

Ubuntu Project 2

Ryan Bynoe

Liberty University

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A factor that is prominent in system administration is the ability to file share between multiple operating systems. P2P is a file sharing network that allows a user to share content to many users as stated by (Li et al., 2016, p. 716). File sharing is the distribution of files, programs, and different types of media. In research from (John, 2013, p. 201), he expressed that a reason file sharing is so important in modern society is because how treacherous it was for workers to access data during occupied times. (Cosmetatos, 1983, p. 189) stated sharing files through a different server can make the productivity of a business efficient and reliable. In this project, the operating systems Ubuntu and Windows Server 2016 were demonstrated to communicate with each other and share files. In the previous project, the Windows Server 2016 was installed. Now, configuring and installing Ubuntu in the CyberScore Lab environment is the focus. Similar to other operating systems, Ubuntu Linux can be used to perform fundamental computer tasks. (Dougherty & Schadt, 2010, p. 173) states that the Ubuntu Server is a versatile system that can be easily accessible by the average user.

### **Windows Server and Ubuntu Network File Sharing Configuration**

In order for files between the Windows server and Ubuntu Linux operating system to be shared, the network file sharing settings must be configured. In this lab, the CyberScore lab environment is being used as a virtual machine for Windows. Access the *Network and Sharing Center* through the *Control Panel* and then *Network and Internet*. The next step is configuring the Internet Protocol Version 4 (TCP/IPv4) Properties by changing the adapter settings, entering the adapter properties, and then entering the IP address and default gateway for the Windows Server. (See Appendix A). In the *Network and Sharing Center*, access the advanced sharing settings, turn on network discovery, file and printer sharing in order for the files to be seen in the

Ubuntu Server. (See Appendix B). The next section leads into the configuration of the Ubuntu Server.

### **Ubuntu Server Configuration**

After the Network and File Sharing settings have been configured, the Ubuntu Server must be configured. In the CyberScore Lab, the Ubuntu Server can be accessed by switching from Windows Server 2016 at the middle of the top black bar. Then under DVD Drive, switch to the Ubuntu 16 Server Disc. After selecting the preferred language English, install the Ubuntu Server (See Appendix C). The network configuration method screen is going to prompt to select from four choices. During this configuration step, the network is going to be configured manually (See Appendix D). The next part of the configuration process prompts to enter a unique IP address which is: 192.168.1.50 (See Appendix E). The next prompts will stay defaulted and the system will continue to detect Ethernet0 (See Appendix F). The hostname for the system will remain defaulted as “ubuntu” and the domain name can remain blank. A user account must be created for the system, so the chosen username is “adminubuntu” (See Appendix G). After the username has been chosen, it will prompt to enter a password and re-enter the password for verification. (See Appendix H). The partitioning method being used is the entire disk and set up LVM (See Appendix I). Select “Yes” to make changes to disks and configure the LVM (See Appendix J). Leave the volume of the disk default at 85.4 GB and select “Yes” to write the changes to the disk (See Appendix K). The system will begin to install and after installation it will prompt the user if they want to use a HTTP Proxy. In this case, the field will remain blank and select continue. After the configuration, the system must install the security updates automatically (See Appendix L). The software to be installed is the DNS Server, Samba File

Server, and the stand system utilities (See Appendix M). Install the GRUB boot loader to the master boot record and the installation of Ubuntu will be complete.

### **Configure Samba File Server**

Before configuring the Samba File Server, verify on Windows Server 2016 that the Network and Sharing settings are still configured. Once the Ubuntu Server has loaded, it will ask for the Login and password that was created during the installation. One challenge I faced was entering the password because I thought I would be able to see at least asterisks during typing out the password. After entering the correct login information, the command “sudo adduser me” was entered along with a password. The purpose of the Samba File Server is to allow the Windows File Server and Ubuntu to communicate with each other by sharing files. A password for the Unix server and also for the SMB was also created (See Appendix N). After writing the samba configuration, the command used to check to see if it was written to the system is “testparm /etc/samba/smb.conf” (See Appendix O-1 and O-2). The next part of the process requires restarting both Ubuntu and the Windows Server 2016.

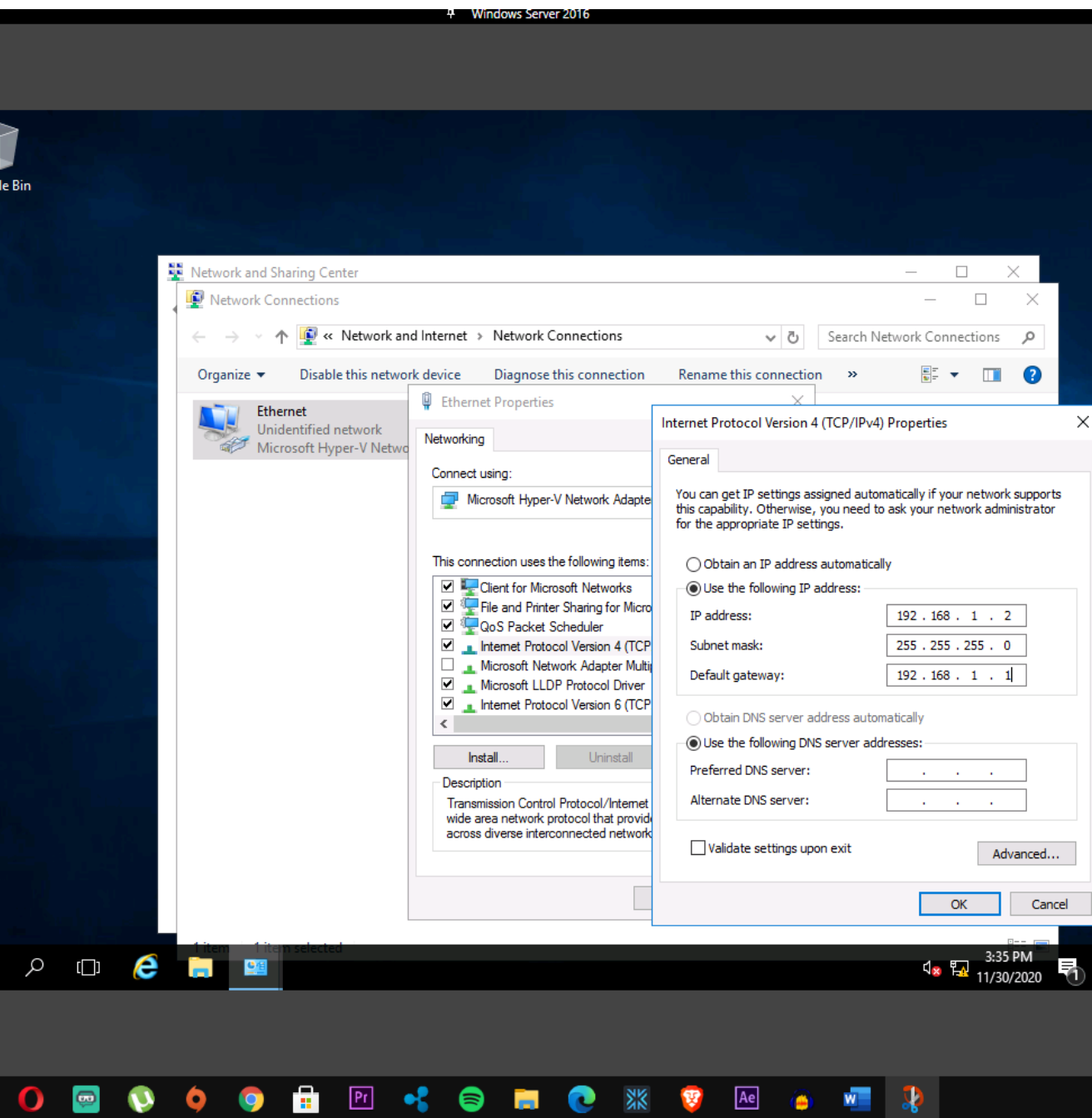
### **Testing the File Sharing of Ubuntu and Windows Server 2016**

After both systems have been restarted, the testing to see if both systems will be able to share and communicate with each other begins. In Windows Server 2016, access to the Ubuntu server was shown. In the Ubuntu server, the “me” folder is shown meaning that it has been written correctly to the server. A text file has been created inside the “me” named *ForUbuntu* and inside the file it says *Can this text be seen?* (See Appendix P). In Ubuntu, the text file was accessed through “sudo nano ForUbuntu.txt” and changed the data to “Yes I can see this text.” (See Appendix Q-1 and Appendix Q-2).

### **Conclusion**

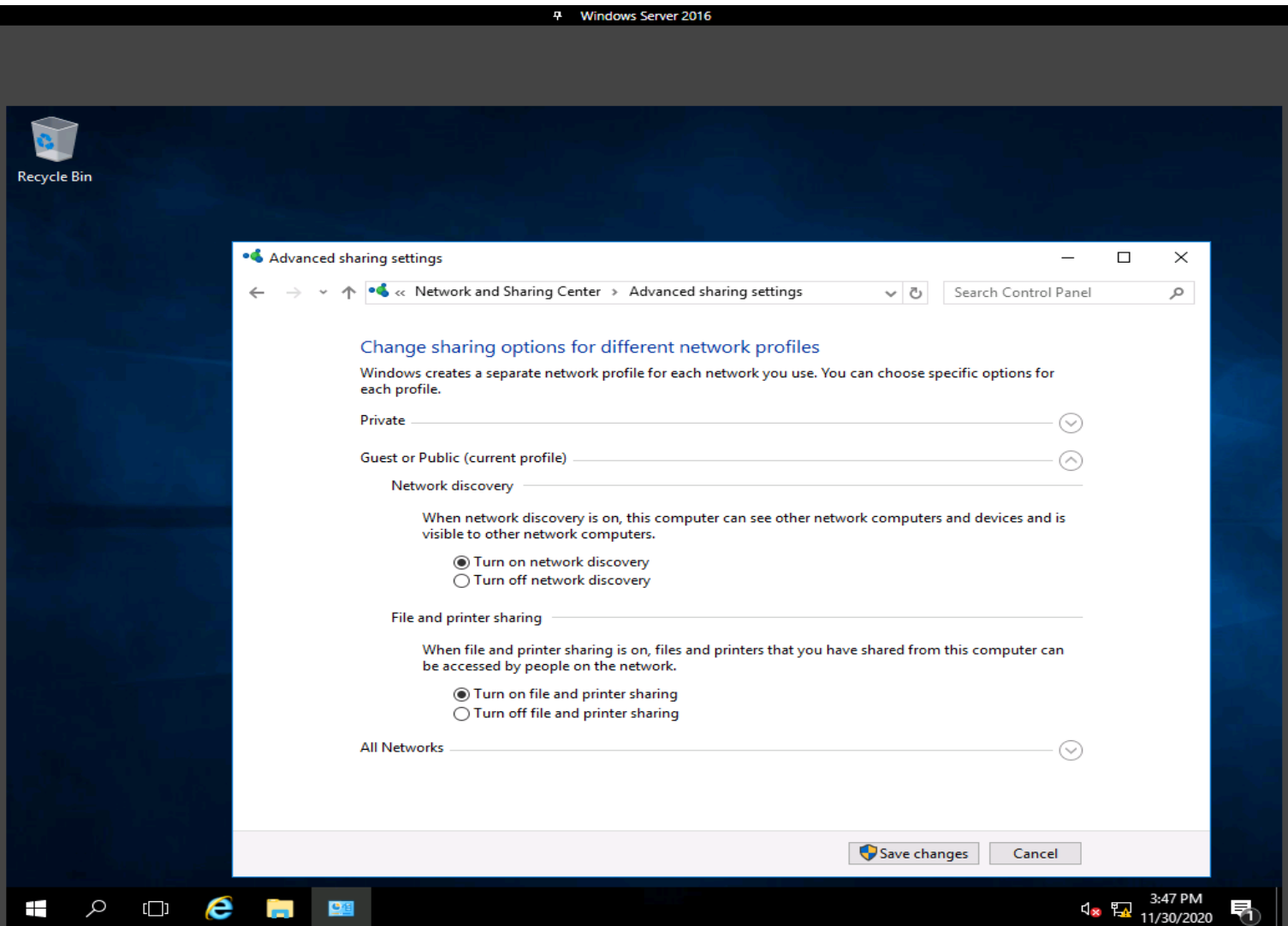
In conclusion, the process of installing and configuring Ubuntu was straightforward. Although the installation process was uncomplicated, there were some challenges in using Ubuntu. One challenge is the maneuvering of the text cursor when entering the commands. Sometimes I would have to press enter to start over because I entered a command wrong or was erasing an automated field. Another challenge was the input of the password. It can be very simple to misspell the password because nothing appears to be entered when typing. The purpose of this project was to manage two operating systems to share files between each other. (Leskelä et al., 2010, p. 849) stated that once a file is bestowed to another operating system, that operating system becomes a server for that file.

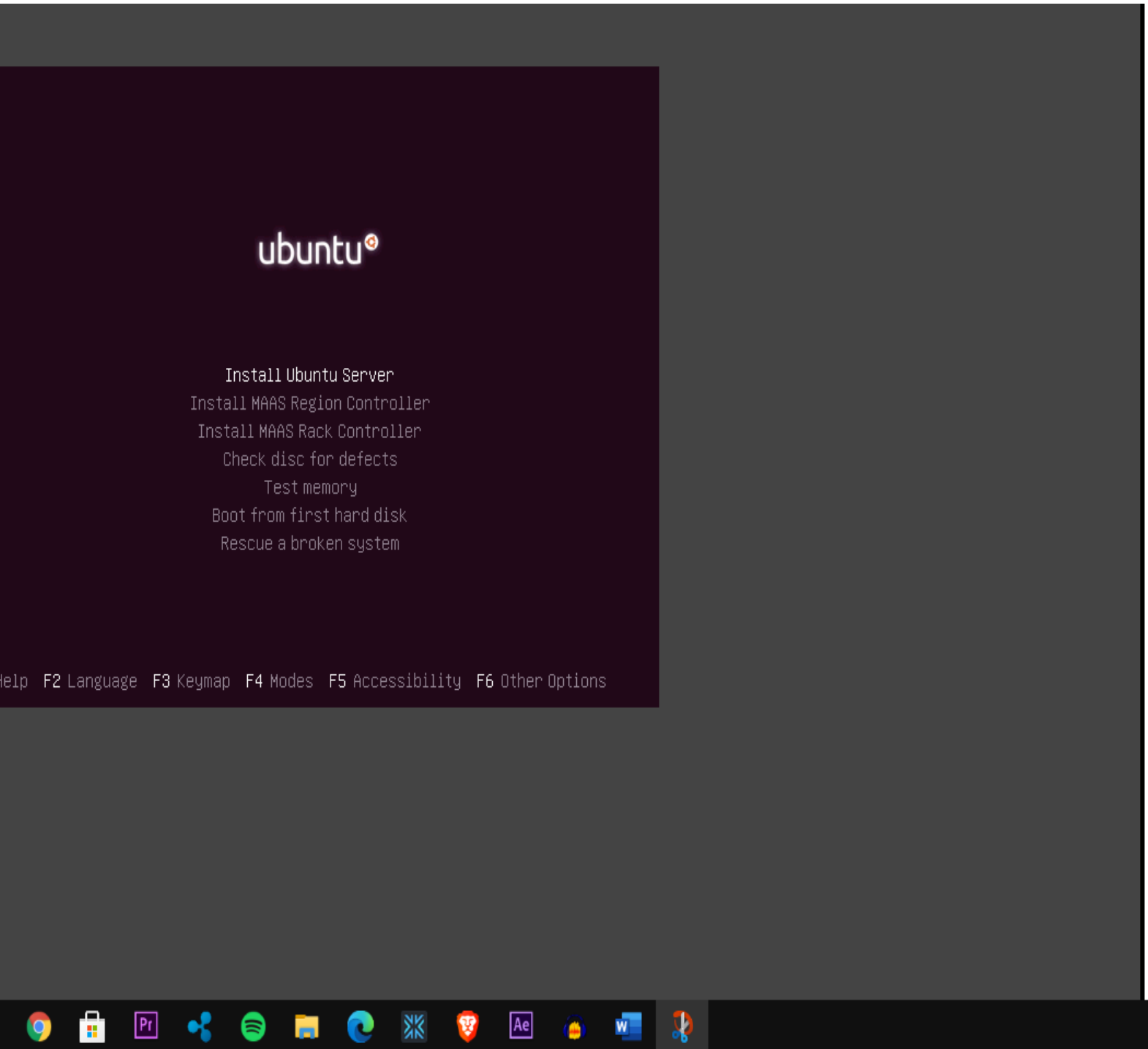
## Windows Server Project 1

Appendix A



## Windows Server Project 1

Appendix B

Appendix C

Appendix D

## [!!] Configure the network

From here you can choose to retry DHCP network autoconfiguration (which may succeed if your DHCP server takes a long time to respond) or to configure the network manually. Some DHCP servers require a DHCP hostname to be sent by the client, so you can also choose to retry DHCP network autoconfiguration with a hostname that you provide.

Network configuration method:

Retry network autoconfiguration  
Retry network autoconfiguration with a DHCP hostname  
Configure network manually

Do not configure the network at this time

<Go Back>

Tab> moves; <Space> selects; <Enter> activates buttons



Appendix E

## [!!] Configure the network

The IP address is unique to your computer and may be:

- \* four numbers separated by periods (IPv4);
- \* blocks of hexadecimal characters separated by colons (IPv6).

You can also optionally append a CIDR netmask (such as "/24").

If you don't know what to use here, consult your network administrator.

IP address:

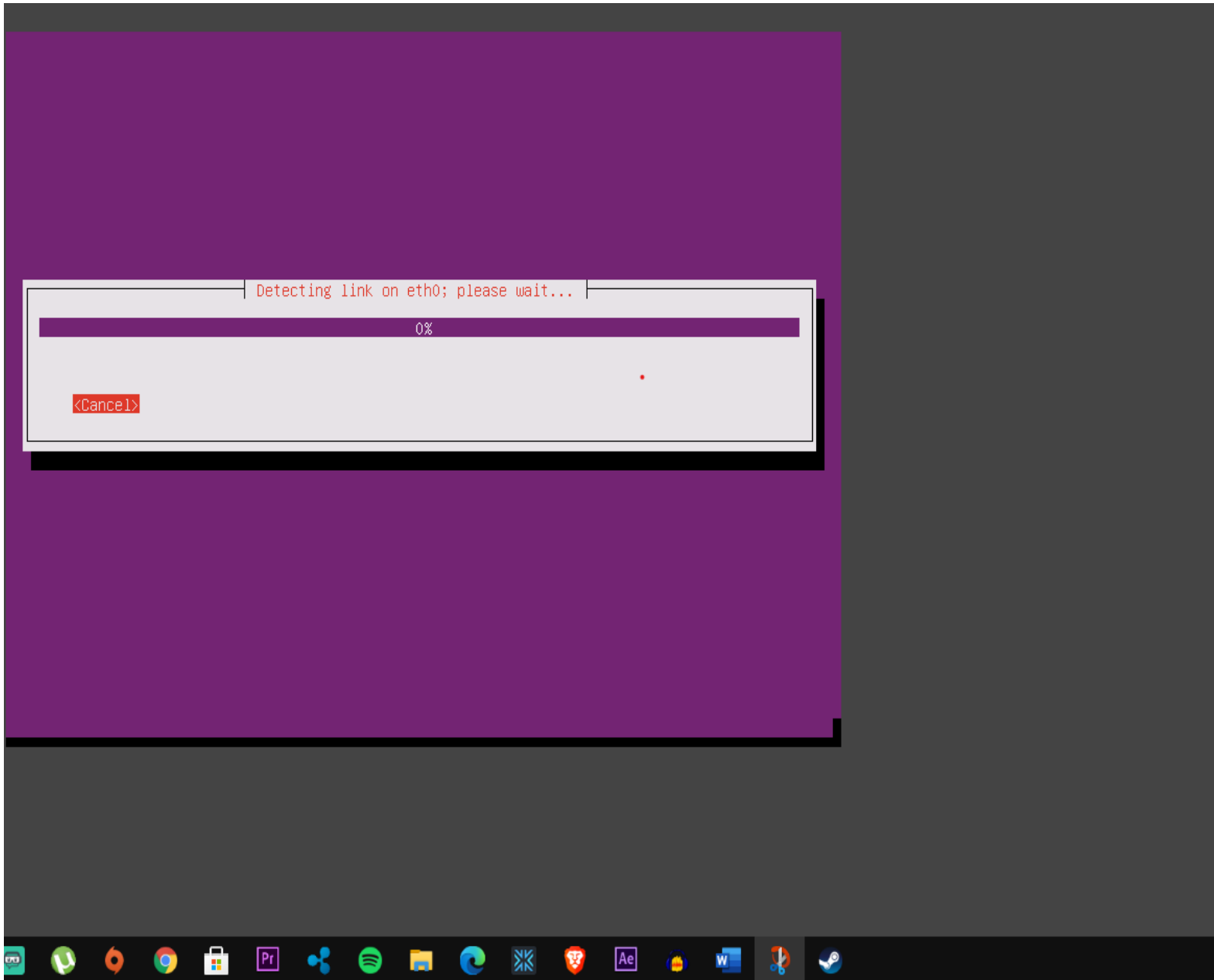
192.168.1.50

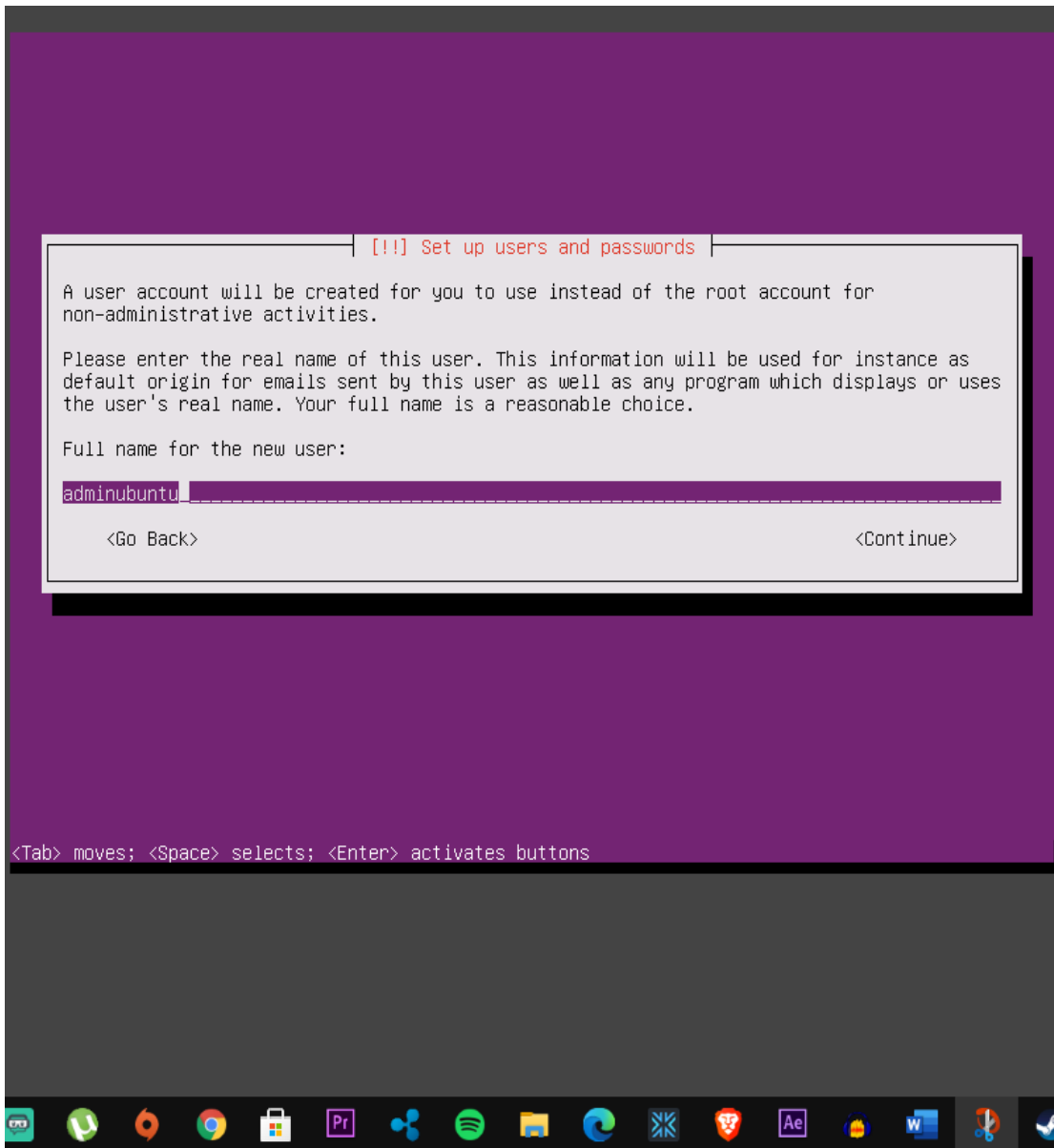
<Go Back>

<Continue>

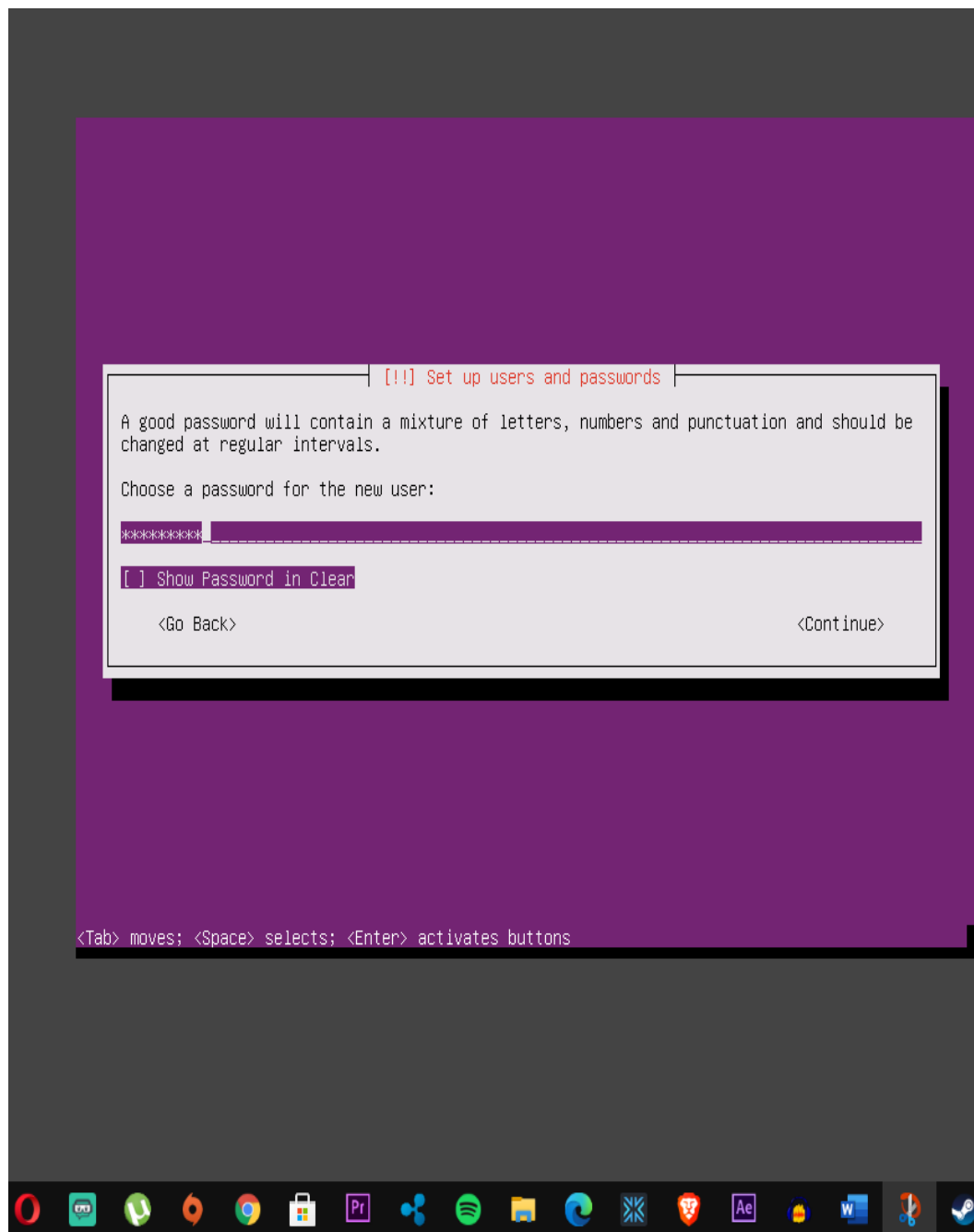
<Tab> moves; <Space> selects; <Enter> activates buttons

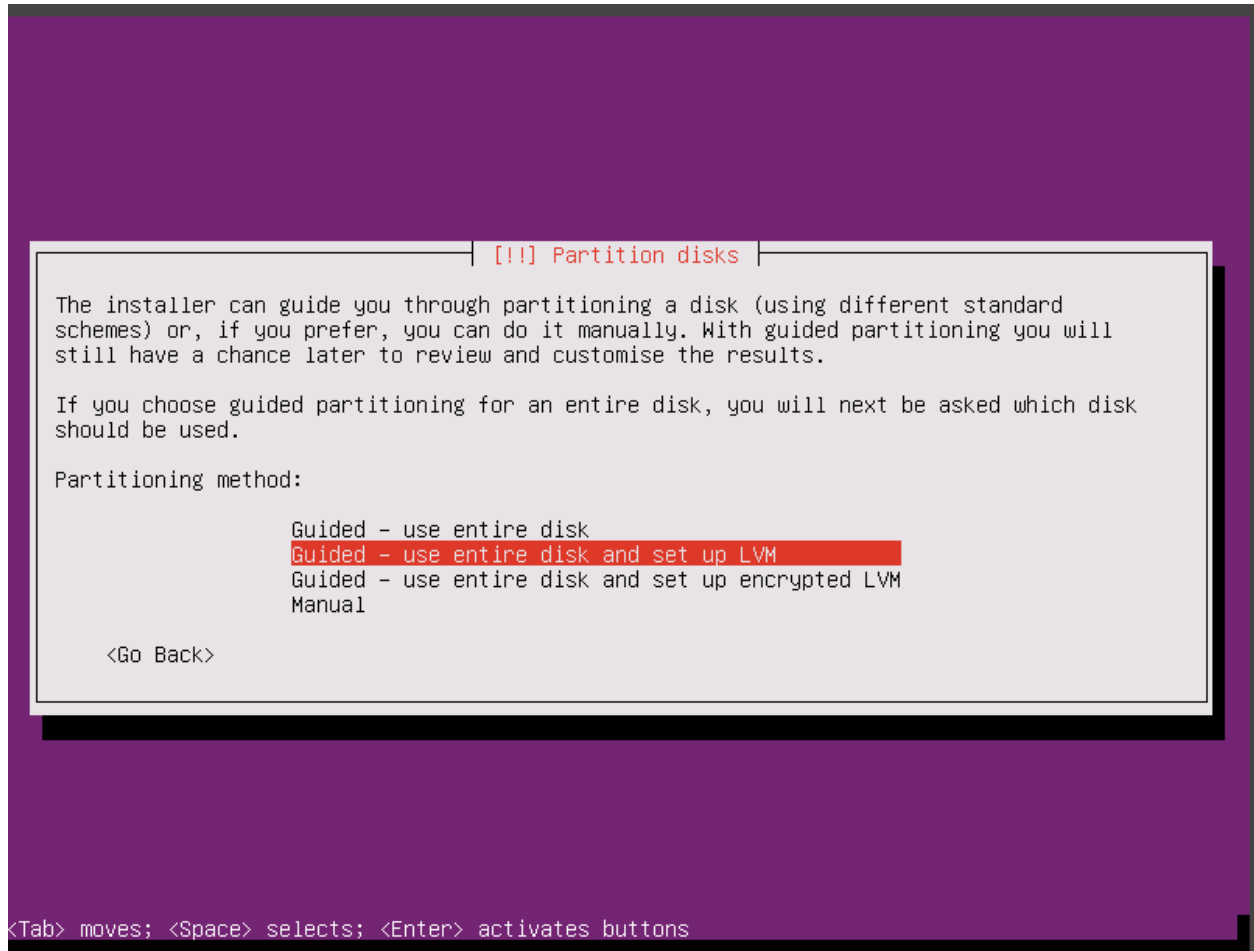


Appendix F

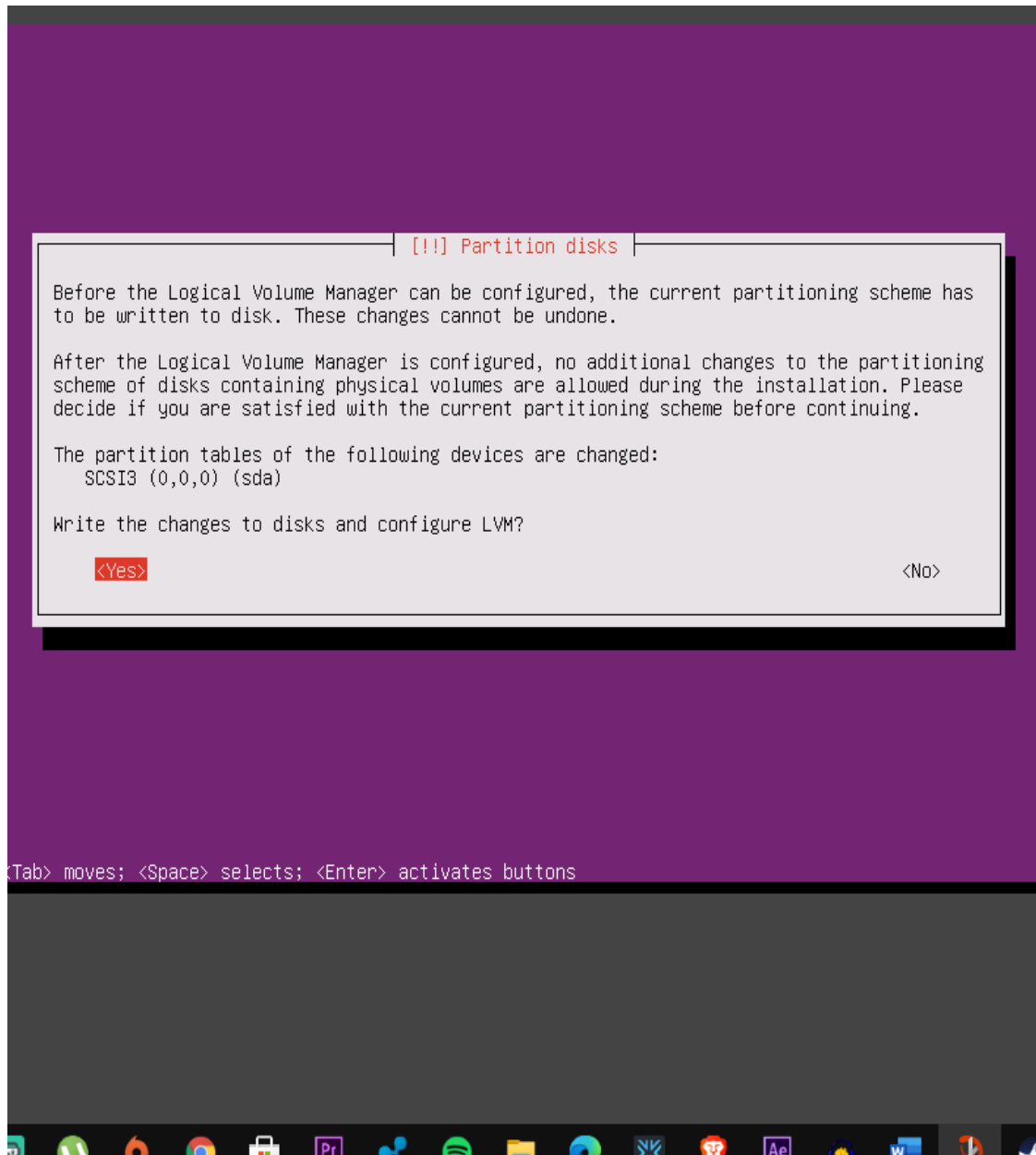
Appendix G

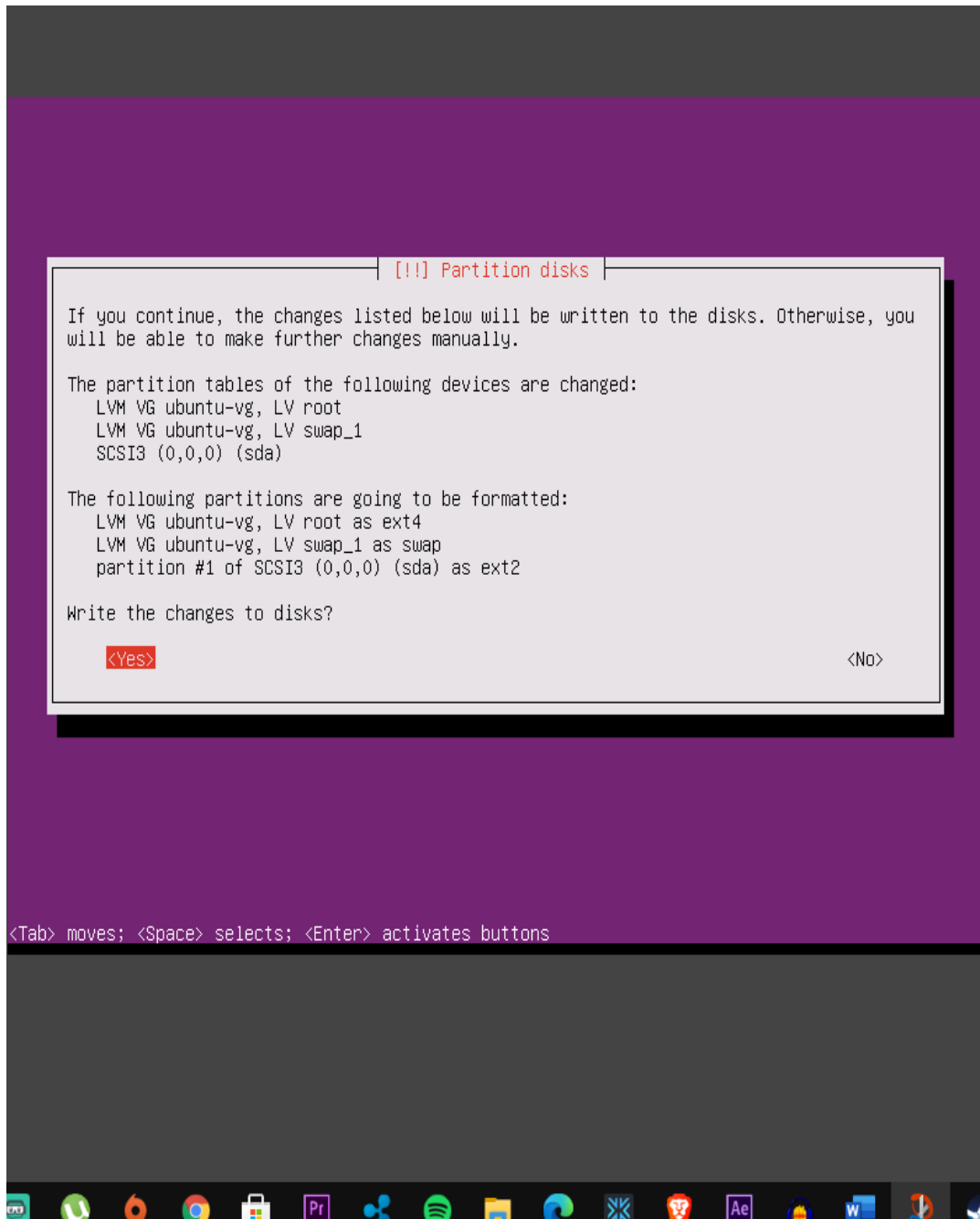
## Appendix H



Appendix I



Appendix J

Appendix K

Appendix L

## [!] Configuring tasksel

Applying updates on a frequent basis is an important part of keeping your system secure.

By default, updates need to be applied manually using package management tools. Alternatively, you can choose to have this system automatically download and install security updates, or you can choose to manage this system over the web as part of a group of systems using Canonical's Landscape service.

How do you want to manage upgrades on this system?

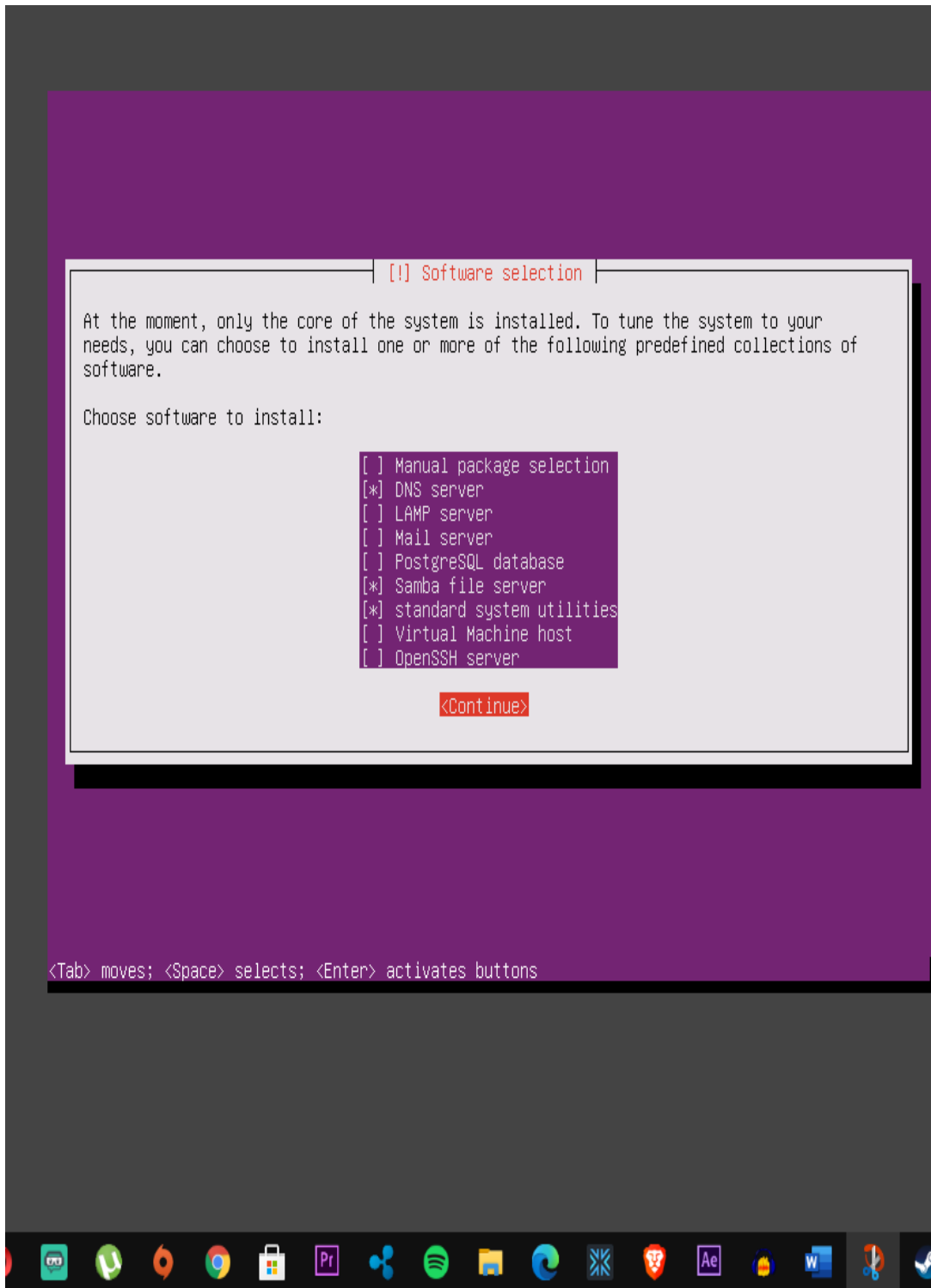
No automatic updates

**Install security updates automatically**

Manage system with Landscape

<Tab> moves; <Space> selects; <Enter> activates buttons



Appendix M

Appendix N

```
Ubuntu 16.04.1 LTS ubuntu tty1
adminubuntu:
Password:

Login incorrect
ubuntu login: Password1
Password:

Login incorrect
ubuntu login: adminubuntu
Password:
Welcome to Ubuntu 16.04.1 LTS (GNU/Linux 4.4.0-31-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

adminubuntu@ubuntu:~$ sudo adduser me
[sudo] password for adminubuntu:
Adding user `me' ...
Adding new group `me' (1001) ...
Adding new user `me' (1001) with group `me' ...
Creating home directory `/home/me' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for me
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] Y
adminubuntu@ubuntu:~$ _
```

Appendix O-1

```

[me]
path = /me
browseable = yes
read only = no
valid users = me

#
# Sample configuration file for the Samba suite for Debian GNU/Linux.
#
#
# This is the main Samba configuration file. You should read the
# smb.conf(5) manual page in order to understand the options listed
# here. Samba has a huge number of configurable options most of which
# are not shown in this example
#
# Some options that are often worth tuning have been included as
# commented-out examples in this file.
# - 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]

## Browsing/Identification ###

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

# server string is the equivalent of the NT Description field
server string = %h server (Samba, Ubuntu)

# Windows Internet Name Serving Support Section:
# WINS Support - Tells the NMBD component of Samba to enable its WINS Server
# wins support = no

# WINS Server - Tells the NMBD components of Samba to be a WINS Client
# Note: Samba can be either a WINS Server, or a WINS Client, but NOT both
# wins server = w.x.y.z

# This will prevent nmbd to search for NetBIOS names through DNS.
dns proxy = no

#### Networking ####

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

```

Appendix O-2

```

#### Networking ####

# The specific set of interfaces / networks to bind to
"/etc/samba/smb.conf" 266L, 9608C written
adminubuntu@ubuntu:/home$ testparm /etc/samba/smb.conf
Load smb config files from /etc/samba/smb.conf
rlimit_max: increasing rlimit_max (1024) to minimum Windows limit (16384)
Processing section "[me]"
WARNING: The "syslog" option is deprecated
Processing section "[printers]"
Processing section "[print$]"
Loaded services file OK.
Server role: ROLE_STANDALONE

Press enter to see a dump of your service definitions

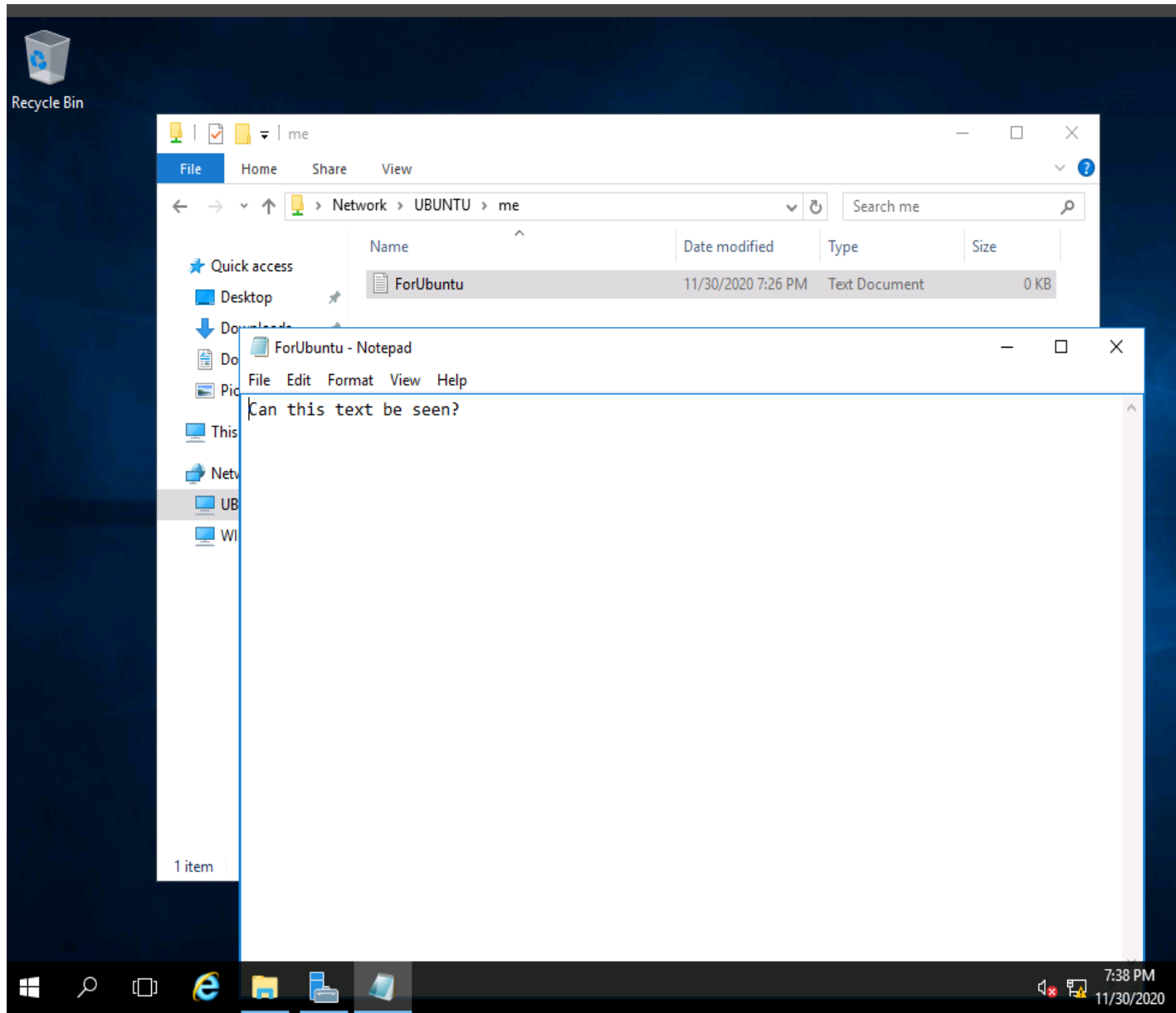
# Global parameters
[global]
    server string = %h server (Samba, Ubuntu)
    server role = standalone server
    map to guest = Bad User
    obey pam restrictions = Yes
    pam password change = Yes
    passwd program = /usr/bin/passwd %u
    passwd chat = *Enter\snew\s*\spassword:* %n\n *Retype\snew\s*\spassword:* %n\n *password\supdated\ssuccessfully* .
    unix password sync = Yes
    syslog = 0
    log file = /var/log/samba/log.%m
    max log size = 1000
    dns proxy = No
    usershare allow guests = Yes
    panic action = /usr/share/samba/panic-action %d
    idmap config * : backend = tdb

[me]
    path = /me
    valid users = me
    read only = No

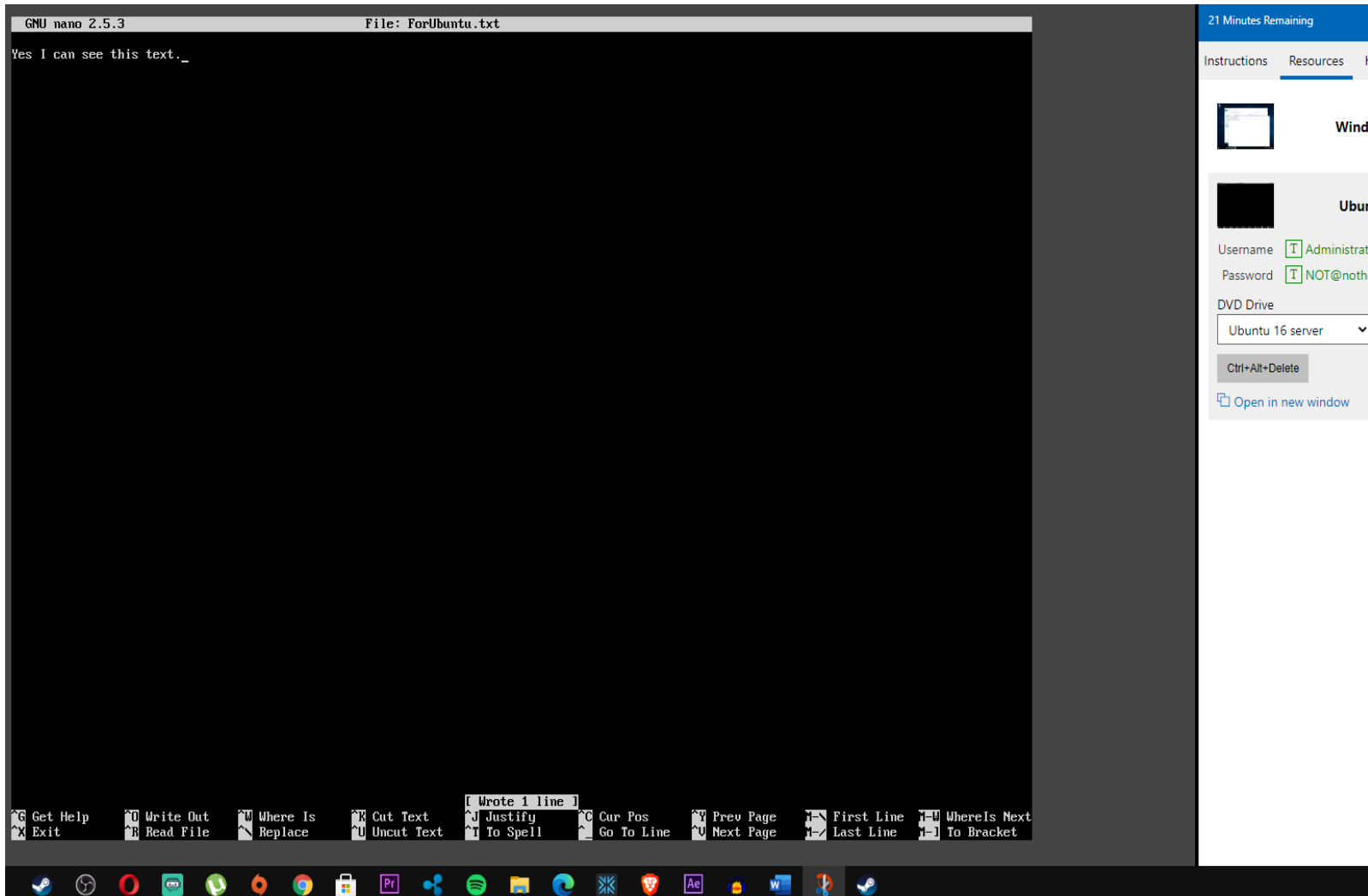
[printers]
    comment = All Printers
    path = /var/spool/samba
    create mask = 0700
    printable = Yes
    browseable = No

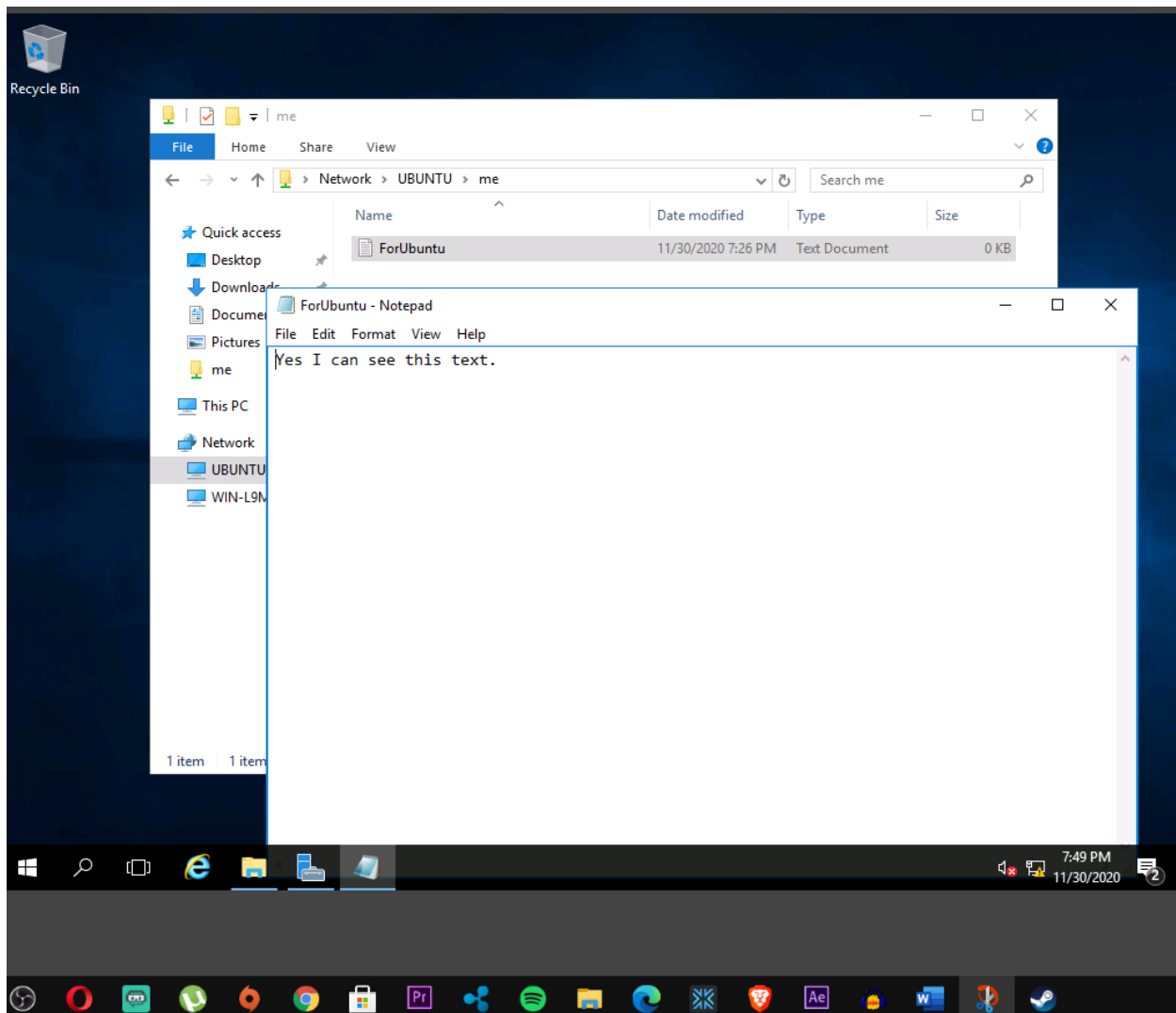
[print$]
    comment = Printer Drivers
    path = /var/lib/samba/printers
adminubuntu@ubuntu:/home$

```

Appendix P



Appendix Q-1

Appendix Q-2

### References

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<https://doi.org/10.1515/amcs-2016-0049>
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[https://doi.org/10.1016/0305-0483\(83\)90007-5](https://doi.org/10.1016/0305-0483(83)90007-5)