

Міністерство освіти і науки України
Національний технічний університет України “Київський політехнічний
інститут імені Ігоря Сікорського”

Звіт

з лабораторної роботи №3 з дисципліни
“Організація комп’ютерних мереж”

“ВСТАНОВЛЕННЯ ТА КОНФІГУРУВАННЯ СЕРВЕРА DHCP”

Виконав студент Флорчук Назарій Петрович

Перевірив викладач Катін Павло Юрійович

Мета роботи:

1. Встановити роль DHCP сервера на комп'ютері, який не є контролером домену.
2. Встановити та налаштувати область DHCP сервера.
3. Налаштувати клієнта на отримання IP-адреси від сервера DHCP.
4. Змінити фізичну адресу мережевого адаптера.
5. Конфігурувати та зарезервувати IP-адресу для клієнта DHCP.

Виконання лабораторної роботи здійснюється на машині:

The screenshot shows the Windows Settings application open to the 'About' page. The left sidebar lists various system settings like Display, Sound, Notifications & actions, Focus assist, Power & sleep, Storage, Tablet, Multitasking, Projecting to this PC, Shared experiences, Clipboard, Remote Desktop, and About. The 'About' section is highlighted. The main content area displays device specifications and Windows specifications, along with links to help and feedback options.

About

Your PC is monitored and protected.

See details in Windows Security

This page has a few new settings
Some settings from Control Panel have moved here, and you can copy your PC info so it's easier to share.

Device specifications

Device name	Processor	Installed RAM	Pen and touch	Related settings
AMD Ryzen 7 5800X 8-Core Processor	GHz	16.0 GB	No pen or touch input is available for this display	BitLocker settings
	Device ID			Device Manager
	Product ID			Remote desktop
	System type	64-bit operating system, x64-based processor		System protection
				Advanced system settings

[Copy](#)

[Rename this PC](#)

Windows specifications

Edition	Version	Installed on	OS build	Experience
Windows 10 Pro	22H2	12/4/2022	19045.2846	Windows Feature Experience Pack 120.2212.4190.0

[Copy](#)

[Change product key or upgrade your edition of Windows](#)

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[Read the Microsoft Software License Terms](#)

[Help from the web](#)

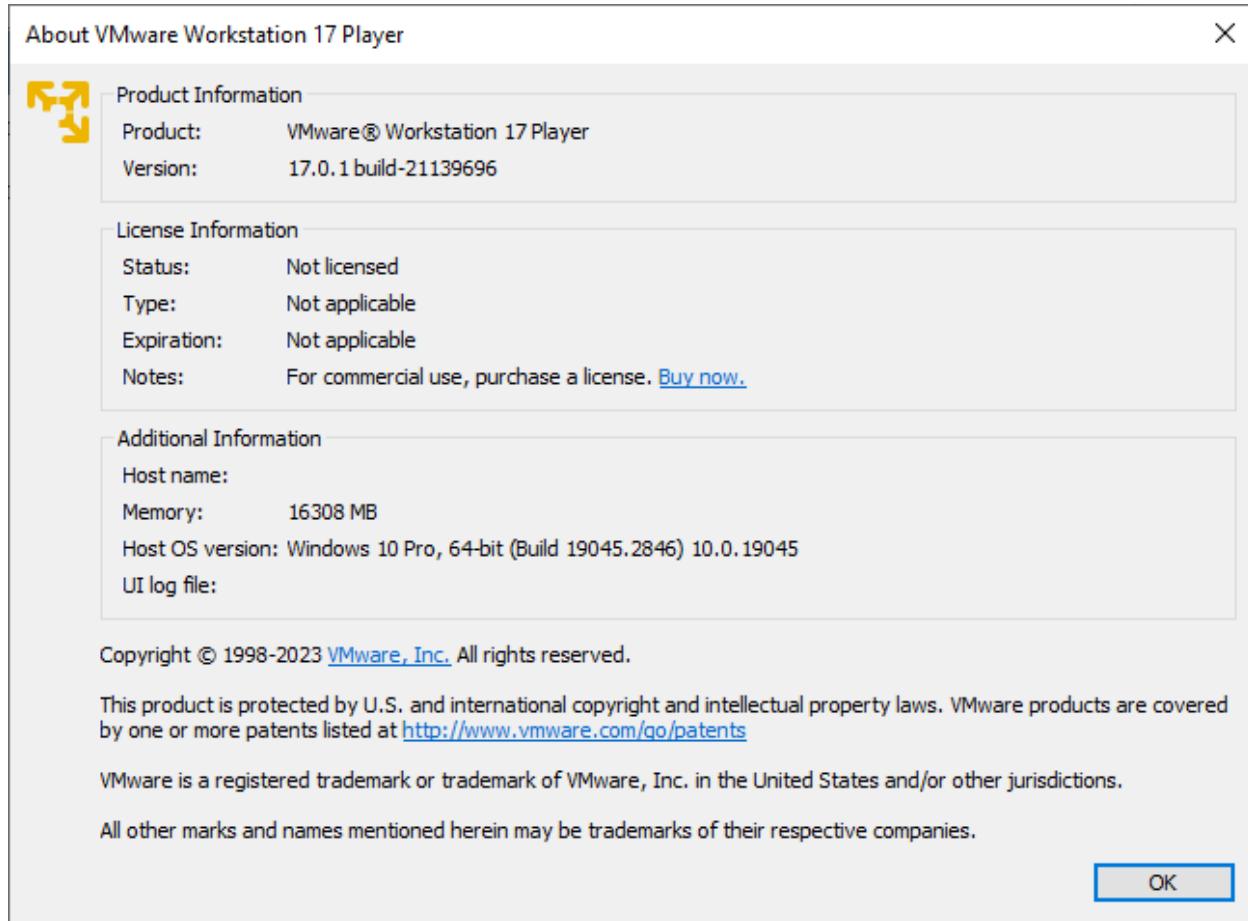
[Finding out how many cores my processor has](#)

[Checking multiple Languages support](#)

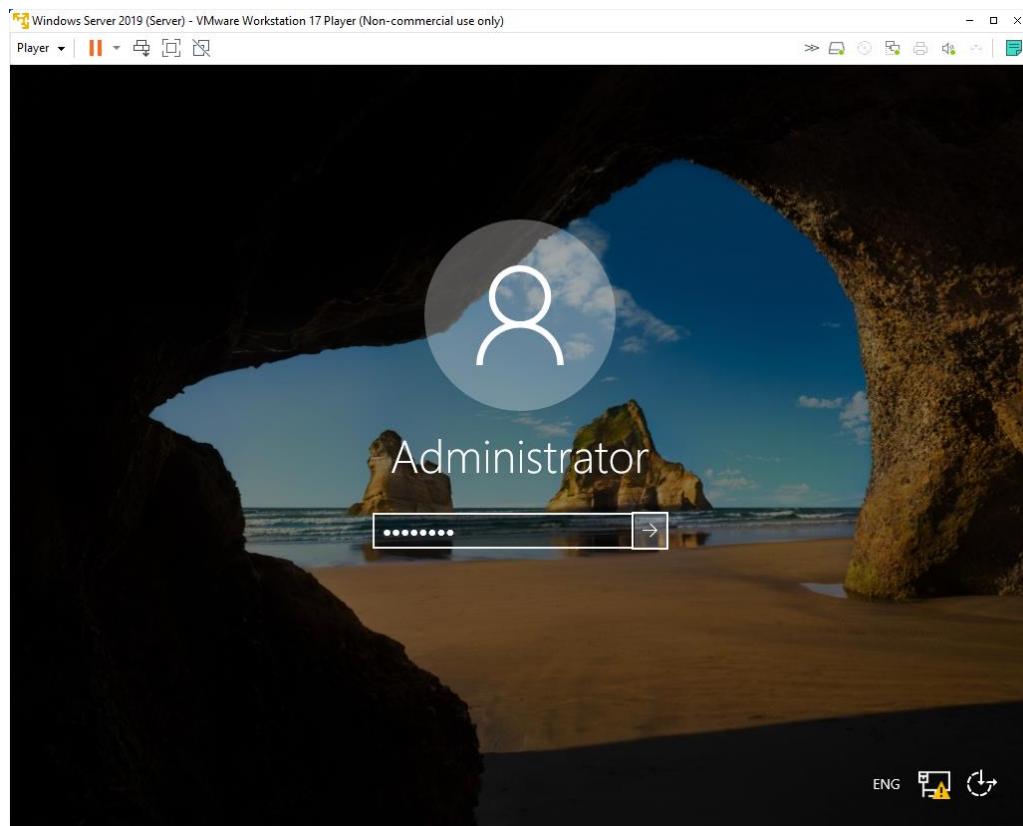
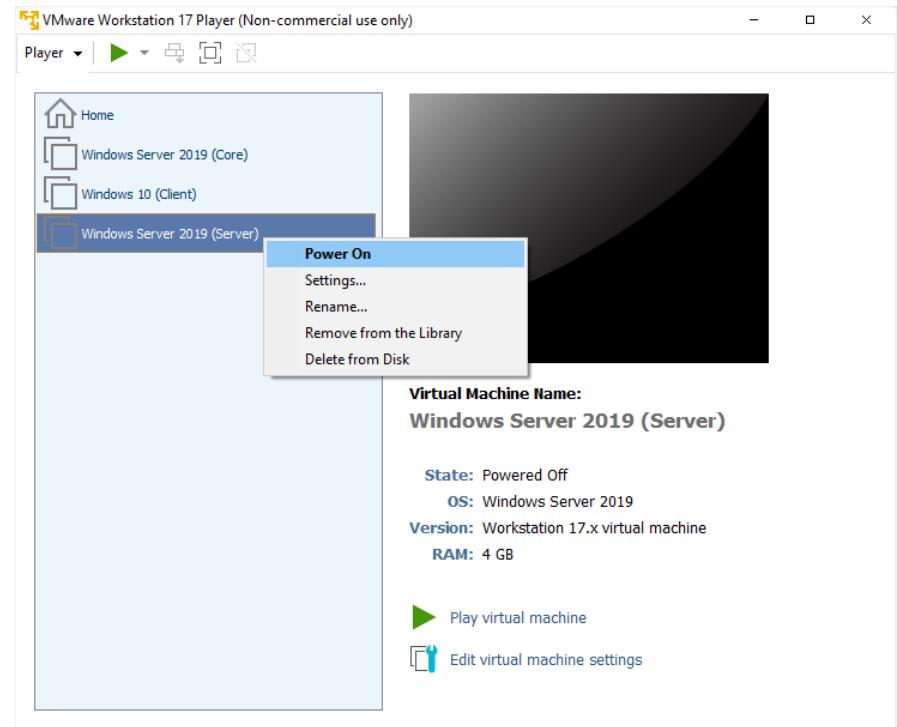
[Get help](#)

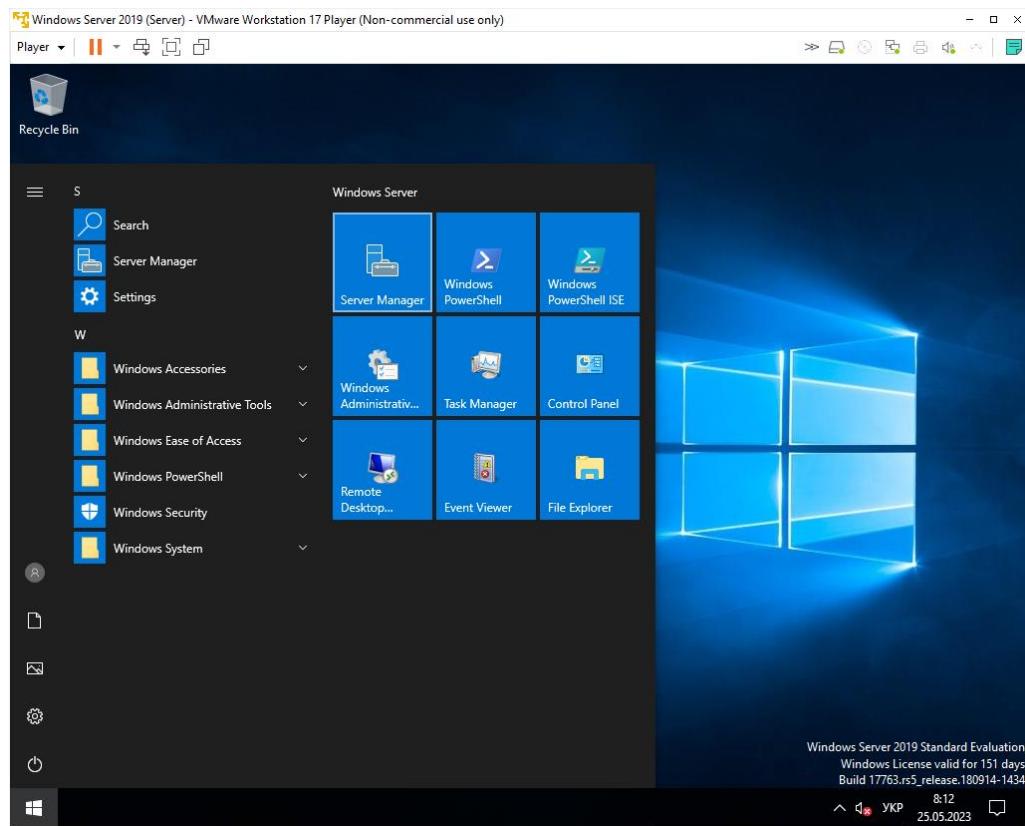
[Give feedback](#)

Берсія VMware Workstation Player:

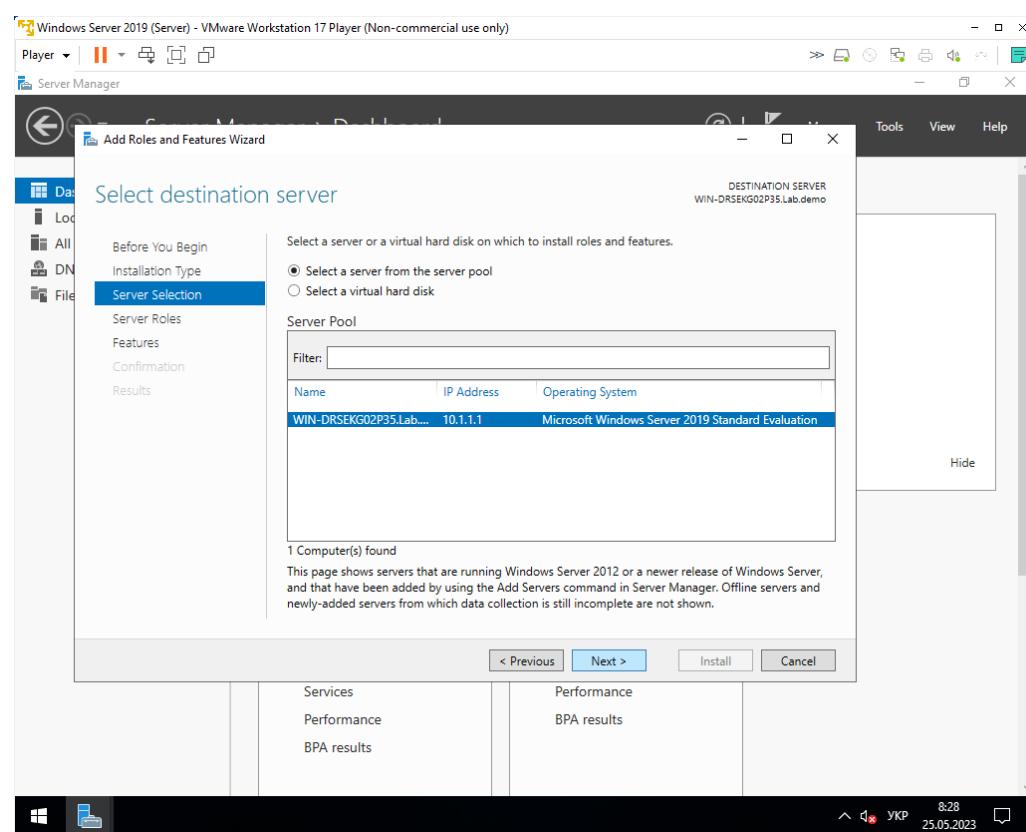
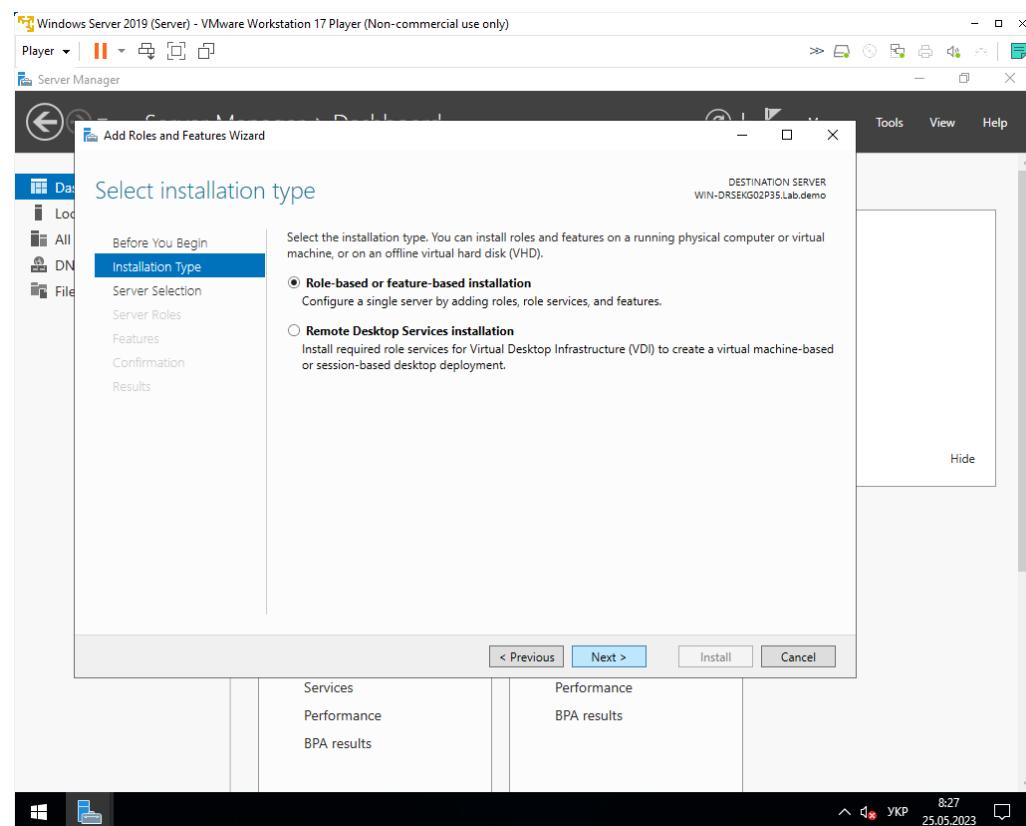


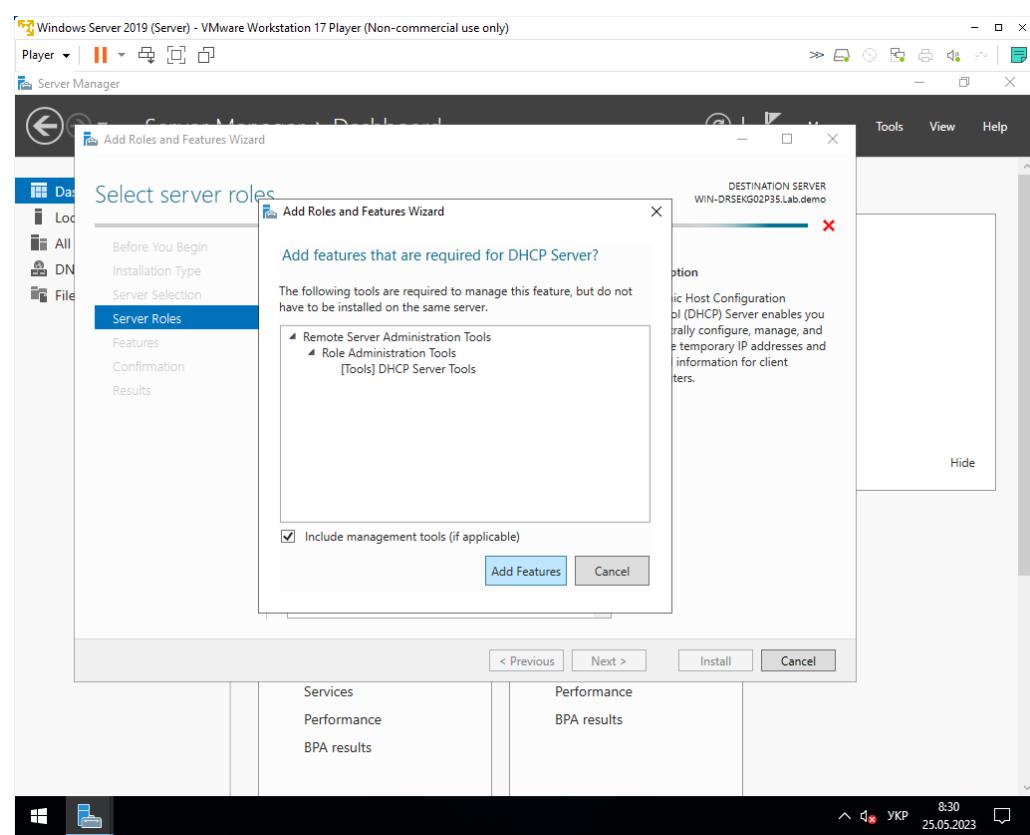
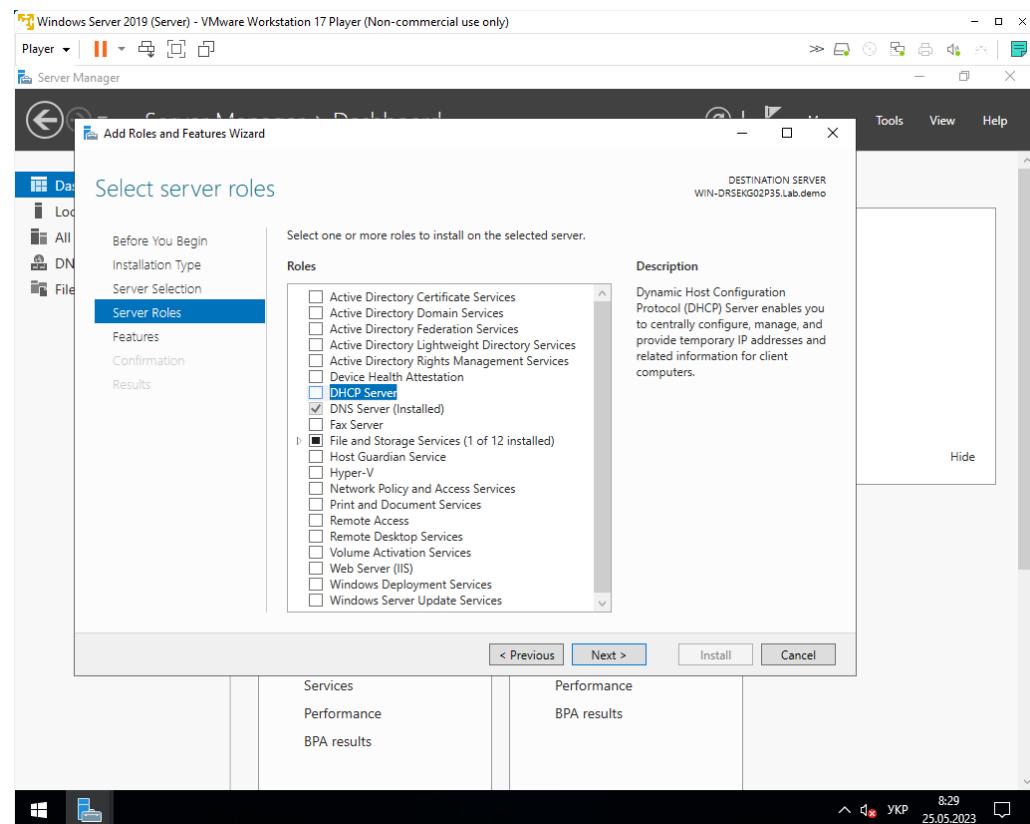
Конфігурація DHCP.

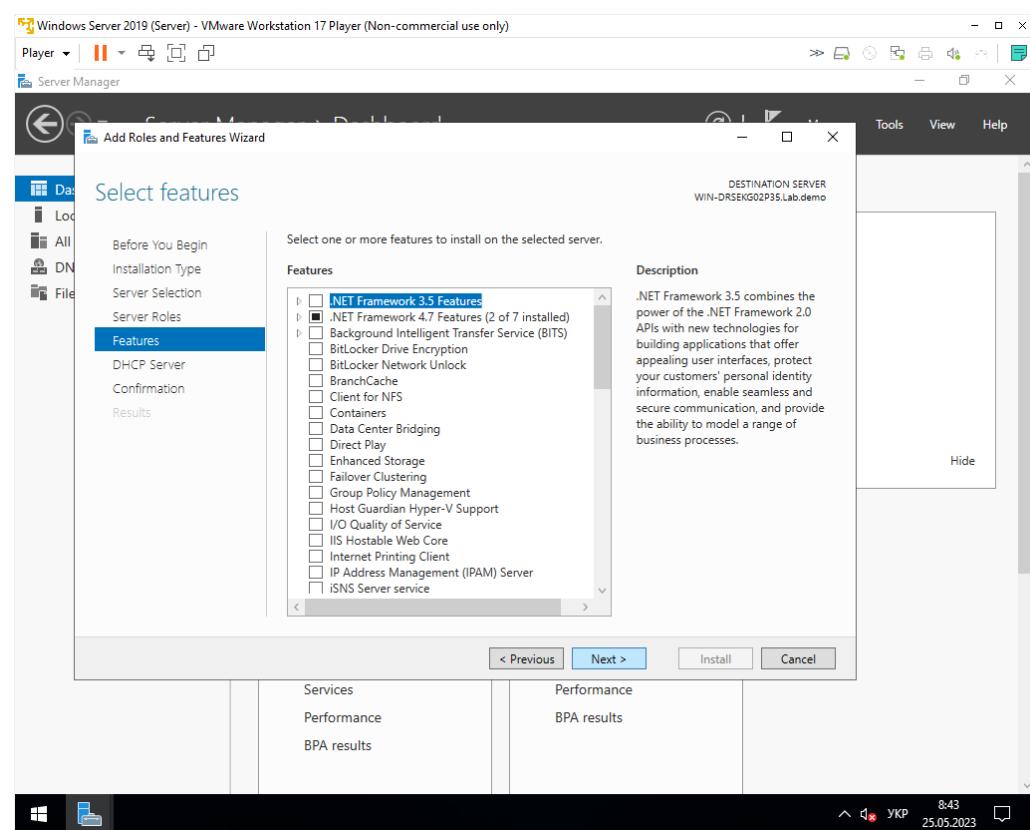
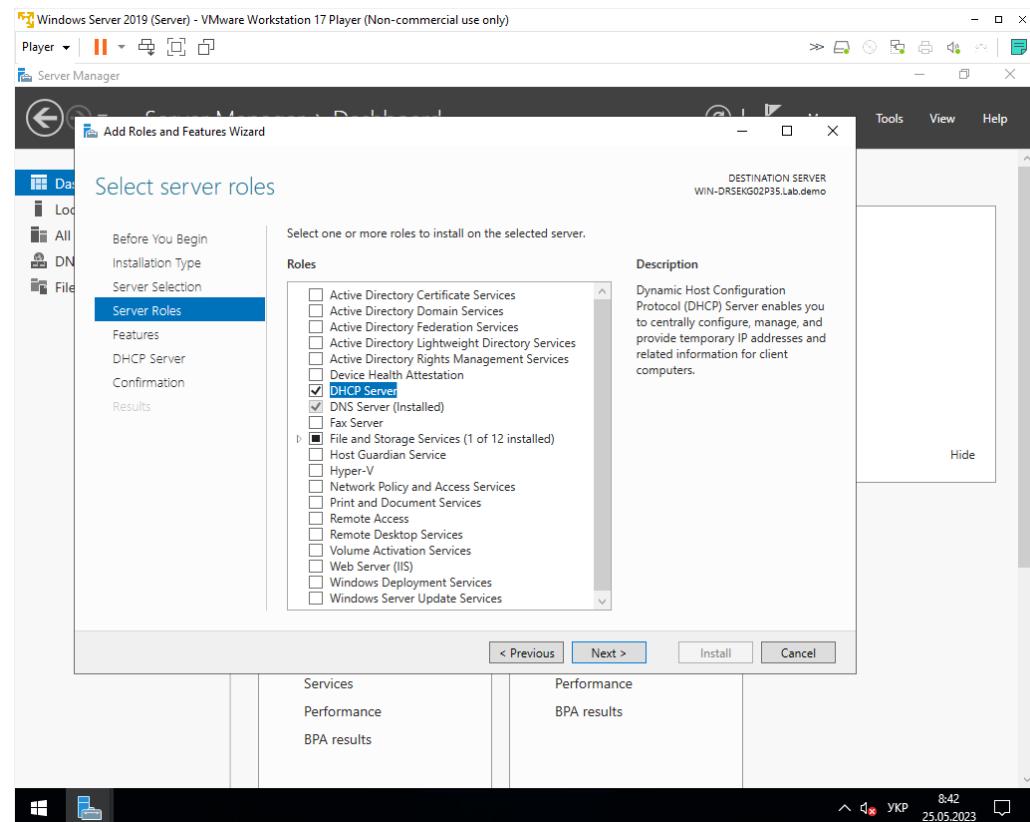


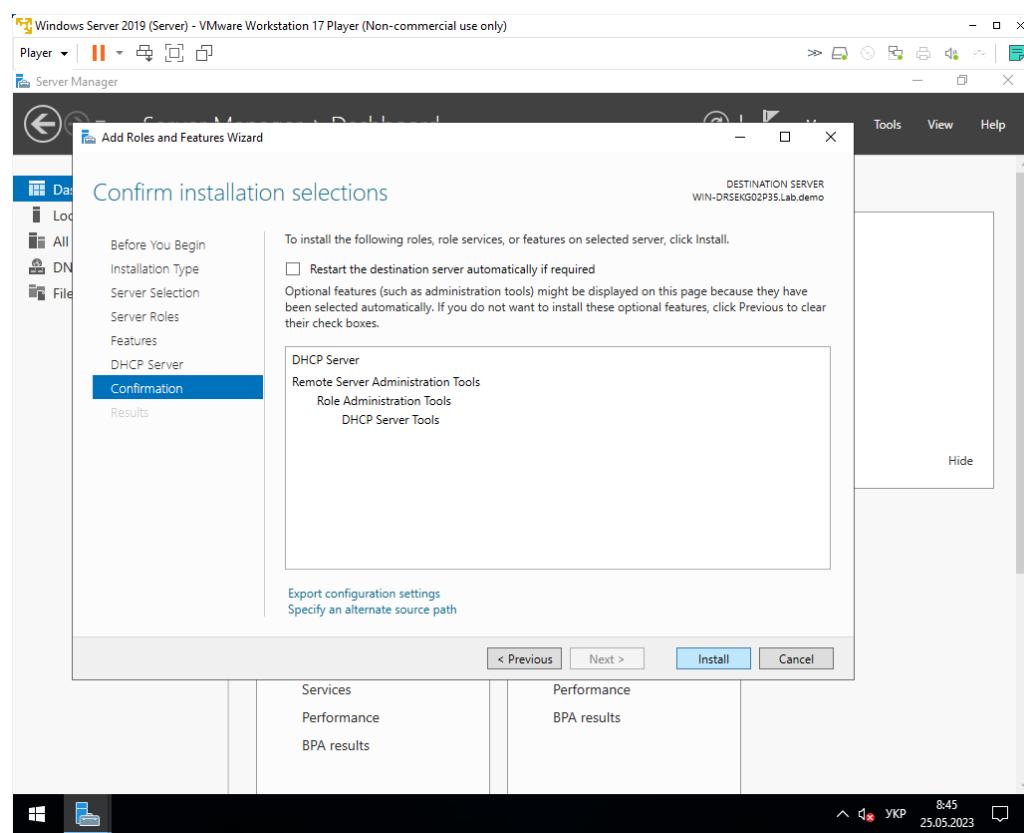
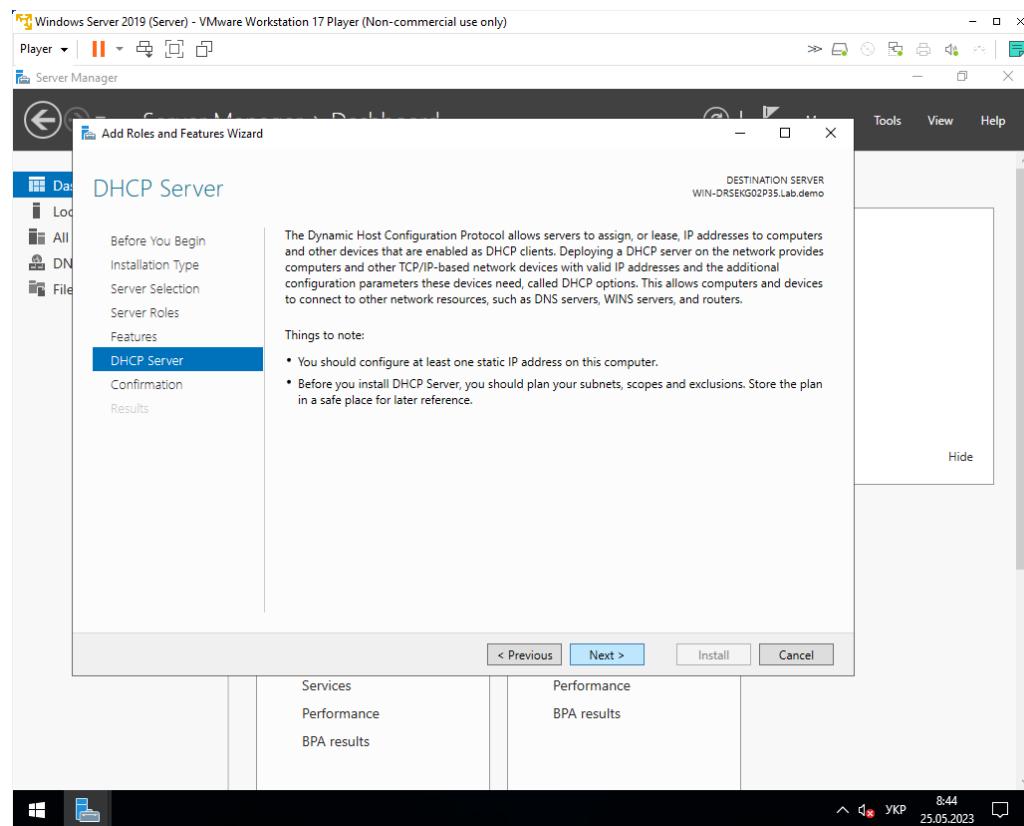


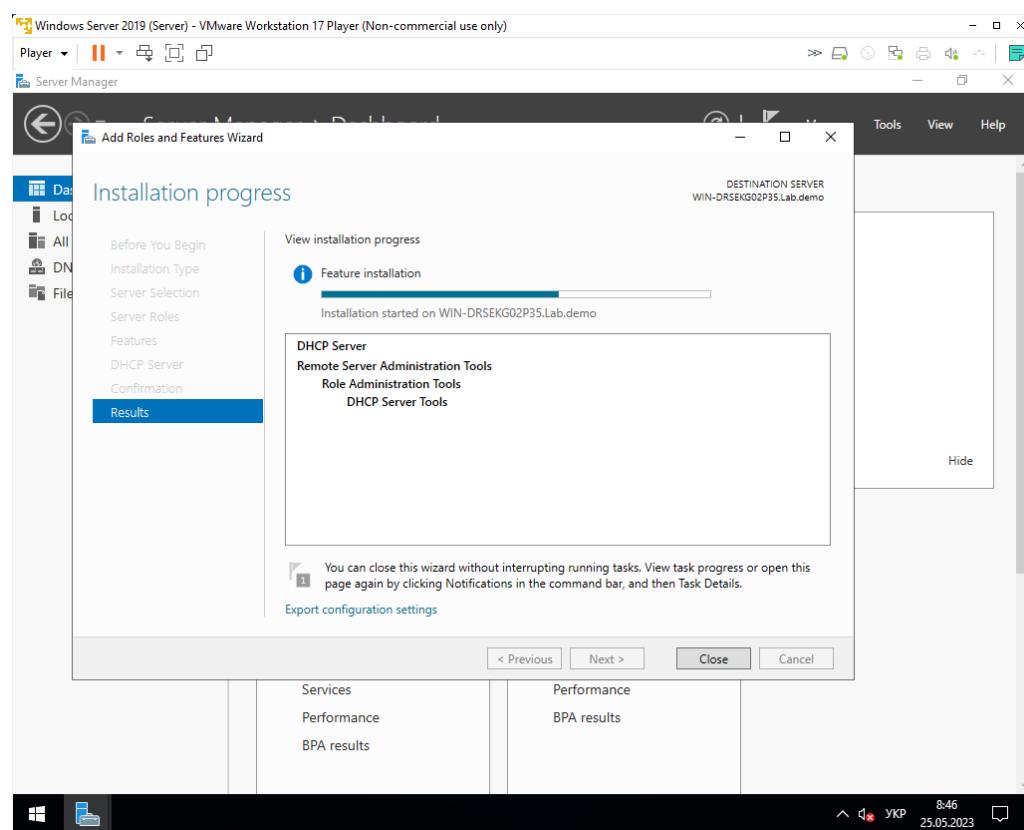
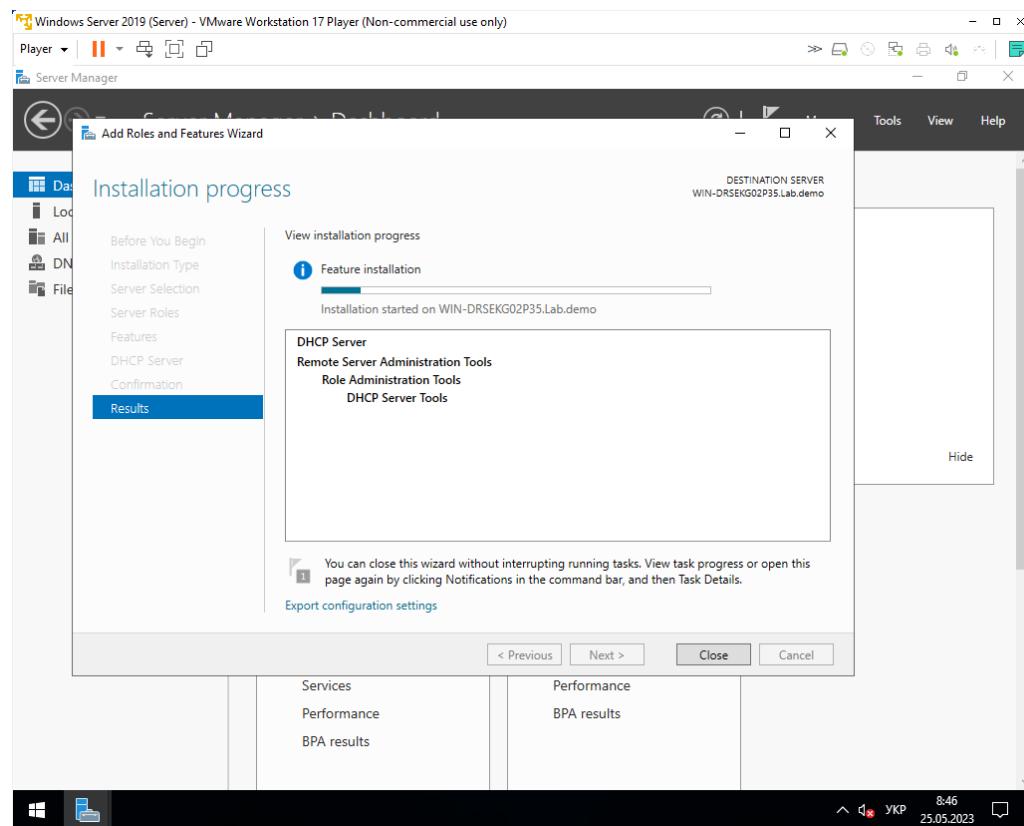
A screenshot of the Windows Server 2019 Server Manager dashboard. The left navigation pane shows 'Dashboard' as the selected item, along with links for 'Local Server', 'All Servers', 'DNS', and 'File and Storage Services'. The main content area is titled 'WELCOME TO SERVER MANAGER' and features a 'QUICK START' section with five numbered steps: 1. Configure this local server, 2. Add roles and features, 3. Add other servers to manage, 4. Create a server group, and 5. Connect this server to cloud services. Below this, the 'ROLES AND SERVER GROUPS' section displays two items: 'DNS' (1 role) and 'File and Storage Services' (1 role). Each item has a 'Manageability' link and other status details like Events, Services, Performance, and BPA results. The taskbar at the bottom shows the date and time (25.05.2023, 8:26).

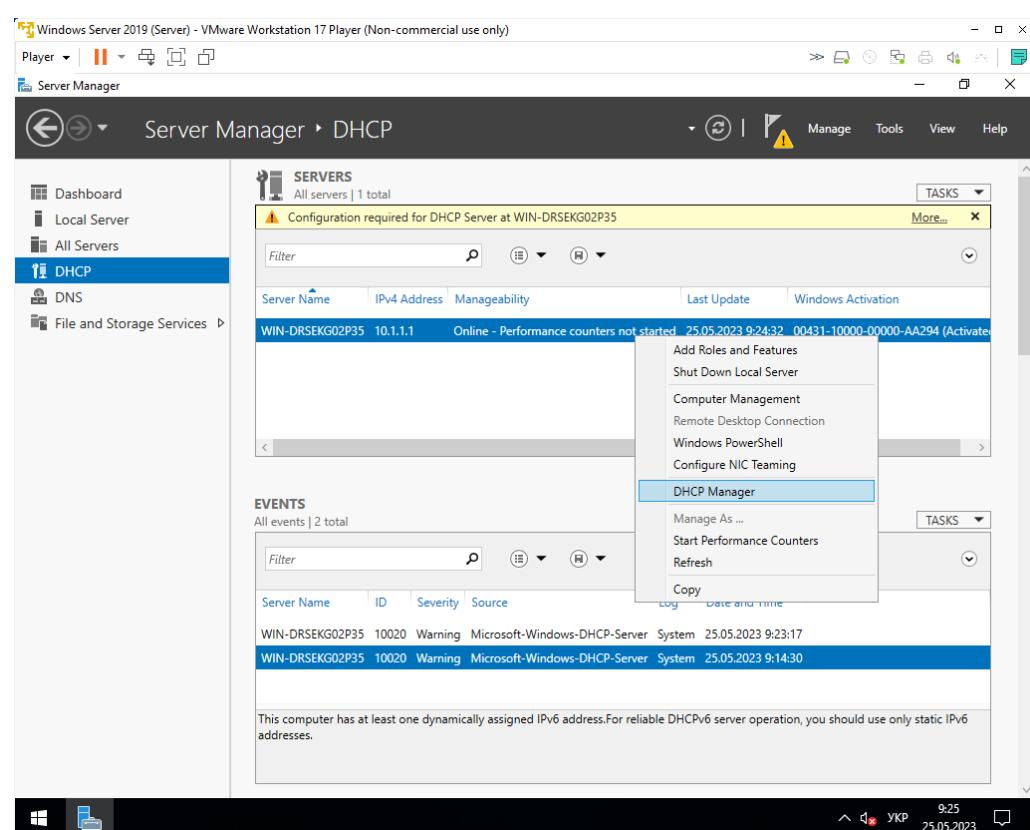
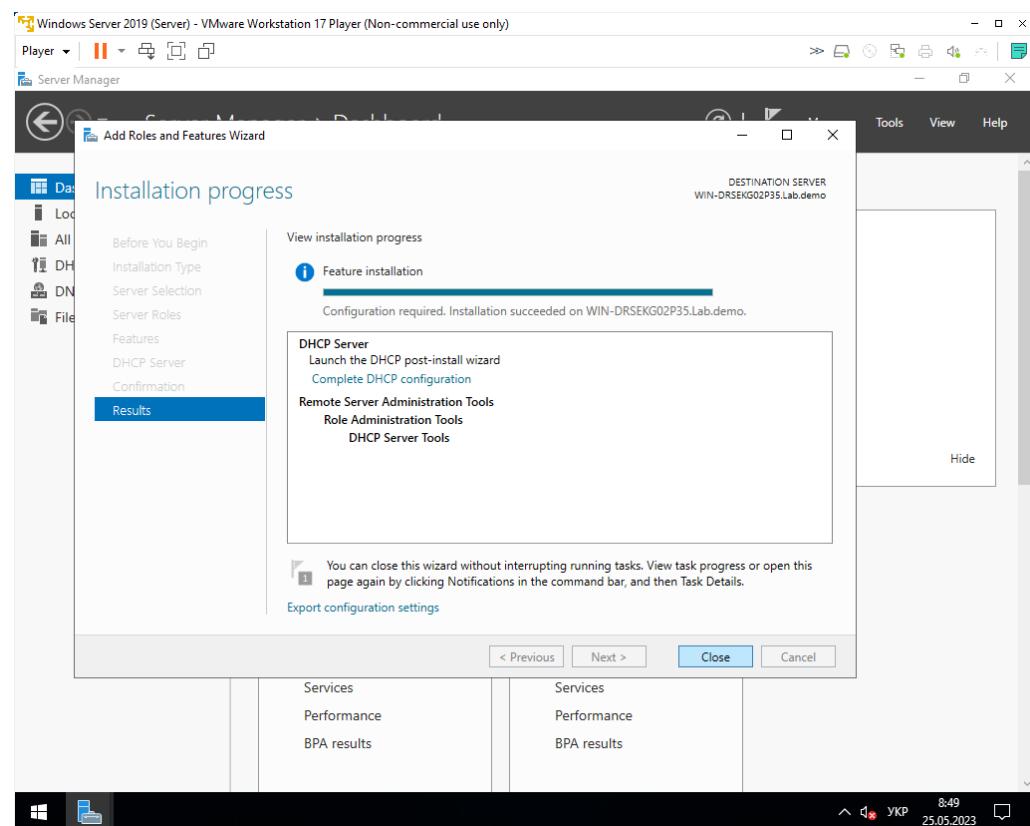


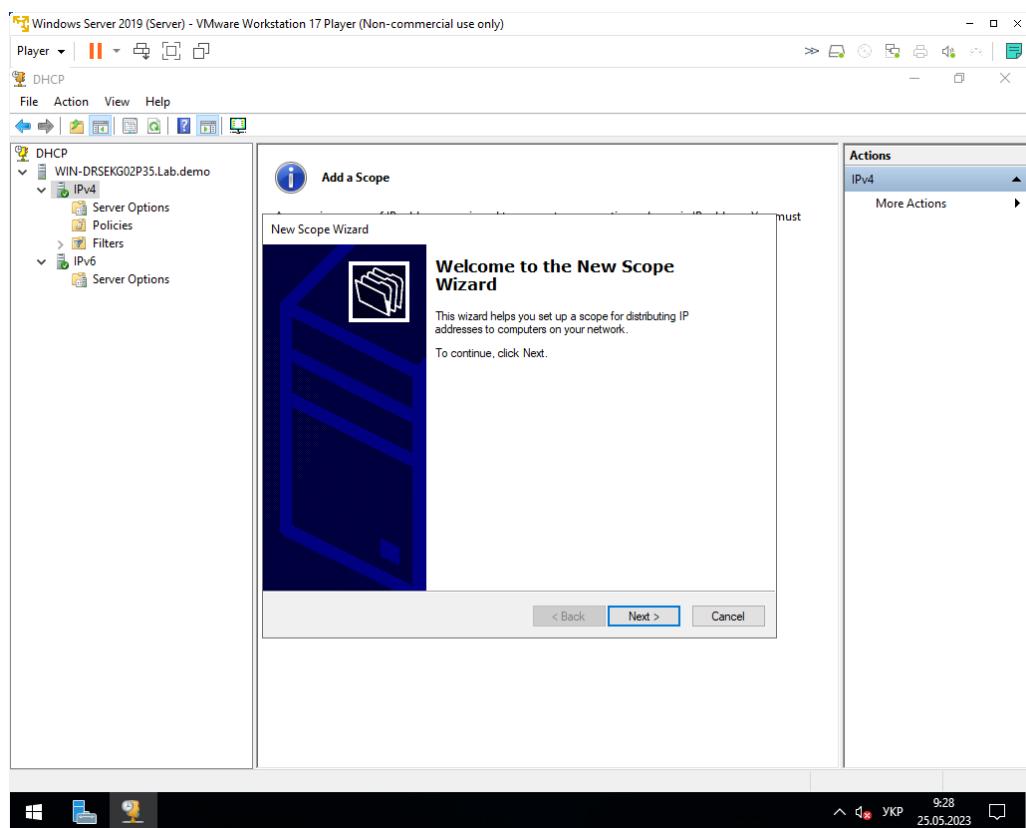
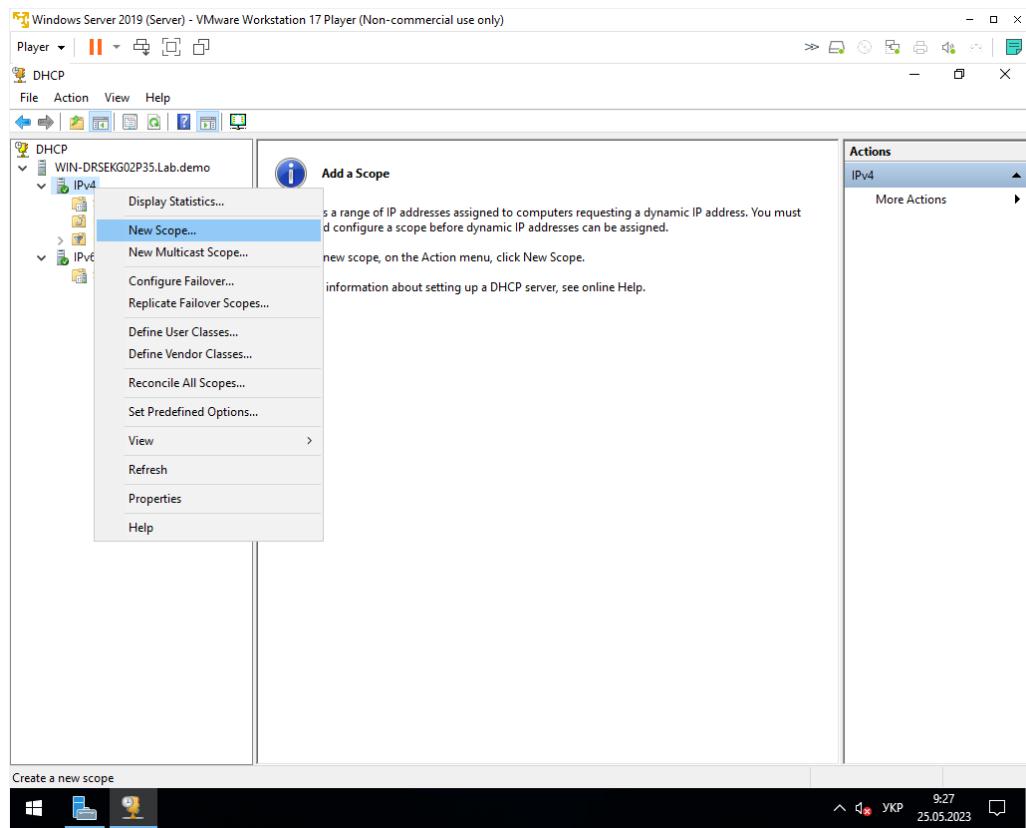


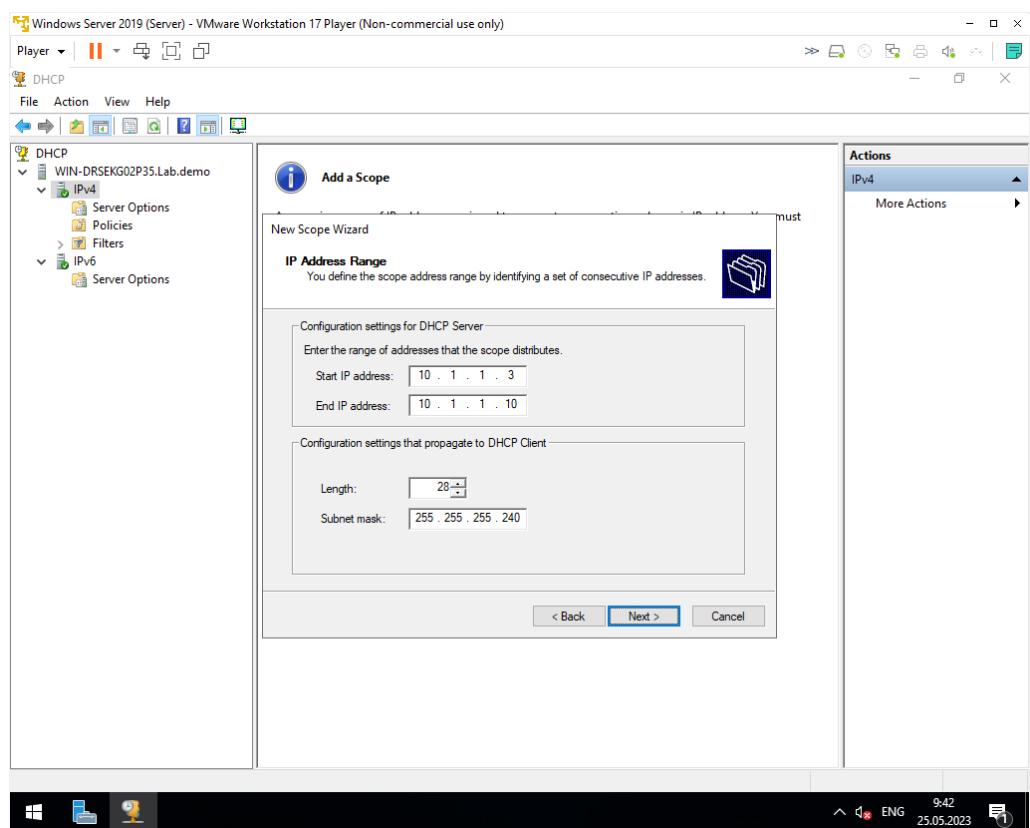
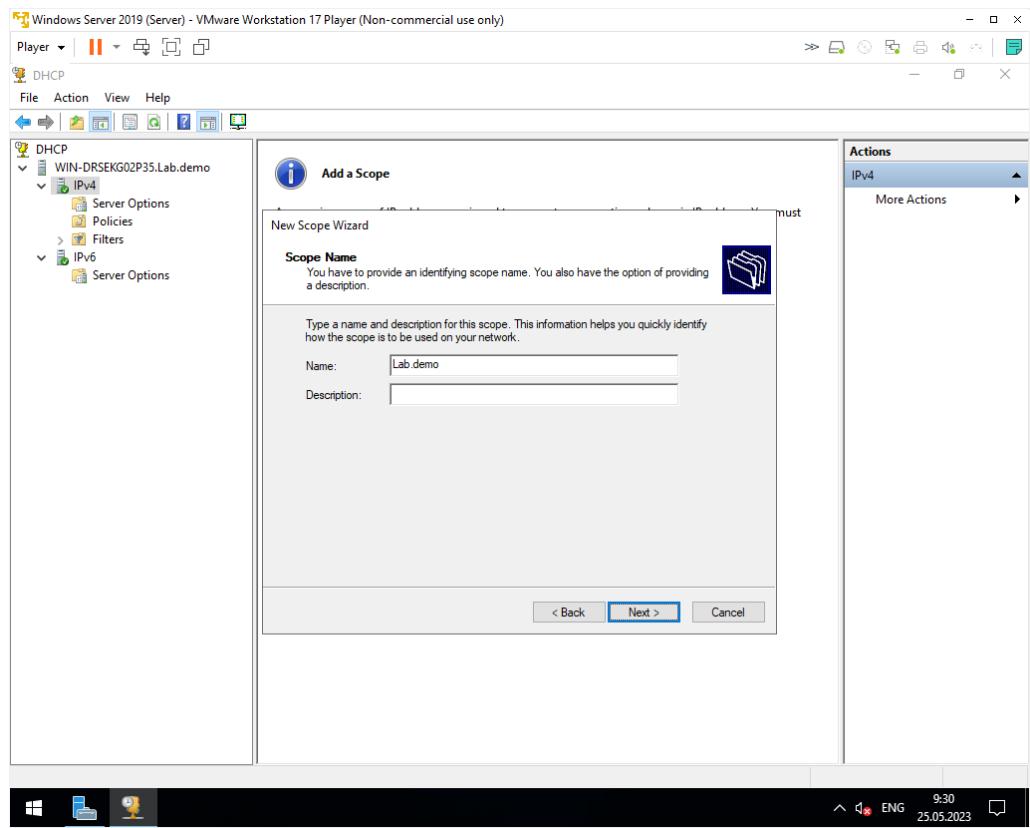


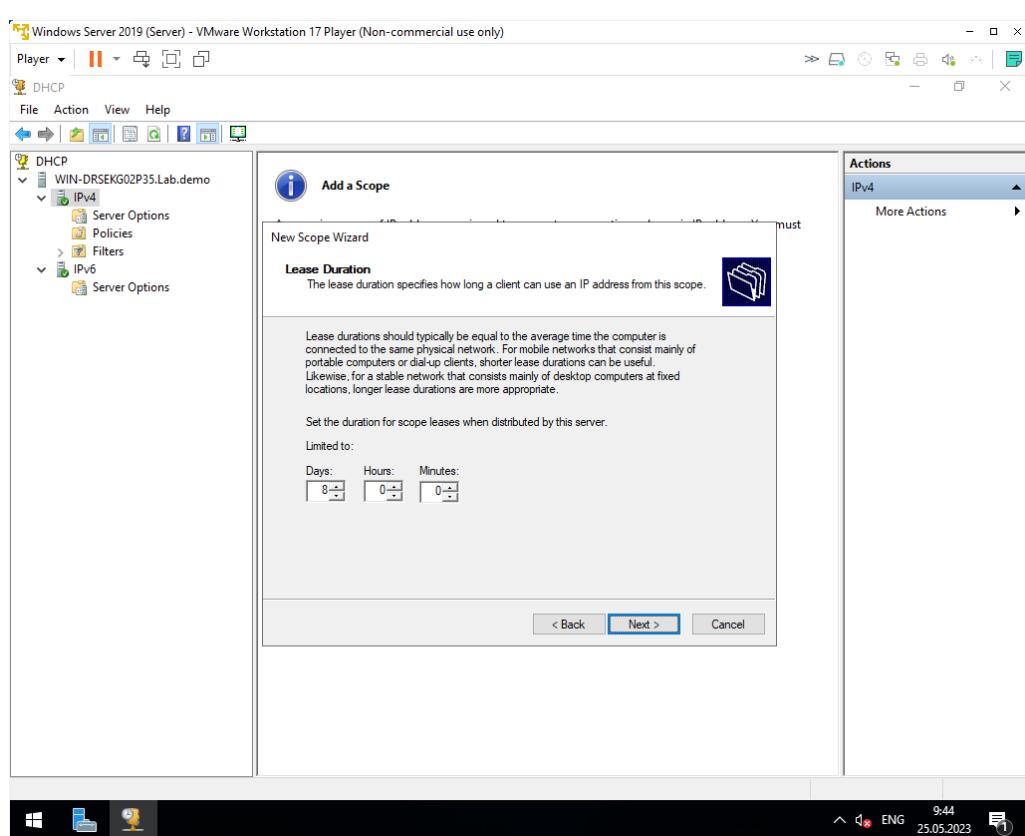
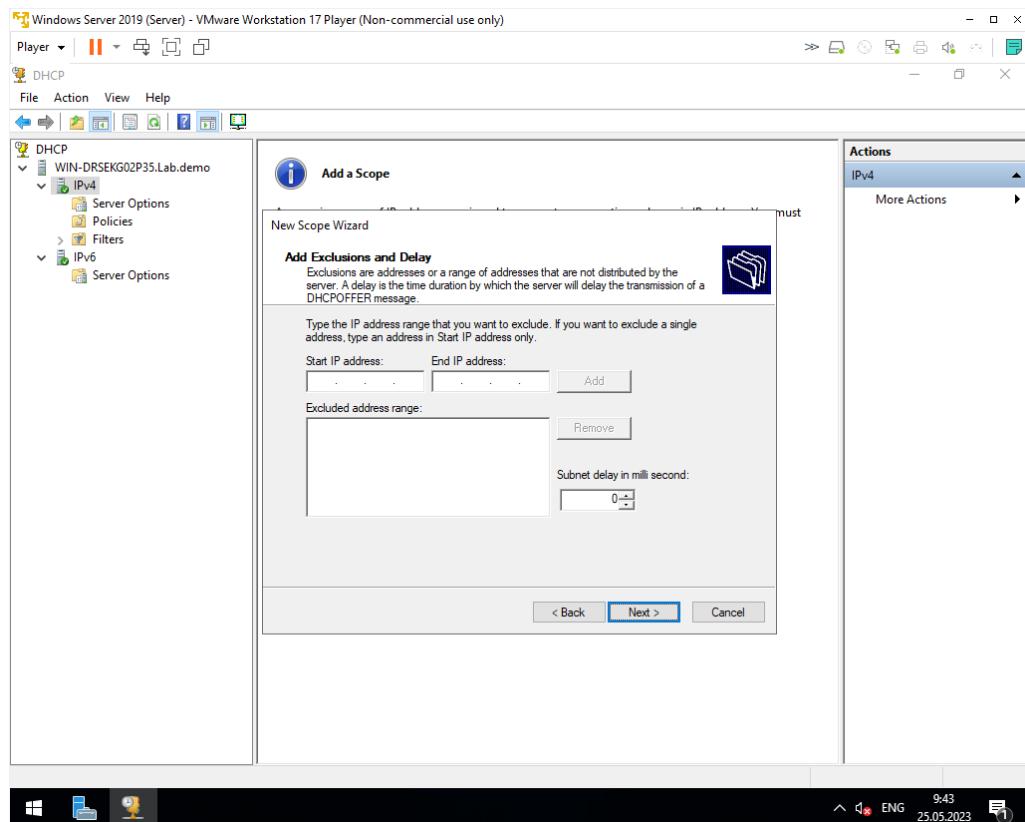


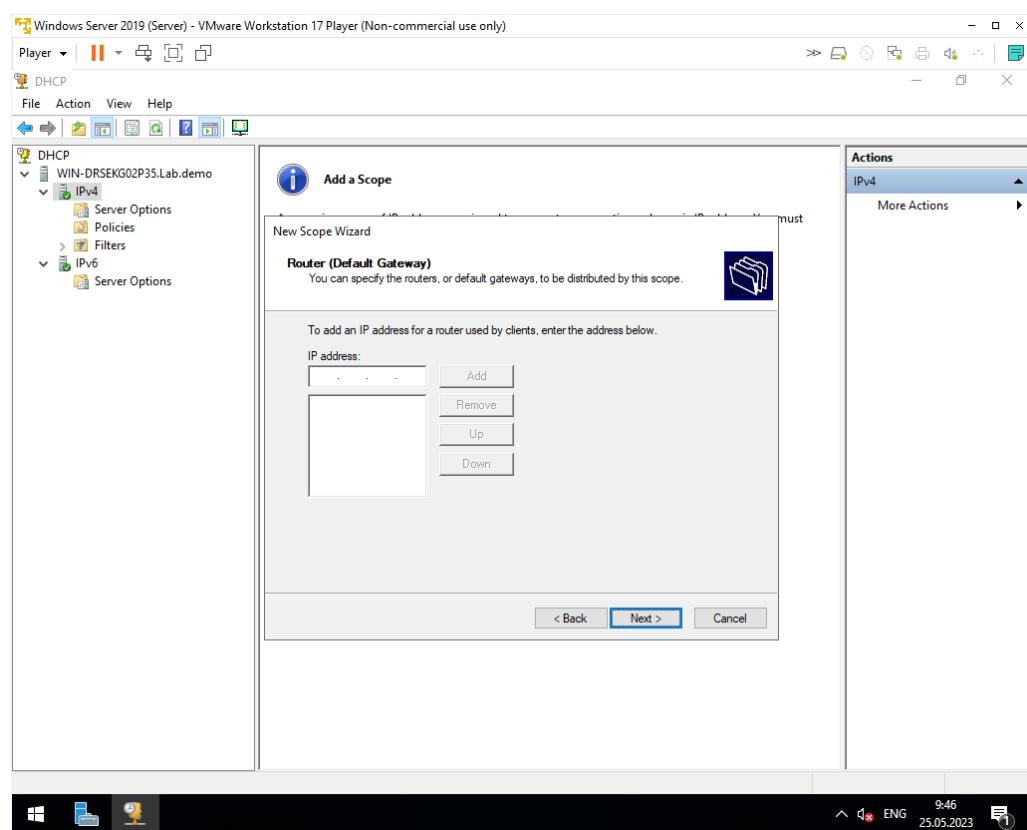
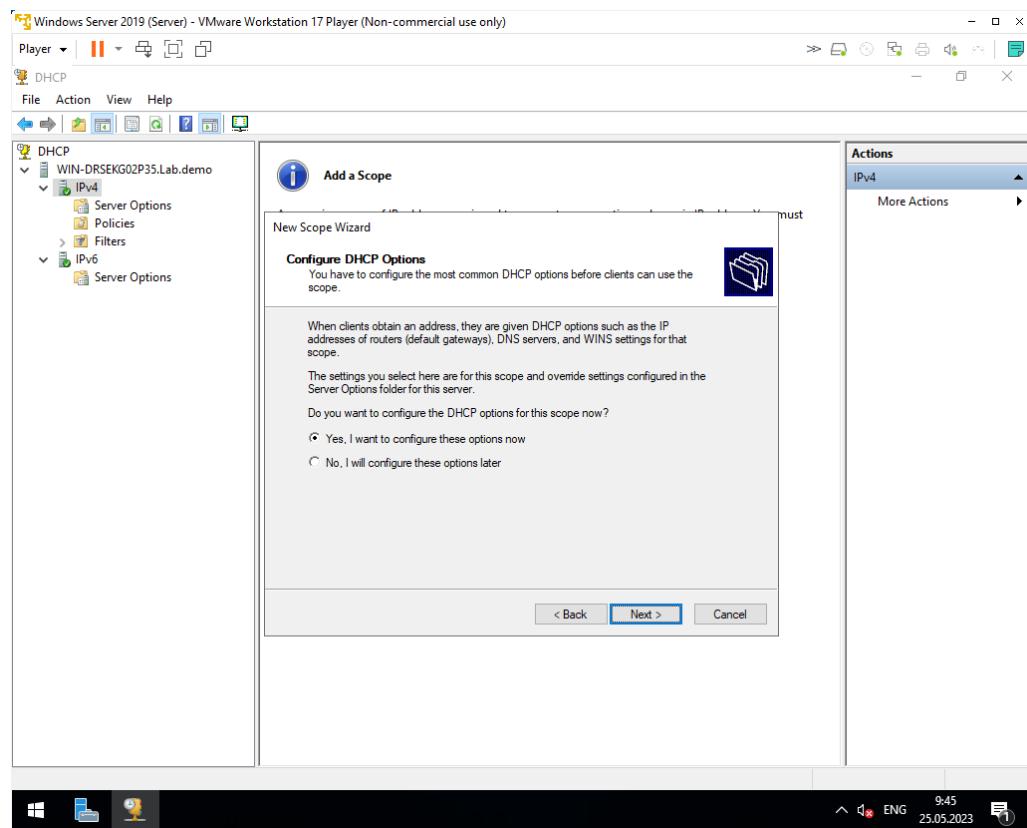


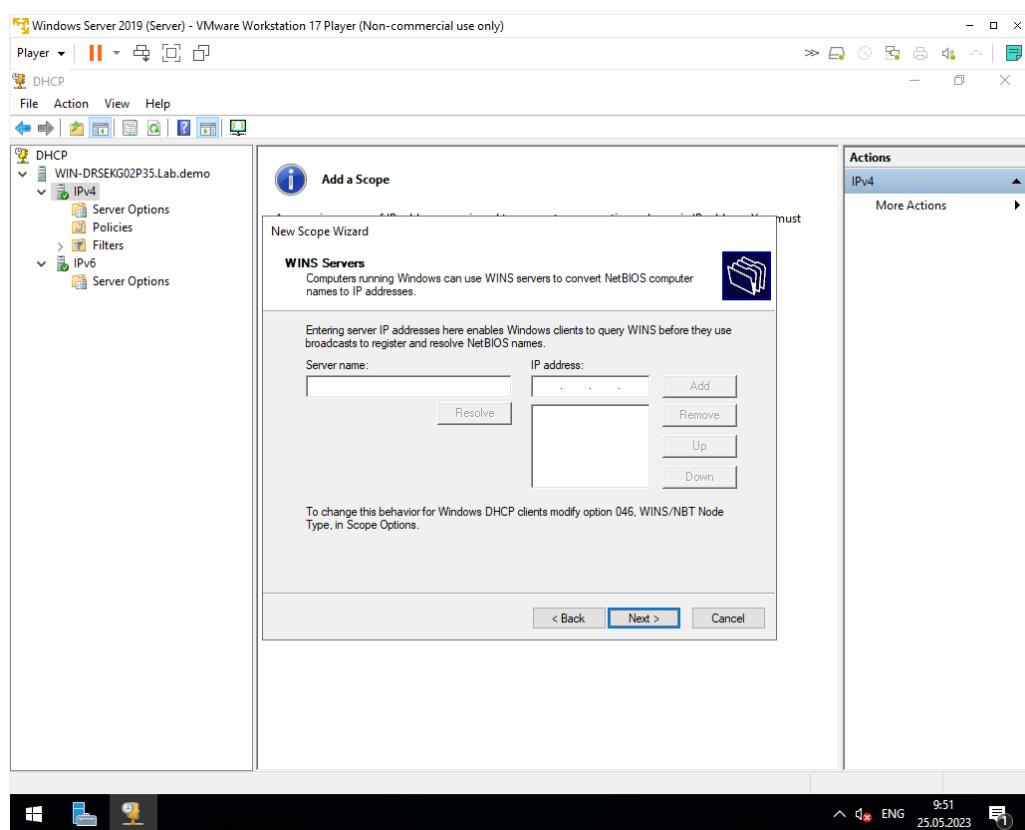
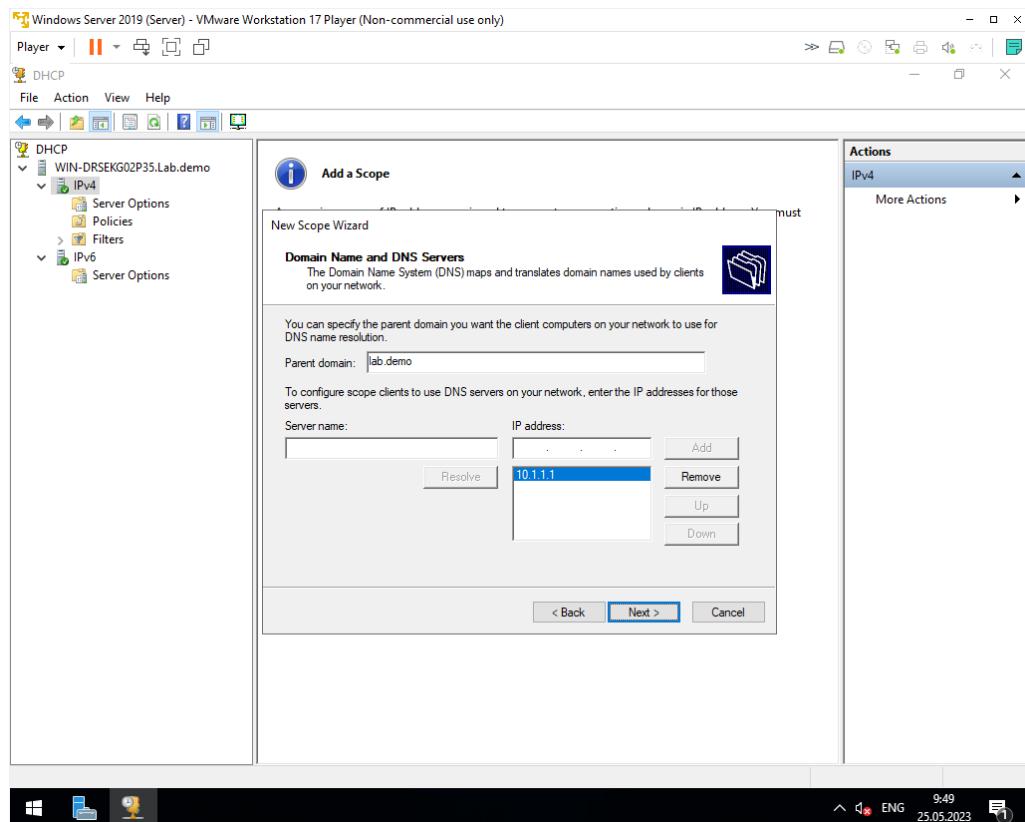


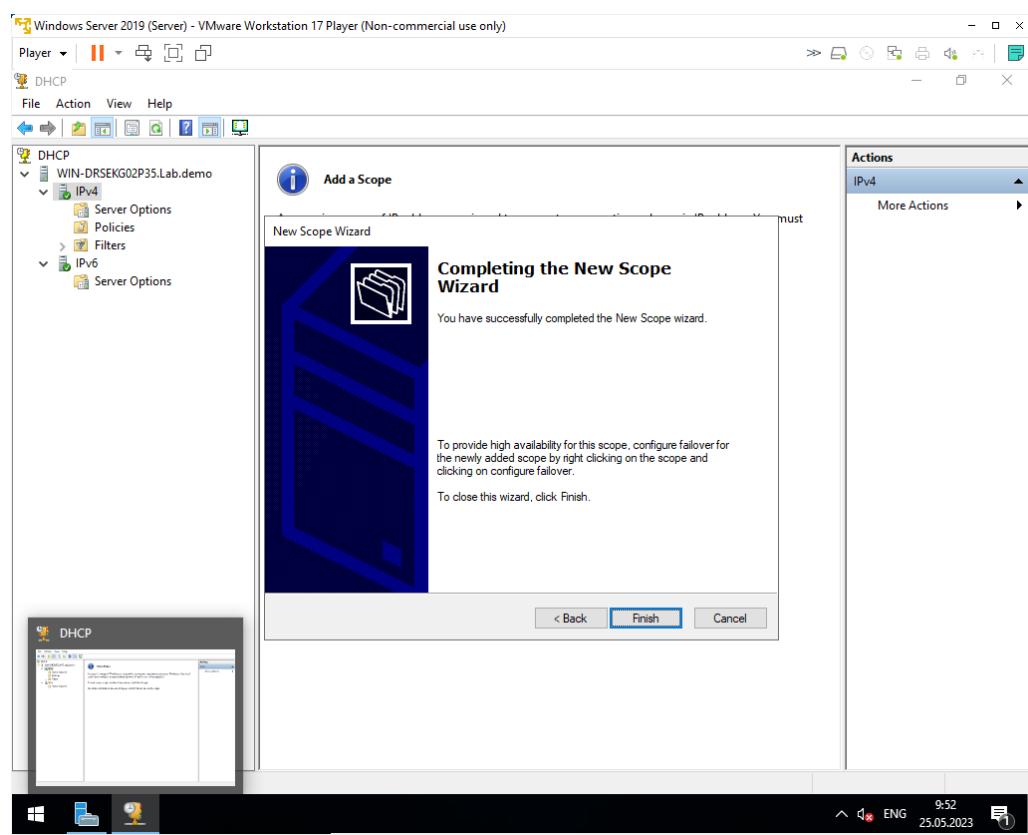
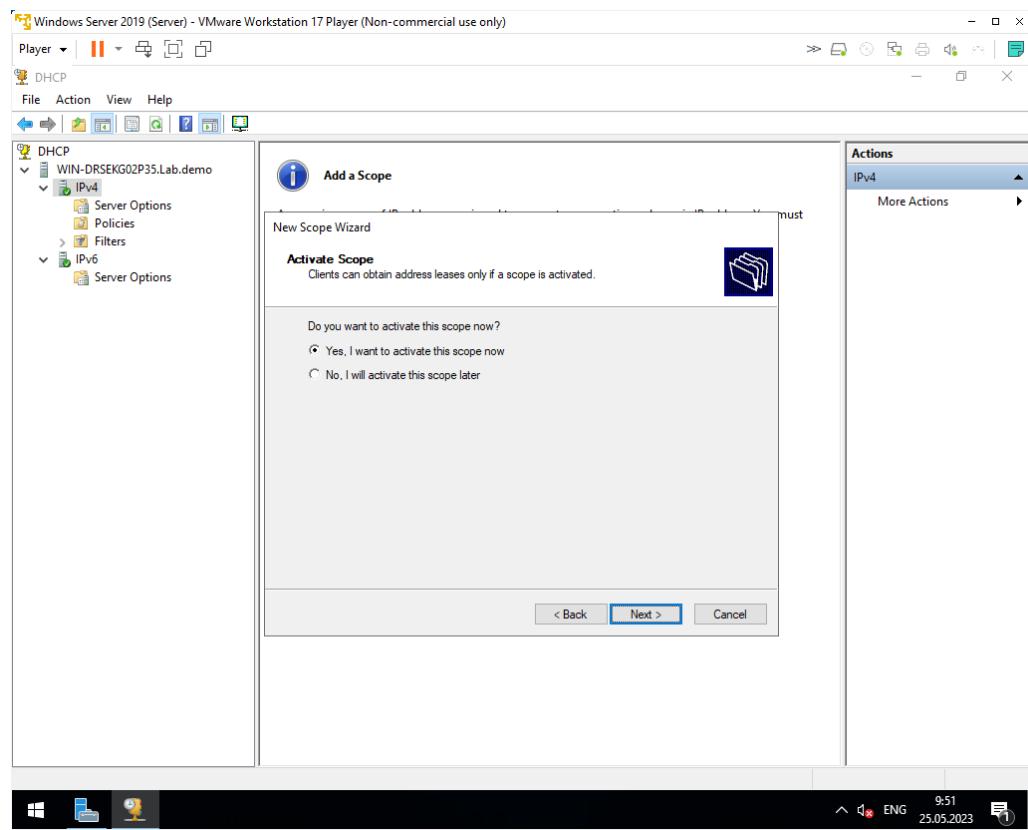


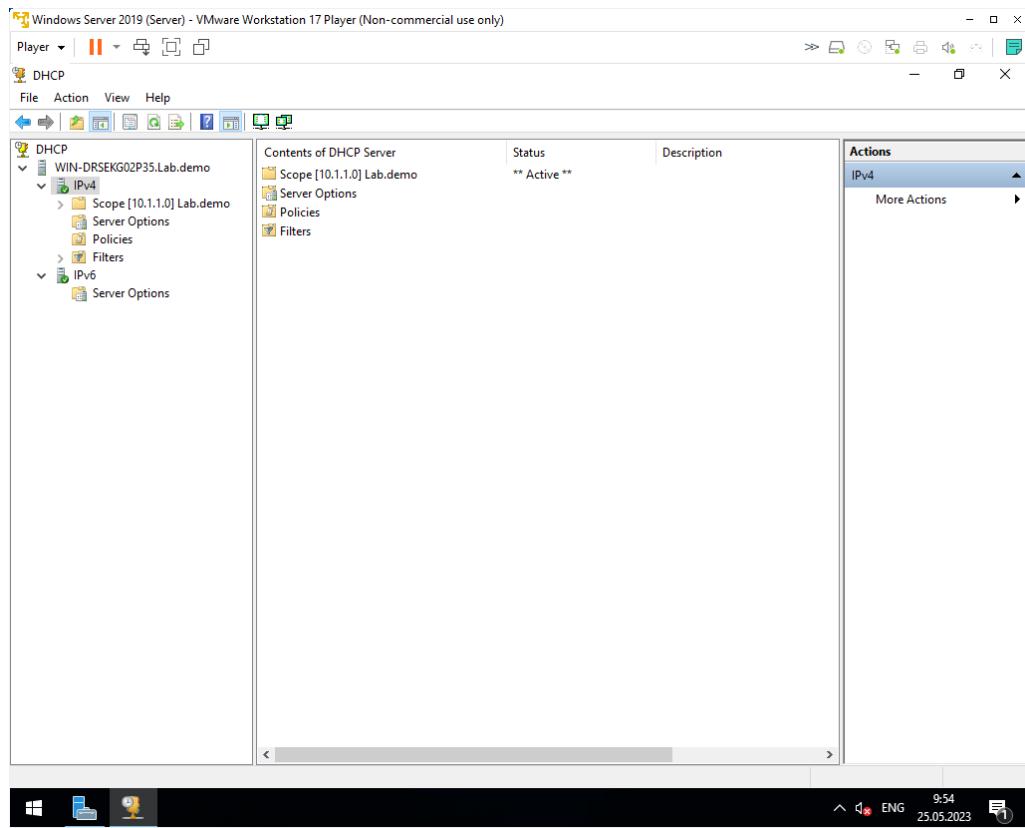




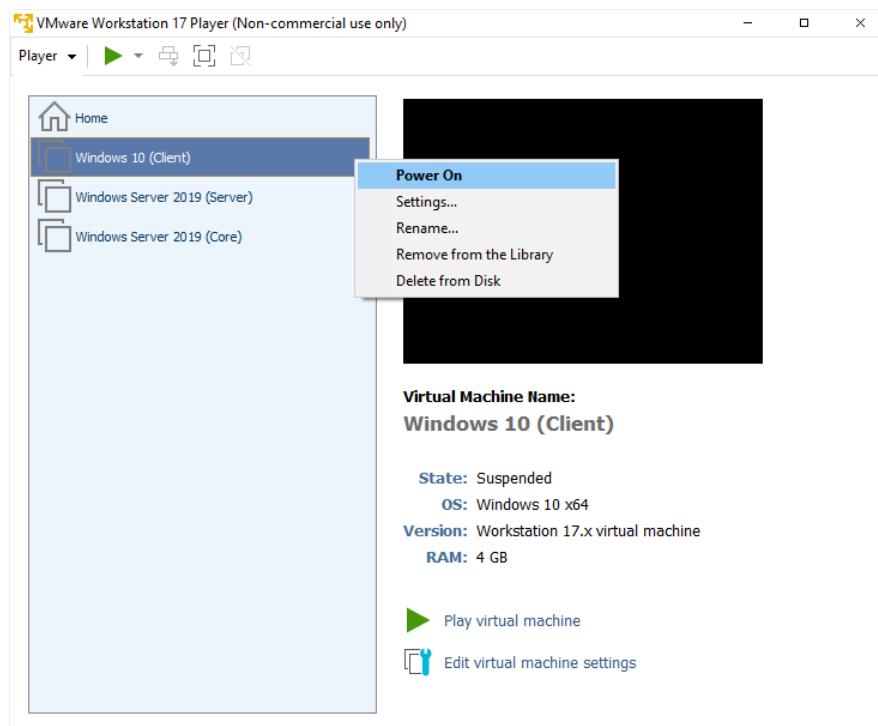


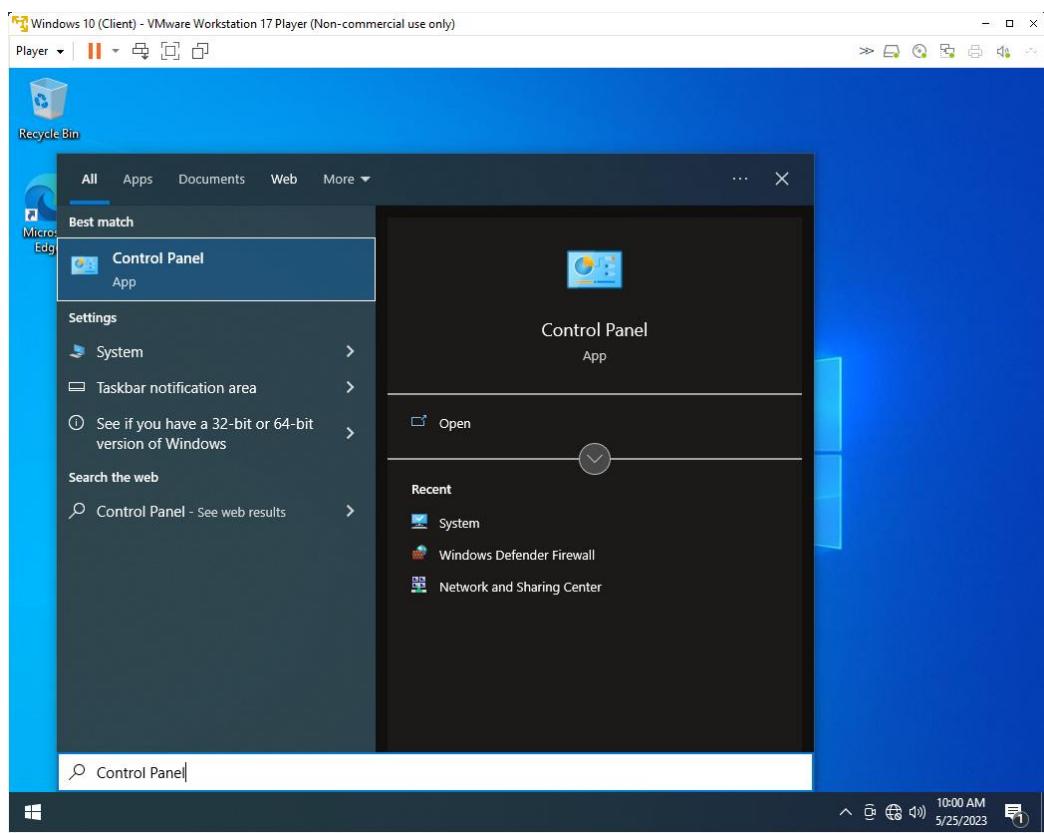
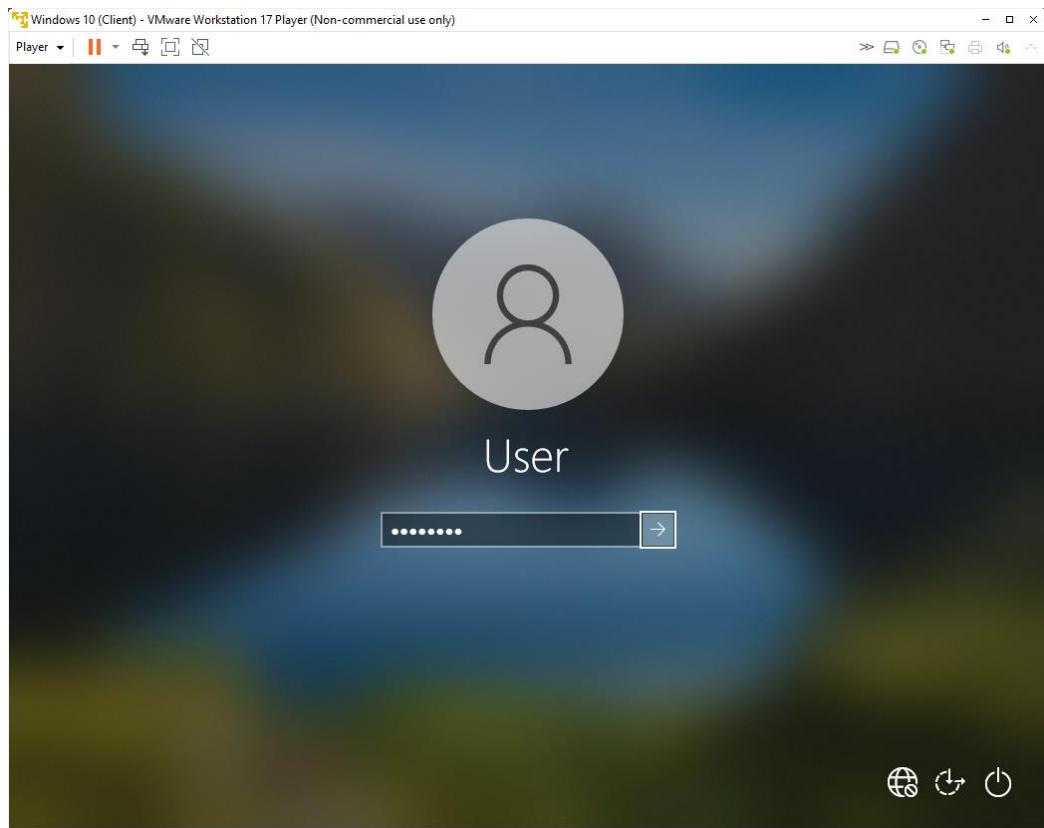


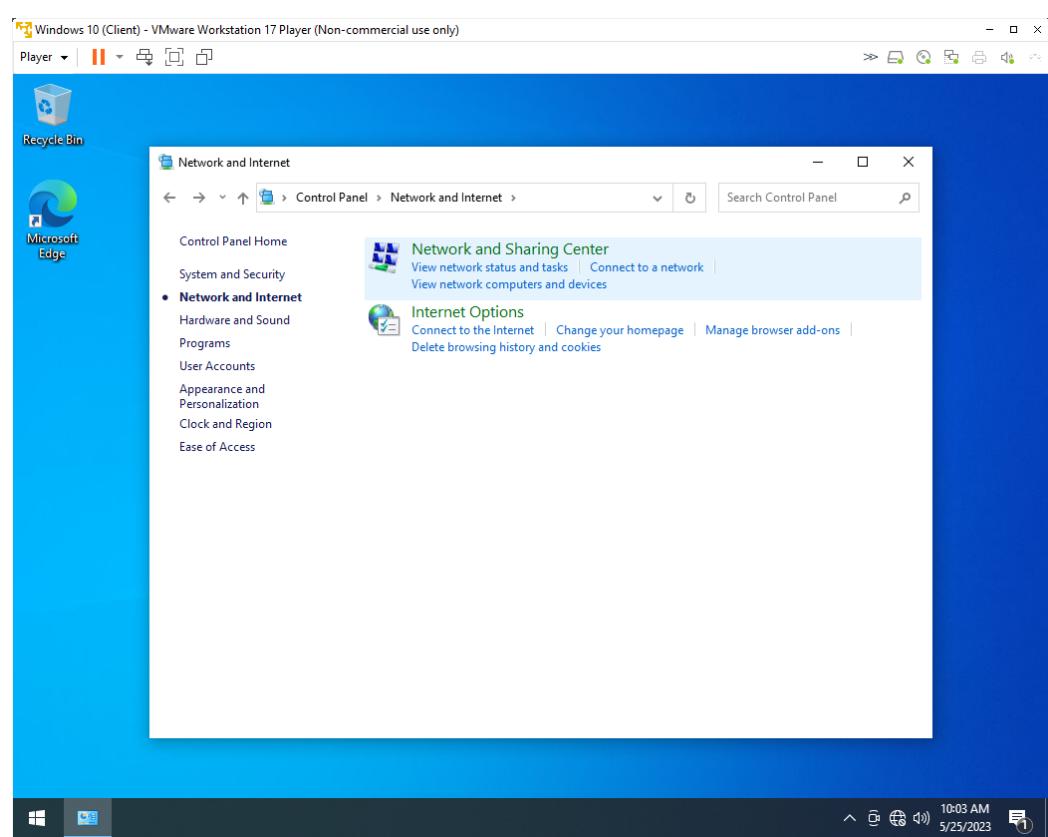
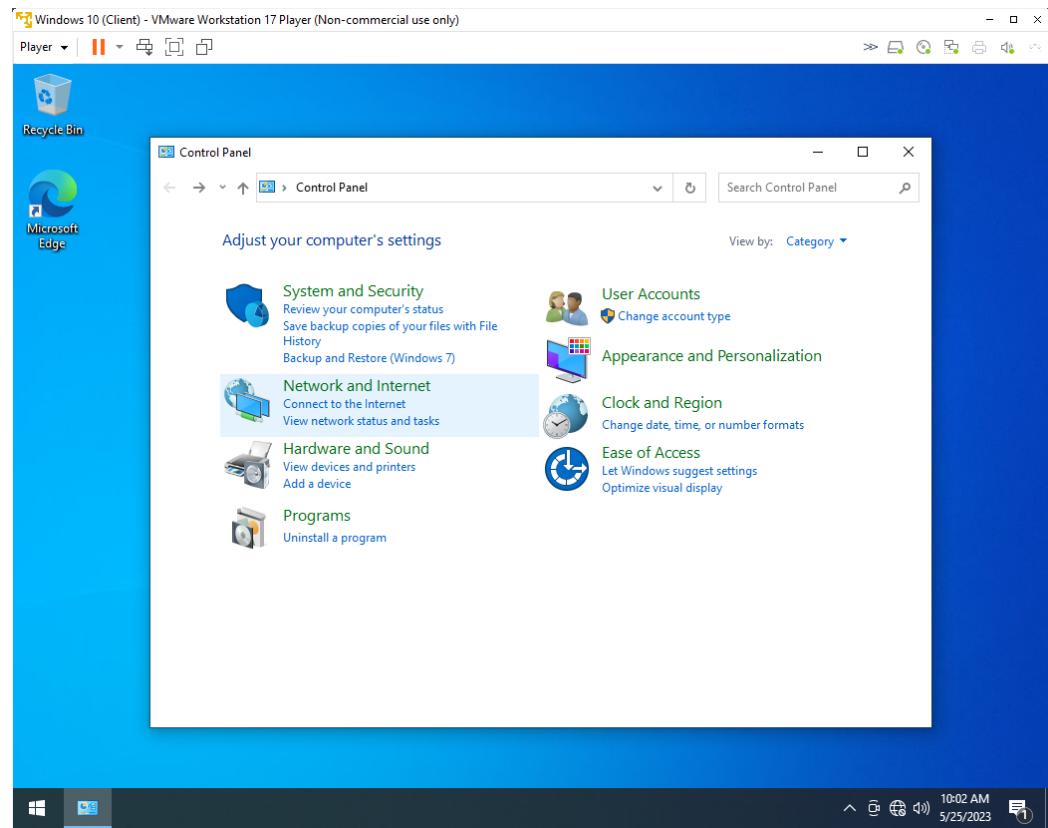


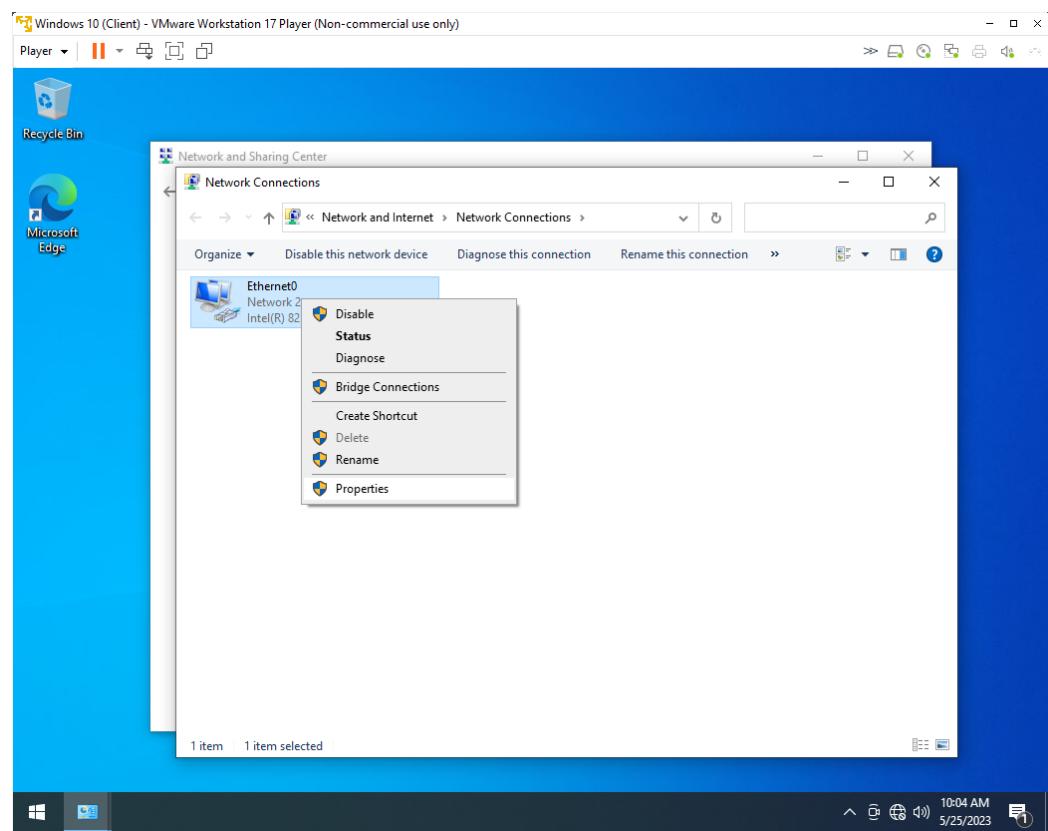
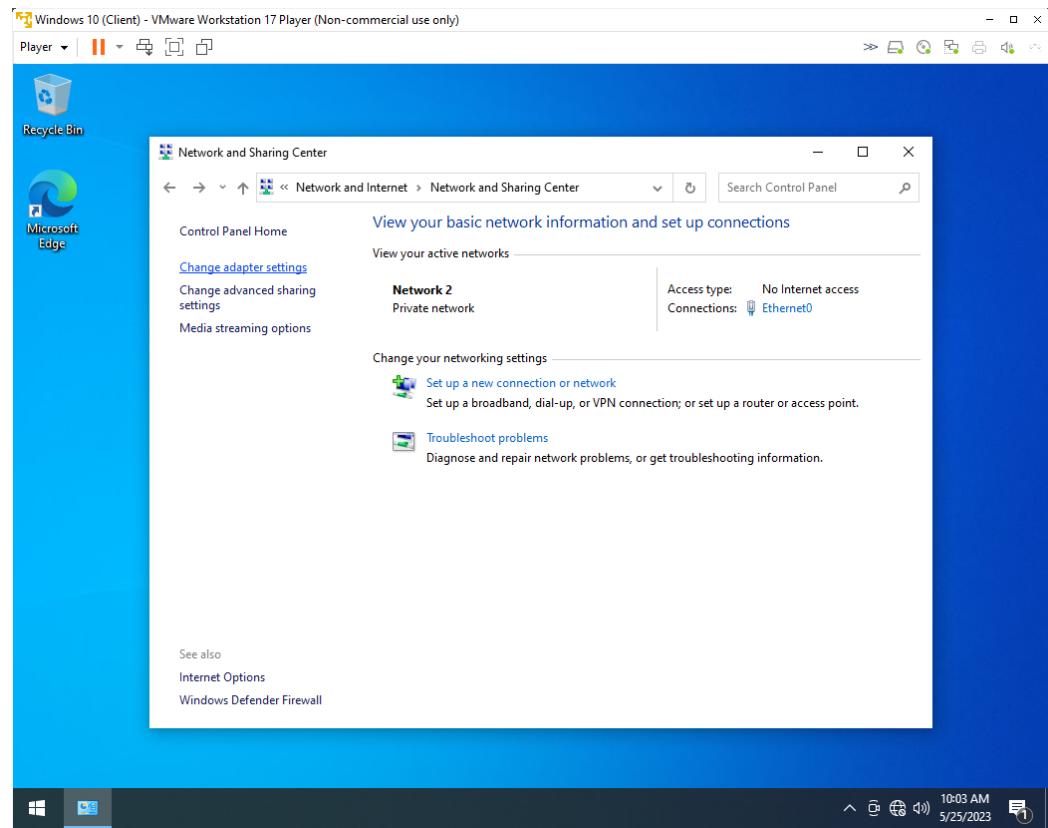


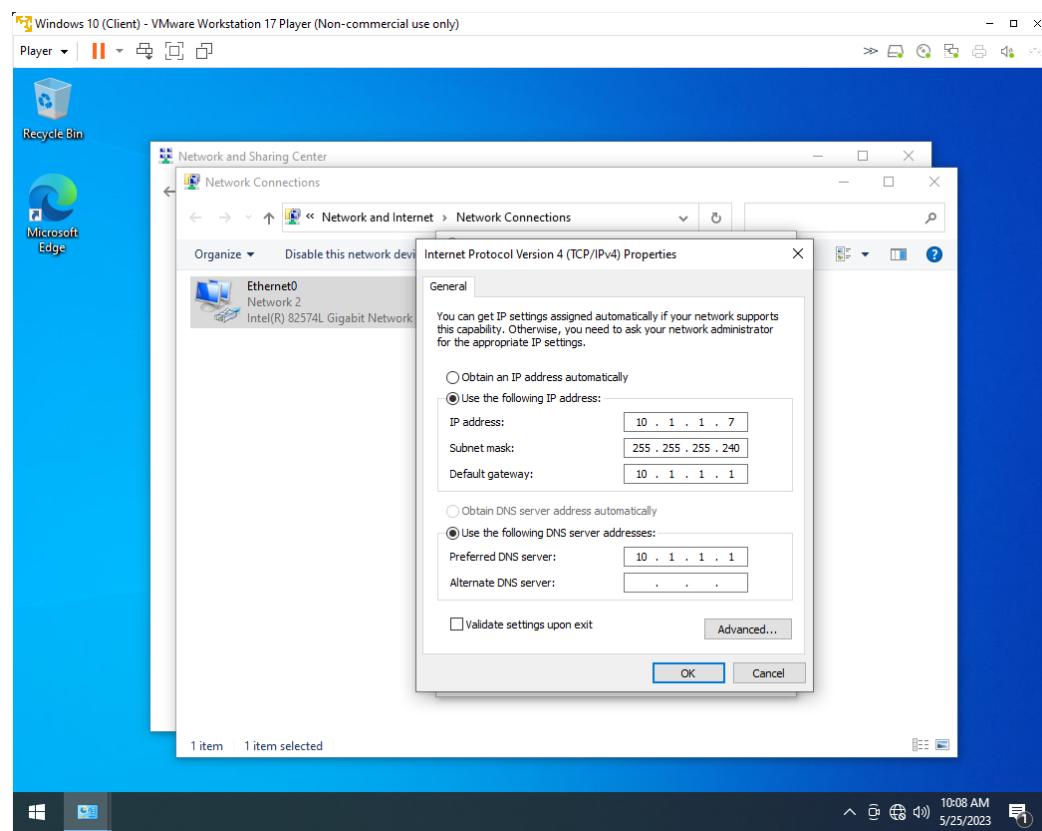
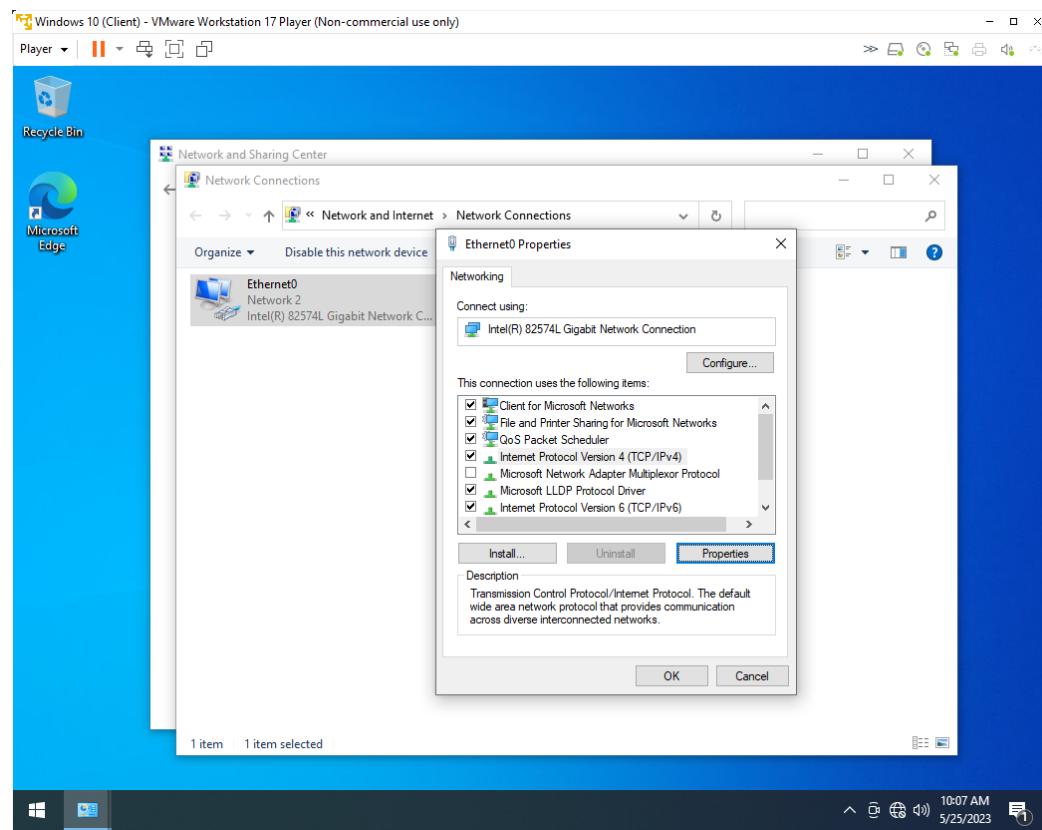
Переключення клієнта на автоматичне отримання адреси від DHCP сервера.

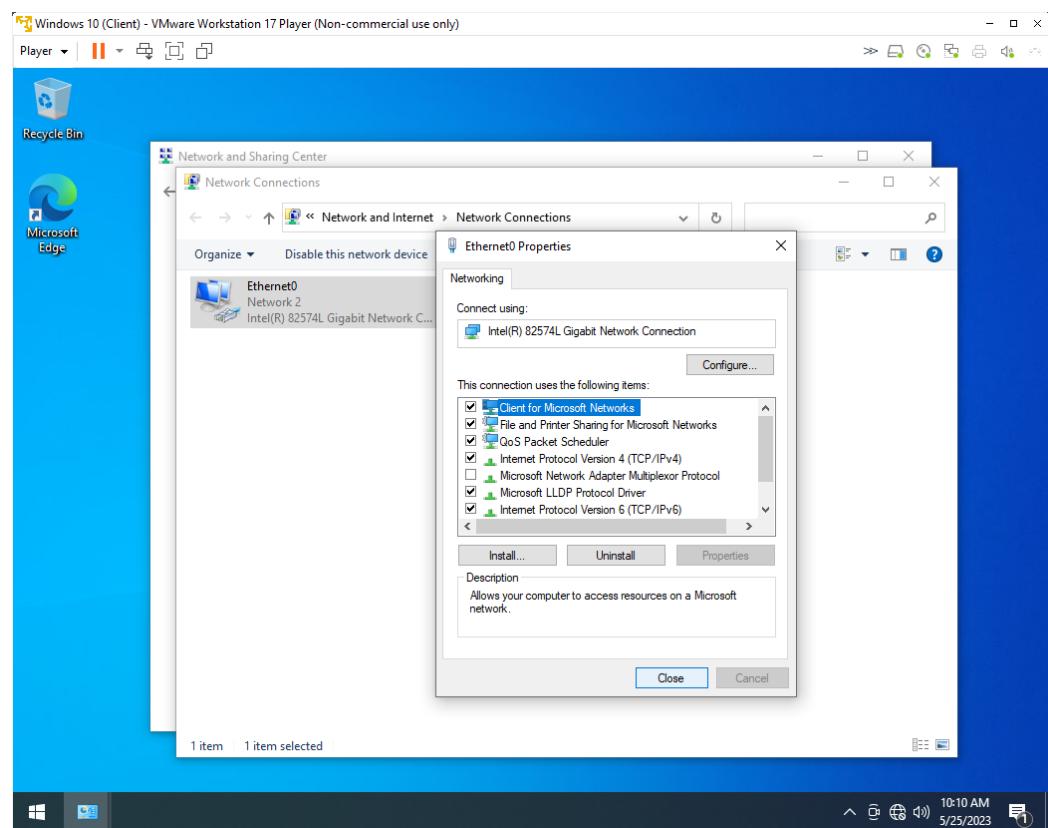
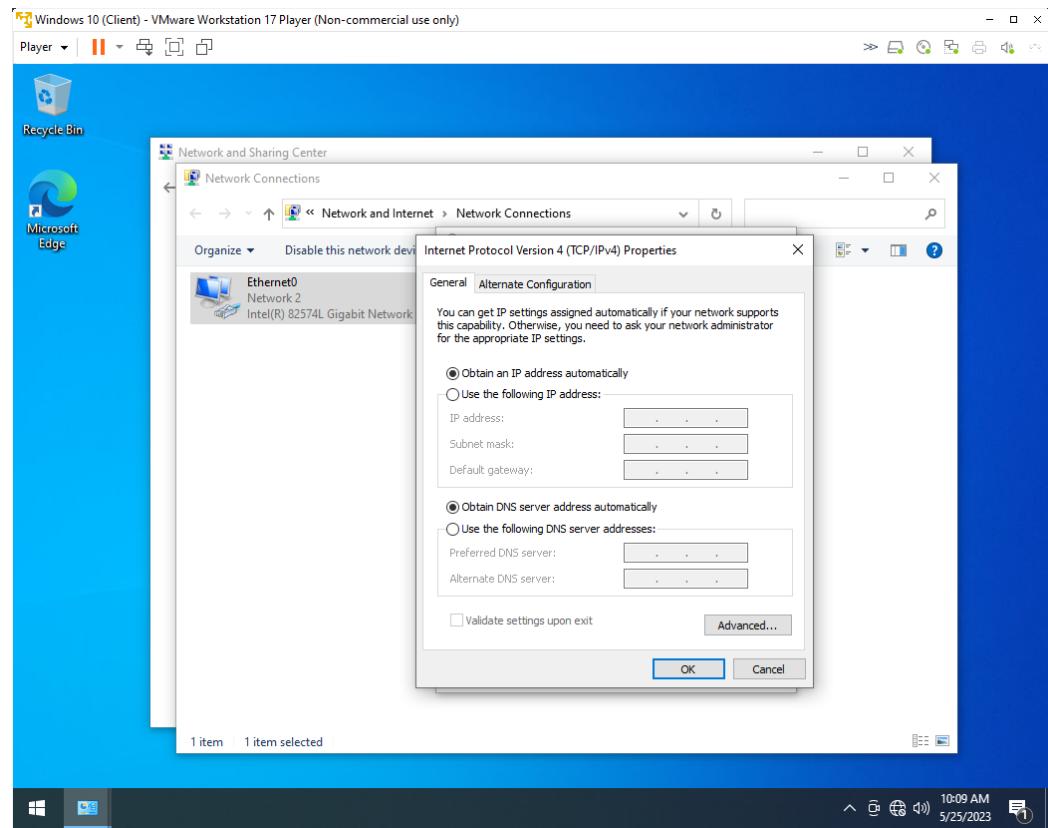


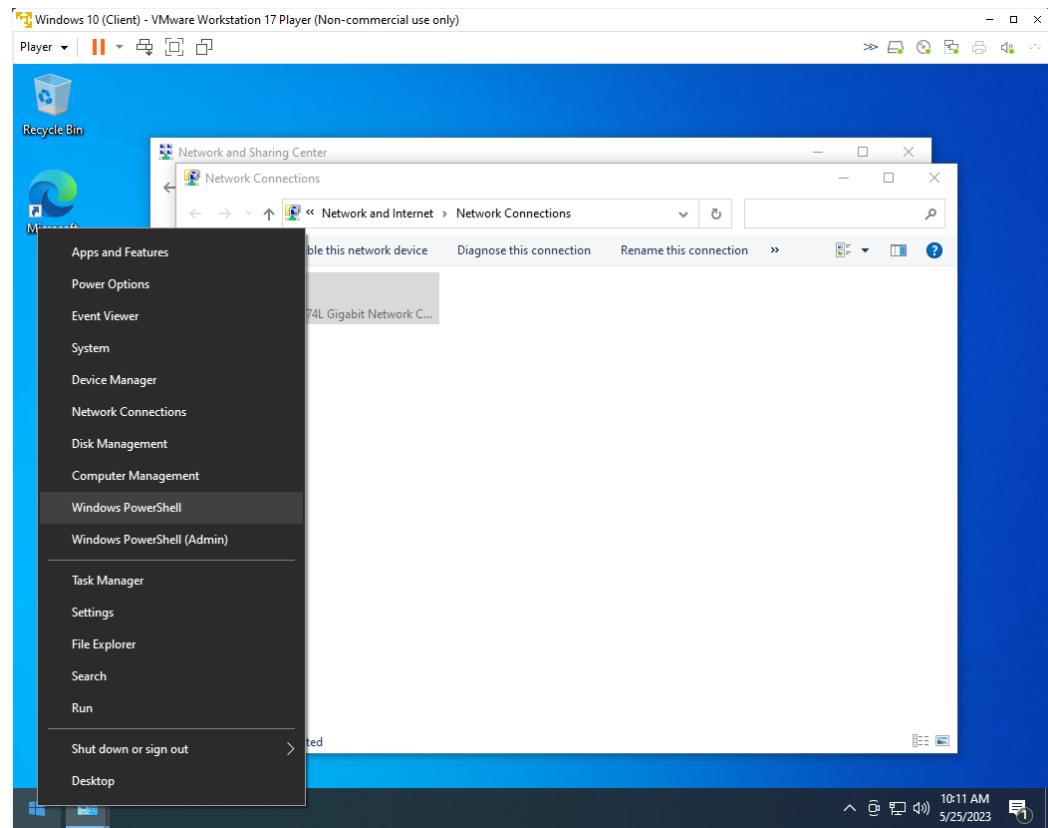












```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\User> ipconfig /all

Windows IP Configuration

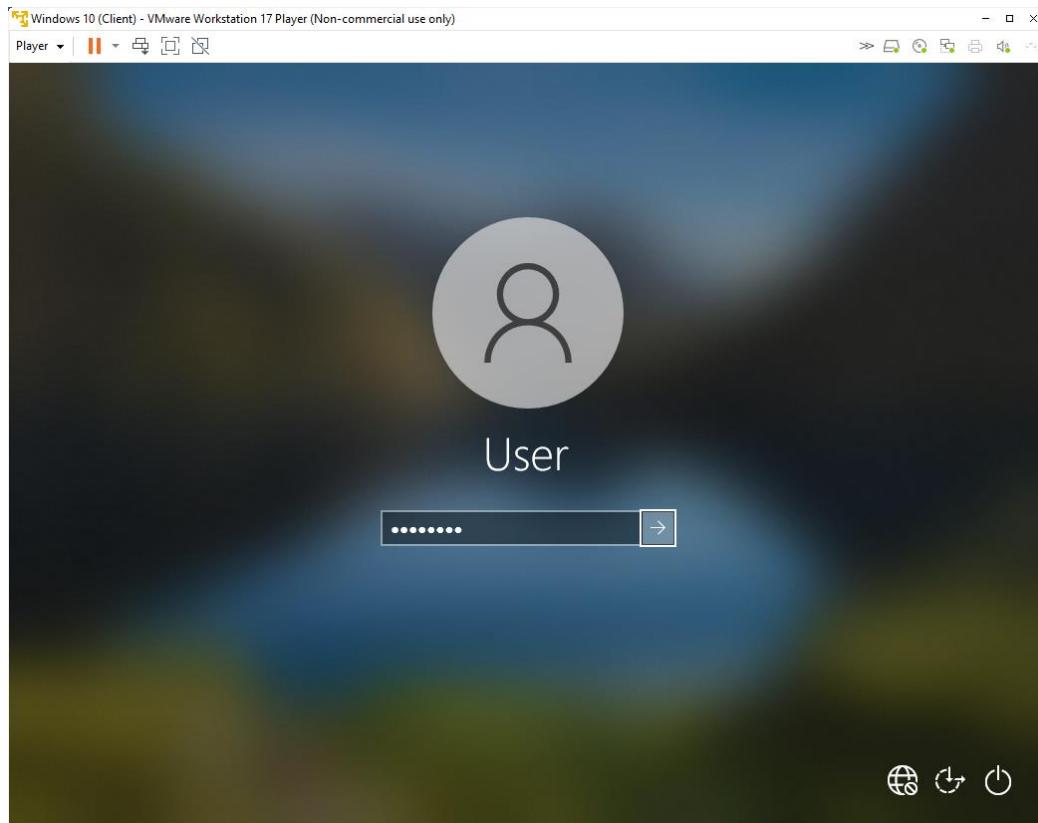
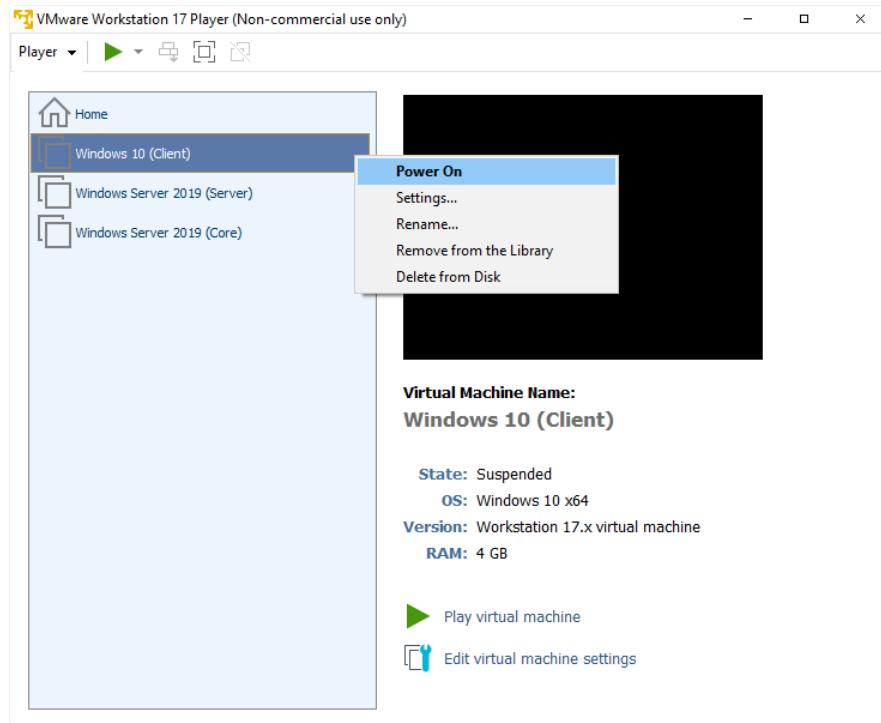
Host Name . . . . . : DESKTOP-EF52UAL
Primary Dns Suffix . . . . . : Lab.demo
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : Lab.demo

Ethernet adapter Ethernet0:

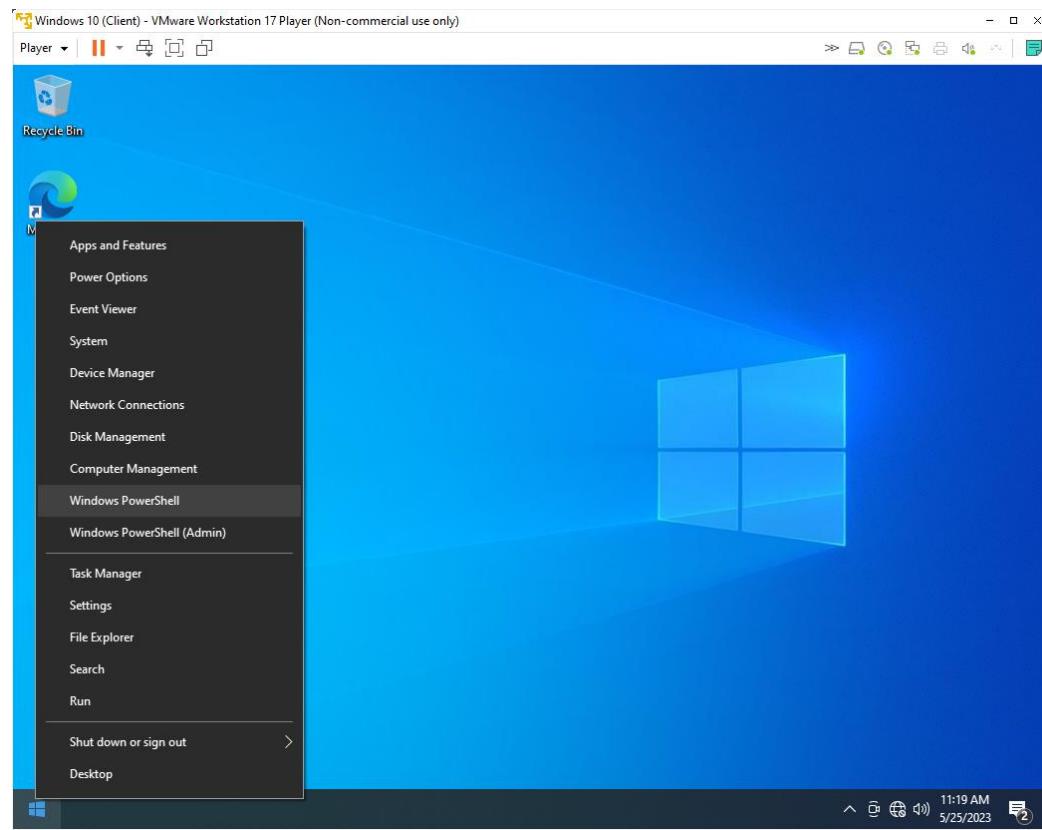
Connection-specific DNS Suffix . . . . . : lab.demo
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address . . . . . : 00-0C-29-D2-99-57
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::405b:ecde:2fa5:7a10%12(Preferred)
IPv4 Address . . . . . : 10.1.1.3(Preferred)
Subnet Mask . . . . . : 255.255.255.240
Lease Obtained . . . . . : Thursday, May 25, 2023 10:58:29 AM
Lease Expires . . . . . : Friday, June 2, 2023 10:58:29 AM
Default Gateway . . . . . :
DHCP Server . . . . . : 10.1.1.1
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID . . . . . : 00-01-00-01-2B-DC-1D-4B-00-0C-29-D2-99-57
DNS Servers . . . . . : 10.1.1.1
NetBIOS over Tcpip. . . . . : Enabled

PS C:\Users\User>
```

Перегляд та зміна фізичної адреси мережевого адаптера клієнта (на віртуальній машині Windows 10 (Client)).



Перегляд фізичної адреси мережевого адаптера.



Windows 10 (Client) - VMware Workstation 17 Player (Non-commercial use only)

Player | < > < > < > < >

Windows PowerShell

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Try the new cross-platform PowerShell <https://aka.ms/powershell>

PS C:\Users\User> ipconfig /all

Windows IP Configuration

Host Name : DESKTOP-EF52UAL
Primary Dns Suffix : Lab.demo
Node Type : Hybrid
IP Routing Enabled. : No
WINS Proxy Enabled. : No
DNS Suffix Search List. : Lab.demo

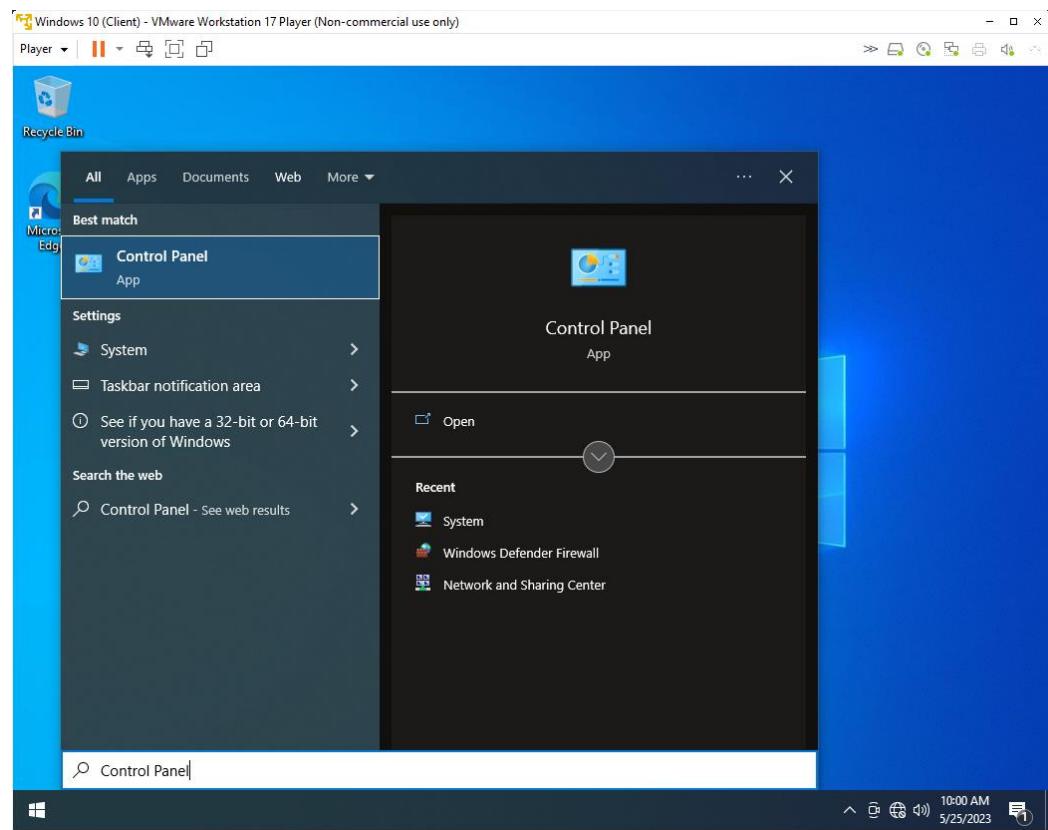
Ethernet adapter Ethernet0:

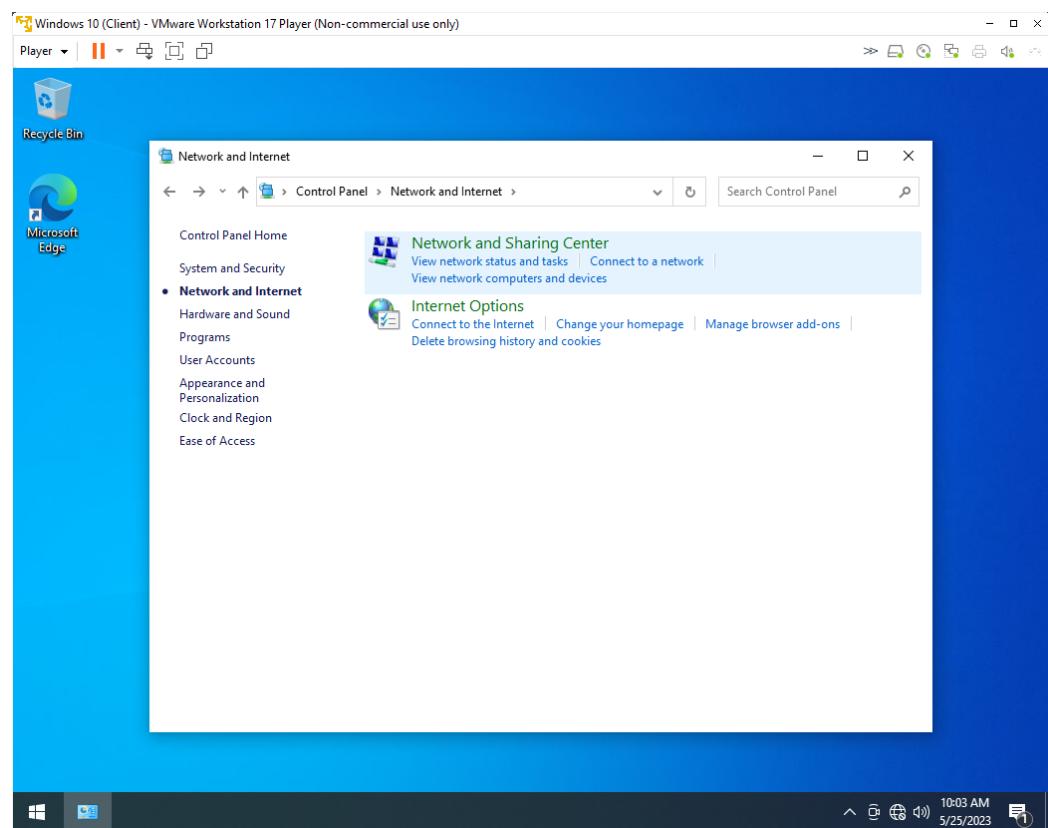
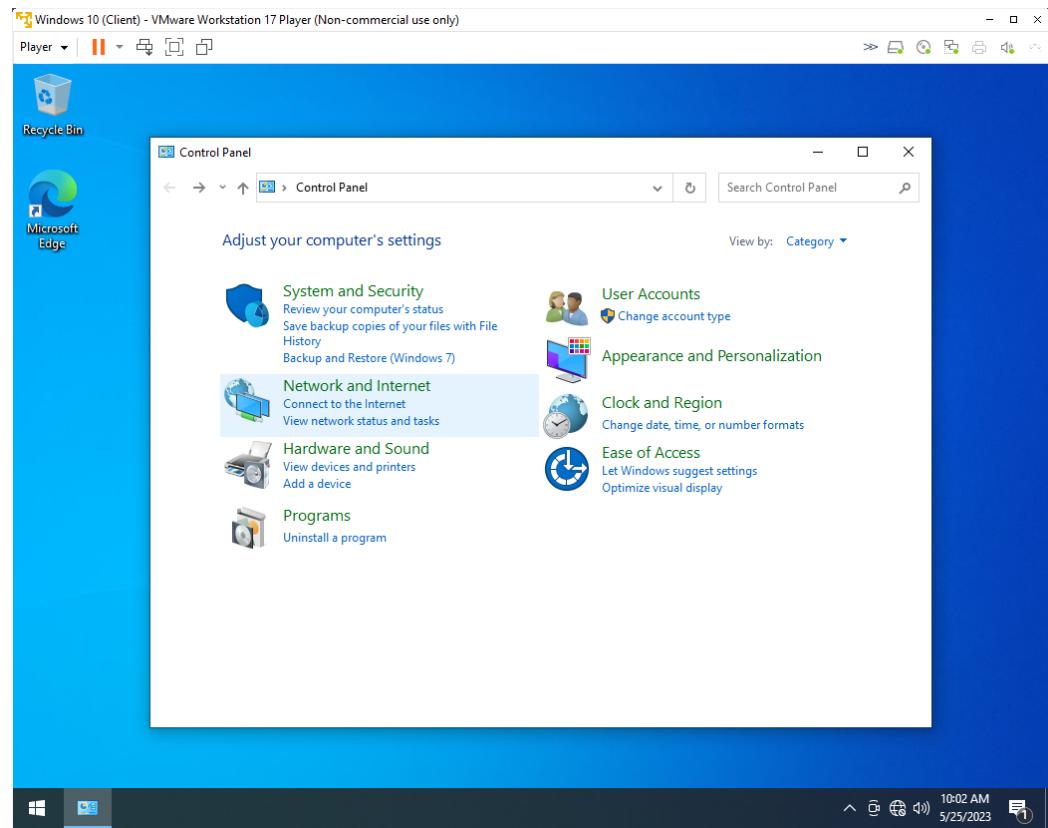
Connection-specific DNS Suffix : lab.demo
Description : Intel(R) 82574L Gigabit Network Connection
Physical Address. : 00-0C-29-D2-99-57
DHCP Enabled : Yes
Autoconfiguration Enabled : Yes
Link-local IPv6 Address : fe80::405b:ecde:2fa5:7a10%12(Preferred)
IPv4 Address : 10.1.1.3(PREFERRED)
Subnet Mask : 255.255.255.240
Lease Obtained : Thursday, May 25, 2023 10:58:29 AM
Lease Expires : Friday, June 2, 2023 10:58:29 AM
Default Gateway :
DHCP Server : 10.1.1.1
DHCPv6 IAID : 100666409
DHCPv6 Client DUID. : 00-01-00-01-2B-DC-1D-4B-00-0C-29-D2-99-57
DNS Servers : 10.1.1.1
NetBIOS over Tcpip. : Enabled

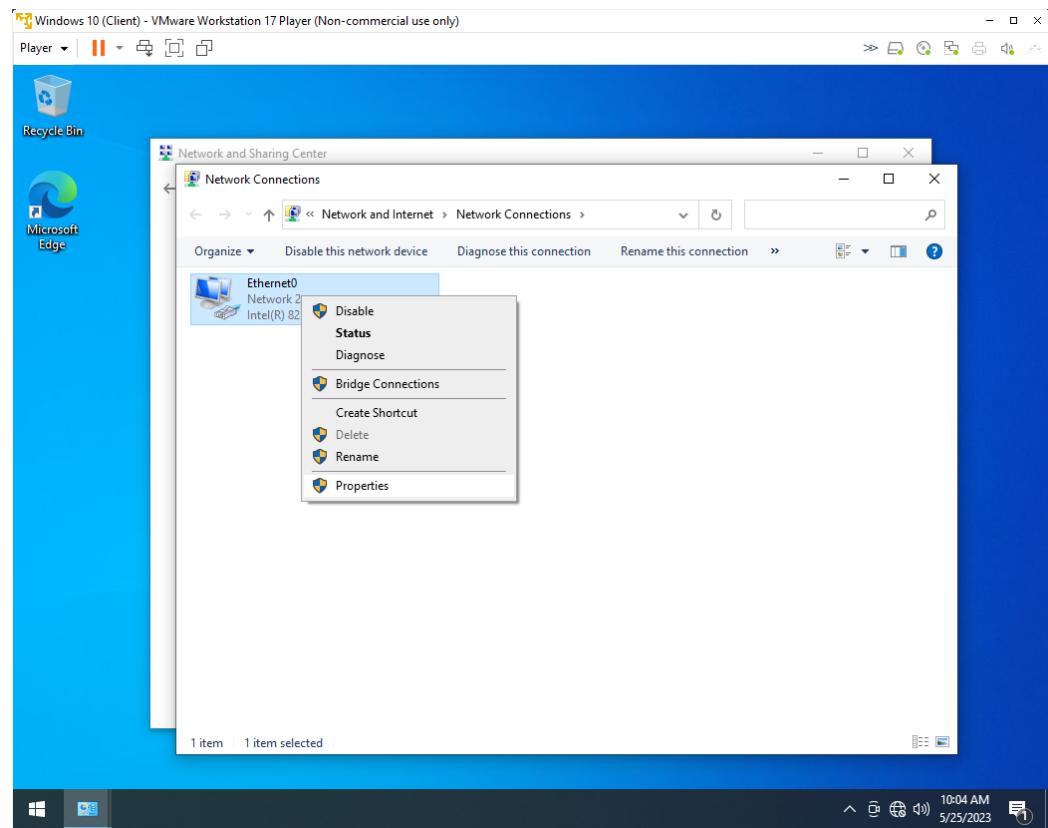
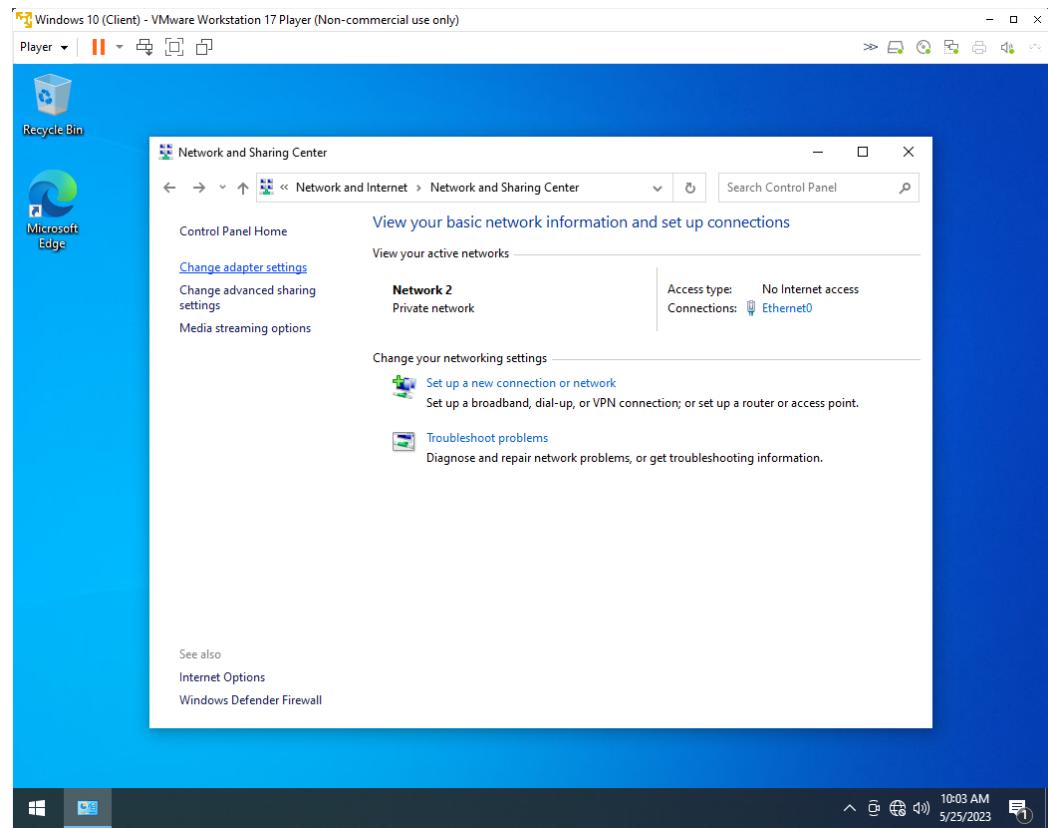
PS C:\Users\User>

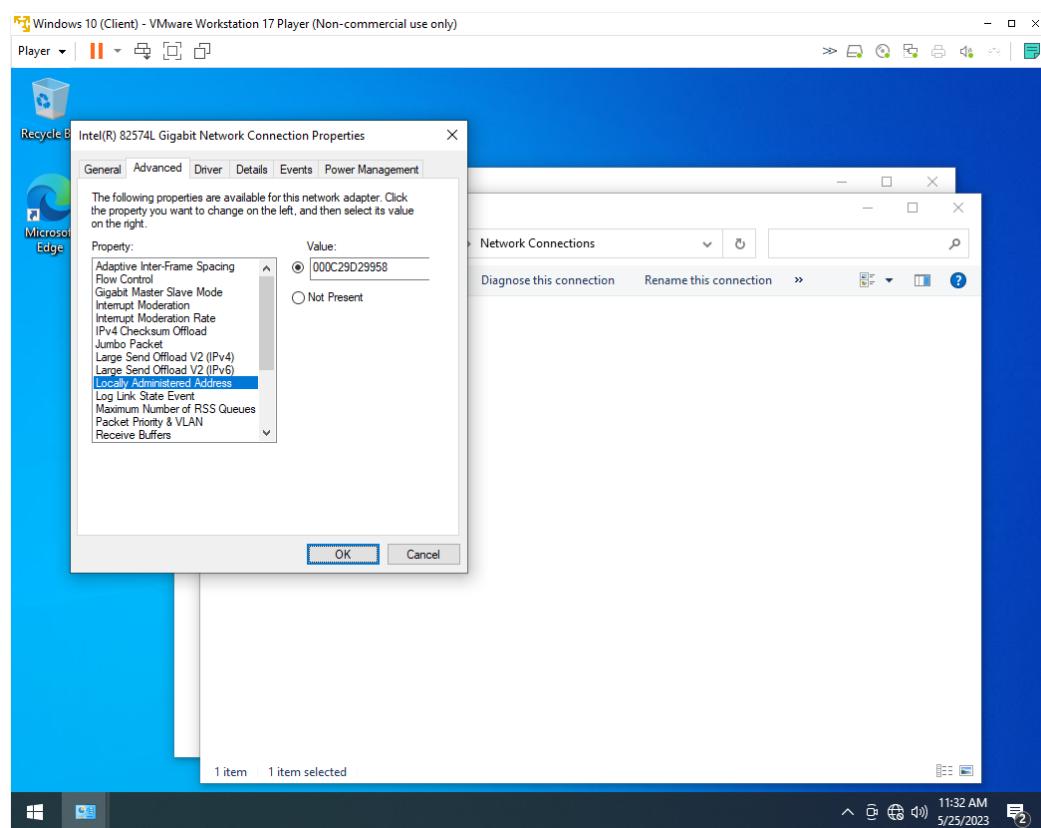
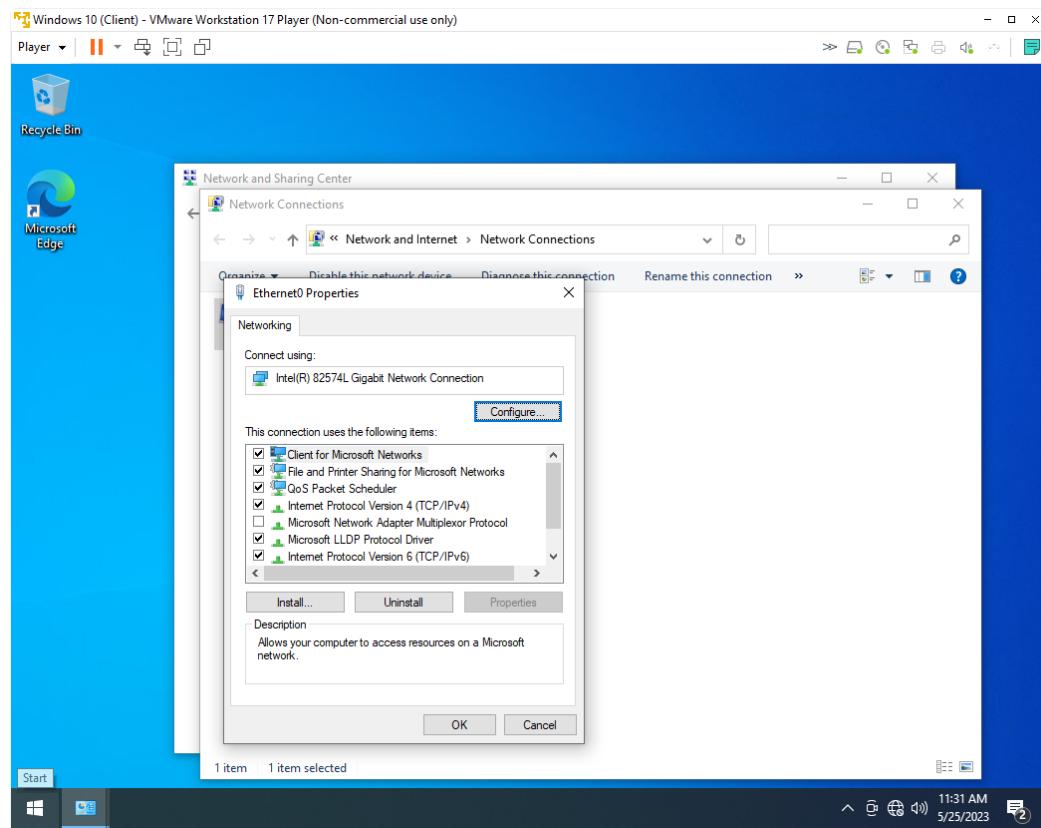
11:20 AM 5/25/2023

Зміна фізичної адреси мережевого адаптера.









Windows 10 (Client) - VMware Workstation 17 Player (Non-commercial use only)

Player | < > < > < > < >

Windows PowerShell

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Try the new cross-platform PowerShell <https://aka.ms/powershell>

PS C:\Users\User> ipconfig /all

Windows IP Configuration

Host Name : DESKTOP-EF52UAL
Primary Dns Suffix : Lab.demo
Node Type : Hybrid
IP Routing Enabled. : No
WINS Proxy Enabled. : No
DNS Suffix Search List. : Lab.demo

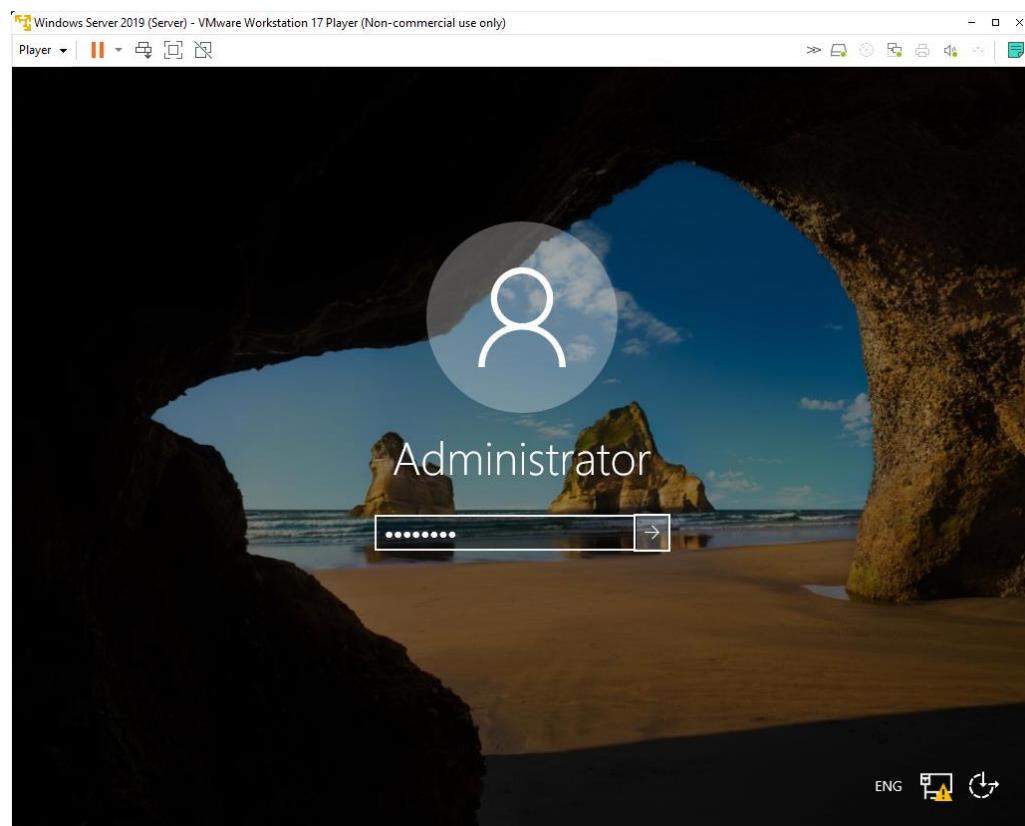
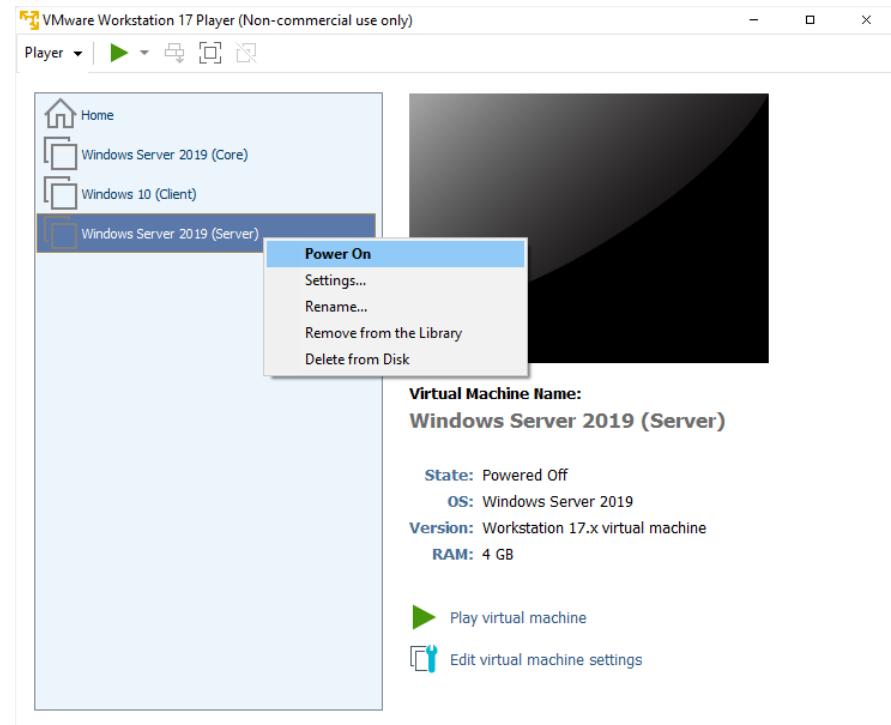
Ethernet adapter Ethernet0:

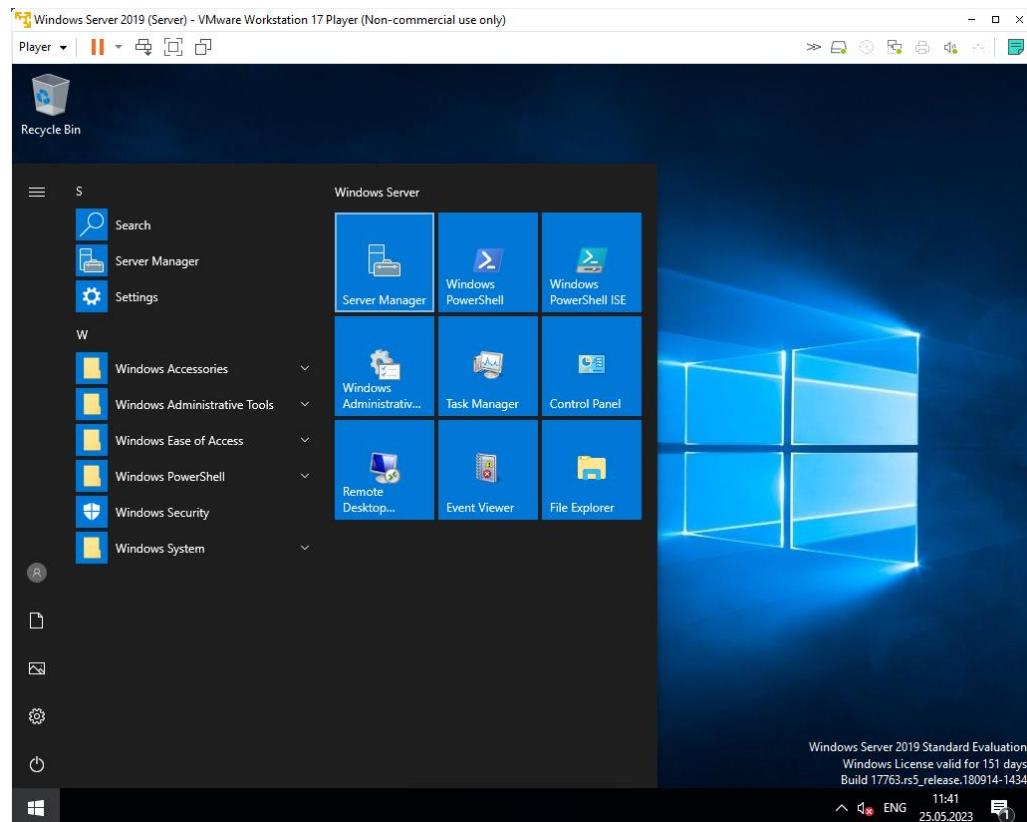
Connection-specific DNS Suffix : lab.demo
Description : Intel(R) 82574L Gigabit Network Connection
Physical Address. : 00-0C-29-D2-99-58
DHCP Enabled : Yes
Autoconfiguration Enabled : Yes
Link-local IPv6 Address : fe80::9dc6:297c:397e:99e5%12(Preferred)
IPv4 Address : 10.1.1.4(Preferred)
Subnet Mask : 255.255.255.240
Lease Obtained : Thursday, May 25, 2023 11:33:24 AM
Lease Expires : Friday, June 2, 2023 11:33:23 AM
Default Gateway :
DHCP Server : 10.1.1.1
DHCPv6 IAID : 100666409
DHCPv6 Client DUID. : 00-01-00-01-2B-DC-1D-4B-00-0C-29-D2-99-57
DNS Servers : 10.1.1.1
NetBIOS over Tcpip. : Enabled

PS C:\Users\User>

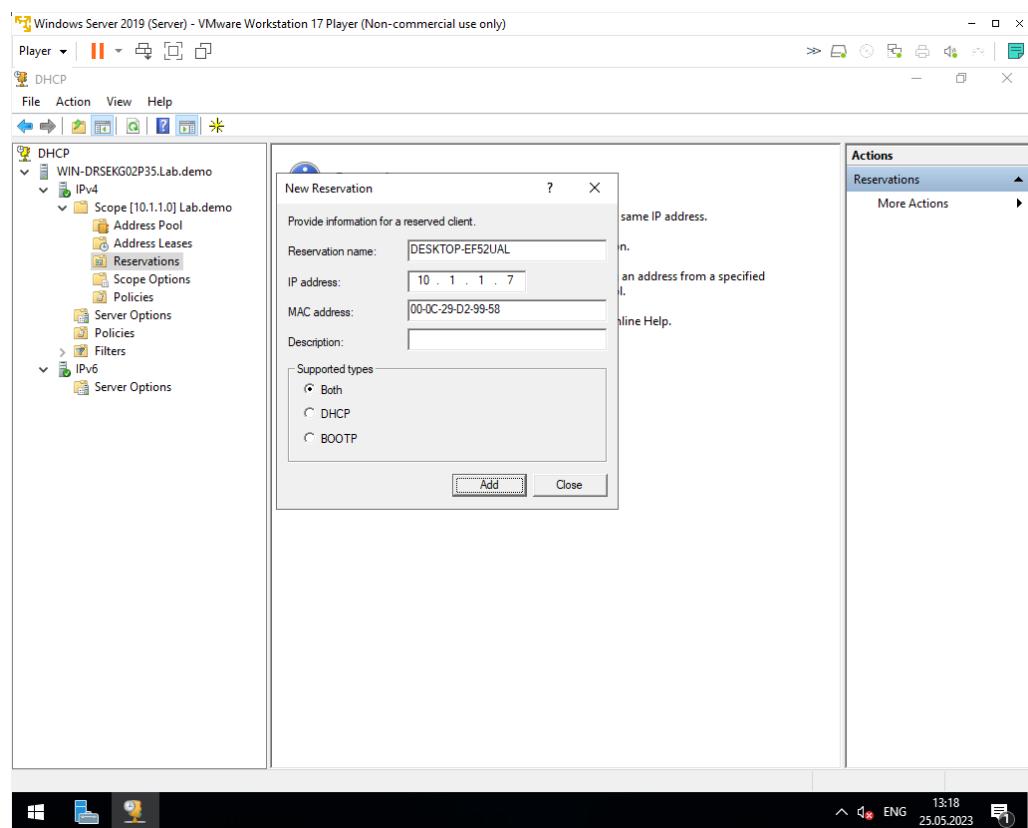
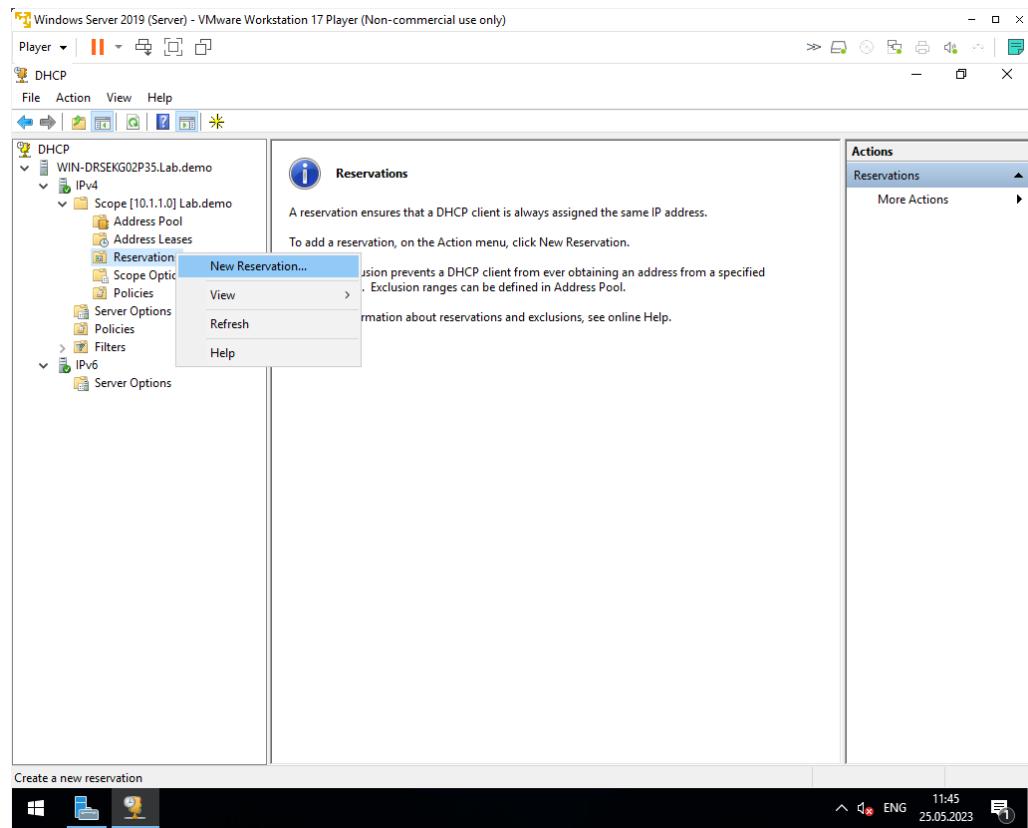
11:33 AM 5/25/2023

Резервування IP-адреси для клієнта.





A screenshot of the Server Manager interface, specifically the DHCP section. The left navigation pane shows "DHCP" selected. The main area displays a table of servers, with one entry for "WIN-DRSEKG02P35" highlighted. A context menu is open over this entry, with "DHCP Manager" selected. Below the table, there is a list of events. The status bar at the bottom right shows "11:43 25.05.2023".



Windows Server 2019 (Server) - VMware Workstation 17 Player (Non-commercial use only)

DHCP

File Action View Help

DHCP WIN-DRSEKG02P35.Lab.demo IPv4 Scope [10.1.1.0] Lab.demo Address Pool Address Leases Reservations Scope Options Policies Server Options Policies Filters IPv6

Option Name	Vendor	Value	Actions
006 DNS Servers	Standard	10.1.1.1	Delete Refresh Properties More Actions 006 DNS Servers More Actions
015 DNS Domain Name	Standard	lab.demo	

Opens the properties dialog box for the current selection.

Windows Server 2019 (Server) - VMware Workstation 17 Player (Non-commercial use only)

DHCP

File Action View Help

DHCP WIN-DRSEKG02P35.Lab.demo IPv4 Scope [10.1.1.0] Lab.demo Address Pool Address Leases Reservations Scope Options Policies Server Options Policies Filters IPv6

Option Name	Vendor	Value	Actions
006 DNS Servers	Standard	10.1.1.1	Scope Options More Actions 006 DNS Servers More Actions
015 DNS Domain Name	Standard	lab.demo	

Scope Options

General Advanced

Available Options Description

- 003 Router Array of rout
- 004 Time Server Array of time
- 005 Name Servers Array of nam
- 006 DNS Servers Array of DN

Data entry

Server name:

IP address: Add Remove Up Down

10.1.1.1
10.1.1.2

OK Cancel Apply

Windows Server 2019 (Server) - VMware Workstation 17 Player (Non-commercial use only)

Player | < > | < > | < > | < > | < >

DHCP

File Action View Help

DHCP

WIN-DRSEKG02P35.Lab.demo

IPv4

Scope [10.1.1.0] Lab.demo

Address Pool

Address Leases

Reservations

Scope Options

Policies

Server Options

Policies

Filters

IPv6

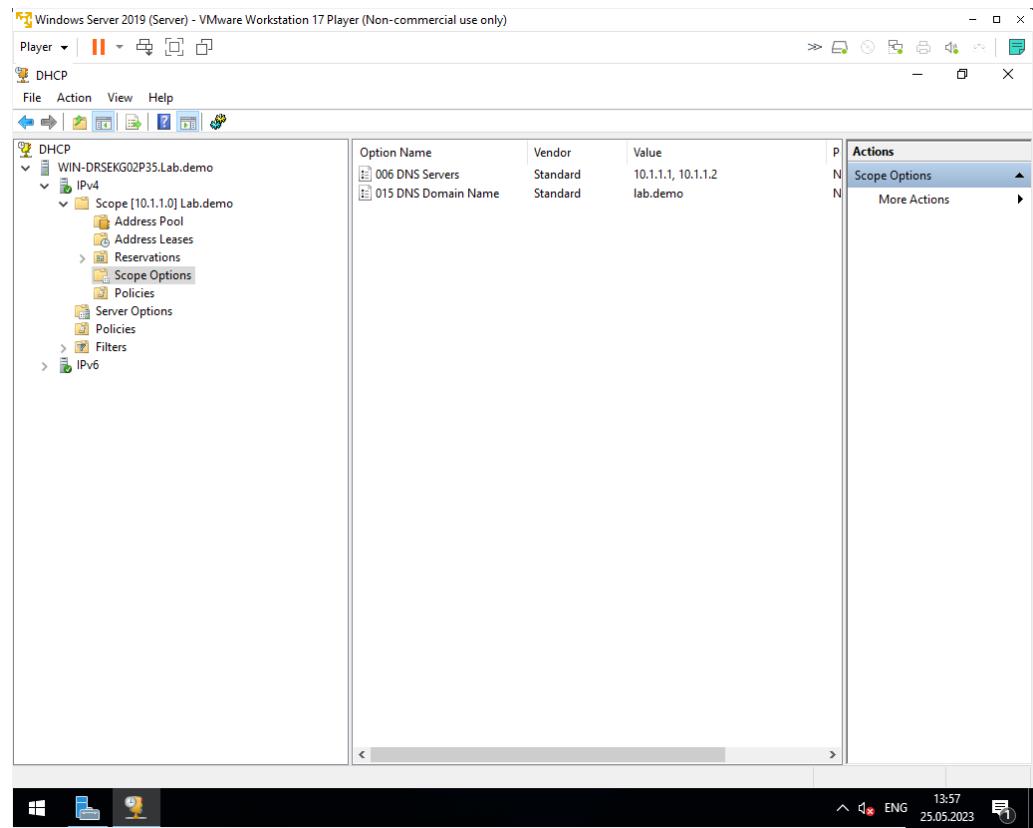
Option Name	Vendor	Value
006 DNS Servers	Standard	10.1.1.1, 10.1.1.2
015 DNS Domain Name	Standard	lab.demo

Actions

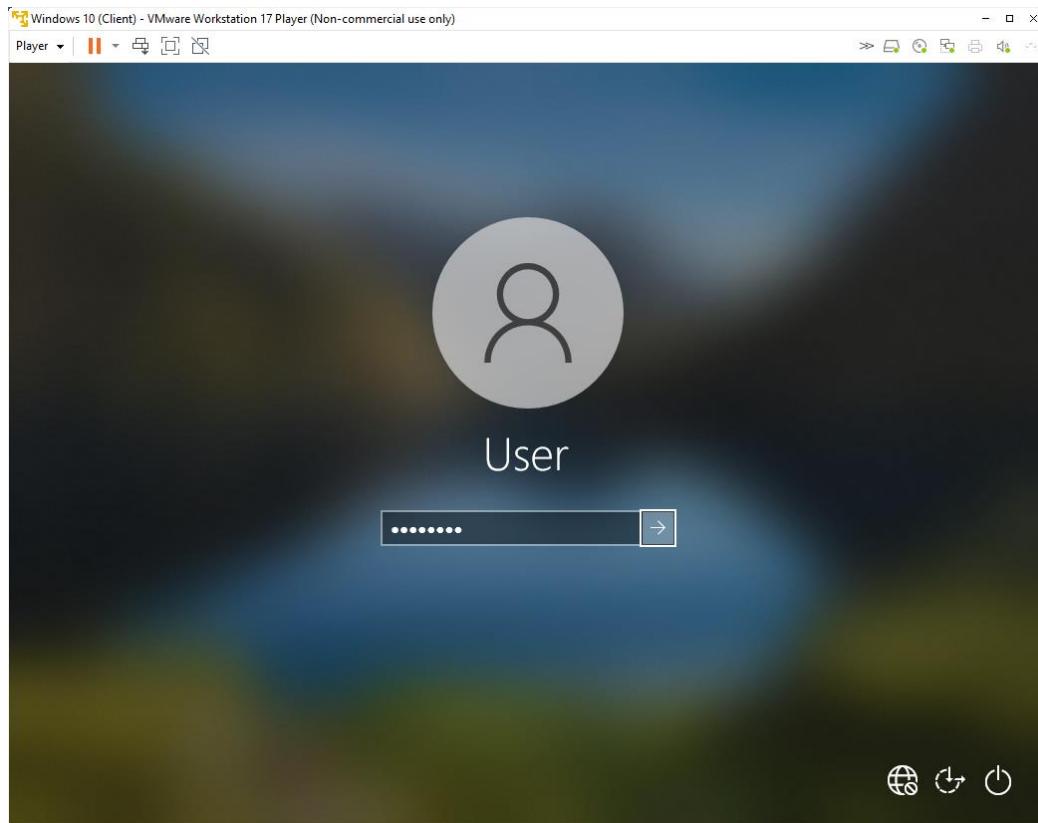
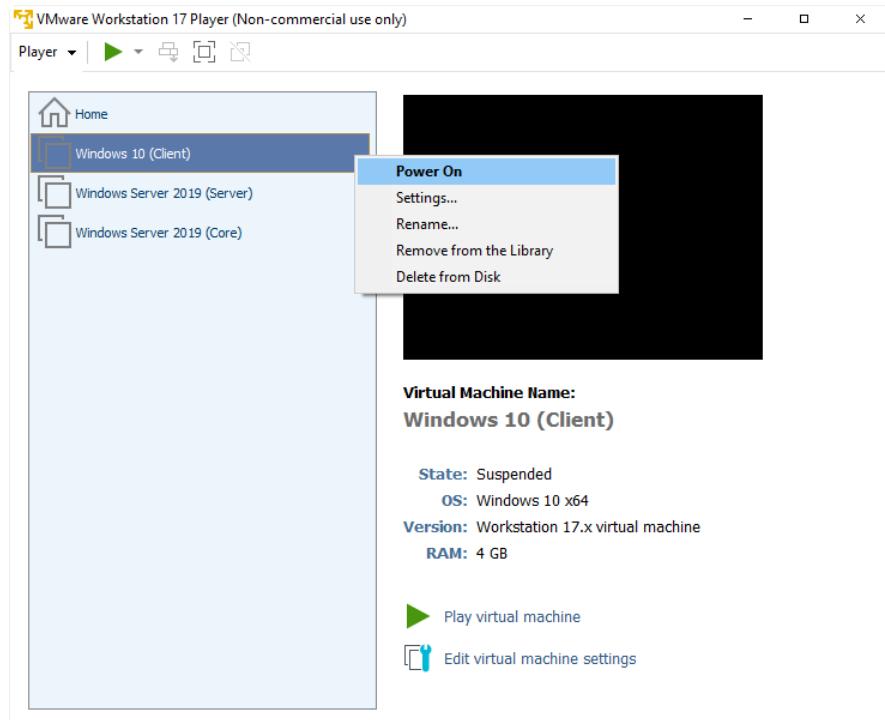
Scope Options

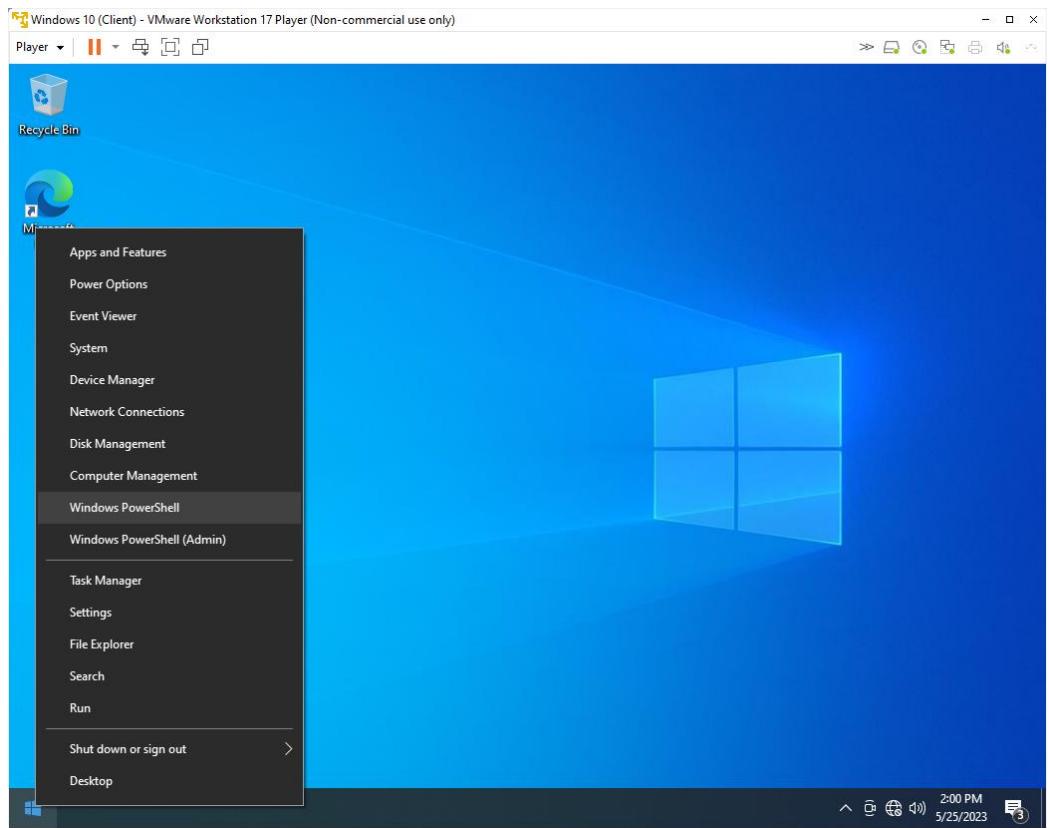
More Actions

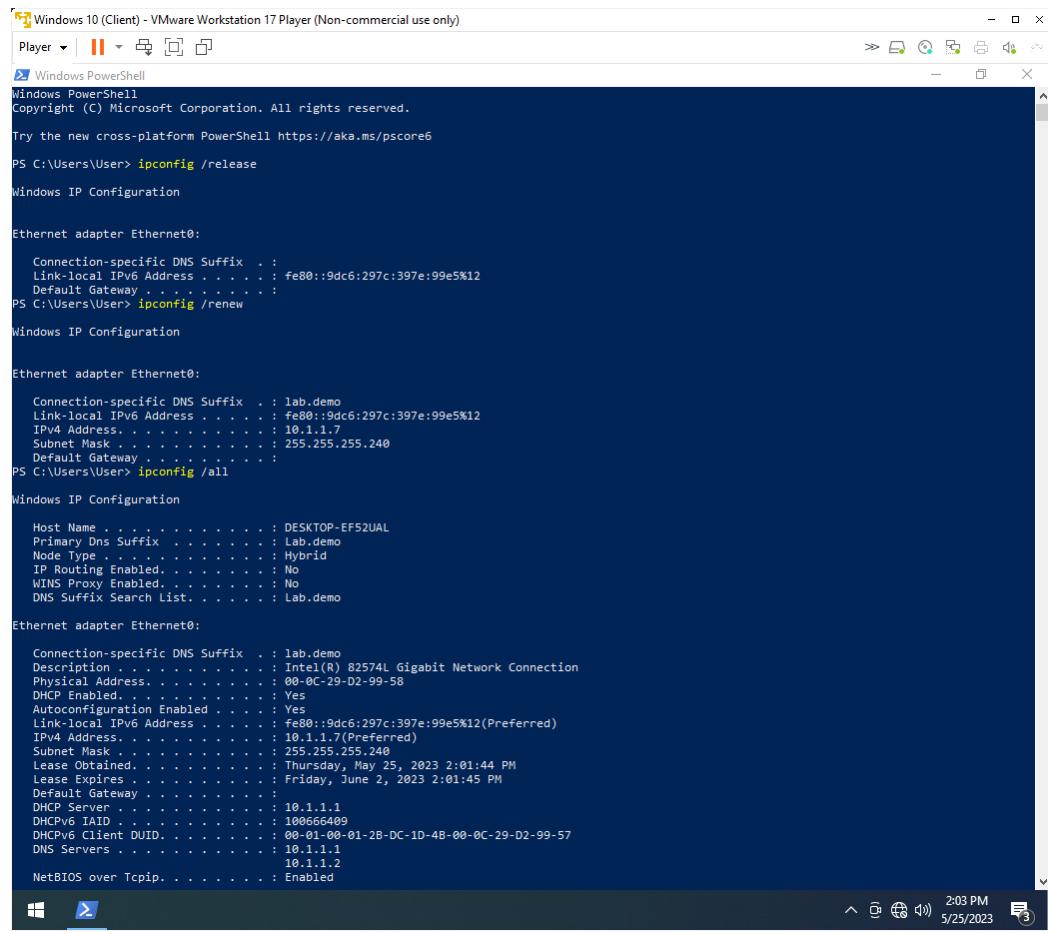
13:57 25.05.2023



Отримання зарезервованої IP-адреси клієнтом (віртуальної машини Windows 10 (Client)).







```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\User> ipconfig /release

Windows IP Configuration

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . : fe80::9dc6:297c:397e:99e5%12
Default Gateway . . . . . :

PS C:\Users\User> ipconfig /renew

Windows IP Configuration

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . : lab.demo
Link-local IPv6 Address . . . . . : fe80::9dc6:297c:397e:99e5%12
IPv4 Address . . . . . : 10.1.1.7
Subnet Mask . . . . . : 255.255.255.240
Default Gateway . . . . . :

PS C:\Users\User> ipconfig /all

Windows IP Configuration

Host Name . . . . . : DESKTOP-EF52UAL
Primary Dns Suffix . . . . . : Lab.demo
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : Lab.demo

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . . . . . : lab.demo
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-D2-99-58
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::9dc6:297c:397e:99e5%12(Preferred)
IPv4 Address . . . . . : 10.1.1.7(Preferred)
Subnet Mask . . . . . : 255.255.255.240
Lease Obtained . . . . . : Thursday, May 25, 2023 2:01:44 PM
Lease Expires . . . . . : Friday, June 2, 2023 2:01:45 PM
Default Gateway . . . . . :
DHCP Server . . . . . : 10.1.1.1
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-2B-DC-1D-4B-00-0C-29-D2-99-57
DNS Servers . . . . . : 10.1.1.1
DNS Servers . . . . . : 10.1.1.2
NetBIOS over Tcpip. . . . . : Enabled
```

Налаштування виконано.