Launch an ec2 instance under a default subnet and VPC using terraform template

terraform init
terraform plan
terraform apply
terraform state list

```
sivathamil@sivathamil:~/terraform$
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sivathamil@sivathamil:~/terraform$
sivathamil@sivathamil:~/terraform$ terraform init

Initializing the backend...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v4.67.0

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.
sivathamil@sivathamil:~/terraform$ cat aws-task-vpc.tf
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = "~> 4.16"
    }
  }

  required_version = ">= 1.2.0"
}

provider "aws" {
  region = "us-east-1"
}

resource "aws_instance" "task-zen-01" {
  ami             = "ami-0c7217cdde317cfec"
  instance_type   = "t2.micro"
   tags ={
    name = "task-zen-01"
  }

}
sivathamil@sivathamil:~/terraform$ terraform plan
```

```
sivathamil@sivathamil: ~/terraform
sivathamil@sivathamil:~/terraform$ 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.task-zen-01 will be created
  + resource "aws_instance" "task-zen-01" {
      + ami                                  = "ami-0c7217cdde317cfec"
      + 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_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = (known after apply)
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
      + primary_network_interface_id         = (known after apply)
      + private_dns                          = (known after apply)
      + private_ip                           = (known after apply)
      + public_dns                           = (known after apply)
      + public_ip                            = (known after apply)
      + secondary_private_ips                = (known after apply)
      + security_groups                      = (known after apply)
      + source_dest_check                    = true
      + subnet_id                            = (known after apply)
      + tags                                 = {
          + "name" = "task-zen-01"
        }
      + tags_all                             = {
          + "name" = "task-zen-01"
        }
      + tenancy                              = (known after apply)
```

```
      + ami                                  = "ami-0c7217cdde317cfec"
      + 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_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = (known after apply)
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
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      + private_dns                          = (known after apply)
      + private_ip                           = (known after apply)
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      + public_ip                            = (known after apply)
      + secondary_private_ips                = (known after apply)
      + security_groups                      = (known after apply)
      + source_dest_check                    = true
      + subnet_id                            = (known after apply)
      + tags                                 = {
          + "name" = "task-zen-01"
        }
      + tags_all                             = {
          + "name" = "task-zen-01"
        }
      + tenancy                              = (known after apply)
      + user_data                            = (known after apply)
      + user_data_base64                     = (known after apply)
      + user_data_replace_on_change          = false
      + vpc_security_group_ids               = (known after apply)
    }

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

```
sivathamil@sivathamil:~/terraform$ 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_instance.task-zen-01 will be created
  + resource "aws_instance" "task-zen-01" {
      + ami                                  = "ami-0c7217cdde317cfec"
      + 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_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = (known after apply)
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
      + primary_network_interface_id         = (known after apply)
      + private_dns                          = (known after apply)
      + private_ip                           = (known after apply)
      + public_dns                           = (known after apply)
      + public_ip                            = (known after apply)
      + secondary_private_ips                = (known after apply)
      + security_groups                      = (known after apply)
      + source_dest_check                    = true
      + subnet_id                            = (known after apply)
      + tags                                 = {
          + "name" = "task-zen-01"
        }
      + tags_all                             = {
          + "name" = "task-zen-01"
        }
      + tenancy                              = (known after apply)
```

sivathamil@sivathamil: ~/terraform

```
      + instance_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = (known after apply)
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
      + primary_network_interface_id         = (known after apply)
      + private_dns                          = (known after apply)
      + private_ip                           = (known after apply)
      + public_dns                           = (known after apply)
      + public_ip                            = (known after apply)
      + secondary_private_ips                = (known after apply)
      + security_groups                      = (known after apply)
      + source_dest_check                    = true
      + subnet_id                            = (known after apply)
      + tags                                 = {
          + "name" = "task-zen-01"
        }
      + tags_all                             = {
          + "name" = "task-zen-01"
        }
      + tenancy                              = (known after apply)
      + user_data                            = (known after apply)
      + user_data_base64                     = (known after apply)
      + user_data_replace_on_change          = false
      + vpc_security_group_ids               = (known after apply)
    }

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_instance.task-zen-01: Creating...
aws_instance.task-zen-01: Still creating... [10s elapsed]
aws_instance.task-zen-01: Still creating... [20s elapsed]
aws_instance.task-zen-01: Creation complete after 26s [id=i-035989c33fd2082a5]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
sivathamil@sivathamil:~/terraform$ terraform state list
aws_instance.task-zen-01
sivathamil@sivathamil:~/terraform$
```

Graphical Interface

Zen Class | ChatGPT | Build infra | Instances | vpcs | VPC | Instance de | VpcDetails | VpcDetails | Command | tamil to en

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:v=3;$case=tags:true%5C,client:false;$regex=tags:false%5C,client:false

AWS Skill Builder | Docker Hub | GitHub | Projects - sivathamil | ChatGPT | main.py - band-na... | Auditorium | hkhcoder/vprofile-p... | Zen Class | Course: The Comple... | <footer>: The Foot...

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EC2 Global View
Events
Console-to-Code Preview

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Images
AMIs
AMI Catalog

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Volumes
Snapshots
Lifecycle Manager

Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces

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Load Balancers
Target Groups
Trust Stores New

Auto Scaling

Instances (1/1) Info

Connect | Instance state | Actions | Launch instances

Find Instance by attribute or tag (case-sensitive) | Running | 1

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
task-zen-01	i-035989c33fd2082a5	Running	t2.micro	Initializing	View alarms	us-east-1b	ec2-44-212-29-139.co...	44.212.29.139	–

Instance: i-035989c33fd2082a5 (task-zen-01)

Details | Status and alarms New | Monitoring | Security | Networking | Storage | Tags

Instance summary Info

Instance ID
i-035989c33fd2082a5 (task-zen-01)

IPv6 address
–

Hostname type
IP name: ip-172-31-86-204.ec2.internal

Answer private resource DNS name
–

Auto-assigned IP address
44.212.29.139 [Public IP]

IAM Role
–

IMDSv2
Optional

Public IPv4 address
44.212.29.139 |open address

Instance state
Running

Private IP DNS name (IPv4 only)
ip-172-31-86-204.ec2.internal

Instance type
t2.micro

VPC ID
vpc-05fbffcb1fb9c1a33

Subnet ID
subnet-029ec4558bf7576c2

Private IPv4 addresses
172.31.86.204

Public IPv4 DNS
ec2-44-212-29-139.compute-1.amazonaws.com |open address

Elastic IP addresses
–

AWS Compute Optimizer finding
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Auto Scaling Group name
–

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EC2 Global View
Filter by VPC:
Select a VPC

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Your VPCs
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Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections

Security
Network ACLs
Security groups

DNS firewall
Rule groups
Domain lists

Network Firewall
Firewalls

subnet-029ec4558bf7576c2

Actions

Details

Subnet ID subnet-029ec4558bf7576c2	Subnet ARN arn:aws:ec2:us-east-1:488546547125:subnet/subnet-029ec4558bf7576c2	State Available	IPv4 CIDR 172.31.80.0/20
Available IPv4 addresses 4090	IPv6 CIDR –	Availability Zone us-east-1b	Availability Zone ID use1-az2
Network border group us-east-1	VPC vpc-05fbffcb1fb9c1a33	Route table rtb-03cf79bc7fb976e19	Network ACL acl-016b81ac4178959eb
Default subnet Yes	Auto-assign public IPv4 address Yes	Auto-assign IPv6 address No	Auto-assign customer-owned IPv4 address No
Customer-owned IPv4 pool –	Outpost ID –	IPv4 CIDR reservations –	IPv6 CIDR reservations –
IPv6-only No	Hostname type IP name	Resource name DNS A record Disabled	Resource name DNS AAAA record Disabled
DNS64 Disabled	Owner 488546547125		

Flow logs | Route table | Network ACL | CIDR reservations | Sharing | Tags

Flow logs

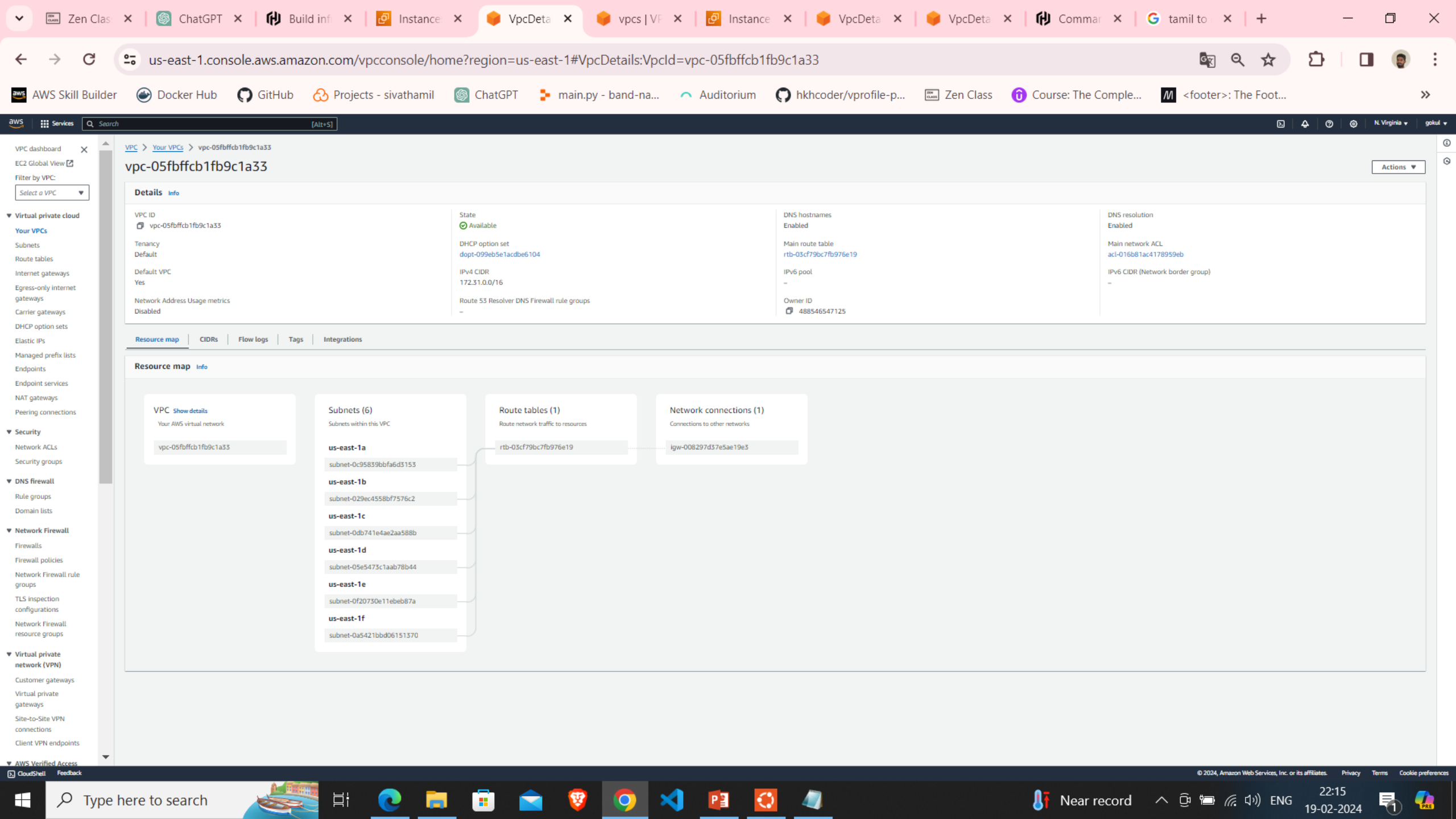
Search

Actions | Create flow log

1

Name	Flow log ID	Filter	Destination type	Destination name	IAM role ARN	Cross accou

No flow logs found in this Region


Zen Clas
ChatGPT
Build inf
Instance
VpcDeta
vpcs | VF
Instance
VpcDeta
VpcDeta
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tamil to
us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#VpcDetails:VpcId=vpc-05fbffcb1fb9c1a33
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Rule groups
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Network Firewall
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Network Firewall rule groups
TLS inspection configurations
Network Firewall resource groups
Virtual private network (VPN)
Customer gateways
Virtual private gateways
Site-to-Site VPN connections
Client VPN endpoints
AWS Verified Access
VPC > Your VPCs > vpc-05fbffcb1fb9c1a33
vpc-05fbffcb1fb9c1a33
Actions
Details Info
VPC ID
vpc-05fbffcb1fb9c1a33
State
Available
DNS hostnames
Enabled
DNS resolution
Enabled
Tenancy
Default
DHCP option set
dopt-099eb5e1acdbe6104
Main route table
rtb-03cf79bc7fb976e19
Main network ACL
acl-016b81ac4178959eb
Default VPC
Yes
IPv4 CIDR
172.31.0.0/16
IPv6 pool
IPv6 CIDR (Network border group)
Network Address Usage metrics
Disabled
Route 53 Resolver DNS Firewall rule groups
Owner ID
488546547125
Resource map
CIDRs
Flow logs
Tags
Integrations
Resource map Info
VPC Show details
Your AWS virtual network
vpc-05fbffcb1fb9c1a33
Subnets (6)
Subnets within this VPC
us-east-1a
subnet-0c95839bbfa6d3153
us-east-1b
subnet-029ec4558bf7576c2
us-east-1c
subnet-0db741e4ae2aa588b
us-east-1d
subnet-05e5473c1aab78b44
us-east-1e
subnet-0f20730e11ebeb87a
us-east-1f
subnet-0a5421bbd06151370
Route tables (1)
Route network traffic to resources
rtb-03cf79bc7fb976e19
Network connections (1)
Connections to other networks
igw-008297d37e5ae19e3
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Thank You.....