MILESTONE 3

Trevonn McGarity

Full Sail University

Project and Portfolio lll

Fialishia O’Loughlin

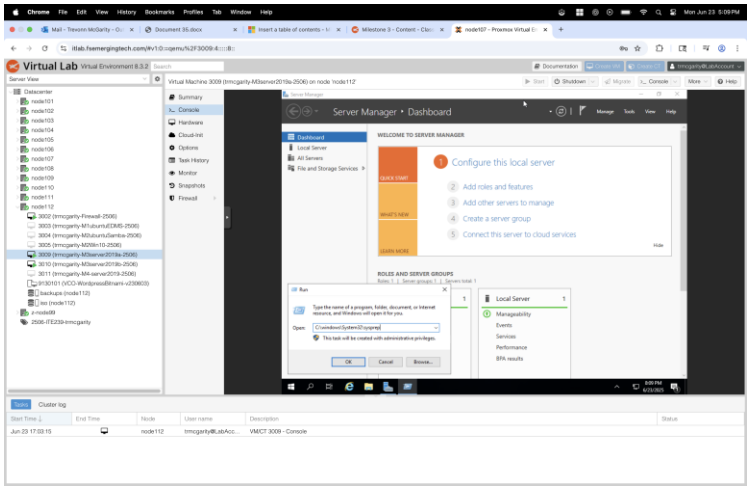
June 23, 2025

Opening the Run Window

Screen shot 1

Step 1: Press Windows + R to open the Run dialog box.

Step 2: Type C:\Windows\System32\sysprep and click OK.

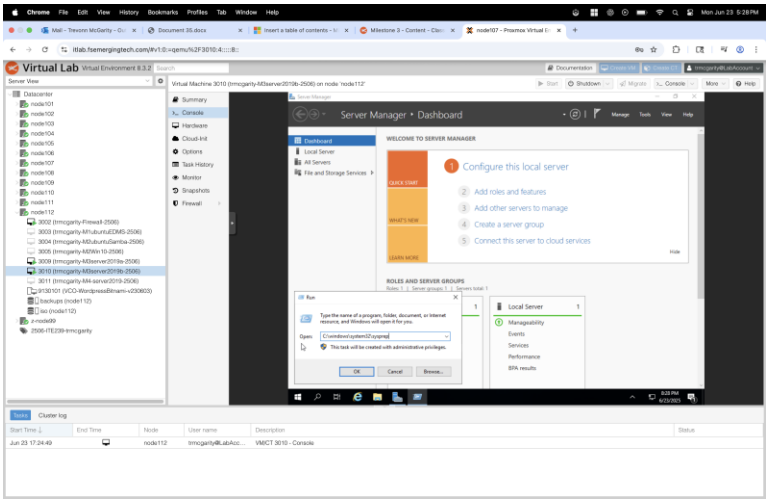


Launching Sysprep via Run Box

Screenshot 2

1. The user opens the Run command and enters the full path to Sysprep: C:\Windows\System32\Sysprep. This action is the first step to start the system preparation

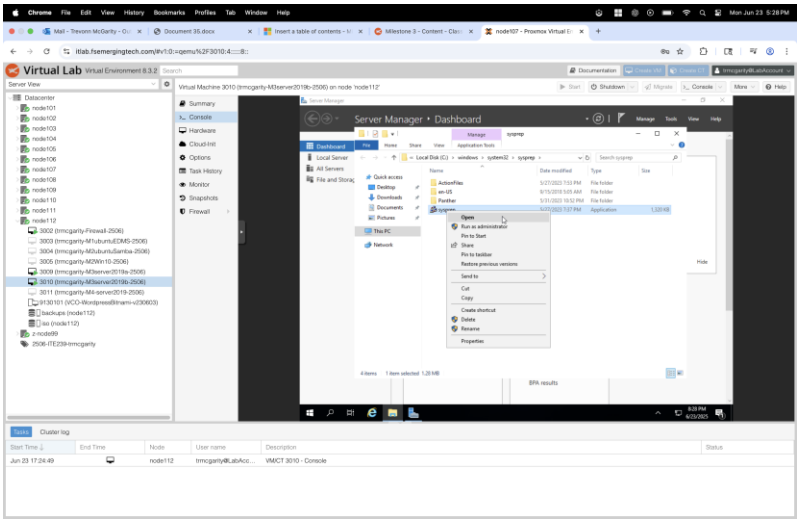
process for the server



Opening Sysprep from File Explorer (Second VM)

Screenshot 3

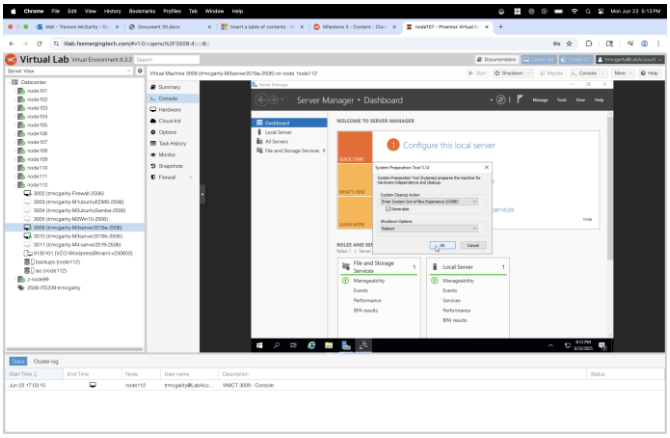
The user navigates to C:\Windows\System32\Sysprep and right-clicks the Sysprep application. Selecting “Open” manually starts the Sysprep program.



Sysprep Settings - First VM

Screenshot 4

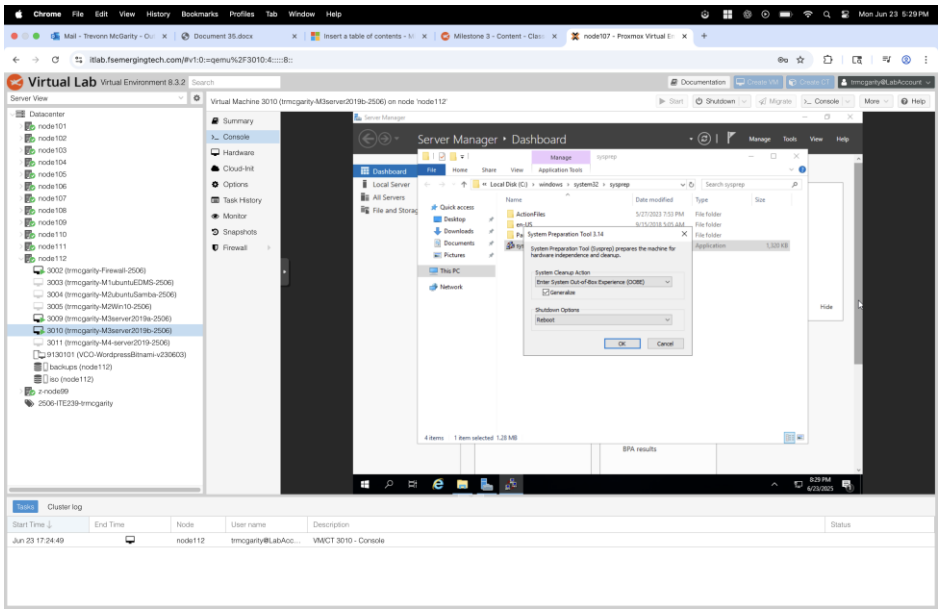
The System Preparation Tool opens with the settings: “Enter System Out-of-Box Experience (OOBE),” “Generalize” checked, and “Reboot” selected. These settings reset system-specific data and restart the VM into the setup screen.



Sysprep Tool Settings (2nd Server)

Screenshot 5

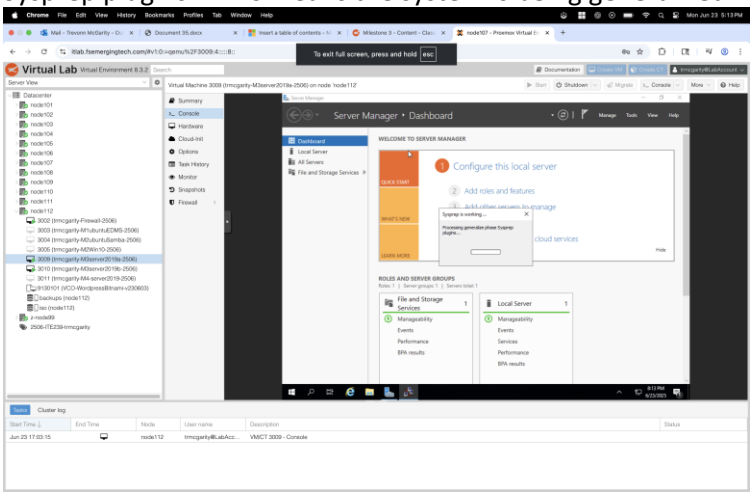
The Sysprep settings are configured to “Enter System Out-of-Box Experience (OOBE),” with “Generalize” checked and the shutdown option set to “Reboot.” These settings prepare the server for reuse and automatic setup after reboot.



Sysprep is Processing (First VM)

Screenshot 6

The Sysprep tool begins working and shows a message saying “Processing generalize phase Sysprep plugins.” This means the system is being generalized

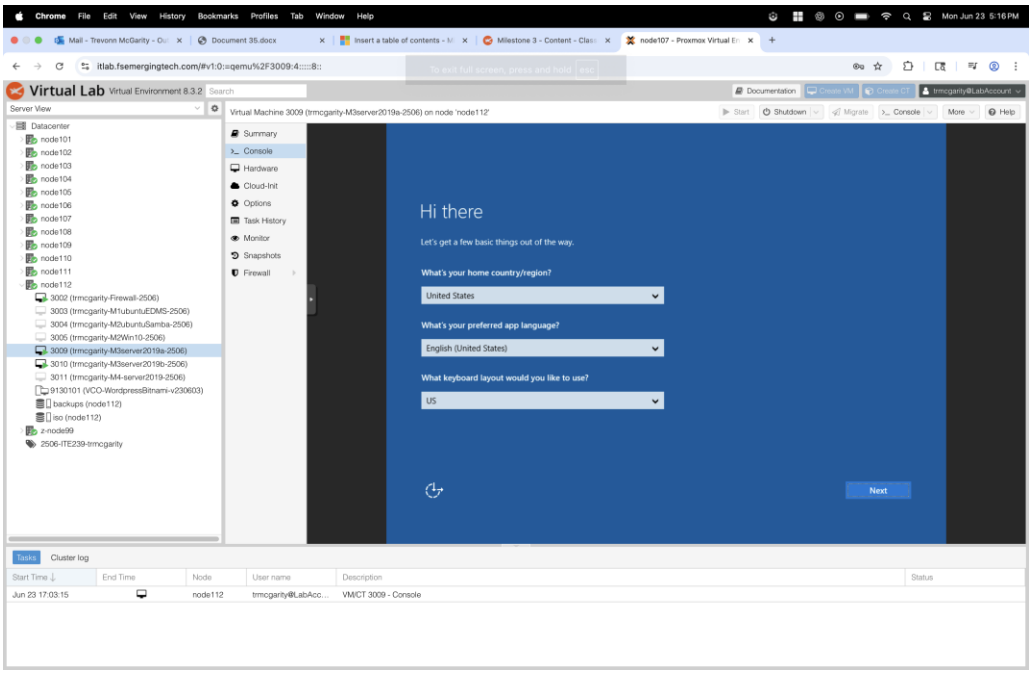


and prepared for the next boot.

Windows Setup Begins (First VM)

Screenshot 7

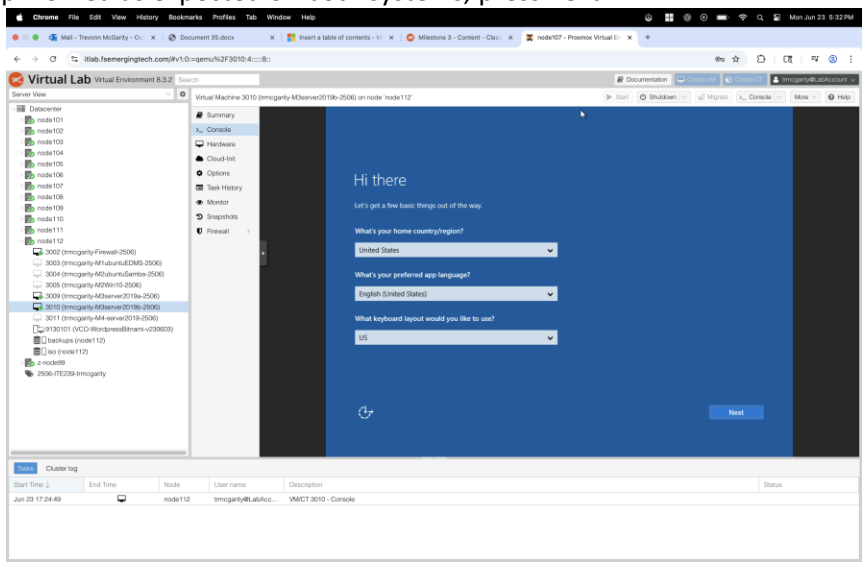
After reboot, the VM shows the Windows setup screen asking for the country, language, and keyboard layout. This confirms Sysprep completed successfully and reset the machine, just press next.



Windows Setup Begins (Second VM)

Screenshot 8

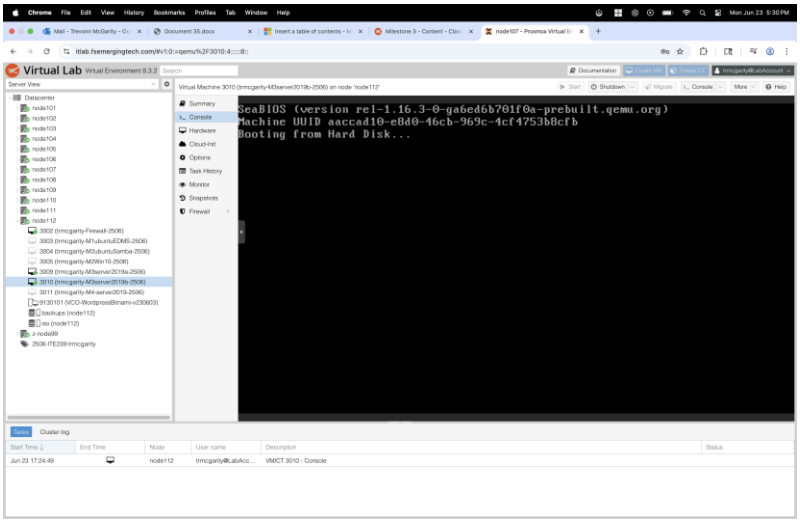
The second VM reaches the same blue setup screen asking for region and language. This indicates Sysprep worked as expected on both systems, press next.



VM Reboots After Sysprep (Second VM)

Screenshot 9

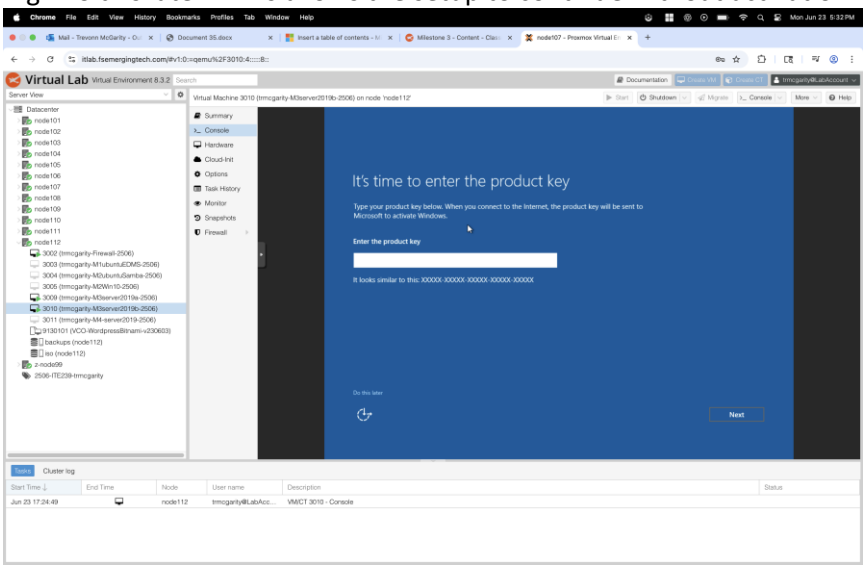
The second virtual machine reboots and displays the BIOS screen showing it's booting from the hard disk. This happens right after Sysprep completes and restarts the server.



Skip Product Key Screen

Screenshot 10

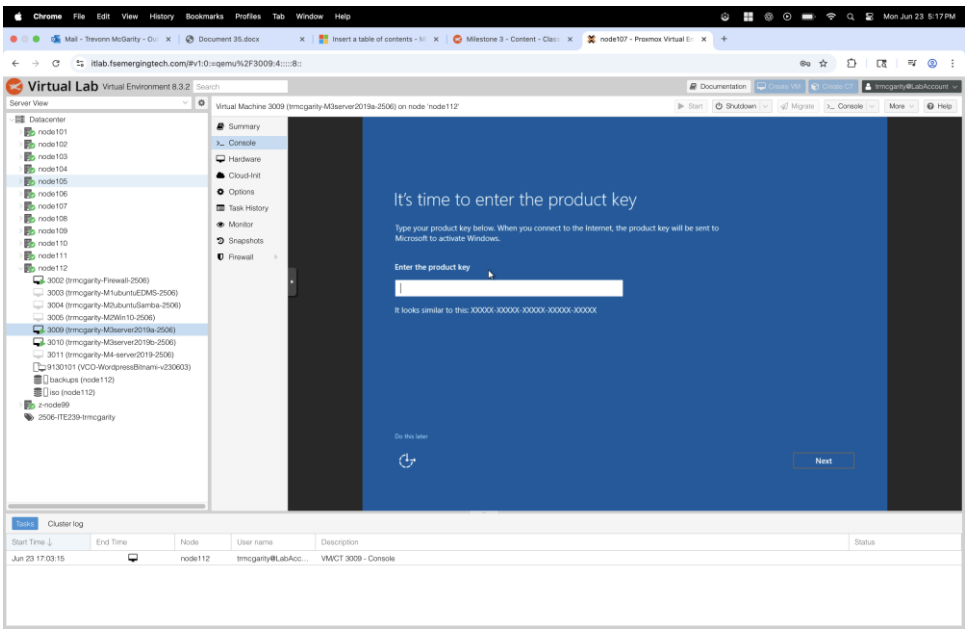
During setup, the system asks for a product key, but since one isn't available, the user can skip this step by clicking "Do this later." This allows the setup to continue without activation.



Skip Product Key Screen(2nd VM)

Screenshot 11

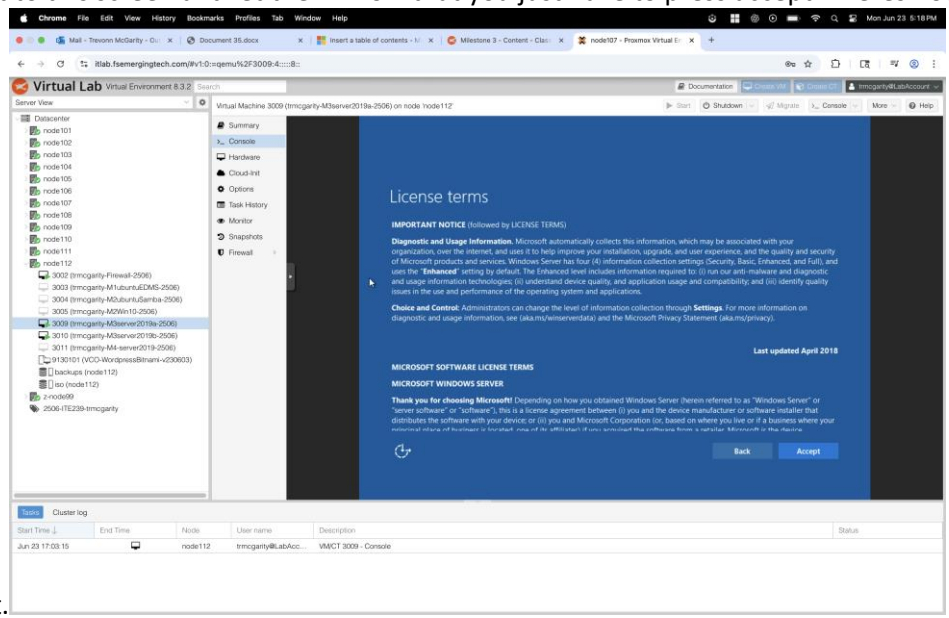
During setup, the system asks for a product key, but since one isn't available, the user can skip this step by clicking "Do this later." This allows the setup to continue without activation.



License Terms

Screenshot 12

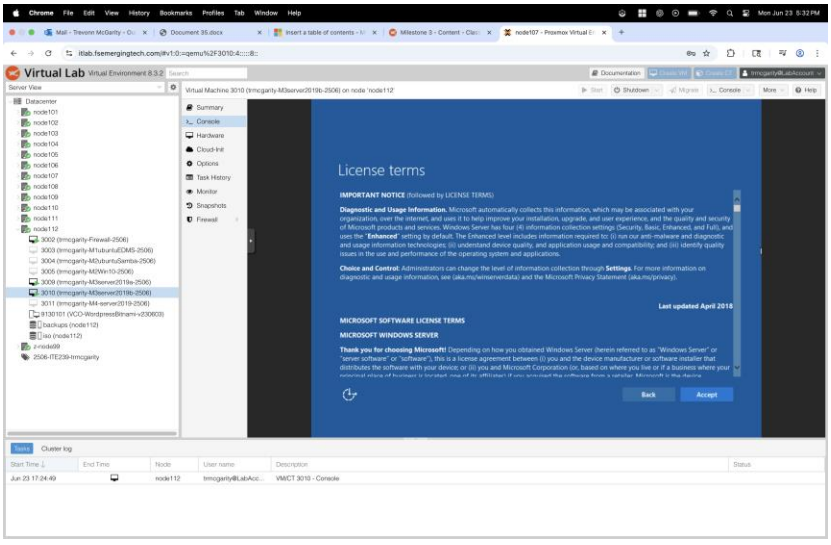
Get to this screen and let them know that you just have to press accept. Theres nothing more to do but that.



License Terms (2nd VM)

Screenshot 13

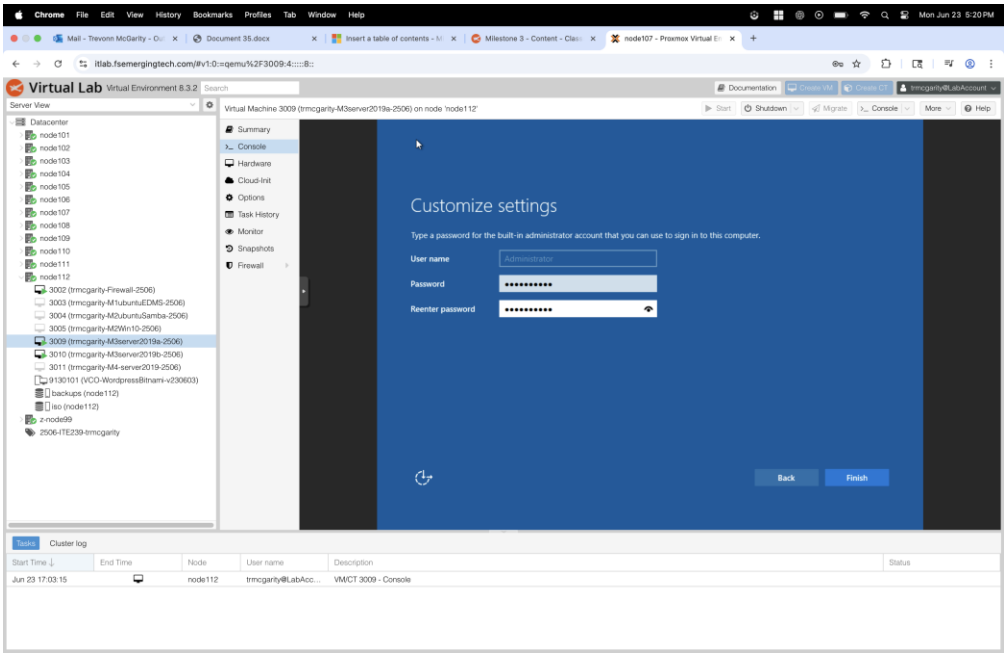
Get to this screen and let them know that you just have to press accept. Theres nothing more to do but that.



Custom Settings

Screenshot 14

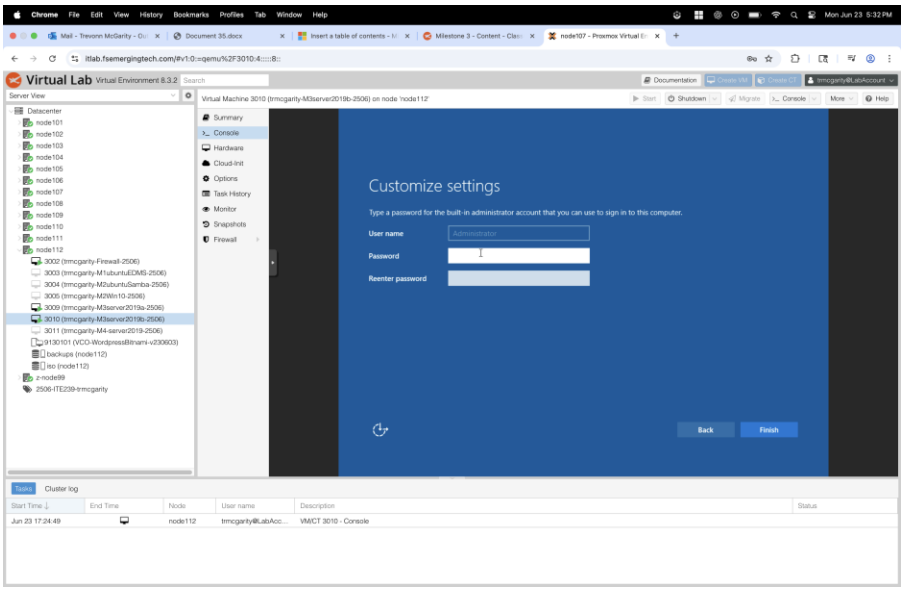
On this page, all you need to do is enter the old password that you created. Then click Finish.



Custom Settings (2nd VM)

Screenshot 15

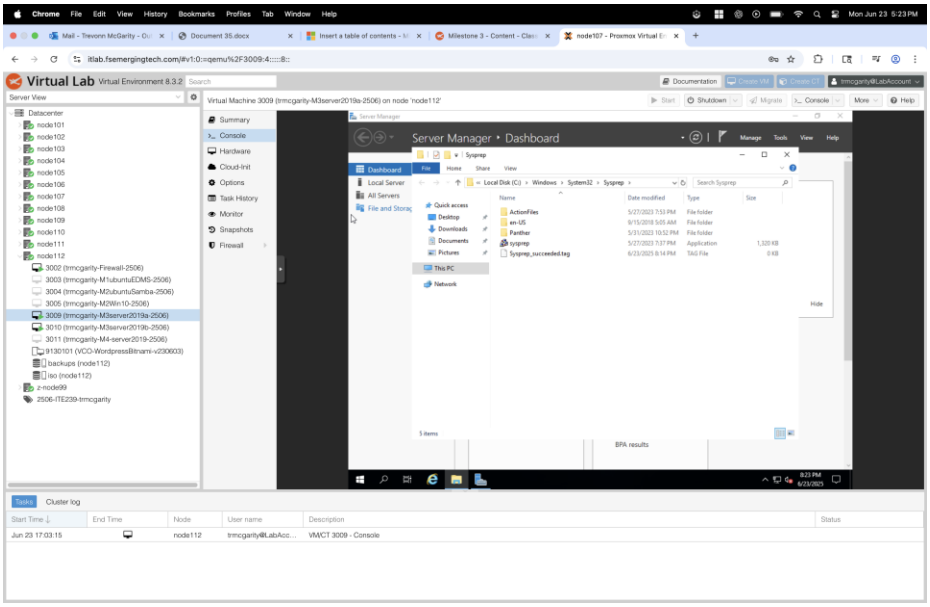
On this page, all you need to do is enter the old password that you created. Then click Finish.



Sysprep Succeeded

Screenshot 16

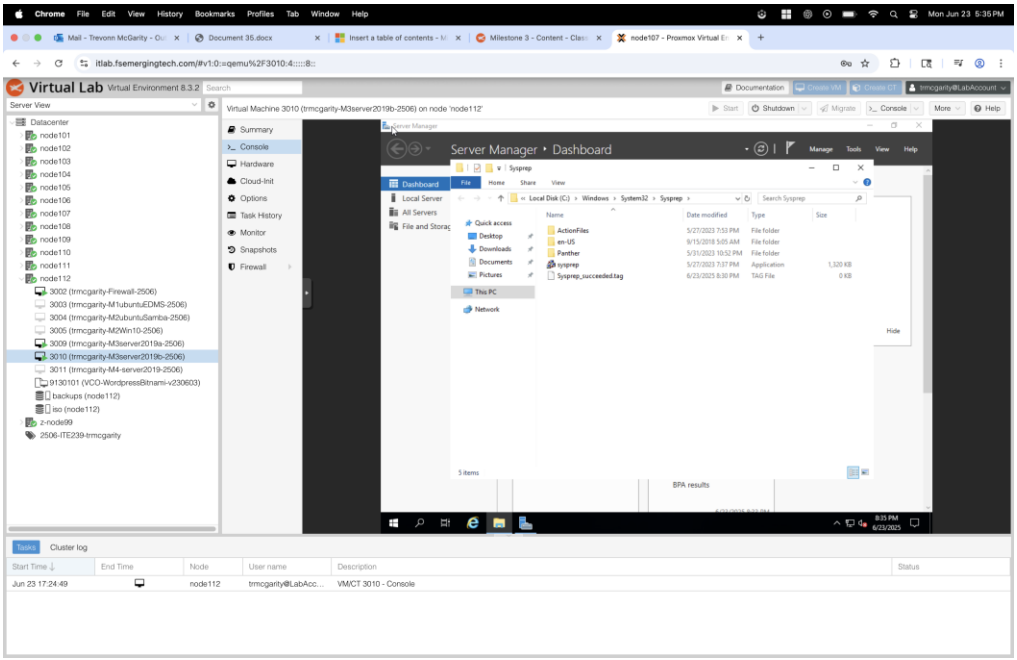
Look and you should see that the Sysprep succeeded. There will be confirmation of its success.



Sysprep Succeeded (2nd VM)

Screenshot 17

Look and you should see that the Sysprep succeeded. There will be confirmation of its success.



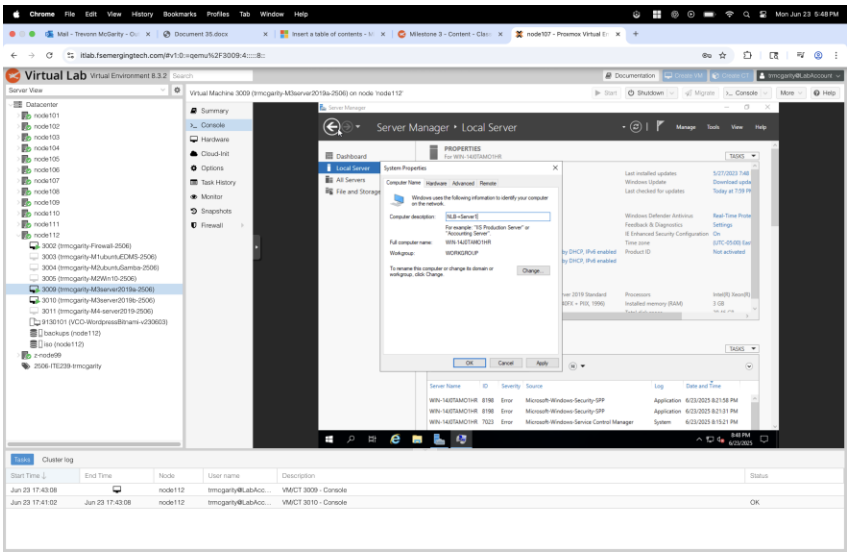
STEP 3 Generating a New SID -

on the second server

Name the servers NLB-server1

Screenshot 18

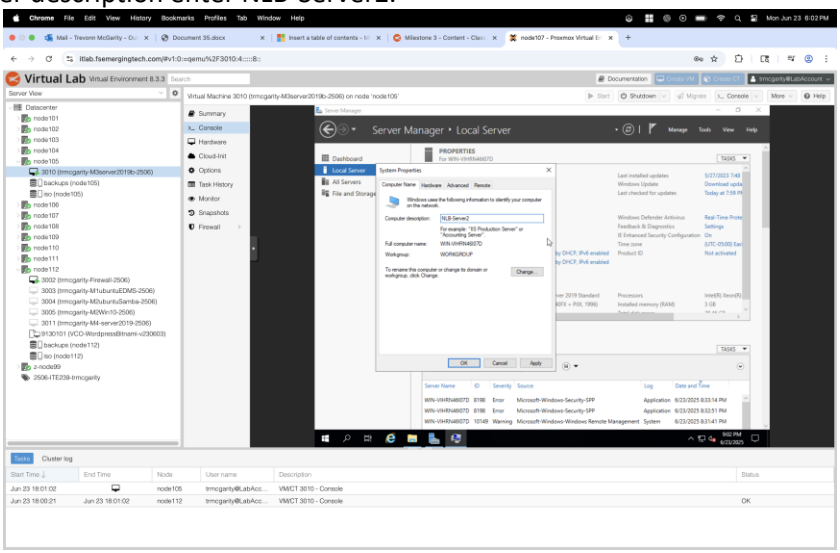
Click on local server and system properties. On the computer name area, the part that says computer description enter NLB-Server1.



Name the servers NLB-server2 (2nd VM)

Screenshot 19

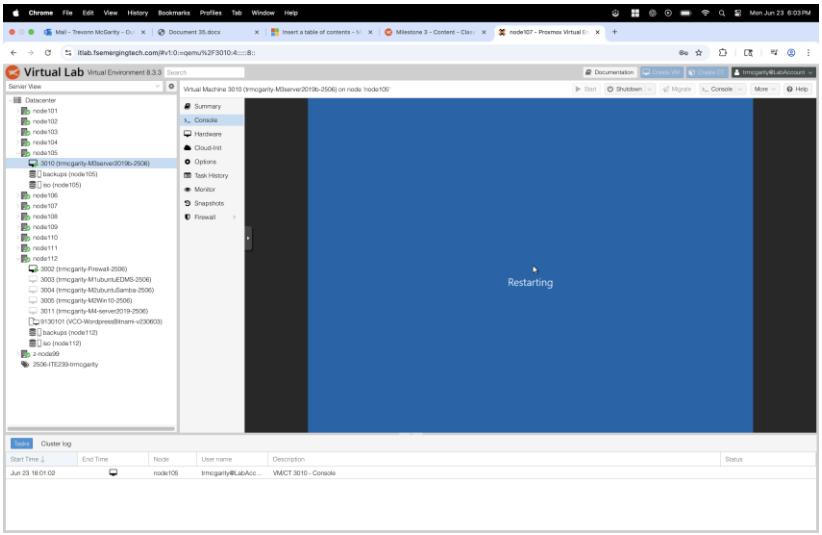
Click on local server and system properties. On the computer name area, the part that says computer description enter NLB-Server2.



Restart

Screenshot 20

It will automatically restart on its own. This is the only way to make sure it works.

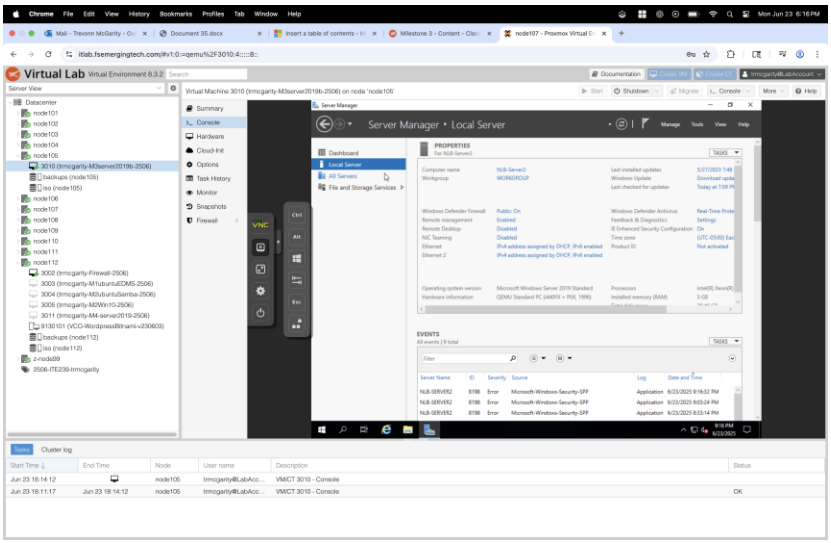


Confirmation

Screenshot 21

Go to the local server. Under the computer name you will see that it has changed to NLB-Server

2.

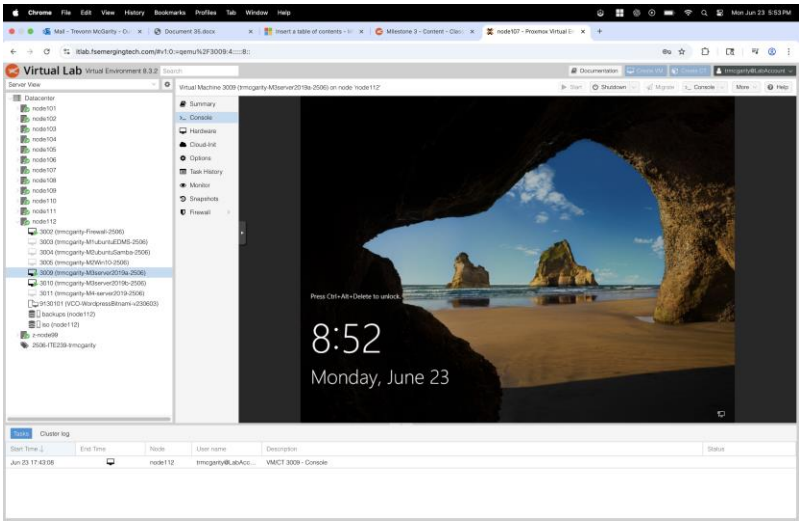


Change host name then reboot

Screenshot 22

Click on local server and system properties. On the computer name area, the part that says computer description enter NLB-Server1. Then reboot.

19

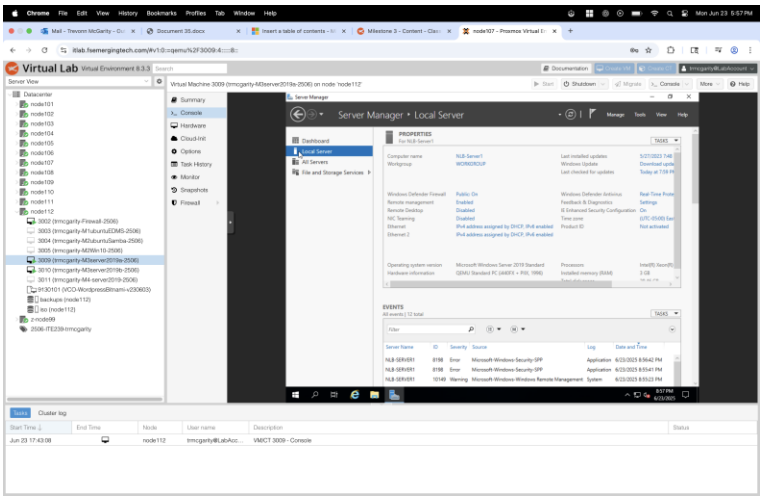


Confirmation (1st VM)

Screenshot 23

Go to the local server. Under the computer name you will see that it has changed to NLB-Server

1.

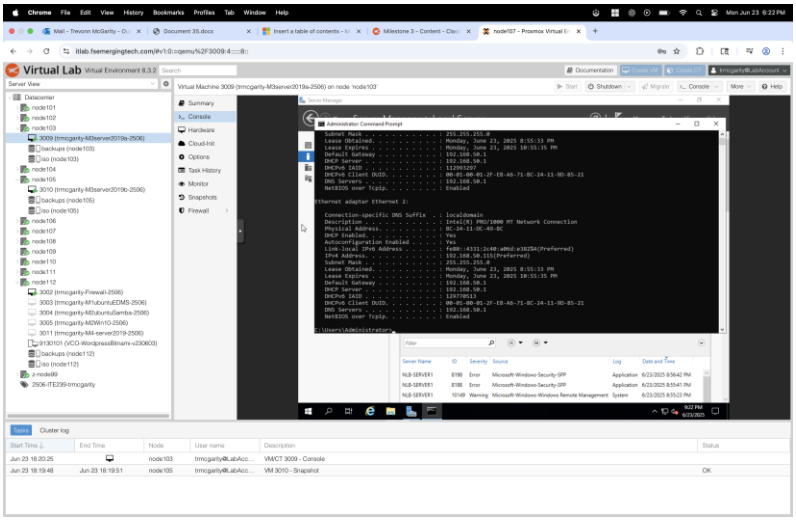


Step 4

Find ip address

Screenshot 24

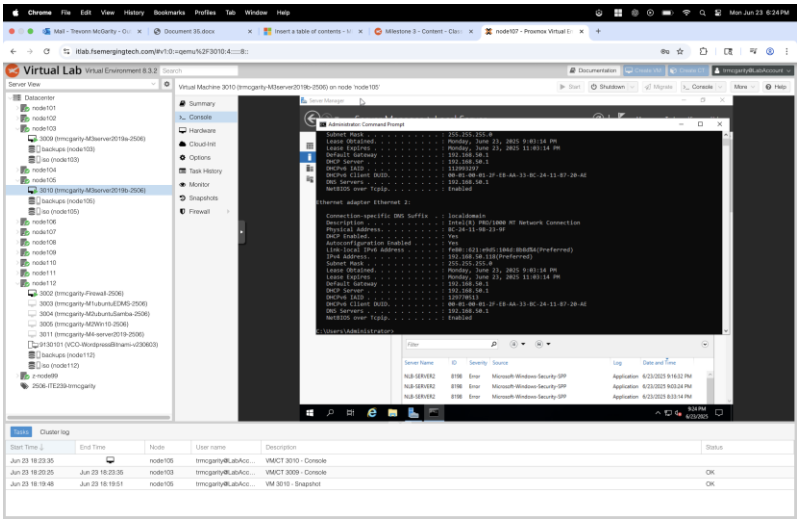
Go to the command prompt. Enter ipaddr and it will show you the address.



Find ip address (2nd Vm)

Screenshot 25

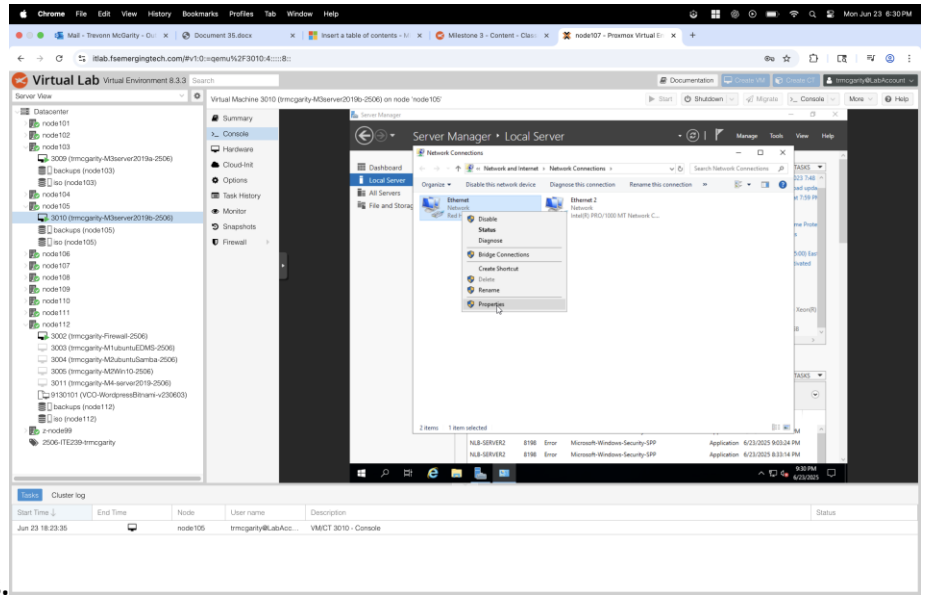
Go to the command prompt. Enter ipaddr and it will show you the address.



Update Properties

Screenshot 26

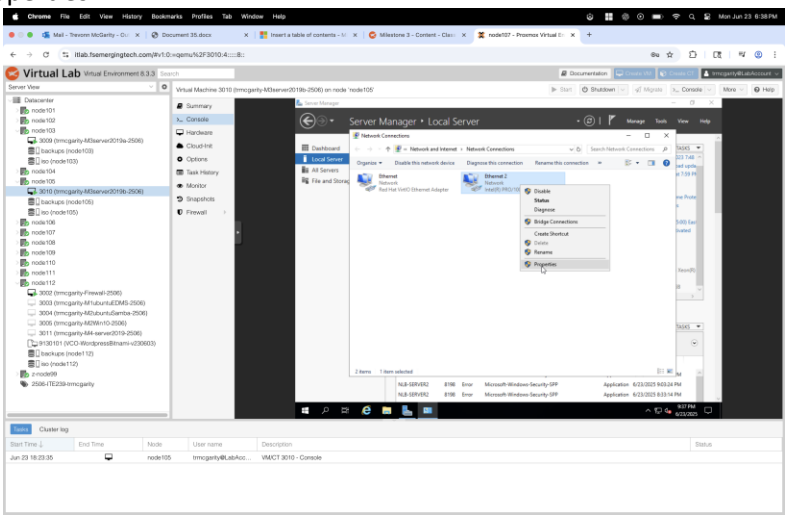
Go to network and internet and then network connections. Right click on ethernet 1 and click properties.



Update Properties (2nd VM)

Screenshot 27

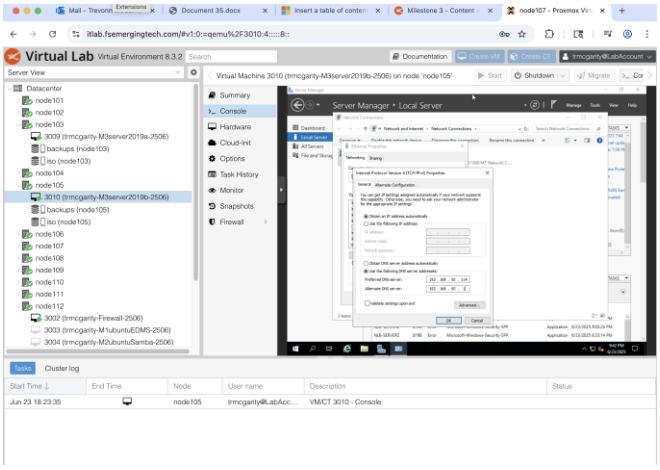
Go to the network and internet and then network connections. Right click on ethernet 2 and click Properties.



Add ip address in Server Manager

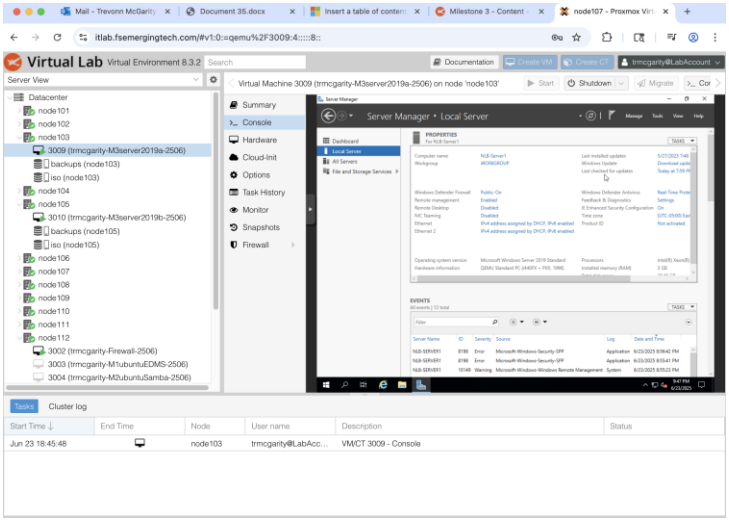
Screenshot 28

In the ethernet properties in the Networking tab there will be a screen that pops up and it says Internet Protocol Version. Enter your ip address from your screenshot into the preferred dns server.



Change to NLB-Server2

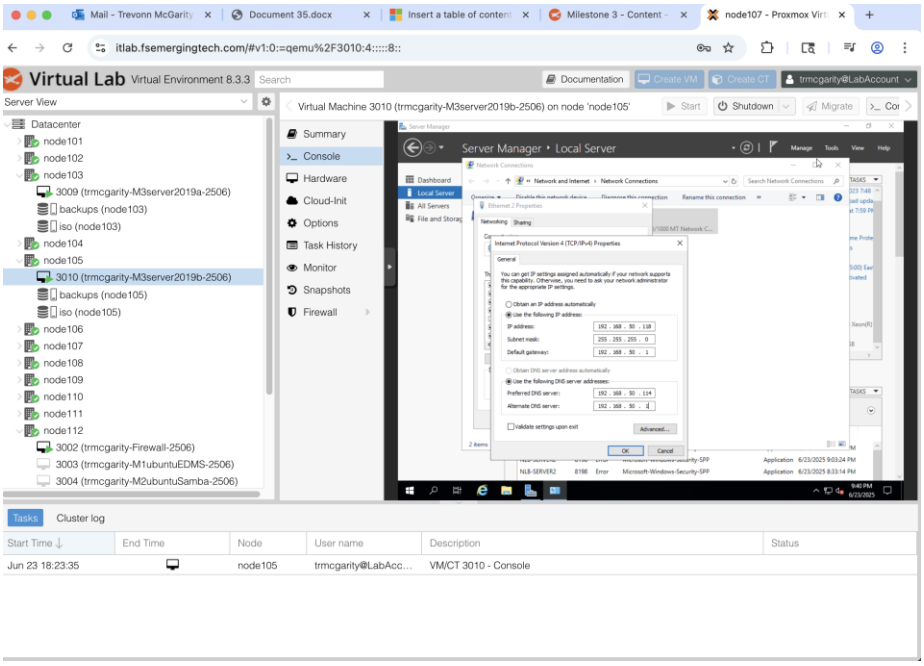
Screenshot 29



Add ip address in Server Manager (2nd VM)

Screenshot 30

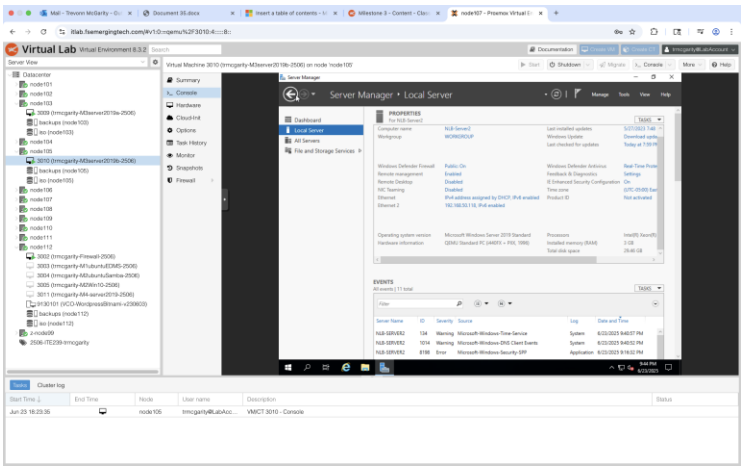
In the ethernet properties in the Networking tab there will be a screen that pops up and it says Internet Protocol Version. Enter your ip address from your screenshot into the preferred dns server.



Refresh for updates

Screenshot 31

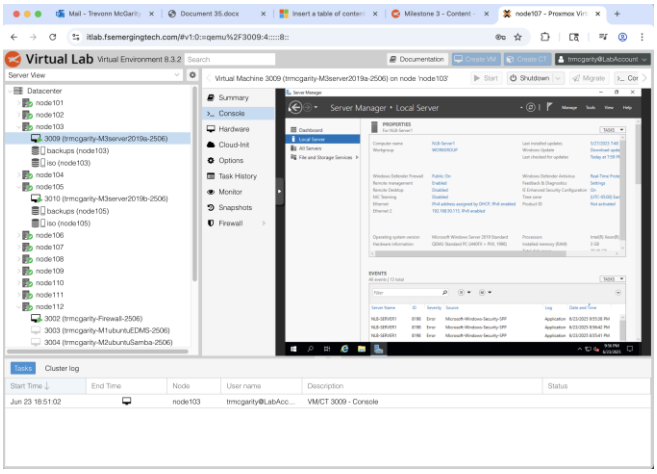
Refresh at the top of the page and you will see the updates. Thats when you notice the update was successful.



Refresh for updates (2nd VM)

Screenshot 32

Refresh at the top of the page and you will see the updates. Thats when you notice the update was successful.

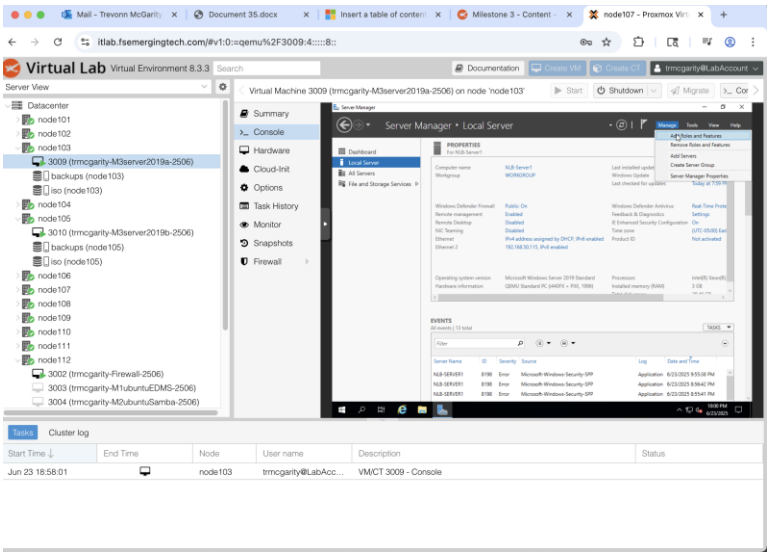


Step 5 Install IIS *role*, and Network Load **Balancing** *feature*, on **both** servers

Add roles and feature

Screenshot 33

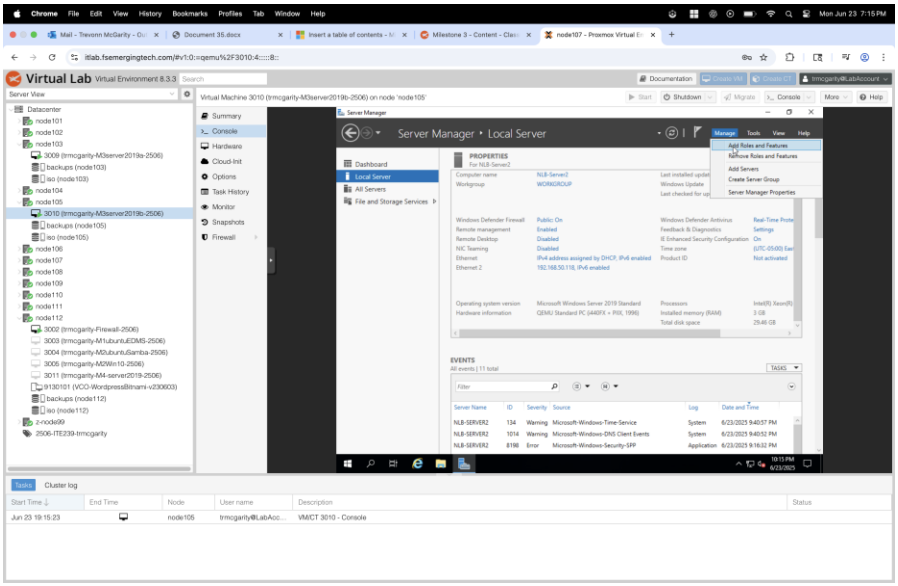
Click on manage at the top bar. Click on add roles and features.



Add roles and feature (2nd VM)

Screenshot 34

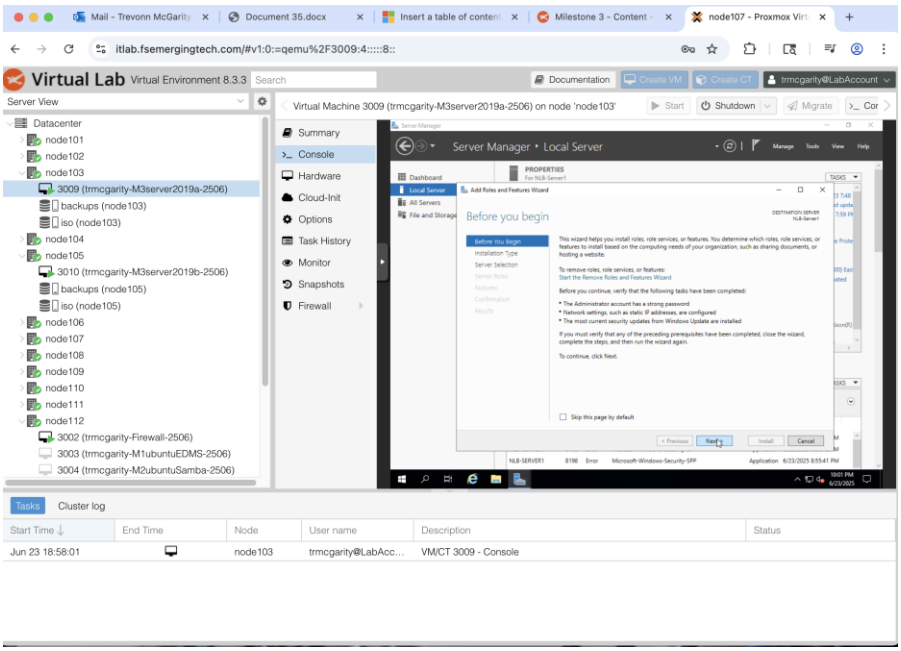
Click on manage at the top bar. Click on add roles and features.



Begin Role Installation Wizard

Screenshot 35

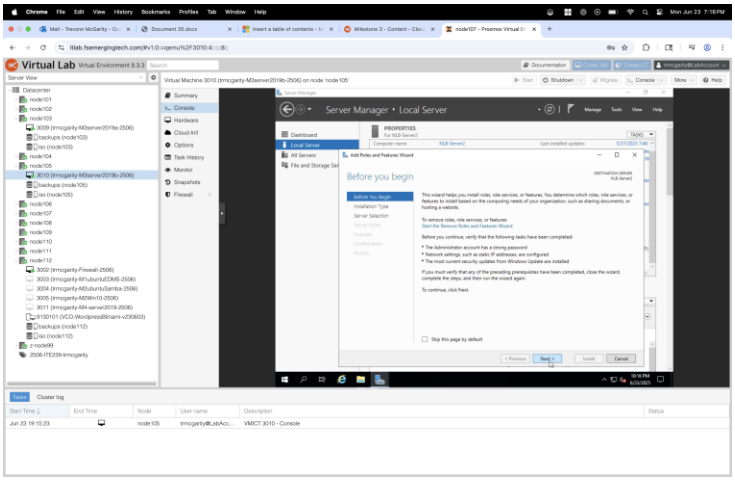
The “Before You Begin” screen appears with basic instructions and a “Next” button. Clicking “Next” starts the Add Roles and Features Wizard.



Initial Installation Step (Server 2)

Screenshot 36

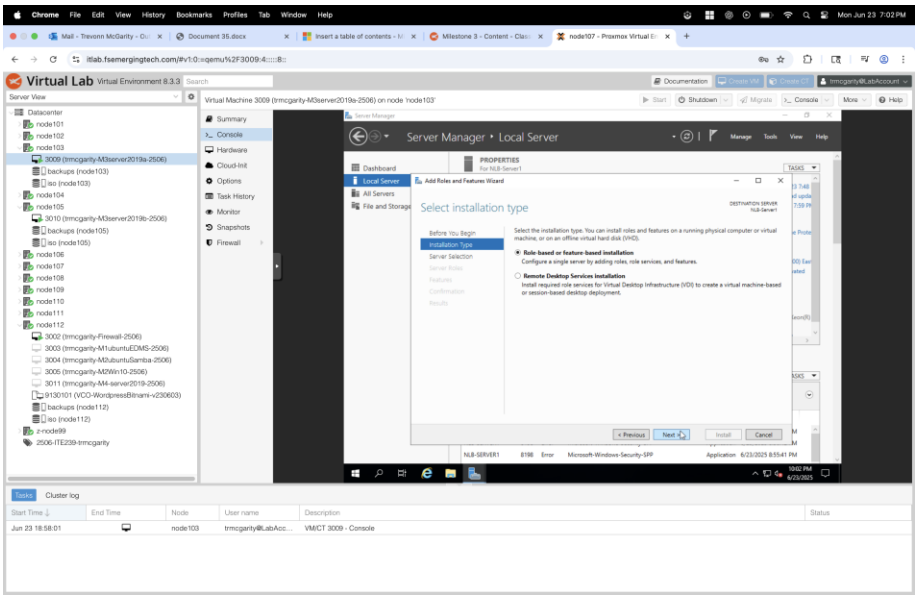
The user also clicks “Next” on the Add Roles and Features Wizard introductory screen on the second server. This ensures both servers follow the exact same configuration steps.



Select Installation Type (Server 1)

Screenshot 36

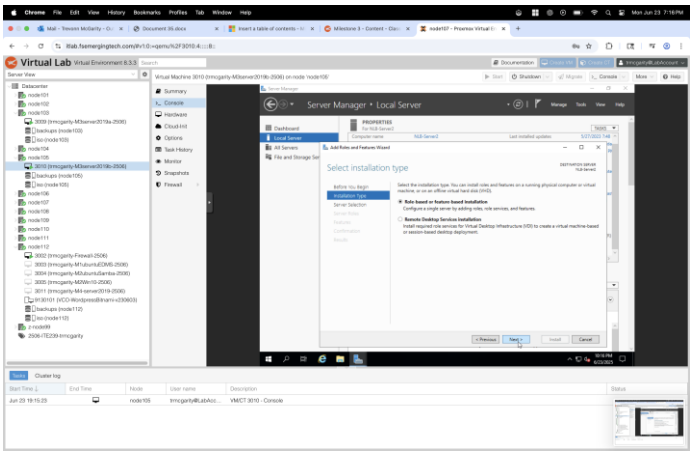
Select “Role-based or feature-based installation” and then clicks “Next.” This specifies the type of installation and prepares the system for role selection.



Select Installation Type (Server 2)

Screenshot 37

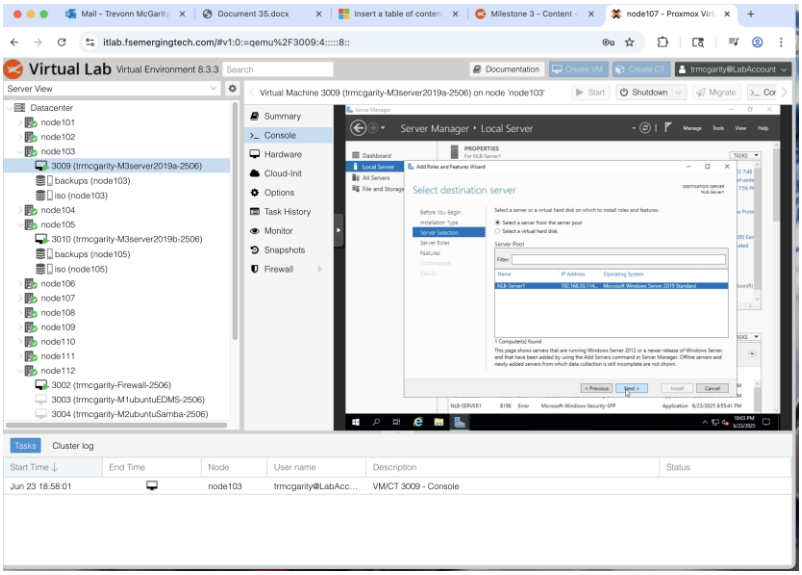
The same “Role-based or feature-based installation” is selected on the second server, and the user clicks “Next.” This keeps both servers consistent in configuration.



Select Destination Server (Server 1)

Screenshot 38

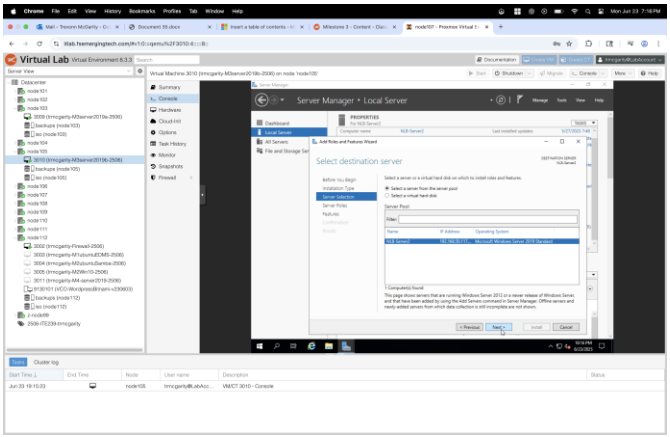
Choose the current server from the server pool as the destination for the installation and click “Next.” This step confirms the target server for the roles and features to be installed.



Select Destination Server (Server 2)

Screenshot 39

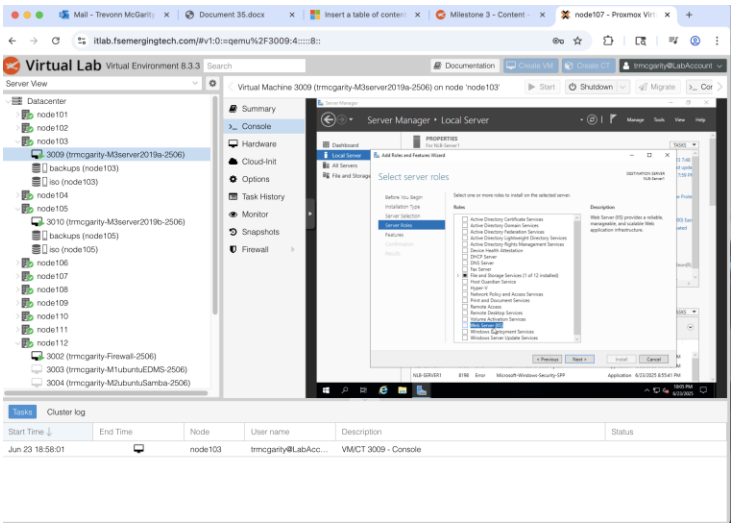
On the second server, the destination server is selected from the available server pool, and “Next” is clicked. This again ensures identical configurations between the two servers.



Selecting Web Server Role (Server 1)

Screenshot 40

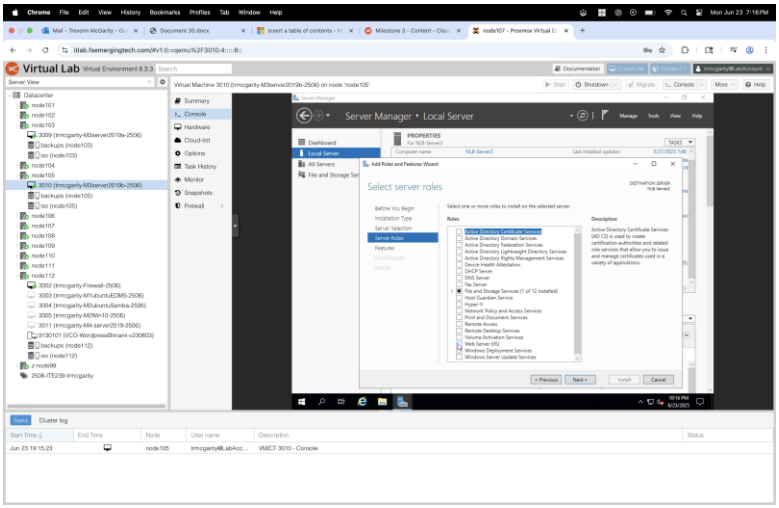
Check the box next to “Web Server (IIS)” to install this role and click “Next.” This enables the installation of IIS Web Server components.



Selecting Web Server Role (Server 2)

Screenshot 41

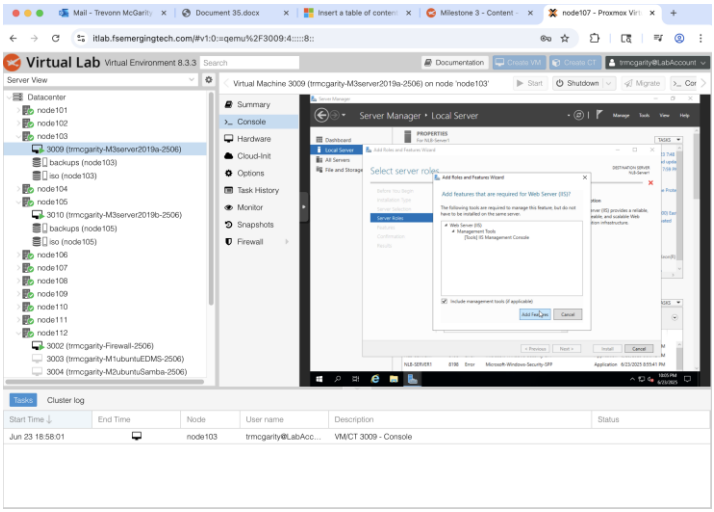
Similarly, the “Web Server (IIS)” role is checked on the second server to install this functionality, and then proceed by clicking “Next.” Both servers now have the IIS role selected.



Confirm IIS Feature Installation (Server 1)

Screenshot 42

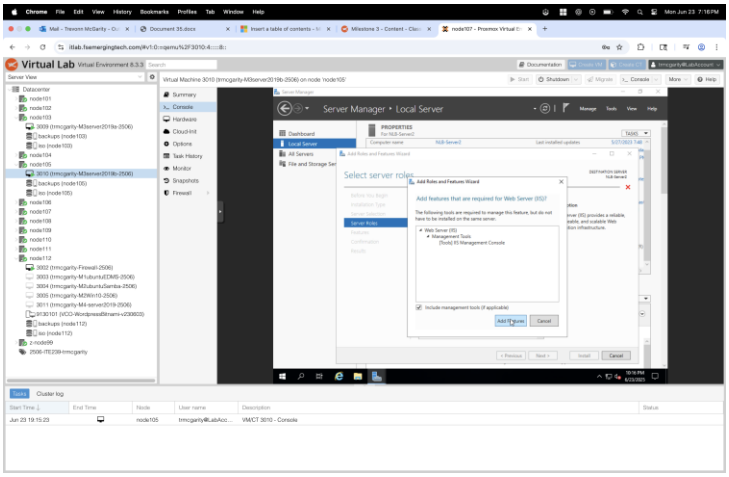
A confirmation window pops up listing required features for the IIS role and then confirm by clicking “Add Features.” This ensures that necessary management tools are installed.



Confirm IIS Feature Installation (Server 2)

Screenshot 43

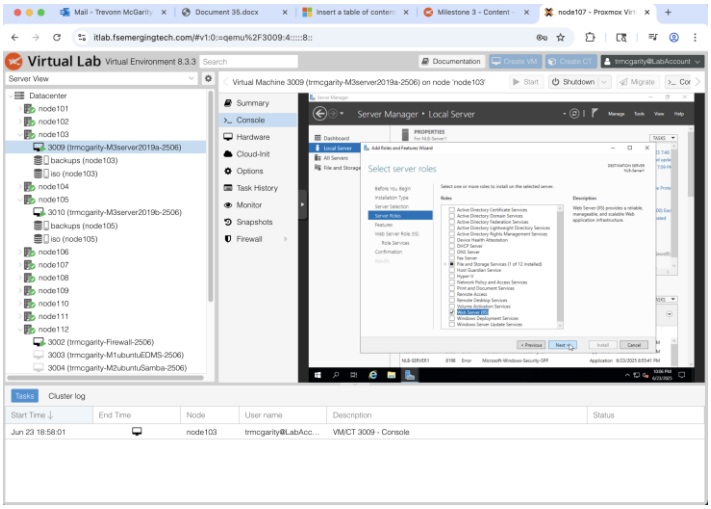
The second server shows the same confirmation window for IIS role features, confirm by clicking “Add Features.” Both servers now have the same set of features selected and confirmed.



Confirm Web Server (IIS) Selection (Server 1)

Screenshot 44

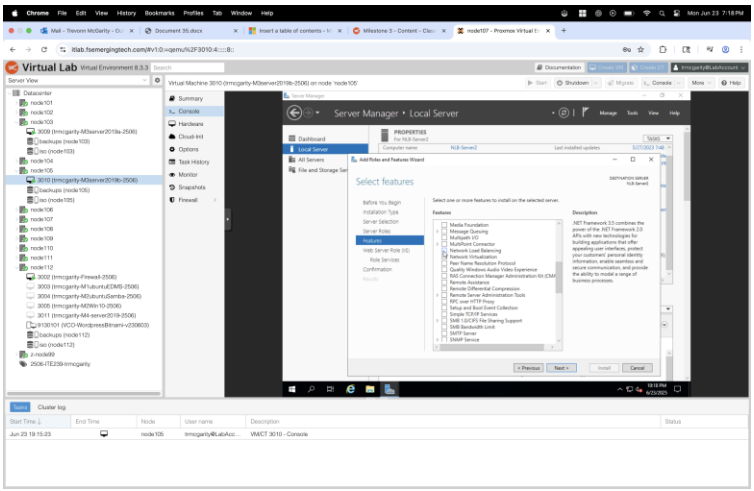
You will see the Web Server (IIS) role selected and click “Next” to continue with the installation. This step confirms that the role checkbox was selected before proceeding.



Confirm Web Server (IIS) Selection (Server 2)

Screenshot 45

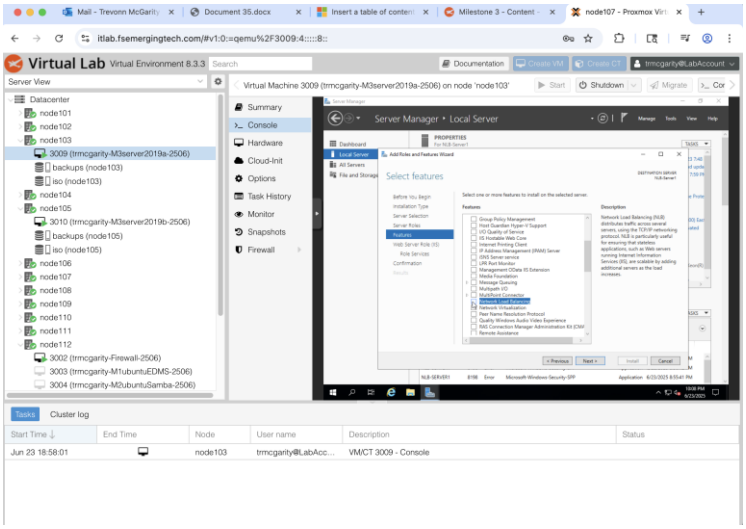
The same confirmation screen appears on the second server with the IIS role selected. The user clicks “Next” to move on to feature installation.



Select Network Load Balancing Feature (Server 1)

Screenshot 46

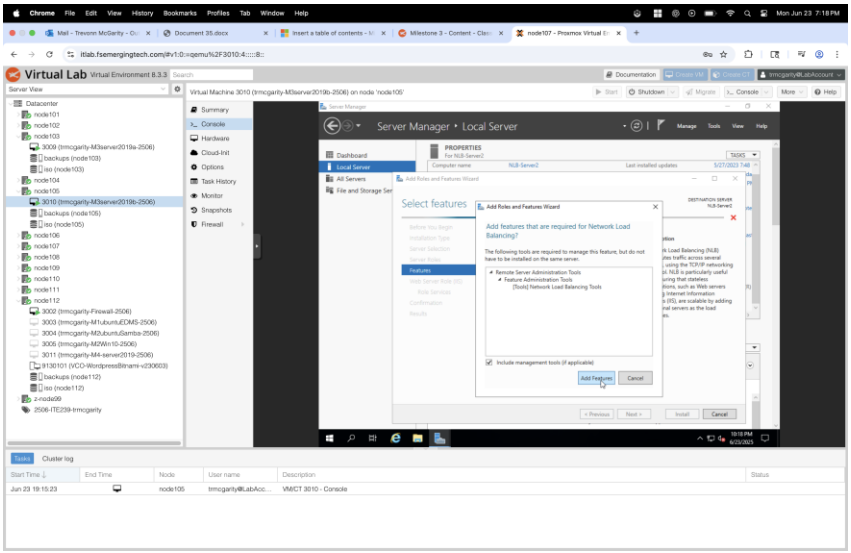
Then check the “Network Load Balancing” feature box to enable NLB functionality. After selecting it, then click “Next” to continue the setup.



Select Network Load Balancing Feature (Server 2)

Screenshot 47

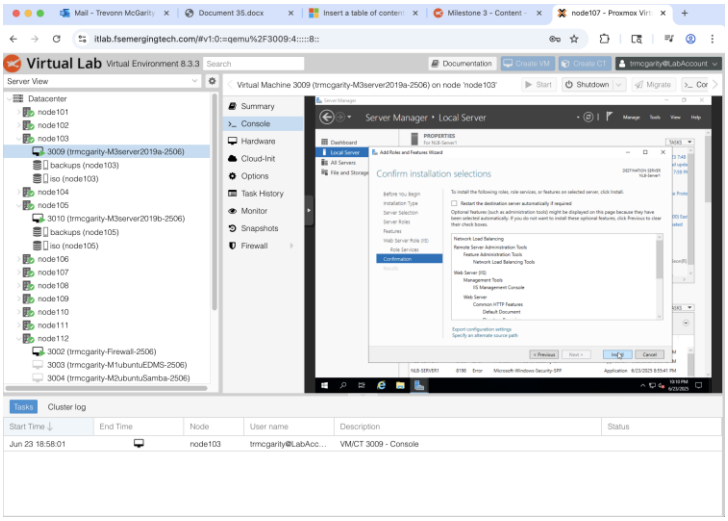
The second server also has “Network Load Balancing” checked under features. Then click “Next” to install this feature on the second machine.



Confirm Installation Selections (Server 1)

Screenshot 48

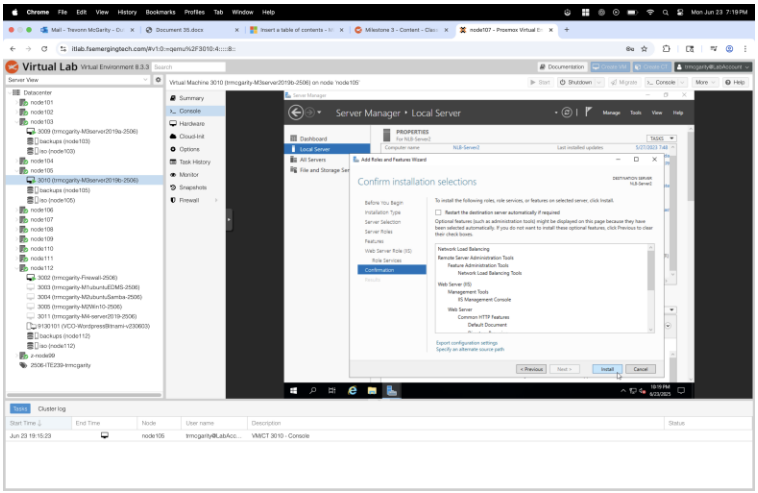
The wizard shows a summary of the selected roles and features, and you click “Install” to begin. This applies the configuration to the first server.



Confirm Installation Selections (Server 2)

Screenshot 49

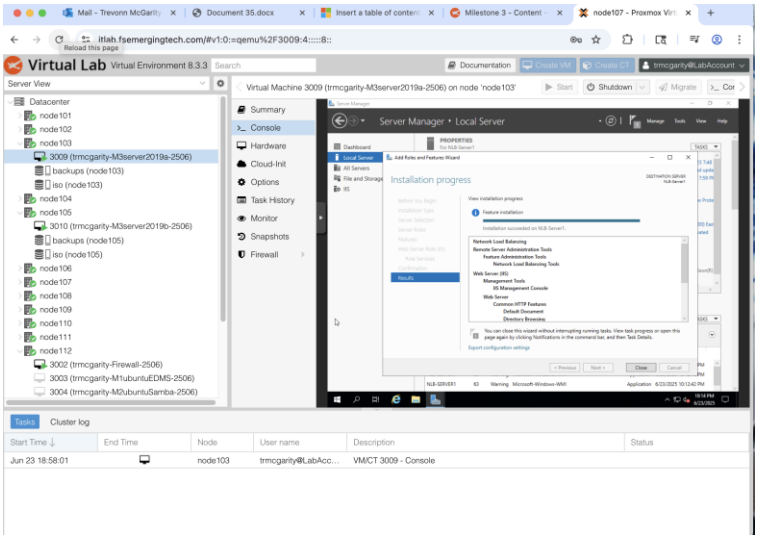
The second server shows the same installation summary, and you click “Install” to start the setup. Both servers are now beginning the installation of IIS and NLB.



Installation Completed (Server 1)

Screenshot 50

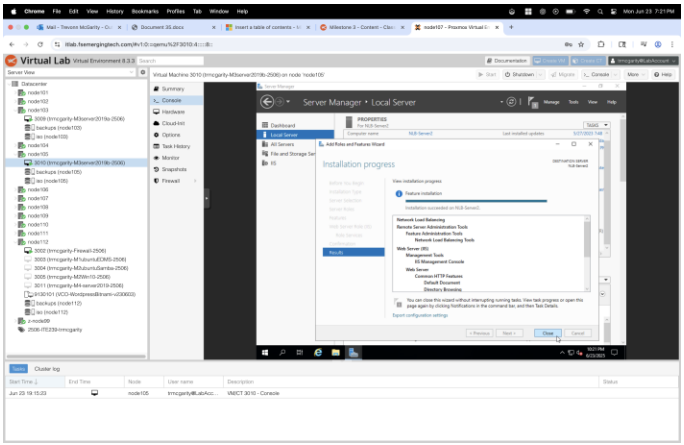
The installation completes successfully, and the screen shows a confirmation message. Then click “Close” to exit the wizard



Installation Completed (Server 2)

Screenshot 51

The installation completes successfully, and the screen shows a confirmation message. Then click “Close” to exit the wizard

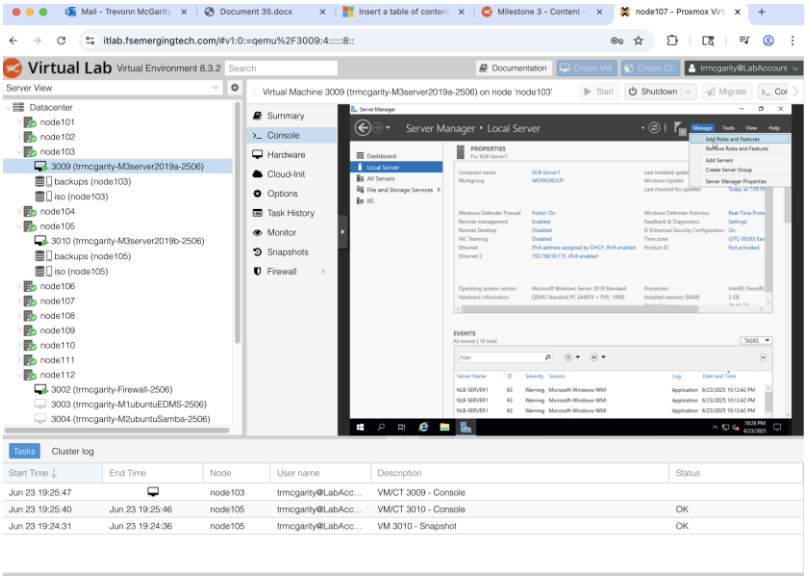


Part 6. Promote NLB-server1

Launch Server Role Wizard

Screenshot 52

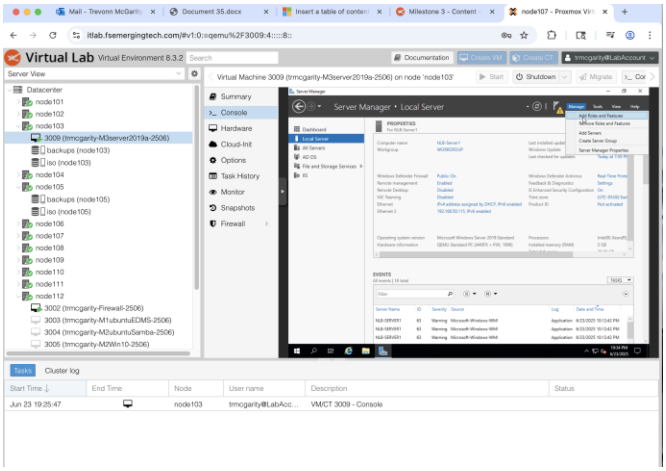
Click “Manage” in Server Manager and selects “Add Roles and Features.” This starts the wizard for installing server roles such as Active Directory.



Begin Installation Wizard

Screenshot 53

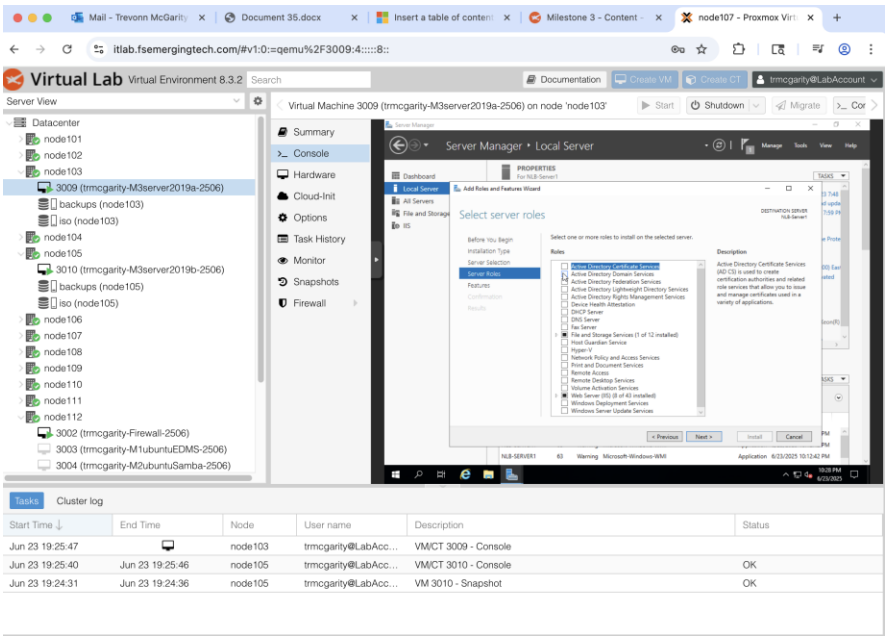
The “Before You Begin” screen appears, and the user clicks “Next” to proceed. This step confirms readiness to configure roles and features.



Select AD DS Role

Screenshot 54

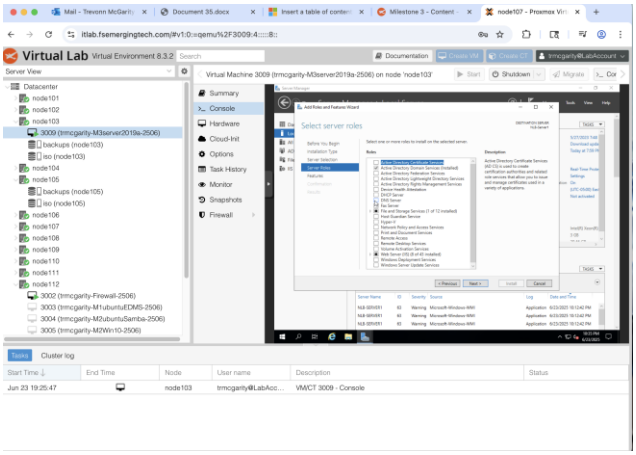
The user advances through the wizard and checks the box for “Active Directory Domain Services” under server roles. This prepares the server to become a domain controller.



Confirmation Pop-up for AD DS Features

Screenshot 55

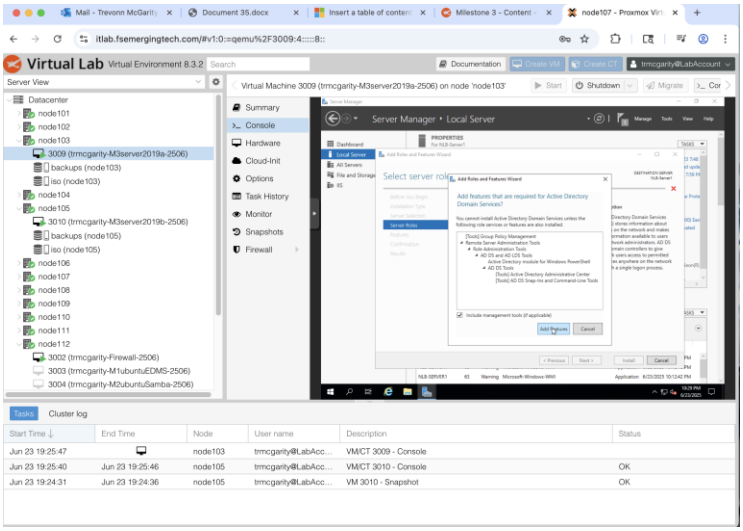
A pop-up appears asking if required features for AD DS should be added, and the user clicks “Add Features.” This ensures dependencies are installed along with the main role.



AD DS Feature Screen Confirmation

Screenshot 56

The wizard now shows that the AD DS features are selected, and the user clicks “Next” to continue. This confirms that all necessary services are queued for installation.

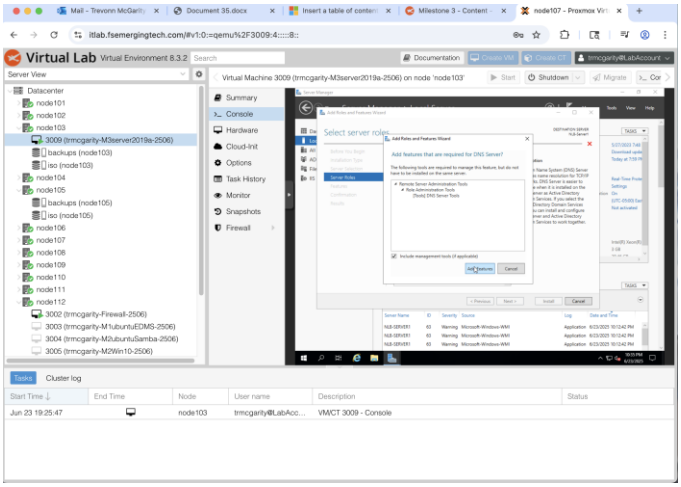


AD DS Feature Summary

Screenshot 57

The summary confirms what has been selected so far, including Active Directory Domain Services. The user clicks “Next” again to move forward.

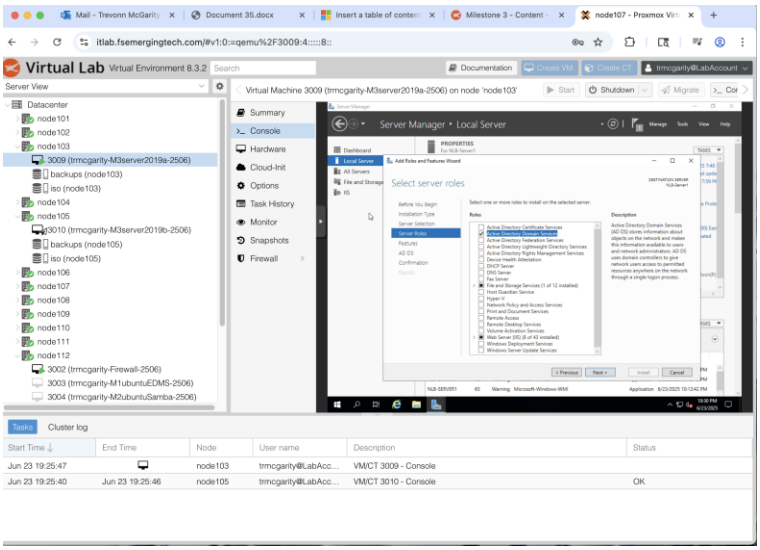
The summary confirms what has been selected so far, including Active Directory Domain Services. The user clicks “Next” again to move forward.



Final Role Selection Check

Screenshot 58

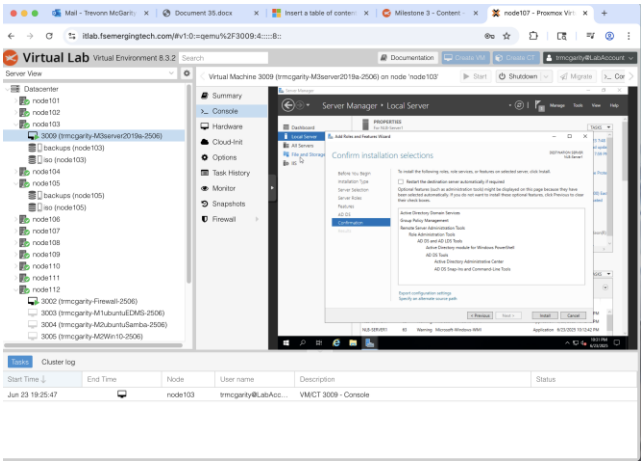
The screen displays that “Active Directory Domain Services” is selected with a green checkmark. The user clicks “Next” to go to the final installation step.



Start AD DS Installation

Screenshot 59

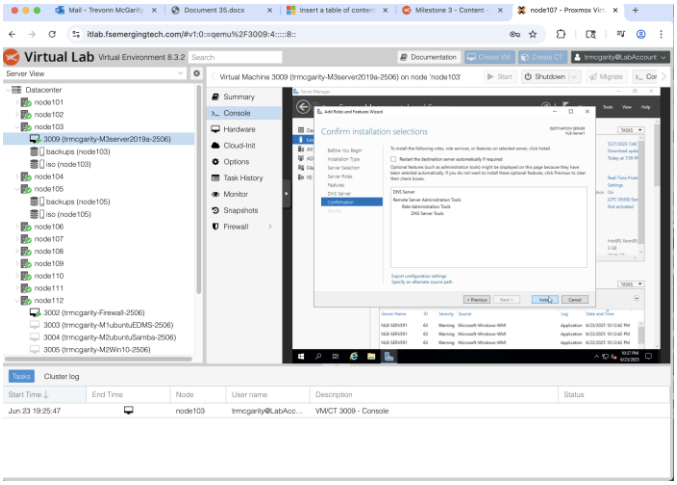
A summary page appears showing the chosen roles and features, and the user clicks “Install.” This begins installing AD DS on the server.



Installation Progress

Screenshot 60

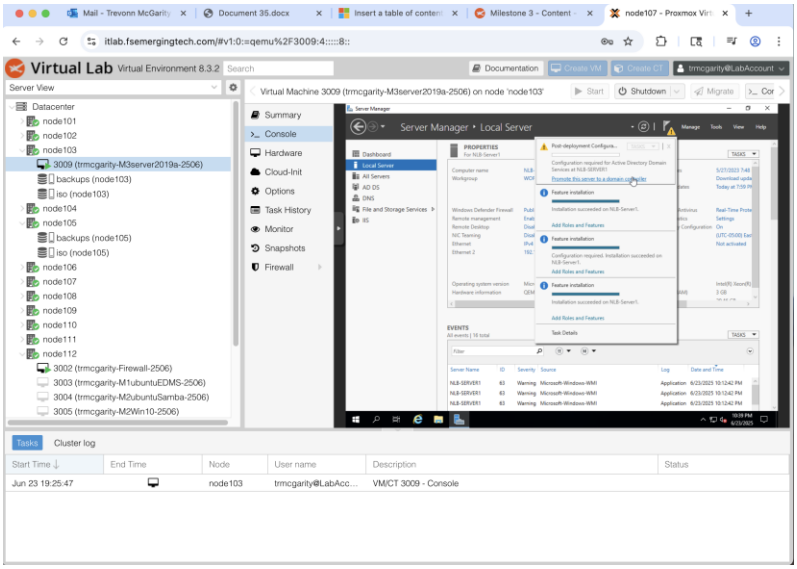
The wizard shows a progress bar indicating that the Active Directory Domain Services are being installed. This screen confirms the installation is in progress.



Promote Server to Domain Controller

Screenshot 61

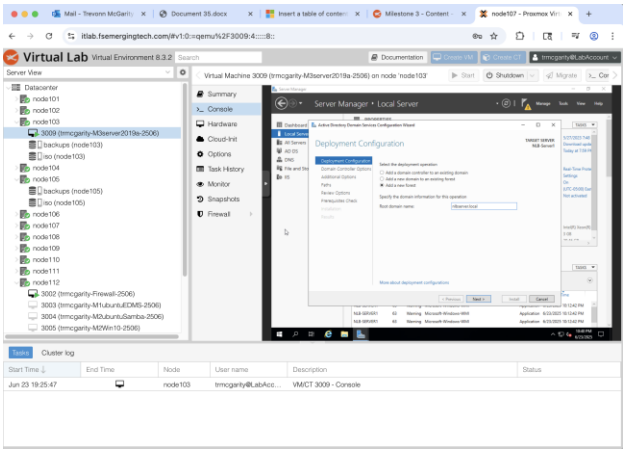
After installation, a notification allows the user to promote the server to a domain controller. Clicking this link starts the domain configuration process.



Set Up New Forest

Screenshot 62

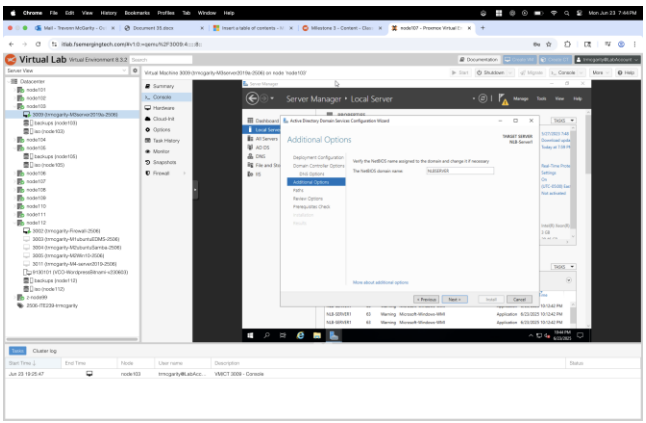
The user selects “Add a new forest” and types nlbserver.local as the root domain name. This creates a new Active Directory forest for the environment.



Specify Domain Name Again

Screenshot 63

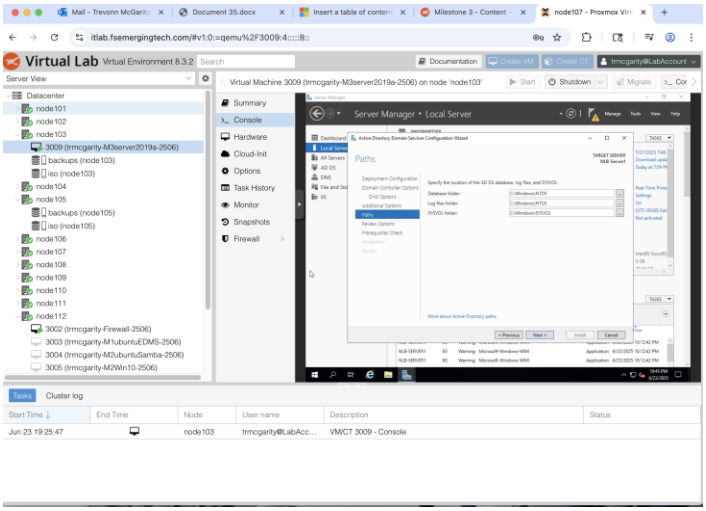
The domain name NLBSERVER is entered for the NetBIOS name. This step ensures the short domain name matches the root.



Review and Confirm Configuration Settings

Screenshot 64

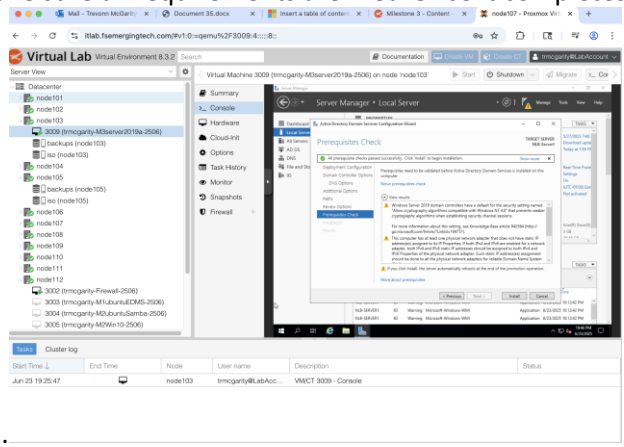
The summary screen shows the selected options for domain configuration. The user double-checks everything matches before moving forward.



Prerequisite Check Before Install

Screenshot 65

The wizard checks to make sure all requirements are met. Once it completes successfully, the

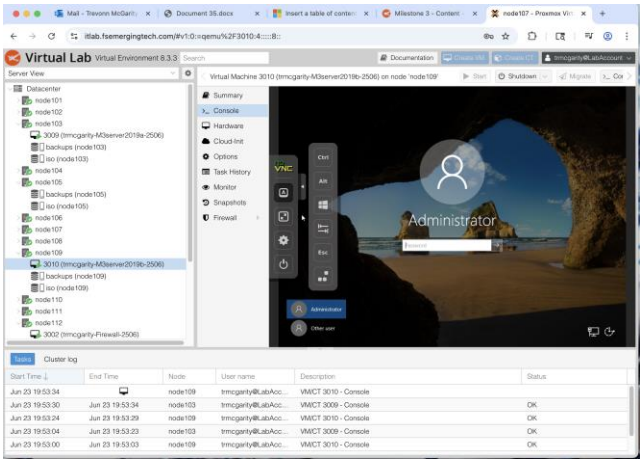


install option becomes available.

Final Configuration and Restart Prompt

Screenshot 66

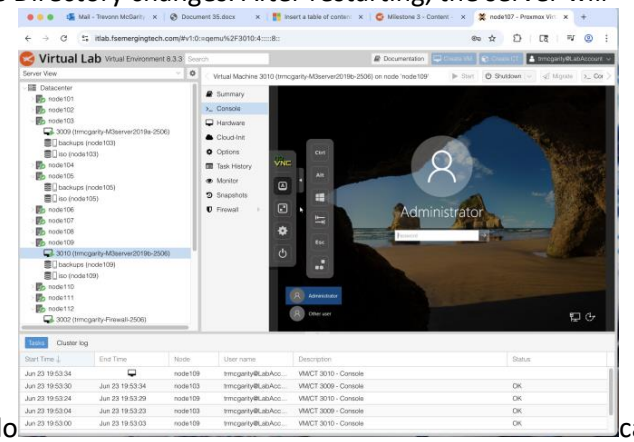
After successful installation, the wizard notifies the user that the server will restart. This reboot finalizes domain controller promotion.



Domain Controller Restarting

Screenshot 67

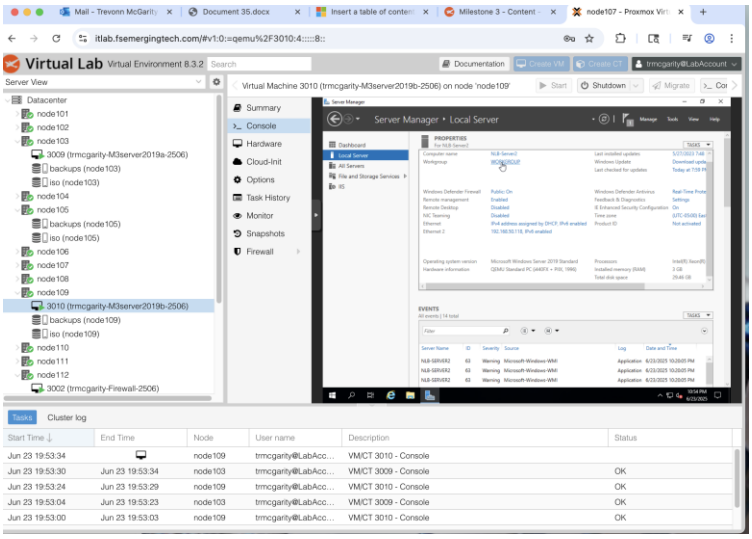
The server reboots to apply the Active Directory changes. After restarting, the server will function as a domain controller for nlbserver.local.



Check Domain Join Status

Screenshot 68

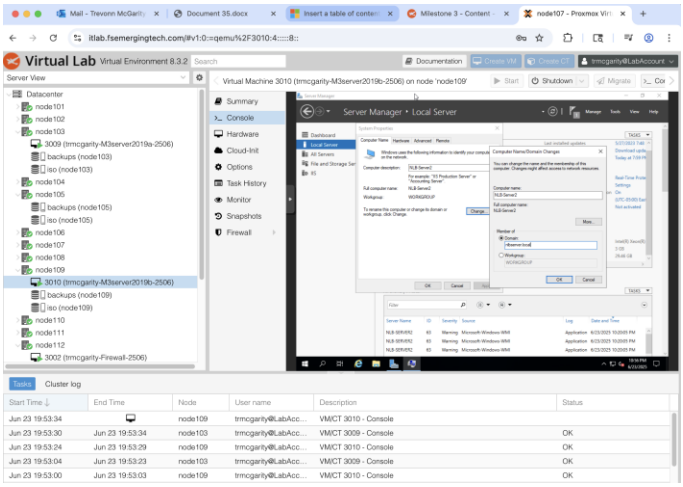
Back in Server Manager, the user clicks on “Workgroup” to confirm the system is no longer in a workgroup and now belongs to the domain.



Join Another Computer to Domain

Screenshot 69

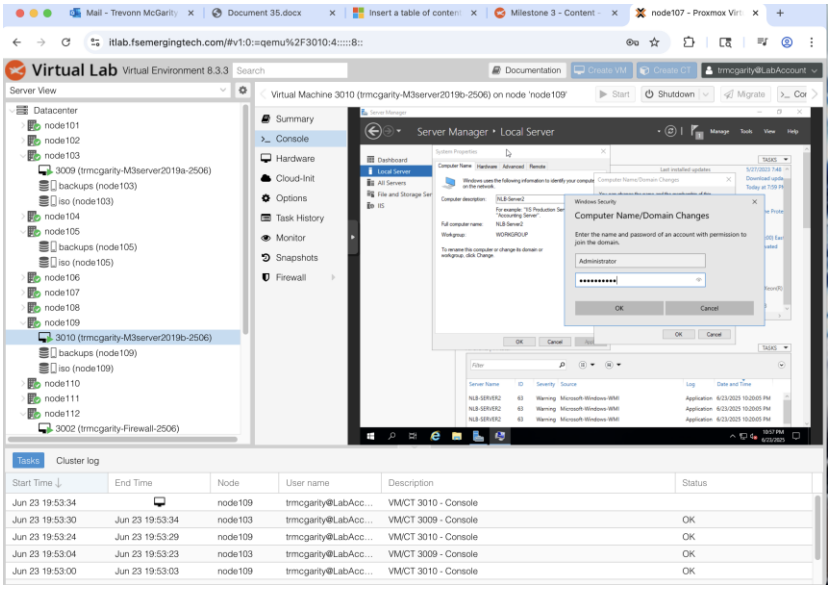
The user enters nlbserver.local in the domain field of another server or client. This joins the second system to the same Active Directory domain.



Domain Join Success Confirmation

Screenshot 70

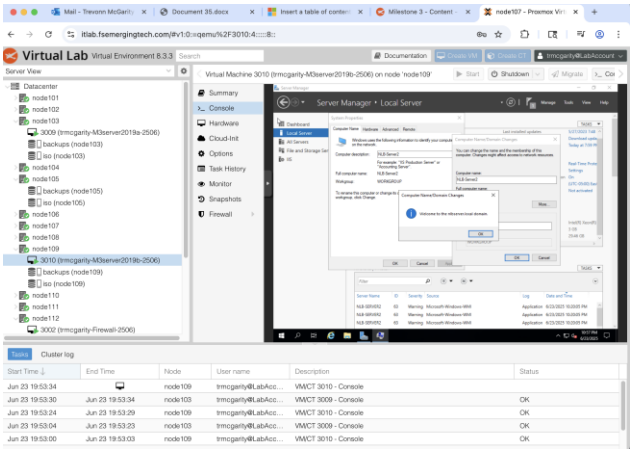
The system displays a success message indicating it joined the domain. The user is prompted to restart the computer.



Logged in to Domain Successfully

Screenshot 71

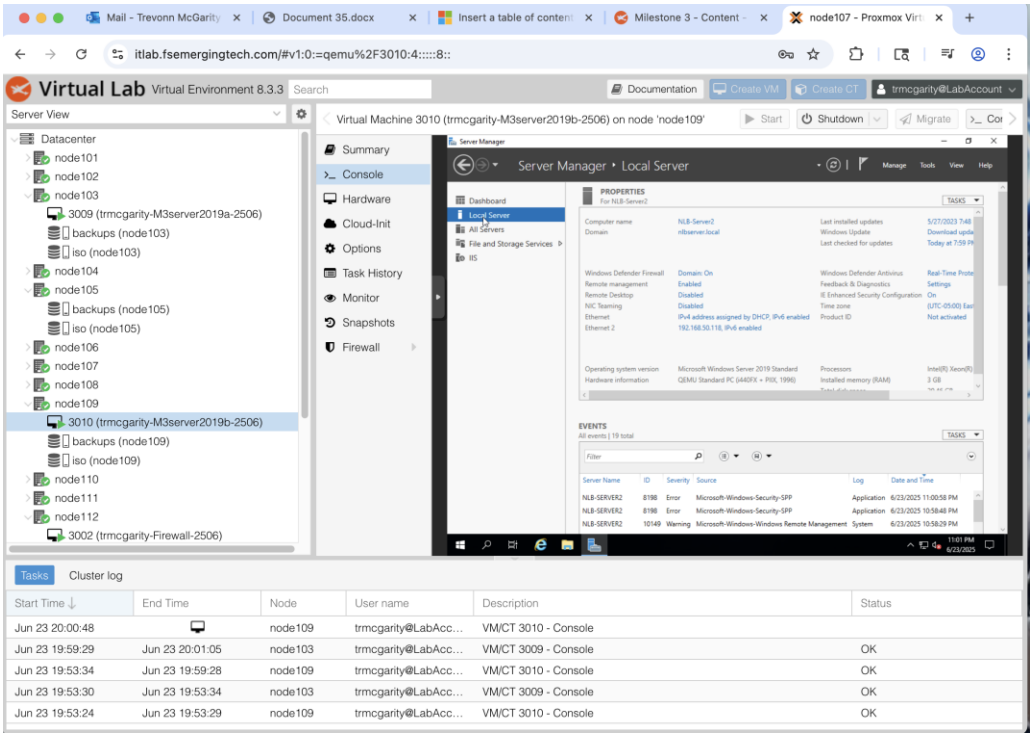
After reboot, the user logs into the machine using domain credentials. This confirms successful domain join to nlbserver.local.



Confirm Both Servers Are Ready

Screenshot 72

The user confirms that both servers in the cluster have completed installations and Windows Updates. This ensures NLB stability and functionality.

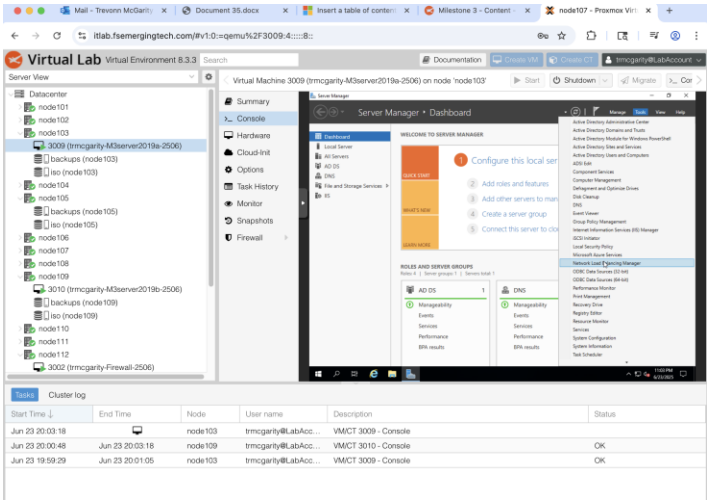


Part 2

Open NLB Manager

Screenshot 73

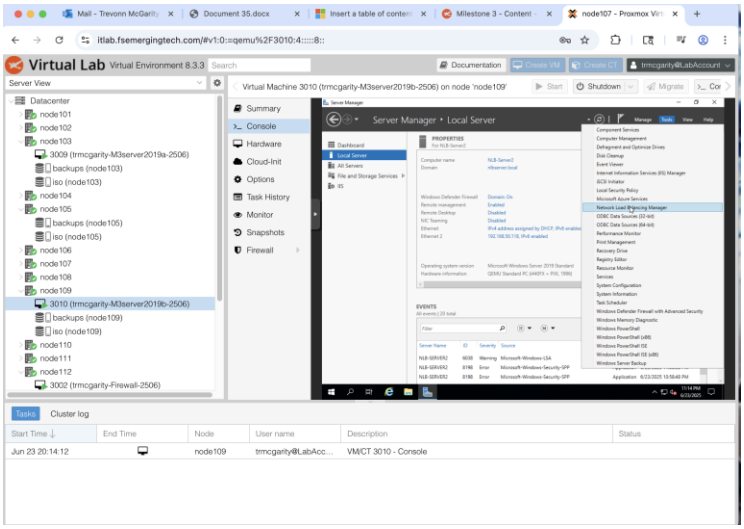
The user opens the Network Load Balancing Manager from the Start Menu or Server Manager Tools menu. This tool is used to create and manage NLB clusters.



Launching New Cluster Creation

Screenshot 74

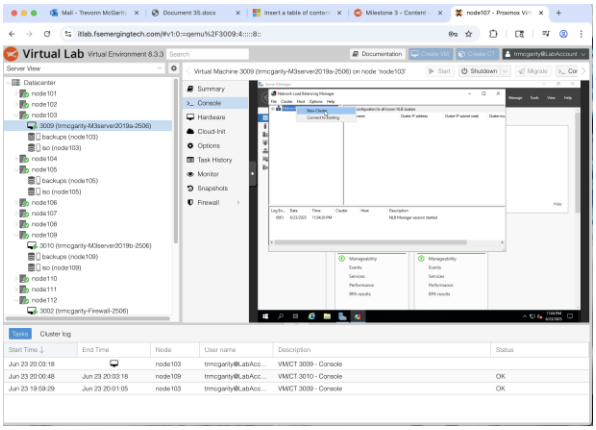
Inside NLB Manager, the user selects “New Cluster” to start the setup process. This initiates the wizard to configure the first host in the cluster.



NLB Cluster Wizard Opened

Screenshot 75

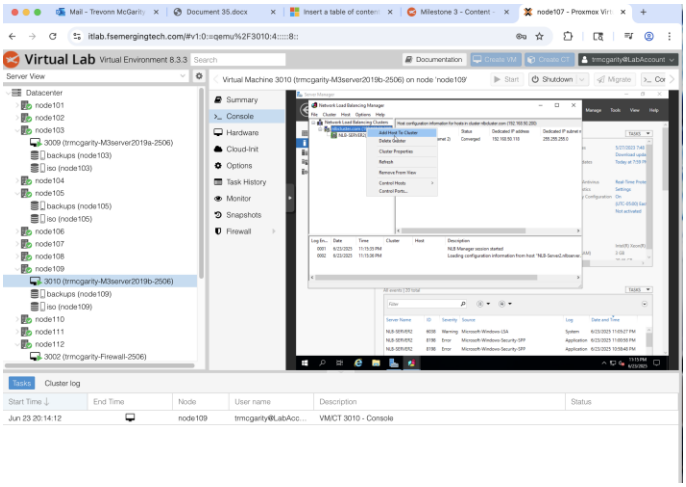
The New Cluster wizard opens and prompts for the first host to be added. The user begins entering the initial cluster node details.



2.1 (2.1 add host to cluster.png): Add First Host to Cluster

Screenshot 76

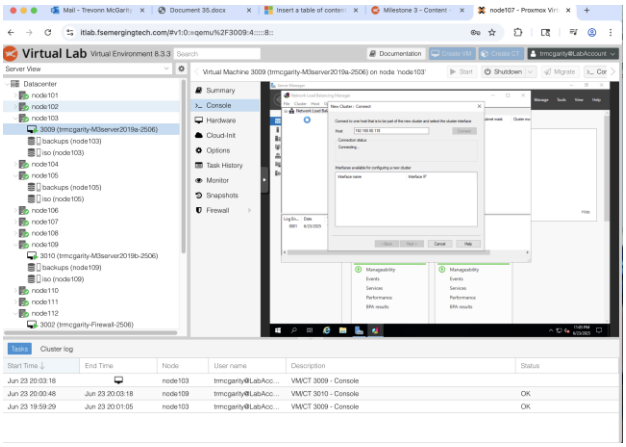
The user adds the name or IP of the server that will be the first host in the NLB cluster. This server will become part of the load-balanced group.



Choose IP Address to Use for NLB

Screenshot 77

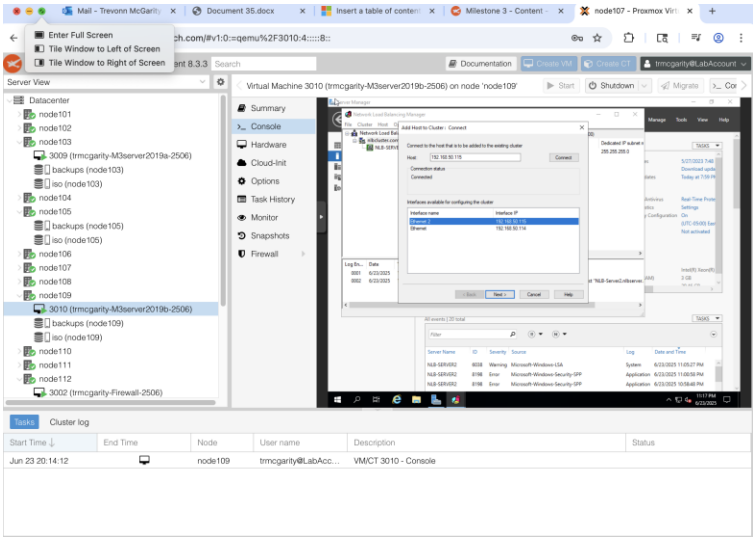
The wizard asks the user to select which IP address the cluster will listen on. The user chooses the appropriate address from the list.



Select Interface for Cluster Traffic

Screenshot 78

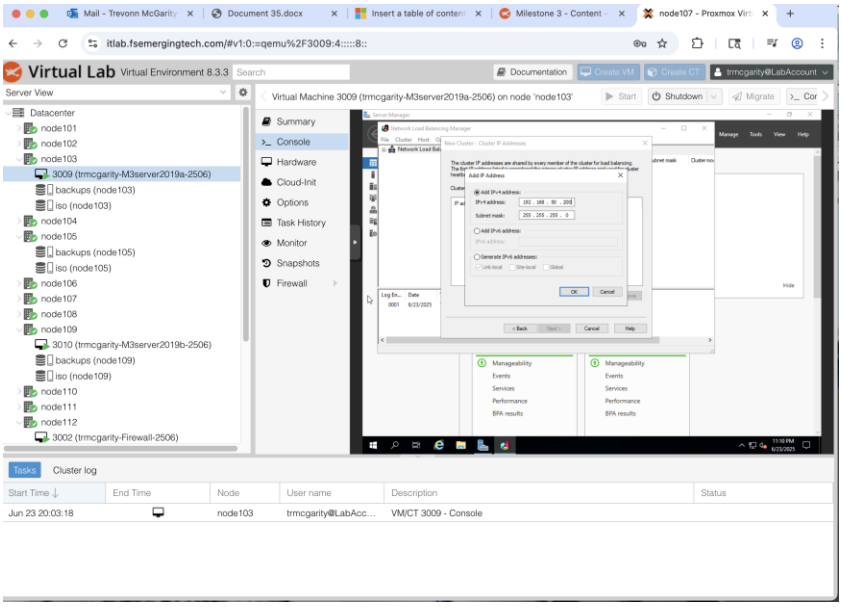
The selected network interface is confirmed for use in the cluster. This defines how the cluster will handle incoming network traffic.



Assign Cluster IP Address

Screenshot 79

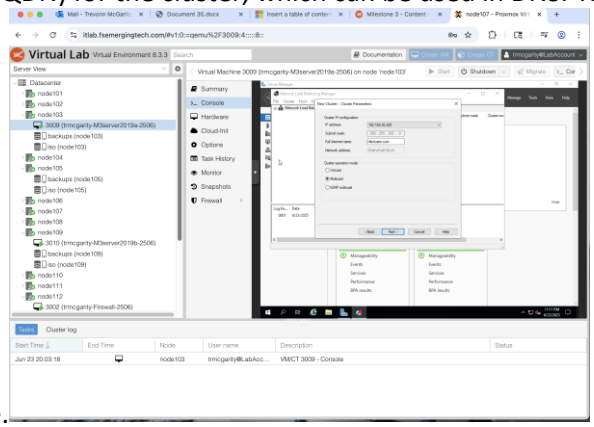
The user adds a virtual IP address to the cluster, which clients will use to connect to the NLB. This IP is shared among all nodes in the cluster.



Define Cluster FQDN (Internet Name)

Screenshot 80

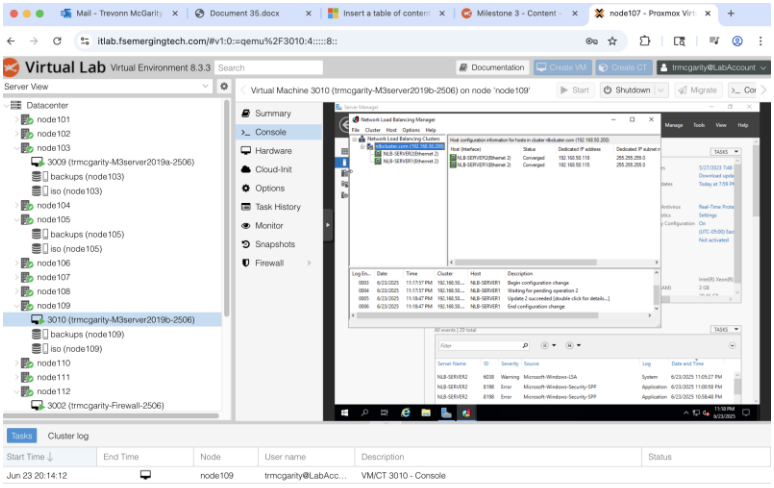
The user enters a full internet name (FQDN) for the cluster, which can be used in DNS. This gives the cluster a friendly, resolvable domain name.



NLB Cluster Successfully Created with Two Hosts

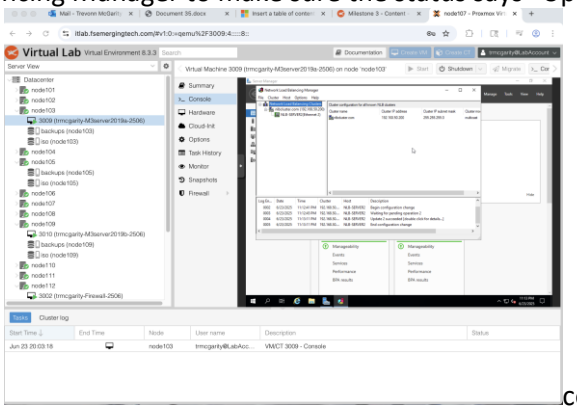
Screenshot 81

Both servers are now visible in the NLB Manager under the newly created cluster. This confirms successful configuration of load balancing across both machines.



Review the Cluster Log for Completion

Screenshot 82

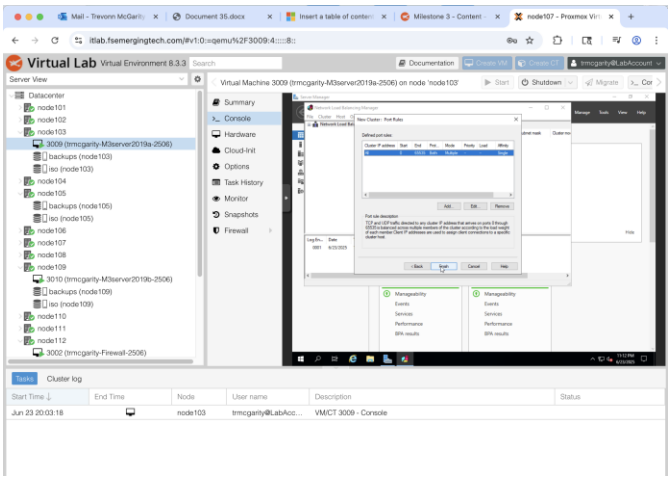
Check the Network Load Balancing Manager to make sure the status says “Update succeeded” and “End configuration change.” This 

confirms the cluster setup was completed successfully.

Click Finish on the Port Rules Screen

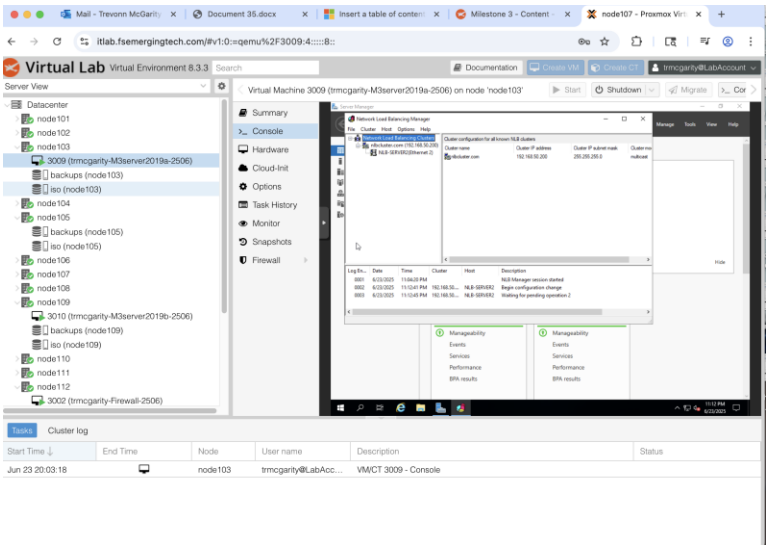
Screenshot 83

On the “New Cluster: Port Rules” screen, click the **Finish** button to apply the default rule. This will direct all traffic through the specified TCP and UDP ports to the cluster.



Verify Both Servers Appear in the Cluster

Make sure both NLB servers are visible under the cluster name on the left panel. This confirms that both nodes have been successfully added to the NLB cluster.


Virtual Lab
Virtual Environment 8.3.3
Datacenter
node101
node102
node103
3009 (trmcgarity-M3server2019a-2506)
backups (node103)
iso (node103)
node104
node105
backups (node105)
iso (node105)
node106
node107
node108
node109
3010 (trmcgarity-M3server2019b-2506)
backups (node109)
iso (node109)
node110
node111
node112
3002 (trmcgarity-Firewall-2506)
Summary
Console
Hardware
Cloud-Init
Options
Task History
Monitor
Snapshots
Firewall
Tasks
Cluster log
Start Time
End Time
Node
User name
Description
Status
Jun 23 20:03:18
node103
trmcgarity@LabAcc...
VM/CT 3009 - Console