

```
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = "~> 5.0"
    }
  }
}

# Initialize the AWS provider
provider "aws" {
  region = "us-east-1"
  access_key = "AKIATUNDYZUYWGIFQ5HX"
  secret_key = "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"
}

# Create a VPC
resource "aws_vpc" "my_vpc" {
  cidr_block = "10.0.0.0/16"
  enable_dns_support = true
  enable_dns_hostnames = true
}
```

```
# Create a public subnet
resource "aws_subnet" "public_subnet" {
  vpc_id      = aws_vpc.my_vpc.id
  cidr_block  = "10.0.1.0/24"
  availability_zone = "us-east-1a"
  map_public_ip_on_launch = true
}

# Create a private subnet
resource "aws_subnet" "private_subnet" {
  vpc_id      = aws_vpc.my_vpc.id
  cidr_block  = "10.0.2.0/24"
  availability_zone = "us-east-1a"
}

# Create an EC2 instance in the public subnet
resource "aws_instance" "my_instance" {
  ami          = "ami-053b0d53c279acc90"
  instance_type = "t2.micro"
  subnet_id    = aws_subnet.public_subnet.id
  key_name     = "newkey"
  root_block_device {
    volume_type = "gp2"
    volume_size = 8
  }
}
```

```
    volume_type      = "gp2"
    volume_size      = 8
    delete_on_termination = true
}

tags = {
    "Name"      = "Assignment_Instance"
    "purpose"   = "Assignment"
}
}

# Create a security group for the EC2 instance
resource "aws_security_group" "my_security_group" {
    name_prefix = "my_security_group_"
    description = "Security group for Assignment EC2 instance"

    # Inbound rule for SSH
    ingress {
        from_port = 22
        to_port   = 22
        protocol  = "tcp"
        cidr_blocks = ["0.0.0.0/0"]
    }
}
```

```

# Inbound rule for SSH
ingress {
    from_port    = 22
    to_port      = 22
    protocol     = "tcp"
    cidr_blocks  = ["0.0.0.0/0"]
}

# Outbound rule for all traffic
egress {
    from_port    = 0
    to_port      = 0
    protocol     = "-1"
    cidr_blocks  = ["0.0.0.0/0"]
}
}

```

```

ubuntu@ip-172-31-83-119:~/terraform-demo$ terraform validate
Success! The configuration is valid.

```

```

ubuntu@ip-172-31-83-119:~/terraform-demo$ terraform plan

```

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_instance.my_instance will be created
+ resource "aws_instance" "my_instance" {
  + ami                    = "ami-053b0d53c279acc90"
  + arn                   = (known after apply)
  + associate_public_ip_address = (known after apply)
  + availability_zone      = (known after apply)
  + cpu_core_count        = (known after apply)
  + cpu_threads_per_core   = (known after apply)
  + disable_api_stop       = (known after apply)
  + disable_api_termination = (known after apply)
  + ebs_optimized          = (known after apply)
  + get_password_data      = false
  + host_id                = (known after apply)
  + host_resource_group_arn = (known after apply)
  + iam_instance_profile   = (known after apply)
  + id                    = (known after apply)
  + instance_initiated_shutdown_behavior = (known after apply)
  + instance_lifecycle     = (known after apply)
}

```

```
+ resource "aws_vpc" "my_vpc" {
+   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               = true
+   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_all                           = (known after apply)
+ }
```

Plan: 5 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.

Plan: 5 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.my_vpc: Creating...

aws_security_group.my_security_group: Creating...

aws_security_group.my_security_group: Creation complete after 2s [id=sg-0f7ad579915630d8a]

aws_vpc.my_vpc: Still creating... [10s elapsed]

aws_vpc.my_vpc: Creation complete after 11s [id=vpc-028be6a928e2980a0]

aws_subnet.private_subnet: Creating...

aws_subnet.public_subnet: Creating...

aws_subnet.private_subnet: Creation complete after 0s [id=subnet-08a1c4579de264d33]

aws_subnet.public_subnet: Still creating... [10s elapsed]

aws_subnet.public_subnet: Creation complete after 11s [id=subnet-050ba39480baa1b75]

aws_instance.my_instance: Creating...

aws_instance.my_instance: Still creating... [10s elapsed]

aws_instance.my_instance: Still creating... [20s elapsed]

aws_instance.my_instance: Still creating... [30s elapsed]

aws_instance.my_instance: Creation complete after 31s [id=i-036d1260cb2c1053b]

Apply complete! Resources: 5 added, 0 changed, 0 destroyed.

ubuntu@ip-172-31-83-119:~/terraform-demo\$

Instance summary for i-036d1260cb2c1053b (Assignment_Instance) [Info](#)

Updated less than a minute ago



Connect

Instance state ▼

Actions ▼

| | | |
|----------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Instance ID i-036d1260cb2c1053b (Assignment_Instance) | Public IPv4 address 44.202.102.164 open address | Private IPv4 addresses 10.0.1.81 |
| IPv6 address - | Instance state Running | Public IPv4 DNS ec2-44-202-102-164.compute-1.amazonaws.com open address |
| Hostname type IP name: ip-10-0-1-81.ec2.internal | Private IP DNS name (IPv4 only) ip-10-0-1-81.ec2.internal | |
| Answer private resource DNS name - | Instance type t2.micro | Elastic IP addresses - |
| Auto-assigned IP address 44.202.102.164 [Public IP] | VPC ID vpc-028be6a928e2980a0 | AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more |
| IAM Role - | Subnet ID subnet-050ba39480baa1b75 | Auto Scaling Group name - |
| IMDSv2 Optional | | |

[Details](#) | [Security](#) | [Networking](#) | [Storage](#) | [Status checks](#) | [Monitoring](#) | [Tags](#)▼ Instance details [Info](#)

| | | |
|-----------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Platform Ubuntu (Inferred) | AMI ID ami-053b0d53c279acc90 | Monitoring disabled |
| Platform details Linux/UNIX | AMI name ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20230516 | Termination protection Disabled |
| Stop protection Disabled | Launch time Wed Oct 04 2023 01:21:03 GMT+0530 (India Standard Time) (1 minute) | AMI location amazon/ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20230516 |
| Instance auto-recovery Default | Lifecycle normal | Stop-hibernate behavior Disabled |
| AMI Launch index 0 | Key pair assigned at launch newkey | State transition reason - |
| Credit specification standard | Kernel ID - | State transition message - |
| Usage operation RunInstances | RAM disk ID - | Owner 249988435249 |
| Enclaves Support - | Boot mode - | Current instance boot mode legacy-bios |


DetailsSecurityNetworkingStorageStatus checksMonitoringTags

▼ Security details

IAM Role

–


Owner ID

 249988435249

Launch time

Wed Oct 04 2023 01:21:03 GMT+0530 (India Standard Time)

Security groups



 [sg-0d9b2c13e32c3ab0f \(default\)](#)

▼ Inbound rules

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Filter rules

< 1 >


| Name | Security group rule ID | Port range | Protocol | Source | Security groups |
|------|------------------------|------------|----------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| – | sgr-05a932335d13a9d36 | All | All | sg-0d9b2c13e32c3ab0f  | default  |

▼ Outbound rules

Q

Filter rules

< 1 >

| Name | Security group rule ID | Port range | Protocol | Destination | Security groups |
|------|------------------------|------------|----------|-------------|-------------------------------------------------------------------------------------------------------------|
| – | sgr-03b7ce96973baceac | All | All | 0.0.0.0/0 | default  |