


GENERANDO LA ESTRUCTURA DE RED

1º Creo la VPC con rango de direcciones 10.40.0.0/16

 Servicios Grupos de recursos

VPCs > Create VPC

Create VPC

A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances. You n block; for example, 10.0.0.0/16. You cannot specify an IPv4 CIDR block larger than /16. You can optionally assoc

Name tag

VPC_Practica2

i

IPv4 CIDR block*

10.40.0.0/16

i

IPv6 CIDR block

☒ No IPv6 CIDR Block

☐ Amazon provided IPv6 CIDR block

☐ IPv6 CIDR owned by me

i


Tenancy

Default

i

* Required

2º Habilito los nombres de dominio DNS

 Servicios Grupos de recursos

VPCs > Edit DNS hostnames


Edit DNS hostnames

VPC ID vpc-09b84fc65194ea8e4

DNS hostnames ☒ enable

* Required

Características de VPC_Practica2

 Filter by tags and attributes or search by keyword

<input type="checkbox"/>	Name ▾	VPC ID ▴	State ▾	IPv4 CIDR
<input checked="" type="checkbox"/>	VPC_Practi...	vpc-09b84fc65194ea8e4	available	10.40.0.0/16
<input type="checkbox"/>		vpc-b5a1bccf	available	172.31.0....




VPC: vpc-09b84fc65194ea8e4

- Description
- CIDR Blocks
- Flow Logs
- Tags

VPC ID	vpc-09b84fc65194ea8e4
State	available
IPv4 CIDR	10.40.0.0/16
IPv6 CIDR	-
DNS resolution	Enabled
DNS hostnames	Enabled
ClassicLink DNS Support	Disabled
Owner	358816195022

3º Genero las dos Subnets (SN1=10.40.1.0/24 y SN2=10.40.2.0/24) en VPC_Practica2, cada una en una availability zone diferente.



Servicios ▾ Grupos de recursos ▾ ⚙


[Subnets](#) > Create subnet

Create subnet

Specify your subnet's IP address block in CIDR format; for example, 10.0.0.0/24. IPv4 block sizes must be between a /16 net


Name tag

SN1




VPC*

vpc-09b84fc65194ea8e4 ▾



Availability Zone

us-east-1a ▾





VPC CIDRs

CIDR	Status
10.40.0.0/16	associated

IPv4 CIDR block*

10.40.1.0/24





Servicios ▾ Grupos de recursos ▾ ⚙


[Subnets](#) > Create subnet

Create subnet

Specify your subnet's IP address block in CIDR format; for example, 10.0.0.0/24. IPv4 block sizes must be between a /16 net


Name tag

SN2




VPC*

vpc-09b84fc65194ea8e4 ▾



Availability Zone

us-east-1b ▾




VPC CIDRs

CIDR	Status
10.40.0.0/16	associated

IPv4 CIDR block*

10.40.2.0/24



Configuro la Subnet SN1 (Que será la que tenga el servidor WEB) para que tenga direccionamiento público IPv4

aws

Servicios

Grupos de recursos

[Subnets](#) > Modify auto-assign IP settings

Modify auto-assign IP settings

Enable the auto-assign IP address setting to automatically request a public IPv4 or IPv6 address for an instance launched in

Subnet ID subnet-0c132b18a5f245c80

Auto-assign IPv4 ☒ Enable auto-assign public IPv4 address

Auto-assign Co-IP ☐ Enable auto-assign customer-owned IPv4 address

* Required

4º Generando la tabla de rutas

aws

Servicios

Grupos de recursos

[Route Tables](#) > Create route table

Create route table

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Name tag TablaRutas_Practica2

VPC* vpc-09b84fc65194ea8e4

* Required

Asocio las subnets SN1 y SN2 a la tabla de rutas

aws

Servicios

Grupos de recursos

gonfdez

Norte de Vir

[Route Tables](#) > Edit subnet associations

Edit subnet associations

Route table rtb-09aca3d24aab2e141 (TablaRutas_Practica2)

Associated subnets subnet-06b87b0272162da77 subnet-0c132b18a5f245c80

Filter by attributes or search by keyword

Subnet ID	IPv4 CIDR	IPv6 CIDR	Current Route Table
subnet-0c132b18a5f245c80 SN1	10.40.1.0/24	-	Main
subnet-06b87b0272162da77 SN2	10.40.2.0/24	-	Main

* Required

Cancel Save

Ruta

Destination	Target	Status	Propagated
10.40.0.0/16	local	active	No

5° Creo la Internet Gateway

Servicios
Grupos de recursos

[Internet gateways](#) > Create internet gateway

Create internet gateway

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gate

Name tag

* Required

Selecciono que dé internet a mi VPC_Practica2

Servicios
Grupos de recursos

[Internet gateways](#) > Attach to VPC

Attach to VPC

Attach an internet gateway to a VPC to enable communication with the internet. Specify the VPC you would like to attach below.

VPC*

► AWS Command Line Interface command

* Required

Ahora me voy a la Tabla de rutas y configuro el router (la tabla de rutas) para que me encamine el tráfico a este gateway

Servicios
Grupos de recursos

[Route Tables](#) > Edit routes

Edit routes

Destination	Target	Status	Propagated
10.40.0.0/16	local	active	No
<input type="text" value="0.0.0.0"/>	<input type="text" value="igw-0390bab9171bbe991"/>		No

Add route

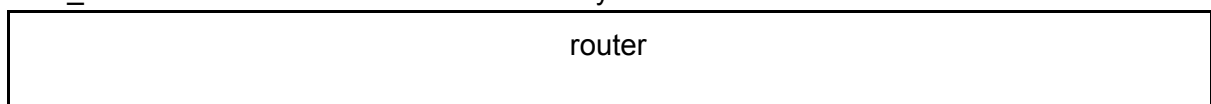
* Required

Cancel Save routes

En este punto ya tengo esto:

VPC_Practica2

GateWay



SN1 (Vacio)

SN2 (Vacio)

GENERANDO LA MÁQUINA EC2 DE LA SN1

1º Elijo la imagen que quiero usar para la máquina virtual

The screenshot shows the AWS Management Console interface for creating an EC2 instance. The 'Step 1: Choose an Amazon Machine Image (AMI)' screen is displayed. On the left, there is a sidebar with a blue arrow pointing to the 'Ubuntu Server 18.04 LTS (HVM), SSD Volume Type' AMI. The main area lists three AMIs: Red Hat Enterprise Linux 8 (HVM), SUSE Linux Enterprise Server 15 SP1 (HVM), and Ubuntu Server 18.04 LTS (HVM). Each AMI has a 'Select' button and a 'Free tier eligible' badge. The Ubuntu AMI is selected, and its details are shown on the right: 'ami-085925f297f89fce1 (64-bit x86)' and 'ami-05d7ab19b28efa213 (64-bit Arm)'. The '64-bit (x86)' option is selected.

La asigno al VPC_Practica2 y a la Subnet pública SN1

The screenshot shows the AWS Management Console interface for creating an EC2 instance. The 'Step 3: Configure Instance Details' screen is displayed. The 'Network' section is expanded, showing the 'VPC_Practica2' and 'subnet-0c132b18a5f245c80 | SN1 | us-east-1a' selected. The 'Auto-assign Public IP' option is set to 'Use subnet setting (Enable)'. The 'IAM role' is set to 'None'. The 'Shutdown behavior' is set to 'Stop'. The 'Enable termination protection' checkbox is checked. The 'Review and Launch' button is visible at the bottom right.

Pongo una etiqueta a esta máquina “ServidorWeb_Practica2”

The screenshot shows the AWS Management Console interface for creating an EC2 instance. The 'Step 5: Add Tags' screen is displayed. A tag is being added with the key 'Name' and the value 'ServidorWeb_Practica2'. The 'Add another tag' button is visible at the bottom left. The 'Instances' and 'Volumes' checkboxes are checked.

Le asigno un security group “SG_ServidorWeb_Practica2” nuevo que solo permite servicios SSH y HTTP

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Anywhere 0.0.0.0/0, ::0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Anywhere 0.0.0.0/0, ::0	e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous **Review and Launch**

Lo lanzo y le asigno un fichero de claves “gonKey”

Step 7: Review Instance Launch

Instance Type: t2.micro, ECU: Variable, vCPUs: 1, Memory (GiB): 2, Instance Storage (GB): 0, EBS-Optimized Available: No, Network Performance: Up to Moderate

Security Groups: SG_ServidorWeb_Practica2 (launch-wizard-1 created 2020-05-21T15:31:56.738+02:00)

Instance Details, Storage, Tags

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair **Download Key Pair**

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel **Launch Instances**

Listo

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IF
ServidorWeb...	i-095342d8e6e8f329b	t2.micro	us-east-1a	running	Initializing	None	ec2-34-200-252-66.co...	34.200.252.66	-

GENERANDO LA MÁQUINA RDS de MARIADB DE LA SN2

1º Creo la database

Create database

Choose a database creation method [Info](#)

☒ Standard Create

You set all of the configuration options, including ones for availability, security, backups, and maintenance.

☐ Easy Create

Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type [Info](#)

☐ Amazon Aurora



☐ MySQL



☒ MariaDB



Version [Info](#)

MariaDB 10.2.21

Templates

Choose a sample template to meet your use case.

☐ Production

Use defaults for high availability and fast, consistent performance.

☐ Dev/Test

This instance is intended for development use outside of a production environment.

☒ Free tier

Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. [Info](#)

Settings

DB instance identifier [Info](#)

Type a name for your DB instance. The name must be unique cross all DB instances owned by your AWS account in the current AWS Region.

EmpresaTextil

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ Credentials Settings

Master username [Info](#)

Type a login ID for the master user of your DB instance.

1 to 16 alphanumeric characters. First character must be a letter

☐ Auto generate a password

Amazon RDS can generate a password for you, or you can specify your own password

Master password [Info](#)

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), "(double quote) and @ (at sign).

Confirm password [Info](#)

DB instance size

DB instance class [Info](#)

Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

☐ Standard classes (includes m classes)

☐ Memory Optimized classes (includes r and x classes)

☒ Burstable classes (includes t classes)

db.t2.micro

1 vCPUs 1 GiB RAM Not EBS Optimized



☐ Include previous generation classes

Storage

Storage type [Info](#)

General Purpose (SSD)



Allocated storage

20

GiB

(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage **may improve** IOPS performance.

Storage autoscaling [Info](#)

Provides dynamic scaling support for your database's storage based on your application's needs.

☒ Enable storage autoscaling

Enabling this feature will allow the storage to increase once the specified threshold is exceeded.

Maximum storage threshold [Info](#)

Charges will apply when your database autoscales to the specified threshold

1000

GiB

Minimum: 21 GiB, Maximum: 16384 GiB

Availability & durability

Multi-AZ deployment [Info](#)

☐ Create a standby instance (recommended for production usage)

Creates a standby in a different Availability Zone (AZ) to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.

☐ Do not create a standby instance

Connectivity

Virtual private cloud (VPC) [Info](#)
VPC that defines the virtual networking environment for this DB instance.

VPC_Practica2 (vpc-09b84fc65194ea8e4) ▼

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change the VPC selection.

▼ **Additional connectivity configuration**

Subnet group [Info](#)
DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

Create new DB Subnet Group ▼

Publicly accessible [Info](#)

☐ Yes
Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.

☒ No
RDS will not assign a public IP address to the database. Only Amazon EC2 instances and devices inside the VPC can connect to your database.

VPC security group
Choose one or more RDS security groups to allow access to your database. Ensure that the security group rules allow incoming traffic from EC2 instances and devices outside your VPC. (Security groups are required for publicly accessible databases.)

VPC security group
Choose one or more RDS security groups to allow access to your database. Ensure that the security group rules allow incoming traffic from EC2 instances and devices outside your VPC. (Security groups are required for publicly accessible databases.)

☐ Choose existing
Choose existing VPC security groups

☒ Create new
Create new VPC security group

New VPC security group name

SG_RDS_Practica2

Availability Zone [Info](#)

us-east-1c ▼

Database port [Info](#)
TCP/IP port that the database will use for application connections.

3306

Listo

RDS > Databases

Databases

☒ Group resources

Modify

Actions ▼

Restore from S3

Create database

< 1 >

	DB identifier	Role	Engine	Region & AZ	Size	Status	CPU	Current ac
<input type="radio"/>	empresatextil	Instance	MariaDB	us-east-1b	db.t2.micro	Available	-	

2º Configuro el security group para que solo permita servicio Mysql por el puerto 3306

Inbound rules Info

Type Info Protocol Info Port range Info Source Info Description - optional Info

MySQL/Aurora TCP 3306 Custom 83.37.55.232/32 X

Add rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel Preview changes Save rules

INSTALACIÓN DEL SERVIDOR WEB APACHE Y HTTP SOBRE LA EC2

1º Me conecto a mi instancia EC2 desde mi máquina Debian10

```
[dev] gonfs@debian:~/practica2
$ chmod 400 gonKey.pem
[dev] gonfs@debian:~/practica2
$ ssh -i "gonKey.pem" ubuntu@ec2-34-200-252-66.compute-1.amazonaws.com
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.15.0-1065-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Thu May 21 14:45:40 UTC 2020

System load:  0.08           Processes:            86
Usage of /:   13.7% of 7.69GB Users logged in:     0
Memory usage: 15%           IP address for eth0: 10.40.1.91
Swap usage:   0%

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-40-1-91:~$
```

2º Instalo el servidor web apache

```
ubuntu@ip-10-40-1-91:~$ sudo apt-get -y install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap liblua5.2-0 ssl-cert
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom openssl-blacklist
The following NEW packages will be installed:
```

```
...
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib
/systemd/system/apache-htcacheclean.service.
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for systemd (237-3ubuntu10.39) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ufw (0.36-0ubuntu0.18.04.1) ...
Processing triggers for ureadahead (0.100.0-21) ...
ubuntu@ip-10-40-1-91:~$
```

```
ubuntu@ip-10-40-1-91:~$ ps -ef | grep apache
root      2174      1    0 14:47 ?        00:00:00 /usr/sbin/apache2 -k start
www-data  2176    2174    0 14:47 ?        00:00:00 /usr/sbin/apache2 -k start
www-data  2177    2174    0 14:47 ?        00:00:00 /usr/sbin/apache2 -k start
ubuntu    13524   1639    0 14:49 pts/0    00:00:00 grep --color=auto apache
ubuntu@ip-10-40-1-91:~$
```

```
ubuntu@ip-10-40-1-91:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Drop-In: /lib/systemd/system/apache2.service.d
            └─apache2-systemd.conf
   Active: active (running) since Thu 2020-05-21 14:47:44 UTC; 2min 28s ago
   Main PID: 2174 (apache2)
     Tasks: 55 (limit: 1152)
    CGroup: /system.slice/apache2.service
            └─2174 /usr/sbin/apache2 -k start
              └─2176 /usr/sbin/apache2 -k start
                └─2177 /usr/sbin/apache2 -k start

May 21 14:47:44 ip-10-40-1-91 systemd[1]: Starting The Apache HTTP Server...
May 21 14:47:44 ip-10-40-1-91 systemd[1]: Started The Apache HTTP Server.
ubuntu@ip-10-40-1-91:~$
```

```
ubuntu@ip-10-40-1-91:~$ sudo apt-get install php libapache2-mod-php php-mysql
```

Copio el archivo Conexion_Mysql.php a mi maquina EC2 en el directorio
/var/www/html/practica2

```
[dev] gonfs@debian:~/practica2
$ scp -i "gonKey.pem" Conexion_MySQL.php ubuntu@ec2-34-200-252-66.compute-1.amazonaws.com:/var
/www/html/practica2
Conexion_MySQL.php                                100% 2116    22.6KB/s   00:00
```

Copio el contenido de Conexion_Mysql.php en index.html

```
ubuntu@ip-10-40-1-91:~/var/www/html$ sudo mv practica2/Conexion_MySQL.php index.html
```

CONEXIÓN A LA RDS DESDE LA EC2

```
ubuntu@ip-10-40-1-91:~$ sudo apt-get -y update
```

```
ubuntu@ip-10-40-1-91:~$ sudo apt-get install mariadb-client
```

me conecto a mi RDS

```
ubuntu@ip-10-40-1-91:~$ mariadb -h empresatextil.crov6mynd5nh.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
```

Se queda así la terminal, no me conecta y me dice que ha pasado el tiempo de conexion y no responde.