

DHCP Server Configuration

Windows Server 2022

A step-by-step guide covering DHCP role installation, post-deployment authorization, scope creation, and client-side lease verification.

Server Host Name	WIN-KKDK503FIRD
Domain	cloud.com
Server Static IP	192.168.139.128 / 255.255.255.0
Scope Name	CLOUD
Scope Network	192.168.139.0 /24
Address Pool	192.168.139.131 – 192.168.139.230
Excluded Range	192.168.139.135 – 192.168.139.137
Lease Duration	8 Days (default)

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1. Install the DHCP Server Role
2. Complete DHCP Post-Deployment Configuration
3. Create a New DHCP Scope
4. Verify the Scope Is Active
5. Verify Client-Side IP Lease

1. Install the DHCP Server Role

Install the DHCP Server role through Server Manager's Add Roles and Features Wizard.

1.1 Open Server Manager and start the wizard

- Server Manager opens to the Dashboard.
- Click **1 Configure this local server**, or go to **Manage > Add Roles and Features** to launch the wizard.

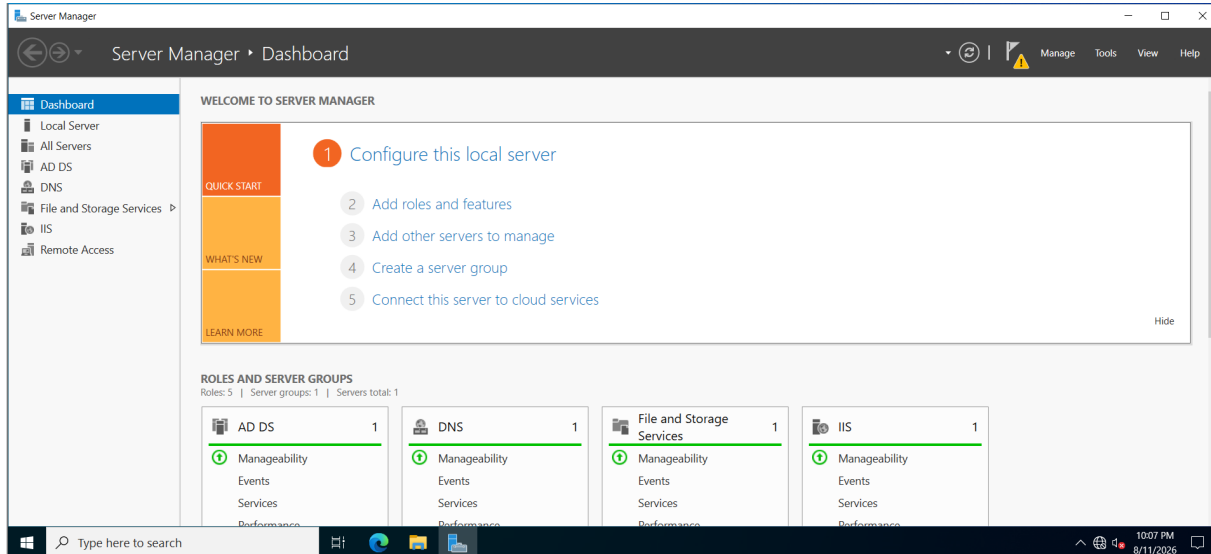


Figure 1.1 — Open Server Manager and start the wizard

1.2 Before You Begin

- Review the prerequisites (static IP already configured, admin password set, updates installed).
- Click **Next**.

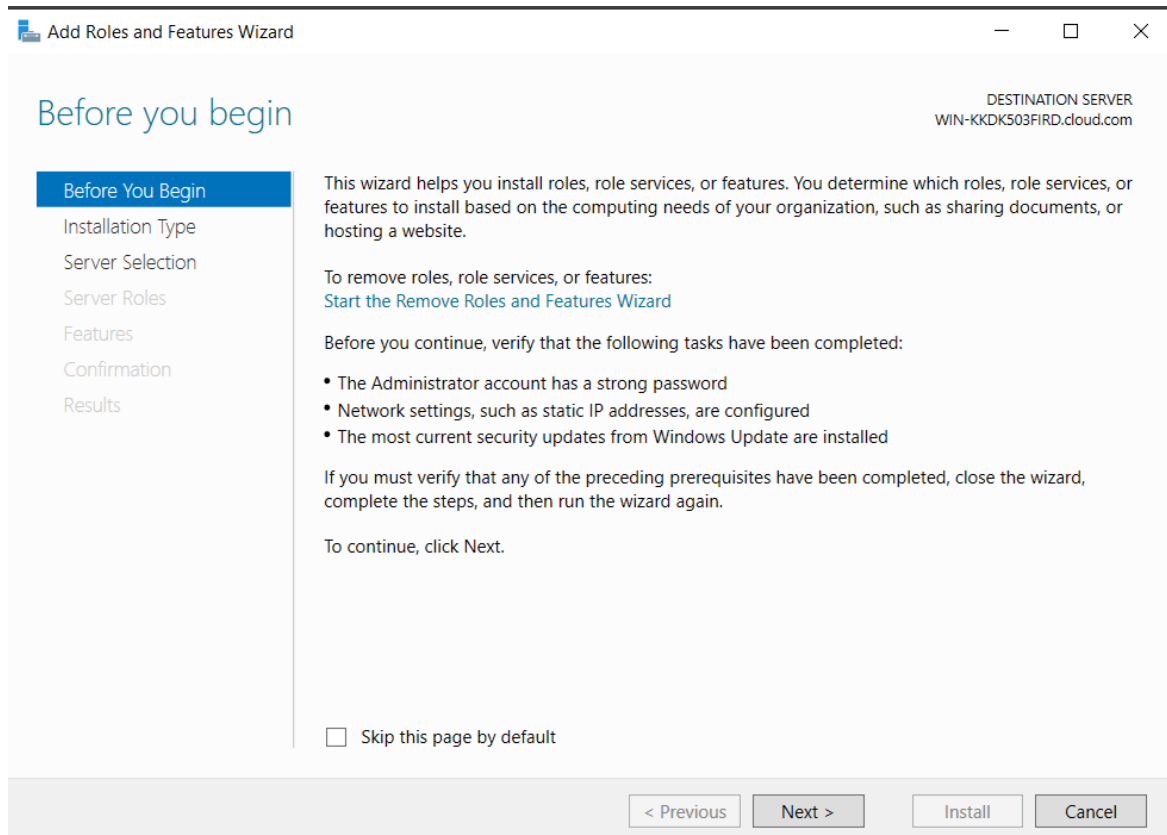


Figure 1.2 — Before You Begin

1.3 Select installation type

- Choose **Role-based or feature-based installation**.
- Click **Next**.

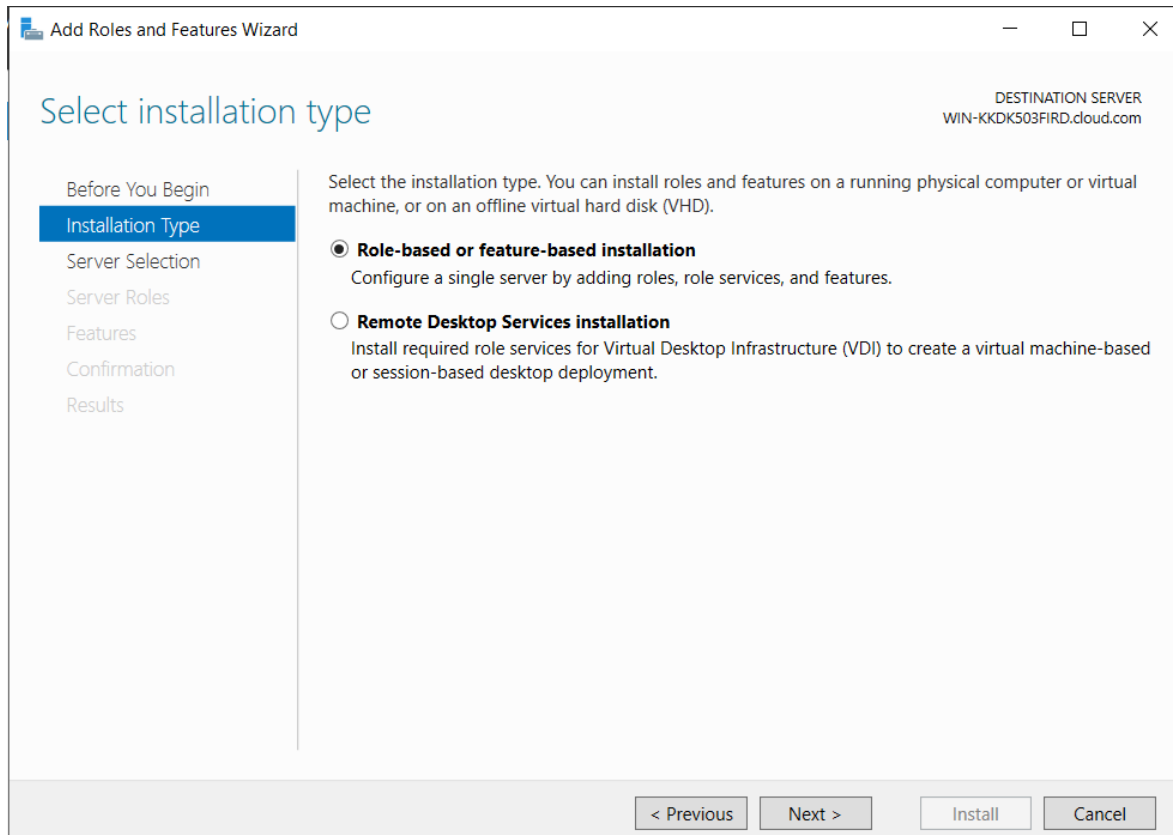


Figure 1.3 — Select installation type

1.4 Select destination server

- Select the target server from the server pool (here, WIN-KKDK503FIRD, 192.168.139.128).
- Click **Next**.

The screenshot shows the 'Add Roles and Features Wizard' window. The title bar reads 'Add Roles and Features Wizard'. The main heading is 'Select destination server'. In the top right corner, it says 'DESTINATION SERVER WIN-KKDK503FIRD.cloud.com'. On the left, a navigation pane lists: 'Before You Begin', 'Installation Type', 'Server Selection' (highlighted), 'Server Roles', 'Features', 'Confirmation', and 'Results'. The main area contains the text 'Select a server or a virtual hard disk on which to install roles and features.' followed by two radio buttons: 'Select a server from the server pool' (selected) and 'Select a virtual hard disk'. Below this is a 'Server Pool' section with a 'Filter:' text box. A table lists the server pool contents:

Name	IP Address	Operating System
WIN-KKDK503FIRD.cloud...	192.168.139.128	Microsoft Windows Server 2022 Datacenter Evaluation

Below the table, it says '1 Computer(s) found'. A note at the bottom states: 'This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.' At the bottom of the window are four buttons: '< Previous', 'Next >' (highlighted), 'Install', and 'Cancel'.

Figure 1.4 — Select destination server

1.5 Select server roles

- In the Roles list, check **DHCP Server**.

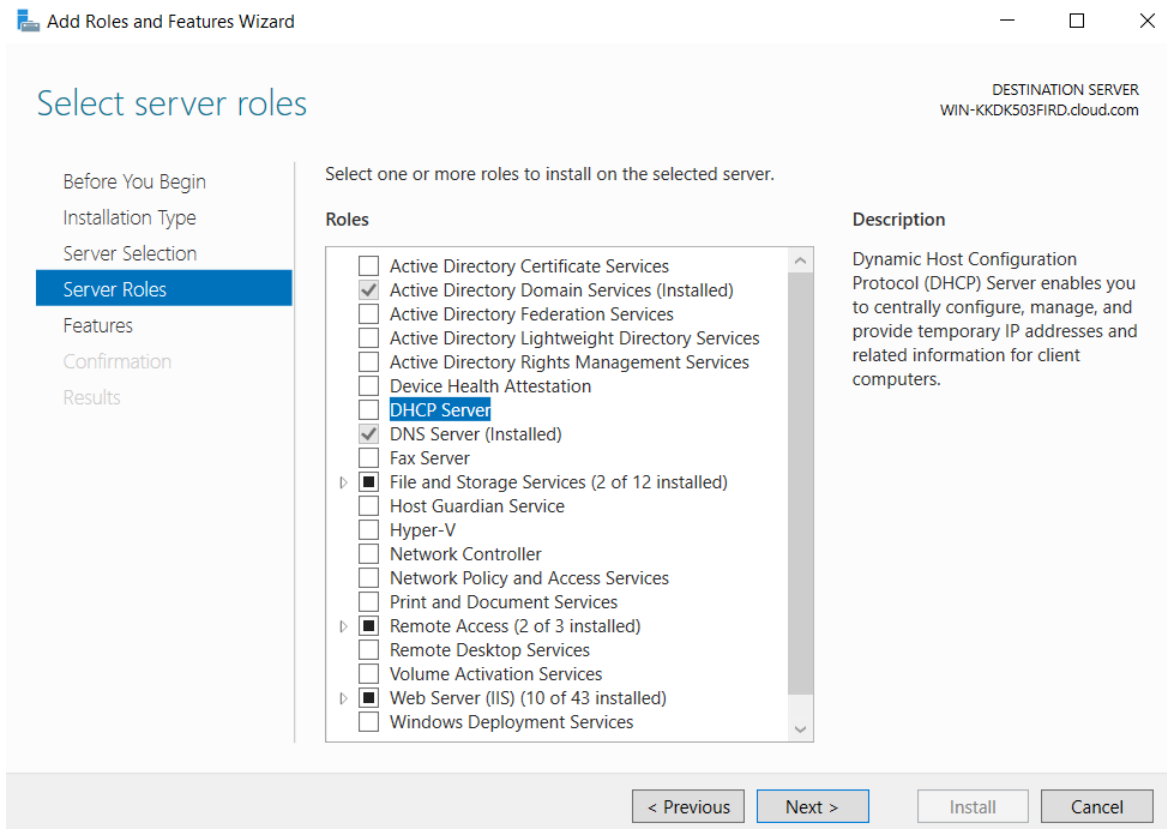


Figure 1.5 — Select server roles

1.6 Add required features

- A prompt appears listing required management tools (Remote Server Administration Tools > DHCP Server Tools).
- Keep **Include management tools (if applicable)** checked and click **Add Features**.

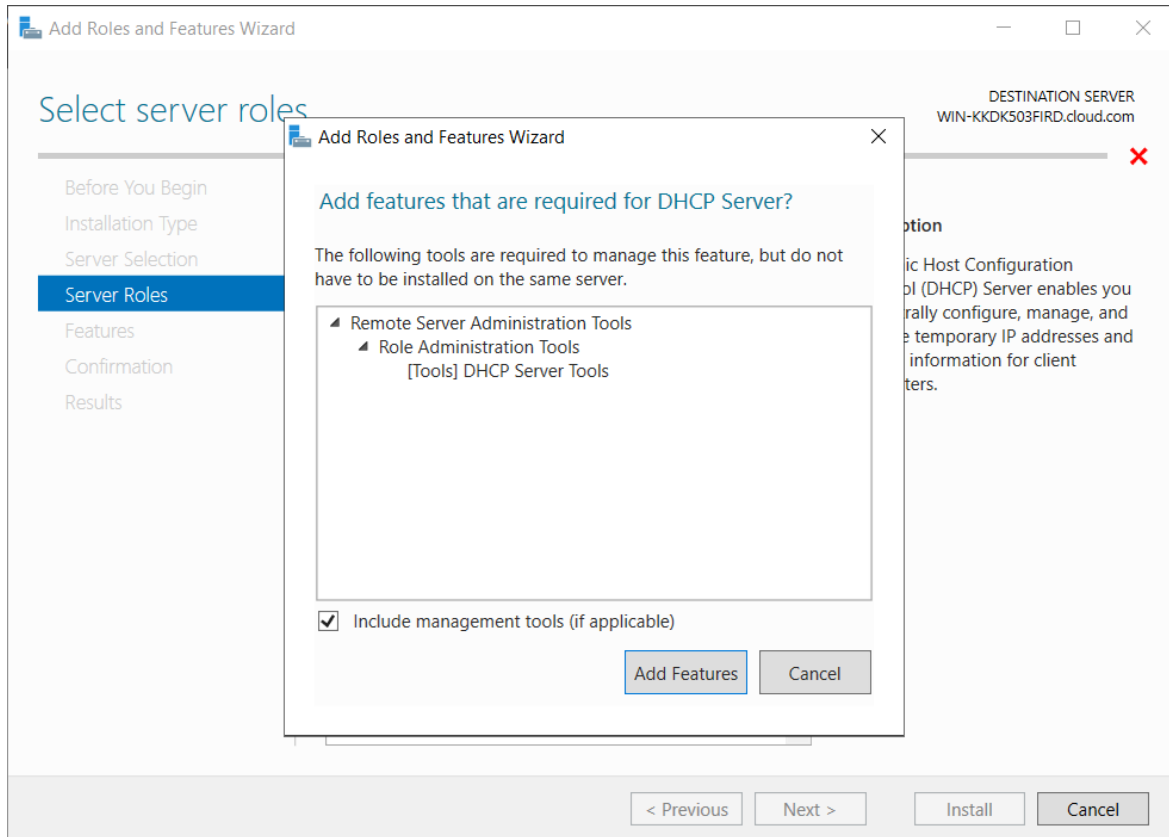


Figure 1.6 — Add required features

1.7 Confirm role selection

- DHCP Server now shows checked, with its own wizard page added on the left.
- Click **Next**.

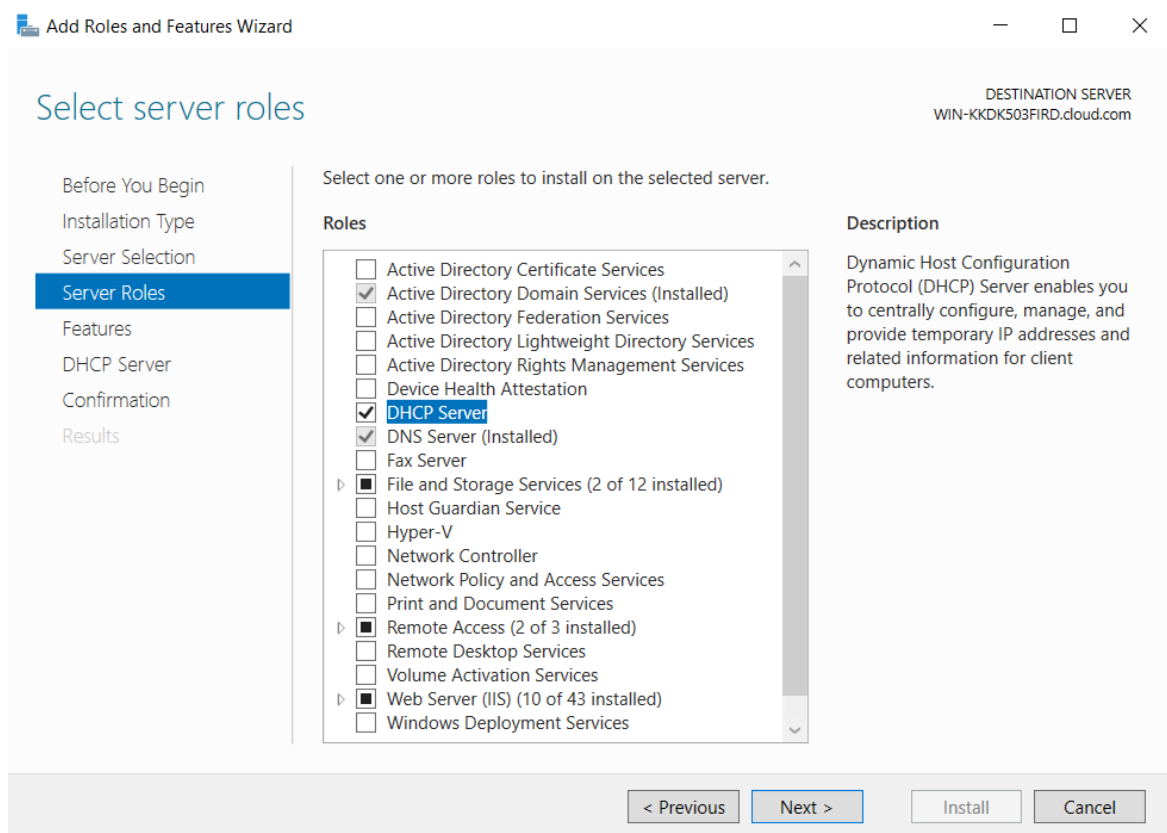


Figure 1.7 — Confirm role selection

1.8 Select features

- No additional features are required for a basic DHCP install.
- Leave the defaults and click **Next**.

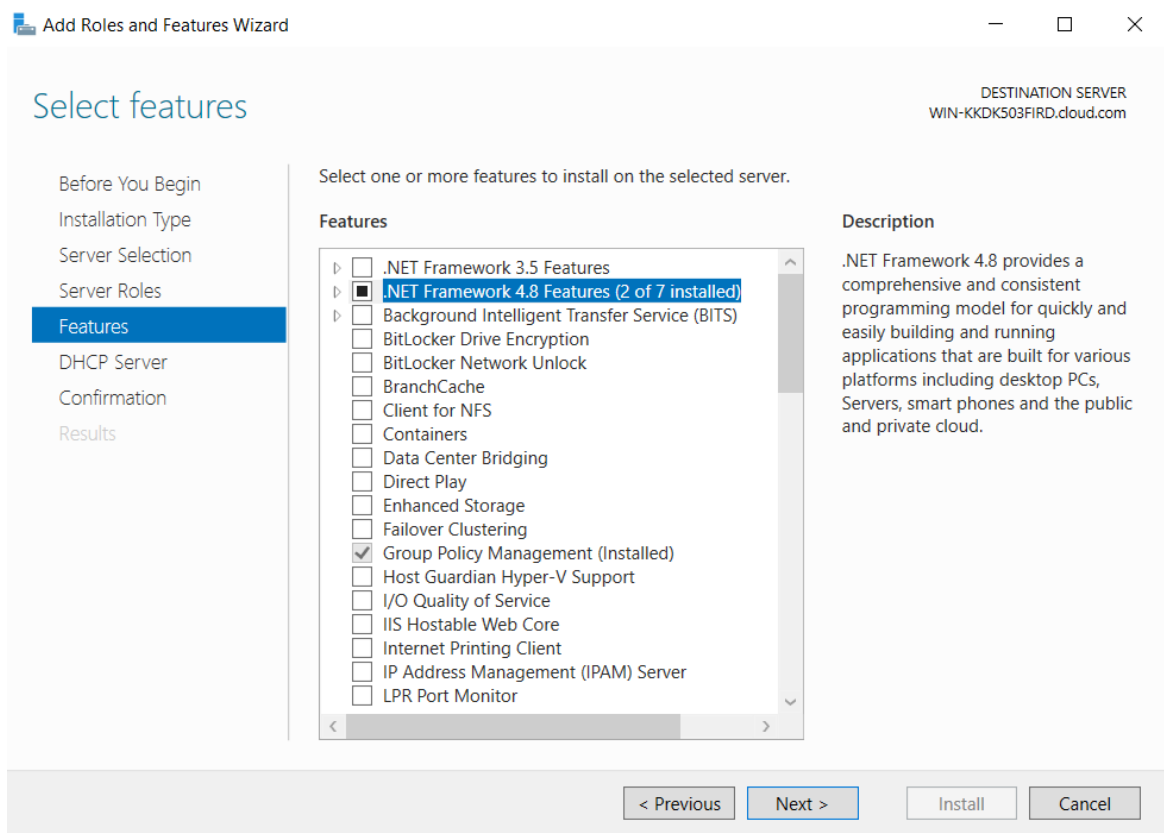


Figure 1.8 — Select features

1.9 DHCP Server information page

- Read the notes: configure a static IP first, and plan scopes/exclusions in advance.
- Click **Next**.

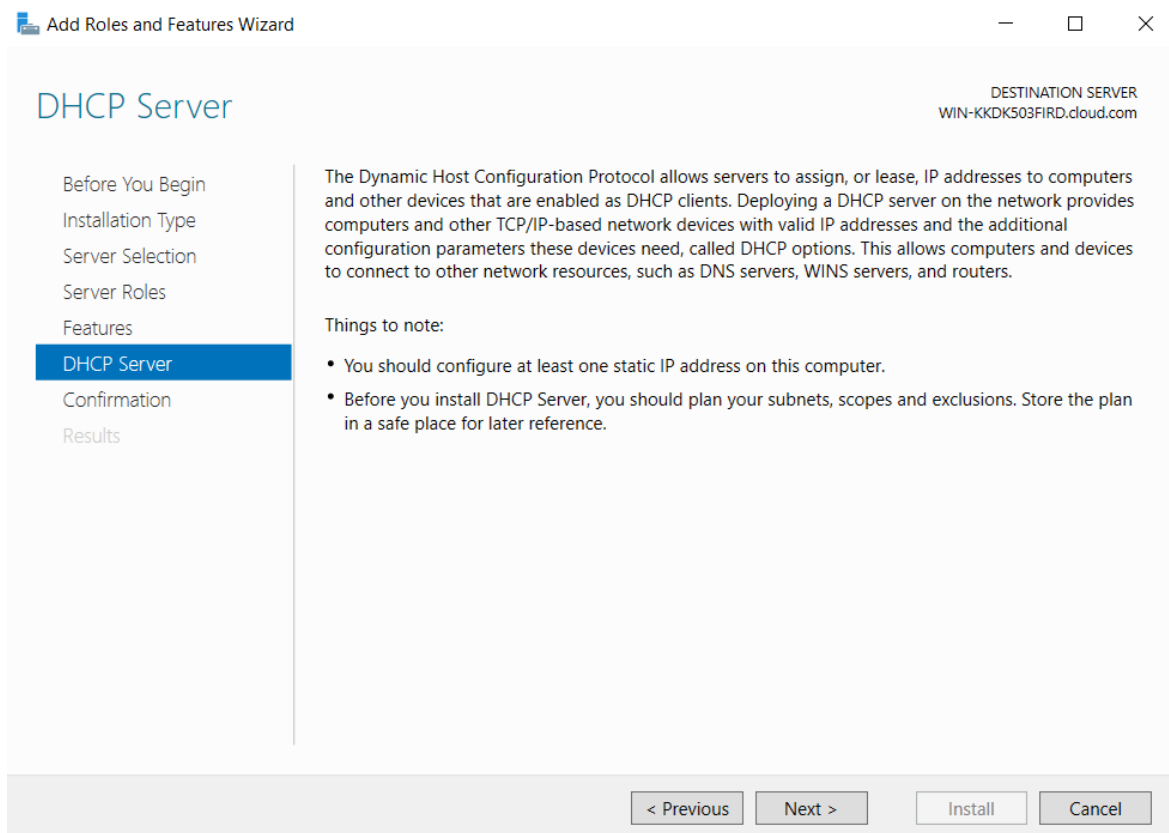


Figure 1.9 — DHCP Server information page

1.10 Confirm installation selections

- Review the summary: DHCP Server + Remote Server Administration Tools + DHCP Server Tools.
- Click **Install**.

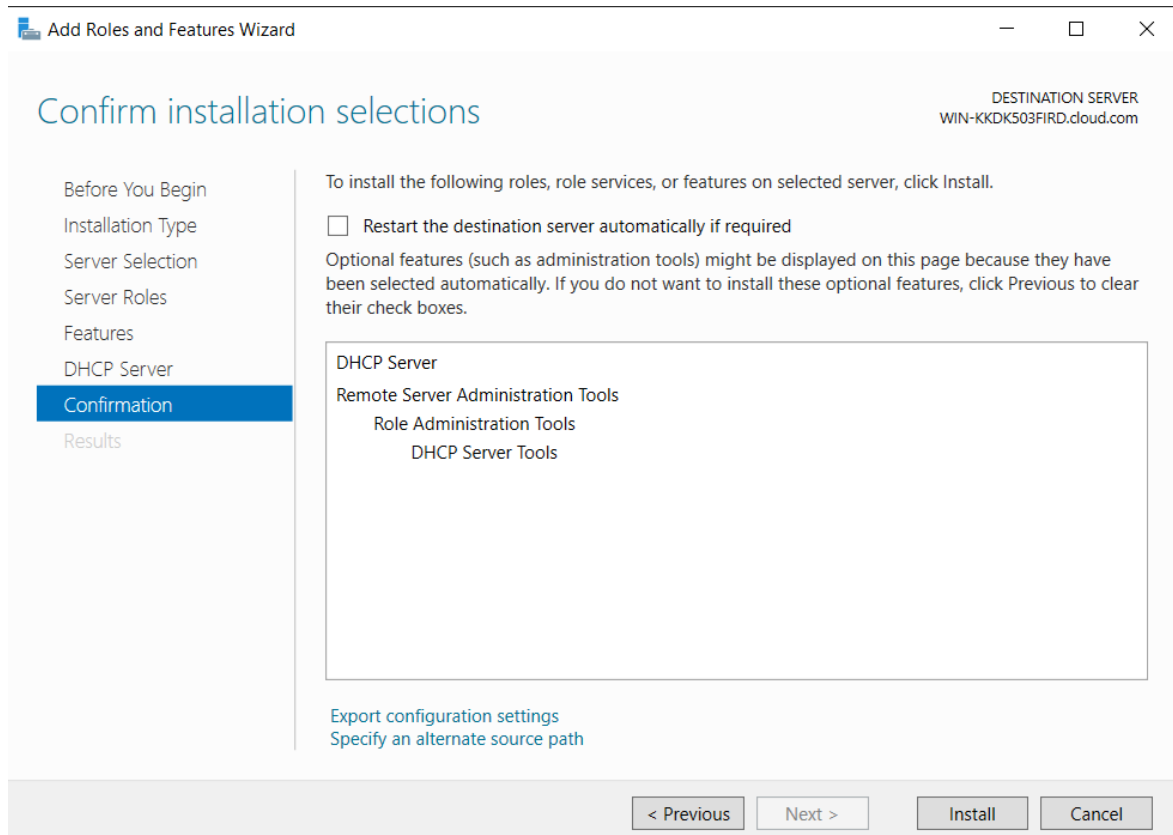


Figure 1.10 — Confirm installation selections

1.11 Installation progress

- The wizard installs the DHCP Server role and management tools.
- Click **Close** once installation succeeds.
- A follow-up notification will indicate that post-deployment configuration is still required.

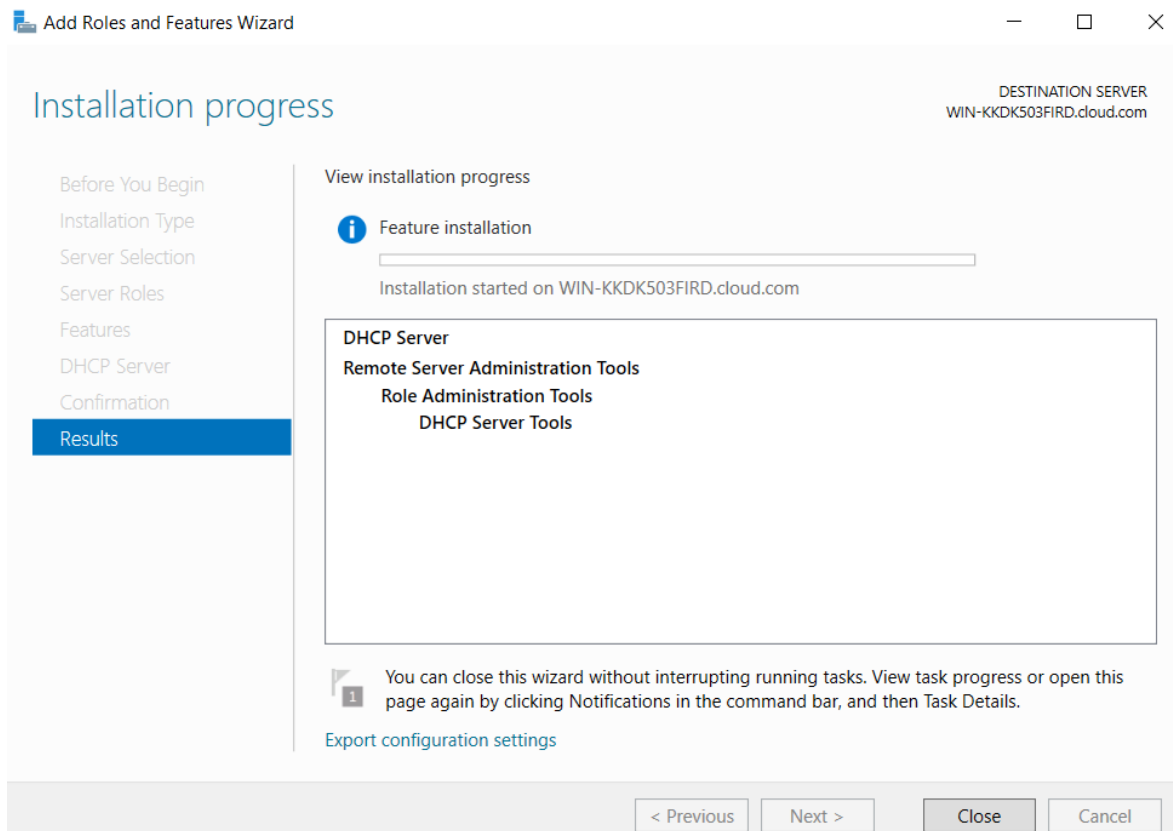


Figure 1.11 — Installation progress

2. Complete DHCP Post-Deployment Configuration

Immediately after role installation, DHCP must be authorized in Active Directory before it can lease addresses on a domain network.

2.1 Open the post-deployment task

- Click the notification flag in Server Manager.
- Under **Post-deployment Configuration**, click **Complete DHCP configuration**.

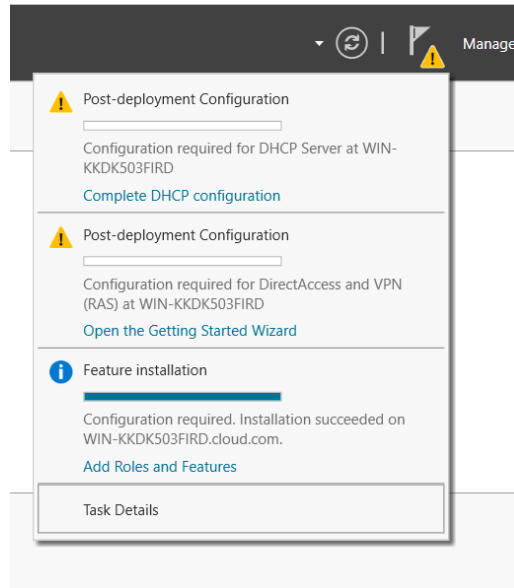


Figure 2.1 — Open the post-deployment task

2.2 Description page

- The wizard explains it will create two security groups — **DHCP Administrators** and **DHCP Users** — and authorize the DHCP server in AD DS.
- (Server's static configuration was verified beforehand with `ipconfig /all`: IP 192.168.139.128 / 255.255.255.0, gateway 192.168.139.2.)
- Click **Next**.

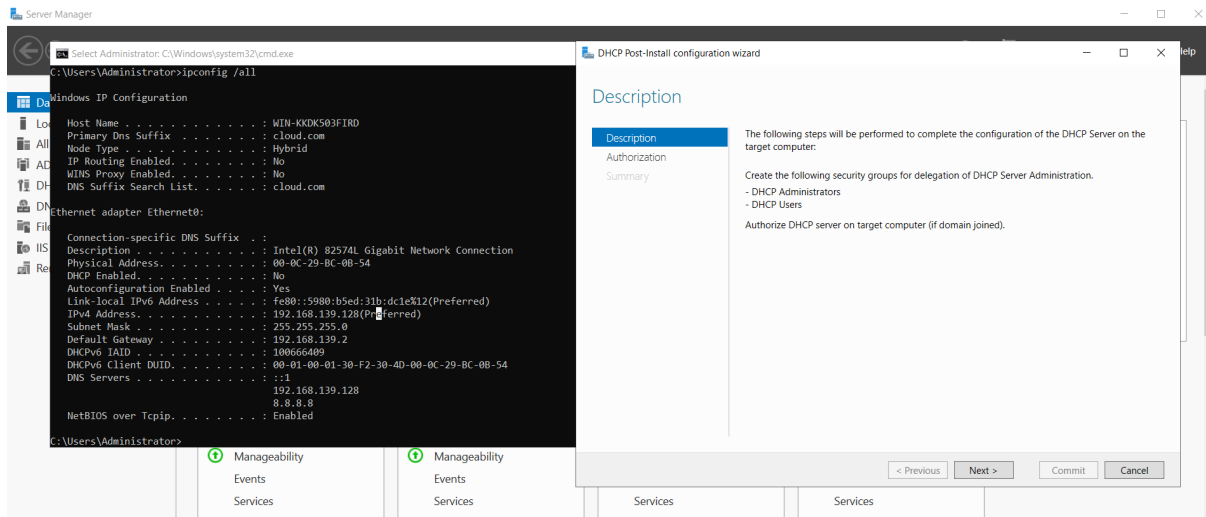
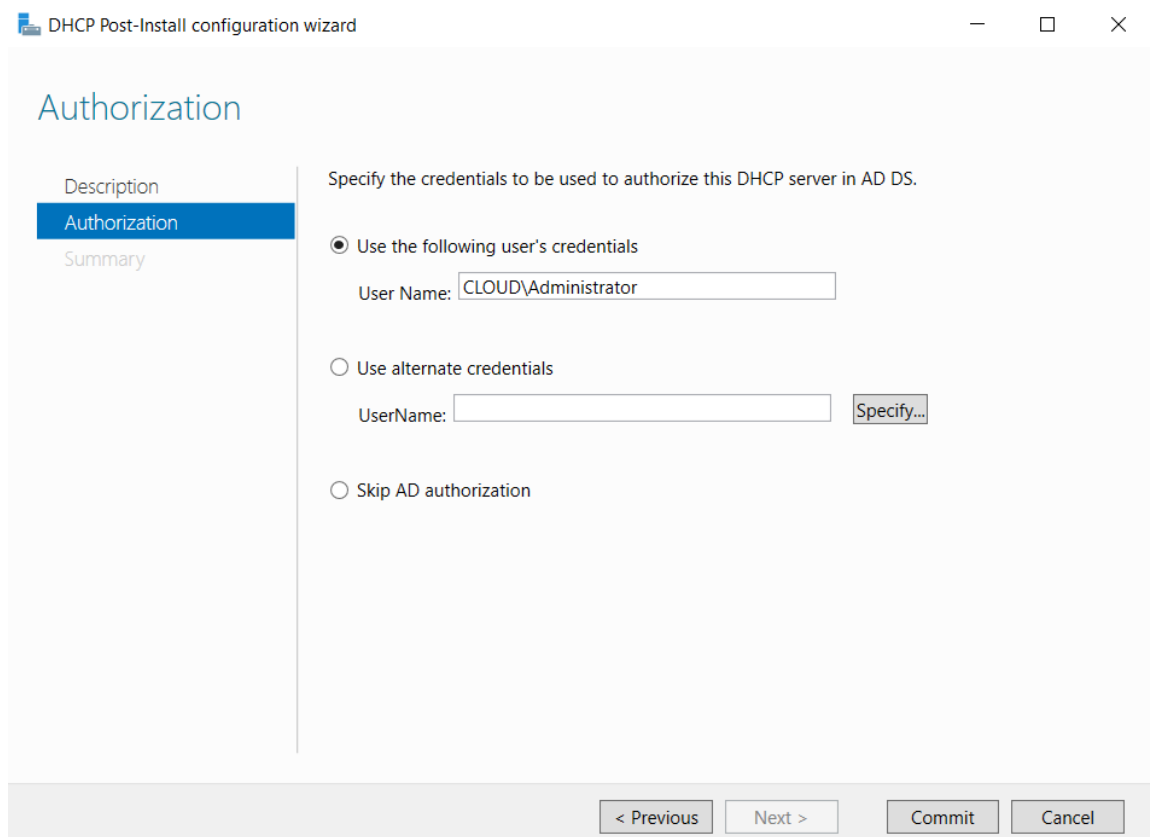


Figure 2.2 — Description page

2.3 Authorization

- Select **Use the following user's credentials** (defaults to the logged-on domain admin, **CLOUD\Administrator**).
- Click **Commit**.



The screenshot shows the 'DHCP Post-Install configuration wizard' window. The title bar includes a minimize button, a maximize button, and a close button. The window has a sidebar on the left with three tabs: 'Description', 'Authorization' (which is selected and highlighted in blue), and 'Summary'. The main area of the window is titled 'Authorization' and contains the following text: 'Specify the credentials to be used to authorize this DHCP server in AD DS.' Below this text are three radio button options. The first option, 'Use the following user's credentials', is selected. It has a text box next to it containing 'CLOUD\Administrator'. The second option, 'Use alternate credentials', is not selected and has a text box next to it with a 'Specify...' button. The third option, 'Skip AD authorization', is not selected. At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Commit', and 'Cancel'.

DHCP Post-Install configuration wizard

Authorization

Description

Authorization

Summary

Specify the credentials to be used to authorize this DHCP server in AD DS.

☒ Use the following user's credentials

User Name: CLOUD\Administrator

☐ Use alternate credentials

UserName: Specify...

☐ Skip AD authorization

< Previous Next > Commit Cancel

Figure 2.3 — Authorization

2.4 Summary

- Both steps report **Done**: security groups created and the DHCP server authorized.
- Restart the DHCP Server service afterward so the new security groups take effect.
- Click **Close**.

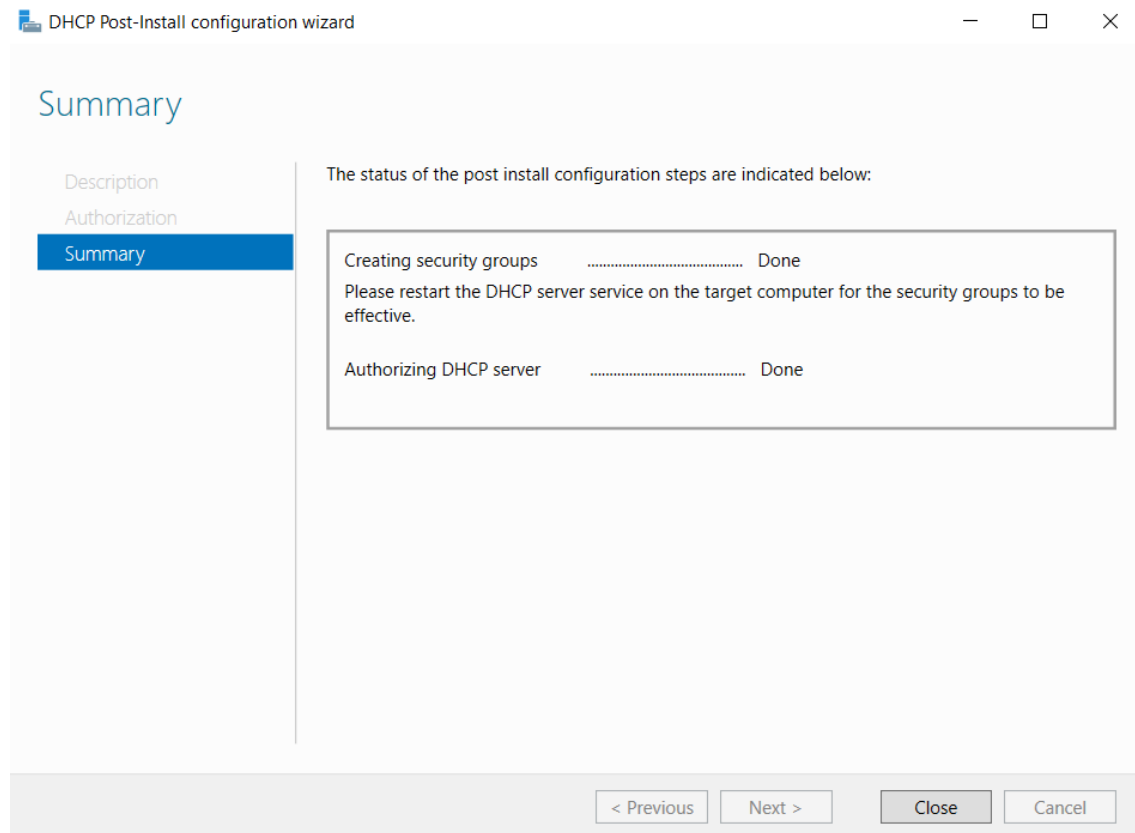


Figure 2.4 — Summary

3. Create a New DHCP Scope

A scope defines the range of addresses this server can lease to clients. Open the DHCP console (dhcpmgmt.msc) and create it under IPv4.

3.1 Open the DHCP console

- In the tree, expand the server > **IPv4**.
- The details pane prompts: "A scope is a range of IP addresses... To add a new scope, on the Action menu, click New Scope."
- Right-click **IPv4** > **New Scope** (or use the Action menu).

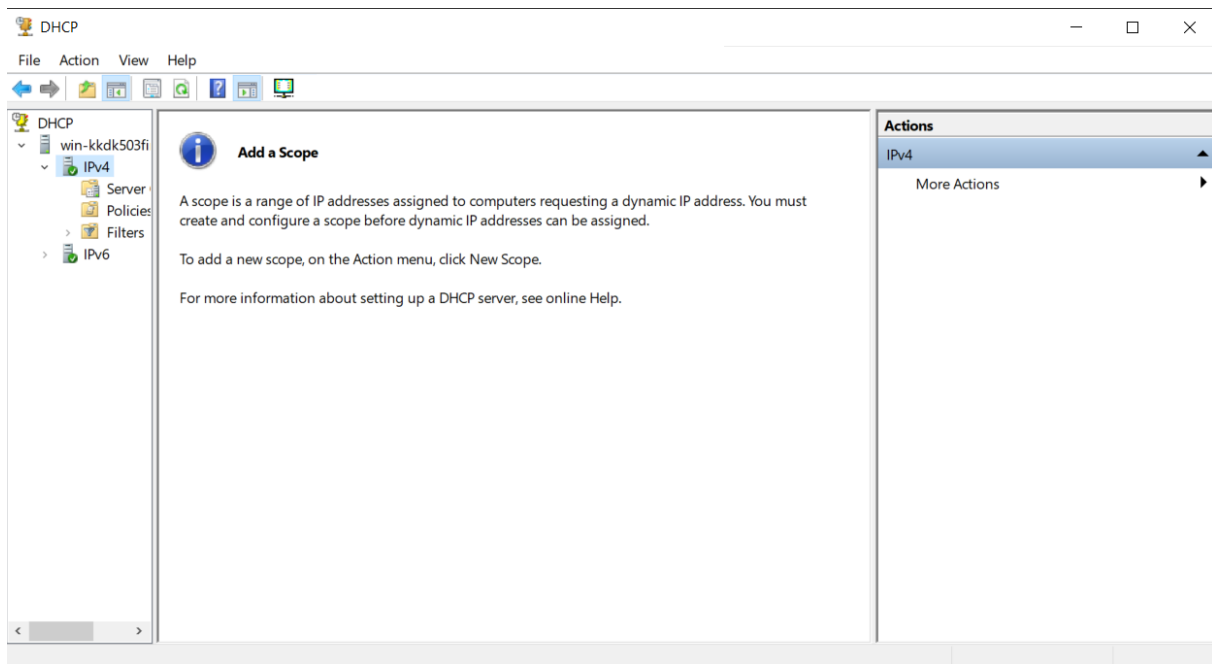


Figure 3.1 — Open the DHCP console

3.2 New Scope Wizard — Welcome

- Click **Next** to begin.

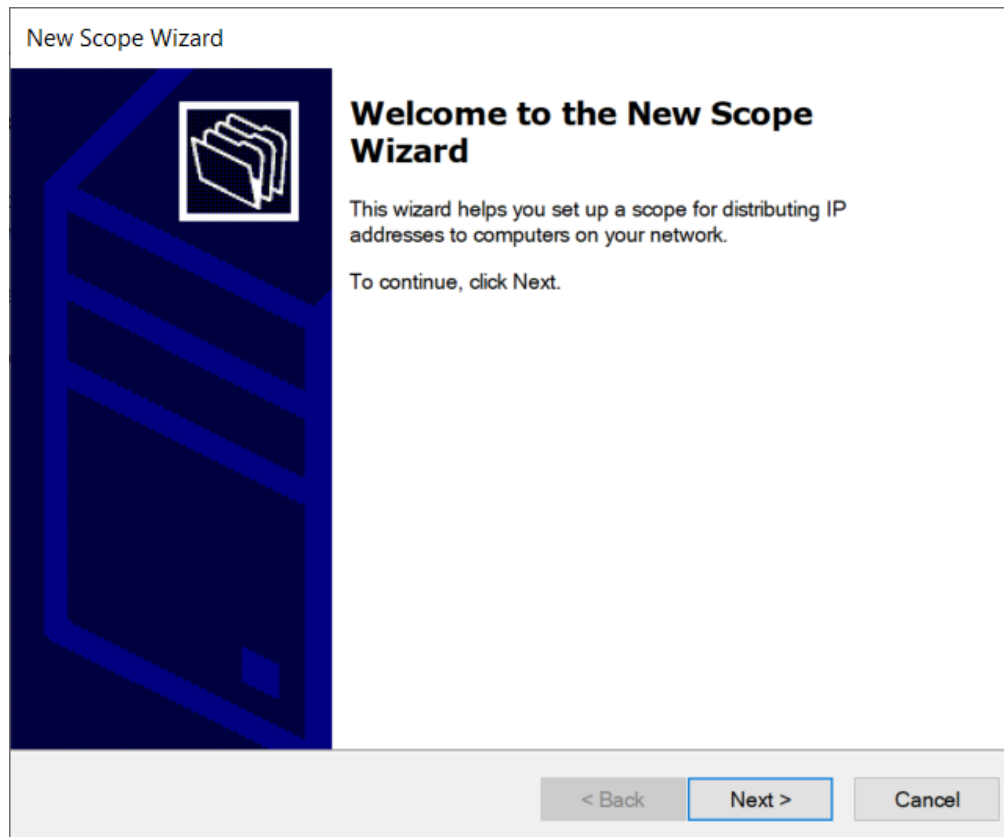


Figure 3.2 — New Scope Wizard — Welcome

3.3 Scope name

- Enter a **Name** to identify the scope — used CLOUD.
- Description is optional.
- Click **Next**.

New Scope Wizard

Scope Name

You have to provide an identifying scope name. You also have the option of providing a description.



Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name:

Description:

< Back

Next >

Cancel

Figure 3.3 — Scope name

3.4 IP address range

- **Start IP address:** 192.168.139.131
- **End IP address:** 192.168.139.230
- **Length:** 24 / **Subnet mask:** 255.255.255.0
- Click **Next**.

New Scope Wizard

IP Address Range
You define the scope address range by identifying a set of consecutive IP addresses.



Configuration settings for DHCP Server

Enter the range of addresses that the scope distributes.

Start IP address: 192 . 168 . 139 . 131

End IP address: 192 . 168 . 139 . 230

Configuration settings that propagate to DHCP Client

Length: 24

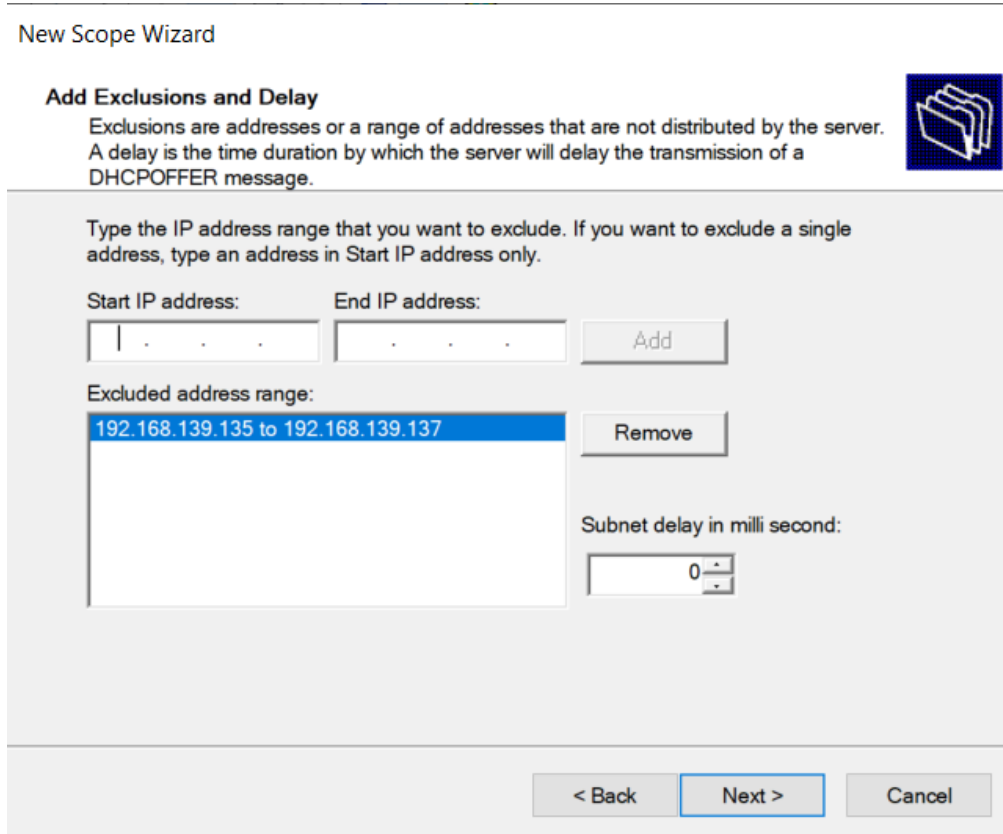
Subnet mask: 255 . 255 . 255 . 0

< Back Next > Cancel

Figure 3.4 — IP address range

3.5 Add exclusions and delay

- Exclude a sub-range that must not be handed out (e.g. reserved for static devices): **192.168.139.135** to **192.168.139.137**, then click **Add**.
- Leave Subnet delay at 0 ms.
- Click **Next**.



The screenshot shows the 'New Scope Wizard' dialog box, specifically the 'Add Exclusions and Delay' step. The title bar reads 'New Scope Wizard'. Below the title bar, the section is titled 'Add Exclusions and Delay'. A small icon of a folder with a document is visible on the right. The text explains: 'Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCP OFFER message.'

Below this text, there are two input fields for 'Start IP address:' and 'End IP address:', each followed by an 'Add' button. The 'Start IP address' field contains the text '192.168.139.135' and the 'End IP address' field contains '192.168.139.137'. Below these fields is a list box labeled 'Excluded address range:' which contains the text '192.168.139.135 to 192.168.139.137'. To the right of the list box is a 'Remove' button. Below the list box is a 'Subnet delay in milli second:' label and a spin box containing the value '0'. At the bottom of the dialog are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 3.5 — Add exclusions and delay

3.6 Lease duration

- Set how long a client may keep a leased address — left at the default of **8 days**.
- Click **Next**.

New Scope Wizard

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope.



Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful.

Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days: Hours: Minutes:

8	0	0
---	---	---

< Back

Next >

Cancel

Figure 3.6 — Lease duration

3.7 Configure DHCP options

- Select **Yes, I want to configure these options now** to set gateway/DNS in the same wizard.
- Click **Next**.

New Scope Wizard

Configure DHCP Options

You have to configure the most common DHCP options before clients can use the scope.



When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.

The settings you select here are for this scope and override settings configured in the Server Options folder for this server.

Do you want to configure the DHCP options for this scope now?

☒ Yes, I want to configure these options now

☐ No, I will configure these options later

< Back Next > Cancel

Figure 3.7 — Configure DHCP options

3.8 Router (default gateway)

- Enter the router/gateway IP address and click **Add**.
- Confirm it appears in the list below, then click **Next**.

New Scope Wizard

Router (Default Gateway)

You can specify the routers, or default gateways, to be distributed by this scope.



To add an IP address for a router used by clients, enter the address below.

IP address:

. . .	Add
139.157.139.2	Remove
	Up
	Down

< Back Next > Cancel

Figure 3.8 — Router (default gateway)

3.9 Domain name and DNS servers

- **Parent domain:** cloud.com
- **DNS servers (IP address list):** 192.168.139.128 and 8.8.8.8
- Click **Next**.

New Scope Wizard

Domain Name and DNS Servers
The Domain Name System (DNS) maps and translates domain names used by clients on your network.

You can specify the parent domain you want the client computers on your network to use for DNS name resolution.

Parent domain:

To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.

Server name:	IP address:	
	. . .	Add
Resolve	192.168.139.128 8.8.8.8	Remove
		Up
		Down

< Back Next > Cancel

Figure 3.9 — Domain name and DNS servers

3.10 WINS servers

- Not used in this environment — left blank.
- Click **Next**.

New Scope Wizard

WINS Servers

Computers running Windows can use WINS servers to convert NetBIOS computer names to IP addresses.



Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.

Server name:	IP address:	
	. . .	Add
Resolve		Remove
		Up
		Down

To change this behavior for Windows DHCP clients modify option 046, WINS/NBT Node Type, in Scope Options.

< Back **Next >** Cancel

Figure 3.10 — WINS servers

3.11 Activate scope

- Select **Yes, I want to activate this scope now** so clients can start leasing addresses immediately.
- Click **Next**.

New Scope Wizard

Activate Scope
Clients can obtain address leases only if a scope is activated.



Do you want to activate this scope now?

☒ Yes, I want to activate this scope now

☐ No, I will activate this scope later

< Back Next > Cancel

Figure 3.11 — Activate scope

3.12 Complete the wizard

- The wizard confirms the scope was created successfully.
- (Optional: right-click the scope > Configure Failover for high availability.)
- Click **Finish**.

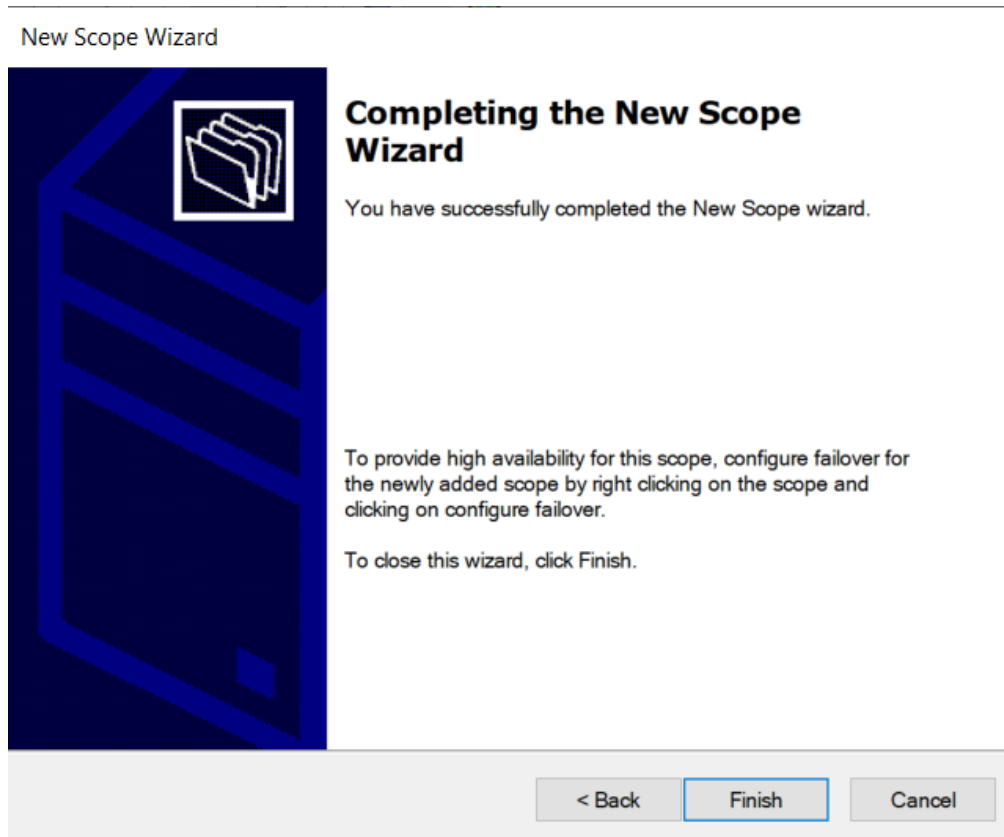


Figure 3.12 — Complete the wizard

4. Verify the Scope Is Active

4.1 Check scope status in the DHCP console

- Select **IPv4** in the tree.
- Confirm **Scope [192.168.139.0] CLOUD** shows status **** Active **** in the details pane.

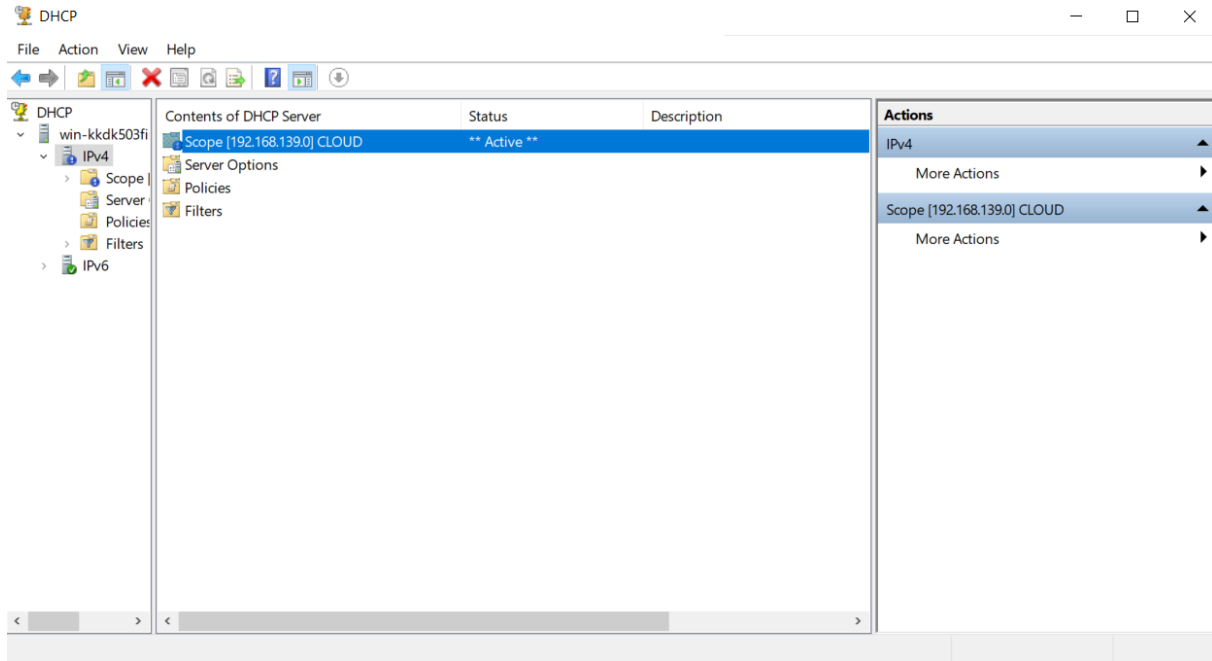


Figure 4.1 — Check scope status in the DHCP console

5. Verify Client-Side IP Lease

Confirm from a client machine on the same network that it receives an address from the new scope.

5.1 Set the client NIC to obtain an IP automatically

- Open **Network Connections > Properties > Internet Protocol Version 4 (TCP/IPv4)**.
- Ensure **Obtain an IP address automatically** and **Obtain DNS server address automatically** are both selected.

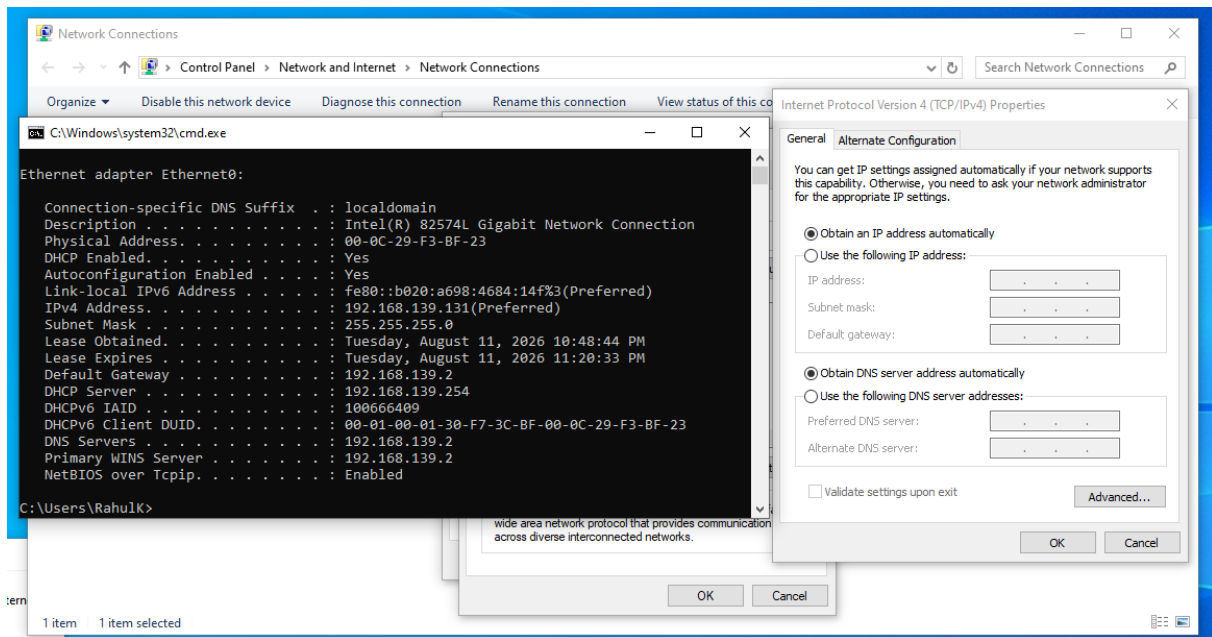
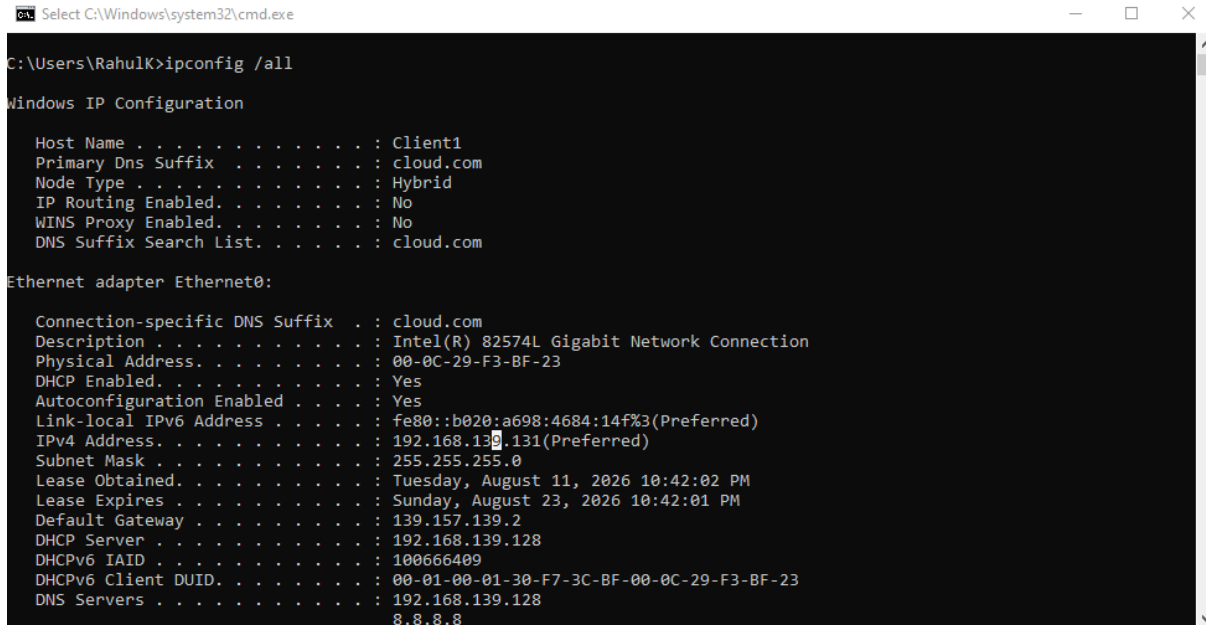


Figure 5.1 — Set the client NIC to obtain an IP automatically

5.2 Confirm the lease with ipconfig /all

- On the client (host name **Client1**), run `ipconfig /all`.
- IPv4 address **192.168.139.131** was leased — the first available address in the pool after the excluded range — from DHCP server 192.168.139.128, with Lease Obtained / Lease Expires timestamps confirming an active 8-day lease.



```

C:\Users\RahulK>ipconfig /all

Windows IP Configuration

Host Name . . . . . : Client1
Primary Dns Suffix . . . . . : cloud.com
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : cloud.com

Ethernet adapter Ethernet0:

Connection-specific DNS Suffix . : cloud.com
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : 00-0C-29-F3-BF-23
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::b020:a698:4684:14f%3(Preferred)
IPv4 Address. . . . . : 192.168.139.131(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Tuesday, August 11, 2026 10:42:02 PM
Lease Expires . . . . . : Sunday, August 23, 2026 10:42:01 PM
Default Gateway . . . . . : 139.157.139.2
DHCP Server . . . . . : 192.168.139.128
DHCPv6 IAID . . . . . : 100666409
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-F7-3C-BF-00-0C-29-F3-BF-23
DNS Servers . . . . . : 192.168.139.128
                        8.8.8.8

```

Figure 5.2 — Confirm the lease with ipconfig /all

5.3 Cross-check via Network Connection Details

- Open **Network Connections > Status > Details** for a GUI view of the same lease information: assigned IPv4 address, subnet mask, default gateway, DHCP server, DNS server, and lease obtained/expiry times.
- Matching values confirm the DHCP scope is issuing addresses correctly.

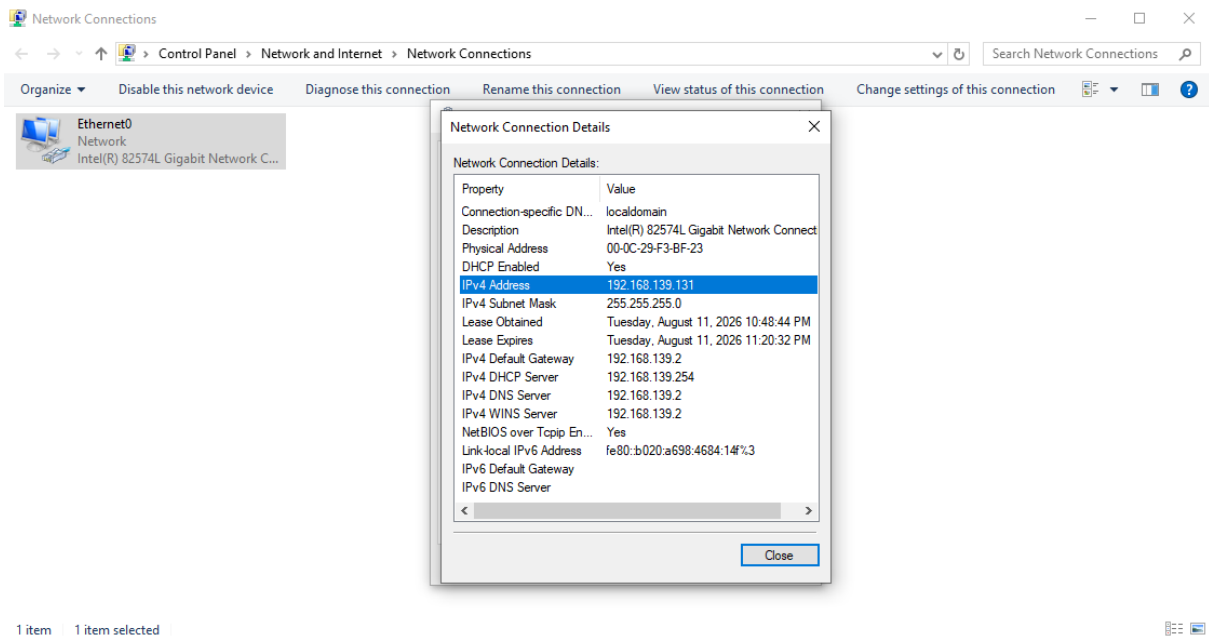


Figure 5.3 — Cross-check via Network Connection Details

End of guide — DHCP Server role installed, authorized, scope "CLOUD" created and active, and client lease verified.