

linux2 [Running] - Oracle VM VirtualBox

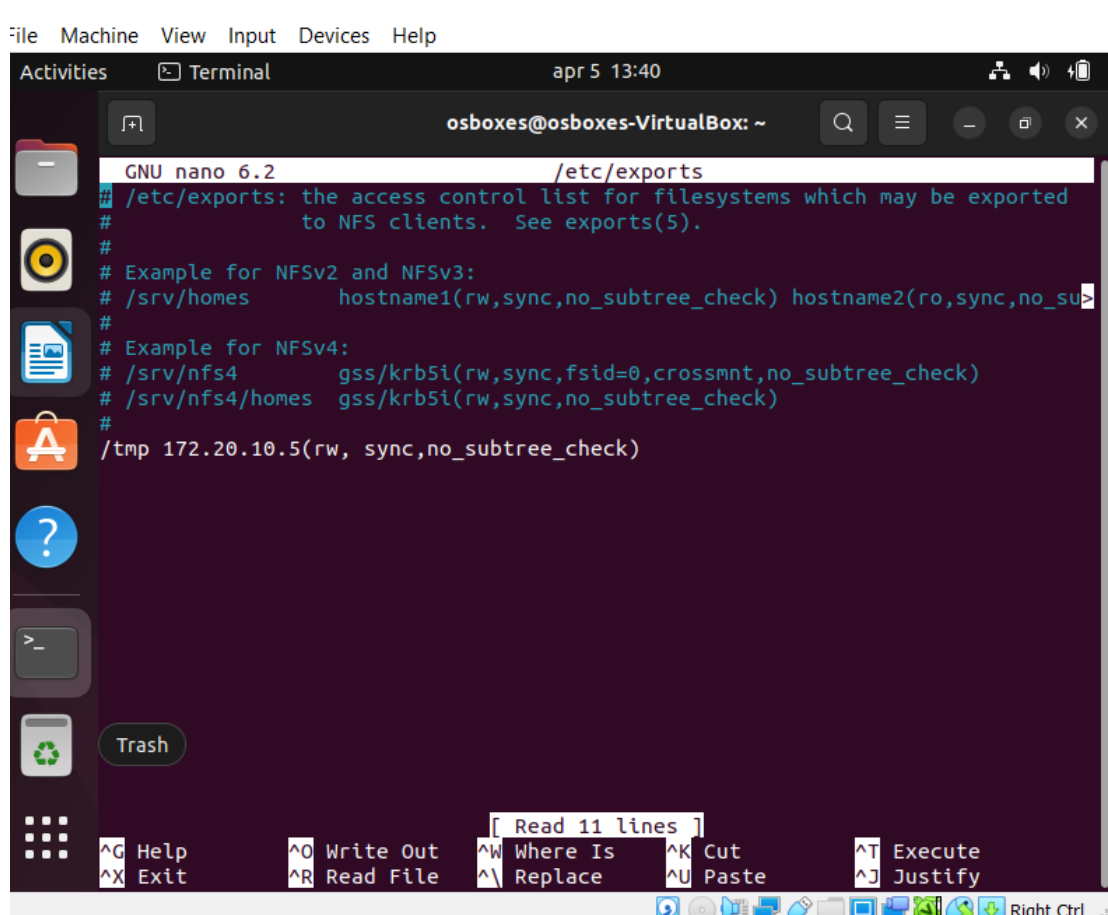
File Machine View Input Devices Help

Activities Terminal apr 5 13:39

```
osboxes@osboxes-VirtualBox: ~  
osboxes@osboxes-VirtualBox:~$ sudo apt-get update  
Hit:1 http://ro.archive.ubuntu.com/ubuntu jammy InRelease  
Hit:2 http://ro.archive.ubuntu.com/ubuntu jammy-updates InRelease  
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]  
Hit:4 http://ro.archive.ubuntu.com/ubuntu jammy-backports InRelease  
Fetched 110 kB in 2s (60,1 kB/s)  
Reading package lists... Done  
osboxes@osboxes-VirtualBox:~$ sudo apt-get install nfs-kernel-server  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
nfs-kernel-server is already the newest version (1:2.6.1-1ubuntu1.2).  
0 upgraded, 0 newly installed, 0 to remove and 119 not upgraded.  
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports  
osboxes@osboxes-VirtualBox:~$ y  
y: command not found  
osboxes@osboxes-VirtualBox:~$ sudo systemctl restart nfs-kernel-server  
osboxes@osboxes-VirtualBox:~$ ifconfig  
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
inet 172.20.10.4 netmask 255.255.255.240 broadcast 172.20.10.15  
inet6 fe80::ae94:126f:5c5b:4880 prefixlen 64 scopeid 0x20<link>  
ether 08:00:27:78:c8:b8 txqueuelen 1000 (Ethernet)  
RX packets 554141 bytes 748043009 (748.0 MB)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 69289 bytes 5025635 (5.0 MB)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0
```

On the 2nd
VM(server) I
installed the nfs-
kernel-server.

Then in order to share the files I edited the `/etc/exports` files with: `/tmp 1st-virtualbox-ip-addr(rw, sync, no_subtree_check)`, `rw` are the read write rights, `sync` writes are synchronous and `no_subtree_check` without subtree checking.



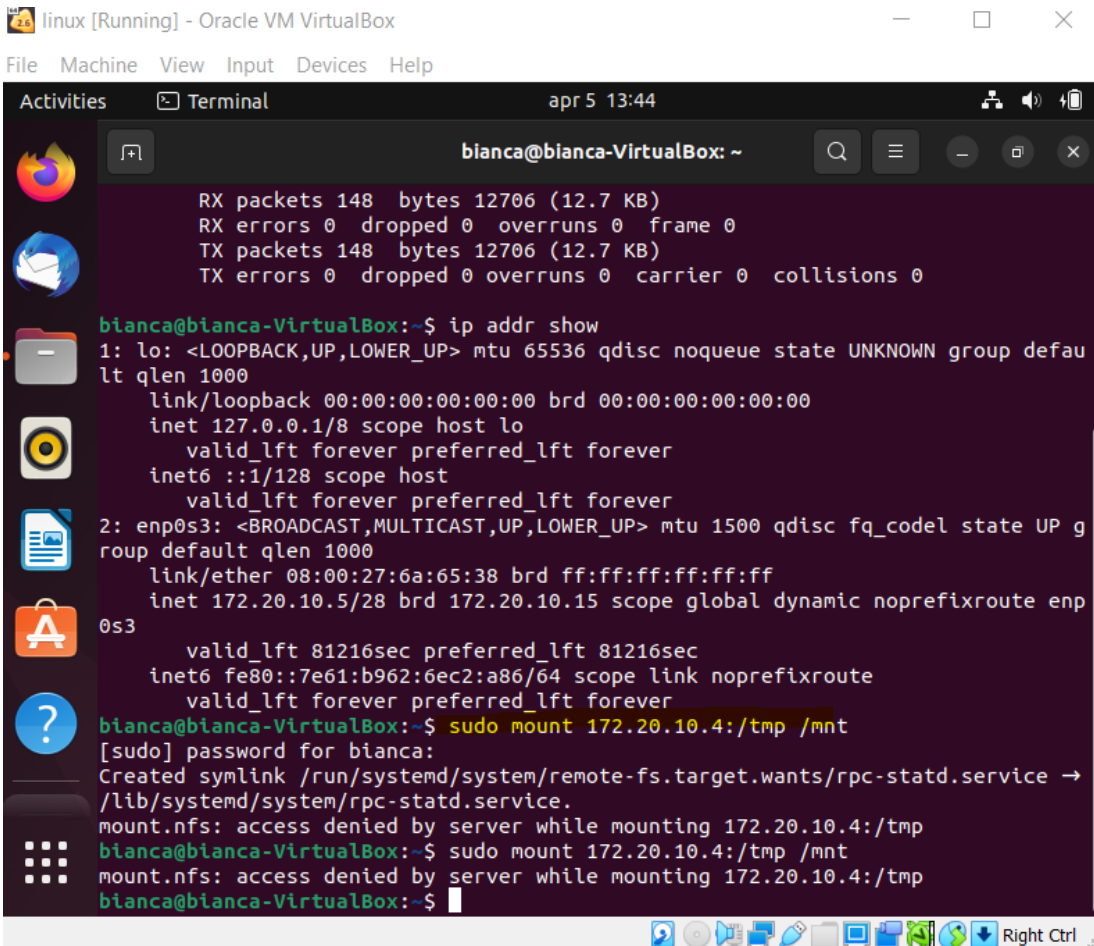
The screenshot shows a terminal window titled "osboxes@osboxes-VirtualBox: ~" with a menu bar (File, Machine, View, Input, Devices, Help) and a status bar (Activities, Terminal, apr 5 13:40). The terminal is running GNU nano 6.2, editing the file `/etc/exports`. The content of the file is as follows:

```
# /etc/exports: the access control list for filesystems which may be exported
# to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes hostname1(rw,sync,no_subtree_check) hostname2(ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4 gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes gss/krb5i(rw,sync,no_subtree_check)
#
/tmp 172.20.10.5(rw, sync,no_subtree_check)
```

At the bottom of the terminal, there is a status bar with various keyboard shortcuts: `^G Help`, `^X Exit`, `^O Write Out`, `^R Read File`, `^W Where Is`, `^_ Replace`, `^K Cut`, `^U Paste`, `^T Execute`, and `^J Justify`. A tooltip "[Read 11 lines]" is visible over the `^W Where Is` shortcut.

I saved it and restarted the nfs server to save the changes.

After that I went on the first machine and tried to mount the share with the following command(highlighted with yellow):



```
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bianca@bianca-VirtualBox: ~
RX packets 148 bytes 12706 (12.7 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 148 bytes 12706 (12.7 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

bianca@bianca-VirtualBox:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defau
lt qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP g
roup default qlen 1000
    link/ether 08:00:27:6a:65:38 brd ff:ff:ff:ff:ff:ff
    inet 172.20.10.5/28 brd 172.20.10.15 scope global dynamic noprefixroute enp
0s3
        valid_lft 81216sec preferred_lft 81216sec
    inet6 fe80::7e61:b962:6ec2:a86/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
bianca@bianca-VirtualBox:~$ sudo mount 172.20.10.4:/tmp /mnt
[sudo] password for bianca:
Created symlink /run/systemd/system/remote-fs.target.wants/rpc-statd.service ->
/lib/systemd/system/rpc-statd.service.
mount.nfs: access denied by server while mounting 172.20.10.4:/tmp
bianca@bianca-VirtualBox:~$ sudo mount 172.20.10.4:/tmp /mnt
mount.nfs: access denied by server while mounting 172.20.10.4:/tmp
bianca@bianca-VirtualBox:~$
```

I had an access denied error so I went to the other machine again and tried to check why I have this error:

- I checked the /etc/exports file such that it would have my modifications and that the /tmp directory is properly exported in the NFS server

- I tried to export it with “sudo exportfs -a”, which allows the NFS server to access and modify the exports file and shared directory, but I has some error here: “bad option list”

- I checked the permissions on the shared directory with “ls -ld /tmp” and it was fine.

- I also mde sure that the firewall on the NFS server is properly configured to allow incoming traffic on the NFS ports: “sudo ufw allow from <client-ip> to any port nfs”

All the commands are in the following screenshot:

```
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ exportfs -a
exportfs: /etc/exports:1: syntax error: bad option list
exportfs: could not open /var/lib/nfs/.etab.lock for locking: errno 13 (Permission denied)
exportfs: could not open /var/lib/nfs/.etab.lock for locking: errno 13 (Permission denied)
exportfs: can't lock /var/lib/nfs/etab for writing
osboxes@osboxes-VirtualBox:~$ ls -l /etc/exports
-rw-r--r-- 1 root root 426 apr  5 13:11 /etc/exports
osboxes@osboxes-VirtualBox:~$ ls -ld /tmp
drwxrwxrwt 19 root root 4096 apr  5 13:24 /tmp
osboxes@osboxes-VirtualBox:~$ sudo exportfs -a
exportfs: /etc/exports:1: syntax error: bad option list
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ sudo exportfs -a
exportfs: /etc/exports:1: syntax error: bad option list
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$ sudo exportfs -a
exportfs: /etc/exports:1: syntax error: bad option list
osboxes@osboxes-VirtualBox:~$ sudo ufw allow from 172.20.10.5 to any port nfs
Rules updated
osboxes@osboxes-VirtualBox:~$ ls -ld /tmp
drwxrwxrwt 19 root root 4096 apr  5 13:37 /tmp
osboxes@osboxes-VirtualBox:~$ sudo nano /etc/exports
osboxes@osboxes-VirtualBox:~$
```

I checked the IP addresses using “ipconfig” and “ip addr show” so that was not a problem.

Yet now, I think that after mounting the shared folders from the 2nd VM, the /tmp directory will have read-write access, while the /tmp/14a directory will only have read rights, because the /tmp folder was shared with read-write rights, so it inherited this permissions. But the /tmp/14 would be shared with read-only rights, so it would have only read rights.

So any changes made to the files in the /tmp folder on the first VM will be reflected on the 2nd VM, as both have read-write rights.

Any changes made to the files in the /tmp/14a folder on the first VM will not be reflected on the 2nd VM as the folder is mounted with read-only access. The first virtual machine can only reead files in /tmp/14a, but not modify them.

I forgot to mention that I also installed on the 1st VM “sudo apt install nfs-common”.