

- Created a main vpc

<input type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR
<input type="checkbox"/>	Main VPC	vpc-0ee63278cc7a1f803	Available	10.0.0.0/18
<input type="checkbox"/>	Default-vpc	vpc-bfba24d4	Available	172.31.0.0/16

- Created 5 subnets ( 2 public, 2 internal, and 1 private).

<input type="checkbox"/>	Name	Subnet ID	State	VPC
<input type="checkbox"/>	Internal01	subnet-03f84138bd473dde3	Available	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	-	subnet-0048ce6b	Available	vpc-bfba24d4   Default-vpc
<input type="checkbox"/>	-	subnet-0c16f02e2399bd223	Available	vpc-bfba24d4   Default-vpc
<input type="checkbox"/>	Public02	subnet-04b2cb7af1cfbf72c	Available	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	Public01	subnet-0e10e49edfc5450b0	Available	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	-	subnet-0ea2783e9ec09e4b1	Available	vpc-bfba24d4   Default-vpc
<input type="checkbox"/>	Internal02	subnet-08f3fcb8f35b8c89f	Available	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	Private01	subnet-07e06ab5bcac5d010	Available	vpc-0ee63278cc7a1f803   Mai...

- 2 route tables (main and privates)

Route tables (4) Info

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Filter route tables

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
<input type="checkbox"/>	Default-rt	rtb-aaaf88c1	3 subnets	–	Yes	vpc-bfba24d4   Default-vpc
<input type="checkbox"/>	private-1	rtb-01f3450cd4c6d7a4f	subnet-07e06ab5bcac5...	–	No	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	main-route-table	rtb-007313346ecc670f6	2 subnets	–	No	vpc-0ee63278cc7a1f803   Mai...
<input type="checkbox"/>	–	rtb-0df87d7f856db9461	–	–	Yes	vpc-0ee63278cc7a1f803   Mai...

NAT gateways (2) Info

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Filter NAT gateways

	Name	NAT gateway ID	Connectivit...	State	State message	Elastic IP address	Private IP address	Network interface ID	VPC	Subnet
<input type="radio"/>	public NAT2	nat-09f6d5050eadcfab	Public	Available	–	3.17.38.204	10.0.2.29	eni-0f3dcca1e0118487	vpc-0ee63278cc7a1f803   Mai...	subnet-04b2cb7af1cfbf72c   P...
<input type="radio"/>	public NAT	nat-006f397313d4cadad	Public	Available	–	3.21.109.246	10.0.1.172	eni-0720d513baa277afe	vpc-0ee63278cc7a1f803   Mai...	subnet-0e10e49edfc5450b0   ...

- Created 2 elastic ips for the nat gateways.

Elastic IP addresses (2)									
<input type="text" value="Filter Elastic IP addresses"/>									
<input type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address	Association ID	Network interface owner account ID
<input type="checkbox"/>	-	3.17.38.204	Public IP	eipalloc-04bdcbe72ac91ca4	-	-	10.0.2.29	eipasoc-0446dc0c4b23ec338	323867645900
<input type="checkbox"/>	-	3.21.109.246	Public IP	eipalloc-0db7e2b4502b42c2	-	-	10.0.1.172	eipasoc-02bdf9f6b15a0c0	323867645900

- Created 2 elastic ips

Elastic IP addresses (2)							
<input type="text" value="Filter Elastic IP addresses"/>							
<input type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Associated instance ID	
<input type="checkbox"/>	–	3.17.38.204	Public IP	eipalloc-04bdcbe72aca91ea4	–	–	
<input type="checkbox"/>	–	3.21.109.246	Public IP	eipalloc-0de7e2eb4502b42c2	–	–	

## Part 2 Ec2

- Created a ec2 instance that was an Ubuntu ami
  - It had a security group with the following rules:
    - Ingress: allow port 80 traffic from the ALB security group'
    - Egress: allow all outbound traffic to any ipv4 address

Instance summary for i-0305a92deb173fe34 (MyDeploymentEC2) <a href="#">Info</a>		
Updated less than a minute ago		
Instance ID i-0305a92deb173fe34 (MyDeploymentEC2)	Public IPv4 address –	Private IPv4 addresses 10.0.3.239
IPv6 address –	Instance state Running	Public IPv4 DNS –
Hostname type IP name: ip-10-0-3-239.us-east-2.compute.internal	Private IP DNS name (IPv4 only) ip-10-0-3-239.us-east-2.compute.internal	Answer private resource DNS name –
Instance type t2.micro	Elastic IP addresses –	VPC ID vpc-0ee63278cc7a1f803 (Main VPC) <a href="#">↗</a>
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   <a href="#">Learn more</a> <a href="#">↗</a>	IAM Role –	Subnet ID subnet-07e06ab5bcac5d010 (Private01) <a href="#">↗</a>

Instance summary for i-0305a92deb173fe34 (MyDeploymentEC2) <a href="#">Info</a>				Connect	Instance state ▼	Actions ▼
Updated less than a minute ago						
Instance ID i-0305a92deb173fe34 (MyDeploymentEC2)	Public IPv4 address –	Private IPv4 addresses 10.0.3.239				
IPv6 address –	Instance state Running	Public IPv4 DNS –				
Hostname type IP name: ip-10-0-3-239.us-east-2.compute.internal	Private IP DNS name (IPv4 only) ip-10-0-3-239.us-east-2.compute.internal	Answer private resource DNS name –				
Instance type t2.micro	Elastic IP addresses –	VPC ID vpc-0ee63278cc7a1f803 (Main VPC) <a href="#">↗</a>				
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   <a href="#">Learn more</a> <a href="#">↗</a>	IAM Role –	Subnet ID subnet-07e06ab5bcac5d010 (Private01) <a href="#">↗</a>				

## Part 3

created a security group

- Created a load balancer security group that allows inbound port 80 ipv4 traffic
- The load balancer security group ingress rules that allow only port 80 access from any ipv4 traffic. And it's egress rules were that it allowed outbound traffic to port 80 only to the deployment 9 Ec2 instance security group.

tf-example-lb-tg

arn:aws:elasticloadbalancing:us-east-2:323867645900:targetgroup/tf-example-lb-tg/79c8c45e4b6b8a17

**Details**

Target type	Protocol - Port	Protocol version	VPC
Instance	HTTP: 80	HTTP1	vpc-0ee63278cc7a1f803
IP address type	Load balancer		
IPv4	elasticlb		

Total targets: 1, Healthy: 0, Unhealthy: 0, Unused: 0, Initial: 1

**Targets** | Monitoring | Health checks | Attributes | Tags

Registered targets (1)

Instance ID	Name	Port	Zone	Health status	Health status details
i-07c5b0762c02265f	MyDeploymentEC2	80	us-east-2a	Initial	Target registration is in progress

Deployment9ALB_sg	sg-0d20186c4bd129304	alb_sg	vpc-0ee63278cc7a1f803	Allow port 80 inbound...	323867645900	1 Permission entry	2 Permission entries
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EC2 > Security Groups > sg-0d20186c4bd129304 - alb\_sg

sg-0d20186c4bd129304 - alb\_sg

**Details**

Security group name	Security group ID	Description	VPC ID
alb_sg	sg-0d20186c4bd129304	Allow port 80 inbound traffic	vpc-0ee63278cc7a1f803
Owner	Inbound rules count	Outbound rules count	
323867645900	1 Permission entry	2 Permission entries	

**Inbound rules** | Outbound rules | Tags

You can now check network connectivity with Reachability Analyzer

**Inbound rules (1/1)**

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sg-0ca8dc921f6d7441d	IPv4	HTTP	TCP	80	0.0.0.0/0	TCP from VPC

<input checked="" type="checkbox"/>	Deployment9ALB_sg	sg-0d20186c4bd129304	alb_sg	vpc-0ee63278cc7a1f803	Allow port 80 inbound...	323867645900	1 Permission entry	2 Permission entries
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sg-0d20186c4bd129304 - alb\_sg Actions

Details

Security group name

alb\_sg

Security group ID

sg-0d20186c4bd129304

Description

Allow port 80 inbound traffic

VPC ID

vpc-0ee63278cc7a1f803

Owner

323867645900

Inbound rules count

1 Permission entry

Outbound rules count

1 Permission entry

Inbound rules

Outbound rules

Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Outbound rules (1/1)

Filter security group rules

Manage tags

Edit outbound rules

< 1 >

<input checked="" type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	Destination	Description
<input checked="" type="checkbox"/>	-	sg-0d0eb30cbfda3e800	-	HTTP	TCP	80	sg-014ce64f32c5da5f...	-

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

<input checked="" type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type
<input checked="" type="checkbox"/>	dep9lb	dep9lb-1959123452.us-east-...	Active	vpc-0ee63278cc7a1f803	us-east-2b, us-east-2a	application

Load balancer: dep9lb

Description

Listeners

Monitoring

Integrated services

Tags

Listeners listen for connection requests using their protocol and port. You can add, remove, or update listeners and listener rules.

To view and edit listener attributes, select the listener and choose Edit.

Add listener

Edit

Delete

<input type="checkbox"/>	Listener ID	Security policy	SSL Certificate	Rules
<input type="checkbox"/>	HTTP : 80 arn...bba659d1b3af0cb8	N/A	N/A	Default: forwarding to tf-example-lb-tg <a href="#">View/edit rules</a>

**Part 4 - RDS (Not finished): I created a rds.tf for the postgresql database. This is what I have so far for the rds.tf but it doesn't seem to work when I run terraform apply**

```
resource "aws_security_group" "rds_sg" {
  name          = "rds_sg"
  description   = "Allow TLS inbound traffic"
  vpc_id        = aws_vpc.main.id

  ingress {
    description      = "TLS from VPC"
    from_port        = 80
    to_port          = 80
    protocol          = "tcp"
    security_groups   = [aws_security_group.ubuntu_ec2.id]
  }
  tags = {
    Name = "SG-for-RDS"
  }
}

resource "aws_db_instance" "rds" {
  allocated_storage      = 20
  engine                 = "postgresql"
  engine_version         = "9.6.20-R1"
  instance_class         = "db.t2.micro"
  multi_az               = "true"
  name                  = "mydb"
  username               = "bishajit"
  password               = "kural23"
  vpc_security_group_ids = [aws_security_group.rds_sg.id]
  skip_final_snapshot    = true
}
```

```

resource "aws_db_subnet_group" "default" {
  name          = "main"
  subnet_ids    = [aws_subnet.internal01.id, aws_subnet.internal02.id]

  tags = {
    Name = "My DB subnet group"
  }
}

```

It gives me this error

```

Error: Error creating DB Instance: InvalidParameterValue: Invalid DB engine
  status code: 400, request id: d9a9bfdb-3656-4cd5-b91f-39f5956cb303, {
  AllocatedStorage: 20,
  AutoMinorVersionUpgrade: true,
  BackupRetentionPeriod: 0,
  CopyTagsToSnapshot: false,
  DBInstanceClass: "db.t2.micro",
  DBInstanceIdentifier: "terraform-20211215041104490800000001",
  DBName: "mydb",
  DeletionProtection: false,
  Engine: "postgresSQL",
  EngineVersion: "9.6.20-R1",
  MasterUserPassword: "*****",
  MasterUsername: "bishajit",
  MultiAZ: true,
  PubliclyAccessible: false,
  StorageEncrypted: false,
  Tags: [{
    Key: "Team",
    Value: "Kura Labs"
  }, {
    Key: "Deployment",
    Value: "DEPLOYMENT_09_TERRAFORM"
  }],
  VpcSecurityGroupIds: ["sg-088d4b5bb37f5472f"]
}

with aws_db_instance.rds,
on rds.tf line 19, in resource "aws_db_instance" "rds":

```

```
| 19: resource "aws_db_instance" "rds" {  
|  
|
```