

Práctica 7: Copias de Seguridad

1. Almacenamiento Rsync con SSH

Creamos la carpeta test1 y después de sincronizarla creamos dentro una nueva carpeta (hola) al resincronizar podemos ver como aparece en nodo1:

The screenshot shows a terminal window on the left and the Oracle VM VirtualBox Administrator window on the right. The terminal window displays the following commands and output:

```
vagrant@nodo1:~$ ls
Memory usage: 20%      IPv4 address for enp0s3: 10.0.2.15
Swap usage: 0%        IPv4 address for enp0s8: 192.168.56.11

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

vagrant@nodo1:~$ ls
test1
vagrant@nodo1:~$ ls
test1
vagrant@nodo1:~$ cd test1/
vagrant@nodo1:~/test1$ ls
hola
vagrant@nodo1:~/test1$

cambio test1
vagrant@nodo2:~$ rsync -avz test1 vagrant@nodo1:
sending incremental file list

sent 73 bytes received 17 bytes 180.00 bytes/sec
total size is 0 speedup is 0.00
vagrant@nodo2:~$ rm cambio/
rm: cannot remove 'cambio/': Is a directory
vagrant@nodo2:~$ cd test1/
vagrant@nodo2:~/test1$ ls
hola
vagrant@nodo2:~/test1$ mkdir hola
vagrant@nodo2:~/test1$ ls
hola
vagrant@nodo2:~/test1$ cd ..
vagrant@nodo2:~$ rsync -avz test1 vagrant@nodo1:
sending incremental file list
test1/
test1/hola/

sent 103 bytes received 24 bytes 84.67 bytes/sec
total size is 0 speedup is 0.00
vagrant@nodo2:~$
```

The VirtualBox Administrator window shows the configuration for a new virtual machine named 'nodo2'. The system is Ubuntu (64-bit) with 1024 MB of memory. The storage is configured with a SCSI controller and a single disk of 40.00 GB. The audio is configured with PulseAudio. The network is configured with a NAT adapter. The virtual machine is currently in the 'Corriendo' (Running) state.

2. Servidor GIT

Creo una nueva carpeta dentro de la carpeta local (cambio y cambio1) y hago un commit. Ahora puedo ver como aparece también en el repositorio:

The screenshot shows a terminal window on the left and a PDF document on the right. The terminal window displays the following commands and output:

```
vagrant@nodo1:~$ ls
System Information as of Tue Nov 15 10:57:44 UTC 2022
System load: 0.05      Processes: 112
Usage of /: 3.6% of 38.7GB Users logged in: 0
Memory usage: 20%      IPv4 address for enp0s3: 10.0.2.15
Swap usage: 0%        IPv4 address for enp0s8: 192.168.56.11

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

vagrant@nodo1:~$ ls
test1
vagrant@nodo1:~$ mkdir test2.git
vagrant@nodo1:~$ cd test2.git/
vagrant@nodo1:~/test2.git$ git init --bare
Initialized empty Git repository in /home/vagrant/test2.git/
HEAD branches config description hooks info objects refs

vagrant@nodo2:~/devel/test2$
After doing this, you may fix the identity used for this commit with:
git commit --amend --reset-author

1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 README
vagrant@nodo2:~/devel/test2$ cd ..
vagrant@nodo2:~$ cd test2/
vagrant@nodo2:~/test2$ git remote add origin vagrant@nodo1:/home/vagrant/t
est2.git
vagrant@nodo2:~/test2$ git push -u origin master
The authenticity of host 'nodo1 (192.168.56.11)' can't be established.
ECDSA key fingerprint is SHA256:mygkZsUyhwV9E9bbsHzxpIdh0uJPyasqW6rk18s.
Are you sure you want to continue connecting (yes/no/[fingerprint]): yes
Warning: Permanently added 'nodo1,192.168.56.11' (ECDSA) to the list of known ho
sts.
vagrant@nodo1's password:
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 201 bytes | 1024 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To nodo1:/home/vagrant/test2.git
 * [new branch] master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
```

The PDF document on the right shows the following content:

1. Almacenamiento Rsync con SSH

Creamos una carpeta en el cliente (test1)

Sincronizamos la carpeta

rsync -avz test1 vagrant@nodo1:.

1.a-Realizamos algún cambio

1.b-Resincronizamos. Comprobamos que los cambios se han actualizado en el servidor.

2.Servidor GIT

2.a- Crear repositorio local:

```
mkdir devel/test2
cd devel/test2
git init
>README
git add *
git commit -m "mi 1er commit"
```

2.b- Crear repositorio remoto:

```
mkdir test2.git
cd test2.git
git init --bare
```

2.c- Conectar repositorio local y remoto:

```
git remote add origin vagrant@nodo1:/home/vagrant/test2.git
git push -u origin master
```

2.d- Realizamos algún cambio en la carpeta local, hacemos un commit y volvemos a subir al repositorio.

3.Copias de seguridad con Kopias mediante SSH

En el nodo 2 instalamos kopia (CLI), siguiendo las indicaciones en: <https://kopia.io/docs/installation/>

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practica_7_CPD_v1.pdf

Pág.2

1

2

3

```
vagrant@nodo1:~/test3$ ls
kopia.blobcfg.f kopia.repository.f q s x z
vagrant@nodo1:~/test3$ cd ..
vagrant@nodo1:~$ ls
test1 test2.git test3 test3b
vagrant@nodo1:~$ cd test3
vagrant@nodo1:~/test3$ ls
kopia.blobcfg.f kopia.repository.f q s x
vagrant@nodo1:~/test3$ ll
total 36
drwxrwxr-x 6 vagrant vagrant 4096 Nov 18 09:33 ./
drwxr-xr-x 8 vagrant vagrant 4096 Nov 18 09:40 ../
-rw-rw-r-- 1 vagrant vagrant 43 Nov 18 09:33 .shards
drwxrwxr-x 3 vagrant vagrant 4096 Nov 18 09:33 ./
-rw-rw-r-- 1 vagrant vagrant 30 Nov 18 09:33 kopia.blobcfg.f
-rw-rw-r-- 1 vagrant vagrant 1101 Nov 18 09:33 kopia.repository.f
drwxrwxr-x 3 vagrant vagrant 4096 Nov 18 09:33 q/
drwxrwxr-x 3 vagrant vagrant 4096 Nov 18 09:33 s/
drwxrwxr-x 3 vagrant vagrant 4096 Nov 18 09:33 x/
vagrant@nodo1:~/test3$ ls
kopia.blobcfg.f kopia.repository.f q s x
vagrant@nodo1:~/test3$
```

```
vagrant@nodo2:~/test3b/notes$
s
uploaded: command not found
vagrant@nodo2:~/test3b$ uploaded snapshot k101427c7a02d757bffa6bf20c03d27b/notes
s
notes notes2
vagrant@nodo2:~/test3b$ uploaded snapshot k101427c7a02d757bffa6bf20c03d27b/notes
s
notes notes2
vagrant@nodo2:~/test3b$ uploaded snapshot k101427c7a02d757bffa6bf20c03d27b/notes
s
uploaded: command not found
vagrant@nodo2:~/test3b$ kopia snapshot restore k101427c7a02d757bffa6bf20c03d27b/notes
vagrant@nodo1:~$ password:
Restoring to local filesystem (/home/vagrant/test3b/notes) with parallelism=8...
Processed 3 (33 B) of 2 (33 B).
Restored 2 files, 1 directories and 0 symbolic links (33 B).
vagrant@nodo2:~/test3b$ ls
k101427c7a02d757bffa6bf20c03d27b notes
vagrant@nodo2:~/test3b$ cd notes/
vagrant@nodo2:~/test3b/notes$ ls
notes notes2
vagrant@nodo2:~/test3b/notes$
```

Página 3 de 4 84 palabras, 538 caracteres Éxito predeterminado

Salimos de la shell. Volvemos a entrar.
Lanzamos el minio con docker

```
docker run -p 9000:9000 \
--name minio1 \
-v /home/vagrant/minio_data:/data \
-e "MINIO_ACCESS_KEY=CpDrandom20" \
-e "MINIO_SECRET_KEY=scretkcPd20CY" \
minio/minio server /data &
```

4.b Probamos el cliente para acceder al servidor (nodo1) desde el nodo2

```
wget https://dl.min.io/client/mc/release/linux-amd64/mc
chmod +x mc
```

4.Instalación del servidor Minio para objetos S3 (Bucket)

Instalamos Minio en el nodo1:

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Pág.3

1

2

3

```
vagrant@nodo1:~$ sudo apt update
vagrant@nodo1:~$ sudo apt -y install apt-transport-https ca-certificates curl software-properties-common
vagrant@nodo1:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
vagrant@nodo1:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"
vagrant@nodo1:~$ sudo apt update
vagrant@nodo1:~$ sudo apt -y install docker-ce
vagrant@nodo1:~$ sudo usermod -aG docker vagrant
```

Salimos de la shell. Volvemos a entrar.
Lanzamos el minio con docker

```
docker run -p 9000:9000 \
--name minio1 \
-v /home/vagrant/minio_data:/data \
-e "MINIO_ACCESS_KEY=CpDrandom20" \
-e "MINIO_SECRET_KEY=scretkcPd20CY" \
minio/minio server /data &
```

4.b Probamos el cliente para acceder al servidor (nodo1) desde el nodo2

```
wget https://dl.min.io/client/mc/release/linux-amd64/mc
chmod +x mc
./mc alias set minio http://nodo1:9000 CpDrandom20 scretkcPd20CY
```

Probamos a acceder al servidor, Creamos un bucket:

```
./mc mb minio/testx1
Crear subdirectorios es con la misma orden mb
./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>

4.d) (opcional) Probar las copias de seguridad de kopia en el servidor Minio como servidor S3.

Pág.3

```
vagrant@nodo1:~$ sudo apt update
vagrant@nodo1:~$ sudo apt -y install apt-transport-https ca-certificates curl software-properties-common
vagrant@nodo1:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
vagrant@nodo1:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"
vagrant@nodo1:~$ sudo apt update
vagrant@nodo1:~$ sudo apt -y install docker-ce
vagrant@nodo1:~$ sudo usermod -aG docker vagrant
```

Salimos de la shell. Volvemos a entrar.
Lanzamos el minio con docker

```
docker run -p 9000:9000 \
--name minio1 \
-v /home/vagrant/minio_data:/data \
-e "MINIO_ACCESS_KEY=CpDrandom20" \
-e "MINIO_SECRET_KEY=scretkcPd20CY" \
minio/minio server /data &
```

4.b Probamos el cliente para acceder al servidor (nodo1) desde el nodo2

```
wget https://dl.min.io/client/mc/release/linux-amd64/mc
chmod +x mc
./mc -help
./mc alias set minio http://nodo1:9000 CpDrandom20 scretkcPd20CY
```

Probamos a acceder al servidor, Creamos un bucket:

```
./mc mb minio/testx1
Crear subdirectorios es con la misma orden mb
./mc mb minio/testx1/d1
```

Copiamos ficheros:

```
./mc cp f1 minio/testx1
```

4.c) Podemos probar desde nuestro ordenador el cliente S3 (Ej: Dragondisk)

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4.d) (opcional) Probar las copias de seguridad de kopia en el servidor Minio como servidor S3.

Página 4 de 4 98 palabras, 630 caracteres Éxito predeterminado

Probamos al cliente para acceder al servidor:

The screenshot shows a terminal window with the following commands and output:

```
Copyright: 2015-2022 MinIO, Inc.
License: GNU AGPLv3 <https://www.gnu.org/licenses/agpl-3.0.html>
Version: RELEASE.2022-11-17T23-20-09Z (go1.19.3 linux/amd64)

Status:
  1 Online, 0 Offline.
API: http://172.17.0.2:9000 http://127.0.0.1:9000
Console: http://172.17.0.2:40781 http://127.0.0.1:40781
Documentation: https://min.io/docs/minio/linux/index.html

vagrant@node1:~$ ls
minio_data test1 test2.glt test3 test3b
vagrant@node1:~$ cd minio_data/
vagrant@node1:~/minio_data$ ls
test1
vagrant@node1:~/minio_data$ cd test1/
vagrant@node1:~/minio_data/test1$ ls
xl_XLDIR__ f1
vagrant@node1:~/minio_data/test1$ cd f1/
vagrant@node1:~/minio_data/test1/f1$ ls
xl.meta
vagrant@node1:~/minio_data/test1/f1$

cat      display object contents
head     display first 'n' lines of an object
pipe     stream STDOUT to an object
find     search for objects
sql      run sql queries on objects
stat     show object metadata
tree     list buckets and objects in a tree format
vagrant@node2:~$ ./mc alias set minio http://node1:9000 CpDrandom20 scretkcPd20CY
Added 'minio' successfully.
vagrant@node2:~$ ./mc mb minio/testx1
Bucket created successfully 'minio/testx1'.
vagrant@node2:~$ ./mc mb minio/testx1/d1
Bucket created successfully 'minio/testx1/d1'.
vagrant@node2:~$ ./mc cp f1 minio/testx1
cp: <ERROR> unable to validate source 'f1'.
vagrant@node2:~$ ./mc cp xl minio/testx1
cp: <ERROR> unable to validate source 'xl'.
vagrant@node2:~$ ls
level mc test1 test3 test3b
vagrant@node2:~$ touch f1
vagrant@node2:~$ ./mc cp f1 minio/testx1
0 0 / ?
vagrant@node2:~$
```

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```
sudo apt update
sudo apt -y install apt-transport-https ca-certificates curl software-properties-common
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal
stable"
sudo apt update
sudo apt -y install docker-ce
sudo usermod -aG docker vagrant

Salimos de la shell. Volvemos a entrar.
Lanzamos el minio con docker
docker run -p 9000:9000 \
--name minio1 \
-v /home/vagrant/minio_data/data \
-e "MINIO_ACCESS_KEY=CpDrandom20" \
-e "MINIO_SECRET_KEY=scretkcPd20CY" \
minio/minio server /data &

4.b Probamos el cliente para acceder al servidor (node1) desde el node2
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://node1:9000 CpDrandom20 scretkcPd20CY

Probamos a acceder al servidor. Creamos un bucket:
./mc mb minio/testx1
Crear subdirectorios es con la misma orden mb
./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

4.d) (opcional) Probar las copias de seguridad de copia en el servidor Minio como servidor S3.
```

Podemos probar desde nuestro ordenador el cliente S3 (Ej: S3 Browser)

The screenshot shows the S3 Browser 10.5.9 interface. The 'Accounts' tab is selected, showing a list of accounts. The 'testx1' account is selected, and the 'Files' tab is active. The 'Path' field shows '/'. The file list shows:

Name	Size	Type	Last Modified
d1/		Folder	
f1	0 bytes	File	18/11/2022 10:31:09

The interface also includes a 'Tasks' section at the bottom, which is currently empty.