

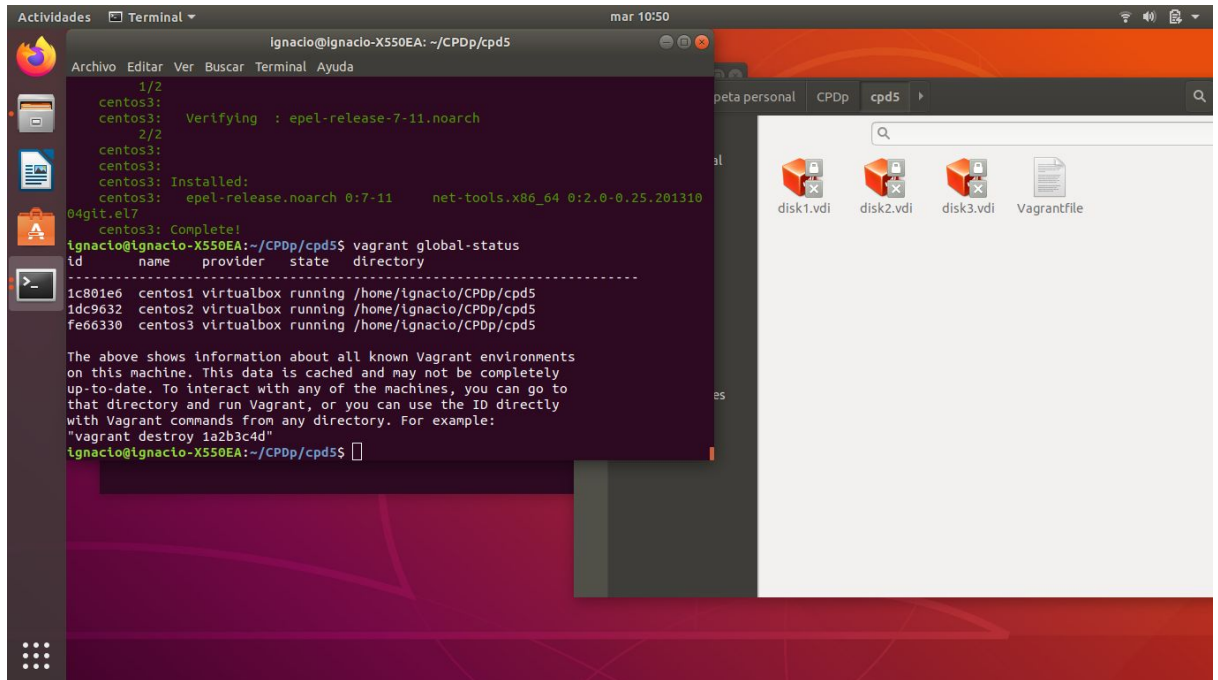
Nombre: Ignacio Morillas Padial

## CPD\_Practica\_4. Vagrant

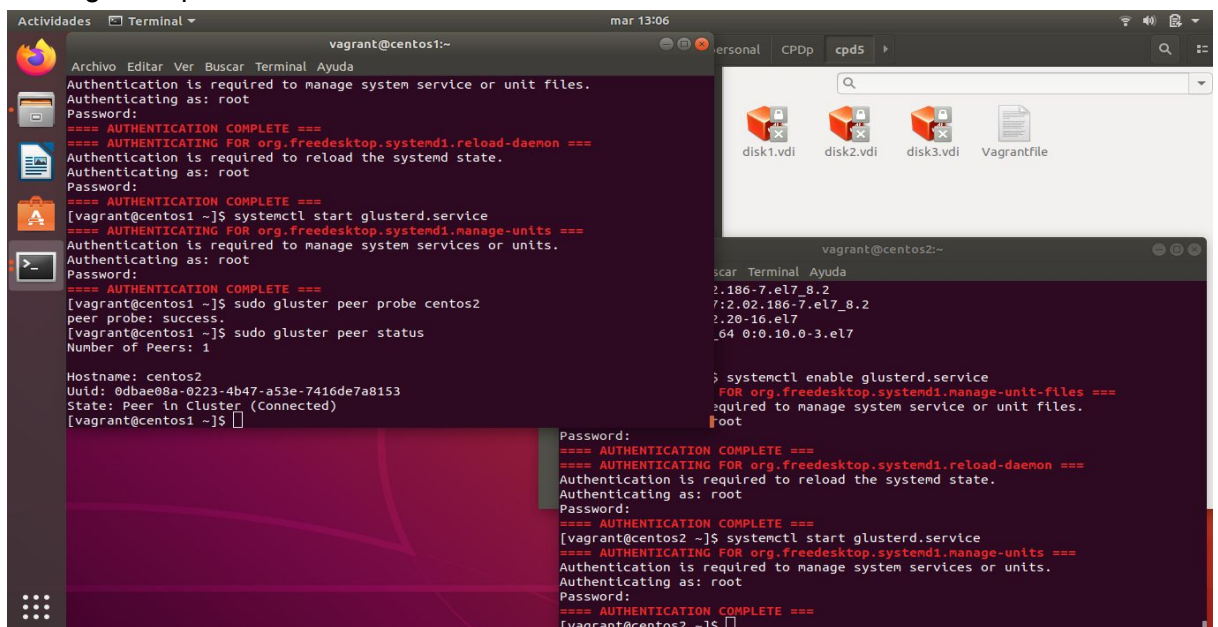
**Objetivo:** Crear un entorno basado en tres máquinas virtuales con Vagrant (+ VirtualBox) e instalar un sistema de ficheros GlusterFS.

**(obligatorio):** A partir del apartado relacionado con GlusterFS realizar diversas capturas de pantalla correspondiente al proceso de cada apartado (y varias capturas del apartado de comprobación). En la captura debe aparecer algún elemento que personalice dicha captura (ej, si estamos en un escritorio y accedemos por ssh se ve la ventana de ssh y se ve parte del fondo de escritorio de forma que cada estudiante muestre su propia captura).

1. Ejecutamos el fichero descargado de swad, vemos que se descargados las tres máquinas virtuales.:  
con “vagrant global status” lo veremos.



2. Accedemos a centos1 e instalamos el glusterFs, posteriormente aremos lo mismo con centos 2:  
“vagrant ssh centos1”  
“sudo yum -y install centos-release-gluster7”  
“sudo yum -y update”  
“sudo yum -y install glusterfs glusterfs-cli glusterfs-libs glusterfs-server”
3. Comprobamos que está todo bien desde centos 1 a centos con:  
“sudo gluster peer probe centos2”  
“sudo gluster peer status”



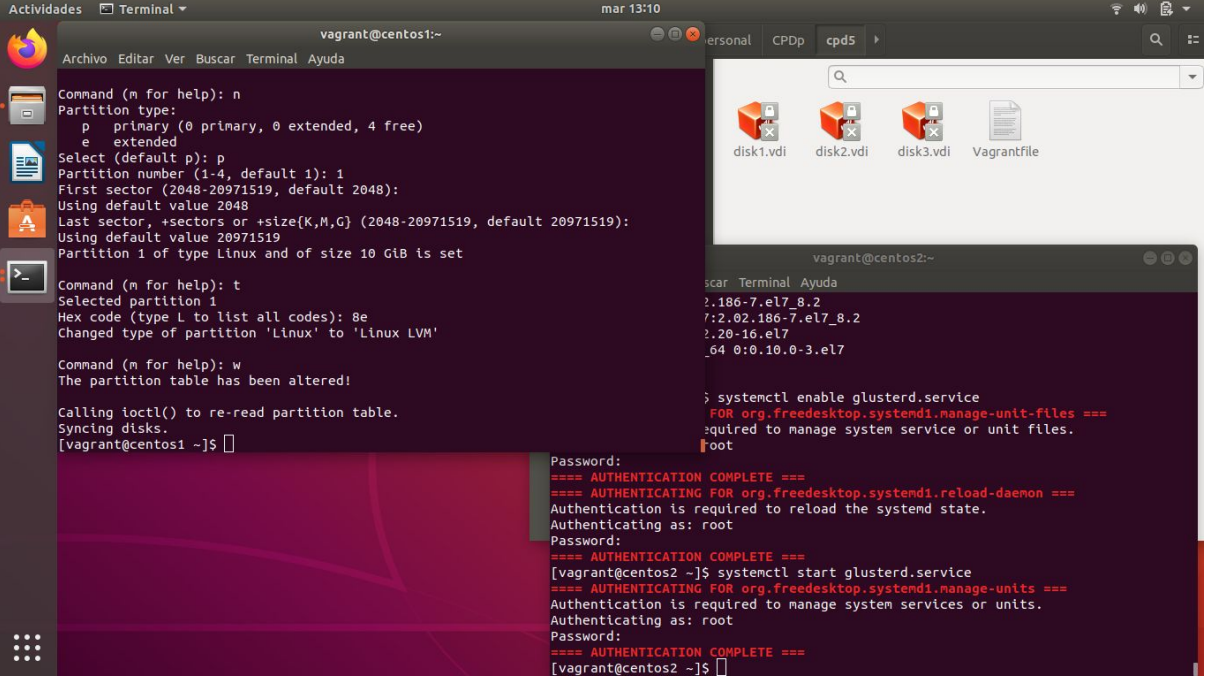
#### 4. Ahora llevamos a cabo la creación de los brick.

Creamos las particiones basadas en XFS y utilizando volúmenes lógicos.

Creamos una partición en /dev/sdb del tipo Linux LVM:

“sudo fdisk /dev/sdb”

Llevamos a cabo los pasos dado en el guión.



```
Command (m for help): n
Partition type:
  p   primary (0 primary, 0 extended, 4 free)
  e   extended
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-20971519, default 2048):
Using default value 2048
Last sector, +sectors or +size[K,M,G] (2048-20971519, default 20971519):
Using default value 20971519
Partition 1 of type Linux and of size 10 GiB is set

Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
[vagrant@centos1 ~]$
```

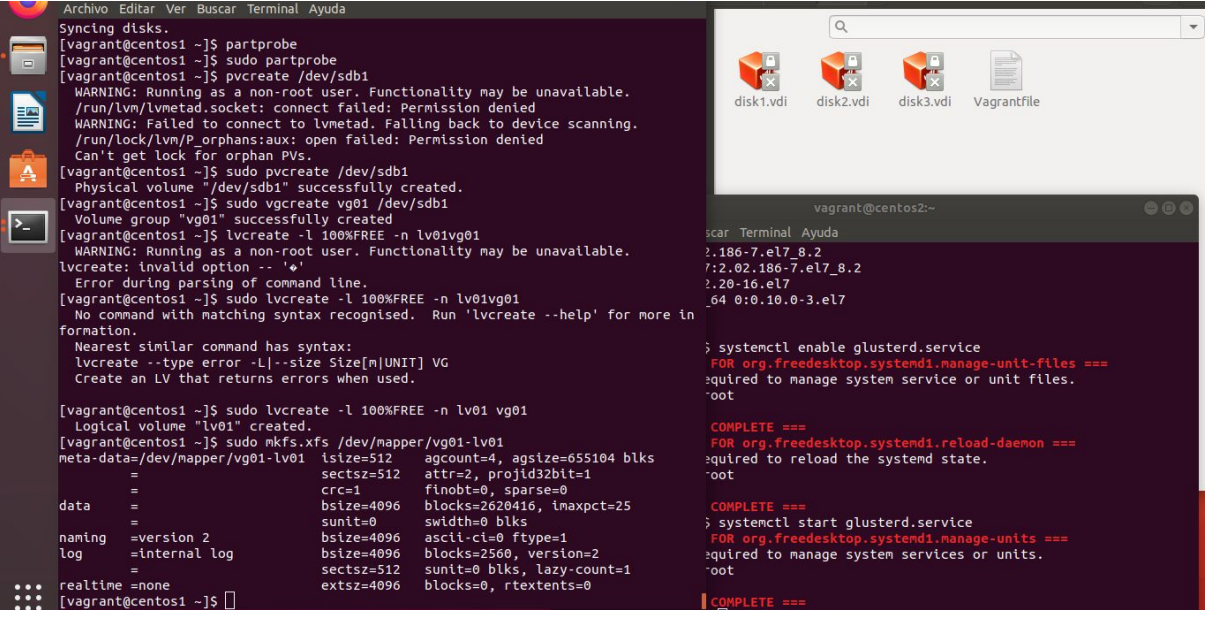
#### 5. Ahora creamos los volúmenes físicos, lógicos y la partición XFS:

“pvcreate /dev/sdb1”

“vgcreate vg01 /dev/sdb1”

“lvcreate -l 100%FREE -n lv01 vg01”

“mkfs.xfs /dev/mapper/vg01-lv01”



```
Syncing disks.
[vagrant@centos1 ~]$ partprobe
[vagrant@centos1 ~]$ sudo partprobe
[vagrant@centos1 ~]$ sudo pvcreate /dev/sdb1
WARNING: Running as a non-root user. Functionality may be unavailable.
/run/lvm/lvmetad.socket: connect failed: Permission denied
WARNING: Failed to connect to lvmetad. Falling back to device scanning.
/run/lock/lvm/P_orphans:aux: open failed: Permission denied
Can't get lock for orphan PVs.
[vagrant@centos1 ~]$ sudo pvcreate /dev/sdb1
Physical volume "/dev/sdb1" successfully created.
[vagrant@centos1 ~]$ sudo vgcreate vg01 /dev/sdb1
Volume group "vg01" successfully created
[vagrant@centos1 ~]$ sudo lvcreate -l 100%FREE -n lv01 vg01
WARNING: Running as a non-root user. Functionality may be unavailable.
lvcreate: invalid option -- 'e'
Error during parsing of command line.
[vagrant@centos1 ~]$ sudo lvcreate -l 100%FREE -n lv01 vg01
No command with matching syntax recognised. Run 'lvcreate --help' for more information.
Nearest similar command has syntax:
lvcreate --type error -L|--size Size[n[UNIT]] VG
Create an LV that returns errors when used.

[vagrant@centos1 ~]$ sudo lvcreate -l 100%FREE -n lv01 vg01
Logical volume "lv01" created.
[vagrant@centos1 ~]$ sudo mkfs.xfs /dev/mapper/vg01-lv01
meta-data=/dev/mapper/vg01-lv01  isize=512    agcount=4, agsize=655104 blks
       =                       sectsz=512   attr=2, projid32bit=1
       =                       crc=1        finobt=0, sparse=0
data      =                       bsize=4096  blocks=2620416, imaxpct=25
       =                       sunit=0      swidth=0 blks
naming    =version 2              ascii-ci=0 ftype=1
log       =internal log          blocks=2560, version=2
       =                       sunit=0 blks, lazy-count=1
realtime  =none                  blocks=0, rtextents=0

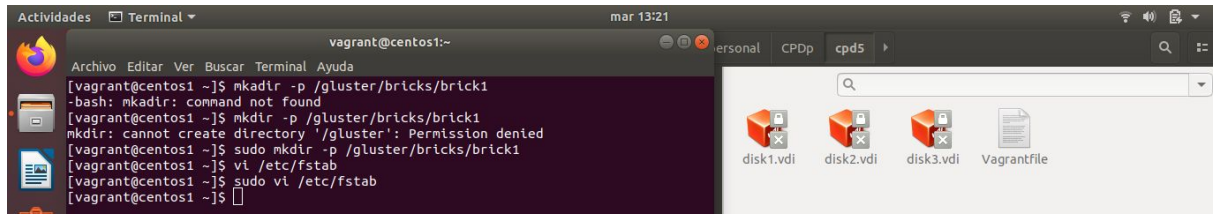
[vagrant@centos1 ~]$
```

## 6. Creamos el punto de montaje:

"mkdir -p /gluster/bricks/brick1"

Editamos el fichero /etc/fstab y añadimos :

"/dev/mapper/vg01-lv01 /gluster/bricks/brick1 xfs defaults 0 0"



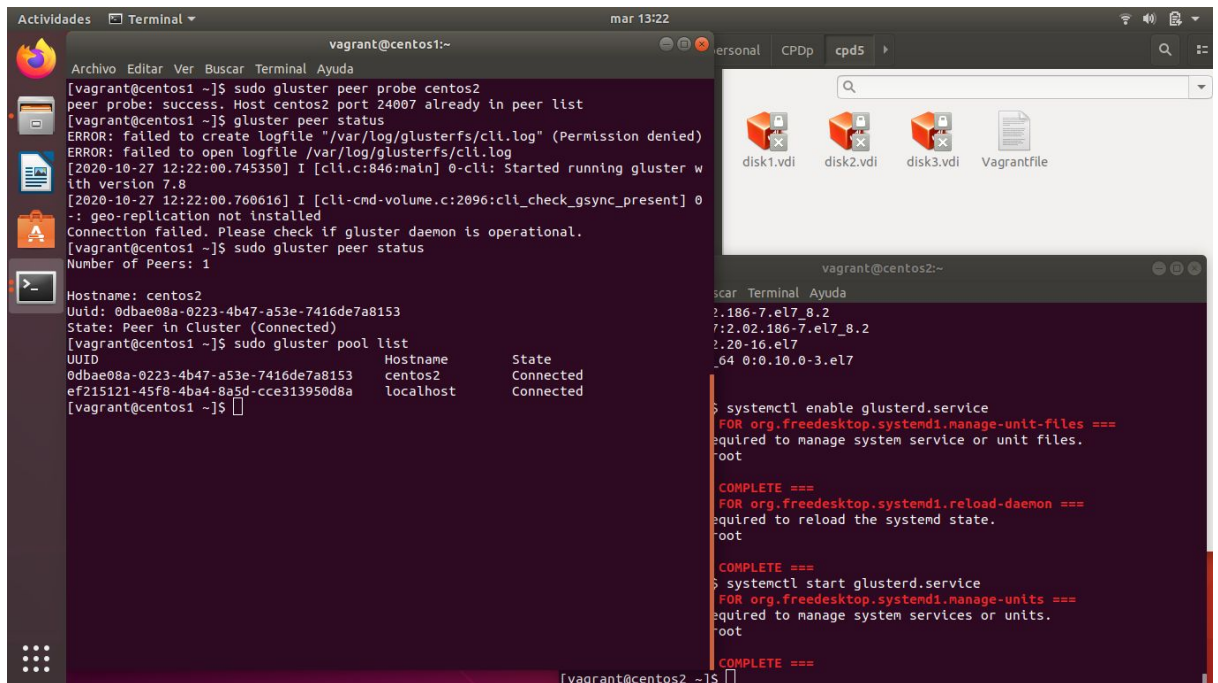
```
Actividades Terminal mar 13:21
vagrant@centos1:~
Archivo Editar Ver Buscar Terminal Ayuda
[vagrant@centos1 ~]$ mkdir -p /gluster/bricks/brick1
-bash: mkdir: command not found
[vagrant@centos1 ~]$ mkdir -p /gluster/bricks/brick1
mkdir: cannot create directory '/gluster': Permission denied
[vagrant@centos1 ~]$ sudo mkdir -p /gluster/bricks/brick1
[vagrant@centos1 ~]$ vi /etc/fstab
[vagrant@centos1 ~]$ sudo vi /etc/fstab
[vagrant@centos1 ~]$
```

## 7. Ahora tenemos que crear el FS: probamos que haya conexión

"gluster peer probe centos2"

"gluster peer status"

"gluster pool list"



```
Actividades Terminal mar 13:22
vagrant@centos1:~
Archivo Editar Ver Buscar Terminal Ayuda
[vagrant@centos1 ~]$ sudo gluster peer probe centos2
peer probe: success. Host centos2 port 24007 already in peer list
[vagrant@centos1 ~]$ gluster peer status
ERROR: failed to create logfile "/var/log/glusterfs/cli.log" (Permission denied)
[2020-10-27 12:22:00.745350] I [cli.c:846:main] 0-clt: Started running gluster w
ith version 7.8
[2020-10-27 12:22:00.760616] I [cli-cmd-volume.c:2096:cli_check_gsync_present] 0
-: geo-replication not installed
Connection failed. Please check if gluster daemon is operational.
[vagrant@centos1 ~]$ sudo gluster peer status
Number of Peers: 1

Hostname: centos2
Uuid: 0dbae08a-0223-4b47-a53e-7416de7a8153
State: Peer in Cluster (Connected)
[vagrant@centos1 ~]$ sudo gluster pool list
UUID                               Hostname      State
0dbae08a-0223-4b47-a53e-7416de7a8153 centos2       Connected
ef215121-45f8-4ba4-8a5d-cce313950d8a localhost     Connected
[vagrant@centos1 ~]$

vagrant@centos2:~
Archivo Editar Ver Buscar Terminal Ayuda
2.186-7.el7_8.2
7:2.02.186-7.el7_8.2
3.20-16.el7
64 0:0.10.0-3.el7

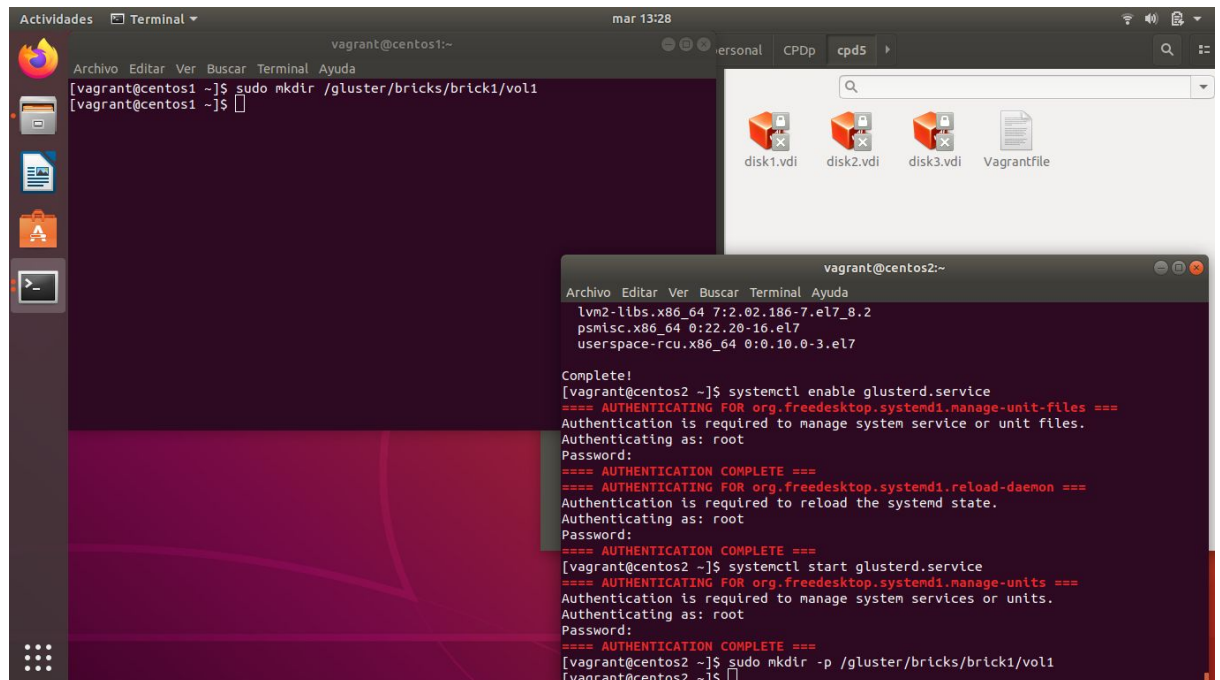
$ systemctl enable glusterd.service
FOR org.freedesktop.systemd1.manage-unit-files ===
quired to manage system service or unit files.
root
COMPLETE ===
FOR org.freedesktop.systemd1.reload-daemon ===
quired to reload the systemd state.
root
COMPLETE ===
$ systemctl start glusterd.service
FOR org.freedesktop.systemd1.manage-units ===
quired to manage system services or units.
root
COMPLETE ===
[vagrant@centos2 ~]$
```



## 8. Creamos el directorio vol1 en centos1 y centos2.

“sudo mkdir /gluster/bricks/brick1/vol1” en centos1

“sudo mkdir -p /gluster/bricks/brick1/vol1” en centos2

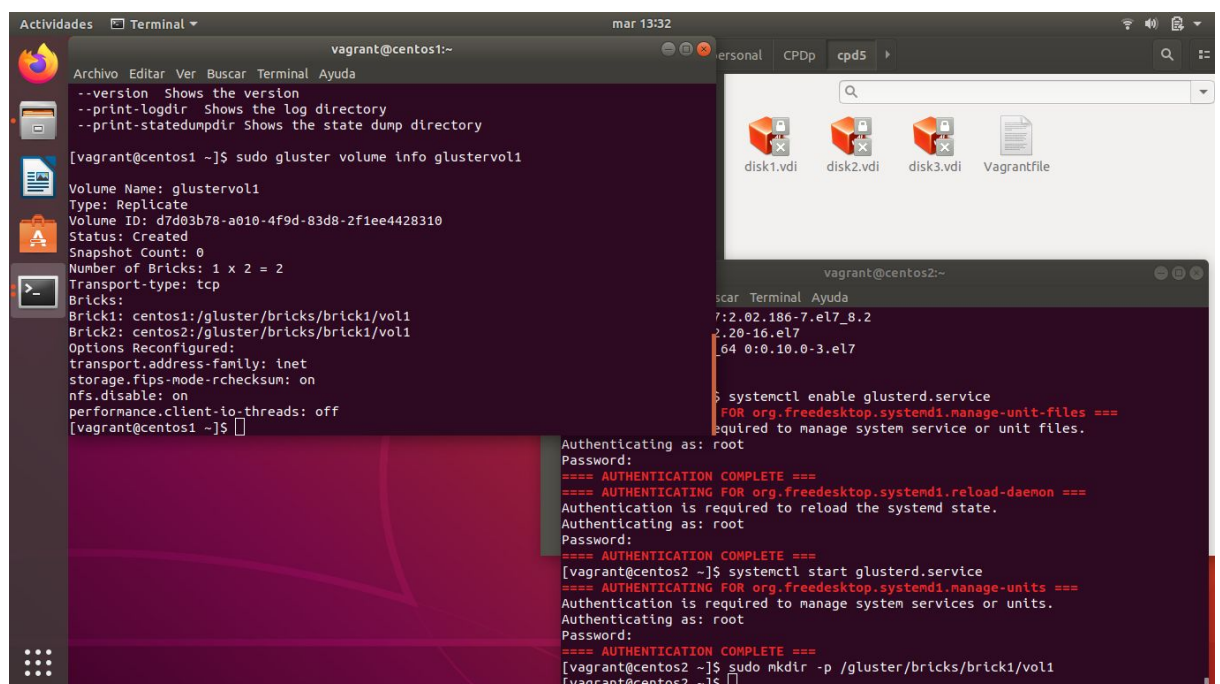


## 9. Creamos los sistemas de ficheros en las unidades /dev/sdb:

“sudo gluster volume create glustervol1 replica 2 transport tcp centos1:/gluster/bricks/brick1/vol1 centos2:/gluster/bricks/brick1/vol1 force”

“sudo gluster volume start glustervol1”

La información del volumen creado:



## 10. Llevamos a cabo la instalación del cliente en centos3.

como indica en el pdf y creamos un fichero con probamos que se ve desde cada servidor los archivos conpartidos.

"ls -la /gluster/bricks/brick1/vol1/"

## 11. Ahora paramos centos1:

"shutdown -h now"

```
ignacio@ignacio-X550EA: ~/CPDp/cpd5
Bricks:
Brick1: centos1:/gluster/bricks/brick1/vol1
Brick2: centos2:/gluster/bricks/brick1/vol1
Options Reconfigured:
transport.address-family: inet
storage.fips-mode-rchecksum: on
nfs.disable: on
performance.client-io-threads: off
[vagrant@centos1 ~]$ ls -la /gluster/bricks/brick1/vol1/
total 0
drwxr-xr-x. 3 root root 24 Oct 27 12:30 .
drwxr-xr-x. 3 root root 18 Oct 27 12:27 ..
drw----- 7 root root 99 Oct 27 12:33 .glusterfs
[vagrant@centos1 ~]$ shutdown -h now
==== AUTHENTICATING FOR org.freedesktop.login1.power-off ====
Authentication is required for powering off the system.
Authenticating as: root
Password:
==== AUTHENTICATION COMPLETE ====
[vagrant@centos1 ~]$ Connection to 127.0.0.1 closed by remote host.
Connection to 127.0.0.1 closed.
ignacio@ignacio-X550EA:~/CPDp/cpd5$

vagrant@centos2:~$
$ systemctl start glusterd.service
FOR org.freedesktop.systemd1.manage-units ====
quired to manage system services or units.
root
$ sudo mkdir -p /gluster/bricks/brick1/vol1
$ ls -la /gluster/bricks/brick1/vol1/
total 0
drwxr-xr-x. 3 root root 24 Oct 27 12:31 .
drwxr-xr-x. 3 root root 18 Oct 27 12:28 ..
drw----- 7 root root 99 Oct 27 12:33 .glusterfs
vagrant@centos2 ~$
```

## 12. Creamos en centos3 algún fichero:

"sudo mkdir /glustervol1 /gdatos1/hola"

"sudo touch /glustervol1 /gdatos1/hola.cpp"

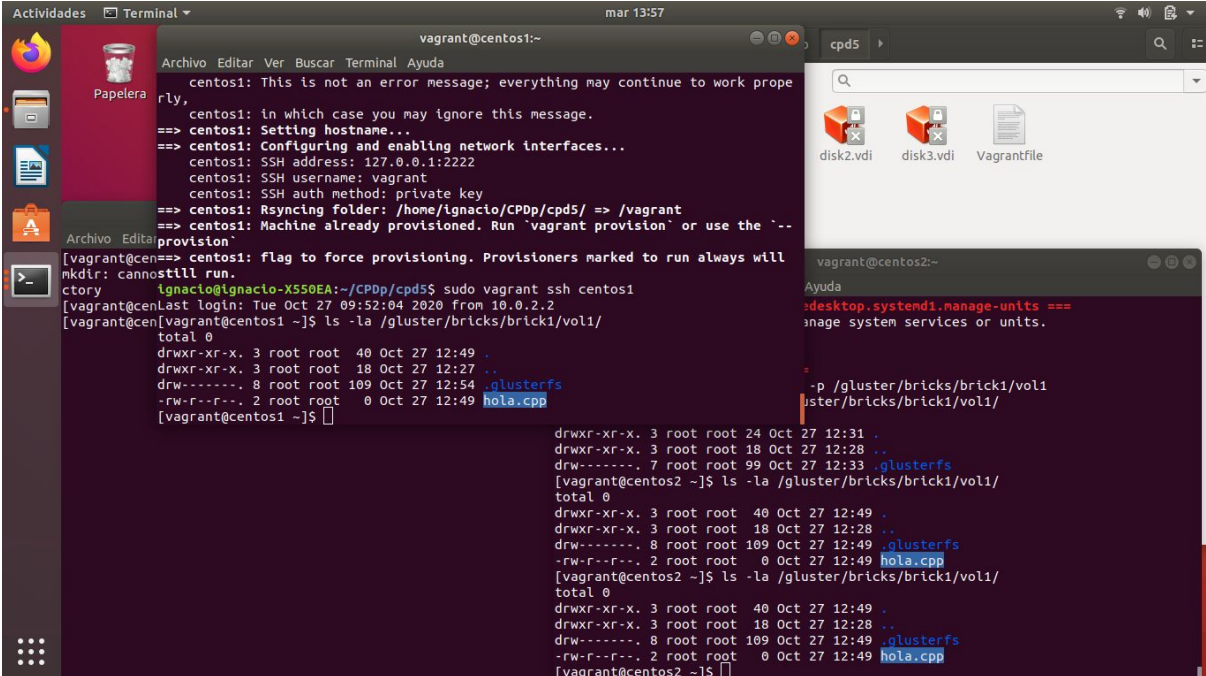
y vemos que en centos2 Aparece.

```
ignacio@ignacio-X550EA: ~/CPDp/cpd5
Bricks:
Brick1: centos1:/gluster/bricks/brick1/vol1
Brick2: centos2:/gluster/bricks/brick1/vol1
Options Reconfigured:
transport.address-family: inet
storage.fips-mode-rchecksum: on
nfs.disable: on
performance.client-io-threads: off
vagrant@centos3:~$
[vagrant@centos3 ~]$ sudo mkdir /glustervol1/gdatos1/hola
mkdir: cannot create directory '/glustervol1/gdatos1/hola': No
ctory
[vagrant@centos3 ~]$ sudo touch /glustervol1 /gdatos1/hola.cpp
[vagrant@centos3 ~]$

vagrant@centos2:~$
$ systemctl start glusterd.service
==== AUTHENTICATING FOR org.freedesktop.systemd1.reload-daemon ====
Authentication is required to reload the systemd state.
Authenticating as: root
Password:
==== AUTHENTICATION COMPLETE ====
[vagrant@centos2 ~]$ systemctl start glusterd.service
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to manage system services or units.
Authenticating as: root
Password:
==== AUTHENTICATION COMPLETE ====
[vagrant@centos2 ~]$ sudo mkdir -p /gluster/bricks/brick1/vol1
[vagrant@centos2 ~]$ ls -la /gluster/bricks/brick1/vol1/
total 0
drwxr-xr-x. 3 root root 24 Oct 27 12:31 .
drwxr-xr-x. 3 root root 18 Oct 27 12:28 ..
drw----- 7 root root 99 Oct 27 12:33 .glusterfs
[vagrant@centos2 ~]$ ls -la /gluster/bricks/brick1/vol1/
total 0
drwxr-xr-x. 3 root root 40 Oct 27 12:49 .
drwxr-xr-x. 3 root root 18 Oct 27 12:28 ..
drw----- 8 root root 109 Oct 27 12:49 .glusterfs
-rw-r--r-- 2 root root 0 Oct 27 12:49 hola.cpp
[vagrant@centos2 ~]$
```

### 13. Volvemos a levantar centos1.

vemos que aparece en centos 1 tambien.



The screenshot shows a Linux desktop environment with a terminal window and two file explorer windows. The terminal window is titled 'vagrant@centos1:~' and shows the following output:

```
centos1: This is not an error message; everything may continue to work properly,
centos1: in which case you may ignore this message.
==> centos1: Setting hostname...
==> centos1: Configuring and enabling network interfaces...
centos1: SSH address: 127.0.0.1:2222
centos1: SSH username: vagrant
centos1: SSH auth method: private key
==> centos1: Rsyncing folder: /home/ignacio/CPDp/cpd5/ => /vagrant
==> centos1: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
[vagrant@centos1 ~]$ sudo vagrant ssh centos1
Last login: Tue Oct 27 09:52:04 2020 from 10.0.2.2
[vagrant@centos1 ~]$ ls -la /gluster/bricks/brick1/vol1/
total 0
drwxr-xr-x. 3 root root 40 Oct 27 12:49 .
drwxr-xr-x. 3 root root 18 Oct 27 12:27 ..
drw----- 8 root root 109 Oct 27 12:54 .glusterfs
-rw-r--r--. 2 root root 0 Oct 27 12:49 hola.cpp
[vagrant@centos1 ~]$
```

The file explorer windows show the contents of the 'cpd5' directory, which includes 'disk2.vdi', 'disk3.vdi', and 'Vagrantfile'.