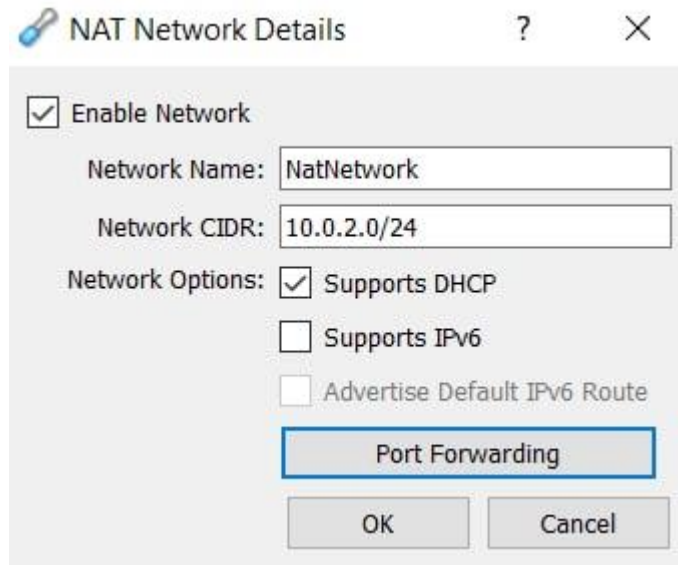


Linux lab

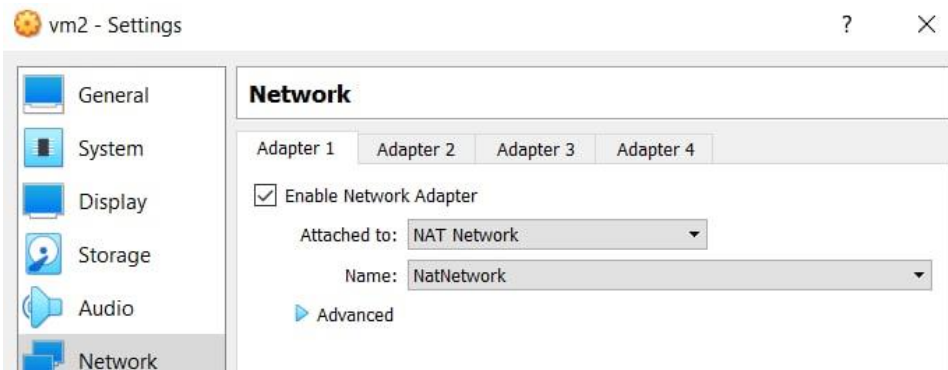
245693

Prerequisites

A new NAT network has been created.

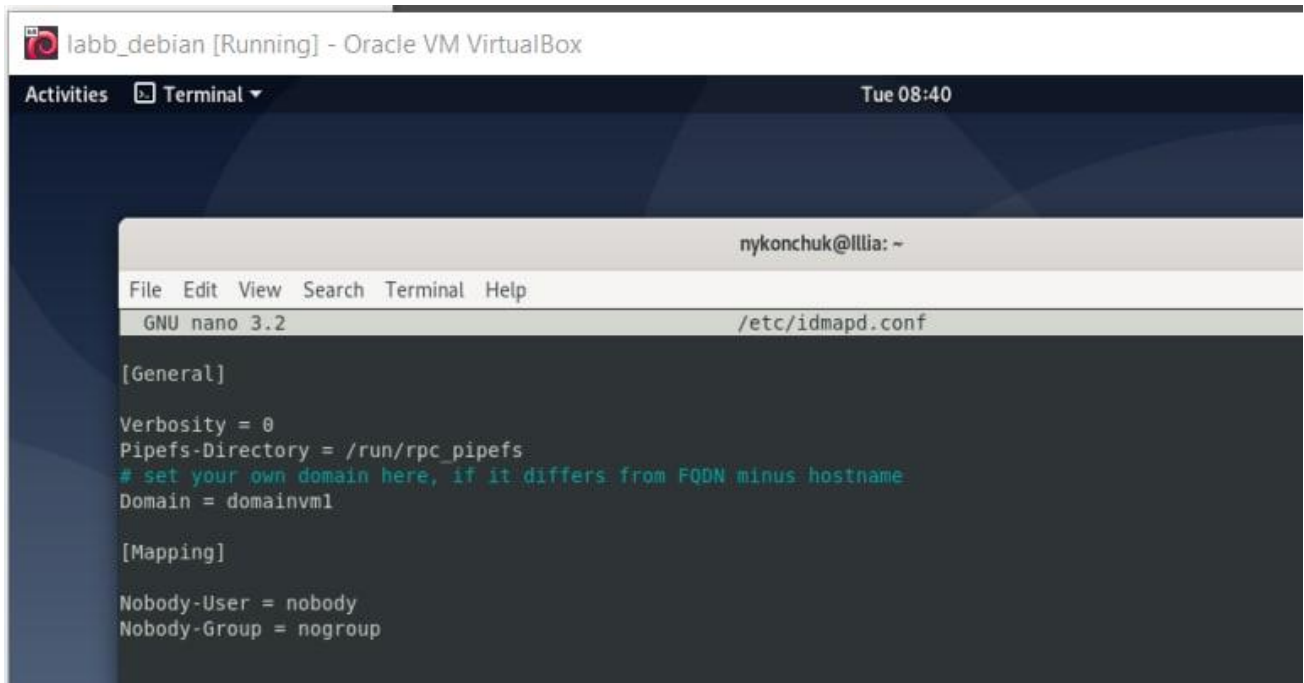


Configured on VM2 and VM1 as following:



Task 1

VM1 Domain configuration



The screenshot shows a terminal window titled "labb_debian [Running] - Oracle VM VirtualBox" with a timestamp of "Tue 08:40". The terminal is running the nano text editor on the file "/etc/idmapd.conf". The user is "nykonchuk@llia: ~". The editor shows the following content:

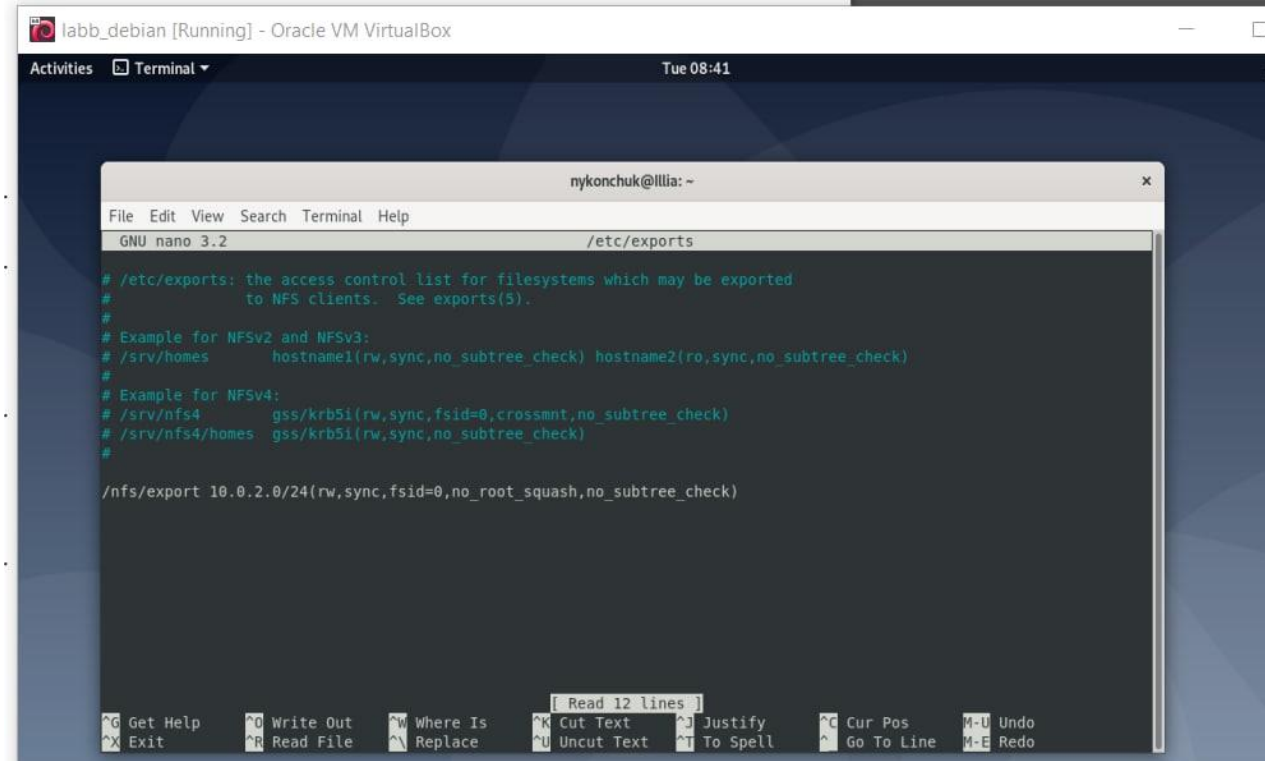
```
[General]

Verbosity = 0
Pipefs-Directory = /run/rpc_pipefs
# set your own domain here, if it differs from FQDN minus hostname
Domain = domainvml

[Mapping]

Nobody-User = nobody
Nobody-Group = nogroup
```

NFS configuration



The screenshot shows a terminal window titled "labb_debian [Running] - Oracle VM VirtualBox" with a timestamp of "Tue 08:41". The terminal is running the nano text editor on the file "/etc/exports". The user is "nykonchuk@llia: ~". The editor shows the following content:

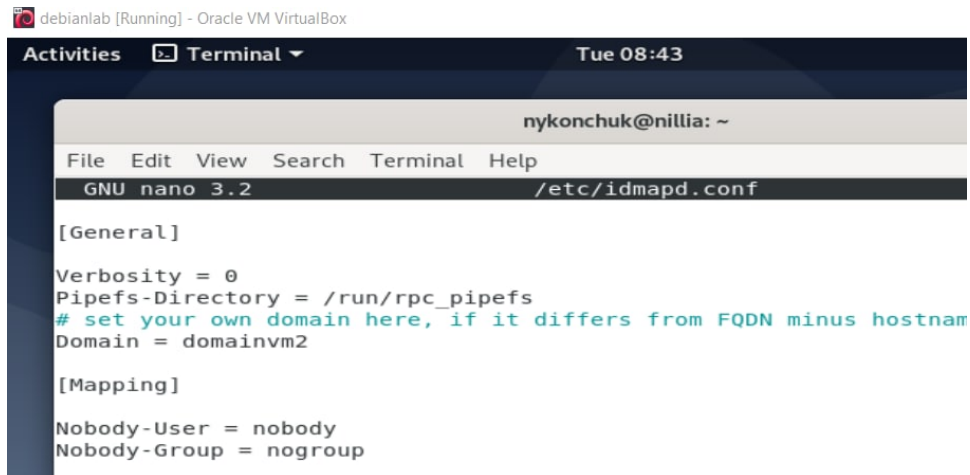
```
# /etc/exports: the access control list for filesystems which may be exported
# to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes      hostname1(rw,sync,no_subtree_check) hostname2(ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4       gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes gss/krb5i(rw,sync,no_subtree_check)
#
/nfs/export 10.0.2.0/24(rw,sync,fsid=0,no_root_squash,no_subtree_check)
```

At the bottom of the terminal window, there is a status bar with various keyboard shortcuts: `^G Get Help`, `^X Exit`, `^O Write Out`, `^R Read File`, `^W Where Is`, `^N Replace`, `^K Cut Text`, `^U Uncut Text`, `^J Justify`, `^T To Spell`, `^C Cur Pos`, `^_ Go To Line`, `M-U Undo`, and `M-E Redo`. A small tooltip above the status bar indicates "Read 12 lines".

Restart:

```
root@Illia:~# systemctl restart nfs-server.service
root@Illia:~#
```

Domain configuration on vm2:



The screenshot shows a terminal window titled "debianlab [Running] - Oracle VM VirtualBox". The terminal displays the nano editor editing the file "/etc/idmapd.conf". The user is "nykonchuk@nillia: ~". The configuration includes a [General] section with "Verbosity = 0", "Pipefs-Directory = /run/rpc_pipefs", a comment "# set your own domain here, if it differs from FQDN minus hostnam", and "Domain = domainvm2". The [Mapping] section includes "Nobody-User = nobody" and "Nobody-Group = nogroup".

```
nykonchuk@nillia: ~
File Edit View Search Terminal Help
GNU nano 3.2 /etc/idmapd.conf

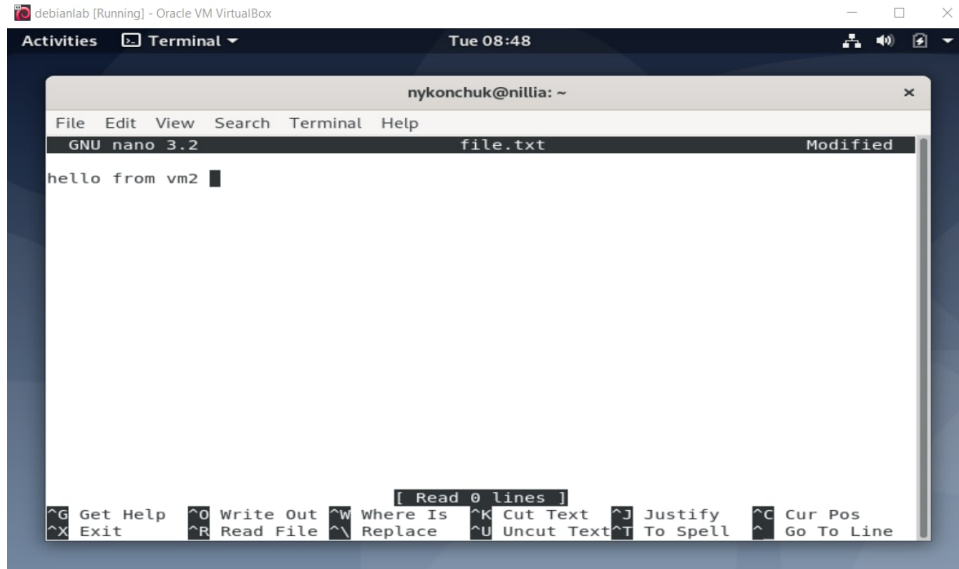
[General]
Verbosity = 0
Pipefs-Directory = /run/rpc_pipefs
# set your own domain here, if it differs from FQDN minus hostnam
Domain = domainvm2

[Mapping]
Nobody-User = nobody
Nobody-Group = nogroup
```

Mount:

```
root@nillia:~# mount -t nfs 10.0.2.101:/nfs/export /nfs/import
^C
root@nillia:~# mount -t nfs 10.0.2.5:/nfs/export /nfs/import
root@nillia:~# df -h
Filesystem                Size      Used Avail Use% Mounted on
udev                      475M         0  475M   0% /dev
tmpfs                      99M       4.9M   94M   5% /run
/dev/sda1                 6.9G       3.8G   2.8G  59% /
tmpfs                     494M         0  494M   0% /dev/shm
tmpfs                     5.0M       4.0K   5.0M   1% /run/lock
tmpfs                     494M         0  494M   0% /sys/fs/cgroup
tmpfs                      99M       4.6M   95M   5% /run/user/1000
/dev/sr1                  337M      337M         0 100% /media/cdrom1
10.0.2.5:/nfs/export      11G       4.0G   5.9G  41% /nfs/import
```

Create and a file on vm2:



```

root@nillia:/nfs/import# nano file.txt
root@nillia:/nfs/import# ls
file.txt
root@nillia:/nfs/import# nano file.txt
root@nillia:/nfs/import# touch filevm2.txt
root@nillia:/nfs/import#

```

Check if it is on vm1:

```

root@Illia:~# cd /nfs/export
root@Illia:/nfs/export# ls
file.txt filevm2.txt
root@Illia:/nfs/export#

```

Unmount:

```

root@nillia:~# umount /nfs/import
root@nillia:~# df -h

```

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	475M	0	475M	0%	/dev
tmpfs	99M	4.9M	94M	5%	/run
/dev/sda1	6.9G	3.8G	2.8G	59%	/
tmpfs	494M	0	494M	0%	/dev/shm
tmpfs	5.0M	4.0K	5.0M	1%	/run/lock
tmpfs	494M	0	494M	0%	/sys/fs/cgroup
tmpfs	99M	4.6M	95M	5%	/run/user/1000
/dev/sr1	337M	337M	0	100%	/media/cdrom1

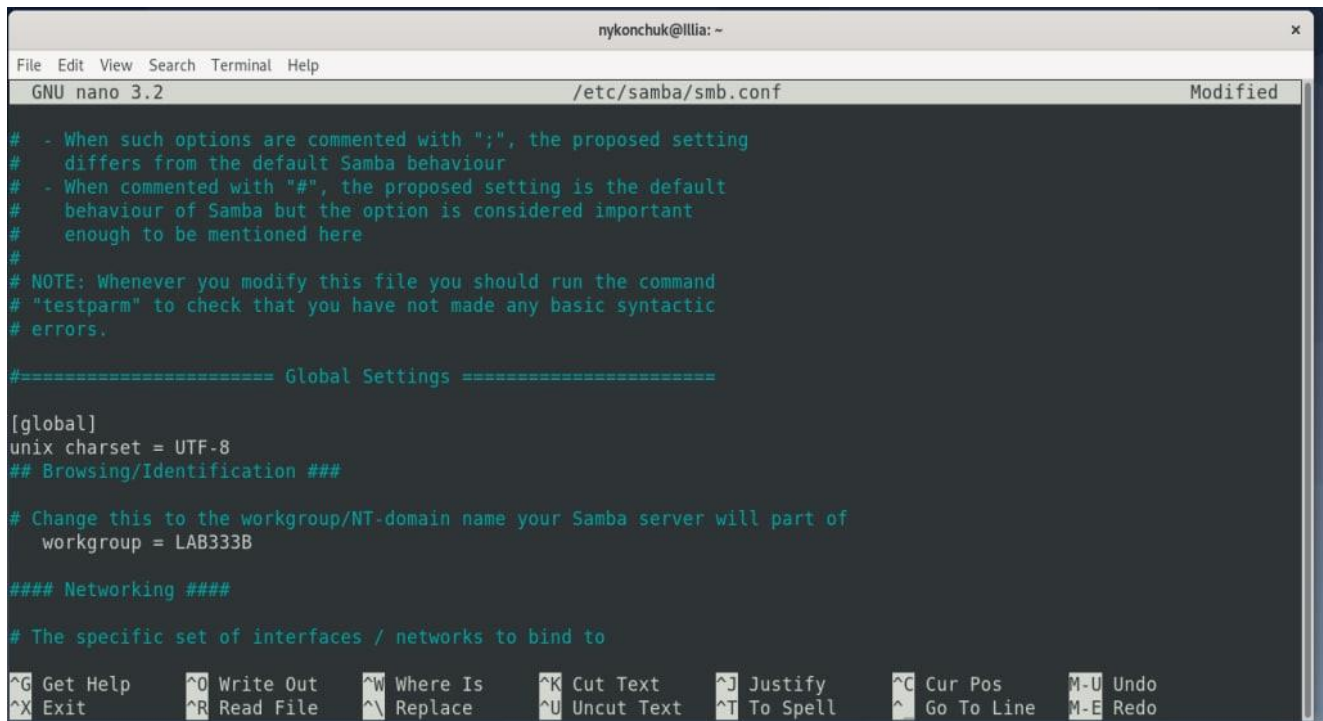
```

root@nillia:~#

```

Task 2

Smb.conf:



The screenshot shows a terminal window titled 'nykonchuk@llia: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The editor is GNU nano 3.2, editing /etc/samba/smb.conf. The file content includes comments about settings, a NOTE about the 'testparm' command, a section for Global Settings with [global] parameters like 'unix charset = UTF-8' and 'workgroup = LAB333B', and a section for Networking with 'interfaces'.

```
# - When such options are commented with ";", the proposed setting
#   differs from the default Samba behaviour
# - When commented with "#", the proposed setting is the default
#   behaviour of Samba but the option is considered important
#   enough to be mentioned here
#
# NOTE: Whenever you modify this file you should run the command
# "testparm" to check that you have not made any basic syntactic
# errors.

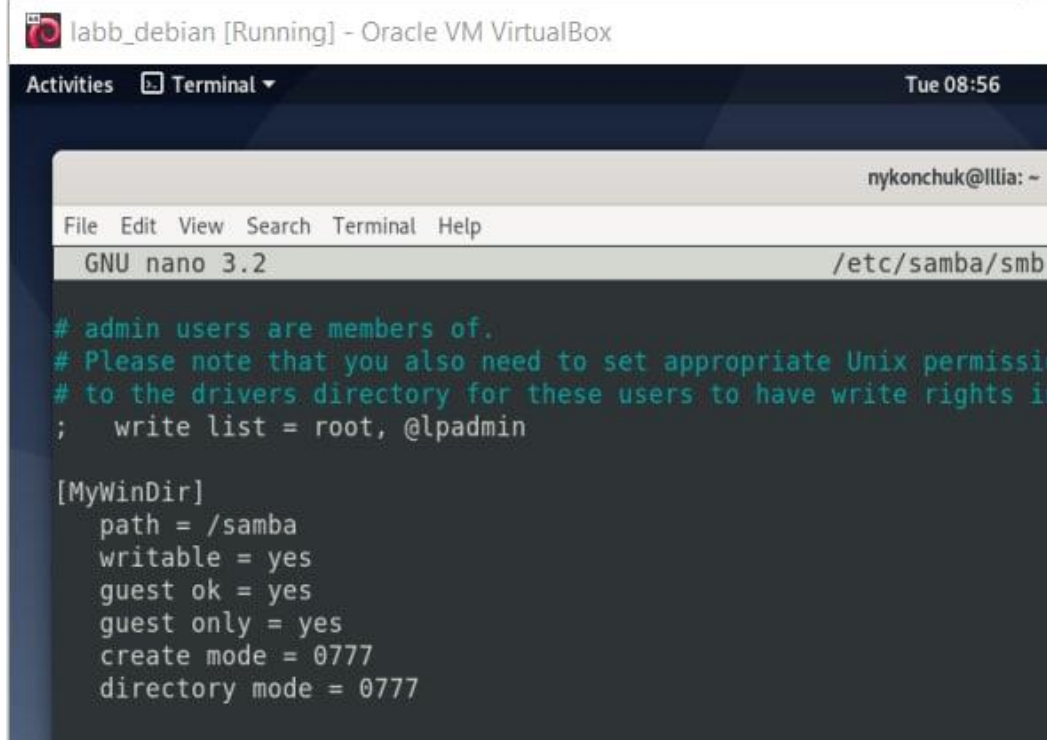
#===== Global Settings =====

[global]
unix charset = UTF-8
## Browsing/Identification ##

# Change this to the workgroup/NT-domain name your Samba server will part of
workgroup = LAB333B

#### Networking ####

# The specific set of interfaces / networks to bind to
```



The screenshot shows a terminal window titled 'labb_debian [Running] - Oracle VM VirtualBox' with a menu bar (File, Edit, View, Search, Terminal, Help). The editor is GNU nano 3.2, editing /etc/samba/smb.conf. The visible content includes the [MyWinDir] section with parameters like 'path = /samba', 'writable = yes', 'guest ok = yes', 'guest only = yes', 'create mode = 0777', and 'directory mode = 0777'.

```
# admin users are members of.
# Please note that you also need to set appropriate Unix permissions
# to the drivers directory for these users to have write rights in it
; write list = root, @lpadmin

[MyWinDir]
path = /samba
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
```

Test and restart:

```
root@Illia:/# testparm /etc/samba/smb.conf
rlimit_max: increasing rlimit_max (1024) to minimum Windows limit (16384)
Registered MSG_REQ_POOL_USAGE
Registered MSG_REQ_DMALLOC_MARK and LOG_CHANGED
Load smb config files from /etc/samba/smb.conf
rlimit_max: increasing rlimit_max (1024) to minimum Windows limit (16384)
Processing section "[homes]"
Processing section "[printers]"
Processing section "[print$]"
Processing section "[MyWinDir]"
Loaded services file OK.
Server role: ROLE_STANDALONE
```

Press enter to see a dump of your service definitions

Global parameters

```
[global]
    log file = /var/log/samba/log.%m
    logging = file
    map to guest = Bad User
    max log size = 1000
```

```
[MyWinDir]
    create mask = 0777
    directory mask = 0777
    guest ok = Yes
    guest only = Yes
    path = /samba
    read only = No
root@Illia:/#
```



```

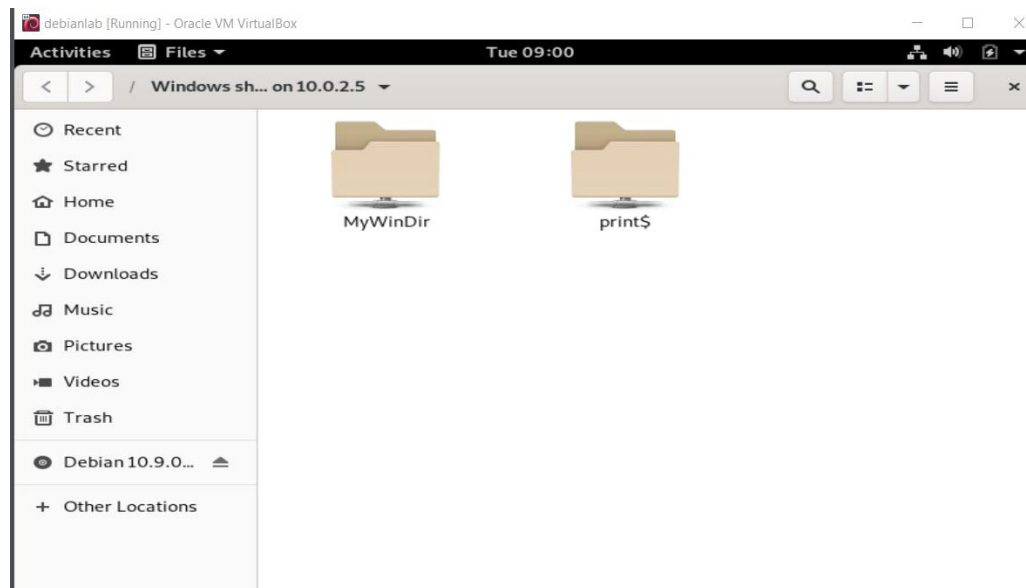
Activities Terminal Tue 08:58
nykonchuk@Illia: ~
File Edit View Search Terminal Help
Active: active (running) since Tue 2021-06-01 08:52:56 EDT; 5min ago
Docs: man:smbd(8)
      man:samba(7)
      man:smb.conf(5)
Main PID: 3227 (smbd)
Status: "smbd: ready to serve connections..."
Tasks: 4 (limit: 2880)
Memory: 14.7M
CGroup: /system.slice/smbd.service
└─3227 /usr/sbin/smbd --foreground --no-process-group
   └─3229 /usr/sbin/smbd --foreground --no-process-group
      └─3230 /usr/sbin/smbd --foreground --no-process-group
         └─3232 /usr/sbin/smbd --foreground --no-process-group

Jun 01 08:52:55 Illia update-apparmor-samba-profile[3218]: grep: /etc/apparmor.d/samba/smbd-shar
Jun 01 08:52:56 Illia update-apparmor-samba-profile[3218]: diff: /etc/apparmor.d/samba/smbd-shar
Jun 01 08:52:56 Illia systemd[1]: Started Samba SMB Daemon.
Jun 01 08:52:56 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:56 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:57 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:57 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:58 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:59 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b
Jun 01 08:52:59 Illia systemd[1]: /lib/systemd/system/smbd.service:9: PIDFile= references path b

root@Illia:~# systemctl restart smbd
root@Illia:~#

```

VM2 nautilus:



Create file:



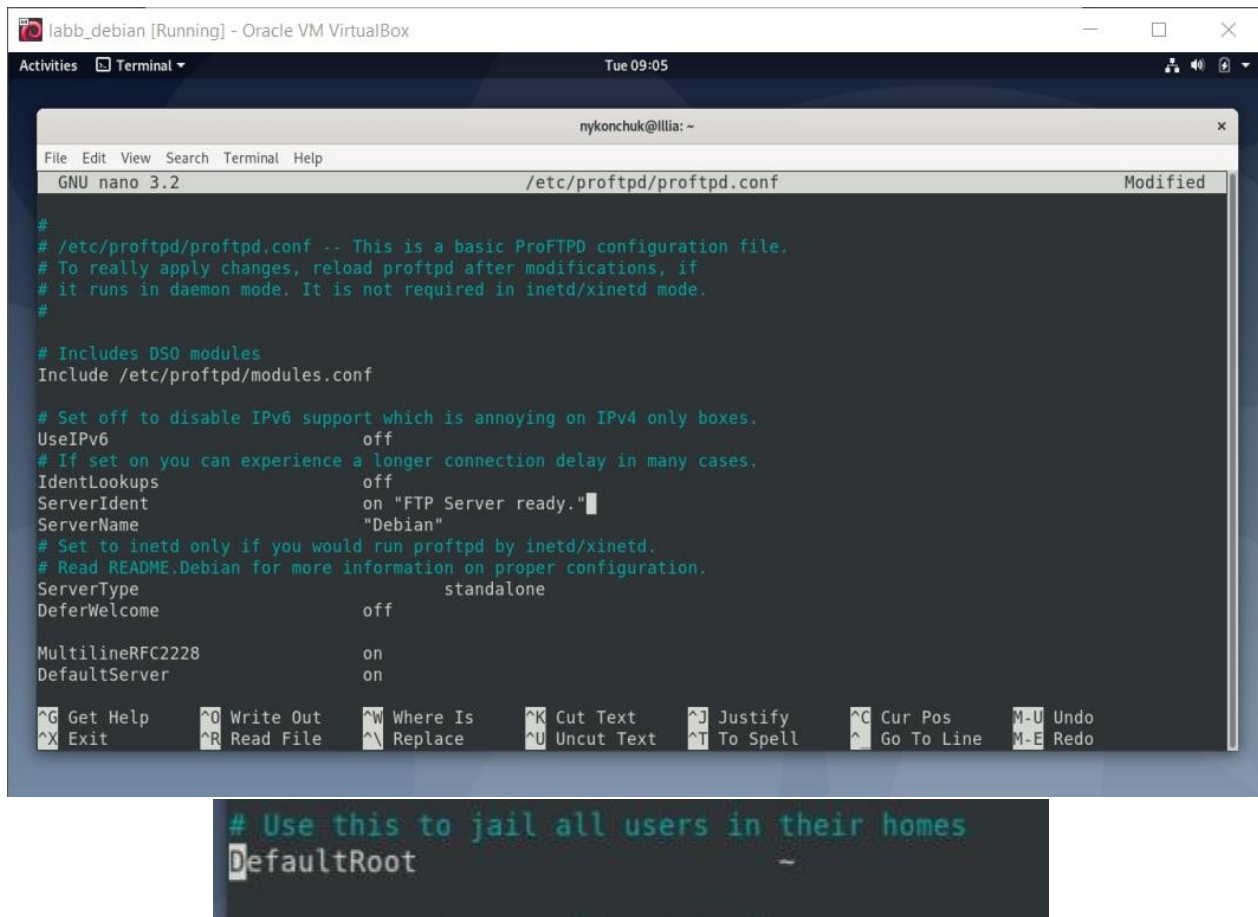
And it is also visible on vm1:

```
labb_debian [Running] - Oracle VM VirtualBox
Tue 09:03
nykonchuk@illia: ~
File Edit View Search Terminal Help
3841 /usr/sbin/smbd --foreground --no-process-group

Jun 01 08:58:07 Illia systemd[1]: Starting Samba SMB Daemon...
Jun 01 08:58:07 Illia systemd[1]: Started Samba SMB Daemon.
root@Illia:/# id ap
id: 'ap': no such user
root@Illia:/# ip ad
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default 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 pfifo_fast state UP group default ql
    link/ether 08:00:27:5a:2c:cb brd ff:ff:ff:ff:ff:ff
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default ql
    link/ether 08:00:27:5a:71:c9 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.5/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s8
        valid_lft 366sec preferred_lft 366sec
    inet6 fe80::a00:27ff:fe5a:71c9/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
root@Illia:/# cd smb
-bash: cd: smb: No such file or directory
root@Illia:/# cd samba/
root@Illia:/samba# ls
smbfile.txt
root@Illia:/samba#
```


Task 3

Proftpd.conf:



```
labb_debian [Running] - Oracle VM VirtualBox
Activities Terminal Tue 09:05
nykonchuk@Illia: ~
File Edit View Search Terminal Help
GNU nano 3.2 /etc/proftpd/proftpd.conf Modified

#
# /etc/proftpd/proftpd.conf -- This is a basic ProFTPD configuration file.
# To really apply changes, reload proftpd after modifications, if
# it runs in daemon mode. It is not required in inetd/xinetd mode.
#

# Includes DSO modules
Include /etc/proftpd/modules.conf

# Set off to disable IPv6 support which is annoying on IPv4 only boxes.
UseIPv6 off
# If set on you can experience a longer connection delay in many cases.
IdentLookups off
ServerIdent on "FTP Server ready."
ServerName "Debian"
# Set to inetd only if you would run proftpd by inetd/xinetd.
# Read README.Debian for more information on proper configuration.
ServerType standalone
DeferWelcome off

MultilineRFC2228 on
DefaultServer on

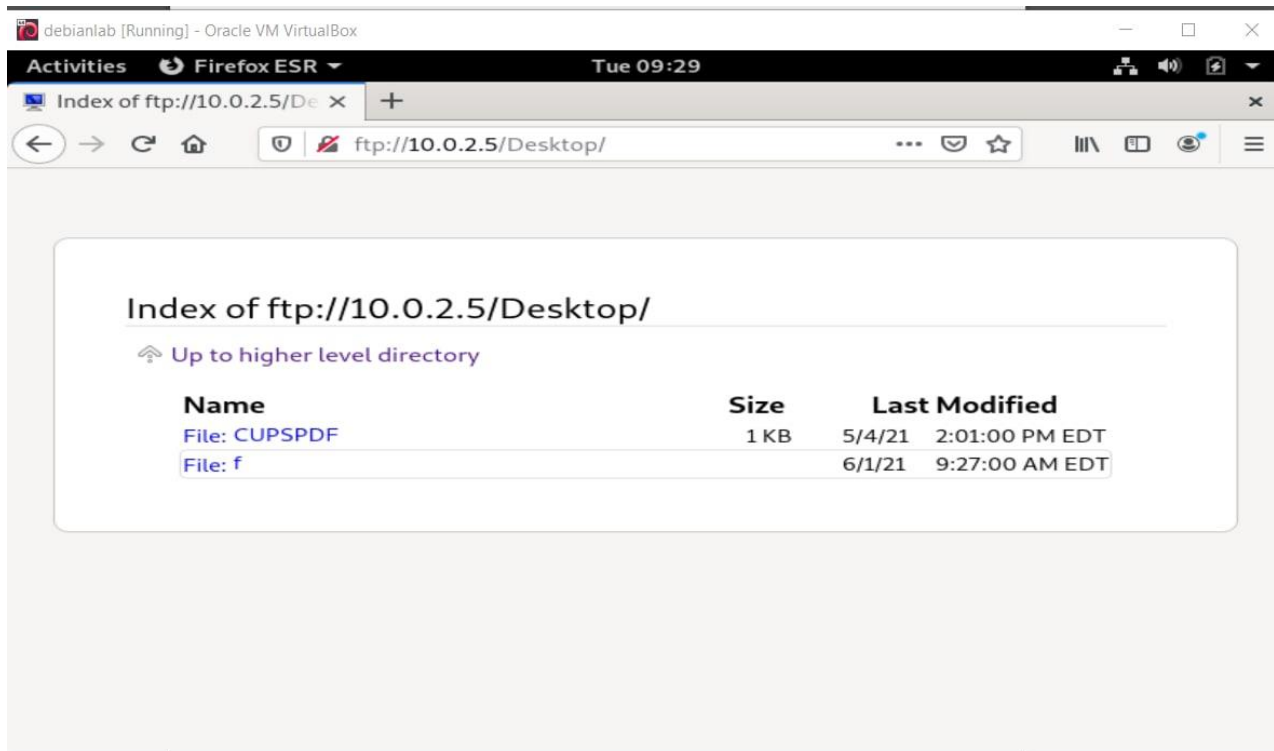
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo
^X Exit ^R Read File ^N Replace ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo

# Use this to jail all users in their homes
DefaultRoot
```

Restart:

```
root@Illia:/# systemctl restart proftpd.service
root@Illia:/#
```

Check connection on vm2:



SSL:

```
root@Illia:~# mkdir /etc/proftpd/ssl
root@Illia:~# openssl req -new -x509 -days 365 -nodes -out /etc/proftpd/ssl/proftpd.cert.pem -keyout /etc/proftpd/ssl/
proftpd.key.pem
Generating a RSA private key
.....+++++
.....+++++
writing new private key to '/etc/proftpd/ssl/proftpd.key.pem'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:PL
State or Province Name (full name) [Some-State]:LS
Locality Name (eg, city) []:Wroclaw
Organization Name (eg, company) [Internet Widgits Pty Ltd]:awri.l
Organizational Unit Name (eg, section) []:
Common Name (e.g. server FQDN or YOUR name) []:
Email Address []:
root@Illia:~#
```

Proftpd.conf modification:

The screenshot shows a terminal window titled "nykonchuk@illia: ~/Desktop" running GNU nano 3.2. The file being edited is /etc/proftpd/proftpd.conf. The configuration includes comments about alternative authentication frameworks, includes for ldap.conf and sql.conf, a section for FTPS connections including tls.conf, and a basic anonymous configuration. The user is currently editing the <Anonymous ~ftp> section, with "ftp" entered as the user.

```
nykonchuk@illia: ~/Desktop
GNU nano 3.2 /etc/proftpd/proftpd.conf Modified

</IfModule>

#
# Alternative authentication frameworks
#
#Include /etc/proftpd/ldap.conf
#Include /etc/proftpd/sql.conf

#
# This is used for FTPS connections
#
Include /etc/proftpd/tls.conf

#
# Useful to keep VirtualHost/VirtualRoot directives separated
#
#Include /etc/proftpd/virtuals.conf

# A basic anonymous configuration, no upload directories.

# <Anonymous ~ftp>
# User ftp

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text   ^J Justify    ^C Cur Pos    M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line  M-E Redo
```

Tls.conf:

The screenshot shows a terminal window titled "nykonchuk@illia: ~/Desktop" running GNU nano 3.2. The file being edited is /etc/proftpd/tls.conf. The configuration includes directives for TLS engine, logging, protocol, options, certificates, and client verification.

```
nykonchuk@illia: ~/Desktop
GNU nano 3.2 /etc/proftpd/tls.conf Modified

<IfModule mod_tls.c>
TLSEngine on
TLSLog /var/log/proftpd/tls.log
TLSProtocol SSLv23
TLSOptions NoCertRequest NoSessionReuseRequired
TLRSACertificateFile /etc/proftpd/ssl/proftpd.cert.pem
TLRSACertificateKeyFile /etc/proftpd/ssl/proftpd.key.pem
TLSVerifyClient off
TLSRequired on
</IfModule>

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text   ^J Justify    ^C Cur Pos    M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line  M-E Redo
```

Try to connect via VM2 after restart of the service(works fine):

```
root@nillia:~# sftp 10.0.2.5
root@10.0.2.5's password:
Connected to 10.0.2.5.
sftp>
```

Filezilla:

