

Instructions

The web development team has completed the initial development of their new web application and would like to get it up and running on their server. They have requested to be able to access the **/development/website** directory through their Windows desktops via a shared drive.

They would also like the Apache web service to look for files within this directory, starting with the “Under Construction” page created previously.

They will also need to be able to access the system via SSH to manage services. Be sure to only allow necessary services through the firewall and configure network settings.

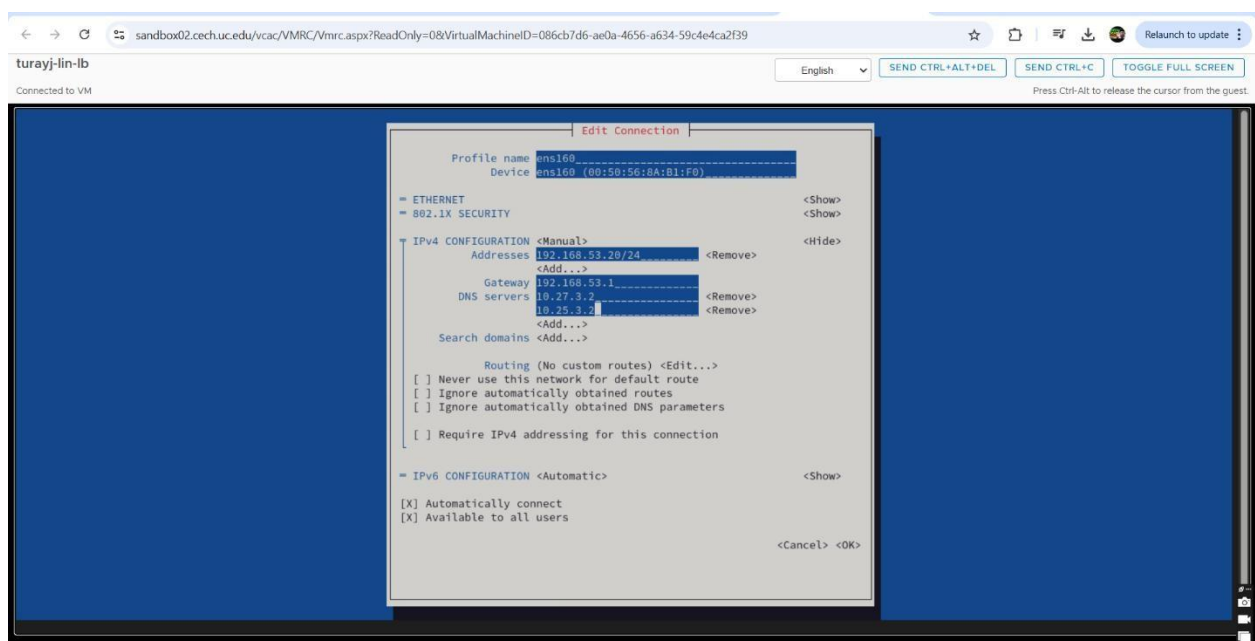
Once complete, please test the file share and web site connections.

HINTS: You can reuse the network settings set by DHCP. You may need to install the Network Manager Tool. Disable SeLinux security for the services to work properly.

Screenshots

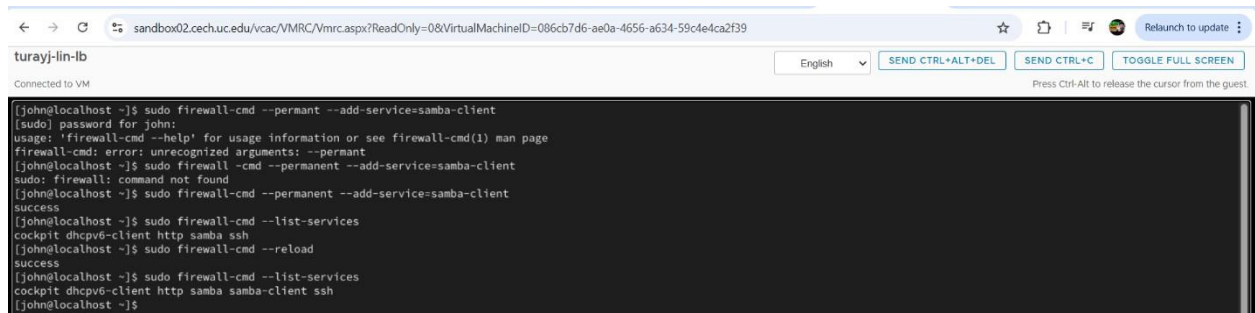
Paste the required screen shots under each description.

1. Paste a screen shot showing the manually set network settings in the Network Manager TUI



2. Paste a screen shot showing the allowed services through the Firewall

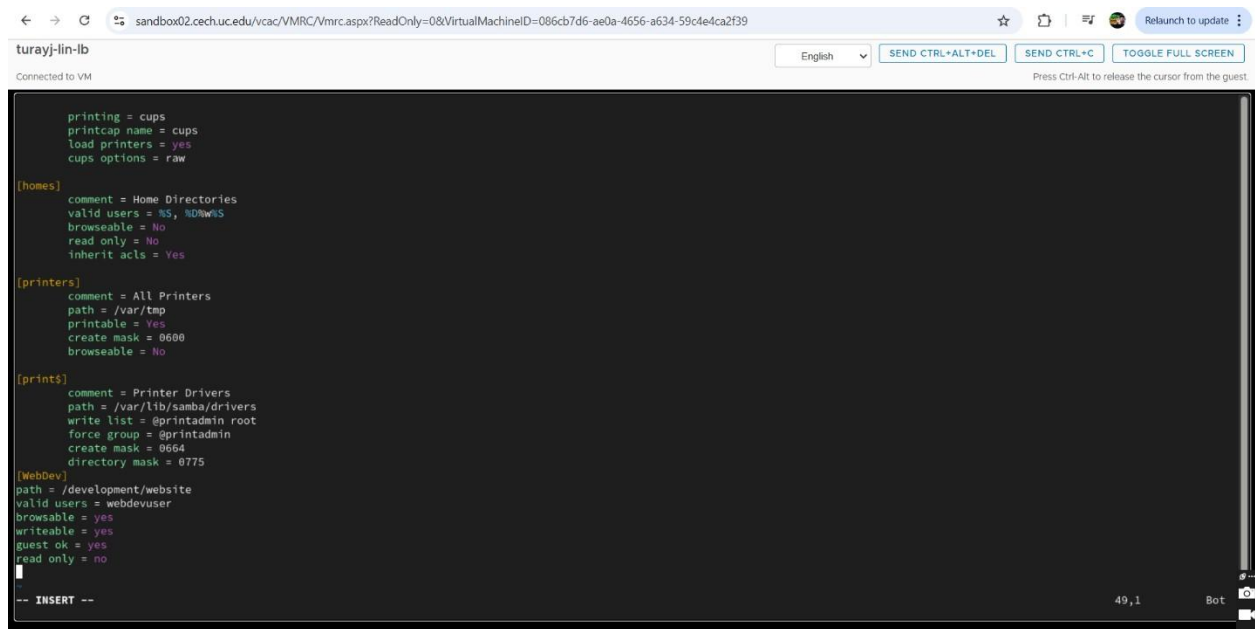
Lab 7 – Linux Network Services Systems Administration



A screenshot of a terminal window titled "turayj-lin-lb" connected to a VM. The terminal shows the following commands and output:

```
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba-client
[sudo] password for john:
usage: 'firewall-cmd --help' for usage information or see firewall-cmd(1) man page
firewall-cmd: error: unrecognized arguments: --permanent
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba-client
sudo: firewall: command not found
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba-client
success
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client http samba ssh
[john@localhost ~]$ sudo firewall-cmd --reload
success
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client http samba samba-client ssh
[john@localhost ~]$
```

3. Paste a screen shot showing the Samba configuration settings



A screenshot of a terminal window titled "turayj-lin-lb" connected to a VM. The terminal shows the following Samba configuration settings:

```
printing = cups
printcap name = cups
load printers = yes
cups options = raw

[homes]
comment = Home Directories
valid users = %S, %D%w%S
browseable = No
read only = No
inherit acls = Yes

[printers]
comment = All Printers
path = /var/tmp
printable = Yes
create mask = 0600
browseable = No

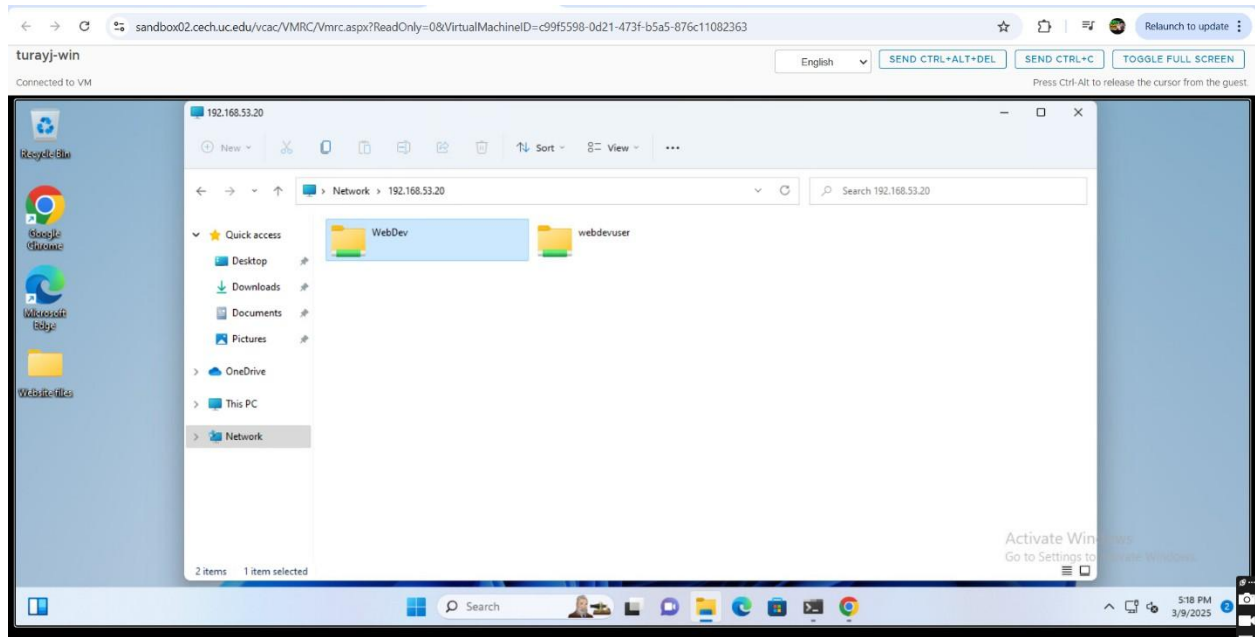
[print$]
comment = Printer Drivers
path = /var/lib/samba/drivers
write list = @printadmin root
force group = @printadmin
create mask = 0664
directory mask = 0775

[WebDev]
path = /development/website
valid users = webdevuser
browseable = yes
writeable = yes
guest ok = yes
read only = no

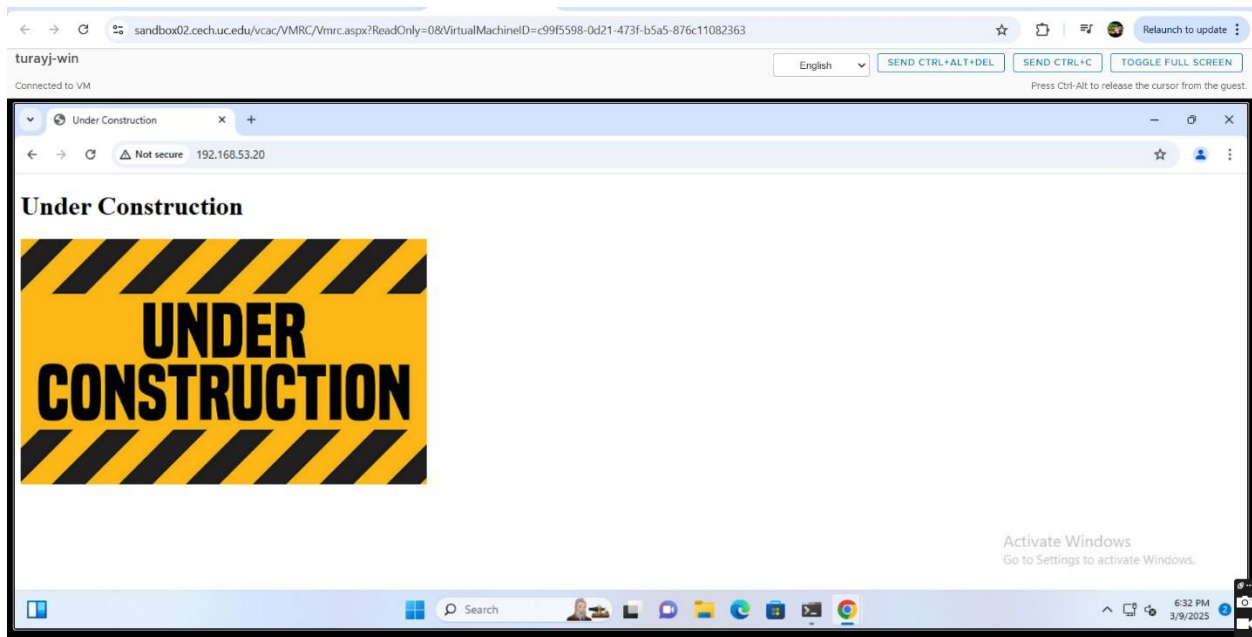
-- INSERT --
```

4. Paste a screen shot showing a web dev user accessing the shared folder through the Windows File Explorer

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5. Paste a screen shot showing the “Under Construction” web page in a web browser from your Windows 11 VM. (Must use http://)



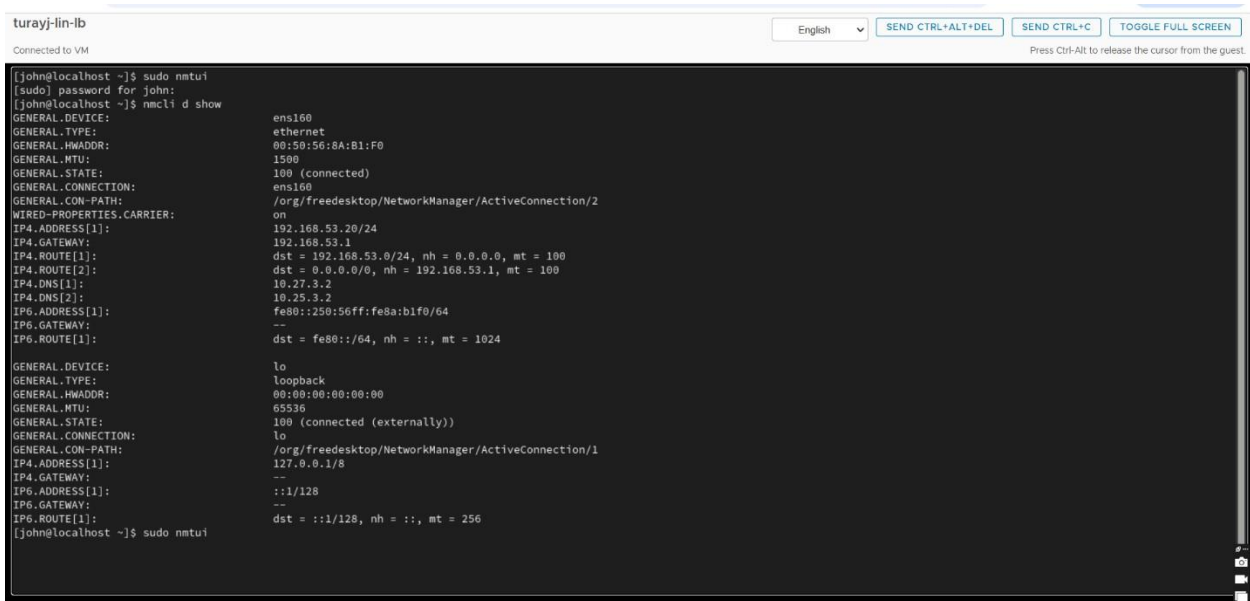
Documentation

Record and explain all the steps you took to complete the task. Include any commands used, screen shots showing GUI interfaces, or any other information that would help you recreate the task.

Note: You will be allowed to use this documentation to help you complete future assignments.

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First I started by running the command “nmtui” to show my network settings:

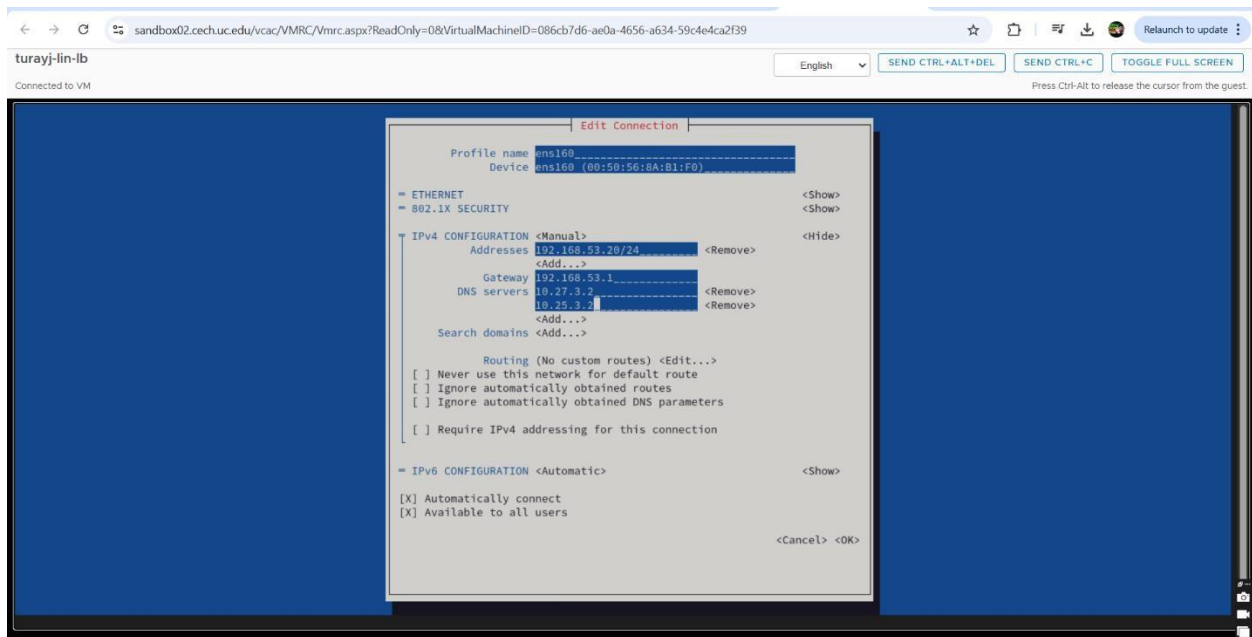


```
turayj-lin-lb
Connected to VM
English SEND CTRL+ALT+DEL SEND CTRL+C TOGGLE FULL SCREEN
Press Ctrl-Alt to release the cursor from the guest.

[john@localhost ~]$ sudo nmtui
[sudo] password for john:
[john@localhost ~]$ nmcli d show
GENERAL.DEVICE: ens160
GENERAL.TYPE: ethernet
GENERAL.HWADDR: 00:50:56:8A:B1:F0
GENERAL.MTU: 1500
GENERAL.STATE: 100 (connected)
GENERAL.CONNECTION: ens160
GENERAL.CON-PATH: /org/freedesktop/NetworkManager/ActiveConnection/2
WIRELESS-PROPERTIES.CARRIER: on
IP4.ADDRESS[1]: 192.168.53.20/24
IP4.GATEWAY: 192.168.53.1
IP4.ROUTE[1]: dst = 192.168.53.0/24, nh = 0.0.0.0, mt = 100
IP4.ROUTE[2]: dst = 0.0.0.0/0, nh = 192.168.53.1, mt = 100
IP4.DNS[1]: 10.27.3.2
IP4.DNS[2]: 10.25.3.2
IP6.ADDRESS[1]: fe80::250:56ff:fe8a:b1f0/64
IP6.GATEWAY: --
IP6.ROUTE[1]: dst = fe80::/64, nh = ::, mt = 1024

GENERAL.DEVICE: lo
GENERAL.TYPE: loopback
GENERAL.HWADDR: 00:00:00:00:00:00
GENERAL.MTU: 65536
GENERAL.STATE: 100 (connected (externally))
GENERAL.CONNECTION: lo
GENERAL.CON-PATH: /org/freedesktop/NetworkManager/ActiveConnection/1
IP4.ADDRESS[1]: 127.0.0.1/8
IP4.GATEWAY: --
IP6.ADDRESS[1]: ::1/128
IP6.GATEWAY: --
IP6.ROUTE[1]: dst = ::1/128, nh = ::, mt = 256
[john@localhost ~]$ sudo nmtui
```

Then I opened the network manager and Manually entered the correct network settings:



Then I installed all services/updates for the allowed services through the firewall:

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```
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
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 19 bytes 2952 (2.8 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 19 bytes 2952 (2.8 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[john@localhost ~]$ ping google.com
PING google.com (142.250.190.110) 56(84) bytes of data:
64 bytes from ord37s35-in-f14.1e100.net (142.250.190.110): icmp_seq=1 ttl=110 time=11.8 ms
64 bytes from ord37s35-in-f14.1e100.net (142.250.190.110): icmp_seq=2 ttl=110 time=11.9 ms
64 bytes from ord37s35-in-f14.1e100.net (142.250.190.110): icmp_seq=3 ttl=110 time=11.8 ms
64 bytes from ord37s35-in-f14.1e100.net (142.250.190.110): icmp_seq=4 ttl=110 time=11.9 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 11.761/11.822/11.864/0.042 ms
[john@localhost ~]$ firewall-cmd --list-services
cockpit dhcpv6-client ssh
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=http
success
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba
success
[john@localhost ~]$ sudo dnf install firewalld samba samba-client httpd
Last metadata expiration check: 0:02:04 ago on Sun 09 Mar 2025 03:54:57 PM EDT.
Package firewalld-1.3.4-9.el9_5.noarch is already installed.
Package samba-4.20.2-2.el9_5.alma1.x86_64 is already installed.
Package samba-client-4.20.2-2.el9_5.alma1.x86_64 is already installed.
Package httpd-2.4.62-1.el9_5.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[john@localhost ~]$
```

```
[john@localhost ~]$ sudo firewall-cmd --permanant --add-service=samba-client
[sudo] password for john:
usage: 'firewall-cmd --help' for usage information or see firewall-cmd(1) man page
firewall-cmd: error: unrecognized arguments: --permanant
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba-client
sudo: firewall: command not found
[john@localhost ~]$ sudo firewall-cmd --permanent --add-service=samba-client
success
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client http samba ssh
[john@localhost ~]$ sudo firewall-cmd --reload
success
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client http samba samba-client ssh
[john@localhost ~]$
```

Then I checked if the services were all enabled:

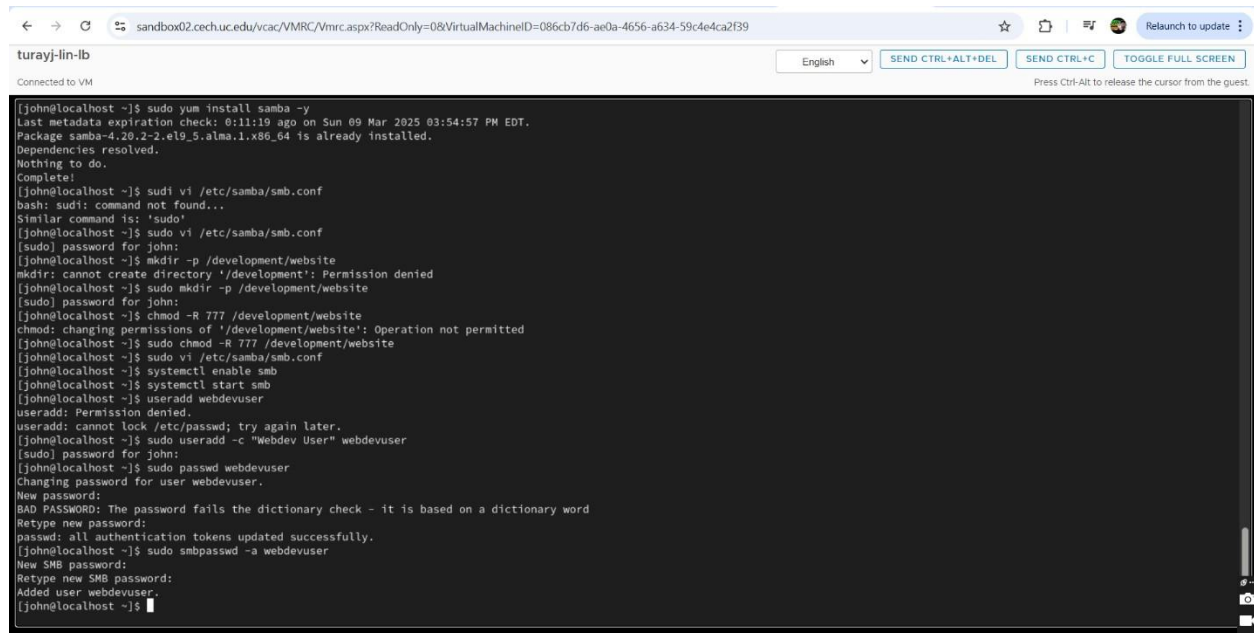
```
Tasks: 1 (limit: 23020)
Memory: 28.8M
CPU: 252ms
CGroup: /system.slice/nmb.service
└─1262 /usr/sbin/nmbd --foreground --no-process-group

Mar 09 15:56:42 localhost.localdomain systemd[1]: Starting Samba NMB Daemon...
Mar 09 15:56:42 localhost.localdomain nmbd[1262]: [2025/03/09 15:56:42.389762, 0] ../../source3/nmbd.c:901(main)
Mar 09 15:56:42 localhost.localdomain nmbd[1262]: nmbd version 4.20.2 started.
Mar 09 15:56:42 localhost.localdomain nmbd[1262]: Copyright Andrew Tridgell and the Samba Team 1992-2024
Mar 09 15:56:42 localhost.localdomain systemd[1]: Started Samba NMB Daemon.
[john@localhost ~]$ sudo systemctl httpd
unknown command verb httpd.
[john@localhost ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Drop-In: /usr/lib/systemd/system/httpd.service.d
           └─php-fpm.conf
   Active: active (running) since Sun 2025-03-09 15:56:42 EDT; 2min 23s ago
     Docs: man:httpd.service(8)
   Main PID: 1269 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
   Tasks: 177 (limit: 23020)
   Memory: 27.0M
     CPU: 1.478s
   CGroup: /system.slice/httpd.service
           └─1269 /usr/sbin/httpd -DFOREGROUND
             └─1421 /usr/sbin/httpd -DFOREGROUND
               └─1422 /usr/sbin/httpd -DFOREGROUND
                 └─1423 /usr/sbin/httpd -DFOREGROUND
                   └─1424 /usr/sbin/httpd -DFOREGROUND

Mar 09 15:56:42 localhost.localdomain systemd[1]: Starting The Apache HTTP Server...
Mar 09 15:56:42 localhost.localdomain httpd[1269]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using localhost.localdomain. Set the 'ServerName'
Mar 09 15:56:42 localhost.localdomain systemd[1]: Started The Apache HTTP Server.
Mar 09 15:56:42 localhost.localdomain httpd[1269]: Server configured, listening on: port 80
[john@localhost ~]$
```

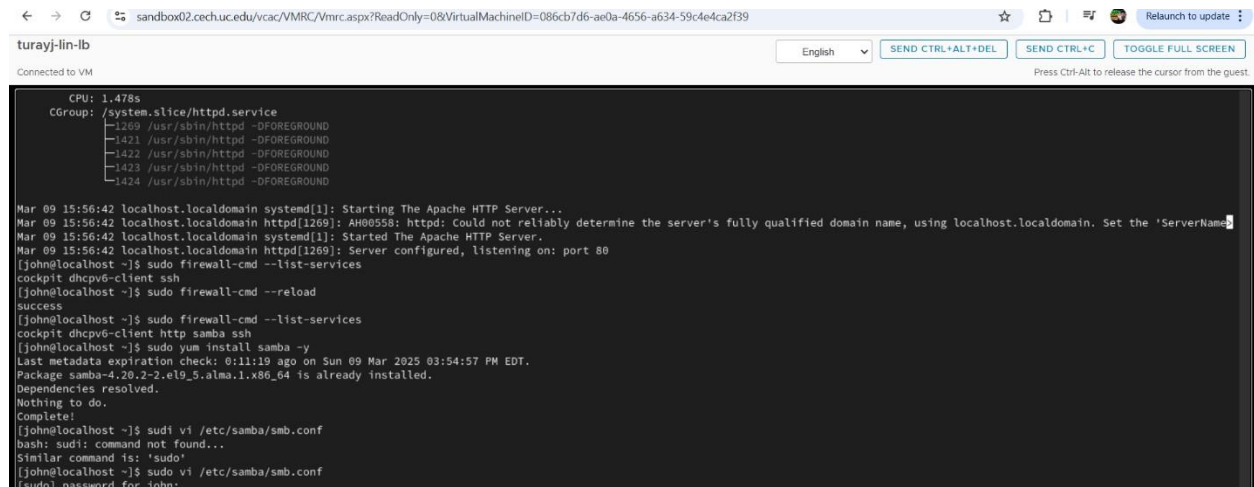
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Then I created the /development/website directory, then set permissions for the directory, then I created the webdev user and the passwd for the webdev user:



```
[john@localhost ~]$ sudo yum install samba -y
Last metadata expiration check: 0:11:19 ago on Sun 09 Mar 2025 03:54:57 PM EDT.
Package samba-4.20.2-2.el9_5.alma.i.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[john@localhost ~]$ sudo vi /etc/samba/smb.conf
bash: sudi: command not found...
Similar command is: 'sudo'
[john@localhost ~]$ sudo vi /etc/samba/smb.conf
(sudo) password for john:
[john@localhost ~]$ mkdir -p /development/website
mkdir: cannot create directory '/development': Permission denied
[john@localhost ~]$ sudo mkdir -p /development/website
[sudo] password for john:
[john@localhost ~]$ chmod -R 777 /development/website
chmod: changing permissions of '/development/website': Operation not permitted
[john@localhost ~]$ sudo chmod -R 777 /development/website
[john@localhost ~]$ sudo vi /etc/samba/smb.conf
[john@localhost ~]$ systemctl enable smb
[john@localhost ~]$ systemctl start smb
[john@localhost ~]$ useradd webdevuser
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
[john@localhost ~]$ sudo useradd -c "Webdev User" webdevuser
(sudo) password for john:
[john@localhost ~]$ sudo passwd webdevuser
Changing password for user webdevuser.
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
[john@localhost ~]$ sudo smbpasswd -a webdevuser
New SMB password:
Retype new SMB password:
Added user webdevuser.
[john@localhost ~]$
```

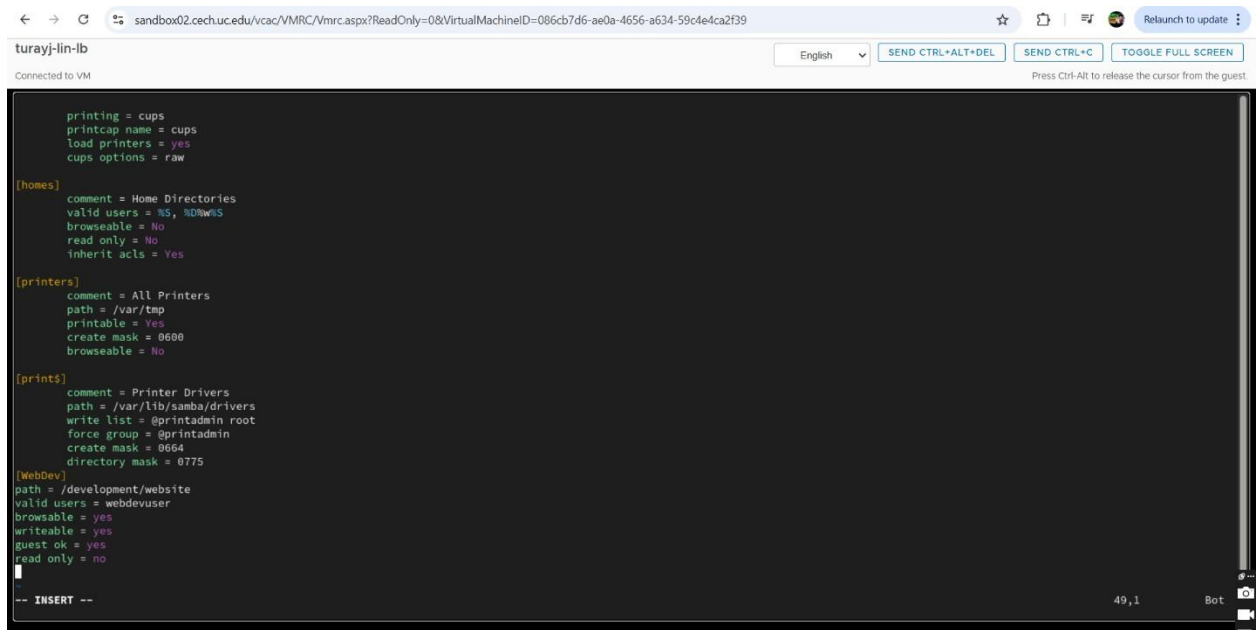
Then I went to edit the samba file by running the command sudo vi/etc/samba/smb.conf:



```
CPU: 1.478s
CGroup: /system.slice/httpd.service
├─1269 /usr/sbin/httpd -DFOREGROUND
├─1421 /usr/sbin/httpd -DFOREGROUND
├─1422 /usr/sbin/httpd -DFOREGROUND
├─1423 /usr/sbin/httpd -DFOREGROUND
└─1424 /usr/sbin/httpd -DFOREGROUND

Mar 09 15:56:42 localhost.localdomain systemd[1]: Starting The Apache HTTP Server...
Mar 09 15:56:42 localhost.localdomain httpd[1269]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using localhost.localdomain. Set the 'ServerName'
Mar 09 15:56:42 localhost.localdomain systemd[1]: Started The Apache HTTP Server.
Mar 09 15:56:42 localhost.localdomain httpd[1269]: Server configured, listening on: port 80
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client ssh
[john@localhost ~]$ sudo firewall-cmd --reload
success
[john@localhost ~]$ sudo firewall-cmd --list-services
cockpit dhcpv6-client http samba ssh
[john@localhost ~]$ sudo yum install samba -y
Last metadata expiration check: 0:11:19 ago on Sun 09 Mar 2025 03:54:57 PM EDT.
Package samba-4.20.2-2.el9_5.alma.i.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[john@localhost ~]$ sudo vi /etc/samba/smb.conf
bash: sudi: command not found...
Similar command is: 'sudo'
[john@localhost ~]$ sudo vi /etc/samba/smb.conf
(sudo) password for john:
```


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The screenshot shows a terminal window titled "turayj-lin-lib" connected to a VM. The terminal displays the configuration for Samba services. The configuration includes settings for the cups service, home directories, printers, printer drivers, and a web development user.

```
printing = cups
printcap name = cups
load printers = yes
cups options = raw

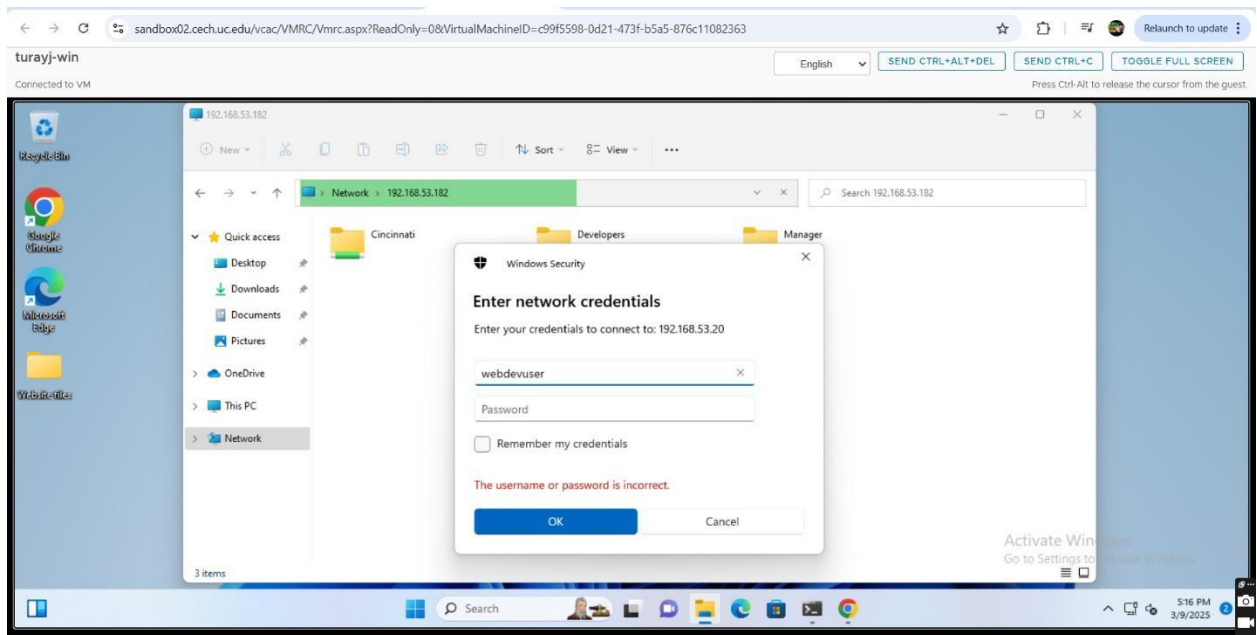
[homes]
comment = Home Directories
valid users = %S, %D%w%S
browseable = No
read only = No
inherit acls = Yes

[printers]
comment = All Printers
path = /var/tmp
printable = Yes
create mask = 0600
browseable = No

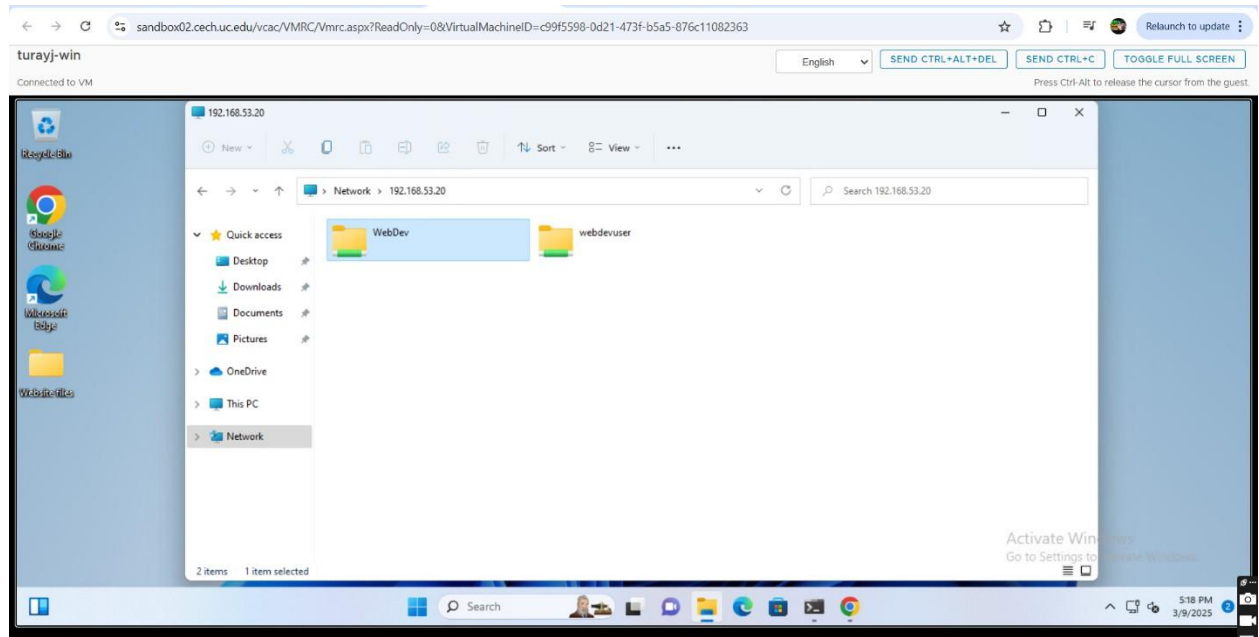
[print$]
comment = Printer Drivers
path = /var/lib/samba/drivers
write list = @printadmin root
force group = @printadmin
create mask = 0664
directory mask = 0775

[WebDev]
path = /development/website
valid users = webdevuser
browseable = yes
writeable = yes
guest ok = yes
read only = no
```

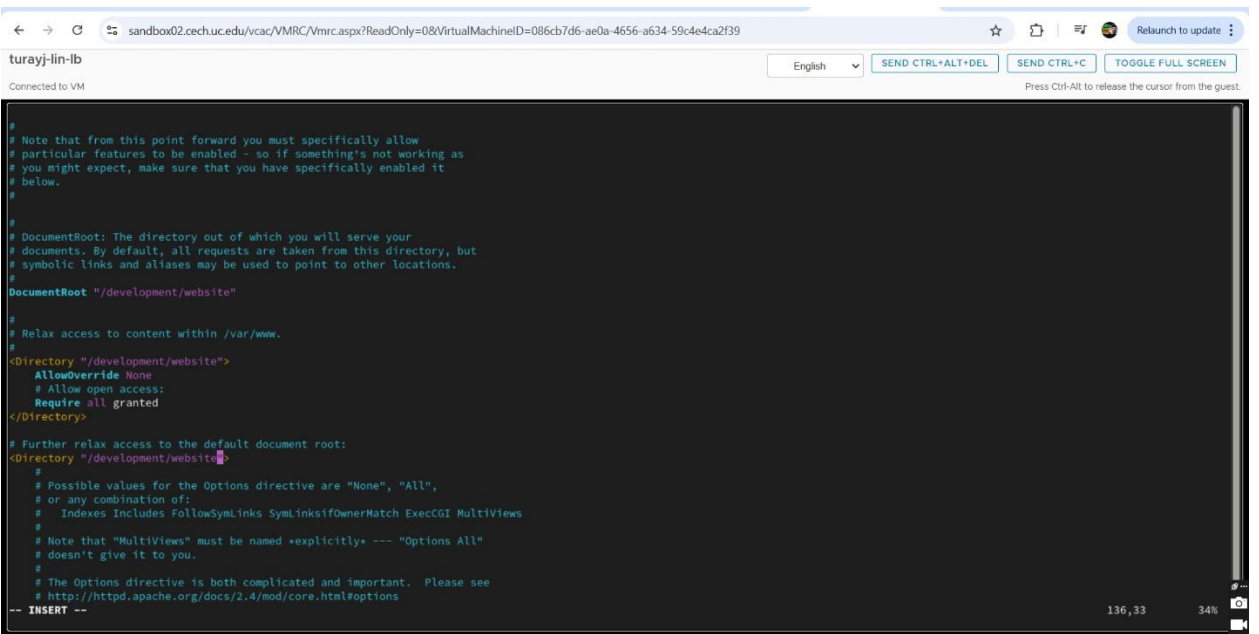
Then I switched over to my windows 11 vm and opened my file explorer, and then I entered my ip address, aswell as my webdev user credentials to access the shared folders:



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Then I configured the Apache file:



Then I went on to disable setenforce and edit the index.html file:

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```
sudo: sentforce: command not found
[john@localhost ~]$ sudo sentenforce 0
sudo: sentenforce: command not found
[john@localhost ~]$ sudo setenforce 0
[john@localhost ~]$ sudo systemctl restart httpd
[john@localhost ~]$ sudo vi /development/website/index.html
[sudo] password for john:
<!DOCTYPE>
<html>
<head>
  <title> Under Construction </title>
</head>
<body>
  <h1 Under Construction //h1>
  <p> This site is currently under construction. Please check back later.</p>
</body>
</html>
```

Then I went back on to my windows 11 vm and opened a browser and put my vm ip address into the search bar:

