

## Ejercicio 2. Unidad 6

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### Creación de un contenedor y registro en ECR

#### requisitos

- Cuenta de AWS
- Conocimiento de Docker Dockerfile

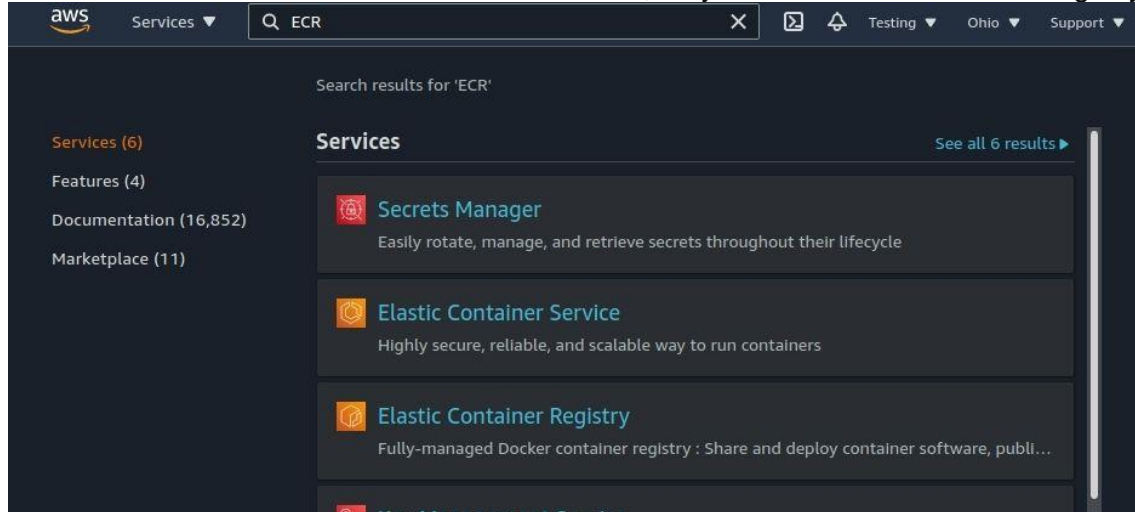
#### pasos

- Crear un repositorio
- Ejecutar una instancia con el rol de IAM (RoleLab)
- Crear un archivo Docker
- Crear una imagen desde el Dockerfile
- Subir la imagen al Registro

NOTA: Este Lab se supone que es lanzado en la región de N.Virginia. (us-east-1 ). En caso de que AWS Academy cambie la región hay que cambiar la región en los códigos de los ejemplos.

Por otro lado en donde ponga XXXXXXXX corresponde al numero de cuenta de AWS Academy que te lanza en ese momento que se puede consultar en el la consola de AWS en la parte superiro derecha.

1. En la consola de administración de AWS, vaya a Elastic Container Registry





## 2. Pulsa en Get Started



Containers

# Amazon Elastic Container Registry

## Share and deploy container software, publicly or privately

Amazon Elastic Container Registry (ECR) is a fully managed container registry that makes it easy to store, manage, share, and deploy your container images and artifacts anywhere.

Create a repository

[Get Started](#)

## How it works



### 3. Dale un nombre y haz clic en Crear repositorio

☰ ECR > Repositories > Create repository ⓘ

## Create repository

### General settings

**Visibility settings** ⓘ  
Choose the visibility setting for the repository.

☒ **Private**  
Access is managed by IAM and repository policy permissions.

☐ **Public**  
Publicly visible and accessible for image pulls.

**Repository name**  
Provide a concise name. A developer should be able to identify the repository contents by the name.

625181428504.dkr.ecr.us-east-2.amazonaws.com/

14 out of 256 characters maximum (2 minimum). The name must start with a letter and can only contain lowercase letters, numbers, hyphens, underscores, and forward slashes.

**Tag immutability** ⓘ  
Enable tag immutability to prevent image tags from being overwritten by subsequent image pushes using the same tag. Disable tag immutability to allow image tags to be overwritten.

☐ **Disabled**

ⓘ Once a repository is created, the visibility setting of the repository can't be changed.

### Image scan settings

**Scan on push**  
Enable scan on push to have each image automatically scanned after being pushed to a repository. If disabled, each image scan must be manually started to get scan results.

☐ **Disabled**

### Encryption settings

4. Una vez que termine, copie la URI para usarla más tarde.

Amazon Container Services

Amazon ECS

Clusters

Task definitions

Amazon EKS

Clusters

Amazon ECR

Repositories

Registries

Public Gallery

ECR > Repositories

PrivatePublic

Private repositories (1)

View push commands

Delete

Edit

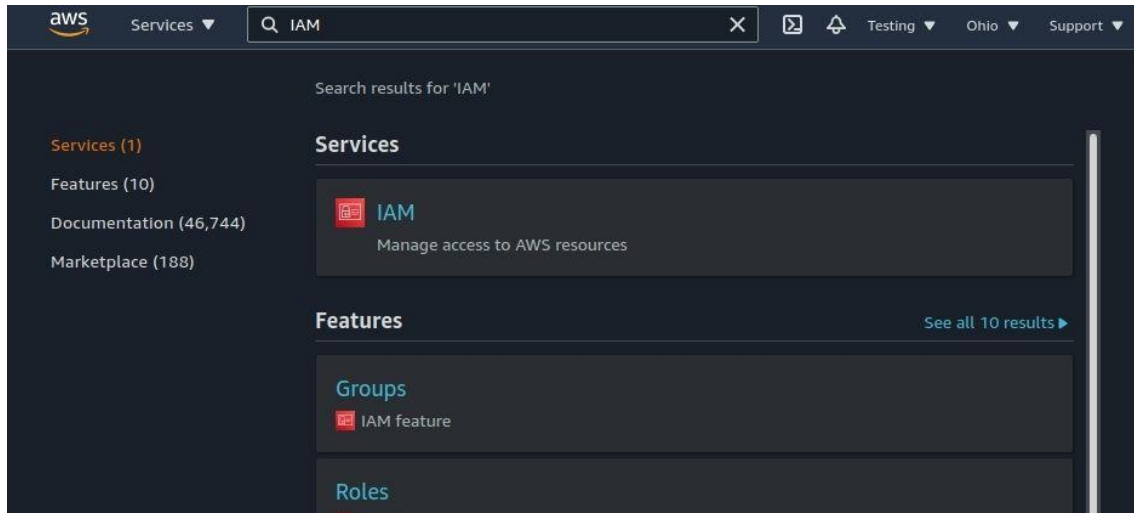
Create repository

Find repositories

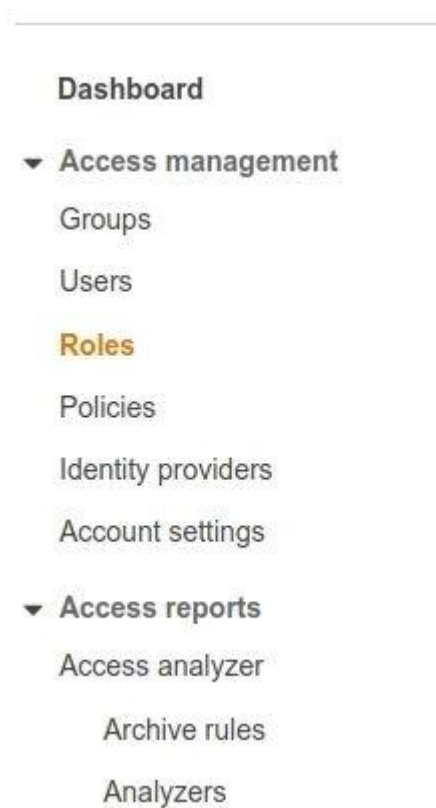
< 1 > ⚙

Repository name	URI	Created at
testrepository	625181428504.dkr.ecr.us-east-2.amazonaws.com/testrepository	01/06/21, 3:50:54 PM

5. Una vez que se crea el repositorio, vaya a IAM



6. Pulsa en Roles



7. Agregue a LabRole estas políticas:

▼ Attach permissions policies


Choose one or more policies to attach to your new role.

Create policy

Filter policies ▼

Q AmazonEc2ContainerRegistryFull

SI

	Policy name ▼	Used as
<input checked="" type="checkbox"/>	 AmazonEC2ContainerRegistryFullAccess	None

▼ Attach permissions policies


Choose one or more policies to attach to your new role.

Create policy

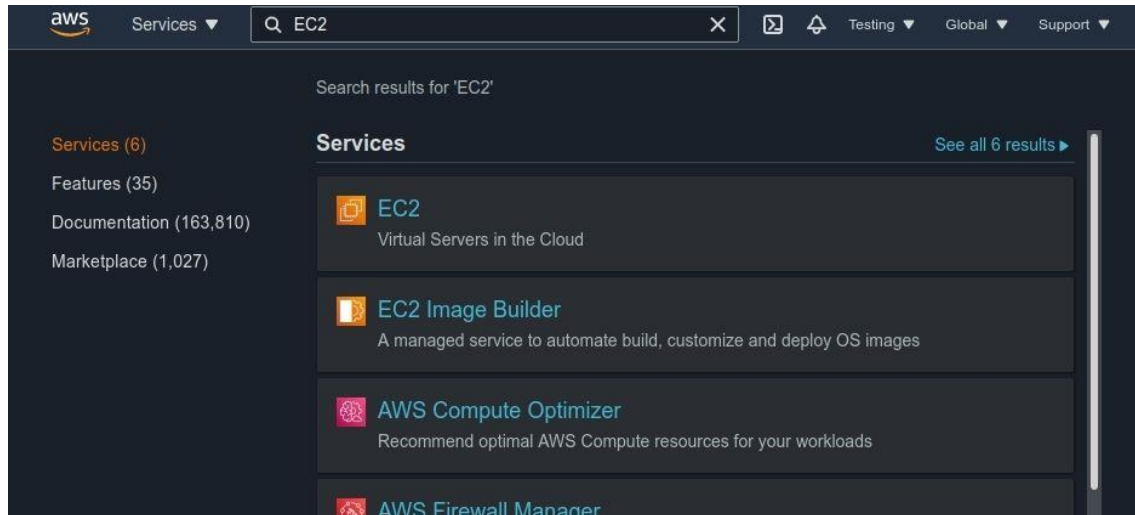
Filter policies ▼

Q AmazonEc2ContainerRegistryFull

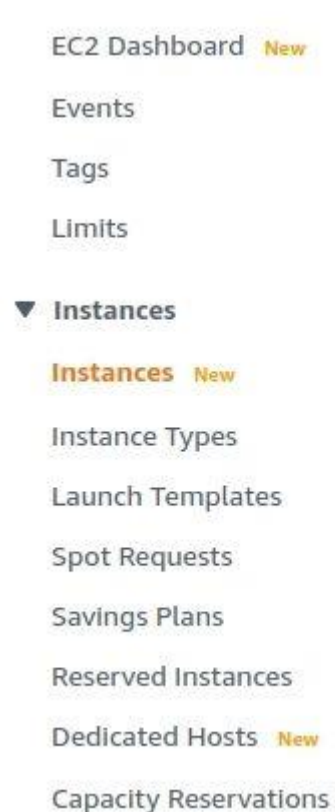
SI

	Policy name ▼	Used as
<input checked="" type="checkbox"/>	 AmazonEC2ContainerRegistryFullAccess	None

## 8. Pulsa en EC2



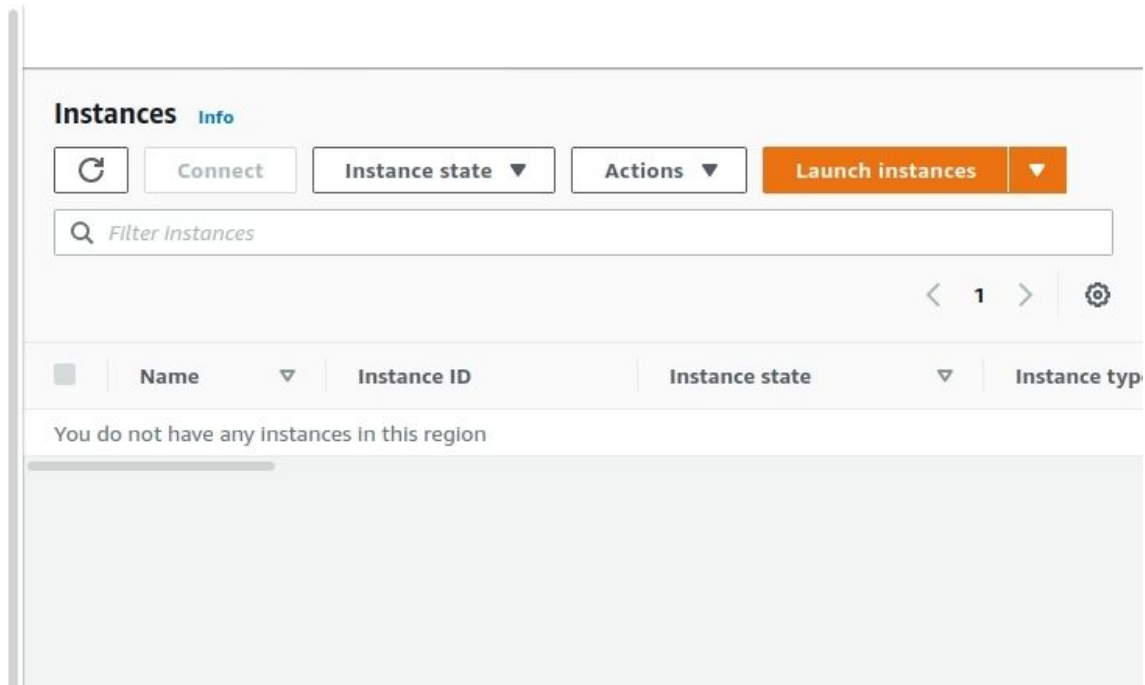
## 9. Ve a Instances








10. Pulsa en Launch instances



11. Seleccione Amazon Linux 2 AMI de 64 bits

  
**Amazon Linux**  
Free tier eligible

**Amazon Linux 2 AMI (HVM), SSD Volume Type -**  
ami-0a0ad6b70e61be944 (64-bit x86) / ami-0f278a714e7f68bd9 (64-bit Arm)  

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.

Root device type: ebs    Virtualization type: hvm    ENA Enabled: Yes

**Select**  
☒ 64-bit (x86)  
☐ 64-bit (Arm)

## 12. Seleccione t2.micro y haga clic en Siguiente

1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review

### Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	
<input type="checkbox"/>	t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	
<input type="checkbox"/>	t3	t3.medium	2	4	EBS only	Yes	Up to 5 Gigabit	
<input type="checkbox"/>	t3	t3.large	2	8	EBS only	Yes	Up to 5 Gigabit	

Cancel
Previous
Review and Launch
Next: Configure Instance Details



13. En Configurar detalles de la instancia, seleccione 1 instancia, asegúrese de tener habilitada la asignación automática de IP pública y, en el rol de IAM, seleccione el rol que creamos ECR\_Full\_Access y haga clic en Revisar y lanzar

1. Choose AMI   2. Choose Instance Type   **3. Configure Instance**   4. Add Storage   5. Add Tags   6. Configure Security Group   7. Review

### Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	<input type="text" value="1"/>	<a href="#">Launch into Auto Scaling Group</a>
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-2cc07c47 (default)"/>	<a href="#">Create new VPC</a>
Subnet	<input type="text" value="subnet-736dc918   Default in us-east-2a"/> 4091 IP Addresses available	<a href="#">Create new subnet</a>
Auto-assign Public IP	<input type="text" value="Use subnet setting (Enable)"/>	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	<input type="text" value="Open"/>	
Domain join directory	<input type="text" value="No directory"/>	<a href="#">Create new directory</a>
IAM role	<input type="text" value="ECR_Full_Access"/>	<a href="#">Create new IAM role</a>
CPU options	<input type="checkbox"/> Specify CPU options	
Shutdown behavior	<input type="text" value="Stop"/>	
Stop - Hibernate behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply.	
Tenancy	<input type="text" value="Shared - Run a shared hardware instance"/> Additional charges will apply for dedicated tenancy.	

[Cancel](#)   [Previous](#)   **[Review and Launch](#)**   [Next: Add Storage](#)



## 14. Revisa la configuración y haz clic en Iniciar

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

### Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.


**⚠ Improve your instances' security. Your security group, launch-wizard-1, is open to the world.**

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.

You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

▼ AMI Details

Edit AMI

 **Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0a0ad6b70e61be944**

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is a...

Root Device Type: ebs    Virtualization type: hvm

▼ Instance Type

Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

▼ Security Groups

Edit security groups

Security group name

launch-wizard-1

Description

launch-wizard-1 created 2021-01-06T16:30:59.253-05:00

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ
SSH	TCP	22	0.0.0.0/0	

Cancel

Previous

Launch

## 15. Usa el par de claves, Vockey.

16. Si todo está bien, debería ver el mensaje de éxito, haga clic en Ver instancias

## Launch Status



### Your instances are now launching

The following instance launches have been initiated: [i-069f13198fd8141a6](#) [View launch log](#)



### Get notified of estimated charges

Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

## How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

### ▼ Here are some helpful resources to get you started

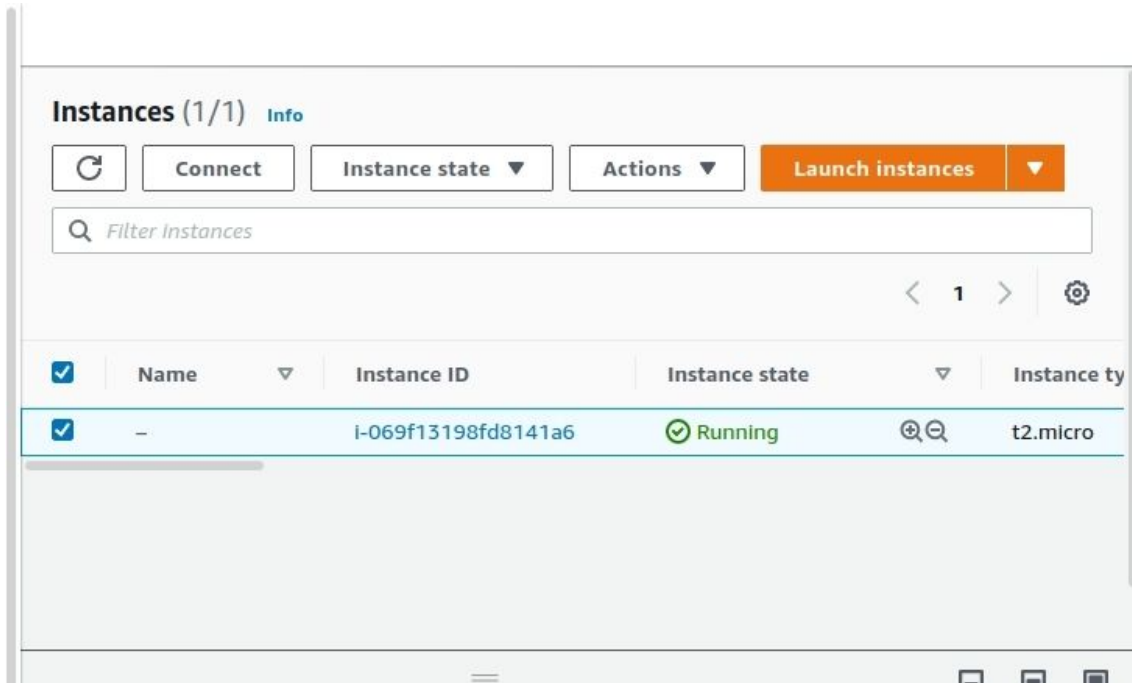
- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

[View Instances](#)

17 -18-19. Seleccione la instancia y haga clic en Conectar



The screenshot displays the AWS Management Console 'Instances' page. At the top, there's a header 'Instances (1/1)' with an 'Info' link. Below this is a toolbar containing a refresh button, a 'Connect' button, a dropdown for 'Instance state', a dropdown for 'Actions', and an orange 'Launch instances' button. A search bar labeled 'Filter Instances' is also present. The main area shows a table with one instance. The table has columns for selection, Name, Instance ID, Instance state, and Instance type. The instance is in a 'Running' state, indicated by a green checkmark and the word 'Running' in green. The instance type is 't2.micro'.

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type
<input checked="" type="checkbox"/>	-	i-069f13198fd8141a6	<span>Running</span>	t2.micro

## 20. Conéctese a la instancia

```
ssh -i "ecr-test.pem" ec2-user@ec2-3-12-71-26.us-east-2.compute.amazonaws.com
The authenticity of host 'ec2-3-12-71-26.us-east-2.compute.amazonaws.com
(3.12.71.26)' can't be established.
ECDSA key fingerprint is
SHA256:1tnWYvB5JvWGBG/seJYL9bC2l3QDxiTtusalwmyn8js.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-12-71-26.us-east-
2.compute.amazonaws.com,3.12.71.26' (ECDSA) to the list of known hosts.

 _ | _ | )
 _ | ( / Amazon Linux 2 AMI
 _ | _ | _ |

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-14-127 ~]$
```

## 21. Instala Docker

```
sudo su
yum -y install docker
```

## 22. Inicia Docker

```
systemctl start docker
```

(Nota: también lo podemos iniciar con la instrucción “service docker start”)

22b. Descarga en la carpeta de trabajo una sencillala web, la descomprimos y borramos el fichero .zip:

```
wget https://sanvalero-static-webs.s3.eu-west-1.amazonaws.com/Drink-Water.zip  
unzip Drink-Water.zip  
rm Drink-Water.zip
```

23. Cree un archivo llamado Dockerfile para crear una imagen Docker con un apache y la página web.

```
Vim Dockerfile
```

24. Copia los datos:

Utilizamos una imagen pública con PHP y Apache de Docker Enterprise.  
([https://hub.docker.com/\\_/php](https://hub.docker.com/_/php)). Copiamos los ficheros de la carpeta de trabajo a la ruta del apache del Docker y lo exponemos por el puerto 80.

```
FROM php:7.0-apache  
COPY . /var/www/html/  
EXPOSE 80
```



26. Creamos la imagen desde Dockerfile con docker built -t (nombre) y listamos las imágenes.

(NOTA: el espacio y el punto después del nombre es importante)

```
docker build -t myapache .  
docker images
```

27. Ejecuta la imagen y lista los procesos. Ejecutamos el Docker en el puerto 80.

```
docker run -d -p 80:80 myapache  
docker ps
```

(Opcional: también podríamos ejecutar esta otra instrucción:

```
docker run -d -p 81:80 --name drinkwater myapache
```

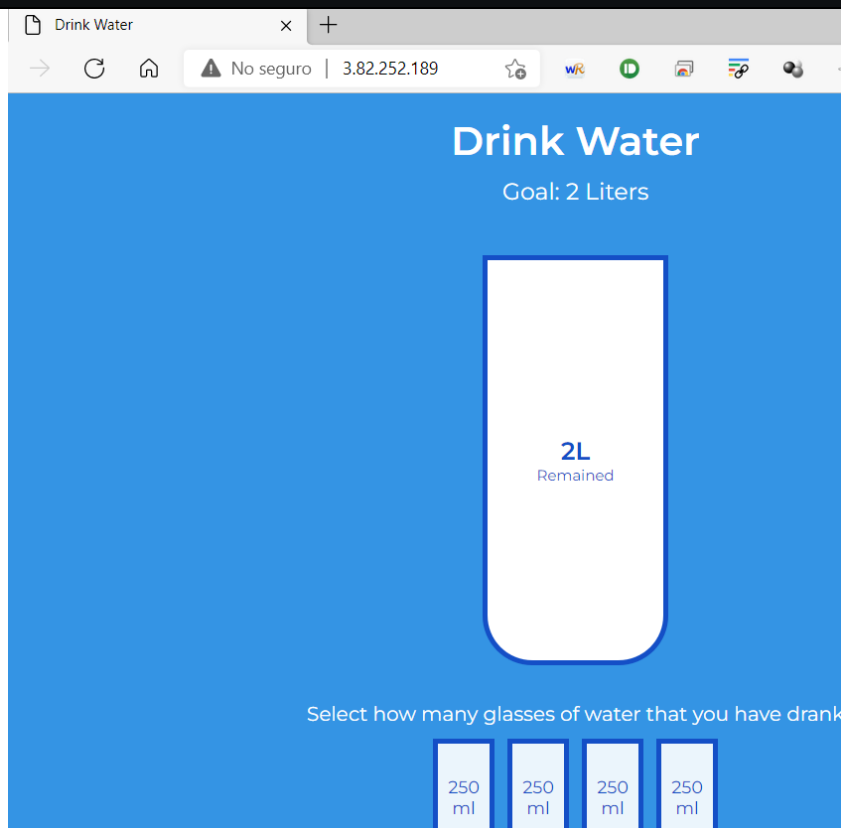
y arrancaríamos la misma imagen y lo expondríamos en el puerto 81. Además la imagen myapache se levantaría como un proceso Docker con el nombre drinkwater. Lo podemos comprobar con Docker ps)

```
root@tb-j15-3j-85-j2a-ecs-n2el]#  
8c9c2903e2b wlabscme „docker-bmp-euflboj“ 3 minutos ago hb 3 minutos 0'0'0'80->80\fc' ::80->80\fc p1916"colt  
0949e195284 wlabscme „docker-bmp-euflboj“ yronf a minutos ago hb yronf a minutos 0'0'0'8J->80\fc' ::8J->80\fc qltjkm9f6L  
01111111 ID IMAGE COMMAND CREATED STATUS PORTS NAMES
```



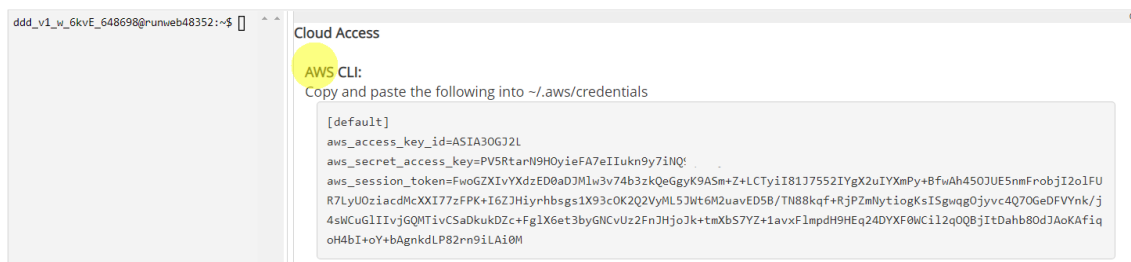
28. Pruebe que el contenedor se está adaptando con curl desde Linux o por navegador por la Ip de la EC2:

```
curl 172.0.0.1
```



29. Ejecutamos Aws configure en el Linux AMI e introducimos el acces key el secret acces key de AWS Academy. En la región, us-east-1 normalmente o la región donde tengamos el laboratorio creado y en tipo de fichero json.

Posteriormente modificamos el fichero ~/.aws/credentials y le agregamos el aws\_session\_token.



```
ddd_v1_w_6kvE_648698@runweb48352:~$  
Cloud Access  
AWS CLI:  
Copy and paste the following into ~/.aws/credentials  
[default]  
aws_access_key_id=ASIA30GJ2L  
aws_secret_access_key=PVSrtarN9HOyieFA7eIIukn9y7iNQ!  
aws_session_token=FwoGZXIvYXdzED0aDjMlw3v74b3zkQeGgyK9ASm+Z+LCTyiI81j7552IYgX2uIYXmPy+BfwAh450JUE5nmFrobjI2o1FU  
R7LyU0ziacdMcXXI77zFPK+IGZJHyrhbsgsIX93cOK2Q2VyML5JWt6M2uavED5B/TN88kqf+RjPZmlytiogKsISgwqg0jyvc4Q70GeDFVYnk/j  
4sWCuGLIIvjGQMTivCSaDkukDZc+FglX6et3byGNCvUz2FnJHjo3k+tmXbS7YZ+IavxFIimpdH9HEq24DYXF0WC1l2q0QBjItDahb8OdJAoKAfiq  
oH4bI+oY+bAgndLP82rn9iLAi0M
```

30. Obten el acceso de inicio de sesión al ECR con el comando aws ecr get-login donde xxxxxxxx es el numero de cuenta de AWS.

```
aws ecr get-login-password | docker login --username AWS --password-stdin  
xxxxxxx.dkr.ecr.us-east-1.amazonaws.com
```

31. Ahora etiquete la imagen con la imagen con el nombre ECR-DNS, donde xxxxx es el número de cuenta de AWS Academy.

```
docker tag myapache xxxxxxxxxxxx.dkr.ecr.us-east-  
1.amazonaws.com/testrepository:myapache
```

32. Puede verificar las imágenes con docker image ls

```
docker image ls
```

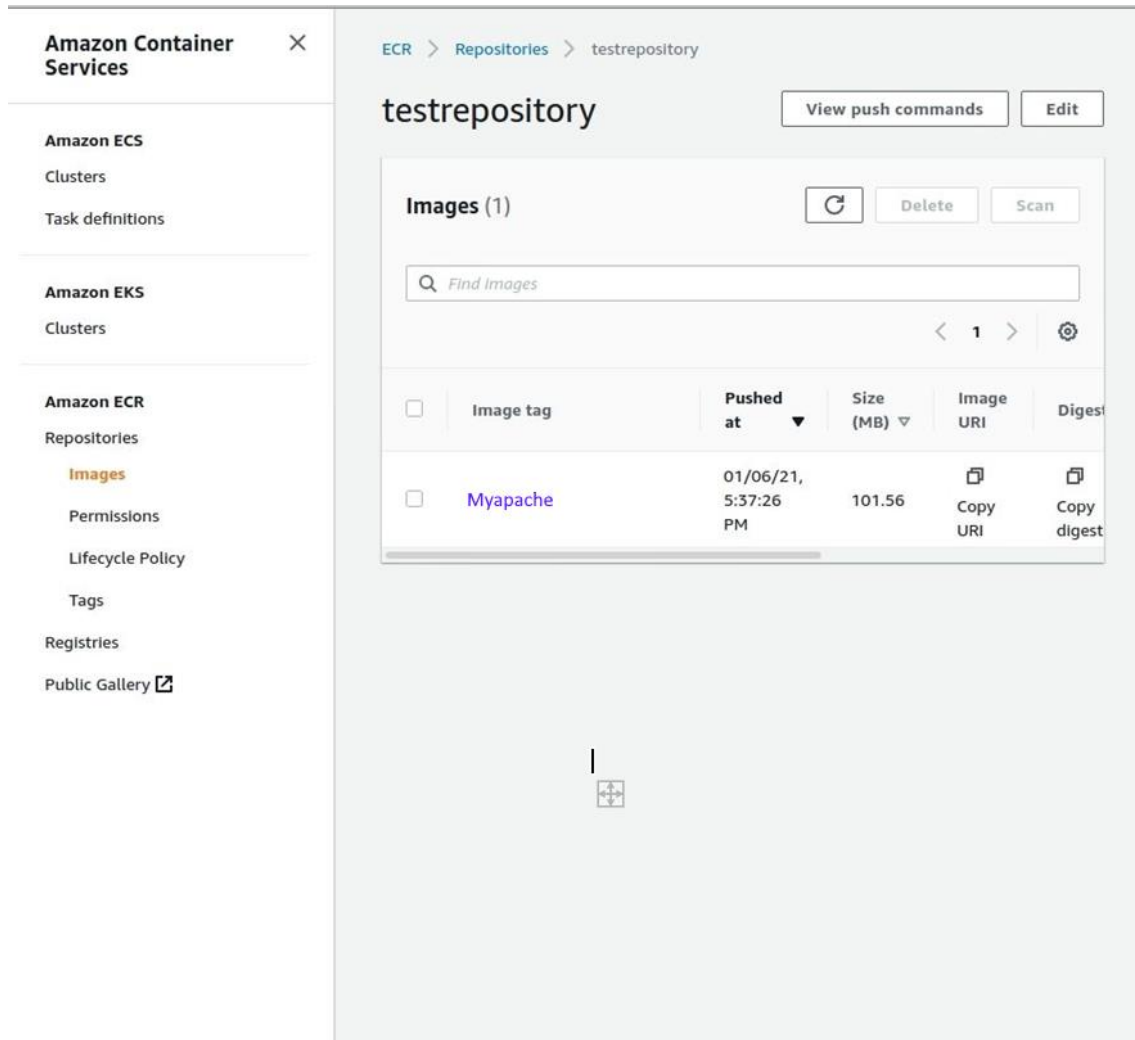
REPOSITORY	TAG	IMAGE ID
625181428504.dkr.ecr.us-east-2.amazonaws.com/testrepository	latest	f79bc35853c9
myapache	latest	f79bc35853c9
minutes ago		260MB
ubuntu	16.04	9499db781771
weeks ago		131MB

33. Sube la imagen a la ECR donde xxxxx es el número de cuenta de AWS Academy.

```
docker push xxxxxxxx.dkr.ecr.us-east-1.amazonaws.com/testrepository:myapache
```



34. En la Administración de la consola de AWS, dentro del repositorio, verá la imagen de la ventana con el nombre de myapache )



Estupendo, aprenderá a crear un repositorio de ECR y a crear y cargar una imagen de Docker.