AWS Project: Deploying a static website with AWS.

##AWS Services for the project

-VPC

-EC2

-Security group

-NAT gateway

-Classic Load Balancer

-Bastion Host instance

-Keypairs

VPC Network Design:

-VPC IP Range:

4 subnets: 2 public subnets, 2 private subnets

2 zones: us-east-1a and us-east-1b

172.18.1.0/24 public-sub 1:us-east-1a

172.18.2.0/24 public-sub 2:us-east-1b

172.18.3.0/24 private-sub 1:us-east-1a

172.18.4.0/24 private-sub 2:us-east-1b

1 Internet gateway

1 NAT gateway

1 EIP

2 Route Tables: 1 Public subnet Route Table, 1 Private subnet Route Table

1 Bastion host in Pub subnet

Deploying the website

-Let's login into our AWS account and for security reason, we can use an IAM user who have full administration privilege. If you don't have one and don't know how to create one, just follow this document: https://docs.aws.amazon.com/IAM/latest/UserGuide/id_users_create.html.

-Now, let get started with the project:

-Let's create the VPC first before other service. Navigate to the VPC console by searching VPC or using the service list option. I am going to create my VPC in the N.Virginia (us-east-1) region because I am closer to this region.

Creating a VPC

-If you look at the VPC home page, we can see that I have 1 VPC, 6 subnets, 1 security group, etc. AWS always have default services in your account for security reasons because if we do not define a security option, then AWS would apply the default option for us.

Creating a VPC with more than one subnets with my IP range: 172.18.0.0/16

Setting up my public and private subnets for my VPC

▼ Customize subnets CIDR blocks

Public subnet CIDR block in us-east-1a

172.18.1.0/24	256 IPs

Public subnet CIDR block in us-east-1b

172.18.2.0/24	256 IPs

Private subnet CIDR block in us-east-1a

172.18.3.0/24	256 IPs

Private subnet CIDR block in us-east-1b

172.18.4.0/24	256 IPs

Creating a NAT gateway in the public subnet and allocate an Elastic IP

NAT gateway settings

Name - *optional*
Create a tag with a key of 'Name' and a value that you specify.

Website-NAT

The name can be up to 256 characters long.

Subnet
Select a subnet in which to create the NAT gateway.

subnet-0eb74ed560101515e (website-subnet-public1-us-east-1a)   ▼

Connectivity type
Select a connectivity type for the NAT gateway.
- ◉ Public
- ○ Private

Elastic IP allocation ID   **Info**
Assign an Elastic IP address to the NAT gateway.

eipalloc-07c1a7fed1c6bc1bf ▼	**Allocate Elastic IP**

▶ Additional settings

Launching a Centos7 instance for website

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

webserver01   Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

🔍 Search our full catalog including 1000s of application and OS images

AMI from catalog   Recents   Quick Start

Amazon Machine Image (AMI)

CentOS-7-2111-20220825_1.x86_64-   Verified provider   🔍
                                                             Browse more AMIs

▼ Summary

Number of instances Info

1

Software Image (AMI)
CentOS 7 (x86_64) - with Updat...read more
ami-002070d43b0a4f171

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 10 GiB

ⓘ **Free tier:** In your first year includes 750   ✕
hours of t2 micro (or t3 micro in the

Cancel   **Launch instance**

Creating a bastion host instances in a public subnet

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

Bastion_host   Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

🔍 Search our full catalog including 1000s of application and OS images

Recents   **Quick Start**

▼ Summary

Number of instances Info

1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI...read more
ami-0b5eea76982371e91

Virtual server type (instance type)
t2.micro

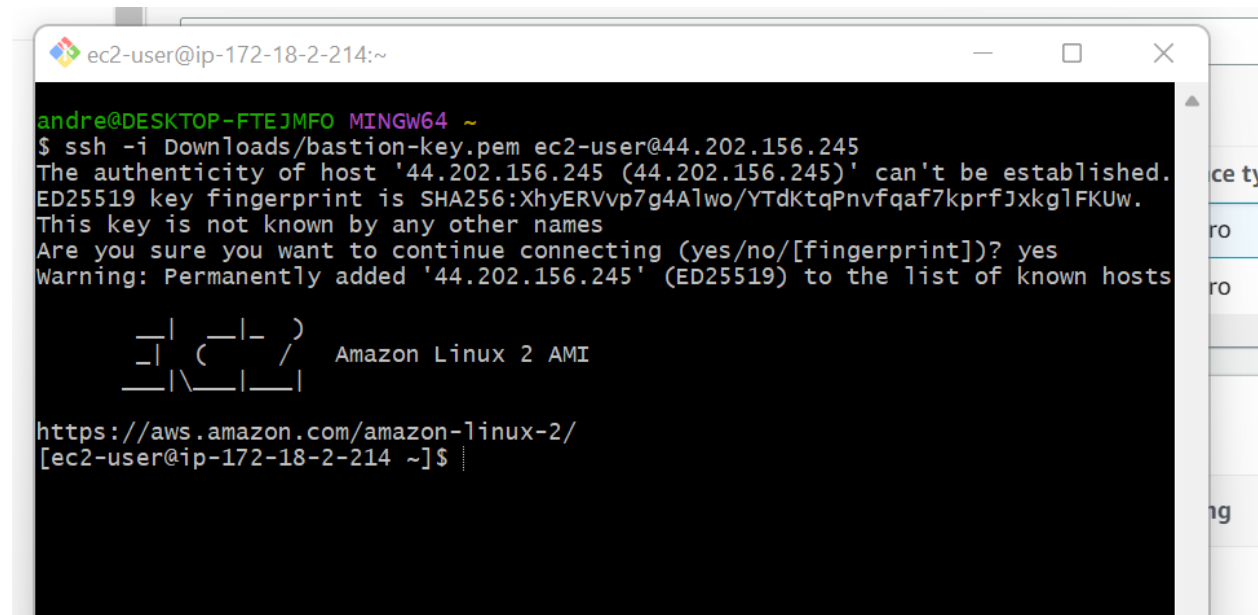Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

ⓘ **Free tier:** In your first year includes 750   ✕
hours of t2 micro (or t3 micro in the

Login into my bastion host instance from my computer

Creating a load balancer

Step 1: Define Load Balancer

Basic Configuration

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can ident ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instance port 80.

Load Balancer name:	web-elb
Create LB Inside:	vpc-0d9fb87ae9405c567 (172.18.0.0/16) | website-vpc ⌄
Create an internal load balancer:	☐ (what's this?)
Enable advanced VPC configuration:	☑
Listener Configuration:	

Load Balancer Protocol	Load Balancer Port	Instance Protocol
HTTP ⌄	80	HTTP ⌄

Add

The website is load balancer

Load balancers (1)
Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

	Name	▽	DNS name	▽	State	▽	VPC ID	▽
☐	web-elb ↗		🗇 web-elb-209538748.us-east-1.elb.amazonaws.com		–		vpc-0d9fb87ae9405c567	

My two instances running

Instances (2) Info

Find instance by attribute or tag (case-sensitive)

Instance state = running ✕   Clear filters

	Name	▽	Instance ID	Instance state	▽	Instance type	▽	Status check	Alarm status
☐	Bastion-Server		i-0cee0ee13bf2187fe	⊘ Running ⊕⊖		t2.micro		⊘ 2/2 checks passed	No alarms +
☐	webserver01		i-0d35f5df4703ee9f5	⊘ Running ⊕⊖		t2.micro		⊘ 2/2 checks passed	No alarms +

Accessing my website using the load balancer DNS name