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.

AWS Pricing (cont)

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
Ensures that business and IT objectives meets the investment.	Skills, requirements, and roles in your organization	minimizing the risk. And simultaneously, to maximize the business value.	To deploy new cloud solutions.

Cloud Migration Strategies

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

Severless and Severs

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).

Severless and Severs (cont)

Container orchestration services help you deploy, manage, and scale your containerized applications.	Security Ensures that the organization's security objectives are met.	Operations Ensuring that the business operations meet the expectations.	To run: 0. Deploy code 1. Make sure Code Ready to Trigger on an Event	To run: 0. Deploy VSI 1. Deploy code 2. Operate Servers

AWS networking

AWS Virtual Private Cloud	VPC is a service that lets you isolate your AWS resources in an isolated network.
Retaining Apps requiring refactoring before migration	Retiring Removing unnecessary apps
Internet Gateway	How traffic can be allowed through a VPN
Virtual Private Gateway	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

AWS EBS and AWS S3

AWS EBS	AWS S3
Block Store	Object Store
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 when first start an AWS account	entity (person or an application) that interacts with AWS resources and services.	deny or allow permissions to AWS resources and services.	collection of IAM users

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

aim to map AWS groups to specific roles within your organization, and apply the policy to the group instead

Multi-factor Authentication: IMay come in the form of a security code that is sent to your mobile device or an email.

AWS Support Plans

Basic	Developer	Business	Enterprise

AWS Cloud EC2

A virtual server in the AWS Cloud

To work with EC2:

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

Instance Types:

AWS Cloud EC2 (cont)

General Purpose instances or Temporary access to servers or resources	Balances computing, memory, and networking resources
Compute Optimized:	For high-performance and compute-intensive needs
Memory Optimized Instances:	When huge amounts of data need to be preloaded before running the app
Accelerated Computing:	Boost the data processing. For graphics applications and streaming.
Storage Optimized:	when you have large datasets on local storage. Eg Warehouses, online transaction systems, large file systems

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

AWS Instance Stores (cont)

	Metadata - information about what the data is
	Key - unique identifier

AWS S3 Storage Classes:

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.

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.

By datamansam

cheatography.com/datamansam/

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AWS Well-Architected Framework (cont)

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.

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