

Today we will learn how to setup a domain controller and a DNS server, linking up a Windows 10 machine and an Ubuntu server while using a Windows Server 2022 Datacenter minimal core.

```
Starting /usr/local/etc/rc.d/vmware-kmod.sh...done.
VMware memory control driver initialized
pfSense 2.7.2-RELEASE amd64 20231206-2010
Bootup complete

FreeBSD/amd64 (pfSense.home.arp) (ttyv0)

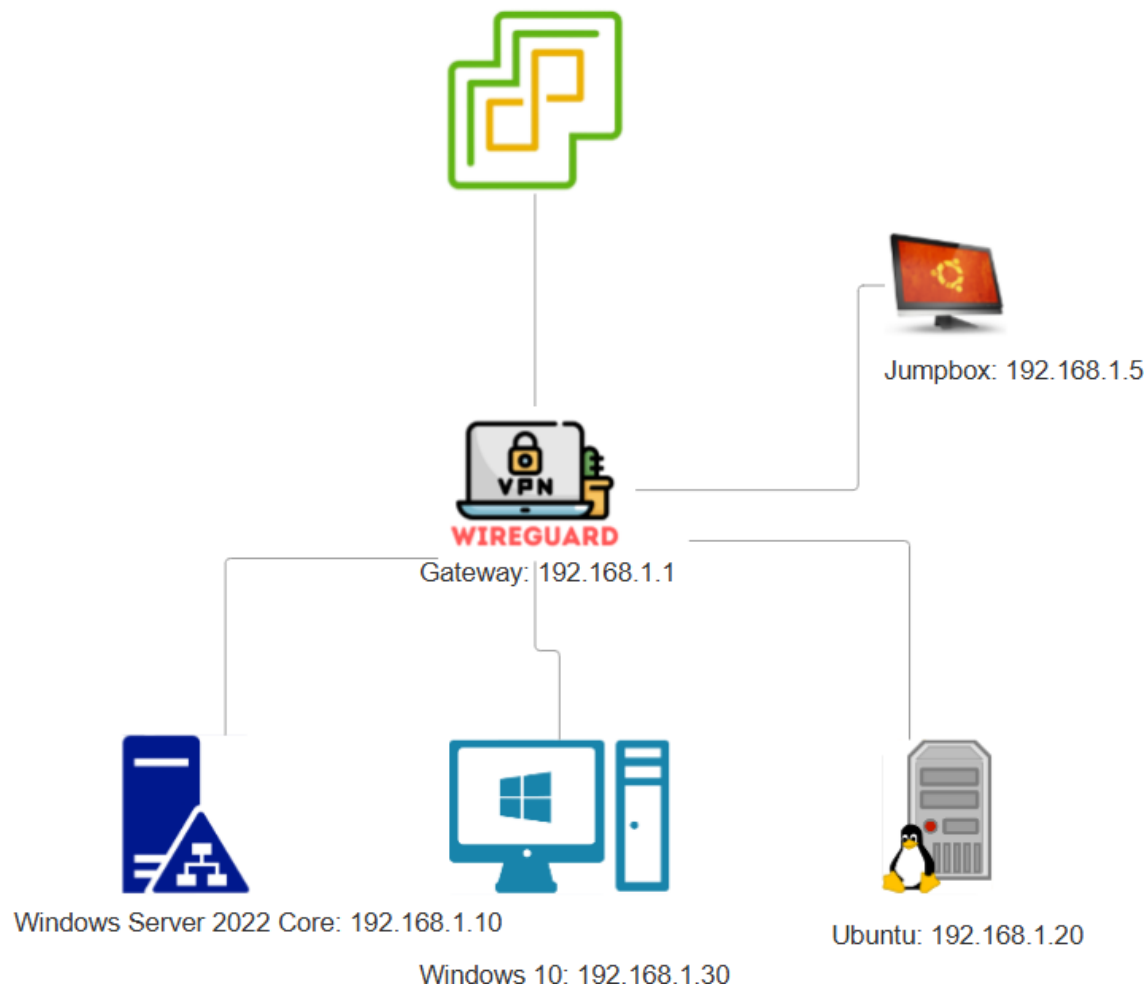
VMware Virtual Machine - Netgate Device ID: 672421e1d2d3de16937b

*** Welcome to pfSense 2.7.2-RELEASE (amd64) on pfSense ***

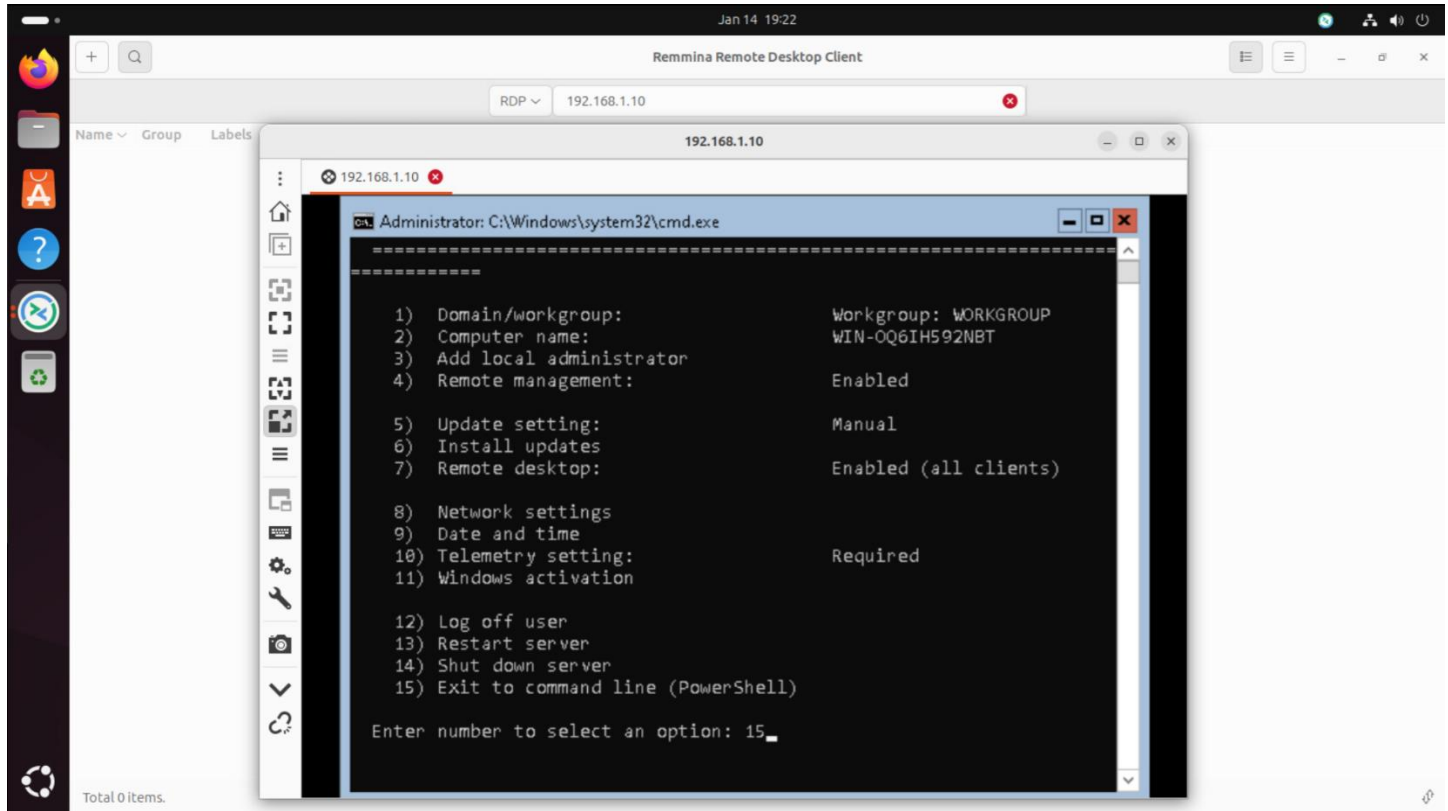
WAN (wan)      -> vmx0      -> v4/DHCP4: 172.21.0.96/24
LAN (lan)      -> vmx1      -> v4: 192.168.1.1/27

0) Logout (SSH only)          9) pfTop
1) Assign Interfaces          10) Filter Logs
2) Set interface(s) IP address 11) Restart webConfigurator
3) Reset webConfigurator password 12) PHP shell + pfSense tools
4) Reset to factory defaults  13) Update from console
5) Reboot system              14) Enable Secure Shell (sshd)
6) Halt system                15) Restore recent configuration
7) Ping host                  16) Restart PHP-FPM
8) Shell

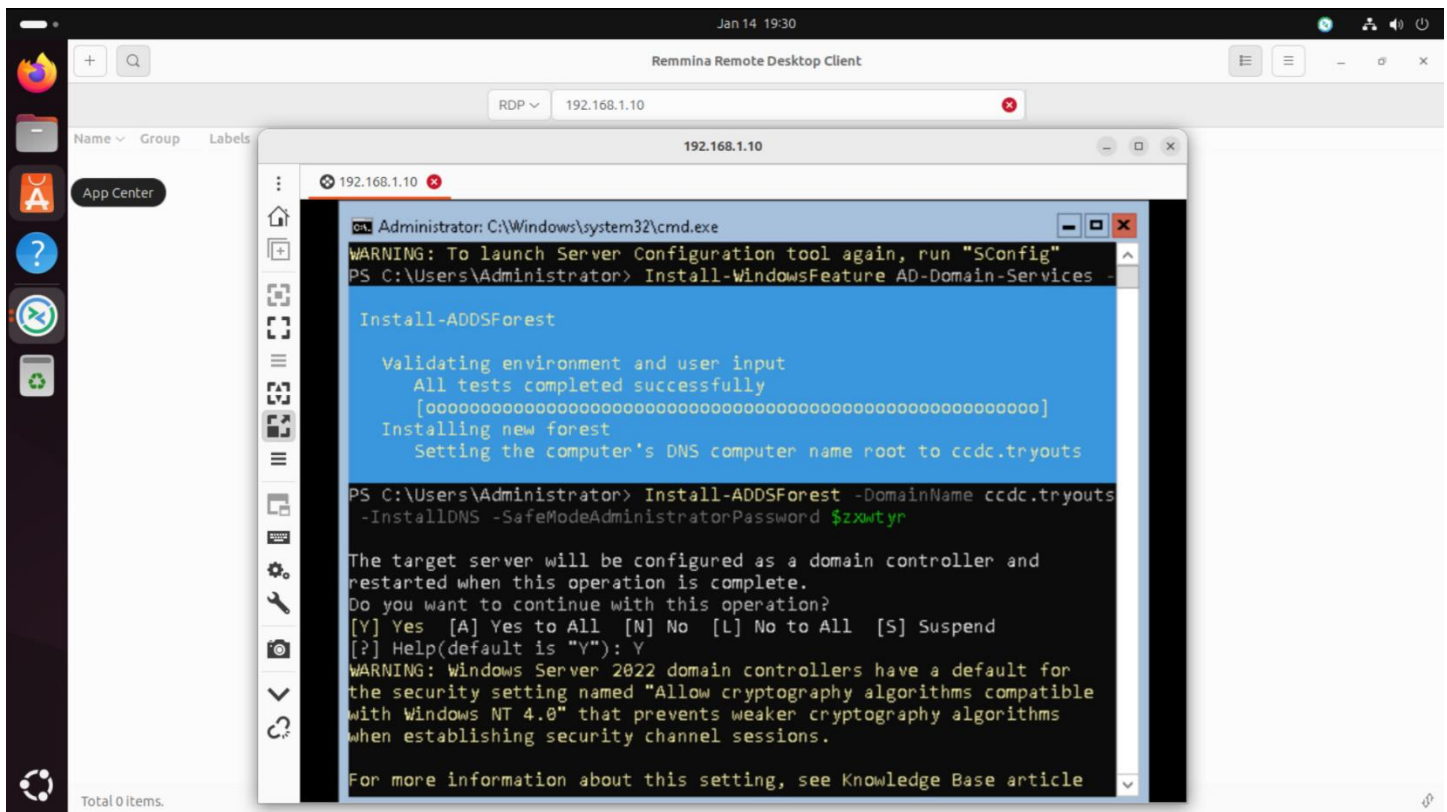
Enter an option: █
```



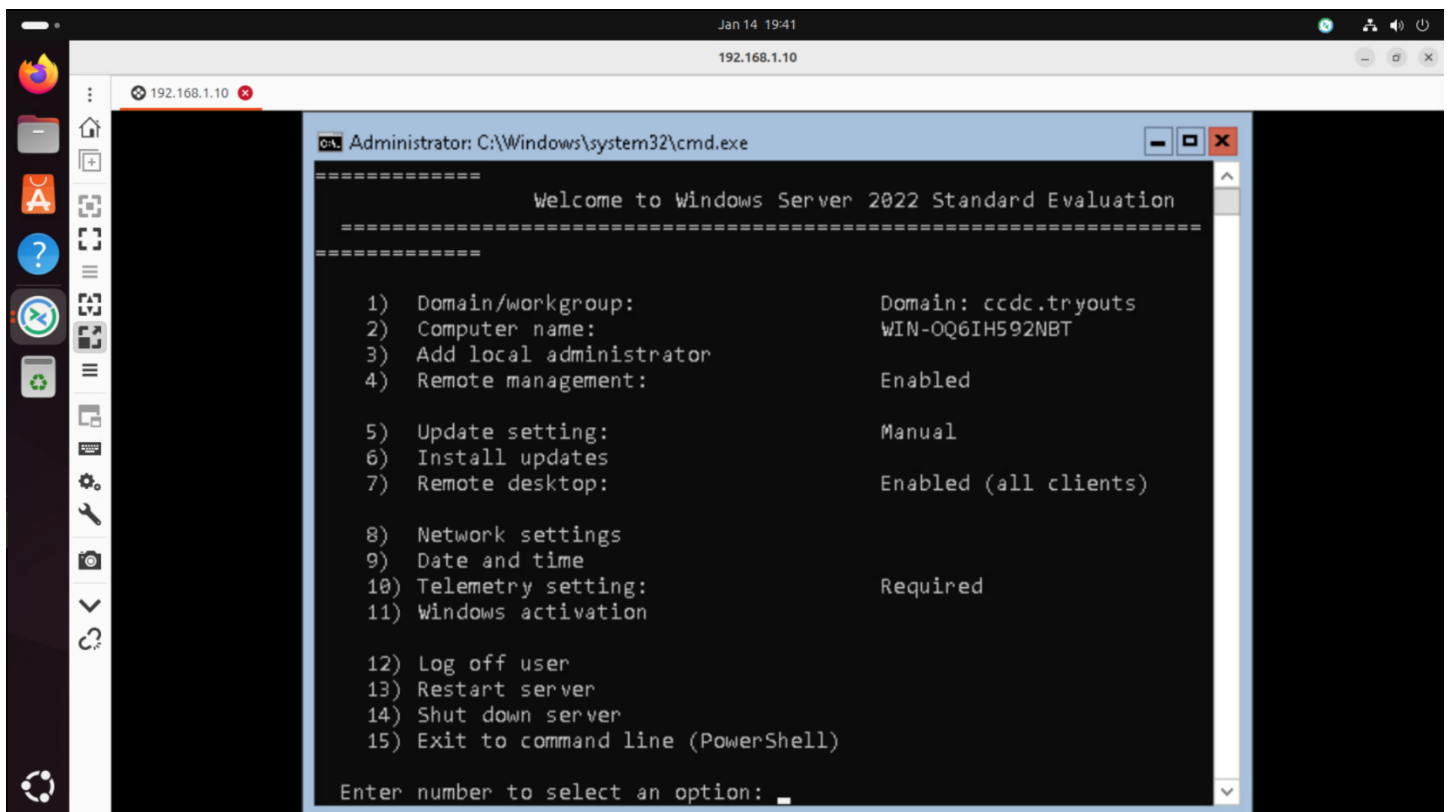
Using the jumpbox, use Remmina Remote Desktop Client to connect to Windows 2022 Standard Core and RDP into 192.168.1.10. Use the provided credentials (Administrator/tryouts24!). Go to the Powershell.



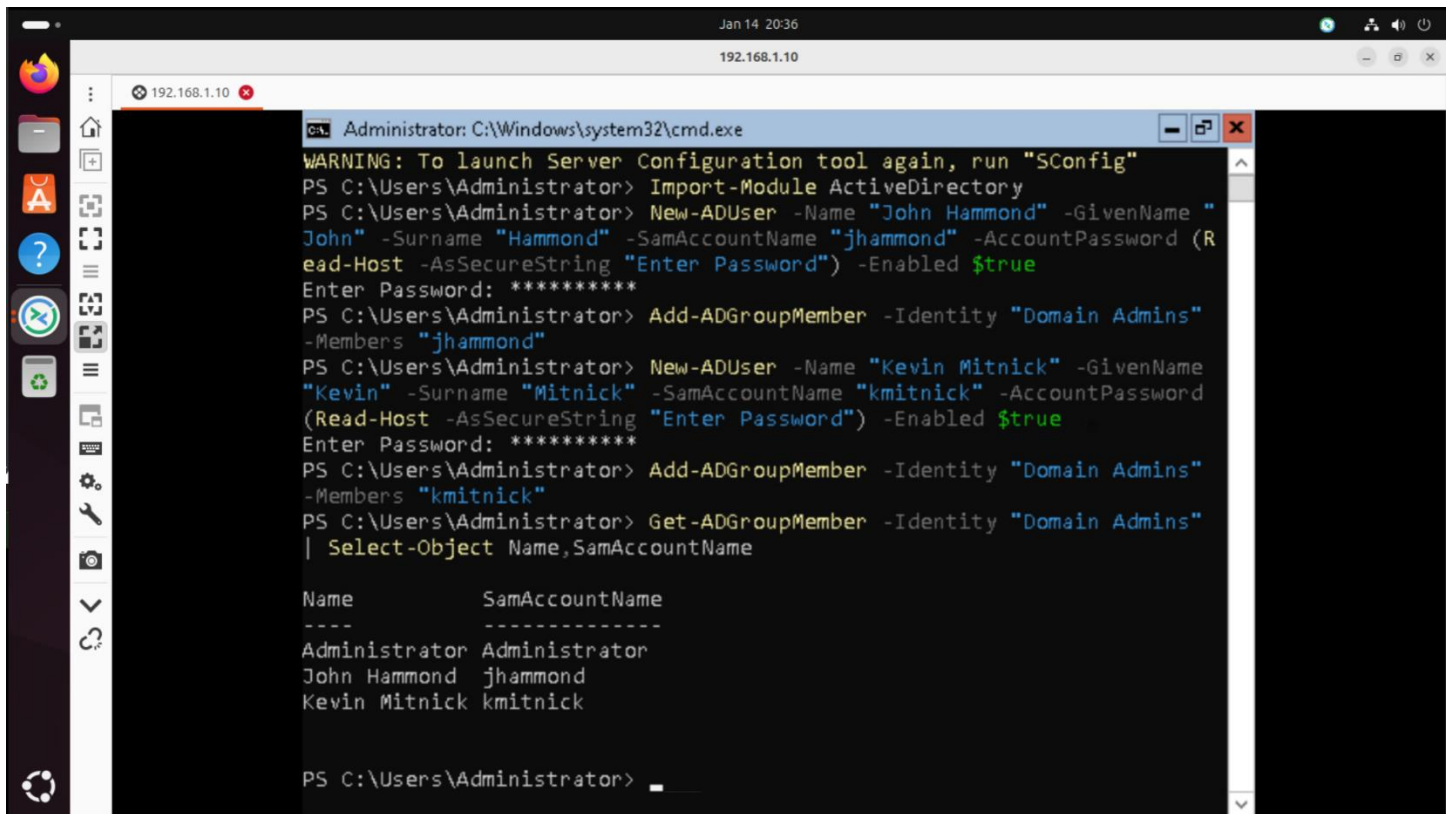
Once you reach Powershell, install the Active Directory using the command 'Install-WindowsFeature AD-Domain-Services -IncludeManagementTools'. After Active Directory is installed, you can conceal the password using the command "\$(\$string of password) = ConvertTo-SecureString -Force -AsPlainText '(complex password)'". After that, you can set up the forest by typing the command 'Install-ADDSForest -DomainName [domain address] -InstallDNS -SafeModeAdministratorPassword \$(chosen string)'. Select 'Y' for yes and let the domain controller be set up. The computer will restart after the forest is created.



Once you reconnect to the remote session and log in, it will show the domain that you have set up.



You can also check the domain through Powershell. To start adding users, you import the module of the Active Directory (Import-Module). To add a user, enter `New-ADUser -Name ____ -GivenName ____ -Surname ____ -SamAccountName ____ -AccountPassword (Read-Host -AsSecureString "string") -Enabled $true` then enter the password. To add a user to the group, type `Add-ADGroupMember -Identity "group" -Members ____`. To make sure the users are added to the group, type in `Get-ADGroupMember -Identity ____ | Select-Object Name,SamAccountName`.



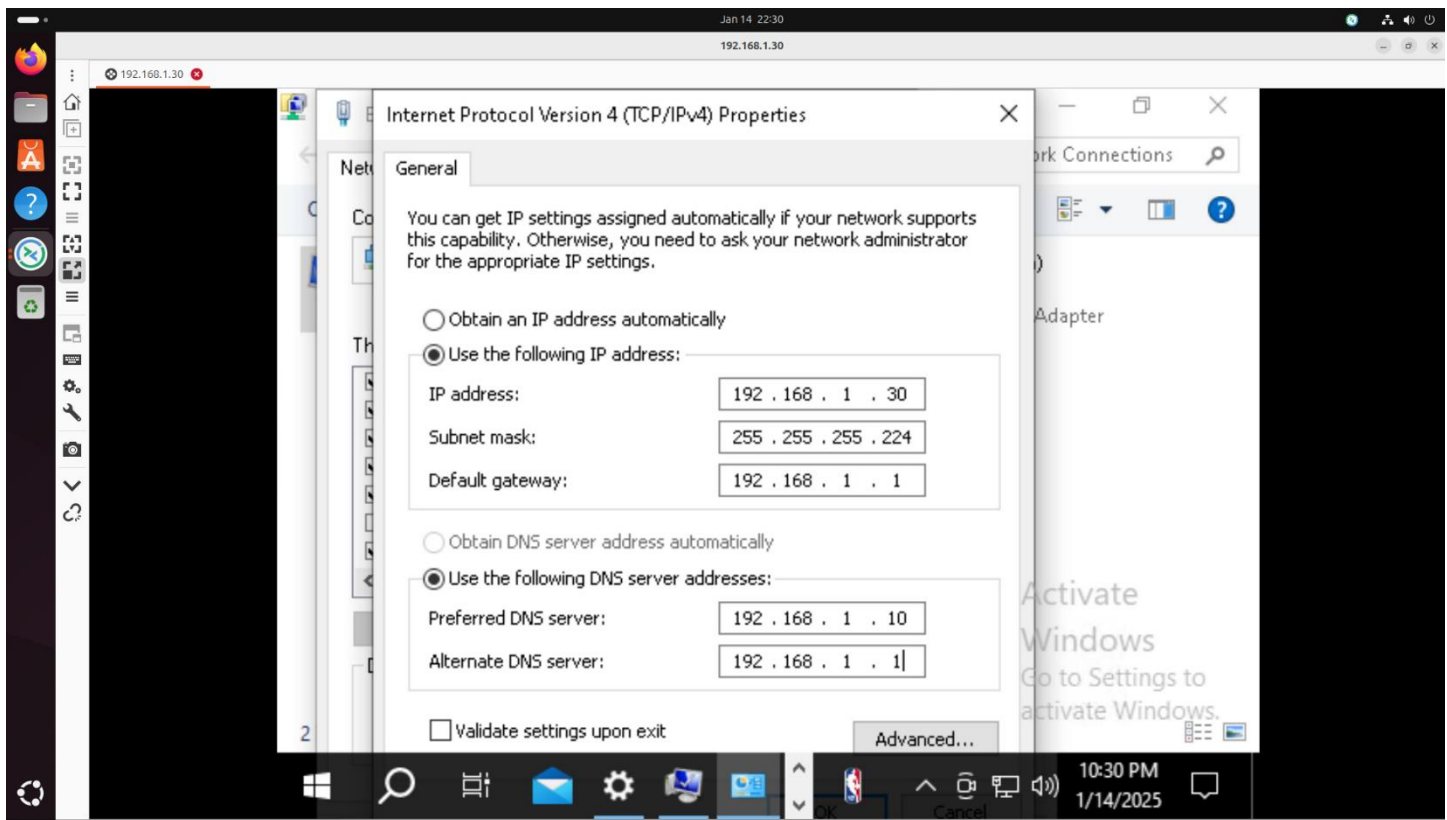
The screenshot shows a Windows command prompt window titled "Administrator: C:\Windows\system32\cmd.exe". The window displays the following PowerShell commands and their output:

```
WARNING: To launch Server Configuration tool again, run "SConfig"
PS C:\Users\Administrator> Import-Module ActiveDirectory
PS C:\Users\Administrator> New-ADUser -Name "John Hammond" -GivenName "John" -Surname "Hammond" -SamAccountName "jhammond" -AccountPassword (Read-Host -AsSecureString "Enter Password") -Enabled $true
Enter Password: *****
PS C:\Users\Administrator> Add-ADGroupMember -Identity "Domain Admins" -Members "jhammond"
PS C:\Users\Administrator> New-ADUser -Name "Kevin Mitnick" -GivenName "Kevin" -Surname "Mitnick" -SamAccountName "kmitnick" -AccountPassword (Read-Host -AsSecureString "Enter Password") -Enabled $true
Enter Password: *****
PS C:\Users\Administrator> Add-ADGroupMember -Identity "Domain Admins" -Members "kmitnick"
PS C:\Users\Administrator> Get-ADGroupMember -Identity "Domain Admins" | Select-Object Name,SamAccountName
```

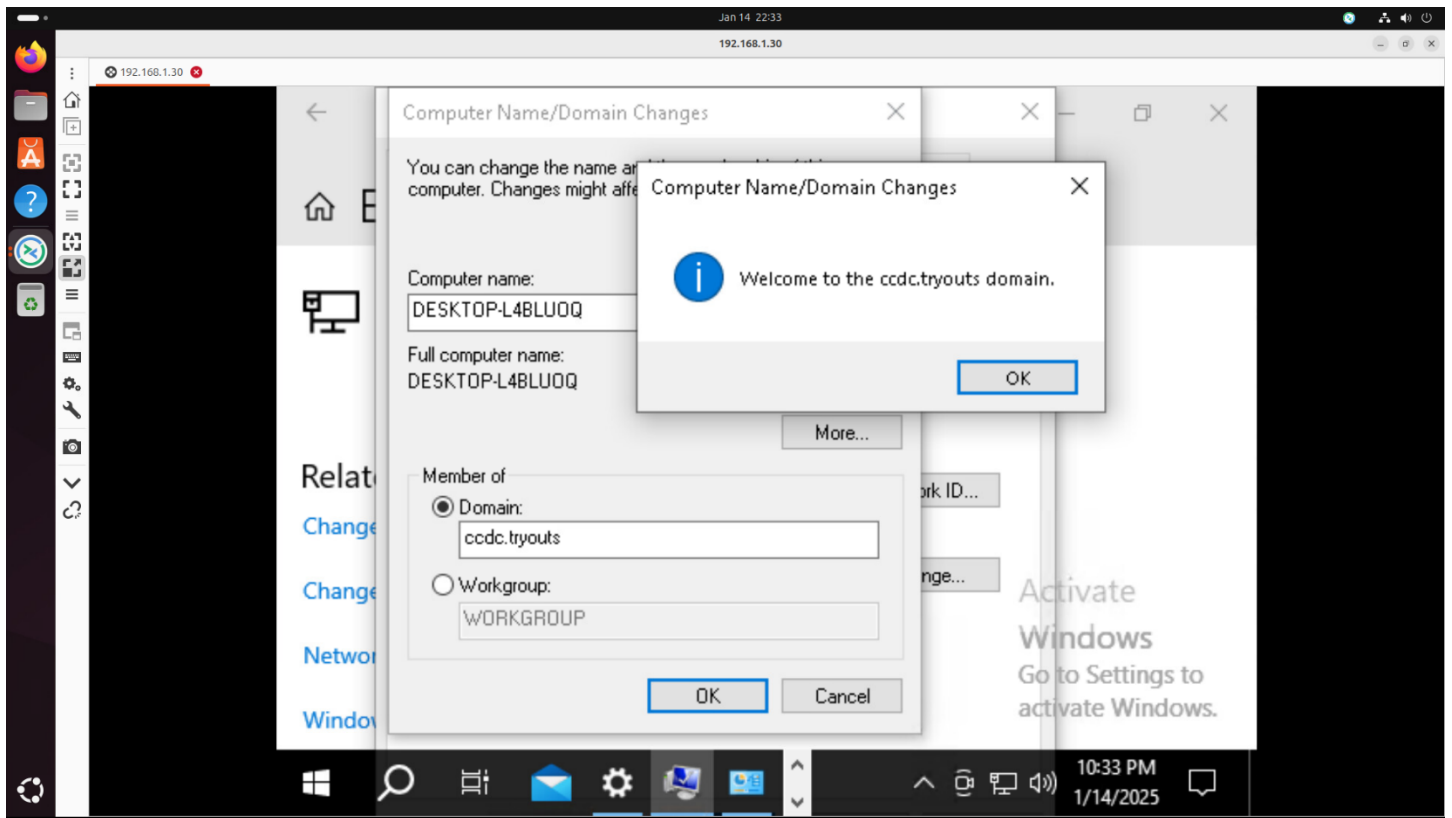
Name	SamAccountName
Administrator	Administrator
John Hammond	jhammond
Kevin Mitnick	kmitnick

The command prompt shows the user "Administrator" at the "C:\Users\Administrator" directory. The output of the `Get-ADGroupMember` command is displayed as a table with two columns: "Name" and "SamAccountName". The table lists the "Administrator" user, "John Hammond" (jhammond), and "Kevin Mitnick" (kmitnick).

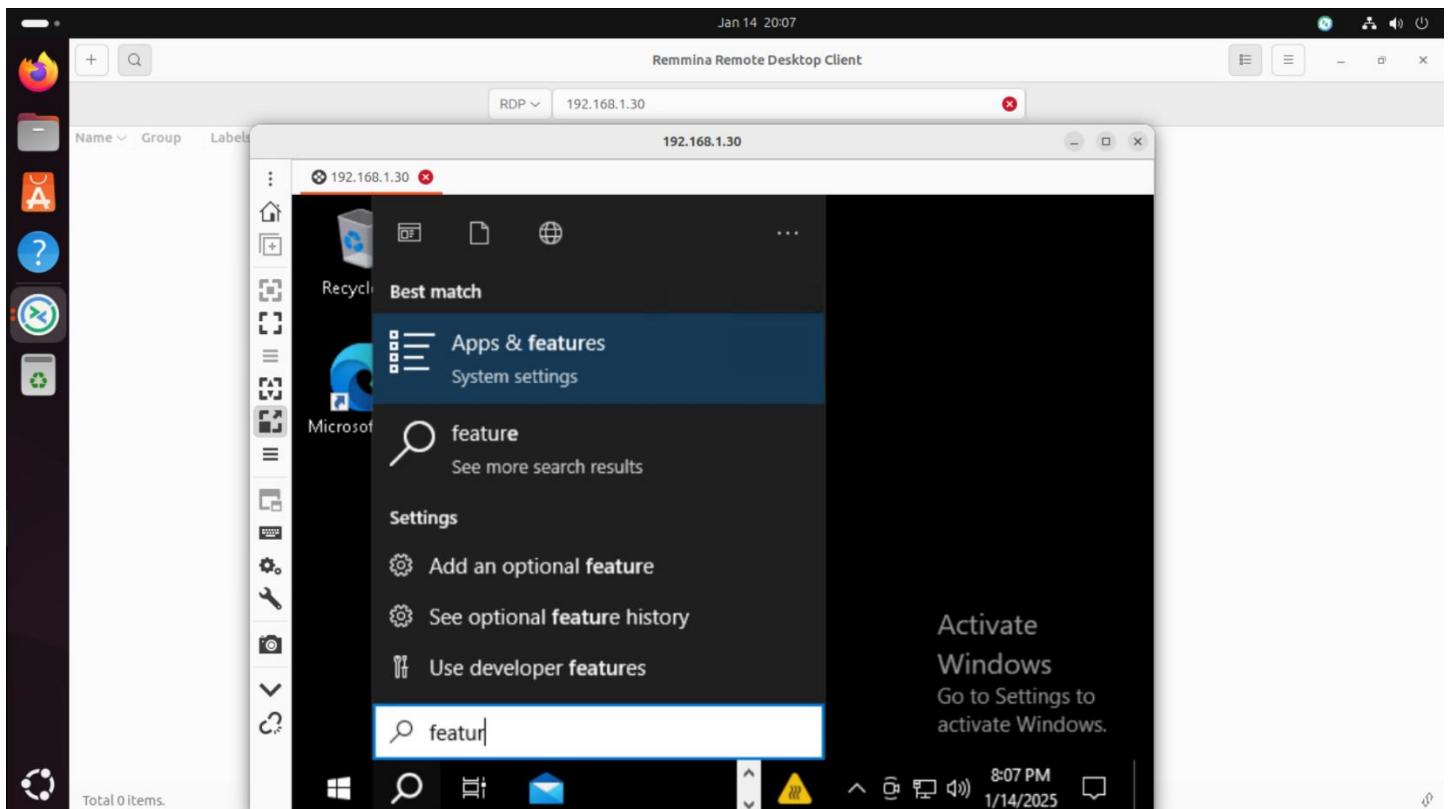
Connect to Windows 10 by going to Remmina and typing 192.168.1.30. To be able to add the computer to a domain controller, you have to make sure that the computer is added to the DNS server. Set the preferred DNS server as 192.168.1.10 (which is your domain controller) and the alternate as 192.168.1.1 (whatever your default gateway is).



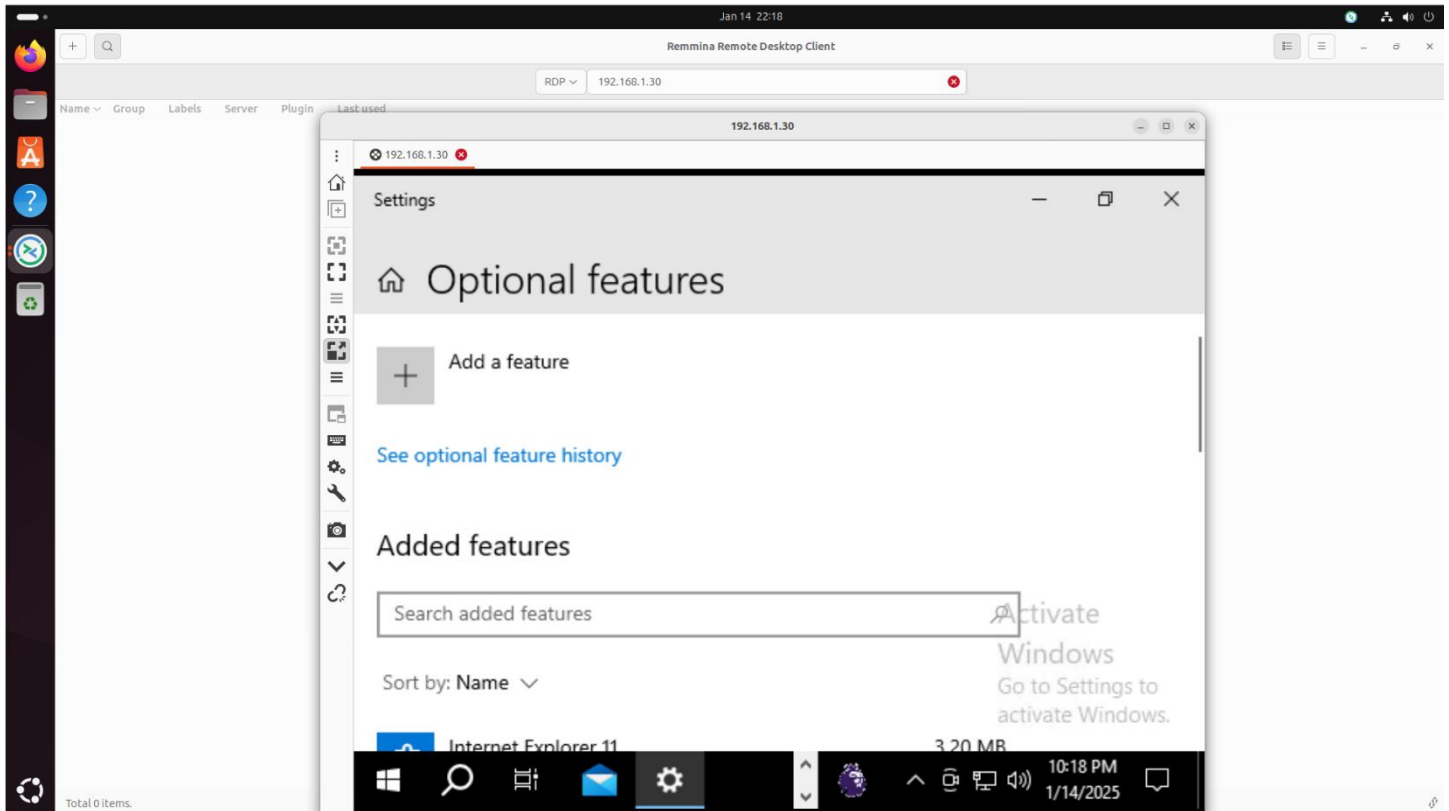
Once you set the DNS server, you can change your domain. Go to System Properties / Advanced System Settings in System then click on the tab that says Computer Name then select Change (to change your computer name). Click on domain to enter a domain then type something like domain.edu or some other domain name. The message will show: Welcome to the domain.com domain. Press OK and it will show you to restart.



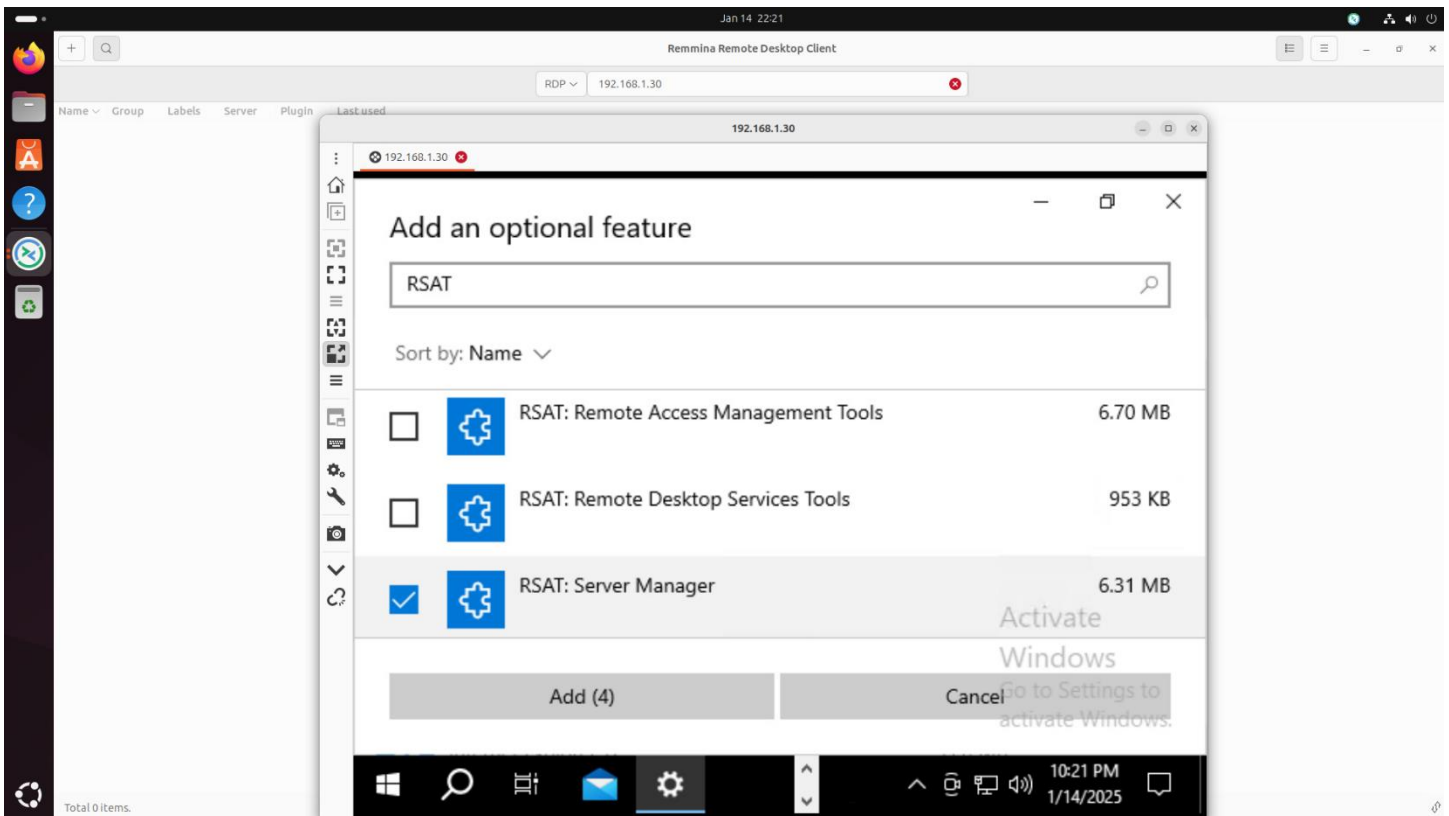
To be able to access Active Directory in a GUI form without installing a desktop environment for Windows Server 2022 Standard core, click on “Add An Optional Feature”



Once you reach optional features, click on “Add a feature”. This will display a list of features you can install on Windows 10.



Find RSAT and install the Server Manager, Group Policy Management tools, the DNS server tools and Active Directory tools (would be easier if installed while there's an internet connection for the Windows 10 machine if you're not able to set up the DNS yet).



Once you install these programs, you'll be able to access the domain controller's functions outside of Powershell.

