HỌC VIỆN CÔNG NGHỆ BƯU CHÍNH VIỄN THÔNG

KHOA CÔNG NGHỆ THÔNG TIN 2

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BÁO CÁO GIỮA KỲ

Môn học

Hệ Điều Hành Windows & Linux

Giảng viên : Đàm Minh Lịnh

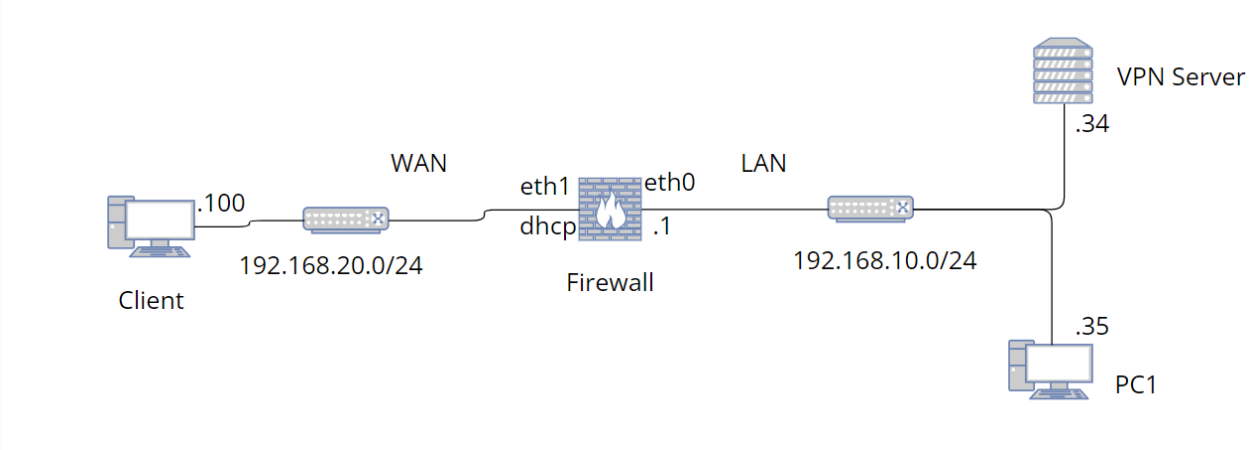
Sinh viên thực hiện: Trần Quốc Trượng

MSSV : N18DCAT100

TP.HCM, tháng 10/2022

MỤC LỤC

1. Sơ đồ mạng



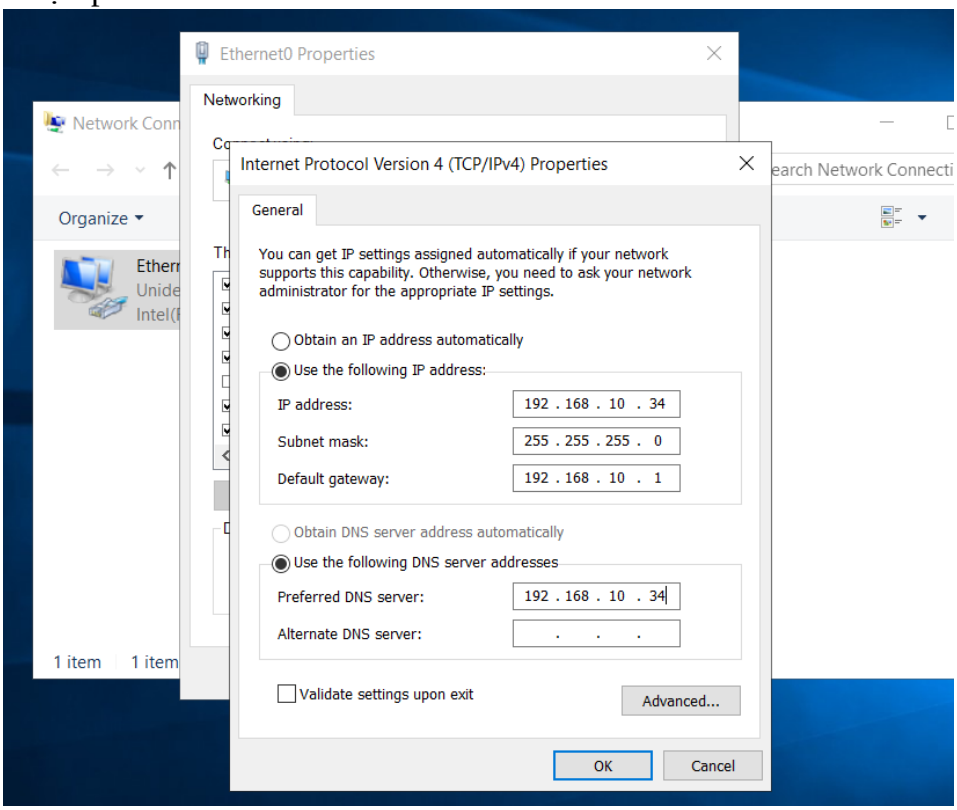
Trong đó:

Tên thiết bị	Thông tin		Interface 1	Interface 2
Client	Windows 11 máy thật	Ip address	192.168.20.100	
		Netmask	/24	
		Default Gateway		
		DNS		
Firewall	Sophos UTM 9.6	Ip address	dhcp	192.168.10.1
		Netmask	/24	/24
		Default Gateway		
		DNS		
VPN Server	Windows Server 2019	Ip address	192.168.10.34	
		Netmask	/24	
		Default Gateway	192.168.10.1	
		DNS	192.168.10.34	
PC1	Windows 10 pro	Ip address	192.168.10.35	
		Netmask	/24	
		Default Gateway	192.168.10.1	
		DNS	192.168.10.34	

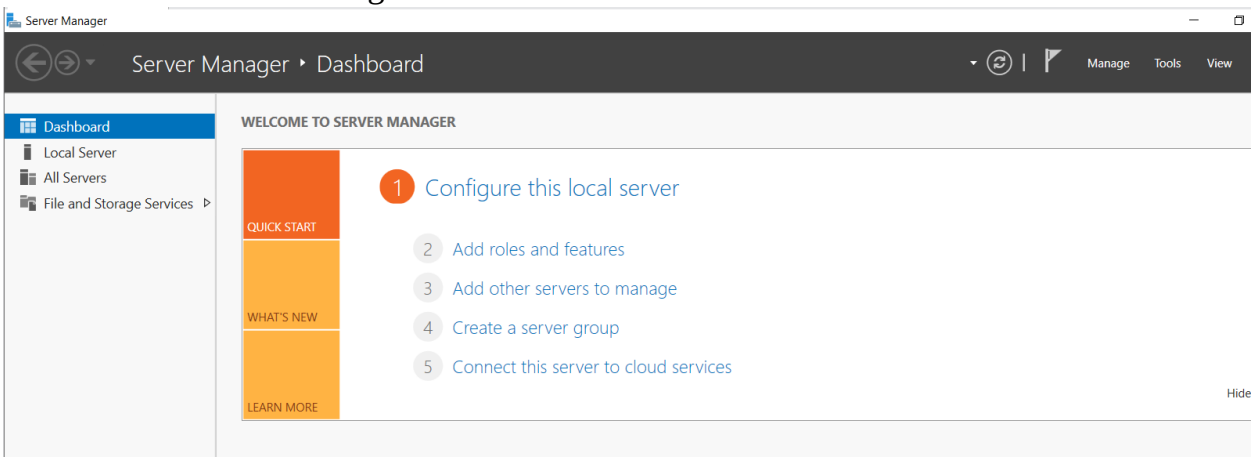
2. Triển khai hệ thống

2.1. Cài đặt domain controller

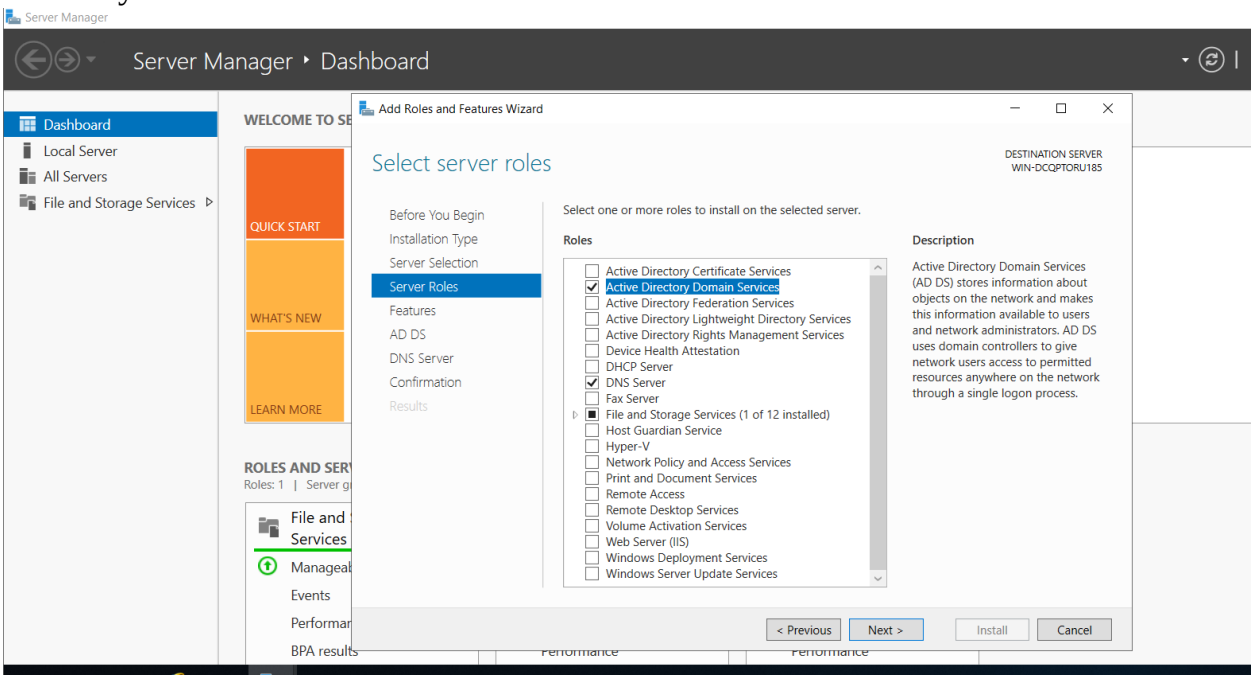
- Bước 1: Đặt ip cho domain



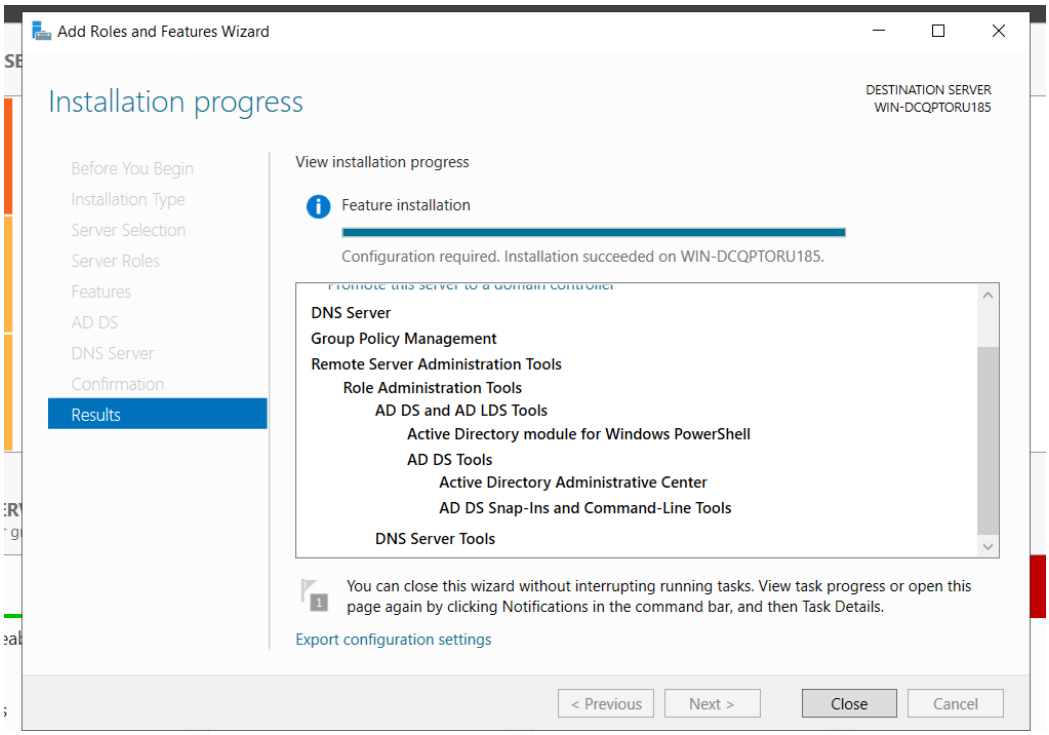
- Bước 2: Vào Server Manager > Add roles and features



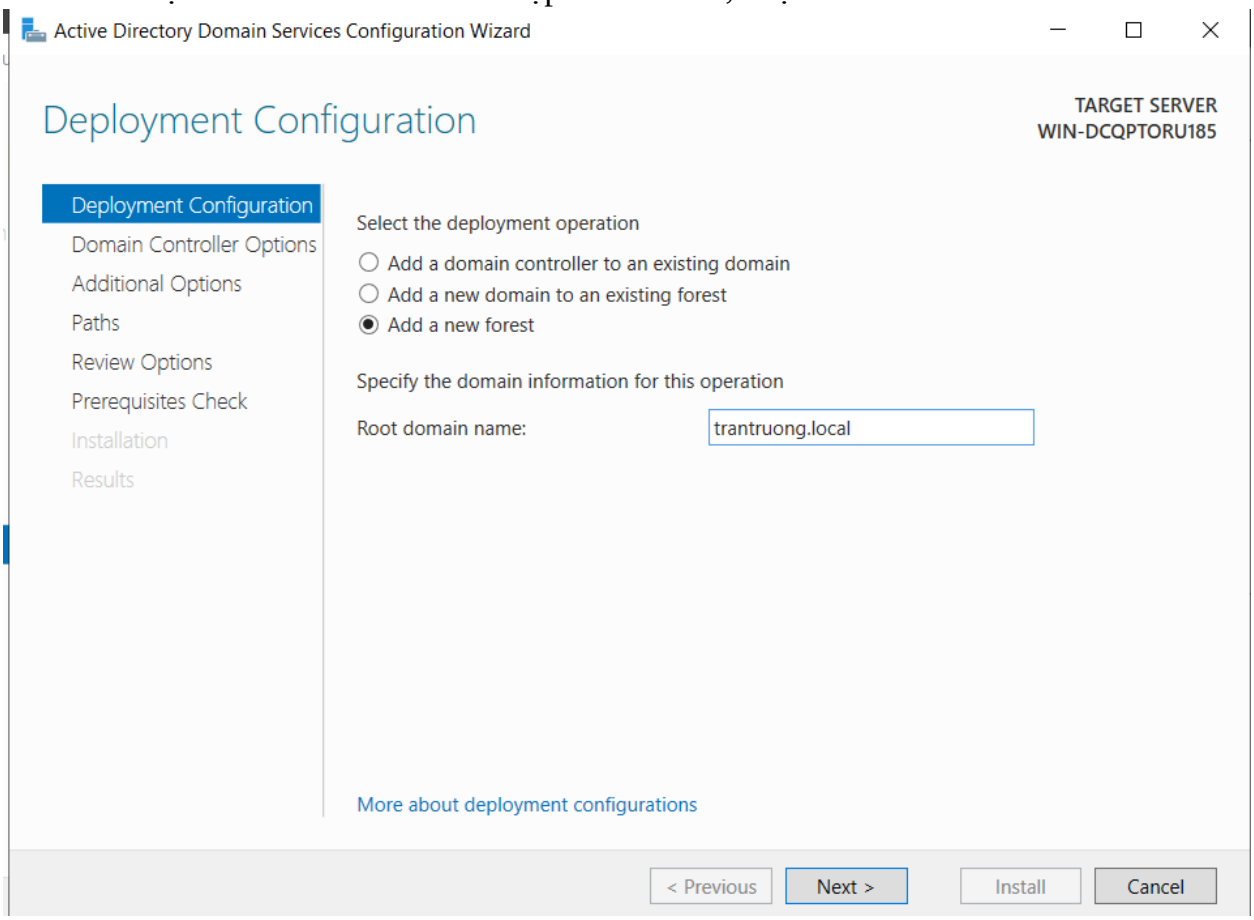
- Bước 3: Bấm Next cho đến khi xuất hiện cửa sổ dưới thì tích chọn Active Directory Sevices



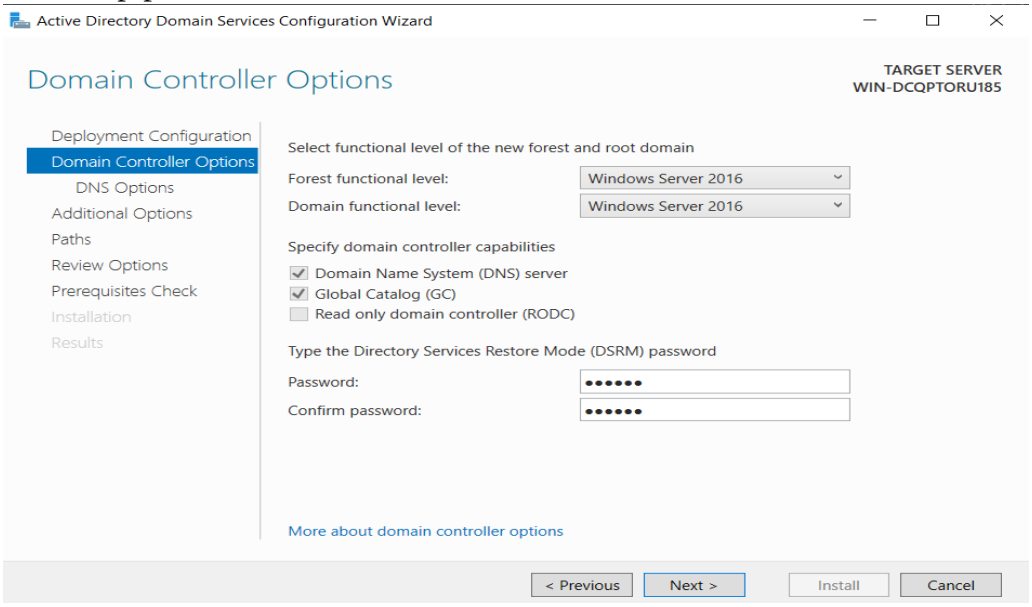
- Bước 4: Chọn Promote this server to a domain controller



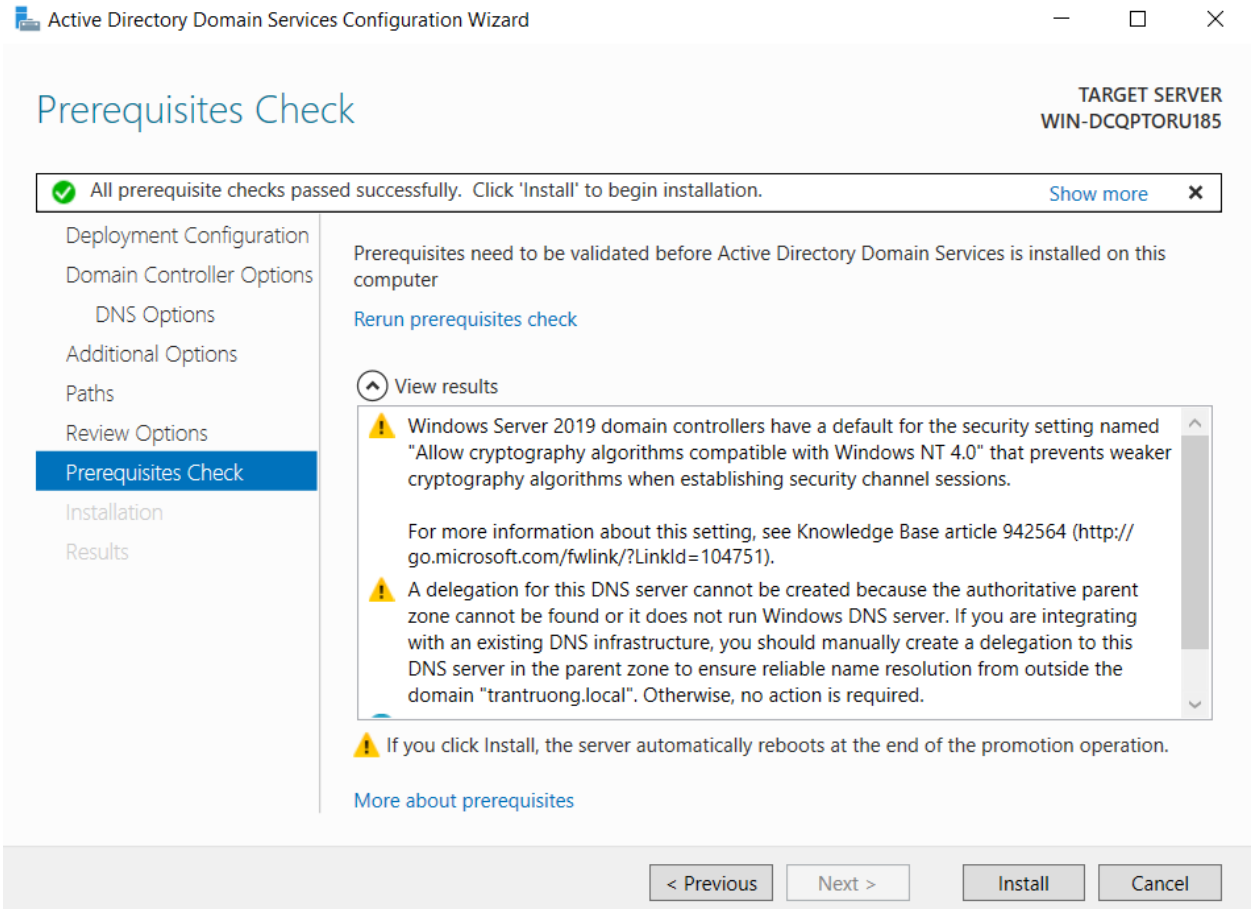
- Bước 5: Chọn Add a new forest và nhập tên domain, chọn next



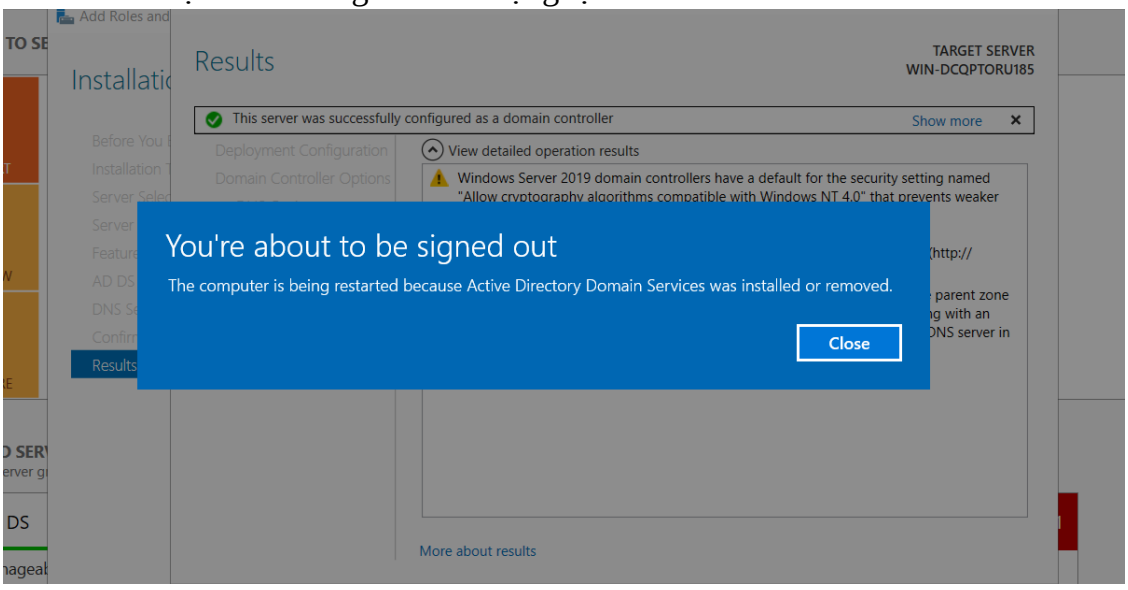
- Bước 6: Nhập password và chọn next



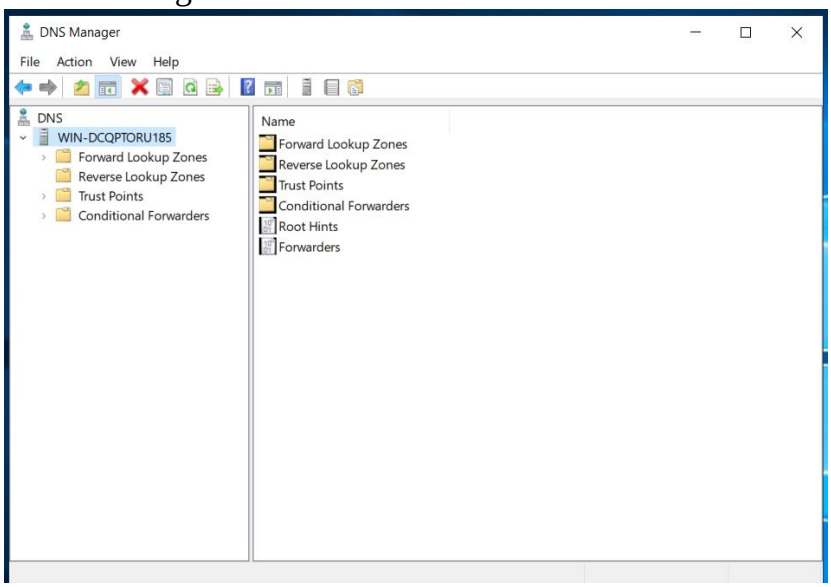
- Bước 7: Chọn Next cho đến khi xuất hiện cửa sổ này thì bấm Install



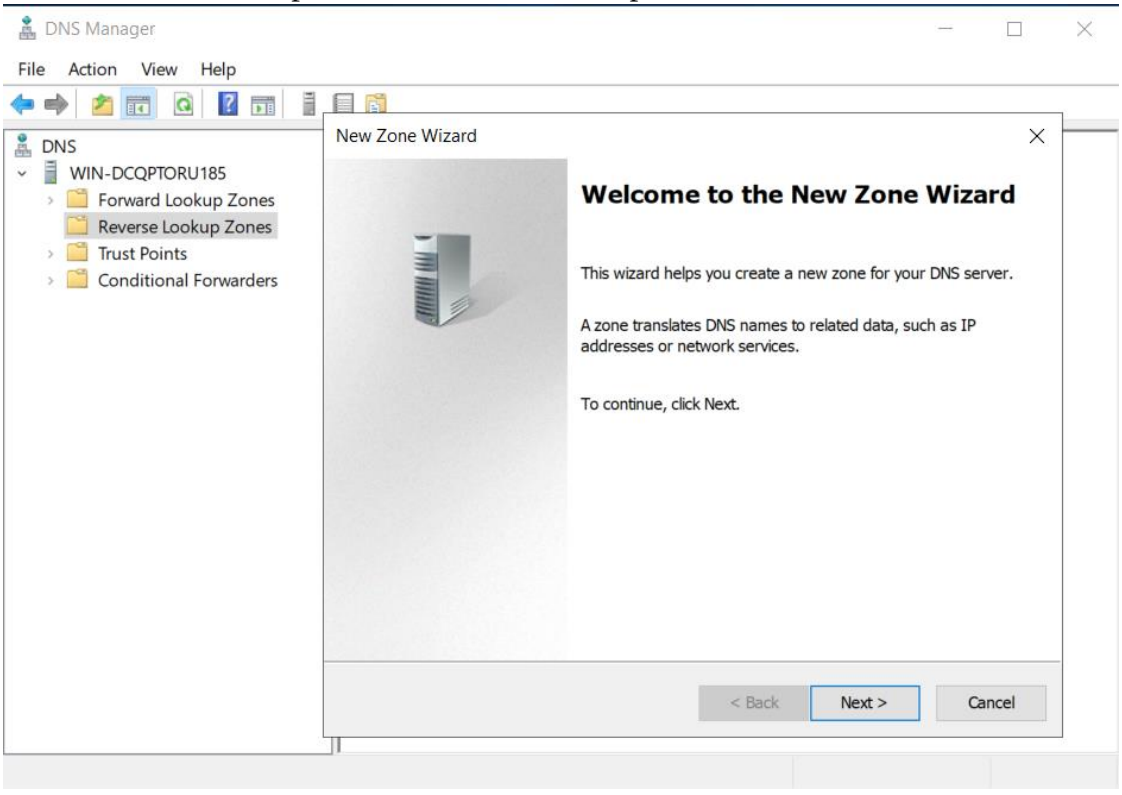
- Bước 8: Cài đặt thành công và khởi động lại



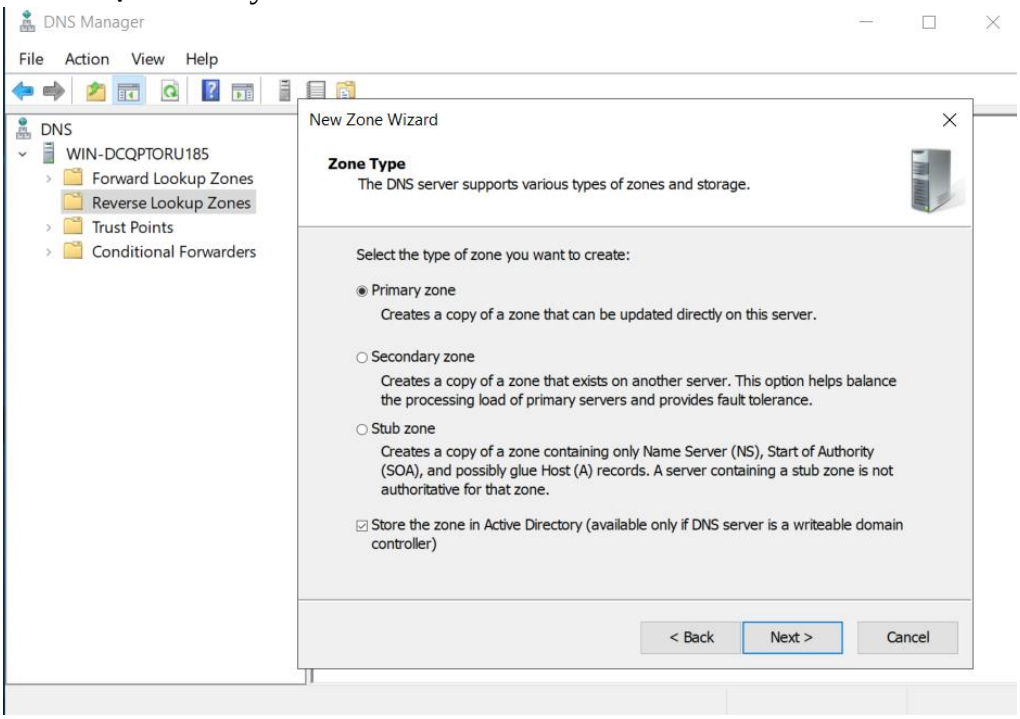
- Bước 9: Mở DNS Manager



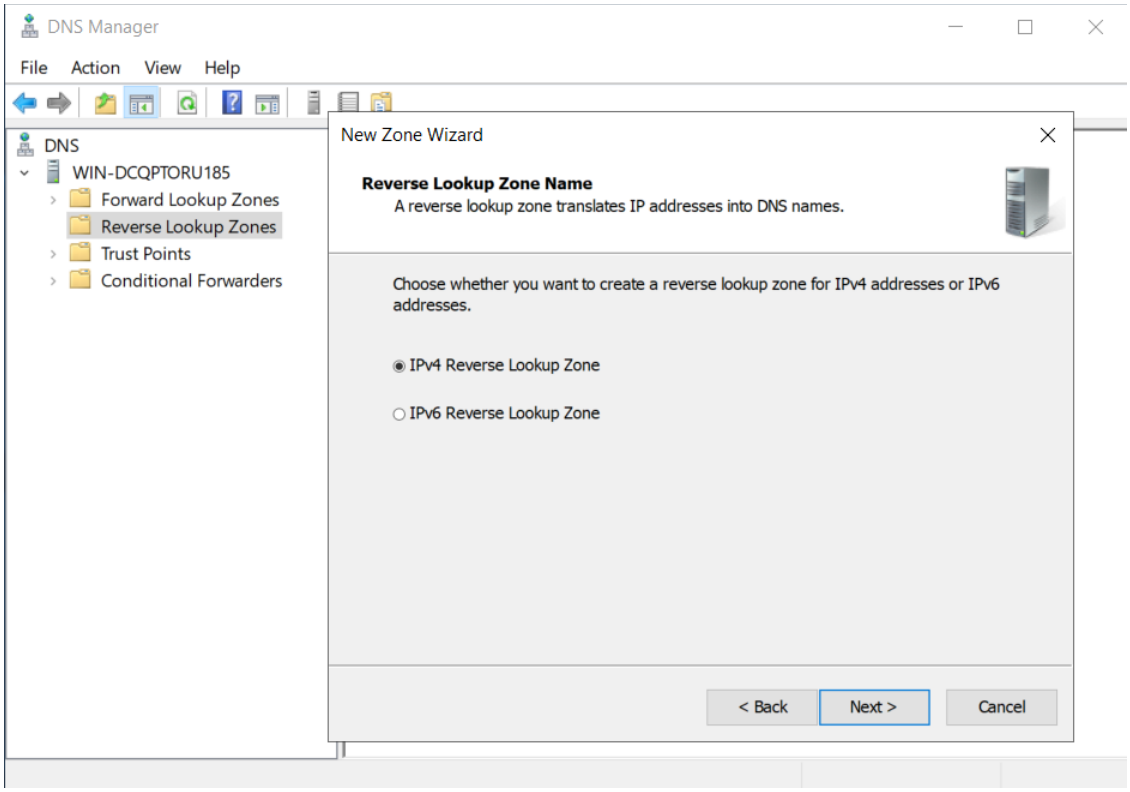
- Bước 10: Click chuột phải vào Reverse Lookup Zones và chọn New Zone



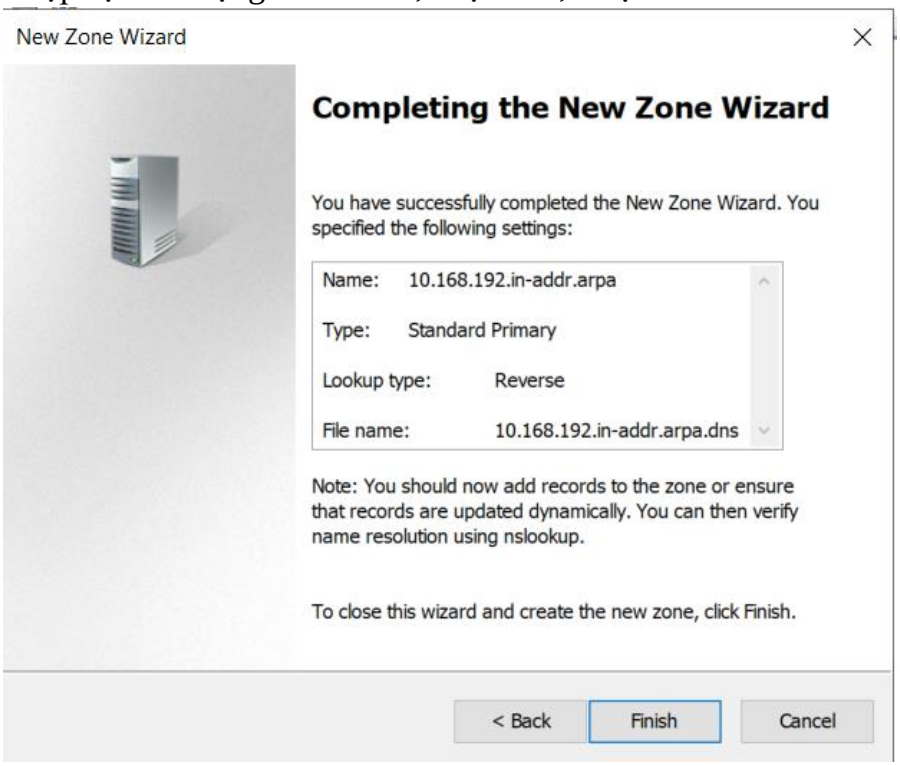
- Bước 11: Chọn Primary zone và bấm Next



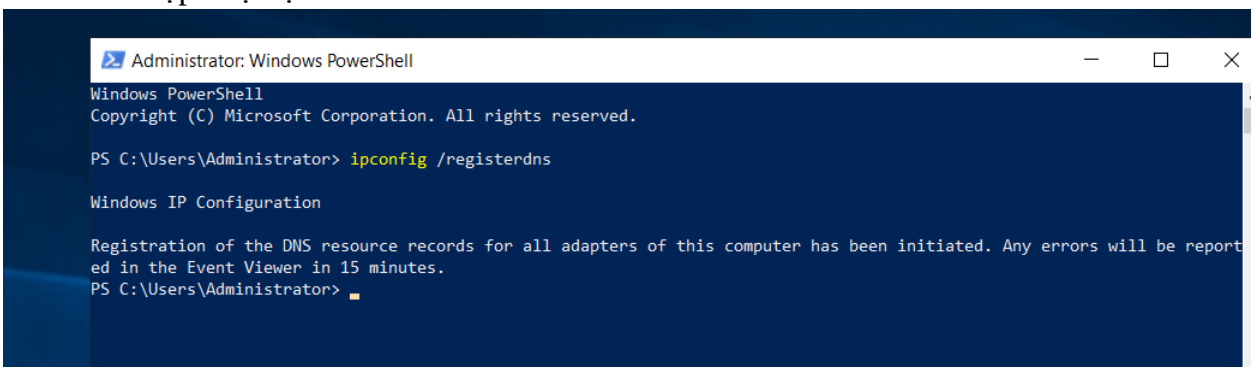
- Bước 12: Chọn IPv4 và bấm Next



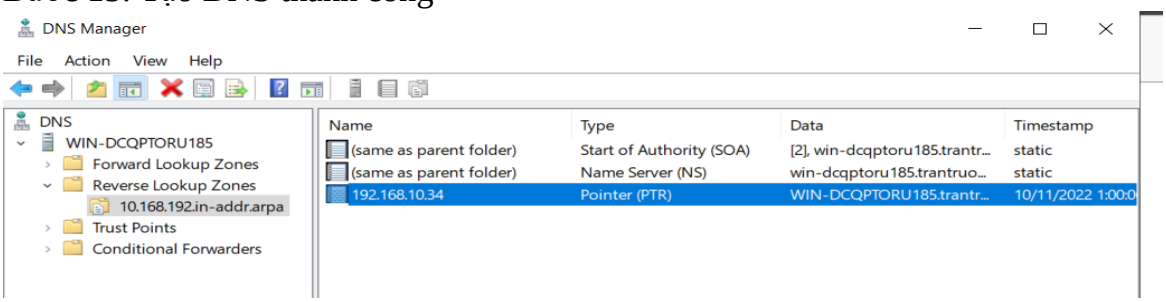
- Bước 13:Nhập địa chỉ mạng của server, chọn OK, Chọn Finish



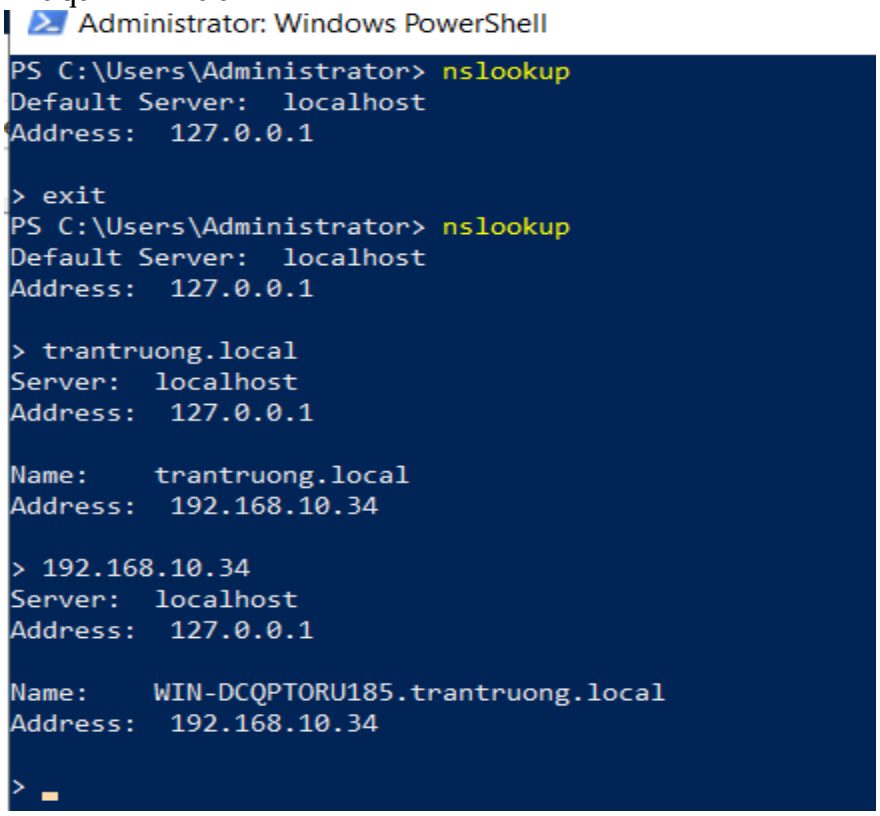
- Bước 14: Cập nhật lại DNS



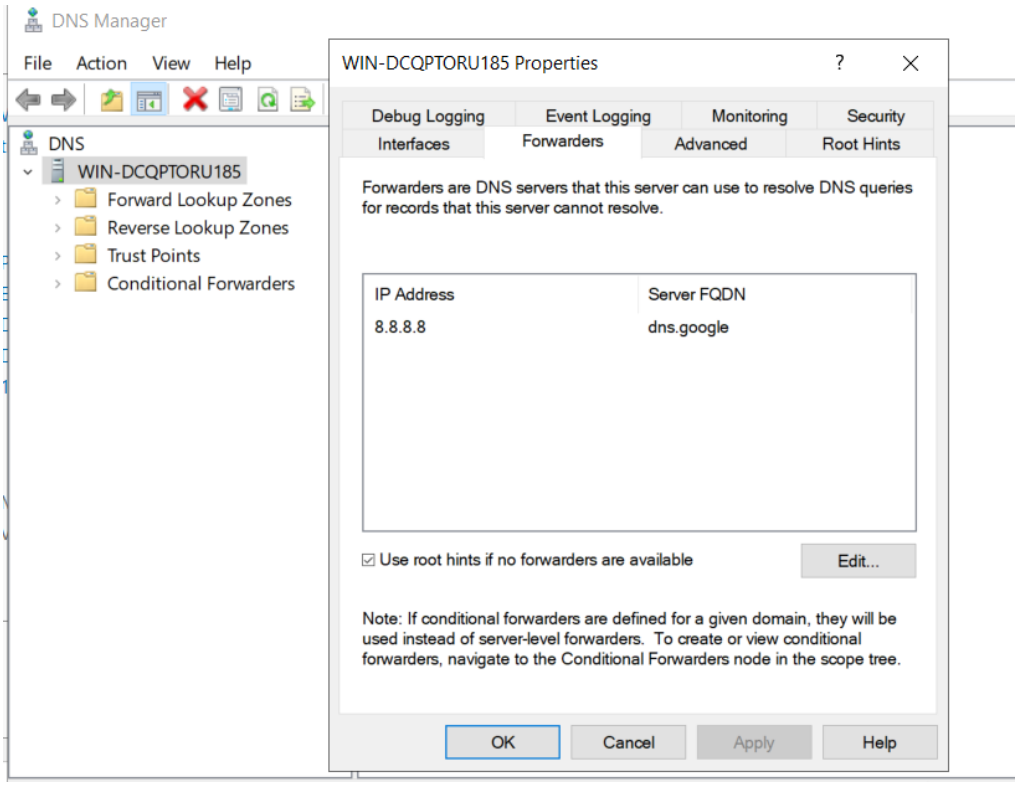
- Bước 15: Tạo DNS thành công



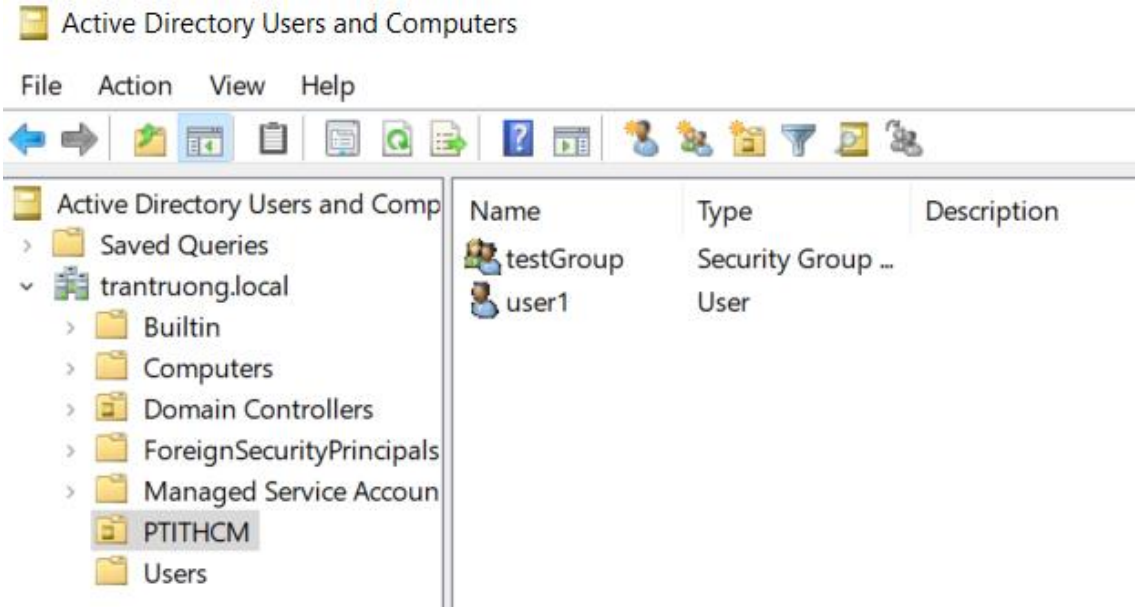
- Bước 16: Kết quả kiểm tra



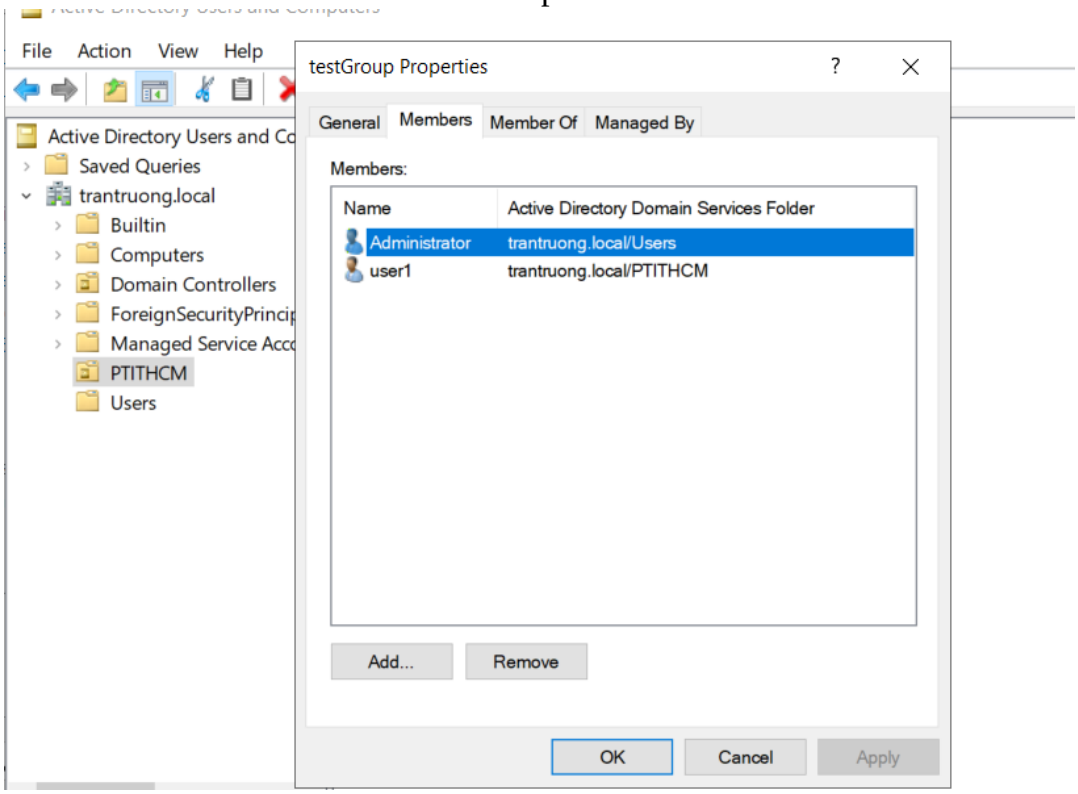
- Bước 17: Chuột phải vào server chon property > Chọn tab Forwarders > Bấm Edit > Chọn Add > Nhập 8.8.8.8 > Bấm OK > Apply > OK



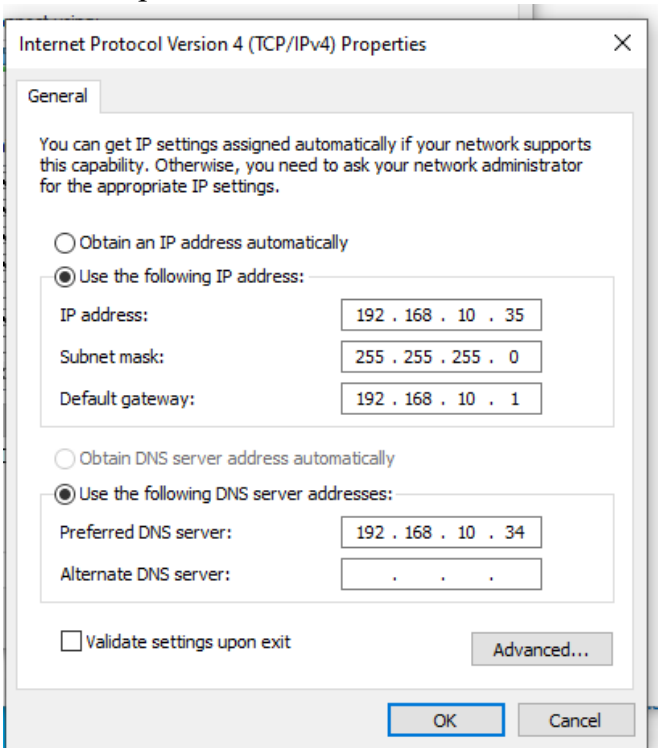
- Bước 18: Vào Server Manager > Tools > Active Directory Users and Computers > Tạo User và group như sau



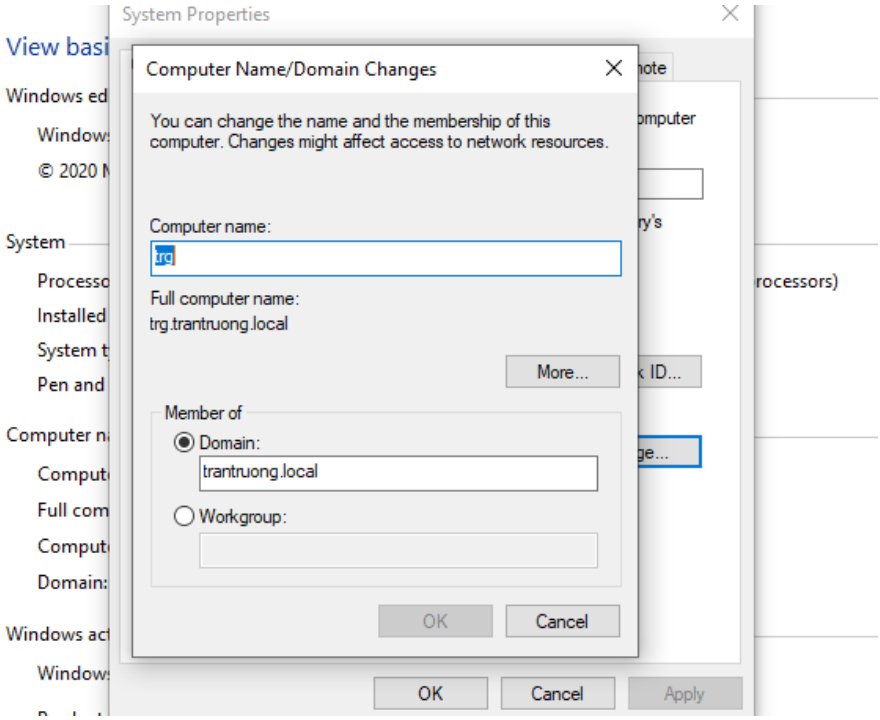
- Bước 19: Thêm user1 và admin vào Group



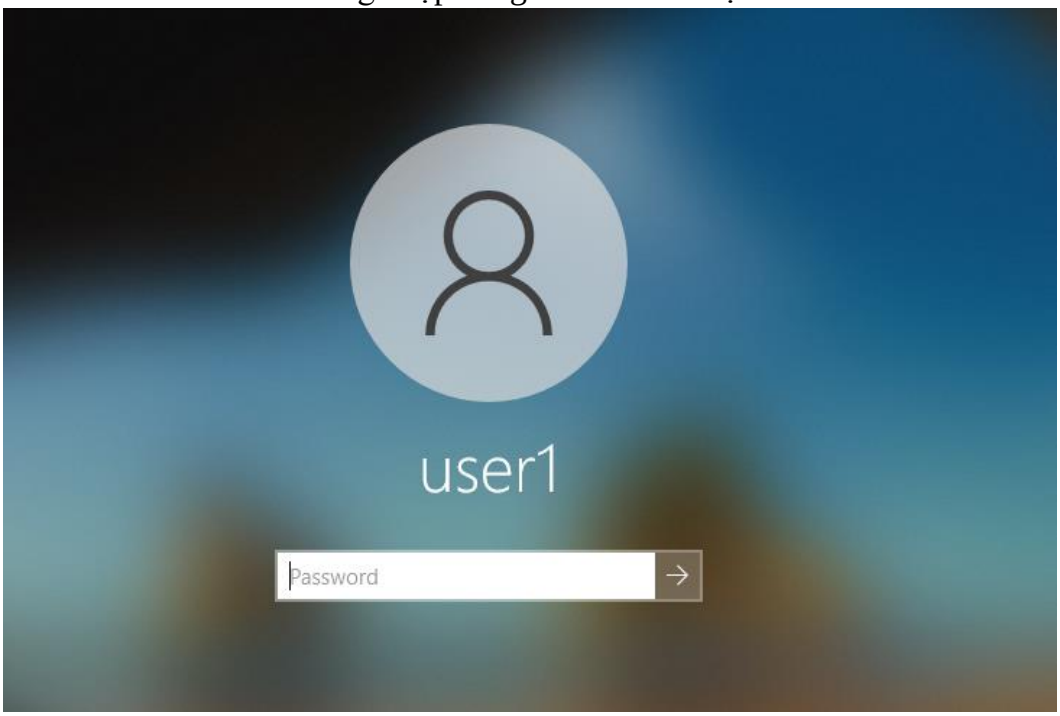
- Bước 20: Trên PC1 đặt lại ipv4 như sau



- Bước 21: Thêm PC1 vào domain

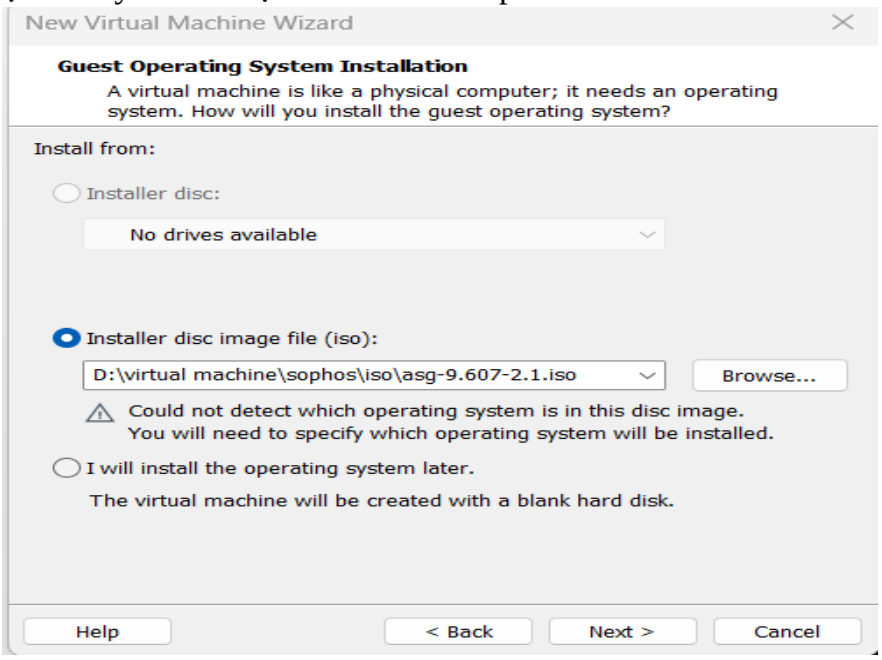


- Bước 22: Restart PC1 và đăng nhập bằng tài khoản đã tạo trên domain

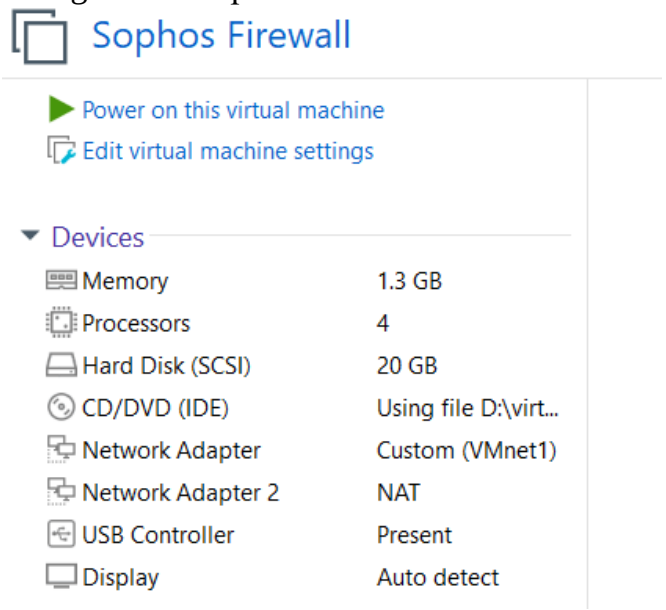


2.2. Cài đặt firewall Sophos

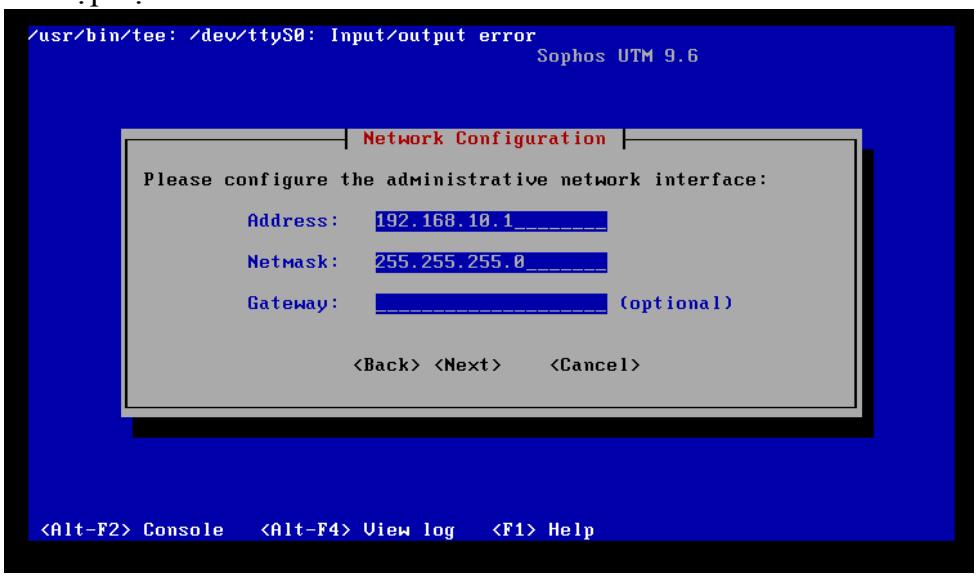
- Bước 1: Tạo 1 máy ảo và chọn file iso cho Sophos



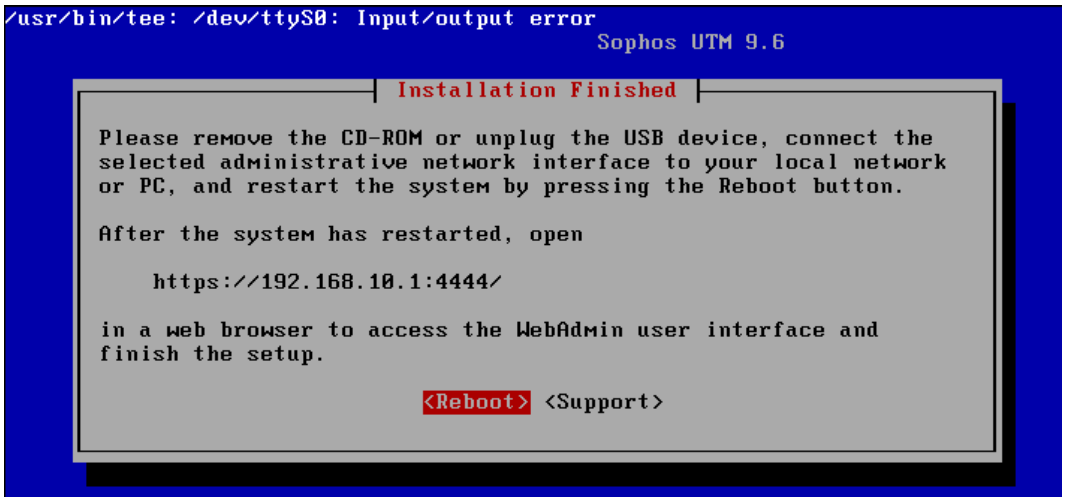
- Bước 2: Thiết lập thông số cho Sophos như sau



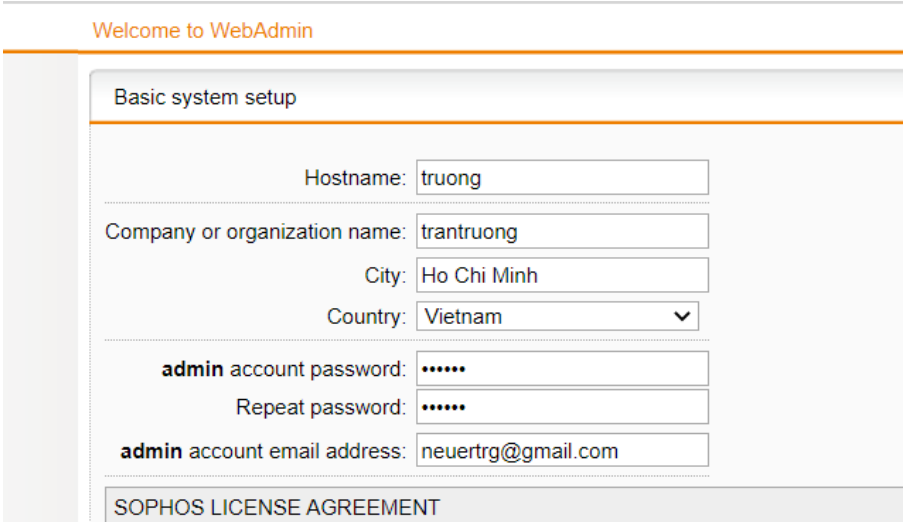
- Bước 3: Nhập địa chỉ cho LAN interface



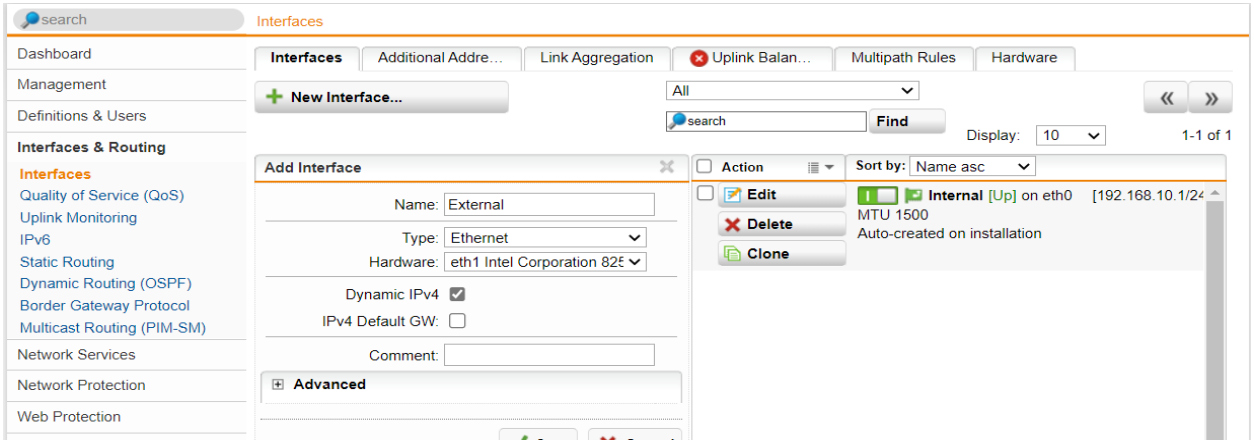
- Bước 4: Reboot



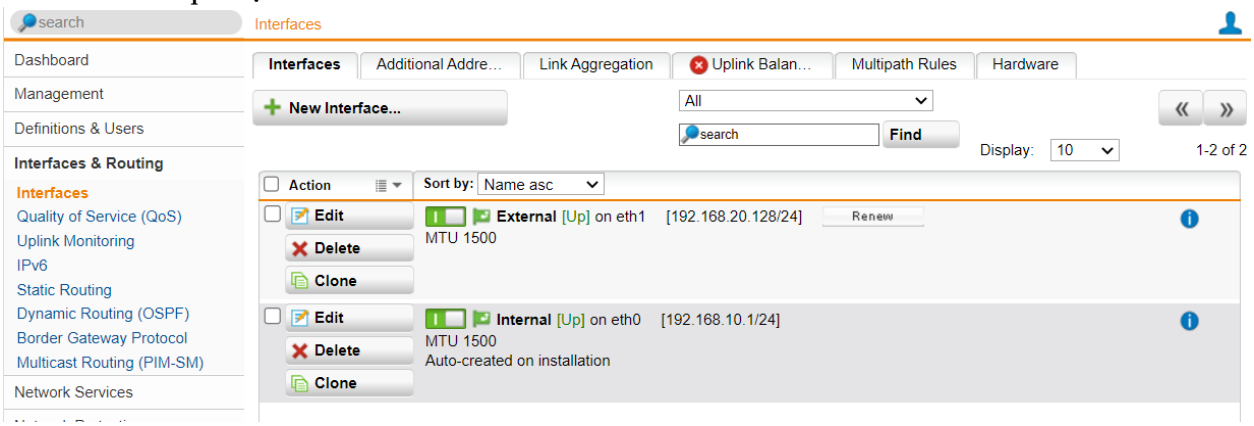
- Bước 5: Truy cập web Admin và nhập thông tin như bên dưới, sau đó nhấn Apply



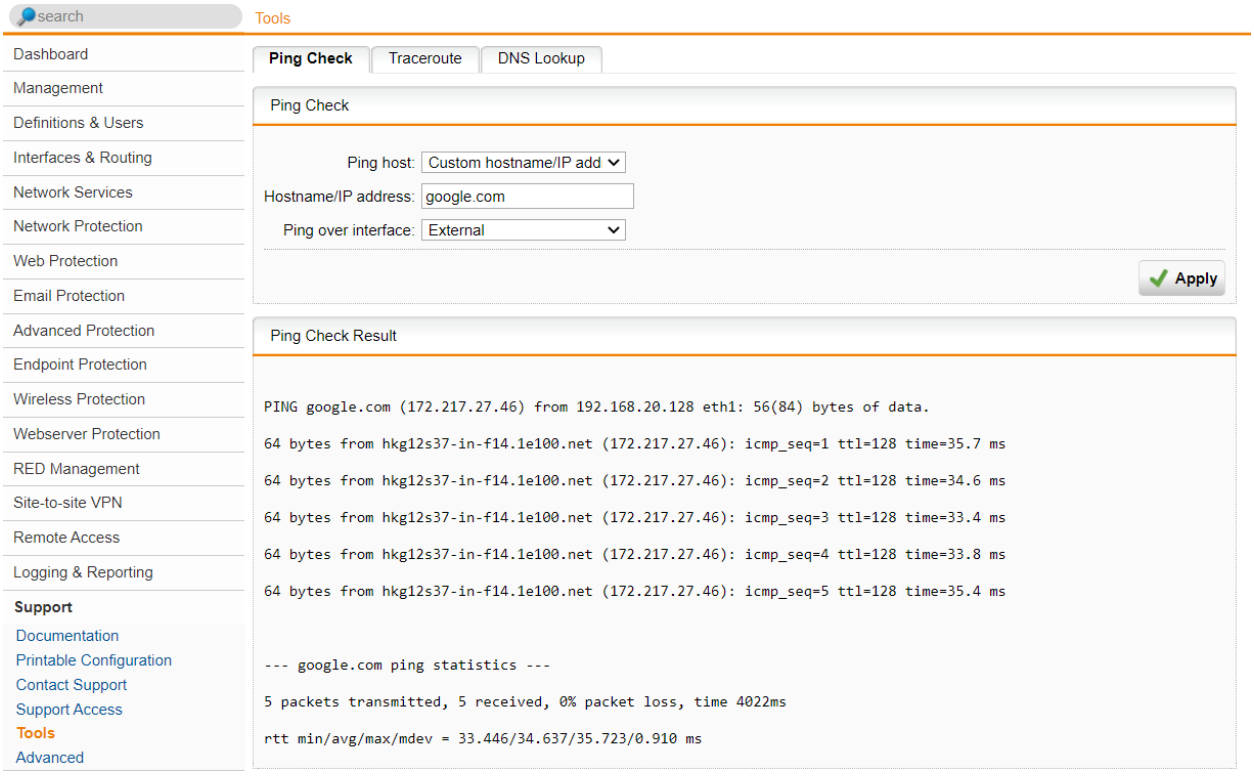
- Bước 6: Cấu hình interface WAN



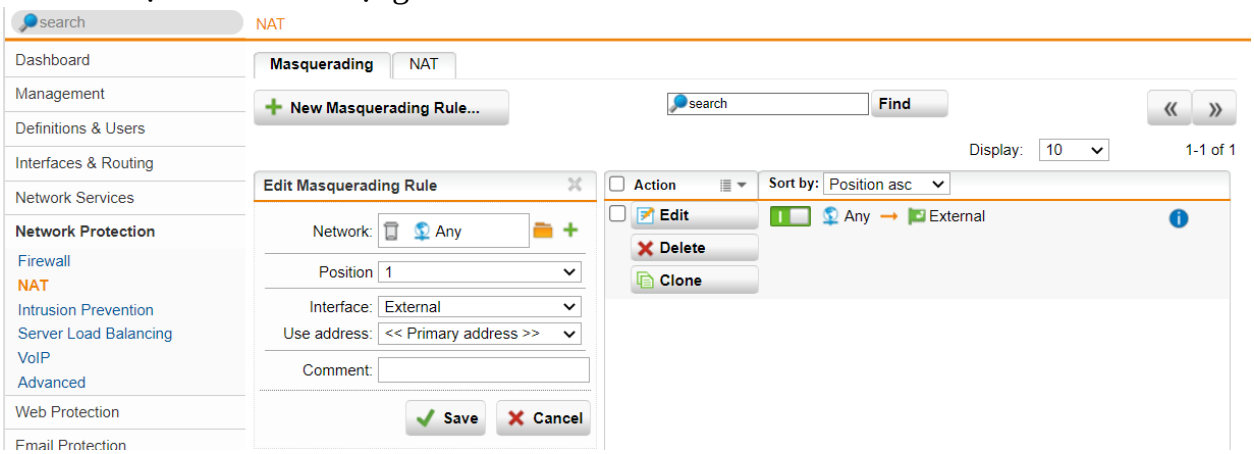
- Bước 7: Kết quả tạo interface



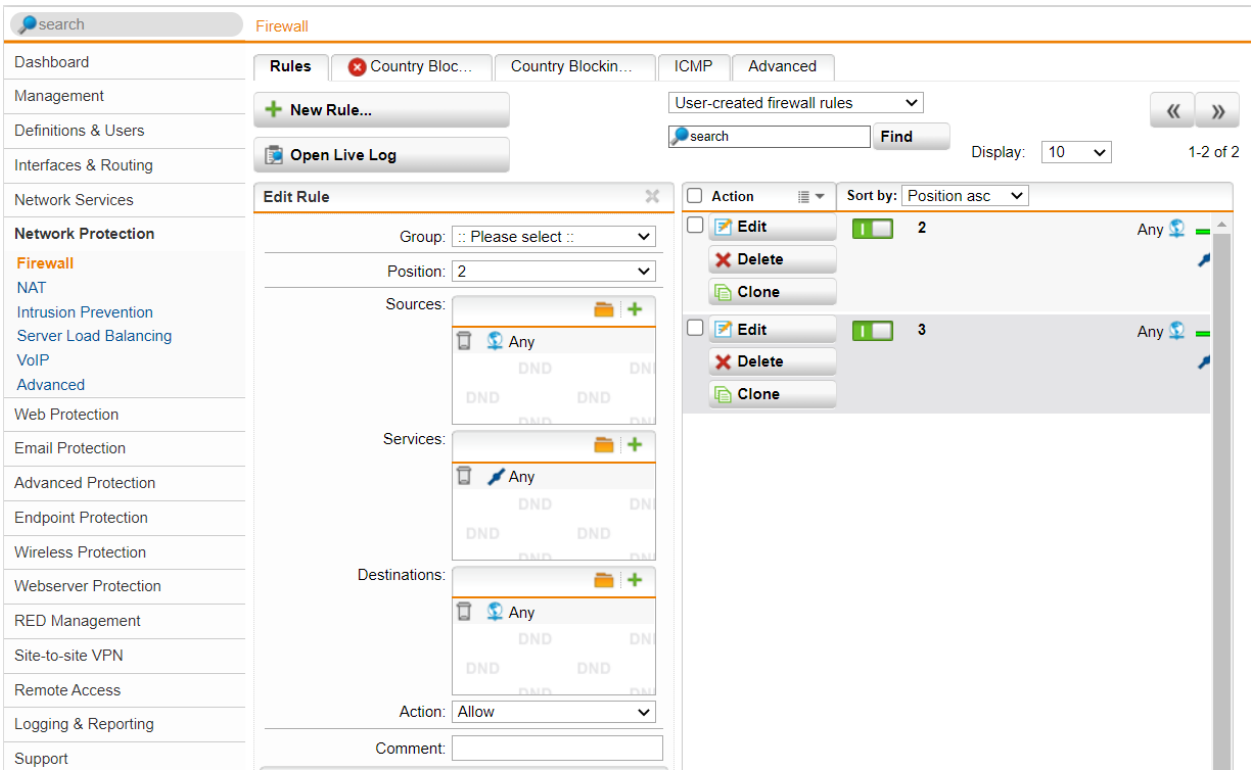
- Bước 8: Vào Support > Tools > ping google kiểm tra firewall truy cập internet



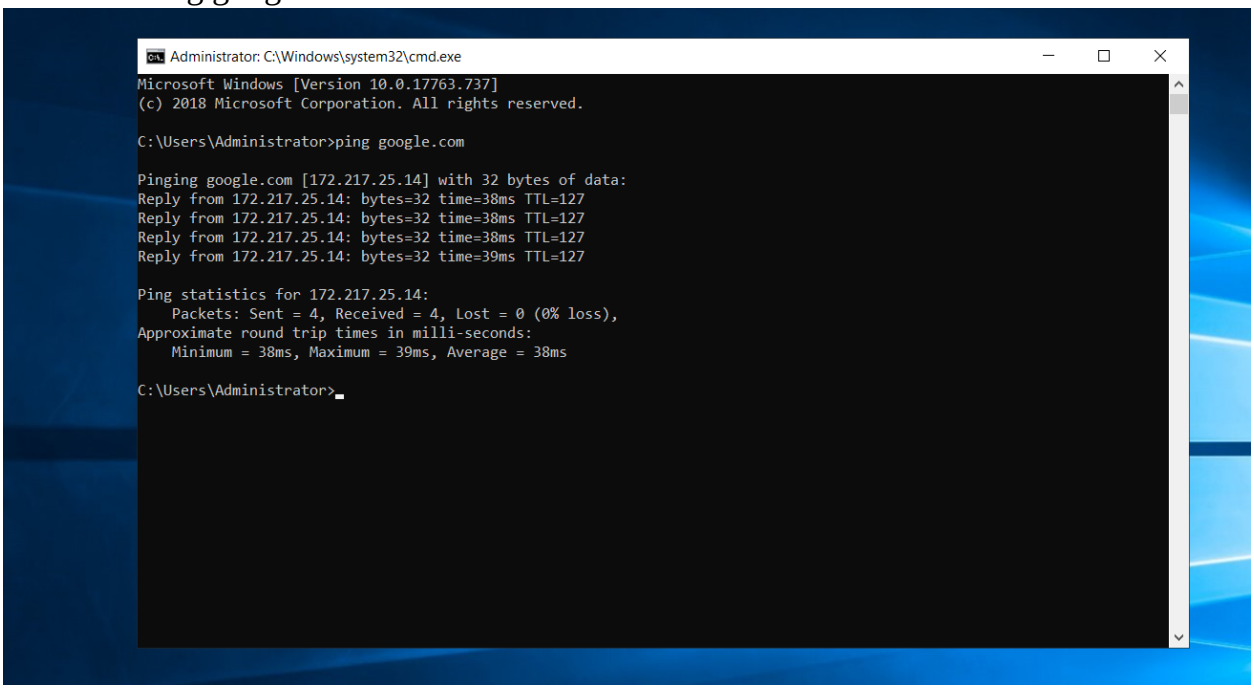
- Bước 9: Tạo nat để các mạng có thể ra internet



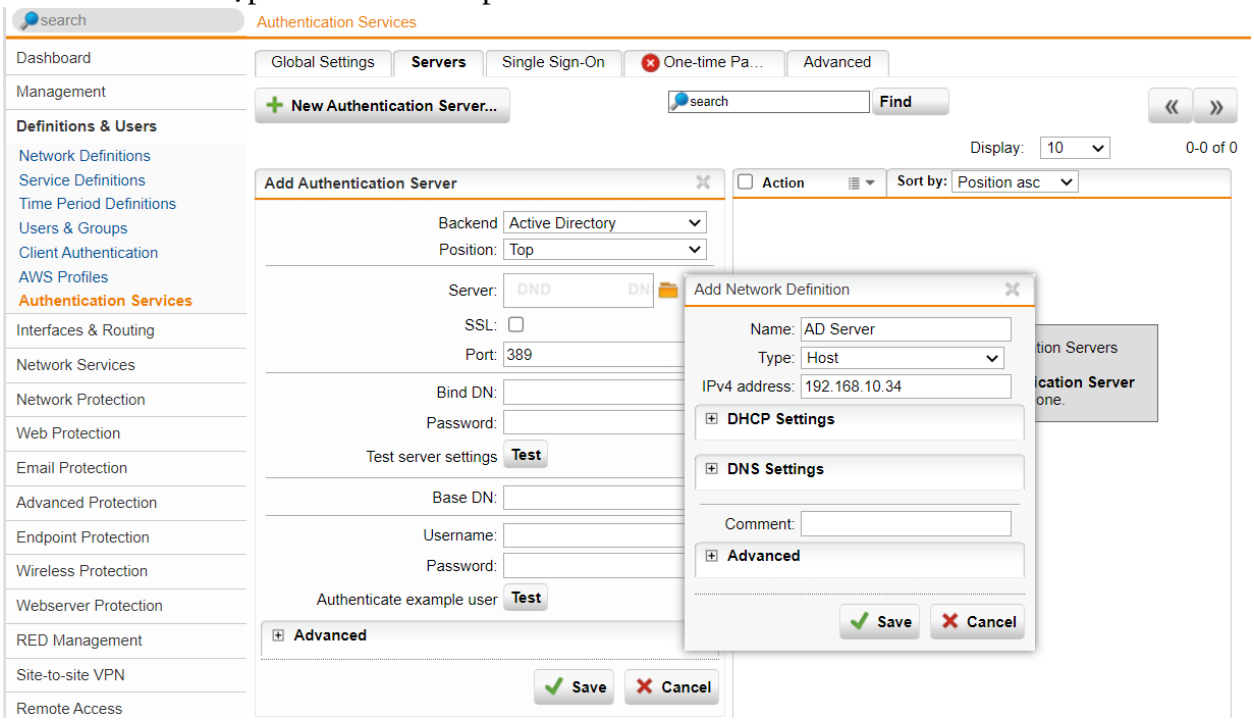
- Bước 10: Tạo rule cho phép domain controller kết nối internet



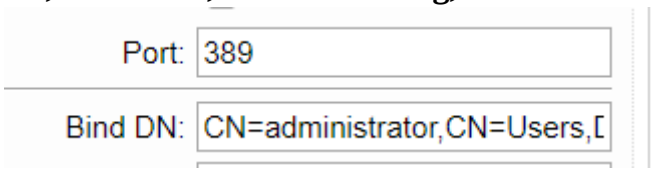
- Bước 11: Ping google từ Domain Controller



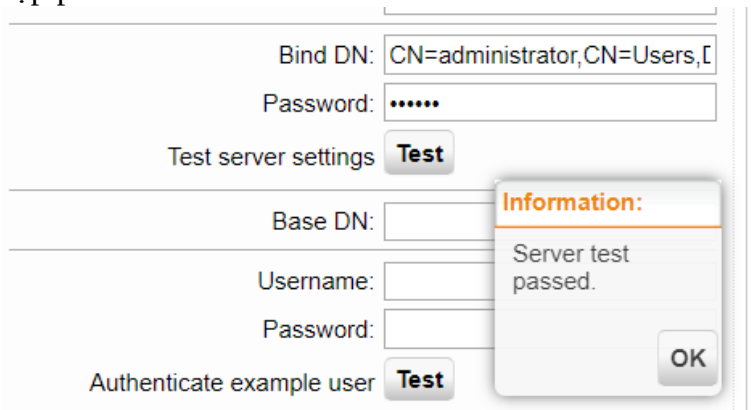
- Bước 12: Tích hợp domain vào Sophos



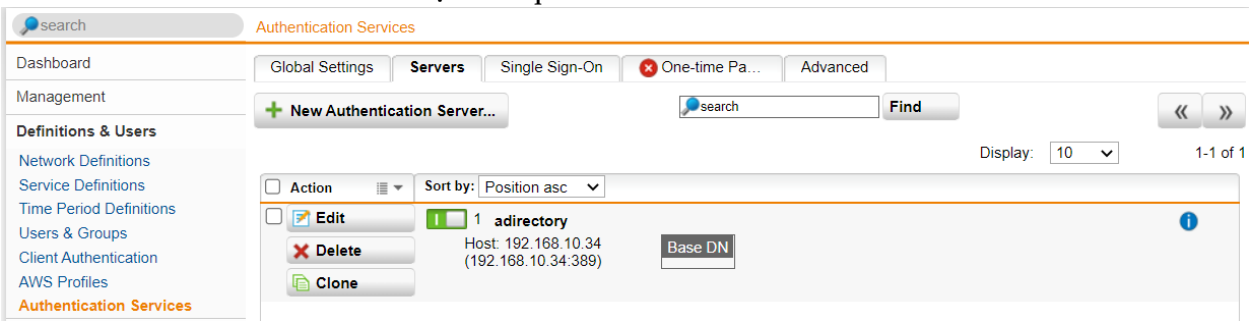
- Bước 13: Bind DN nhập "**CN=administrator,CN=Users,DC=trantruong,DC=local**"



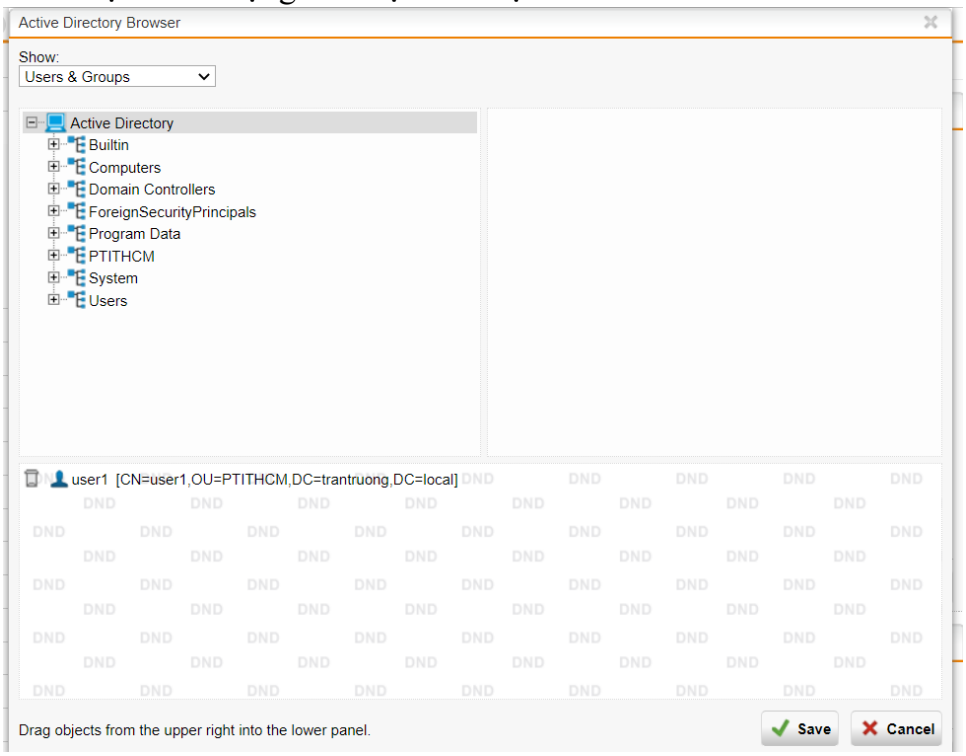
- Bước 14: Nhập password cho tài khoản administrator và nhấn test server settings



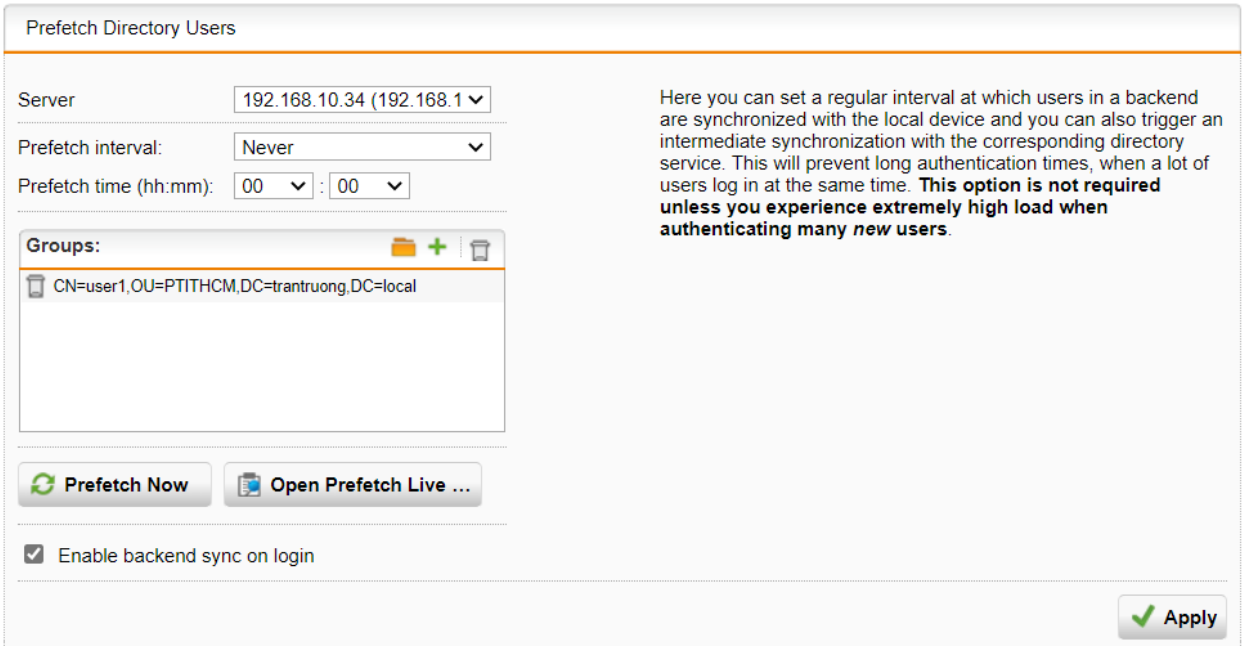
- Bước 15: Nhấn save và thu được kết quả



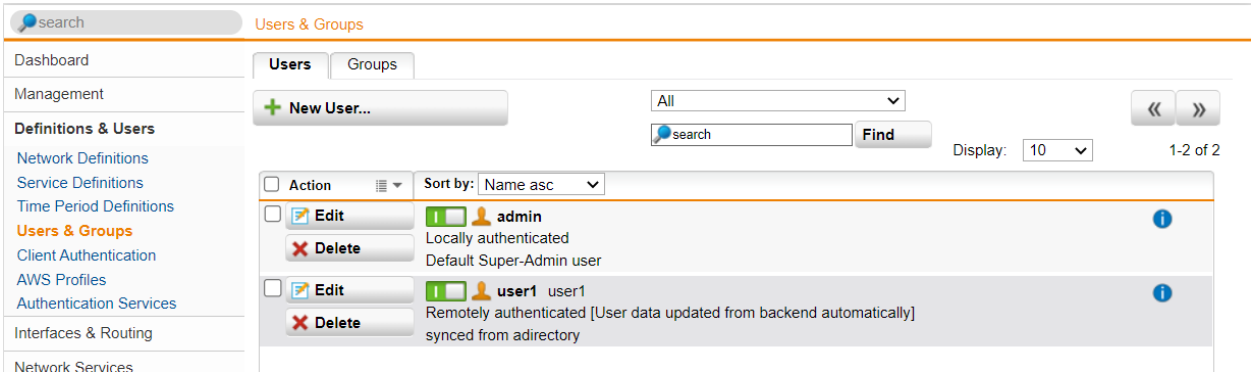
- Bước 16: Authentication Services > Tab Advanced > Mục Prefetch Directory Users nhấn chọn biểu tượng thư mục rồi chọn user > nhấn save



- Bước 17: Tích chọn “Enable backend sync on login” sau đó nhấn Apply

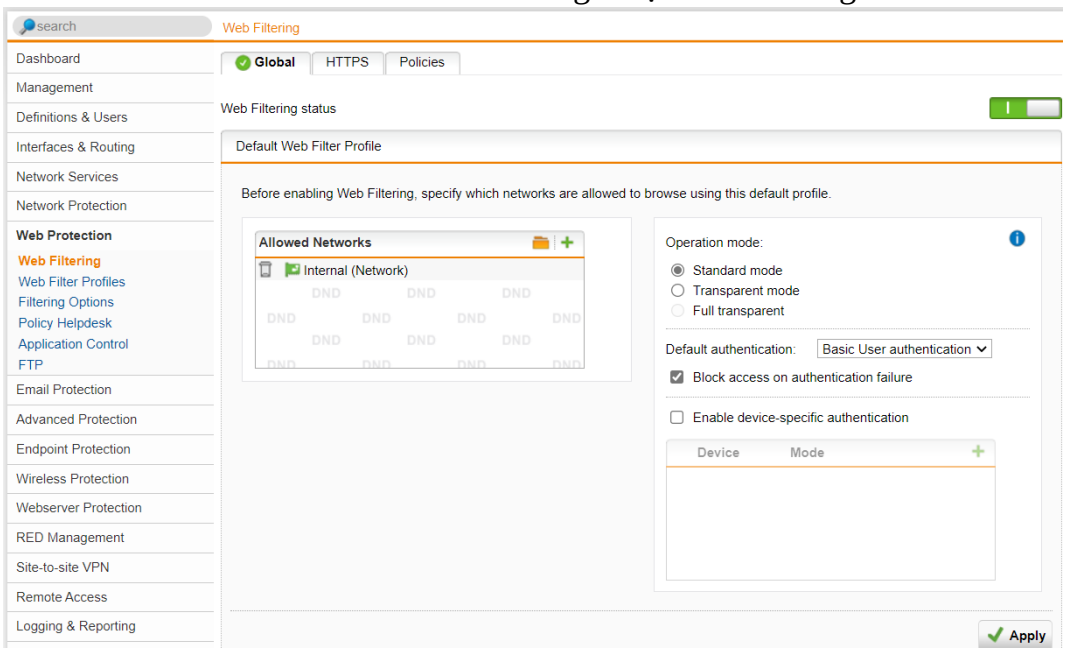


- Bước 18: Urser 1 đã được tạo

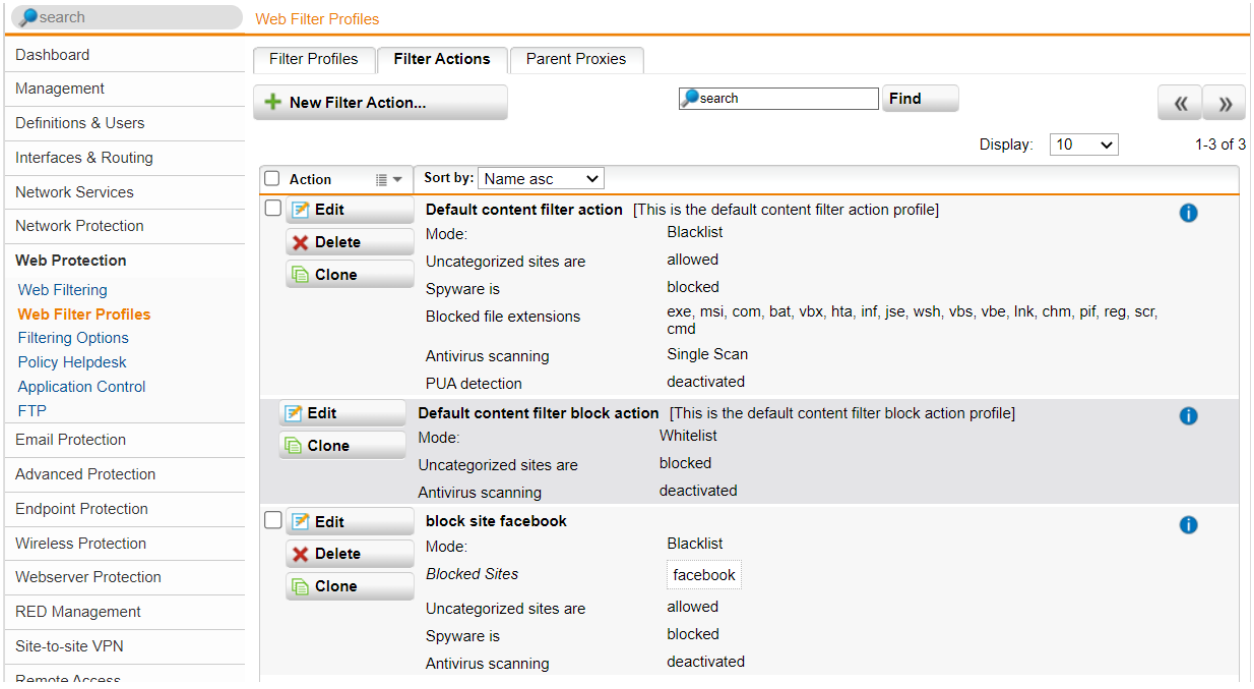


2.3. Cấu hình chính sách Sophos chặn user truy cập facebook

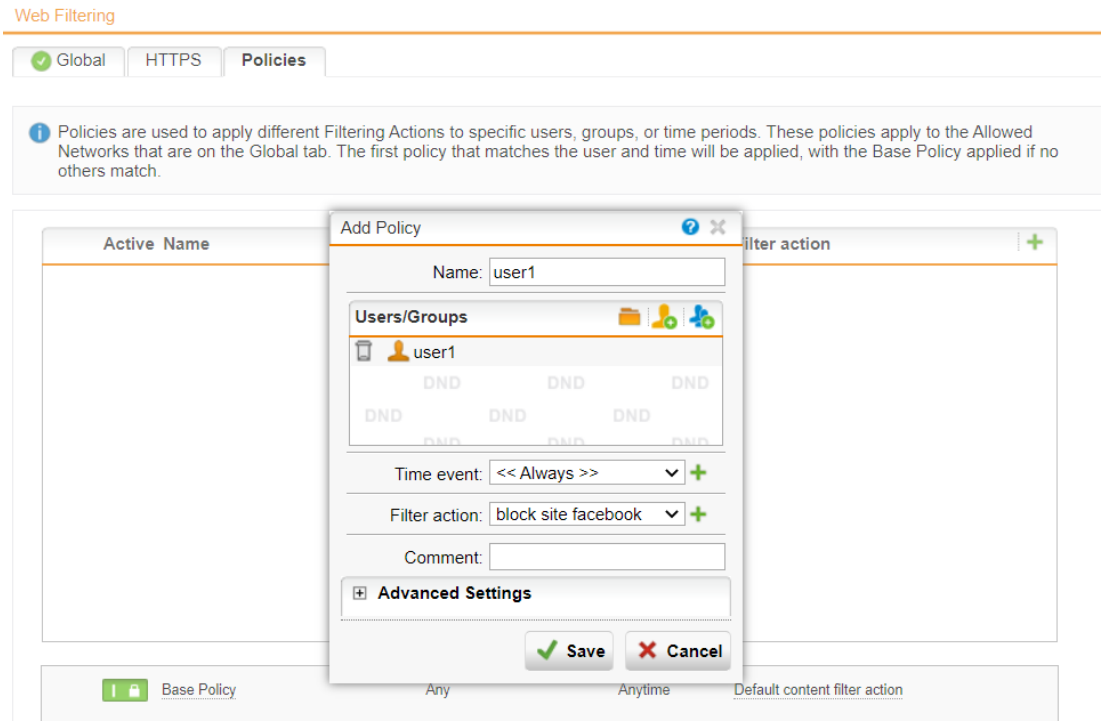
- Bước 1: Vào Web Protection > Web Filtering > bật web filtering



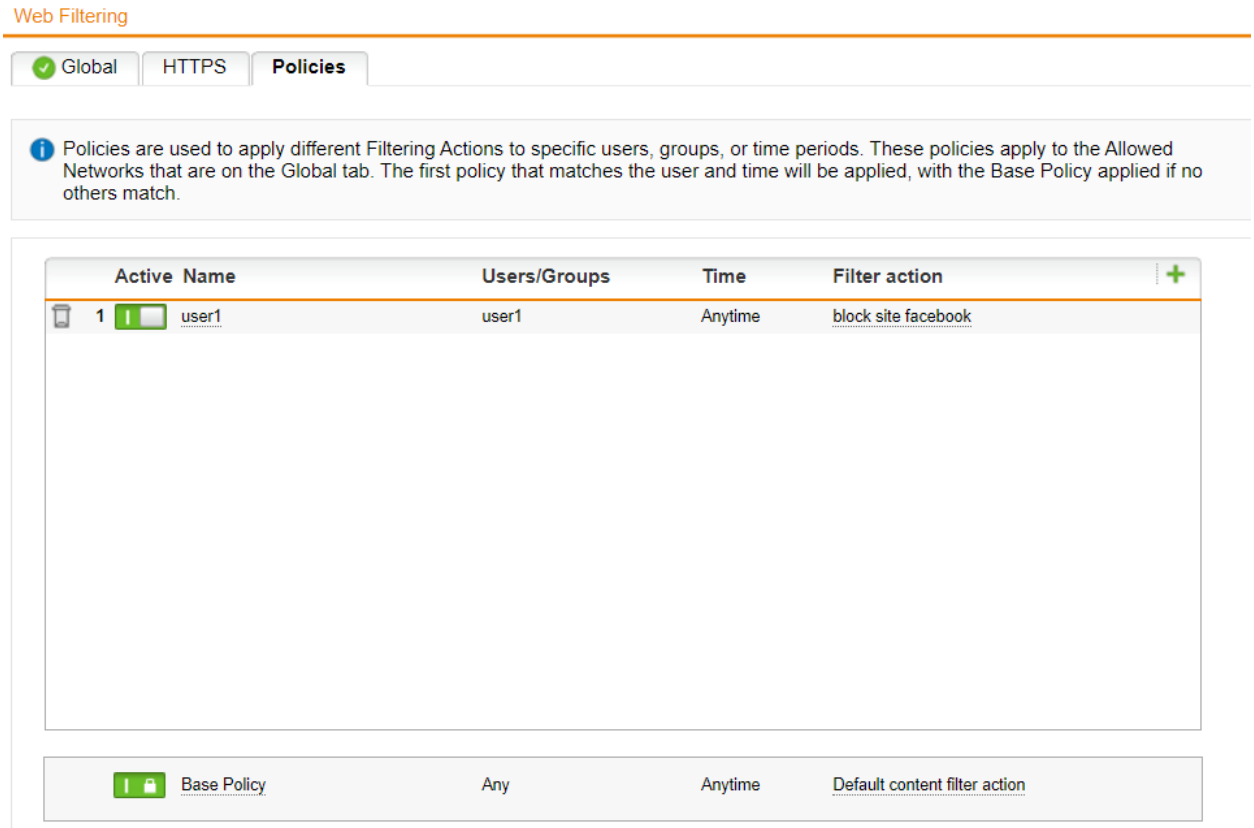
- Bước 2: Vào Web Protection > Web Filter Profiles > Filer Actions > New Filter Action > tạo action block site facebook.com



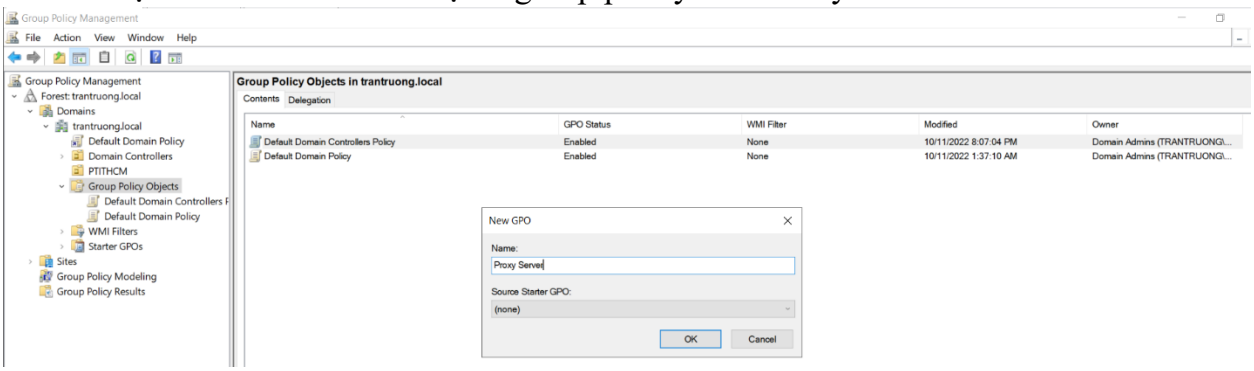
- Bước 3: Vào tab Polices add policy cho user1



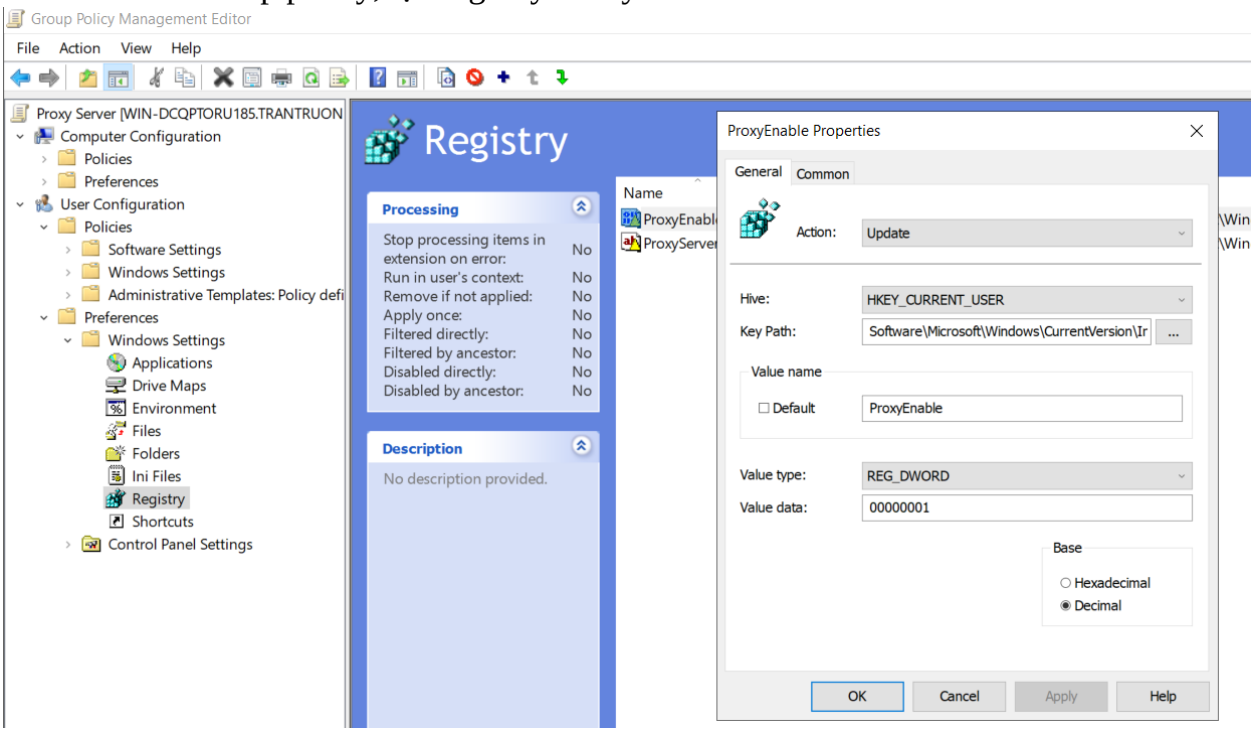
- Bước 4: Click active



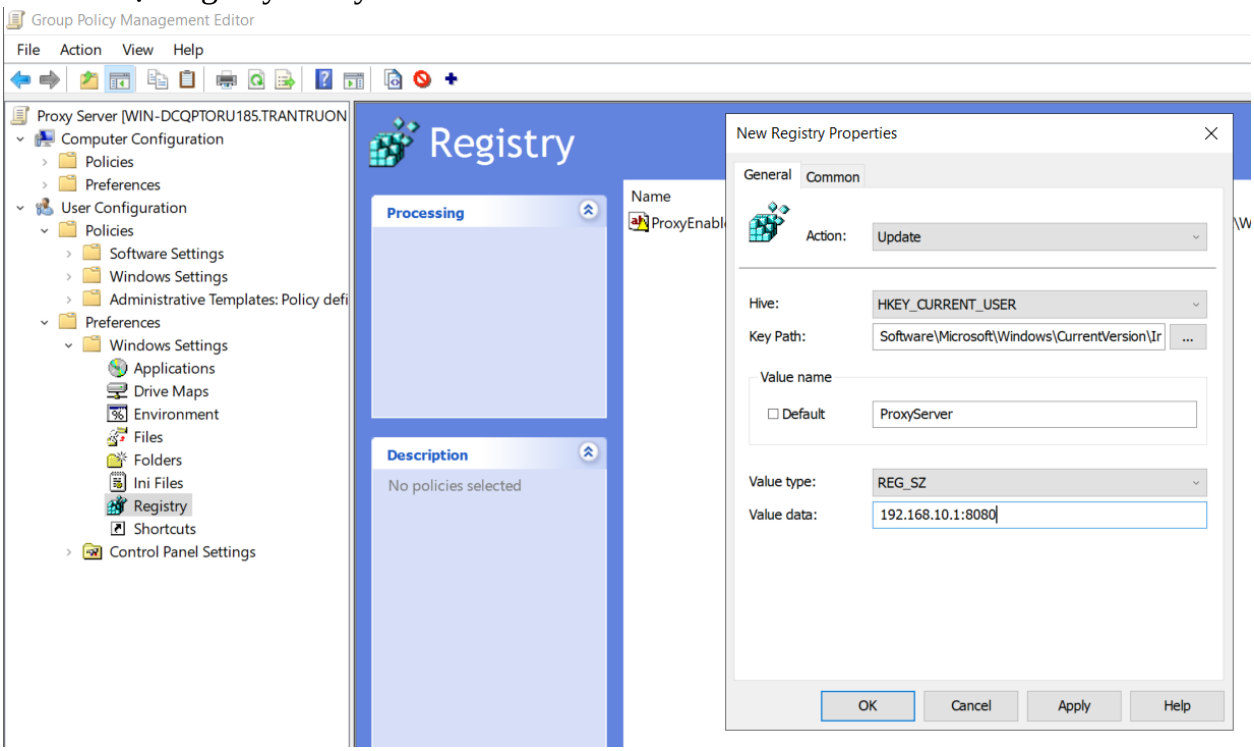
- Bước 5: tại Domain Controller tạo 1 group policy tên “Proxy Server”



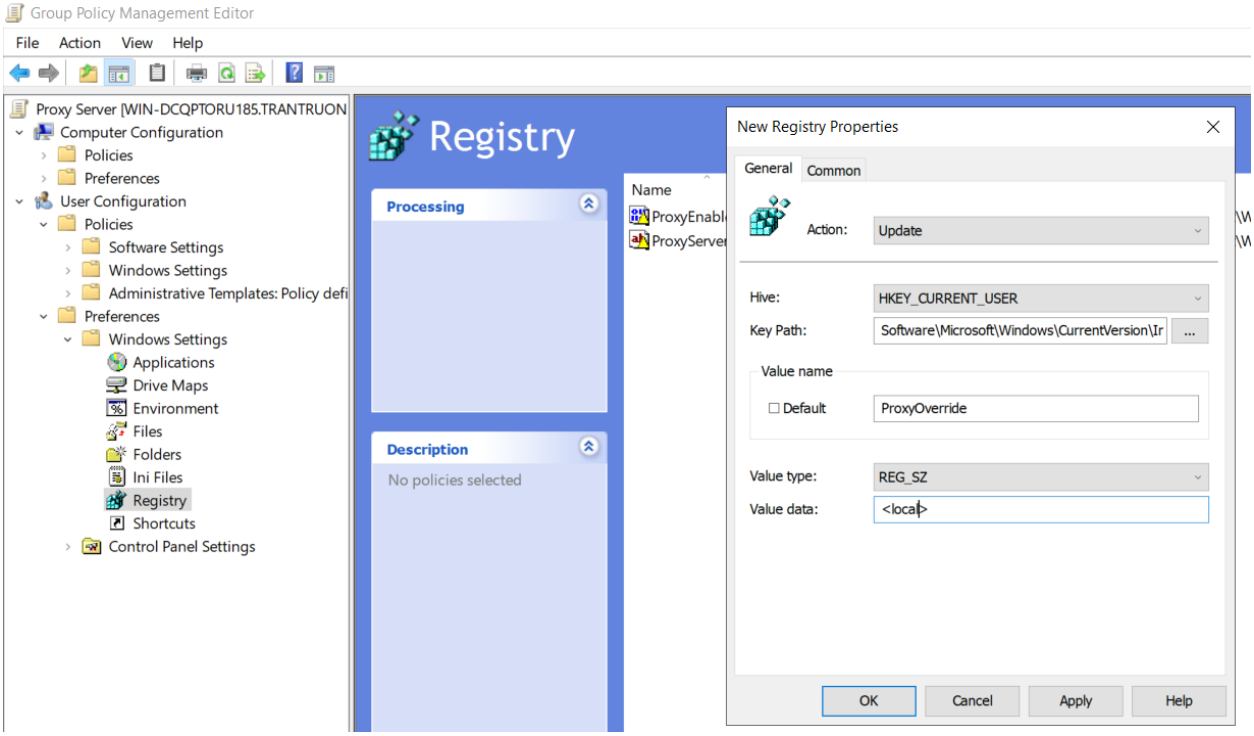
- Bước 6: Edit Group policy, tạo registry ProxyEnable



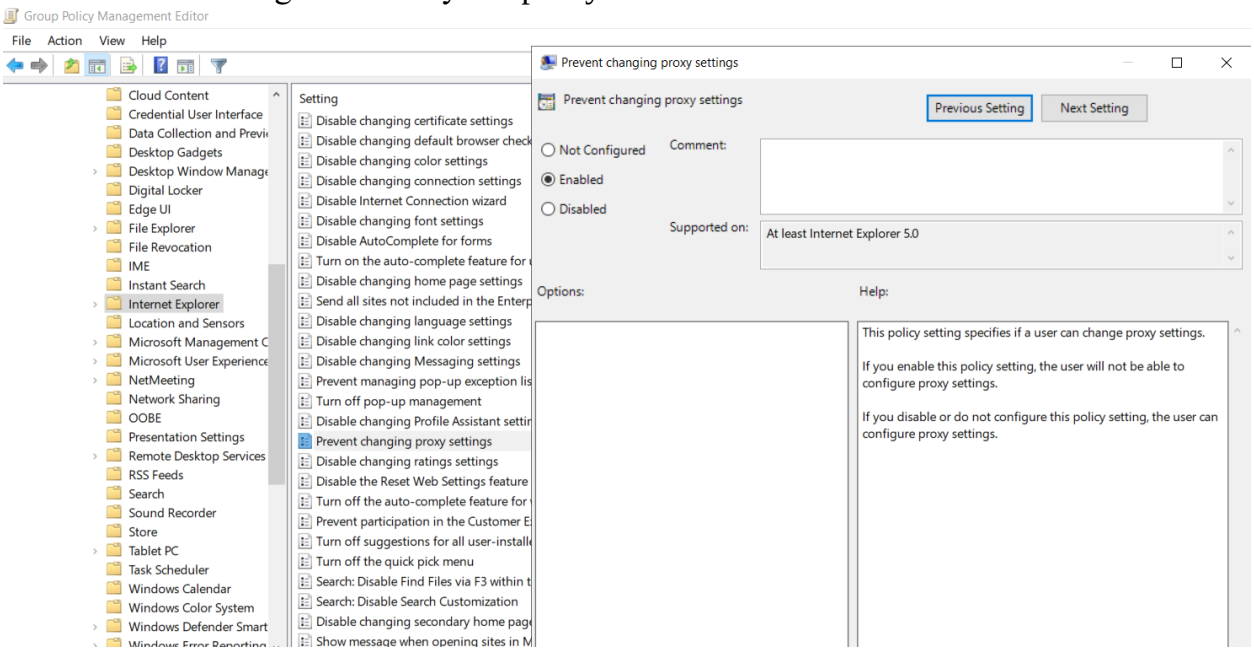
- Bước 7: tạo registry ProxyServer



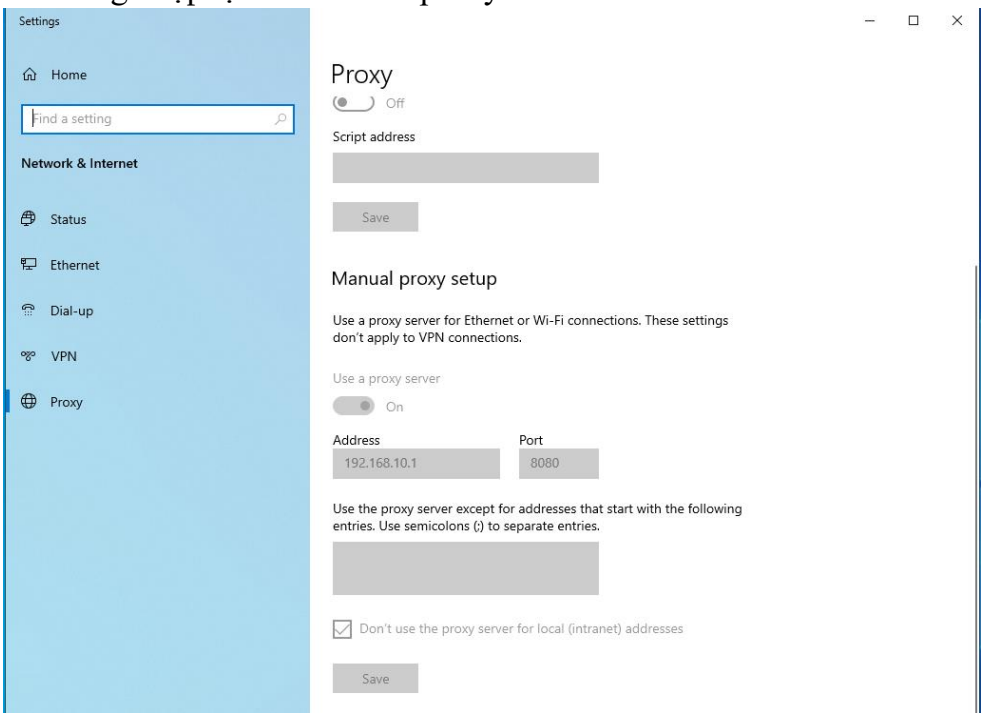
- Bước 8: tạo registry Override



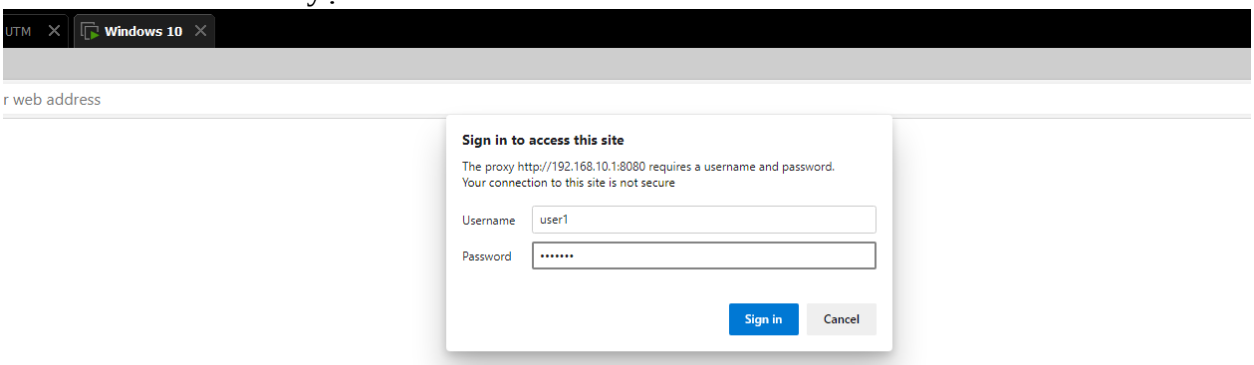
- Bước 9: Cấu hình ngăn user thay đổi proxy



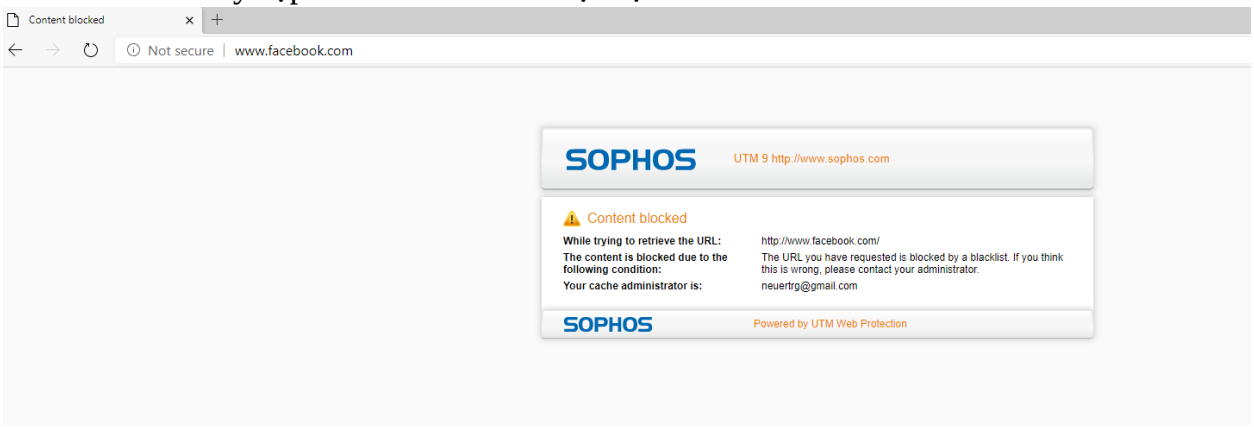
- Bước 10: Chạy “gpupdate /force” để cập nhật lại chính sách
- Bước 11: Đăng nhập lại PC1 và mở proxy để kiểm tra



- Bước 12: Mở trình duyệt trên PC1

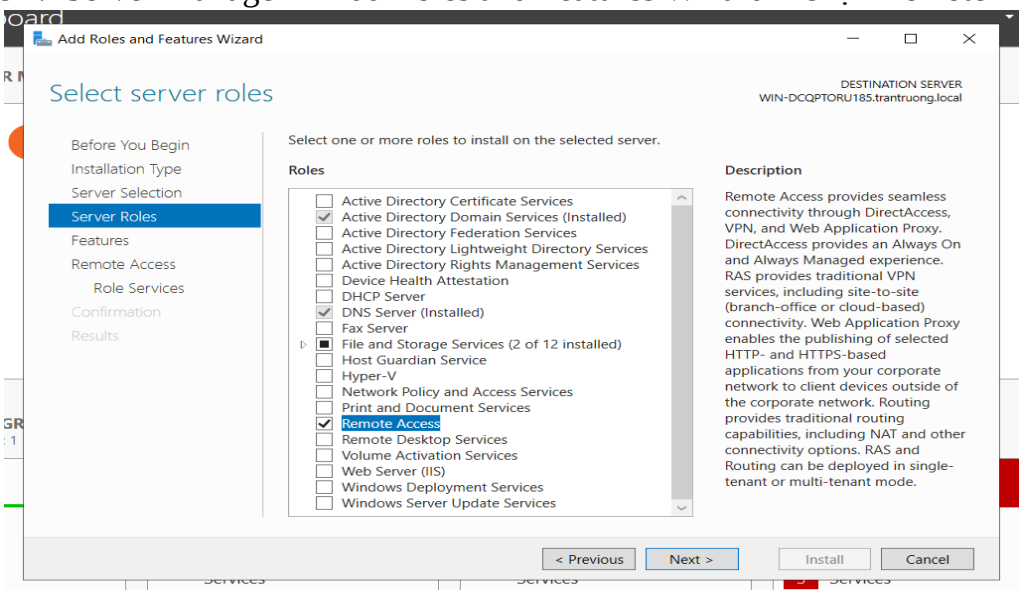


- Bước 13: thử truy cập facebook.com và bị chặn

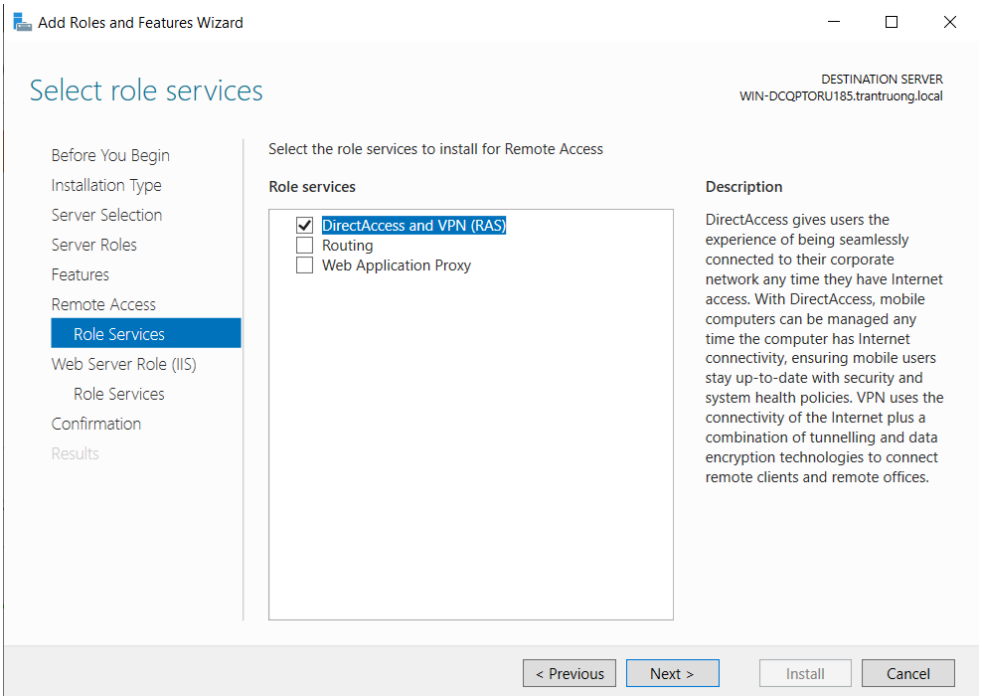


2.4. Cài đặt và cấu hình vpn server

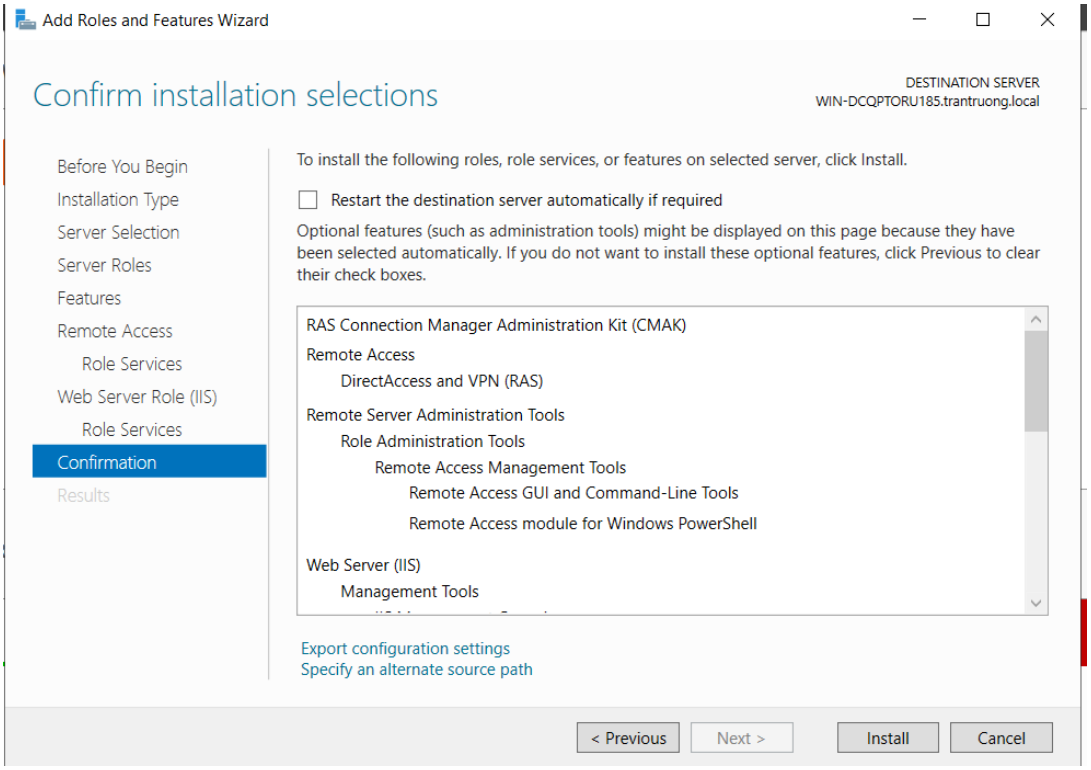
- Bước 1: Server Manager > Add Roles and Features Wizard > chọn Remote Acces



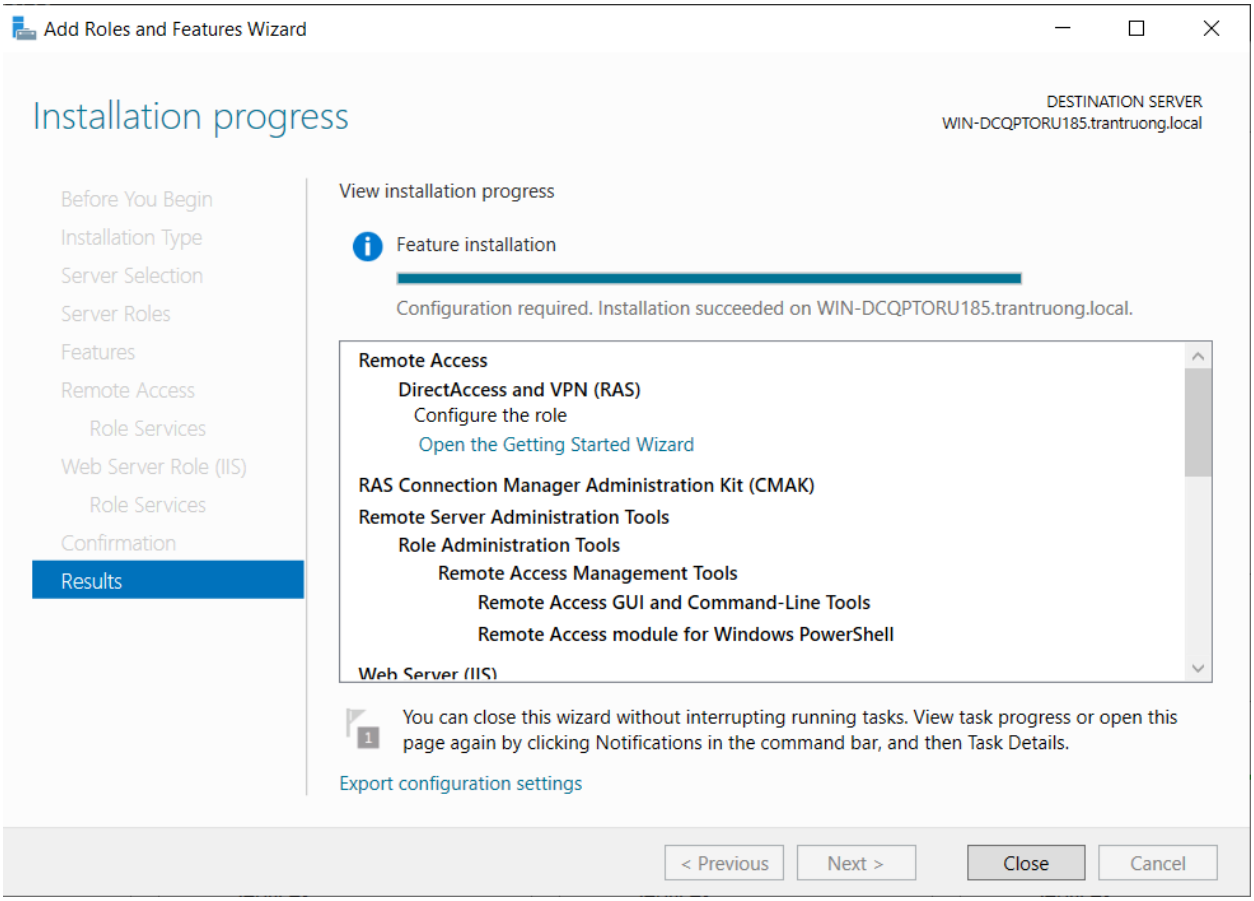
- Bước 2: Chọn RAS



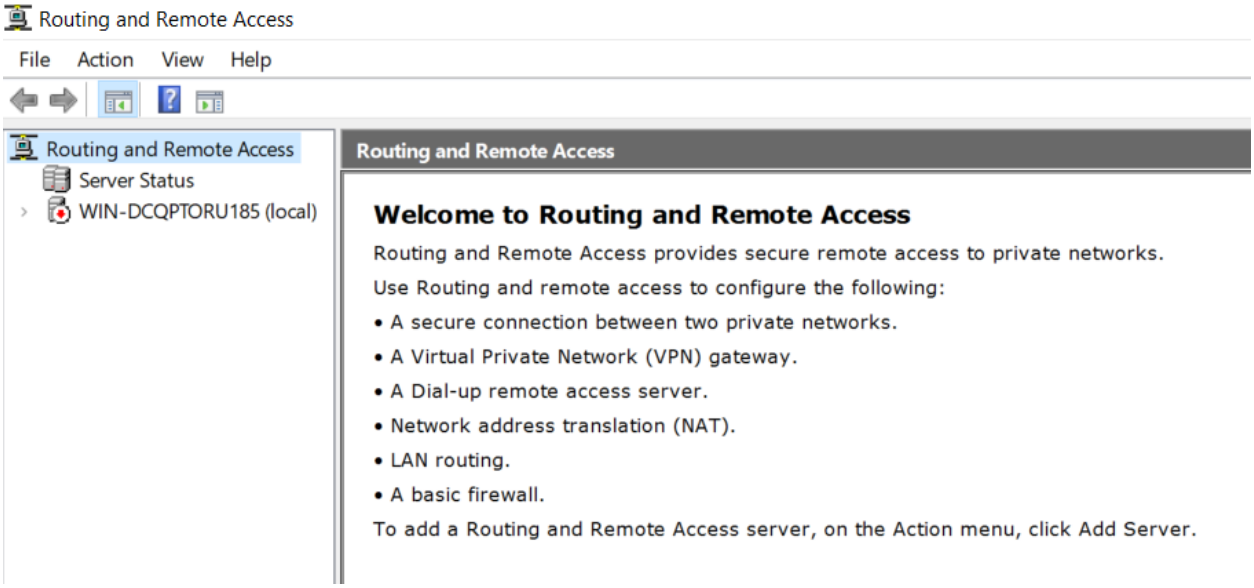
- Bước 3: Click Install



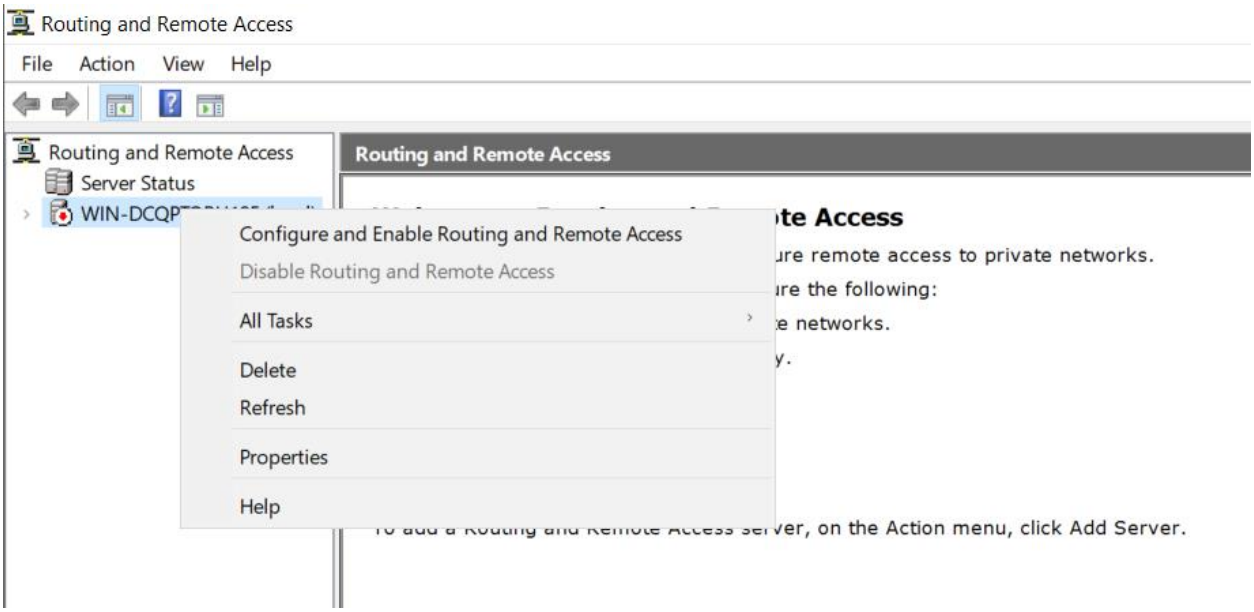
- Bước 4: Hoàn thành cài đặt



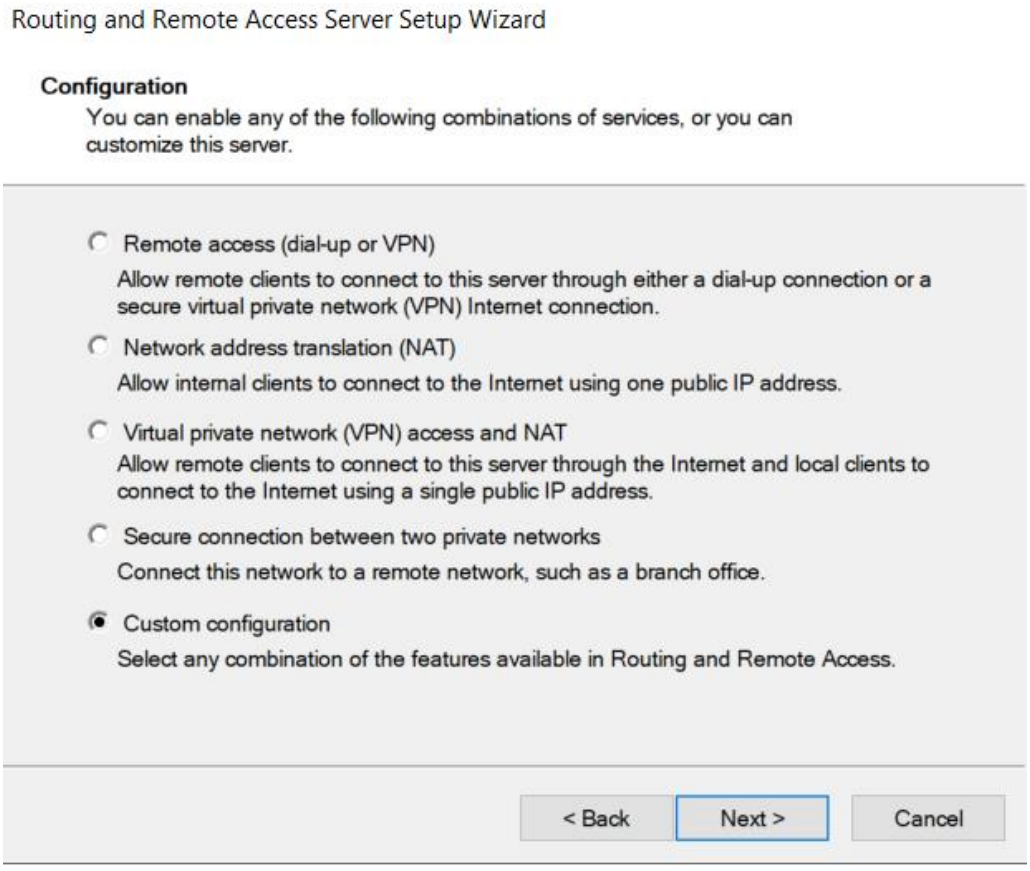
- Bước 5: Tools > Routing and Remote Access



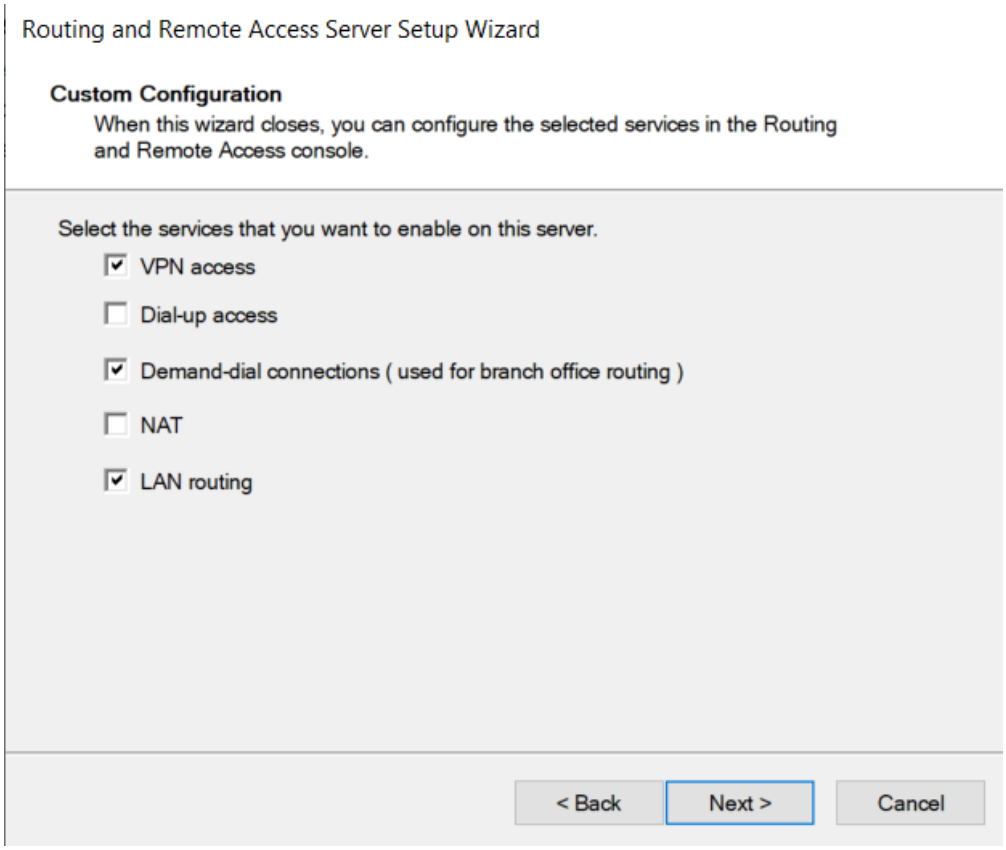
- Bước 6: Chuột phải vào server > Configure and Enable Routing and Remote Access



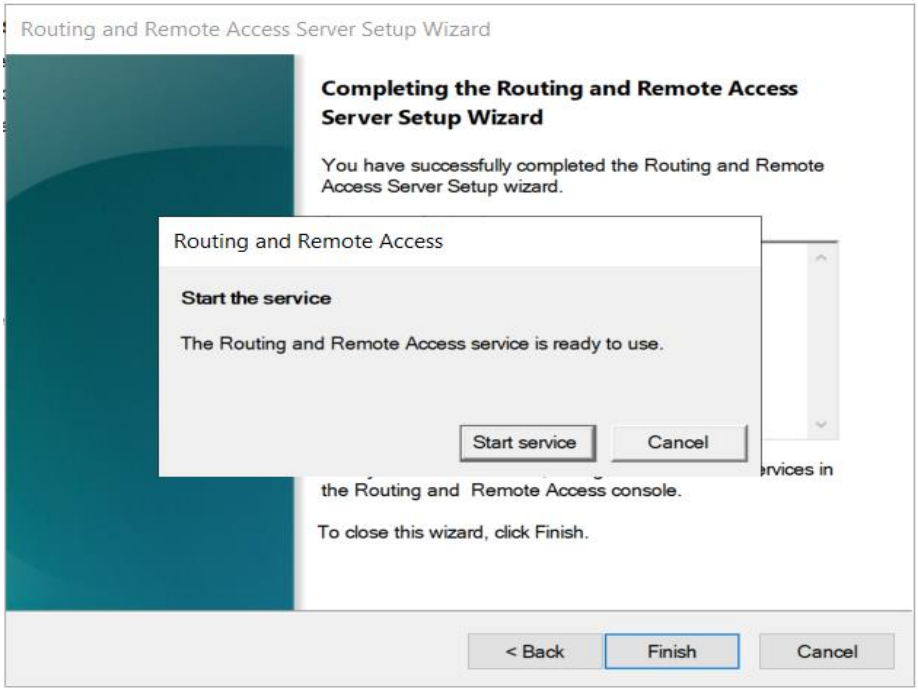
- Bước 7: Custom config, nhấn next



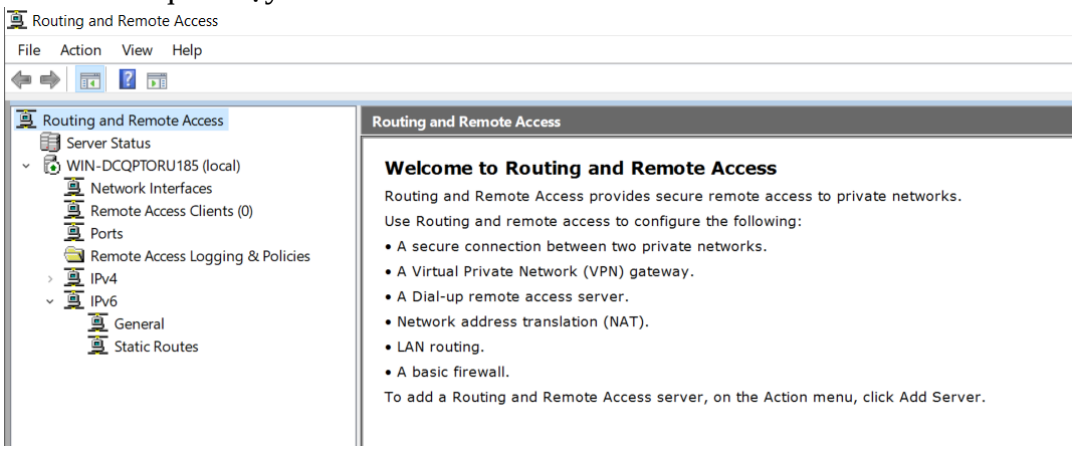
- Bước 8: Chọn VPN, Demand-dial, LAN, rồi bấm next



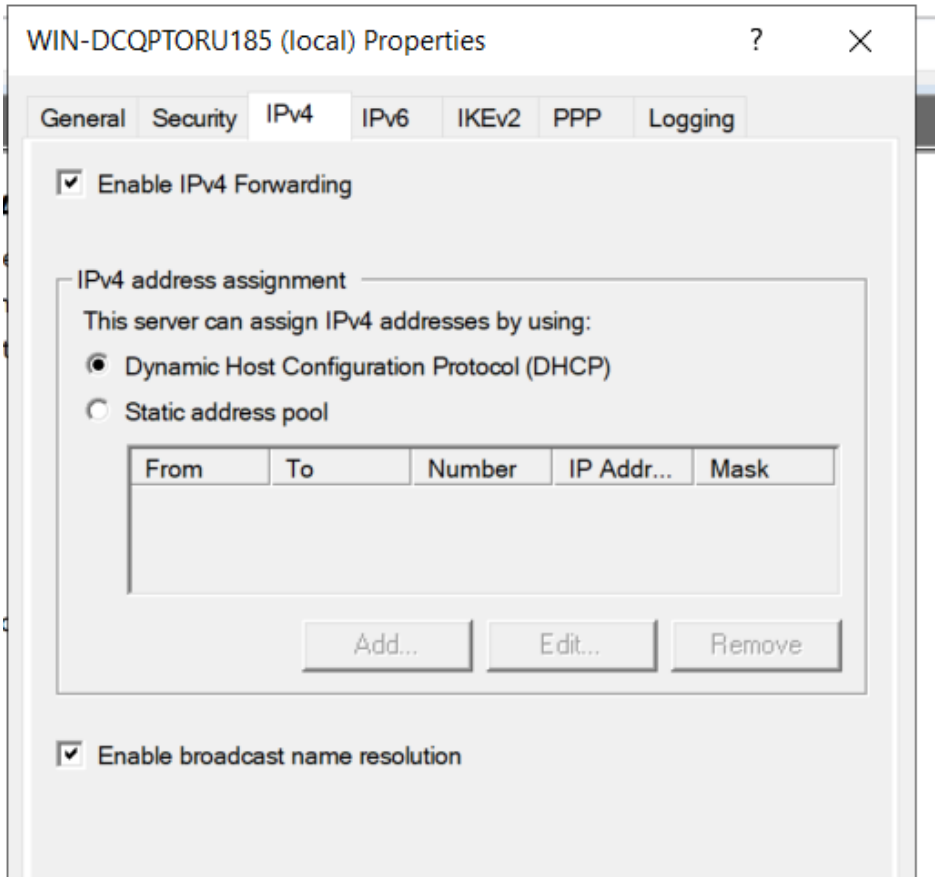
- Bước 9: Start service



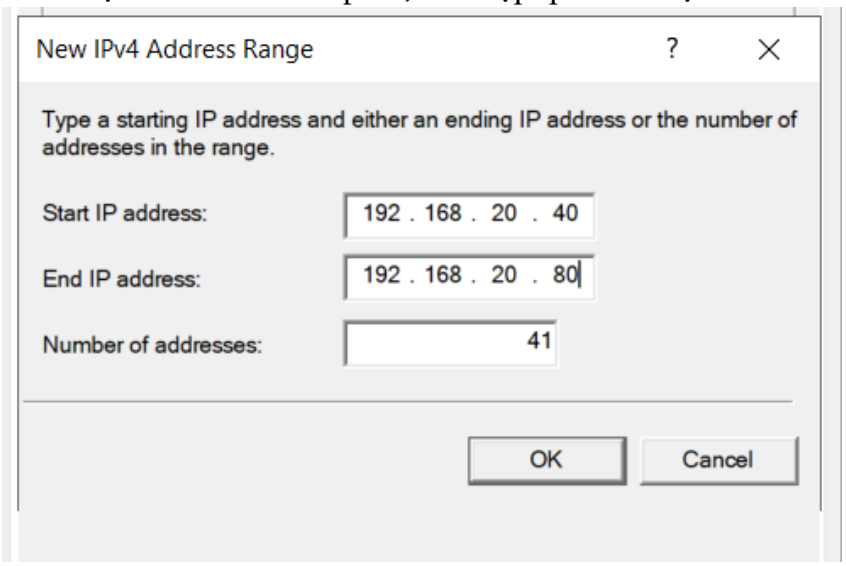
- Bước 10: Kết quả chạy service



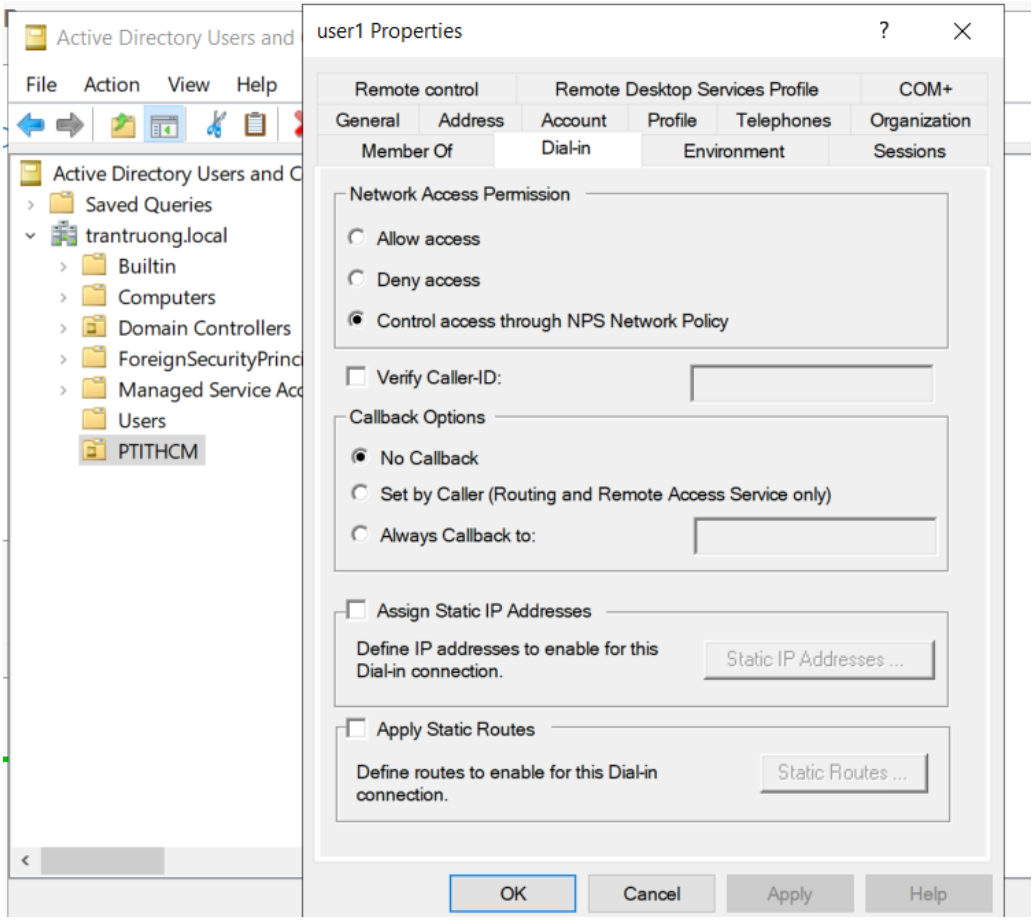
- Bước 11: Chuột phải vào server chọn Properties



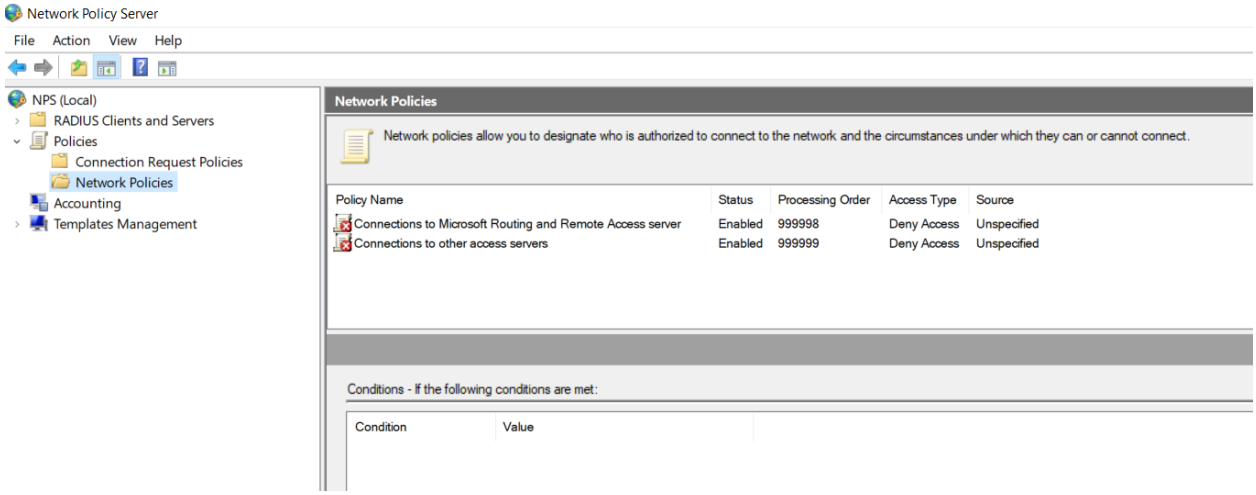
- Bước 12: Click chọn Static address pool, và nhập ip và lưu lại



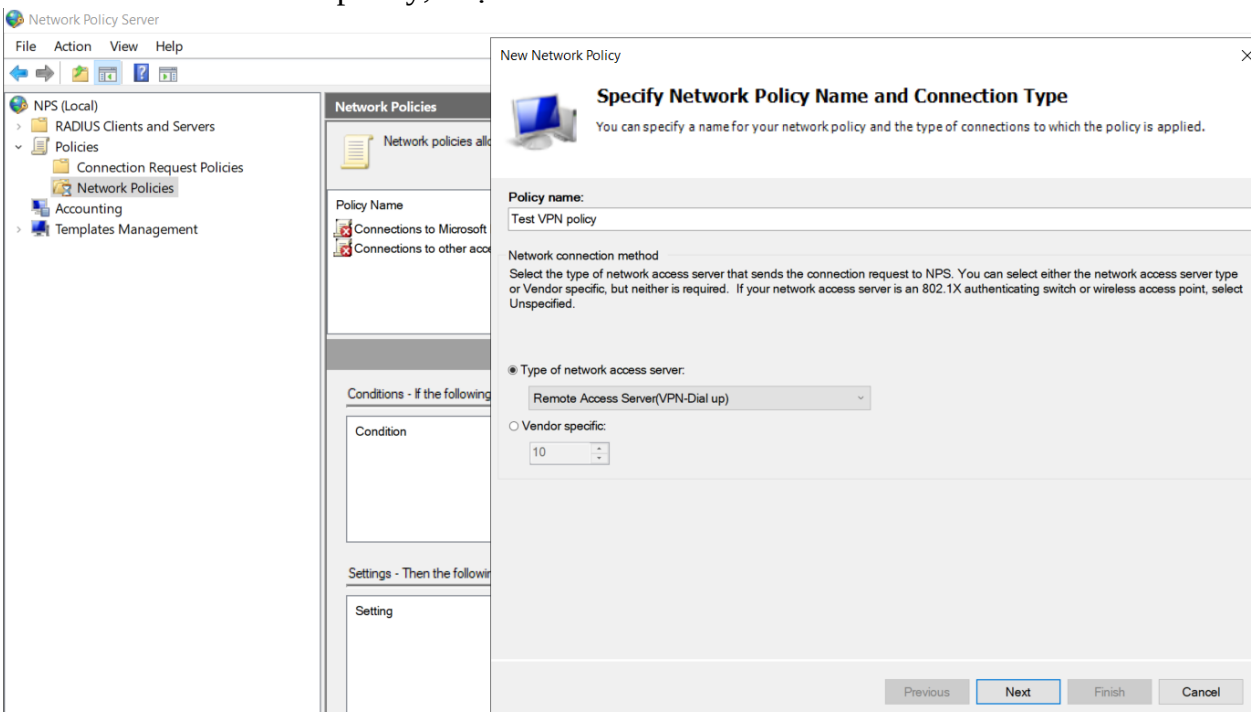
- Bước 13: Chọn user được phép kết nối vpn, chọn properties > tab Dial-in > click chọn Control access through NPS Network Policy



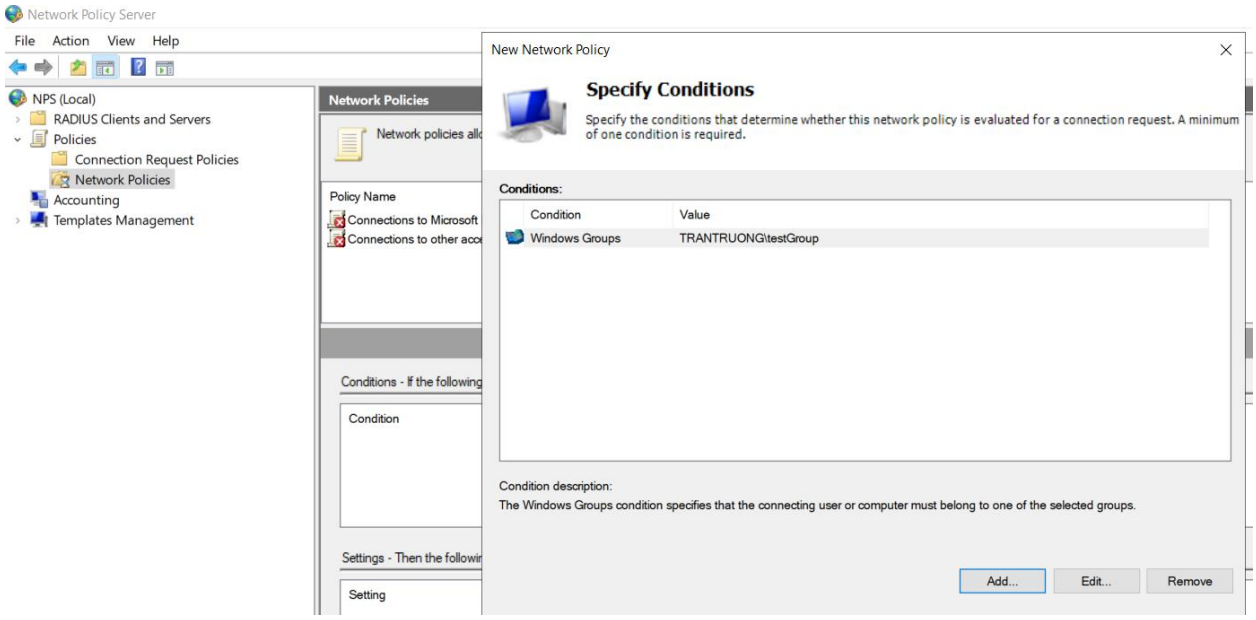
- Bước 14: Mở Tools > Network Policy Server



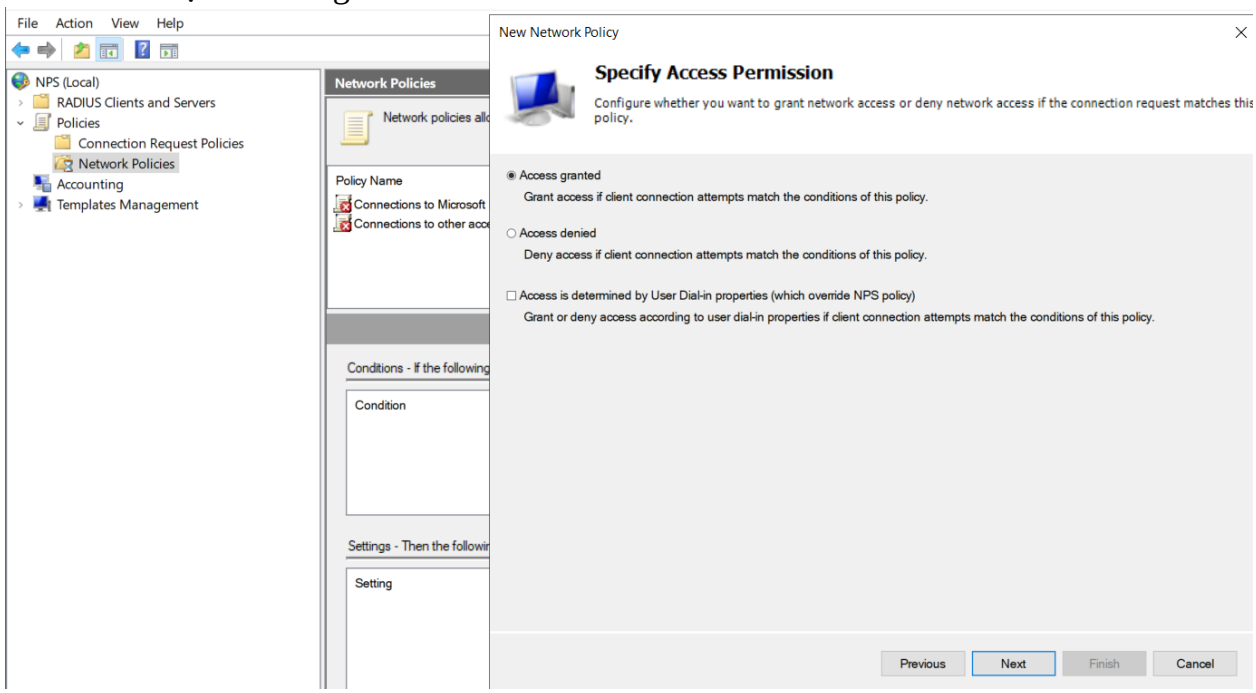
- Bước 15: New network policy, chọn next



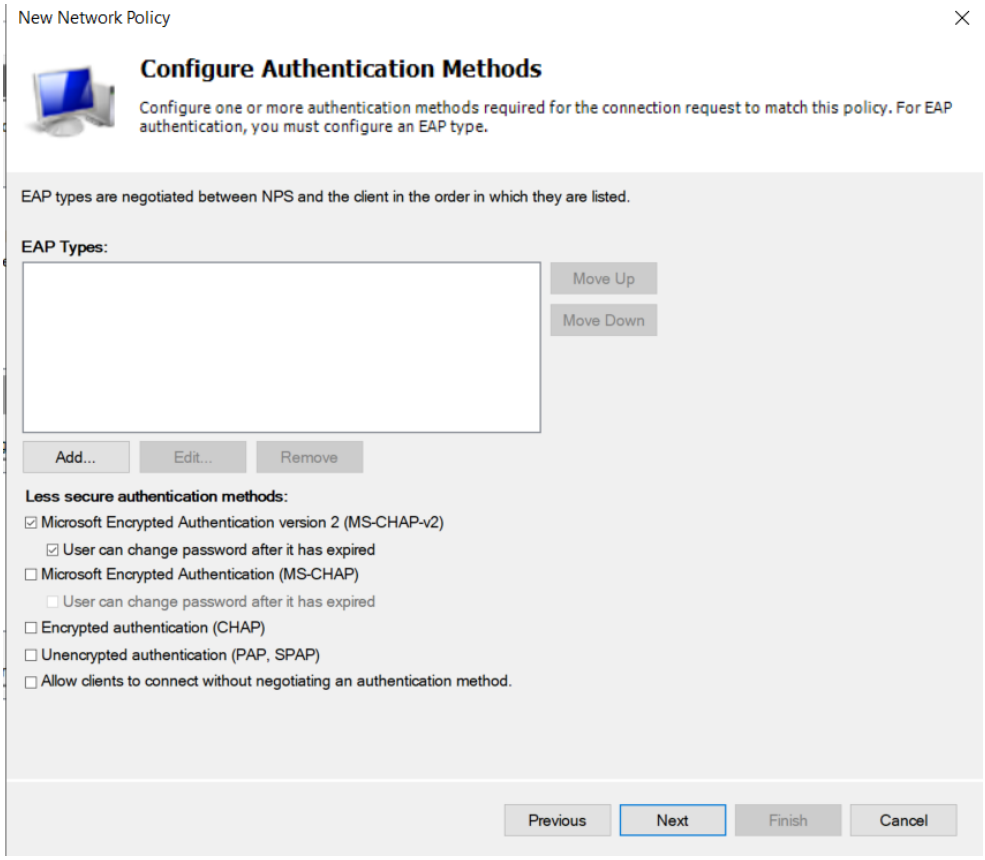
- Bước 16: Thêm Group



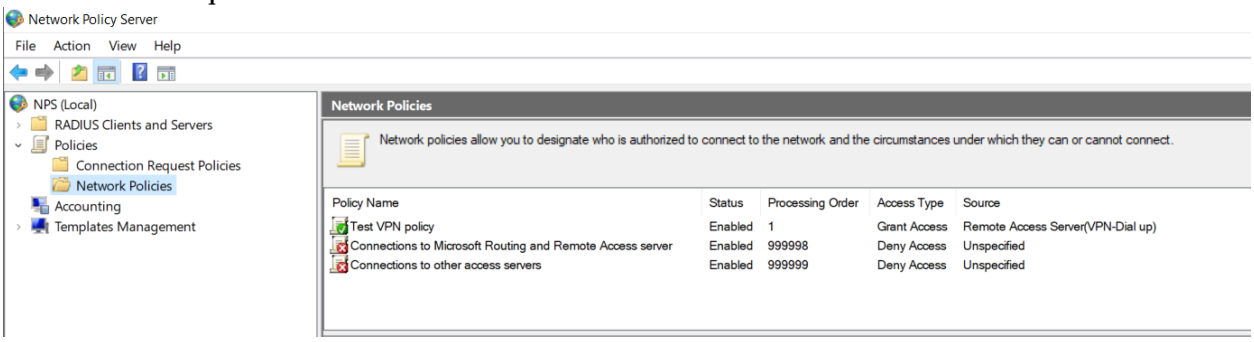
- Bước 17: Chọn Access granted > Next



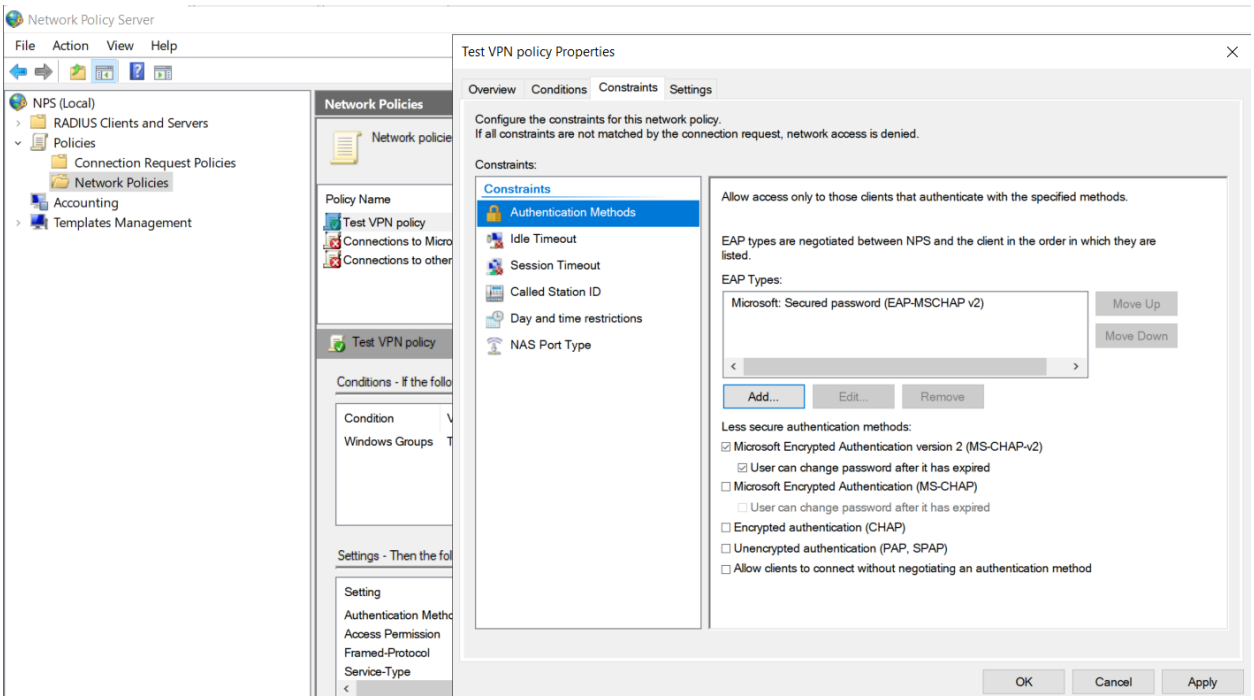
- Bước 18: Chọn MS-CHAP-V2



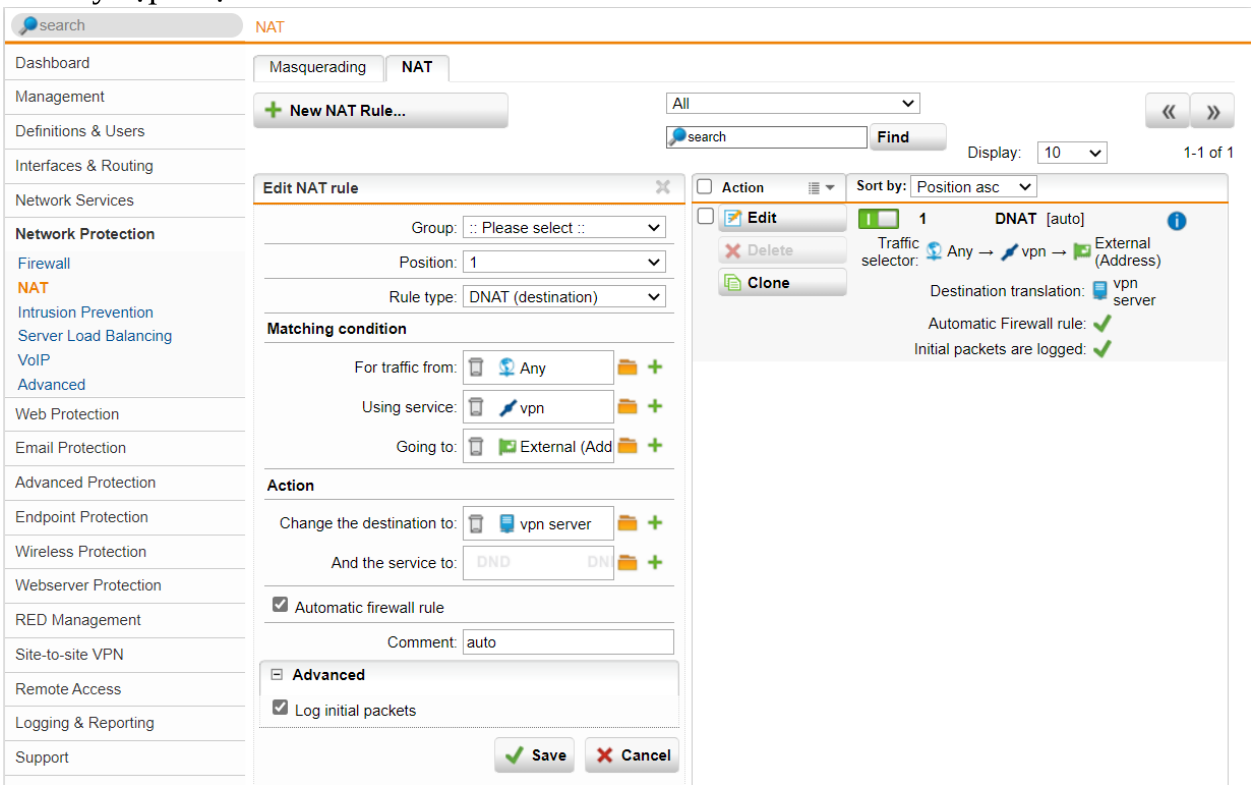
- Bước 19: Kết quả sau khi finish



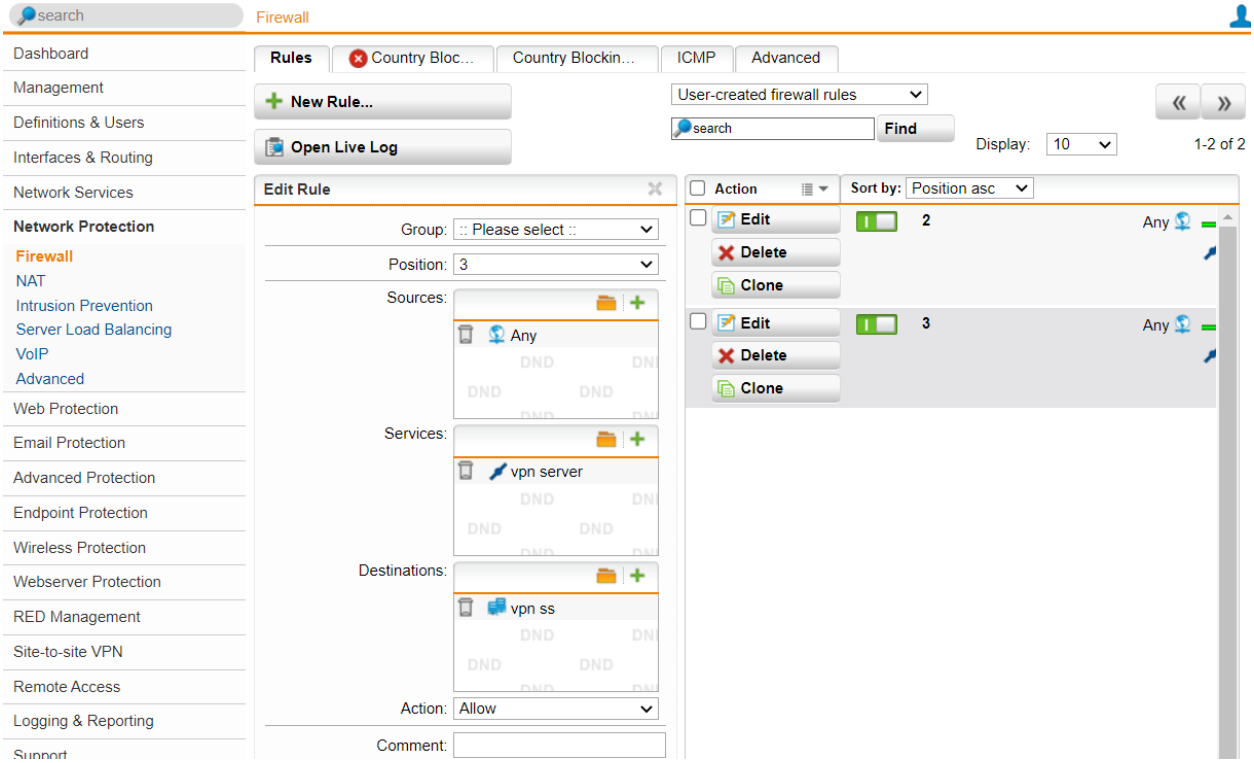
- Bước 20: Chuột phải vào network Policies > Properties > Contraints > Add EAP-MSCHAP v2 > Apply > OK



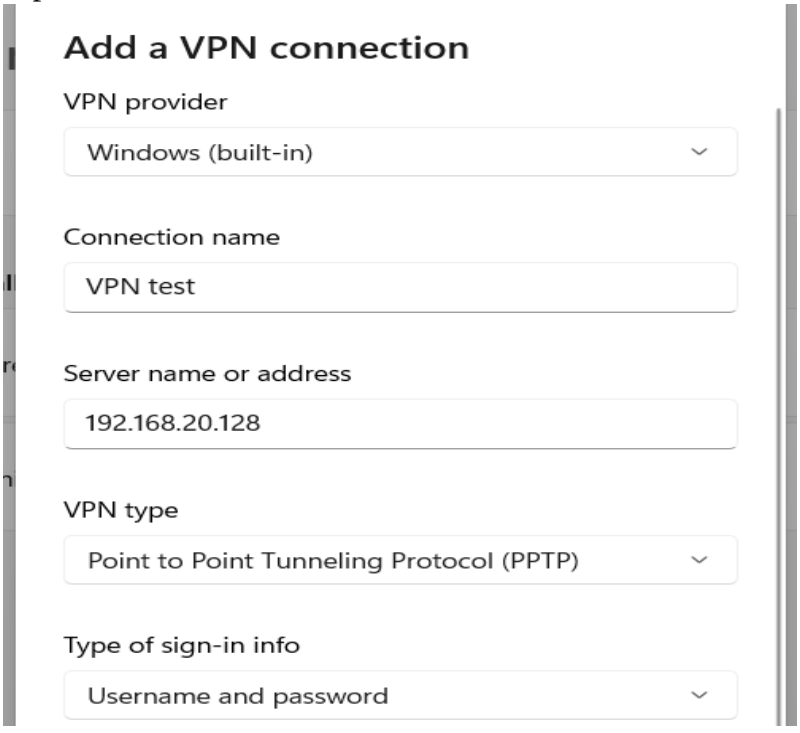
- Bước 21: Trên Sophos tạo rule NAT port 1723 của VPN service để bên ngoài có thể truy cập được



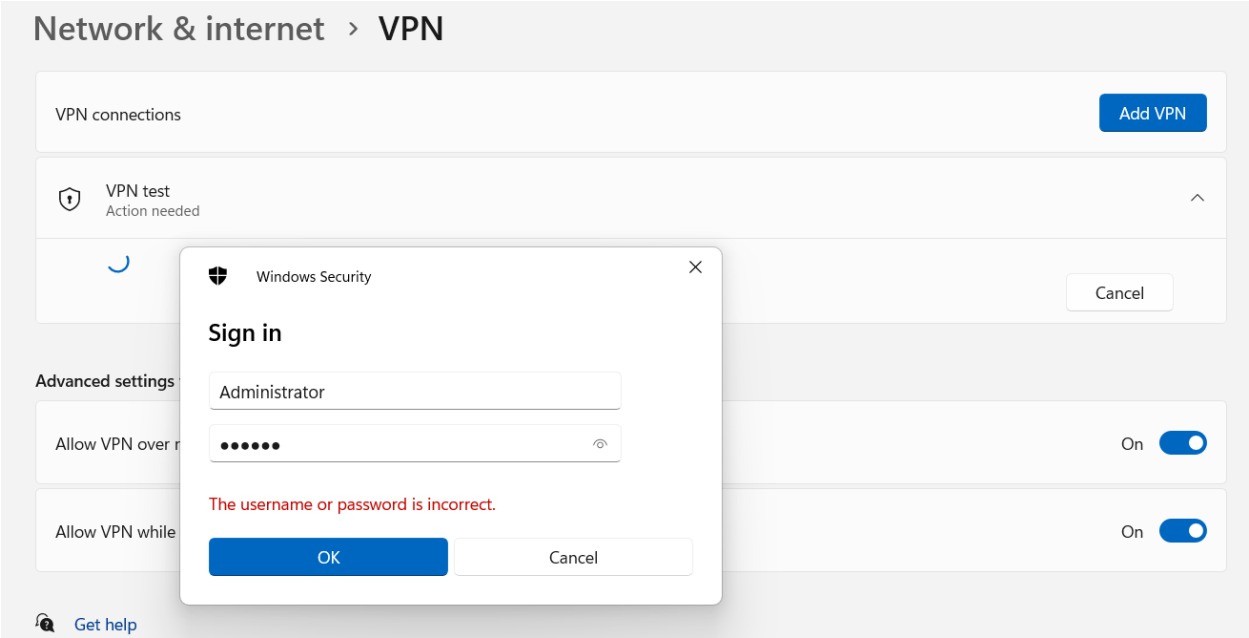
- Bước 22: Tạo rule cho phép các mạng khác kết nối VPN



- Bước 23: tại máy client (máy thật) tạo 1 kết nối VPN đến domain thông qua port đã NAT của sophos

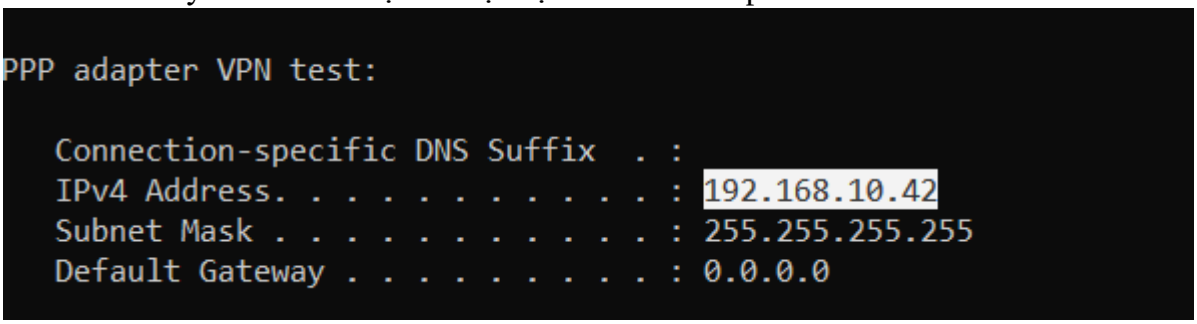


- Bước 24: Nhập mật khẩu admin



- Bước 25: Kết nối thành công

- Bước 26: Máy Client đã nhận IP nội bộ do domain cấp

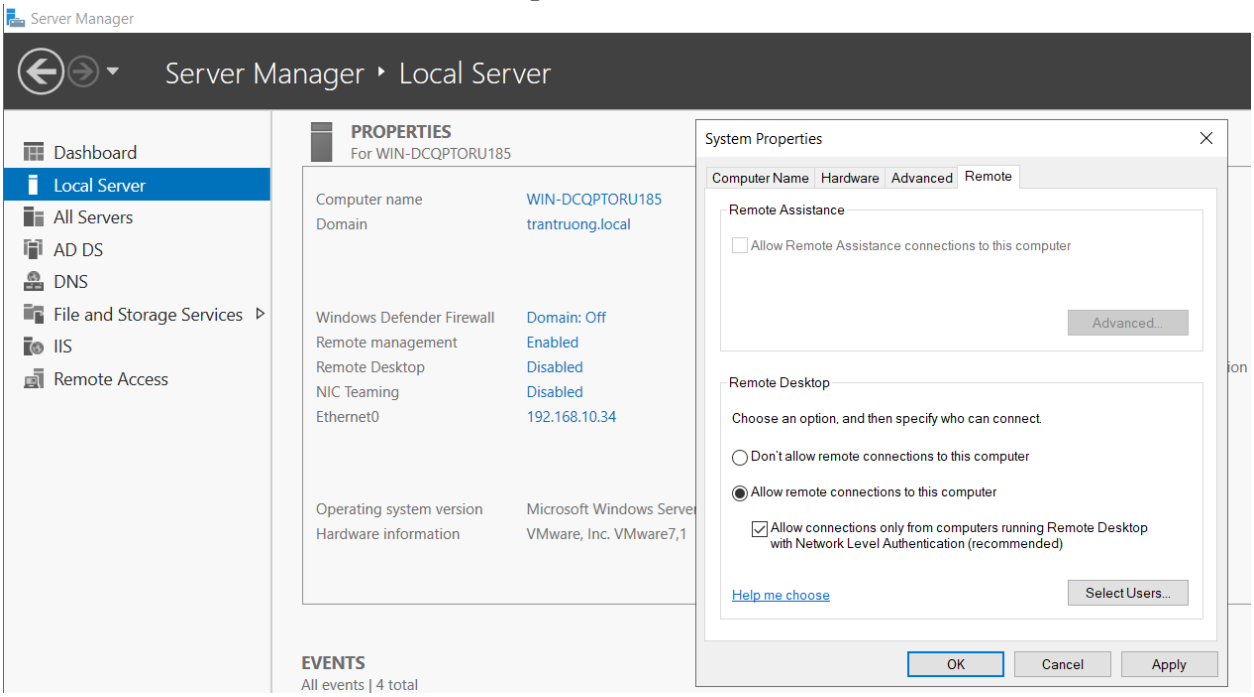


- Bước 27: Từ máy Client ping tới Domain để kiểm tra kết nối VPN

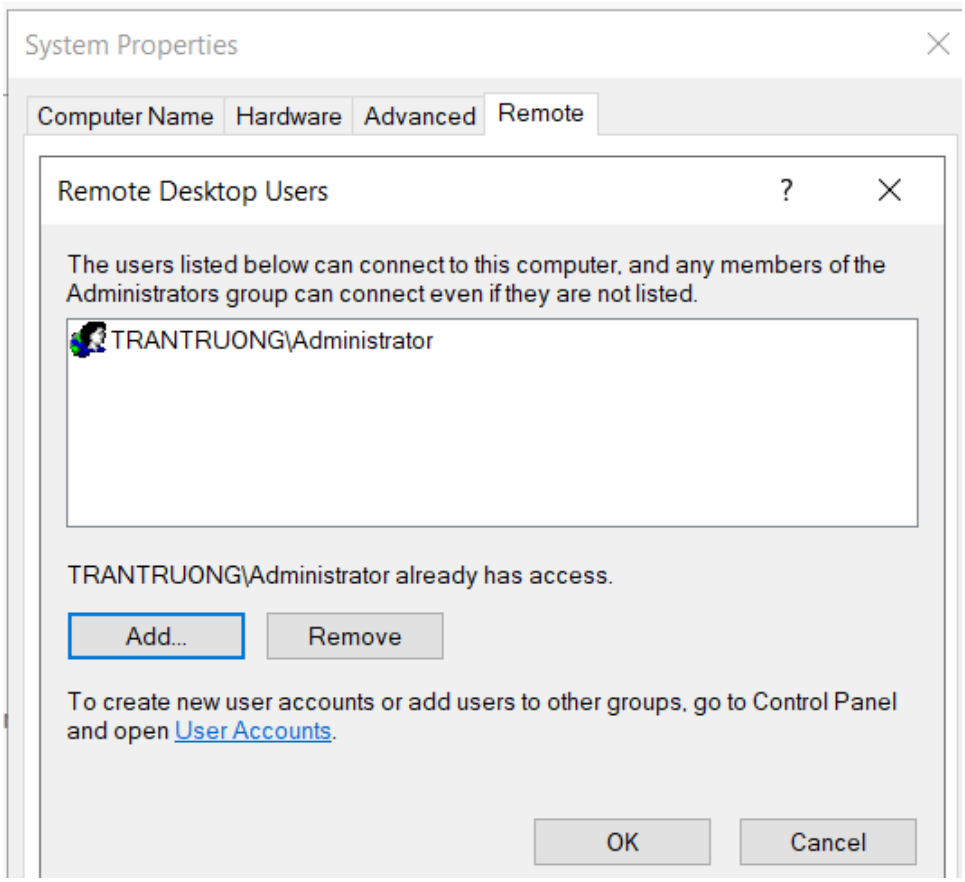
```
C:\Users\neuer>ping 192.168.10.34

Pinging 192.168.10.34 with 32 bytes of data:
Reply from 192.168.10.34: bytes=32 time=7ms TTL=127
Reply from 192.168.10.34: bytes=32 time=1ms TTL=127
Reply from 192.168.10.34: bytes=32 time=2ms TTL=127
Reply from 192.168.10.34: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.10.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 7ms, Average = 3ms

C:\Users\neuer>
```

2.5. Cấu hình cho phép admin remote desktop

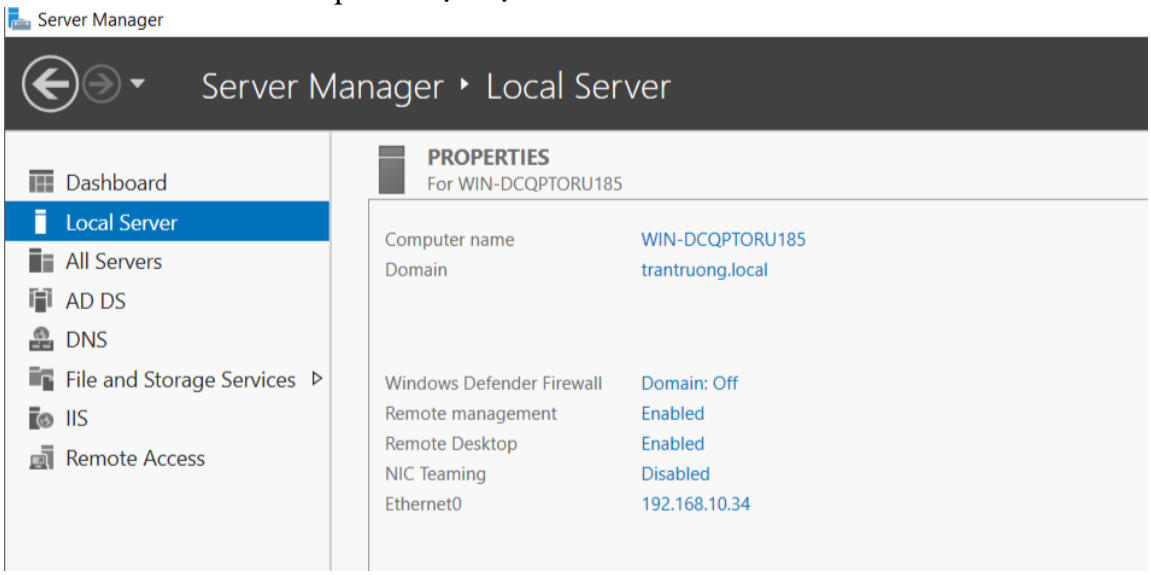
- Bước 1: Vào Server Manager > Local Server > Click Remote Desktop > Chọn Allow remote connections to this computer > Select Users…



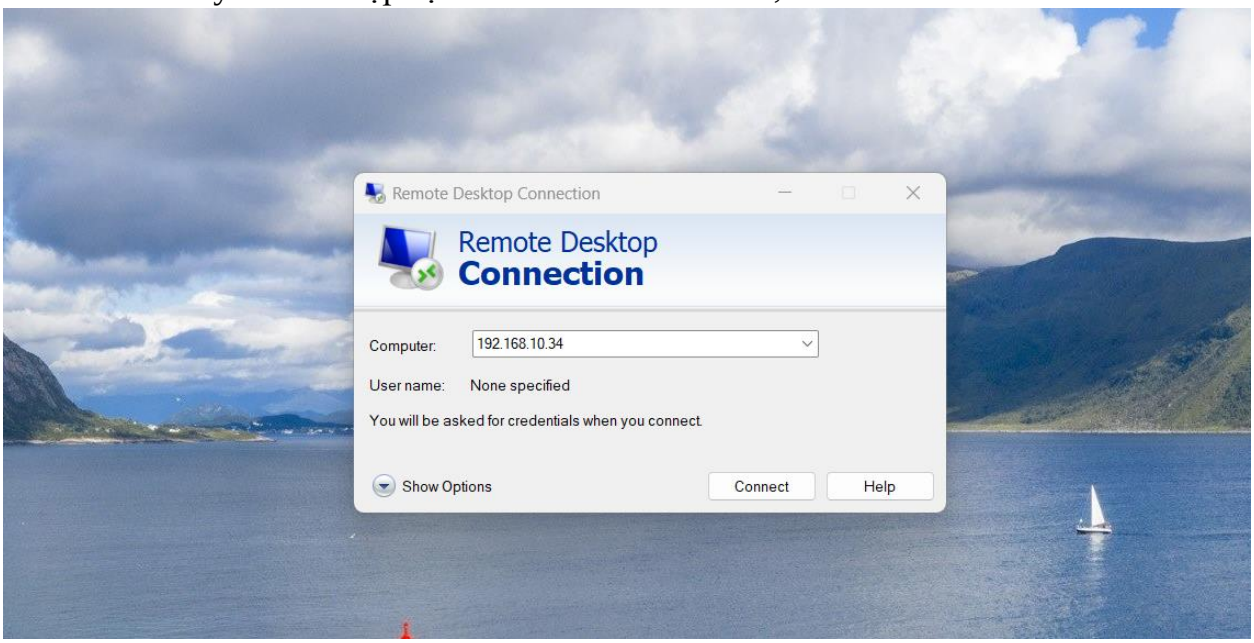
- Bước 2: Add user Administrator > OK



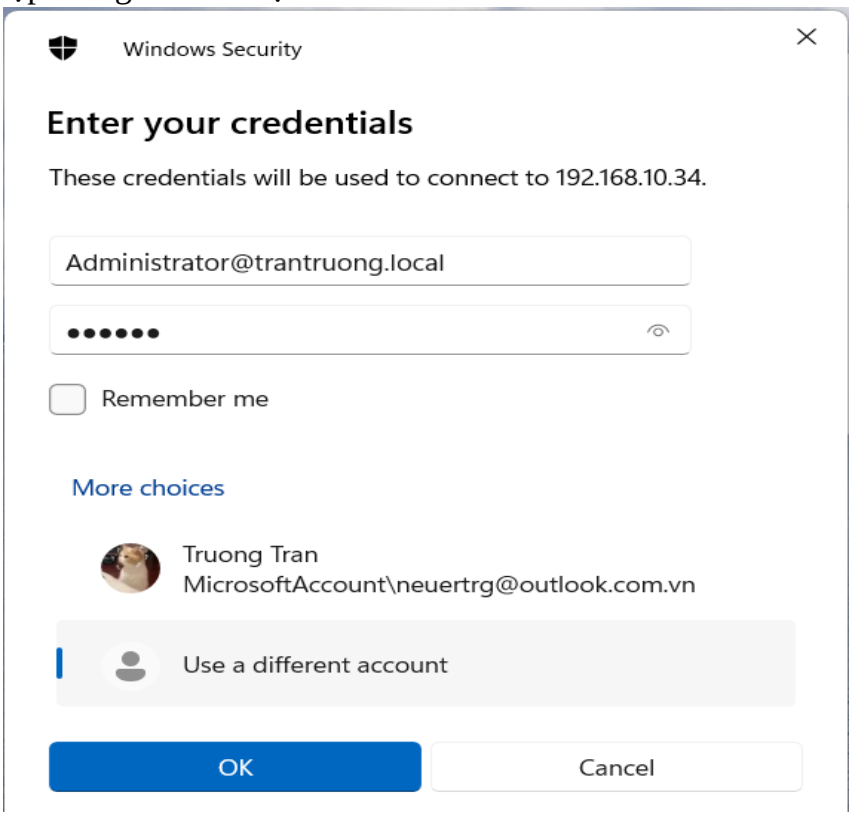
- Bước 3: Remote Desktop đã được bật



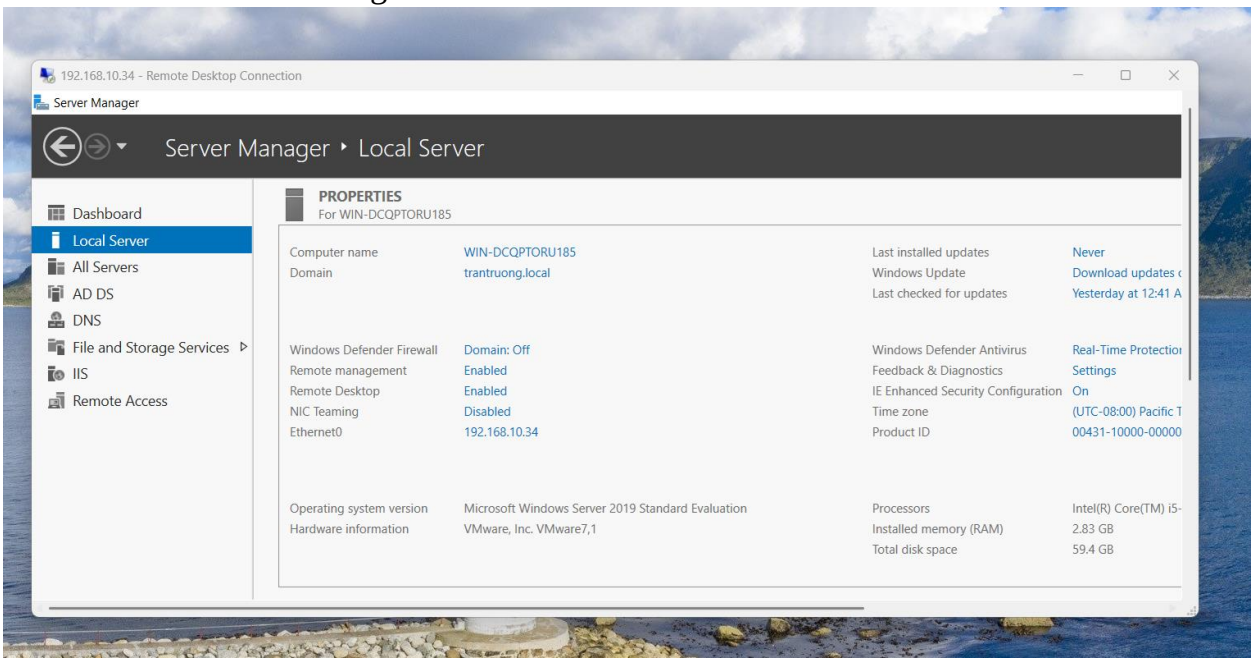
- Bước 4: Từ máy Client nhập địa chỉ Domain Controller, nhấn Connect



- Bước 5: Nhập thông tin xác thực rồi nhấn OK

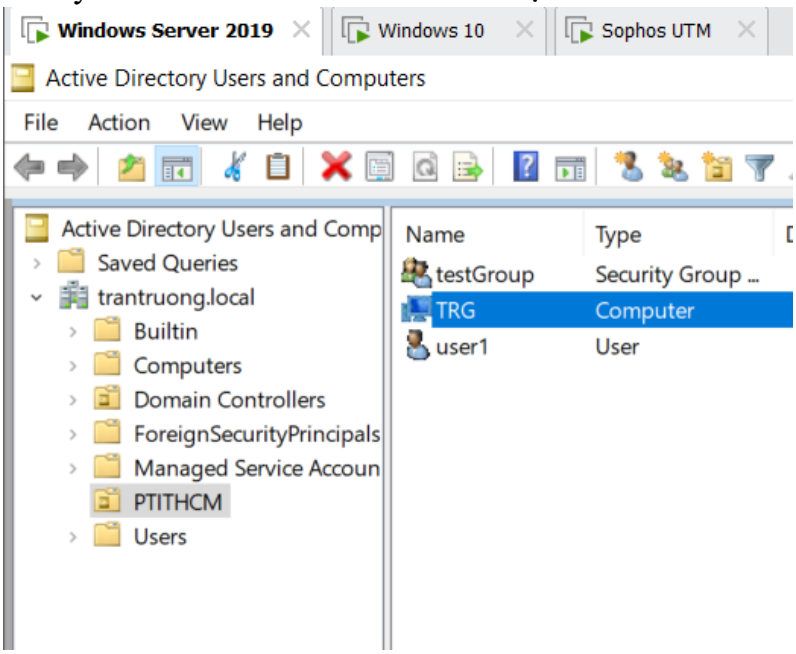


- Bước 6: Kết nối thành công

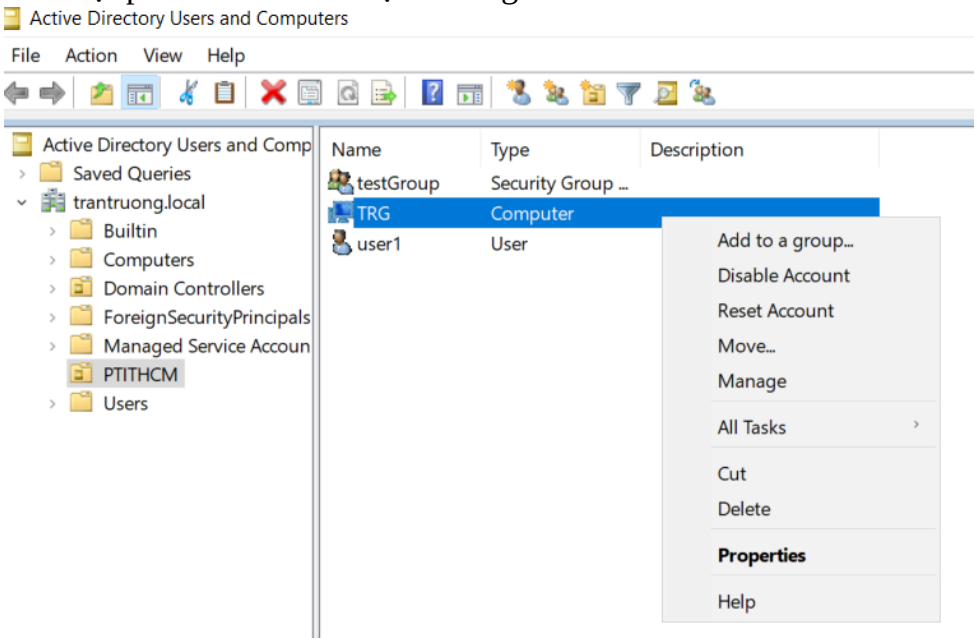


2.6. Cấu hình cho phép user1 remote desktop vào PC1

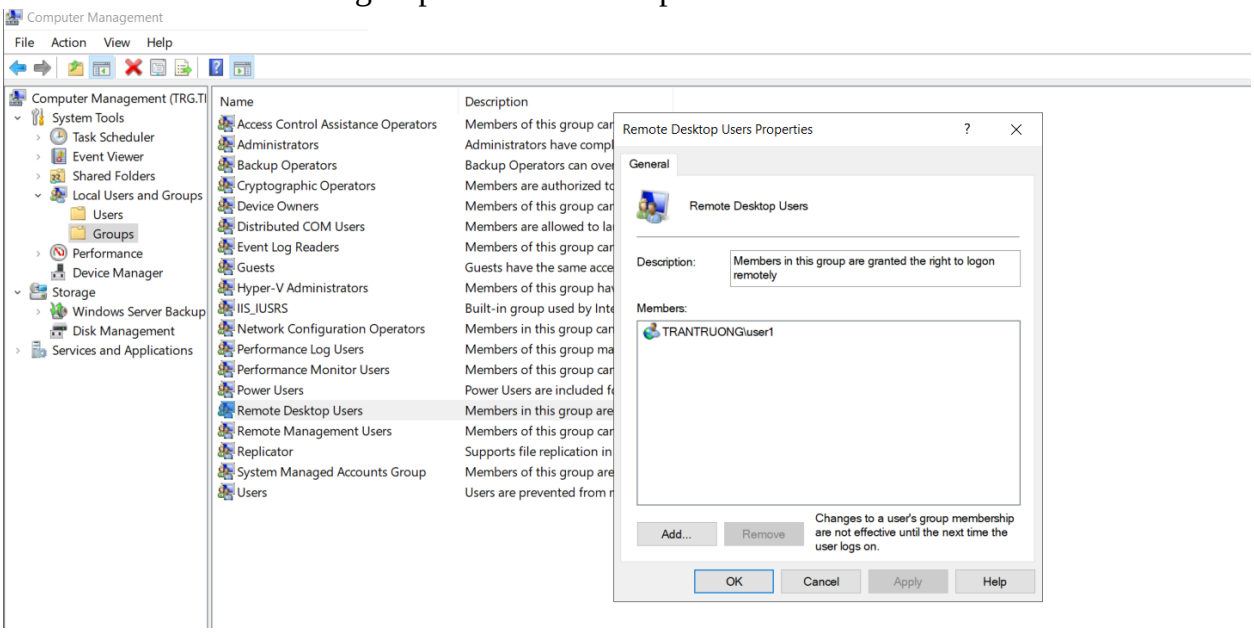
- Bước 1: Thêm máy PC1 vào OU "PTITHCM" đã tạo ở trên



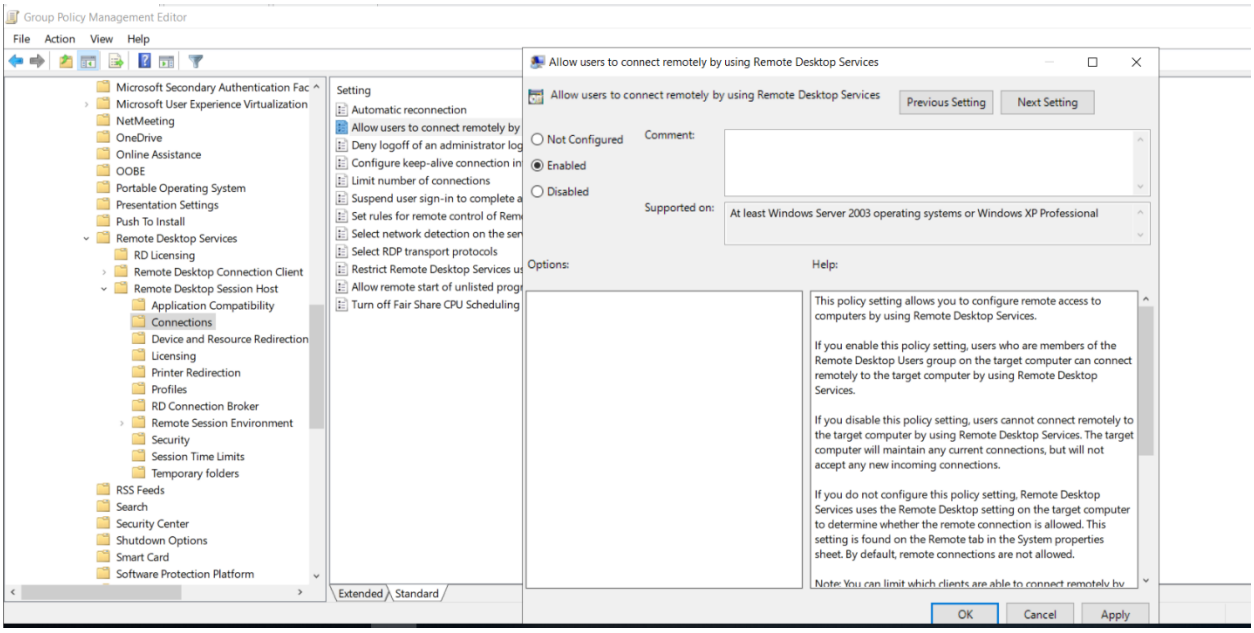
- Bước 2: Chuột phải vào PC và chọn Manage

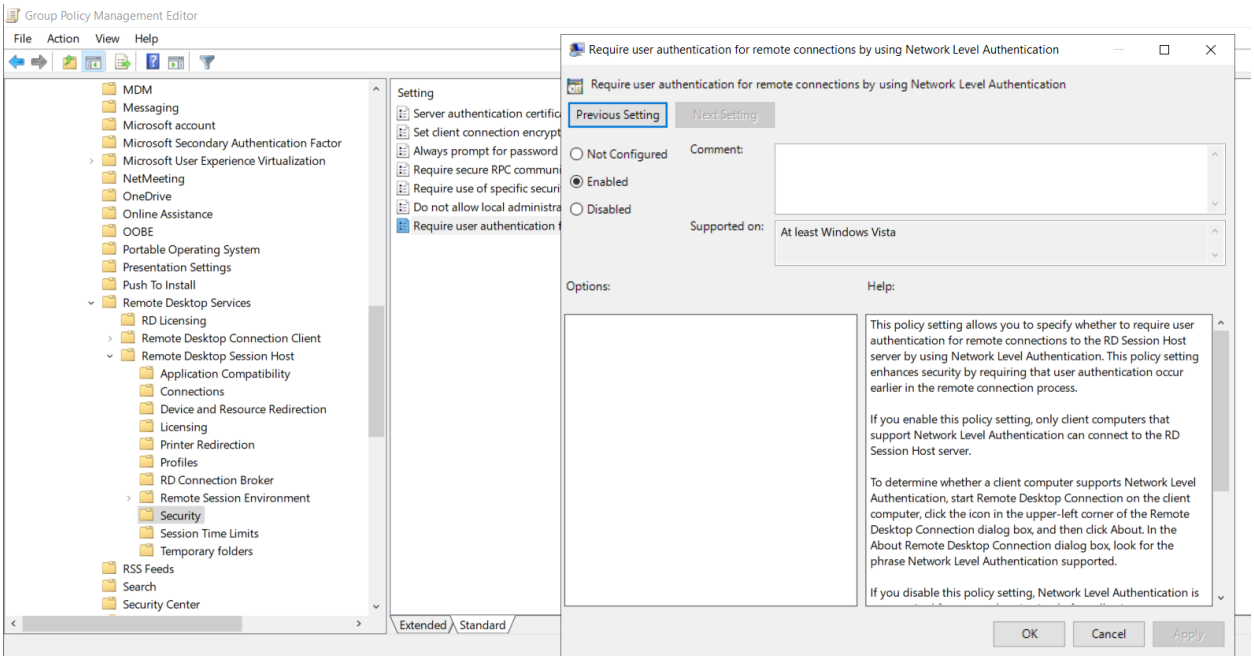


- Bước 3: Thêm user1 vào group Remote Desktop Users

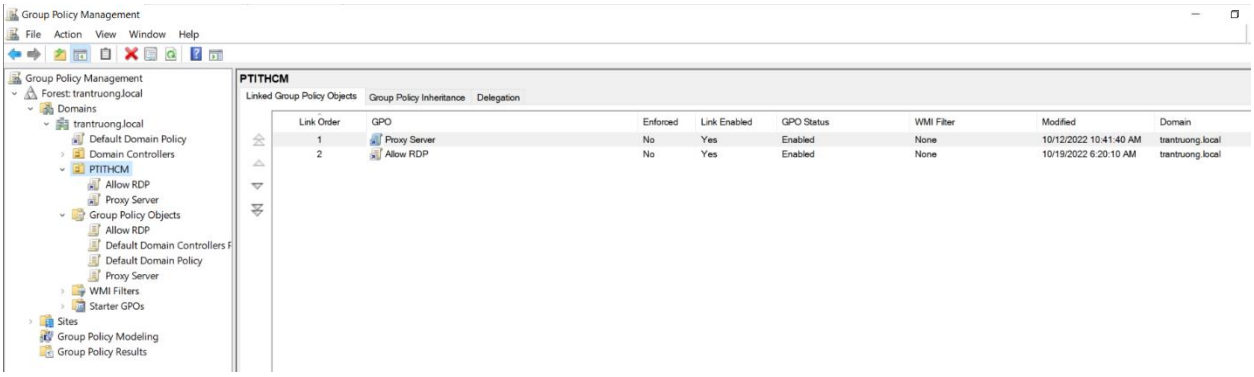


- Bước 4: Tạo Group Policy cho phép remote desktop PC1

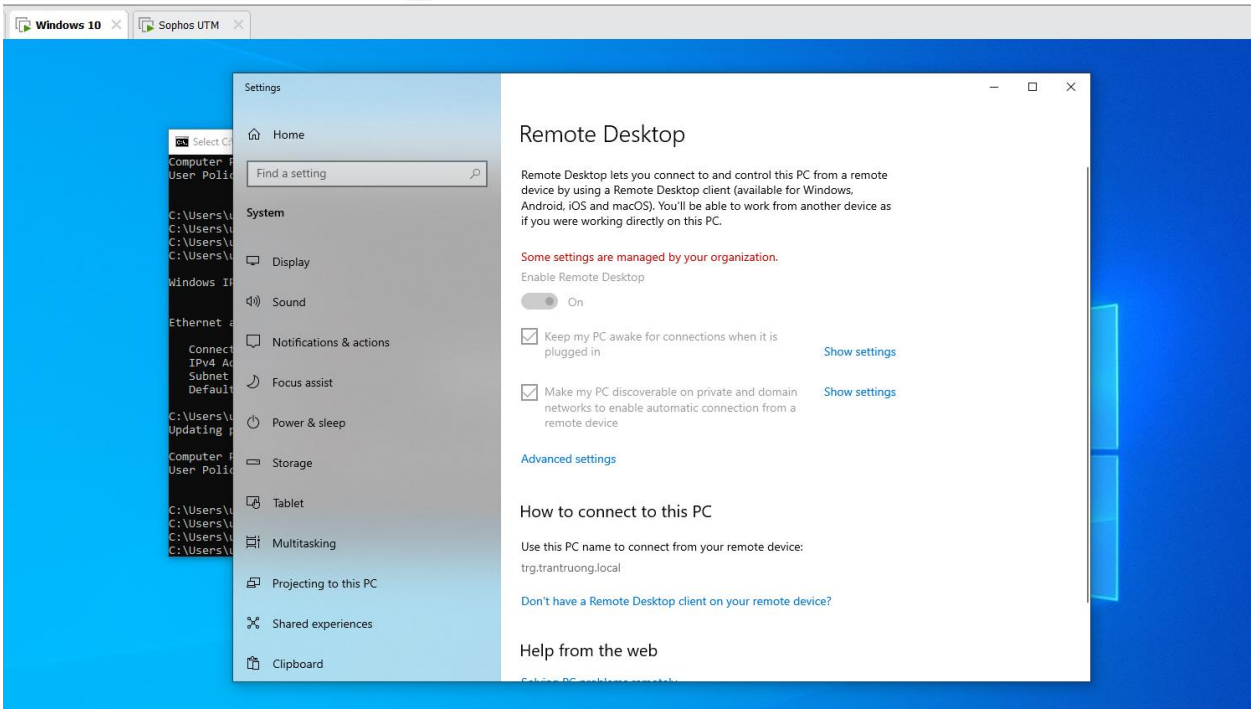




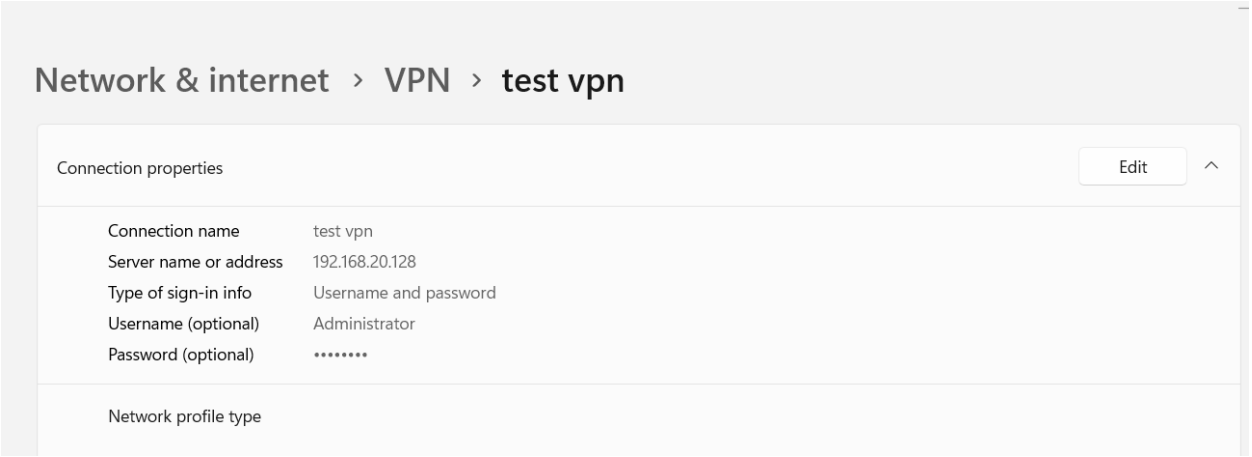
- Bước 5: Link GPO với OU “PTITHCM” đã tạo ở trên và chạy lệnh “gpupdate /force để cập nhật lại”



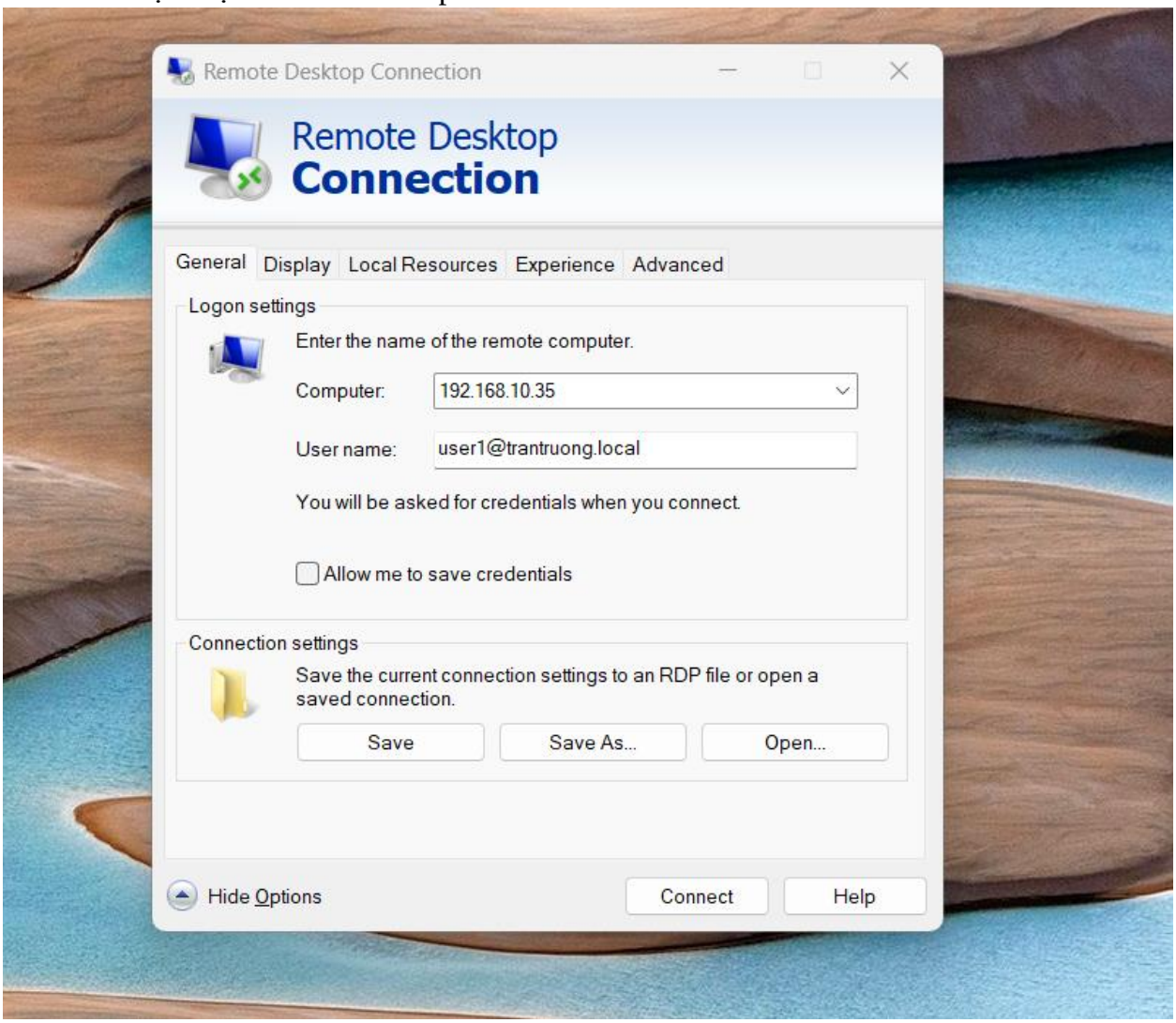
- Bước 6: Khởi động lại PC1 và kiểm tra lại cài đặt Remote Desktop đã được bật chưa



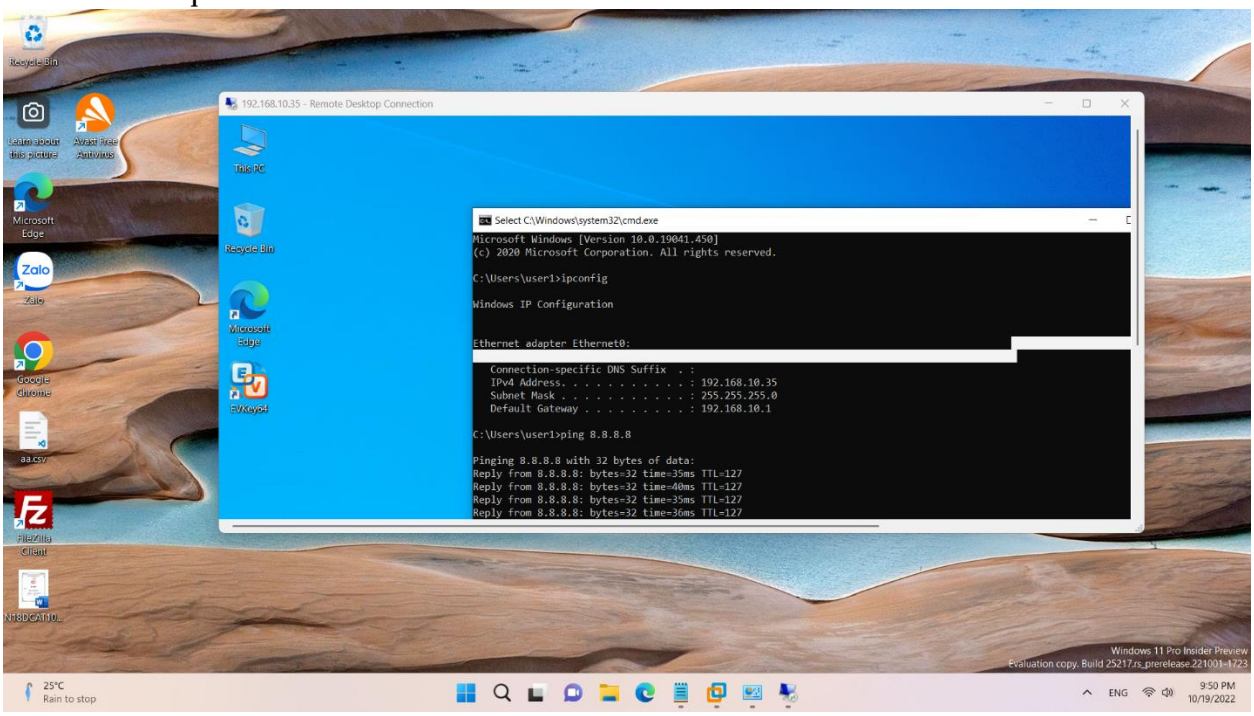
- Bước 7: Từ máy Client kết nối lại VPN



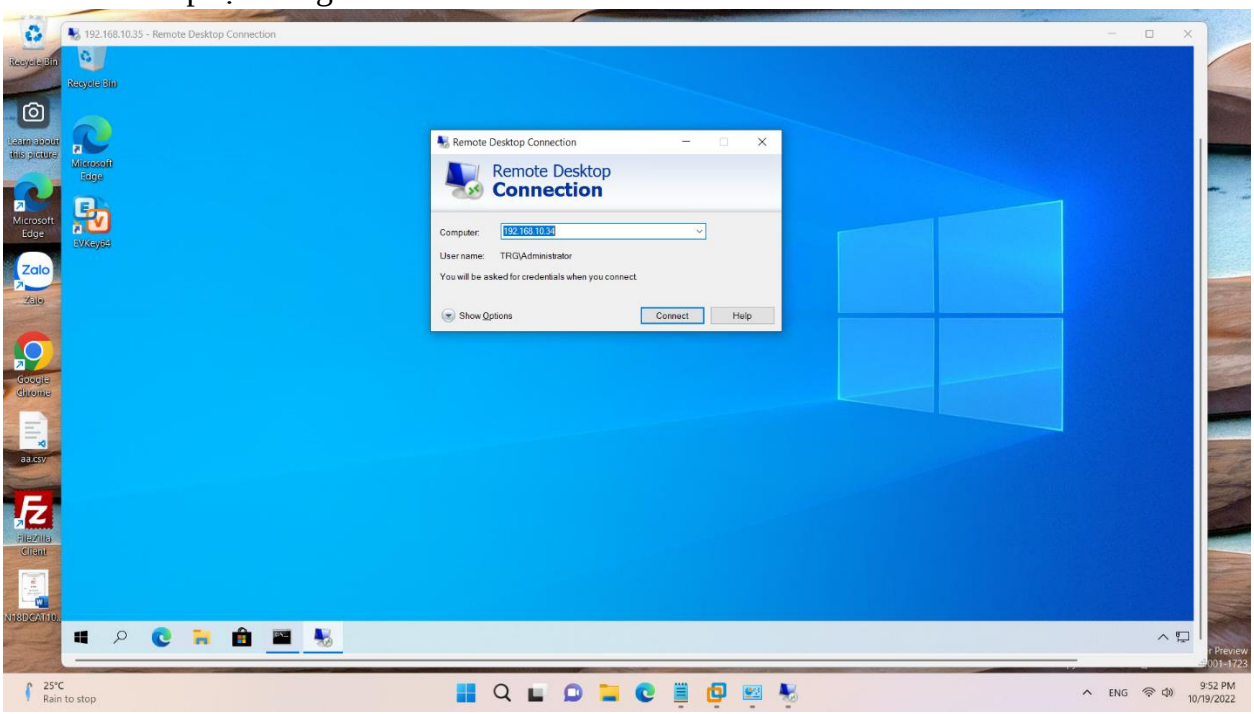
- Bước 8: Thực hiện remote desktop đến PC1



- Bước 9: Kết quả remote



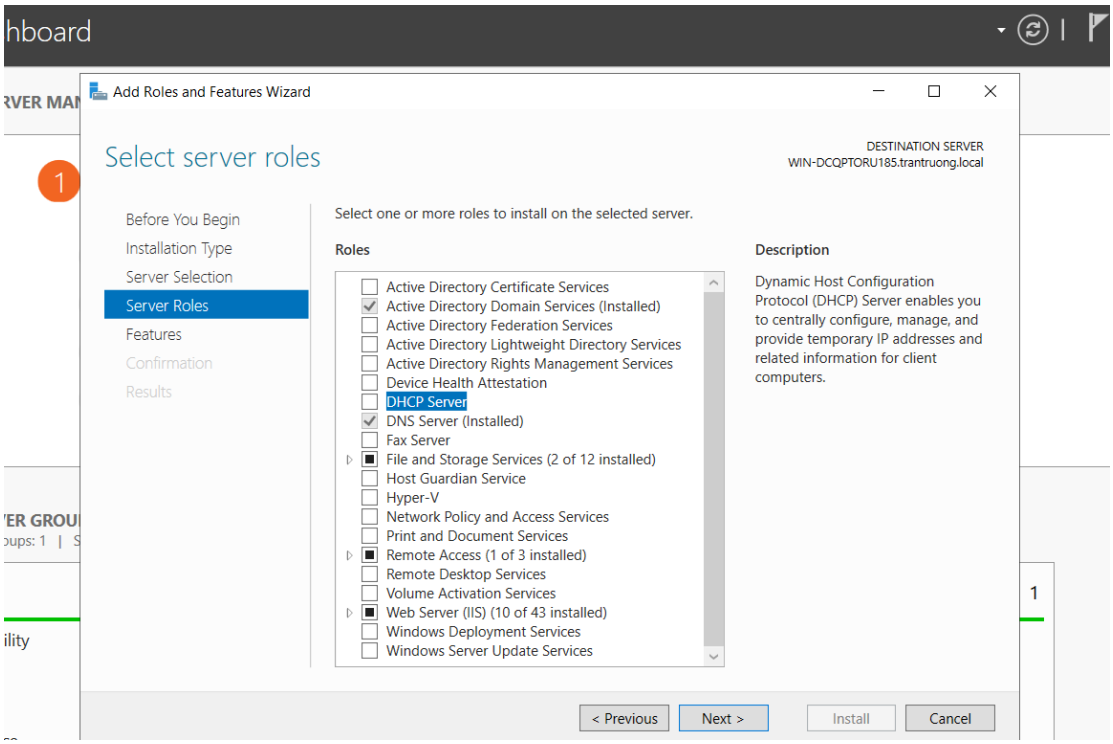
- Bước 10: Tiếp tục dùng kết nối remote ở trên để remote tới Windows Server



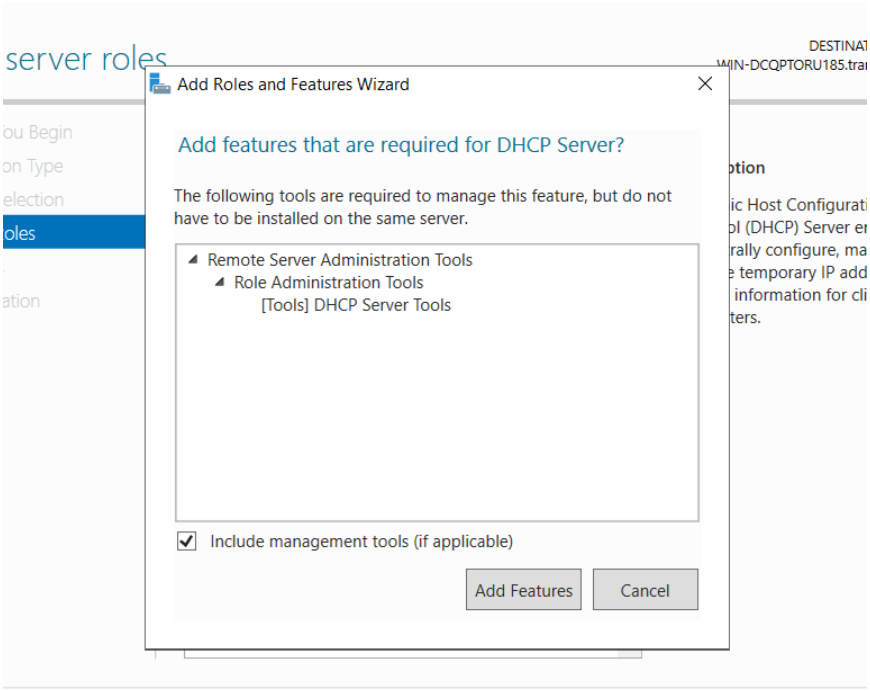
- Bước 11: Kết quả

2.7. Cài đặt và cấu hình DHCP server trên Windows Server

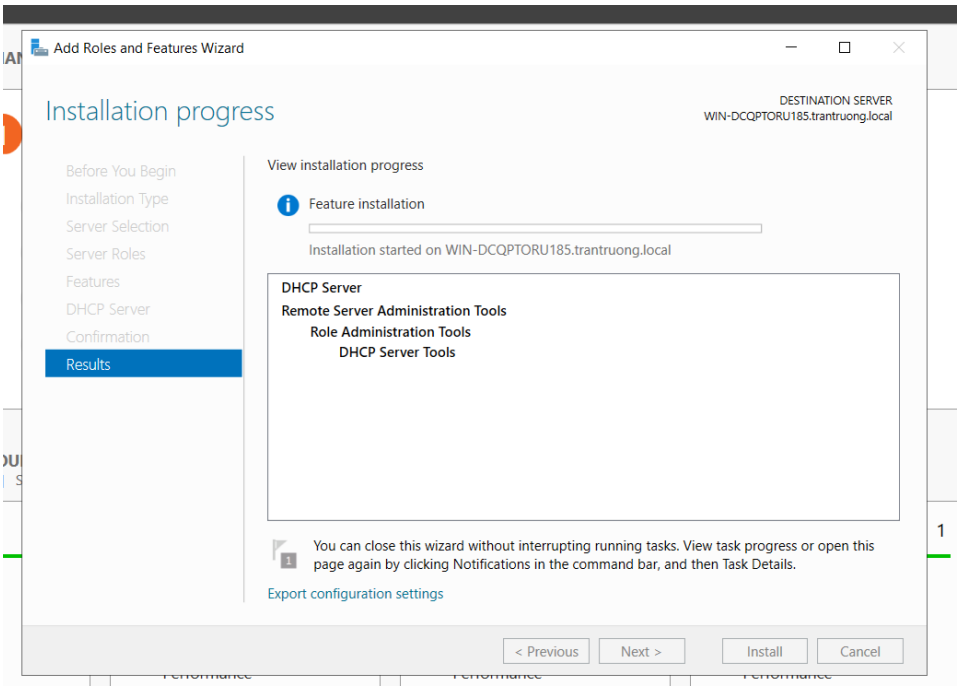
- Bước 1: Tích chọn DHCP Server



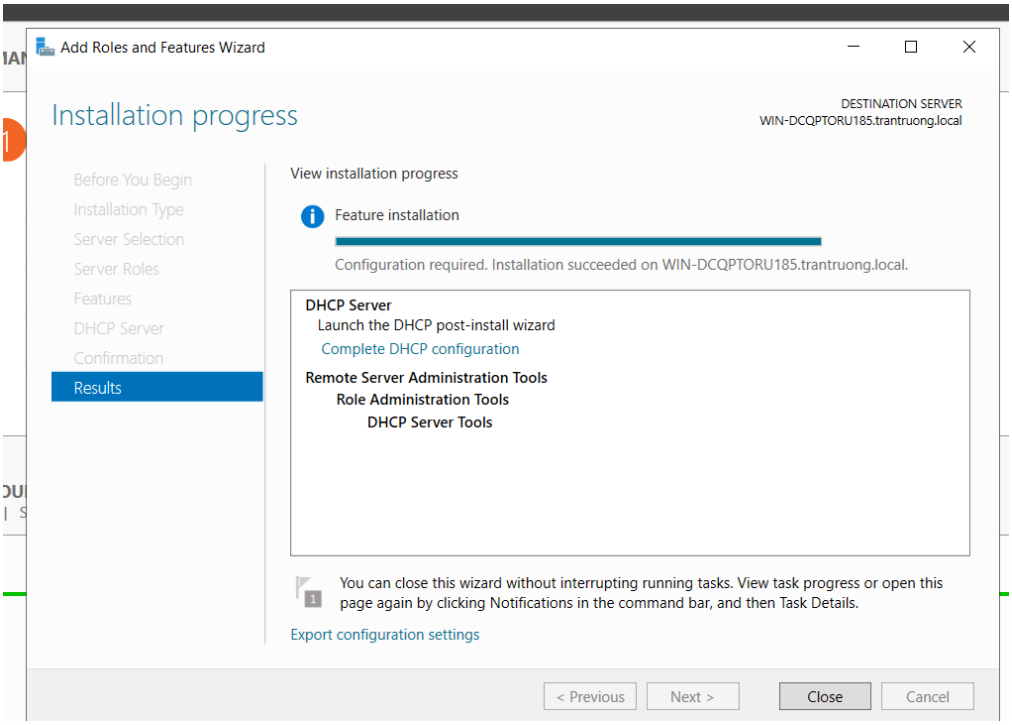
- Bước 2: Chọn Add Futures



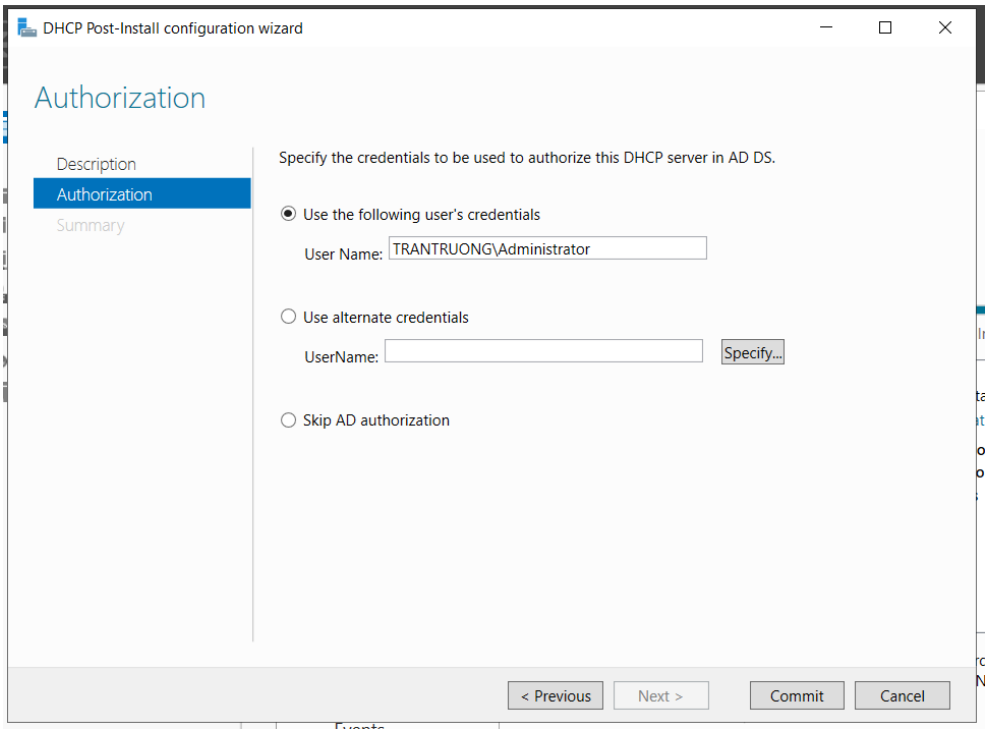
- Bước 3: Nhấn Install và đợi quá trình cài đặt hoàn tất



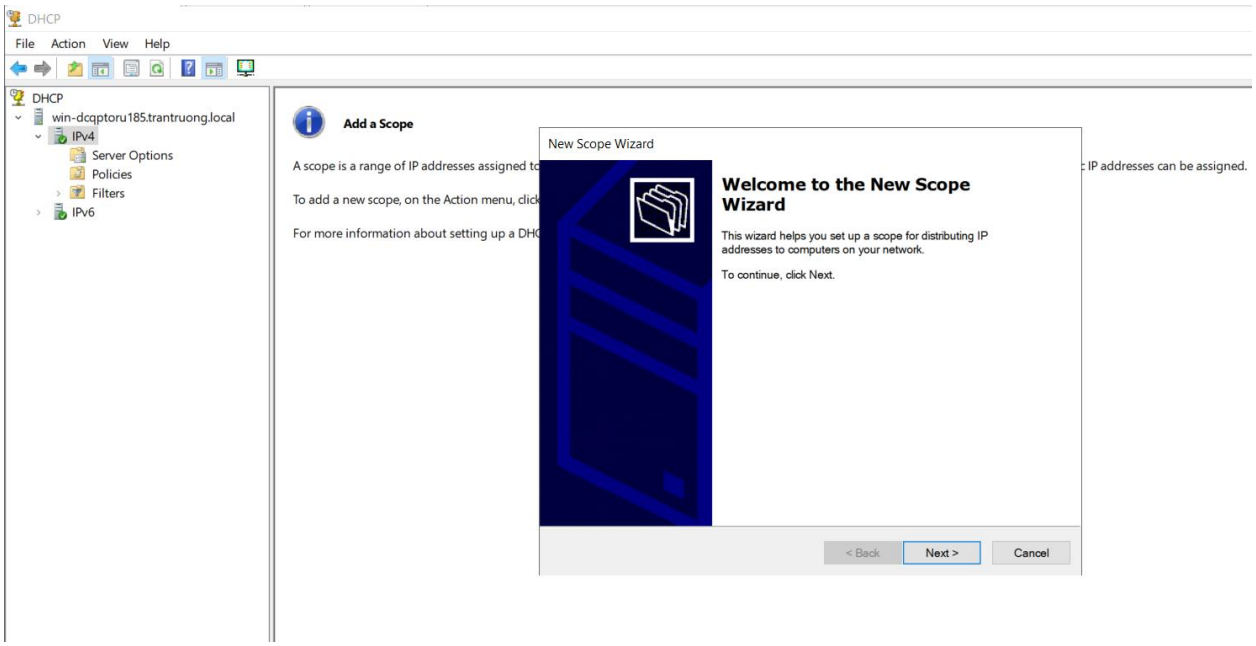
- Bước 4: Click “Complete DHCP configuration”



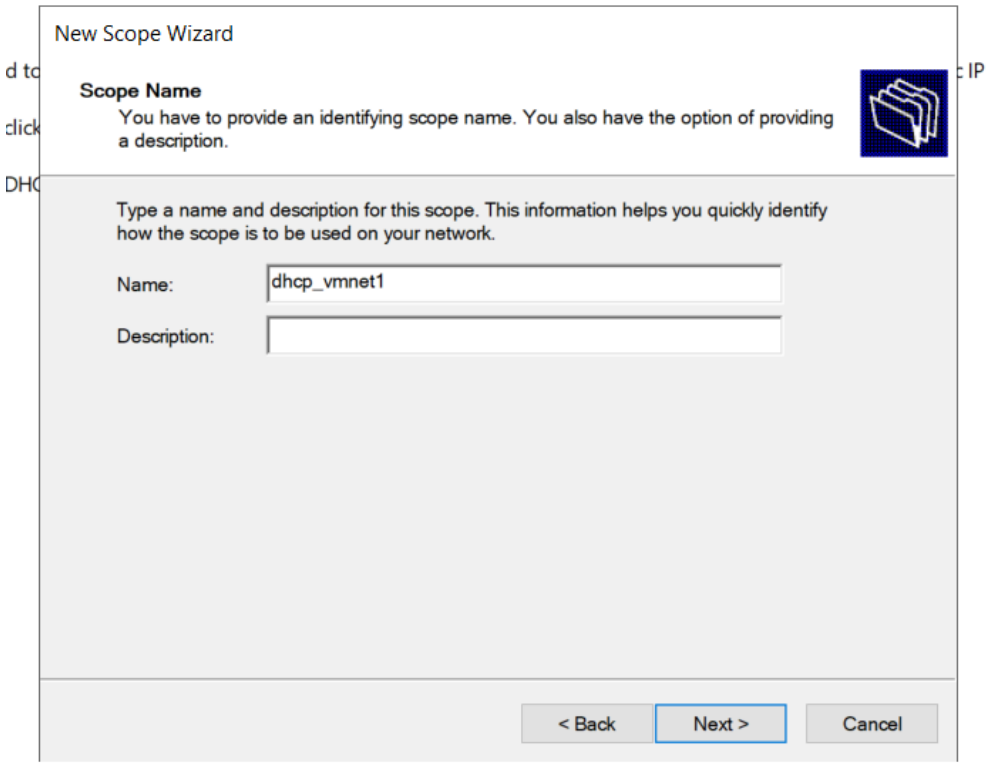
- Bước 5: Nhấn Commit



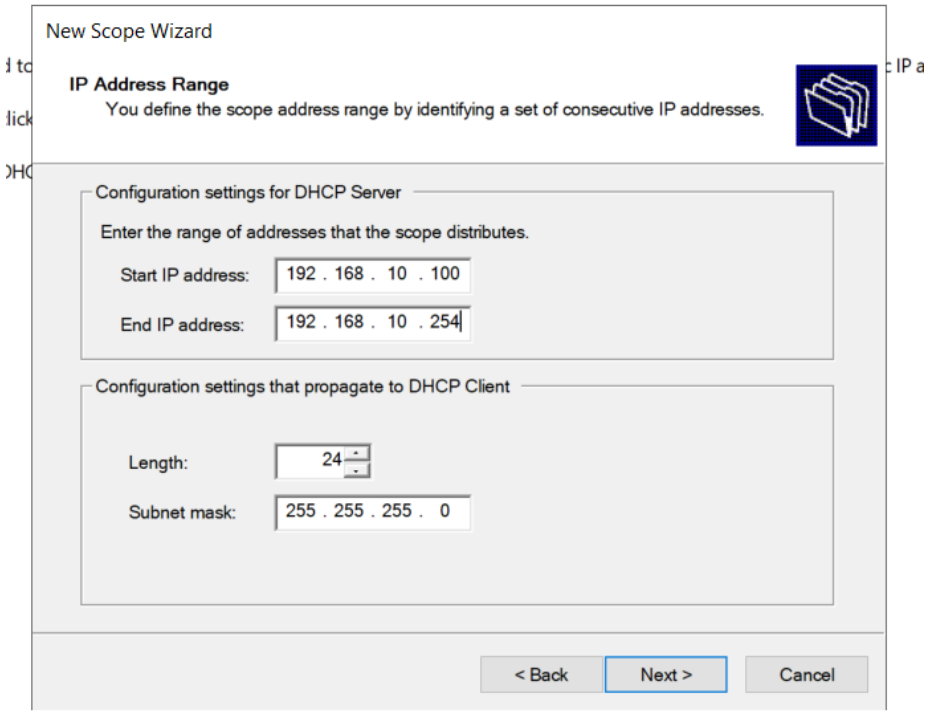
- Bước 6: Vòa tools > DHCP > Ipv4 >new scope



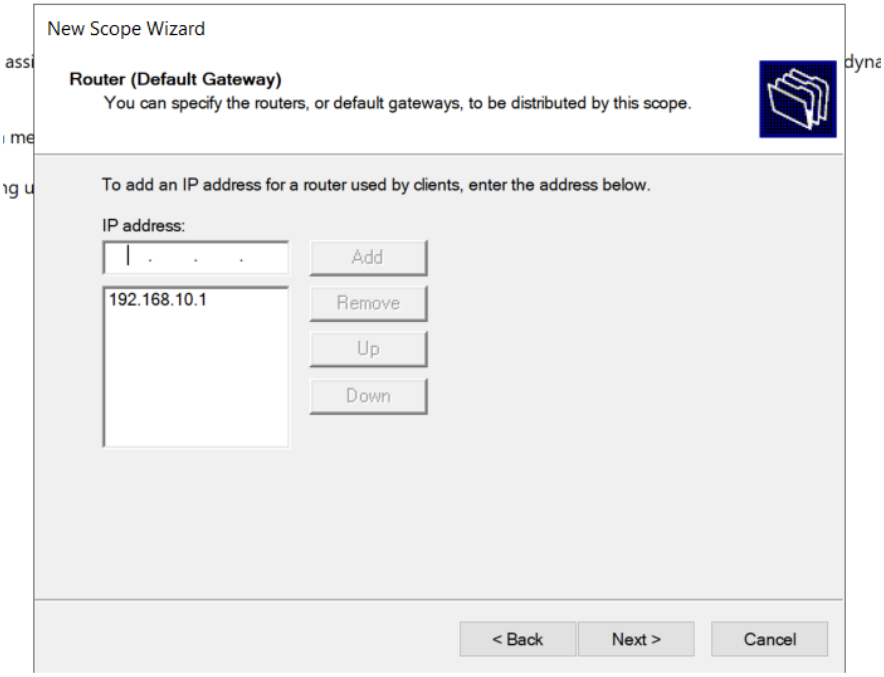
- Bước 7: Đặt tên Scope



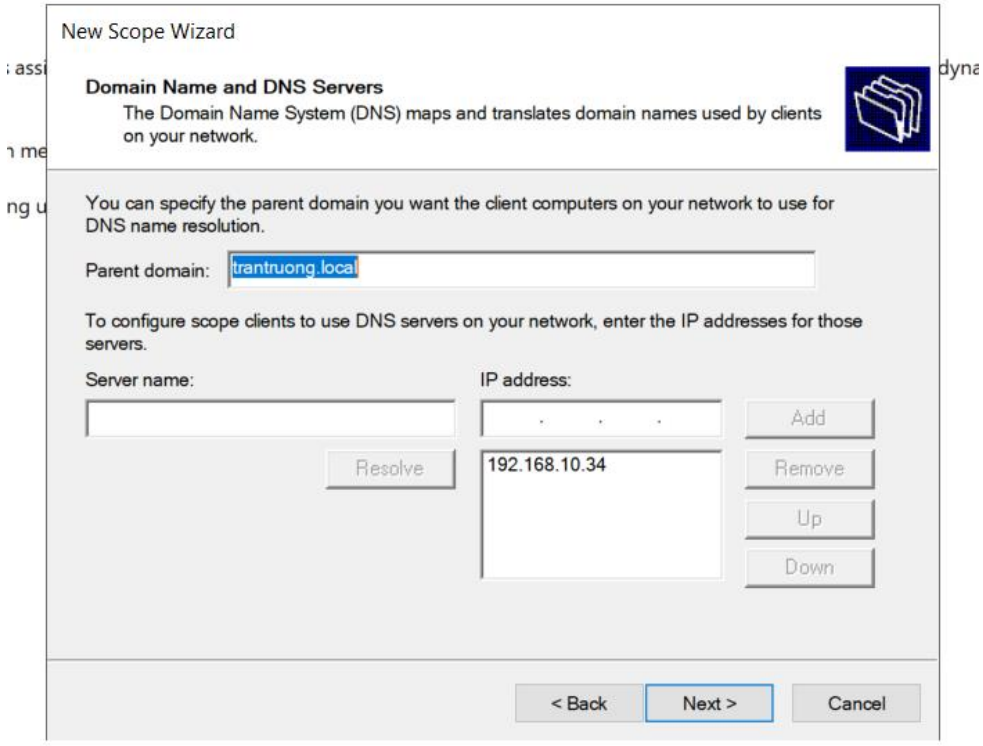
- Bước 8: Dải ip sẽ cấp phát



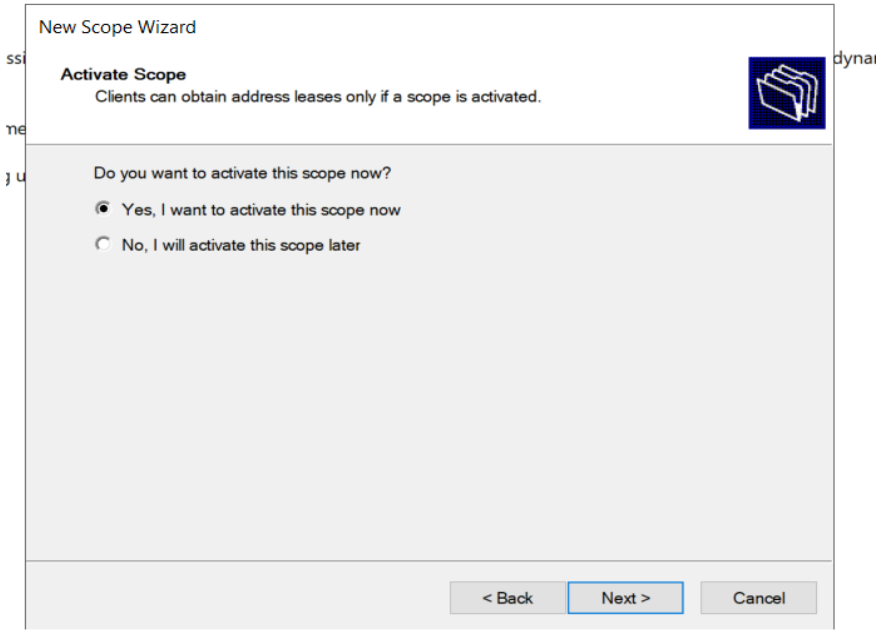
- Bước 9: Thêm Default Gateway



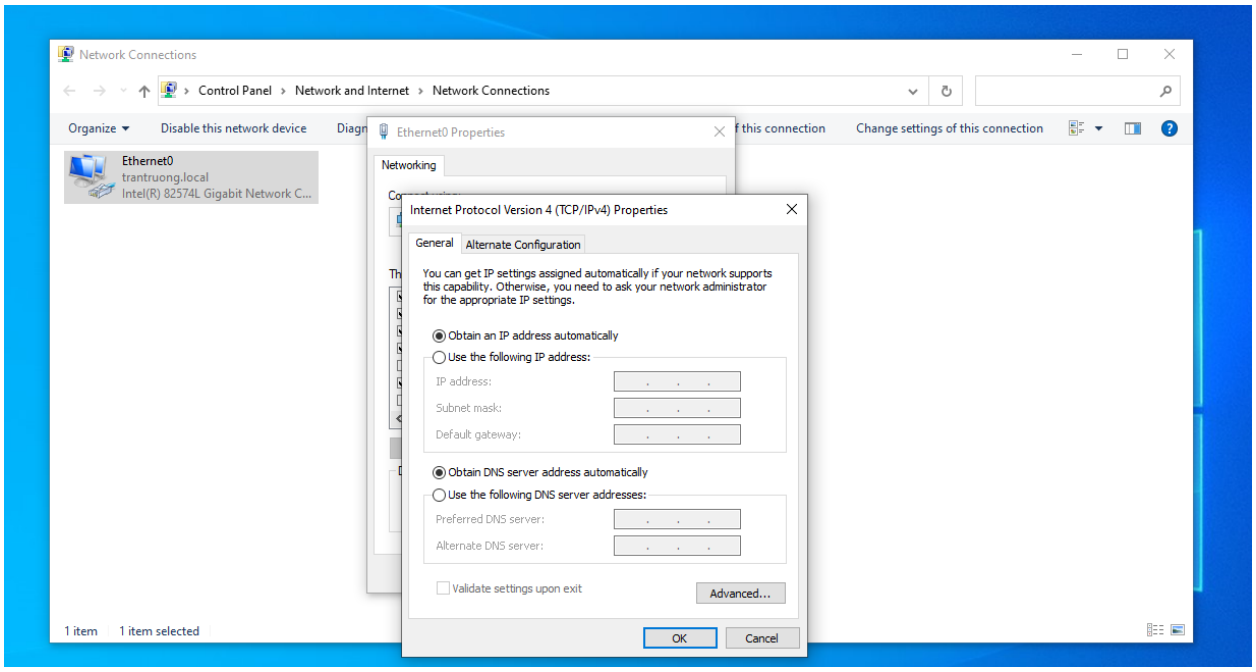
- Bước 10: Thêm DNS Server



- Bước 11: Kích hoạt Scope



- Bước 12: Trên máy PC1 điều chỉnh cài đặt ip dhcp



- Bước 13: Kiểm tra kết quả máy tính đã nhận IP động do server cấp