

# ECR

Amazon ECR > Repositories

PrivatePublic

Private repositories (1)

View push commandsDeleteActions

Create repository

<input type="checkbox"/>	Repository name ▲	URI	Created at ▼	Tag immutability	Scan frequency	Encryption type	Pull through cache
<input type="checkbox"/>	<a href="#">mundose-pin</a>	578740199171.dkr.ecr.us-east-2.amazonaws.com/mundose-pin	August 28, 2023, 13:09:43 (UTC-03)	Disabled	Manual	AES-256	Inactive

# Output

```
Apply complete! Resources: 30 added, 0 changed, 0 destroyed.

Outputs:

account_id = "578740199171"
db_address = "mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com"
ecr_repository_url = "578740199171.dkr.ecr.us-east-2.amazonaws.com/mundose-pin"
project_name = "mundose-pin"
region = "us-east-2"
END 2023-28-08 13:13:56
DURATION 269 seconds
```

# Terraform create ec2 bastion for ssh tunnel

```
make bastion-ssh-create
```

<input checked="" type="checkbox"/>	<a href="#">mundose-pin-bastion</a>	<a href="#">i-0c60c643ec0463e9c</a>	<span>Running</span>			t2.micro	-	No alarms	us-east-2b	<a href="#">ec2-18-116-29-206.us-east-2.compute...</a>
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Instance: i-0c60c643ec0463e9c (mundose-pin-bastion)

DetailsSecurityNetworkingStorageStatus checksMonitoringTags

▼ Instance summary [Info](#)

Instance ID

i-0c60c643ec0463e9c (mundose-pin-bastion)

IPv6 address

-

Hostname type

IP name: ip-10-0-2-132.us-east-2.compute.internal

Answer private resource DNS name

-

Auto-assigned IP address

18.116.29.206 [Public IP]

IAM Role

[mundose-pin-ec2-role](#)

IMDSv2

Optional

Public IPv4 address

18.116.29.206 | [open address](#)

Instance state

Running

Private IP DNS name (IPv4 only)

ip-10-0-2-132.us-east-2.compute.internal

Instance type

t2.micro

VPC ID

[vpc-02baa0657a63c6eb \(mundose-pin\)](#)

Subnet ID

[subnet-0fbf4bca452c41525 \(mundose-pin-public-us-east-2b\)](#)

Private IPv4 addresses

10.0.2.132

Public IPv4 DNS

[ec2-18-116-29-206.us-east-2.compute.amazonaws.com | \[open address\]\(#\)](#)

Elastic IP addresses

-

AWS Compute Optimizer finding

[Opt-in to AWS Compute Optimizer for recommendations.](#) | [Learn more](#)

Auto Scaling Group name

-

# Outputs

## Outputs:

```
aws_default_security_group_id = "sg-0dfdbffbdbb6df36e"
aws_subnets_private_ids = tolist([
  "subnet-0b1030b99a73f21b9",
  "subnet-0d5b22256a41c4d60",
])
aws_subnets_public_ids = tolist([
  "subnet-0fbf4bca452c41525",
  "subnet-07166368315c5c7f6",
])
aws_vpc_id = "vpc-02baa0657a63c6ceb"
bastion_public_dns = "ec2-18-116-29-206.us-east-2.compute.amazonaws.com"
bastion_security_group_id = "sg-01c8e4d10039a73ce"
END 2023-28-08 14:29:51
DURATION 57 seconds
```

## Create ssh tunnel to RDS

```
root 29746 0.0 0.0 53512 772 ? Ss 14:53 0:00 ssh -i /home/carlos/Trabajo/Cursos/DevOps2301/mundose-pin/mundose-pin-bastion.pem -f -N -L 5433:mundose.cknxtpwrto.us-east-2.rds.amazonaws.com:5432 ec2-user@ec2-18-116-29-206.us-east-2.compute.amazonaws.com -v
root 29811 0.0 0.0 53512 768 ? Ss 14:54 0:00 ssh -i /home/carlos/Trabajo/Cursos/DevOps2301/mundose-pin/mundose-pin-bastion.pem -f -N -L 5433:mundose.cknxtpwrto.us-east-2.rds.amazonaws.com:5432 ec2-user@ec2-18-116-29-206.us-east-2.compute.amazonaws.com
carlos 29953 0.0 0.0 15652 1120 pts/16 S+ 14:55 0:00 grep --color=auto 5433
> netstat -atunp | grep 5433
(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)
tcp        0      0 0.0.0.0:5433          0.0.0.0:*             LISTEN      -
tcp6       0      0 :::5433              :::*                   LISTEN      -
```

```
[root@ip-10-0-2-132 ec2-user]# psql --version
psql (PostgreSQL) 9.2.24
```

## Update psql client on bastion ec2 to avoid security problems

```
[root@ip-10-0-2-132 ec2-user]# sudo yum install -y amazon-linux-extras
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Package amazon-linux-extras-2.0.1-1.amzn2.noarch already installed and latest version
Nothing to do
[root@ip-10-0-2-132 ec2-user]# sudo amazon-linux-extras install postgresql10
Installing postgresql
```

```
[root@ip-10-0-2-132 ec2-user]# psql --version
psql (PostgreSQL) 10.21
[root@ip-10-0-2-132 ec2-user]# psql -h mundose.cknxtpwrto.us-east-2.rds.amazonaws.com -U master -d mundose
Password for user master:
psql (10.21, server 15.3)
WARNING: psql major version 10, server major version 15.
Some psql features might not work.
SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 256, compression: off)
Type "help" for help.

mundose=>
```

## Create data base structure

```
[root@ip-10-0-2-132 ec2-user]# vi create.sql
[root@ip-10-0-2-132 ec2-user]# cat create.sql
drop table if exists vote;

--
-- Create table `vote`
--
CREATE TABLE vote (
  name varchar(255),
  value integer
);

--
-- Insert values into `vote`
--
INSERT INTO vote VALUES
('up', '0'),
('down', '0');
```

from local

psql "postgresql://master:[masterpass@127.0.0.1:5433/mundose?sslmode=require](#)" < sql/create.sql

```
> psql "postgresql://master:masterpass@127.0.0.1:5433/mundose?sslmode=require"
psql (10.23 (Ubuntu 10.23-0ubuntu0.18.04.2), server 15.3)
WARNING: psql major version 10, server major version 15.
         Some psql features might not work.
SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 256, compression: off)
Type "help" for help.

mundose=> █
```

from EC2 Bastion

```
[root@ip-10-0-2-132 ec2-user]# psql -h mundose.ckxnxtpwrto.us-east-2.rds.amazonaws.com -U master -d mundose < create.sql
Password for user master:
NOTICE: table "vote" does not exist, skipping
DROP TABLE
CREATE TABLE
INSERT 0 2
[root@ip-10-0-2-132 ec2-user]#
```

## Push vote app image to ECR

```
make ecr-push
```

```

Step 21/21 : CMD ["node", "index.js"]
----> Running in ccbfd889534c
Removing intermediate container ccbfd889534c
----> 800e1f224eac
Successfully built 800e1f224eac
Successfully tagged vote:latest
AWS_ACCOUNT_ID 578740199171
REPOSITORY_URL 578740199171.dkr.ecr.us-east-2.amazonaws.com/mundose-pin
WARNING! Your password will be stored unencrypted in /home/carlos/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
The push refers to repository [578740199171.dkr.ecr.us-east-2.amazonaws.com/mundose-pin]
bfd251d74980: Pushed
aa7922b82478: Pushed
a39d67fb040d: Pushed
efacba6c0e9c: Pushed
77b897ea207d: Pushed
ea1c1a315bbc: Pushed
63cb23df0560: Pushed
08249ce7456a: Pushed
vote: digest: sha256:f133a4c5b490f7b7a215ae8e7f8f2d3a0b9a27c7a16d758f4052efff3906a0b5 size: 1995

```

Amazon ECR > Repositories > mundose-pin

**mundose-pin** View push commands Edit

Images (1) Refresh Delete Details Scan

<input type="checkbox"/>	Image tag	Artifact type	Pushed at	Size (MB)	Image URI	Digest	Scan status	Vulnerabilities
<input type="checkbox"/>	vote	Image	August 28, 2023, 16:18:13 (UTC-03)	85.16	Copy URI	sha256:f133a4c5b490f7b7a215ae8e7f8f2d...	-	-

## Terraform create EKS cluster

```
make eks-create
```

```

eks_cluster_endpoint = "https://8C40060C416AA4DD4BC91EB0042F0559.gr7.us-east-2.eks.amazonaws.com"
eks_cluster_id = "mundose-pin"
eks_nodegroup_rolearn = "arn:aws:iam::578740199171:role/green-eks-node-group-20230828193202693900000004"
project_name = "mundose-pin"
region = "us-east-2"
vpc_id = "vpc-02baa0657a63c6ceb"
vpc_private_subnets = tolist([
  "subnet-0b1030b99a73f21b9",
  "subnet-0d5b22256a41c4d60",
])
END 2023-28-08 16:41:31
DURATION 590 seconds

```

EKS > Clusters > mundose-pin

**mundose-pin** Refresh Delete cluster

This cluster is running the oldest Kubernetes version currently supported by Amazon EKS. Ensure that your cluster is updated before the version end of support date. [Learn more](#)

Update now

▼ Cluster info [Info](#)

Kubernetes version <a href="#">Info</a> 1.23	Status <span>Active</span>	Provider EKS
---	-------------------------------	-----------------

Overview | Resources | Compute | Networking | Add-ons | Authentication | Logging | Update history | Tags

**Details**

<p>API server endpoint</p> <p><a href="https://8C40060C416AA4DD4BC91EB0042F0559.gr7.us-east-2.eks.amazonaws.com">https://8C40060C416AA4DD4BC91EB0042F0559.gr7.us-east-2.eks.amazonaws.com</a></p> <p>Certificate authority</p> <p><a href="#">LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tck1JSUMvakNDQWVhZ0F3S3UJBJ0tCQURBTklna3Foa2lHOXcwQKFRc0ZBREWFwTVJnd0VRWURWUVRERXdwcmRXSmwKY201bGRHVnpNQjRYFRJek1EZ3</a></p>	<p>OpenID Connect provider URL</p> <p><a href="https://oidc.eks.us-east-2.amazonaws.com/id/8C40060C416AA4DD4BC91EB0042F0559">https://oidc.eks.us-east-2.amazonaws.com/id/8C40060C416AA4DD4BC91EB0042F0559</a></p> <p>Cluster IAM role ARN</p> <p><a href="#">arn:aws:iam::578740199171:role/mundose-pin-cluster-20230828193202696900000005</a></p>	<p>Created</p> <p><a href="#">an hour ago</a></p> <p>Cluster ARN</p> <p><a href="#">arn:aws:eks:us-east-2:578740199171:cluster/mundose-pin</a></p> <p>Platform version <a href="#">Info</a> eks.12</p>
---	--	--

I can add more nodes to the cluster changing on this script

```
eks_managed_node_groups = {

  green = {
    min_size      = 1
    max_size      = 2
    desired_size  = 1

    instance_types = ["t2.medium"]
    capacity_type  = "ON_DEMAND" # SPOT
  }
}
```

```
eks_managed_node_groups = {

  green = {
    min_size = 3
    max_size = 5
    desired_size = 3

    instance_types = ["t2.medium"]
    capacity_type = "ON_DEMAND" # SPOT
  }
}
```

or editing the node group

[EKS](#) > [Clusters](#) > [mundose-pln](#) > [Node group: green-2023082819384594150000000d](#) > Edit node group

## Edit node group: green-2023082819384594150000000d

### Node group scaling configuration

**Desired size**  
Set the desired number of nodes that the group should launch with initially.

nodes

**Minimum size**  
Set the minimum number of nodes that the group can scale in to.

nodes

**Maximum size**  
Set the maximum number of nodes that the group can scale out to.

nodes

## Test connection between the cluster and the RDS database

```
kubectl create ns vote
kubectl run alpine --image=alpine -i --tty -n vote
```

the connection fails

```
> kubectl create ns vote
namespace/vote created
> kubectl run alpine --image=alpine -i --tty -n vote
If you don't see a command prompt, try pressing enter.
/ # apk --update add postgresql-client
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/community/x86_64/APKINDEX.tar.gz
(1/8) Installing postgresql-common (1.2-r0)
Executing postgresql-common-1.2-r0.pre-install
(2/8) Installing lz4-libs (1.9.4-r4)
(3/8) Installing libpq (15.4-r0)
(4/8) Installing ncurses-terminfo-base (6.4_p20230506-r0)
(5/8) Installing libncursesw (6.4_p20230506-r0)
(6/8) Installing readline (8.2.1-r1)
(7/8) Installing zstd-libs (1.5.5-r4)
(8/8) Installing postgresql15-client (15.4-r0)
Executing busybox-1.36.1-r2.trigger
Executing postgresql-common-1.2-r0.trigger
* Setting postgresql15 as the default version
OK: 12 MiB in 23 packages
/ # psql "postgresql://master:masterpass@mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com:5432/mundose?sslmode=require"
^C
/ # psql -h mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com -U master -d mundose
^C
/ # ping mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com
PING mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com (10.0.3.220): 56 data bytes
^C
--- mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com ping statistics ---
2 packets transmitted, 0 packets received, 100% packet loss
/ # psql -h mundose.ckxnxtpwrrto.us-east-2.rds.amazonaws.com -U master -d mundose
^C
/ #
```

## Add inbound rule

```
resource "aws_security_group_rule" "postgresql_ec2_instances_sg" {
  # this rule is added to the security group defined by `security_group_id`
  # and this id target the `default` security group associated with the created VPC
  security_group_id = data.aws_security_group.default_security_group.id

  type      = "ingress"
  protocol  = "tcp"
  from_port = 5432
  to_port   = 5432

  # One of ['cidr_blocks', 'ipv6_cidr_blocks', 'self', 'source_security_group_id', 'prefix_list_ids']
  # must be set to create an AWS Security Group Rule
  source_security_group_id = module.eks.eks_managed_node_groups.green.security_group_id

  lifecycle {
    create_before_destroy = true
  }
}
```

Security Groups (1/1) Info

Filter security groups

Name: mundose-pln-vpc-default-sg Clear filters

Name	Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count	Outbound
mundose-pln-vpc-default-sg	sg-0dfdbfbdbb6df36e	default	vpc-02baa0657a63c6ceb	default VPC security gr...	578740199171	3 Permission entries	1 Permissi...

sg-0dfdbfbdbb6df36e - default

Details Inbound rules Outbound rules Tags

Inbound rules (3)

Filter security group rules

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sgr-066ed41f4388053...	-	All traffic	All	All	sg-0dfdbfbdbb6df36...	-
-	sgr-0af2b1ed115aa5f71	-	PostgreSQL	TCP	5432	sg-01c8e4d10039a73c...	-
-	sgr-047ae6aa5faa50da5	-	PostgreSQL	TCP	5432	sg-0c4be3fd03c18869...	-

```
/ # psql -h mundose.ckxnntpwrto.us-east-2.rds.amazonaws.com -U master -d mundose
^C
/ # psql -h mundose.ckxnntpwrto.us-east-2.rds.amazonaws.com -U master -d mundose
Password for user master:
psql (15.4, server 15.3)
SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, compression: off)
Type "help" for help.

mundose=>
```

## Install vote app

```
make kubectrl-vote
```

## Get LoadBalancer

### Option1



```
> k get all -n vote
```

NAME	READY	STATUS	RESTARTS	AGE
pod/alpine	1/1	Running	1 (3h21m ago)	3h49m
pod/vote-67c9847fcf-ldxxb	1/1	Running	0	3h15m

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/vote	LoadBalancer	172.20.11.120	aa2ff6a4513a8420f94cf3af30b0a074-680757160.us-east-2.elb.amazonaws.com	80:32303/TCP	3h16m

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/vote	1/1	1	1	3h16m

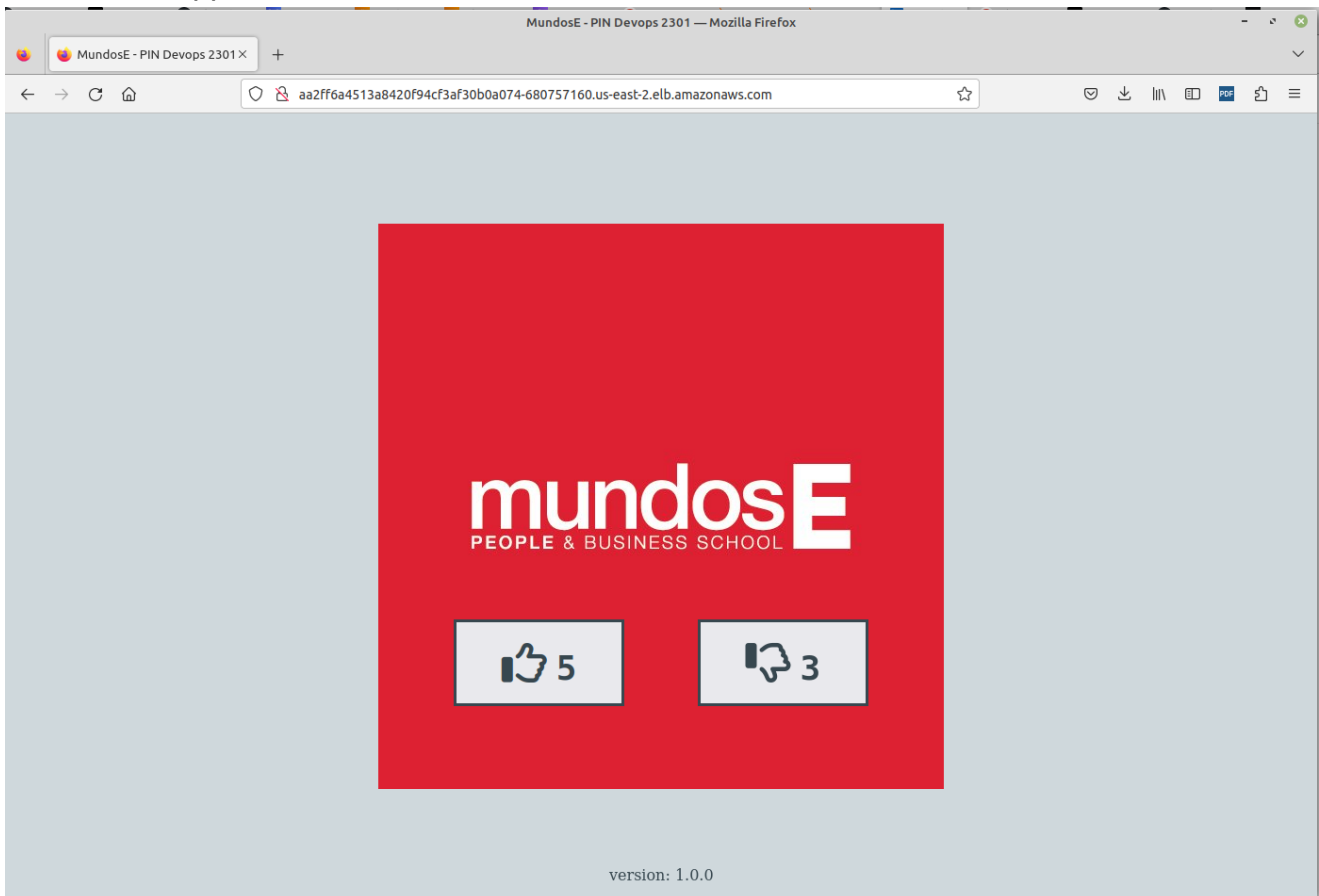
  

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/vote-67c9847fcf	1	1	1	3h16m

## Option2

```
> make load-balancer
/home/carlos/Trabajo/Cursos/DevOps2301/mundise-pin
EXECUTE load-balancer
LOAD_BALANCER aa2ff6a4513a8420f94cf3af30b0a074-680757160.us-east-2.elb.amazonaws.com
```

## Browse the app



## Install Prometheus

```
make kubectl-prometheus
```

```

> make kubectll-prometheus
/home/carlos/Trabajo/Cursos/DevOps2301/mundise-pin
EXECUTE kubectll-prometheus
namespace/prometheus created
"prometheus-community" has been added to your repositories
Release "prometheus" does not exist. Installing it now.
NAME: prometheus
LAST DEPLOYED: Mon Aug 28 23:23:18 2023
NAMESPACE: prometheus
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
The Prometheus server can be accessed via port 80 on the following DNS name from within your cluster:
prometheus-server.prometheus.svc.cluster.local

Get the Prometheus server URL by running these commands in the same shell:
export POD_NAME=$(kubectl get pods --namespace prometheus -l "app.kubernetes.io/name=prometheus,app.kubernetes.io/instance=prometheus" -o jsonpath="{.items[0].metadata.name}")
kubectl --namespace prometheus port-forward $POD_NAME 9090

The Prometheus alertmanager can be accessed via port 9093 on the following DNS name from within your cluster:
prometheus-alertmanager.prometheus.svc.cluster.local

Get the Alertmanager URL by running these commands in the same shell:
export POD_NAME=$(kubectl get pods --namespace prometheus -l "app.kubernetes.io/name=alertmanager,app.kubernetes.io/instance=prometheus" -o jsonpath="{.items[0].metadata.name}")
kubectl --namespace prometheus port-forward $POD_NAME 9093

#####
##### WARNING: Pod Security Policy has been disabled by default since #####
##### it deprecated after k8s 1.25+. use #####
##### (index .Values "prometheus-node-exporter" "rbac" #####
##### "pspEnabled") with (index .Values #####
##### "prometheus-node-exporter" "rbac" "pspAnnotations") #####
##### in case you still need it. #####
#####

The Prometheus PushGateway can be accessed via port 9091 on the following DNS name from within your cluster:
prometheus-prometheus-pushgateway.prometheus.svc.cluster.local

Get the PushGateway URL by running these commands in the same shell:
export POD_NAME=$(kubectl get pods --namespace prometheus -l "app=prometheus-pushgateway,component=pushgateway" -o jsonpath="{.items[0].metadata.name}")
kubectl --namespace prometheus port-forward $POD_NAME 9091

For more information on running Prometheus, visit:
https://prometheus.io/

```

```

> k get all -n prometheus
NAME                                     READY   STATUS    RESTARTS   AGE
pod/prometheus-alertmanager-0          0/1     Pending   0           5m58s
pod/prometheus-kube-state-metrics-d96b9df7-c9k4c  1/1     Running   0           5m58s
pod/prometheus-prometheus-node-exporter-b7lwx  1/1     Running   0           5m58s
pod/prometheus-prometheus-pushgateway-799f46dfd8-t5lfq  1/1     Running   0           5m58s
pod/prometheus-server-6c9c9b7b58-hwbxr  0/2     Pending   0           5m58s

NAME                                     TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/prometheus-alertmanager         ClusterIP      172.20.141.180   <none>            9093/TCP          6m
service/prometheus-alertmanager-headless ClusterIP      None             <none>            9093/TCP          6m
service/prometheus-kube-state-metrics   ClusterIP      172.20.132.55    <none>            8080/TCP          6m
service/prometheus-prometheus-node-exporter ClusterIP      172.20.205.99    <none>            9100/TCP          6m
service/prometheus-prometheus-pushgateway ClusterIP      172.20.8.157     <none>            9091/TCP          6m
service/prometheus-server                ClusterIP      172.20.101.88    <none>            80/TCP            6m

NAME                                     DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
daemonset.apps/prometheus-prometheus-node-exporter 1         1         1       1             1           kubernetes.io/os=linux 6m

NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/prometheus-kube-state-metrics 1/1     1             1           6m1s
deployment.apps/prometheus-prometheus-pushgateway 1/1     1             1           6m1s
deployment.apps/prometheus-server             0/1     1             0           6m1s

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/prometheus-kube-state-metrics-d96b9df7 1         1         1       6m1s
replicaset.apps/prometheus-prometheus-pushgateway-799f46dfd8 1         1         1       6m1s
replicaset.apps/prometheus-server-6c9c9b7b58 1         1         0       6m1s

NAME                                     READY   AGE
statefulset.apps/prometheus-alertmanager 0/1     6m2s

```

## Install ebs csi driver

```
make kubectll-ebs-csi-driver
```

```

> make kubectll-ebs-csi-driver
/home/carlos/Trabajo/Cursos/DevOps2301/mundise-pin
EXECUTE kubectll-ebs-csi-driver
AWS_ACCOUNT_ID 578740199171
2023-08-28 23:39:33 [i] 1 iamserviceaccount (kube-system/ebs-csi-controller-sa) was included (based on the include/exclude rules)
2023-08-28 23:39:33 [i] serviceaccounts that exist in Kubernetes will be excluded, use --override-existing-serviceaccounts to override
2023-08-28 23:39:33 [i] 1 task: { create IAM role for serviceaccount "kube-system/ebs-csi-controller-sa" }
2023-08-28 23:39:33 [i] building iamserviceaccount stack "eksctl-mundose-pin-addon-iamserviceaccount-kube-system-ebs-csi-controller-sa"
2023-08-28 23:39:33 [i] deploying stack "eksctl-mundose-pin-addon-iamserviceaccount-kube-system-ebs-csi-controller-sa"
2023-08-28 23:39:34 [i] waiting for CloudFormation stack "eksctl-mundose-pin-addon-iamserviceaccount-kube-system-ebs-csi-controller-sa"
2023-08-28 23:40:04 [i] waiting for CloudFormation stack "eksctl-mundose-pin-addon-iamserviceaccount-kube-system-ebs-csi-controller-sa"
2023-08-28 23:40:07 [i] Kubernetes version "1.23" in use by cluster "mundose-pin"
2023-08-28 23:40:07 [i] using provided ServiceAccountRoleARN "arn:aws:iam::578740199171:role/AmazonEKS_EBS_CSI_DriverRole"
2023-08-28 23:40:07 [i] creating addon
2023-08-28 23:41:03 [i] addon "aws-ebs-csi-driver" active

```

```

k get all -n prometheus
NAME                                READY    STATUS    RESTARTS   AGE
pod/prometheus-alertmanager-0      1/1      Running   0           36m
pod/prometheus-kube-state-metrics-d96b9df7-c9k4c  1/1      Running   0           36m
pod/prometheus-prometheus-node-exporter-b7lwx    1/1      Running   0           36m
pod/prometheus-prometheus-pushgateway-799f46dfd8-t5lfq  1/1      Running   0           36m
pod/prometheus-server-6c9c9b7b58-hwbxr          2/2      Running   0           36m

NAME                                TYPE          CLUSTER-IP      EXTERNAL-IP    PORT(S)          AGE
service/prometheus-alertmanager      ClusterIP      172.20.141.180  <none>         9093/TCP         36m
service/prometheus-alertmanager-headless ClusterIP      None            <none>         9093/TCP         36m
service/prometheus-kube-state-metrics ClusterIP      172.20.132.55  <none>         8080/TCP         36m
service/prometheus-prometheus-node-exporter ClusterIP      172.20.205.99  <none>         9100/TCP         36m
service/prometheus-prometheus-pushgateway ClusterIP      172.20.8.157   <none>         9091/TCP         36m
service/prometheus-server             ClusterIP      172.20.101.88  <none>         80/TCP           36m

NAME                                DESIRED    CURRENT    READY    UP-TO-DATE    AVAILABLE    NODE SELECTOR    AGE
daemonset.apps/prometheus-prometheus-node-exporter  1           1           1           1           1           kubernetes.io/os=linux  36m

NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
deployment.apps/prometheus-kube-state-metrics  1/1       1           1           36m
deployment.apps/prometheus-prometheus-pushgateway  1/1       1           1           36m
deployment.apps/prometheus-server              1/1       1           1           36m

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/prometheus-kube-state-metrics-d96b9df7  1           1           1           36m
replicaset.apps/prometheus-prometheus-pushgateway-799f46dfd8  1           1           1           36m
replicaset.apps/prometheus-server-6c9c9b7b58             1           1           1           36m

NAME                                READY    AGE
statefulset.apps/prometheus-alertmanager  1/1      36m

```

## Browse the console

```
> kubectl port-forward -n prometheus deploy/prometheus-server 8080:9090 --address 0.0.0.0
Forwarding from 0.0.0.0:8080 -> 9090
Handling connection for 8080
Handling connection for 8080
Handling connection for 8080
Handling connection for 8080
```

← → ↺

localhost:8080/targets?search=

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⌵

Prometheus

Alerts Graph Status ▾ Help

🌙 🌞 🌛

## Targets

All scrape pools ▾

All Unhealthy Collapse All

🔴 Unknown
🔴 Unhealthy
🟢 Healthy

### kubernetes-apisservers (2/2 up) [Show less](#)

Endpoint	Status	Labels	Last Scrape	Scrape Duration	Error
<a href="https://10.0.3.204/metrics">https://10.0.3.204/metrics</a>	UP	<code>instance="10.0.3.204-44"</code> <code>job="kubernetes-apisservers"</code>	32.264s ago	114.866ms	
<a href="https://10.0.4.114/metrics">https://10.0.4.114/metrics</a>	UP	<code>instance="10.0.4.114-44"</code> <code>job="kubernetes-apisservers"</code>	6.416s ago	97.356ms	

### kubernetes-nodes (1/1 up) [Show less](#)

Endpoint	Status	Labels	Last Scrape	Scrape Duration	Error
<a href="https://kubernetes.default.svc/api/v1/nodes/pip-10-0-3-152-us-east-2.compute.internal/proxy/metrics">https://kubernetes.default.svc/api/v1/nodes/pip-10-0-3-152-us-east-2.compute.internal/proxy/metrics</a>	UP	<code>beta_kubernetes_io_arch="amd64"</code> <code>beta_kubernetes_io_instance_type="t2.medium"</code> <code>beta_kubernetes_io_os="linux"</code> <code>eks_amazonaws_com_capacityType="ON_DEMAND"</code> <code>eks_amazonaws_com_nodegroup="green-2023082019384594150000000d"</code> <code>eks_amazonaws_com_nodegroup_image="ami-0891236afdf2c57df"</code> <code>eks_amazonaws_com_sourceLaunchTemplateId="lt-07515006cd163e811"</code> <code>eks_amazonaws_com_sourceLaunchTemplateVersion="1"</code> <code>failure_domain.beta_kubernetes_io_region="us-east-2"</code> <code>failure_domain.beta_kubernetes_io_zone="us-east-2a"</code> <code>instance="pip-10-0-3-152-us-east-2.compute.internal"</code> <code>job="kubernetes-nodes"</code> <code>k8s_io_cloud_provider_aws="f9f62b7bbdf2f33816b1b479a08"</code> <code>kubernetes_io_arch="amd64"</code> <code>kubernetes_io_hostname="pip-10-0-3-152-us-east-2.compute.internal"</code> <code>kubernetes_io_os="linux"</code> <code>node_kubernetes_io_instance_type="t2.medium"</code> <code>topology_eks_csi_aws_com_zone="us-east-2a"</code> <code>topology_kubernetes_io_region="us-east-2"</code> <code>topology_kubernetes_io_zone="us-east-2a"</code>	41.140s ago	23.544ms	

## Install grafana

```
make kubectl-grafana
```

```
> make kubectl-grafana
/home/carlos/Trabajo/Cursos/DevOps2301/mundise-pin
EXECUTE kubectl-grafana
namespace/grafana created
"grafana" has been added to your repositories
NAME: grafana
LAST DEPLOYED: Tue Aug 29 00:01:29 2023
NAMESPACE: grafana
STATUS: deployed
REVISION: 1
NOTES:
1. Get your 'admin' user password by running:

    kubectl get secret --namespace grafana grafana -o jsonpath="{.data.admin-password}" | base64 --decode ; echo

2. The Grafana server can be accessed via port 80 on the following DNS name from within your cluster:

    grafana.grafana.svc.cluster.local

Get the Grafana URL to visit by running these commands in the same shell:
NOTE: It may take a few minutes for the LoadBalancer IP to be available.
    You can watch the status of by running 'kubectl get svc --namespace grafana -w grafana'
    export SERVICE_IP=$(kubectl get svc --namespace grafana grafana -o jsonpath='{.status.loadBalancer.ingress[0].ip}')
    http://$SERVICE_IP:80

3. Login with the password from step 1 and the username: admin
```

```
> kubectl get all -n grafana
```

NAME	READY	STATUS	RESTARTS	AGE
pod/grafana-54d8b6bbb-4xvjc	0/1	Running	0	43s

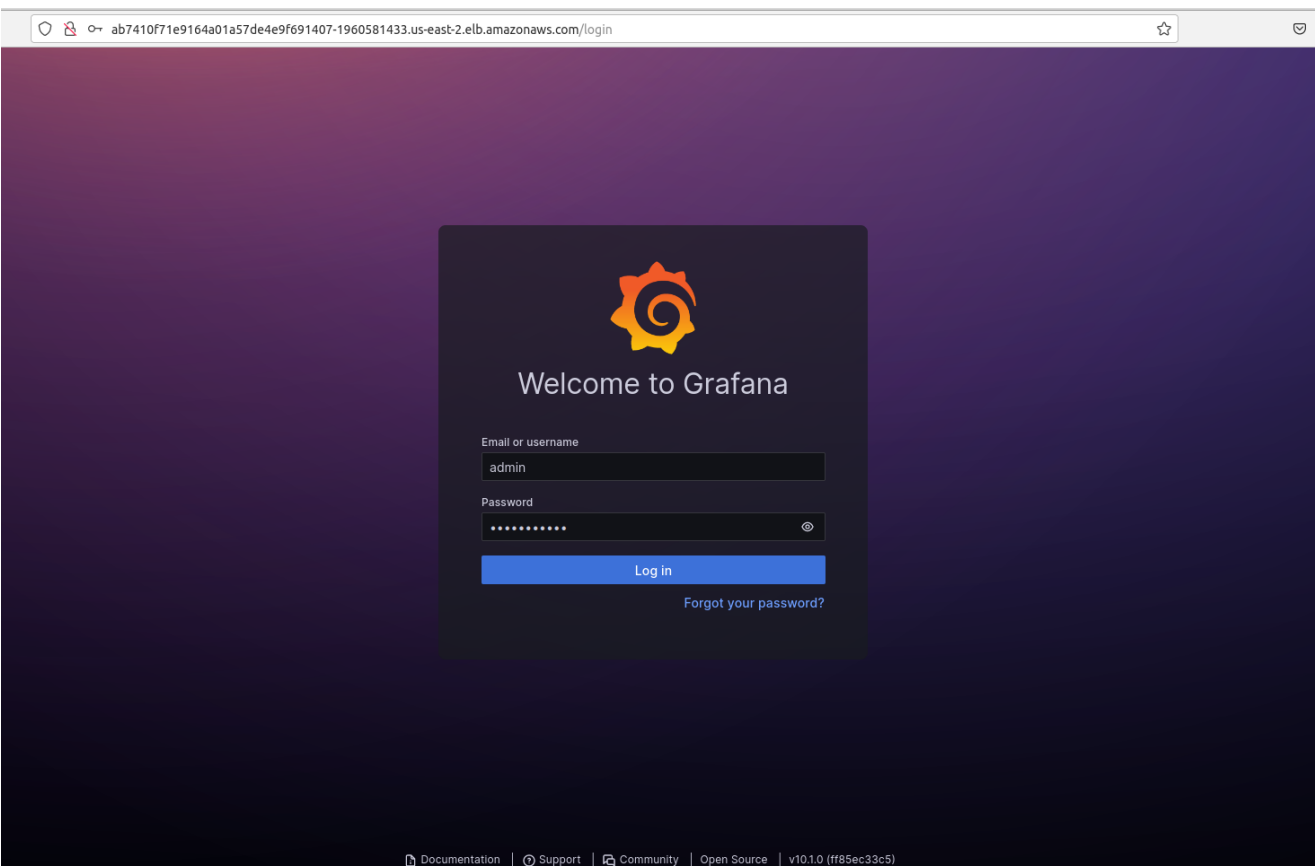
NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/grafana	LoadBalancer	172.20.198.113	ab7410f71e9164a01a57de4e9f691407-1960581433.us-east-2.elb.amazonaws.com	80:31741/TCP	45s

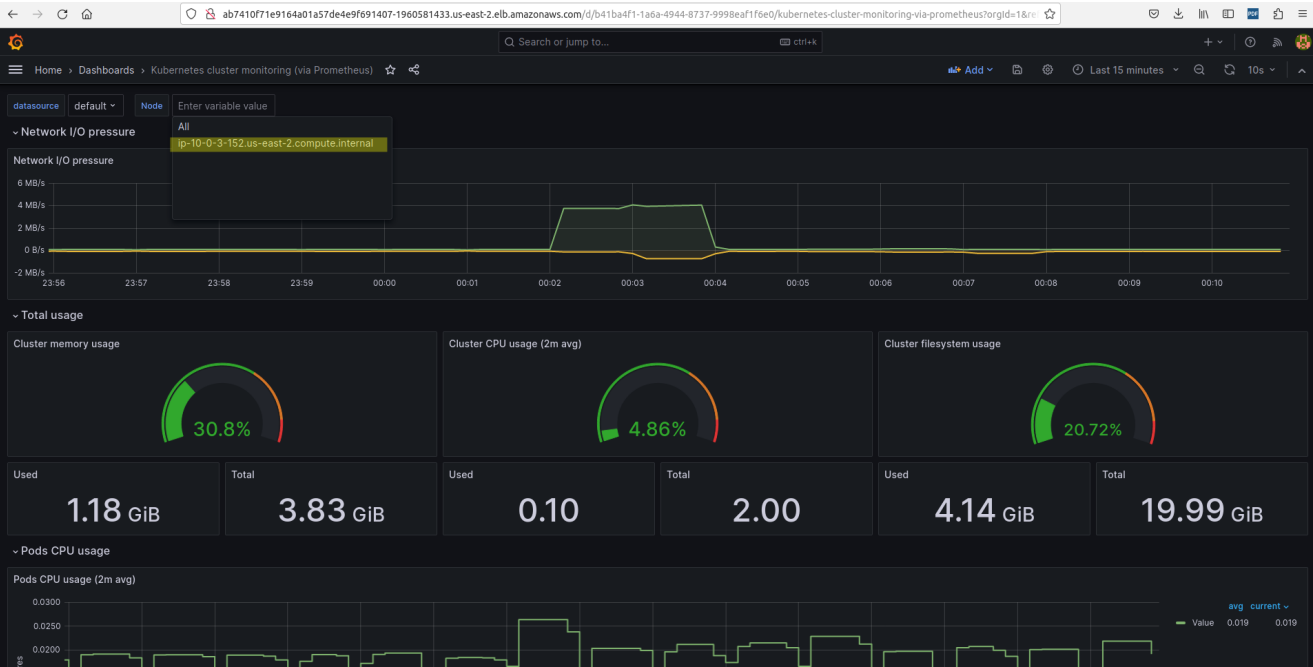
NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/grafana	0/1	1	0	46s

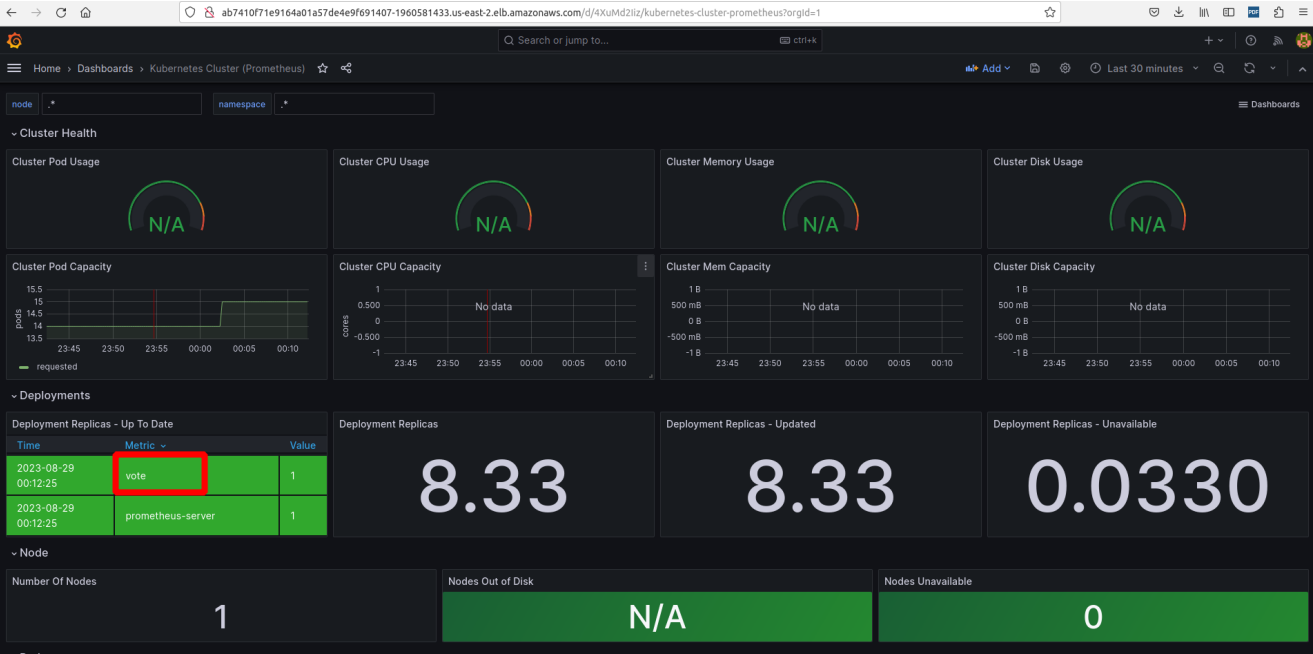
NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/grafana-54d8b6bbb	1	1	0	46s



Import 3119



Import 6417



The End