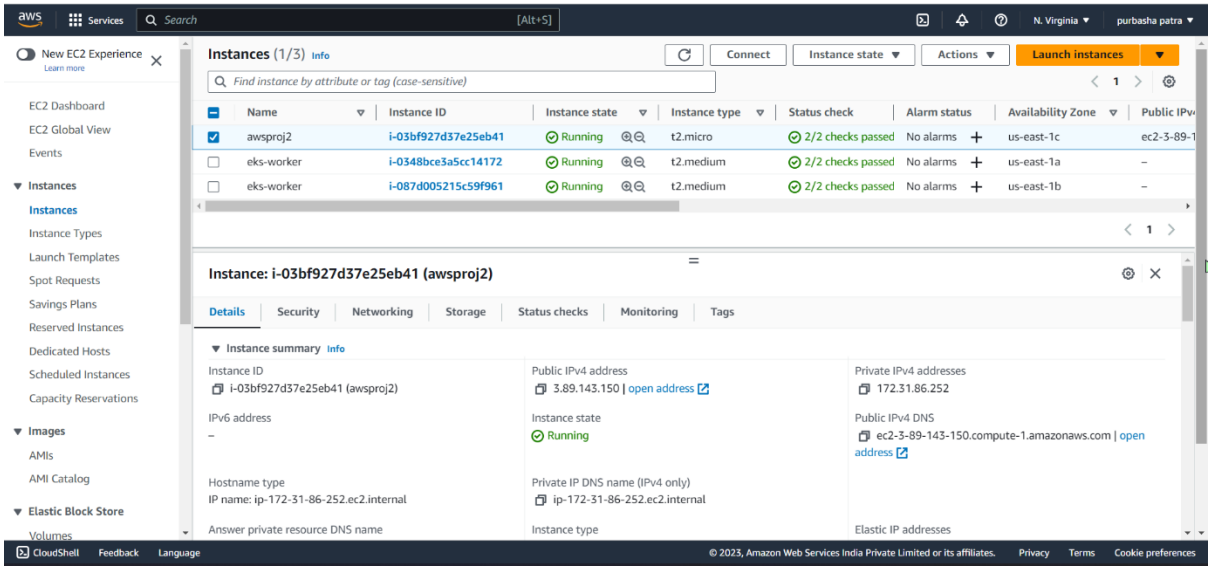
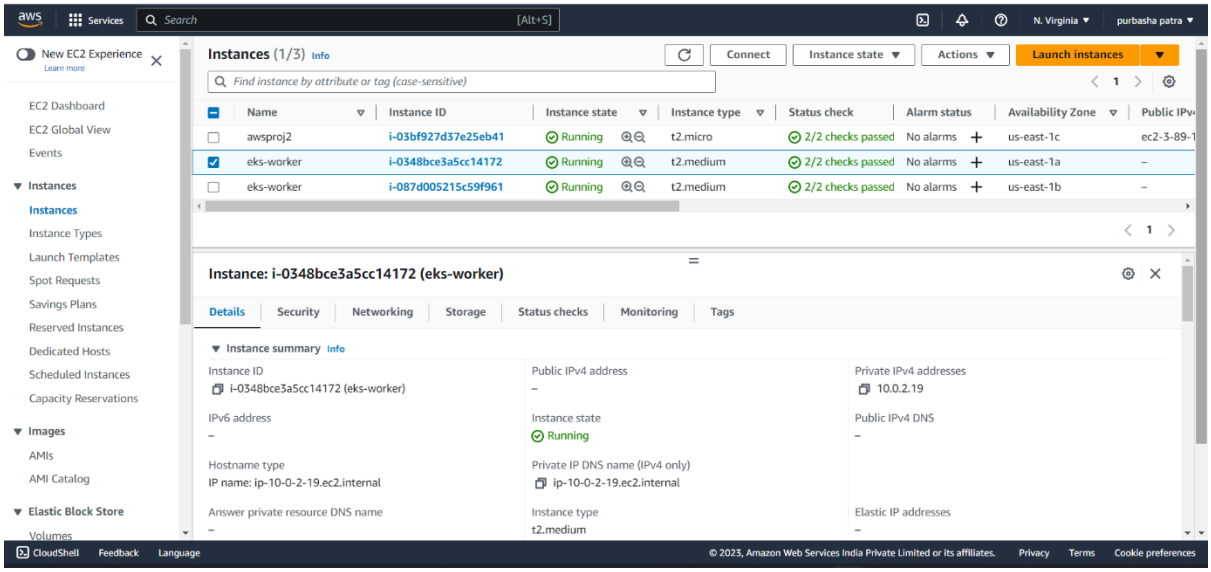
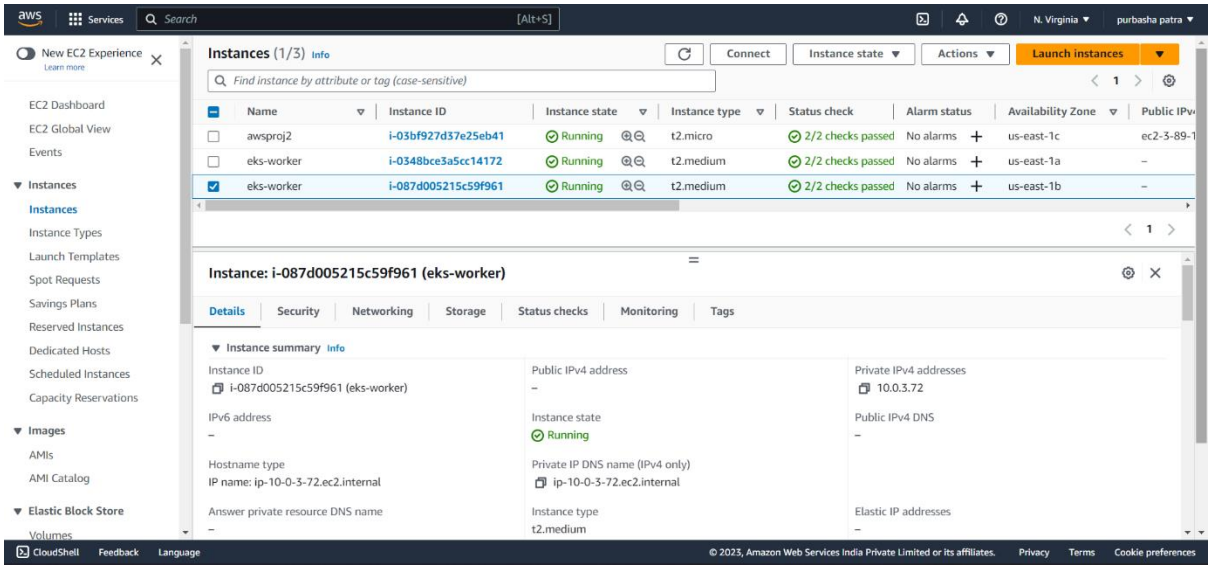
PROJECT PART-2






aws
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Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4
awsproj2
i-03bf927d37e25eb41
Running
t2.micro
2/2 checks passed
No alarms
us-east-1c
ec2-3-89-1
eks-worker
i-0348bce3a5cc14172
Running
t2.medium
2/2 checks passed
No alarms
us-east-1a
eks-worker
i-087d005215c59f961
Running
t2.medium
2/2 checks passed
No alarms
us-east-1b
Instance: i-087d005215c59f961 (eks-worker)
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Instance summary Info
Instance ID
i-087d005215c59f961 (eks-worker)
Public IPv4 address
Private IPv4 addresses
10.0.3.72
IPv6 address
Instance state
Running
Public IPv4 DNS
Hostname type
IP name: ip-10-0-3-72.ec2.internal
Private IP DNS name (IPv4 only)
ip-10-0-3-72.ec2.internal
Answer private resource DNS name
Instance type
t2.medium
Elastic IP addresses
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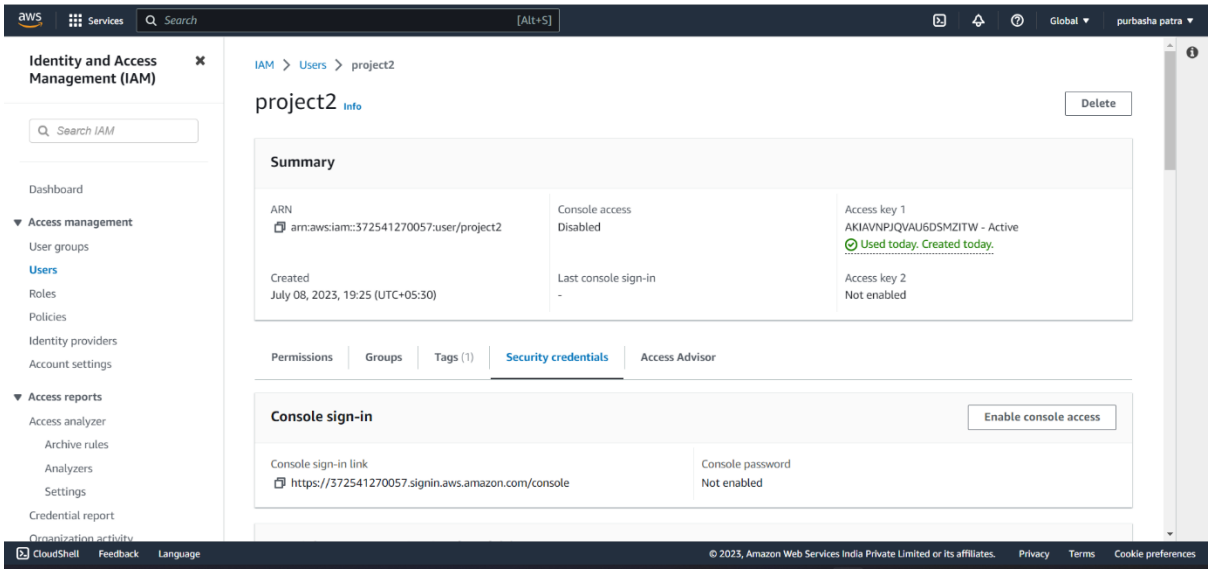
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Identity and Access Management (IAM)
Search IAM
Dashboard
Access management
User groups
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Roles
Policies
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Account settings
Access reports
Access analyzer
Archive rules
Analyzers
Settings
Credential report
IAM > Users > project2
project2 Info
Delete
Summary
ARN
arn:aws:iam::372541270057:user/project2
Console access
Disabled
Access key 1
AKIAVNPJQVAU6DSMZITW - Active
Used today. Created today.
Created
July 08, 2023, 19:25 (UTC+05:30)
Last console sign-in
-
Access key 2
Not enabled
Permissions
Groups
Tags (1)
Security credentials
Access Advisor
Console sign-in
Enable console access
Console sign-in link
https://372541270057.signin.aws.amazon.com/console
Console password
Not enabled
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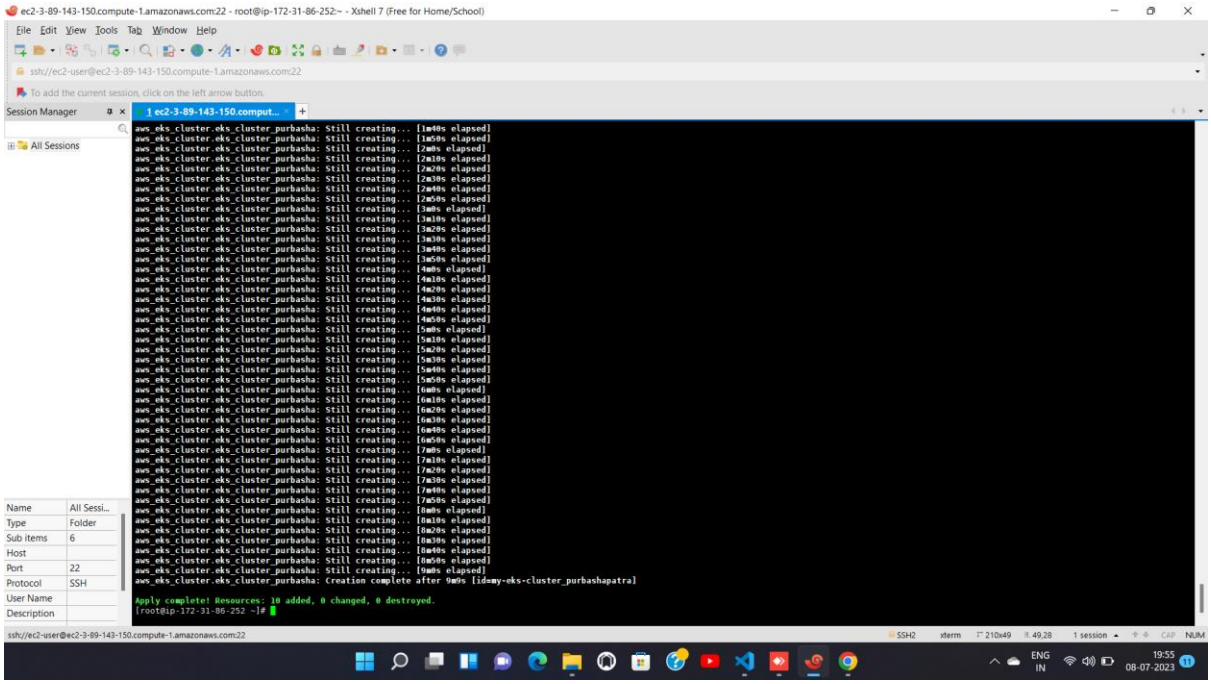
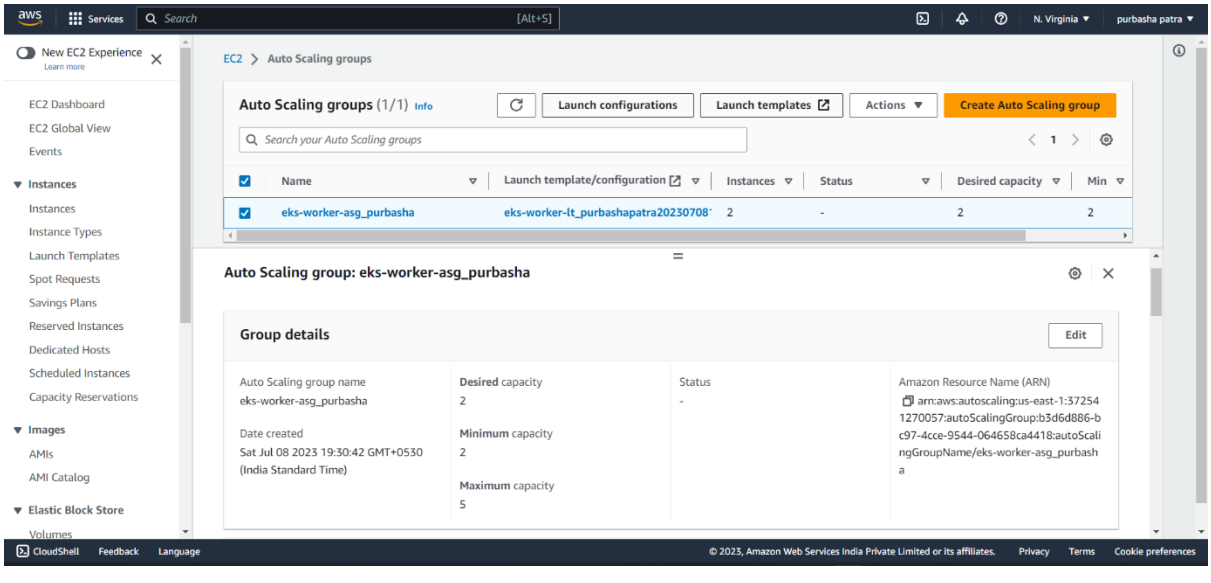

ec2-3-89-143-150.compute-1.amazonaws.com:22 - root@ip-172-31-86-252:~ - Xshell 7 (Free for Home/School)
File Edit View Tools Tab Window Help
Session Manager
All Sessions
aws_eks_cluster.eks_cluster_purbasha: Still creating... [1m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [1m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [2m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [3m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [4m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [5m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [6m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [7m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m10s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m20s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m30s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m40s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [8m50s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Still creating... [9m0s elapsed]
aws_eks_cluster.eks_cluster_purbasha: Creation complete after 9m0s [id=my-eks-cluster_purbashapatra]
Apply complete! Resources: 10 added, 0 changed, 0 destroyed.
[root@ip-172-31-86-252 ~]#
Name All Sessi...
Type Folder
Sub items 6
Host
Port 22
Protocol SSH
User Name
Description
ENG IN
19:55 08-07-2023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EC2 > Auto Scaling groups
Auto Scaling groups (1/1) Info
Launch configurations
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Create Auto Scaling group
Search your Auto Scaling groups
Name
Launch template/configuration
Instances
Status
Desired capacity
Min
eks-worker-asg_purbasha
eks-worker-lt_purbashapatra20230708'
2
-
2
2
Auto Scaling group: eks-worker-asg_purbasha
Group details
Edit
Auto Scaling group name
eks-worker-asg_purbasha
Date created
Sat Jul 08 2023 19:30:42 GMT+0530 (India Standard Time)
Desired capacity
2
Minimum capacity
2
Maximum capacity
5
Status
-
Amazon Resource Name (ARN)
arn:aws:autoscaling:us-east-1:372541270057:autoScalingGroup:b3d6d886-bc97-4cce-9544-064658ca4418:autoScalingGroupName/eks-worker-asg_purbasha
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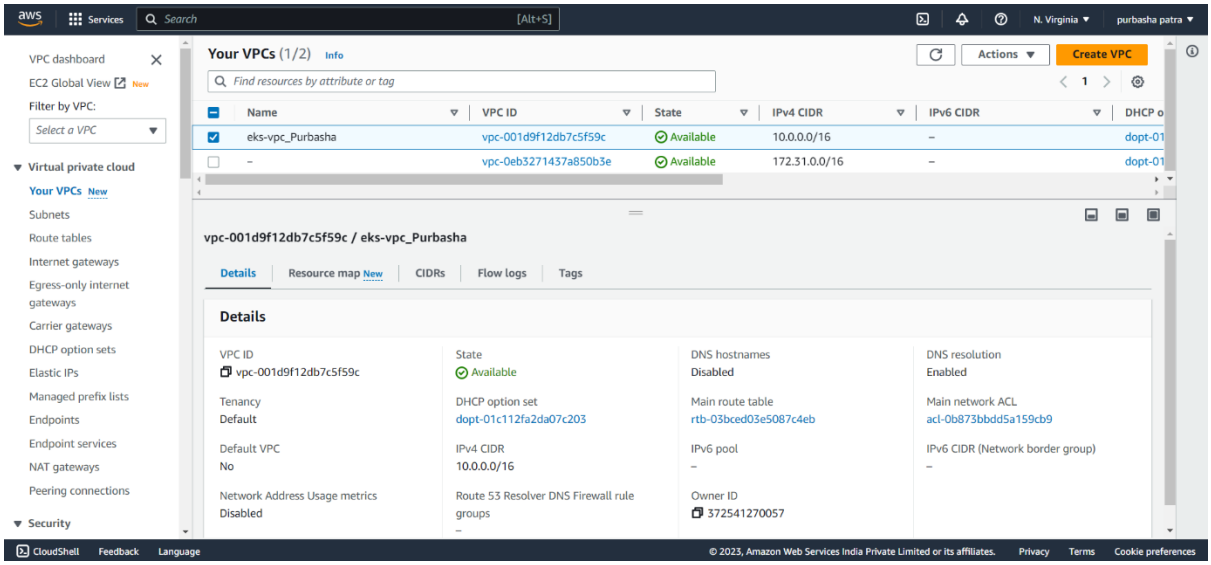
Services
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VPC dashboard
EC2 Global View
New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs New
Subnets
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Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
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NAT gateways
Peering connections
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Find resources by attribute or tag
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Create VPC
Name
VPC ID
State
IPv4 CIDR
IPv6 CIDR
DHCP o
eks-vpc_Purbasha
vpc-001d9f12db7c5f59c
Available
10.0.0.0/16
dopt-01
vpc-0eb3271437a850b3e
Available
172.31.0.0/16
dopt-01
vpc-001d9f12db7c5f59c / eks-vpc_Purbasha
Details
Resource map New
CIDRs
Flow logs
Tags
Details
VPC ID
vpc-001d9f12db7c5f59c
State
Available
DNS hostnames
Disabled
DNS resolution
Enabled
Tenancy
Default
DHCP option set
dopt-01c112fa2da07c203
Main route table
rtb-03bced03e5087c4eb
Main network ACL
acl-0b873bbdd5a159cb9
Default VPC
No
IPv4 CIDR
10.0.0.0/16
IPv6 pool
–
IPv6 CIDR (Network border group)
–
Network Address Usage metrics
Disabled
Route 53 Resolver DNS Firewall rule groups
–
Owner ID
372541270057
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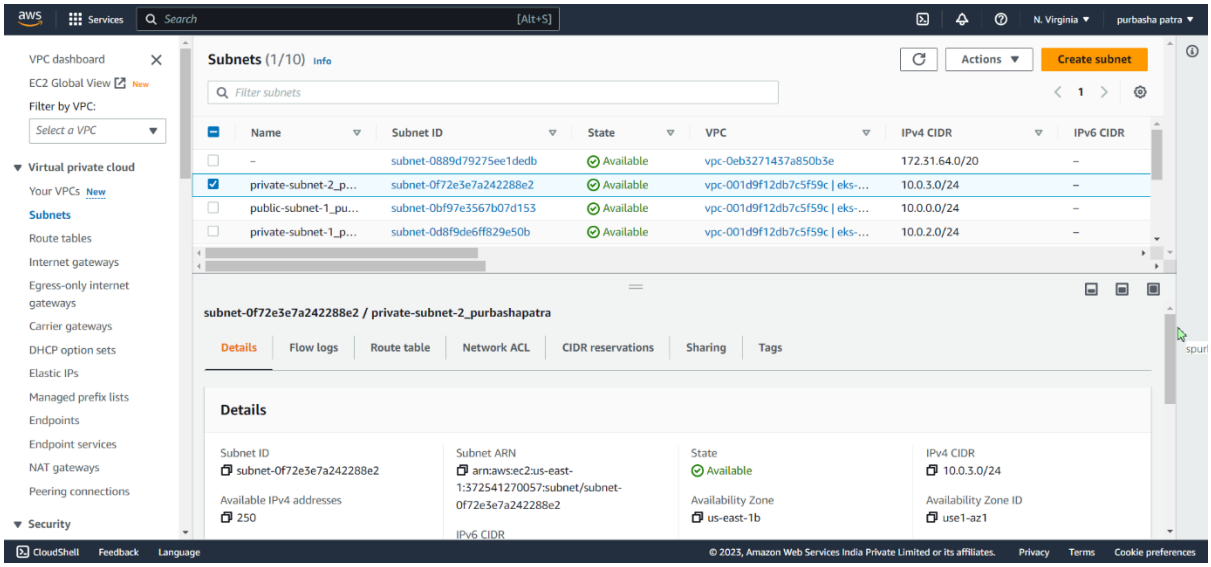
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Subnets (1/10) Info
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Actions
Create subnet
Name
Subnet ID
State
VPC
IPv4 CIDR
IPv6 CIDR
subnet-0889d79275ee1dedb
Available
vpc-0eb3271437a850b3e
172.31.64.0/20
private-subnet-2_p...
subnet-0f72e3e7a242288e2
Available
vpc-001d9f12db7c5f59c | eks-...
10.0.3.0/24
public-subnet-1_pu...
subnet-0bf97e3567b07d153
Available
vpc-001d9f12db7c5f59c | eks-...
10.0.0.0/24
private-subnet-1_p...
subnet-0d8f9de6ff829e50b
Available
vpc-001d9f12db7c5f59c | eks-...
10.0.2.0/24
subnet-0f72e3e7a242288e2 / private-subnet-2_purbashapatra
Details
Flow logs
Route table
Network ACL
CIDR reservations
Sharing
Tags
Details
Subnet ID
subnet-0f72e3e7a242288e2
Subnet ARN
arn:aws:ec2:us-east-1:372541270057:subnet/subnet-0f72e3e7a242288e2
State
Available
IPv4 CIDR
10.0.3.0/24
Available IPv4 addresses
250
Availability Zone
us-east-1b
Availability Zone ID
use1-az1
IPv6 CIDR
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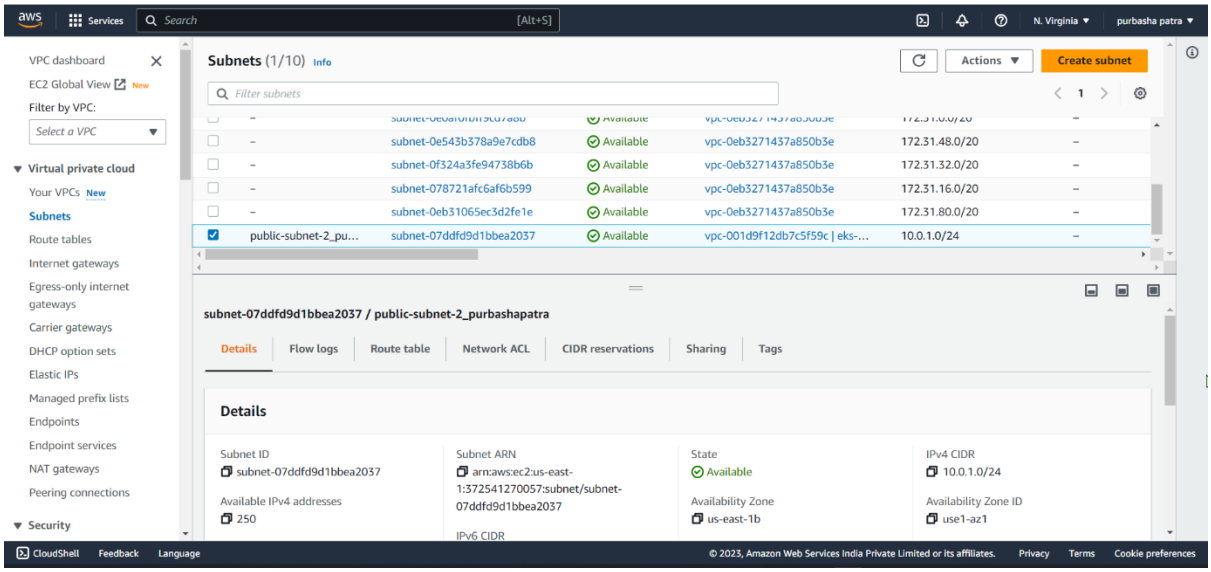

main.tf(terraform file)

```
# Define the provider
provider "aws" {
  region = "us-east-1"
}

# Create VPC for the EKS cluster
resource "aws_vpc" "purbasha_eks_vpc" {
  cidr_block = "10.0.0.0/16"

  tags = {
    Name = "eks-vpc_Purbasha"
  }
}

# Create public subnets for the EKS cluster
resource "aws_subnet" "purbasha_public_subnet_1" {
  vpc_id                  = aws_vpc.purbasha_eks_vpc.id
  cidr_block              = "10.0.0.0/24"
```

```
  availability_zone       = "us-east-1a"

  tags = {
    Name = "public-subnet-1_purbashapatra"
  }
}

resource "aws_subnet" "purbasha_public_subnet_2" {
  vpc_id                  = aws_vpc.purbasha_eks_vpc.id
  cidr_block              = "10.0.1.0/24"
  availability_zone       = "us-east-1b"

  tags = {
    Name = "public-subnet-2_purbashapatra"
  }
}
# Create private subnets for the EKS cluster
resource "aws_subnet" "purbasha_private_subnet_1" {
  vpc_id                  = aws_vpc.purbasha_eks_vpc.id
  cidr_block              = "10.0.2.0/24"
  availability_zone       = "us-east-1a"

  tags = {
    Name = "private-subnet-1_purbashapatra"
  }
}

resource "aws_subnet" "purbasha_private_subnet_2" {
  vpc_id                  = aws_vpc.purbasha_eks_vpc.id
  cidr_block              = "10.0.3.0/24"
  availability_zone       = "us-east-1b"
```

```
  tags = {
    Name = "private-subnet-2_purbashapatra"
  }
}

# Create IAM roles for the EKS cluster
resource "aws_iam_role" "purbashapatra_eks_worker_role" {
  name = "eks-worker-role_purbashapatra"

  assume_role_policy = jsonencode({
    Version   = "2012-10-17"
    Statement = [
      {
        Action    = "sts:AssumeRole"
        Effect    = "Allow"
        Principal = {
          Service = "ec2.amazonaws.com"
        }
      }
    ]
  })

  managed_policy_arns = [
    "arn:aws:iam::aws:policy/AmazonEKSClusterPolicy"
  ]
}

resource "aws_iam_role" "purbashapatra_eks_master_role" {
  name = "eks-master-role_purbashapatra"
```

```
  assume_role_policy = jsonencode({
    Version   = "2012-10-17"
    Statement = [
      {
        Action    = "sts:AssumeRole"
        Effect    = "Allow"
        Principal = {
          Service = "eks.amazonaws.com"
        }
      }
    ]
  })

  managed_policy_arns = [
    "arn:aws:iam::aws:policy/AmazonEKSClusterPolicy"
  ]
}
# Create the EKS cluster
resource "aws_eks_cluster" "eks_cluster_purbasha" {
  name     = "my-eks-cluster_purbashapatra"
  role_arn = aws_iam_role.purbashapatra_eks_master_role.arn
  version  = "1.27"

  vpc_config {
    subnet_ids = [
      aws_subnet.purbasha_public_subnet_1.id,
      aws_subnet.purbasha_public_subnet_2.id,
      aws_subnet.purbasha_private_subnet_1.id,
      aws_subnet.purbasha_private_subnet_2.id,
    ]
  }
```

```
}
# Create the launch template for worker nodes
resource "aws_launch_template" "worker_lt_purbasha" {
  name_prefix   = "eks-worker-lt_purbashapatra"
  image_id      = "ami-04823729c75214919"
  instance_type = "t2.medium"

  block_device_mappings {
    device_name = "/dev/xvda"
    ebs {
      volume_size = 8
    }
  }
}
# Create the autoscaling group for worker nodes
resource "aws_autoscaling_group" "worker_asg_purbasha" {
  name                = "eks-worker-asg_purbasha"
  launch_template {
    id      = aws_launch_template.worker_lt_purbasha.id
    version = "$Latest"
  }
  min_size        = 2
  max_size        = 5
  desired_capacity = 2
  vpc_zone_identifier = [
    aws_subnet.purbasha_private_subnet_1.id,
    aws_subnet.purbasha_private_subnet_2.id,
  ]

  tag {
    key                 = "Name"
```

```
    value               = "eks-worker"
    propagate_at_launch = true
  }
}
```