

ARQUITECTURA DE RED VPC EN AWS

Estudiante: Diana Lozano

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1. Diseño de la Red Virtual (VPC)

Configuraremos una red lógica denominada [demo-vpc-dianalozano](#) utilizando el bloque de direcciones **10.0.0.0/16**.

The screenshot shows the 'Create VPC' configuration page in the AWS Management Console. The 'VPC settings' section is set to 'VPC only'. The 'Name tag' is 'demo-vpc-dianalozano'. The 'IPv4 CIDR block' is '10.0.0.0/16'. The 'Encryption control' section shows 'Monitor mode' selected. The 'Tags' section shows a single tag 'Name: demo-vpc-dianalozano'.

VPC settings
Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.
 VPC only VPC and more

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.
demo-vpc-dianalozano

IPv4 CIDR block [Info](#)
 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block
10.0.0.0/16
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy [Info](#)
Default

VPC encryption control (\$) [Info](#)
Monitor mode provides visibility into encryption status without blocking traffic. Enforce mode prevents unencrypted traffic. [Additional charges apply](#)
 None Monitor mode Enforce mode

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
Key: Name Value - optional: demo-vpc-dianalozano

You can add 49 more tags

2. Segmentación en Subredes

Creamos dos subredes dentro de la VPC para organizar los recursos según su nivel de exposición:

- **Subred Pública (public-subnet-1-dianalozano):** Configurada con el CIDR 10.0.1.0/24 para alojar el servidor web.
- **Subred Privada (private-subnet-1-dianalozano):** Configurada con el CIDR 10.0.2.0/24 para recursos internos sin salida directa a internet.

SUBNET PUBLICA

☰ [VPC](#) > [Subnets](#) > Create subnet

[Create subnet](#) [Info](#)

VPC

VPC ID
Create subnets in this VPC.
vpc-0fbc07f19be6a3fa5 (demo-vpc-dianalozano)

Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
public-subnet-1-dianalozano

The name can be up to 256 characters long.

Availability Zone [Info](#)
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
United States (N. Virginia) / use1-az4 (us-east-1c)

IPv4 VPC CIDR block [Info](#)
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.
10.0.0.0/16

IPv4 subnet CIDR block
10.0.1.0/24
< > ^ ^

Tags - optional

Key	Value - optional
<input type="text" value="Name"/> X	<input type="text" value="public-subnet-1-dianalozano"/> X Remove
Add new tag	You can add 49 more tags.
Remove	

[Add new subnet](#)

[Cancel](#) [Create subnet](#)

Subnets (1) [Info](#)

Subnet ID : subnet-0212c1d1e70060962 [X](#) [Clear filters](#)

<input type="checkbox"/> Name	Subnet ID	State	VPC
<input type="checkbox"/> public-subnet-1-dianalozano	subnet-0212c1d1e70060962	Available	vpc-0fbc07f19be6a3fa5 demo...

SUBNET PRIVADA

The screenshot shows the 'Create subnet' wizard in the AWS VPC console. The top navigation bar shows 'VPC > Subnets > Create subnet'. The main section is titled 'Create subnet' with a 'Info' link. The first step, 'VPC', shows a dropdown for 'VPC ID' containing 'vpc-0fb0719be6a3fa5 (demo-vpc-dianalozano)'. The second step, 'Associated VPC CIDRs', shows 'IPv4 CIDRs' set to '10.0.0.0/16'. The third step, 'Subnet settings', is expanded. It shows 'Subnet 1 of 1' with 'Subnet name' set to 'private-subnet-1-dianalozano', 'Availability Zone' set to 'United States (N. Virginia) / us-east-1a (us-east-1e)', 'IPv4 VPC CIDR block' set to '10.0.0.0/16', and 'IPv4 subnet CIDR block' set to '10.0.2.0/24'. Under 'Tags - optional', there is a tag 'Name: private-subnet-1-dianalozano'. At the bottom are 'Cancel' and 'Create subnet' buttons.

3. Conectividad y Tablas de Ruteo

Para habilitar la comunicación con internet en la subred pública, se realizaron los siguientes pasos:

1. **Internet Gateway (IGW):** Cree [demo-igw-dianalozano](#) y la vincule a la VPC.
2. **Tabla de Ruteo Pública (public-rt):** Añadi una ruta estática hacia 0.0.0.0/0 con destino al IGW.
3. **Tabla de Ruteo Privada:** Luego cree una tabla independiente asociada a la subred privada sin ruta al IGW, asegurando su aislamiento.

VPC > Internet gateways > Create internet gateway

Create internet gateway Info

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

Internet gateway settings

Name tag
Creates a tag with a key of 'Name' and a value that you specify.

demo-igw-dianalozano

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key Value - optional

Q Name X Q demo-igw-dianalozano X Remove

Add new tag

You can add 49 more tags.

Cancel Create internet gateway

Create route table Info

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

Route table settings

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

public-rt-dianalozano

VPC
The VPC to use for this route table.

vpc-0fbc07f19be6a3fa5 (demo-vpc-dianalozano)

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key Value - optional

Q Name X Q public-rt-dianalozano X Remove

Add new tag

You can add 49 more tags.

Cancel Create route table

VPC > Route tables > rtb-05a0786e9ccfe0e24 > Edit routes

Edit routes

Destination	Target	Status	Propagated	Route Origin	
10.0.0.0/16	local	Active	No	CreateRouteTable	
Q 0.0.0.0/0	Internet Gateway	-	No	CreateRoute	Remove
Q igw-0a0633f4393ac65ad	X				

Add route

Cancel Preview Save changes

The screenshot shows the AWS VPC Route Tables page. A green success message at the top states: "Updated routes for rtb-05a0786e9ccfe0e24 / public-rt-dianalozano successfully". The main section is titled "rtb-05a0786e9ccfe0e24 / public-rt-dianalozano". The "Details" tab is selected, showing the Route table ID (rtb-05a0786e9ccfe0e24), which is Main and has No Owner ID (vpc-0fb07f19be6a3fa5 | demo-vpc-dianalozano). The "Routes" tab is selected, showing two routes: 0.0.0.0/0 (target igw-0a0633f4393ac65ad, status Active, propagated No, route origin Create Route) and 10.0.0.0/16 (target local, status Active, propagated No, route origin Create Route Table).

4. Security Group

Se configuró el grupo de seguridad [sgdianalozano](#) para filtrar el tráfico entrante a la instancia. Se habilitaron los puertos:

- **SSH (22):** Para acceso administrativo.
- **HTTP (80):** Para permitir el tráfico de usuarios al servidor web.

The screenshot shows the AWS EC2 Security Groups page. A green success message at the top states: "Security group (sg-0e09017c08a256767 | demo-sg-dianalozano) was created successfully". The main section is titled "sg-0e09017c08a256767 - demo-sg-dianalozano". The "Details" tab is selected, showing the Security group name (demo-sg-dianalozano), Security group ID (sg-0e09017c08a256767), Owner (654654478122), Description (seguridad), and VPC ID (vpc-0fb07f19be6a3fa5). The "Inbound rules" tab is selected, showing two rules: one for port 22 (HTTP, TCP) and another for port 80 (HTTP, TCP).

5. Lanzamiento y Automatización (User Data)

Desplegamos una instancia EC2 en la subred pública. Se utilizó un script de **User Data** para automatizar la instalación de Apache y la creación de una página personalizada con el nombre del host y la fecha.

6. Resultados y Verificación

La validación final se realizó accediendo a la **IP Pública (3.91.43.233)**. El navegador mostró el mensaje configurado, confirmando que la infraestructura de red (VPC, IGW, Subnets y Security Groups) está correctamente integrada.

← → ⌂ ⚠ No seguro 3.87.237.26

It works!