

# Compartiendo archivos en una red Linux con NFS.

**Por:** John A. Pérez B. ~ 20186748

Este tutorial es un extracto del siguiente  
video:

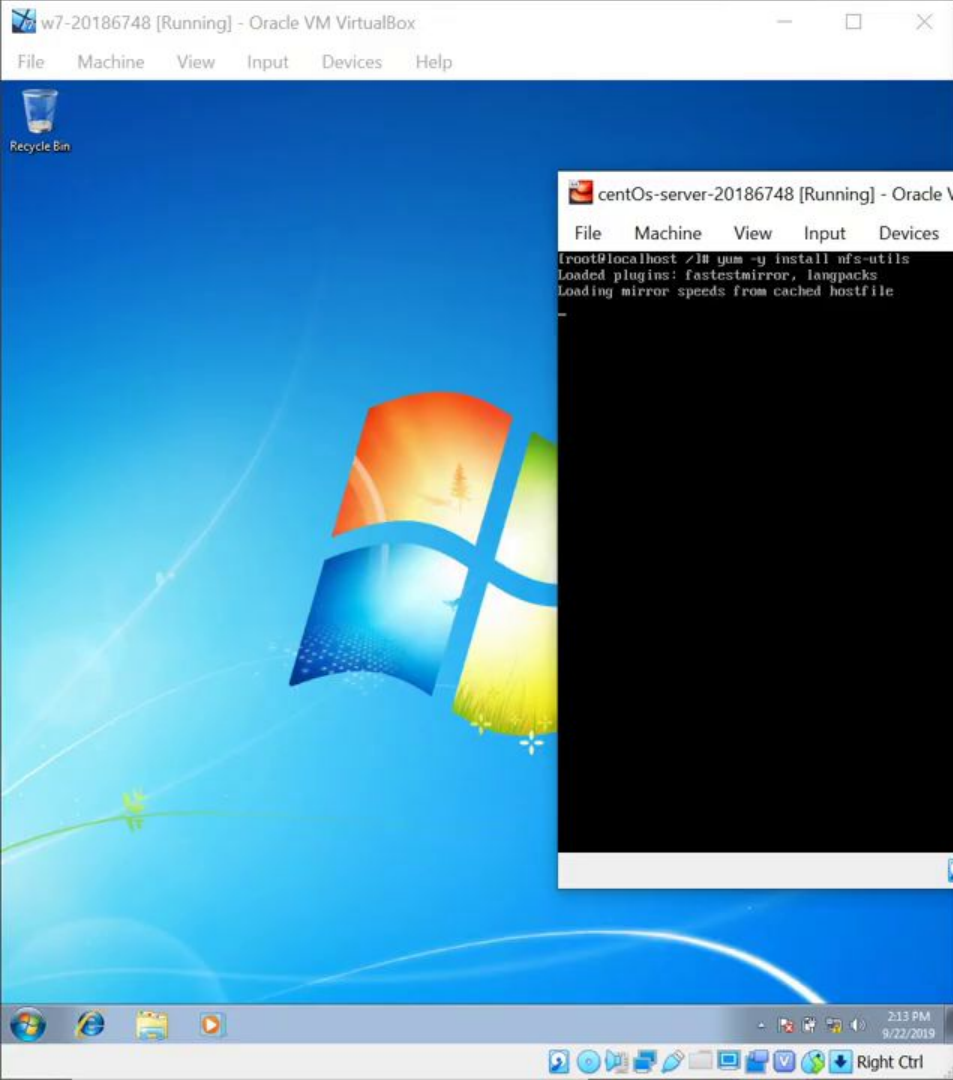
<https://youtu.be/P4e00jmkW0E>

**Fase 1:** Descargamos los  
paquetes necesarios

## Paso 1

Para comenzar descargamos el paquete nfs-utils en nuestro servidor con el comando **yum -y install nfs-utils.\***

\***yum** es el pkm de centos, y la opción **-y** acepta todas las condiciones de la instalacion por nosotros.



## Paso 2

Nuevamente utilizamos el comando **yum -y install nfs-utils** esta vez en nuestro cliente para instalar el nfs-utils.

root@localhost:~

```
[root@localhost ~]# yum -y install nfs-utils
```

root@localhost:~

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# Fase 2: Configuración de la red interna en Virtual Box



## **Paso 1**

En todas nuestras máquinas virtuales, nos vamos al menu de virtual  
vox en el panel superior, y luego vamos a dispositivos >  
configuraciones de red.



## **Paso 2**

En las configuraciones red, cambiamos la conexión a red local, y asignamos el nombre de nuestra red local. Luego repetimos el procedimiento con el servidor y el cliente Linux.



## w7-20186748 - Settings

- General
- System
- Display
- Storage
- Audio
- Network**
- Serial Ports
- USB
- Shared Folders
- User Interface

**Network**

Adapter 1 Adapter 2 Adapter 3 Adapter 4

☒ Enable Network Adapter

Attached to: Internal Network

Name:

nfs

▶ Advanced

OK

Cancel





Home



Trash

## centOs-cliente-20186748 - Settings

General

System

Display

Storage

Audio

Network

Serial Ports

USB

Shared Folders

User Interface

## Network

Adapter 1

Adapter 2

Adapter 3

Adapter 4

☒ Enable Network Adapter

Attached to: Internal Network

Name:

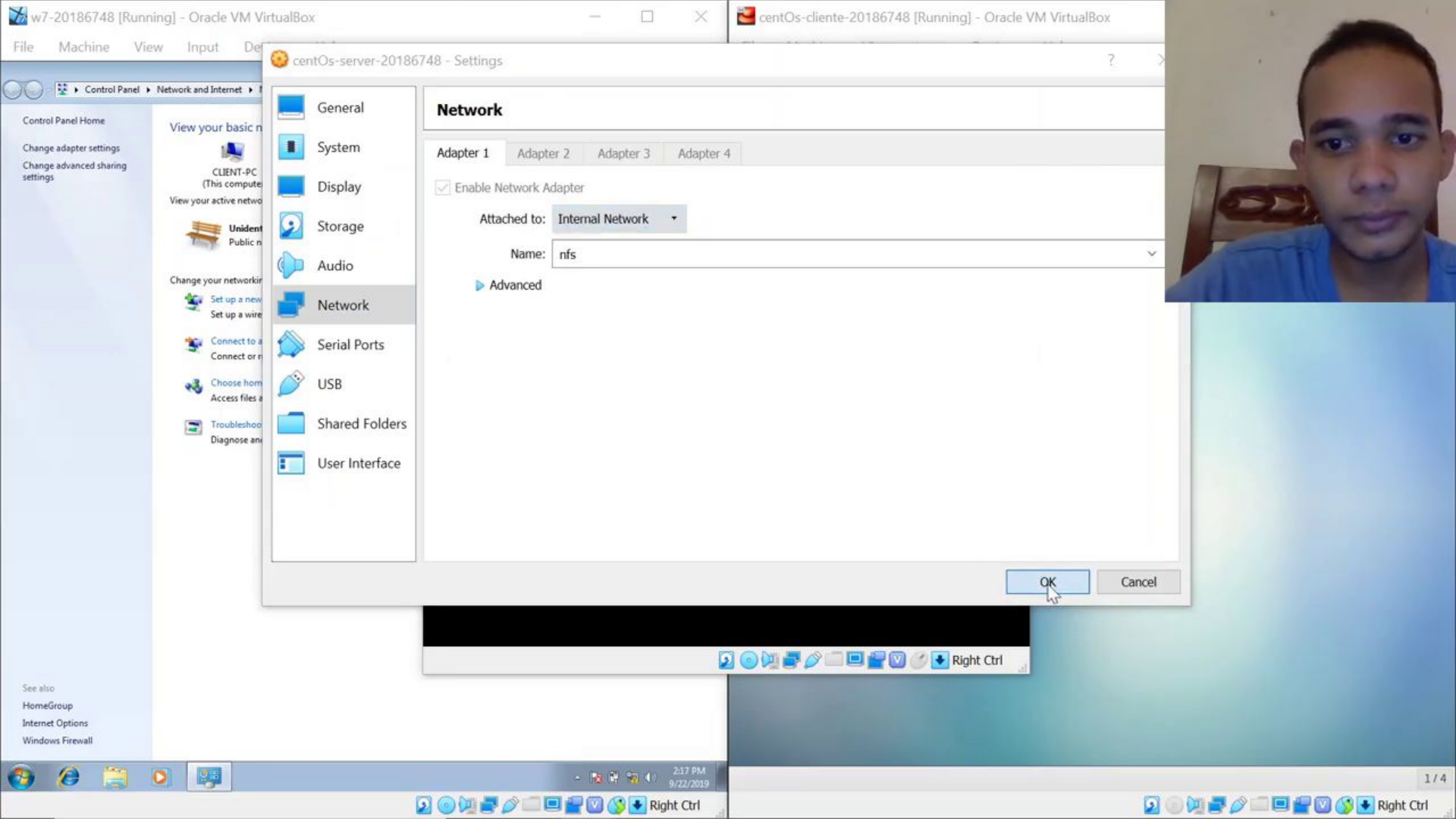
nfs

▶ Advanced

OK

Cancel

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CENTOS



# Configuración de las interfaces de red

---

## Paso 1

Colocamos todos nuestros computadores bajo la misma red para que puedan comunicarse.\*

\*En el vídeo anterior habíamos explicado como configurar la NIC por lo que se puede utilizar cualquiera de las formas que habíamos visto.



Control Panel Home

Change adapter settings  
Change advanced sharing  
settings

View your basic network information and set up connections

CLIENT-PC  
(This computer)

Unidentified network



Internet

[See full map](#)

View your active networks

[Connect or disconnect](#)**Unidentified network**  
Public networkAccess type: No network access  
Connections: Local Area Connection

Change your networking settings

[Set up a new connection or network](#)

Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access

[Connect to a network](#)

Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.

[Choose homegroup and sharing options](#)

Access files and printers located on other network computers, or change sharing settings.

[Troubleshoot problems](#)

Diagnose and repair network problems, or get troubleshooting information.

See also

HomeGroup  
Internet Options  
Windows Firewall

Local Area Connection Properties

Networking

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically☒ Use the following IP address:

IP address: 10 . 0 . 2 . 8

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 10 . 0 . 2 . 123

☐ Obtain DNS server address automatically☒ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

☐ Validate settings upon exit[Advanced...](#)

OK

Cancel

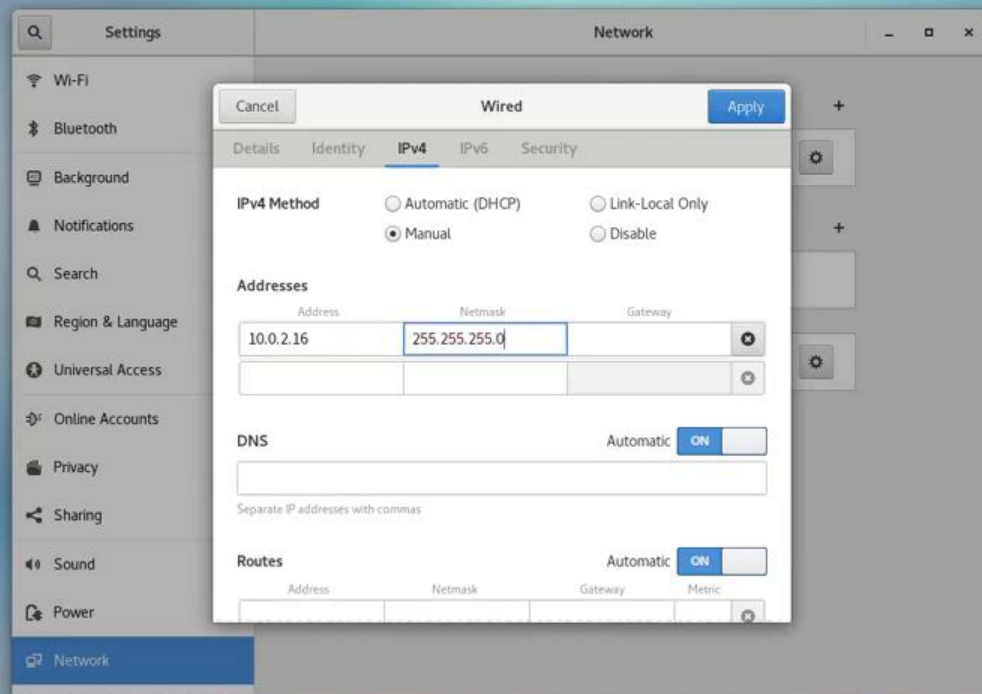




Home



Trash



w7-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Control Panel > Network and Internet > Network and Sharing Center

Control Panel Home

Change adapter settings  
Change advanced sharing settings

View your basic network information and set up connections:

CLIENT-PC (This computer) Unidentified network

View your active networks:

Unidentified network  
Public network

Change your networking settings:

- Set up a new connection or network  
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection
- Connect to a network  
Connect or reconnect to a wireless, wired, dial-up, or VPN connection
- Choose homegroup and sharing options  
Access files and printers located on other network computers
- Troubleshoot problems  
Diagnose and repair network problems, or get trouble shooting help

See also  
HomeGroup  
Internet Options  
Windows Firewall

2:19 PM  
9/22/2019

centOs-server-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

GNU nano 2.3.1 File: ifcfg-ens8s3 Modified

```
TYPE=Ethernet
PROXY_METHOD=none
BROWSER_ONLY=no
BOOTPROTO=none
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
IPV6INIT=yes
IPV6_AUTOCONF=yes
IPV6_DEFROUTE=yes
IPV6_FAILURE_FATAL=no
IPV6_ADDR_GEN_MODE=stable-privacy
NAME=ens8s3
UUID=a1141d29-ffbb-4eac-9a22-b1c2ca9c19f5
DEVICE=ens8s3
ONBOOT=no
IPADDR=10.0.2.123
NETMASK=255.255.255.0
```

Get Help WriteOut Read File Prev Page Cut Text Cur Pos  
Exit Justify Where Is Next Page UnCut Text To Spell

Right Ctrl



centOs-server-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Applications Places

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Right Ctrl

## Paso 2

Probamos que ambos clientes puedan comunicarse con el servidor.  
para esto utilizamos el comando **ping** y la dirección ip del servidor.



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\client>ping 10.0.2.123

Pinging 10.0.2.123 with 32 bytes of data:
Reply from 10.0.2.123: bytes=32 time=162ms TTL=64
Reply from 10.0.2.123: bytes=32 time<1ms TTL=64
Reply from 10.0.2.123: bytes=32 time<1ms TTL=64
Reply from 10.0.2.123: bytes=32 time<1ms TTL=64

Ping statistics for 10.0.2.123:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 162ms, Average = 40ms

C:\Users\client>
```





Home



Trash

```
root@localhost:~  
File Edit View Search Terminal Help  
[root@localhost ~]# ping 10.0.2.123  
PING 10.0.2.123 (10.0.2.123) 56(84) bytes of data.  
64 bytes from 10.0.2.123: icmp_seq=1 ttl=64 time=0.569 ms  
64 bytes from 10.0.2.123: icmp_seq=2 ttl=64 time=0.356 ms  
64 bytes from 10.0.2.123: icmp_seq=3 ttl=64 time=1.30 ms  
64 bytes from 10.0.2.123: icmp_seq=4 ttl=64 time=0.376 ms  
^C  
--- 10.0.2.123 ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3002ms  
rtt min/avg/max/mdev = 0.356/0.650/1.300/0.384 ms  
[root@localhost ~]#
```



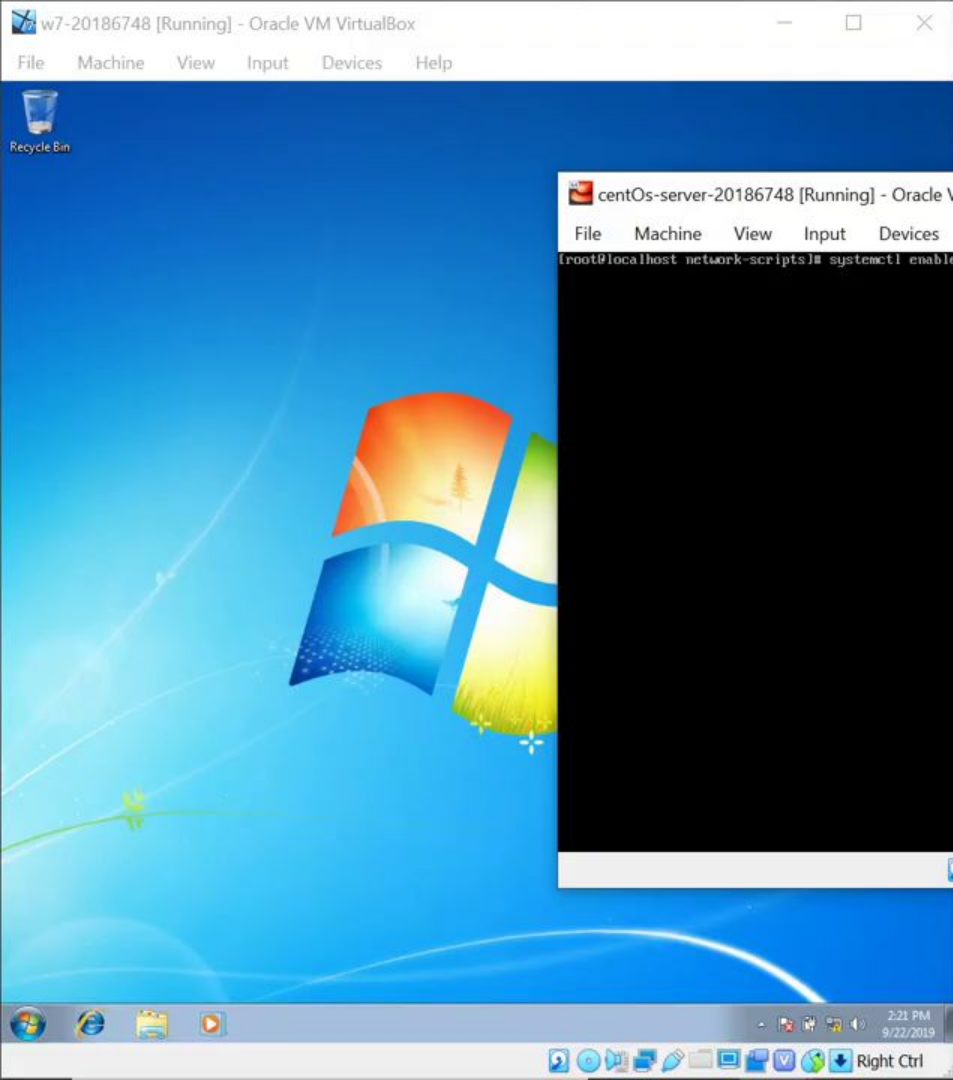
7  
CENTOS

# Fase 3: Configuración del servidor NFS

## Paso 1

En el servidor habilitamos el servicio nfs. con el comando  
**#systemctl enable nfs-server.service**

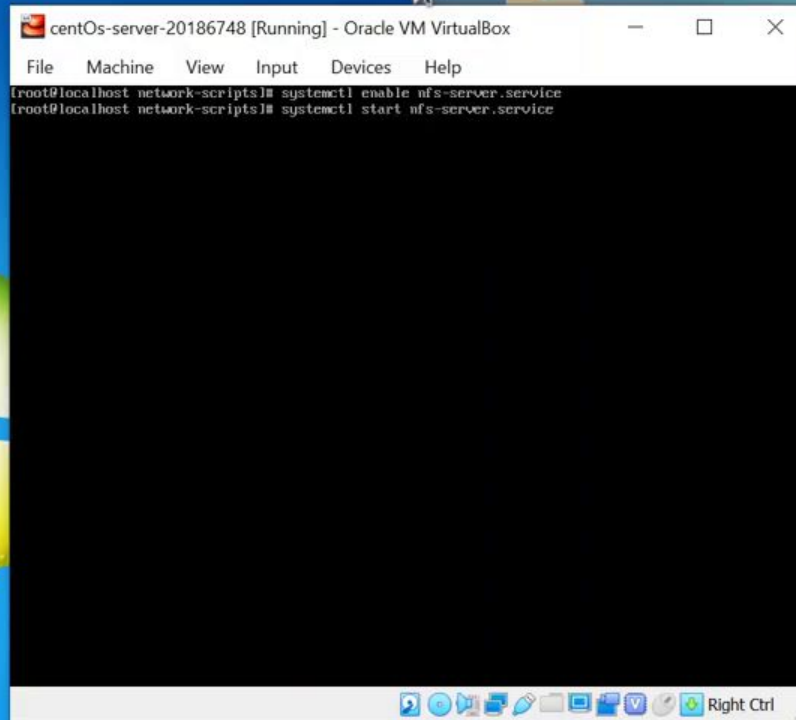
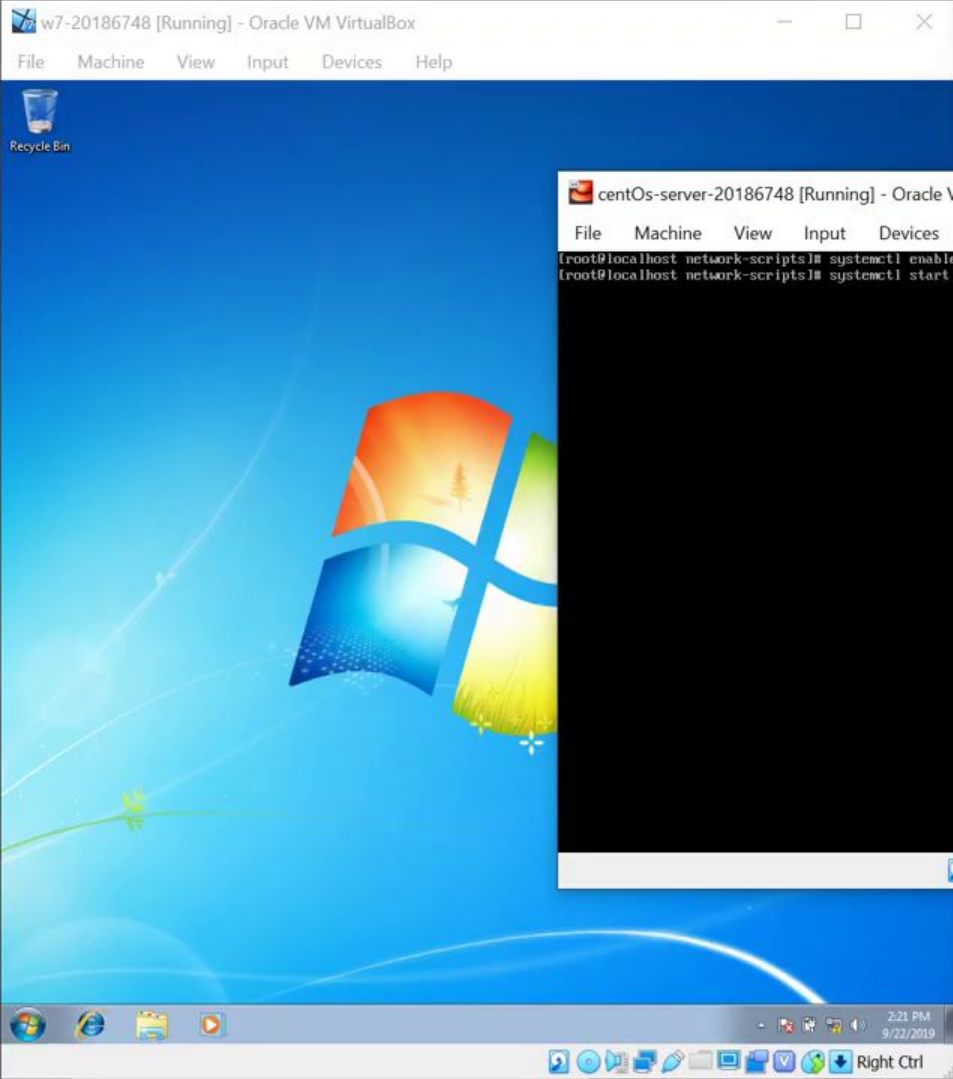




## Paso 2

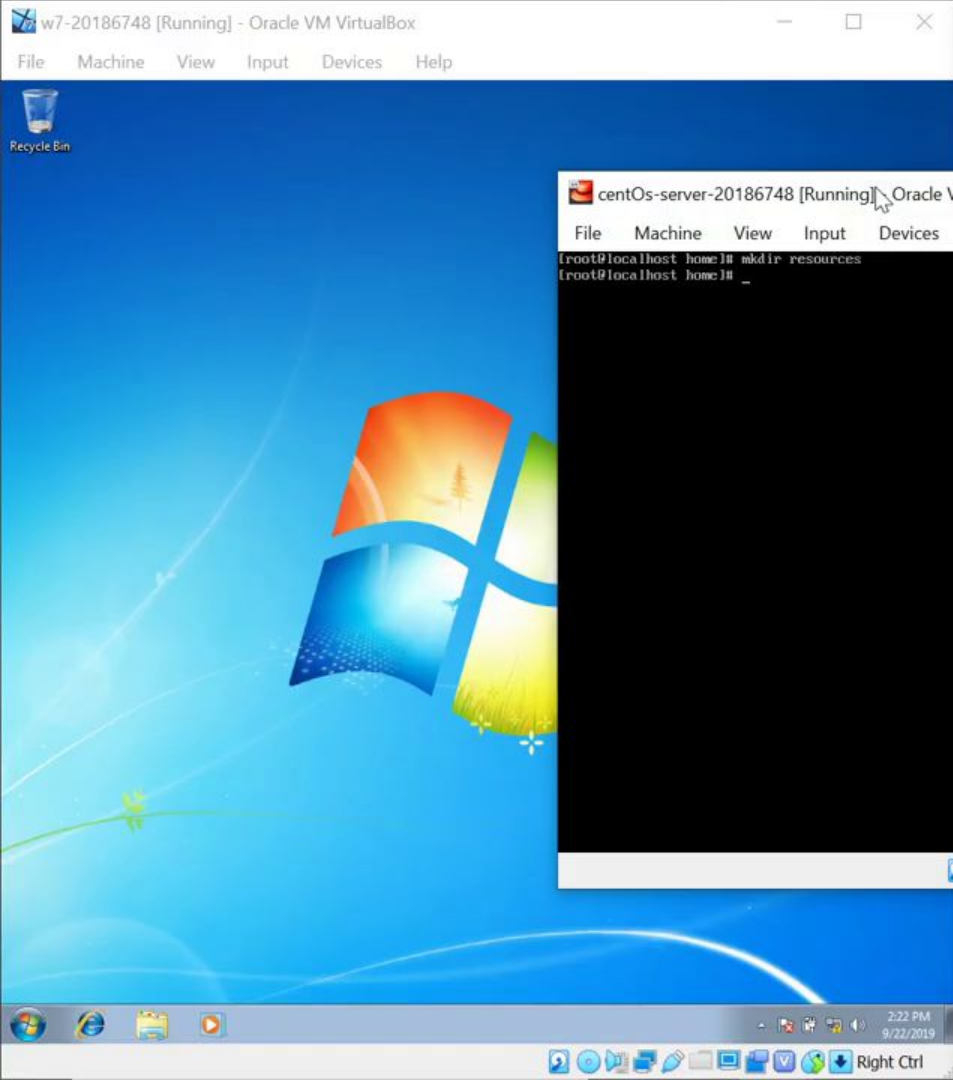
En el servidor iniciamos el servicio nfs. con el comando

**#systemctl start nfs-server.service**



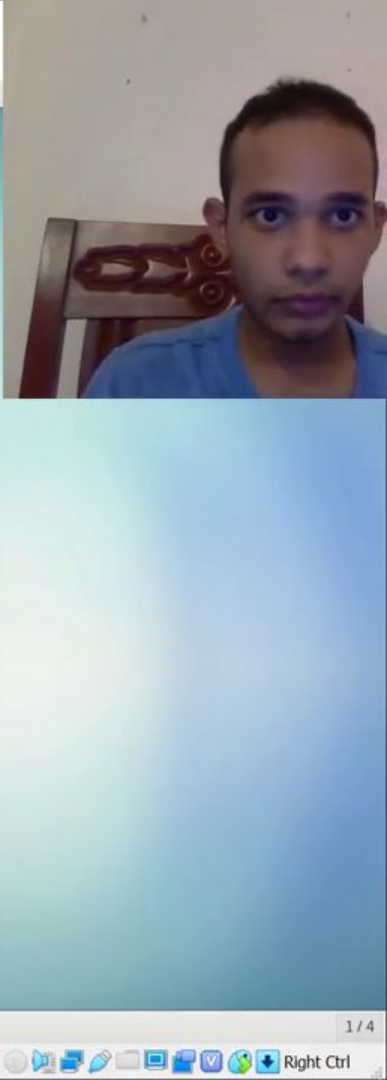
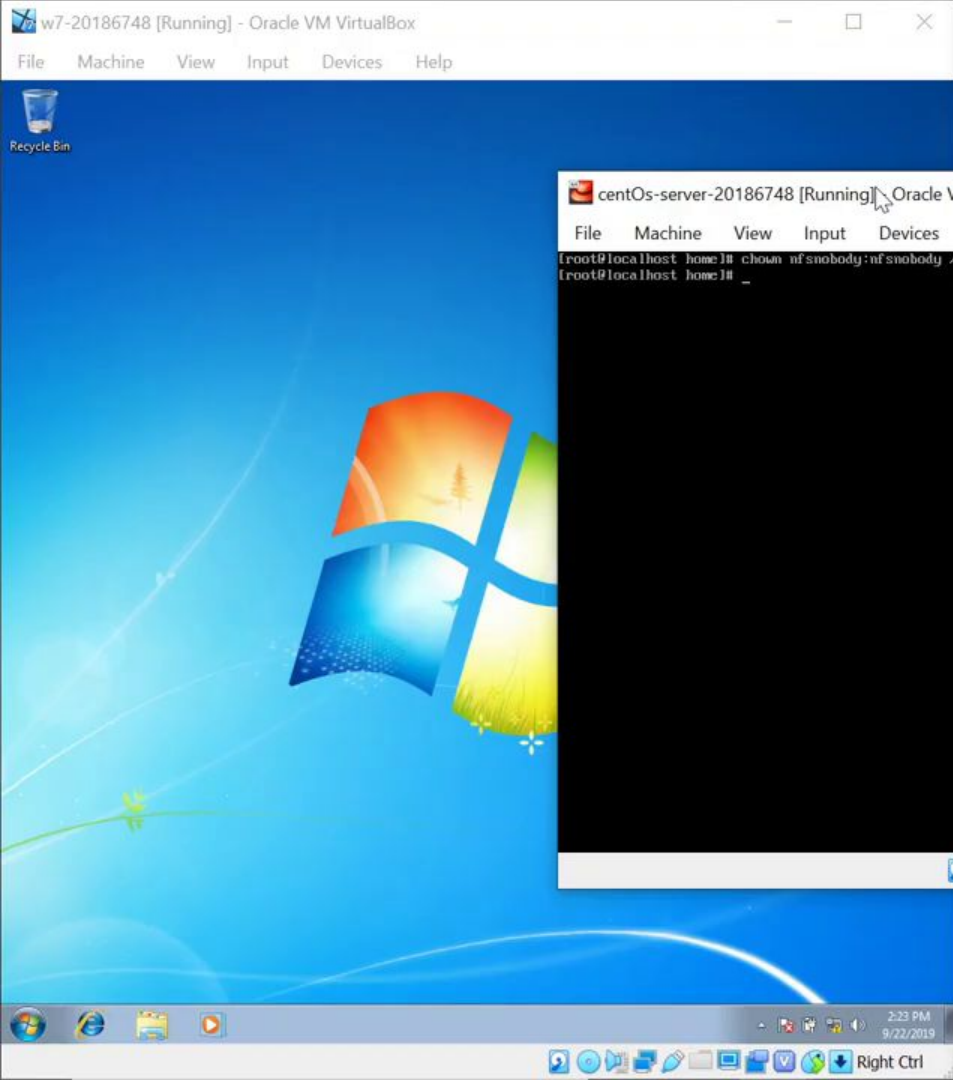
### Paso 3

Creamos el directorio que queremos compartir. para esto utilizamos el comando **mkdir** y el nombre del directorio que vamos a crear.



## Paso 4

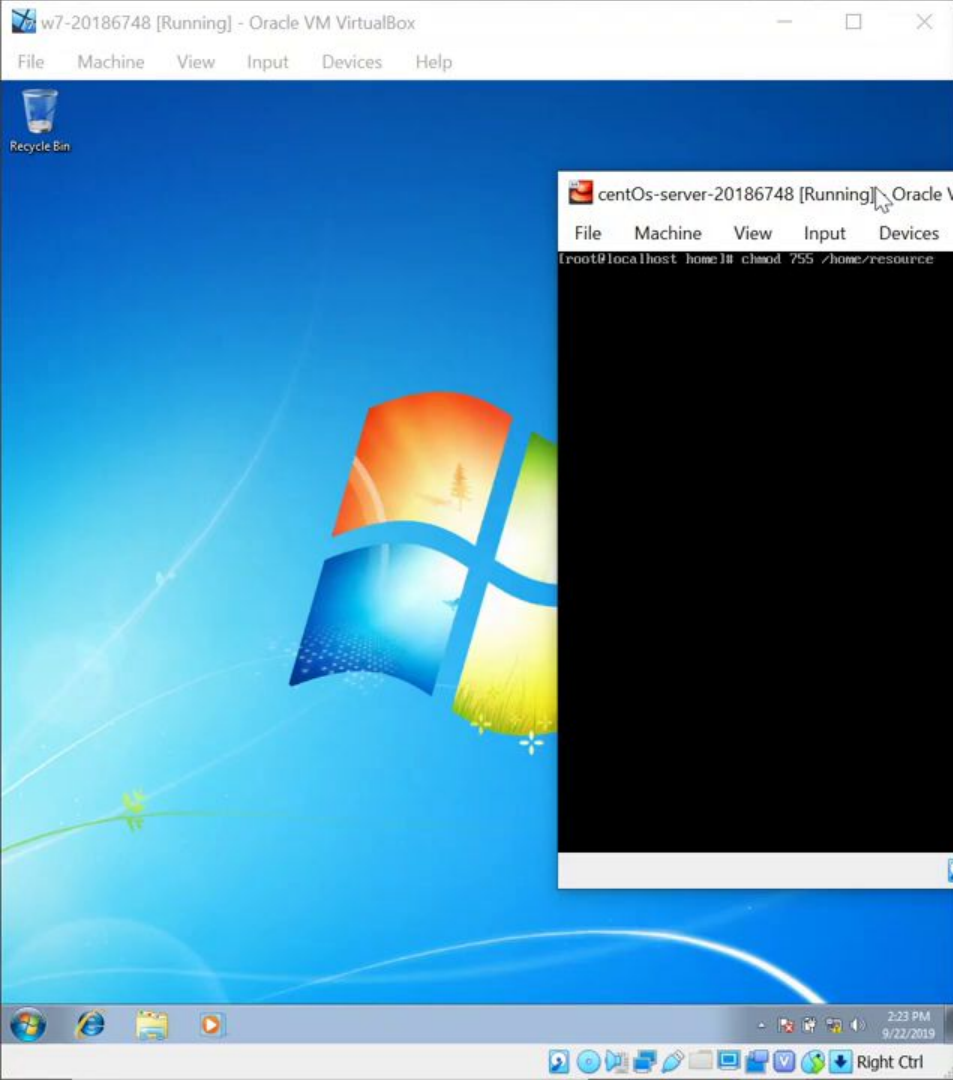
Asignamos el propietario de nuestro directorio a todos, con el comando **chown nfsnobody:nfsnobody** y el directorio.



## Paso 5

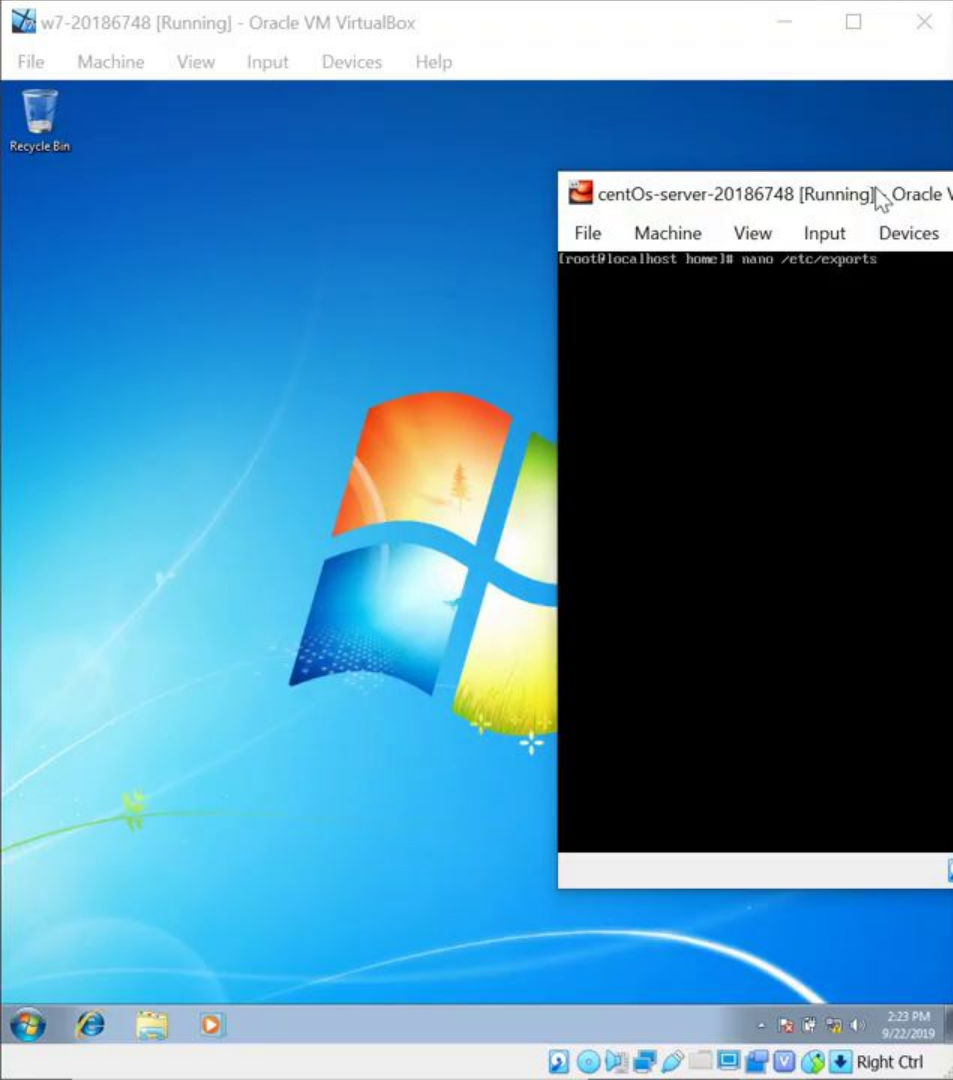
Cambiamos los permisos de nuestro directorio, con el comando **chmod** los permisos y el nombre de directorio. en este caso los permisos serán 755, todos para el dueño, y lectura y ejecución para grupos y otros. como se muestra en la siguiente images





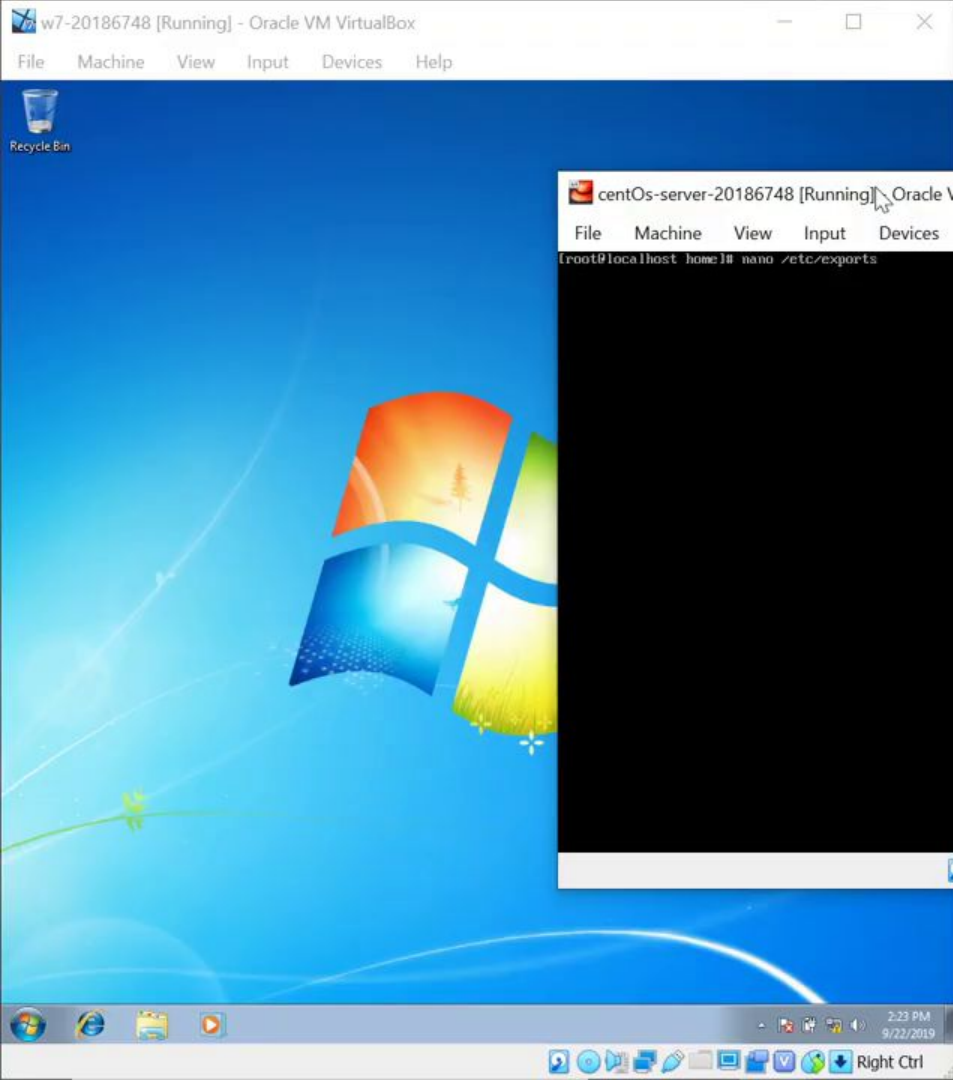
## Paso 6

Vamos al archivo **exports**, en el directorio /etc, para editar las configuraciones de los archivos compartidos.



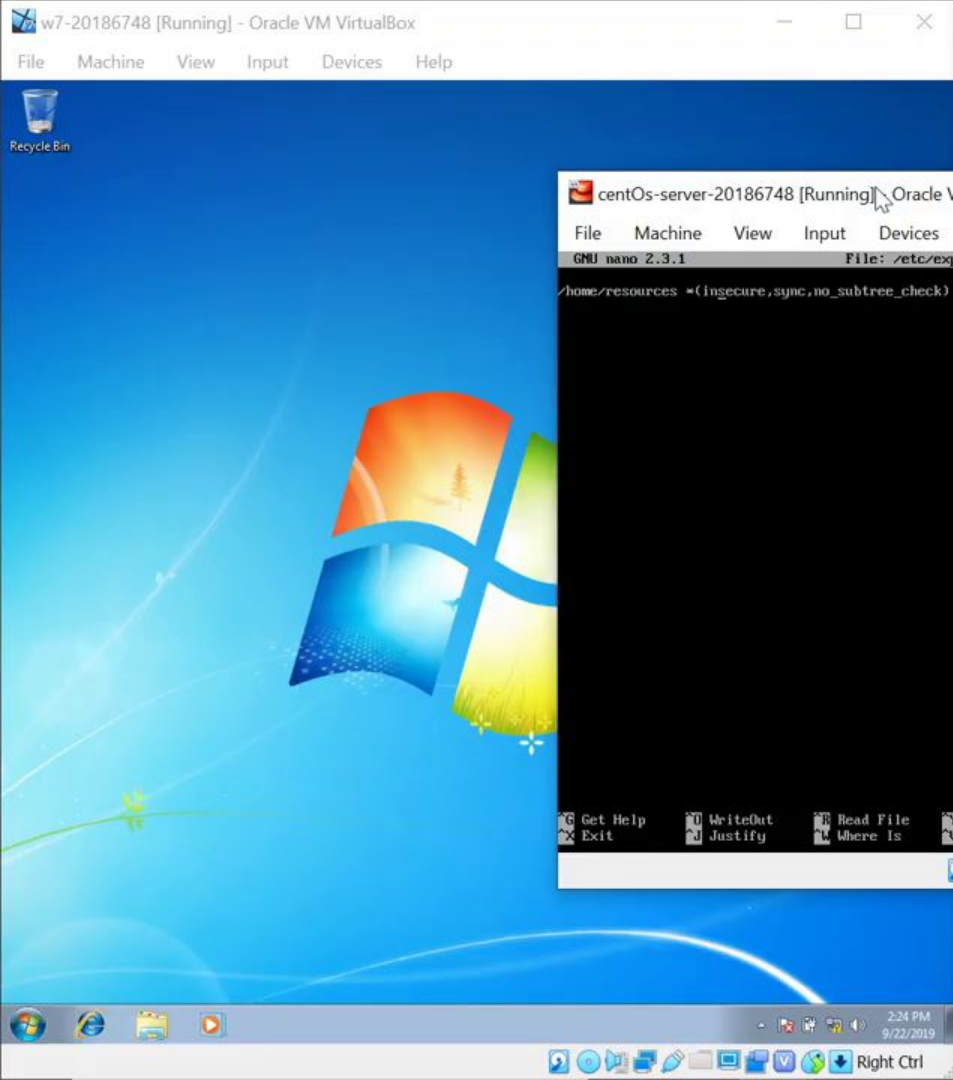
## Paso 7

Vamos al archivo **exports**, en el directorio /etc, para editar las configuraciones de los archivos compartidos.



## Paso 8

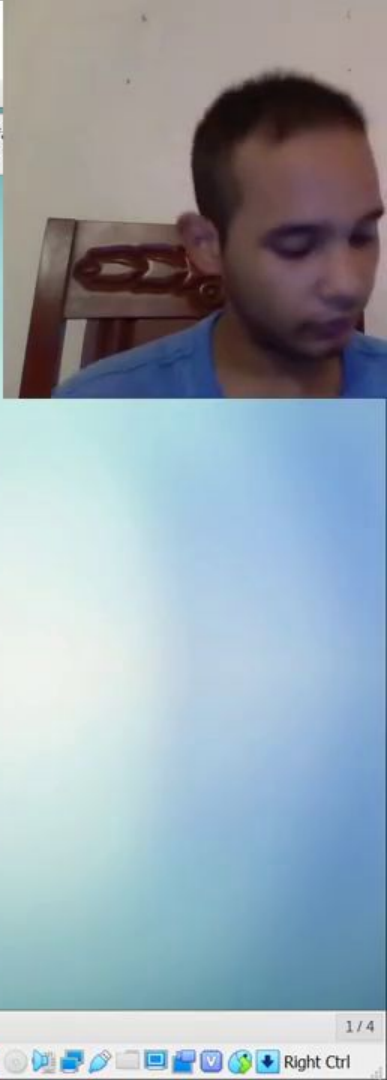
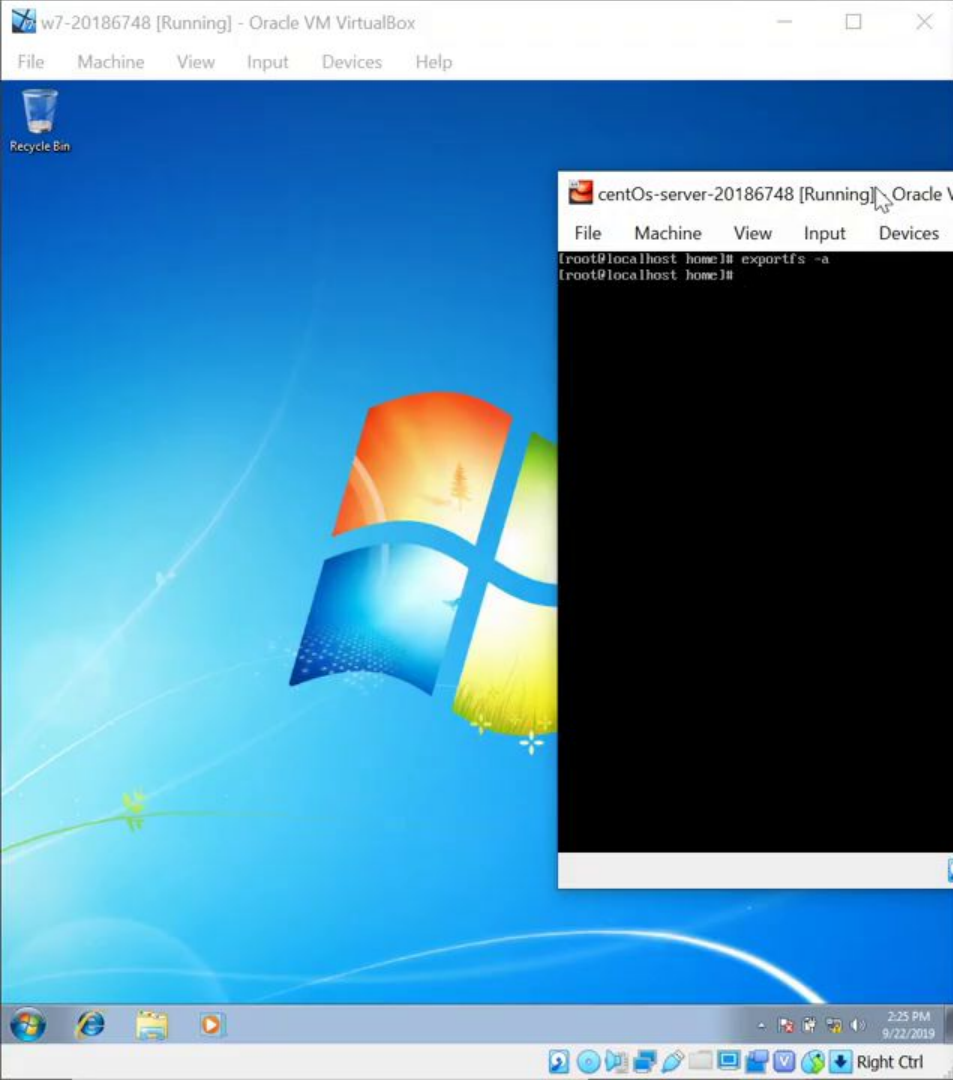
En el archivo **exports**, configuramos los parámetros del directorio que estamos compartiendo. donde la sintaxis que usaremos es la siguiente **/home/resources \*(insecure, sync, no\_subtree\_check)**. Primero colocamos el directorio, luego el \* que indica que el directorio se compartirá para todas las direcciones IP, y dentro del paréntesis las opciones.



## Paso 9

Luego de guardar las configuraciones, insertamos el comando **exportfs -a**, para exportarlas.





# Fase 4: Configuración del cliente Linux

## **Paso 1**

Creamos el directorio donde montaremos el directorio compartido



Home



Trash

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# mkdir shar
```

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## **Paso 2**

Verificamos los recursos compartido.



Home



Trash



share

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# mkdir share
[root@localhost Desktop]# ls
share
[root@localhost Desktop]# showmount -e 10.0.2.123
clnt_create: RPC: Port mapper failure - Unable to receive: errno 113 (No route to host)
[root@localhost Desktop]# showmount -e 10.0.2.123
Export list for 10.0.2.123:
/home/test *
/home/resources *
[root@localhost Desktop]#
```



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CENTOS

## Paso 3

montamos el directorio compartido con el comando.

**mount [la direccion del servido]:[Directorio compartido] [Destino]**



Home



Trash



share

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# mkdir share
[root@localhost Desktop]# ls
share
[root@localhost Desktop]# showmount -e 10.0.2.123
clnt_create: RPC: Port mapper failure - Unable to receive: errno 113 (No route to host)
[root@localhost Desktop]# showmount -e 10.0.2.123
Export list for 10.0.2.123:
/home/test *
/home/resources *
[root@localhost Desktop]# mount 10.0.2.123:/home/resources ./share
[root@localhost Desktop]#
```

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CENTOS



## Paso 4

Utilizamos el comando **df -h**. Para mostrar si el directorio esta conectado con el servidor



Home



Trash



share

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# mkdir share
[root@localhost Desktop]# ls
share
[root@localhost Desktop]# showmount -e 10.0.2.123
clnt_create: RPC: Port mapper failure - Unable to receive: errno 113 (No route to host)
[root@localhost Desktop]# showmount -e 10.0.2.123
Export list for 10.0.2.123:
/home/test *
/home/resources *
[root@localhost Desktop]# mount 10.0.2.123:/home/resources ./share
[root@localhost Desktop]# df -h
Filesystem                Size      Used Avail Use% Mounted on
/dev/mapper/centos-root    17G      4.5G   13G   26% /
devtmpfs                   903M          0  903M    0% /dev
tmpfs                      920M          0  920M    0% /dev/shm
tmpfs                      920M      9.5M   910M    2% /run
tmpfs                      920M          0  920M    0% /sys/fs/cgroup
/dev/sda1                  1014M    232M   783M   23% /boot
tmpfs                      184M      4.0K   184M    1% /run/user/42
tmpfs                      184M     36K   184M    1% /run/user/0
10.0.2.123:/home/resources 17G      1.3G    16G    8% /root/Desktop/share
[root@localhost Desktop]#
```

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CENTOS

## Paso 5

Finalmente colocamos el comando **mount**, para finalizar el proceso.



Home



Trash



Share

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
cgroup on /sys/fs/cgroup/memory type cgroup (rw,nosuid,nodev,noexec,relatime,seclabel,memory)
configfs on /sys/kernel/config type configfs (rw,relatime)
/dev/mapper/centos-root on / type xfs (rw,relatime,seclabel,attr2,inode64,noquota)
selinuxfs on /sys/fs/selinux type selinuxfs (rw,relatime)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=32,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=15461)
debugfs on /sys/kernel/debug type debugfs (rw,relatime)
mqueue on /dev/mqueue type mqueue (rw,relatime,seclabel)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,seclabel)
/dev/sdal on /boot type xfs (rw,relatime,seclabel,attr2,inode64,noquota)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw,relatime)
tmpfs on /run/user/42 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=188232k,mode=700,uid=42,gid=42)
tmpfs on /run/user/0 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=188232k,mode=700)
gvfsd-fuse on /run/user/0/gvfs type fuse.gvfsd-fuse (rw,nosuid,nodev,relatime,user_id=0,group_id=0)
fusectl on /sys/fs/fuse/connections type fusectl (rw,relatime)
10.0.2.123:/home/resources on /root/Desktop/share type nfs4 (rw,relatime,vers=4.1,rsize=262144,wsize=262144,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=10.0.2.16,local_lock=none,addr=10.0.2.123)
[root@localhost Desktop]#
```

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CENTOS

# Fase 5: Configuración del cliente Windows

# **Paso 1**

Nos vamos a programas y características



Recycle Bin

## Programs (1)

Default Programs

## Control Panel (20)

Programs and Features

- Change Customer Experience Improvement Program settings
- Uninstall a program
- Add or remove programs
- Show which programs are installed on your computer
- How to install a program
- Change or remove a program
- Run programs made for previous versions of Windows
- Allow a program through Windows Firewall
- Make a file type always open in a specific program
- Set your default programs

## Files (1)

Programs

See more results

progra Shut down



## **Paso 2**

Damos clic en activar o desactivar características de Windows, y activamos el cliente NFS.



Control Panel Home

View installed updates

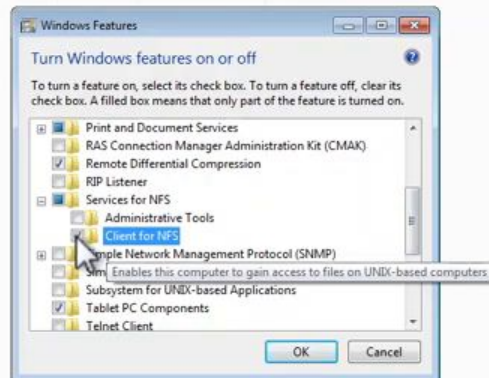
Turn Windows features on or off

## Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Organize ▾

Name	Publisher	Installed On	Size	Version
Oracle VM VirtualBox Guest Additions 6.0.8	Oracle Corporation	9/21/2019		6.0.8.0



Currently installed programs Total size: 0 bytes  
1 programs installed



## Paso 3

En la cmd utilizamos el comando **showmount** y la direccion del servidor para ver los directorios compartidos



```
C:\Windows\system32\cmd.exe
C:\Users\client>showmount -e 10.0.2.123
Exports list on 10.0.2.123:
/home/resources
/home/test
C:\Users\client>
```



## Paso 4

Utilizamos el comando **mount -o anon,rw,casesensitive [server ip]:[directorio] [disco para montar]**. Donde “anon” indica de que la conexion sera anomima, “rw” son los permisos de lectura y escritura, y “casesensitive” toma en cuenta las mayusculas al buscar el directorio. al final elegimos el disco en que queremos montar el directorio si colocamos \* Windows lo elije automaticamente

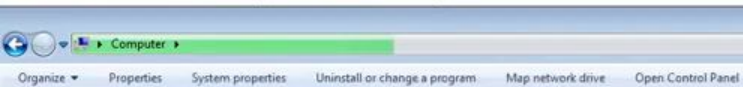


```
C:\Windows\system32\cmd.exe
C:\Users\client>showmount -e 10.0.2.123
Exports list on 10.0.2.123:
/home/resources          *
/home/test               *
C:\Users\client>nmount -o anon,rw,casesensitive 10.0.2.123:/home/resources z:
```



## **Paso 5**

Si queremos ver el disco compartido vamos a mi pc



#### Hard Disk Drives (1)



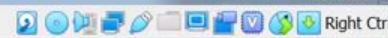
#### Devices with Removable Storage (2)



#### Network Location (1)



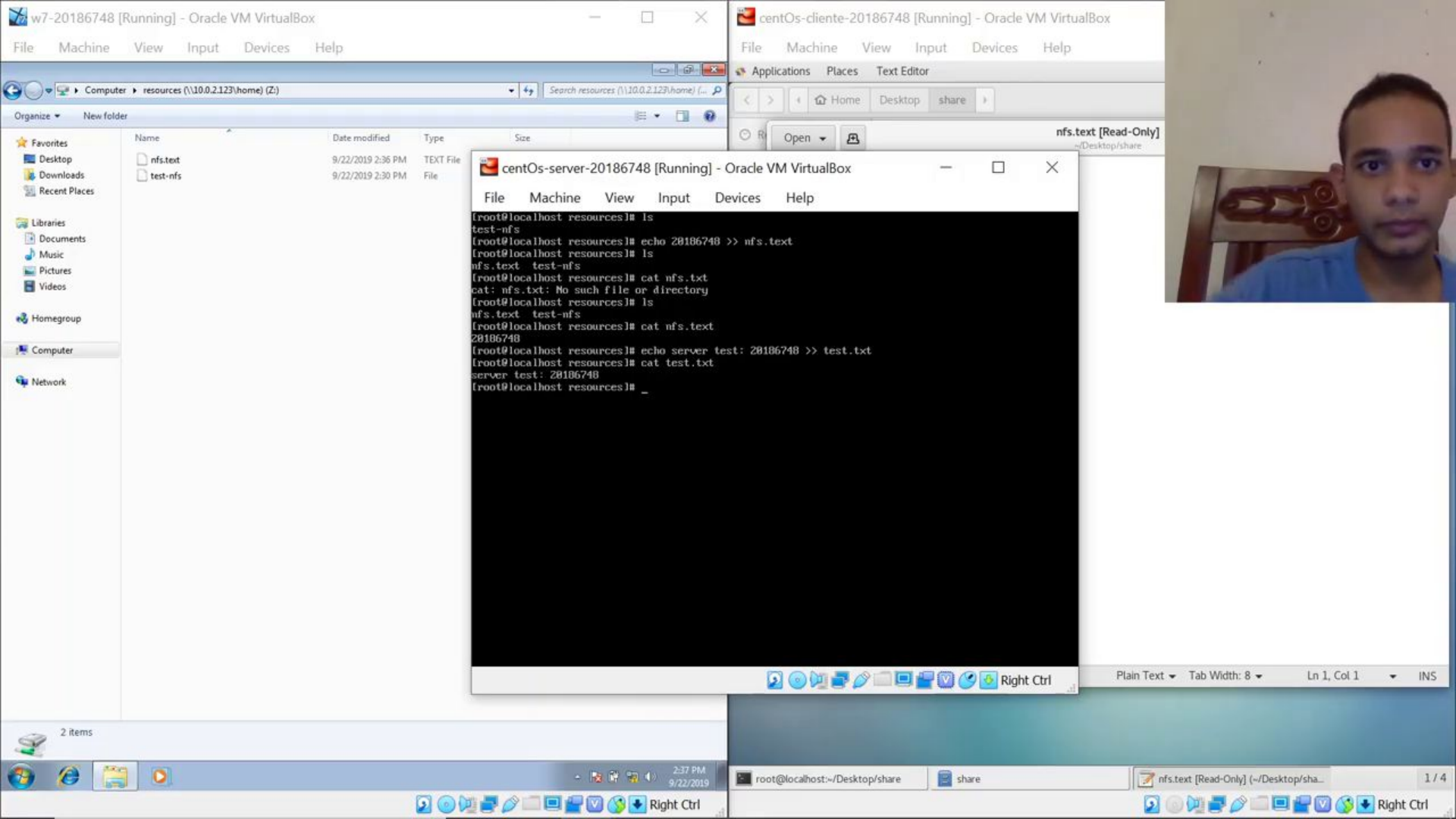
1 item selected



**Probando**



Para probar vamos a generar un archivo desde el servidor e interactuar con este a través de los clientes



w7-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Computer > resources (\\10.0.2.123\home) (Z:)

Search resources (\\10.0.2.123\home) (Z:)

Organize Open Print New folder

Name	Date modified	Type	Size
nfs.test	9/22/2019 2:36 PM	TEXT File	1 KB
test	9/22/2019 2:37 PM	Text Document	1 KB

test - Notepad

File Edit Format View Help

server test: 20186748

test  
Text Document  
Date modified: 9/22/2019 2:37 PM  
Date created: 9/22/2019 2:37 PM  
Size: 22 bytes

taskbar icons: Internet Explorer, Firefox, File Explorer, VLC, Notepad, Taskbar icons: Network, Volume, Speaker, 2:37 PM 9/22/2019

Right Ctrl

centOs-cliente-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Applications Places Files

< > < Home Desktop share >

Recent

Home

Documents

Downloads

Music

Pictures

Videos

Trash

+ Other Locations

nfs.test

test.txt

taskbar icons: Network, Volume, Speaker, 2:37 PM 9/22/2019

root@localhost: ~/Desktop/share


share

taskbar icons: Network, Volume, Speaker, 2:37 PM 9/22/2019

Right Ctrl

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"test.txt" selected (22 bytes)



w7-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Computer

Organize System properties Uninstall or change a program Map network drive Open Control Panel

Hard Disk Drives (1)

Local Disk (C:)

13.2 GB free of 19.8 GB

Devices with Removable Storage (1)

CD Drive (D:)

Network Location (1)

resources (\\10.0.2.123\h)

15.7 GB free of 16.9 GB

centOs-server-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

```
[root@localhost resources]# ls
test-nfs
[root@localhost resources]# echo 20186748 >> nfs.txt
[root@localhost resources]# ls
nfs.txt test-nfs
[root@localhost resources]# cat nfs.txt
cat: nfs.txt: No such file or directory
[root@localhost resources]# ls
nfs.txt test-nfs
[root@localhost resources]# cat nfs.txt
20186748
[root@localhost resources]# echo server test: 20186748 >> test.txt
[root@localhost resources]# cat test.txt
server test: 20186748
[root@localhost resources]#
```

centOs-cliente-20186748 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Applications Places Terminal

root@localhost:

File Edit View Search Terminal Help

```
[root@localhost share]# ls
test-nfs
[root@localhost share]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/mapper/centos-root 17G  4.5G      13G   27% /
devtmpfs        903M   0    903M   0% /dev
tmpfs           920M   0    920M   0% /dev/shm
tmpfs           920M  9.5M    910M   2% /run
tmpfs           920M   0    920M   0% /sys/fs/cgroup
/dev/sda1       1014M  232M   783M  23% /boot
tmpfs          184M  4.0K   184M   1% /run/user/42
tmpfs          184M  56K   184M   1% /run/user/0
10.0.2.123:/home/resources 17G  1.3G   16G   8% /root/Desktop/share
[root@localhost share]#
```

CLIENT-PC Workgroup: WORKGROUP Memory: 1.00 GB Processor: Intel(R) Core(TM) i5-82...

2:38 PM 9/22/2019

Right Ctrl

root@localhost:~/Desktop/share

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Right Ctrl