

Deploying custom image on EKS

Creating a Cluster

- First creating a new ec2 instance and giving it an IAM role that has permissions to access eks
- Create a new role with the `AmazonEKSClusterPolicy` and `AmazonEKSVPCResourceController` policies
- Once that's done, the ec2 instance has access to the EKS and it can create a cluster now

```
eksctl create cluster --name=eksydg --region=us-east-1 --zones=us-east-1a,us-east-1b --without-nodegroup
```

```
ubuntu@ip-172-31-35-74:~/eks-deploy$ eksctl create cluster --name=eksydg --region=us-east-1 --zones=us-east-1a,us-east-1b --without-nodegroup
2025-08-01 08:44:16 [i] eksctl version 0.212.0
2025-08-01 08:44:16 [i] using region us-east-1
2025-08-01 08:44:16 [i] subnets for us-east-1a - public:192.168.0.0/19 private:192.168.64.0/19
2025-08-01 08:44:16 [i] subnets for us-east-1b - public:192.168.32.0/19 private:192.168.96.0/19
2025-08-01 08:44:16 [i] using Kubernetes version 1.32
2025-08-01 08:44:16 [i] creating EKS cluster "eksydg" in "us-east-1" region with
2025-08-01 08:44:16 [i] if you encounter any issues, check CloudFormation console or try 'eksctl utils describe-stacks --region=us-east-1 --cluster=eksydg'
2025-08-01 08:44:16 [i] Kubernetes API endpoint access will use default of (publicAccess=true, privateAccess=false) for cluster "eksydg" in "us-east-1"
2025-08-01 08:44:16 [i] CloudWatch logging will not be enabled for cluster "eksydg" in "us-east-1"
2025-08-01 08:44:16 [i] you can enable it with 'eksctl utils update-cluster-logging --enable-types={SPECIFY-YOUR-LOG-TYPES-HERE (e.g. all)} --region=us-east-1 --cluster=eksydg'
2025-08-01 08:44:16 [i] default addons vpc-cni, kube-proxy, coredns, metrics-server were not specified, will install them as EKS addons
2025-08-01 08:44:16 [i] 1 sequential tasks: { create cluster control plane "eksydg",
2025-08-01 08:44:16 [i] 2 sequential sub-tasks: {
2025-08-01 08:44:16 [i]   1 task: { create addons },
2025-08-01 08:44:16 [i]   wait for control plane to become ready,
2025-08-01 08:44:16 [i] }
2025-08-01 08:44:16 [i] building cluster stack "eksctl-eksydg-cluster"
2025-08-01 08:44:17 [i] deploying stack "eksctl-eksydg-cluster"
2025-08-01 08:44:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:45:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:46:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:47:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:48:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:49:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:50:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:51:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:52:17 [i] waiting for CloudFormation stack "eksctl-eksydg-cluster"
2025-08-01 08:52:18 [i] recommended policies were found for "vpc-cni" addon, but since OIDC is disabled on the cluster, eksctl cannot configure the requested permissions; the recommended way to provide IAM perm
issions for "vpc-cni" addon is via pod identity associations; after addon creation is completed, add all recommended policies to the config file, under 'addon.PodIdentityAssociations', and run 'eksctl update add
on'
2025-08-01 08:52:18 [i] creating addon: vpc-cni
2025-08-01 08:52:19 [i] successfully created addon: vpc-cni
2025-08-01 08:52:19 [i] creating addon: kube-proxy
2025-08-01 08:52:19 [i] successfully created addon: kube-proxy
2025-08-01 08:52:19 [i] creating addon: coredns
2025-08-01 08:52:20 [i] successfully created addon: coredns
2025-08-01 08:52:20 [i] creating addon: metrics-server
2025-08-01 08:52:20 [i] successfully created addon: metrics-server
2025-08-01 08:52:21 [i] waiting for the control plane to become ready
2025-08-01 08:54:22 [i] saved kubeconfig as "/home/ubuntu/.kube/config"
2025-08-01 08:54:22 [i] no tasks
2025-08-01 08:54:22 [✓] all EKS cluster resources for "eksydg" have been created
2025-08-01 08:54:23 [i] kubectcl command should work with "/home/ubuntu/.kube/config", try 'kubectcl get nodes'
2025-08-01 08:54:23 [✓] EKS cluster "eksydg" in "us-east-1" region is ready
ubuntu@ip-172-31-35-74:~/eks-deploy$
```

Clusters (1)

Info

Filter clusters

eksydg

Active

1.32

Upgrade now

Standard support until March 21, 2026

Extended

9 minutes ago

EKS

Delete

Create cluster

<

1

>

eksydg

Delete cluster

Upgrade version

Monitor cluster

End of standard support for Kubernetes version 1.32 is March 21, 2026. On that date, your cluster will enter the extended support period with additional fees. For more information, see the [pricing page](#). If you do not want to use extended support, we recommend you update the cluster to version 1.33 or opt-out of extended support by managing your Kubernetes version policy. To learn more about our version policy, see our [documentation](#).

Upgrade

Cluster info

Info

Status

Active

Kubernetes version

1.32

Info

Support period

Standard support until March 21, 2026

Provider

EKS

Cluster health

0

Upgrade insights

0

Node health issues

0

Overview

Resources

Compute

Networking

Add-ons1

Access

Observability

Update history

Tags

Details

API server endpoint

<https://A56F15D3BAC5F8EE44D0ED77BA2D4CDA.gr7.us-east-1.eks.amazonaws.com>

OpenID Connect provider URL

<https://oidc.eks.us-east-1.amazonaws.com/Id/A56F15D3BAC5F8EE44D0ED77BA2D4CDA>

Created

8 minutes ago

Certificate authority

LS0tLS1CRUdJTIBDRVJUSUZJQ0FUR50tLS0tck1JSURCVENDQWUyZ0F3SUJBZ0UyYVZnNOJmNOVXd3RFFZSktyWklodmNOQVFFTEJRQXdGVEVUTUJFR0ExVUU

Cluster IAM role ARN

[arn:aws:iam::267092042432:role/eksctl-eksydg-cluster-serviceRole-th0tKRxqkDna](#)
[View in IAM](#)

Cluster ARN

[arn:aws:eks:us-east-1:267092042432:cluster/eksydg](#)

Platform version

eks.16

EKS Auto Mode

Info

Manage

EKS automates routine cluster tasks for compute, storage, and networking to meet application compute needs.

EKS Auto Mode

Disabled

Overview

Resources

Compute

Networking

Add-ons1

Access

Observability

Update history

Tags

New versions are available for 1 add-on.

Add-ons (3)

Info

View details

Edit

Remove

Get more add-ons

Find add-on

Any categ...

Any status

3 matches

< 1 >

kube-proxy

Enable service networking within your cluster.

Category

networking

Status

Active

Version

v1.32.0-eksbuild.2

EKS Pod Identity

-

IAM role for service account (IRSA)

Not set

Update version

Metrics Server

Install metrics-server to collect cluster-wide resource usage data for autoscaling and monitoring.

Category

observability

Status

Degraded

Version

v0.8.0-eksbuild.1

EKS Pod Identity

-

IAM role for service account (IRSA)

Not set

CoreDNS

Enable service discovery within your cluster.

Category

networking

Status

Degraded

Version

v1.11.4-eksbuild.2

EKS Pod Identity

-

IAM role for service account (IRSA)

Not set

Creating Node Groups

```
eksctl create nodegroup \
--cluster eksydg \
--region us-east-1 \
--name workers \
--node-type t3.micro \
--nodes 2 \
--nodes-min 1 \
--nodes-max 3 \
--managed
```

```
root@ip-172-31-35-74:/home/ubuntu/eks-deploy# eksctl create nodegroup --cluster eksydg --region us-east-1 --name workers --node-type t3.micro --nodes 2 --nodes-min 1 --nodes-max 3 --managed
2025-08-01 09:30:18 [i] will use version 1.32 for new nodegroup(s) based on control plane version
2025-08-01 09:30:19 [i] nodegroup "workers" will use "" [AmazonLinux2023/1.32]
2025-08-01 09:30:19 [i] 1 nodegroup (workers) was included (based on the include/exclude rules)
2025-08-01 09:30:19 [i] will create a CloudFormation stack for each of 1 managed nodegroups in cluster "eksydg"
2025-08-01 09:30:19 [i]
2025-08-01 09:30:19 [i] sequential tasks: { fix cluster compatibility, 1 task: { 1 task: { create managed nodegroup "workers" } } }
2025-08-01 09:30:19 [i] checking cluster stack for missing resources
2025-08-01 09:30:20 [i] cluster stack has all required resources
2025-08-01 09:30:20 [i] building managed nodegroup stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:30:20 [i] deploying stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:30:20 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:30:50 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:31:46 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:33:03 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 09:33:03 [i] no tasks
2025-08-01 09:33:03 [✓] created 0 nodegroup(s) in cluster "eksydg"
2025-08-01 09:33:03 [i] nodegroup "workers" has 2 node(s)
2025-08-01 09:33:03 [i] node "ip-192-168-30-77.ec2.internal" is ready
2025-08-01 09:33:03 [i] node "ip-192-168-49-63.ec2.internal" is ready
2025-08-01 09:33:03 [i] waiting for at least 1 node(s) to become ready in "workers"
2025-08-01 09:33:03 [i] nodegroup "workers" has 2 node(s)
2025-08-01 09:33:03 [i] node "ip-192-168-30-77.ec2.internal" is ready
2025-08-01 09:33:03 [i] node "ip-192-168-49-63.ec2.internal" is ready
2025-08-01 09:33:03 [✓] created 1 managed nodegroup(s) in cluster "eksydg"
2025-08-01 09:33:03 [i] checking security group configuration for all nodegroups
2025-08-01 09:33:03 [i] all nodegroups have up-to-date cloudformation templates
root@ip-172-31-35-74:/home/ubuntu/eks-deploy#
```

Stacks (2)

Filter by stack name

Filter status

Active

View nested

Stacks

eksctl-eksydg-nodegroup-workers

2025-08-01 15:00:20 UTC+0530

CREATE_COMPLETE

eksctl-eksydg-cluster

2025-08-01 14:14:17 UTC+0530

CREATE_COMPLETE

eksctl-eksydg-nodegroup-workers

Stack infoEventsResourcesOutputsParametersTemplateChange setsGit sync

Table viewTimeline view

Events (11)

Search events

Timestamp	Logical ID	Status	Detailed status	Status reason
2025-08-01 15:02:26 UTC+0530	eksctl-eksydg-nodegroup-workers	CREATE_COMPLETE	-	-
2025-08-01 15:02:26 UTC+0530	ManagedNodeGroup	CREATE_COMPLETE	-	-
2025-08-01 15:00:43 UTC+0530	ManagedNodeGroup	CREATE_IN_PROGRESS	-	Resource creation Initiated
2025-08-01 15:00:40 UTC+0530	ManagedNodeGroup	CREATE_IN_PROGRESS	-	-
2025-08-01 15:00:39 UTC+0530	NodeInstanceRole	CREATE_COMPLETE	-	-
2025-08-01 15:00:24 UTC+0530	LaunchTemplate	CREATE_COMPLETE	-	-
2025-08-01 15:00:23 UTC+0530	LaunchTemplate	CREATE_IN_PROGRESS	-	Resource creation Initiated
2025-08-01 15:00:23 UTC+0530	NodeInstanceRole	CREATE_IN_PROGRESS	-	Resource creation Initiated
2025-08-01 15:00:22 UTC+0530	NodeInstanceRole	CREATE_IN_PROGRESS	-	-
2025-08-01 15:00:22 UTC+0530	NodeInstanceRole	CREATE_IN_PROGRESS	-	-

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```

root@ip-172-31-35-74:/home/ubuntu/eks-deploy# kubectl get nodes
NAME                                STATUS    ROLES    AGE     VERSION
ip-192-168-30-77.ec2.internal      Ready    <none>   4m47s   v1.32.3-eks-473151a
ip-192-168-49-63.ec2.internal      Ready    <none>   4m46s   v1.32.3-eks-473151a
root@ip-172-31-35-74:/home/ubuntu/eks-deploy#

```

- Scaling nodegroups

```

eksctl create nodegroup \
  --cluster eksydg \
  --region us-east-1 \
  --name workers \
  --node-type t3.micro \
  --nodes 2 \
  --nodes-min 1 \
  --nodes-max 3 \
  --managed

```

```

root@ip-172-31-35-74:/home/ubuntu/eks-deploy# eksctl scale nodegroup --cluster eksydg --name workers --nodes 3 --nodes-min 1 --nodes-max 4 --region us-east-1
2025-08-01 09:42:48 [i] scaling nodegroup "workers" in cluster "eksydg"
2025-08-01 09:42:49 [i] initiated scaling of nodegroup
2025-08-01 09:42:49 [i] to see the status of the scaling run "eksctl get nodegroup --cluster eksydg --region us-east-1 --name workers"
root@ip-172-31-35-74:/home/ubuntu/eks-deploy# eksctl get nodegroup --cluster eksydg --region us-east-1 --name workers

```

CLUSTER	NODEGROUP	STATUS	CREATED	MIN SIZE	MAX SIZE	DESIRED CAPACITY	INSTANCE TYPE	IMAGE ID	ASG NAME	TYP
eksydg	workers	ACTIVE	2025-08-01T09:30:42Z	1	4	3	t3.micro	AL2023_x86_64_STANDARD	eks-workers-76cc327c-1393-6104-108a-c55f79269184	man

Deleting a nodegroup

```

root@ip-172-31-35-74:/home/ubuntu/eks-deploy# eksctl delete nodegroup \
> --cluster eksydg \
> --name workers \
> --region us-east-1
2025-08-01 09:45:19 [i] 1 nodegroup (workers) was included (based on the include/exclude rules)
2025-08-01 09:45:19 [i] will drain 1 nodegroup(s) in cluster "eksydg"
2025-08-01 09:45:19 [i] starting parallel draining, max in-flight of 1
2025-08-01 09:45:19 [i] cordon node "ip-192-168-30-77.ec2.internal"
2025-08-01 09:45:19 [i] cordon node "ip-192-168-49-63.ec2.internal"
2025-08-01 09:45:19 [i] cordon node "ip-192-168-63-127.ec2.internal"
2025-08-01 09:46:42 [!] 2 pods are unevictable from node ip-192-168-49-63.ec2.internal
2025-08-01 09:47:43 [!] 2 pods are unevictable from node ip-192-168-49-63.ec2.internal
2025-08-01 09:48:43 [!] 2 pods are unevictable from node ip-192-168-49-63.ec2.internal
2025-08-01 09:49:43 [!] 2 pods are unevictable from node ip-192-168-49-63.ec2.internal

```

Deleting Cluster

Access entry was successfully created.

eksydg

Delete cluster
Upgrade version
Monitor cluster

Error loading resources
nodes is forbidden: User "arn:aws:iam::267092042432:user/YashwanthDoddegowda" cannot list resource "nodes" in API group "" at the cluster scope

End of standard support for Kubernetes version 1.32 is March 21, 2026. On that date, your cluster will enter the extended support period with additional fees. For more information, see the [pricing page](#). If you do not want to use extended support, we recommend you update the cluster to version 1.33 or opt-out of extended support by managing your Kubernetes version policy. To learn more about our version policy, see our [documentation](#).

Upgrade

Cluster info
Info

Status Active	Kubernetes version Info 1.32	Support period Standard support until March 21, 2026	Provider EKS
Cluster health 0	Upgrade insights 3	Node health issues 0	

```

root@ip-172-31-35-74:/home/ubuntu/eks-deploy# eksctl delete cluster --name eksydg --region us-east-1 --disable-nodegroup-eviction
2025-08-01 10:01:48 [i] deleting EKS cluster "eksydg"
2025-08-01 10:01:49 [i] will drain 0 unmanaged nodegroup(s) in cluster "eksydg"
2025-08-01 10:01:49 [i] starting parallel draining, max in-flight of 1
2025-08-01 10:01:49 [i] deleted 0 Fargate profile(s)
2025-08-01 10:01:49 [✓] kubeconfig has been updated
2025-08-01 10:01:49 [i] cleaning up AWS load balancers created by Kubernetes objects of Kind Service or Ingress
2025-08-01 10:01:50 [i]
2 sequential tasks: { delete nodegroup "workers", delete cluster control plane "eksydg" [async]
}
2025-08-01 10:01:50 [i] will delete stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:01:50 [i] waiting for stack "eksctl-eksydg-nodegroup-workers" to get deleted
2025-08-01 10:01:50 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:02:20 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:03:13 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:04:46 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:05:54 [i] waiting for CloudFormation stack "eksctl-eksydg-nodegroup-workers"
2025-08-01 10:05:54 [i] will delete stack "eksctl-eksydg-cluster"
2025-08-01 10:05:54 [✓] all cluster resources were deleted
root@ip-172-31-35-74:/home/ubuntu/eks-deploy#

```

Permissions given to the IAM role

ydg-eks-access-role

Info

Delete

Allows EC2 Instances to call AWS services on your behalf.

Summary

Edit

Creation date

August 01, 2025, 13:31 (UTC+05:30)

ARN

arn:aws:iam::267092042432:role/ydg-eks-access-role

Instance profile ARN

arn:aws:iam::267092042432:instance-profile/ydg-eks-access-role

Last activity

8 minutes ago

Maximum session duration

4 hours

Permissions

Trust relationships

Tags

Last Accessed

Revoke sessions

Permissions policies (8/8)

Info

Simulate

Remove

Add permissions

You can attach up to 10 managed policies.

Search

Filter by Type

All types

< 1 >

Policy name	Type	Attached entities
AmazonEC2FullAccess	AWS managed	11
AmazonEKSClusterPolicy	AWS managed	5
AmazonVPCFullAccess	AWS managed	1
AWSCloudFormationFullAccess	AWS managed	2
Describe-offerings	Customer inline	0
eks-full-access	Customer inline	0
ekscreateLaunchTemplate	Customer inline	0
IAMFullAccess	AWS managed	3

ydg-eks-access-role

Info

Delete

Allows EC2 Instances to call AWS services on your behalf.

Summary

Edit

Creation date

August 01, 2025, 13:31 (UTC+05:30)

ARN

arn:aws:iam::267092042432:role/ydg-eks-access-role

Instance profile ARN

arn:aws:iam::267092042432:instance-profile/ydg-eks-access-role

Last activity

8 minutes ago

Permissions

Trust relationships

Permissions policies (8/8)

Info

Simulate

Remove

Add permissions

You can attach up to 10 managed policies.

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AmazonEKSClusterPolicy	AWS managed	5
AmazonVPCFullAccess	AWS managed	1
AWSCloudFormationFullAccess	AWS managed	2
Describe-offerings	Customer inline	0
eks-full-access	Customer inline	0
ekscreateLaunchTemplate	Customer inline	0
IAMFullAccess	AWS managed	3

Delete ydg-eks-access-role?

×

Delete **ydg-eks-access-role** permanently? This will also delete all its inline policies and any attached instance profiles.

Role name

Last activity

ydg-eks-access-role

10 minutes ago

Note: Recent activity usually appears within 4 hours. Data is stored for a maximum of 365 days, depending when your region began supporting this feature. [Learn more](#)

This action cannot be undone.

To confirm deletion, enter the role name in the text input field.

ydg-eks-access-role

Cancel

Delete

Stopping the Instance

Instances (1/4) [Info](#)

Find Instance by attribute or tag (case-sensitive) All states

ydg Clear filters

Connect Instance state Actions Launch instances

	Name	Instance ID	Instance state	Instance type	Status check	Zone	Public IPv4 DNS
<input type="checkbox"/>	eksydg-workers-Node	i-003f200093a9023af	Terminated	t3.micro	-	-	-
<input type="checkbox"/>	eksydg-workers-Node	i-06b9267c880704331	Terminated	t3.micro	-	-	-
<input checked="" type="checkbox"/>	ydg-eks-cluster-machine	i-0401f85987d7a5ff8	Running	t2.large	2/2 checks passed	us-east-1c	ec2-3-82-13-160.com
<input type="checkbox"/>	eksydg-workers-Node	i-079b449c54bccdfb	Terminated	t3.micro	-	us-east-1b	-

Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate (delete) instance
View alarms +

Issues I faced

- The IAM role I created didn't have permission to create VPC and store errors in CloudFormation
 - fixed it by giving those permissions
- The create cluster failed again cause the max number of vpcs in nv region already reached, which was 5, so I deleted my vpc
- The create cluster failed again cause IAM role access was not in the role
 - resolved it by giving IAM Access to the role
- Used eksctl to add the context of the cluster to kubectl config

```
eksctl utils write-kubeconfig --cluster=eksydg --region=us-east-1
```

Clusters (0) [Info](#)

Filter clusters Delete Create cluster

Cluster name	Status	Kubernetes version	Support period	Upgrade policy	Created	Provider