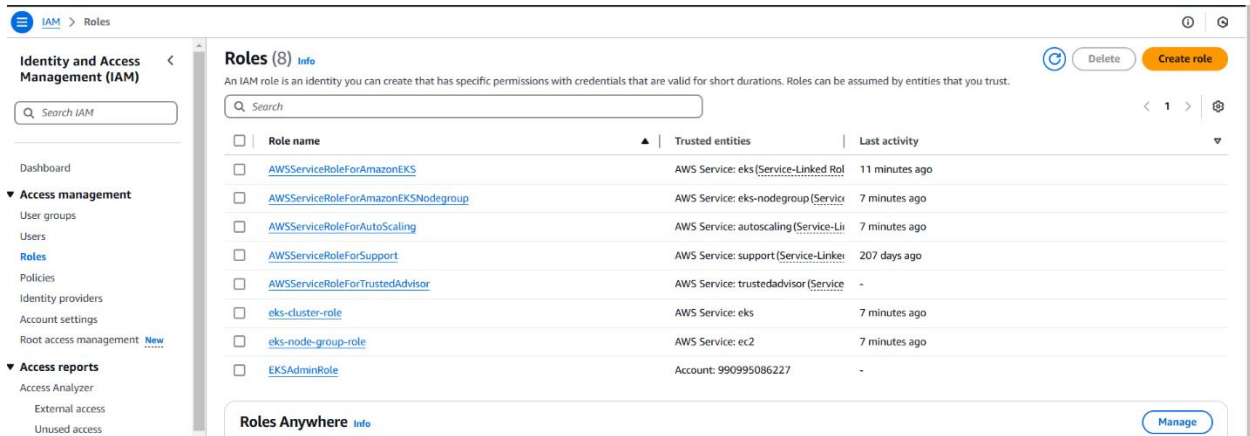


Provisioning EKS Cluster, Node groups by Terraform

GitHub Link: <https://github.com/yugendar42/eks-cluster-provision-by-terraform/tree/main>

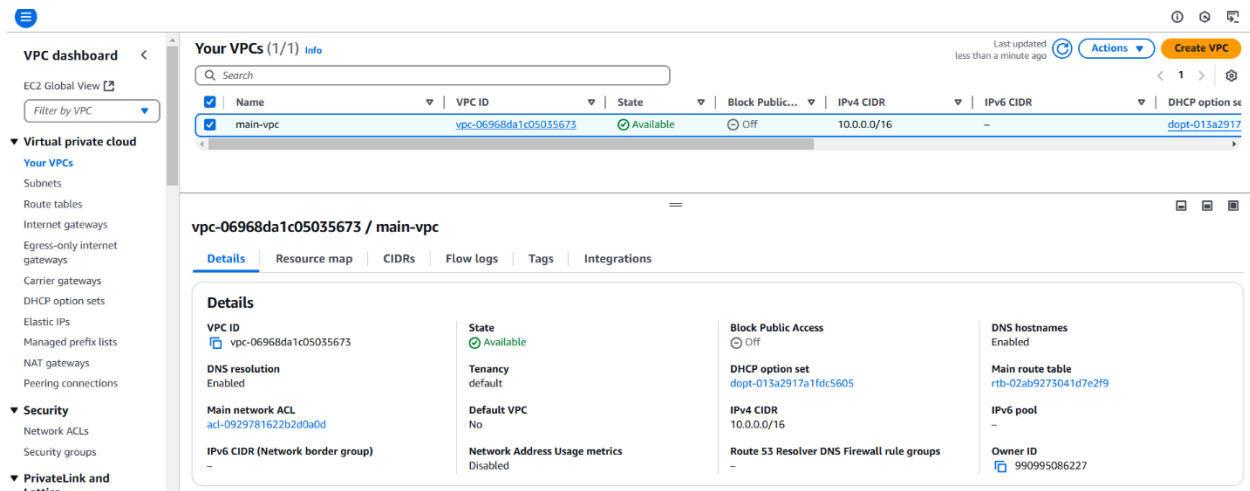
IAM-Roles for EKS-Cluster, Node Group



The screenshot shows the AWS IAM console 'Roles' page. The left sidebar contains navigation links for Identity and Access Management (IAM), Access management, Access reports, and PrivateLink and Lattice. The main content area displays a list of 8 roles. The roles are:

Role name	Trusted entities	Last activity
AWSServiceRoleForAmazonEKS	AWS Service: eks (Service-Linked Role)	11 minutes ago
AWSServiceRoleForAmazonEKSCluster	AWS Service: eks-nodegroup (Service-Linked Role)	7 minutes ago
AWSServiceRoleForAutoScaling	AWS Service: autoscaling (Service-Linked Role)	7 minutes ago
AWSServiceRoleForSupport	AWS Service: support (Service-Linked Role)	207 days ago
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linked Role)	-
eks-cluster-role	AWS Service: eks	7 minutes ago
eks-node-group-role	AWS Service: ec2	7 minutes ago
EKSAAdminRole	Account: 990995086227	-

VPC



The screenshot shows the AWS VPC console 'Your VPCs' page. The left sidebar contains navigation links for VPC dashboard, Virtual private cloud, Security, and PrivateLink and Lattice. The main content area displays a table of VPCs with the following details:

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set
main-vpc	vpc-06968da1c05035673	Available	Off	10.0.0.0/16	-	dopt-013a2917

Below the table, the details for the selected VPC **vpc-06968da1c05035673 / main-vpc** are shown:

- VPC ID:** [vpc-06968da1c05035673](#)
- State:** Available
- Block Public Access:** Off
- DNS hostnames:** Enabled
- DNS resolution:** Enabled
- Tenancy:** default
- DHCP option set:** [dopt-013a2917a1fd:5605](#)
- Main network ACL:** [acl-092978162b2d0a0d](#)
- Default VPC:** No
- IPv4 CIDR:** 10.0.0.0/16
- Main route table:** [rtb-02ab9273041d7e2f9](#)
- IPv6 CIDR (Network border group):** -
- Network Address Usage metrics:** Disabled
- Route 53 Resolver DNS Firewall rule groups:** -
- IPv6 pool:** -
- Owner ID:** [990995086227](#)

Subnets

Subnets (2) Info

Last updated less than a minute ago

Actions

Create subnet

Find resources by attribute or tag

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/> public_subnet1	subnet-08d4816ed69010c76	Available	vpc-06968da1c05035673 mai...	Off	10.0.0.0/20	-
<input type="checkbox"/> public_subnet2	subnet-00e905b14dbe8018a	Available	vpc-06968da1c05035673 mai...	Off	10.0.16.0/20	-

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Route Tables

Route tables (1/2) Info

Last updated 1 minute ago

Actions

Create route table

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
<input checked="" type="checkbox"/> vpc_rtTable	rtb-0c94ceae4661d0763	2 subnets	-	No	vpc-06968da1c05035673 mai...	990995086227
<input type="checkbox"/> -	rtb-02ab9273041d7e2f9	-	-	Yes	vpc-06968da1c05035673 mai...	990995086227

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

NAT gateways

Peering connections

rtb-0c94ceae4661d0763 / vpc_rtTable

Details Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (2)

Find subnet association

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
public_subnet1	subnet-08d4816ed69010c76	10.0.0.0/20	-
public_subnet2	subnet-00e905b14dbe8018a	10.0.16.0/20	-

Edit subnet associations

Subnets without explicit associations (0)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

Find subnet association

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
------	-----------	-----------	-----------

Edit subnet associations

Internet Gateways

Internet gateways (1/1) Info

Actions

Create internet gateway

Search

Name	Internet gateway ID	State	VPC ID	Owner
<input checked="" type="checkbox"/> main_vpcigw	igw-0faf86f5a9d9b7887	Attached	vpc-06968da1c05035673 main-vpc	990995086227

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

NAT gateways

Peering connections

igw-0faf86f5a9d9b7887 / main_vpcigw

Details Tags

Details

Internet gateway ID igw-0faf86f5a9d9b7887 State Attached VPC ID vpc-06968da1c05035673 | main-vpc Owner 990995086227

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only Internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

NAT gateways

Peering connections

Security Groups (5) [Info](#)

Find resources by attribute or tag

Actions

Export security groups to CSV

Create security group

<input type="checkbox"/>	Name	Security group ID	Security group name	VPC ID	Description
<input type="checkbox"/>	-	sg-0d5b2cac3363aa476	default	vpc-06968da1c05035673	default VPC security group
<input type="checkbox"/>	eks-nodes-sg	sg-0b9dc8fc1a05a7b7f	eks-nodes-sg	vpc-06968da1c05035673	Managed by Terraform
<input type="checkbox"/>	eks-cluster-sg	sg-0d2abc0ac40957ee6	eks-cluster-sg	vpc-06968da1c05035673	Managed by Terraform
<input type="checkbox"/>	-	sg-0b77559fe830080d0d	eks-remoteAccess-16cac1f9-bb6f-2ef6-...	vpc-06968da1c05035673	Security group for all nodes in the node...
<input type="checkbox"/>	eks-cluster-sg-my-ek...	sg-01997572a3ac4cc0c	eks-cluster-sg-my-eks-cluster-735157785	vpc-06968da1c05035673	EKS created security group applied to E...

Security

Network ACLs

Security groups

PrivateLink and Lattice

The screenshot displays the Amazon Elastic Kubernetes Service (EKS) console interface. At the top, there are navigation tabs for 'Amazon Elastic Kubernetes Service', 'Clusters', and 'my-eks-cluster'. The main header shows the cluster name 'my-eks-cluster' along with actions like 'Delete cluster', 'Upgrade version', and 'View dashboard'. A blue banner provides information about the end of standard support for Kubernetes version 1.31.

Cluster info

Status Active	Kubernetes version 1.31	Support period Standard support until November 26, 2025	Provider EKS
Cluster health issues 0	Upgrade insights 0	Node health issues 0	

Related services: Amazon ECR, AWS Batch

Navigation tabs: Overview (selected), Resources, Compute, Networking, Add-ons, Access, Observability, Update history, Tags

Details

API server endpoint https://6AAE8BD985E40611ADCDF2F2A49FEF4A1.gr7.us-east-1.eks.amazonaws.com	OpenID Connect provider URL https://oidc.eks.us-east-1.amazonaws.com/id/6AAE8BD985E40611ADCDF2F2A49FEF4A1	Created 18 minutes ago
Certificate authority <pre>L5OILtICRudJTIBDRVJUSUZJQOFURSOILShCk1JSURK VENDQWUyZ0FS3SUJB2OUQ21LUEJM1RnOG93RFZS ktvWklodmNOOVFFTEjROXdGVEVUTUJFR0ExVUIUKO</pre>	Cluster IAM role ARN arnaws:iams:990995086227:role/eks-cluster-role View in IAM	Cluster ARN arnaws:eks-us-east-1:990995086227:cluster/my-eks-cluster
		Platform version eks.20

Access to Data Resource Center

Security

Organizational

Access policy

Step 1
Configure IAM access entry

Step 2
Review

Step 3
Add access policy

Step 4
Review and create

Configure IAM access entry

IAM principal

Principal ARN: `arn:aws:iam::100000000000:role/iam-role`

Principal type: `role`

Principal name: `iam-role`

Principal type: `role`

Principal name: `iam-role`

Access policy

Policy name: `iam-policy`

Policy type: `role`

Policy name: `iam-policy`

Policy type: `role`

Additional configuration

Access policy

Policy name: `iam-policy`

Policy type: `role`

Policy name: `iam-policy`

Policy type: `role`

Access policy

Policy name: `iam-policy`

Policy type: `role`

Policy name: `iam-policy`

Policy type: `role`

Nodes

The screenshot shows the Amazon Elastic Kubernetes Service (EKS) console. The left sidebar contains navigation links for Amazon Elastic Kubernetes Service, Clusters, Settings, Amazon EKS Anywhere, Related services, and Documentation. The main content area is titled 'my-eks-cluster' and has tabs for Overview, Resources, Compute (selected), Networking, Add-ons, Access, Observability, Update history, and Tags.

Nodes (2) Info

Filter Nodes by property or value

Node name	Instance type	Compute	Managed by	Created	Status
ip-10-0-12-168.ec2.internal	t2.medium	Node group	worker_node1	Created 10 minutes ago	Ready
ip-10-0-27-174.ec2.internal	t2.medium	Node group	worker_node1	Created 10 minutes ago	Ready

Node groups (1) Info

Node groups implement basic compute scaling through EC2 Auto Scaling groups.

Group name	Desired size	AMI release version	Launch template	Status
worker_node1	2	1.31.5-20250228	-	Active

Fargate profiles (0) Info

Profile name	Status
--------------	--------

Auto Scaling Group

The screenshot shows the Amazon EC2 console 'Auto Scaling groups' page. The left sidebar contains navigation links for EC2, Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store, and Snapshots. The main content area is titled 'Auto Scaling groups (1/1)' and has buttons for Launch configurations, Launch templates, Actions, and Create Auto Scaling group.

Auto Scaling groups (1/1) Info

Search your Auto Scaling groups

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availabil...
eks-worker_node1-16cac1f9-bb6f-2ef6-fef1-09ec7a101d4b	eks-16cac1f9-bb6f-2ef6-fef1-09ec7a101d4b	2	-	2	1	2	us-east-1a,...

Auto Scaling group: eks-worker_node1-16cac1f9-bb6f-2ef6-fef1-09ec7a101d4b

Details | Integrations - new | Automatic scaling | Instance management | Instance refresh | Activity | Monitoring

eks-worker_node1-16cac1f9-bb6f-2ef6-fef1-09ec7a101d4b Capacity overview

arn:aws:autoscaling:us-east-1:990995086227:autoScalingGroup:7a553f58-f4d5-4a2e-b1d7-1e53383f52d6:autoScalingGroupName/eks-worker_node1-16cac1f9-bb6f-2ef6-fef1-09ec7a101d4b

Desired capacity	Scaling limits (Min - Max)	Desired capacity type	Status
2	1 - 2	Units (number of instances)	-

Date created
Tue Mar 11 2025 12:16:04 GMT+0530 (India Standard Time)

EC2 Instances

The screenshot shows the Amazon EC2 console 'Instances' page. The left sidebar contains navigation links for EC2, Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store, and Snapshots. The main content area is titled 'Instances (2)' and has buttons for Connect, Instance state, Actions, and Launch instances.

Instances (2) Info

Find Instance by attribute or tag (case-sensitive)

Instance state = running

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public
i-0eb2f8f6877409e83	i-0eb2f8f6877409e83	Running	t2.medium	2/2 checks passed	View alarms	us-east-1a	ec2-54-196-68-211.co...	54.196
i-02904a029537bc14e	i-02904a029537bc14e	Running	t2.medium	2/2 checks passed	View alarms	us-east-1b	ec2-44-205-20-91.com...	44.205

Select an instance

EXPLORER

OPEN EDITORS

EKS-CLUSTER-PROVISION-BY-TERRAFORM

terraform

modules

terraform.lock.hcl

main.tf

provider.tf

README

terraform.tfstate

terraform.tfvars

variables.tf

aws

OUTLINE

TIMELINE

APPLICATION BUILDER

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

powershell

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m0s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m10s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m20s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m30s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m40s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [5m50s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [6m0s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [6m10s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [6m20s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still creating... [6m30s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Creation complete after 6m30s [id=my-eks-cluster]

module.node-group.aws_eks_node_group.eks_nodes: Creating...

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [10s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [20s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [30s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [40s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [50s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m0s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m10s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m20s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m30s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m40s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still creating... [1m50s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Creation complete after 1m50s [id=my-eks-cluster:worker_node1]

Apply complete! Resources: 27 added, 0 changed, 0 destroyed.

PS D:\Projects\eks-cluster-provision-by-terraform> aws eks update-kubeconfig --name my-eks-cluster

Updated context arn:aws:eks:us-east-1:990995086227:cluster/my-eks-cluster in C:\Users\yugen\.kube\config

PS D:\Projects\eks-cluster-provision-by-terraform> kubectl get nodes

NAME STATUS ROLES AGE VERSION

ip-10-0-12-168.ec2.internal Ready <none> 5m38s v1.31.5-eks-5d632ec

ip-10-0-27-174.ec2.internal Ready <none> 5m51s v1.31.5-eks-5d632ec

PS D:\Projects\eks-cluster-provision-by-terraform>

EXPLORER

OPEN EDITORS

EKS-CLUSTER-PROVISI...

terraform

modules

terraform.lock.hcl

main.tf

provider.tf

README

terraform.tfstate

terraform.tfstate.backup

terraform.tfvars

variables.tf

aws

OUTLINE

TIMELINE

APPLICATION BUILDER

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 5m10s elapsed]

module.vpc.aws_internet_gateway.vpcigw: Still destroying... [id=igw-0faf86f5a9d9b7887, 5m10s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 5m20s elapsed]

module.vpc.aws_internet_gateway.vpcigw: Still destroying... [id=igw-0faf86f5a9d9b7887, 5m20s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 5m30s elapsed]

module.vpc.aws_internet_gateway.vpcigw: Still destroying... [id=igw-0faf86f5a9d9b7887, 5m30s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 5m40s elapsed]

module.vpc.aws_internet_gateway.vpcigw: Still destroying... [id=igw-0faf86f5a9d9b7887, 5m40s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 5m50s elapsed]

module.vpc.aws_internet_gateway.vpcigw: Still destroying... [id=igw-0faf86f5a9d9b7887, 5m50s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Destruction complete after 5m33s

module.vpc.aws_internet_gateway.vpcigw: Destruction complete after 5m33s

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 6m0s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Still destroying... [id=my-eks-cluster:worker_node1, 6m10s elapsed]

module.node-group.aws_eks_node_group.eks_nodes: Destruction complete after 6m19s

module.iam-node-group.aws_iam_role.eks_node_group_role: Destroying... [id=eks-node-group-role]

module.eks.aws_eks_cluster.my-eks-cluster: Destroying... [id=my-eks-cluster]

module.eks.aws_eks_cluster.my-eks-cluster: Destruction complete after 1s

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 10s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 20s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 30s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 40s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 50s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 1m0s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 1m10s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 1m20s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 1m30s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Still destroying... [id=my-eks-cluster, 1m40s elapsed]

module.eks.aws_eks_cluster.my-eks-cluster: Destruction complete after 1m41s

module.vpc.aws_subnet.publicSubnet2: Destroying... [id=subnet-08e905b14dbe8018a]

module.iam-eks.aws_iam_role.eks_cluster_role: Destroying... [id=eks-cluster-role]

module.vpc.aws_subnet.publicSubnet1: Destroying... [id=subnet-08d4816ed69010c76]

module.iam-eks.aws_iam_role.eks_cluster_role: Destruction complete after 1s

module.vpc.aws_subnet.publicSubnet2: Destruction complete after 1s

module.vpc.aws_subnet.publicSubnet1: Destruction complete after 1s

module.security-group.aws_security_group.eks_node_grp_sg: Destruction complete after 2s

module.vpc.aws_vpc.mainVpc: Destroying... [id=vpc-06968da1c05035673]

module.vpc.aws_vpc.mainVpc: Destruction complete after 0s

Destroy complete! Resources: 27 destroyed.

PS D:\Projects\eks-cluster-provision-by-terraform>