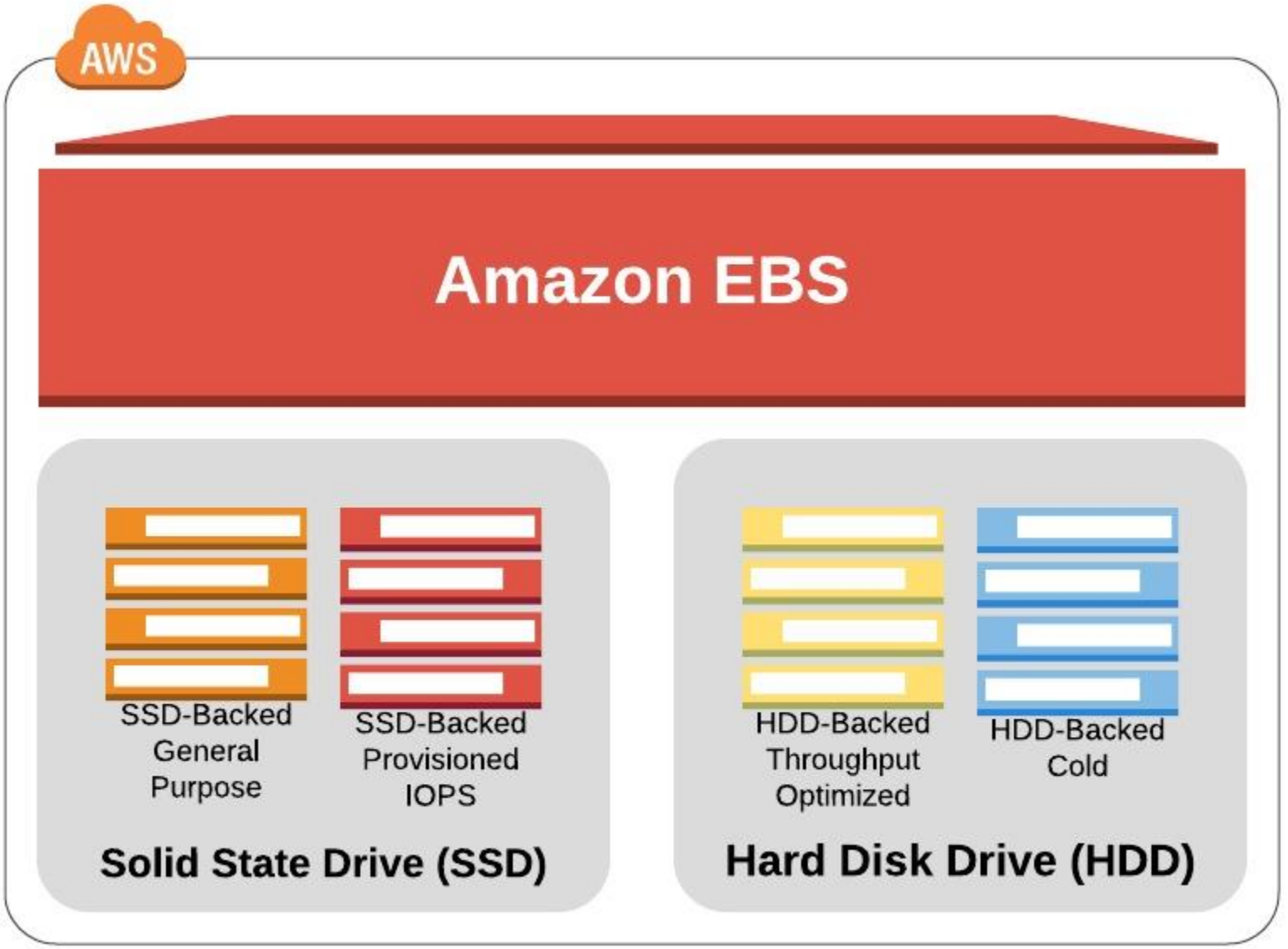

AWS
EBS

Elastic block Storage (EBS)

amazon web services

What is EBS?

- EBS stands for **Elastic Block Store**.
- EC2 is a virtual server in a cloud while EBS is a virtual disk in a cloud.
- Amazon EBS allows you to create storage volumes and attach them to the EC2 instances.
- EBS volume does not exist on one disk, it spreads across the Availability Zone. EBS volume is a disk which is attached to an EC2 instance.
- EBS volume attached to the EC2 instance where windows or Linux is installed known as Root device of volume.


AWS
Amazon EBS
SSD-Backed General Purpose
SSD-Backed Provisioned IOPS
Solid State Drive (SSD)
HDD-Backed Throughput Optimized
HDD-Backed Cold
Hard Disk Drive (HDD)

AWS EBS Snapshots Archive

What is Snapshot?

A snapshot can be defined as a system state at a specific point of time in a computer system.

The hard drive snapshots contain the hard disk's directory structure, including each file and folder over the disk efficiently. This backup type can also be assigned as a "**disk image**."
The disk images permit the complete disk to restore in case the main disk fails. Several disk programs that are creating snapshots permit particular files to recover through the snapshot, rather than having to recover the complete backup.


amazon
web services™
S3

❑ What is Amazon S3?

- What is Amazon S3?

- Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

- What is Amazon S3?

- Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

1) Low Cost

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

1) Low Cost

2) Scalability

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

1) Low Cost

2) Scalability

3) Availability

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

1) Low Cost

2) Scalability

3) Availability

4) Security

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

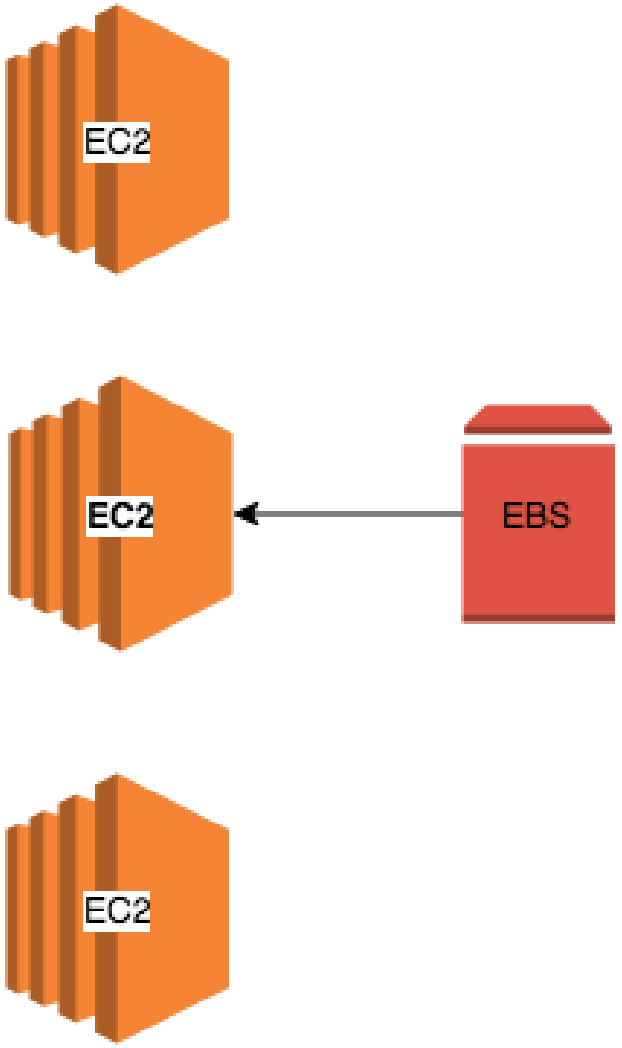
1) Low Cost
2) Scalability
3) Availability
4) Security
5) Flexibility

❑ What is Amazon S3?

❑ Amazon Simple Storage Service (Amazon S3) is a public Cloud Storage available in AWS. It is object storage offering amazon s3 buckets. Also S3 is Global Service it is used by several company's around the world.

Features of S3:

1) Low Cost
2) Scalability
3) Availability
4) Security
5) Flexibility
6) Simple Data Transfer



EBS - Can be attached to a single EC2 instance only

AWS IAM

❑ What is IAM?

What is IAM?

- AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

❑ What is IAM?

❑ AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

Features of IAM:

❑ What is IAM?

❑ AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

Features of IAM:

- ➢ Centralized Control of AWS Account

❑ What is IAM?

❑ AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

Features of IAM:

- ➢ Centralized Control of AWS Account
- ➢ Identity Federation

❑ What is IAM?

❑ AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

Features of IAM:

- ➢ Centralized Control of AWS Account
- ➢ Identity Federation
- ➢ Eventually Consistent

❑ What is IAM?

❑ AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. With IAM, you can centrally manage permissions that control which AWS resources users can access. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

Features of IAM:

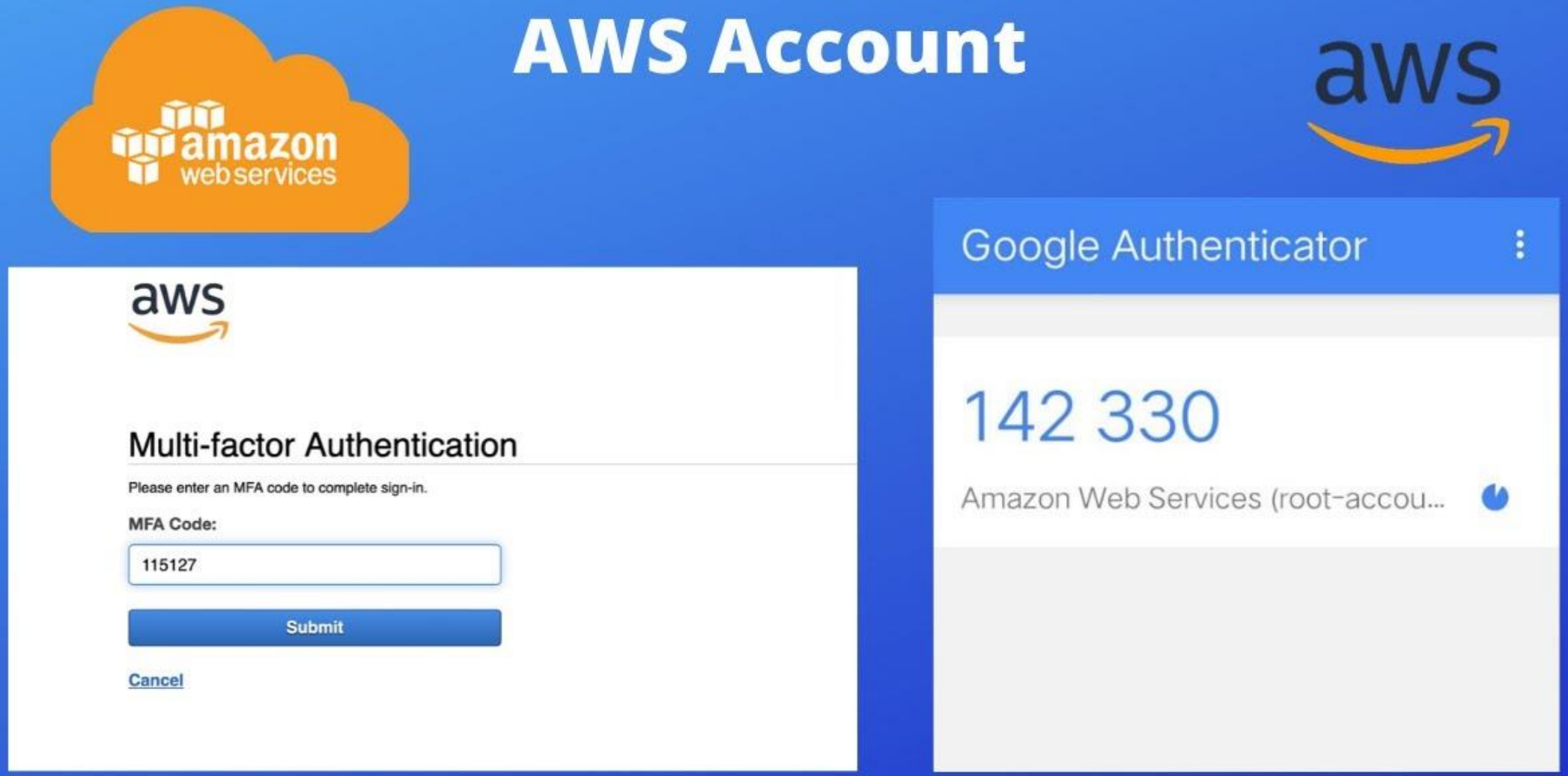
- ➢ Centralized Control of AWS Account
- ➢ Identity Federation
- ➢ Eventually Consistent
- ➢ Multi-Factor Authentication


AWS
MFA

- What is MFA?

- What is MFA?
- AWS Multi-Factor Authentication (MFA) is a simple best practice that adds an extra layer of protection on top of your user name and password. These multiple factors provide increased security for your AWS account settings and resources.

Setup MFA (2-Factor Authentication) on AWS Account



Multi-factor Authentication

Please enter an MFA code to complete sign-in.

MFA Code:

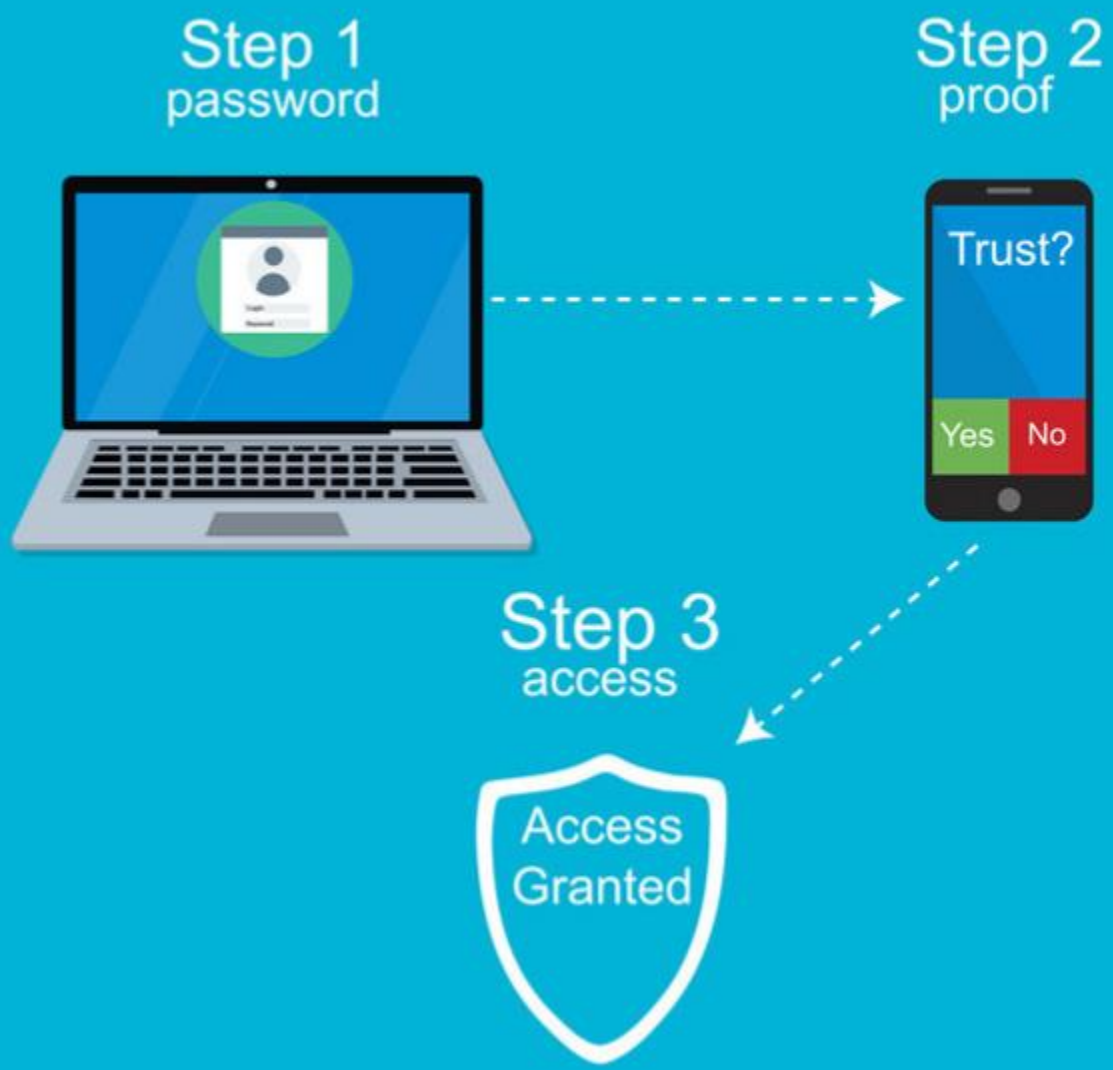
115127

Submit

Cancel


aws
Google Authenticator
AWS EC2 MFA
Secure SSH
with Google
Authenticator

Configure IAM MFA Status for each one of your AWS accounts




AWS Monitoring

- What is AWS monitoring?

- What is AWS monitoring?

- Monitoring is the process of collecting, analyzing and using data to track various systems. Amazon Web Services (AWS) monitoring scans your AWS resources and applications, collecting data to ensure everything is operating smoothly and securely. Monitoring your AWS infrastructure helps identify vulnerabilities and issues, predict performance and optimize configurations. This practice relies on various tools and services to collect, analyze and present data insights.


AWS
CloudTrail

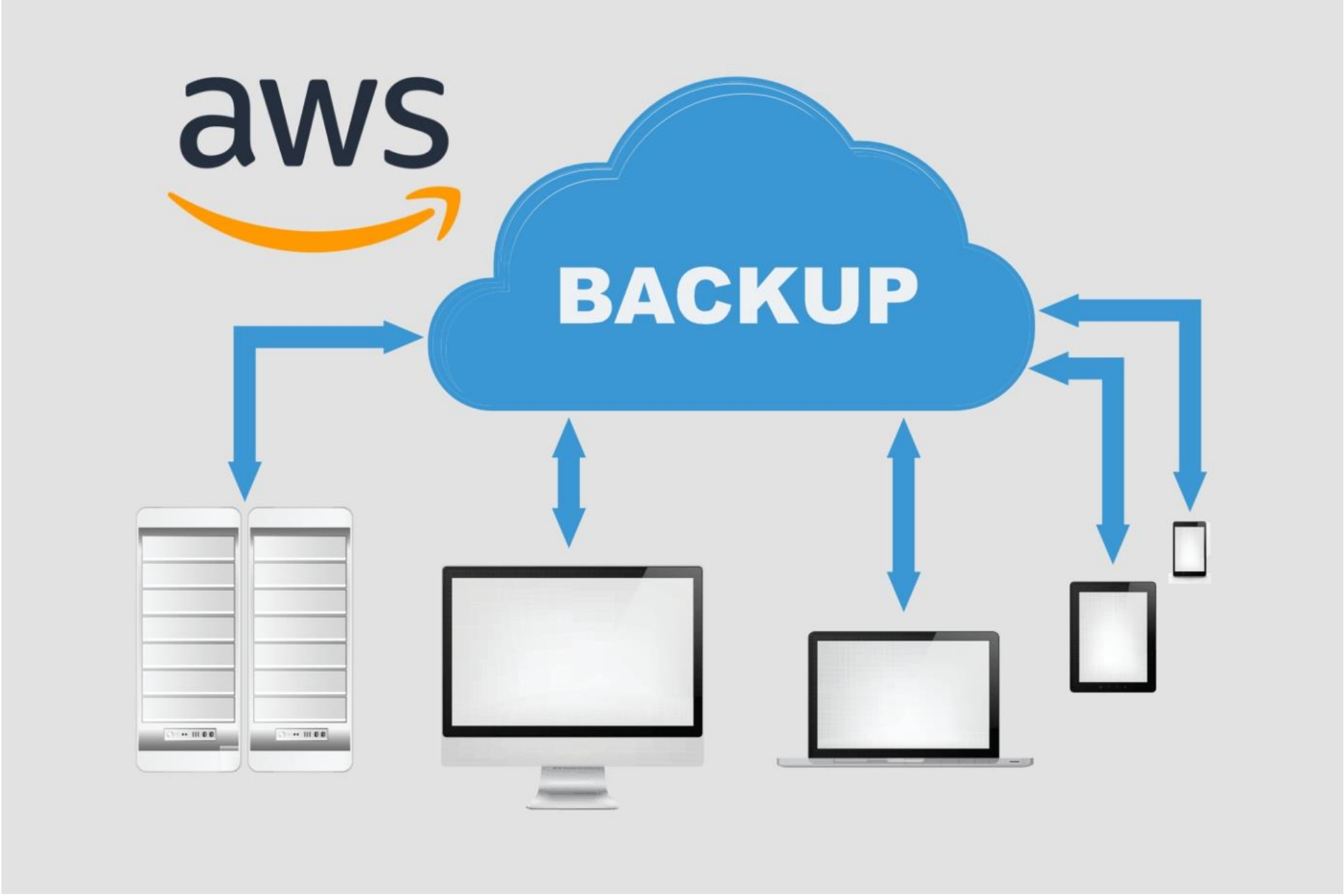
- What is Cloud Trail?

- What is Cloud Trail?
- AWS CloudTrail provides a detailed record of all actions taken within an AWS account. This includes actions taken by users, services, and applications. CloudTrail records all API activity within an AWS account.

AWS Cloudwatch

- What is AWS CloudWatch?

- What is AWS CloudWatch?
- Amazon CloudWatch is AWS's central logging and metrics service. Which will monitor AWS Infrastructure.

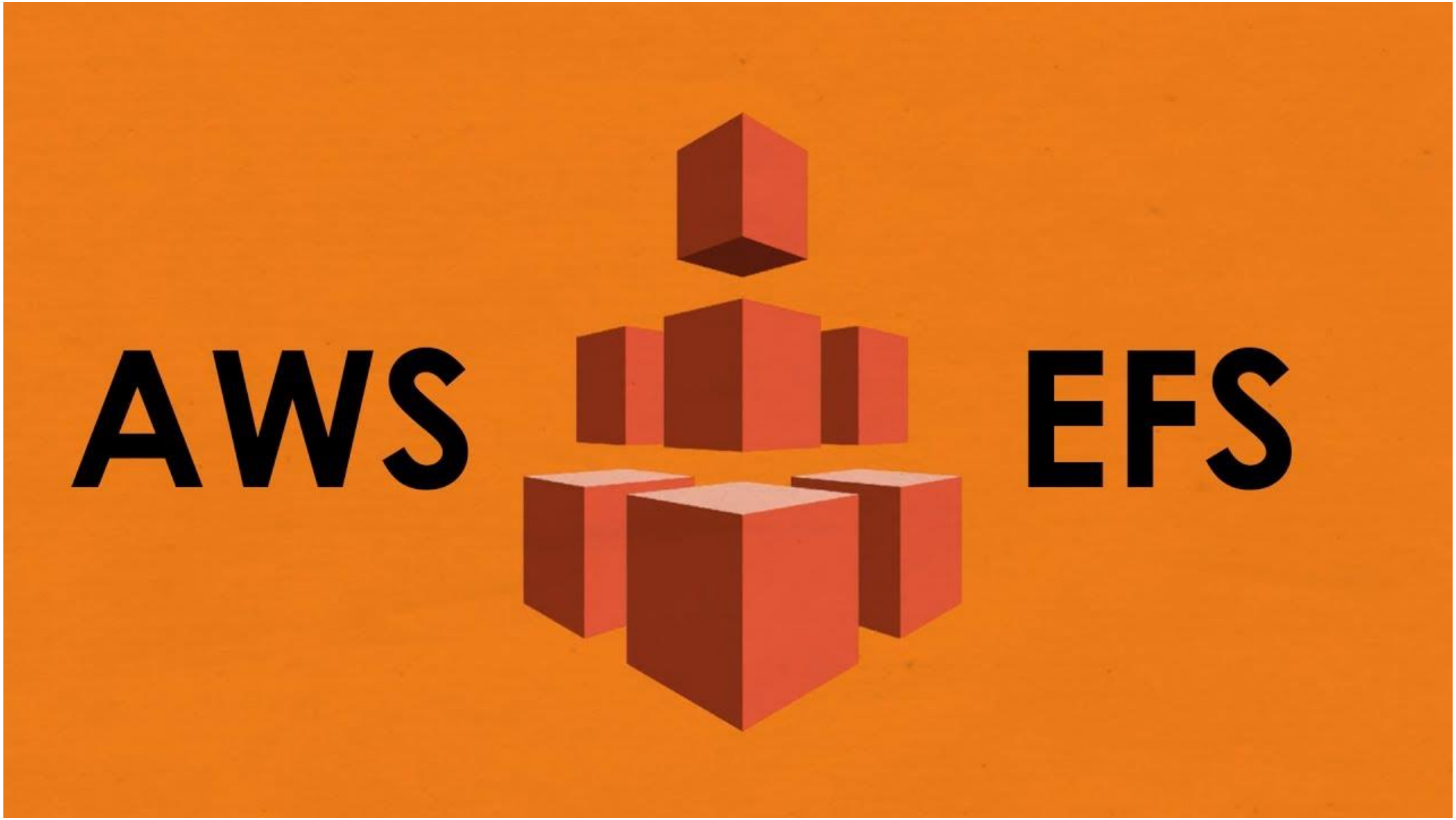

aws
BACKUP

❑ What is AWS Backup?

❑ What is AWS Backup?

- ❑ AWS Backup is a fully managed backup service that makes it easy to centralize and automate the backing up of data across AWS services. With AWS Backup, you can create backup policies called backup plans. You can use these plans to define your backup requirements, such as how frequently to back up your data and how long to retain those backups.


AWS Backup
AWS Backup
Makes it easy to centrally manage backups in the AWS Cloud via console, APIs, or CLI
Create backup plan
Backup frequency, retention policy
Amazon EFS
AWS Storage Gateway
Amazon DynamoDB
Amazon RDS
Amazon EBS
Assign AWS resources
Backup
Resources automatically backed up according to backup plan using Amazon S3
Monitor
Modify
Restore

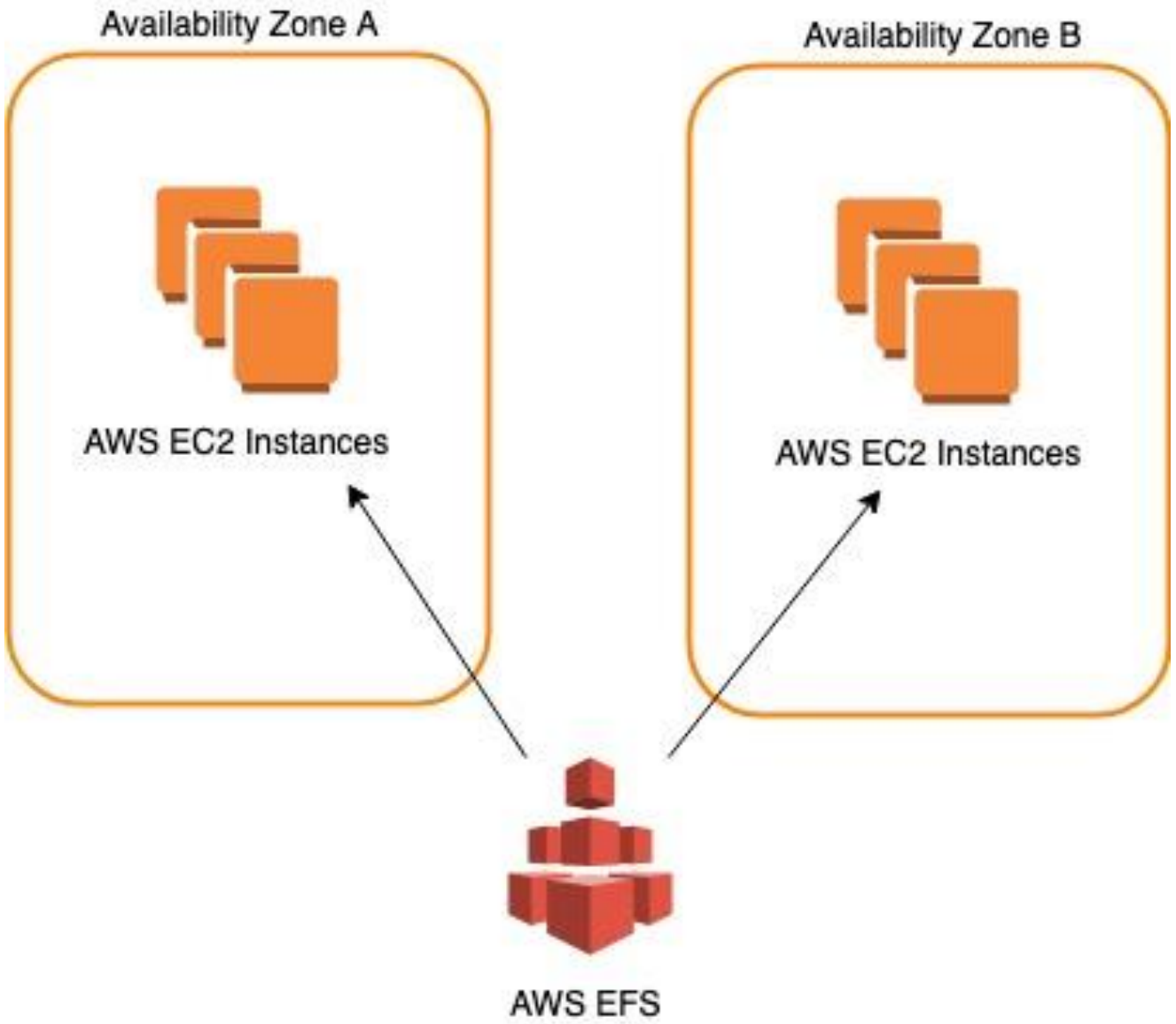

AWS
EFS

❑ What is Amazon Elastic File System?

❑ What is Amazon Elastic File System?

❑ Amazon Elastic File System (Amazon EFS) provides serverless, fully elastic file storage so that you can share file data without provisioning or managing storage capacity and performance.

Amazon EFS supports the Network File System version 4 (NFSv4.1 and NFSv4.0) protocol, so the applications and tools that you use today work seamlessly with Amazon EFS.


Availability Zone A
Availability Zone B
AWS EC2 Instances
AWS EC2 Instances
AWS EFS

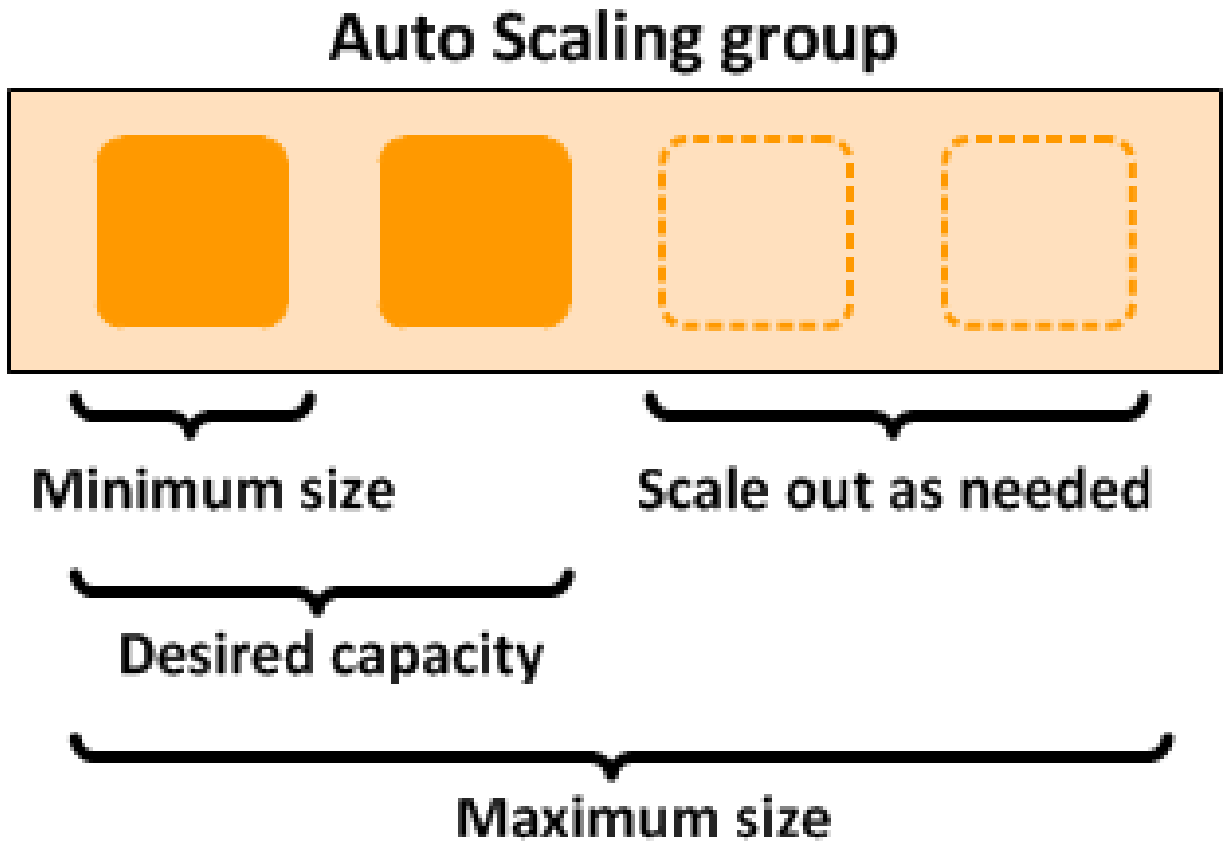
AUTO SCALING

❑ What is AWS Auto Scaling?

- What is AWS Auto Scaling?

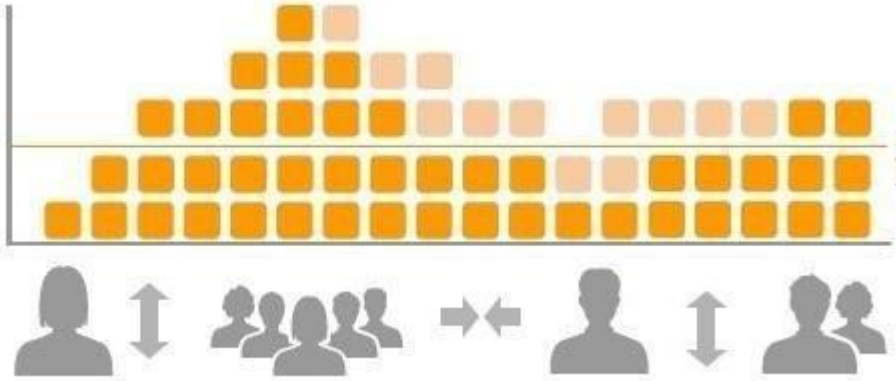
- AWS Auto Scaling is a Service. That automatically monitors and adjusts compute resources to maintain performance for applications hosted in AWS Cloud.

  AWS Auto Scaling is used with applications that rely on multiple AWS services that can scale. Scaling policies can be unified for multiple AWS services together. Both Amazon EC2 Auto Scaling and Application Auto Scaling services can be combined and included in AWS Auto Scaling.


Auto Scaling group
Minimum size
Scale out as needed
Desired capacity
Maximum size

Create Auto Scaling Group

Step 1: Create or select a launch template



Step 2: Create Auto Scaling group


amazon RDS

❑ What is Database?

❑ What is Database?

A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

❑ What is Database?

A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

❑ What is Amazon RDS?

❑ What is Database?

A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

❑ What is Amazon RDS?

Amazon Relational Database Service (RDS) is a managed SQL database service provided by Amazon Web Services (AWS). Amazon RDS supports an array of database engines to store and organize data. It also helps in relational database management tasks like data migration, backup, recovery and patching.

❑ What is Database?

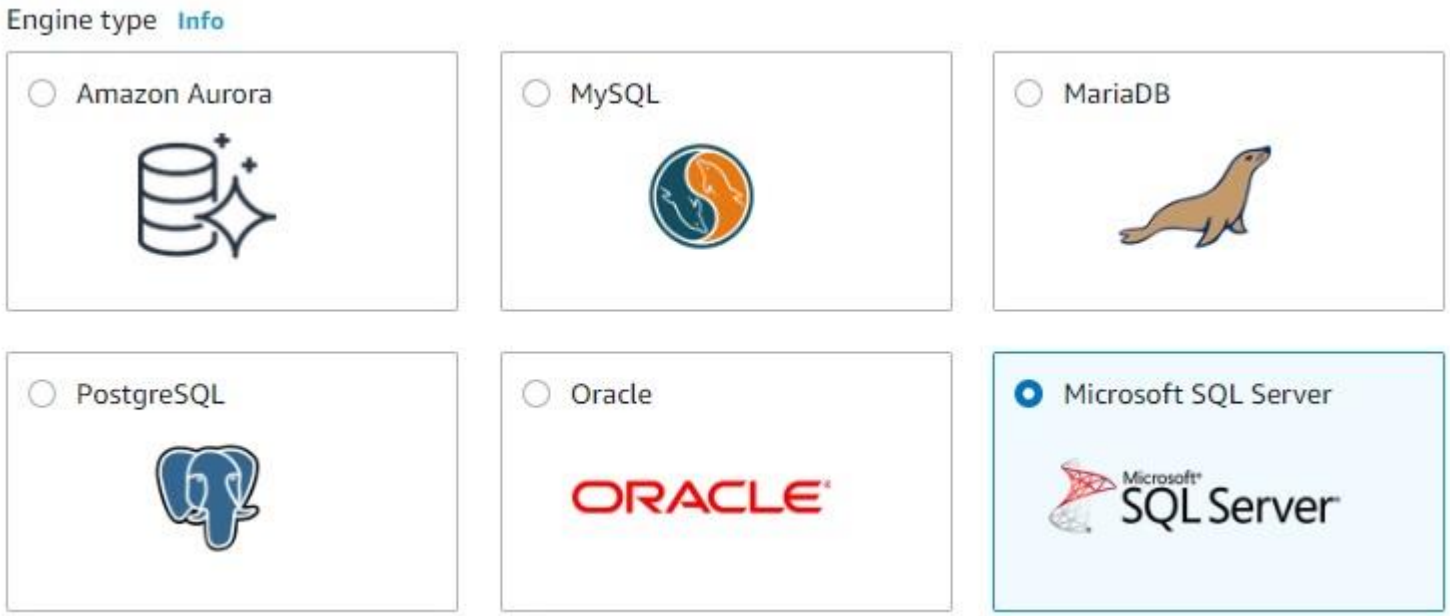
A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).

❑ What is Amazon RDS?

Amazon Relational Database Service (RDS) is a managed SQL database service provided by Amazon Web Services (AWS). Amazon RDS supports an array of database engines to store and organize data. It also helps in relational database management tasks like data migration, backup, recovery and patching.

❑RDS Supports 6 types of Engines:

❑ RDS Supports 6 types of Engines:



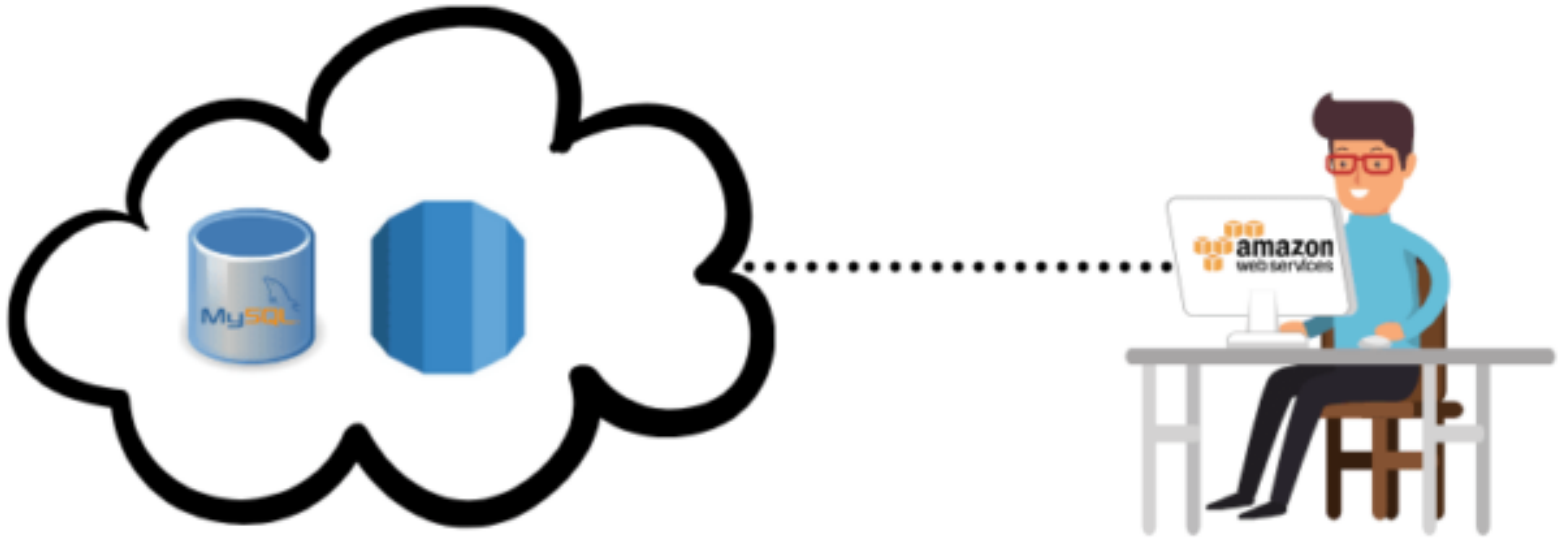
AWS RDS

Why choose RDS

Why choose RDS

Amazon Relational Database Service (RDS) is a cloud-based platform that makes it easy to set up and operate a relational database in the cloud.

How to Create MySQL Database with AWS RDS

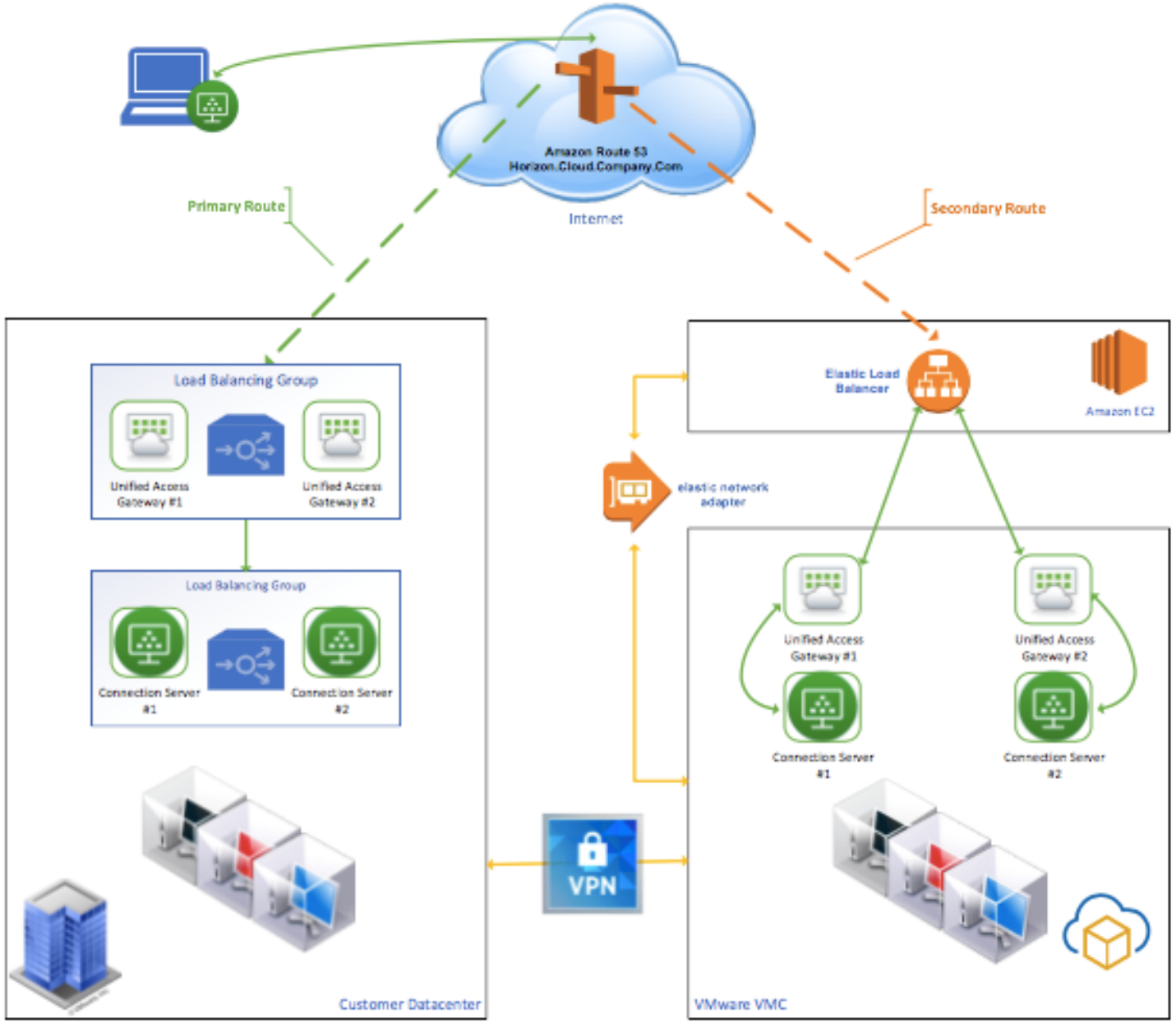


AWS
Route 53

❑ What Is AWS Route 53?

Amazon Route 53 is highly available, reliable, and scalable cloud Domain Name System (DNS) web service globally.

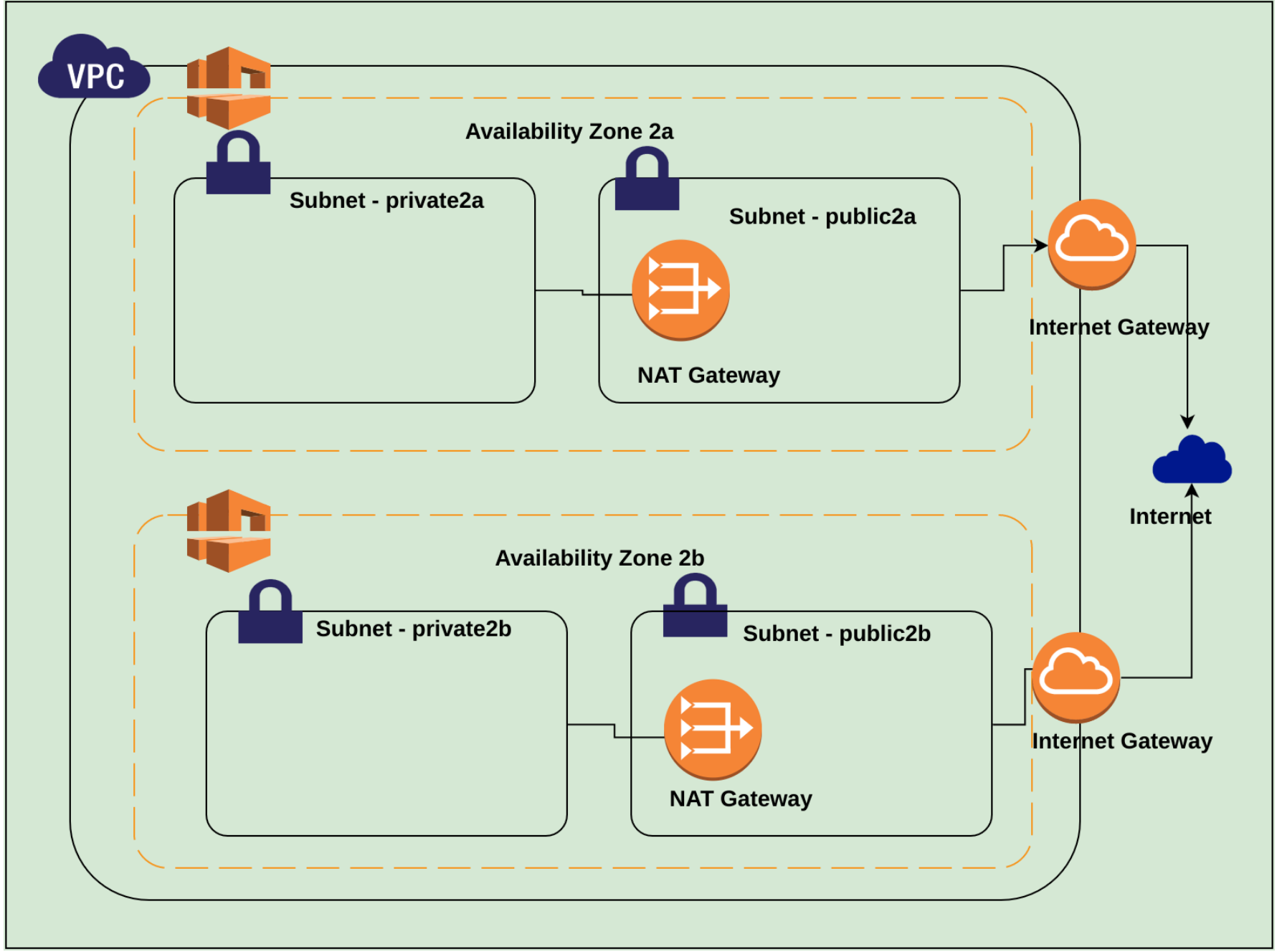
The purpose of Amazon Route 53 to provide an extremely reliable and cost-effective way for developers and businesses to route end users effectively and successfully to Internet applications.


Amazon Route 53
Horizon.Cloud.Company.Com
Internet
Primary Route
Secondary Route
Load Balancing Group
Unified Access Gateway #1
Unified Access Gateway #2
Load Balancing Group
Connection Server #1
Connection Server #2
Customer Datacenter
VPN
Elastic Load Balancer
Amazon EC2
elastic network adapter
Unified Access Gateway #1
Unified Access Gateway #2
Connection Server #1
Connection Server #2
VMware VMC


VPC

- What is VPC?

- Amazon Virtual Private Cloud (Amazon VPC), you can launch AWS resources in a logically isolated virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.


VPC
Availability Zone 2a
Subnet - private2a
Subnet - public2a
NAT Gateway
Internet Gateway
Internet
Availability Zone 2b
Subnet - private2b
Subnet - public2b
NAT Gateway
Internet Gateway

HARSHA TRAININGS
GET TRAINED , GET JOB

Revision Class