

LAB ASSIGNMENTS 7: AWS EKS

EC2 > Instances > Launch an instance

Success

Successfully initiated launch of instance (i-0d406ac387b28cbac)

Launch log

Next Steps

What would you like to do next with this instance, for example "create alarm" or "create backup"

Create billing and free tier usage alerts

To manage costs and avoid surprise bills, set up email notifications for

Connect to your instance

Once your instance is running, log into it from your local computer.

Connect an RDS database

Configure the connection between an EC2 instance and a database to allow traffic flow between them.

Create EBS snapshot policy

Create a policy that automates the creation, retention, and deletion of EBS snapshots

IAM > Security credentials

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Root access management

Use access keys to send programmatic calls to AWS from the AWS CLI, AWS Tools for PowerShell, AWS SDKs, or direct AWS API calls. You can have a maximum of two access keys (active or inactive) at a time. [Learn more](#)

Description

eksctlsk

Last used

None

Last used region

N/A

Status

Active

Created

Now

Last used service

N/A

Actions

X.509 Signing certificates (0)

Use X.509 certificates to make secure SOAP-protocol requests to some AWS services. You can have a maximum of two X.509 certificates (active or inactive) at a time. [Learn more](#)

Actions

Upload

Create X.509 certificate

CloudShell

Feedback

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2. 13.201.67.254 (ubuntu)

```
ubuntu@ip-172-31-32-8:~$ whoami
ubuntu
ubuntu@ip-172-31-32-8:~$
```

```

ubuntu@ip-172-31-32-8:~$ whoami
ubuntu
ubuntu@ip-172-31-32-8:~$ wget https://github.com/eksctl-io/eksctl/releases/download/v0.204.0/eksctl_Linux_amd64.tar.gz
--2025-02-27 14:34:37-- https://github.com/eksctl-io/eksctl/releases/download/v0.204.0/eksctl_Linux_amd64.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)|20.207.73.82|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/134539560/3ae52b00-ae5a-474f-b65a-85b8ae7592f0?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250227%2Fus-east-1%2Fus-east-1%2Faws4_request&X-Amz-Date=20250227T143437Z&X-Amz-Expires=300&X-Amz-Signature=c11f4cb2e2798bb4e1a749ba2213f7c234ca1acc417ac928f52c4b151d8e7feb6X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Deksctl_Linux_amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2025-02-27 14:34:37-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/134539560/3ae52b00-ae5a-474f-b65a-85b8ae7592f0?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250227%2Fus-east-1%2Fus-east-1%2Faws4_request&X-Amz-Date=20250227T143437Z&X-Amz-Expires=300&X-Amz-Signature=c11f4cb2e2798bb4e1a749ba2213f7c234ca1acc417ac928f52c4b151d8e7feb6X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Deksctl_Linux_amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 38989216 (37M) [application/octet-stream]
Saving to: 'eksctl_Linux_amd64.tar.gz'

eksctl_Linux_amd64.tar.gz      100%[=====] 37.18M  21.3MB/s   in 1.7s

2025-02-27 14:34:40 (21.3 MB/s) - 'eksctl_Linux_amd64.tar.gz' saved [38989216/38989216]

ubuntu@ip-172-31-32-8:~$ tar -xvzf eksctl_Linux_amd64.tar.gz
eksctl
ubuntu@ip-172-31-32-8:~$ sudo mv eksctl /usr/local/bin
ubuntu@ip-172-31-32-8:~$ eksctl version
0.204.0
ubuntu@ip-172-31-32-8:~$

```

```

ubuntu@ip-172-31-32-8:~$ mkdir demo
ubuntu@ip-172-31-32-8:~$ cd demo
ubuntu@ip-172-31-32-8:~/demo$ eksctl version
0.204.0
ubuntu@ip-172-31-32-8:~/demo$

```

```

inflating: aws/dist/docutils/writers/html5_polyglot/template.txt
inflating: aws/dist/docutils/writers/html5_polyglot/tuftig.css
inflating: aws/dist/docutils/writers/html5_polyglot/minimal.css
inflating: aws/dist/docutils/writers/html5_polyglot/responsive.css
inflating: aws/dist/docutils/writers/html5_polyglot/math.css
inflating: aws/dist/docutils/writers/pep_html/template.txt
inflating: aws/dist/docutils/writers/pep_html/pep.css
inflating: aws/dist/docutils/writers/odf_odt/styles.odt
inflating: aws/dist/docutils/writers/html4css1/template.txt
inflating: aws/dist/docutils/writers/html4css1/html4css1.css
ubuntu@ip-172-31-32-8:~/demo$ sudo ./aws/install
You can now run: /usr/local/bin/aws --version
ubuntu@ip-172-31-32-8:~/demo$ aws --version
aws-cli/2.24.13 Python/3.12.9 Linux/6.8.0-1021-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-32-8:~/demo$

```

```

ubuntu@ip-172-31-32-8:~/demo$ aws --version
aws-cli/2.24.13 Python/3.12.9 Linux/6.8.0-1021-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-32-8:~/demo$ aws configure
AWS Access Key ID [None]: 
AWS Secret Access Key [None]: 
Default region name [None]: 
Default output format [None]: 
ubuntu@ip-172-31-32-8:~/demo$

```

```

ubuntu@ip-172-31-32-8:~/demo$ eksctl version
0.204.0
ubuntu@ip-172-31-32-8:~/demo$ aws --version
aws-cli/2.24.13 Python/3.12.9 Linux/6.8.0-1021-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-32-8:~/demo$ kubectl version
Client Version: v1.32.0-eks-5ca49cb
Kustomize Version: v5.5.0
The connection to the server localhost:8080 was refused - did you specify the right host or port?
ubuntu@ip-172-31-32-8:~/demo$

```

```

ubuntu@ip-172-31-32-8:~/demo$ vim eks.yaml
ubuntu@ip-172-31-32-8:~/demo$ cat eks.yaml
apiVersion: eksctl.io/v1alpha5
kind: ClusterConfig

```

```

metadata:
  name: lasya-cluster
  region: ap-south-1

nodeGroups:
  - name: ng-1
    instanceType: t2.micro
    desiredCapacity: 2

```

```

ubuntu@ip-172-31-32-8:~/demo$

```

```

2025-02-27 15:12:13 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-1"
2025-02-27 15:12:43 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-1"
2025-02-27 15:13:26 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-1"
2025-02-27 15:15:05 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-1"
2025-02-27 15:15:05 [i] waiting for the control plane to become ready
2025-02-27 15:15:05 [✓] saved kubeconfig as "/home/ubuntu/.kube/config"
2025-02-27 15:15:05 [i] no tasks
2025-02-27 15:15:05 [✓] all EKS cluster resources for "lasya-cluster" have been created
2025-02-27 15:15:05 [i] nodegroup "ng-1" has 2 node(s)
2025-02-27 15:15:05 [i] node "ip-192-168-2-80.ap-south-1.compute.internal" is ready
2025-02-27 15:15:05 [i] node "ip-192-168-55-176.ap-south-1.compute.internal" is ready
2025-02-27 15:15:05 [i] waiting for at least 2 node(s) to become ready in "ng-1"
2025-02-27 15:15:05 [i] nodegroup "ng-1" has 2 node(s)
2025-02-27 15:15:05 [i] node "ip-192-168-2-80.ap-south-1.compute.internal" is ready
2025-02-27 15:15:05 [i] node "ip-192-168-55-176.ap-south-1.compute.internal" is ready
2025-02-27 15:15:05 [✓] created 1 nodegroup(s) in cluster "lasya-cluster"
2025-02-27 15:15:06 [i] kubectl command should work with "/home/ubuntu/.kube/config", try 'kubectl get nodes'
2025-02-27 15:15:06 [✓] EKS cluster "lasya-cluster" in "ap-south-1" region is ready
ubuntu@ip-172-31-32-8:~/demo$

```

```

ubuntu@ip-172-31-32-8:~/demo$ eksctl get cluster --region ap-south-1
NAME      REGION    EKSCTL CREATED
lasya-cluster  ap-south-1  True
ubuntu@ip-172-31-32-8:~/demo$ eksctl get nodegroup --cluster lasya-cluster --region ap-south-1
CLUSTER  NODEGROUP  STATUS    CREATED          MIN SIZE  MAX SIZE  DESIRED CAPACITY  INS
TANCE TYPE  IMAGE ID      ASG NAME
lasya-cluster  ng-1      CREATE_COMPLETE  2025-02-27T15:12:13Z  2         2         2                 t2.
micro      ami-0c5c573feb08cfa4d  eksctl-lasya-cluster-nodegroup-ng-1-NodeGroup-4HeSar0SMofj  unmanaged
ubuntu@ip-172-31-32-8:~/demo$ kubectl get nodes
NAME                                STATUS    ROLES    AGE    VERSION
ip-192-168-2-80.ap-south-1.compute.internal  Ready    <none>   4m14s  v1.30.9-eks-5d632ec
ip-192-168-55-176.ap-south-1.compute.internal  Ready    <none>   4m34s  v1.30.9-eks-5d632ec
ubuntu@ip-172-31-32-8:~/demo$

```

aws [Alt+S] Asia Pacific (Mumbai) tr_lasya_admin

CloudFormation > Stacks

CloudFormation

- Stacks
- StackSets
- Exports
- Infrastructure Composer
- laC generator
- Hooks overview [New](#)
- Hooks [New](#)

▼ **Registry**

- Public extensions

Stacks (2)

Filter by stack name

Filter status: Active View nested

Stack name	Status	Created time	Description
eksctl-lasya-cluster-nodegroup-ng-1	CREATE_COMPLETE	2025-02-27 20:42:13 UTC+0530	EKS nodes (AMI: AmazonLinux2, false, private net [created and ma EKS cluster (dedi

Amazon ECR > Private registry > Repositories

Amazon Elastic Container Registry

- ▼ **Private registry**
 - [Repositories](#)
 - Features & Settings
- ▼ **Public registry**
 - Repositories
 - Settings

ECR public gallery [\[2\]](#)

Amazon ECS [\[2\]](#)

Amazon EKS [\[2\]](#)

Successfully created empapp

Private repositories (1)

Search by repository substring

Repository name	URI	Created at	Tag immutability	Encryption type
empapp	515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp	February 27, 2025, 20:59:47 (UTC+05.5)	Mutable	AES-256

```
KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain So
ftware/Desktop/project2/employeeappaws
$ aws ecr get-login-password --region ap-south-1 | docker login --username AWS -
--password-stdin 515966518319.dkr.ecr.ap-south-1.amazonaws.com
Login Succeeded
```

```
ftware/Desktop/project2/employeeappaws
$ docker images
REPOSITORY          TAG                 IMAGE ID            SIZE
empapp              latest             3720c48d           562MB
54e5                14 seconds ago
bookapp             1.1                ee3d309c           822MB
890f                11 days ago
bookapp             latest             ee3d309c           822MB
890f                11 days ago
nes2uq21cs254lasvatalasilabookapp 1.1                ee3d309c           822MB
```

```
KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ docker tag empapp:latest 515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp:latest

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ docker images
REPOSITORY                                TAG                IMAGE ID           CREATED           SIZE
515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp    latest            3720c48d54e5      2 minutes ago    562MB
empapp                                                  latest            3720c48d54e5      2 minutes ago    562MB
bookapp                                                  1.1              ee3d309c890f      11 days ago      822MB
bookapp                                                  latest            ee3d309c890f      11 days ago      822MB
pes2ug21cs2541asyatalasilabookapp                    1.1              ee3d309c890f      11 days ago      822MB
pes2ug21cs2541asyatalasila/bookapp                    1.1              ee3d309c890f      11 days ago      822MB
pes2ug21cs2541asyatalasila/bookapp                    1.2              ee3d309c890f      11 days ago      822MB
pes2ug21cs2541asyatalasila/bookapp                    1.3              ee3d309c890f      11 days ago      822MB
docker_mysql-bookstore-container                     1.1              69beca87614e      11 days ago      822MB
docker_mysql-bookstore-container                     latest            69beca87614e      11 days ago      872MB
pes2ug21cs2541asyatalasila/docker_mysql-bookstore-container 1.1              69beca87614e      11 days ago      872MB
<none>                                                <none>           4d13cc3ba103      11 days ago      822MB
docker_network-currency-conversion                    latest            696445b372f8      2 weeks ago      894MB

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ docker push 515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp:latest
The push refers to repository [515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp]
9e54a387bec9: Waiting
35e0d1fc6dfd: Waiting
5843afab3874: Waiting
53c9466125e4: Waiting
d8d715783b80: Waiting
9e54a387bec9: Waiting
35e0d1fc6dfd: Waiting
5843afab3874: Waiting
```

[Private registry](#) > [Repositories](#) > empapp

Images (3)

Search artifacts

1

<input type="checkbox"/>	Image tag	Artifact type	Pushed at	Size (MB)	Image URI	Digest
<input type="checkbox"/>	latest	Image Index	February 27, 2025, 21:31:30 (UTC+05.5)	210.87	Copy URI	sha256:3720c48...
<input type="checkbox"/>	-	Image	February 27, 2025, 21:31:29 (UTC+05.5)	0.00	Copy URI	sha256:7c5351a...
<input type="checkbox"/>	-	Image	February 27, 2025, 21:31:29 (UTC+05.5)	210.87	Copy URI	sha256:088f825...

```
KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ aws eks --region ap-south-1 update-kubeconfig --name lasya-cluster
Updated context arn:aws:eks:ap-south-1:515966518319:cluster/lasya-cluster in C:\Users\lasya.talasila\.kube\config

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ ls
Dockerfile  k8s/  mvnw*  mvnw.cmd  pom.xml  src/  target/

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws
$ cd k8s

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws/k8s
$ ls
k8s.yaml

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws/k8s
$ cat k8s.yaml
bash: cat: command not found

KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws/k8s
$ cat k8s.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: empapp
spec:
  replicas: 3
  selector:
    matchLabels:
      app: empapp
  template:
    metadata:
      labels:
        app: empapp
    spec:
      containers:
        - name: empapp
          image: 515966518319.dkr.ecr.ap-south-1.amazonaws.com/empapp:latest
          ports:
            - containerPort: 8080
---
apiVersion: v1
kind: Service
metadata:
  name: newapp-service
```

```
port: 80
targetPort: 8080
type: LoadBalancer
KSCSGLOBAL+lasya.talasila@IN-D71DG74 MINGW64 ~/OneDrive - Körber Supply Chain Software/Desktop/project2/employeeappaws/k8s
$ kubectl apply -f k8s.yaml
deployment.apps/empapp created
service/newapp-service created
$ kubectl get all
type: LoadBalancer

ubuntu@ip-172-31-37-175:~/demo$ kubectl apply -f k8s.yaml
deployment.apps/newapp created
service/newapp-service created
ubuntu@ip-172-31-37-175:~/demo$ kubectl get svc
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)
kubernetes                          ClusterIP           10.100.0.1      <none>            443/TCP
newapp-service                      LoadBalancer       10.100.194.88   a8bf38a05a3f944daba5d2eba6fdebb9-355926874.ap-south-1.elb.amazonaws.com  80:32750/TCP
ubuntu@ip-172-31-37-175:~/demo$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
newapp  3/3     3            3           27s
ubuntu@ip-172-31-37-175:~/demo$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
newapp-6d99d6d4b8-4b65p            1/1     Running   0          37s
newapp-6d99d6d4b8-h66f9            1/1     Running   0          37s
newapp-6d99d6d4b8-sskfr            1/1     Running   0          37s
ubuntu@ip-172-31-37-175:~/demo$ ^C
ubuntu@ip-172-31-37-175:~/demo$ ^C
ubuntu@ip-172-31-37-175:~/demo$
```

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← → ↺ ⚠ Not secure a8bf38a05a3f944daba5d2eba6fdebb9-355926874.ap-south-1.elb.amazonaws.com/emps ☆ 📄 ⬇ Ⓛ ⋮

emp v4: 4b65p

```
ubuntu@ip-172-31-37-175:~/demo$ eksctl delete cluster lasya-cluster --region ap-south-1
2025-02-27 19:02:54 [i] deleting EKS cluster "lasya-cluster"
2025-02-27 19:02:54 [i] will drain 0 unmanaged nodegroup(s) in cluster "lasya-cluster"
2025-02-27 19:02:54 [i] starting parallel draining, max in-flight of 1
2025-02-27 19:02:55 [i] deleted 0 Fargate profile(s)
2025-02-27 19:02:55 [✓] kubeconfig has been updated
2025-02-27 19:02:55 [i] cleaning up AWS load balancers created by Kubernetes objects of Kind Service or Ingress
2025-02-27 19:03:20 [i]
2 sequential tasks: { delete nodegroup "ng-015cd747", delete cluster control plane "lasya-cluster" [async]
}
2025-02-27 19:03:20 [i] will delete stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:03:20 [i] waiting for stack "eksctl-lasya-cluster-nodegroup-ng-015cd747" to get deleted
2025-02-27 19:03:20 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:03:50 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:04:44 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:06:08 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:07:24 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:08:05 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:09:15 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:10:24 [i] waiting for CloudFormation stack "eksctl-lasya-cluster-nodegroup-ng-015cd747"
2025-02-27 19:10:25 [i] will delete stack "eksctl-lasya-cluster-cluster"
2025-02-27 19:10:25 [✓] all cluster resources were deleted
ubuntu@ip-172-31-37-175:~/demo$
```