

## **DEVOPS**

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1.	<b>Terraform</b> <ul style="list-style-type: none"><li>• VPC</li><li>• Subnet</li><li>• IGW</li><li>• Route Table</li><li>• Subnet Association</li><li>• Create Security Group</li><li>• Launch instance</li></ul>

### **Create VPC**

```
resource "aws_vpc" "tier-3-project" {  
  
  cidr_block = "192.168.0.0/16"  
  
  tags = {  
  
    Name = "3tier-terraform"  
  
  }  
}
```

}

vpc-0b84b5053eb9dd4fd / 3tier-terraform

Details

Resource map

CIDRs


Flow logs

Tags

Integrations

Details

VPC ID

 vpc-0b84b5053eb9dd4fd

Tenancy

Default


Default VPC

No

Network Address Usage metrics

Disabled

State

 Available

DHCP option set

dopt-00a30660bb10b6b6d

IPv4 CIDR

192.168.0.0/16

Route 53 Resolver DNS Firewall rule groups

-

DNS hostnames

Disabled


Main route table

[rtb-0c09c6215e5a5fba4](#)

IPv6 pool

-

Owner ID

 761018873814

DNS resolution

Enabled

Main network ACL





[acl-03859dc57529279aa](#)

IPv6 CIDR (Network border group)

-

## Create Subnet

```
resource "aws_subnet" "sub1" {  
  
  vpc_id = aws_vpc.tier-3-project.id  
  
  cidr_block = "192.168.1.0/24"  
  
  availability_zone = "us-east-1a"  
  
  map_public_ip_on_launch = "true"  
  
}
```

<input type="checkbox"/>	-	<a href="#">subnet-0b7714/d445554541</a>	 Available	<a href="#">vpc-0b289054d2486799c</a>   Default VPC	1 / 2.5 1.48.0 / 20
<input type="checkbox"/>	-	<a href="#">subnet-09f91c771ec8bb5a2</a>	 Available	<a href="#">vpc-06289054d2486799c</a>   Default VPC	172.31.0.0/20
<input checked="" type="checkbox"/>	-	<a href="#">subnet-0d4ebd9b6c6c14bf1</a>	 Available	<a href="#">vpc-0b84b5053eb9dd4fd</a>   3tier-terraform	192.168.1.0/24
<input type="checkbox"/>	-	<a href="#">subnet-00a1b06b1c5e81b43</a>	 Available	<a href="#">vpc-06289054d2486799c</a>   Default VPC	172.31.64.0/20


## Create IGW

```
resource "aws_internet_gateway" "int" {  
  
  vpc_id=aws_vpc.tier-3-project.id  
  
  tags = {  
  
    Name="igw-40-40"
```

```
}
```

```
}
```

#### Details

Internet gateway ID  igw-083c239fb57193962	State  Attached	VPC ID <a href="#">vpc-0b84b5053eb9dd4fd</a>   <a href="#">3tier-terraform</a>	Owner  761018873814
--	---	---	---

## Create Route Table

```
resource "aws_route_table" "Public-RT" {
```

```
  vpc_id = aws_vpc.tier-3-project.id
```

```
  tags = {
```

```
    Name="Public-RT-40"
```

```
}
```

#### Details

Route table ID  rtb-035859422c9ab2143	Main  No	Explicit subnet associations <a href="#">subnet-0d4ebd9b6c6c14bf1</a>	Edge associations -
VPC <a href="#">vpc-0b84b5053eb9dd4fd</a>   <a href="#">3tier-terraform</a>	Owner ID  761018873814		

```
# route = [{
```

```
#   gateway_id=aws_internet_gateway.int.id
```

```
#   cidr_block="0.0.0.0/0"
```

```
#  }]
```

```
}
```

## Routing

```
resource "aws_route" "route_to_internet" {  
  
  route_table_id      = aws_route_table.Public-RT.id  
  
  destination_cidr_block = "0.0.0.0/0"  
  
  gateway_id          = aws_internet_gateway.int.id  
  
}
```

## Subnet association

```
resource "aws_route_table_association" "demo" {  
  
  subnet_id = aws_subnet.sub1.id  
  
  route_table_id = aws_route_table.Public-RT.id  
  
}
```

}

Explicit subnet associations (1)				Edit subnet associations
<input type="text" value="Find subnet association"/>				< 1 > ⚙
Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	
-	<a href="#">subnet-0d4ebd9b6c6c14bf1</a>	192.168.1.0/24	-	

Subnets without explicit associations (0)				Edit subnet associations
<small>The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:</small>				
<input type="text" value="Find subnet association"/>				< 1 > ⚙
Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	
No subnets without explicit associations				
All your subnets are associated with a route table.				

## Create Security Group

```
resource "aws_security_group" "sg" {  
  
  vpc_id = aws_vpc.tier-3-project.id  
  
  tags = {  
  
    Name = "sg_3tier"  
  
  }  
  
  ingress = [{  
  
    from_port    = 22  
  
    to_port      = 22  
  
    protocol     = "tcp"  
  
    cidr_blocks  = ["0.0.0.0/0"]  
  
    description  = "Allow SSH access from anywhere"  
  
    ipv6_cidr_blocks = []  
  
    prefix_list_ids = []  
  
  }  
}
```

```

security_groups = []

self           = false

}}

egress = [{

from_port      = 0

to_port        = 0

protocol       = "-1"

cidr_blocks    = ["0.0.0.0/0"]

description    = "Allow all outbound traffic"

ipv6_cidr_blocks = []



prefix_list_ids = []

security_groups = []

self           = false

}}

```

	sg_3tier	<a href="#">sg-0ade683a7e565ba8c</a>	terraform-202410071307494307000...	<a href="#">vpc-0b84b5053eb9dd4fd</a> 	Managed by Terraform	761018873814
}						

## Create Security Group

```

resource "aws_instance" "inst" {

ami = "ami-0866a3c8686eaeeba"

instance_type = "t2.micro"

key_name="new_key"

subnet_id = aws_subnet.sub1.id

vpc_security_group_ids = [aws_security_group.sg.id]

tags = {

Name="public_instance"

}

}

```

The screenshot displays the AWS Management Console interface. The top navigation bar includes the AWS logo, a search bar, and various service icons. The left-hand navigation pane shows the 'Instances' section selected under the 'EC2' category. The main content area, titled 'Instances (1)', features a search bar and a table listing the instance details.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
public_instance	i-03631a6250fb41ad9	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	-	3.235.84.198

Below the table, there is a 'Select an instance' dropdown menu. The footer of the console shows the copyright notice for Amazon Web Services, Inc. and links to Privacy, Terms, and Cookie preferences.

