

TERRAFORM CODE

Write Terraform script to create highly available infrastructure in AWS. The infra should have 1 vpc, 3 subnets setup in 3 different az and 2 instances setup in 2 different subnets

```
provider "aws" {  
  region = "ap-south-1"  
  profile = "default"  
}
```

2 instances setup

```
resource "aws_instance" "ec2-1" {  
  ami = "ami-079db87dc4c10ac91"  
  instance_type = "t2.micro"  
  key_name = "prd01"  
  //vpc_security_group_ids = ["${aws_security_group.rtp03-sg.id}"]  
  subnet_id = "${aws_subnet.rtp01-public_subent_01.id}"  
}
```

```
resource "aws_instance" "ec2-2" {  
  ami = "ami-0a0f1259dd1c90938"  
  instance_type = "t2.micro"  
  key_name = "prd01"  
  //vpc_security_group_ids = ["${aws_security_group.rtp03-sg.id}"]  
  subnet_id = "${aws_subnet.rtp02-public_subent_02.id}"  
}
```

```
resource "aws_security_group" "rtp03-sg" {  
  name = "rtp03-sg"  
  vpc_id = "${aws_vpc.rtp03-vpc.id}"  
  ingress {  
    from_port = 22  
    to_port = 22  
    protocol = "tcp"  
    cidr_blocks = ["0.0.0.0/0"]  
  }
```

```

    }

    ingress {
        from_port = 80
        to_port = 80
        protocol = "tcp"
        cidr_blocks = ["0.0.0.0/0"]
    }

    ingress {
        from_port = 80
        to_port = 80
        protocol = "tcp"
        cidr_blocks = ["0.0.0.0/0"]

    }
    egress {
        from_port = 0
        to_port = 0
        protocol = "-1"
        cidr_blocks = ["0.0.0.0/0"]
    }

    tags = {
        Name = "ssh-sg"

    }

}

```

1 vpc created

```

//creating a VPC
resource "aws_vpc" "rtp03-vpc" {
    cidr_block = "10.1.0.0/16"
    tags = {
        Name = "rpt03-vpc"
    }

}

```

3 subnets setup in 3 different az

// Creating a Subnet

```
resource "aws_subnet" "rtp01-public_subent_01" {  
    vpc_id          = "${aws_vpc.rtp03-vpc.id}"  
    cidr_block      = "10.1.1.0/24"  
    map_public_ip_on_launch = true  
    availability_zone = "ap-south-1a"  
    tags = {  
        Name = "rtp01-public_subent_01"  
    }  
}
```

```
resource "aws_subnet" "rtp02-public_subent_02" {  
    vpc_id          = "${aws_vpc.rtp03-vpc.id}"  
    cidr_block      = "10.1.2.0/24" # Unique CIDR block  
    map_public_ip_on_launch = true  
    availability_zone = "ap-south-1b"  
    tags = {  
        Name = "rtp02-public_subent_02"  
    }  
}
```

```
resource "aws_subnet" "rtp03-public_subent_03" {  
    vpc_id          = "${aws_vpc.rtp03-vpc.id}"  
    cidr_block      = "10.1.3.0/24" # Unique CIDR block  
    map_public_ip_on_launch = true  
    availability_zone = "ap-south-1c"  
    tags = {  
        Name = "rtp03-public_subent_03"  
    }  
}
```

//Creating a Internet Gateway

```
resource "aws_internet_gateway" "rtp03-igw" {  
    vpc_id = "${aws_vpc.rtp03-vpc.id}"  
    tags = {  
        Name = "rtp03-igw"  
    }  
}
```

// Create a route table

```
resource "aws_route_table" "rtp03-public-rt" {
```

```

vpc_id = "${aws_vpc.rtp03-vpc.id}"
route {
  cidr_block = "0.0.0.0/0"
  gateway_id = "${aws_internet_gateway.rtp03-igw.id}"
}
tags = {
  Name = "rtp03-public-rt"
}
}

```

Outputs

VPC

The screenshot displays the AWS Management Console interface for a VPC. At the top, a table lists VPCs with columns for Name, VPC ID, State, IPv4 CIDR, IPv6 CIDR, DHCP option set, and Main route table. Below this, the 'Resource map' section provides a visual overview of the VPC's components:

- VPC:** vpc-0ae5b007465b9beaf / rtp03-vpc
- Subnets (3):** ap-south-1a (rtp01-public_subent_01), ap-south-1b (rtp02-public_subent_02), and ap-south-1c (rtp03-public_subent_03).
- Route tables (2):** rtp03-public-rt and rtb-0fc6e8a1b2ef0559a.
- Network connections (1):** rtp03-igw.

A notification box asks, "Was the resource map helpful today?" with a feedback link.

Subnets which have been created

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 ad
<input checked="" type="checkbox"/> rtp02-public_subent_02	subnet-04a293c235f697919	Available	vpc-0ae5b007465b9beaf rtp0...	10.1.2.0/24	-	250
<input checked="" type="checkbox"/> rtp03-public_subent_03	subnet-027f07401af46400	Available	vpc-0ae5b007465b9beaf rtp0...	10.1.3.0/24	-	251
<input type="checkbox"/> -	subnet-0c02387636eaf7c1c	Available	vpc-017dbc649e0a04a46	172.31.0.0/20	-	4091
<input type="checkbox"/> -	subnet-0b86013a7d69b8d25	Available	vpc-017dbc649e0a04a46	172.31.32.0/20	-	4090
<input type="checkbox"/> -	subnet-0c34917293818af04	Available	vpc-017dbc649e0a04a46	172.31.16.0/20	-	4090
<input checked="" type="checkbox"/> rtp01-public_subent_01	subnet-048345fc2399abebe	Available	vpc-0ae5b007465b9beaf rtp0...	10.1.1.0/24	-	250

Internet Gateway

Internet gateways (1/2) [Info](#)

igw-074c57c79b8c645c9 / rpt03-igw

Details

Tags

Internet gateway ID

igw-074c57c79b8c645c9

State

Attached

VPC ID

vpc-0ae5b007465b9beaf | rpt03-vpc

Owner

068953489573

Route tables

Route tables (1/3) [Info](#)

rtb-09b3a0a1d08c4511a / rpt03-public-rt

Details

Routes

Subnet associations

Edge associations

Route propagation

Tags

Route table ID

rtb-09b3a0a1d08c4511a

Main

No

Explicit subnet associations

-

Edge associations

-

VPC

vpc-0ae5b007465b9beaf | rpt03-vpc

Owner ID

068953489573