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February 13, 2024

Samba File Server

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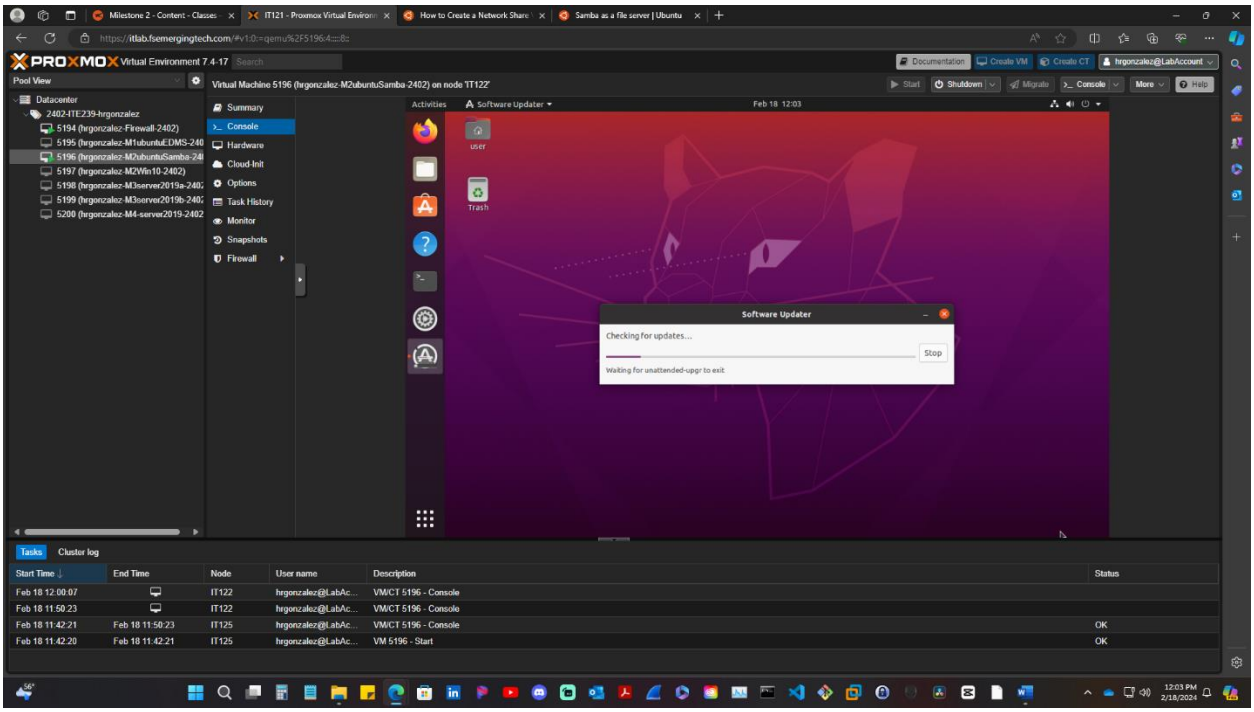
Simba File Server Prerequisites for installation

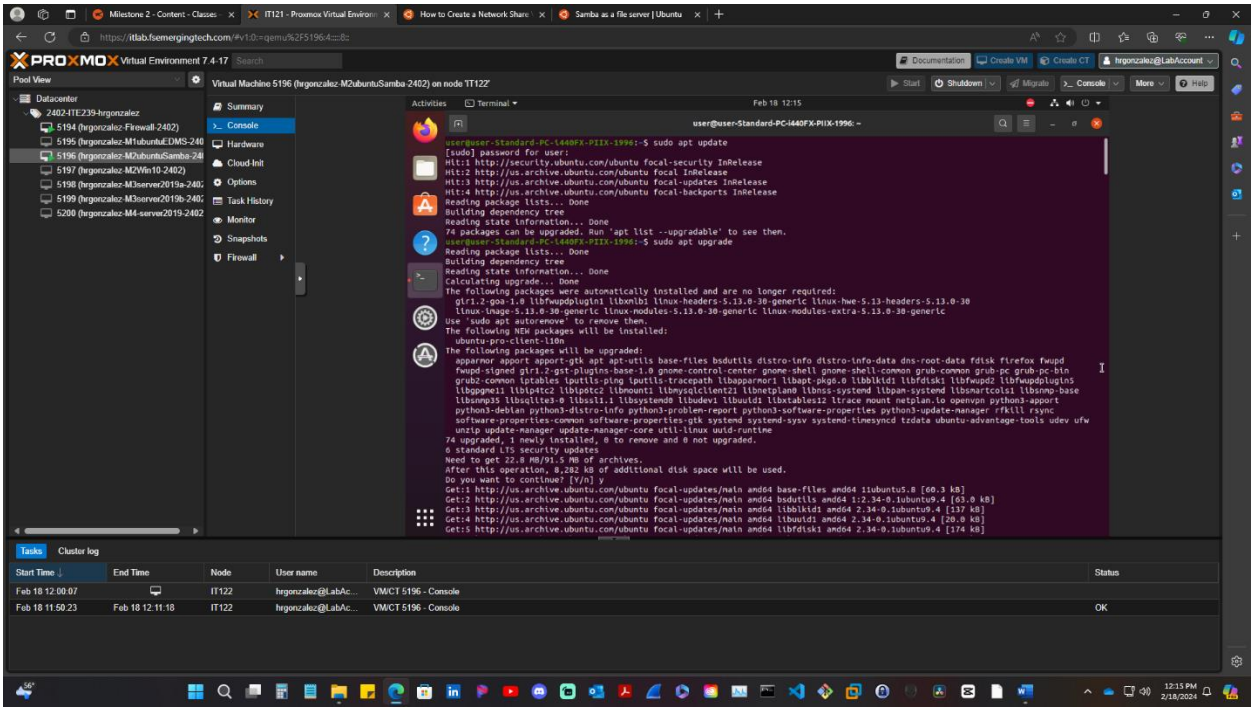
Software up to date

Make sure OS system is up to date. Do this by going to > show applications (9 dot image) > software updater > update if necessary.



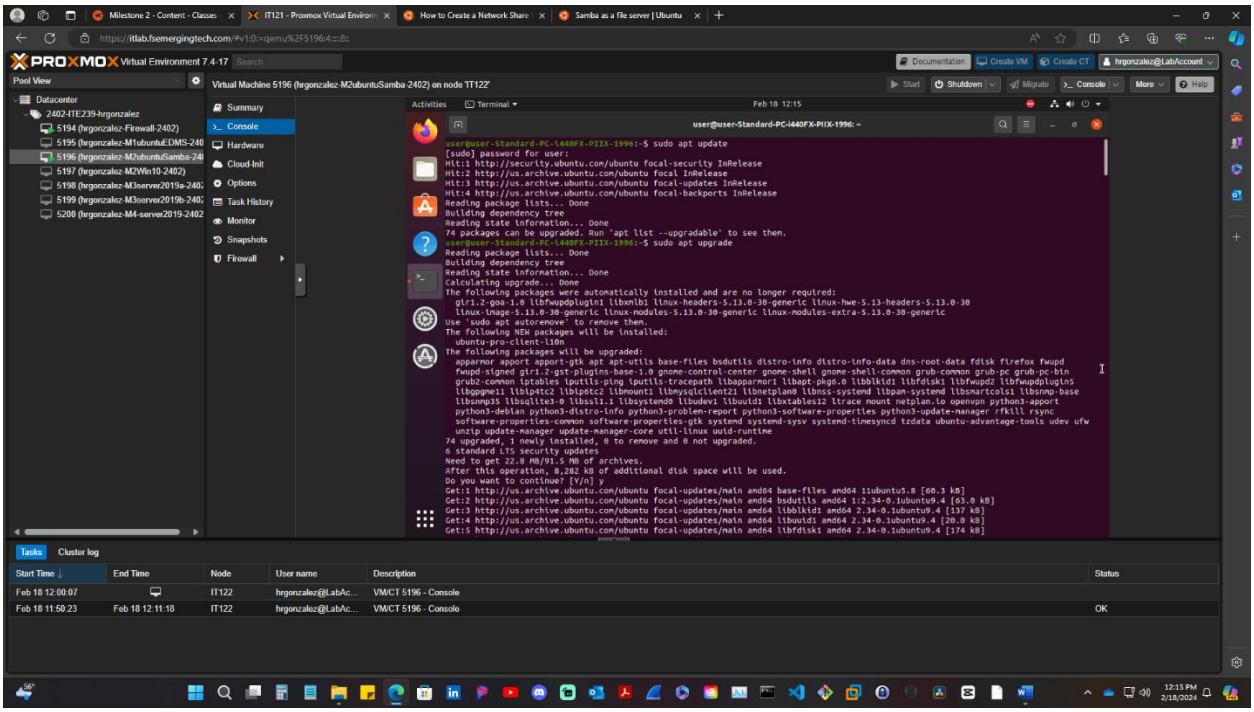
Update Package List

Use command > sudo apt update



Upgrade packages to newer versions

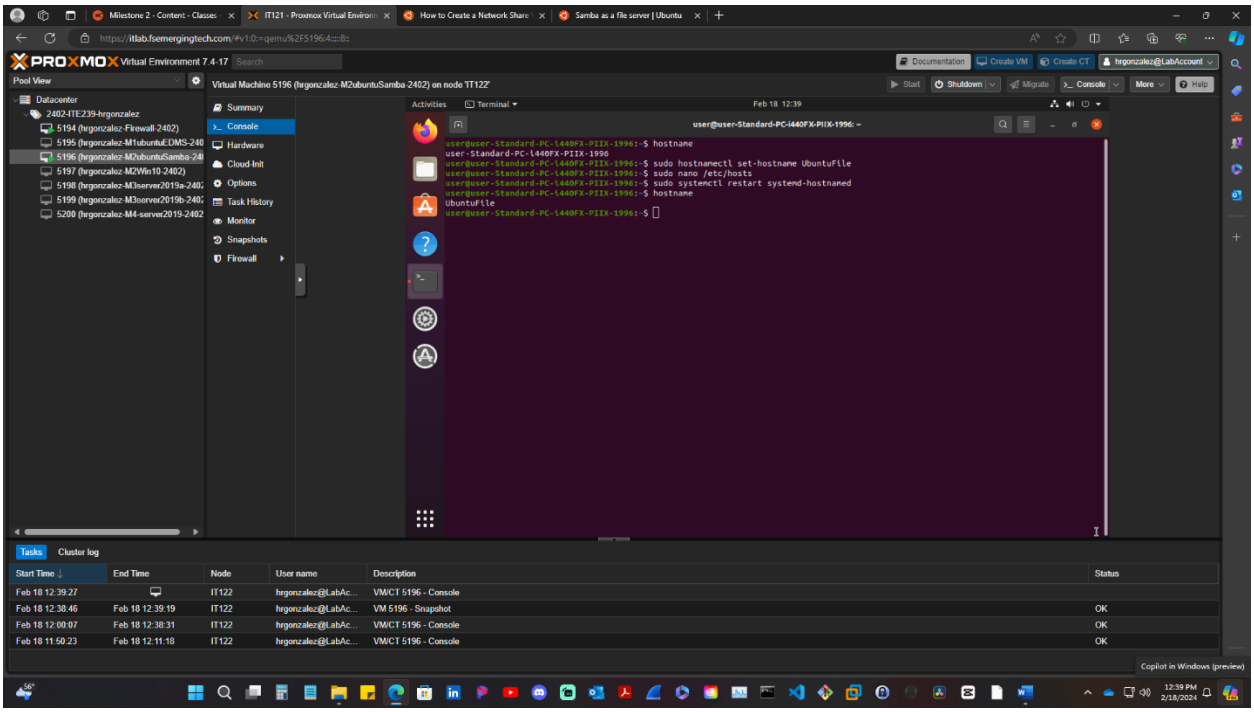
Use command > sudo apt upgrade



Changing Hostname

Checking current hostname

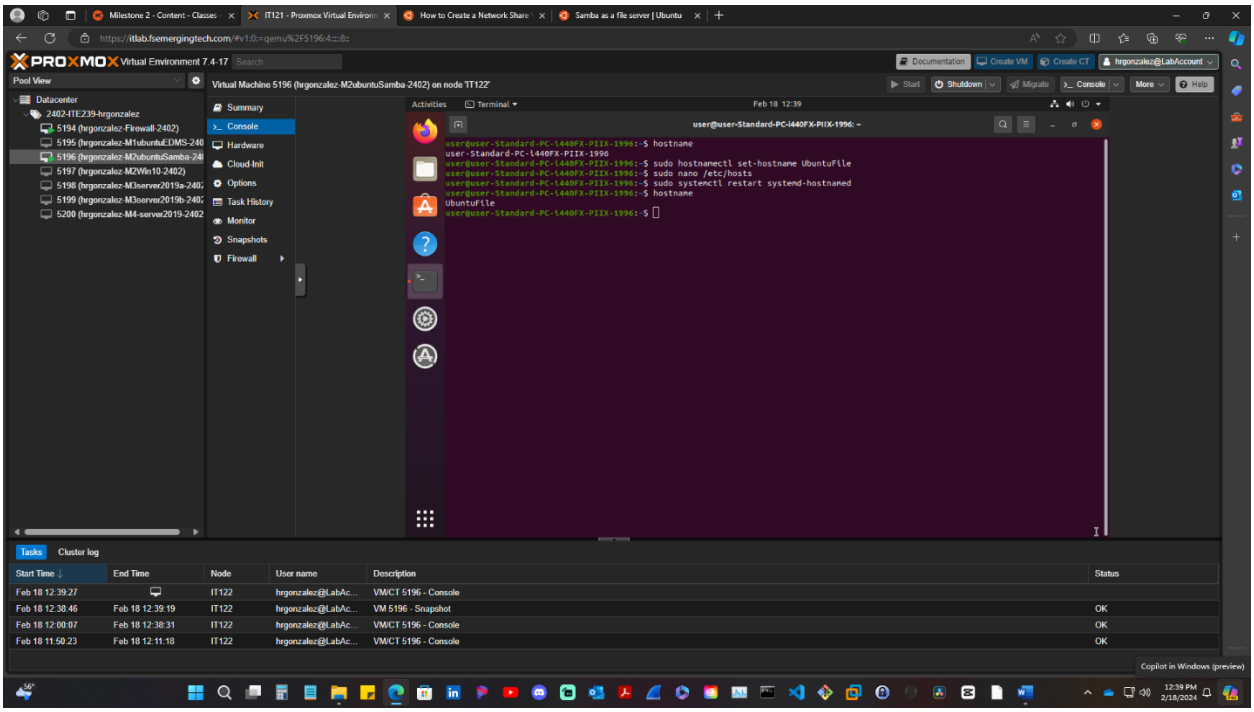
Use command > hostname



Change Hostname

To change hostname use command > sudo hostnamectl set-hostname “hostname”

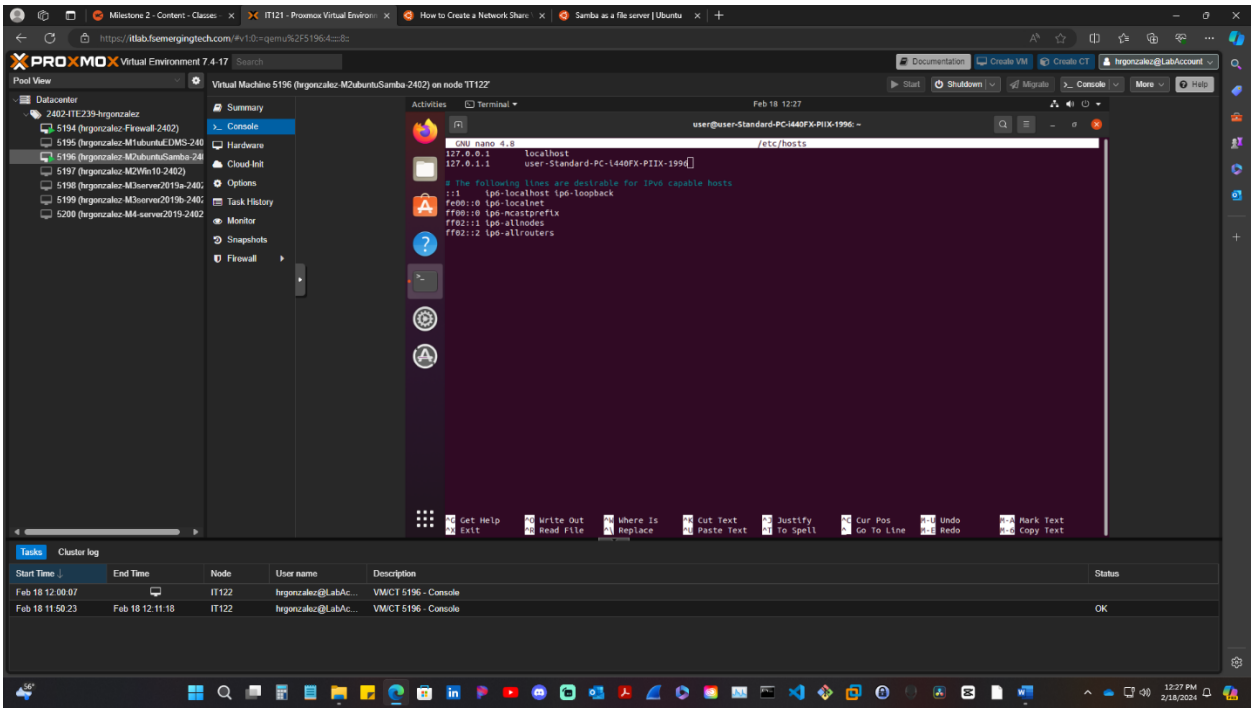
Replace “hostname” with new name.

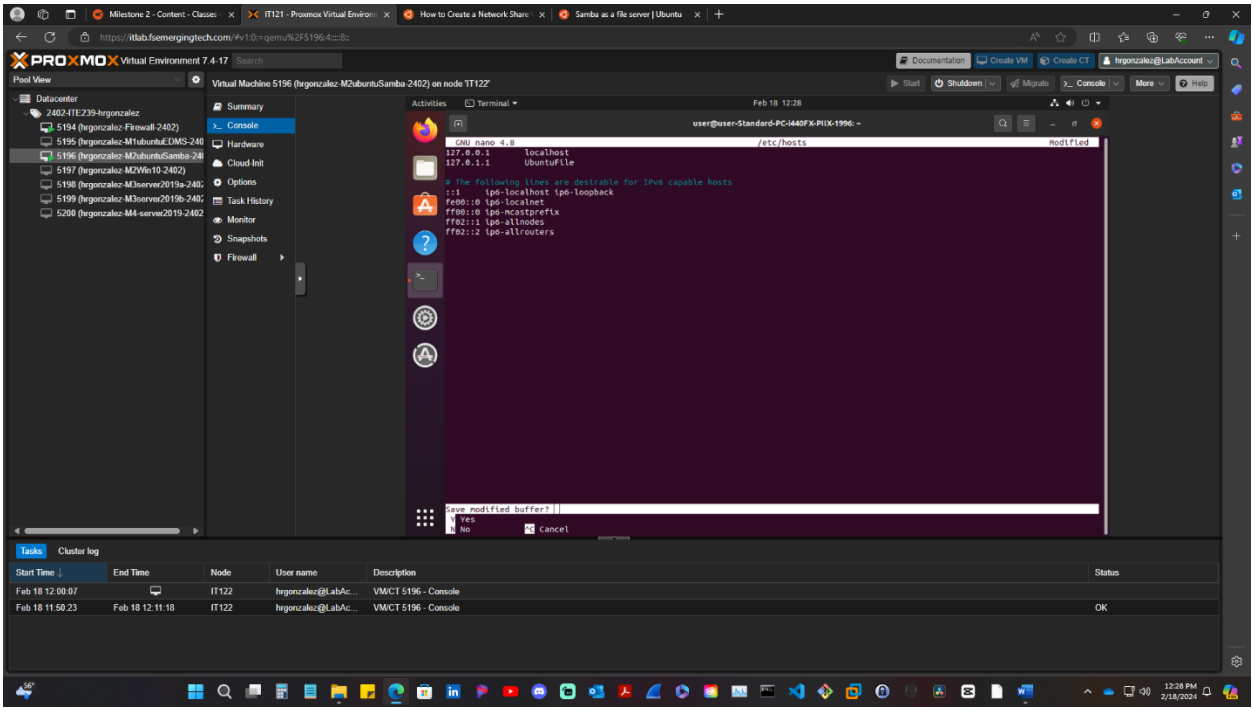


Update /etc/hosts file

This ensure the system recognize new hostname correctly.

Use command line > sudo nano /etc/hosts > change name below localhost to new hostname > exit and press Y to save changes.

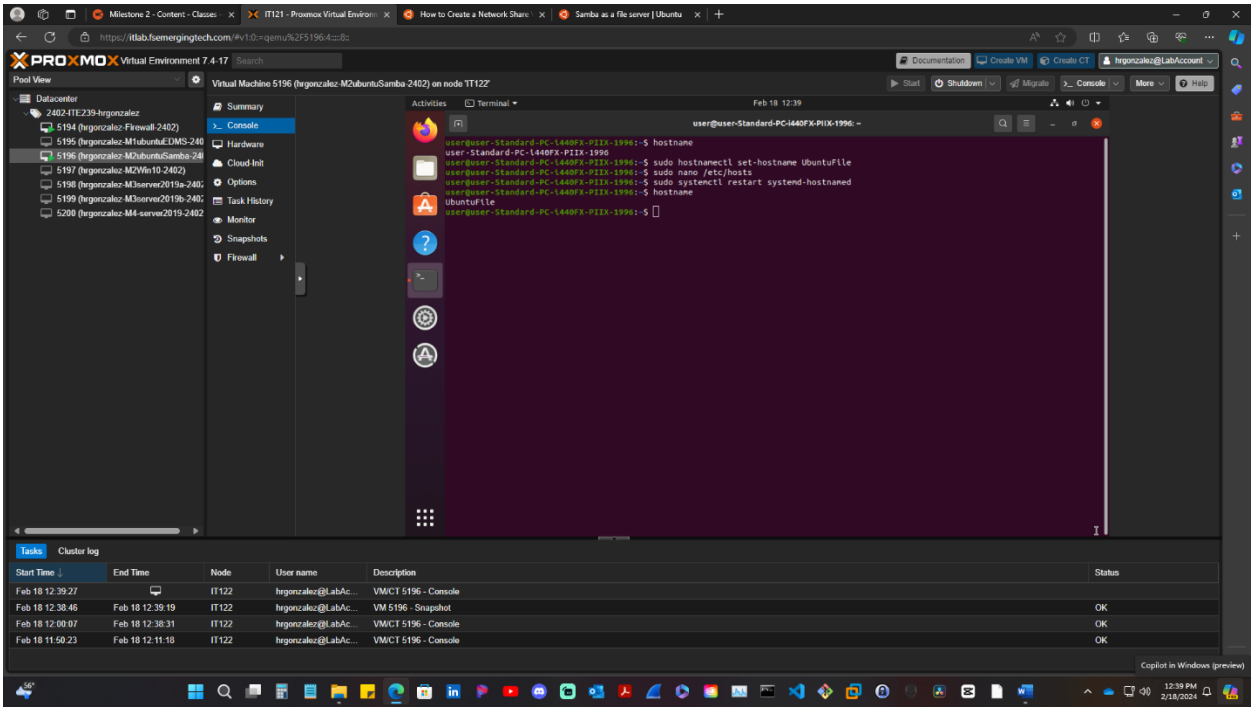




Reboot system

You can reboot system by using command line > reboot

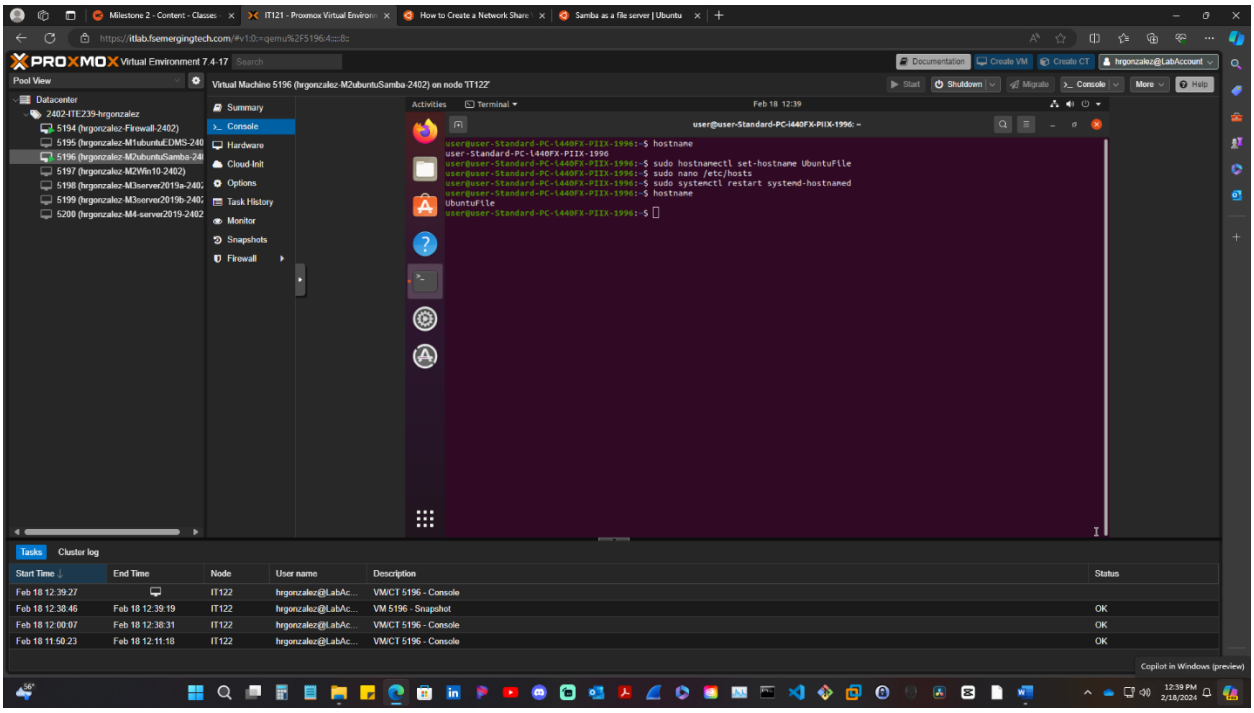
You can also use command line > sudo systemctl restart systemd-hostnamed which is what we are going to use.



Verify hostname changes

Use command line > hostname

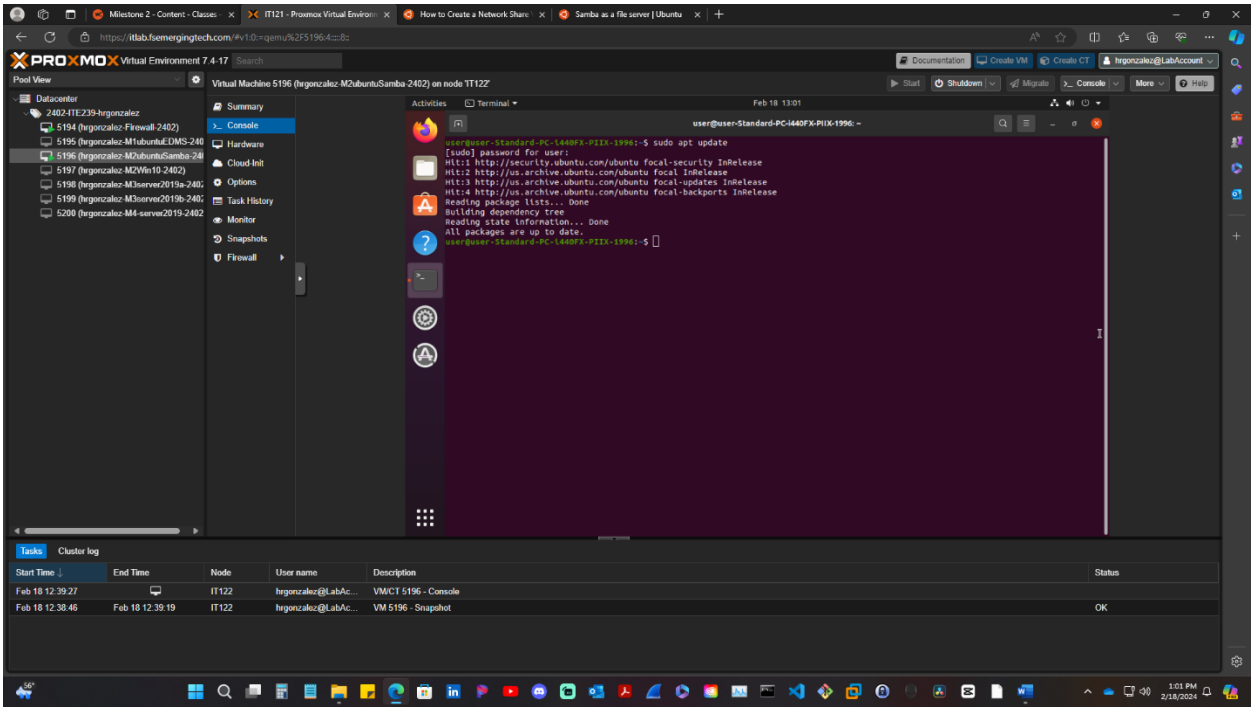
If done correctly you should see your new hostname displayed.



Installing and Configuring Samba

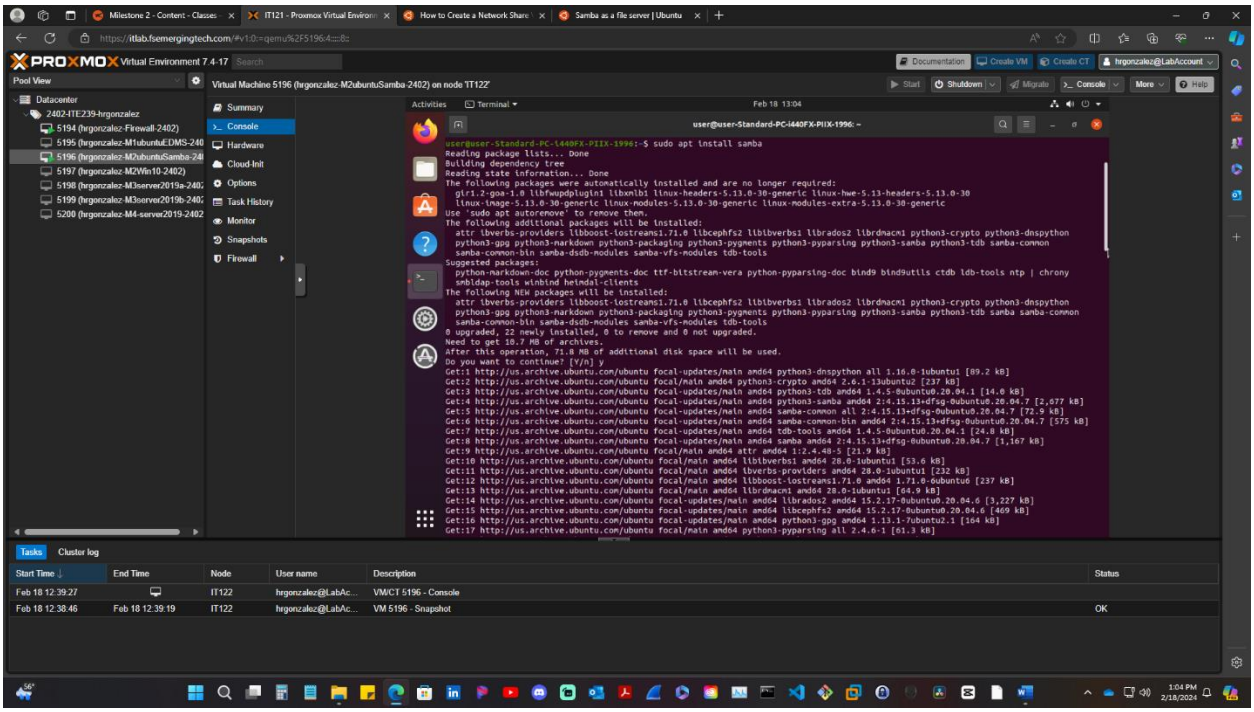
Let's update list of packages *packages might be updated since we did this in previous steps*

Use command > sudo apt update



Install Samba

Use command > sudo apt install samba > Type Y when prompted.

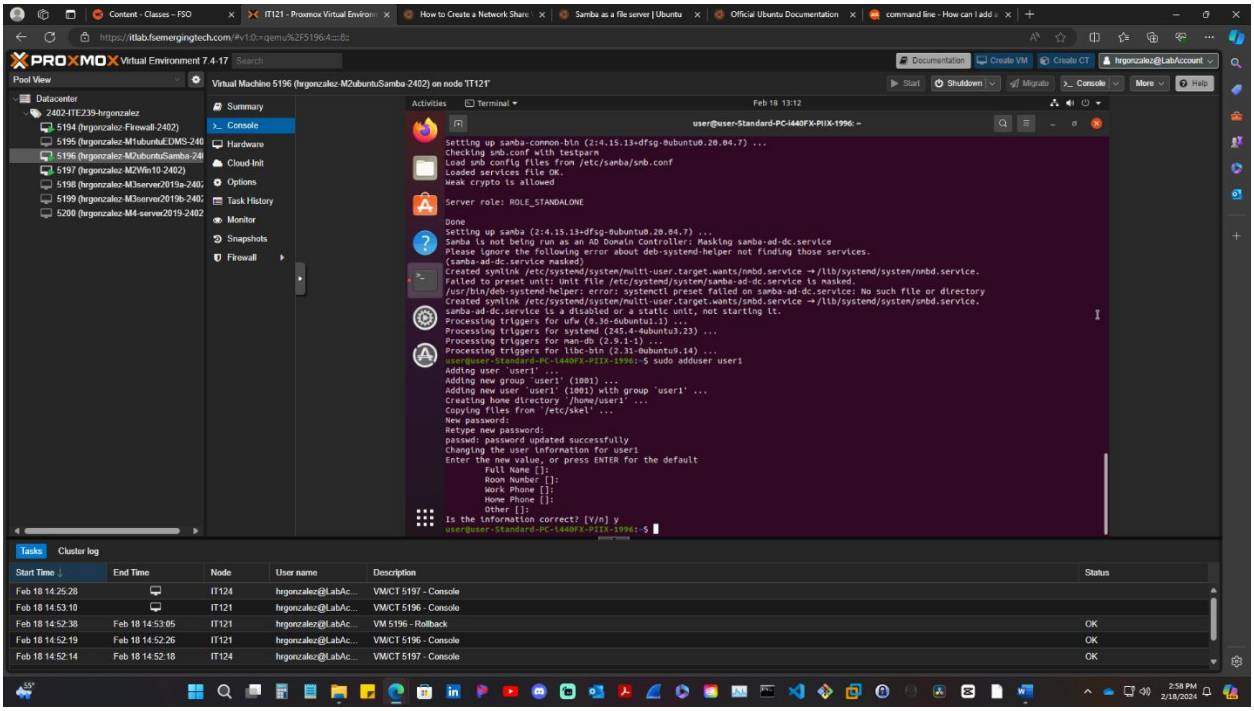


Create New User

Use command > sudo adduser user1

When prompted for a password use Fullsail1!

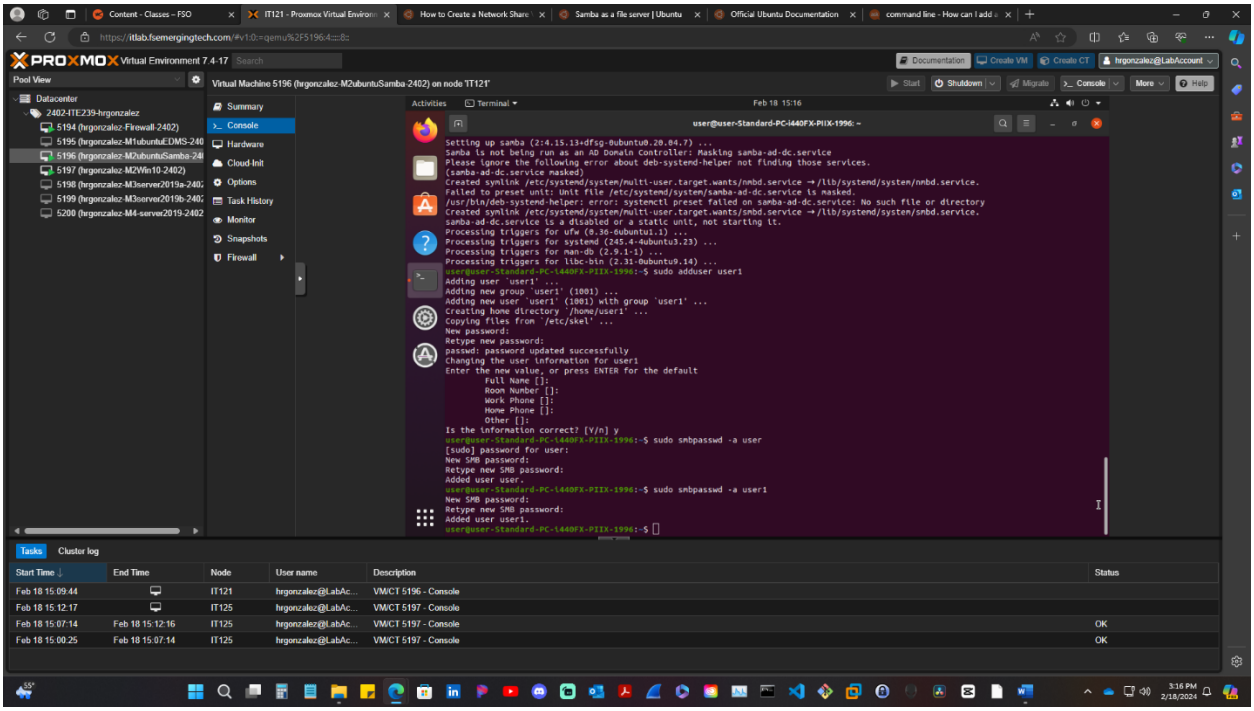
Press enter for the following prompts to leave at default. When prompted type Y and hit enter.



Create Samba User

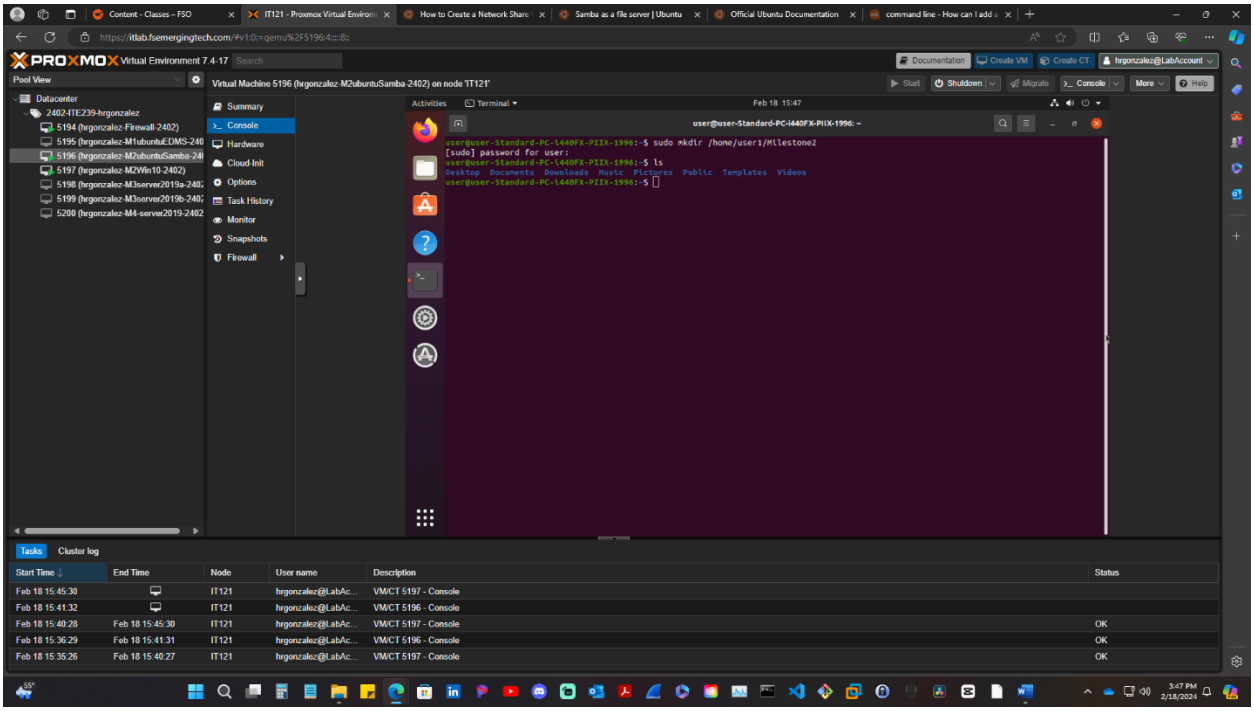
Use command line > sudo smbpasswd -a “<user_name>”

Replace “<user_name>” with your username. In the picture below I created a samba password for both users, user and user1.



Create a directory to be shared

Use command > sudo mkdir /home/user1/Milestone2

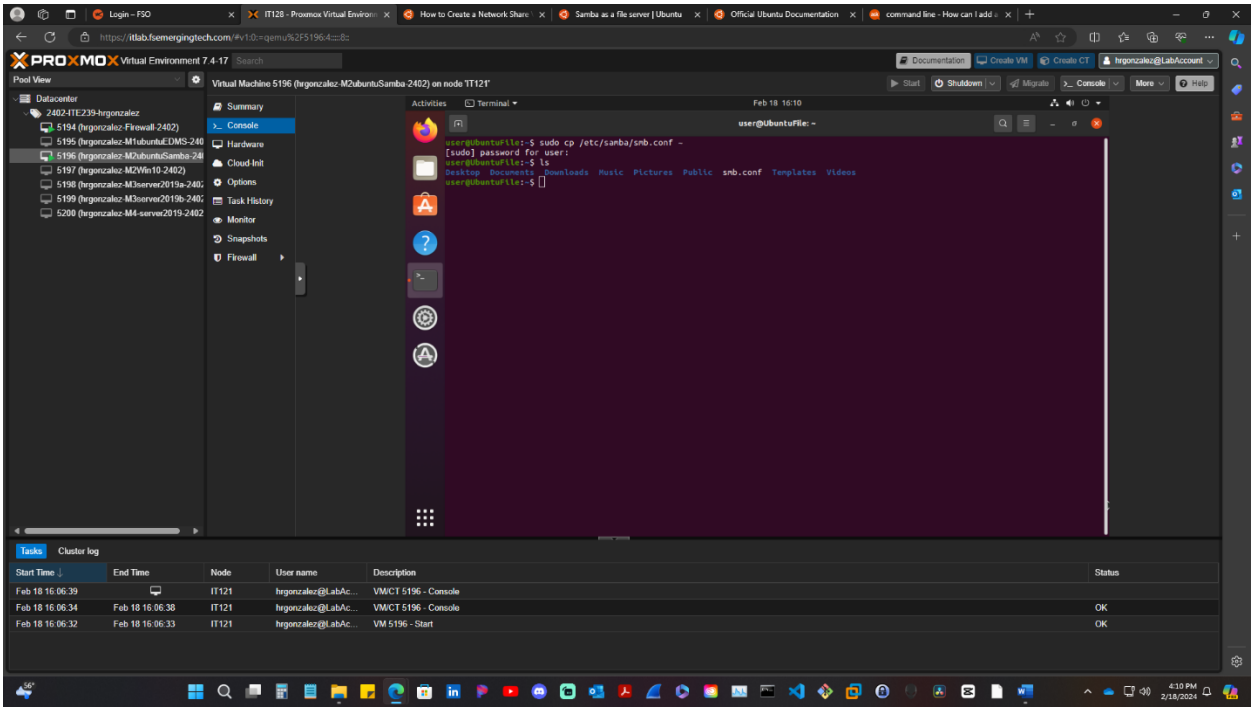


Back up Copy of smb.conf file

Let's make a backup of our original smb.conf file into our home directory (in case we need it)

Use command > sudo cp /etc/samba/smb.conf ~

Use command > ls to verify that back up is made.

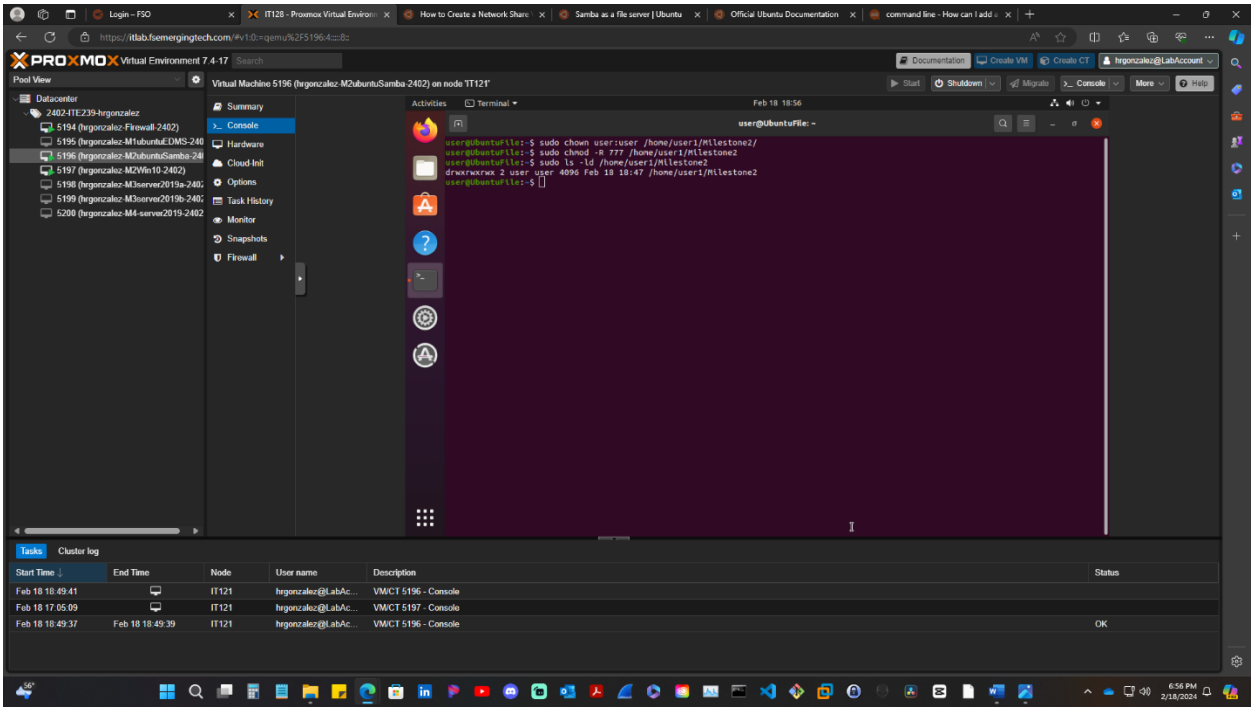


Setting Ownership

Before we go any further lets change Ownership and Permissions for the Milestone 2 folder.

We need to set ownership of the directory and it's file to be able to access and make changes so that user1 will be able to have access.

Use command line > sudo chown user : user /home/user1/Milestone2

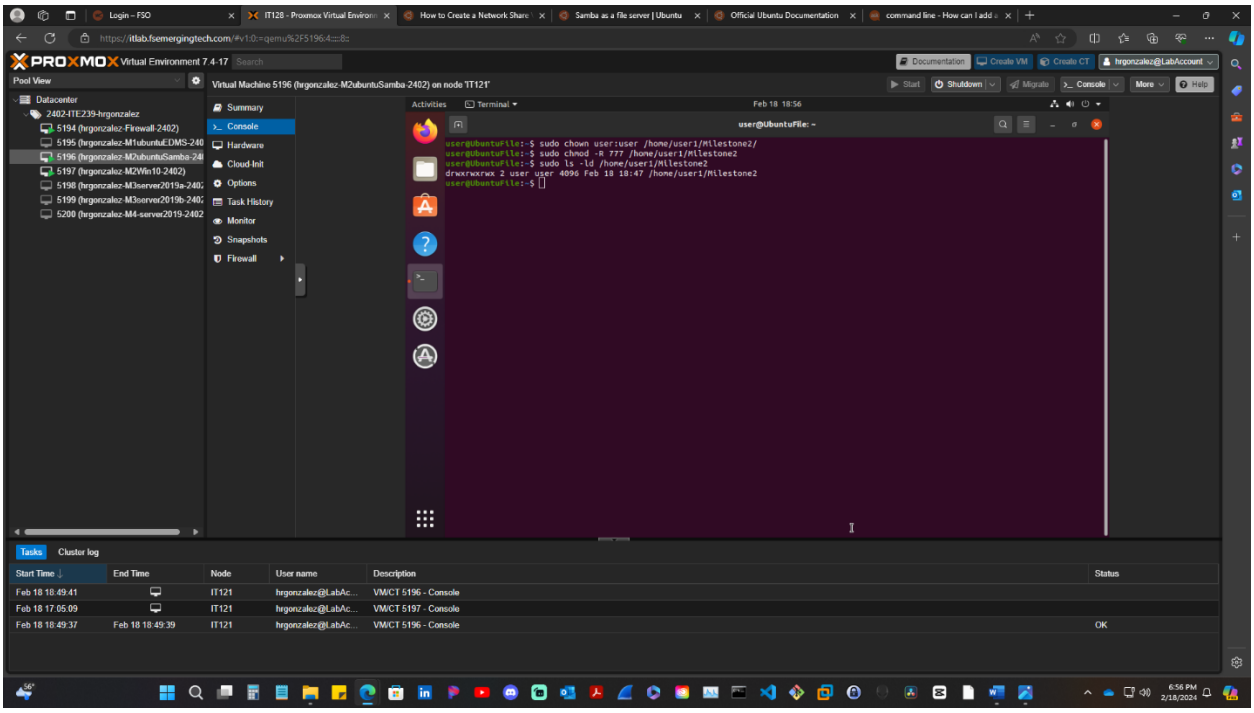


Set Permissions

Now we need to change the permissions of the file so it can be accessed.

Use command > sudo chmod -R 777 /home/user1/Milestone2

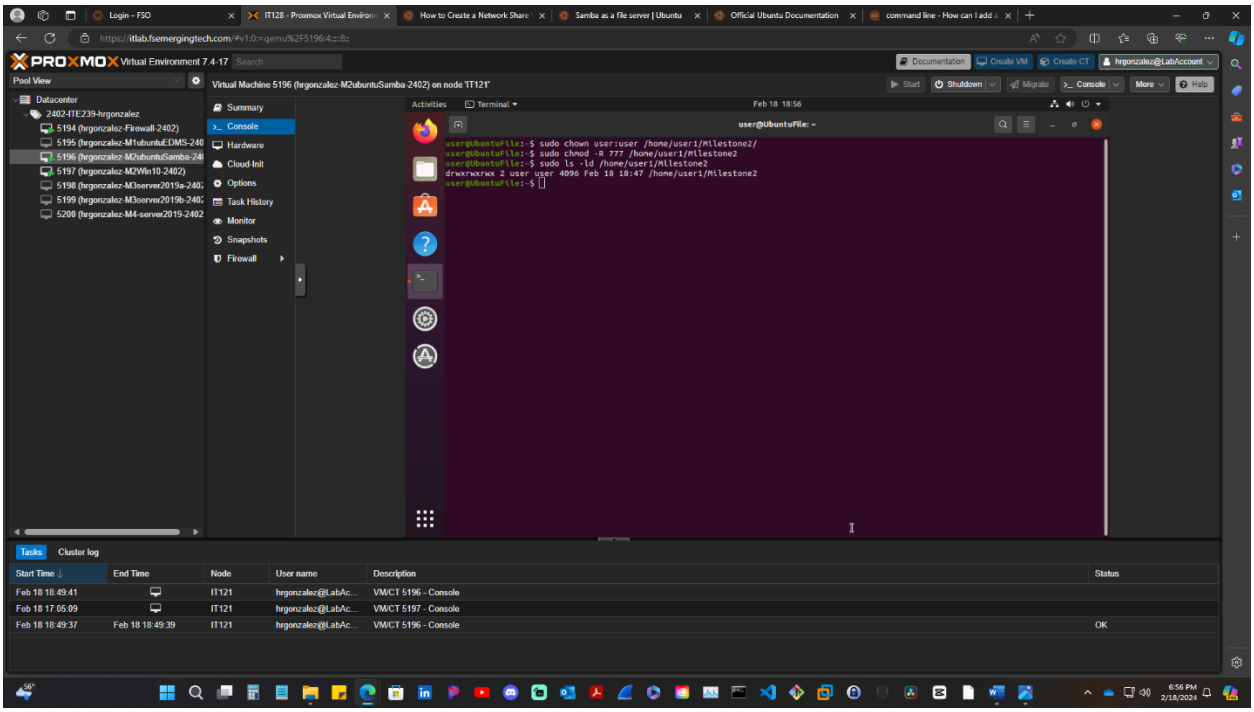
This command sets the permissions to allow full access (read, write, and execute) for the owner (user) and the group, which includes user1. The -R stands for all subdirectories within the specific folder.



Verify ownership and Permission

Use command > sudo ls -ld /home/user1/Milestone2

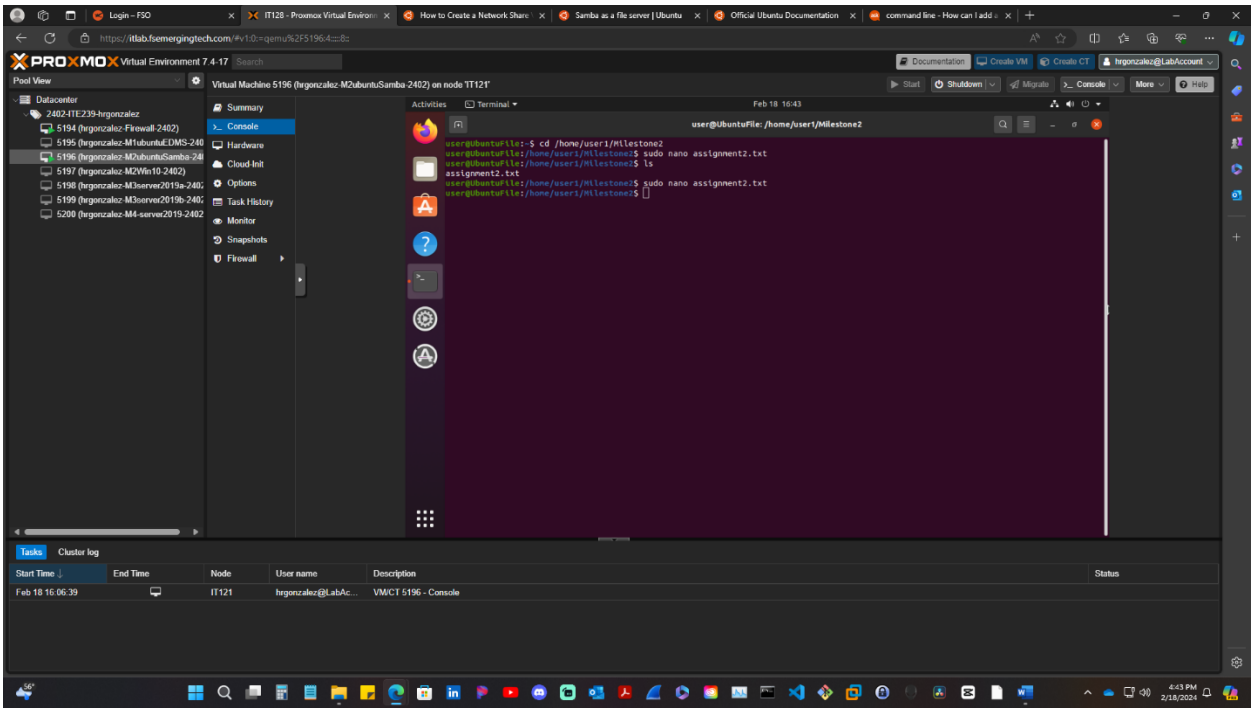
It should display a number 2, meaning there are 2 user with access to that file.

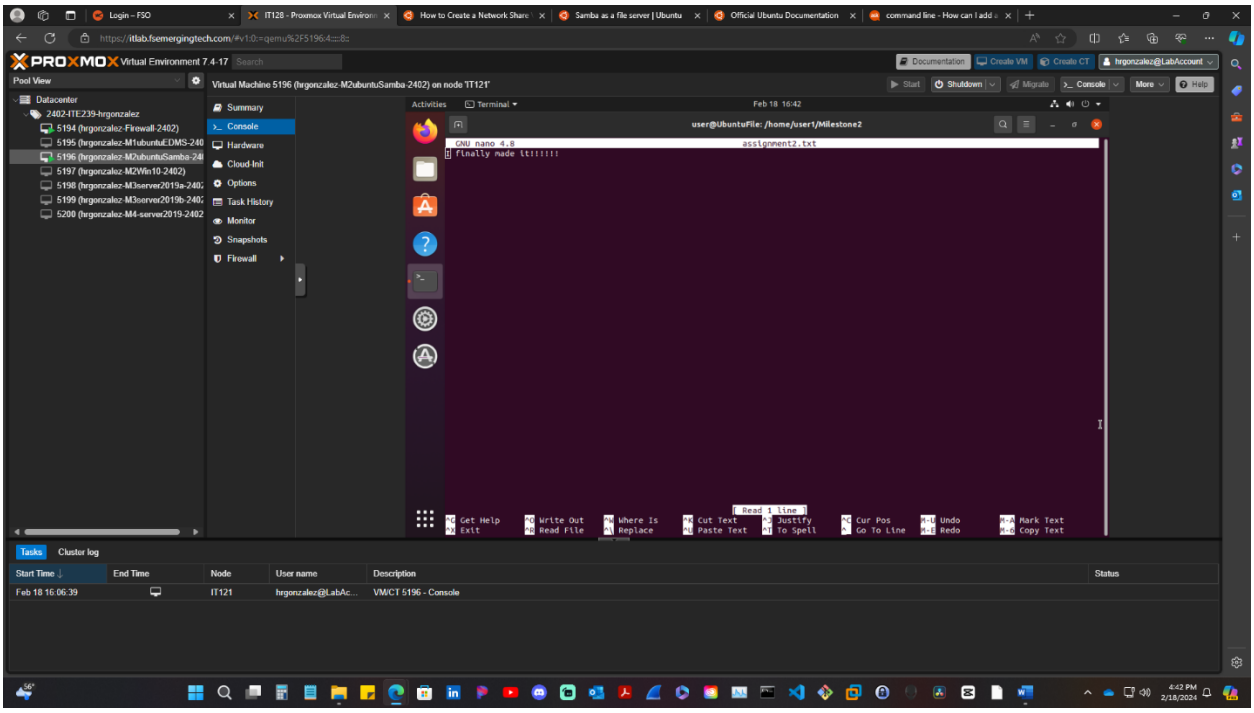


Create Text File in Milestone2 folder

We are going to create an assignment2.txt file, lets navigate to the Milestone2 folder.

Use command > cd /home/user1/Milestone2 > sudo nano assignment2.txt > type " I finally made it!!!! > exit > when prompted input Y > then hit enter to save changes.

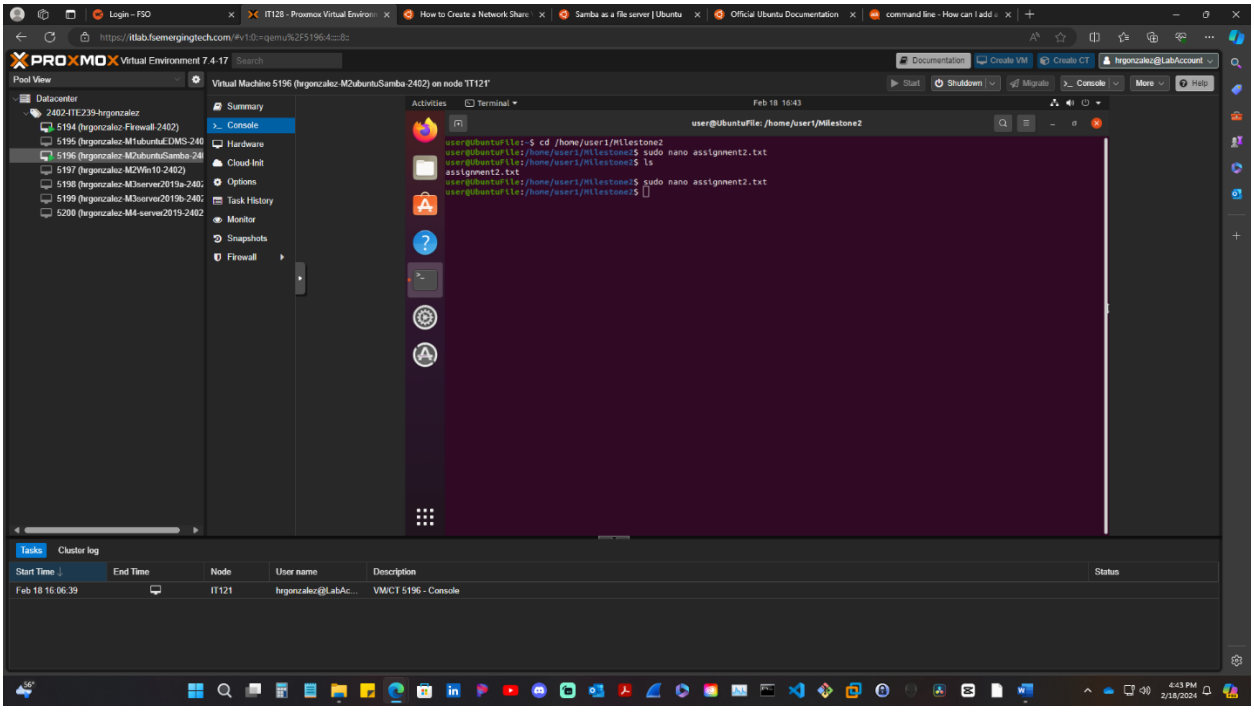




Verify assignment2.txt file is in Milestone folder

While in Milestone2 folder use command > ls

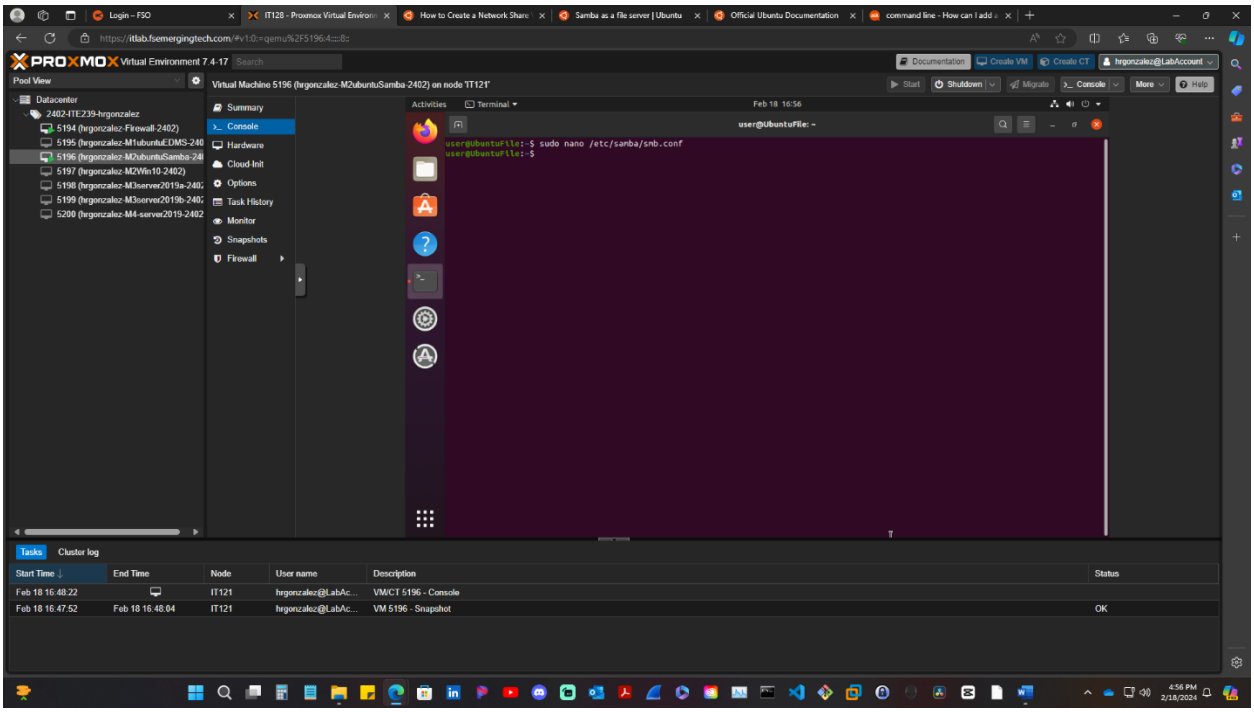
This will display our text file name assignment2.txt

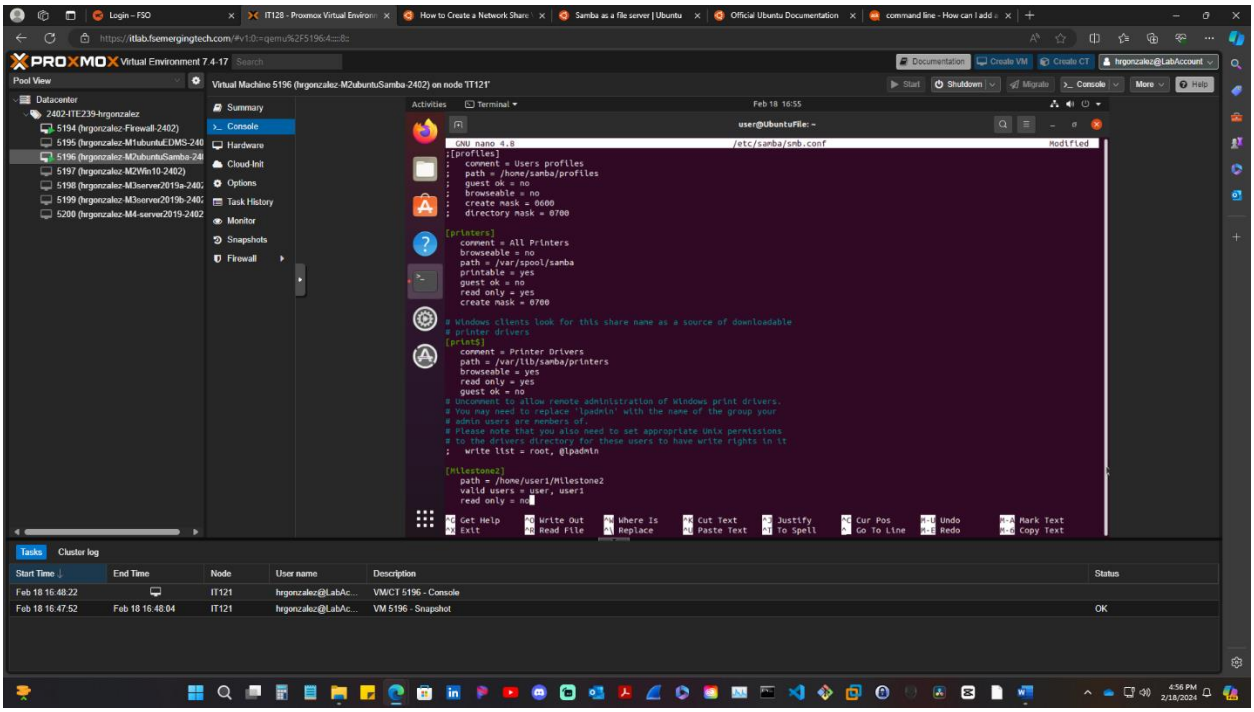


Configuring Samba file

Now we need to make changes in the Samba conf file so we are able to share our files.

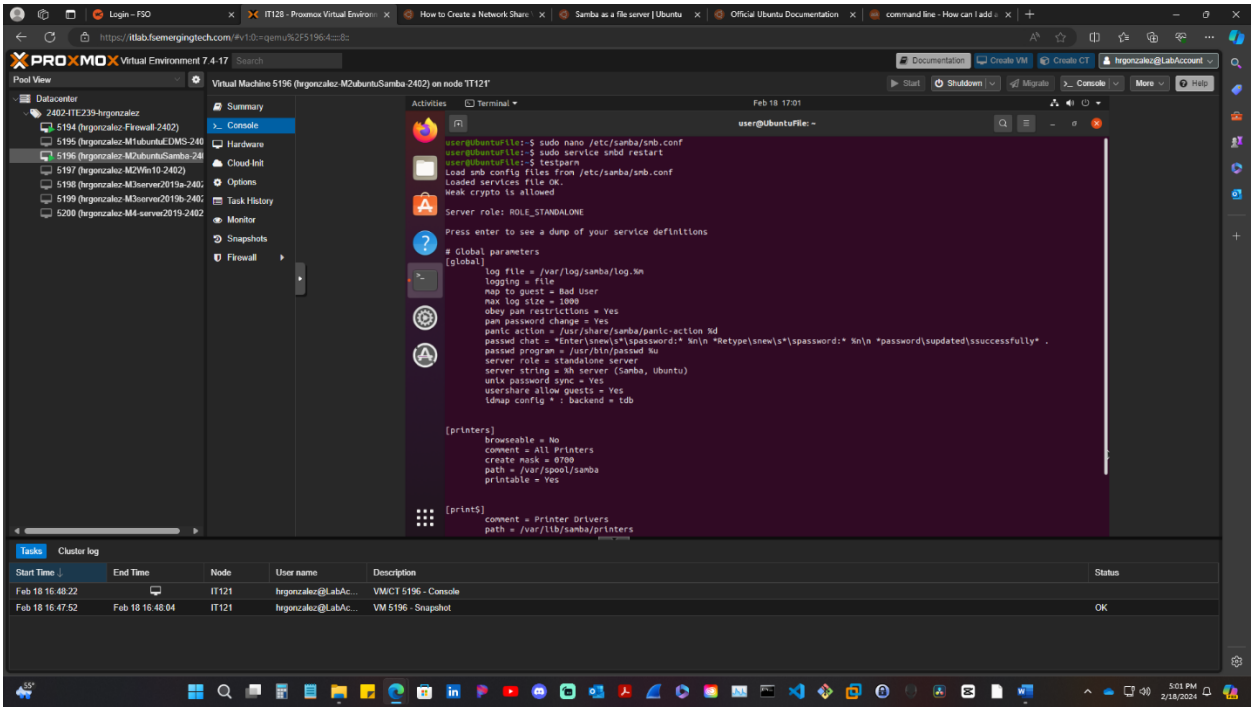
To edit samba conf file we need to use command > sudo nano /etc/samba/smb.conf > once in the samba file scroll down until the end of file and add this to file: *Look at picture provided*.





Restart Samba

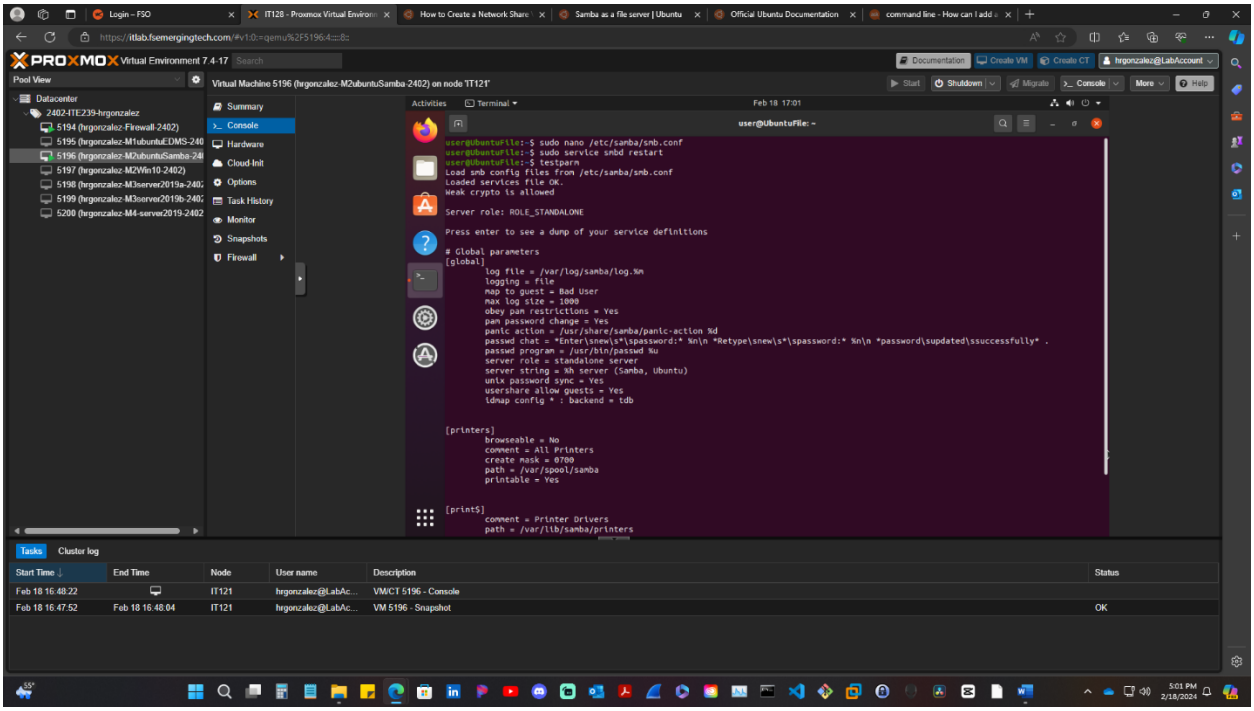
Use command > sudo service smbd restart



Check for Samba syntax errors

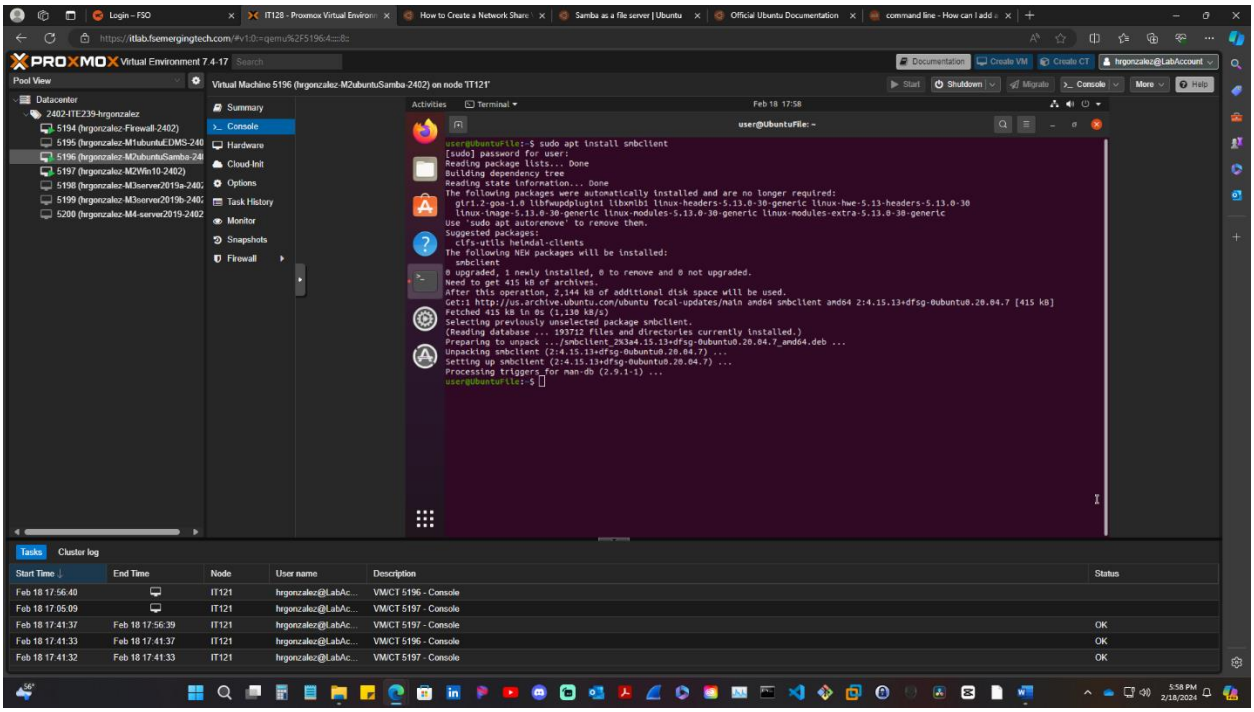
Use command > testparm > press enter to see dump file definitions.

If correct you should see loaded services files ok.



Install smbclient

Use command > sudo apt install smbclient

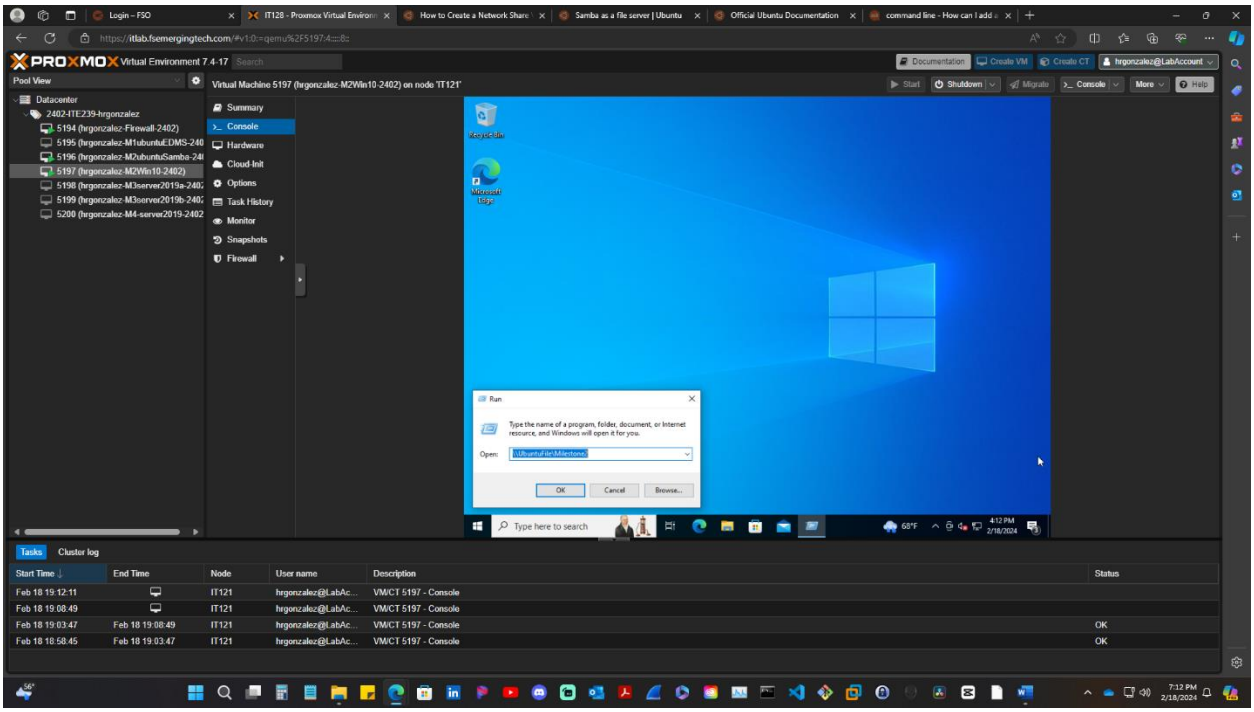


Accessing File from Windows10

On Windows10 right click on windows logo > click run > and enter \\<ip_address>\Milestone2

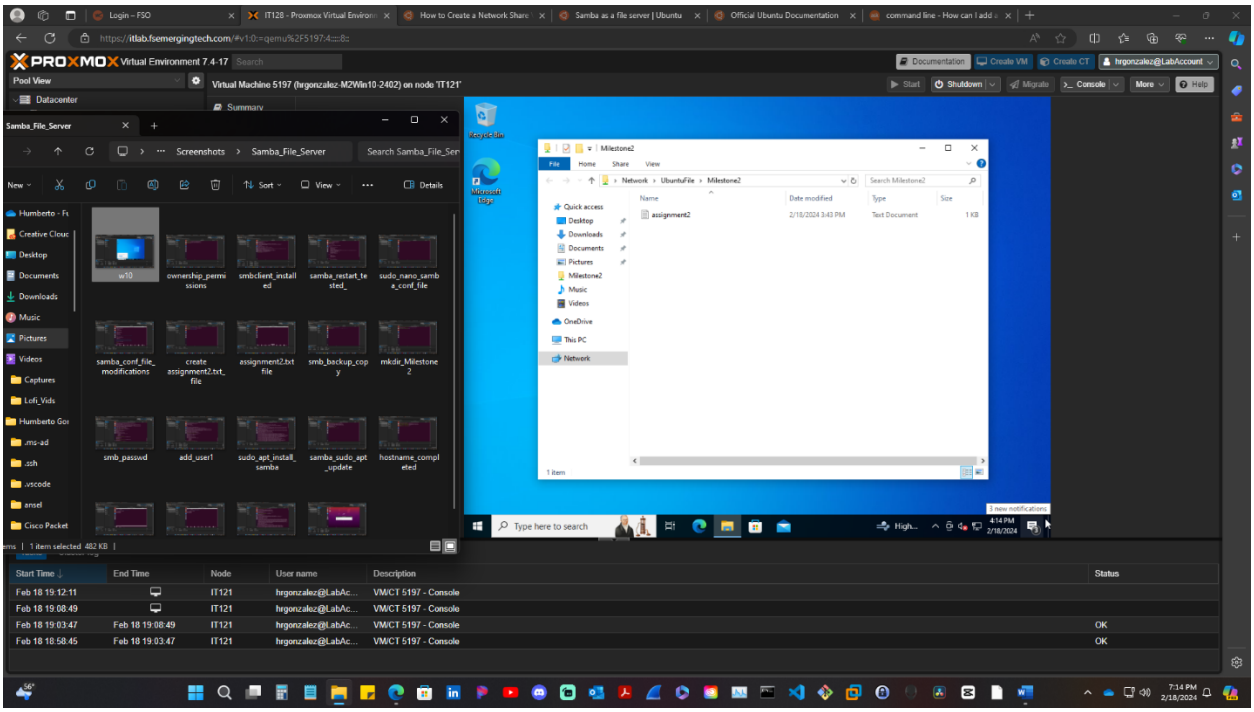
<ip address> being your Ubuntu VM address.

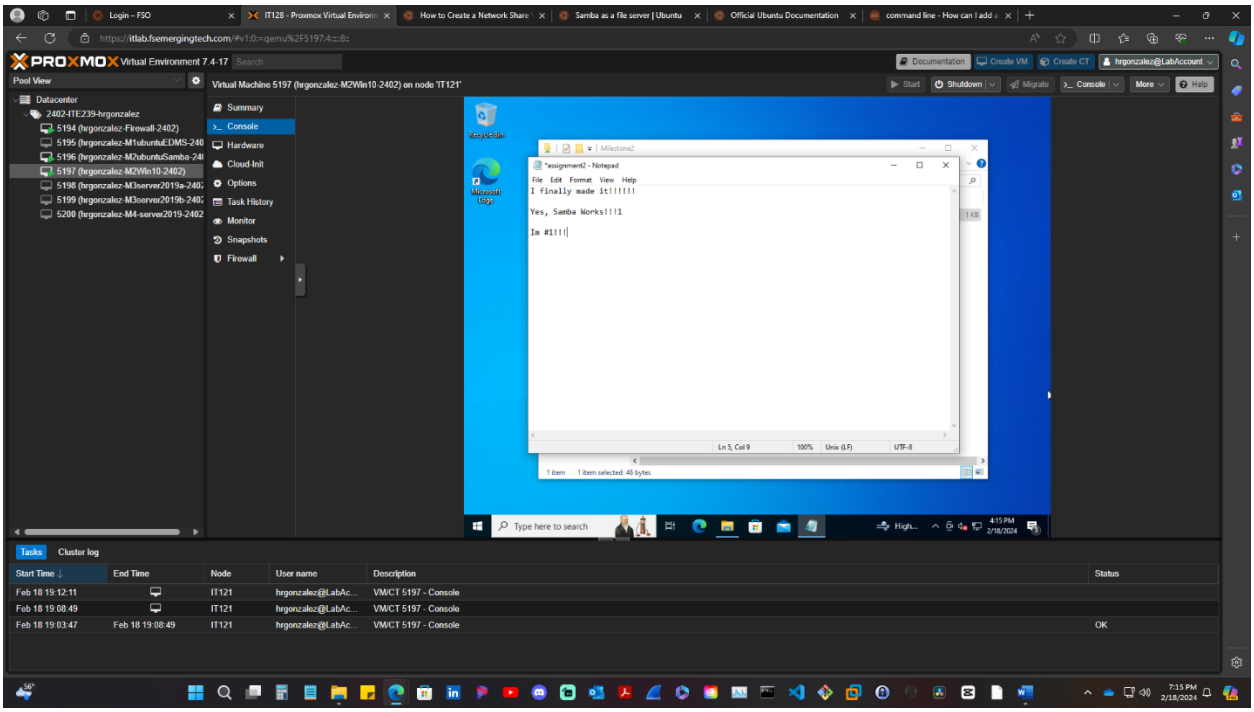
You can also use \\UbuntuFile\Milestone2 UbuntuFile being the hostname that we created in earlier steps.



Navigate to assignment2.txt

Open text file > type “Yes, Samba works!” > go to file > save > close all windows.



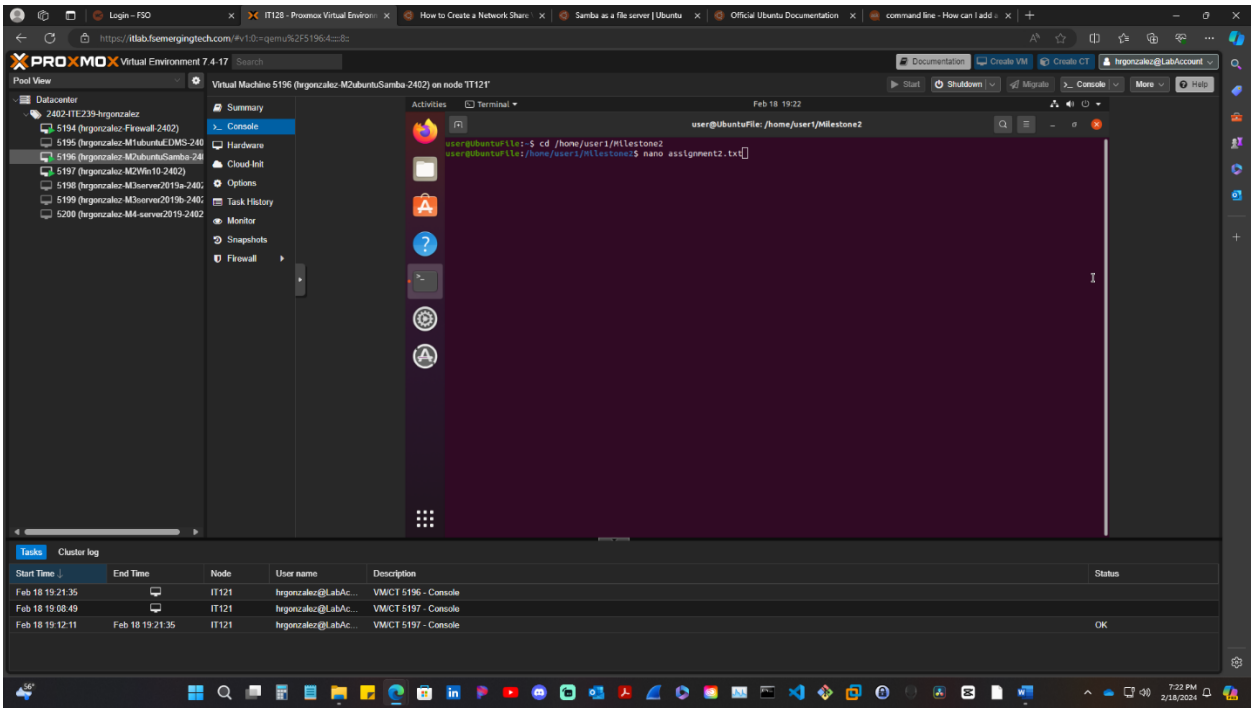


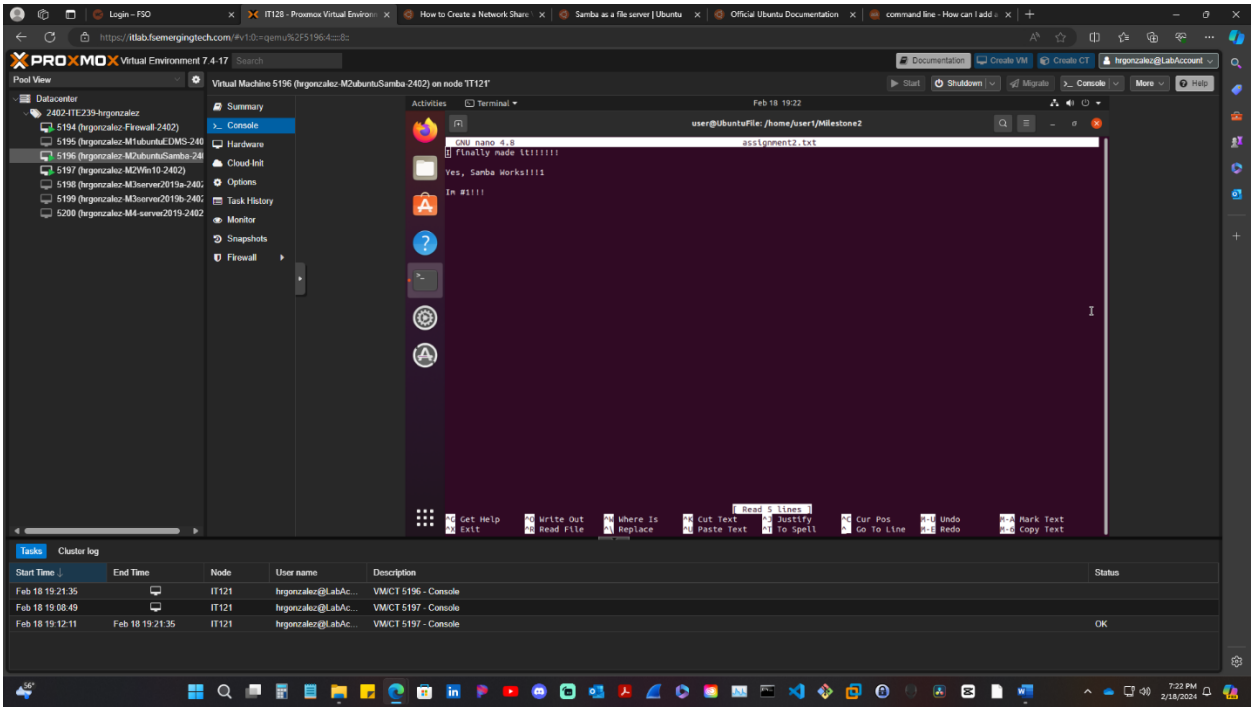
Open Text File in Ubuntu

Navigate to assignment2.txt file

Use command > cd /home/user1/Milestone2 > nano assignment2.txt

Changes made in Win10 should be displayed.





Write up

Importance of interoperability between OS

Interoperability, or the capacity of several operating systems (OS) to communicate, share data, and function effectively within a corporate network, is critical in today's linked business landscape. As businesses rely more on varied software platforms and devices, establishing compatibility between operating systems is critical for efficient operations, productivity, and security.

The variety of business networks is one of the key reasons why interoperability is so important. Companies frequently use a combination of operating systems, including Windows, macOS, and Linux, as well as mobile operating systems such as iOS and Android. Each OS is tailored to unique functionalities and preferences, resulting in an individual system within the enterprise. Without interoperability, these different technologies would struggle to properly interact and collaborate, limiting workflow and production.

Regardless of the hardware or operating system that each team or department uses, interoperability supports cooperation and communication. For example, easy document collaboration and file sharing allow staff members to collaborate effectively, which boosts output and creativity. Employee delays and annoyance could result from incompatibilities that arise when they try to share files or access resources across various OS systems in the absence of interoperability.

Interoperability is essential from a security perspective to keep a strong defense against cyberattacks. In order to properly monitor and safeguard network assets, cybersecurity procedures and solutions frequently need to be integrated with various OS environments. In the absence of interoperability, security safeguards could disintegrate, creating holes that bad actors could exploit. Organizations can enforce consistent regulations and deploy comprehensive security measures throughout the network by guaranteeing OS compatibility and seamless communication.

In addition, interoperability is critical for seamless integration with third-party applications and services. Many firms use a variety of software solutions for activities including customer relationship management (CRM), enterprise resource planning (ERP), and communication tools. Maximizing the usability and value of these applications requires ensuring that they can communicate effectively with various operating systems within the corporate network.

Interoperability also improves business networks' scalability and flexibility. In the case of a growing business like Marconi Law Firm where there may be a need to implement new technology, extend their infrastructure, or handle remote workforces as they develop and grow, interoperability plays a big role. Systems that are interoperable can readily adjust to these modifications, enabling them to smoothly incorporate new hardware and software without interfering with ongoing business processes. This adaptability is essential to preserving agility and competitiveness in the fast-paced commercial world of today.

Being able to integrate interoperability to Marconi Law firm helps lowers the IT infrastructure's total cost of ownership (TCO). They are able to save money by enabling the integration of various systems and devices rather than investing in expensive specialist hardware or software solutions made for certain operating systems. Due to interoperability, Marconi is able to lower cost in maintenance and support procedures because IT teams can operate a unified network environment more effectively, which saves time and money on updates and troubleshooting.

In conclusion, interoperability between operating systems is crucial in a corporate network because it affects productivity, collaboration, security, flexibility, and cost-effectiveness. Interoperability allows organizations to maximize the value of their IT investments while adjusting to changing business needs and technical improvements by providing smooth communication and integration across many platforms. In today's interconnected world, implementing interoperability will help create a robust and future proof network.

References

How to Create a Network Share Via Samba Via CLI (Command-line interface/Linux Terminal) - Uncomplicated, Simple and Brief Way! - Community Help Wiki (ubuntu.com)

Samba as a file server | Ubuntu

Operating System Comparison Criteria: Compatibility and Interoperability (linkedin.com)

The Importance of Interoperability | IEEE Computer Society

How Interoperability Unlocks Cloud Security Potential | CSA (cloudsecurityalliance.org)