

Elastic Load Balancing		
Load Balancing Service	Distributes application traffic across services	
	Ensures that one resource won't get overloaded, and that the traffic is spread out.	
Services to run containerized applications		
ECS - Elastic Container Service	EKS - Elastic Kubernetes Service	
AWS Cloud Resource Provisioning		
AWS Management Console	AWS Command Line Interface	Software Development Kits
Web GUI	Automate API requests, services, actions	To access and manage AWS services through an API
Software Development Kits	to access and manage AWS services.	The API is fitted to the platform or programing language that you use.
AWS Cloud Provision Services:		
With AWS Elastic Beanstalk, you provide code and configuration settings to: Adjust capacity Load balancing Automatic scaling Application health monitoring		
With AWS CloudFormation, you can treat your infrastructure as code build an environment by writing lines of code		
AWS Organization		
A container for your AWS accounts.		
comes with an organization root user by default. It allows you to manage permissions of your organization's accounts.		

AWS Pricing		
Free Tier		
Always - do not expire.	Free for the first 12 months	Trials - Short term offers
Always Free is available to everyone.	With more data to work with	For specific services
		free for the first 12 months
Pricing Models:		
Pay for what you use:	Pay less when you reserve:	Pay Less with Volume-Based Discount When You Use More
No need for licensing agreements.	Requires a commitment for future consumption.	Pricing per unit gets lower when you cross a threshold.
	This option is for those who know that they need the resources in the future.	
Cost Explorer:		
To visualize cost and usage.		
Cost Explorer has a web-based dashboard.	Filters and groups help you to drill down to find insights.	
The Pricing Calculator lets you create a cost estimate for the use of AWS resources.		
The Billing Dashboard lets you pay your AWS bill, monitor usage, and analyze costs.		

Innovate with AWS Cloud		
Machine Learning - ML	Artificial Intelligence - AI	Serverless Applications
SageMaker reduces the development time and complexity of ML.	Service to build voice and text chatbots - Amazon Lex Service that can convert text to speech - Amazon Transcribe Service that can discover text patterns - Amazon Comprehend Service that can detect potential fraud activities online - Amazon Fraud Detection	In AWS, you can run the serverless application with a service called AWS Lambda.
Cloud Migration and Innovation		
Cloud Adoption Framework		
Business	People	Governance Platform

that business and IT objectives meets the investment.

requirements, and roles in your organization

the risk. And simultaneously, to maximize the business value.

Cloud Migration Strategies

Rehosting	Replatforming	Refactoring	Repurchasing
=lift-and-shift.	=lift, tinker and shift.	Changing application foundations	SAAS from traditional model

Serverless and Servers

Containers	AWS Lambda	AWS EC2
Let you package code in a single object.	Deploy Code for building and maintain apps	Provides virtual server instances (VSI).

that the Deploy 0.

businesscode 1. Deploy VSI 1.

Make Deploy code 2. Operate Servers

Ready to Trigger on an Event

AWS networking

AWS Virtual Private Cloud	Virtual Private Cloud is a managed service that lets you isolate your AWS resources in an isolated network.
Private Cloud requiring Internet Gateway	Private Cloud requiring Internet Gateway
VPN	Used to access private resources in the VPC
AWS Direct Connect	Dedicated private connection between a data center and VPC
Subnet	A section of VPC
Access Control Lists (ACL)	A firewall that controls the traffic, both inbound and outbound.
	Stateless Packet filtering
Security Group	Firewall that controls inbound and outbound traffic
	Specific to an AWS EC2 instance
Configuration	Adding custom rules for the traffic.
AWS Route 53	Lets someone access your website from their browser
	Like a phone book

EBS	Object Store
Block Store	Object <= 5 terabytes
Block <= 17.6 terabytes	Object <= 5 terabytes
Faster performance	Data does not suffer loss, degradation, or a corruption for a very long time
Data can be modified	Data can not be modified, unless re-uploaded

Database Migration Service - AWS DMS

Helps move data between a source database and a target database.

Monitoring and Analysis

AWS CloudWatch	AWS CloudTrail	Trusted Advisor
To monitor resources	Logs actions inside your AWS environment.	Checks account, evaluates, and recommends.
Trust finder evaluates best practice in:		
- Cost optimization		
- Performance		
- Security		
- Fault tolerance		
- Service limits		

Identity and access management

AWS Account Root User	IAM Users	IAM Policies	IAM Groups	IAM Roles

Identity and access management (cont)

Created entity deny or collection when (person allow of IAM first or an permis- users start an applic- sions to AWS account) that AWS interacts resources with AWS and resources services.

AWS Cloud EC2 (cont)

Temporary It may high-performance and optimized: compute-intensive needs services or in When huge amounts of data resources or form of be preloaded before optimized a running the app Instances: security Boost the data processing. Acceler- code For graphics applications and rated that is streaming. Computing: sent to Storage when you have large your datasets on local storage. Eg Optimized: mobile Warehouses, online transac- tion systems, large file systems or an email.

AWS Instance Stores (cont)

S3 Standard	Ideal for data accessed often
S3 Standard-Infrequent Access	Lower storage price but higher data retrieval price.
S3 One Zone-IA (S3 One Zone-Infrequent Access)	It stores data in one Availability Zone, cheaper
S3 Intelligent-Tiering	Requires automation and monitoring
S3 Glacier	For archiving data, retrieve objects within a few minutes.
S3 Glacier Deep Archive	Has the lowest cost, can retrieve objects within 12 hours.

Full access to all of the accounts resources and AWS services.

AWS Support Plans

Basic Developer Business Enterprise

AWS Cloud EC2

A virtual server in the AWS Cloud

To work with EC2:

1. Launch The config includes the operating system, application server, or applications. with template config:
2. Connect Programs and applications
3. Use Execute commands to install software, add storage, copy, and organize files, and much more.

Instance Types:

General Balances computing, memory, and networking resources

Instance:

AWS Instance Stores

Instance Stores A storage volume that acts as a physical hard drive

AWS EBS - Elastic Block Store Provides storage volumes.

Used for data that needs to persist

Backup the data with AWS EBS snapshots.

Cloud Storage - AWS S3 Also called AWS Simple Storage Service.

Allows uploading any type of file.

Object-level storage contains: Data - any type of file

Metadata - information about what the data is

Key - unique identifier

AWS S3 Storage Classes:

AWS Well-Architected Framework

Operational Excellence Pillar

The operational excellence pillar is a capacity to manage and monitor systems. It improves supporting systems processes and procedures.

It includes:

- Making small and reversible changes
- Prediction of system disruptions
- Performing code tasks
- Making documentation notes

Security Pillar

The security pillar consists of protecting systems and data.

Well-Architected Framework applies security at all levels.

It protects both stored and in-transit data. When possible, best security practices are automatically applied.

Reliability Pillar

The reliability pillar is the ability to minimize disruptions of the system.

AWS Well-Architected Framework (cont)

It obtains computing resources as needed.

It entails boosting system availability.

It automatically recovers the system from disruptions.

Performance Efficiency Pillar

The performance efficiency pillar is the capacity to accurately use computing resources.

It satisfies the efficiency on demand.

Cost Optimization Pillar

Cost optimization pillar helps you run your cloud services at the lowest price points.

Cost optimization performs operations such as:

Analysis of your costs

Operating managed services

Makes sure you only pay for what you use