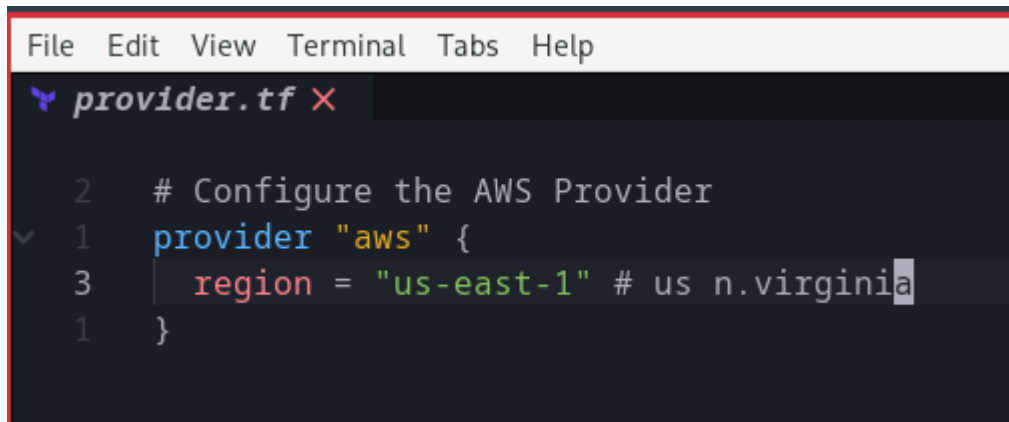


Networking

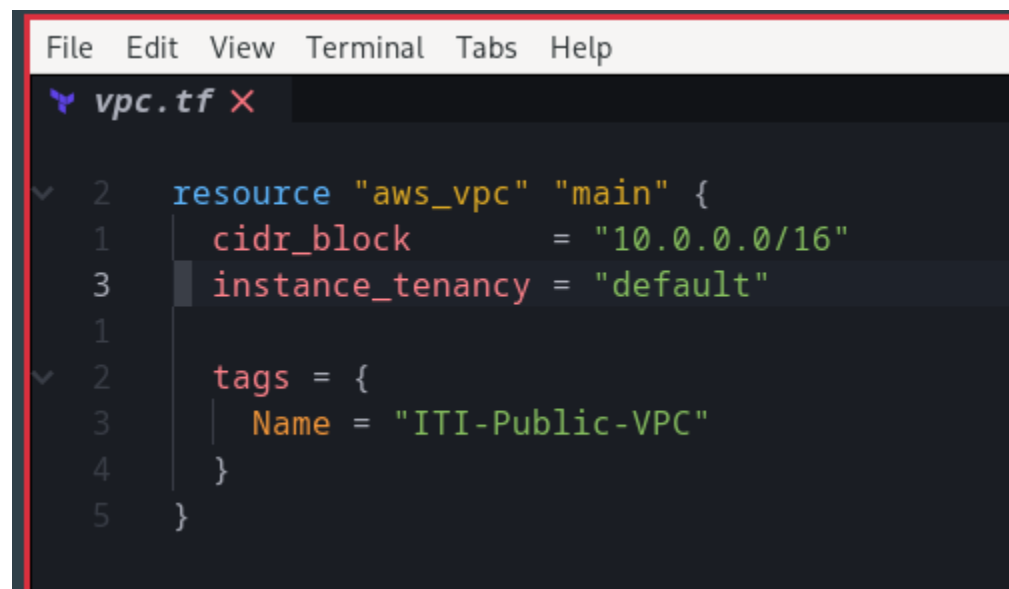
1- create vpc



```
File Edit View Terminal Tabs Help

provider.tf X

2 # Configure the AWS Provider
1 provider "aws" {
3   region = "us-east-1" # us n.virginia
1 }
```



```
File Edit View Terminal Tabs Help

vpc.tf X

2 resource "aws_vpc" "main" {
1   cidr_block      = "10.0.0.0/16"
3   instance_tenancy = "default"
1
2   tags = {
3     Name = "ITI-Public-VPC"
4   }
5 }
```

lab1.txt

```
[mahmoud@hestia lab1]$ nvim provider.tf
```

```
[mahmoud@hestia lab1]$ nvim vpc.tf
```

```
[mahmoud@hestia lab1]$ terraform init
```

Initializing the backend...

Initializing provider plugins...

- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v5.89.0...
- Installed hashicorp/aws v5.89.0 (signed by HashiCorp)

Terraform has created a lock file `.terraform.lock.hcl` to record the provider selections it made above. Include this file in your version control repository so that Terraform can guarantee to make the same selections by default when you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see any changes that are required for your infrastructure. All Terraform commands should now work.

If you ever set or change modules or backend configuration for Terraform, rerun this command to reinitialize your working directory. If you forget, other commands will detect it and remind you to do so if necessary.

```
File Edit View Terminal Tabs Help
[mahmoud@hestia lab1]$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_vpc.main will be created
+ resource "aws_vpc" "main" {
  + arn                        = (known after apply)
  + cidr_block                 = "10.0.0.0/16"
  + default_network_acl_id    = (known after apply)
  + default_route_table_id    = (known after apply)
  + default_security_group_id = (known after apply)
  + dhcp_options_id           = (known after apply)
  + enable_dns_hostnames      = (known after apply)
  + enable_dns_support        = true
  + enable_network_address_usage_metrics = (known after apply)
  + id                        = (known after apply)
  + instance_tenancy          = "default"
  + ipv6_association_id       = (known after apply)
  + ipv6_cidr_block           = (known after apply)
  + ipv6_cidr_block_network_border_group = (known after apply)
  + main_route_table_id       = (known after apply)
  + owner_id                  = (known after apply)
  + tags                      = {
    + "Name" = "ITI-Public-VPC"
  }
  + tags_all                  = {
    + "Name" = "ITI-Public-VPC"
  }
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

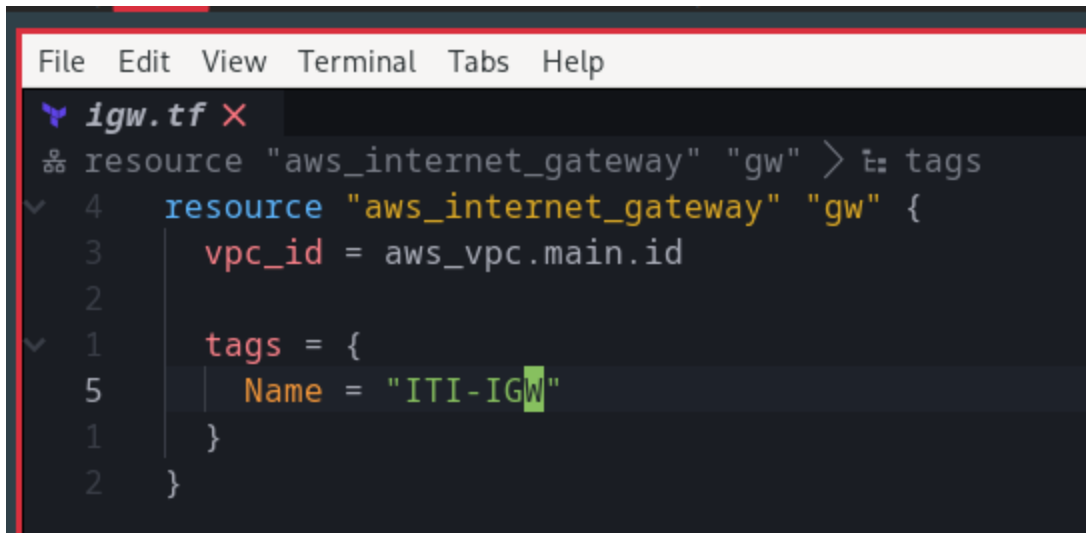
aws_vpc.main: Creating...
aws_vpc.main: Creation complete after 3s [id=vpc-05dec54d8c8b6549c]
```

Search

IPv4 CIDR: 10.0.0.0/16 X Clear filters

<input type="checkbox"/>	Name	VPC ID	State	Block Public...	IPv4 CIDR
<input type="checkbox"/>	ITI-VPC	vpc-05dec54d8c8b6549c	Available	Off	10.0.0.0/16

2- create internet gateway



```
File Edit View Terminal Tabs Help
igw.tf ✕
resource "aws_internet_gateway" "gw" {
  tags = {
    Name = "ITI-IGW"
  }
}
```

Terraform is attaching this to the needed vpc directly through the vpc_id

```
[mahmoud@hestia lab1]$ terraform apply
aws_vpc.main: Refreshing state... [id=vpc-05dec54d8c8b6549c]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_internet_gateway.gw will be created
+ resource "aws_internet_gateway" "gw" {
  + arn      = (known after apply)
  + id       = (known after apply)
  + owner_id = (known after apply)
  + tags     = {
    + "Name" = "main"
  }
  + tags_all = {
    + "Name" = "main"
  }
  + vpc_id   = "vpc-05dec54d8c8b6549c"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_internet_gateway.gw: Creating...
aws_internet_gateway.gw: Creation complete after 1s [id=igw-0dda96f983179260d]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
```

Internet gateways (2) [Info](#)

Search

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-01fb0da35d4df6962	Attached	vpc-0889885554766243c	588738591182
ITI-IGW	igw-0dda96f983179260d	Attached	vpc-05dec54d8c8b6549c ITI-VPC	588738591182

3- create public route table

```
File Edit View Terminal Tabs Help
public-rt.tf ✕
4 resource "aws_route_table" "iti-public-rt" {
3   vpc_id = aws_vpc.iti-vpc.id
2
1   route {
5     cidr_block = "0.0.0.0/0"
1     gateway_id = aws_internet_gateway.iti-igw.id
2   }
3
4   tags = {
5     Name = "ITI-Public-RT"
6   }
7 }
```

```
File Edit View Terminal Tabs Help
aws_vpc.it1-vpc: Refreshing state... [id=vpc-0fb8ce4035827cfbd]
aws_internet_gateway.it1-igw: Refreshing state... [id=igw-023720f9fc0893438]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_route_table.it1-public-rt will be created
+ resource "aws_route_table" "iti-public-rt" {
+   arn                = (known after apply)
+   id                 = (known after apply)
+   owner_id           = (known after apply)
+   propagating_vgws   = (known after apply)
+   route              = [
+     {
+       + cidr_block      = "0.0.0.0/0"
+       + gateway_id      = "igw-023720f9fc0893438"
+       # (11 unchanged attributes hidden)
+     },
+   ]
+   tags               = {
+     + "Name" = "ITI-Public-RT"
+   }
+   tags_all           = {
+     + "Name" = "ITI-Public-RT"
+   }
+   vpc_id             = "vpc-0fb8ce4035827cfbd"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_route_table.it1-public-rt: Creating...
aws_route_table.it1-public-rt: Creation complete after 3s [id=rtb-02b2d93d21364381e]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
[mahmoud@hestia lab11$]
```

rtb-02b2d93d21364381e / ITI-Public-RT

Actions

Details Info

Route table ID

rtb-02b2d93d21364381e

VPC

vpc-0fb8ce4035827cfbd | ITI-VPC

Main

No

Owner ID

588738591182

Explicit subnet associations

-

Edge associations

-

Routes

Subnet associationsEdge associationsRoute propagationTags

Routes (2)

BothEdit routes

Filter routes

Destination	Target	Status	Propagated
0.0.0.0/0	igw-023720f9fc0893438	Active	No
10.0.0.0/16	local	Active	No

4- create private route table

```
File Edit View Terminal Tabs Help

private-rt.tf ✕

4 resource "aws_route_table" "iti-private-rt" {
3     vpc_id = aws_vpc.iti-vpc.id
2
1     tags = {
5         Name = "ITI-Private-RT"
1     }
2 }
```

```
[mahmoud@hestia lab1]$ terraform apply
aws_vpc.iti-vpc: Refreshing state... [id=vpc-0fb8ce4035827cfbd]
aws_internet_gateway.iti-igw: Refreshing state... [id=igw-023720f9fc0893438]
aws_route_table.iti-public-rt: Refreshing state... [id=rtb-02b2d93d21364381e]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_route_table.iti-private-rt will be created
+ resource "aws_route_table" "iti-private-rt" {
+   arn                = (known after apply)
+   id                 = (known after apply)
+   owner_id           = (known after apply)
+   propagating_vgws   = (known after apply)
+   route              = (known after apply)
+   tags               = {
+     "Name" = "ITI-Private-RT"
+   }
+   tags_all           = {
+     "Name" = "ITI-Private-RT"
+   }
+   vpc_id             = "vpc-0fb8ce4035827cfbd"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_route_table.iti-private-rt: Creating...
aws_route_table.iti-private-rt: Creation complete after 2s [id=rtb-0224d662ad073ea99]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
[mahmoud@hestia lab1]$
```

5- create public route

and the route table is connecting the local network by default

rtb-0224d662ad073ea99 / ITI-Private-RT

Actions

Details

Info

Route table ID

rtb-0224d662ad073ea99

VPC

vpc-0fb8ce4035827cfbd | ITI-VPC

Main

No

Owner ID

588738591182

Explicit subnet associations

-

Edge associations

-

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (1)

Both

Edit routes

Filter routes

Destination

Target

Status

Propagated

10.0.0.0/16

local

Active

No

Resource map

Info

VPC

Show details

Your AWS virtual network

ITI-VPC

Subnets (0)

Subnets within this VPC

Route tables (3)

Route network traffic to resources

ITI-Private-RT

ITI-Public-RT

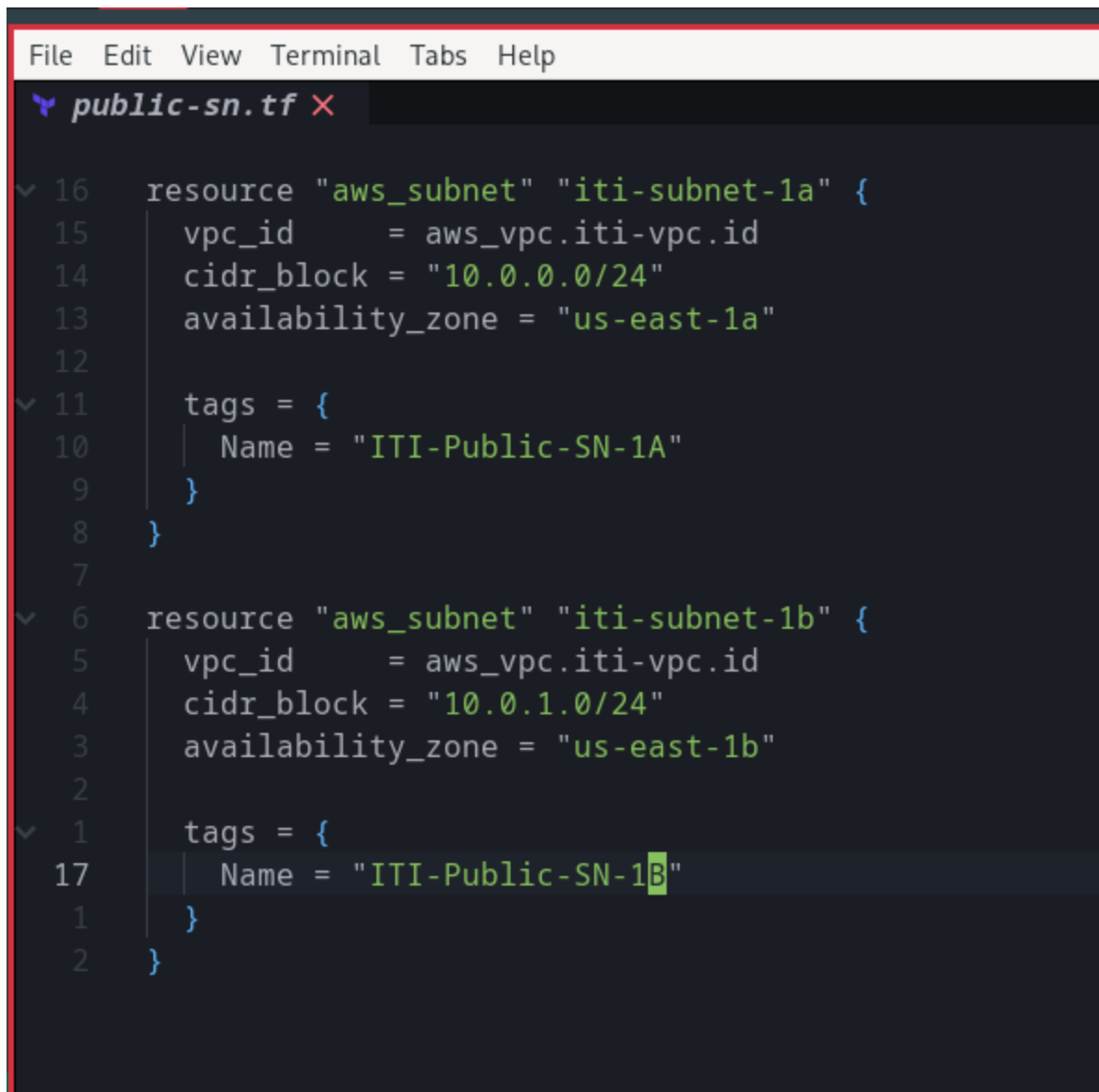
rtb-0dae7b92ed298689b

Network connections (1)

Connections to other networks

ITI-IGW

6- attach public route table to subnets



The image shows a code editor window with a menu bar (File, Edit, View, Terminal, Tabs, Help) and a tab titled `public-sn.tf`. The editor contains Terraform configuration for two AWS subnets. The first subnet, `iti-subnet-1a`, is configured with `vpc_id = aws_vpc.iti-vpc.id`, `cidr_block = "10.0.0.0/24"`, `availability_zone = "us-east-1a"`, and a tag `Name = "ITI-Public-SN-1A"`. The second subnet, `iti-subnet-1b`, is configured with `vpc_id = aws_vpc.iti-vpc.id`, `cidr_block = "10.0.1.0/24"`, `availability_zone = "us-east-1b"`, and a tag `Name = "ITI-Public-SN-1B"`. The line numbers on the left range from 1 to 17, with line 17 being the last line of the second subnet's configuration.

```
File Edit View Terminal Tabs Help

public-sn.tf ✕

16 resource "aws_subnet" "iti-subnet-1a" {
15     vpc_id      = aws_vpc.iti-vpc.id
14     cidr_block  = "10.0.0.0/24"
13     availability_zone = "us-east-1a"
12
11     tags = {
10         Name = "ITI-Public-SN-1A"
9     }
8 }
7
6 resource "aws_subnet" "iti-subnet-1b" {
5     vpc_id      = aws_vpc.iti-vpc.id
4     cidr_block  = "10.0.1.0/24"
3     availability_zone = "us-east-1b"
2
1     tags = {
17         Name = "ITI-Public-SN-1B"
1     }
2 }
```

```

# aws_subnet.it1-subnet-1a will be created
+ resource "aws_subnet" "iti-subnet-1a" {
  + arn                                     = (known after apply)
  + assign_ipv6_address_on_creation        = false
  + availability_zone                      = "us-east-1a"
  + availability_zone_id                   = (known after apply)
  + cidr_block                             = "10.0.0.0/24"
  + enable_dns64                           = false
  + enable_resource_name_dns_a_record_on_launch = false
  + enable_resource_name_dns_aaaa_record_on_launch = false
  + id                                     = (known after apply)
  + ipv6_cidr_block_association_id         = (known after apply)
  + ipv6_native                            = false
  + map_public_ip_on_launch                = false
  + owner_id                               = (known after apply)
  + private_dns_hostname_type_on_launch    = (known after apply)
  + tags                                   = {
    + "Name" = "ITI-Public-SN-1A"
  }
  + tags_all                               = {
    + "Name" = "ITI-Public-SN-1A"
  }
  + vpc_id                                 = "vpc-0fb8ce4035827cfbd"
}

```

```

# aws_subnet.it1-subnet-1b will be created
+ resource "aws_subnet" "iti-subnet-1b" {
  + arn                                     = (known after apply)
  + assign_ipv6_address_on_creation        = false
  + availability_zone                      = "us-east-1b"
  + availability_zone_id                   = (known after apply)
  + cidr_block                             = "10.0.1.0/24"
  + enable_dns64                           = false
  + enable_resource_name_dns_a_record_on_launch = false
  + enable_resource_name_dns_aaaa_record_on_launch = false
  + id                                     = (known after apply)
  + ipv6_cidr_block_association_id         = (known after apply)
  + ipv6_native                            = false
  + map_public_ip_on_launch                = false
  + owner_id                               = (known after apply)
  + private_dns_hostname_type_on_launch    = (known after apply)
}

```

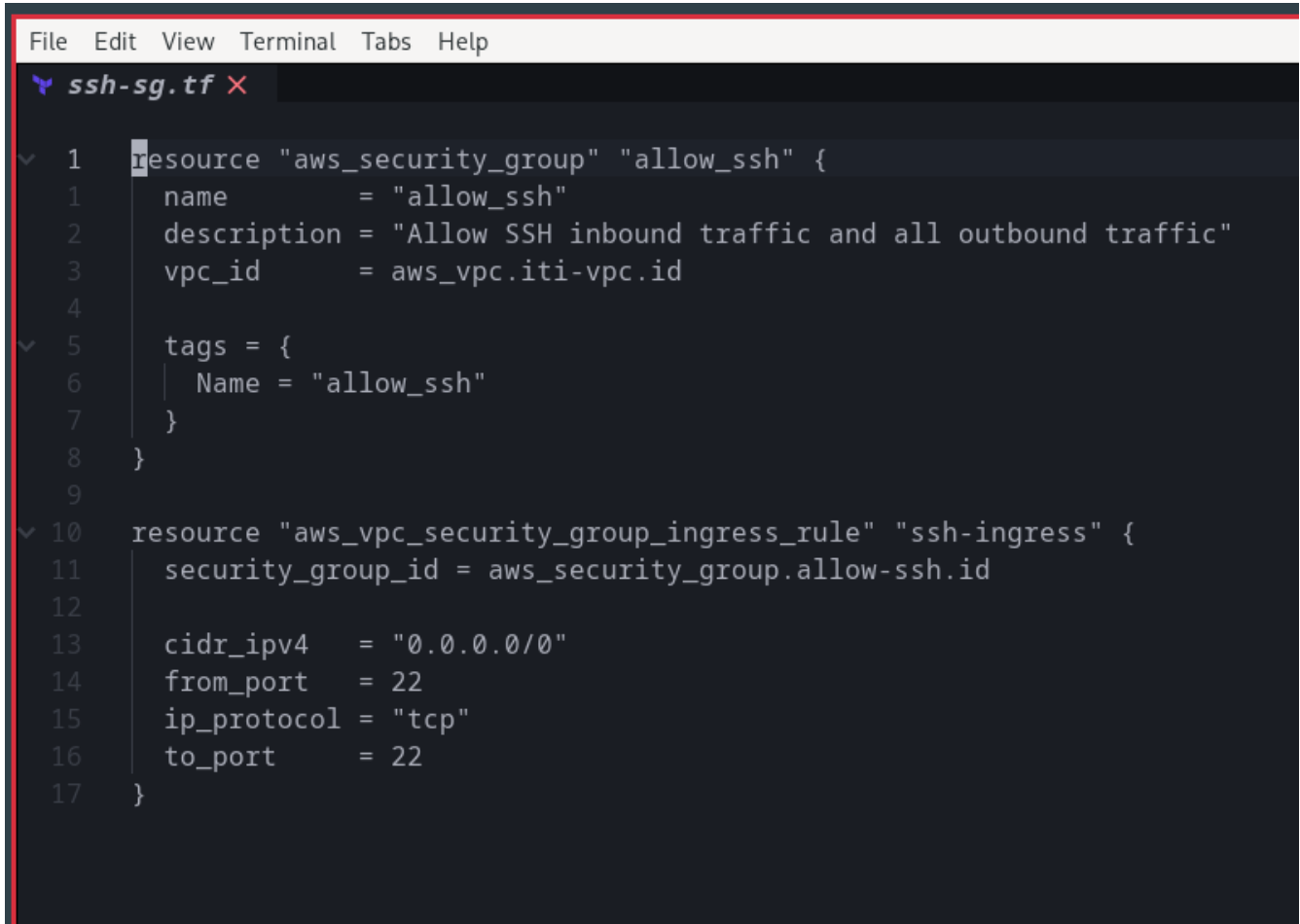
Subnets (8) [Info](#)

Last updated
less than a minute ago

<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
<input type="checkbox"/>	-	subnet-09edf757ca72853d4	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.32.0/20
<input type="checkbox"/>	-	subnet-039aab0389789dc3c	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.0.0/20
<input type="checkbox"/>	-	subnet-001665d3a2ff3edf4	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.80.0/20
<input type="checkbox"/>	-	subnet-064d4e86b7200d3b6	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.64.0/20
<input type="checkbox"/>	ITI-Public-SN-1A	subnet-0cf86fdf9f562a5eb	Available	vpc-0fb8ce4035827cfbd ITI-VPC	<input type="radio"/> Off	10.0.0.0/24
<input type="checkbox"/>	ITI-Public-SN-1B	subnet-0c73ea086c30c5939	Available	vpc-0fb8ce4035827cfbd ITI-VPC	<input type="radio"/> Off	10.0.1.0/24
<input type="checkbox"/>	-	subnet-0485ad47d683416fd	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.16.0/20
<input type="checkbox"/>	-	subnet-0698a33934f6607c5	Available	vpc-0889885554766243c	<input type="radio"/> Off	172.31.48.0/20

– Compute

7– create security group which allow ssh from 0.0.0.0/0

A screenshot of a code editor window with a dark theme. The window has a menu bar at the top with 'File', 'Edit', 'View', 'Terminal', 'Tabs', and 'Help'. Below the menu bar, there is a tab labeled 'ssh-sg.tf' with a red 'X' icon. The main area of the editor contains Terraform configuration code. The code is as follows:

```
1 resource "aws_security_group" "allow_ssh" {  
2     name           = "allow_ssh"  
3     description    = "Allow SSH inbound traffic and all outbound traffic"  
4     vpc_id         = aws_vpc.iti-vpc.id  
5  
6     tags = {  
7         Name = "allow_ssh"  
8     }  
9  
10 resource "aws_vpc_security_group_ingress_rule" "ssh-ingress" {  
11     security_group_id = aws_security_group.allow-ssh.id  
12  
13     cidr_ipv4      = "0.0.0.0/0"  
14     from_port      = 22  
15     ip_protocol    = "tcp"  
16     to_port        = 22  
17 }
```

```
[mahmoud@hestia lab1]$ terraform apply
aws_vpc.iti-vpc: Refreshing state... [id=vpc-0fb8ce4035827cfbd]
aws_internet_gateway.iti-igw: Refreshing state... [id=igw-023720f9fc0893438]
aws_route_table.iti-private-rt: Refreshing state... [id=rtb-0224d662ad073ea99]
aws_subnet.iti-subnet-1a: Refreshing state... [id=subnet-0cf86fdf9f562a5eb]
aws_subnet.iti-subnet-1b: Refreshing state... [id=subnet-0c73ea086c30c5939]
aws_security_group.allow_ssh: Refreshing state... [id=sg-033ea9c89ef428850]
aws_route_table.iti-public-rt: Refreshing state... [id=rtb-02b2d93d21364381e]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_vpc_security_group_ingress_rule.ssh-ingress will be created
+ resource "aws_vpc_security_group_ingress_rule" "ssh-ingress" {
  + arn                = (known after apply)
  + cidr_ipv4          = "0.0.0.0/0"
  + from_port          = 22
  + id                 = (known after apply)
  + ip_protocol        = "tcp"
  + security_group_id   = "sg-033ea9c89ef428850"
  + security_group_rule_id = (known after apply)
  + tags_all           = {}
  + to_port            = 22
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_vpc_security_group_ingress_rule.ssh-ingress: Creating...
aws_vpc_security_group_ingress_rule.ssh-ingress: Creation complete after 1s [id=sgr-02ce93b92c0450486]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
[mahmoud@hestia lab1]$
```

sg-033ea9c89ef428850 - allow_ssh

Actions

Details

Security group name

allow_ssh

Security group ID

sg-033ea9c89ef428850

Description

Allow SSH inbound traffic and all outbound traffic

VPC ID

vpc-0fb8ce4035827cfbd

Owner

588738591182

Inbound rules count

1 Permission entry

Outbound rules count

0 Permission entries

Inbound rules

Outbound rules

Sharing - new

VPC associations - new

Tags

Inbound rules (1)

Manage tags

Edit inbound rules

Search

< 1 > ⚙

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
-	sgr-02ce93b92c0450486	IPv4	SSH	TCP	22	0.0.0.0/0	-

8- create security group that allow ssh and port 3000 from vpc cidr only

```
File Edit View Terminal Tabs Help
sec-group.tf ✕

10 resource "aws_security_group" "allow_ssh_3port" {
9   name      = "allow_ssh_3port"
8   description = "Allow SSH and port 3000"
7   vpc_id    = aws_vpc.iti-vpc.id
6
5   tags = {
4     Name = "allow_ssh_3Port"
3   }
2 }
1

11 resource "aws_vpc_security_group_ingress_rule" "allow_ssh_ingress" {
1   security_group_id = aws_security_group.allow_ssh_3port.id
2   cidr_ipv4        = "10.0.0.0/16"
3   from_port        = 22
4   to_port          = 22
5   ip_protocol      = "tcp"
6 }
7

8 resource "aws_vpc_security_group_ingress_rule" "allow_3000_ingress" {
9   security_group_id = aws_security_group.allow_ssh_3port.id
10  cidr_ipv4         = "10.0.0.0/16"
11  from_port         = 3000
12  to_port           = 3000
13  ip_protocol       = "tcp"
14  ✕ }          ■■■■ Unexpected attribute: An attribute named "vpc_id" is not expected here
```

Details

Security group name allow_ssh_3port	Security group ID sg-0d2b1bfba2adc8508	Description Allow SSH and port 3000	VPC ID vpc-0fb8ce4035827cfbd
Owner 588738591182	Inbound rules count 2 Permission entries	Outbound rules count 0 Permission entries	

- Inbound rules
- Outbound rules
- Sharing - new
- VPC associations - new
- Tags

Inbound rules (2)

Manage tags Edit inbound rules

Search








< 1 > ⚙

	Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
	-	sgr-05bcd10b985ef9e6	IPv4	Custom TCP	TCP	3000	10.0.0.0/16	-
	-	sgr-0b52eb4a9c508f507	IPv4	SSH	TCP	22	10.0.0.0/16	-

9- create ec2(bastion) in public subnet with security group from 7

Instance summary for i-0543171c5e2a9a0e4 (bastion) [Info](#)

Updated less than a minute ago

Instance ID  i-0543171c5e2a9a0e4	Public IPv4 address -
IPv6 address -	Instance state  Running
Hostname type IP name: ip-10-0-0-53.ec2.internal	Private IP DNS name (IPv4 only)  ip-10-0-0-53.ec2.internal
Answer private resource DNS name -	Instance type t3.micro
Auto-assigned IP address -	VPC ID  vpc-0fb8ce4035827cfbd (ITI-VPC) ↗
IAM Role -	Subnet ID  subnet-0cf86fdf9f562a5eb (ITI-Public-SN-1A) ↗
IMDSv2 Optional  EC2 recommends setting IMDSv2 to required Learn more ↗	Instance ARN  arn:aws:ec2:us-east-1:588738591182:instance/i-0543171c5e2a9a0e4
Operator -	

Details

Status and alarms

Monitoring

Security


Networking


Storage

Tags

▼ Security details

IAM Role
-

Security groups
 sg-033ea9c89ef428850 (allow_ssh)

Owner ID
 588738591182

ec2public.tf ✕

```
21 data "aws_ami" "ubuntu" {
20   most_recent = true
19
18   filter {
17     name      = "name"
16     values    = ["ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-*"]
15   }
14
13   filter {
12     name      = "virtualization-type"
11     values    = ["hvm"]
10   }
9
8   owners = ["099720109477"] # Canonical
7 }
6
5 resource "aws_instance" "web" {
4   ami           = data.aws_ami.ubuntu.id
3   instance_type = "t3.micro"
2
1   subnet_id      = aws_subnet.iti-subnet-1a.id
22  vpc_security_group_ids = [aws_security_group.allow_ssh.id]
1
2   tags = {
3     Name = "bastion"
4   }
5 }
```

10- create ec2(application) private subnet with security group from 8

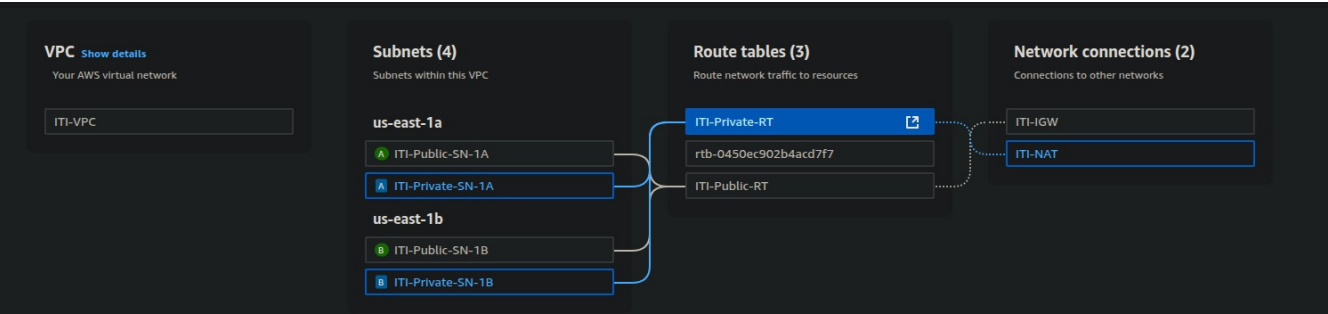
fixing the subnets to route to the correct route table

```
File Edit View Terminal Tabs Help
public-sn.tf ✕
resource "aws_route_table_association" "public_rt_assoc_1b" > π route_tabl
27 resource "aws_subnet" "iti-public-sn-1a" {
26     vpc_id          = aws_vpc.iti-vpc.id
25     cidr_block      = "10.0.0.0/24"
24     availability_zone = "us-east-1a"
23
22     tags = {
21         Name = "ITI-Public-SN-1A"
20     }
19 }
18
17 resource "aws_route_table_association" "public_rt_assoc_1a" {
16     subnet_id      = aws_subnet.iti-public-sn-1a.id
15     route_table_id = aws_route_table.iti-public-rt.id
14 }
13
12 resource "aws_subnet" "iti-public-sn-1b" {
11     vpc_id          = aws_vpc.iti-vpc.id
10     cidr_block      = "10.0.1.0/24"
9     availability_zone = "us-east-1b"
8
7     tags = {
6         Name = "ITI-Public-SN-1B"
5     }
4 }
3
2 resource "aws_route_table_association" "public_rt_assoc_1b" {
1     subnet_id      = aws_subnet.iti-public-sn-1b.id
28     route_table_id = aws_route_table.iti-public-rt.id
1 }
2
```

and also fixing the private one

```
File Edit View Terminal Tabs Help
private-sn.tf ✕
resource "aws_route_table_association" "private_rt_assoc_1b" > π subnet_
26 resource "aws_subnet" "iti-private-sn-1a" {
25     vpc_id          = aws_vpc.iti-vpc.id
24     cidr_block      = "10.0.2.0/24"
23     availability_zone = "us-east-1a"
22
21     tags = {
20         Name = "ITI-Private-SN-1A"
19     }
18 }
17
16 resource "aws_route_table_association" "private_rt_assoc_1a" {
15     subnet_id      = aws_subnet.iti-private-sn-1a.id
14     route_table_id = aws_route_table.iti-private-rt.id
13 }
12
11 resource "aws_subnet" "iti-private-sn-1b" {
10     vpc_id          = aws_vpc.iti-vpc.id
9     cidr_block      = "10.0.3.0/24"
8     availability_zone = "us-east-1b"
7
6     tags = {
5         Name = "ITI-Private-SN-1B"
4     }
3 }
2
1 resource "aws_route_table_association" "private_rt_assoc_1b" {
27     subnet_id      = aws_subnet.iti-private-sn-1b.id
1     route_table_id = aws_route_table.iti-private-rt.id
2 }
```


the ending result of the vpc



the ec2 terraform file

```
File Edit View Terminal Tabs Help
ec2private.tf
resource "aws_instance" "web"
1 resource "aws_instance" "private-ec2" {
2   ami           = data.aws_ami.ubuntu.id
3   instance_type = "t3.micro"
4   subnet_id     = aws_subnet.iti-private-sn-1a.id
5   vpc_security_group_ids = [aws_security_group.allow_ssh_3port.id]
6
7   tags = {
8     Name = "application"
9   }
10 }
```

Find instances by instance ID or tag (auto-submitting)									
Instance state = running									
Clear filters									
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
	application	i-0e361f0f57e582355	Running	t3.micro	Initializing	View alarms +	us-east-1a	-	-
	bastion	i-081e6f629859e973e	Running	t3.micro	Initializing	View alarms +	us-east-1a	-	-

IAM Role -	Subnet ID subnet-0c009de7937d67700 (ITI-Private-SN-1A)
IMDSv2 Optional  EC2 recommends setting IMDSv2 to required Learn more	Instance ARN arn:aws:ec2:us-east-1:588738591182:Instance/i-0e361f0f57e582355
Operator -	
▼ Instance details Info	
AMI ID ami-07f9449c0b700566e	Monitoring disabled
AMI name ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20250228	Allowed image -

i-0e361f0f57e582355 (application)

Details

Status and alarms

Monitoring

Security

▼ Security details

IAM Role
-

Security groups
[sg-065f386d6ac2b79d7 \(allow_ssh_3port\)](#)

i-081e6f629859e973e (bastion)

Details

Status and alarms

Monitoring

Security

Networking

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▼ Security details

IAM Role
-

Security groups
[sg-0ac14a77afc1f9fa9 \(allow_ssh\)](#)

Owner ID
[588738591182](#)

i-081e6f629859e973e (bastion)

-

Auto-assigned IP address



-

IAM Role

-

IMDSv2

Optional

 EC2 recommends setting IMDSv2 to required | [Learn more](#) 

Operator

-

▼ Instance details [Info](#)



AMI ID

 [ami-07f9449c0b700566e](#)


AMI name

t3.micro


VPC ID

 [vpc-004f4e405dc1ba579 \(ITI-VPC\)](#) 

Subnet ID

 [subnet-08c64fa2f21615606 \(ITI-Public-SN-1A\)](#) 

Instance ARN

 [arn:aws:ec2:us-east-1:588738591182:instance/i-081e6f629859e973e](#)

Monitoring

disabled

Allowed image