EGYPTIAN RUSSIAN UNIVERSITY

ERU

Faculty Of Engineering

Telecommunication Department

Training AWS IT and Network

Under Supervision

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Prepared By

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Content

(1) Install Win Sev and Win 10

(2) Add rule active directory domain service

(3) Add policy on users

(4) Add DHCP

(5) Share file

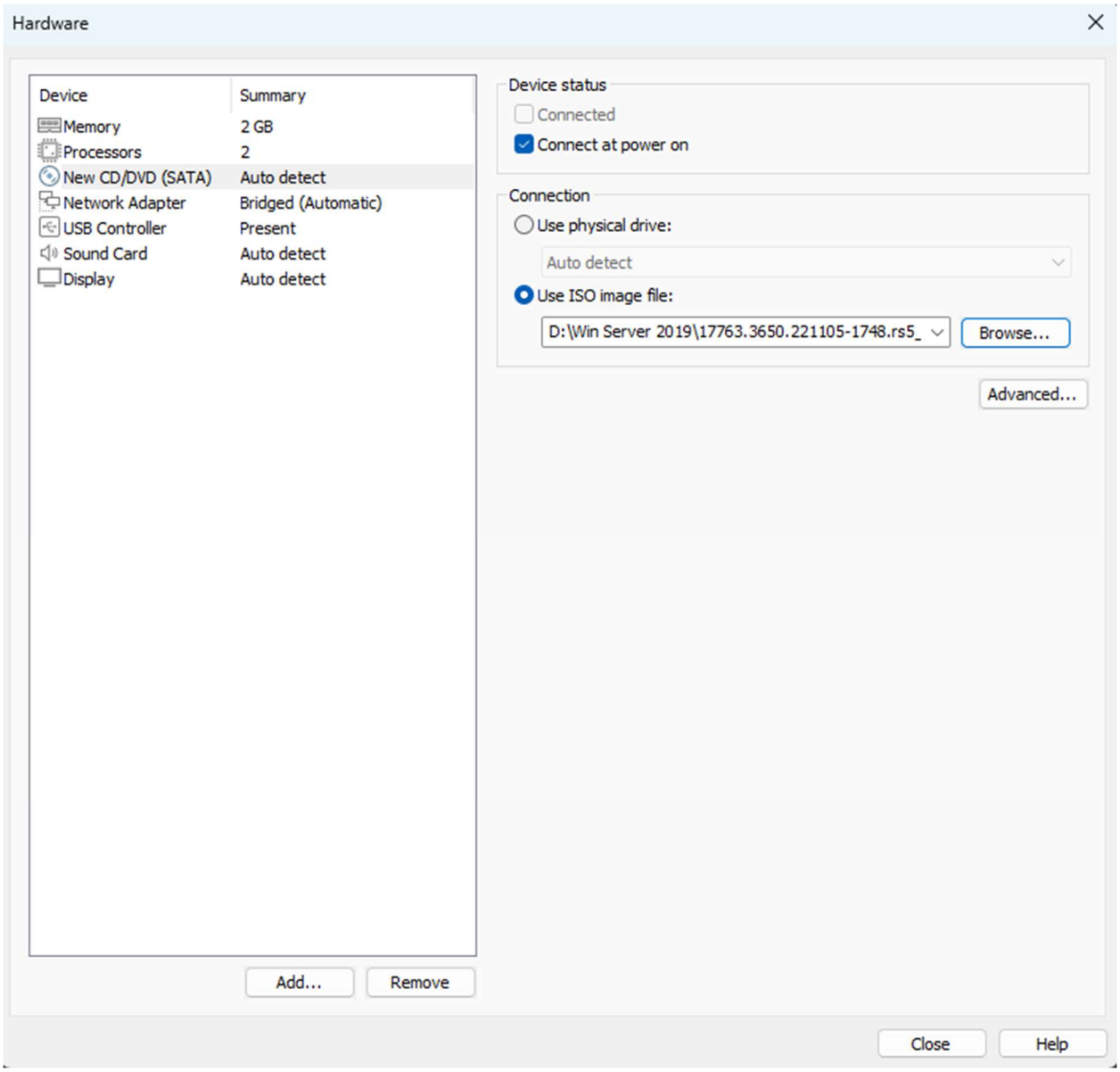
(6) Create VHD

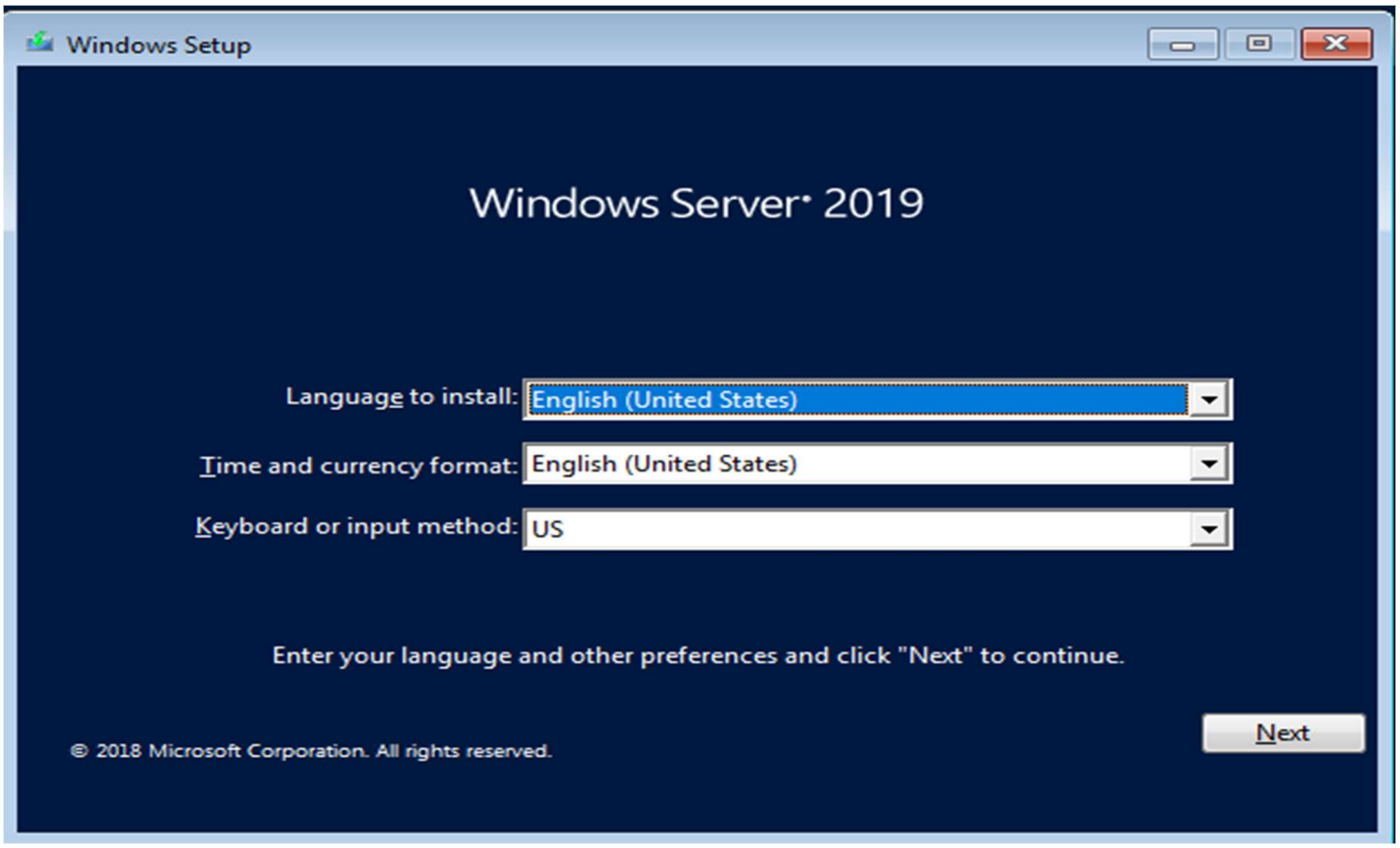
(7) Create another Win Server for backup

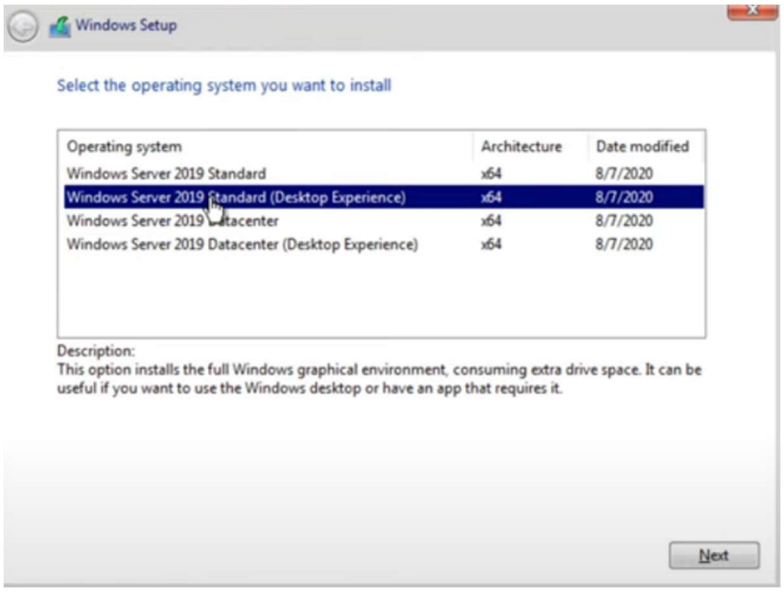
Windows Server Domain Configuration

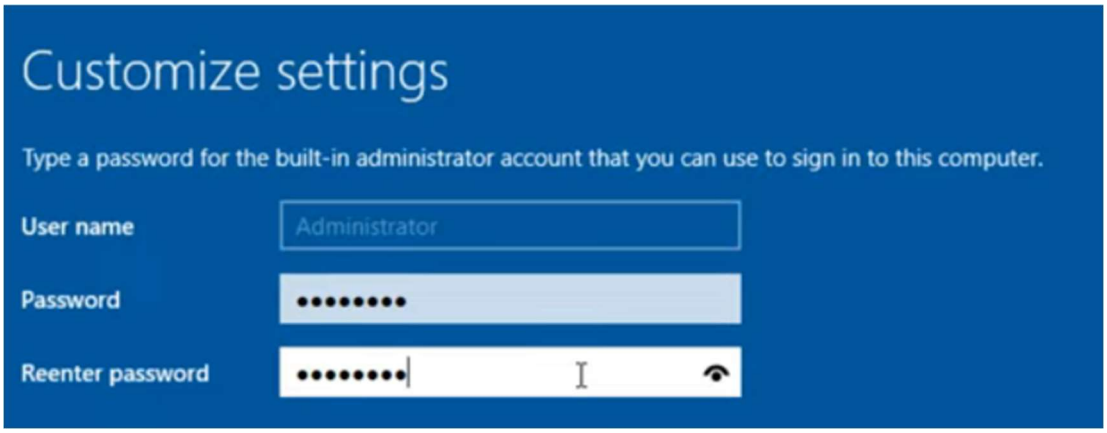
1-Install One VM for Win10 and Two VM for Win Server (Primary Domain and Additional) and Computer name will be your name like

1.1-Install Win Server

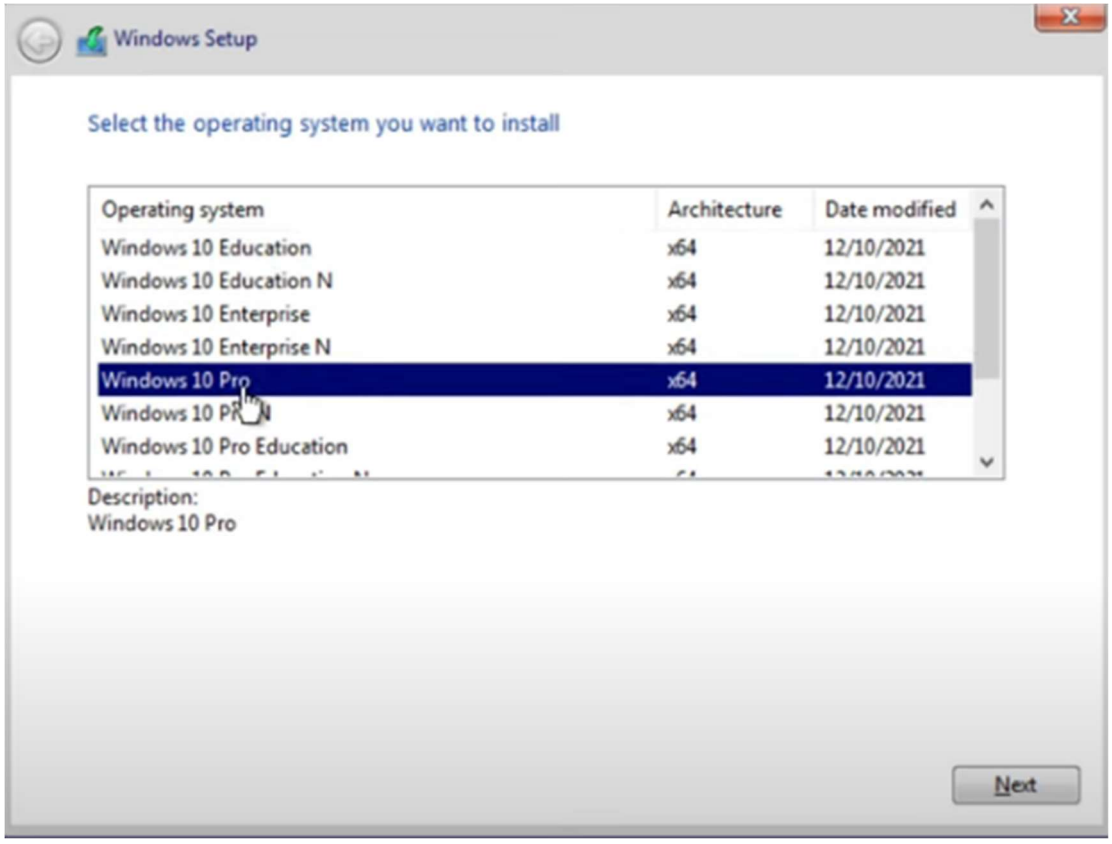



Windows Setup
Windows Server 2019
Language to install: English (United States)
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
© 2018 Microsoft Corporation. All rights reserved.
Next

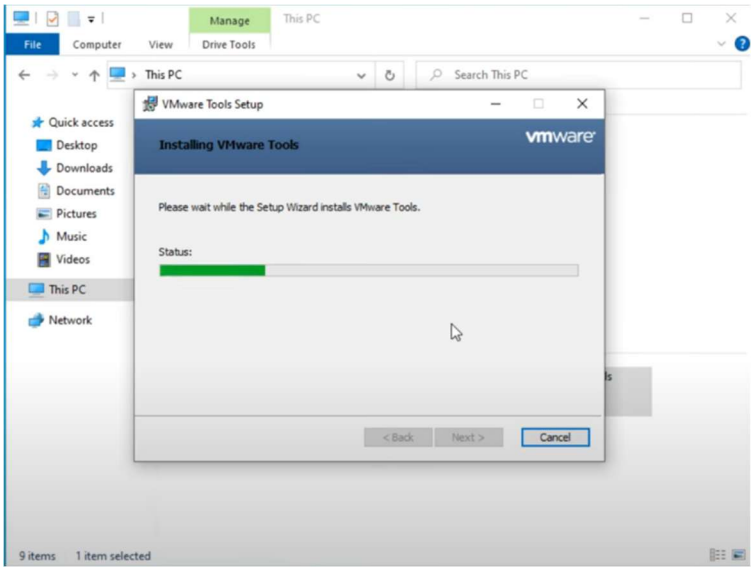

Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2019 Standard
x64
8/7/2020
Windows Server 2019 Standard (Desktop Experience)
x64
8/7/2020
Windows Server 2019 Datacenter
x64
8/7/2020
Windows Server 2019 Datacenter (Desktop Experience)
x64
8/7/2020
Description:
This option installs the full Windows graphical environment, consuming extra drive space. It can be useful if you want to use the Windows desktop or have an app that requires it.
Next


Customize settings
Type a password for the built-in administrator account that you can use to sign in to this computer.
User name
Administrator
Password
Reenter password

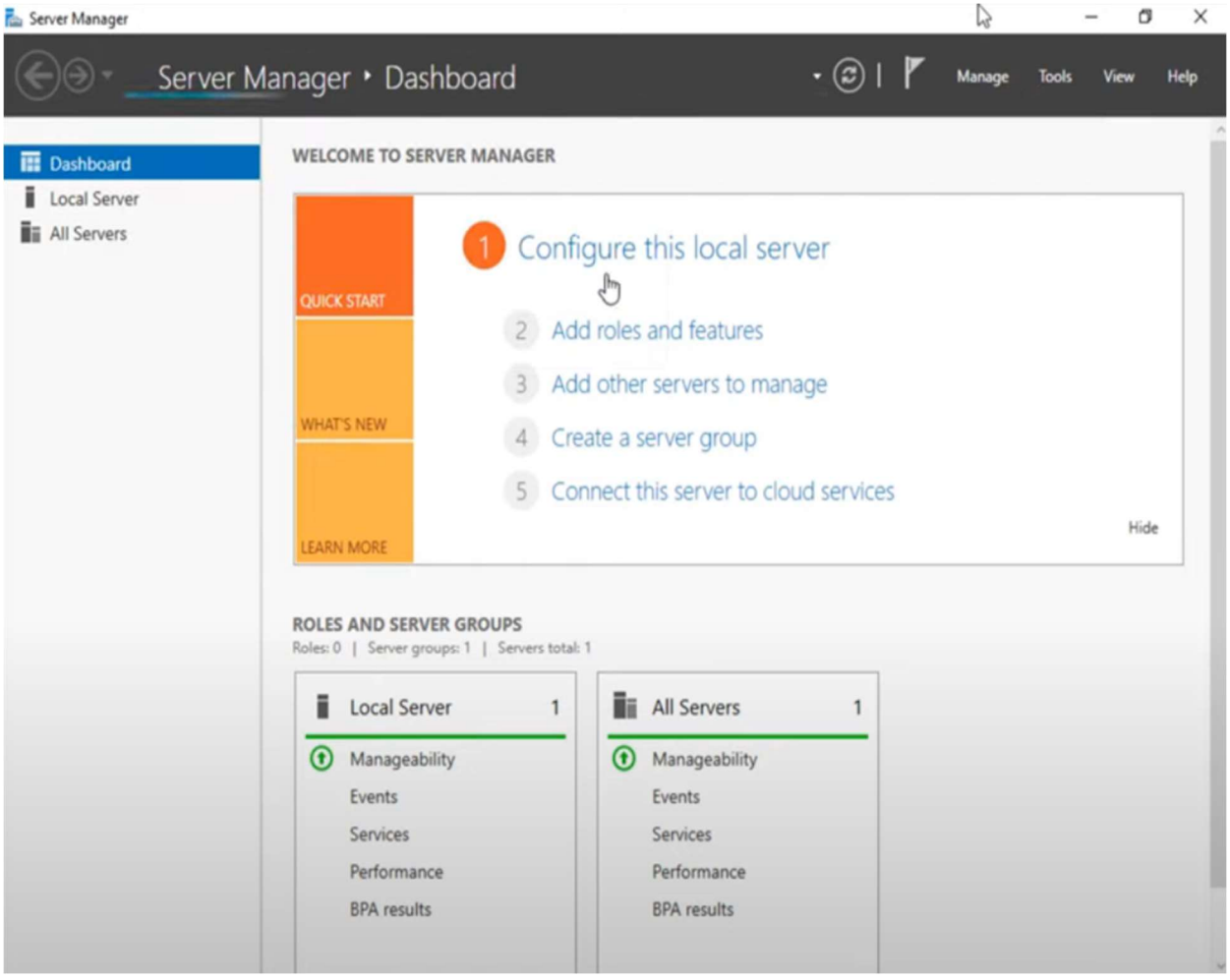
1.2-Install Win 10 as User

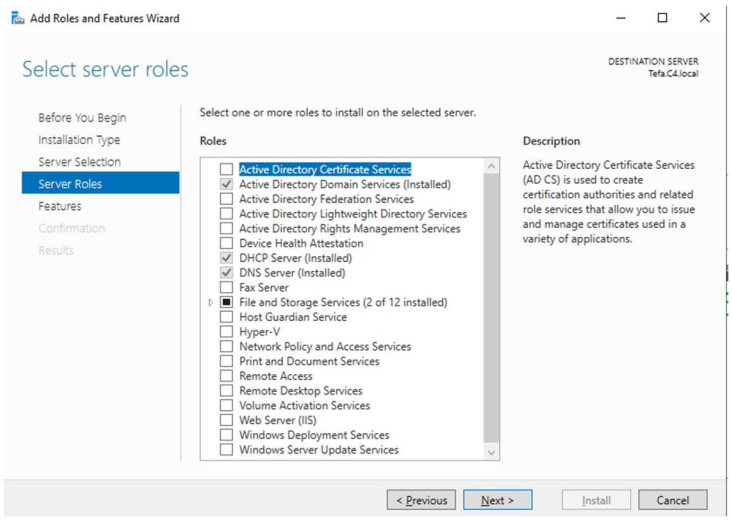


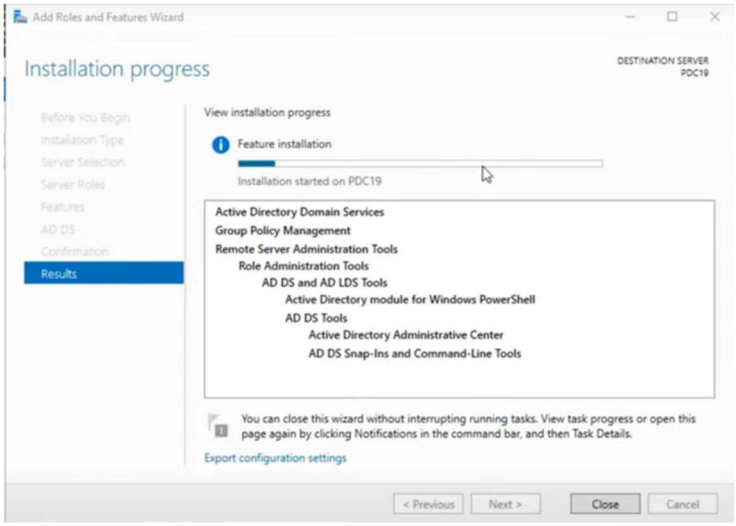
1.3-Then install VM tools

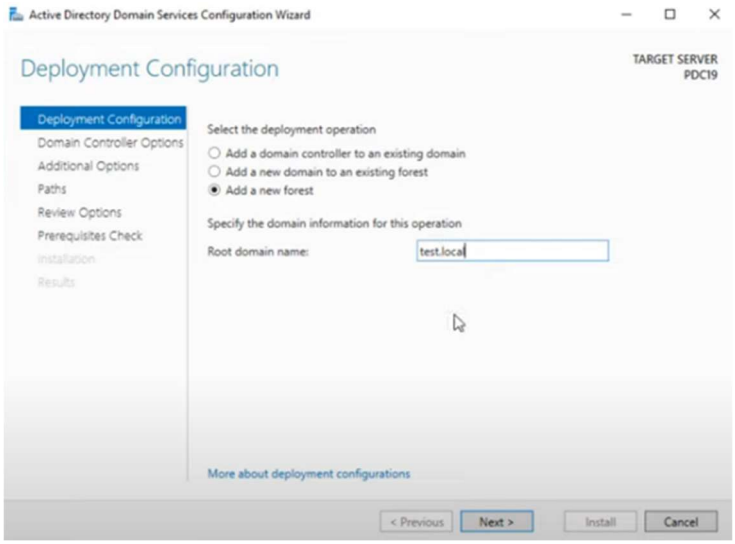


2-Add role active directory domain service




Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
Tefa.C4.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Certificate Services
Active Directory Domain Services (Installed)
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Device Health Attestation
DHCP Server (Installed)
DNS Server (Installed)
Fax Server
File and Storage Services (2 of 12 installed)
Host Guardian Service
Hyper-V
Network Policy and Access Services
Print and Document Services
Remote Access
Remote Desktop Services
Volume Activation Services
Web Server (IIS)
Windows Deployment Services
Windows Server Update Services
Description
Active Directory Certificate Services (AD CS) is used to create certification authorities and related role services that allow you to issue and manage certificates used in a variety of applications.
< Previous
Next >
Install
Cancel


Add Roles and Features Wizard
Installation progress
DESTINATION SERVER
PDC19
Before You Begin
Installation Type
Server Selection
Server Roles
Features
AD DS
Confirmation
Results
View installation progress
Feature installation
Installation started on PDC19
Active Directory Domain Services
Group Policy Management
Remote Server Administration Tools
Role Administration Tools
AD DS and AD LDS Tools
Active Directory module for Windows PowerShell
AD DS Tools
Active Directory Administrative Center
AD DS Snap-Ins and Command-Line Tools
You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.
Export configuration settings
< Previous
Next >
Close
Cancel


Active Directory Domain Services Configuration Wizard
Deployment Configuration
TARGET SERVER
PDC19
Deployment Configuration
Domain Controller Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results
Select the deployment operation
Add a domain controller to an existing domain
Add a new domain to an existing forest
Add a new forest
Specify the domain information for this operation
Root domain name:
test.local
More about deployment configurations
< Previous
Next >
Install
Cancel

2.1-After installation add some OU and add users,computers

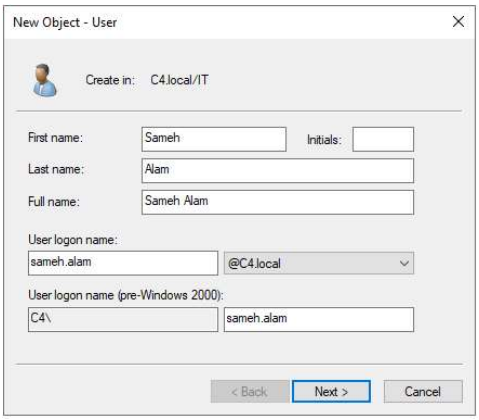
-This is a design for C4 company, and here the sections will be explained:

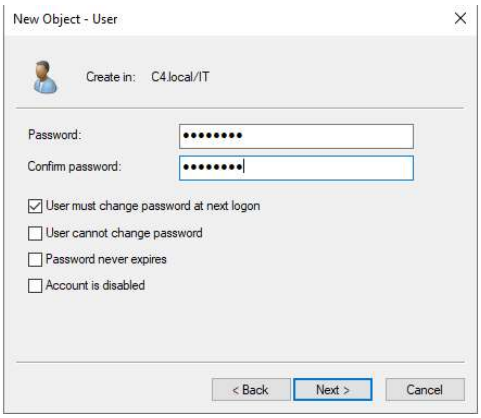
“IT,HR,Developers,Finance,Safety,Sales” Each department contains users and computers.

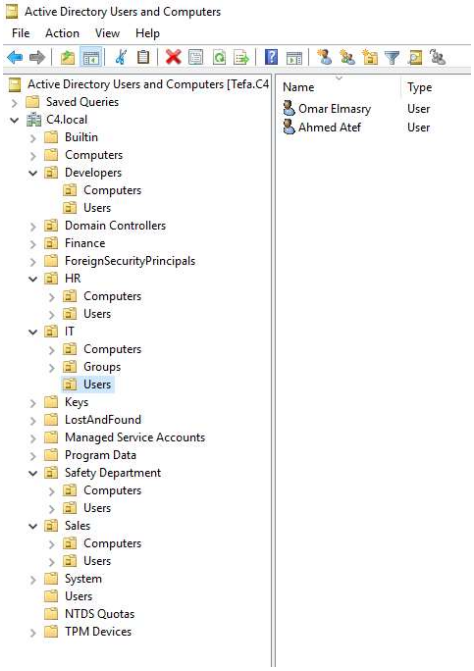
-Each department has permissions on the company's domain

Such as the IT department, which has permissions to access user devices and solve problems.

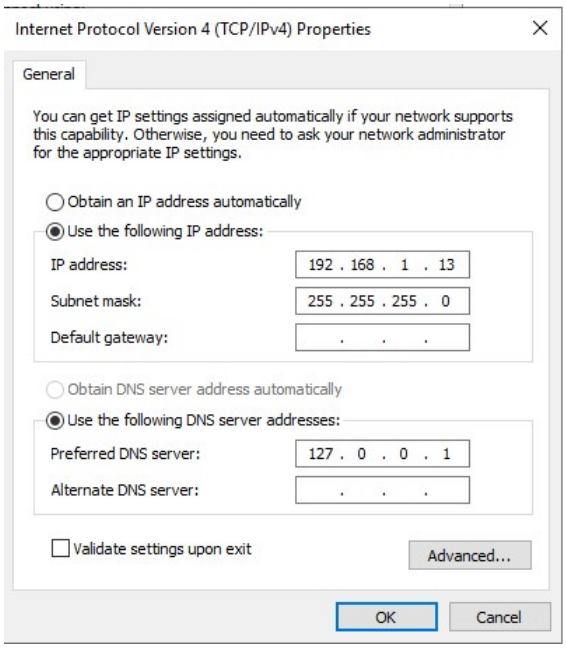
-The HR department deals with applications for jobs within the company, the Sales department deals with accounts, and so on with other departments



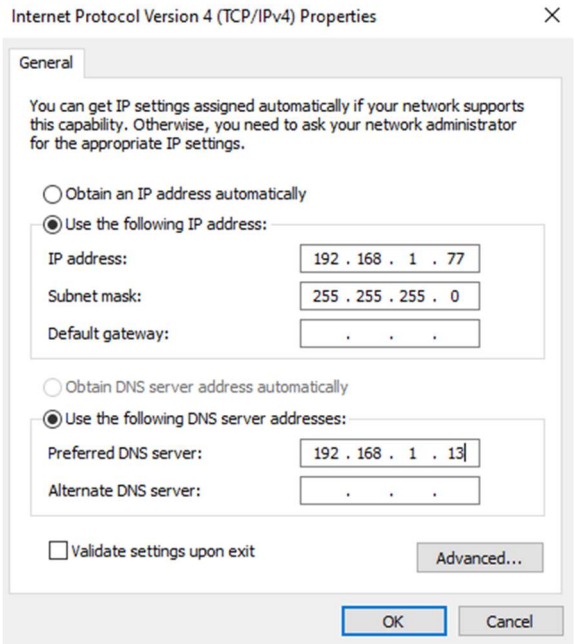




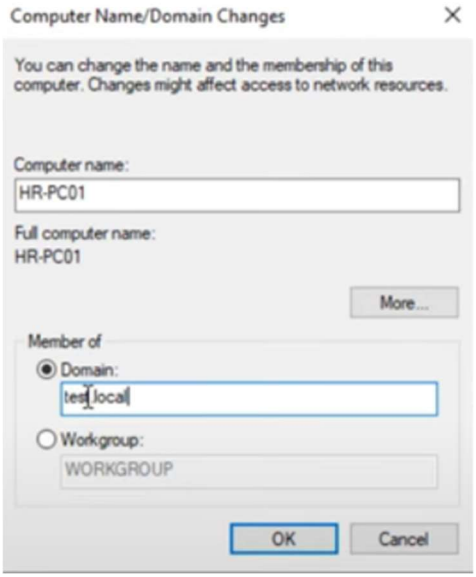
2.2-Before add active directory, you must edit time and add IP for win server and DNS 127.0.0.1 to see himself



2.3-In Win 10 you must edit time and add IP also but in different form

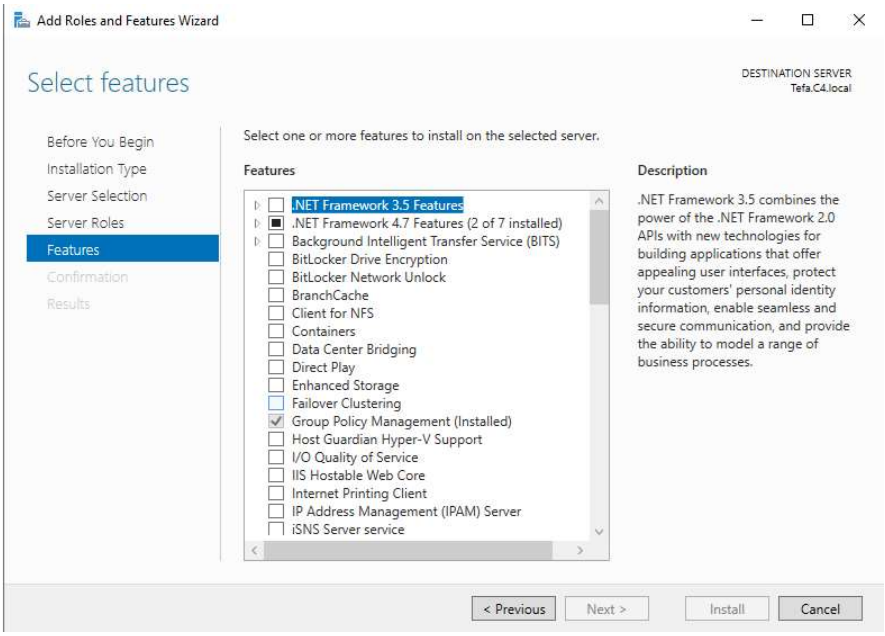


2.4-After this step , we will join to domain

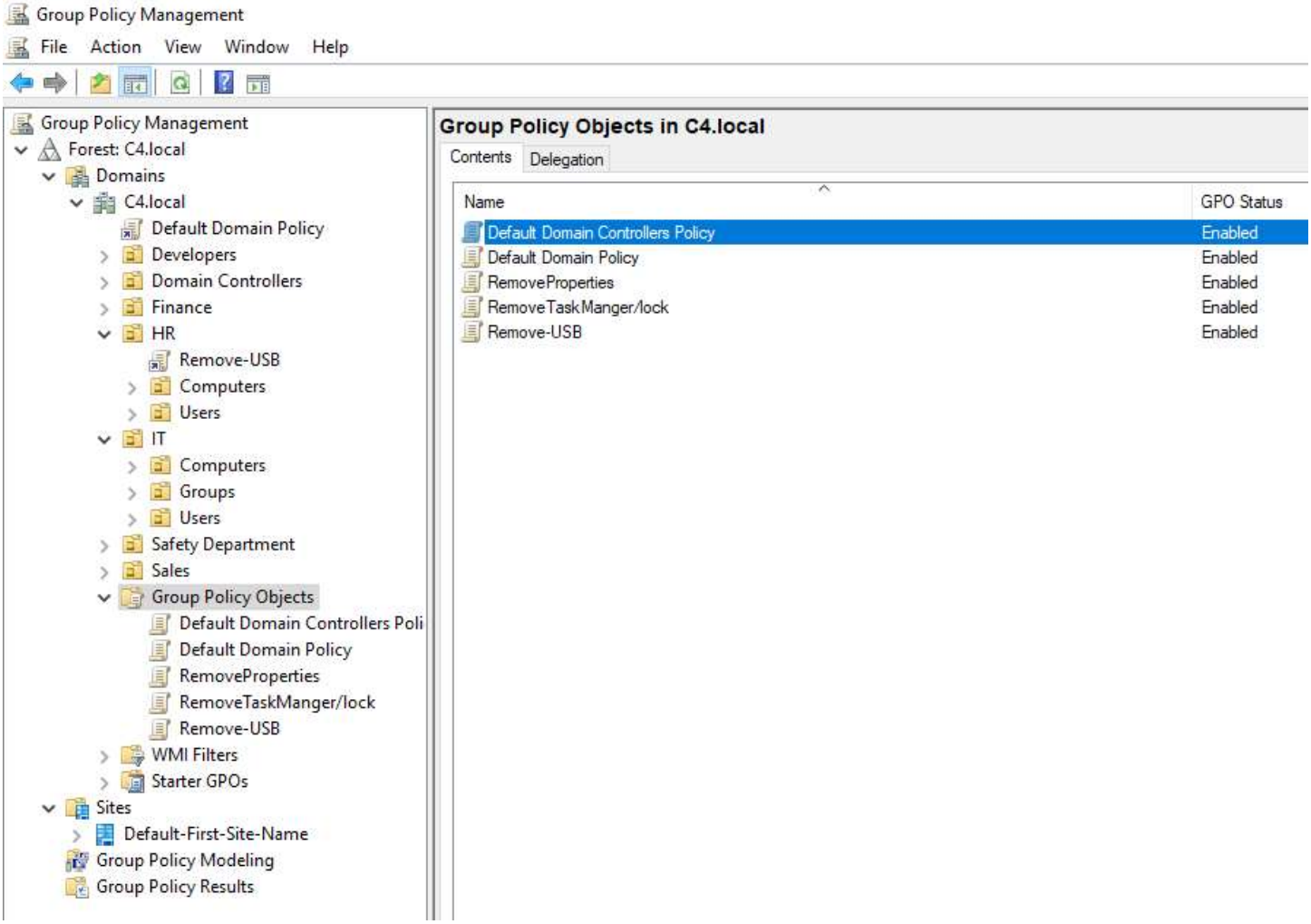


Then add Username,Password “Administrator”

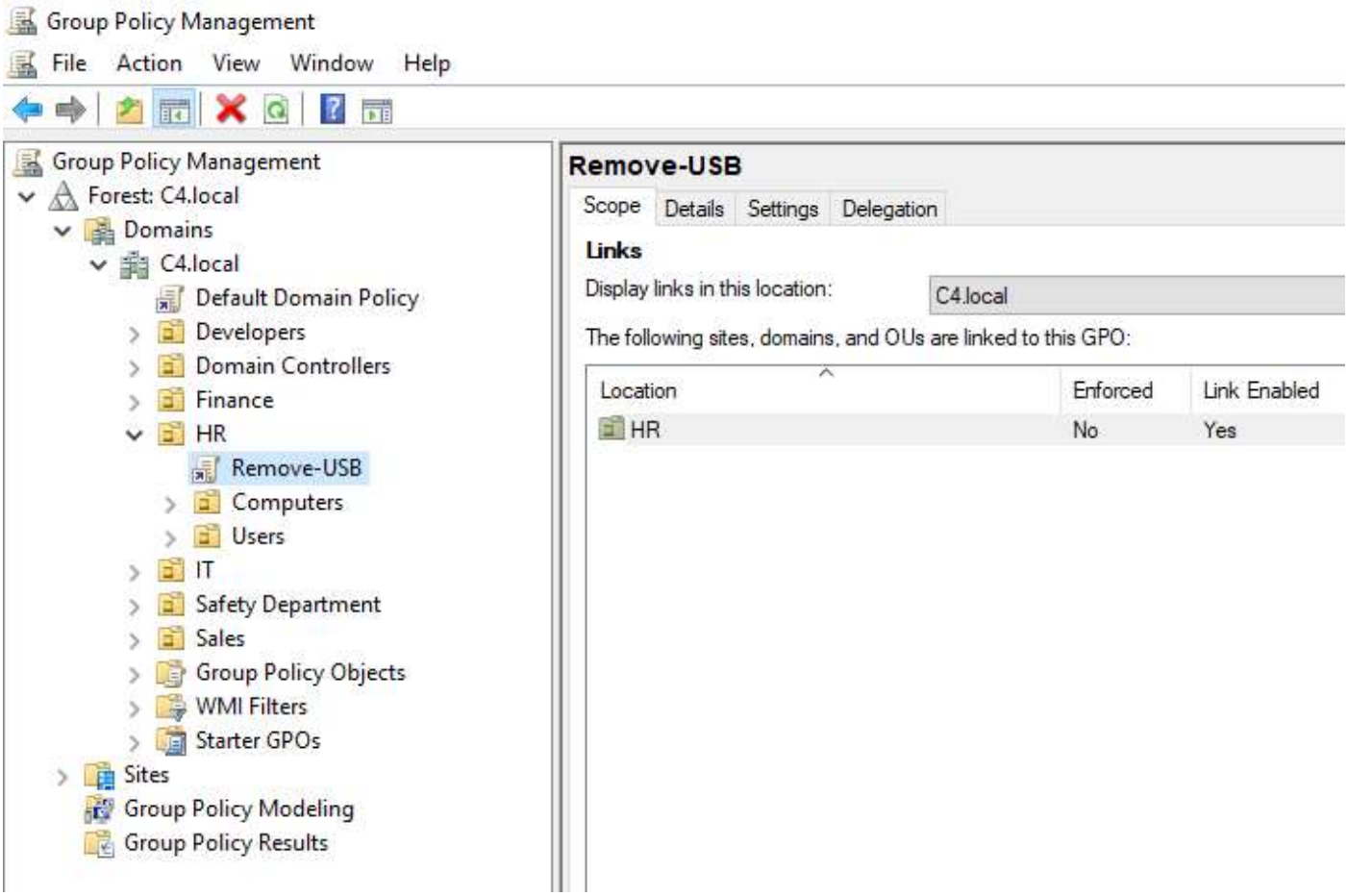
3-Install Group policy

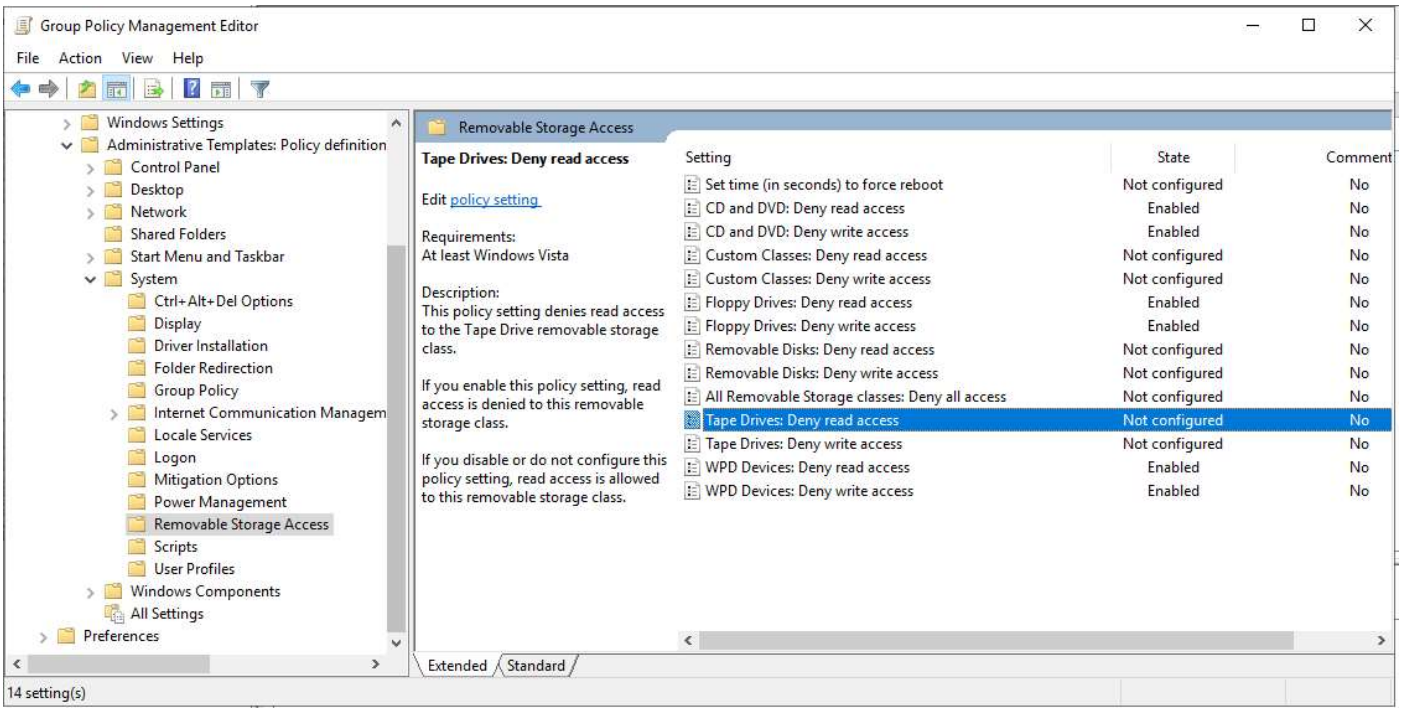


3.1-Add Policy on user in HR department

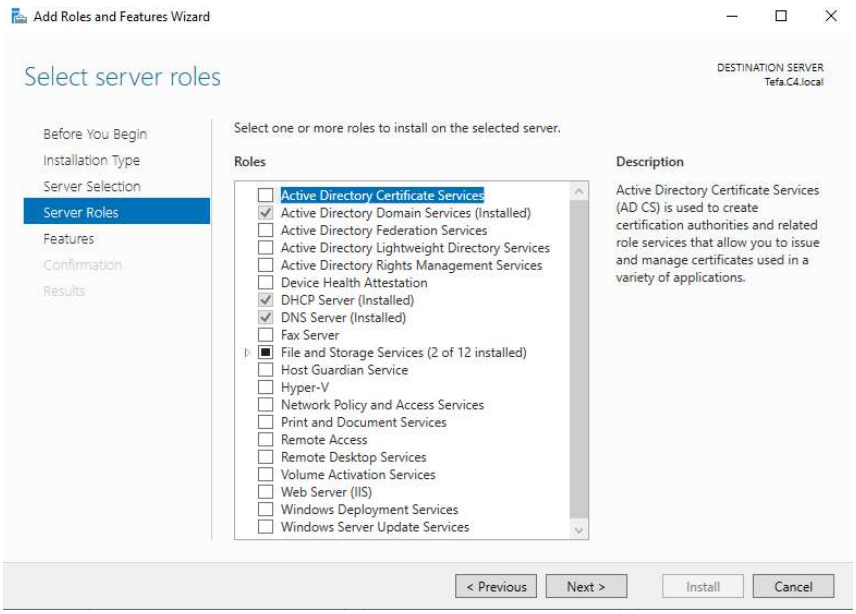


A policy has been applied to block a user's USB drive in the department because a virus could be transmitted from the user's flash drive, affecting the domain

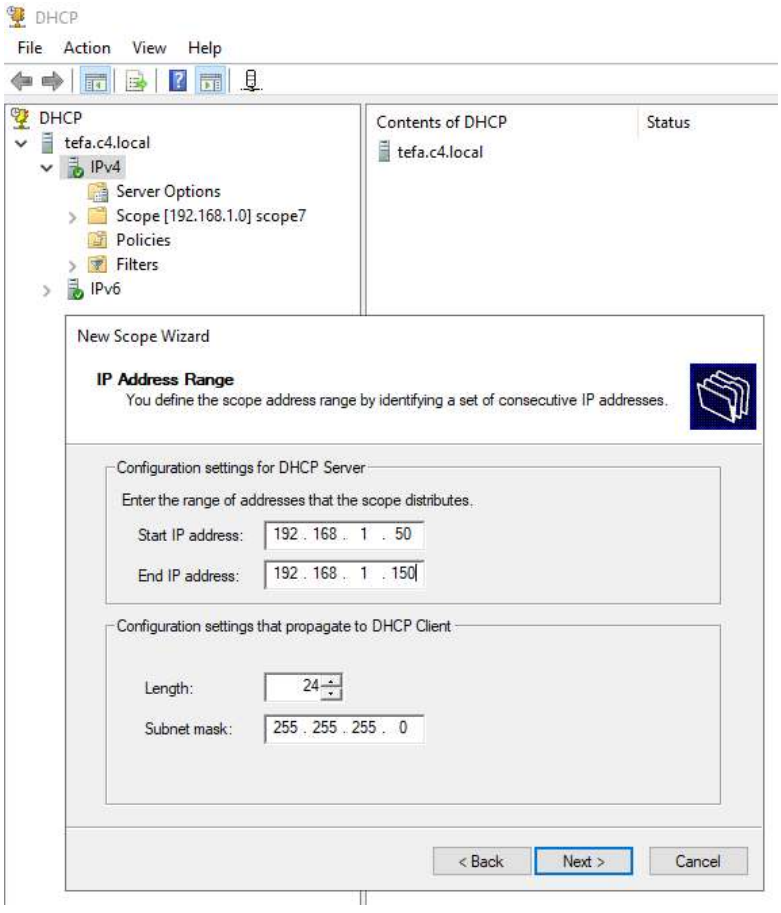




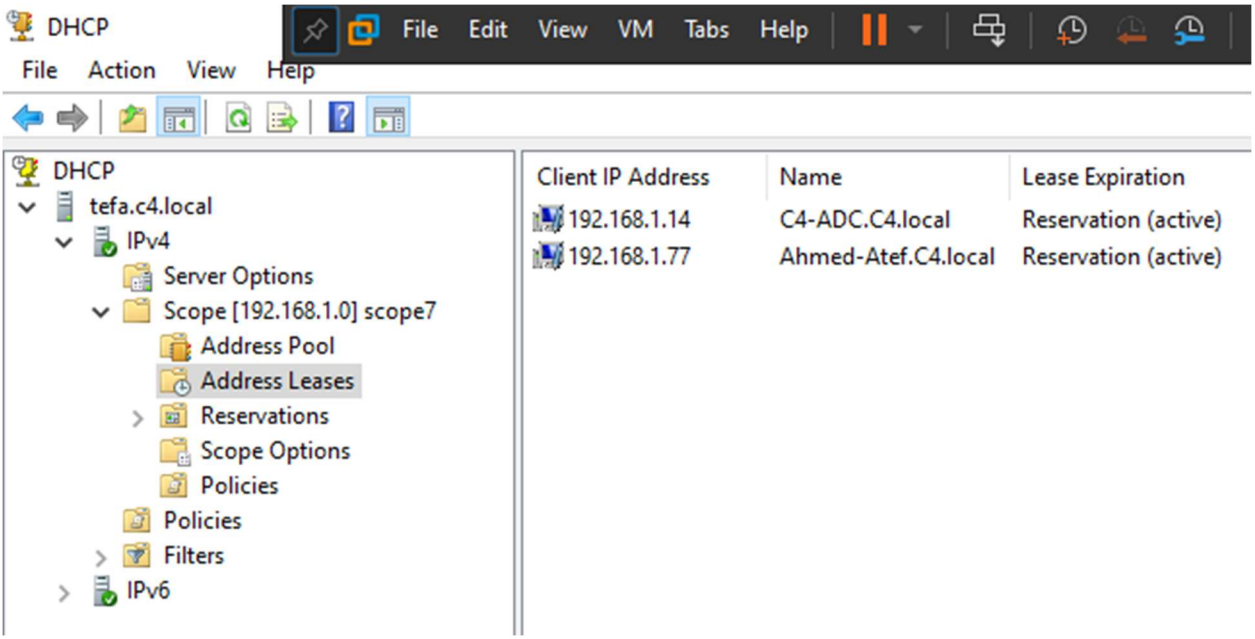
4-Add DHCP



4.1-Configuration DHCP



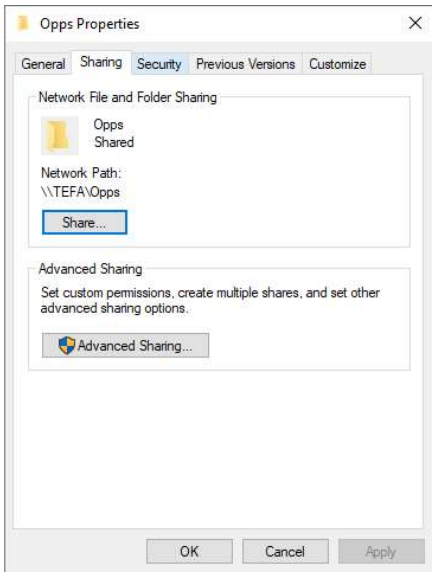
4.2-Active users on DHCP

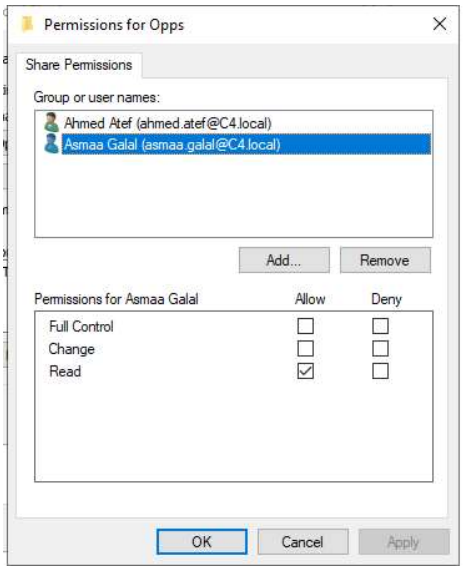


5-Share file

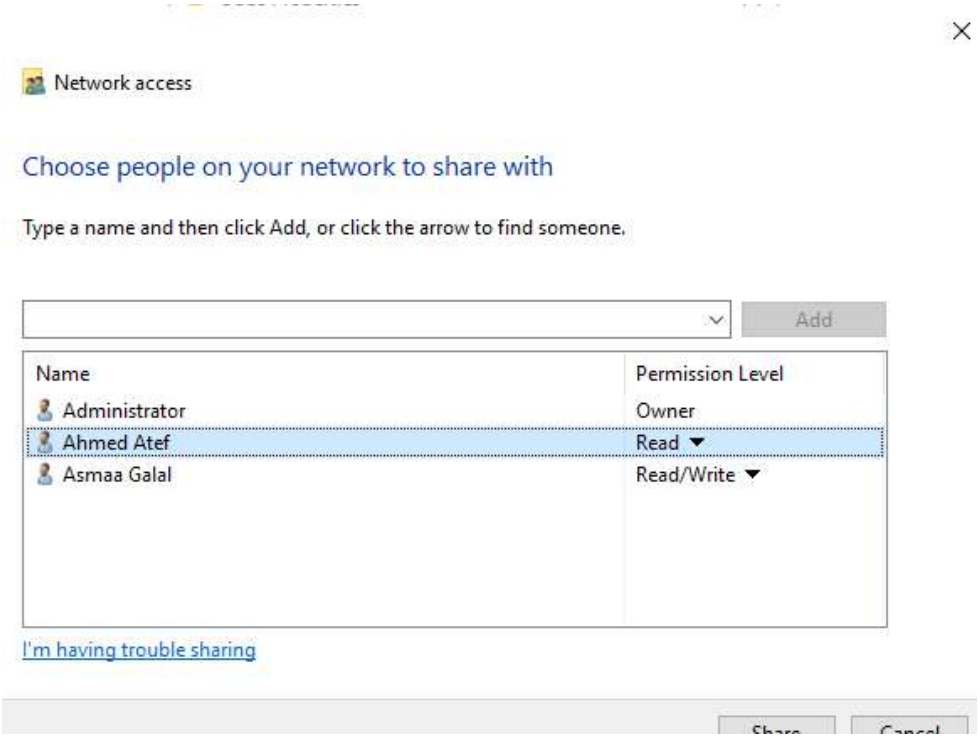
5.1-Share file from “Administrator” to other users

“TEFA” name of the server

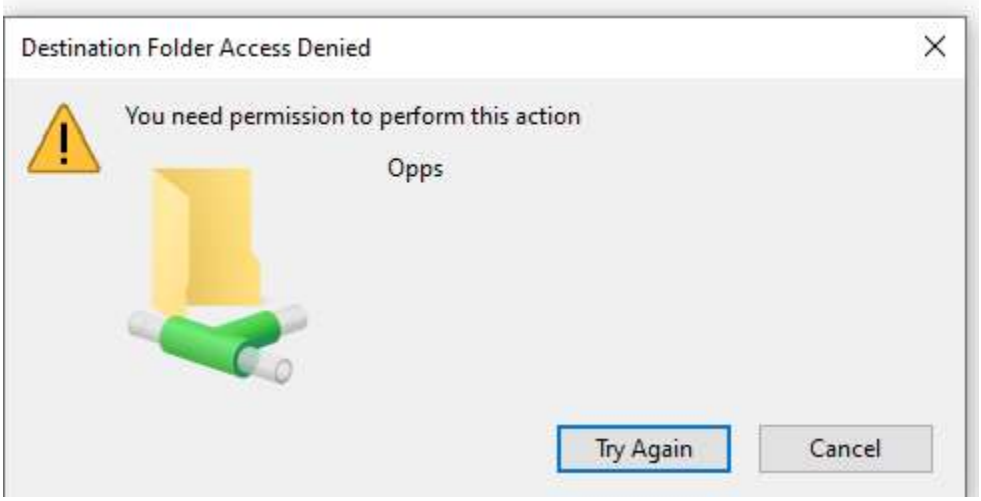




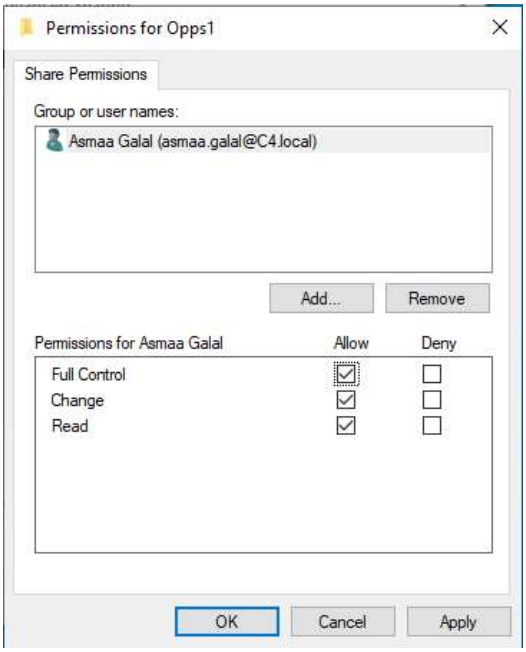
When give user “Ahmed” permission Read only

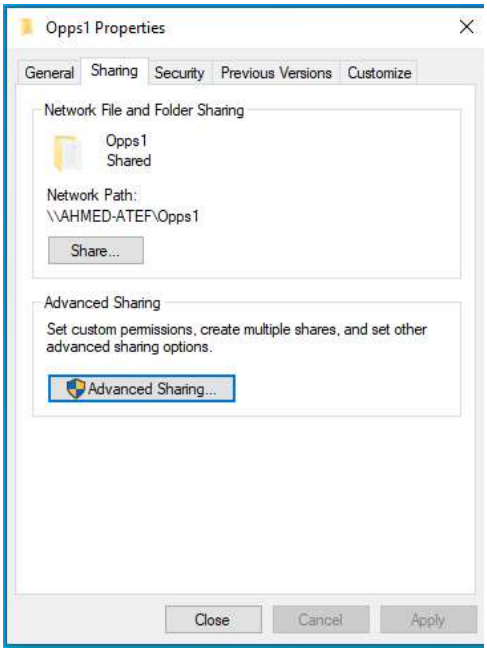


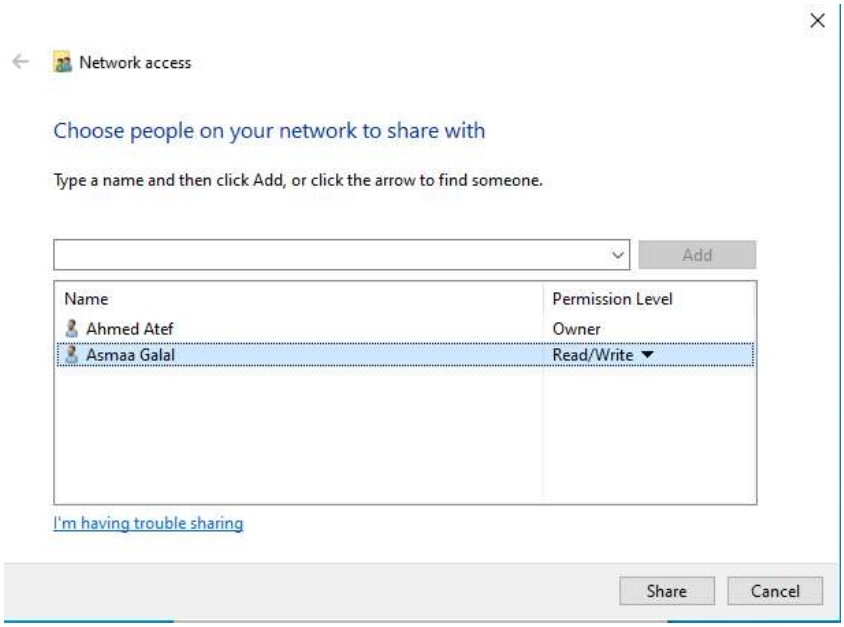
If Ahmed cannot add or modify anything inside the file

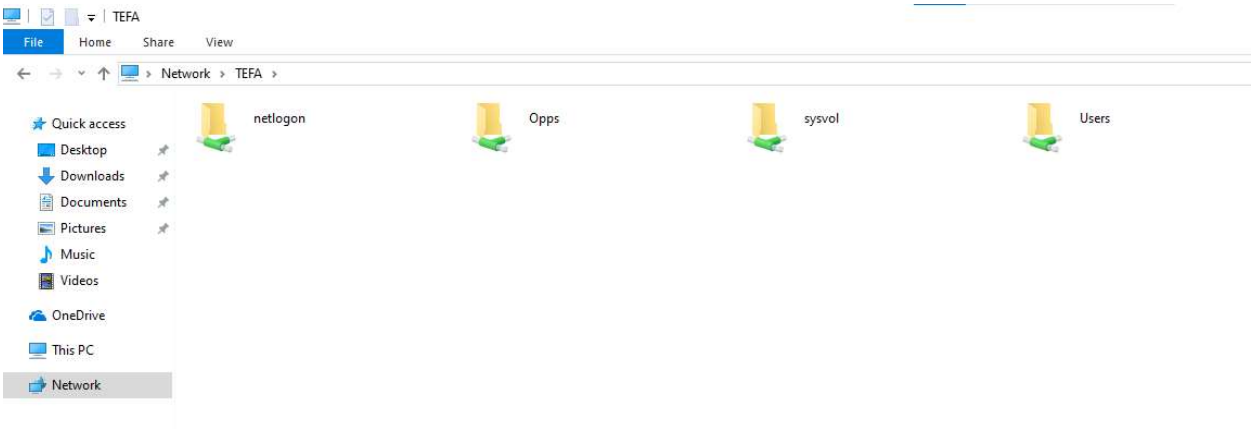


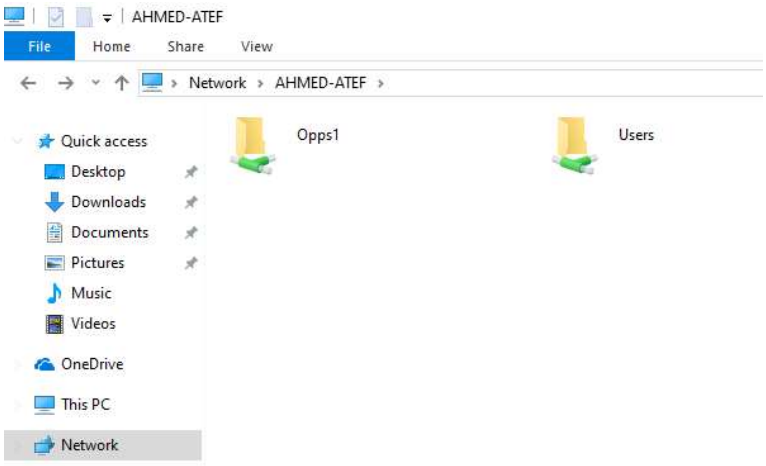
5.2-Share file from user to another user



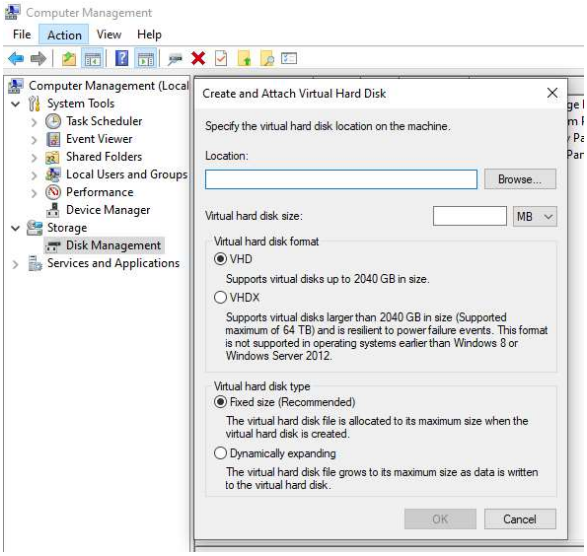








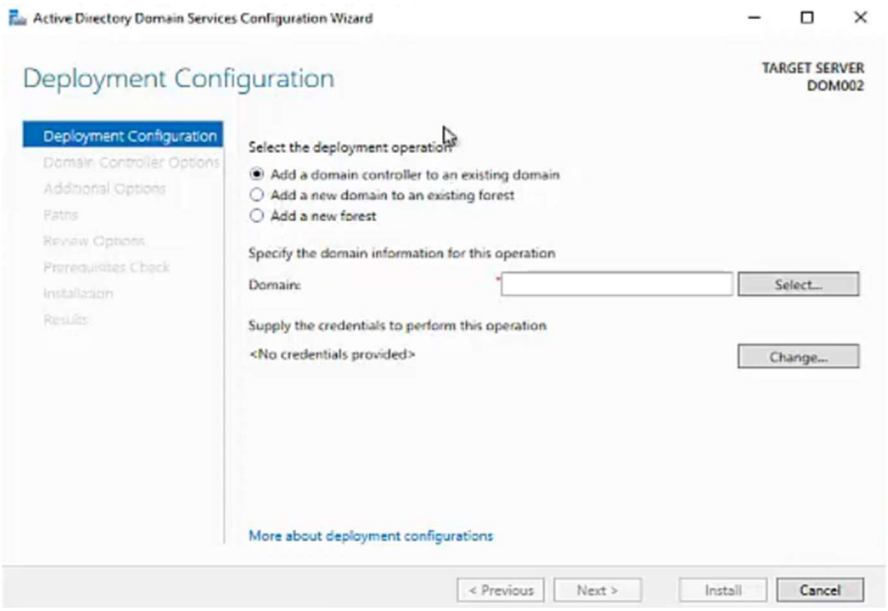
6-Create VHD

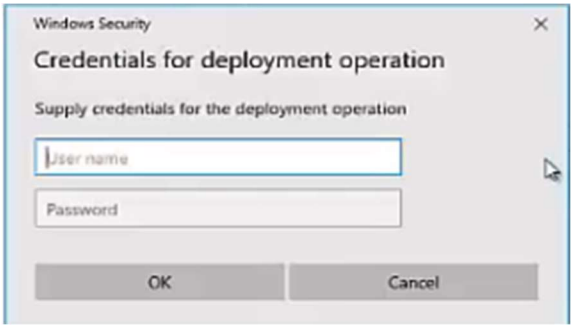


Then install VHD and give it a letter

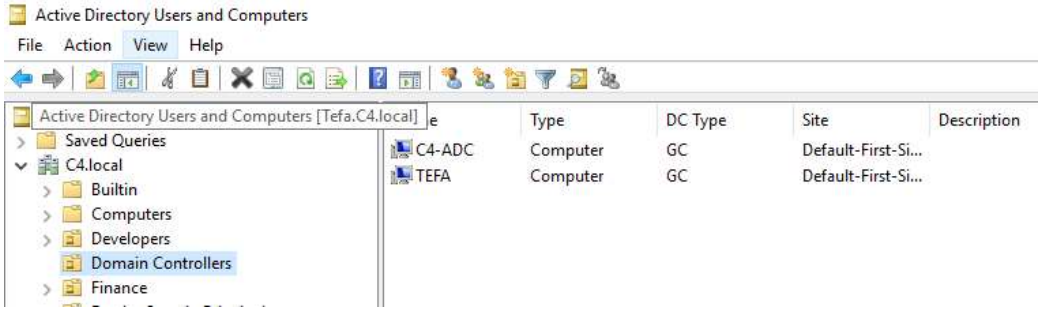
7-Create another Win Server for backup

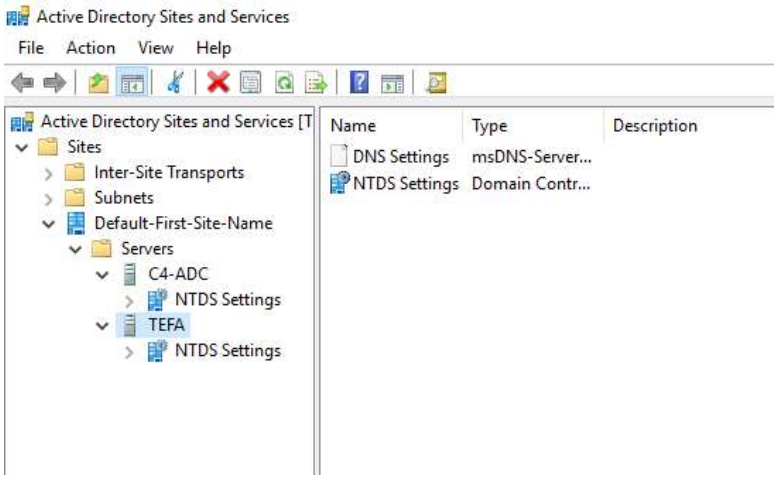
Then install active directory domain service on it, not choose new forest but add domain controller





After these steps a new server will be copy from old server

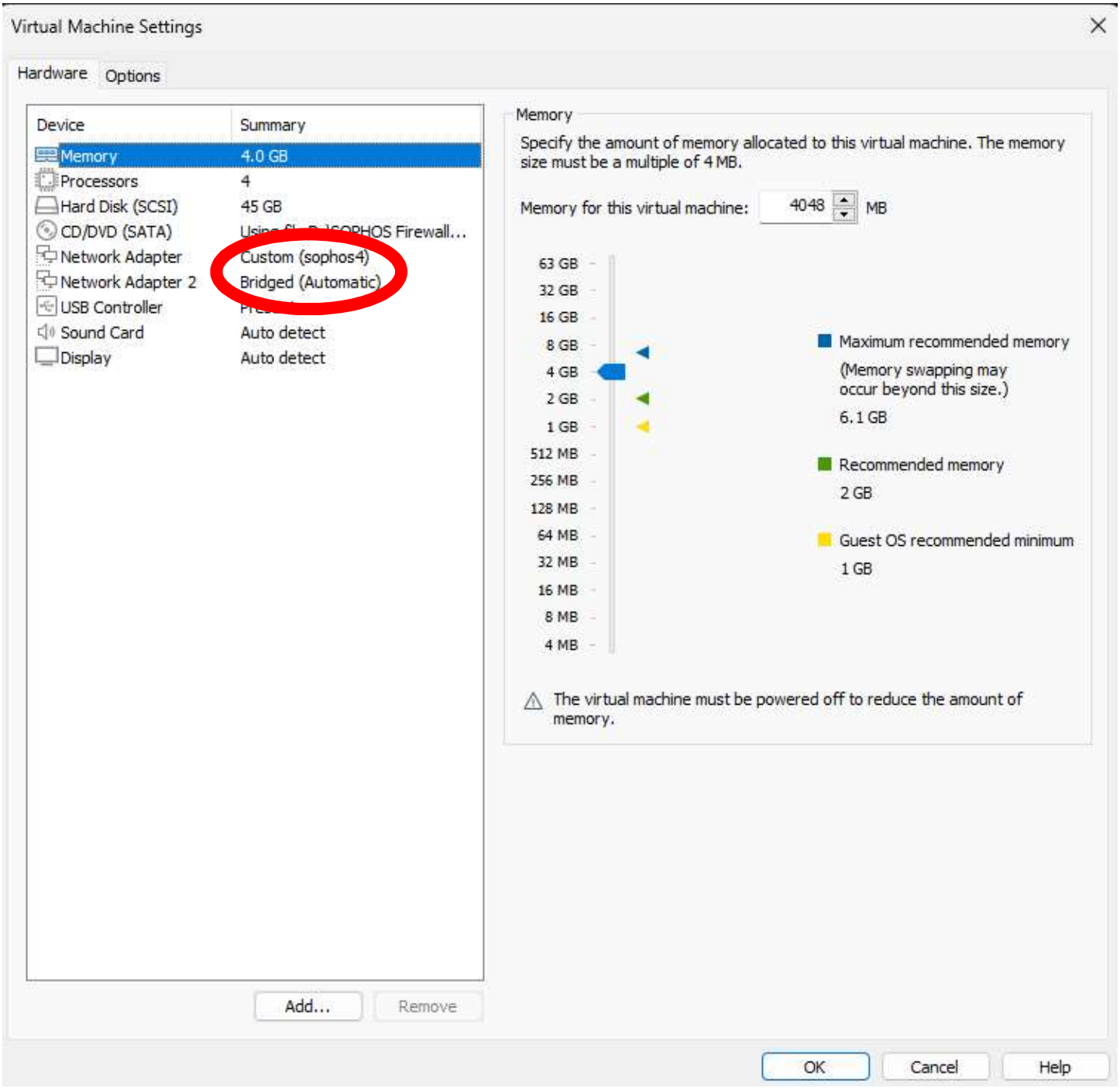



Active Directory Sites and Services
File
Action
View
Help
Active Directory Sites and Services [T
Sites
Inter-Site Transports
Subnets
Default-First-Site-Name
Servers
C4-ADC
NTDS Settings
TEFA
NTDS Settings
Name
Type
Description
DNS Settings
msDNS-Server...
NTDS Settings
Domain Contr...

Content

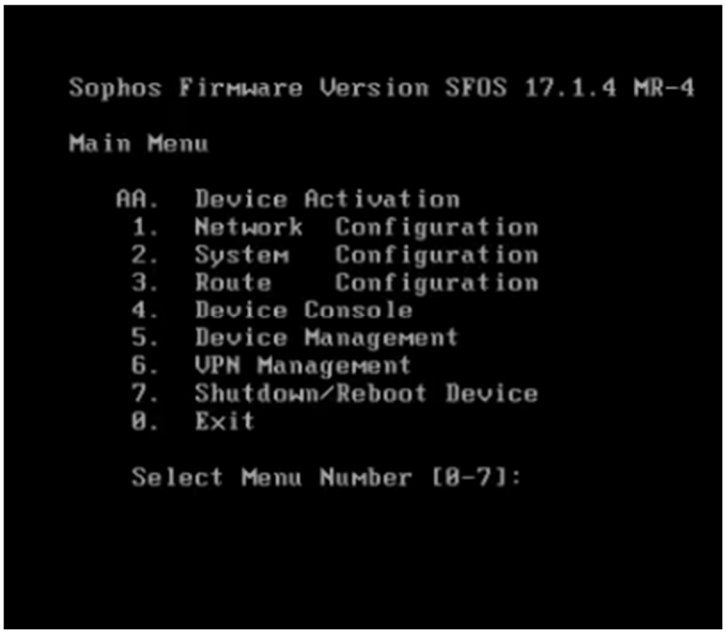
1- Install SOPHOS Firewall VMware

After choosing the ISO version of the firewall, there must be 2 network adapters in the VM, the first to be host and the second to be bridge, must be install this version on LINUX



NB: network called custom is host

After the installation window of Sophos will be in this form

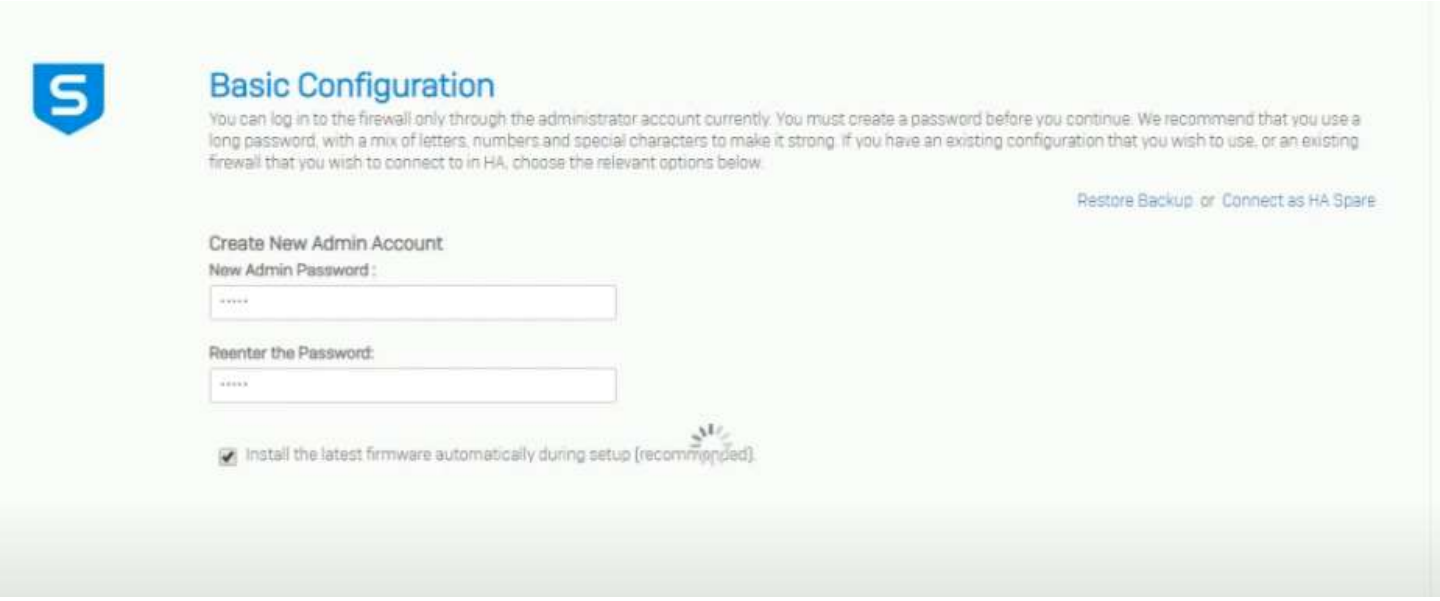


Choose 1 then 1, you will seen port 1 is LAN , port 2 is WAN ,if you want to change IP address for port 1 LAN do it , for me it became **192.168.1.15**

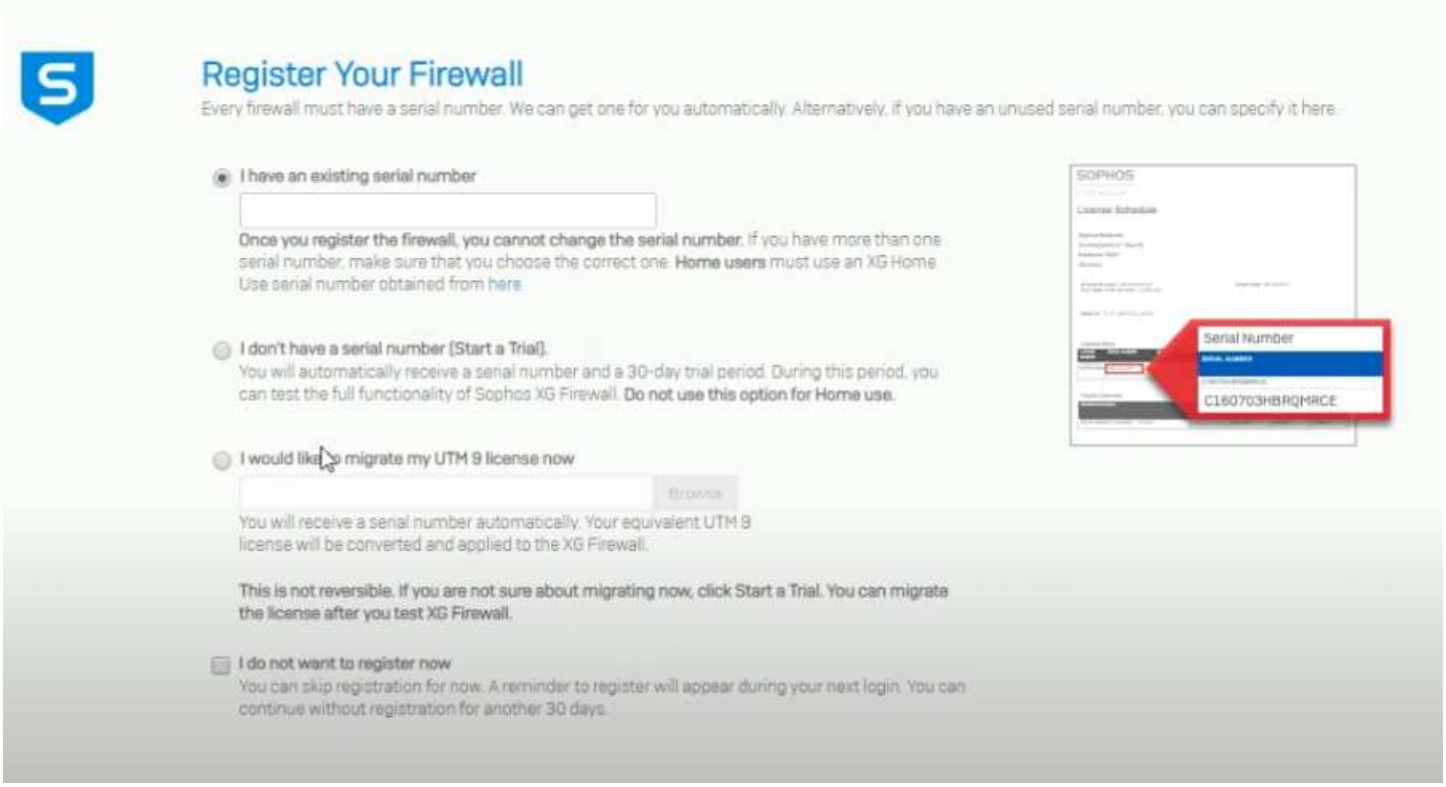
Open the browser write https://IP address:4444

Default password in SOPHOS is :admin ,after write https://IP address:4444

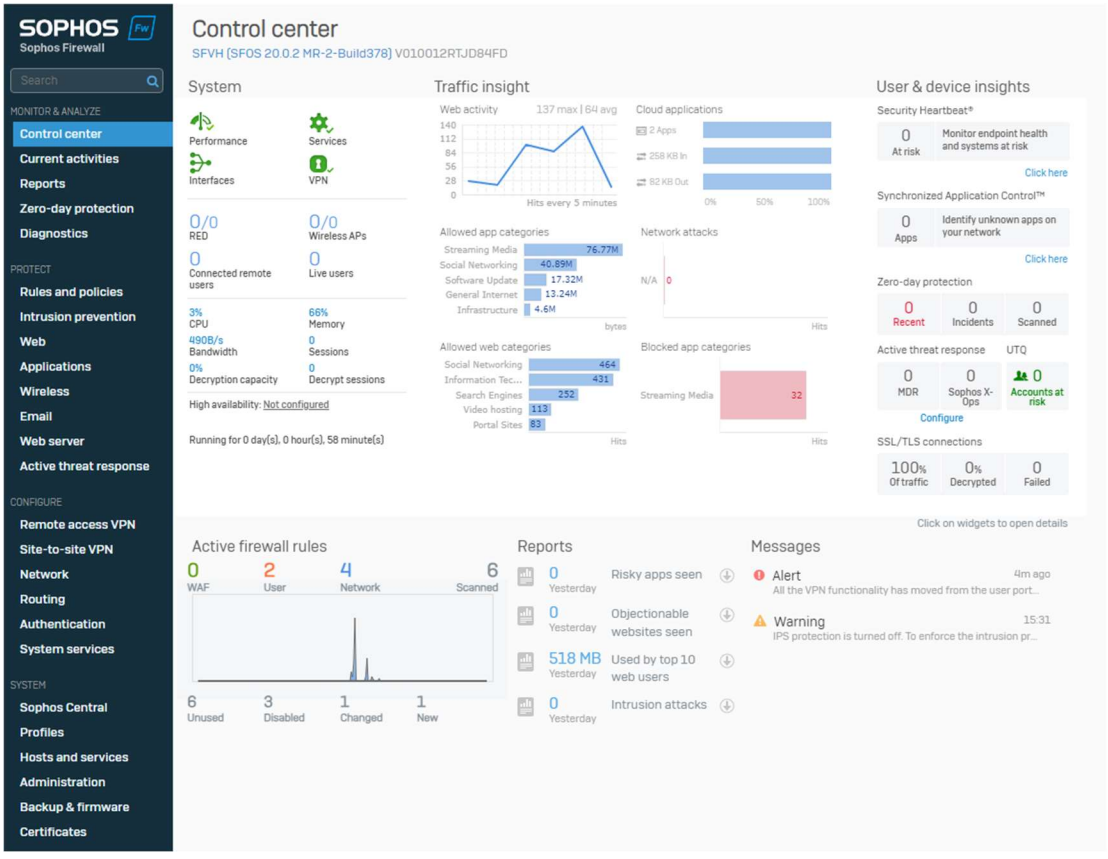
Will show that ,if you want to create new password



Serial number will send to you in mail after register in SOPHOS

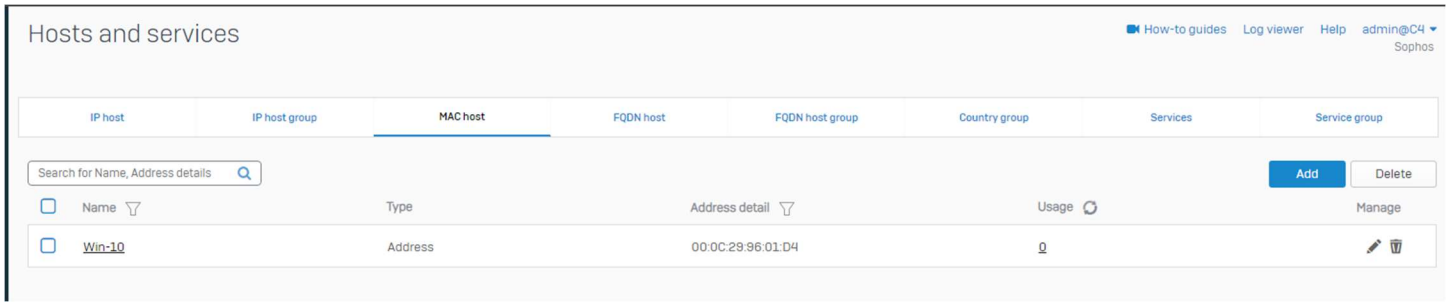


After all that will show the main window



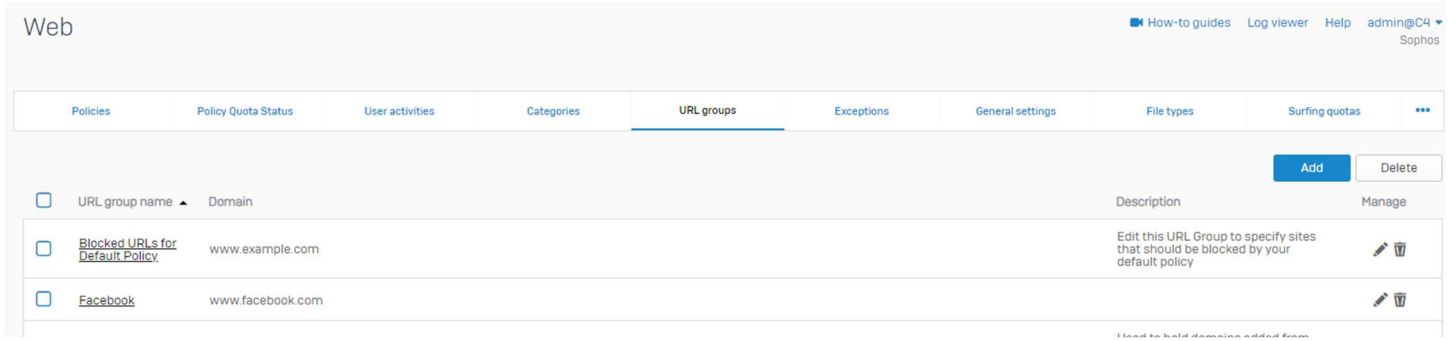
2- Add rule and policy on users

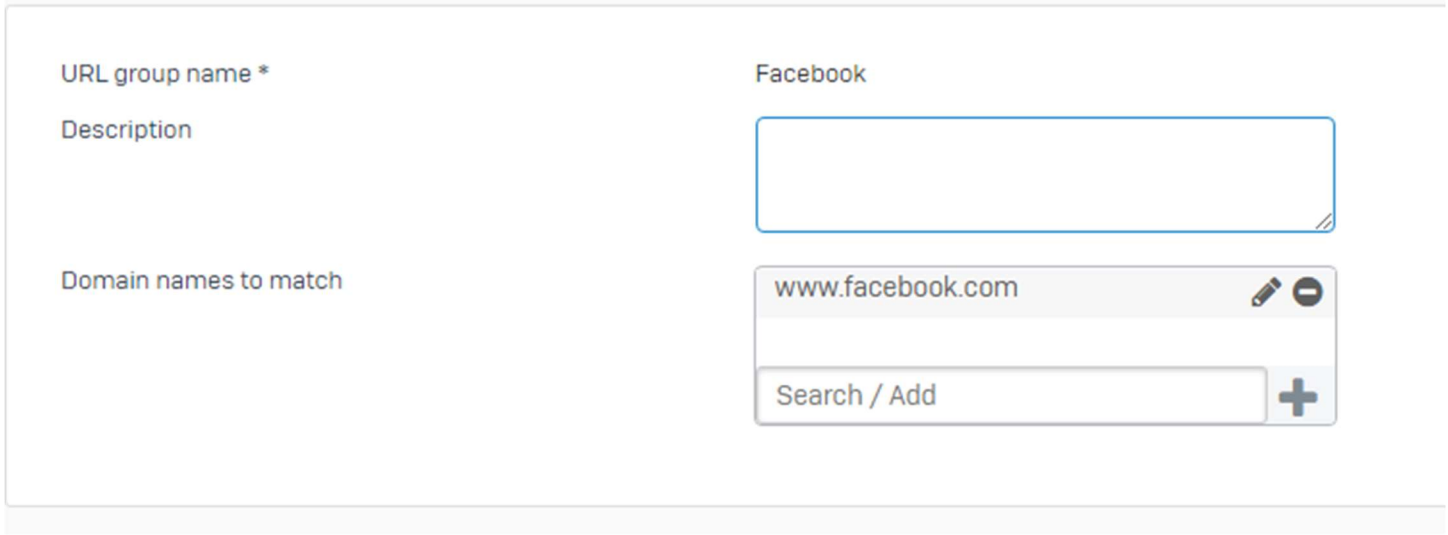
2.1-first create host ,there are types of ways to add host, for me MAC host better because MAC not changed



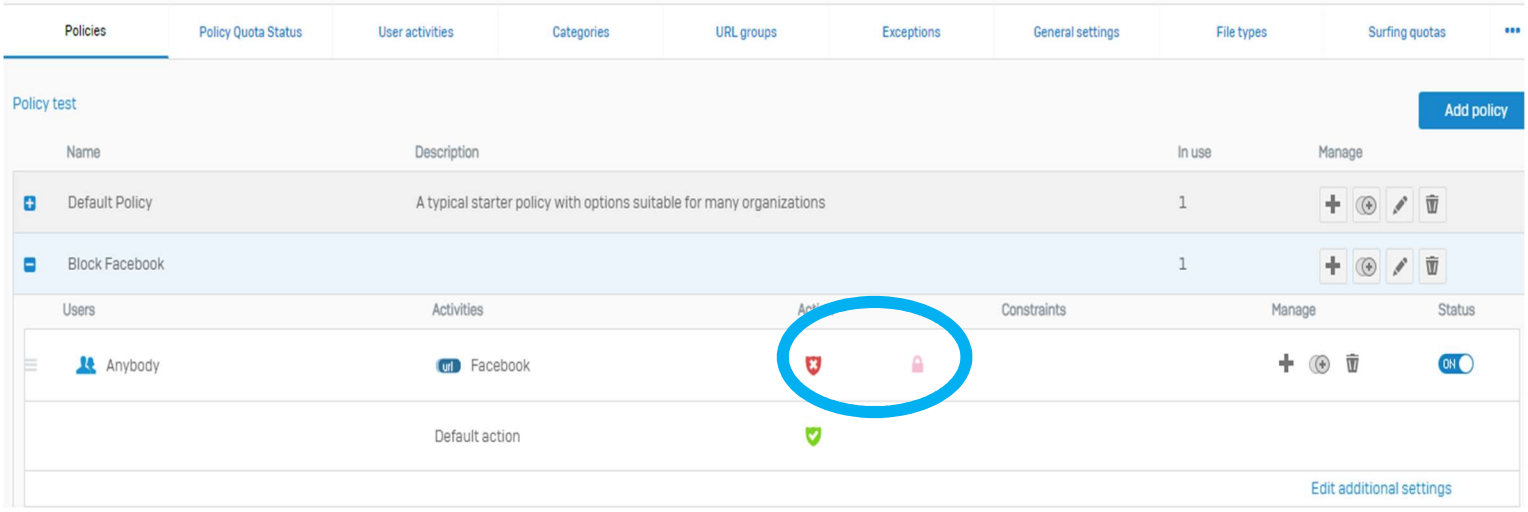
2.2-second we will add policy to block facebook

Will add URL first

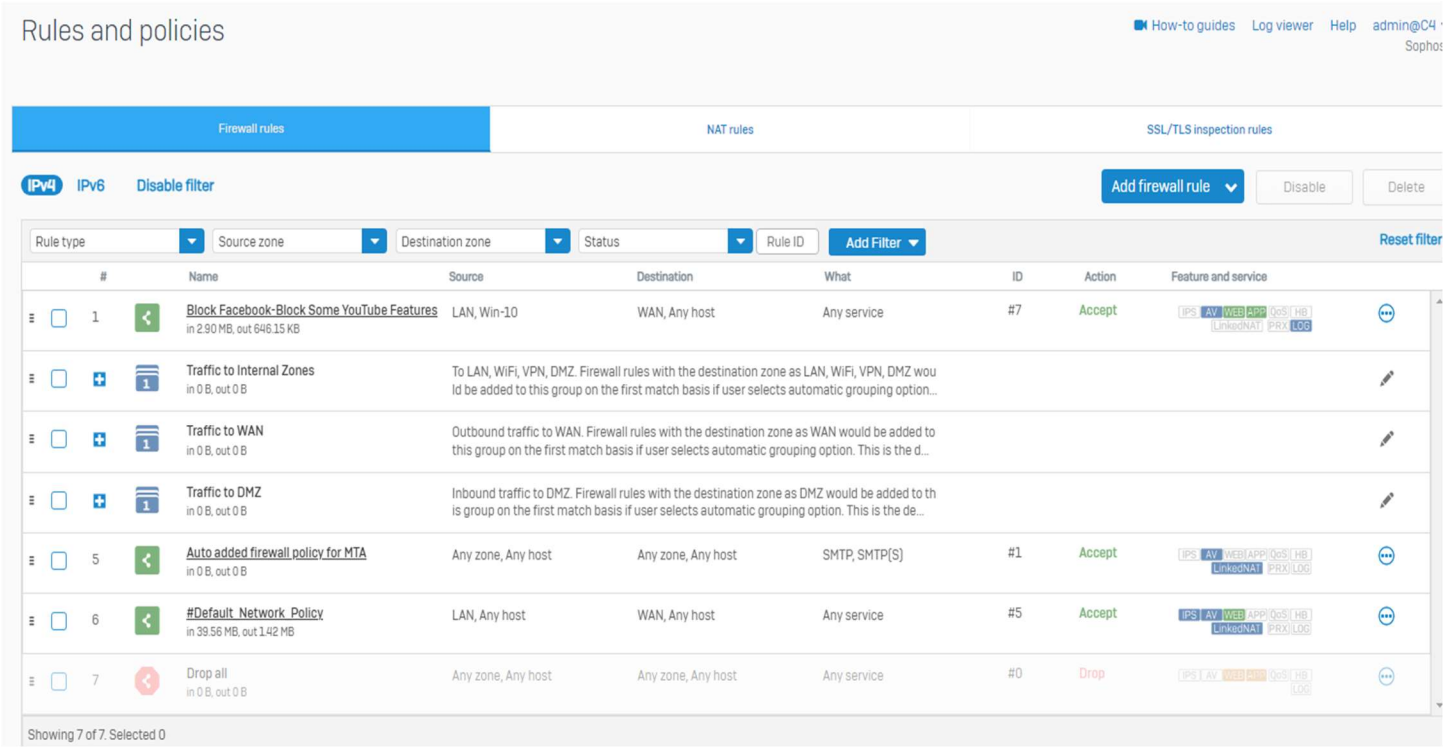


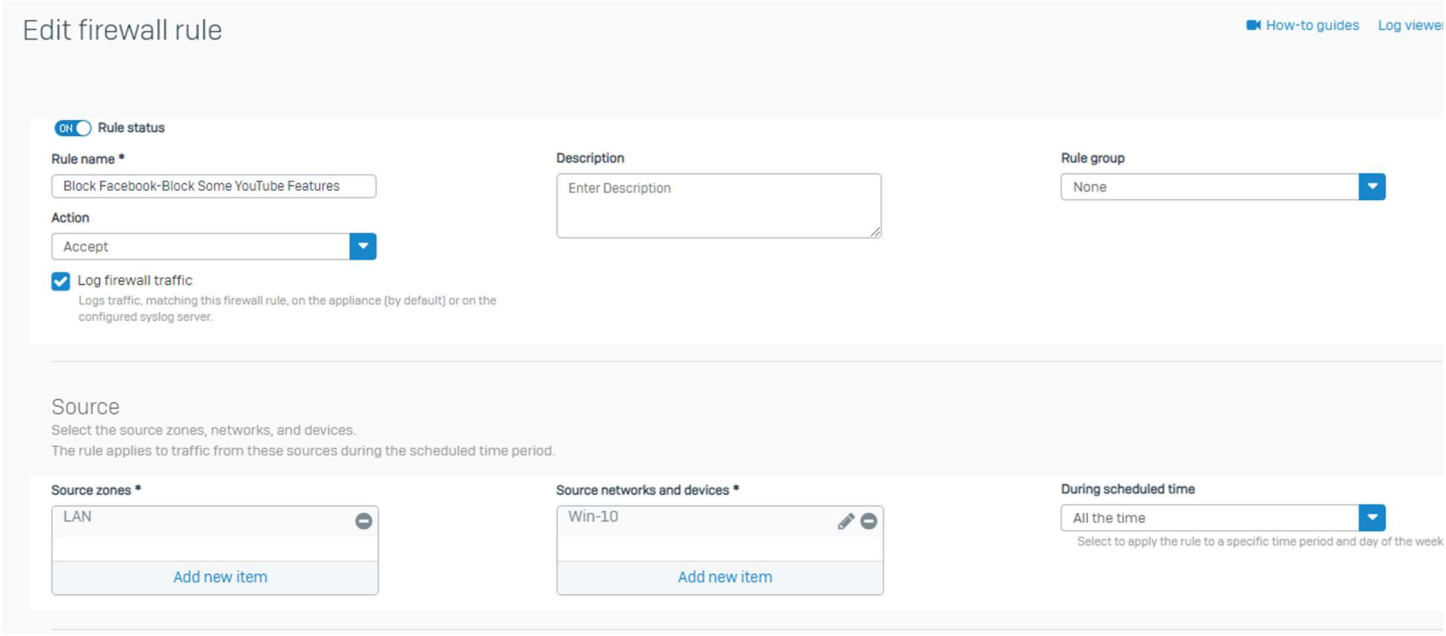


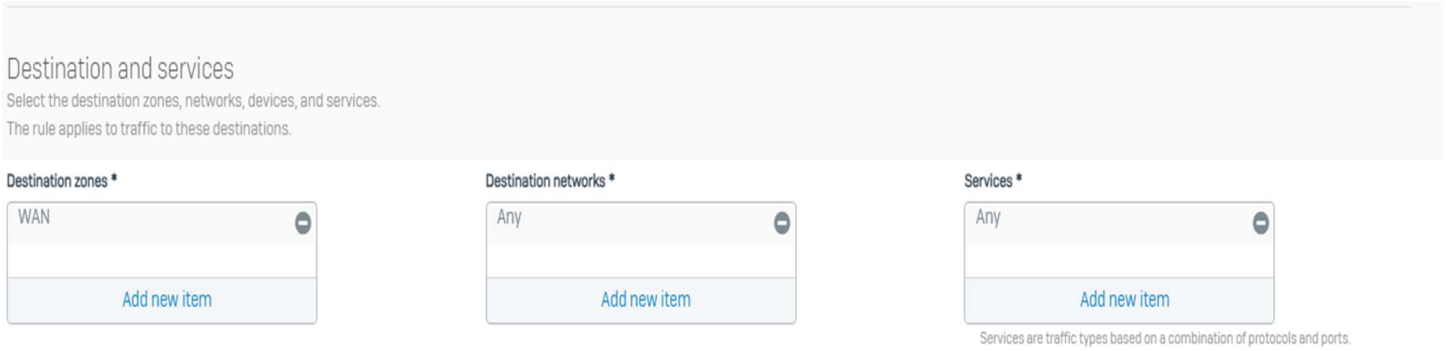
2.3-Then add policy, add in which URL and blocked

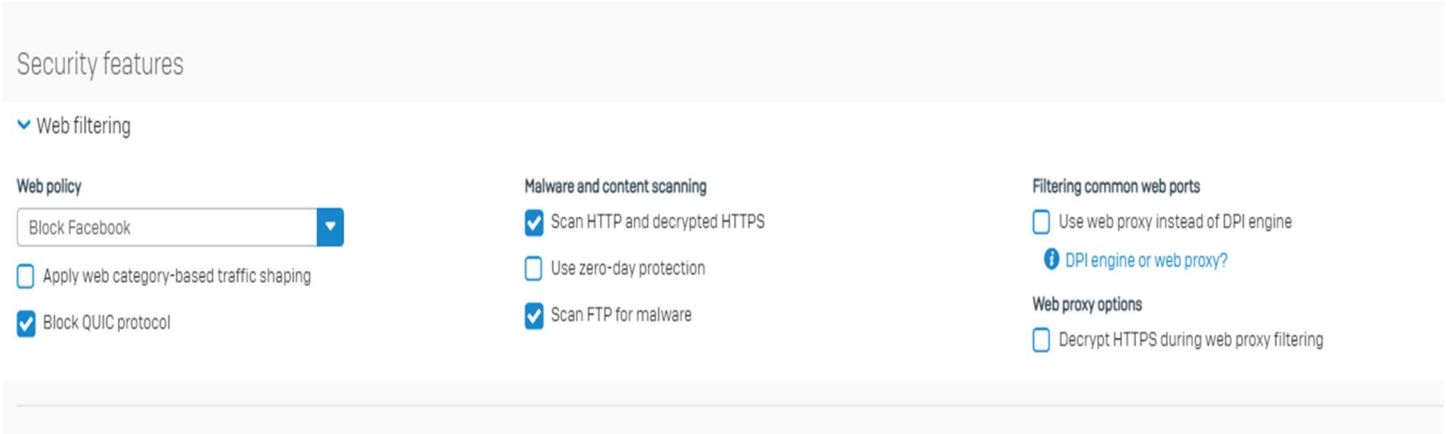


2.4 add rule







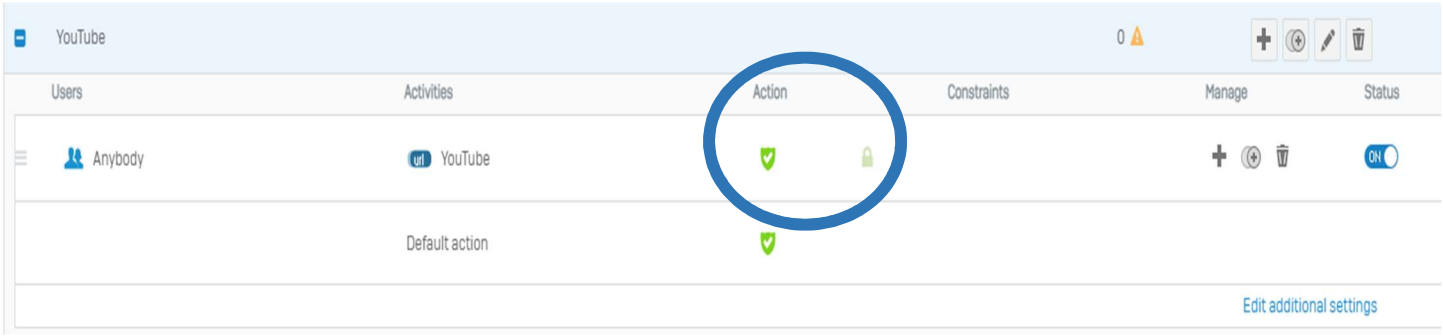


In these screens we must determine (source zone – source network-destination zone-destination networks) then add web policy then save

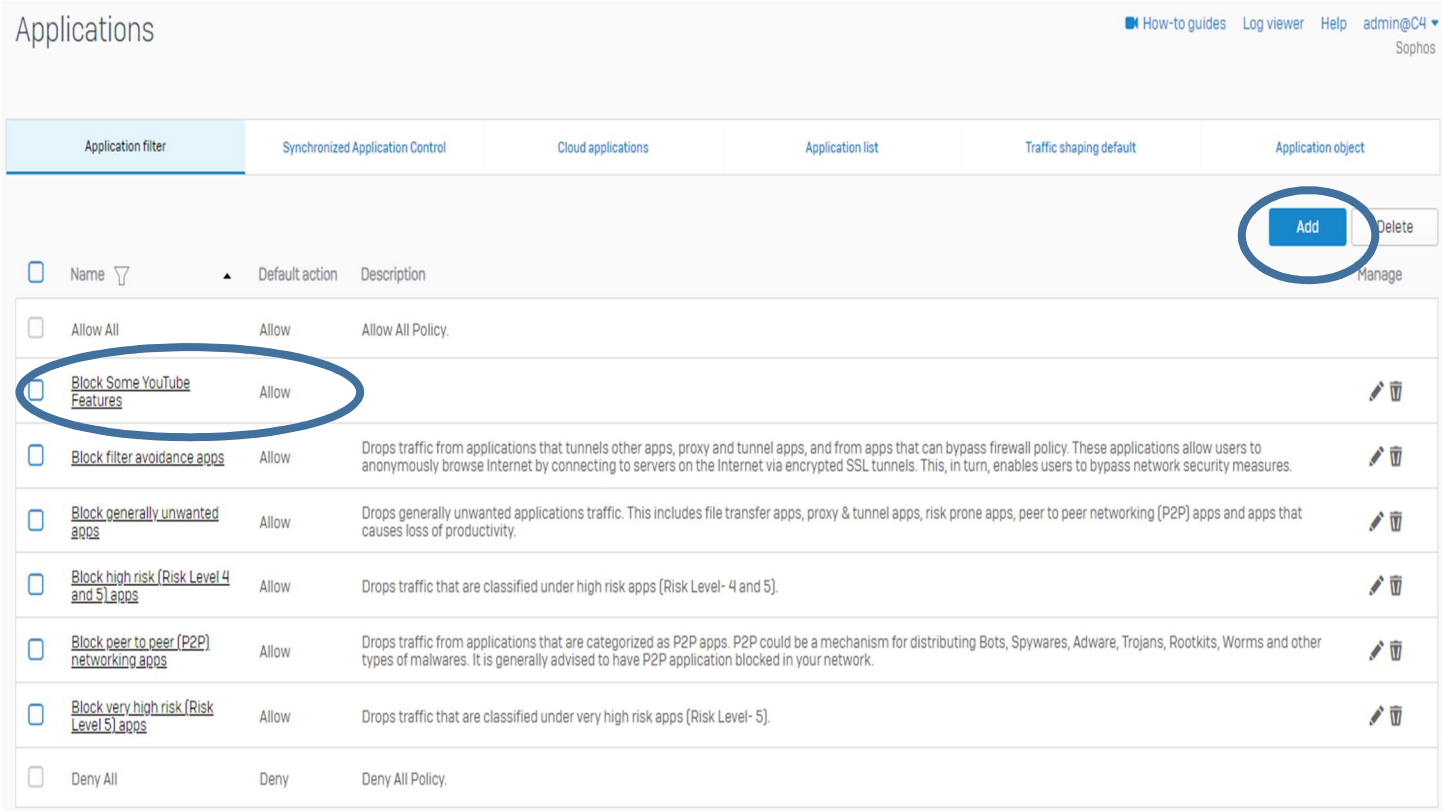
4- Web filter and applications filter

We will close some features on a specific site, for example (YOUTUBE)

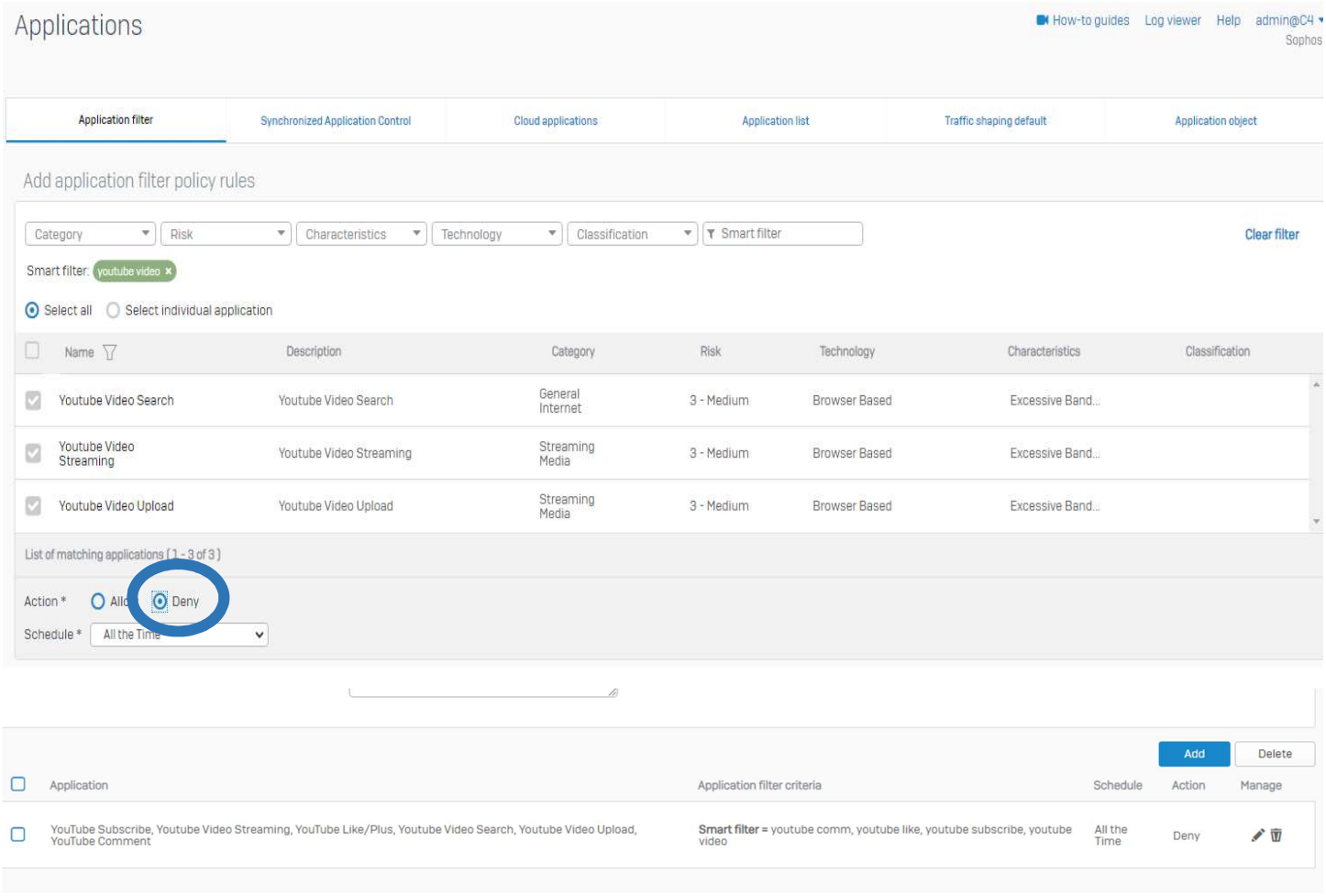
We will do all the steps that happened in #3, But we won't block it



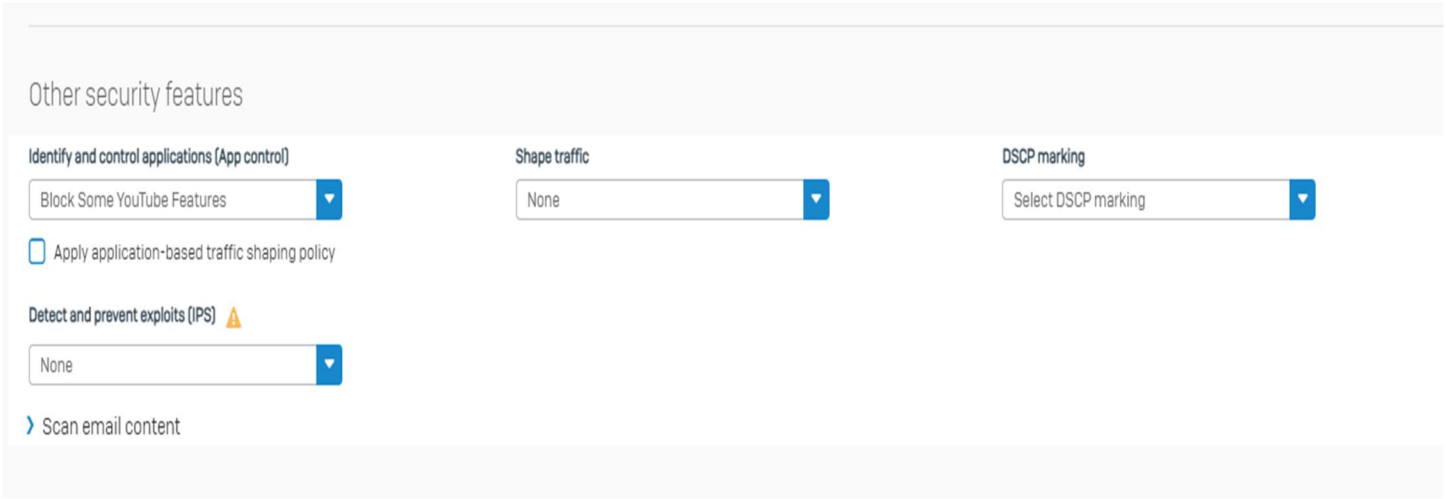
Then will do block for some features in youtube , move to applications



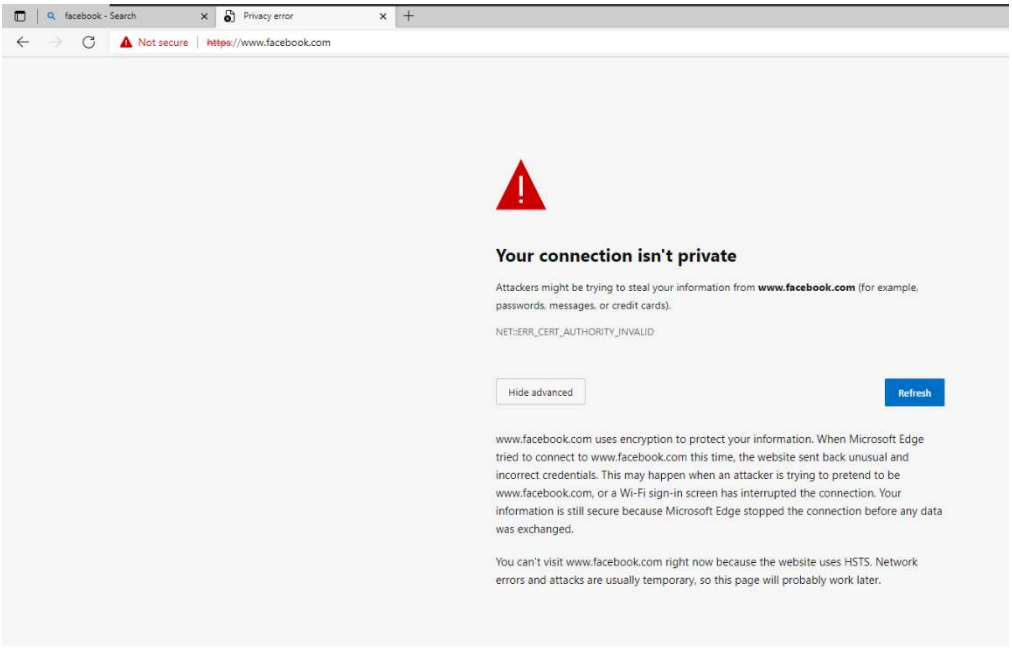
We will add some features and don't forget to deny them as (Video playback)

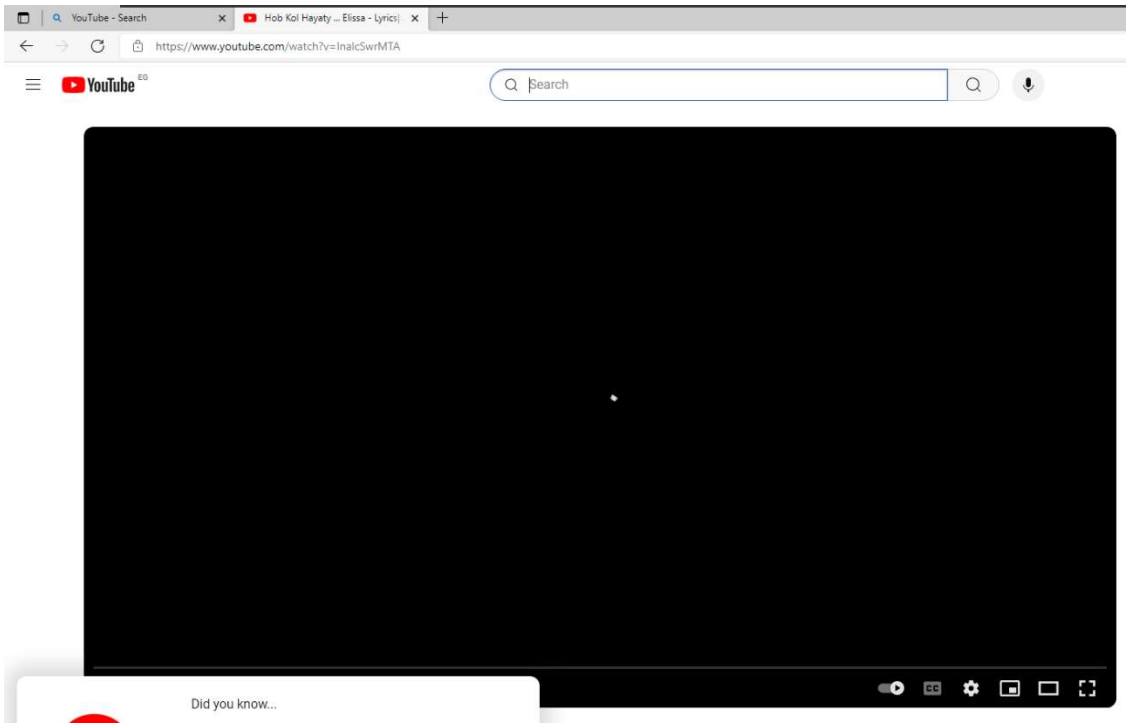


Then move to rules and polices to add it



Then move to user lets try this



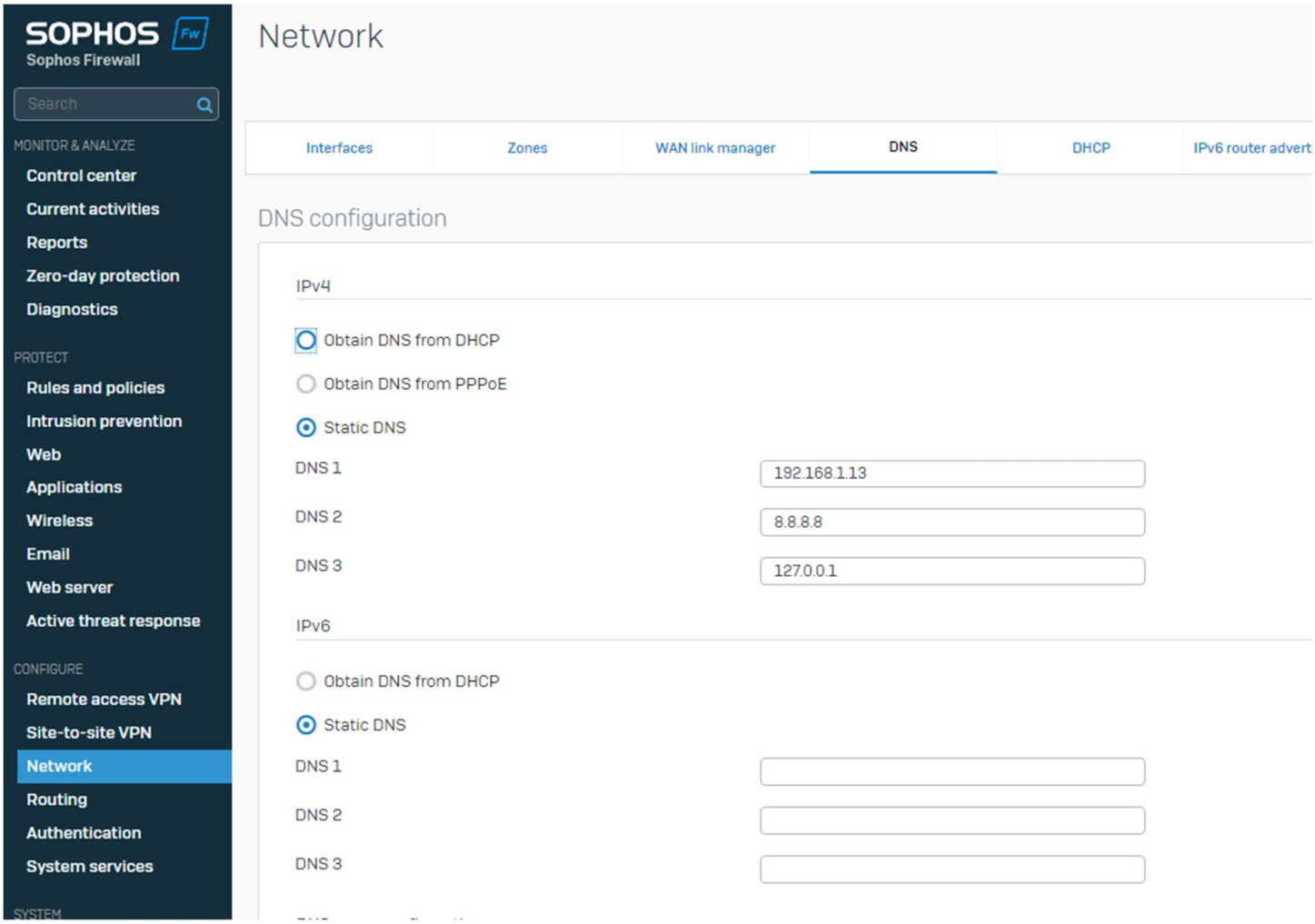


In this way it was applied rules and polices

4- Configure DNS and DHCP

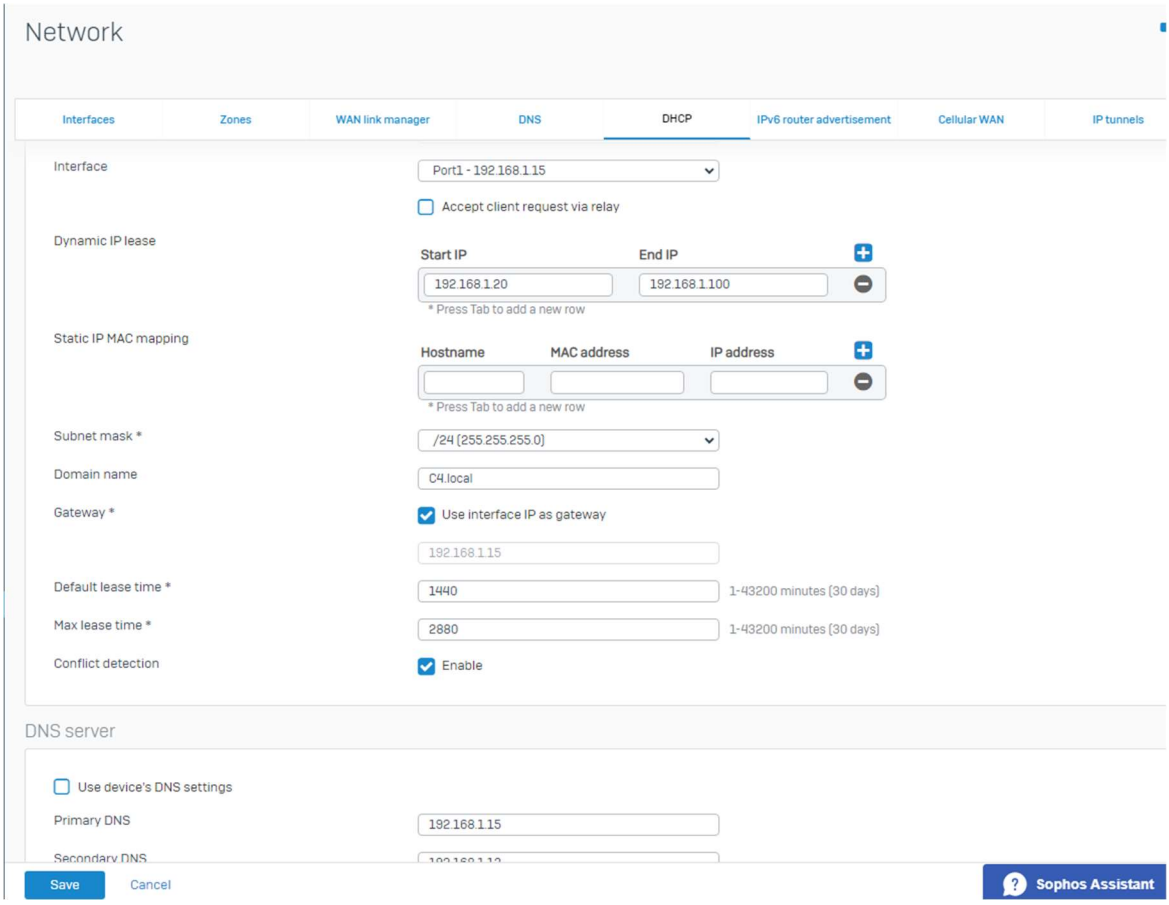
In the previous steps, I set the IP address as static, not dynamic, and also the gateway

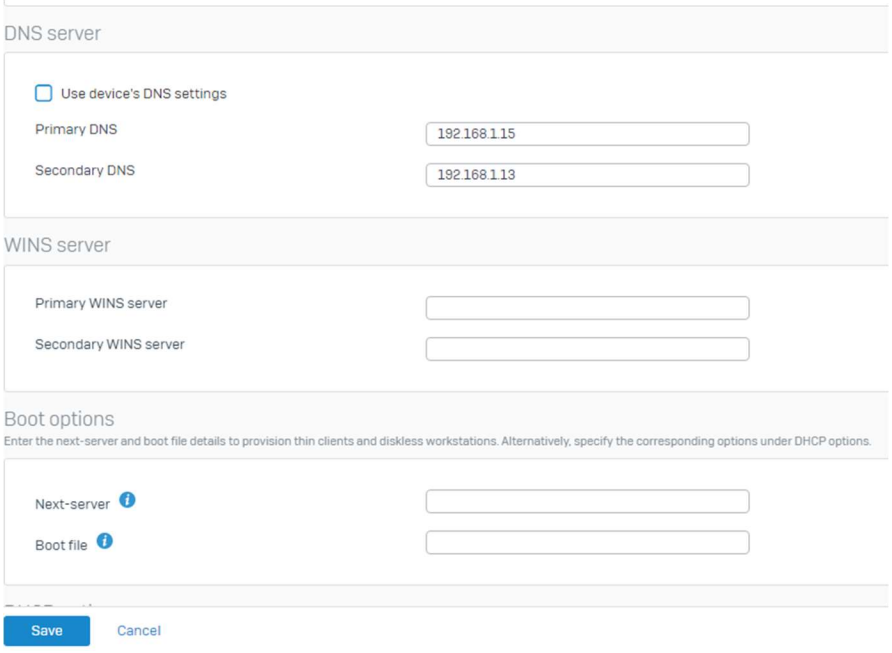
Now let's Configure DNS and DHCP



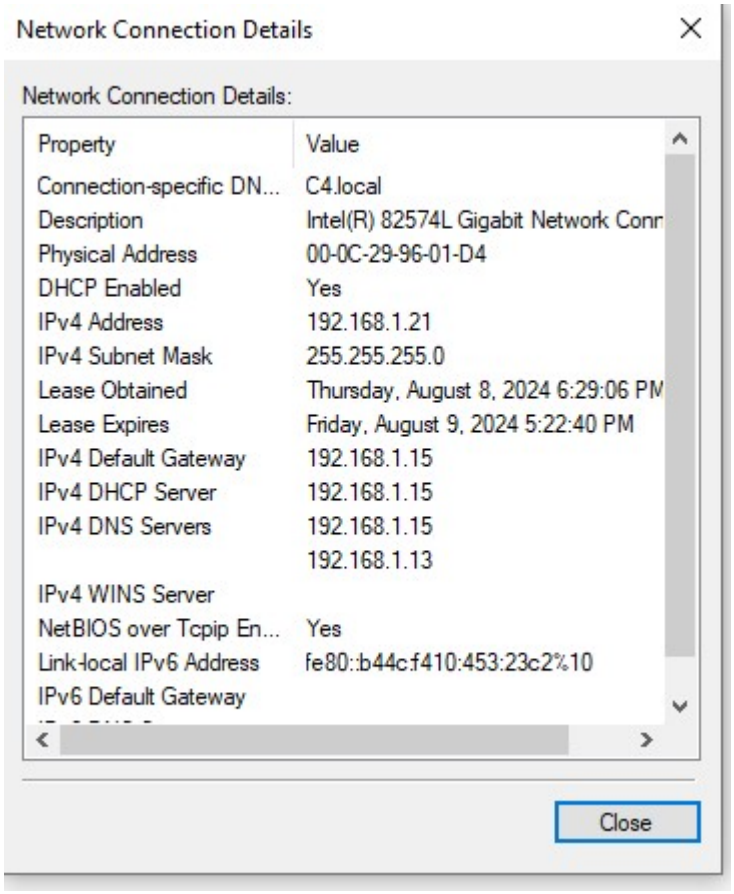
In this screen DNS-1 special for WIN Server IP, DNS-2 for Global , DNS-2 for loopback

DHCP


Network
Interfaces
Zones
WAN link manager
DNS
DHCP
IPv6 router advertisement
Cellular WAN
IP tunnels
Interface
Port1 - 192.168.1.15
Accept client request via relay
Dynamic IP lease
Start IP
End IP
192.168.1.20
192.168.1.100
* Press Tab to add a new row
Static IP MAC mapping
Hostname
MAC address
IP address
* Press Tab to add a new row
Subnet mask *
/24 (255.255.255.0)
Domain name
C4.local
Gateway *
Use interface IP as gateway
192.168.1.15
Default lease time *
1440
1-43200 minutes (30 days)
Max lease time *
2880
1-43200 minutes (30 days)
Conflict detection
Enable
DNS server
Use device's DNS settings
Primary DNS
192.168.1.15
Secondary DNS
Save
Cancel
Sophos Assistant


DNS server
Use device's DNS settings
Primary DNS
192.168.1.15
Secondary DNS
192.168.1.13
WINS server
Primary WINS server
Secondary WINS server
Boot options
Enter the next-server and boot file details to provision thin clients and diskless workstations. Alternatively, specify the corresponding options under DHCP options.
Next-server
Boot file
Save
Cancel

Move to user lets try that



5- Create user as viewer

We must create user in SOPHOS

Edit user

Username * user

Name * Ahmed Atef

Description Description

User type * User Administrator

Profile * Profile

Password * ********** Change Password

Email * ahmed1hazo@gmail.com Quara

Internet usage time 00:00 (HH:MM)

Policies

Group * Open Group

Surfing quota * Unlimited Internet Access

Access time * Allowed all the time

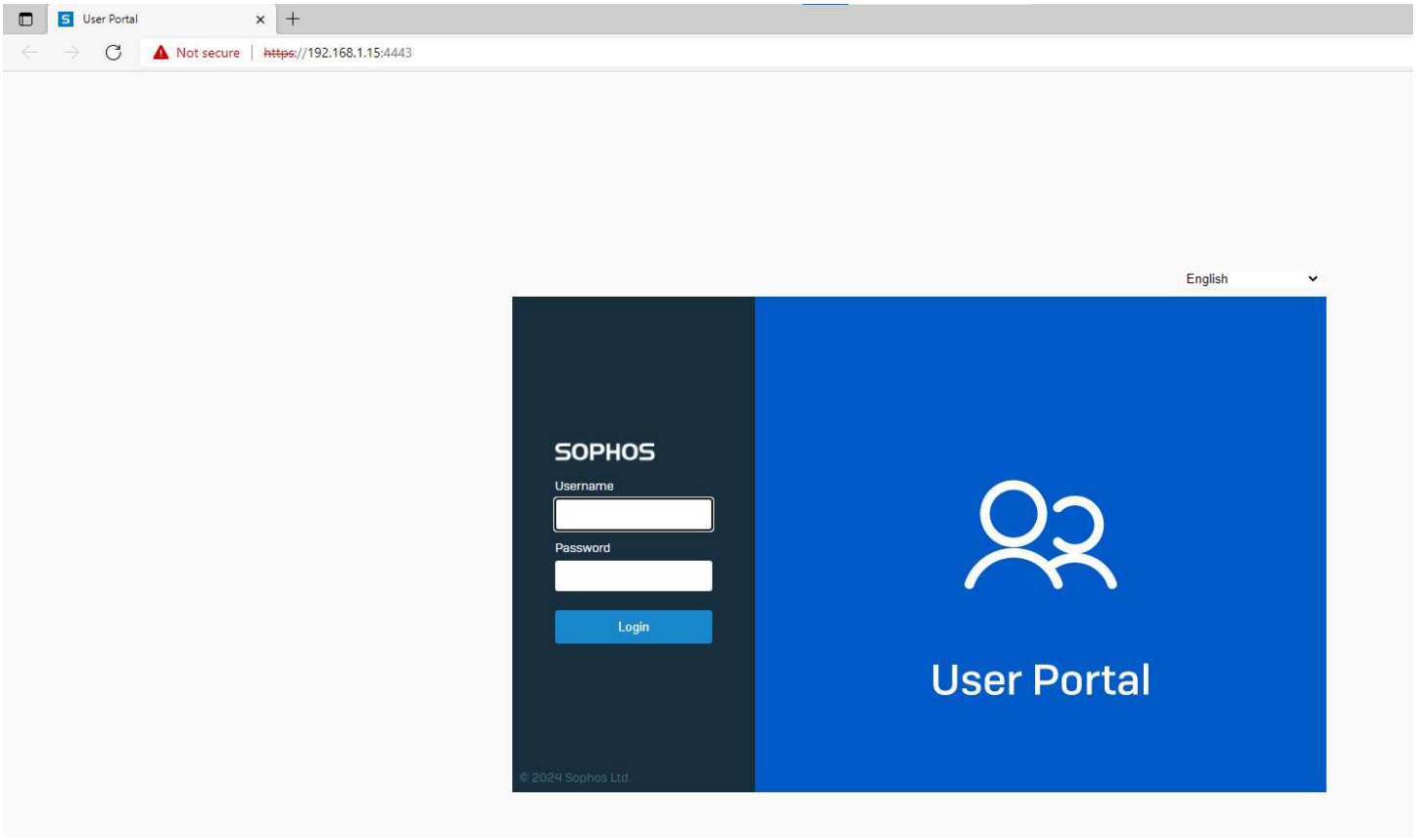
Network traffic None

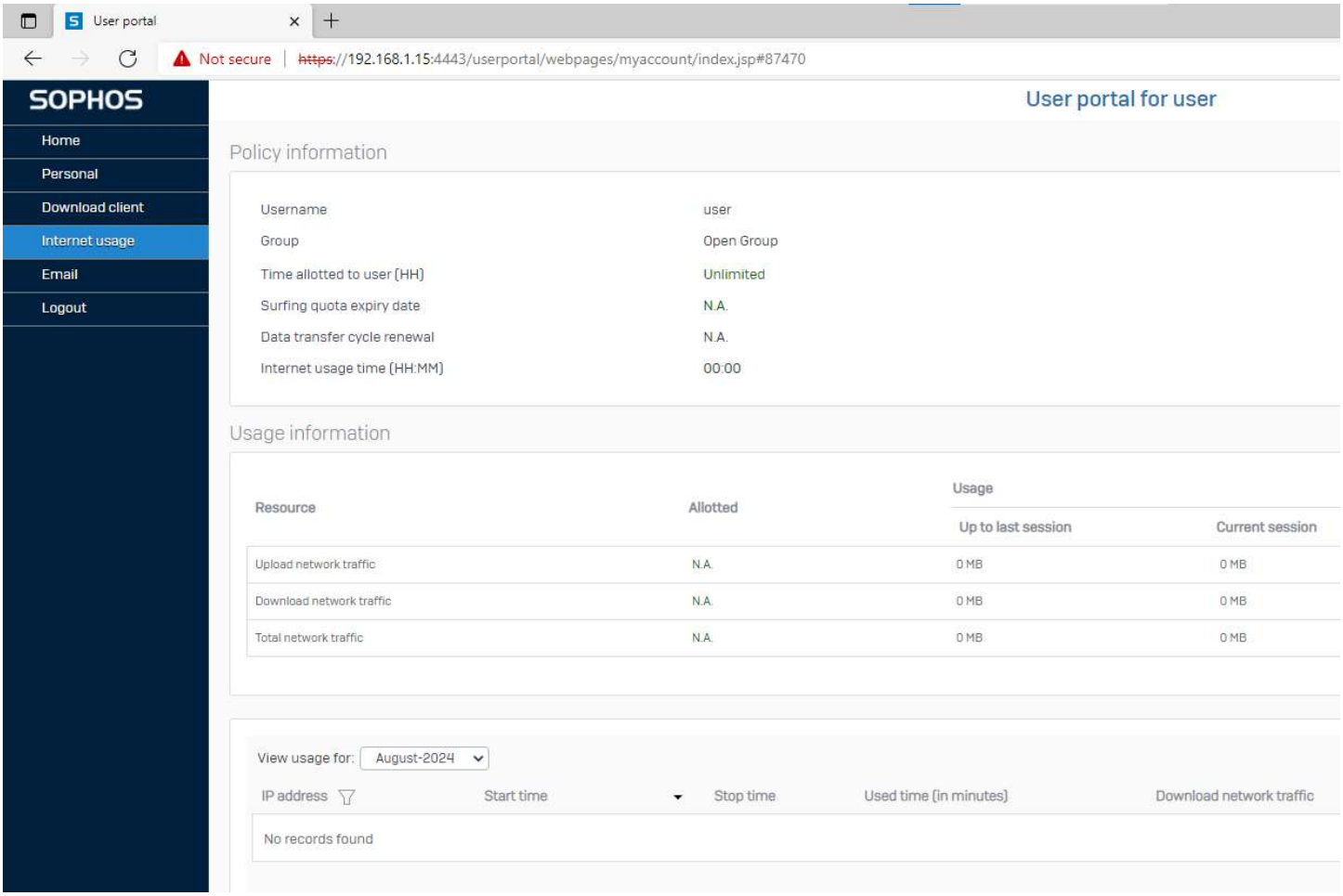
Traffic shaping None

VPN

Save | Reset user accounting | View usage | Cancel

To try open SOPHOS as user must not use portal 4444 but 4443





Content

(1) Create WIN Server at Microsoft Azure

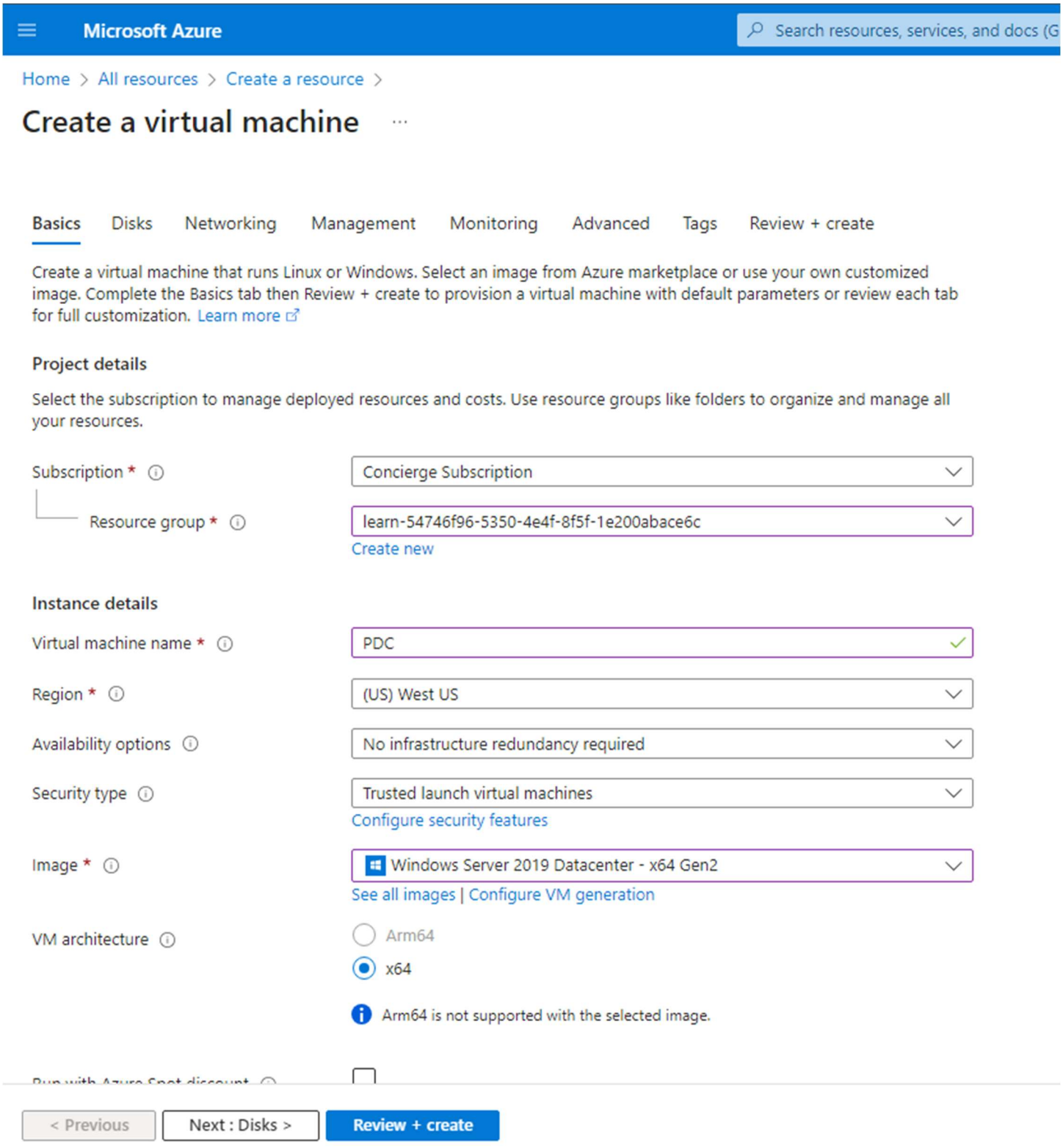
(2) Configure the cloud server as Domain

(3) Complete Azure or AWS one certification

(4) Create (DHCP,VLAN,OSPF,AAA,ACL) with eNSP

(5) Wireshark Report

1- Create WIN Server at Microsoft Azure



Create a virtual machine ...

Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. Learn more

Administrator account

Username * : Ahmed

Password * : ••••••••••••••

Confirm password * : ••••••••••••••

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * : ○ None ◉ Allow selected ports

Select inbound ports * : RDP (3389)

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

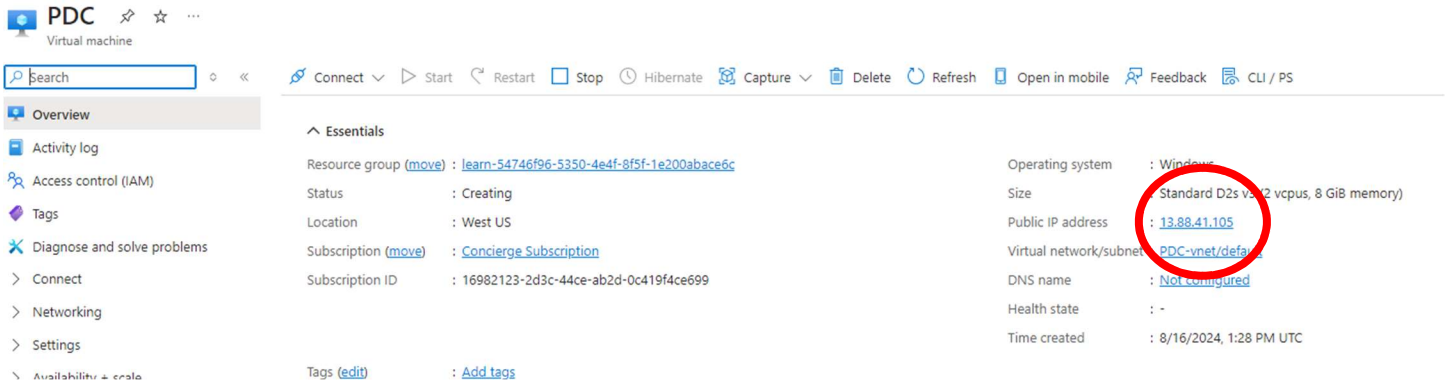
Licensing

Save up to 49% with a license you already own using Azure Hybrid Benefit. Learn more

Would you like to use an existing Windows Server license? ☐

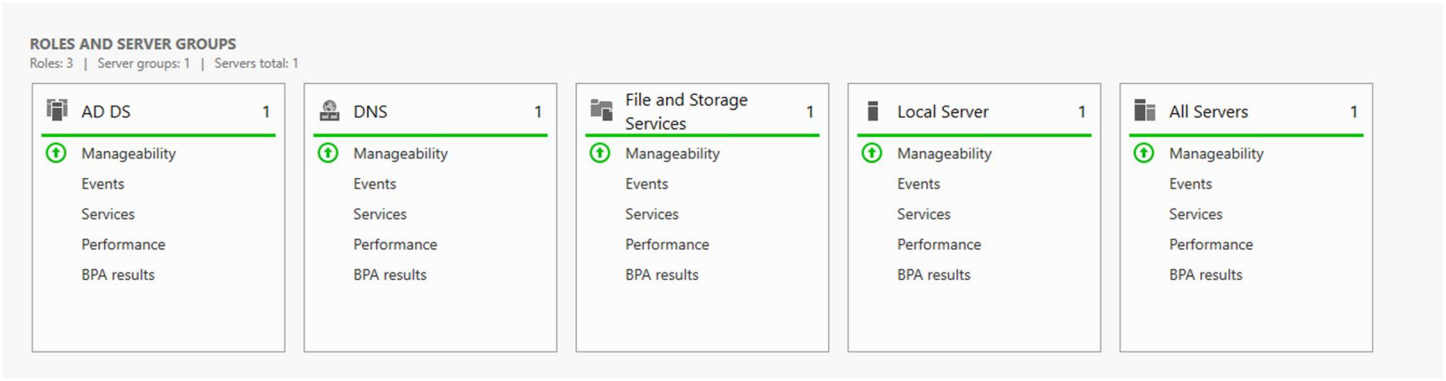
Review Azure hybrid benefit compliance

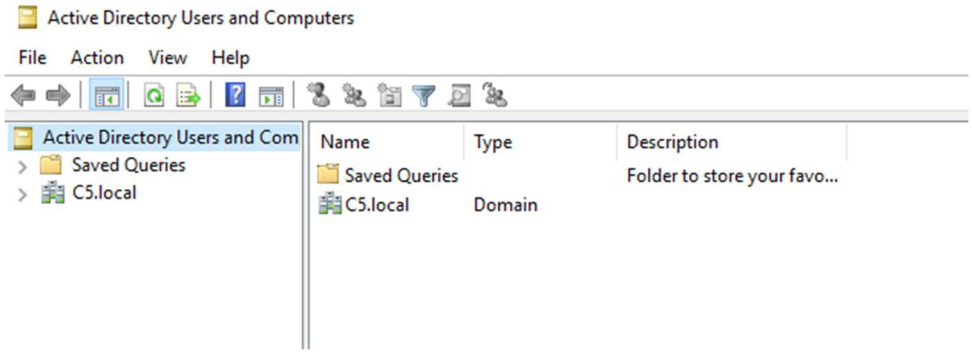
< Previous | Next : Disks > | Review + create



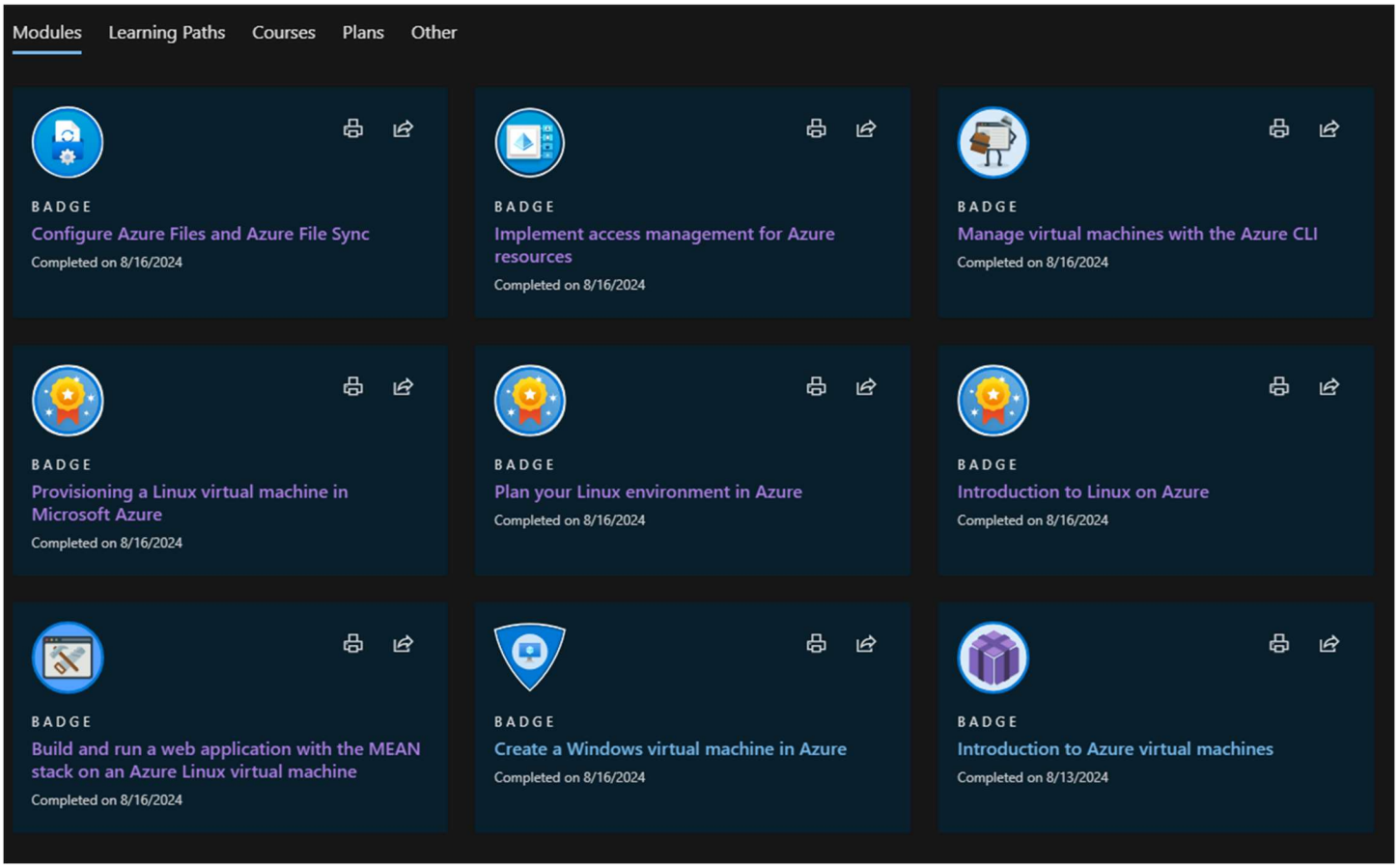
This Public IP to remote this VM

2- Configure the cloud server as Domain



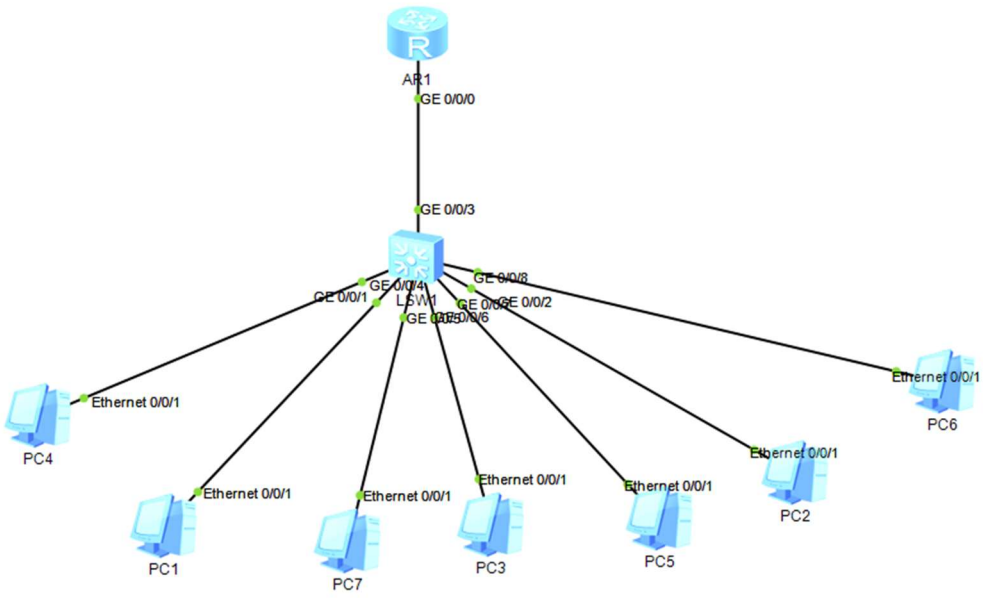


3-Azure certification



4- Create (DHCP,VLAN,OSPF,ACL,AAA) with eNSP

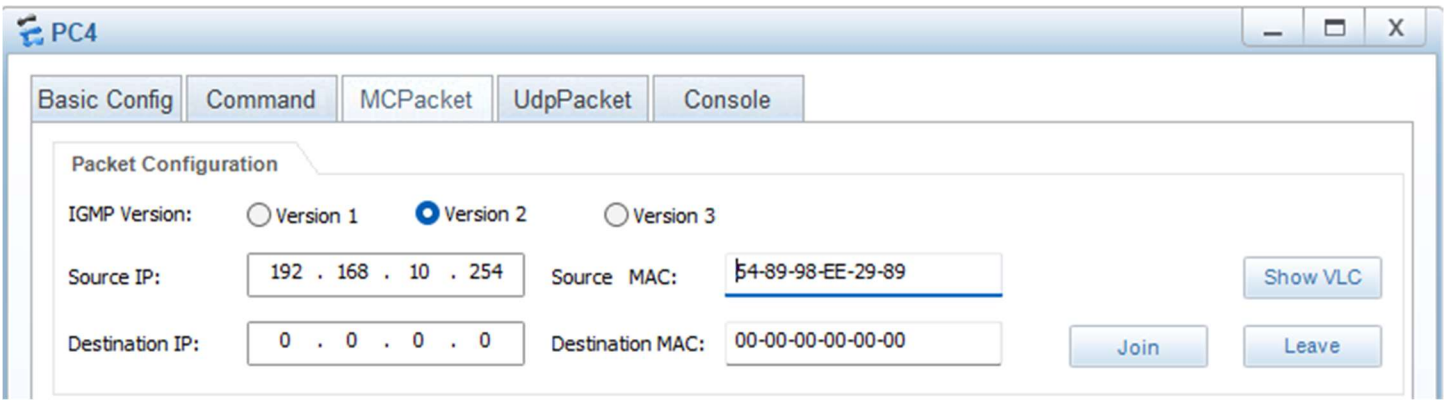
4.1-DHCP

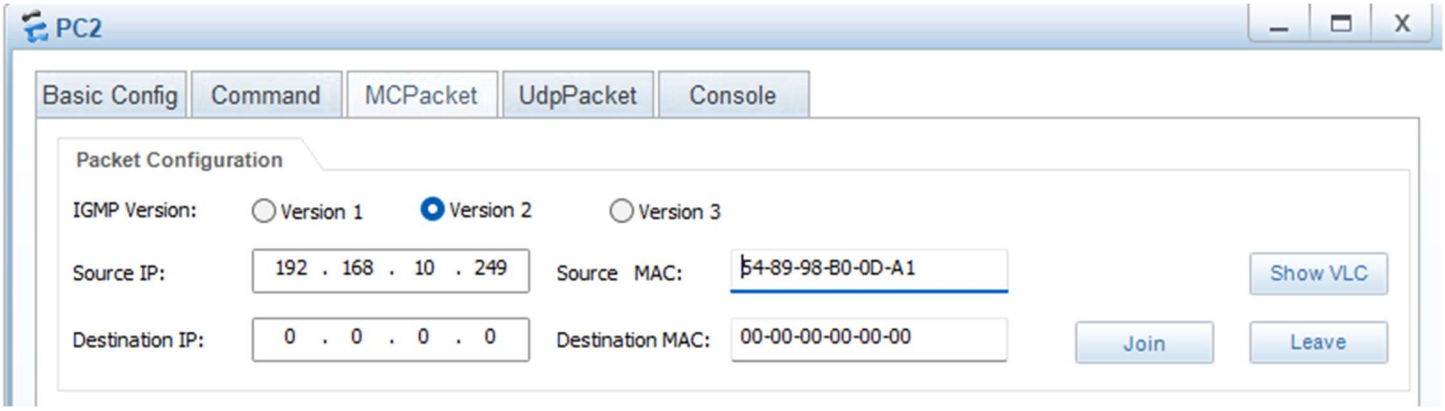


To active DHCP in Router ,there are some steps

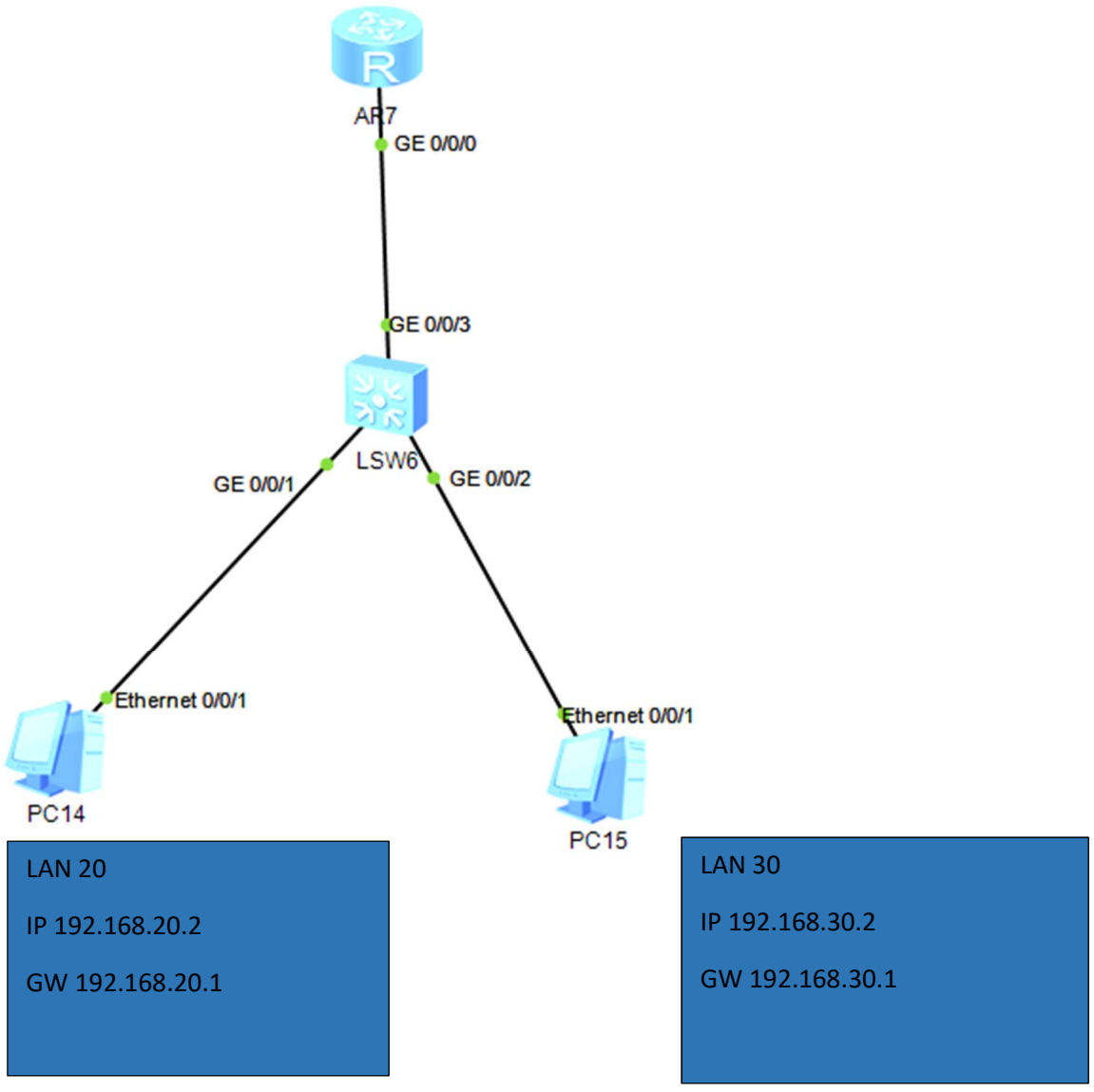
```
<Huawei>
<Huawei>
<Huawei>
<Huawei>sy
Aug 18 2024 02:42:41-08:00 Huawei %%01IFPDT/4/IF_STATE(l)[0]:Interface GigabitEt
hernet0/0/0 has turned into UP state.
<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname C4
[C4]dhcp enable
Info: The operation may take a few seconds. Please wait for a moment.done.
[C4]int g0/0/0
[C4-GigabitEthernet0/0/0]dhcp selc
                         ^
Error: Unrecognized command found at '^' position.
[C4-GigabitEthernet0/0/0]dhcp se
                         ^
Error:Ambiguous command found at '^' position.
[C4-GigabitEthernet0/0/0]dhcp select interface
Error: Failed to create interface IP pool, because no IP address has been config
ured on the interface.
[C4-GigabitEthernet0/0/0]ip address 192.168.10.1 255.255.255.0
Aug 18 2024 02:44:44-08:00 C4 %%01IFNET/4/LINK_STATE(l)[1]:The line protocol IP
on the interface GigabitEthernet0/0/0 has entered the UP state.
[C4-GigabitEthernet0/0/0]dhcp select interface
[C4-GigabitEthernet0/0/0]dhcp server dns-list 8.8.8.8 8.8.4.4
[C4-GigabitEthernet0/0/0]dhcp server lease day 10
[C4-GigabitEthernet0/0/0]q
[C4]q
<C4>save
  The current configuration will be written to the device.
  Are you sure to continue? (y/n)[n]:y
  It will take several minutes to save configuration file, please wait.......
  Configuration file had been saved successfully
  Note: The configuration file will take effect after being activated
<C4>

  Please check whether system data has been changed, and save data in time

  Configuration console time out, please press any key to log on
```

This Router taken IP Address 192.168.10.1 then ips start form 10.2 to 10.254



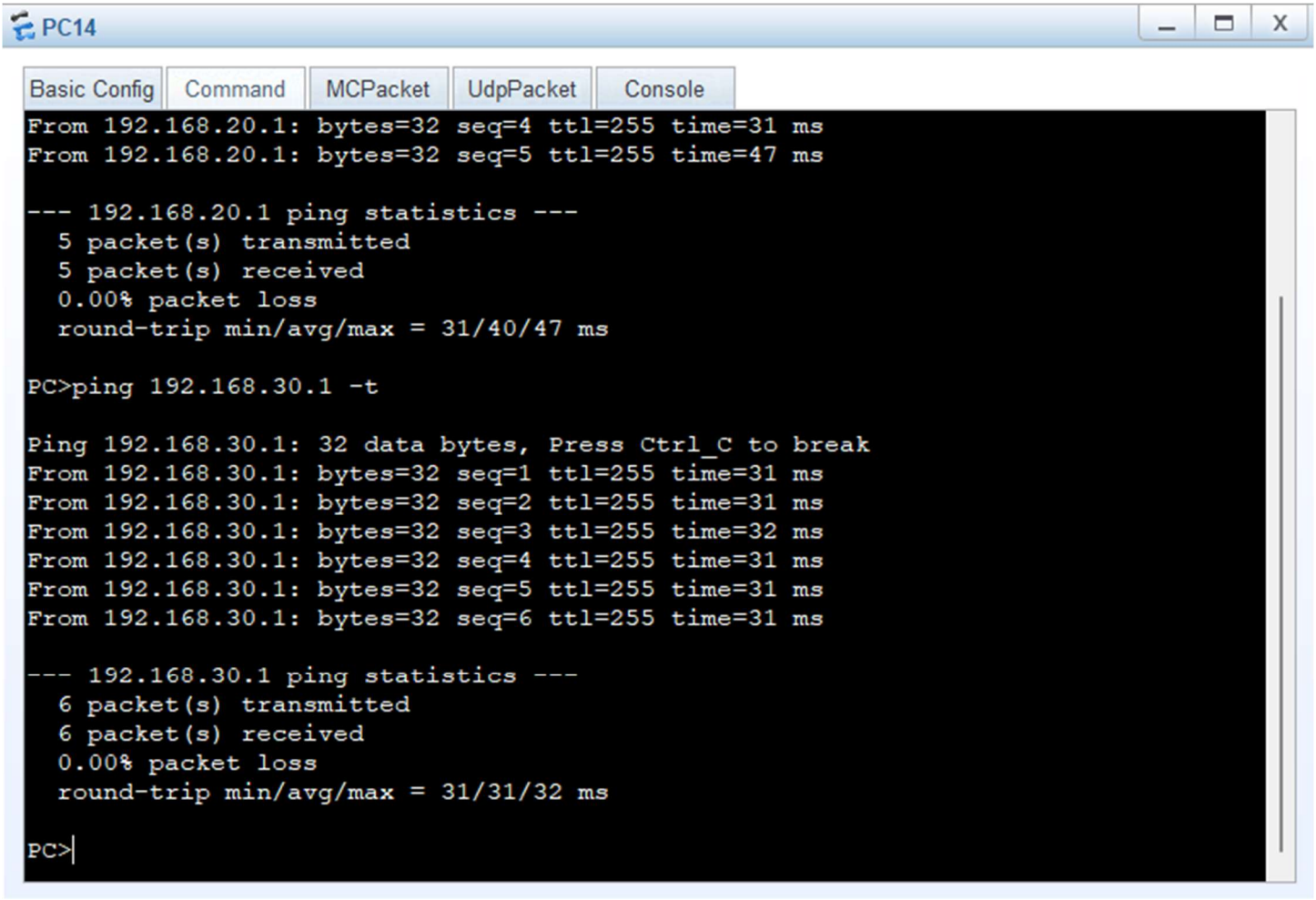

PC2
Basic Config
Command
MCPacket
UdpPacket
Console
Packet Configuration
IGMP Version:
Version 1
Version 2
Version 3
Source IP:
192 . 168 . 10 . 249
Source MAC:
54-89-98-B0-0D-A1
Show VLC
Destination IP:
0 . 0 . 0 . 0
Destination MAC:
00-00-00-00-00-00
Join
Leave

4.2-VLAN

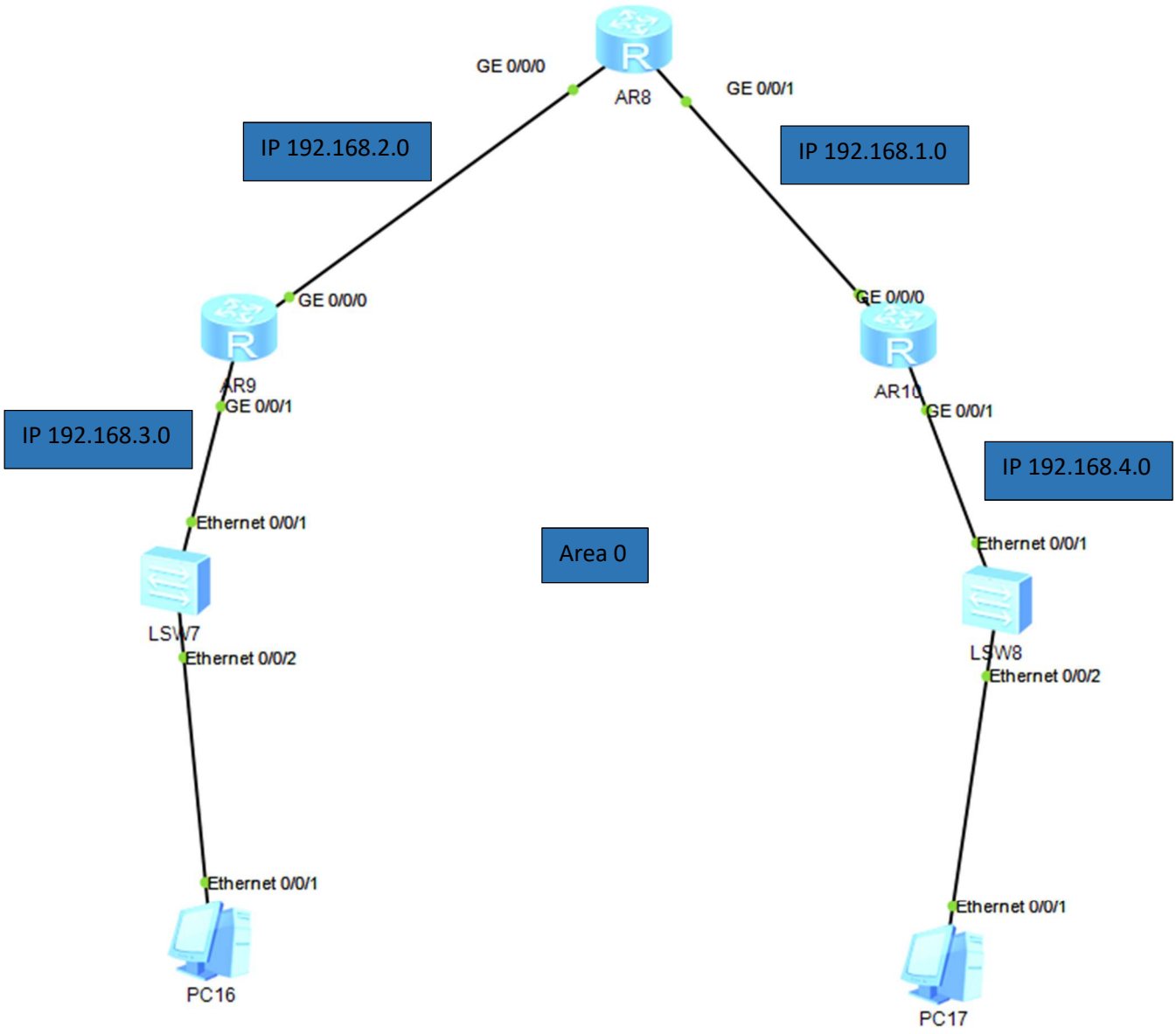

AR7
GE 0/0/0
GE 0/0/3
LSW6
GE 0/0/1
GE 0/0/2
Ethernet 0/0/1
Ethernet 0/0/1
PC14
PC15
LAN 20
IP 192.168.20.2
GW 192.168.20.1
LAN 30
IP 192.168.30.2
GW 192.168.30.1

```
The device is running!

<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]v
[Huawei]vlan b
[Huawei]vlan 20
[Huawei-vlan20]
Aug 17 2024 23:36:28-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 4, th
e change loop count is 0, and the maximum number of records is 4095.
[Huawei-vlan20]de
[Huawei-vlan20]description IT
[Huawei-vlan20]
Aug 17 2024 23:36:58-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 5, th
e change loop count is 0, and the maximum number of records is 4095.
[Huawei-vlan20]v
[Huawei-vlan20]vlan 30
[Huawei-vlan30]
Aug 17 2024 23:37:08-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 6, th
e change loop count is 0, and the maximum number of records is 4095.
[Huawei-vlan30]de
[Huawei-vlan30]description HR
[Huawei-vlan30]
Aug 17 2024 23:37:38-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 7, th
e change loop count is 0, and the maximum number of records is 4095.
[Huawei-vlan30]
[Huawei-vlan30]q
[Huawei]
[Huawei]in
[Huawei]int
[Huawei]interface g
[Huawei]interface GigabitEthernet 0/0/1
[Huawei-GigabitEthernet0/0/1]po
[Huawei-GigabitEthernet0/0/1]port l
[Huawei-GigabitEthernet0/0/1]port link-t
[Huawei-GigabitEthernet0/0/1]port link-type ac
[Huawei-GigabitEthernet0/0/1]port link-type access
[Huawei-GigabitEthernet0/0/1]
Aug 17 2024 23:39:18-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 8, th
e change loop count is 0, and the maximum number of records is 4095.
```

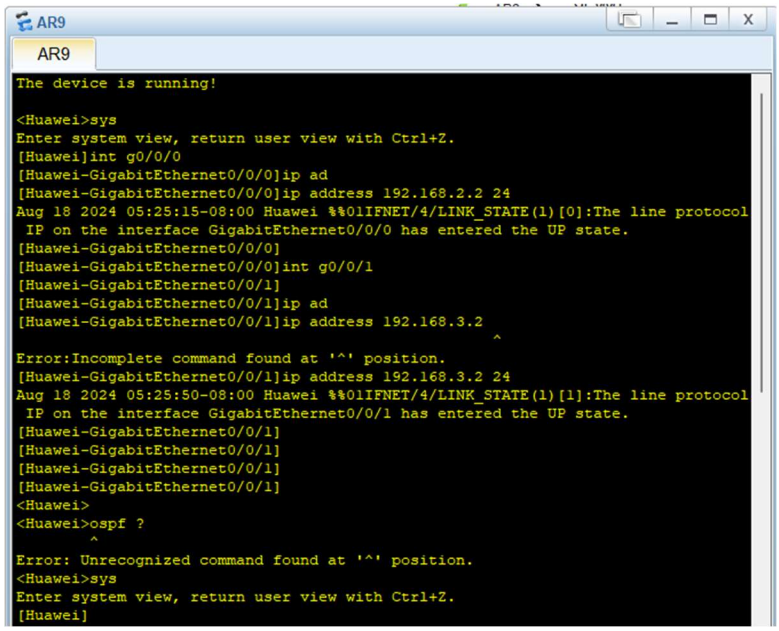
```
[Huawei-GigabitEthernet0/0/2]port default v
[Huawei-GigabitEthernet0/0/2]port default vlan 30
[Huawei-GigabitEthernet0/0/2]
Aug 17 2024 23:40:18-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 11, t
he change loop count is 0, and the maximum number of records is 4095.
[Huawei-GigabitEthernet0/0/2]
[Huawei-GigabitEthernet0/0/2]q
[Huawei]
[Huawei]
[Huawei]dis
[Huawei]display cu
[Huawei]display current-configuration int
[Huawei]display current-configuration interface g0/0/1
#
interface GigabitEthernet0/0/1
 port link-type access
 port default vlan 20
#
return
[Huawei]int
[Huawei]interface g
[Huawei]interface GigabitEthernet 0/0/0
                                  ^
Error: Wrong parameter found at '^' position.
[Huawei]int
[Huawei]interface g
[Huawei]interface GigabitEthernet 0/0/3
[Huawei-GigabitEthernet0/0/3]po
[Huawei-GigabitEthernet0/0/3]port l
[Huawei-GigabitEthernet0/0/3]port link-t
[Huawei-GigabitEthernet0/0/3]port link-type tr
[Huawei-GigabitEthernet0/0/3]port link-type trunk
[Huawei-GigabitEthernet0/0/3]
Aug 17 2024 23:42:48-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
.25.191.3.1 configurations have been changed. The current change number is 12, t
he change loop count is 0, and the maximum number of records is 4095.
[Huawei-GigabitEthernet0/0/3]po
[Huawei-GigabitEthernet0/0/3]port tr
[Huawei-GigabitEthernet0/0/3]port trunk v
[Huawei-GigabitEthernet0/0/3]port trunk al
[Huawei-GigabitEthernet0/0/3]port trunk allow v
[Huawei-GigabitEthernet0/0/3]port trunk allow vlan 20 30
[Huawei-GigabitEthernet0/0/3]
Aug 17 2024 23:43:38-08:00 Huawei DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5
```

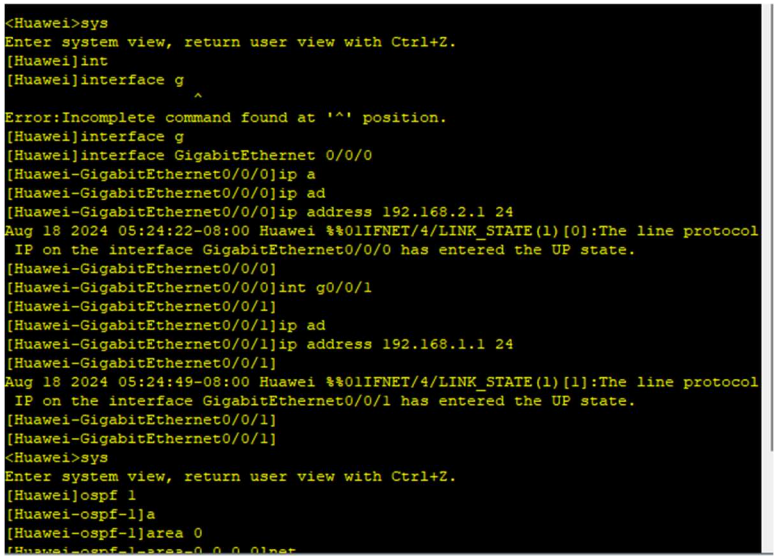

PC14
Basic Config
Command
MCPacket
UdpPacket
Console
From 192.168.20.1: bytes=32 seq=4 ttl=255 time=31 ms
From 192.168.20.1: bytes=32 seq=5 ttl=255 time=47 ms
--- 192.168.20.1 ping statistics ---
5 packet(s) transmitted
5 packet(s) received
0.00% packet loss
round-trip min/avg/max = 31/40/47 ms
PC>ping 192.168.30.1 -t
Ping 192.168.30.1: 32 data bytes, Press Ctrl_C to break
From 192.168.30.1: bytes=32 seq=1 ttl=255 time=31 ms
From 192.168.30.1: bytes=32 seq=2 ttl=255 time=31 ms
From 192.168.30.1: bytes=32 seq=3 ttl=255 time=32 ms
From 192.168.30.1: bytes=32 seq=4 ttl=255 time=31 ms
From 192.168.30.1: bytes=32 seq=5 ttl=255 time=31 ms
From 192.168.30.1: bytes=32 seq=6 ttl=255 time=31 ms
--- 192.168.30.1 ping statistics ---
6 packet(s) transmitted
6 packet(s) received
0.00% packet loss
round-trip min/avg/max = 31/31/32 ms
PC>

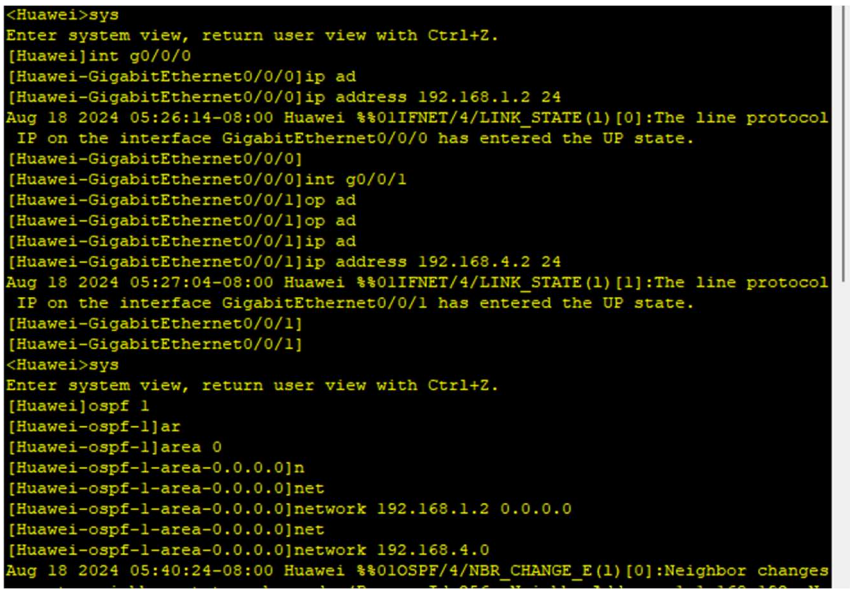
4.3-OSPF


GE 0/0/0
AR8
GE 0/0/1
IP 192.168.2.0
IP 192.168.1.0
GE 0/0/0
GE 0/0/0
AR9
GE 0/0/1
AR10
GE 0/0/1
IP 192.168.3.0
IP 192.168.4.0
Ethernet 0/0/1
Area 0
Ethernet 0/0/1
LSW7
LSW8
Ethernet 0/0/2
Ethernet 0/0/2
Ethernet 0/0/1
Ethernet 0/0/1
PC16
PC17

To configure OSPF first configure each router with another







To test the connection between them do ping

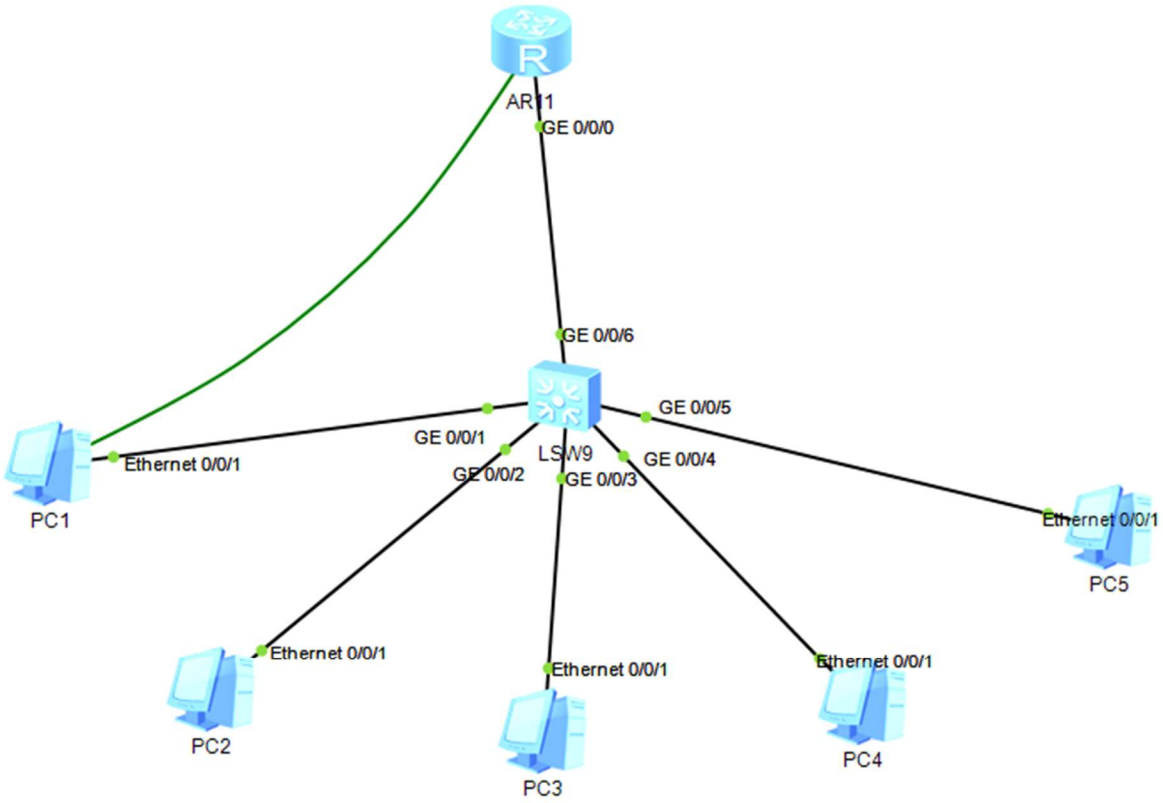
```
From 192.168.3.2: bytes=32 seq=3 ttl=255 time=31 ms
From 192.168.3.2: bytes=32 seq=4 ttl=255 time=32 ms
From 192.168.3.2: bytes=32 seq=5 ttl=255 time=31 ms

--- 192.168.3.2 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 31/37/47 ms

PC>ping 192.168.2.2

Ping 192.168.2.2: 32 data bytes, Press Ctrl_C to break
From 192.168.2.2: bytes=32 seq=1 ttl=255 time=31 ms
From 192.168.2.2: bytes=32 seq=2 ttl=255 time=47 ms
From 192.168.2.2: bytes=32 seq=3 ttl=255 time=47 ms
From 192.168.2.2: bytes=32 seq=4 ttl=255 time=47 ms
From 192.168.2.2: bytes=32 seq=5 ttl=255 time=47 ms

--- 192.168.2.2 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 31/43/47 ms

PC>
```

PC17

Basic Config | Command | MCPacket | UdpPacket | Console

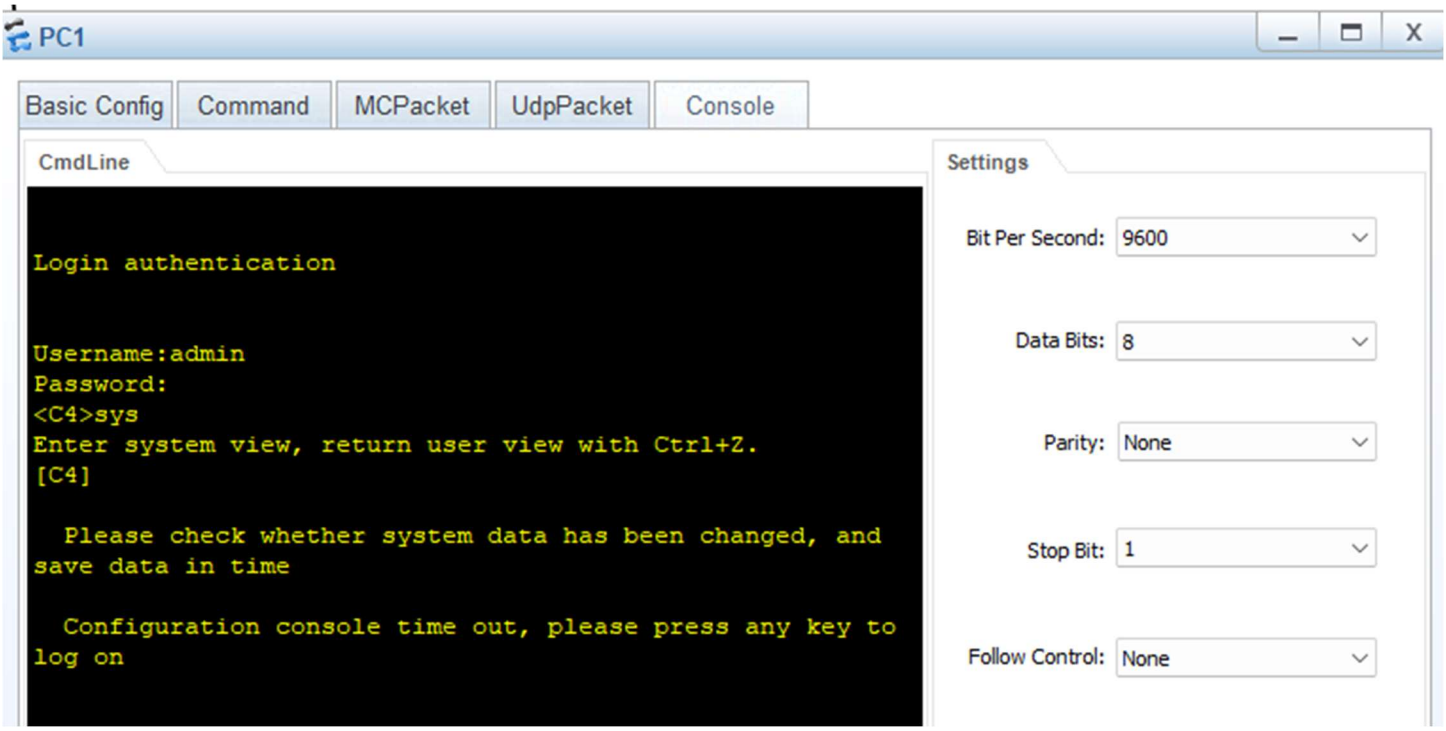
```
Welcome to use PC Simulator!

PC>ping 192.168.1.2

Ping 192.168.1.2: 32 data bytes, Press Ctrl_C to break
From 192.168.1.2: bytes=32 seq=1 ttl=255 time=47 ms
From 192.168.1.2: bytes=32 seq=2 ttl=255 time=46 ms
From 192.168.1.2: bytes=32 seq=3 ttl=255 time=32 ms
From 192.168.1.2: bytes=32 seq=4 ttl=255 time=47 ms
From 192.168.1.2: bytes=32 seq=5 ttl=255 time=46 ms

--- 192.168.1.2 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 32/43/47 ms

PC>
```

4.4-AAA

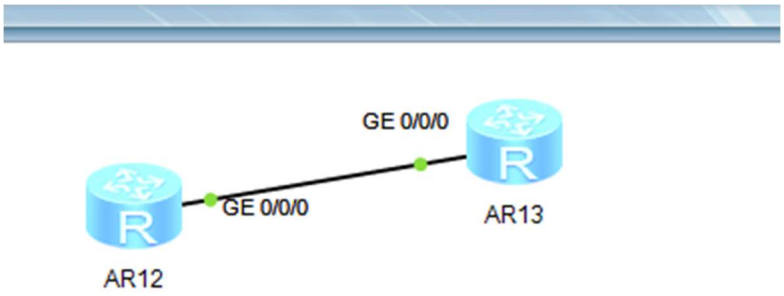


After activation DHCP from the router , if want to remote on the router from any PC connect console between router and PC then configure it from the router

```
[C4]us
[C4]user-int
[C4]user-interface c
[C4]user-interface console 0
[C4-ui-console0]au
[C4-ui-console0]auth
[C4-ui-console0]authentication-mode aaa
[C4-ui-console0]q
[C4]aaa
[C4-aaa]local
[C4-aaa]local-user admin pas
[C4-aaa]local-user admin password ci
[C4-aaa]local-user admin password cipher 123
[C4-aaa]
[C4-aaa]loca
[C4-aaa]local-user admin pr
[C4-aaa]local-user admin privilege l
[C4-aaa]local-user admin privilege level 15
[C4-aaa]
[C4-aaa]loc
[C4-aaa]local-user admin ter
[C4-aaa]local-user admin se
[C4-aaa]local-user admin service-type ter
[C4-aaa]local-user admin service-type terminal
[C4-aaa]
[C4-aaa]q
```



Another connection



We will remote on AR13 from AR12 from terminal

First give everyone ip address AR12:192.168.1.1 AR13:192.168.1.2

```
[R1-aaa]auth
[R1-aaa]authentication-scheme C4
Info: Create a new authentication scheme.
[R1-aaa-authen-C4]ath
[R1-aaa-authen-C4]auth
[R1-aaa-authen-C4]authentication-m
[R1-aaa-authen-C4]authentication-mode ?
  hwtacacs  HWTACACS
  local     Local
  none      None
  radius    RADIUS
[R1-aaa-authen-C4]authentication-mode local
[R1-aaa-authen-C4]q
```

AR13

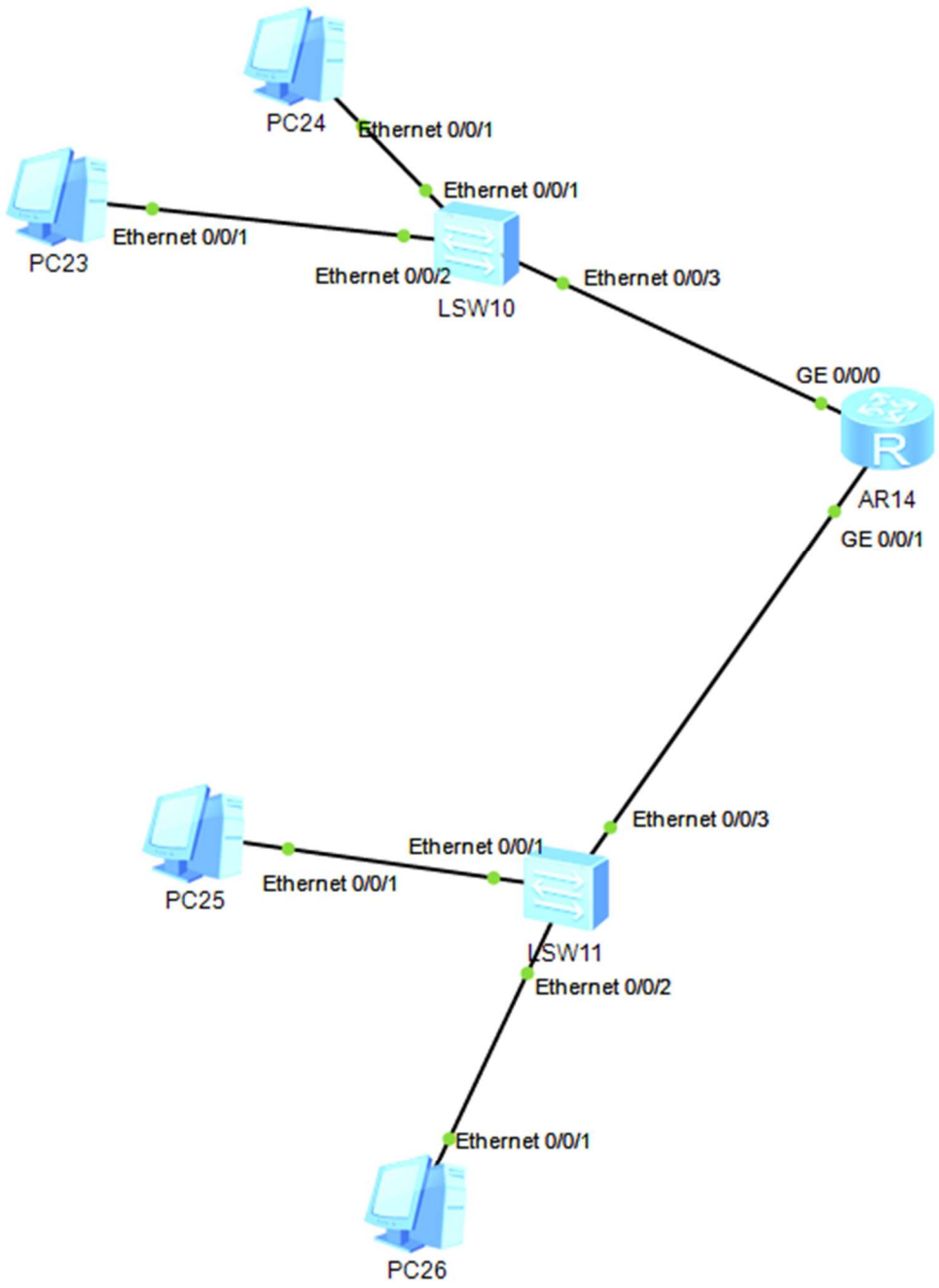
AR13

```
[R2-aaa]auth
[R2-aaa]authentication-scheme C4
Info: Create a new authentication scheme.
[R2-aaa-authen-C4]
[R2-aaa-authen-C4]
[R2-aaa-authen-C4]auth
[R2-aaa-authen-C4]authentication-m
[R2-aaa-authen-C4]authentication-mode local
[R2-aaa-authen-C4]
[R2-aaa-authen-C4]q
[R2-aaa]
[R2-aaa]do
[R2-aaa]domain C5
Info: Success to create a new domain.
[R2-aaa-domain-c5]auth
[R2-aaa-domain-c5]authorization-scheme C
[R2-aaa-domain-c5]authorization-scheme C4
Error: The authorization scheme does not exist.
[R2-aaa-domain-c5]auth
[R2-aaa-domain-c5]authentication-scheme C4
[R2-aaa-domain-c5]q
[R2-aaa]
[R2-aaa]lo
[R2-aaa]local-user admin pas
[R2-aaa]local-user admin password ci
[R2-aaa]local-user admin password cipher 123
[R2-aaa]lo
[R2-aaa]local-user admin pr
[R2-aaa]local-user admin privilege l
[R2-aaa]local-user admin privilege level 15
```

```
<R1>
<R1>te
<R1>telnet 192.168.1.2
  Press CTRL_] to quit telnet mode
  Trying 192.168.1.2 ...
  Connected to 192.168.1.2 ...

Login authentication


Username:admin
Password:
<R2>
<R1>
<R1>
```

4.5-ACL

We have two system as two area and in area one there is PC unwanted to reach PCs in area 1 so called that ACL

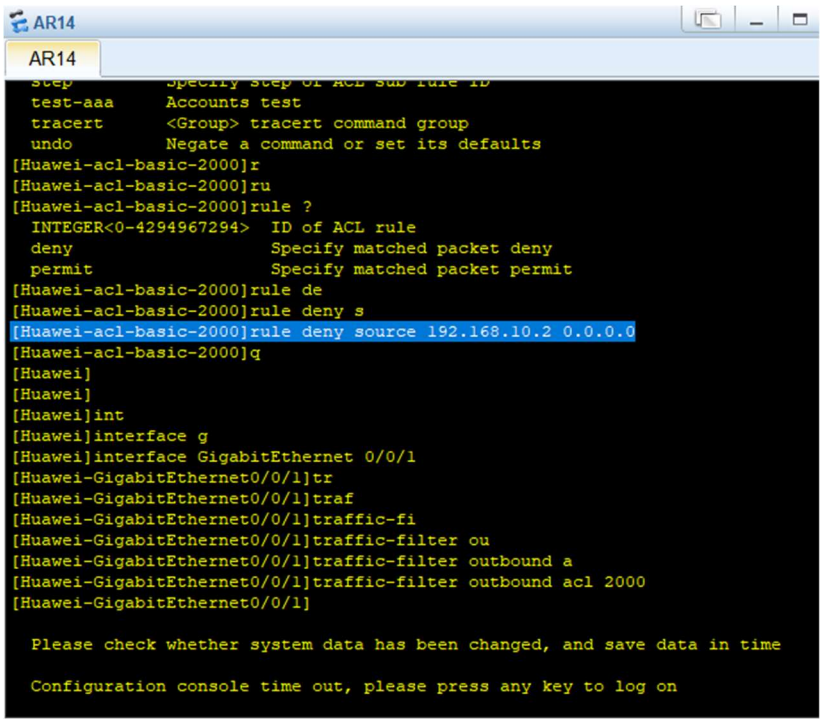


AR14

AR14

```
The device is running!

<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]int
[Huawei]interface g
[Huawei]interface GigabitEthernet 0/0/0
[Huawei-GigabitEthernet0/0/0]ipad
[Huawei-GigabitEthernet0/0/0]ip ad
[Huawei-GigabitEthernet0/0/0]ip address 192.168.10.1 24
Aug 18 2024 07:03:09-08:00 Huawei %%01IFNET/4/LINK_STATE(l)[0]:The line protocol
 IP on the interface GigabitEthernet0/0/0 has entered the UP state.
[Huawei-GigabitEthernet0/0/0]
[Huawei-GigabitEthernet0/0/0]int g 0/0/1
[Huawei-GigabitEthernet0/0/1]
[Huawei-GigabitEthernet0/0/1]ip ad
[Huawei-GigabitEthernet0/0/1]ip address 192.168.20.1 24
Aug 18 2024 07:03:34-08:00 Huawei %%01IFNET/4/LINK_STATE(l)[1]:The line protocol
 IP on the interface GigabitEthernet0/0/1 has entered the UP state.
[Huawei-GigabitEthernet0/0/1]
[Huawei-GigabitEthernet0/0/1]
<Huawei>
<Huawei>
<Huawei>
<Huawei>
<Huawei>ac
<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]ac
[Huawei]access-user
                  ^
```

After giver every interface ip address , must give every PC ip address



To test that form PC it has ip 192.168.10.2

```
PC>ping 192.168.20.2

Ping 192.168.20.2: 32 data bytes, Press Ctrl_C to break
Request timeout!
Request timeout!
Request timeout!
Request timeout!
Request timeout!

--- 192.168.20.2 ping statistics ---
  5 packet(s) transmitted
  0 packet(s) received
  100.00% packet loss

PC>
```

5- Wireshark Report