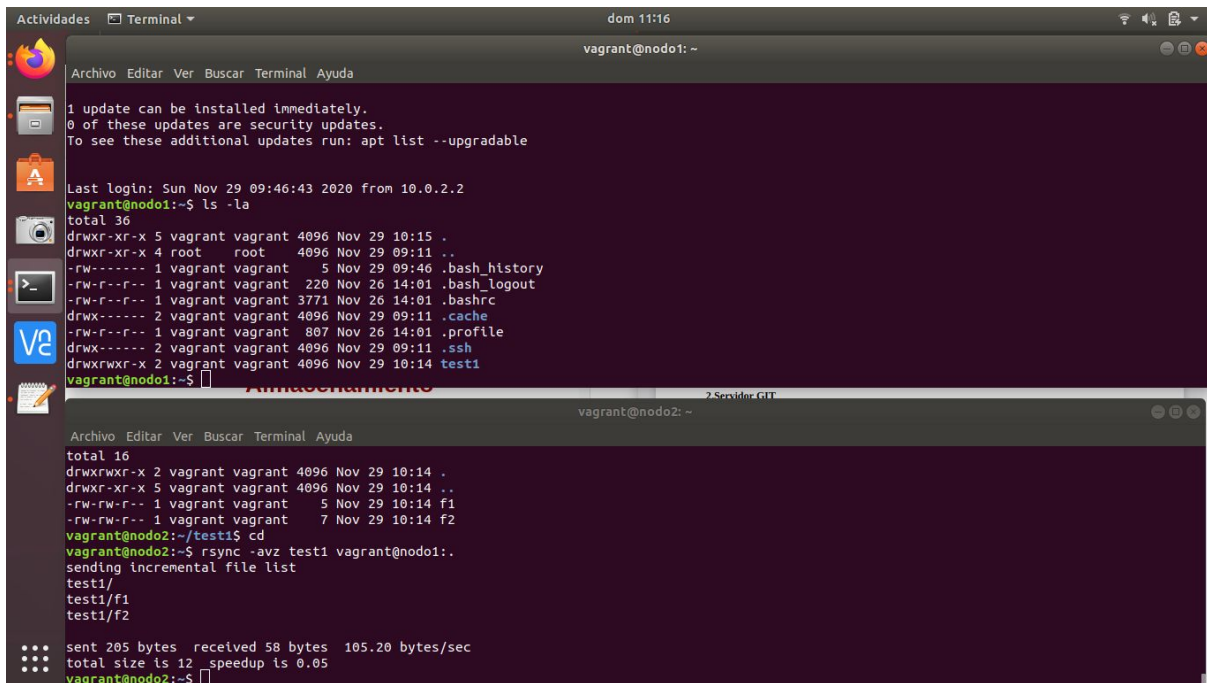


# CPD\_Practica\_8.

## Almacenamiento

### 1. Almacenamiento Rsync con SSH

#### SINCRONIZAMOS LAS CARPETAS



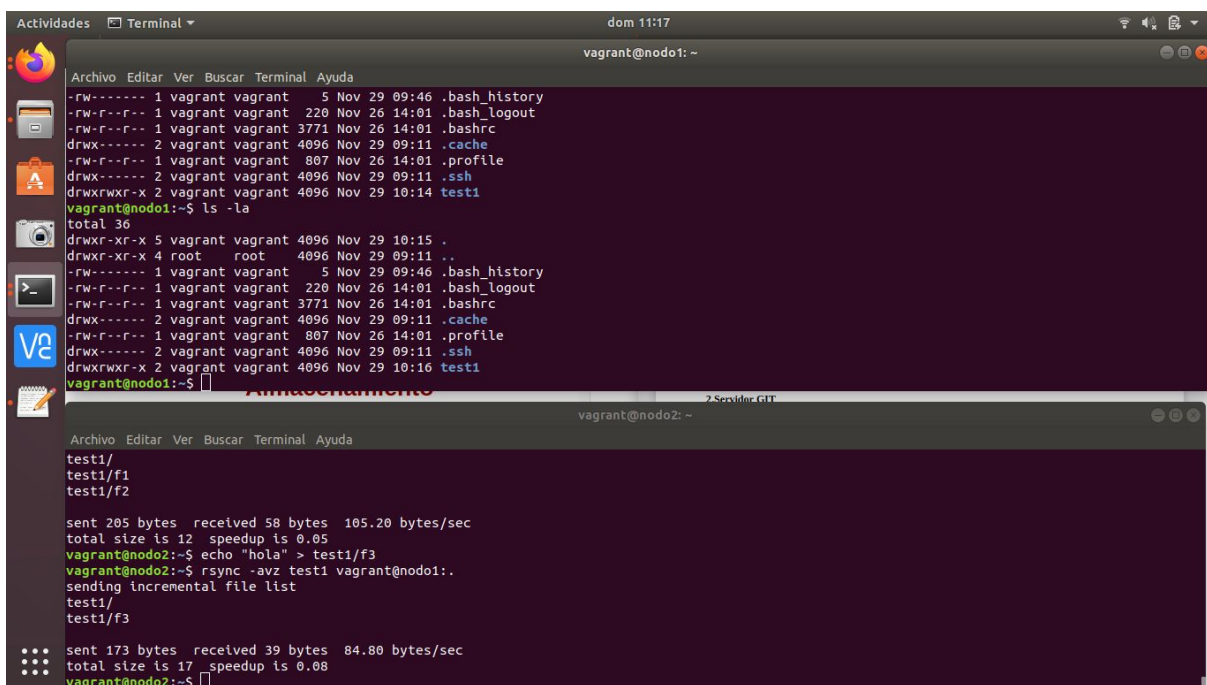
The screenshot shows two terminal windows. The top window is on 'vagrant@nodo1' and the bottom window is on 'vagrant@nodo2'. In the top window, the user lists the contents of the current directory, showing a 'test1' folder. In the bottom window, the user runs 'cd test1' and then 'rsync -avz test1 vagrant@nodo1:'. The output shows the file list being sent and the files 'f1' and 'f2' being transferred.

```
dom 11:16
vagrant@nodo1: ~
1 update can be installed immediately.
0 of these updates are security updates.
To see these additional updates run: apt list --upgradable

Last login: Sun Nov 29 09:46:43 2020 from 10.0.2.2
vagrant@nodo1:~$ ls -la
total 36
drwxr-xr-x 5 vagrant vagrant 4096 Nov 29 10:15 .
drwxr-xr-x 4 root root 4096 Nov 29 09:11 ..
-rw-r--r-- 1 vagrant vagrant 5 Nov 29 09:46 .bash_history
-rw-r--r-- 1 vagrant vagrant 220 Nov 26 14:01 .bash_logout
-rw-r--r-- 1 vagrant vagrant 3771 Nov 26 14:01 .bashrc
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .cache
-rw-r--r-- 1 vagrant vagrant 807 Nov 26 14:01 .profile
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .ssh
drwxrwxr-x 2 vagrant vagrant 4096 Nov 29 10:14 test1
vagrant@nodo1:~$

dom 11:16
vagrant@nodo2: ~
total 16
drwxrwxr-x 2 vagrant vagrant 4096 Nov 29 10:14 .
drwxr-xr-x 5 vagrant vagrant 4096 Nov 29 10:14 ..
-rw-rw-r-- 1 vagrant vagrant 5 Nov 29 10:14 f1
-rw-rw-r-- 1 vagrant vagrant 7 Nov 29 10:14 f2
vagrant@nodo2:~/test1$ cd
vagrant@nodo2:~$ rsync -avz test1 vagrant@nodo1:
sending incremental file list
test1/
test1/f1
test1/f2
... sent 205 bytes received 58 bytes 105.20 bytes/sec
... total size is 12 speedup is 0.05
vagrant@nodo2:~$
```

#### REALIZAMOS ALGÚN CAMBIO Y RESINCRONIZAMOS LAS CARPETAS



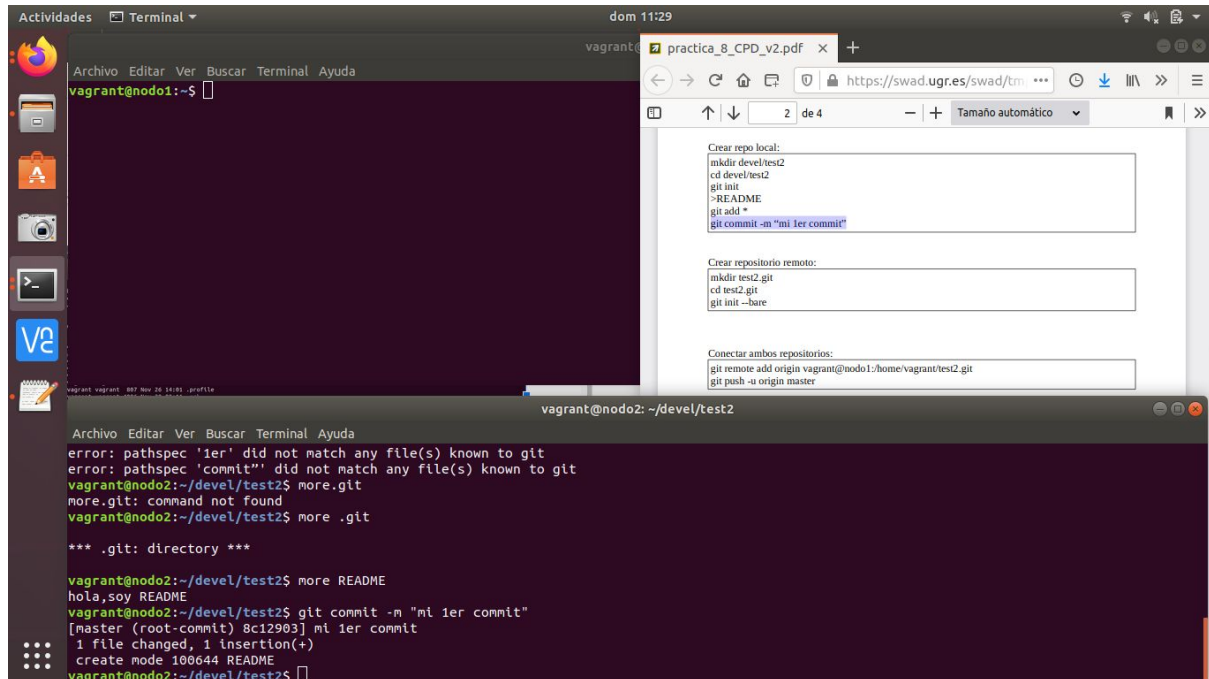
The screenshot shows the same two terminal windows. In the top window, the user has added a new file 'f3' to the 'test1' directory. In the bottom window, the user runs 'echo "hola" > test1/f3' and then 'rsync -avz test1 vagrant@nodo1:'. The output shows that only the new file 'f3' is being transferred, demonstrating incremental synchronization.

```
dom 11:17
vagrant@nodo1: ~
-rw-r--r-- 1 vagrant vagrant 5 Nov 29 09:46 .bash_history
-rw-r--r-- 1 vagrant vagrant 220 Nov 26 14:01 .bash_logout
-rw-r--r-- 1 vagrant vagrant 3771 Nov 26 14:01 .bashrc
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .cache
-rw-r--r-- 1 vagrant vagrant 807 Nov 26 14:01 .profile
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .ssh
drwxrwxr-x 2 vagrant vagrant 4096 Nov 29 10:14 test1
vagrant@nodo1:~$ ls -la
total 36
drwxr-xr-x 5 vagrant vagrant 4096 Nov 29 10:15 .
drwxr-xr-x 4 root root 4096 Nov 29 09:11 ..
-rw-r--r-- 1 vagrant vagrant 5 Nov 29 09:46 .bash_history
-rw-r--r-- 1 vagrant vagrant 220 Nov 26 14:01 .bash_logout
-rw-r--r-- 1 vagrant vagrant 3771 Nov 26 14:01 .bashrc
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .cache
-rw-r--r-- 1 vagrant vagrant 807 Nov 26 14:01 .profile
drwx----- 2 vagrant vagrant 4096 Nov 29 09:11 .ssh
drwxrwxr-x 2 vagrant vagrant 4096 Nov 29 10:16 test1
vagrant@nodo1:~$

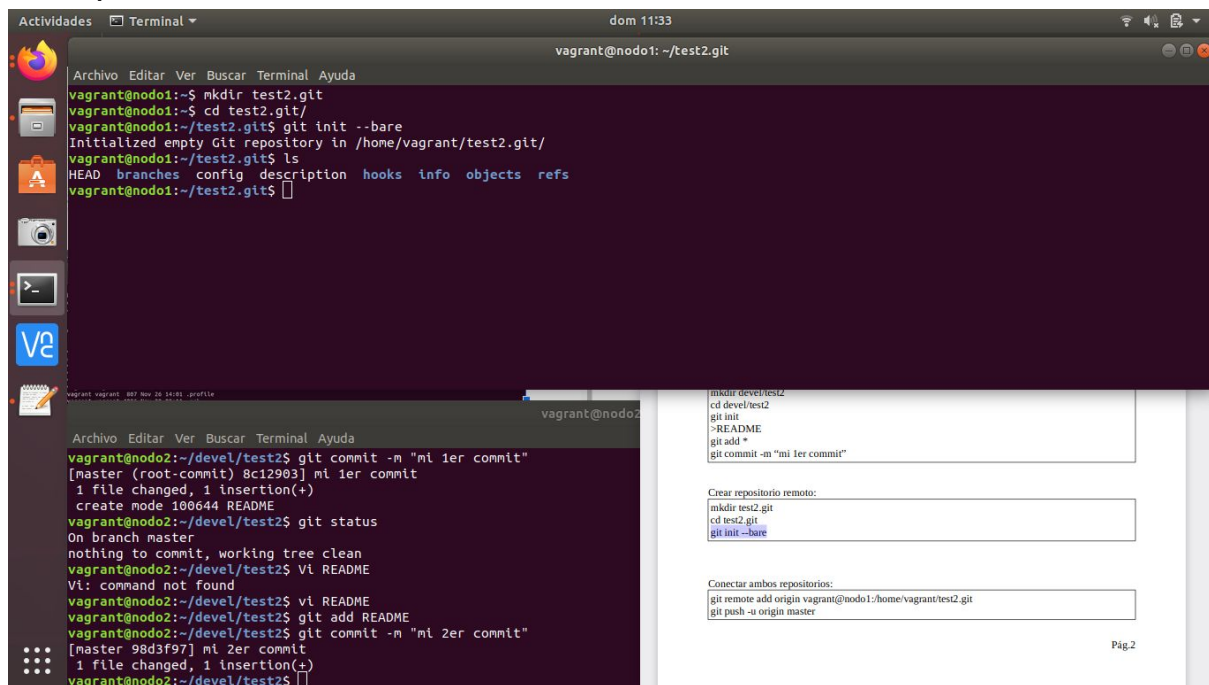
dom 11:17
vagrant@nodo2: ~
test1/
test1/f1
test1/f2
... sent 205 bytes received 58 bytes 105.20 bytes/sec
... total size is 12 speedup is 0.05
vagrant@nodo2:~$ echo "hola" > test1/f3
vagrant@nodo2:~$ rsync -avz test1 vagrant@nodo1:
sending incremental file list
test1/
test1/f3
... sent 173 bytes received 39 bytes 84.80 bytes/sec
... total size is 17 speedup is 0.08
vagrant@nodo2:~$
```

## 2. Servidor GIT

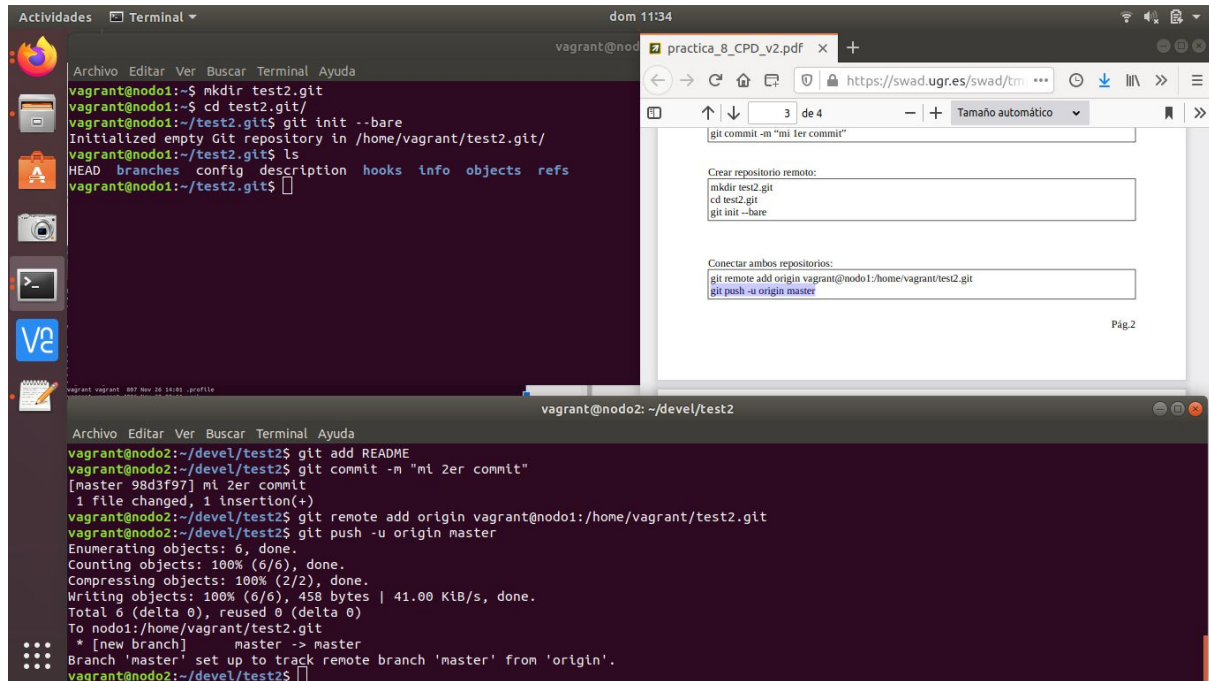
### Crear repo local:



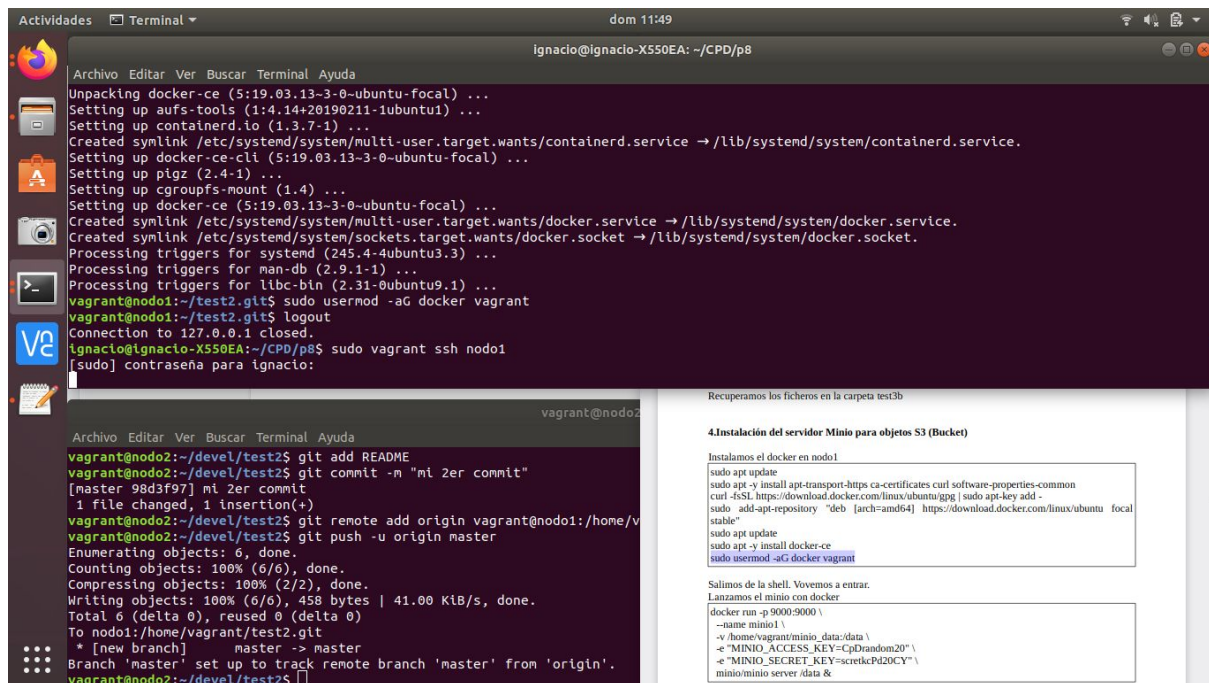
### Crear repositorio remoto:



## Conectar ambos repositorios:

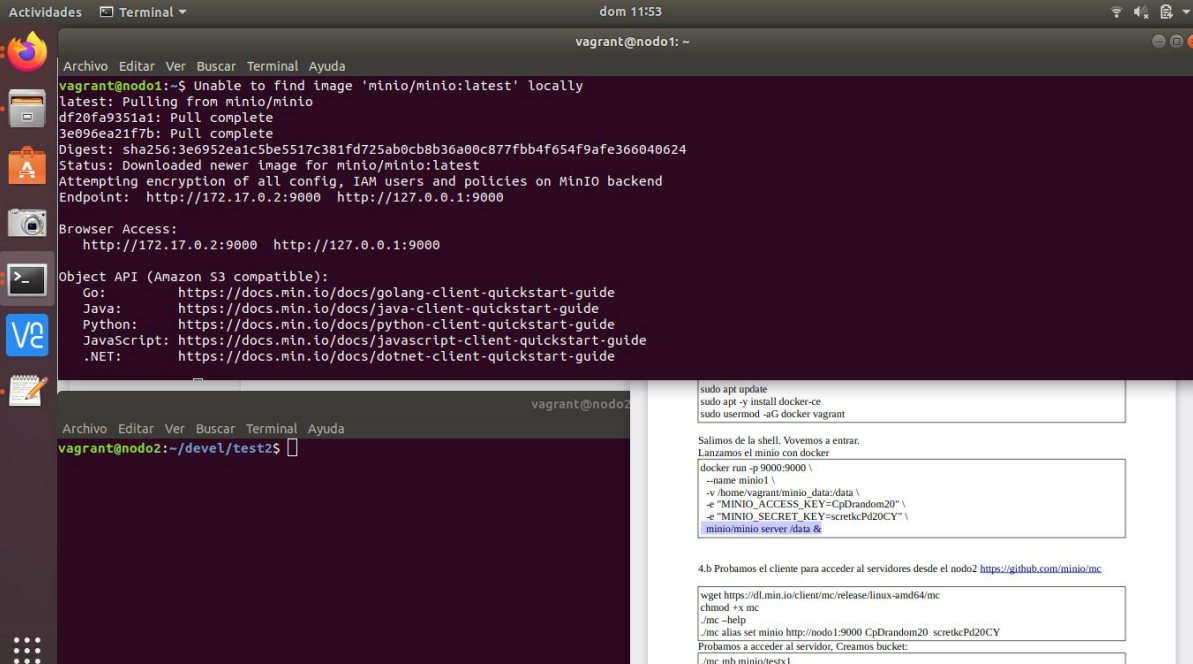


3. Copias de seguridad con duplicity con ssh
4. Instalación del servidor Minio para objetos S3 (Bucket)
  - a. Instalamos el docker en nodo1





## Lanzamos el minio con docker



```
vagrant@node1:~$ docker run -p 9000:9000 \
  --name minio1 \
  -v /home/vagrant/minio_data:/data \
  -e "MINIO_ACCESS_KEY=CpDrandom20" \
  -e "MINIO_SECRET_KEY=scretkPd20CY" \
  minio/minio server /data &
```

Browser Access:  
http://172.17.0.2:9000 http://127.0.0.1:9000

Object API (Amazon S3 compatible):  
Go: https://docs.min.io/docs/golang-client-quickstart-guide  
Java: https://docs.min.io/docs/java-client-quickstart-guide  
Python: https://docs.min.io/docs/python-client-quickstart-guide  
JavaScript: https://docs.min.io/docs/javascript-client-quickstart-guide  
.NET: https://docs.min.io/docs/dotnet-client-quickstart-guide

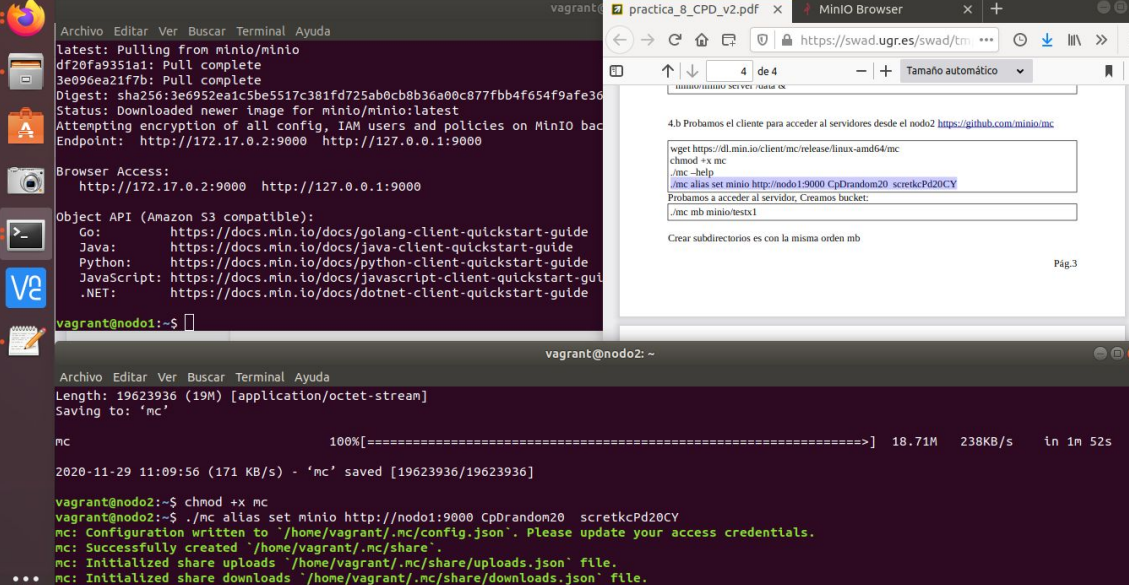


practica\_8\_CPD\_v2.pdf x MiniIO Browser

192.168.12.11:9000/minio

Search Objects...

### b. Probamos el cliente para acceder al servidores desde el nodo2



```
vagrant@node2:~$ docker run -p 9000:9000 \
  --name minio1 \
  -v /home/vagrant/minio_data:/data \
  -e "MINIO_ACCESS_KEY=CpDrandom20" \
  -e "MINIO_SECRET_KEY=scretkPd20CY" \
  minio/minio server /data &
```

practica\_8\_CPD\_v2.pdf x MiniIO Browser

https://swad.ugr.es/swad/tm

4 de 4 Tamaño automático

4.b Probamos el cliente para acceder al servidores desde el nodo2 <https://github.com/minio/mc>

```
wget https://dl.min.io/client/mc/release/linux-amd64/mc
chmod +x mc
./mc -help
./mc alias set minio http://nodo1:9000 CpDrandom20 scretkPd20CY
Probamos a acceder al servidor, Creamos bucket:
./mc mb minio/test4
```

Crear subdirectorios con la misma orden mb

Pág.3

## Probamos a acceder al servidor, Creamos bucket:

The screenshot shows a terminal window on the left and a web browser on the right. The terminal displays the output of the `mc` command, which creates a bucket named `testx1` in the `minio` namespace. The browser shows the MinIO web interface at `192.168.12.11:9000/minio/cpdnch1`, displaying the bucket `testx1`.

```
latest: Pulling from minio/minio
df20fa9351ai: Pull complete
3e096ea21f7b: Pull complete
Digest: sha256:3e0952e1c5be5517c381fd725ab0cb8b36a00c877fbb4f654f9afe36
Status: Downloaded newer image for minio/minio:latest
Attempting encryption of all config, IAM users and policies on MinIO bac
Endpoint: http://172.17.0.2:9000 http://127.0.0.1:9000

Browser Access:
http://172.17.0.2:9000 http://127.0.0.1:9000

Object API (Amazon S3 compatible):
Go: https://docs.min.io/docs/golang-client-quickstart-guide
Java: https://docs.min.io/docs/java-client-quickstart-guide
Python: https://docs.min.io/docs/python-client-quickstart-guide
JavaScript: https://docs.min.io/docs/javascript-client-quickstart-gu
.NET: https://docs.min.io/docs/dotnet-client-quickstart-guide

vagrant@nodo1:~$
```

192.168.12.11:9000/minio/cpdnch1/test4/

## Crear subdirectorios es con la misma orden mb:

The screenshot shows a terminal window on the left and a web browser on the right. The terminal displays the output of the `mc mb` command, which creates a subdirectory named `d1` in the `testx1` bucket. The browser shows the MinIO web interface at `https://swad.ugr.es/swad/tm`, displaying the bucket `testx1` and the subdirectory `d1`.

```
latest: Pulling from minio/minio
df20fa9351ai: Pull complete
3e096ea21f7b: Pull complete
Digest: sha256:3e0952e1c5be5517c381fd725ab0cb8b36a00c877fbb4f654f9afe36
Status: Downloaded newer image for minio/minio:latest
Attempting encryption of all config, IAM users and policies on MinIO bac
Endpoint: http://172.17.0.2:9000 http://127.0.0.1:9000

Browser Access:
http://172.17.0.2:9000 http://127.0.0.1:9000

Object API (Amazon S3 compatible):
Go: https://docs.min.io/docs/golang-client-quickstart-guide
Java: https://docs.min.io/docs/java-client-quickstart-guide
Python: https://docs.min.io/docs/python-client-quickstart-guide
JavaScript: https://docs.min.io/docs/javascript-client-quickstart-gu
.NET: https://docs.min.io/docs/dotnet-client-quickstart-guide

vagrant@nodo1:~$
```

192.168.12.11:9000/minio/cpdnch1/test4/

The screenshot shows the MinIO web interface for the bucket `testx1`. It displays a list of objects, including subdirectories `d1/` and `t1/`, and a file `f1` with a size of 5 bytes, dated Nov 29, 2020.

testx1 / +

Search Objects...

- d1/
- t1/
- f1  
5 bytes Nov 29, 2020

## Copiamos ficheros:

The screenshot shows a terminal window and a web browser. The terminal window is running commands to set up MinIO and upload files. The web browser is showing the MinIO web console.

**Terminal Output:**

```
latest: Pulling from minio/minio
df20fa9351ai: Pull complete
3e096ea21f7b: Pull complete
Digest: sha256:3e0952e1c5be5517c381fd725ab0cb8b36a00c877fbb4f654f9afe36
Status: Downloaded newer image for minio/minio:latest
Attempting encryption of all config, IAM users and policies on MinIO bac
Endpoint: http://172.17.0.2:9000 http://127.0.0.1:9000

Browser Access:
http://172.17.0.2:9000 http://127.0.0.1:9000

Object API (Amazon S3 compatible):
Go: https://docs.min.io/docs/golang-client-quickstart-guide
Java: https://docs.min.io/docs/java-client-quickstart-guide
Python: https://docs.min.io/docs/python-client-quickstart-guide
JavaScript: https://docs.min.io/docs/javascript-client-quickstart-guide
.NET: https://docs.min.io/docs/dotnet-client-quickstart-guide

vagrant@nodo1:~$
```

**Web Browser Output:**

practica\_8\_CPD\_v2.pdf x MinIO Browser

https://swad.ugr.es/swad/tm ...

4 de 4 Tamaño automático

Pag.3

/mc mb minio/testx1/d1

Copiamos ficheros:

/mc cp f1 minio/testx1

4.c) Podemos probar desde nuestro ordenador el cliente S3 (Ej: DragonDisk)  
<http://www.s3-client.com/download-s3-compatible-cloud-client.html>

Podemos probar un cliente en modo gráfico para acceder desde nuestro ordenador.

**Terminal Output (continued):**

```
vagrant@nodo2:~$ ./mc mb minio/testx1/d1
Bucket created successfully 'minio/testx1/d1'.
vagrant@nodo2:~$ ./mc cp test
test1/
vagrant@nodo2:~$ ./mc cp test
test1/
vagrant@nodo2:~$ ls test1/f
f1 f2 f3
vagrant@nodo2:~$ ls test1/f
f1 f2 f3
vagrant@nodo2:~$ ./mc
.cache/ .mc/ .ssh/ devel/ test1/
vagrant@nodo2:~$ ./mc cp test1/f1 minio/testx1
test1/f1: 5 B / 5 B | 122 B/s 0s
vagrant@nodo2:~$
```

The screenshot shows the MinIO web console interface. The top bar has a hamburger menu and a search icon. The main content area shows the bucket 'testx1 / t1 /' with a search bar and a list of objects.

testx1 / t1 /

Search Objects...

Object	Size	Modified
f3	5 bytes	Nov 29, 2020
f2	7 bytes	Nov 29, 2020
f1	5 bytes	Nov 29, 2020