

# AWS - Amazon Web Services



# AWS

**AWS (Amazon Web Services)** este o platformă de cloud computing oferită de Amazon, care include un mix de oferte de infrastructură ca serviciu (IaaS), platformă ca serviciu (PaaS) și software ca serviciu (SaaS).



# Cloud computing

Tot mai multe companii prefera sa inchirieze infrastructura de la diferiti provideri decat sa o construiasca ei. Astfel ele inchiriaza resurse din “cloud”

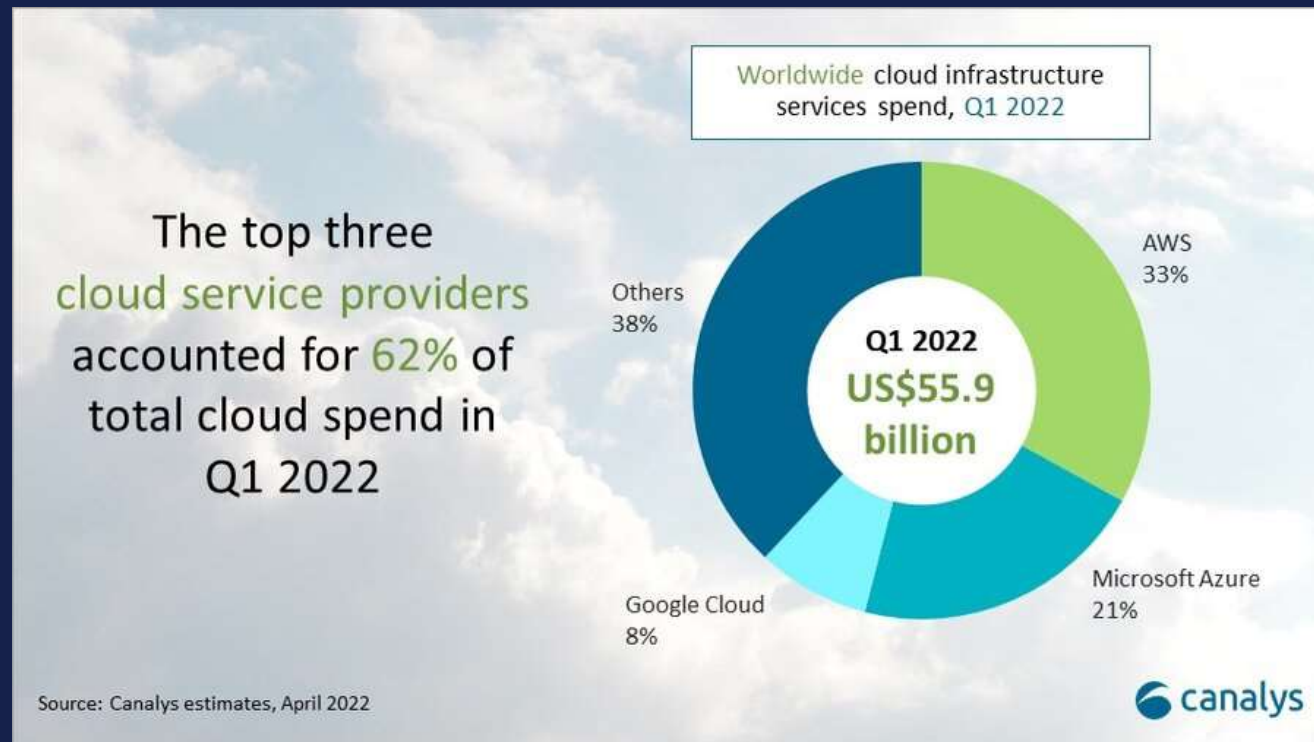
Acesta reprezinta utilizarea la cerere a resurselor unui computer, spatiu de stocare, putere de procesare fara managementul direct al clientului. Providerii mari de cloud au servere distribuite in mai multe locatii geografice pentru a oferi servicii de cat mai mare calitate pentru toti utilizatorii de pe glob.



# Avantaje

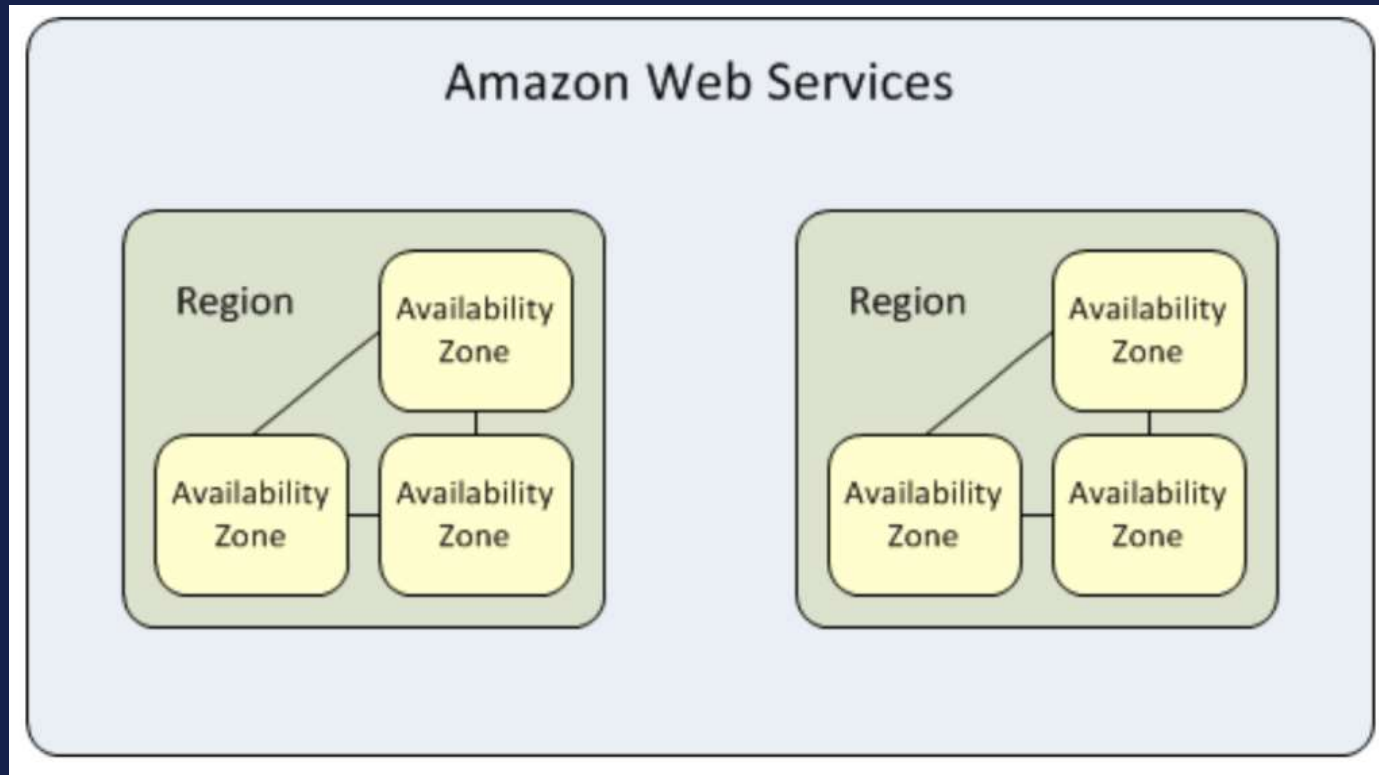
- 1) Viteza foarte mare
- 2) Update-uri automate
- 3) Eficienta si costuri reduce
- 4) Securitate
- 5) Scalabilitate
- 6) Unlimited Storage Capacity
- 7) Disaster Recovery

# Alti provideri de cloud

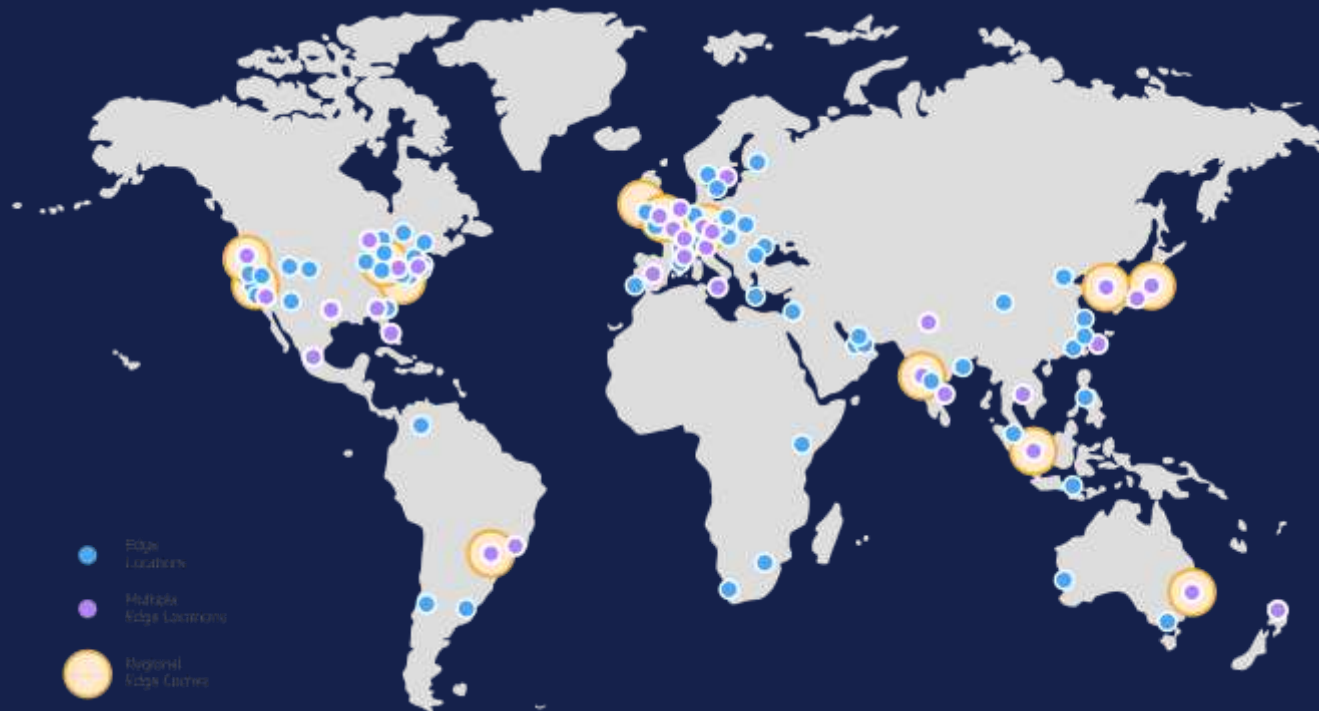


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# AWS Regions and AZ

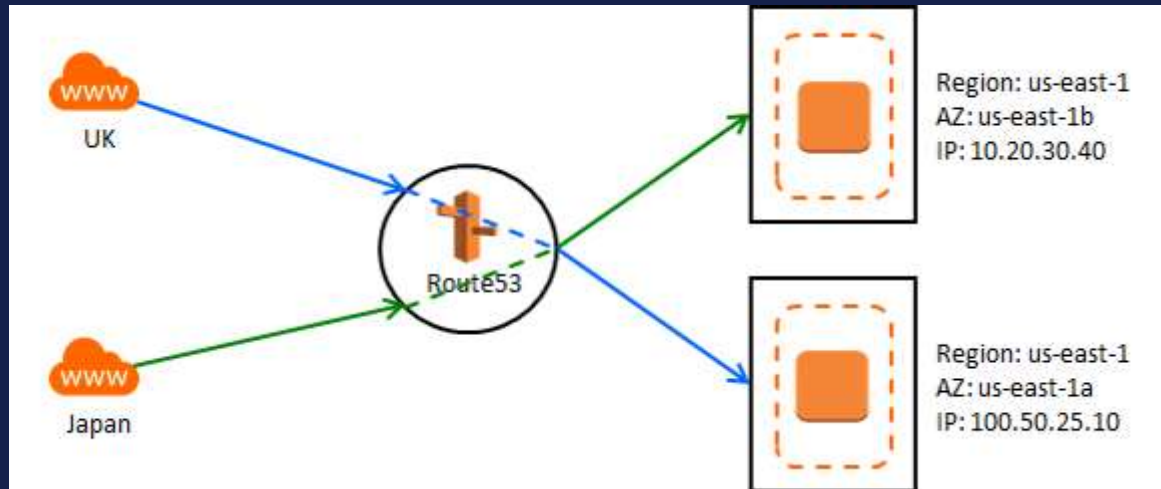


# Edge location



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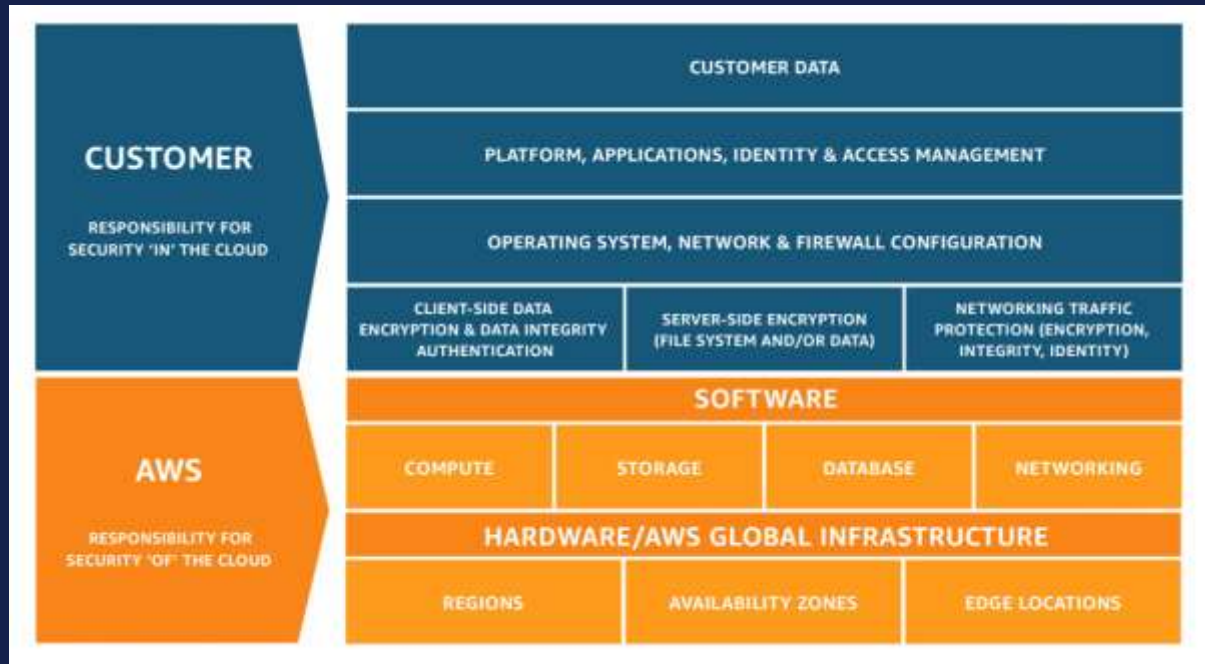
# Route53



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# Aws shared responsibility model



# AWS IAM

**IAM (Identity and Access Management)** - puteți specifica cine sau ce poate accesa servicii și resurse în AWS, și puteți gestiona centralizat permisiunile.

Aici se pot crea utilizatori de AWS, grupuri, policy-uri și role-uri

# AWS Command Line Interface

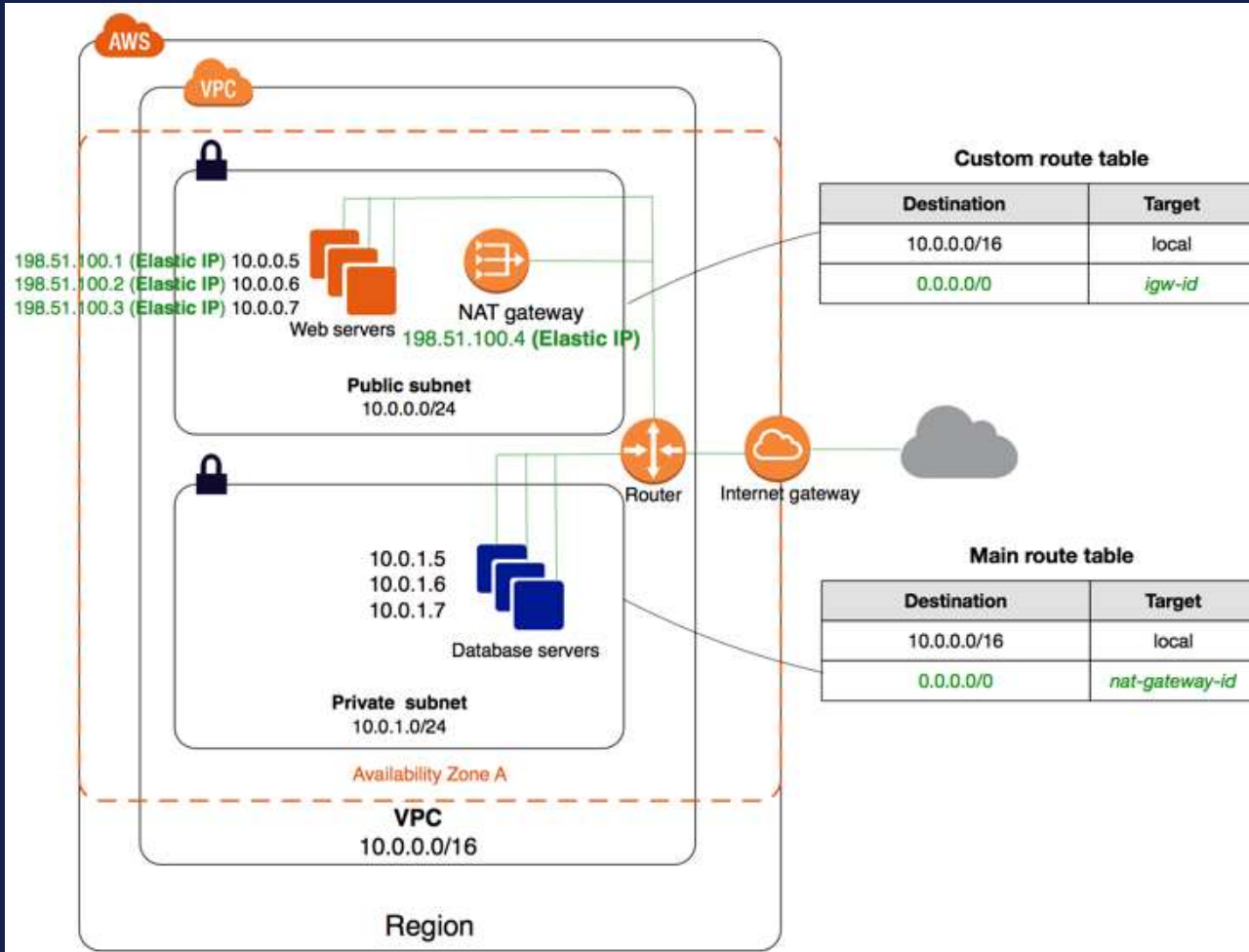
The AWS Command Line Interface (AWS CLI) – Este un tool ce poate fi downloada si configurat de unde poti controla diferite conturi de aws , crea sau sterge infrastructura prin diferite comenzi de CLI.

Tot ce poti face din interfata grafica, poti face si din CLI

<https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html>





# VPC



# EC2

Amazon Elastic Compute Cloud – Este un server virtual pe care il ofera AWS , similar unei masini virtuale , dar in cloud. Este foarte scalabila, rapida si te scuteste de nevoie de a investi in infrastructure hardware

|  <b>EC2 instance types</b> |  |   |                                 |                              |                                      |   |   |   |                       |
|---|--|---|---------------------------------|------------------------------|--------------------------------------|---|---|---|-----------------------|
|   | General Purpose                        |   | Compute Optimized               | Memory Optimized             |                                      | Accelerated Computing                           | Storage Optimized                         |   |                       |
| Type  | t2                                     | m5  | c5                              | r4                           | x1e                                  | p3  | h1  | i3  | d2                    |
| Description   | Burstable, good for changing workloads | Balanced, good for consistent workloads     | High ratio of compute to memory | Good for in-memory databases | Good for full in-memory applications | Good for graphics processing and other GPU uses | HDD backed, balance of compute and memory | SDD backed, balance of compute and memory | Highest disk ratio    |
| Mnemonic  | t is for <b>tiny</b> or <b>turbo</b>   | m is for <b>main</b> or <b>happy medium</b> | c is for <b>compute</b>         | r is for <b>RAM</b>          | x is for <b>xtreme</b>               | p is for <b>pictures</b>                        | h is for <b>HDD</b>                       | i is for <b>IOPS</b>                      | d is for <b>dense</b> |



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# Security group

Acesta este ca un firewall virtual pentru instancele de ec2 pentru a controla traficul care intra si iese

### Create Security Group

Security group name ⓘ

Web Server Security Group

Description ⓘ

Security for production web server.

VPC ⓘ

vpc-e68d9c81 | DefaultVPC (default) ▾

Security group rules:

Inbound

Outbound

| Type ⓘ  | Protocol ⓘ | Port Range ⓘ | Source ⓘ                   | Description ⓘ       |
|---------|------------|--------------|----------------------------|---------------------|
| SSH ▾   | TCP        | 22           | Anywhere ▾ 0.0.0.0/0, ::/0 | Admin access.       |
| HTTP ▾  | TCP        | 80           | Anywhere ▾ 0.0.0.0/0, ::/0 | Web traffic.        |
| HTTPS ▾ | TCP        | 443          | Custom ▾ 0.0.0.0/0, ::/0   | Secure web traffic. |

Add Rule

< >

Cancel Create

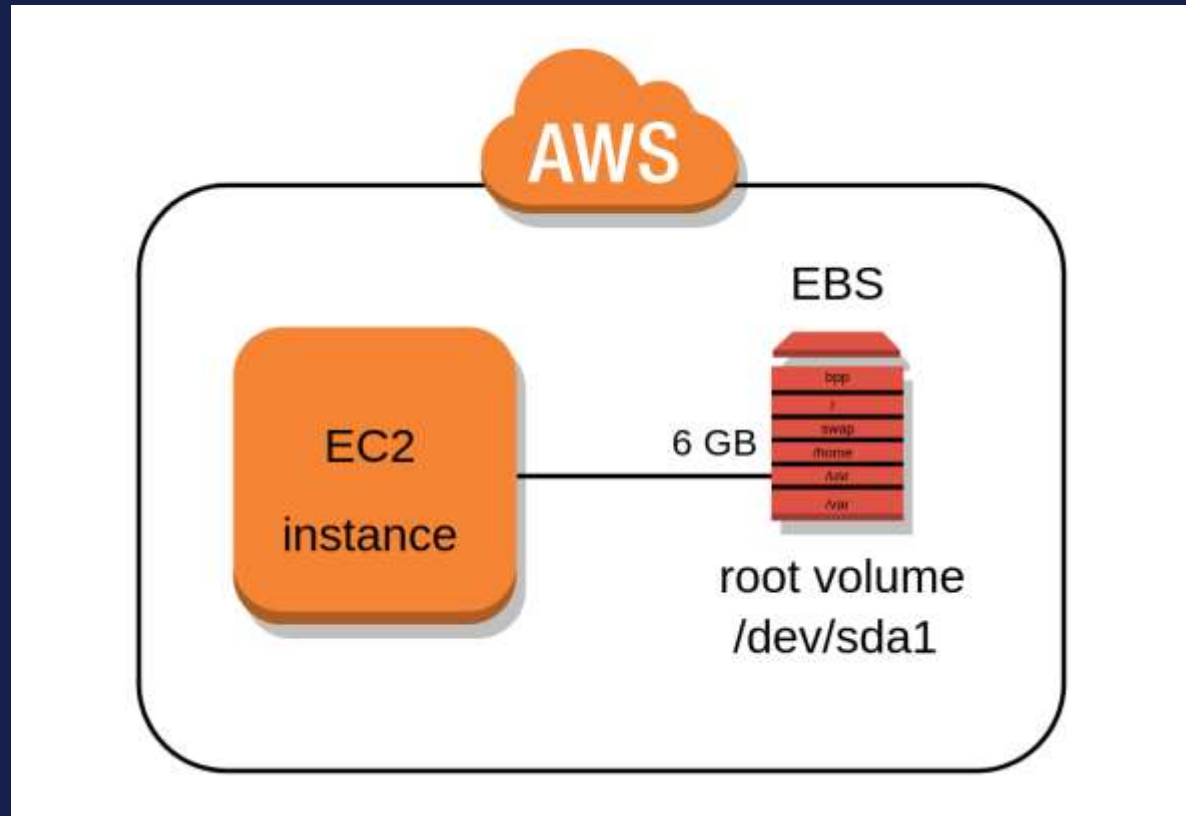
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# EBS

Amazon EBS - Reprezinta un spatiu de stocare ce poate fi atasat la instanta ta de EC2

Este rapid, high available si scalabil

# EBS



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# RDS

Amazon Relational Database Service - Este un serviciu de baza de date relational oferit de AWS. Aceasta baza de date ruleaza in cloud, este rapida , foarte scalabila si poate fi utilizata ca baza de date relationala si integrata in aplicatia voastra.

# AWS S3

Amazon Simple Storage Service (**Amazon S3**) numite si bucket este un serviciu de stocare  
Oferit de aws scalabil, secure, always available si foarte performant

(Designed to provide 99.999999999% durability and 99.99% availability of objects)



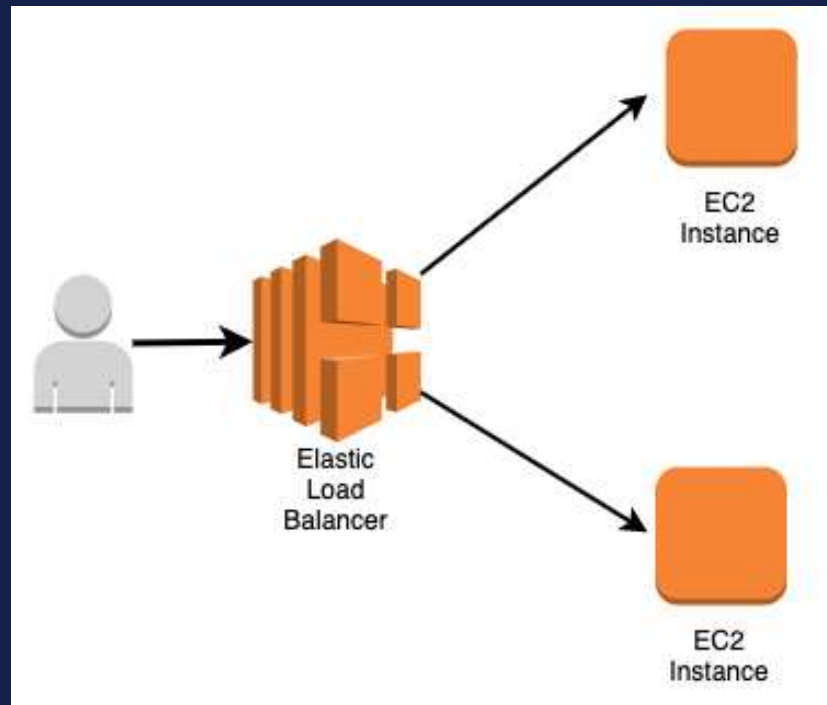
# AWS S3

## S3 Storage Classes Comparison

|                                    | S3 Standard               | S3 Intelligent-Tiering    | S3 Standard-IA            | S3 One Zone-IA            | S3 Glacier                | S3 Glacier Deep Archive   |
|------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Designed for durability            | 99.999999999%<br>(11 9's) | 99.999999999%<br>(11 9's) | 99.999999999%<br>(11 9's) | 99.999999999%<br>(11 9's) | 99.999999999%<br>(11 9's) | 99.999999999%<br>(11 9's) |
| Designed for availability          | 99.99%                    | 99.9%                     | 99.9%                     | 99.5%                     | 99.99%                    | 99.99%                    |
| Availability SLA                   | 99.9%                     | 99%                       | 99%                       | 99%                       | 99.9%                     | 99.9%                     |
| Availability Zones                 | ≥3                        | ≥3                        | ≥3                        | 1                         | ≥3                        | ≥3                        |
| Minimum capacity charge per object | N/A                       | N/A                       | 128KB                     | 128KB                     | 40KB                      | 40KB                      |
| Minimum storage duration charge    | N/A                       | 30 days                   | 30 days                   | 30 days                   | 90 days                   | 180 days                  |
| Retrieval fee                      | N/A                       | N/A                       | per GB retrieved          | per GB retrieved          | per GB retrieved          | per GB retrieved          |

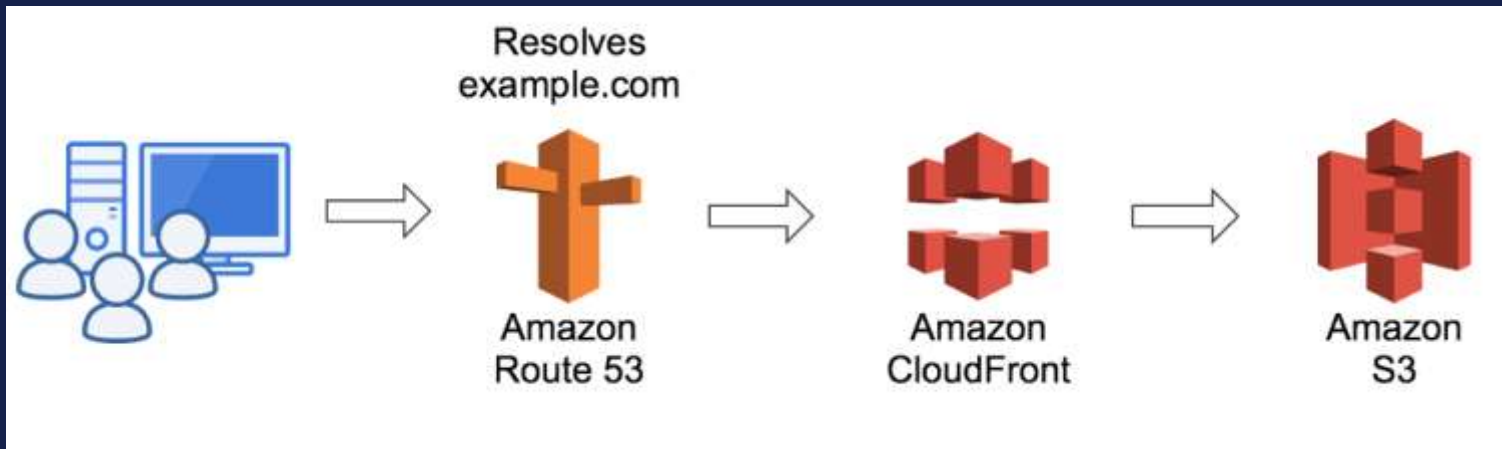
<https://aws.amazon.com/s3/storage-classes/>

# Elastic Load Balancing - AWS



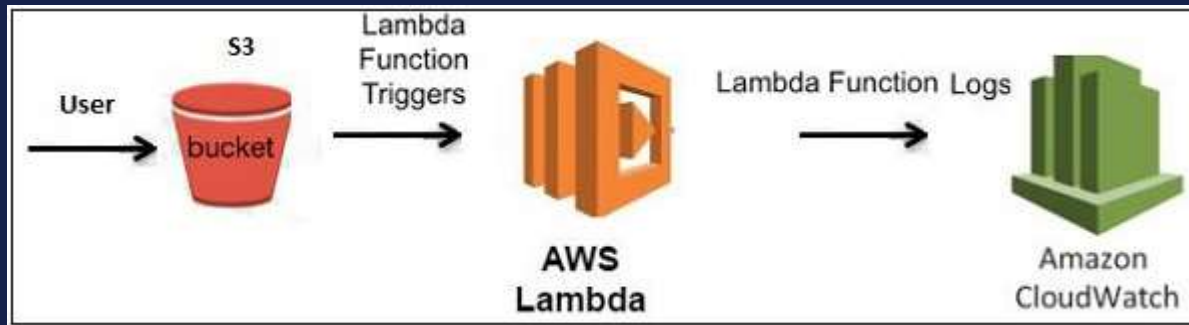
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# AWS Serverless



# AWS Serverless

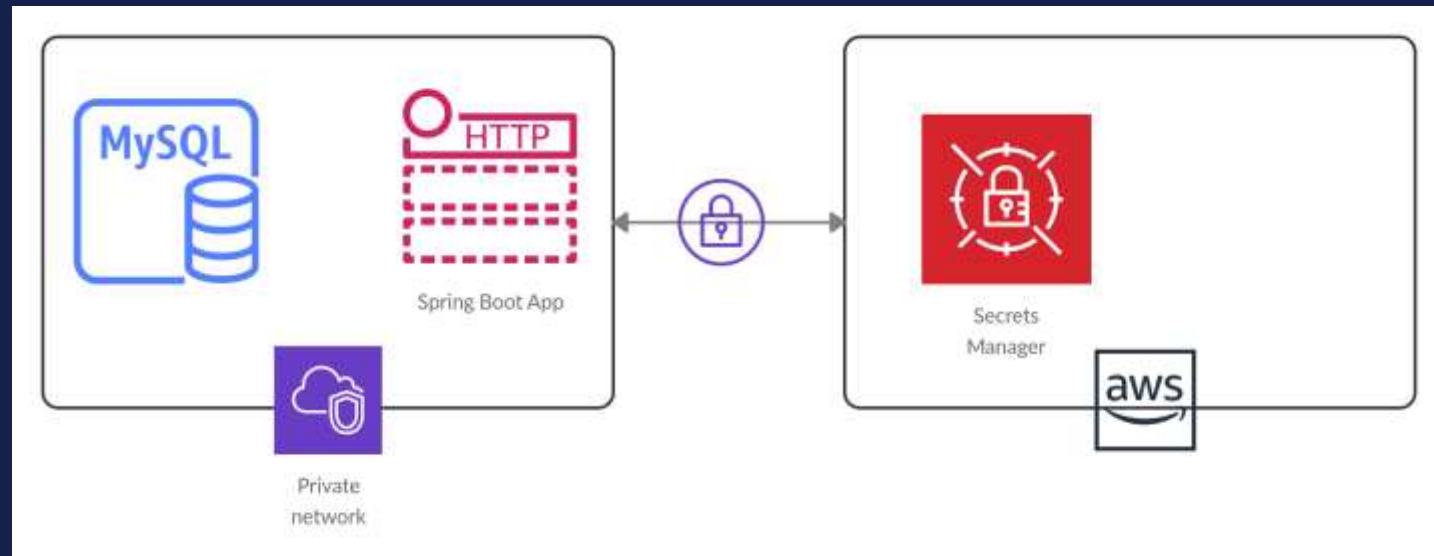
Lambda - Este o platforma serverless ce ne permite sa executam functii in cloud. Puterea de procesare este scalabila in acest caz deoarece se folosesc resursele din cloud



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# AWS Secrets Manager

AWS Secrets Manager - Te ajuta sa stochezi, rotesti sau sa primesti credentiale secrete



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# Alte servicii AWS

**EKS - Amazon Elastic Kubernetes Service**  
**SNS - Amazon Simple Notification Service**  
**ECS - Amazon Elastic Container Service**  
**AWS CloudTrail**  
**Web application firewall**  
**API GATEWAY**  
**CloudFormation**  
**CloudWatch**  
**AWS CodePipeline**



# Sfârșit

