

Diplomatura en DevOps

Edición 2403

Informe Práctico Integrador FINAL (PIN-F)

Tutor:

- Guazzardo, Marcelo

Grupo 6:

- Hector Barrios hdbarrios@gmail.com
- Juan Pablo Heyda juanpabloh.123@gmail.com
- Renzo Carletti renzocarletti@hotmail.com / pipito1498@gmail.com
- Johanna Dominguez johisd9@hotmail.com
- Lucas Bufano lucas.bufano2@gmail.com

Repositorio de GitHub Público:

- <https://github.com/hdbarrios/devops-g6-pin-final>

Objetivos:

- Instalar terraform
- Configurar usuario programático en AWS IAM
- Desarrollar código terraform para crear una instancia EC2 y un EKS con 3 nodos
- Utilizar github actions para desplegar nginx, grafana y prometheus en EKS, usando helm
- Plus - destruir toda la infra desde github actions.

Anexos:

- Costos relacionados a la implementación en AWS.
- Instalar terraform en estación de trabajo.
- Evaluar código terraform y credenciales aws:
- Imagen de "validation_infra" Job que crea lo solicitado sobre el eks

Crear el backend:

Usando **create_backend.sh**, si no tienes el archivo `~/.aws/config` creado, ejecuta **aws configure --profile terraform-admin** (se aconseja si tienes más de una cuenta por administrar usar profiles)

```
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g6-pinFinal 14:45:06 (test ed4d2f7) $ tree
├── backend.tf
├── create_backend.sh
├── docs
│   └── ings
├── main.tf
├── outputs.tf
├── profiles
│   ├── grafana_893_main_rev5.json
│   ├── grupo6.png
│   ├── pinf.tfvars
│   ├── pin.pem
│   ├── pin.pub
│   └── provision.sh
├── README.md
└── variables.tf

4 directories, 12 files
```

```
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g6-pinFinal 14:37:13 (test ed4d2f7) $ ./create_backend.sh
/usr/local/bin/aws
{
  "Location": "/tf-state-pinf-bucket"
}
{
  "TableDescription": {
    "AttributeDefinitions": [
      {
        "AttributeName": "LockID",
        "AttributeType": "S"
      }
    ],
    "TableName": "tf-pinf-locks",
    "KeySchema": [
      {
        "AttributeName": "LockID",
        "KeyType": "HASH"
      }
    ],
    "TableStatus": "CREATING",
    "CreationDateTime": "2025-02-27T14:38:22.653000-03:00",
    "ProvisionedThroughput": {
      "NumberOfDecreasesToday": 0,
      "ReadCapacityUnits": 0,
      "WriteCapacityUnits": 0
    },
    "TableSizeBytes": 0,
    "ItemCount": 0,
    "TableArn": "arn:aws:dynamodb:us-east-1:536697232168:table/tf-pinf-locks",
    "TableId": "eba11c73-f500-42a3-9598-26e62e8f1545",
    "BillingModeSummary": {
      "BillingMode": "PAY_PER_REQUEST"
    }
  }
}
```

```
{
  "Table": {
    "AttributeDefinitions": [
      {
        "AttributeName": "LockID",
        "AttributeType": "S"
      }
    ],
    "TableName": "tf-pinf-locks",
    "KeySchema": [
      {
        "AttributeName": "LockID",
        "KeyType": "HASH"
      }
    ],
    "TableStatus": "CREATING",
    "CreationDateTime": "2025-02-27T14:38:22.653000-03:00",
    "ProvisionedThroughput": {
      "NumberOfDecreasesToday": 0,
      "ReadCapacityUnits": 0,
      "WriteCapacityUnits": 0
    },
    "TableSizeBytes": 0,
    "ItemCount": 0,
    "TableArn": "arn:aws:dynamodb:us-east-1:536697232168:table/tf-pinf-locks",
    "TableId": "eb411c73-f500-42a3-9598-26e62e8f1545",
    "BillingModeSummary": {
      "BillingMode": "PAY_PER_REQUEST"
    }
  }
}
```

General purpose buckets (3) Info All AWS Regions

Buckets are containers for data stored in S3.

1 match

Name	AWS Region	IAM Access Analyzer	Creation date
tf-state-pinf-bucket	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 27, 2025, 14:38:21 (UTC-03:00)

DynamoDB > Tables

Tables (2) Info

1 matched results

Clear filters

Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode	Total size
tf-pinf-locks	Active	LockID (S)	-	0	0	Off	☆	On-demand	On-demand	0 bytes

GitHub Actions:

Para la construcción de la infraestructura se requiere acceso a aws. Desde el repositorio de github vamos settings/secrets/actions y agregamos dos New Repository Secret:

devops-g6-pin-final

Type to search

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Pages

Security

Code security

Deploy keys

Secrets and variables

Actions

Codespaces

Dependabot

Actions secrets and variables

Secrets Variables

Environment secrets

This environment has no secrets.
Manage environment secrets

Repository secrets

New repository secret

Name	Last updated
aws-access-key-id	now
aws-secret-access-key	now

El Workflows diseñados fueron:

.github/workflows/

- [apply.yml](#) (dos Jobs con un total de 13 steps)
- [destroy.yml](#) (un Job con 6 steps)

Terraform Apply, solo se ejecuta en condiciones;

```
on:
  push:
    branches:
      - master
  pull_request:
    branches:
      - master
  workflow_dispatch:
    branches:
      - master
```

Los Jobs:

terraform_apply, tiene 7 steps

- actions/checkout@v4
- Install Terraform
- Terraform version
- Terraform ini
- Terraform validation
- Terraform plan, *solo se ejecuta para push y pull_request event*
- Terraform apply, *solo se ejecuta en push event*

validacion_infra, tiene 4 steps, se ejecuta sobre el mismo worker que el job terraform_apply, y si y solo si se cumple: que terraform_apply este completo y se ejecuta solo en un push event

- actions/checkout@v4
- Install kubectl
- Install Helm
- Install AWS CLI
- Verificando el cluster EKS, este step ejecuta la instalacion de nginx, grafana y prometheus
- Port-forward prometheus-service, es un jstep para ejecutar un port forward desde el worker del actions.

Terraform Destroy, solo se ejecuta con la condición;

```
on:
  workflow_dispatch:
    branches:
      - master
```

MundosE - <https://mundose.com/index.html>

Ejemplo de ejecución con PR: <https://github.com/hdbarrios/devops-g6-pin-final/pull/1>

merge testing - github actions #1

hdbarrios wants to merge 11 commits into master from test

Conversation

hdbarrios commented now

No description provided.

hector.barrios added 11 commits last week

- initial commit
- aws profile added
- eks resource added
- main.tf ready to deploy ec2 and eks
- main.tf ready to deploy ec2 and eks
- main.tf updated
- main.tf updated
- main.tf updated
- main.tf ready to deploy ec2 and eks
- github actions added
- evidence of changes

Unverified

43f8de2

d5c96fc

9271f61

8469f67

5da7eca

6e3a5df

6928209

8a7a4b1

dc42c1d

6ba56c4

18e2dfc

Reviews

No reviews

Still in progress? [Convert to draft](#)

Assignees

No one—[assign yourself](#)

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

Successfully merging this pull request may close these issues.

None yet

Notifications

Unsubscribe

You're receiving notifications because you're watching this repository.

1 participant

Lock conversation

Some checks haven't completed yet

2 in progress checks

- GitGuardian Security Checks Started 12s ago — This check has started...
- Terraform Apply / terraform_apply (pull_request) Started 2s ago — This check has started...

No conflicts with base branch

Merging can be performed automatically.

Merge pull request

You can also merge this with the command line. [View command line instructions.](#)

All checks have passed

1 neutral, 1 skipped, 1 successful checks

1 skipped check

- Terraform Apply / validacion_infra (pull_request) Skipped

1 neutral check

- GitGuardian Security Checks Completed in 5s — 1 secret uncovered!

1 successful check

- Terraform Apply / terraform_apply (pull_request) Successful in 22s

No conflicts with base branch

Merging can be performed automatically.

Merge pull request

You can also merge this with the command line. [View command line instructions.](#)

Add a comment

devops-g6-pin-final

hdbarrios Merge pull request #1 from hdbarrios/test

ba05c28 · now · 24 Commits

- .github/workflows workflow/apply/reorder 1 minute ago
- docs initial commit last week
- profiles add tfvars 47 minutes ago
- .gitignore initial commit last week
- README.md initial commit last week
- backend.tf initial commit last week
- create_backend.sh initial commit last week
- main.tf without profile 45 minutes ago
- outputs.tf main.tf ready to deploy ec2 and eks 3 days ago
- tfplan evidence of changes 5 hours ago
- tfplan.txt evidence of changes 5 hours ago
- variables.tf main.tf ready to deploy ec2 and eks 3 days ago

README

About

No description, website, or provided.

Activity

- 0 stars
- 1 watching
- 0 forks

Releases

No releases published

[Create a new release](#)

Packages

No packages published

[Publish your first package](#)

Languages

- HCL 75.1%
- shell 24.9%

MundosE - <https://mundose.com/index.html>

Details: <https://github.com/hdbarrios/devops-g6-pin-final/actions/runs/13710001184>

→

github.com/hdbarrio/devops-devs-gp-pin-final/actions/runs/13708768987/job/38340483567

Summary

jobs

terraform_apply

validation_infra

Run details

Usage

Workflow file

validation_infra

successful • finished ago in 1m 47s

Install kubectl

Install Helm

Install AWS CLI

Verificando el cluster EKS

```
1 $ Run aws eks update-kubeconfig --name mundano --region us-east-1
2 Added new context 'aws-eks:us-east-1:1360972212:cluster:Mundano' to /home/runner/.kube/config
3
4 {
5     .....
6     DescrInstances
7     .....
8     [
9         {
10             i-0b67d80f6e3c306 | 12.micro | running | 104.72.79.74 | 10.11.1.177 |
11         }
12         {
13             i-012f9f6d0c0d0b0e4 | t3.small | running | None | 10.11.10.77 |
14         }
15         {
16             i-0b67f2ab0b0d7784 | t3.small | running | None | 10.11.10.282 |
17         }
18         {
19             i-0b97f9880b0b0c31 | t3.small | running | None | 10.11.20.236 |
20         }
21     ]
22     .....
23     "authenticationMode": "API_AND_CONFIG_MAP"
24 }
25
26 EKS Nodes:
27
28 NAME STATUS ROLES AGE VERSION INTERNAL_IP EXTERNAL_IP OS-IMAGE KERNEL-VERSION CONTAINER-RUNTIME
29 ip-10-11-10-77.ec2.internal Ready <none> 97s v1.30.0-eks-58b32ac 10.11.10.77 <none> Amazon Linux 2 5.10.234-225.900.amzn2.x86_64 containerd//7.7.25
30 ip-10-11-20-236.ec2.internal Ready <none> 96s v1.30.0-eks-58b32ac 10.11.20.236 <none> Amazon Linux 2 5.10.234-225.900.amzn2.x86_64 containerd//7.7.25
31 ip-10-11-10-282.ec2.internal Ready <none> 96s v1.30.0-eks-58b32ac 10.11.10.282 <none> Amazon Linux 2 5.10.234-225.900.amzn2.x86_64 containerd//7.7.25
32
33 Install helm charts:
34
35 "bitnami" has been added to your repositories
36 "prometheus-community" has been added to your repositories
37 "grafana" has been added to your repositories
38
39 Many things while we grab the latest from your chart repository...
40 ...Successfully got an update from the "grafana" chart repository
41 ...Successfully got an update from the "prometheus-community" chart repository
42 ...Successfully got an update from the "bitnami" chart repository
43
44 Update Complete. Happy Helming!
45
46 Install Nginx Webserver
47
48 Pulling registry.k8s.io/nginxinc/nginx-ingress:1.0.1
49 Digest: sha256:728396634aea20c2022111f095063664b358020ff8b7bea20fcd3278dc
50 Release 'nginx-ingress' has been upgraded. Happy Helming!
51 NAME nginx-webserver
52 LAST DEPLOYED: The Fri 6 21:40:04 2025
53 NAMESPACE: mundano
54
55 STATUS: deployed
56
57 REVISION: 10
58 TEST SUITE: None
59
60 NOTES:
61
62 Check kube-nginx
63 CHART VERSION: 19.0.1
64 APP VERSION: 1.27.4
65
66 Did you know there are enterprise versions of the Bitnami catalog? We enhanced secure software supply chain features, unlimited pulls from Docker, LTS support, or application customization, see Bitnami Premium or Tanu Application Catalog. See
67 https://www.elrco.com/go/datalogs/kubernetes for more information.
```

← → ↺ ↻ ⌂ github.com/hbarrios/devops/g6-pin-final/actions/runs/13708788987/job/38340483567

Validation infra

Summary jobs terraform_apply validation_infra Run details Usage Workflow file

validation_infra
Successful 7 minutes ago in 1m 27s

Verificando el cluster EKS

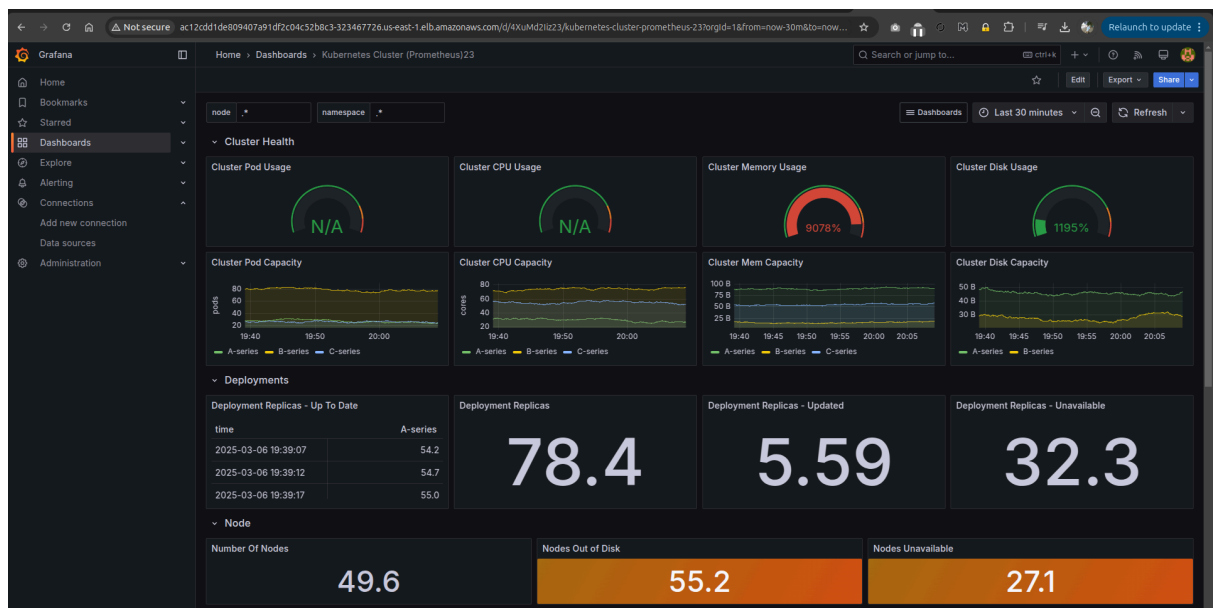
```
161
162 For more information on running Prometheus, visit:
163 https://prometheus.io/docs
164 Install grafana
165 Release "grafana" has been upgraded. Happy relinking!
166 kubectl get pods
167 LAST DEPLOYED: Thu Mar 6 21:48:14 2025
168 NAME: grafana
169 STATUS: deployed
170 REVISION: 8
171 NOTES:
172 1. Get your 'admin' user password by running:
173
174 kubectl get secret --namespace grafana grafana -o jsonpath='{.data.admin-password}' | base64 --decode & echo
175
176
177 2. The Grafana server can be accessed via port 30 on the following DNS name from within your cluster:
178
179 grafana.grafana.svc.cluster.local
180
181 Get the Grafana URL to visit by running these commands in the same shell:
182 NOTE: It may take a few minutes for the loadbalancer IP to be available.
183
184 You can watch the status of by running 'kubectl get svc --namespace grafana -w grafana'
185 export SERVICE_IP=$(kubectl get svc --namespace grafana grafana -o jsonpath='{.status.loadBalancer.ingress[0].ip}')
186 http://$SERVICE_IP:80
187
188 3. Login with the password from step 1 and the username: admin
189
190 List Pods
191 NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
192 kube-scheduler LoadBalancer 172.20.248.243   elb-373737445f78802a64dc6495-1773457215.us-east-1.elb.amazonaws.com 80:31445/TCP,443:31488/TCP 8m
193
194 NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
195 grafana LoadBalancer 172.20.192.143   elb-31030105048878616af49c32063-523487720.us-east-1.elb.amazonaws.com 80:30145/TCP 7m
196
197 NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
198 prometheus-alertmanager ClusterIP 172.20.249.242   <none>          9095/TCP 7m
199 prometheus-alertmanager-headless ClusterIP <none>          9095/TCP 7m
200 prometheus-kube-state-metrics ClusterIP 172.20.47.3      <none>          8080/TCP 7m
201 prometheus-prometheus-node-exporter ClusterIP 172.20.238.190   <none>          9100/TCP 7m
202 prometheus-prometheus-pushgateway ClusterIP 172.20.233.161   <none>          9091/TCP 7m
203 prometheus-server ClusterIP 172.20.221.240   <none>          9090/TCP 7m
204
205 List PV
206 NAME          CAPACITY   ACCESS MODES   STORAGECLASS   VOLUMECLAIMTEMPLATECLASS   REASON   AGE
207 pvc-8650d81e-c51f-4348-b088-f86261c1d049 10Gi       RWO            nfs              <none>          72m
208 pvc-f18c4e8c-46b1-4393-871fc0d4631c 10Gi       RWO            nfs              <none>          74m
209
210 > Port-forward prometheus-service
211
212 > Port Run actions/checkout@v4
213
214 > Complete job
```

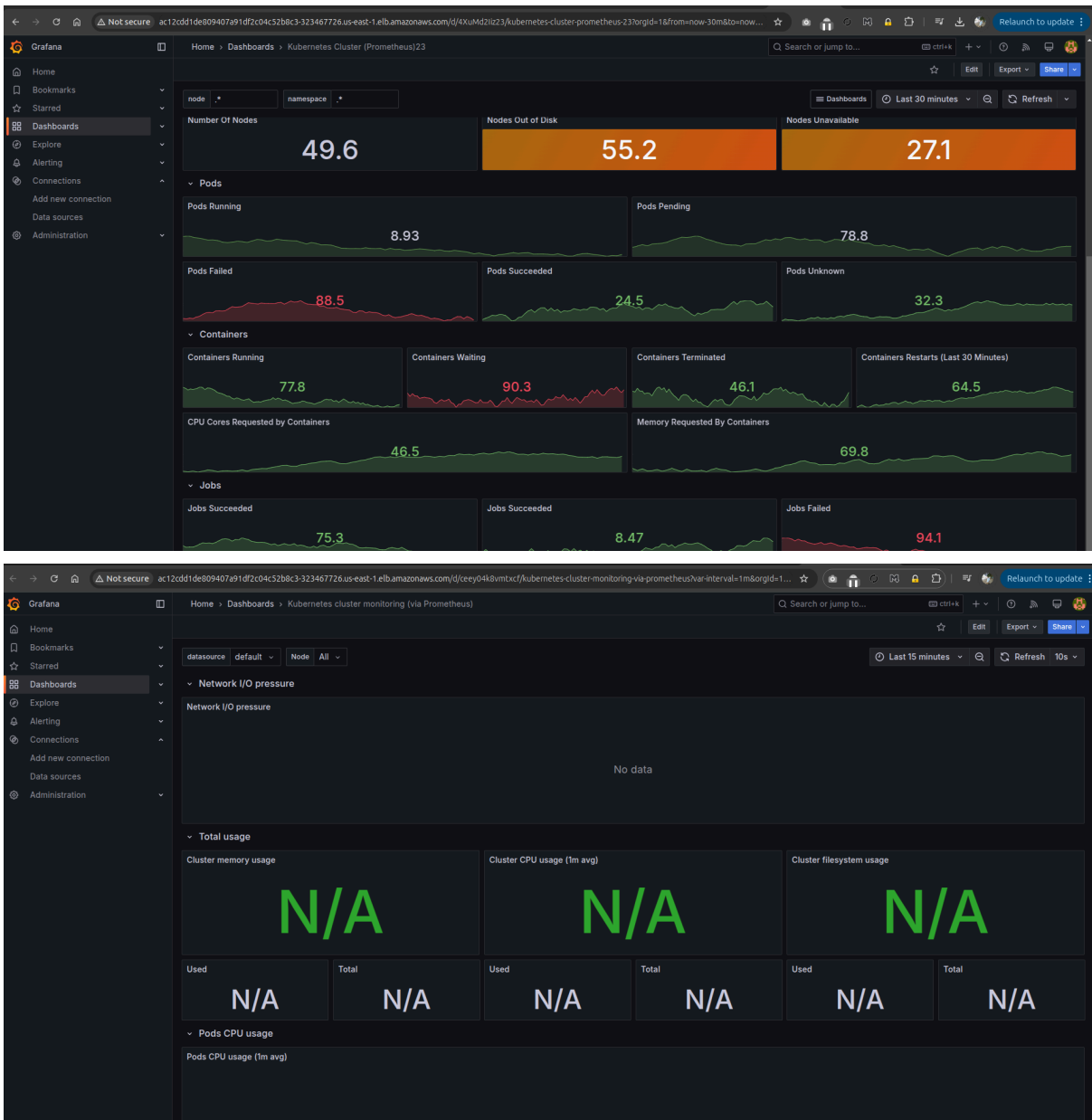
[illegible]

MundosE - <https://mundose.com/index.html>

Adicional:(elb)/pinfg6/grupo6.html descripcion del equipo 6

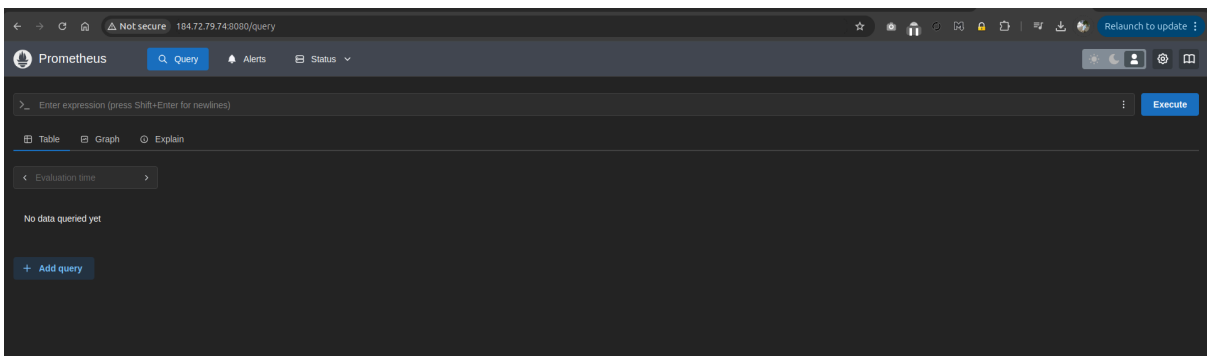
Grafana:





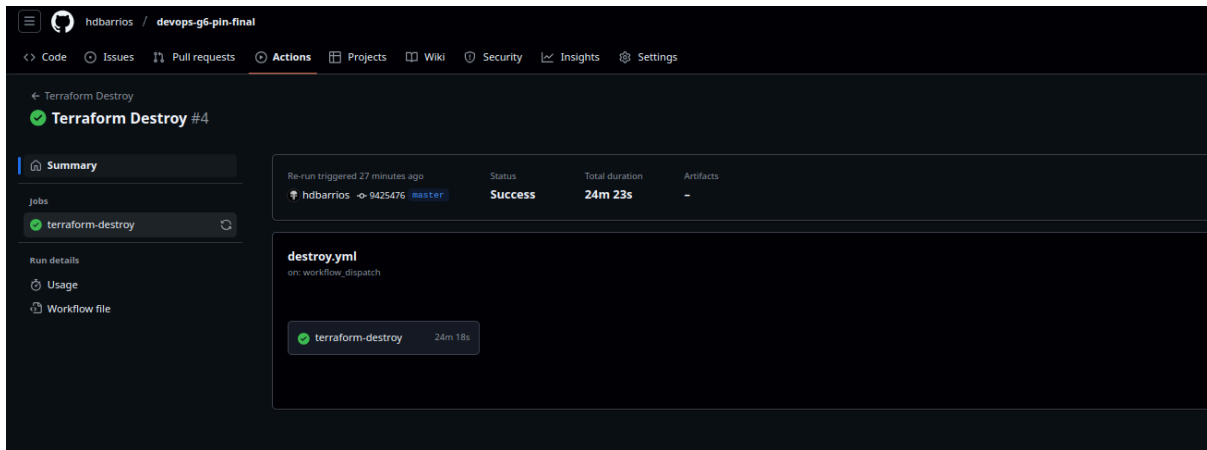
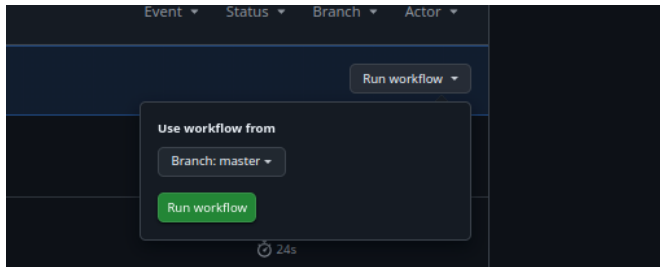
Port-Froward Manual: Desde la instancia EC2 conexi3n SSH.

```
ubuntu@ip-10-11-1-177:~$ 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
```



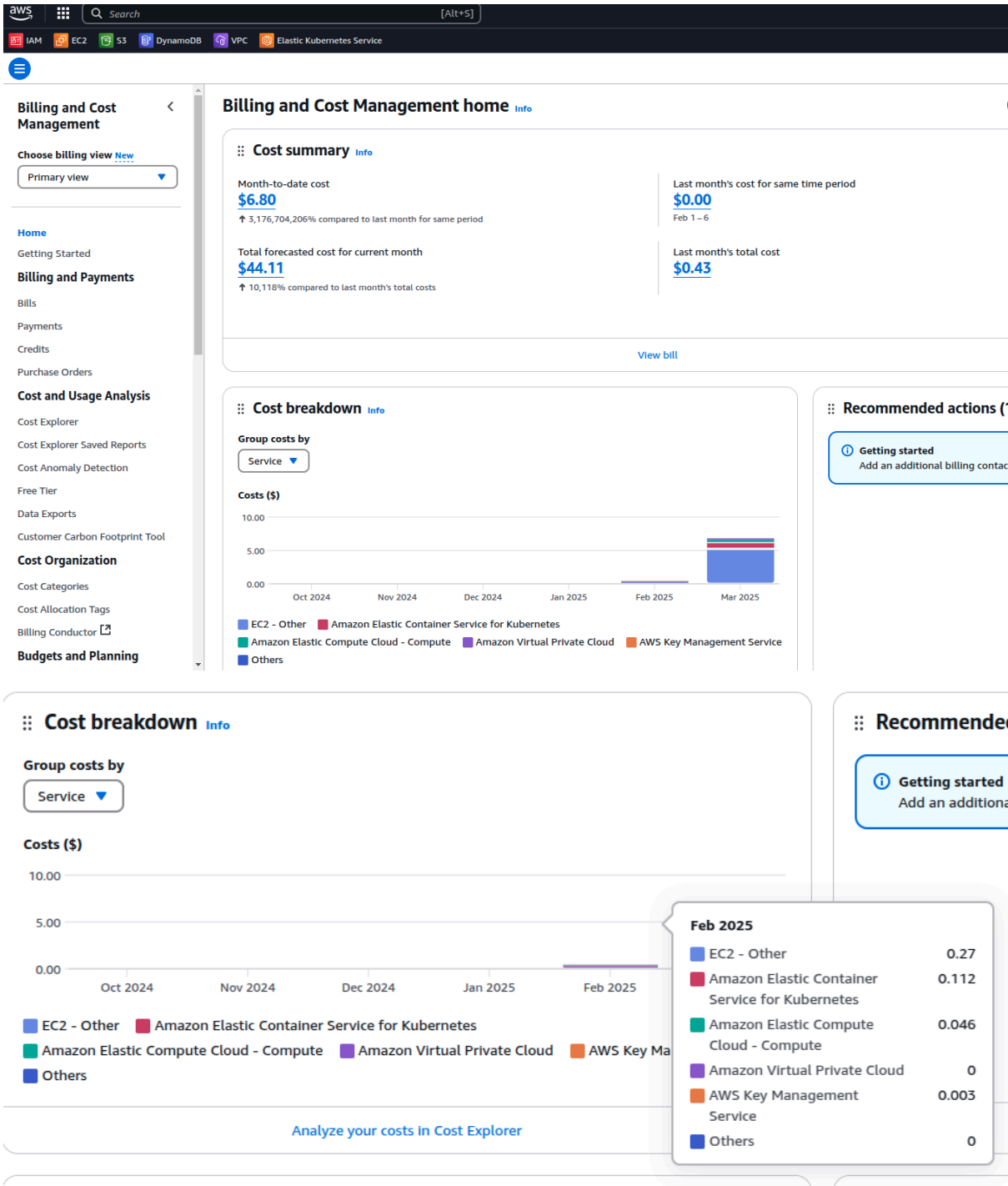
MundosE - <https://mundose.com/index.html>

Para el Destroy: Ejecucion de Actinons con Master:



ANEXOS:

Costos relacionados:



Pre- Requisitos:

Instalar terraform

<https://developer.hashicorp.com/terraform/tutorials/aws-get-started/install-cli>

```
$ sudo apt-get update && sudo apt-get install -y gnupg software-properties-common

$ wget -O- https://apt.releases.hashicorp.com/gpg | \
gpg --dearmor | \
sudo tee /usr/share/keyrings/hashicorp-archive-keyring.gpg > /dev/null

$ gpg --no-default-keyring \
--keyring /usr/share/keyrings/hashicorp-archive-keyring.gpg \
--fingerprint

$ echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] \
https://apt.releases.hashicorp.com $(lsb_release -cs) main" | \
sudo tee /etc/apt/sources.list.d/hashicorp.list

$ sudo apt update && sudo apt-get install terraform -y

$ terraform -version
Terraform v1.10.2
on linux_amd64
```

Adicional puedes instalar **tfenv** para tener varias versiones de Terraform:

<https://github.com/tfutils/tfenv>

```
$ export PATH="$HOME/.tfenv/bin:$PATH"    #INCLUIR EN ~/.bash_profile
$ tfenv
tfenv 3.0.0
Usage: tfenv <command> [<options>]
```

Commands:

install	Install a specific version of Terraform
use	Switch a version to use
uninstall	Uninstall a specific version of Terraform
list	List all installed versions
list-remote	List all installable versions
version-name	Print current version
init	Update environment to use tfenv correctly.
pin	Write the current active version to ~/.terraform-version

```
$ tfenv use 1.10.2
No installed versions of terraform matched '1.10.2:^1.10.2$'. Trying to install a
matching version since TFENV_AUTO_INSTALL=true
Installing Terraform v1.10.2
Downloading                                release                                tarball                                from
https://releases.hashicorp.com/terraform/1.10.2/terraform_1.10.2_linux_amd64.zip
#####
#####
##### 100.0%
Downloading                                SHA                                hash                                file                                from
https://releases.hashicorp.com/terraform/1.10.2/terraform_1.10.2_SHA256SUMS
```

```
Not instructed to use Local PGP (/home/hbarrios/.tfenv/use-{gpgv,gnupg}) & No
keybase install found, skipping OpenPGP signature verification
Archive: /tmp/tfenv_download.Yfp59d/terraform_1.10.2_linux_amd64.zip
  inflating: /home/hbarrios/.tfenv/versions/1.10.2/LICENSE.txt
  inflating: /home/hbarrios/.tfenv/versions/1.10.2/terraform
Installation of terraform v1.10.2 successful. To make this your default version,
run 'tfenv use 1.10.2'
Switching default version to v1.10.2
Default version (when not overridden by .terraform-version or
TFENV_TERRAFORM_VERSION) is now: 1.10.2
```

Evaluar código terraform y credenciales aws:

Lista de comandos de Terraform que puedes usar para probar y luego aplicar tu configuración en los archivos de Terraform:

1. Inicializar Terraform

Primero, se debe inicializar el entorno de Terraform. Esto instalará los proveedores necesarios y configurará tu backend (si lo estás usando).

```
terraform init -backend-config="profile=terraform-admin"
```

Este comando se ejecuta una sola vez cuando configuras un nuevo proyecto Terraform o cuando haces cambios en los proveedores y módulos.

```
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g6-pinFinal 16:34:42 (test dc42e15) $ terraform init -backend-config="profile=terraform-admin"
Initializing the backend...
Initializing modules...
Initializing provider plugins...
- Reusing previous version of hashicorp/cloudinit from the dependency lock file
- Reusing previous version of hashicorp/null from the dependency lock file
- Reusing previous version of hashicorp/aws from the dependency lock file
- Reusing previous version of hashicorp/tls from the dependency lock file
- Reusing previous version of hashicorp/time from the dependency lock file
- Using previously-installed hashicorp/time v0.12.1
- Using previously-installed hashicorp/cloudinit v2.3.6
- Using previously-installed hashicorp/null v3.2.3
- Using previously-installed hashicorp/aws v5.88.0
- Using previously-installed hashicorp/tls v4.0.6

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g6-pinFinal 16:34:48 (test dc42e15) $
```

2. Verificar la configuración (Planificación)

Para revisar qué cambios realizará Terraform en tu infraestructura, se puede ejecutar el comando **terraform plan**. Este comando no realizará ningún cambio, solo mostrará una descripción detallada de lo que se va a hacer.

```
terraform plan -var-file=profiles/pinf.tfvars -out=tfplan
```

```
chbarrios@bubirai: /workspace/specs/repos/hdbarrios/devops-g6-pin$ final 09:26:12 (test edd2f7) $ terraform plan -var-file=profiles/pinf.tfvars -out=tfplan
Acquiring state lock. This may take a few moments...
data.aws_availability_zones.azs: Reading...
data.aws_availability_zones.azs: Read complete after 1s [id=us-east-1]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:
```

```
Plan: 95 to add, 0 to change, 0 to destroy.

Changes to Outputs:
+ account_id                = "336697232168"
+ aws_admin_entries         = [
+   admin_role              = [
+     access_entry_arn      = (known after apply)
+     cluster_name          = (known after apply)
+     created_at            = (known after apply)
+     id                    = (known after apply)
+     kubernetes_groups     = (known after apply)
+     modified_at           = (known after apply)
+     principal_arn         = (known after apply)
+     tags                  = [
+       Name                = "mundos-e"
+       environment         = "PRD"
+       equipo              = "GrupoD"
+       proyecto            = "PINF"
+       repository          = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+     ]
+   ]
+   tags_all               = [
+     Name                  = "mundos-e"
+     environment           = "PRD"
+     equipo                = "GrupoD"
+     proyecto              = "PINF"
+     repository            = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+   ]
+   timeouts               = null
+   type                   = "STANDARD"
+   user_name               = (known after apply)
+ ]
+ cluster_creator           = [
+   access_entry_arn      = (known after apply)
+   cluster_name          = (known after apply)
+   created_at            = (known after apply)
+   id                    = (known after apply)
+   kubernetes_groups     = (known after apply)
+   modified_at           = (known after apply)
+   principal_arn         = "arn:aws:iam::336697232168:user/pin-f"
+   tags                  = [
+     Name                = "mundos-e"
+     environment         = "PRD"
+     equipo              = "GrupoD"
+     proyecto            = "PINF"
+     repository          = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+   ]
+   tags_all               = [
+     Name                  = "mundos-e"
+     environment           = "PRD"
+     equipo                = "GrupoD"
+     proyecto              = "PINF"
+     repository            = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+   ]
+   timeouts               = null
+   type                   = "STANDARD"
+   user_name               = (known after apply)
+ ]
+ programatic_user         = [
+   access_entry_arn      = (known after apply)
+   cluster_name          = (known after apply)
+   created_at            = (known after apply)
+   id                    = (known after apply)
+   kubernetes_groups     = (known after apply)
+   modified_at           = (known after apply)
+   principal_arn         = "arn:aws:iam::336697232168:user/ec2_admin_role_cicd"
+   tags                  = [
+     Name                = "mundos-e"
+     environment         = "PRD"
+     equipo              = "GrupoD"
+     proyecto            = "PINF"
+     repository          = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+   ]
+   tags_all               = [
+     Name                  = "mundos-e"
+     environment           = "PRD"
+     equipo                = "GrupoD"
+     proyecto              = "PINF"
+     repository            = "git@github.com:chdbarrios/devops-g6-pin-final.git"
+   ]
+   timeouts               = null
+   type                   = "STANDARD"
+   user_name               = (known after apply)
+ ]
+ ]
+ eks_cluster_certificate_authority_data = (known after apply)
+ eks_cluster_endpoint                = (known after apply)
+ eks_cluster_name                     = "mundos-e"
+ instance_id                         = (known after apply)
+ instance_ip                         = (known after apply)
+ instance_key_name                    = "pin"
+ instance_private_dns                 = (known after apply)
+ instance_private_ip                 = (known after apply)
+ instance_public_dns                 = (known after apply)
+ instance_state                       = (known after apply)
+ instance_type                       = "t2.micro"
+ internet_gateway_id                 = (known after apply)
+ programatic_user_access_key          = (sensitive value)
+ programatic_user_name                = "ec2_admin_role_cicd"
+ route_table_id                      = (known after apply)
+ security_group_id                   = (known after apply)
+ subnet_id                           = (known after apply)
+ vpc_id                              = (known after apply)
```

Save the plan to: tfplan

To perform exactly these actions, run the following command to apply:

```
terraform apply "tfplan"
```

Para este proyecto se debe especificar el archivo de variables `pinf.tfvarss` con la opción `-var-file` para que Terraform use las configuraciones definidas en ese archivo.

Salida esperada: Terraform mostrará un resumen de los recursos que se van a crear, modificar o destruir.

Nota:

- se puede ejecutar para validar sintaxis: `terraform validate`

Permite tener código de salida si se quiere implementar CI/CD:

```
terraform plan -var-file=profiles/pinf.tfvarss -out=tfplan  
-detailed-exitcode && echo $?
```

Código de salida 0: No hay cambios

Código de salida 1: Ocurrió un error

Código de salida 2: Se detectaron cambios

3. Aplicar la configuración (Ejecutar cambios)

Si todo está bien con el plan y se puede aplicar los cambios, ejecuta:

```
terraform apply -var-file=profiles/pinf.tfvarss -auto-approve
```

*Terraform pedirá confirmación antes de proceder. Al estar seguro de que los cambios son correctos, se escribe **yes** para confirmar. con el flag **-auto-approve** se evita la interacción, mismo proceso que se usa en github-actions.*

```
- name: Terraform apply  
  if: github.event_name == 'push' # Solo en push a master (es decir, cuando el PR se mergea)  
  working-directory: terraform-pinf  
  run: |  
    terraform apply -var-file=profiles/pinf.tfvars -auto-approve -input=false
```

```
hearnings@neutral: /workspaces/mundosE/infra/terraform/mundosE-pinf$ terraform apply -var-file=profiles/pinf.tfvars -auto-approve  
Acquiring state lock. This may take a few moments...  
module.eks.module.kms.data.aws_caller_identity.current[0]: Reading...  
module.eks.data.aws_partition.current[0]: Reading...  
module.ebs_csi_driver_aws.data.aws_region.current: Reading...  
module.eks.data.aws_caller_identity.current[0]: Reading...  
module.ebs_csi_driver_aws.data.aws_region.current: Reading...  
module.ebs_csi_driver_aws.data.aws_region.current: Read complete after 0s [id=us-east-1]  
module.eks.data.aws_partition.current[0]: Read complete after 0s [id=aws]  
module.ebs_csi_driver_aws.data.aws_region.current: Read complete after 0s [id=us-east-1]  
data.aws_availability_zones.azs: Reading...  
module.ebs_csi_driver_aws.data.aws_partition.current: Reading...  
module.ebs_csi_driver_aws.data.aws_caller_identity.current: Reading...  
module.ebs_csi_driver_aws.data.aws_partition.current: Reading...  
module.eks.module.kms.data.aws_partition.current[0]: Reading...  
module.eks.data.aws_partition.current: Read complete after 0s [id=aws]  
module.ebs_csi_driver_aws.data.aws_partition.current: Read complete after 0s [id=aws]  
module.eks.data.aws_iam_policy_document.assume_role_policy[0]: Read complete after 0s [id=2830595799]  
module.ebs_csi_driver_aws.data.aws_iam_policy_document.ebs_csi[0]: Reading...  
module.ebs_csi_driver_aws.data.aws_iam_policy_document.ebs_csi[0]: Read complete after 0s [id=3064053908]  
module.eks.data.aws_iam_policy_document.ebs_csi[0]: Reading...  
module.ebs_csi_driver_aws.data.aws_iam_policy_document.ebs_csi[0]: Reading...  
module.eks.data.aws_iam_policy_document.ebs_csi[0]: Read complete after 0s [id=513122117]  
module.eks_csi_driver_aws.data.aws_iam_policy_document.ebs_csi[0]: Read complete after 0s [id=435063099]  
module.eks.module.kms.data.aws_caller_identity.current[0]: Read complete after 0s [id=536697232168]  
module.eks.data.aws_caller_identity.current[0]: Read complete after 0s [id=536697232168]  
module.eks.data.aws_iam_session_context.current[0]: Reading...  
module.eks.data.aws_iam_session_context.current[0]: Read complete after 0s [id=arn:aws:iam::536697232168:user/pln-f]  
module.ebs_csi_driver_aws.data.aws_caller_identity.current: Read complete after 0s [id=536697232168]  
module.ebs_csi_driver_aws.data.aws_caller_identity.current: Read complete after 1s [id=536697232168]  
data.aws_availability_zones.azs: Read complete after 1s [id=us-east-1]  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_partition.current: Reading...  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_caller_identity.current: Reading...  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_partition.current: Read complete after 0s [id=aws]  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_iam_policy_document.assume_role_policy[0]: Reading...  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_iam_policy_document.assume_role_policy[0]: Read complete after 0s [id=2560088296]  
module.eks.module.eks_managed_node_group["main_node_group"].data.aws_caller_identity.current: Read complete after 0s [id=536697232168]  
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:  
+ create
```

...

Nota: en la instancia, para validar la aplicación del provider.sh, basta con hacer un `cat /var/log/cloud-init-output.log`

...

Apply complete! Resources: 95 added, 0 changed, 0 destroyed.

Outputs:

```

account_id = "536697232168"
eks_access_entries = {
    "admin_role" = {
        "access_entry_arn" = "arn:aws:eks:us-east-1:536697232168:access-entry/mundos-e/role/536697232168/ec2_admin_role_cicd/4ccab3ec-f30c-4ed5-8470-e14b58b3141d"
        "cluster_name" = "mundos-e"
        "created_at" = "2025-03-05T19:48:09Z"
        "id" = "mundos-e:arn:aws:iam:536697232168:role/ec2_admin_role_cicd"
        "kubernetes_groups" = toset([])
        "modified_at" = "2025-03-05T19:48:09Z"
        "principal_arn" = "arn:aws:iam:536697232168:role/ec2_admin_role_cicd"
        "tags" = tomap({
            "Name" = "mundos-e"
            "environment" = "PRD"
            "equipo" = "Grupo6"
            "proyecto" = "PINF"
            "repositorio" = "git@github.com:hdbarrios/devops-g6-pin-final.git"
        })
        "tags_all" = tomap({
            "Name" = "mundos-e"
            "environment" = "PRD"
            "equipo" = "Grupo6"
            "proyecto" = "PINF"
            "repositorio" = "git@github.com:hdbarrios/devops-g6-pin-final.git"
        })
        "timeouts" = null /* object */
        "type" = "STANDARD"
        "user_name" = "arn:aws:sts:536697232168:assumed-role/ec2_admin_role_cicd/{{SessionName}}"
    }
}

cluster_creator = {
    "access_entry_arn" = "arn:aws:eks:us-east-1:536697232168:access-entry/mundos-e/user/536697232168/pin-f/eccab3ec-f30a-7ac5-dc48-eb3e685bdb80"
    "cluster_name" = "mundos-e"
    "created_at" = "2025-03-05T19:48:08Z"
    "id" = "mundos-e:arn:aws:iam:536697232168:user/pin-f"
    "kubernetes_groups" = toset([])
    "modified_at" = "2025-03-05T19:48:08Z"
    "principal_arn" = "arn:aws:iam:536697232168:user/pin-f"
    "tags" = tomap({
        "Name" = "mundos-e"
        "environment" = "PRD"
        "equipo" = "Grupo6"
        "proyecto" = "PINF"
        "repositorio" = "git@github.com:hdbarrios/devops-g6-pin-final.git"
    })
}

```

[illegible]

```

    "InstanceId": "i-0d3f7b5ced0e9e523",
    "InstanceIp": "10.212.94.255",
    "InstanceKeyName": "pin",
    "InstancePrivateDns": "ip-10-11-1-200.ec2.internal",
    "InstancePrivateIp": "10.11.1.200",
    "InstancePublicDns": "ec2-18-212-94-255.compute-1.amazonaws.com",
    "InstanceState": "running",
    "InstanceType": "t2.micro",
    "InternetGatewayId": "igw-00d36c15c7ef049ba",
    "ProgrammaticUserAccessKey": "sensitive",
    "ProgrammaticUserName": "ec2_admin_role_ctcd",
    "RouteTableId": "rtb-072fe5b23a3a4f6e",
    "SecurityGroupId": "sg-0b47f6c2761cc38b",
    "SubnetId": "subnet-07b0a6bd83b577f7",
    "VpcId": "vpc-03d0804d4ab1cd1678"
  },
  "barrios@bublr: /workspace$ space/roff/hdbarrios/devops-g6-pinFinal 10:51:38 (test cd24e15) $

```

4. Ver los resultados de la aplicación

Después de aplicar la configuración, Terraform mostrará la salida definida en tu archivo `outputs.tf`, si has configurado algún bloque `output`.

MundosE - <https://mundose.com/index.html>

Para obtener información adicional sobre los recursos creados (por ejemplo, la dirección IP pública de una instancia EC2), se puede usar:

```
terraform refresh -var-file=profiles/pinf.tfvars
```

5. Comprobar el estado actual de Terraform

Si se requiere ver el estado actual de la infraestructura gestionada por Terraform, ejecutar:

```
terraform show
```

```
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g6-pin-final 17:27:03 (test 0ba55c4) $ terraform show
# data.aws_availability_zones.azs:
data "aws_availability_zones" "azs" {
  group_names = [
    "us-east-1-zg-1",
  ]
  id          = "us-east-1"
  names       = [
    "us-east-1a",
    "us-east-1b",
    "us-east-1c",
    "us-east-1d",
    "us-east-1e",
    "us-east-1f",
  ]
  state       = "available"
  zone_ids    = [
    "us-east-1a",
    "us-east-1b",
    "us-east-1c",
    "us-east-1d",
    "us-east-1e",
    "us-east-1f",
  ]
}

# data.aws_security_group.eks_cluster_sg:
data "aws_security_group" "eks_cluster_sg" {
  arn          = "arn:aws:ec2:us-east-1:536697232168:security-group/sg-07f0cdd740d58f93f"
  description  = "EKS cluster security group"
  id           = "sg-07f0cdd740d58f93f"
  name         = "mundos-e-cluster-2025030520114410180000000c"
  tags         = {
    "Name"       = "mundos-e-cluster"
    "environment" = "PRD"
    "equipo"      = "Grupo6"
    "proyecto"    = "PINF"
    "repositorio" = "git@github.com:hdbarrios/devops-g6-pin-final.git"
  }
  vpc_id       = "vpc-0f7b4f08533629f63"

  filter {
    name = "tag:Name"
    values = [
      "mundos-e-cluster",
    ]
  }
}
```

Salida en yml

(

instalación:

```
export VERSION=v4.2.0 && export BINARY=yq_linux_amd64 && wget
https://github.com/mikefarah/yq/releases/download/${VERSION}/${
BINARY}.tar.gz -O - | tar xz && sudo mv ${BINARY}
/usr/bin/yq
```

)

```
terraform show -json | jq . | yq eval -P
```

6. Destruir la infraestructura (opcional)

Si se necesita destruir todos los recursos que has creado (por ejemplo, para probar la limpieza), puedes usar:

```
terraform destroy -var-file=profiles/pinf.tfvarss
```

Terraform solicitará confirmación. Escribe **yes** para proceder.

*Terraform pedirá confirmación antes de proceder. Al estar seguro de que los cambios son correctos, se escribe **yes** para confirmar. Con el flag **-auto-approve** se evita la interacción, mismo proceso que se usa en github-actions.*

```
module.eks.aws_security_group_rule.node["ingress_cluster_8443_webhook"]: Destruction complete after 5s
module.eks.aws_security_group_rule.node["ingress_cluster_kubelet"]: Destruction complete after 6s
module.eks.aws_security_group_rule.node["ingress_ec2_all"]: Destruction complete after 7s
module.eks.aws_security_group_rule.node["ingress_self_coredns_udp"]: Destruction complete after 8s
module.eks.aws_security_group.cluster[0]: Destroying... [id=sg-0a0c658bd34081c43]
module.eks.aws_security_group.node[0]: Destroying... [id=sg-03e0bb3ee10b9df5]
module.eks.aws_security_group.node[0]: Destruction complete after 1s
module.eks.aws_security_group.cluster[0]: Destruction complete after 1s
aws_vpc.vpc: Destroying... [id=vpc-03d00d484b1cd1678]
aws_vpc.vpc: Destruction complete after 1s

Destroy complete! Resources: 95 destroyed.
hbarrios@nubiral: /workspace/space/repos/hdbarrios/devops-g8-plnFinal 17:07:21 (test dc42e15) $
```

MundoS

hdbarrios / devops-g8-pin-final

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Terraform Apply

Merge pull request #19 from hdbarrios/test #51

Re run all jobs

Summary

jobs

run details

Usage

Workflow file

validation_infra

view raw

Search logs

Set up job

1

Install kubect

25

Install Helm

25

Install AWS CLI

24

Verify facts of cluster EKS

104

Port-forward prometheus-service

24

Post Run actions/checkout@v4

24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000