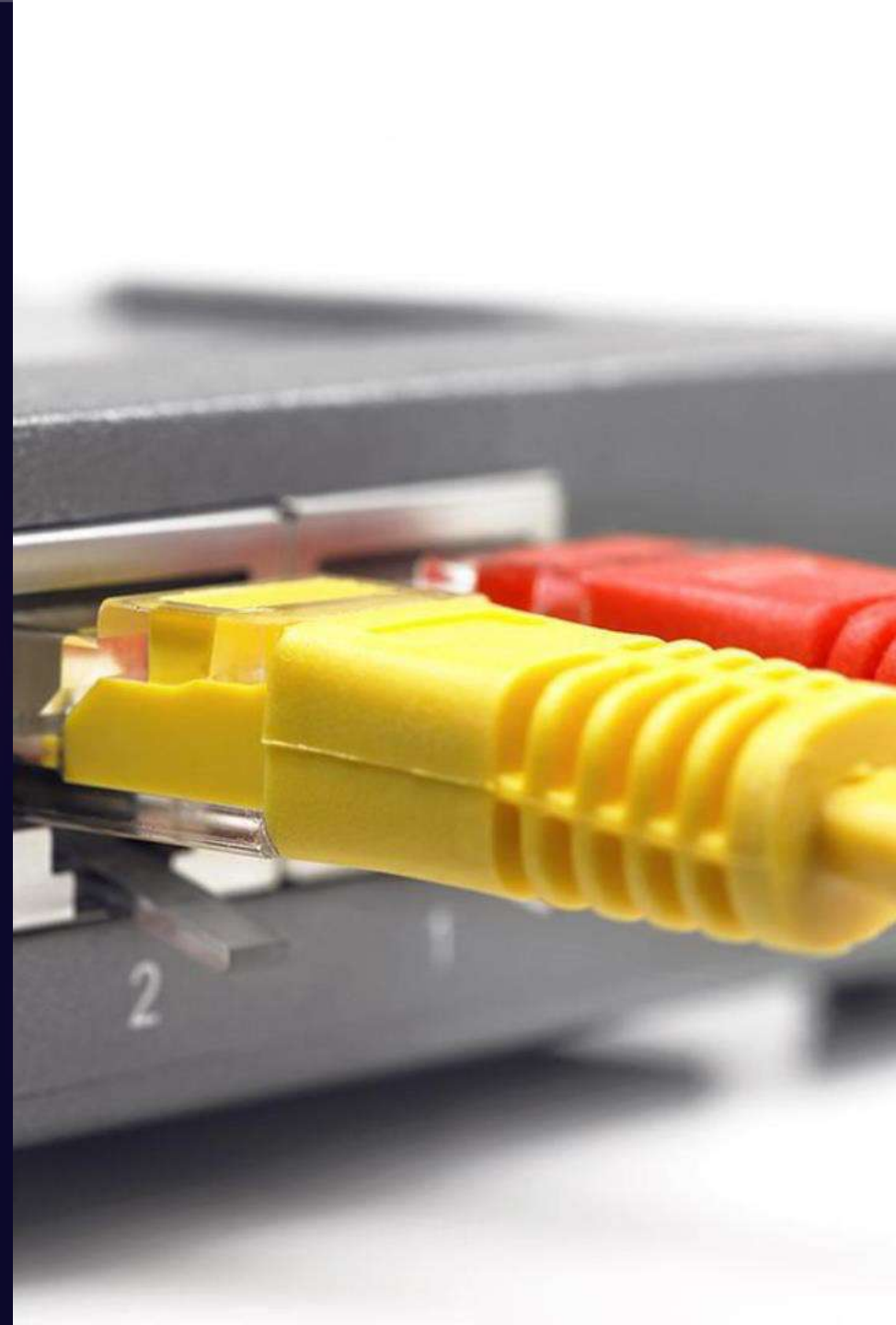


Connect 2-4 computers together using a network hub to create a LAN

Welcome to the world of Local Area Networks! Learn how to connect multiple computers using a network hub and build your own LAN.

○ Group 6

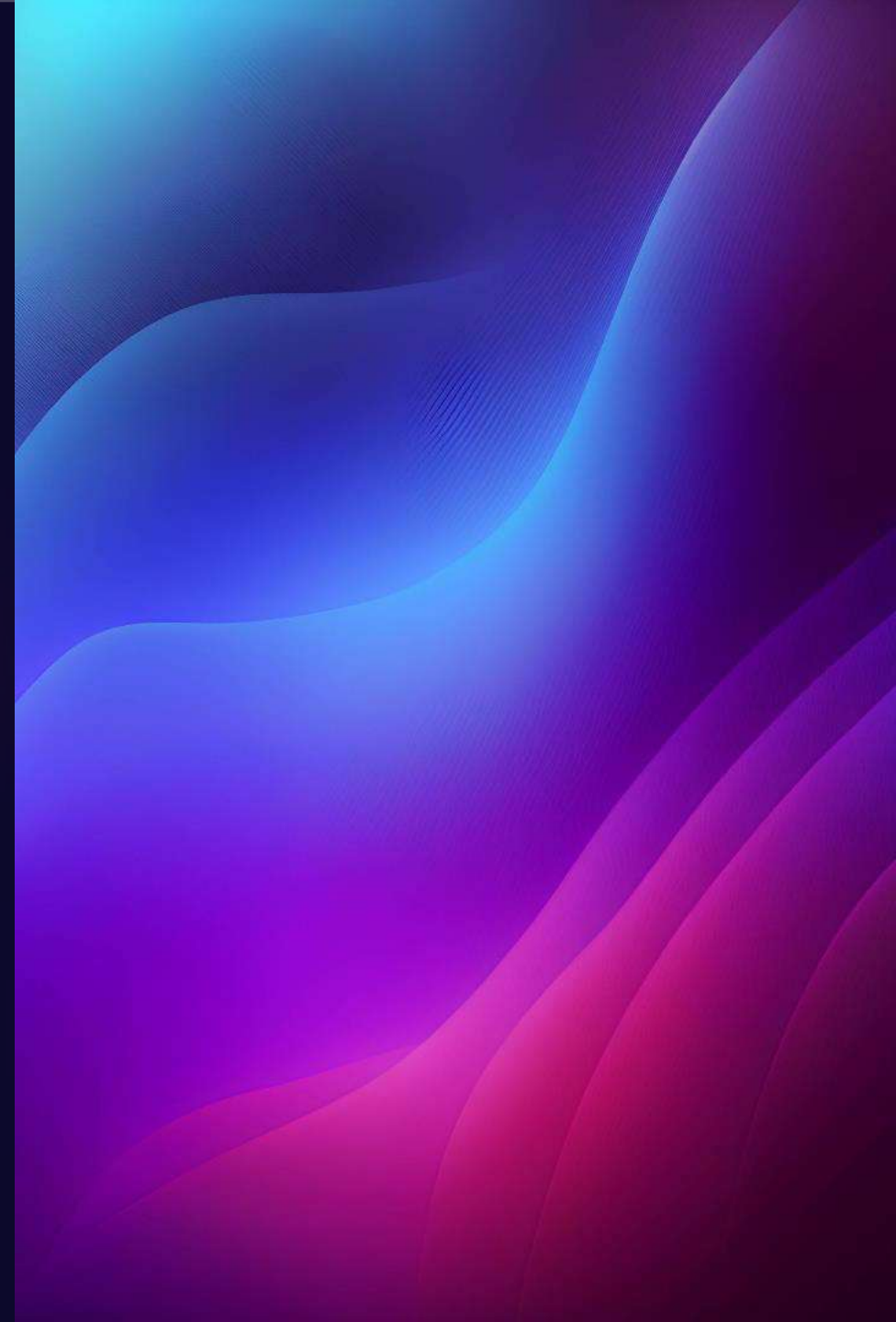


Introduction to Local Area Networks (LANs)

LANs allow multiple devices to share resources and communicate with each other within a limited geographic area. They are commonly used in homes, offices, and schools.

What is a network hub?

A network hub is a central device that connects multiple computers in a LAN. It acts as a common connection point, receiving and distributing data packets to all connected devices.



Benefits of using a network hub

1

Easy Expansion

Adding more computers to the LAN is as simple as connecting them to the network hub.

2

Cost-Efficient

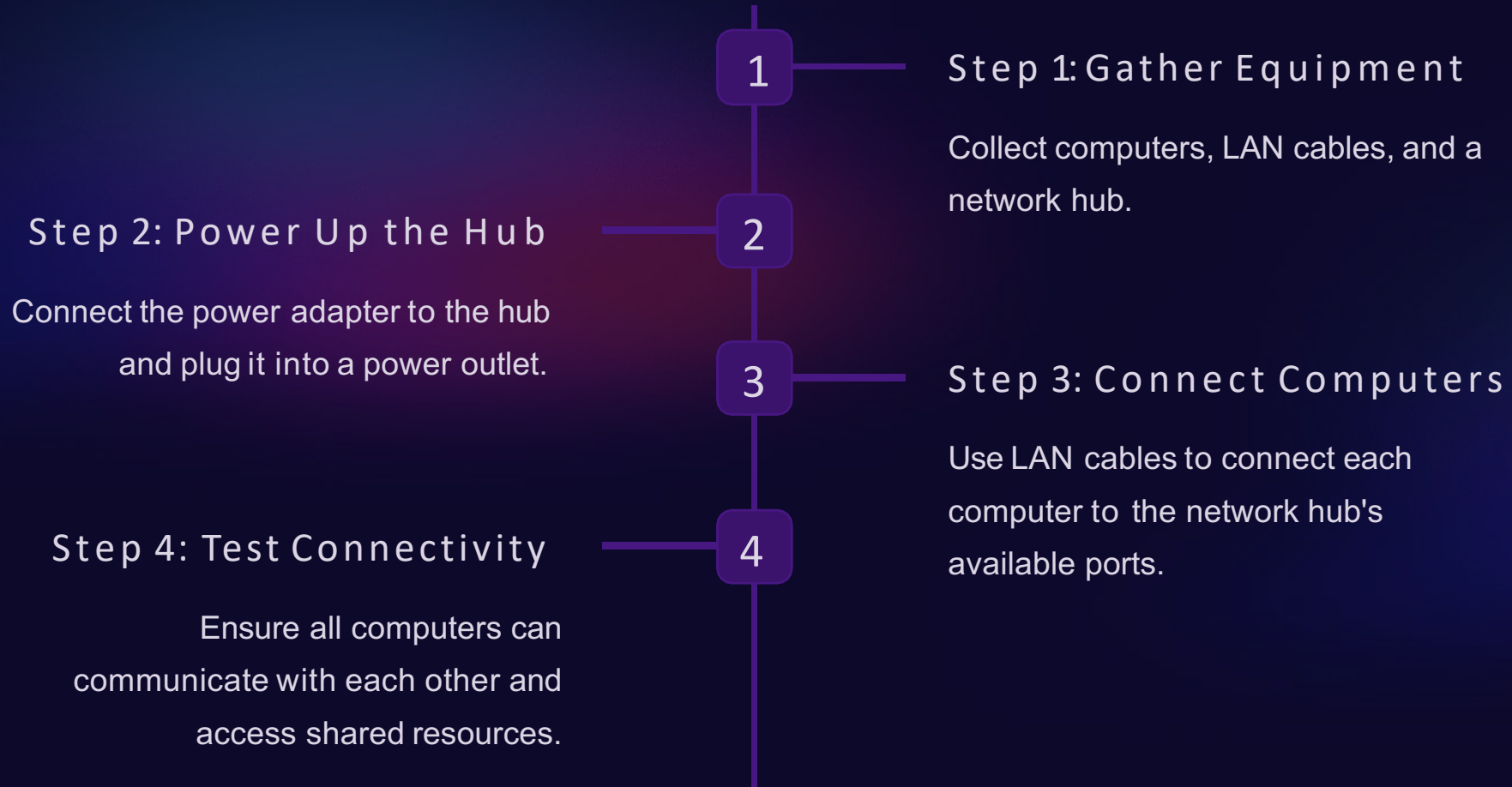
Network hubs are affordable compared to other networking devices like switches or routers.

3

Shared Resources

A network hub allows sharing of files, printers, and other resources between connected computers.

Step-by-step guide to connecting computers



Troubleshooting common issues

Disconnected Cables

Check if any LAN cables are unplugged or loose.

IP Address Conflicts

Ensure no two computers have the same IP address.

Hub Power Issues

Test the power connection of the network hub.

Firewall Settings

Adjust firewall settings to allow network communication.

Network security considerations

Keep your LAN secure by following these best practices:

1. Change default passwords on the network hub and connected devices.
2. Enable encryption, such as WPA2, for wireless LAN connections.
3. Regularly update firmware and security patches on network devices.
4. Implement secure access controls to limit unauthorized connections.

Follow the Following Step in pcs
to convert them in to create a
lan

computer
PC-1

This PC

Storage (D)

N folder

HPUSB Disk

Document

VC
MiniTool Video Converter

Foto

video

OBS Studio

rutus-3.2.1



Pinned

All apps >

Edge

Mail

Calendar

Microsoft Store

Photos

Settings

Microsoft 365 (Office)

Solitaire & Casual Games

WhatsApp

Spotify

Disney+

Xbox

Clipchamp – Video Editor

Prime Video for Windows

TikTok

Instagram

Messenger

Calculator

Recommended

More >

OBS Studio (64bit)
Recently added

Codec Tweak Tool
Recently added

Windows
Jan 3

Media Player Classic
Recently added

Document
Jan 3

VID_20210715_114052
Oct 2022

ip Malik

⏻



This PC

Storage (D)

N folder

HPUSB Disk

Document

MiniTool Video Converter

Foto

video

OBS Studio

rufus-3.21



Control Panel

All Apps Documents Web Settings People Folders Photos S ...

Best match

Control Panel
App

Apps

Settings >

NVIDIA Control Panel >

Windows Tools >

Settings

App & browser control >

Controlled folder access >

Change User Account Control settings >

Search the web

Control - See web results >

Control Panel
App

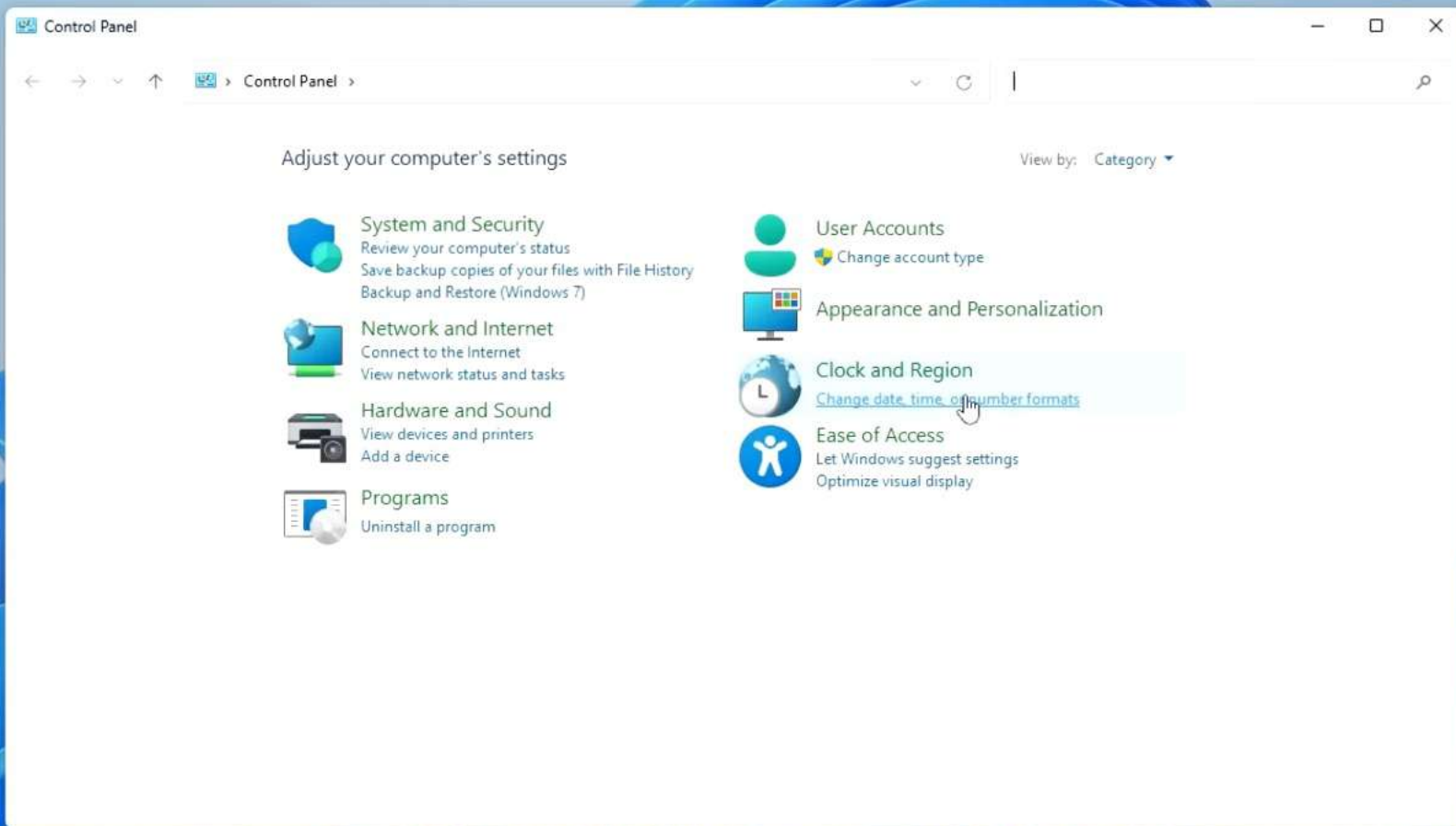
Open

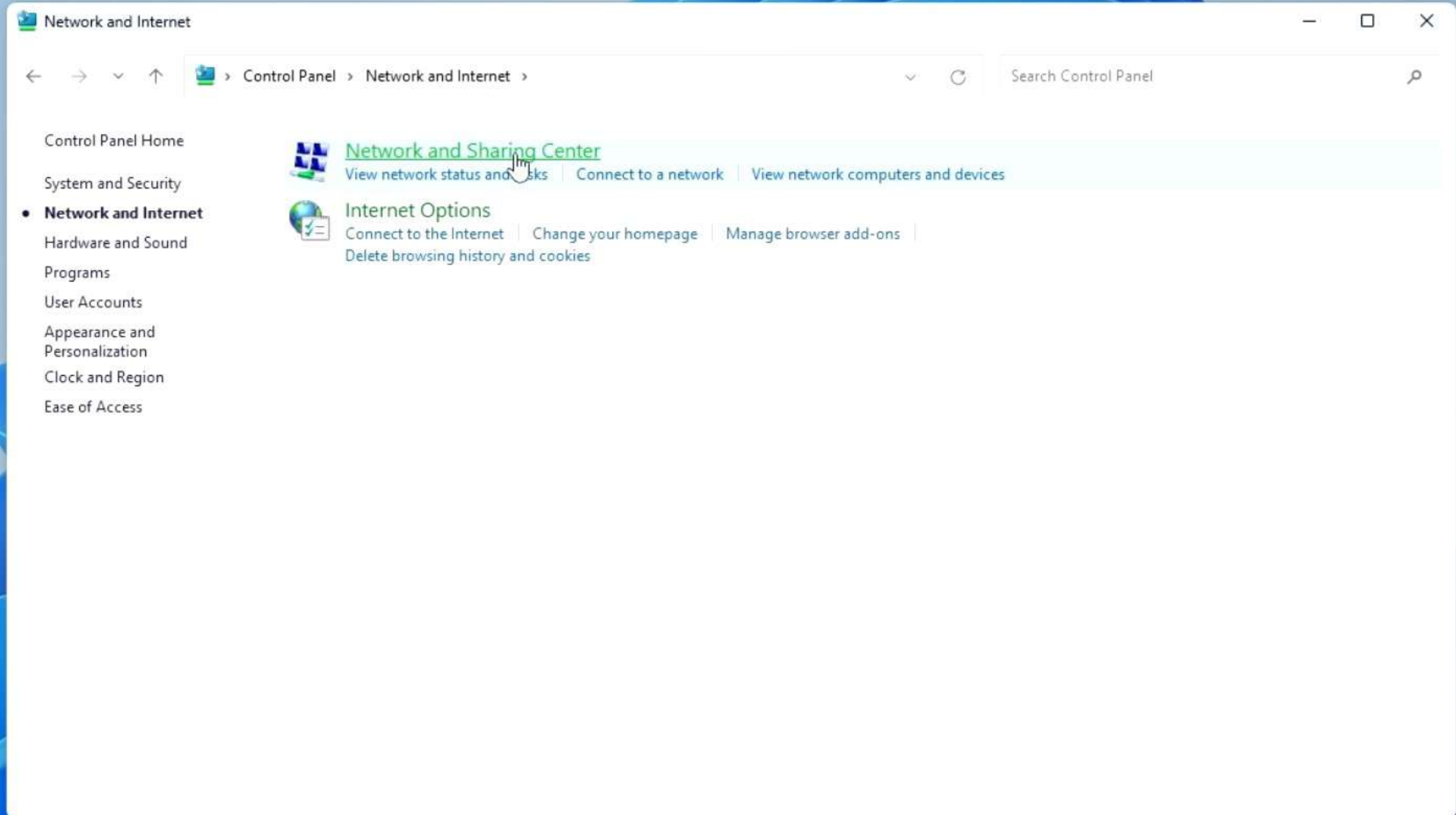
Recent

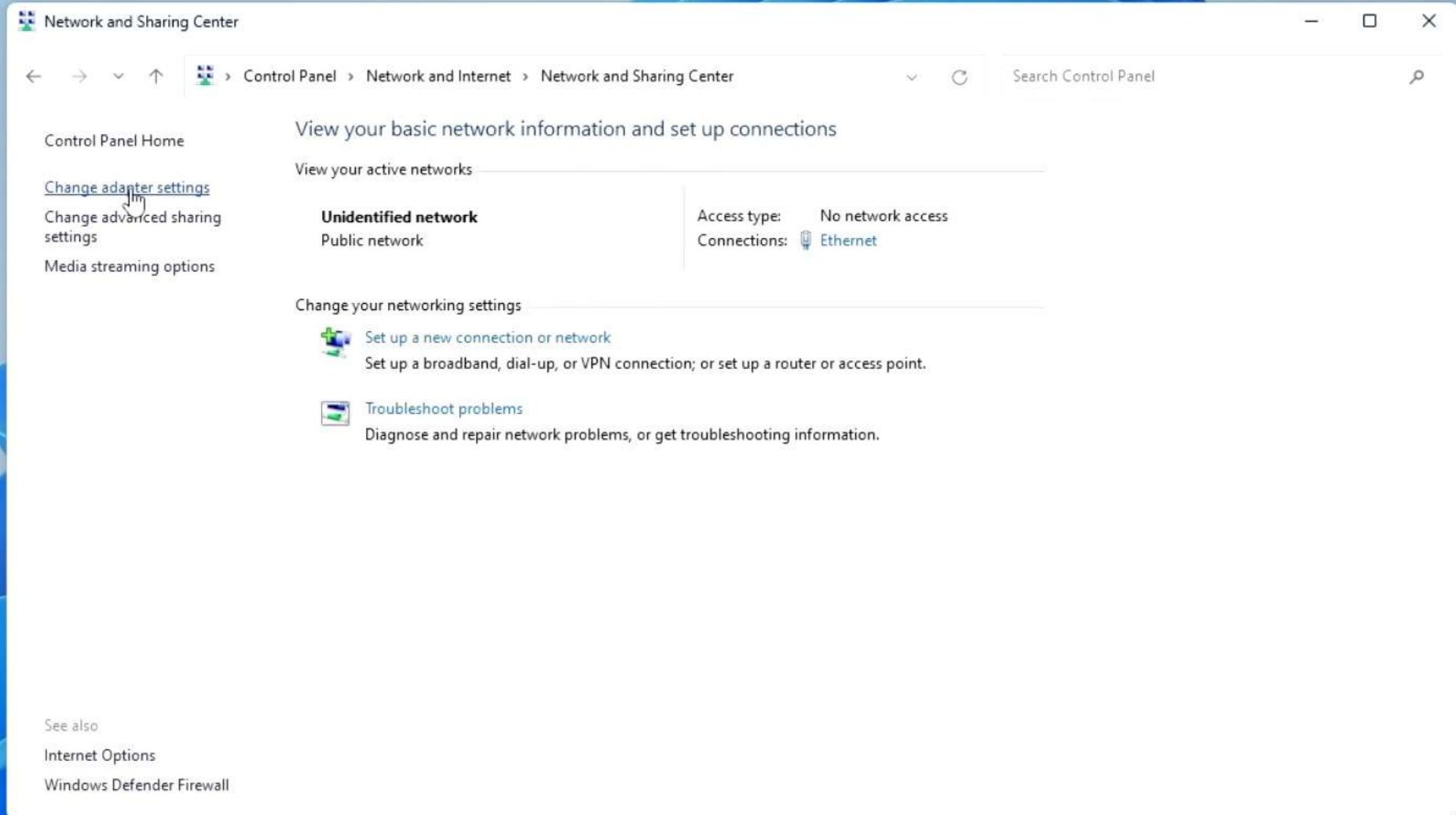
Device Manager

3°C
Облачно

7:08 PM
3/11/2023









Network and Sharing Center


Network Connections

← → ↕ ↑

Control Panel > Network and Internet > Network Connections >

⌵ ↻ 🔍

Organize ▾



Ethernet

Unidentified network

Realtek Giga-byt GbE Family Contr...

1 item

1 item selected

⌵

📄

?



Network and Sharing Center

Network Connections

← → ↕ ↑

Control Panel > Network and Internet > Network Connections >

⌵ ↻ 🔍

Organize ▾ Disable this network device Diagnose this connection Rename this connection View status of this connection Change settings of this connection ⌵ 📑 ⓘ

Ethernet

Unidentified network

Realtek GbE

⌵

Disable

Status

Diagnose

⌵

Bridge Connections

Create Shortcut

⌵

Delete

Rename

⌵

Properties

1 item

1 item selected

☰ 📄



Network and Sharing Center

Network Connections

← → ↕ ↑

Control Panel > Network and Internet > Network Connections

⌵ ↺ 🔍

Organize ▾

Disable this network device

Diagnose this connection

Rename this connection

View status of this connection

Change settings of this connection

⌵ ▢ ⓘ

Ethernet

Unidentified network

Realtek Gaming GbE Family Contr...

Properties

1 item

1 item selected

☰ ☐

Some Like It Hot

Network and Sharing Center

Network Connections

Control Panel > Network and Internet > Network Connections

Organize Disable this network device Diagnose this connection Rename this connection View status of this connection Change settings of this connection

Ethernet Properties

Networking

Connect using:
Realtek Gaming GbE Family Controller

Configure...

This connection uses the following items:

☒ Client for Microsoft Networks

☒ File and Printer Sharing for Microsoft Networks

☒ QoS Packet Scheduler

☒ Internet Protocol Version 4 (TCP/IPv4)

☐ Microsoft Network Adapter Multiplexor Protocol

☒ Microsoft LLDP Protocol Driver

☒ Internet Protocol Version 6 (TCP/IPv6)

Install... Uninstall Properties

Description
Allows your computer to access resources on a Microsoft network.

OK Cancel

1 item 1 item selected



Network and Sharing Center

Network Connections

Control Panel > Network and Internet > Network Connections

Organize this connection... Disable this network device... Diagnose this connection... Rename this connection... View status of this connection... Change settings of this connection

Ethernet Properties

Networking

1 item

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address:

Subnet mask:

Default gateway:

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

☐ Validate settings upon exit

Advanced...

OK

Cancel

Organize ▾

Disable this network device

Diagnose this connection

Rename this connection

View status of this connection

Change settings

Ethernet Properties

Networking

Connections

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IP address:

192 . 168 . 1 . 1

Subnet mask:

255 . 255 . 255 . 0

Default gateway:

192 . 168 . 1 . 2

☐ Obtain DNS server address automatically☒ Use the following DNS server addresses:

Preferred DNS server:

208 . 67 . 222 . 222

Alternate DNS server:

208 . 67 . 220 . 220

☐ Validate settings upon exit

Advanced...

OK

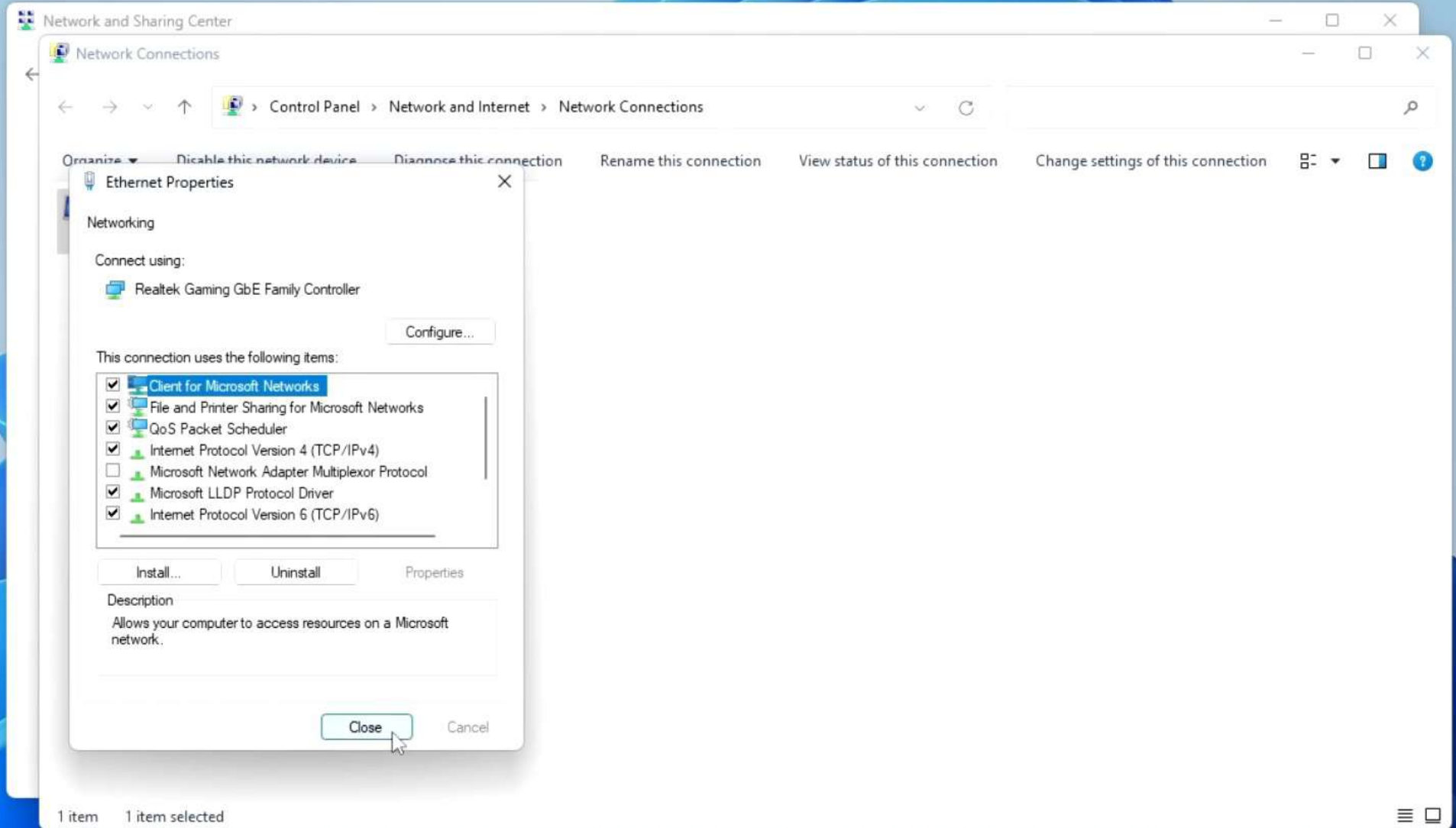
Cancel

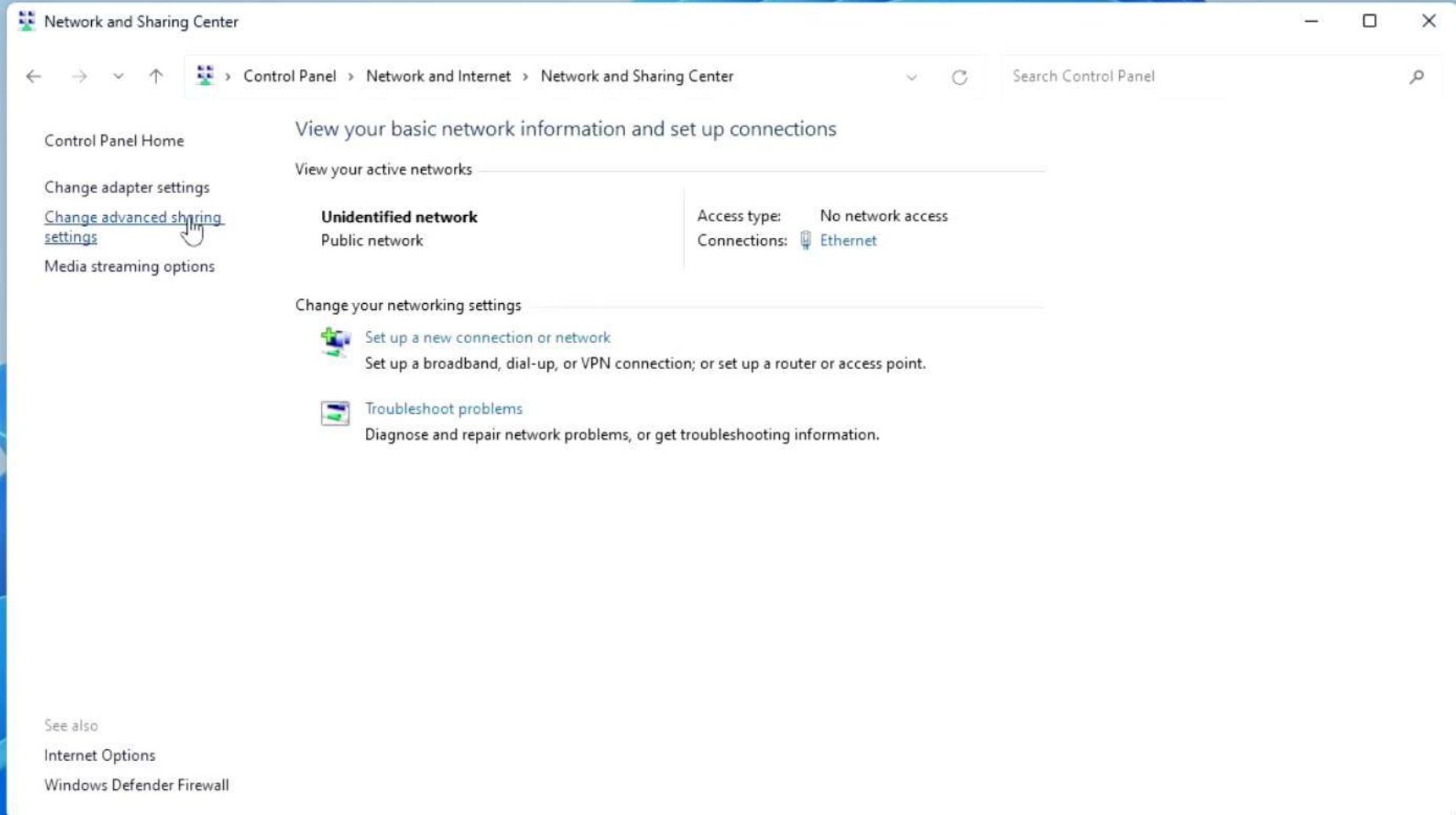
1 item



Some Like It
Hot

Some Like It Hot





Settings



ip Malik
ssd.chipmalik@outlook.com

Find a setting



System



Bluetooth & devices



Network & internet



Personalization



Apps



Accounts



Time & language



Gaming



Accessibility



Privacy & security



Windows Update

See also
Internet
Window

Advanced network settings > Advanced sharing settings

Private networks

Network discovery

Your PC can find and be found by other devices on the network

On



Set up network connected devices automatically

File and printer sharing

Allow others on the network to access shared files and printers on this device

Off

Public networks

Current profile

All networks



Get help



Give feedback

Settings



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Find a setting



System

Bluetooth & devices

Network & internet

Personalization

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[Get help](#)

[Give feedback](#)



Network

← →

Control

Change

Change settings


Media st

See also

Internet

Window

Settings



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Network & internet

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Find a setting

- System
- Bluetooth & devices
- Network & internet**
- Personalization
- Apps
- Accounts
- Time & language
- Gaming
- Accessibility
- Privacy & security
- Windows Update

Advanced network settings > Advanced sharing settings

Private networks

Public networks

Current profile

All networks

Public folder sharing

Allow others on the network to read and write files in Public folders

On

File sharing connections

Use 128-bit encryption for devices that support it

128-bit encryption (Recommended)

Password protected sharing

Only people who have a user account and password on this PC can access shared files, printers, and Public folders

On

Get help

Give feedback



Network

← →

Control Panel

Change settings


Media

See also

Internet

Window

Settings



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Find a setting

System

Bluetooth & devices

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Personalization

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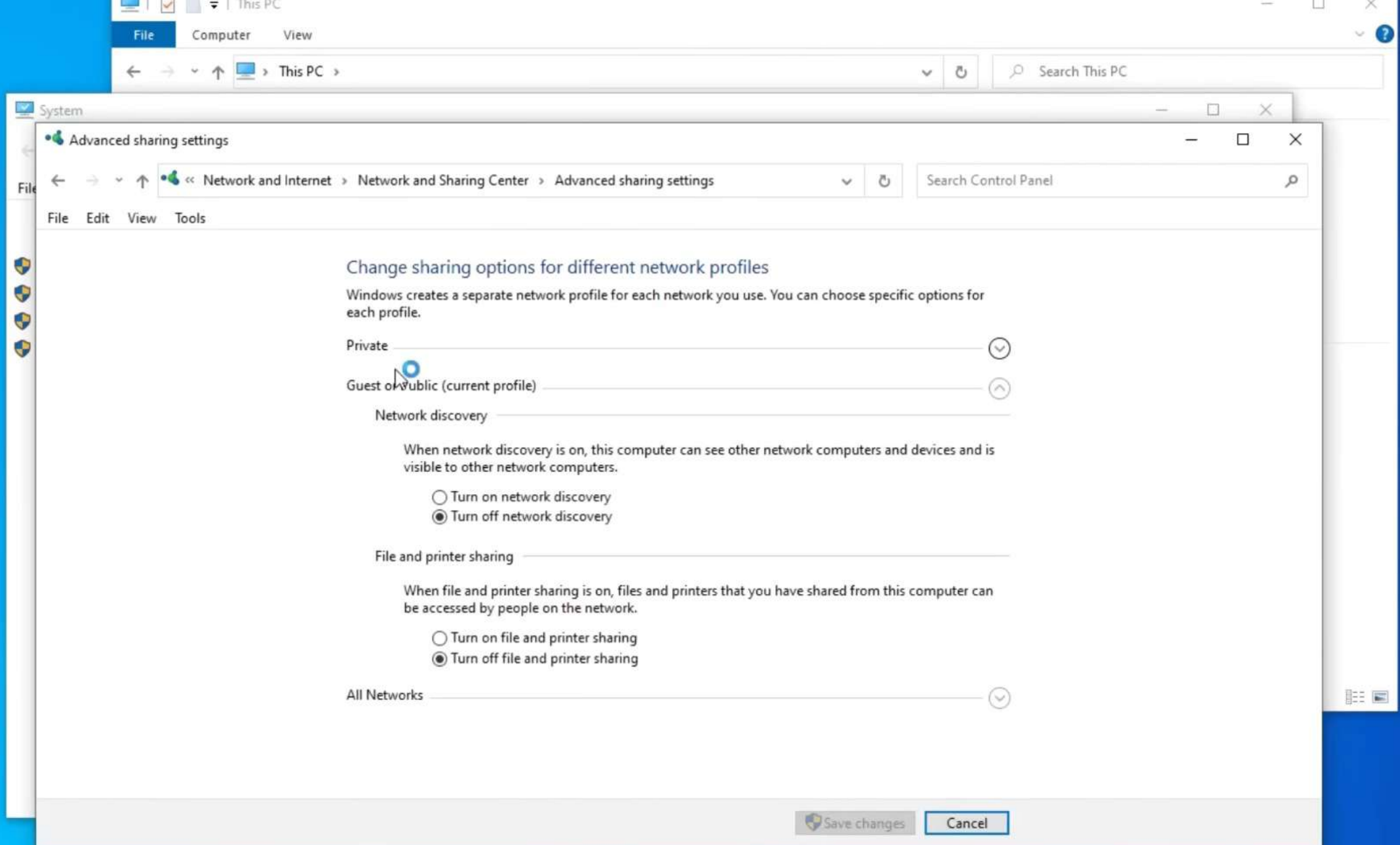
Password protected sharing

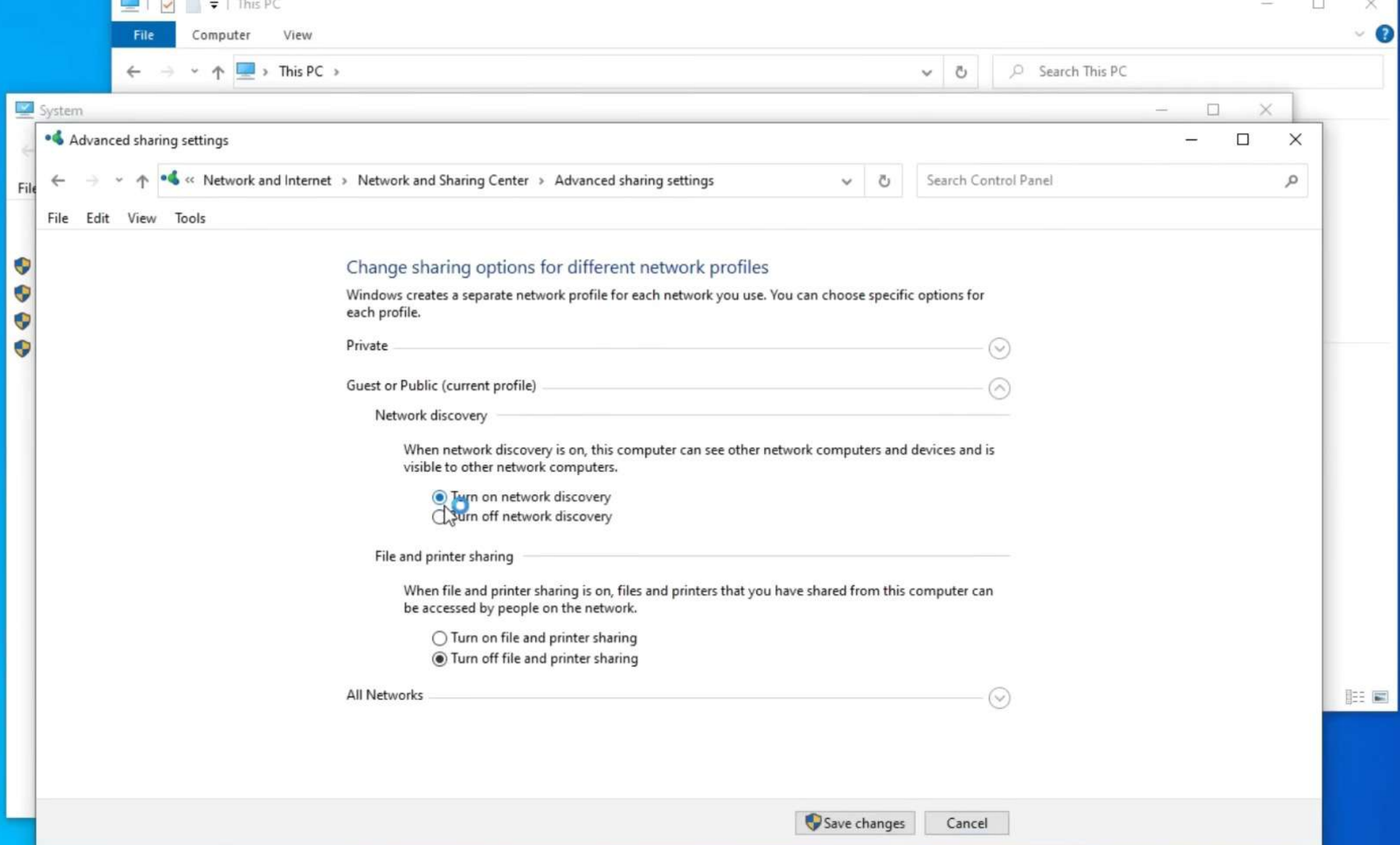
Only people who have a user account and password on this PC can access shared files, printers, and Public folders

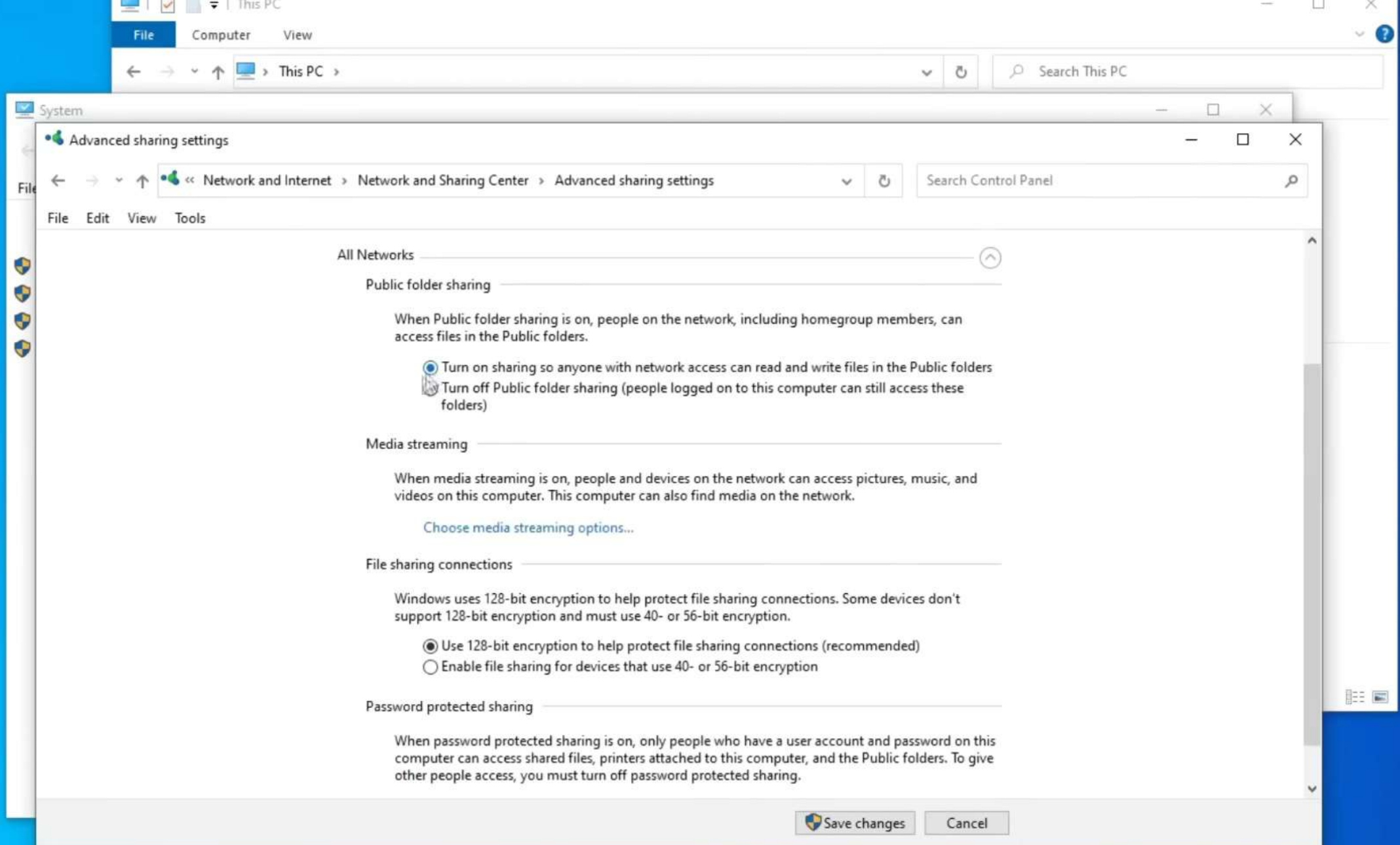
Off

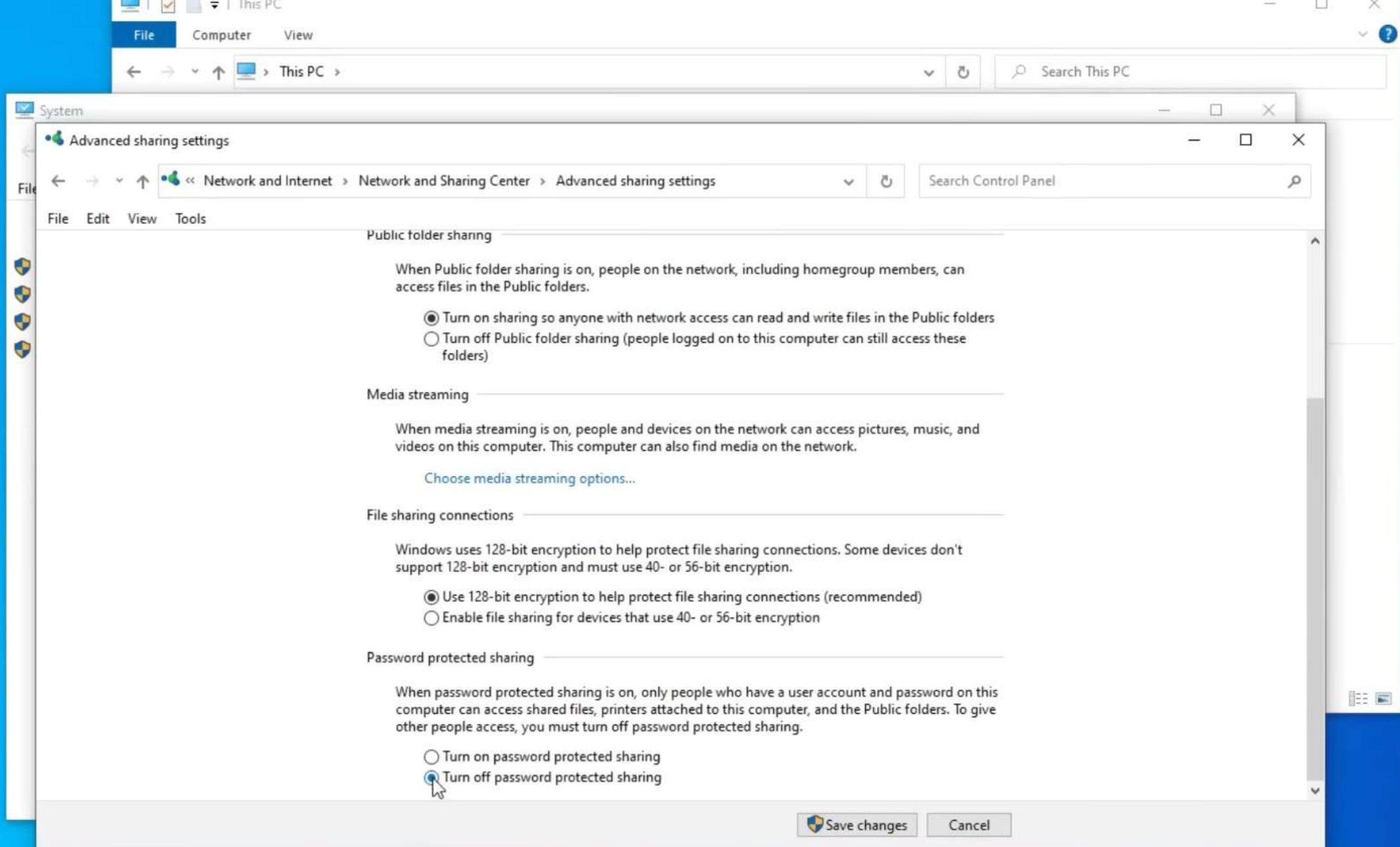
Get help

Give feedback

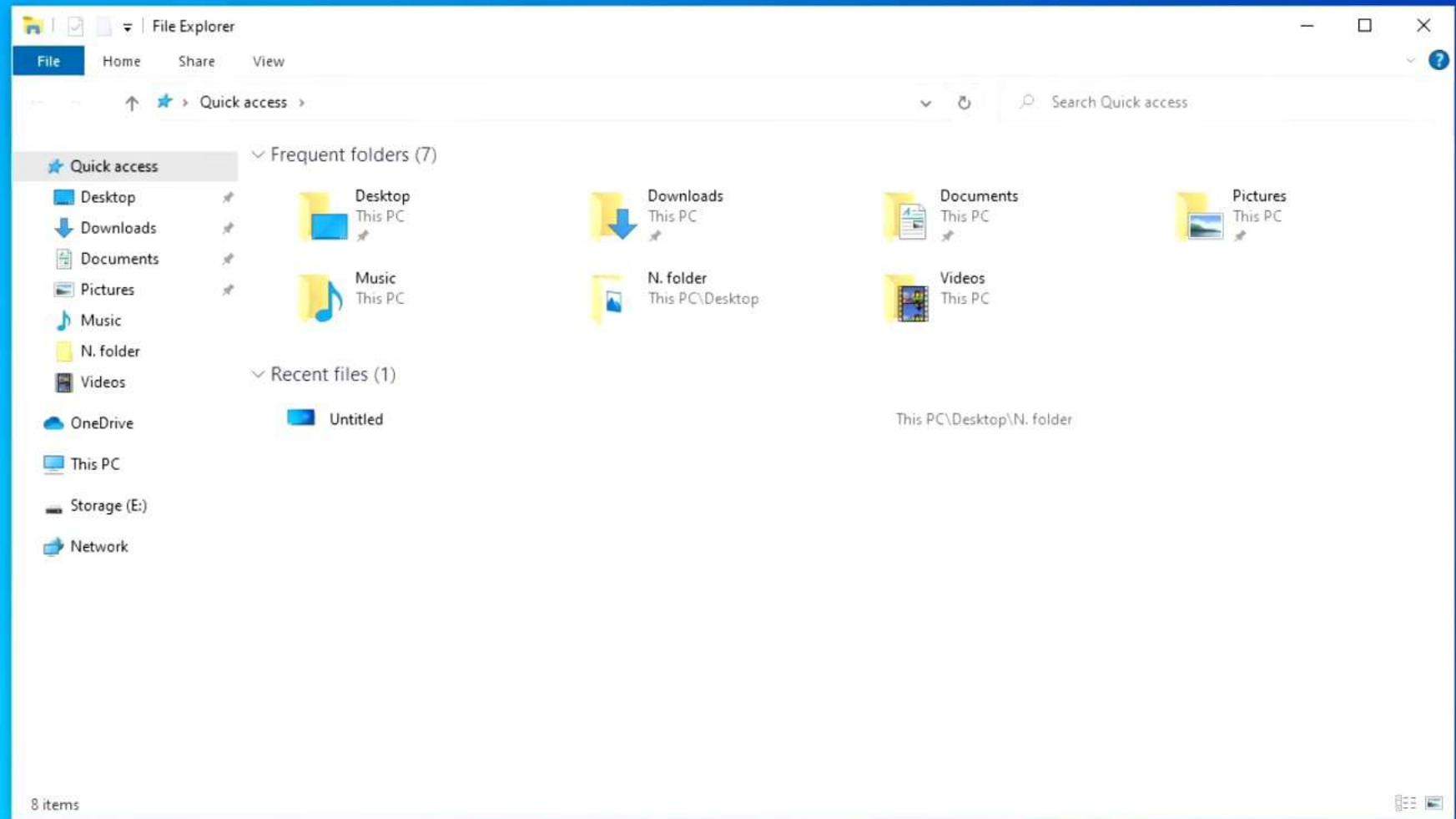


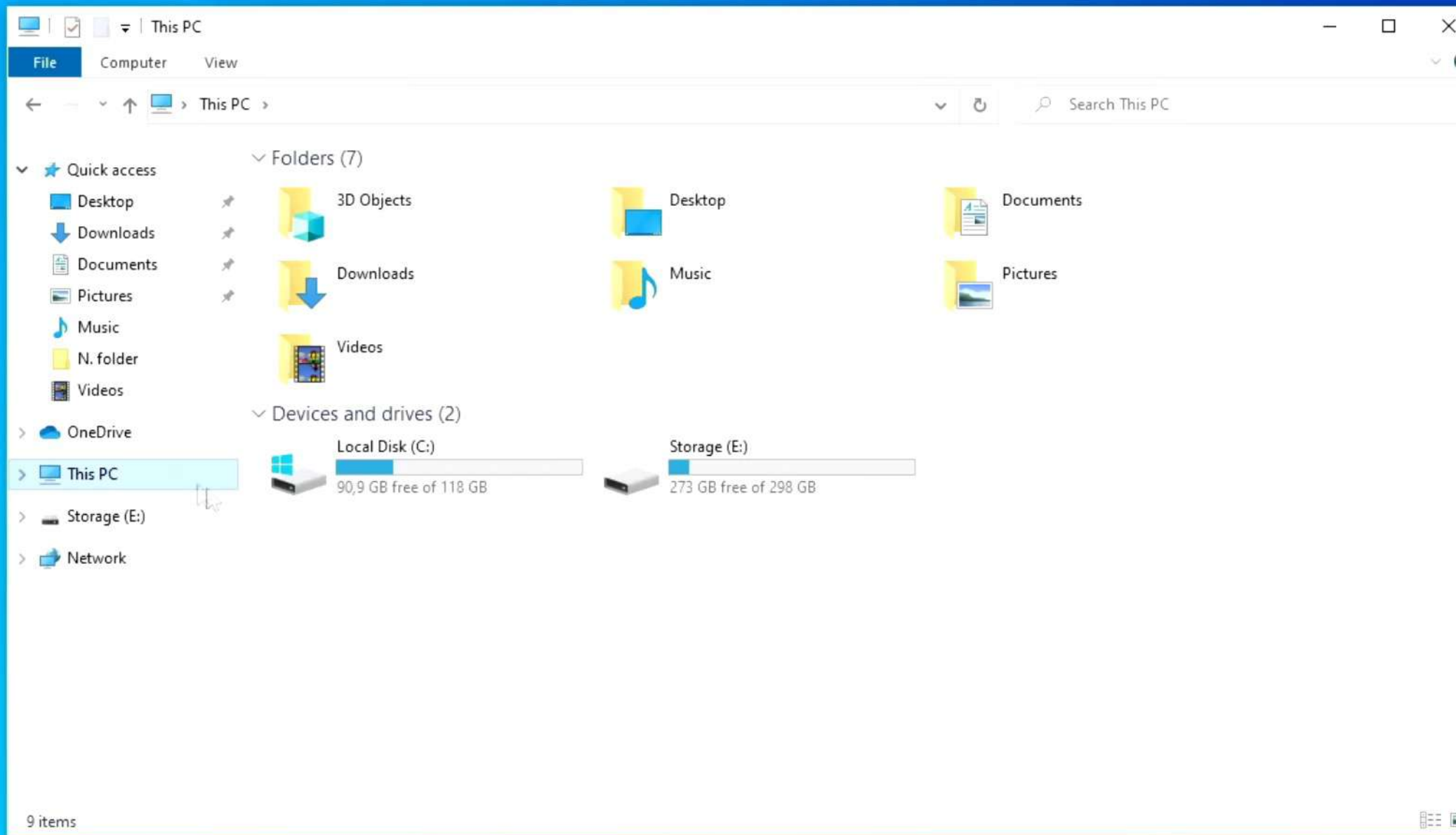


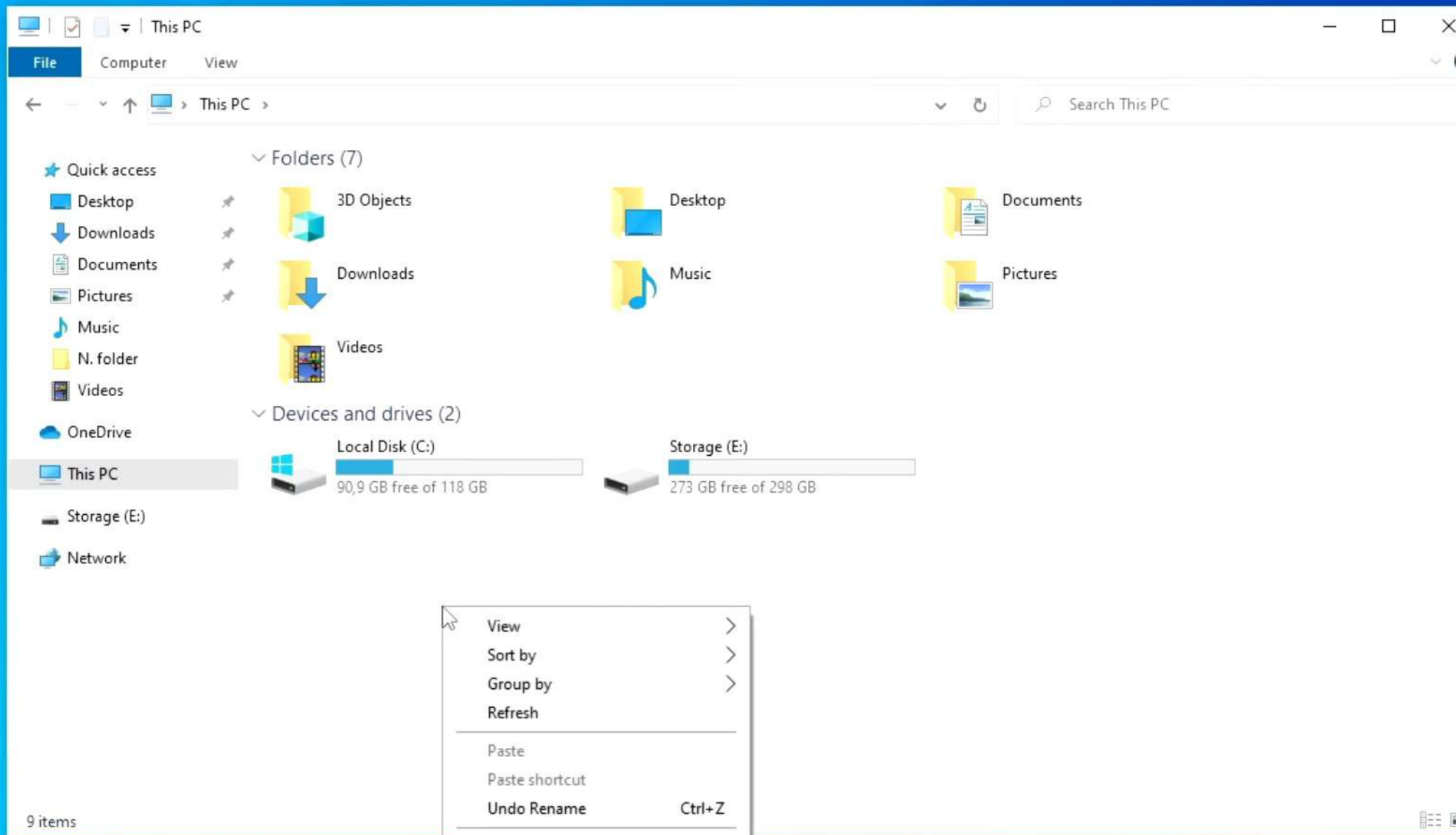




computer
PC-2







- View >
- Sort by >
- Group by >
- Refresh
- Paste
- Paste shortcut
- Undo Rename Ctrl+Z
- Add a network location
- Properties

System

Control Panel > System and Security > System

File Edit View Tools


Control Panel Home

- Device Manager
- Remote settings
- System protection
- Advanced system settings

View basic information about your computer

Windows edition


Windows 10 Pro
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System


Processor:	Intel(R) Core(TM) i5-4440 CPU @ 3.10GHz 3.10 GHz
Installed memory (RAM):	16,0 GB
System type:	64-bit Operating System, x64-based processor
Pen and Touch:	No Pen or Touch Input is available for this Display

Computer name, domain, and workgroup settings

Computer name:	DESKTOP-E0CHRQL	 Change settings
Full computer name:	DESKTOP-E0CHRQL	
Computer description:		
Workgroup:	WORKGROUP	

Windows activation

Windows is activated [Read the Microsoft Software License Terms](#)

Product ID: 00330-80000-00000-AA796  [Change product key](#)

See also

Security and Maintenance

System

Control Panel > System and Security > System

File Edit View Tools

Control Panel Home

- Device Manager
- Remote settings
- System protection
- Advanced system settings

View basic information

Windows edition

Windows 10 Pro

© Microsoft Corporation

System

Processor:

Installed memory:

System type:

Pen and Touch:

Computer name, domain, and workgroup

Computer name:

Full computer name:

Computer description:

Workgroup:

Windows activation

Windows is activated

Product ID: 00330-80000-00000-AA796

System Properties

Computer Name Hardware Advanced System Protection Remote

Windows uses the following information to identify your computer on the network.

Computer description:

For example: "Kitchen Computer" or "Mary's Computer".

Full computer name: DESKTOP-E0CHRQL

Workgroup: WORKGROUP

To use a wizard to join a domain or workgroup, click Network ID.

Network ID...

To rename this computer or change its domain or workgroup, click Change.

Change...

OK Cancel Apply

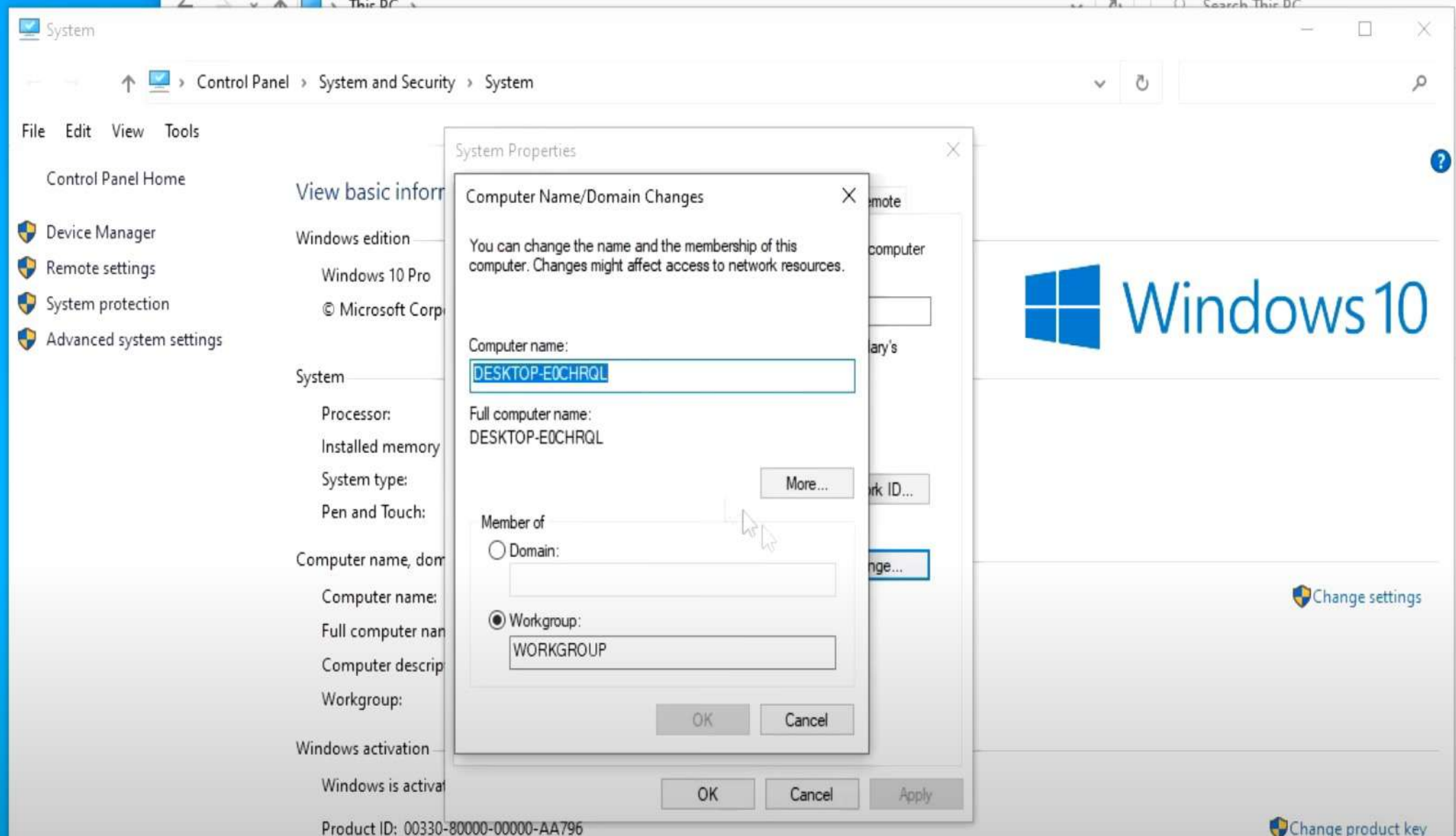
Windows 10

Change settings

Change product key

See also

Security and Maintenance



System

Control Panel > System and Security > System

File Edit View Tools

Control Panel Home

- Device Manager
- Remote settings
- System protection
- Advanced system settings

View basic information

Windows edition

Windows 10 Pro

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System

Processor:

Installed memory:

System type: [More...](#)

Pen and Touch:

Computer name, domain, and workgroup settings

Computer name: PC-2

Full computer name: PC-2

Computer description:

Workgroup: WORKGROUP

Windows activation

Windows is activated

Product ID: 00330-80000-00000-AA796

System Properties

Computer Name/Domain Changes

You can change the name and the membership of this computer. Changes might affect access to network resources.

Computer name: PC-2

Full computer name: PC-2

More...

Member of

☐ Domain:

☒ Workgroup: WORKGROUP

OK Cancel

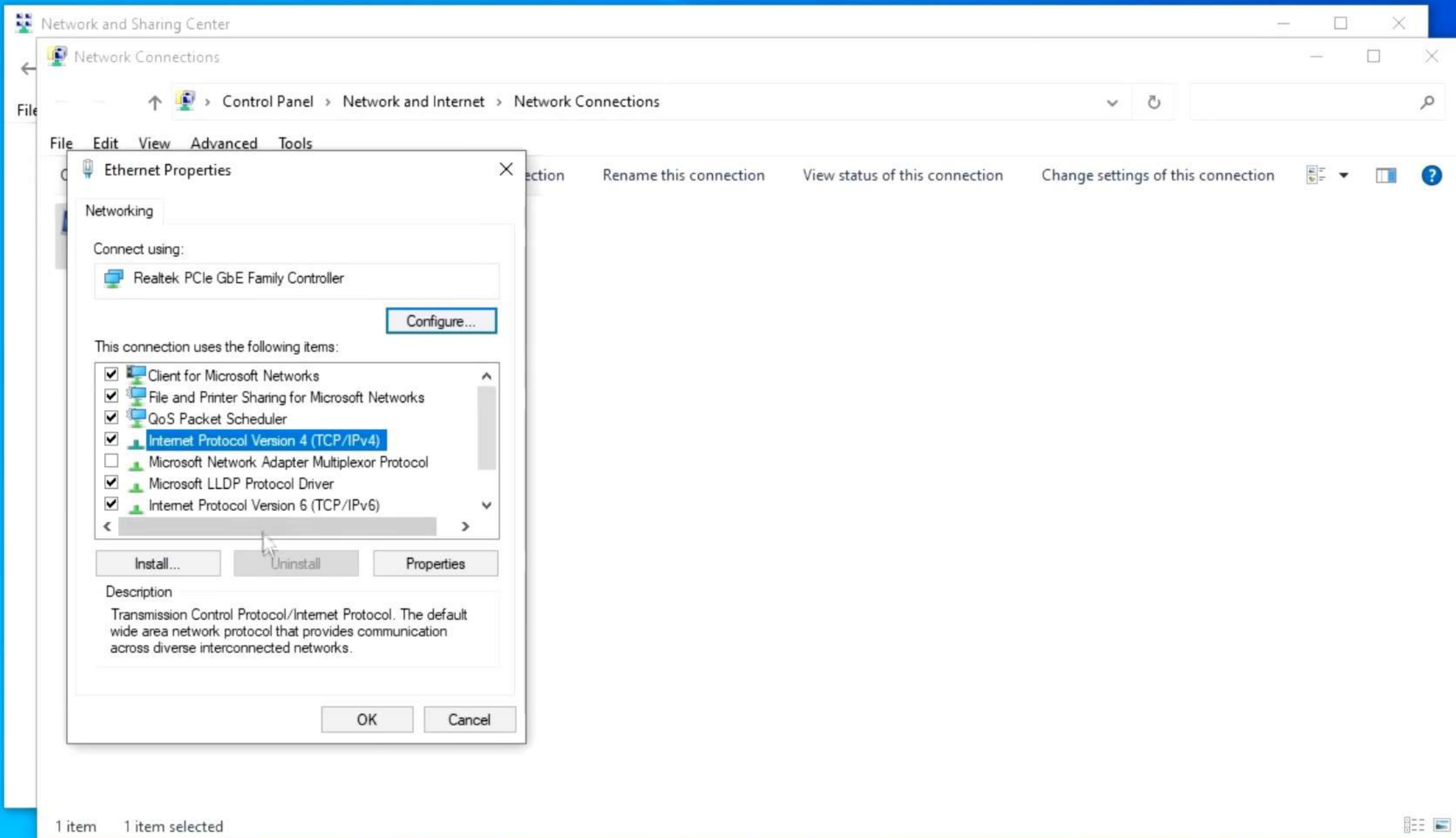


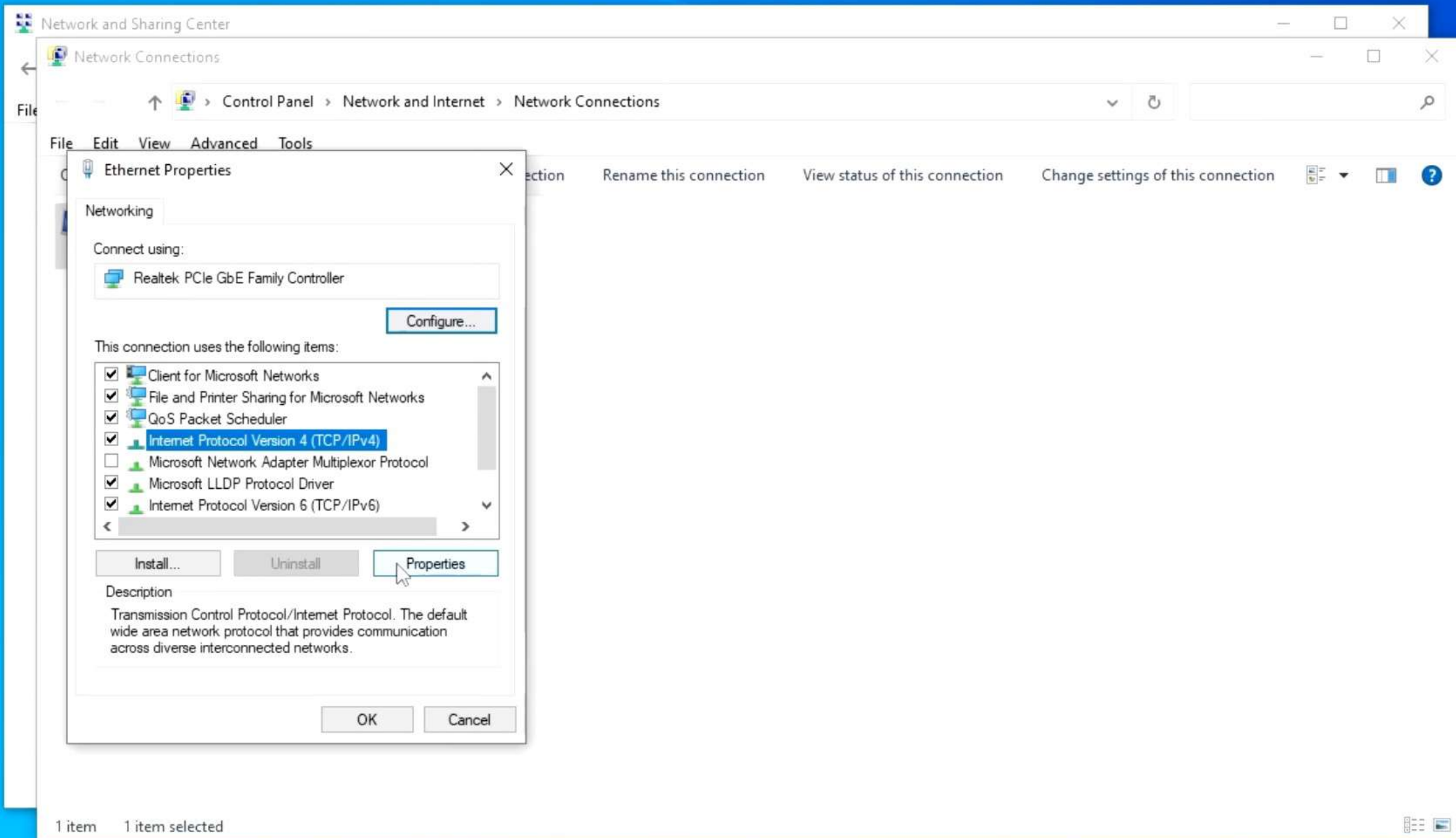
[Change settings](#)

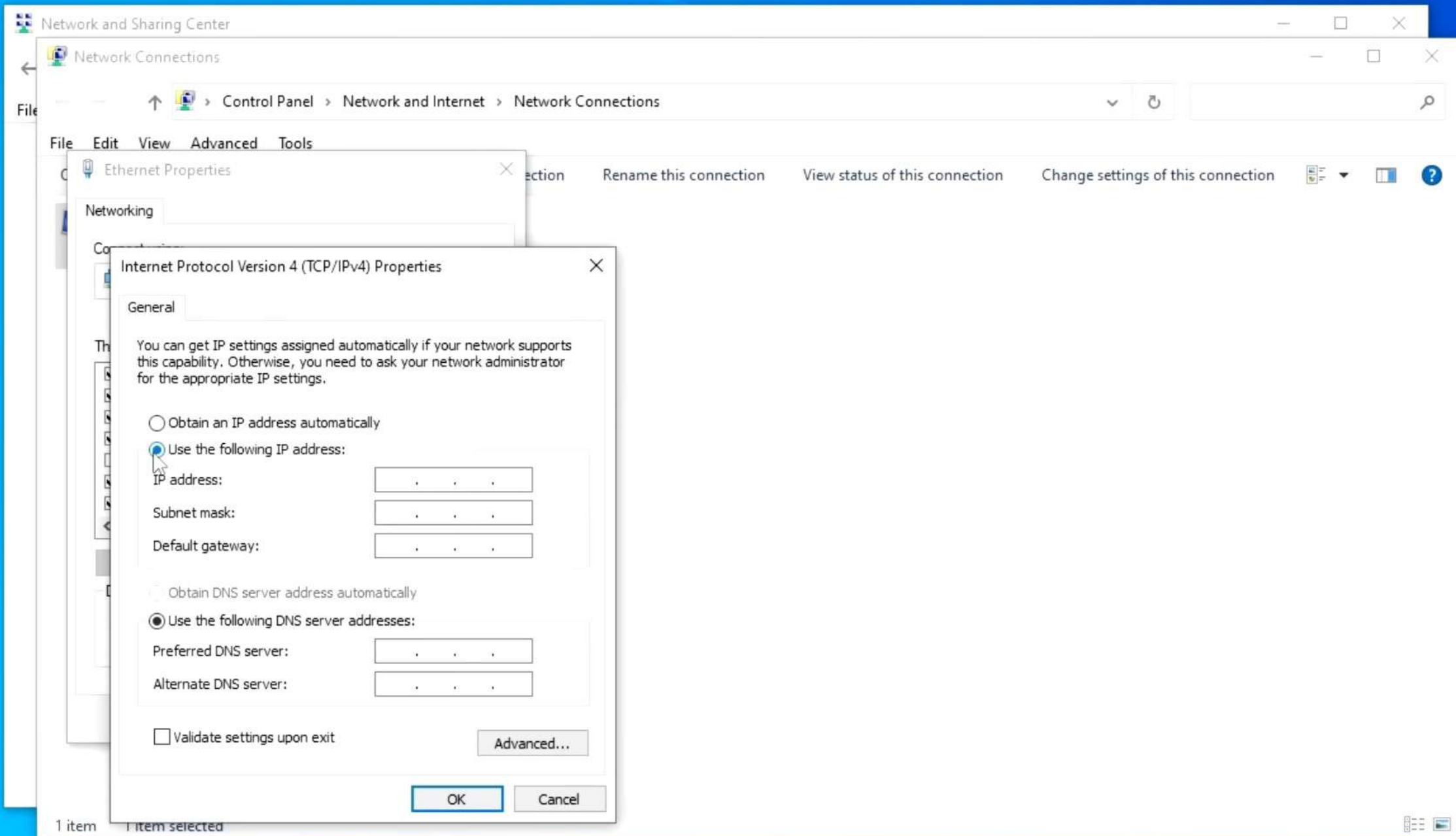
[Change product key](#)

See also

Security and Maintenance







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Alternate DNS server:

208 . 67 . 220 . 220

☐ Validate settings upon exit

Advanced...

OK

Cancel

Change sharing options for different network profiles

Windows creates a separate network profile for each network you use. You can choose specific options for each profile.

Private (current profile) _____ (^)

Network discovery _____

When network discovery is on, this computer can see other network computers and devices and is visible to other network computers.

☒ Turn on network discovery

☒ Turn on automatic setup of network connected devices.

☐ Turn off network discovery

File and printer sharing _____

When file and printer sharing is on, files and printers that you have shared from this computer can be accessed by people on the network.

☐ Turn on file and printer sharing

☒ Turn off file and printer sharing

Guest or Public _____ (v)

All Networks _____ (v)

Save changes

Cancel

Change sharing options for different network profiles

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Private (current profile) 

Guest or Public 

All Networks 

 Save changes

Cancel

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Guest or Public

All Networks

Save changes

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☐ Turn off file and printer sharing

All Networks 

 Save changes

Cancel

File Edit View Tools

Public folder sharing

When Public folder sharing is on, people on the network, including homegroup members, can access files in the Public folders.

- ☒ Turn on sharing so anyone with network access can read and write files in the Public folders
- ☐ Turn off Public folder sharing (people logged on to this computer can still access these folders)

Media streaming

When media streaming is on, people and devices on the network can access pictures, music, and videos on this computer. This computer can also find media on the network.

[Choose media streaming options...](#)

File sharing connections

Windows uses 128-bit encryption to help protect file sharing connections. Some devices don't support 128-bit encryption and must use 40- or 56-bit encryption.

- ☒ Use 128-bit encryption to help protect file sharing connections (recommended)
- ☐ Enable file sharing for devices that use 40- or 56-bit encryption

Password protected sharing

When password protected sharing is on, only people who have a user account and password on this computer can access shared files, printers attached to this computer, and the Public folders. To give other people access, you must turn off password protected sharing.

- ☒ Turn on password protected sharing
- ☐ Turn off password protected sharing

 Save changes

Cancel

File Edit View Tools

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 Save changes

Cancel

File Edit View Tools

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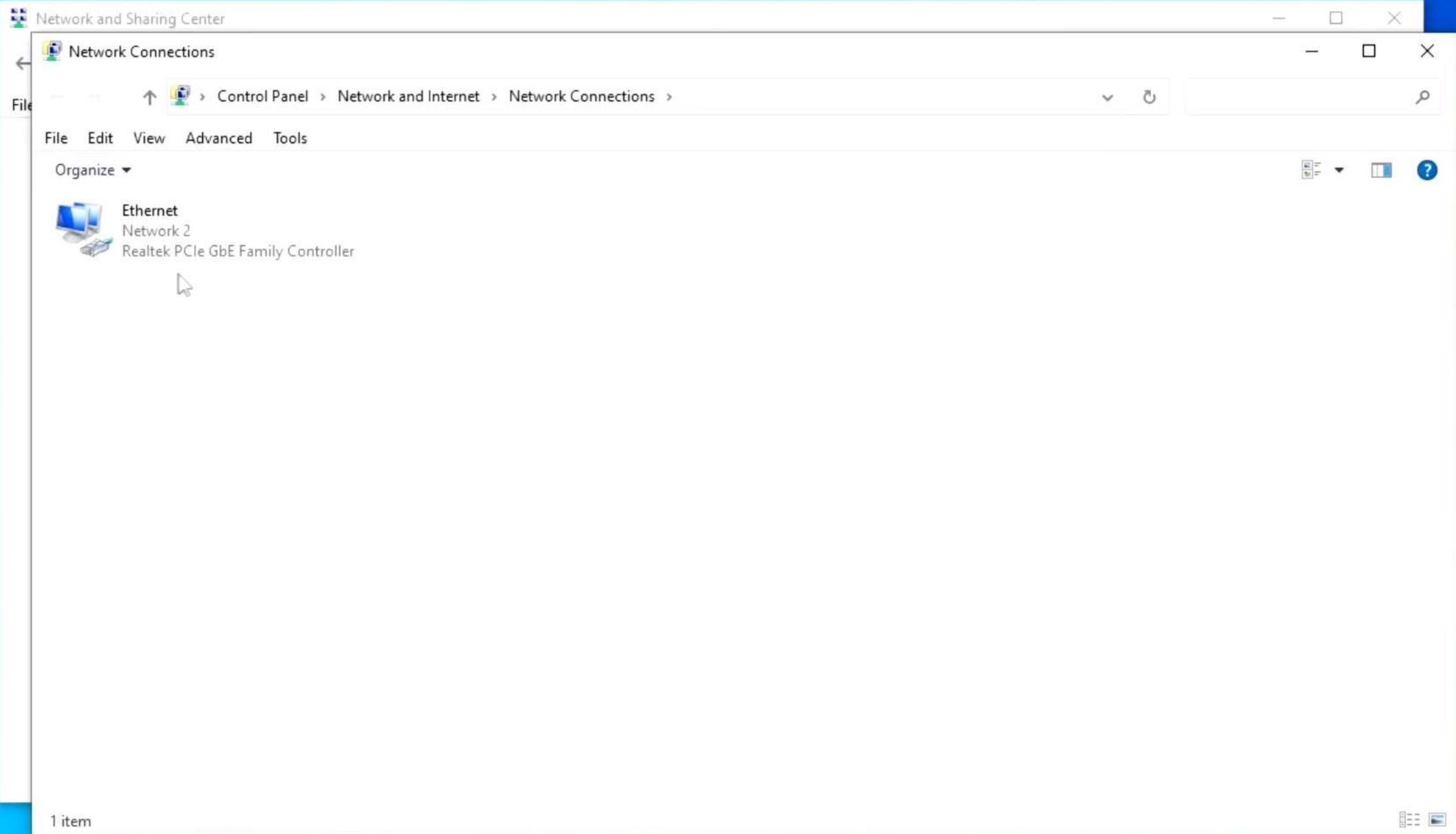
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- ☐ Turn on password protected sharing
- ☒ Turn off password protected sharing

 Save changes

Cancel







Apps and Features

Power Options

Event Viewer

System

Device Manager

Network Connections

Disk Management

Computer Management

Windows PowerShell

Windows PowerShell (Admin)

Task Manager

Settings

File Explorer

Search

Run

Shut down or sign out >

Desktop

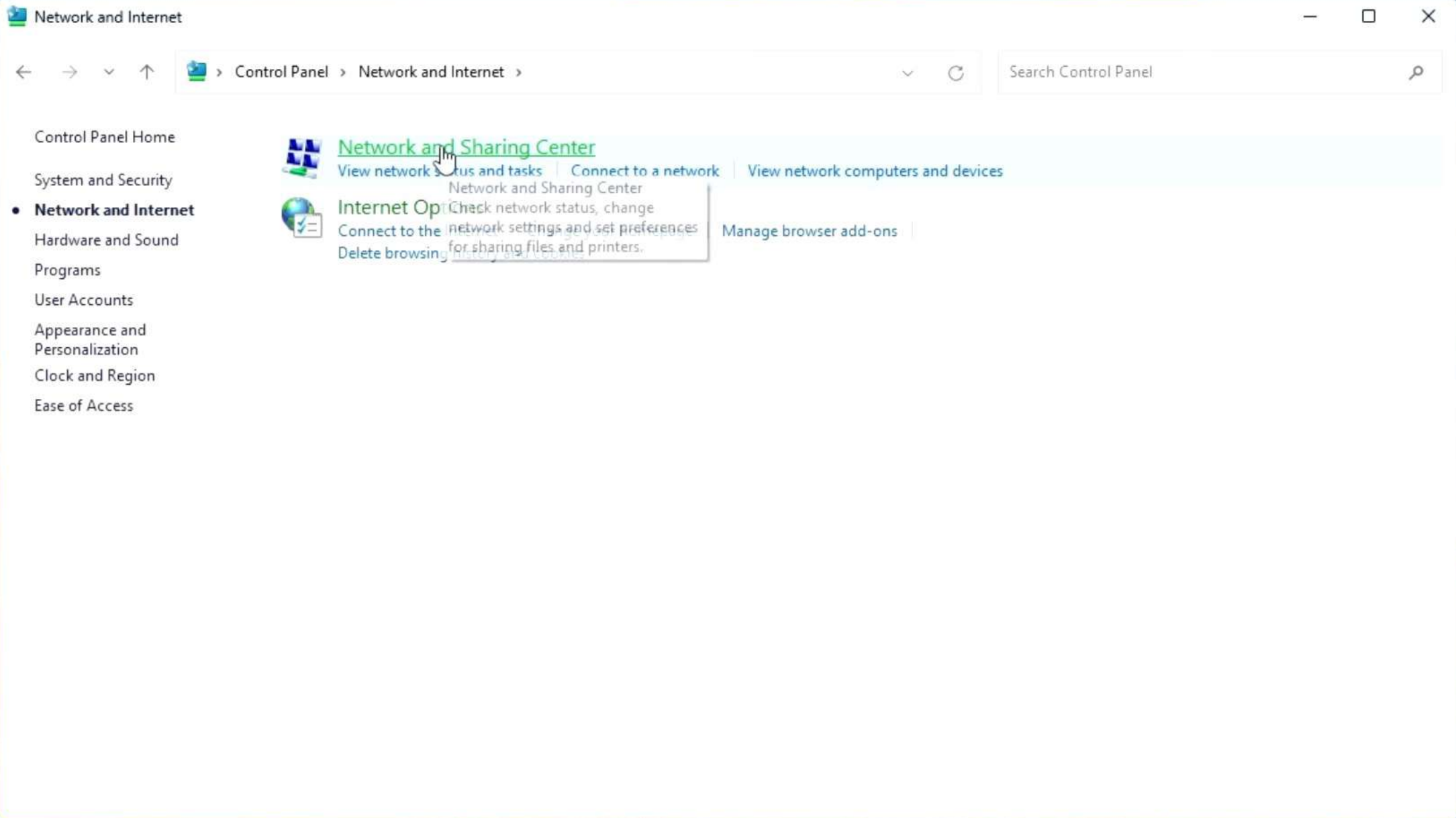
Sign out

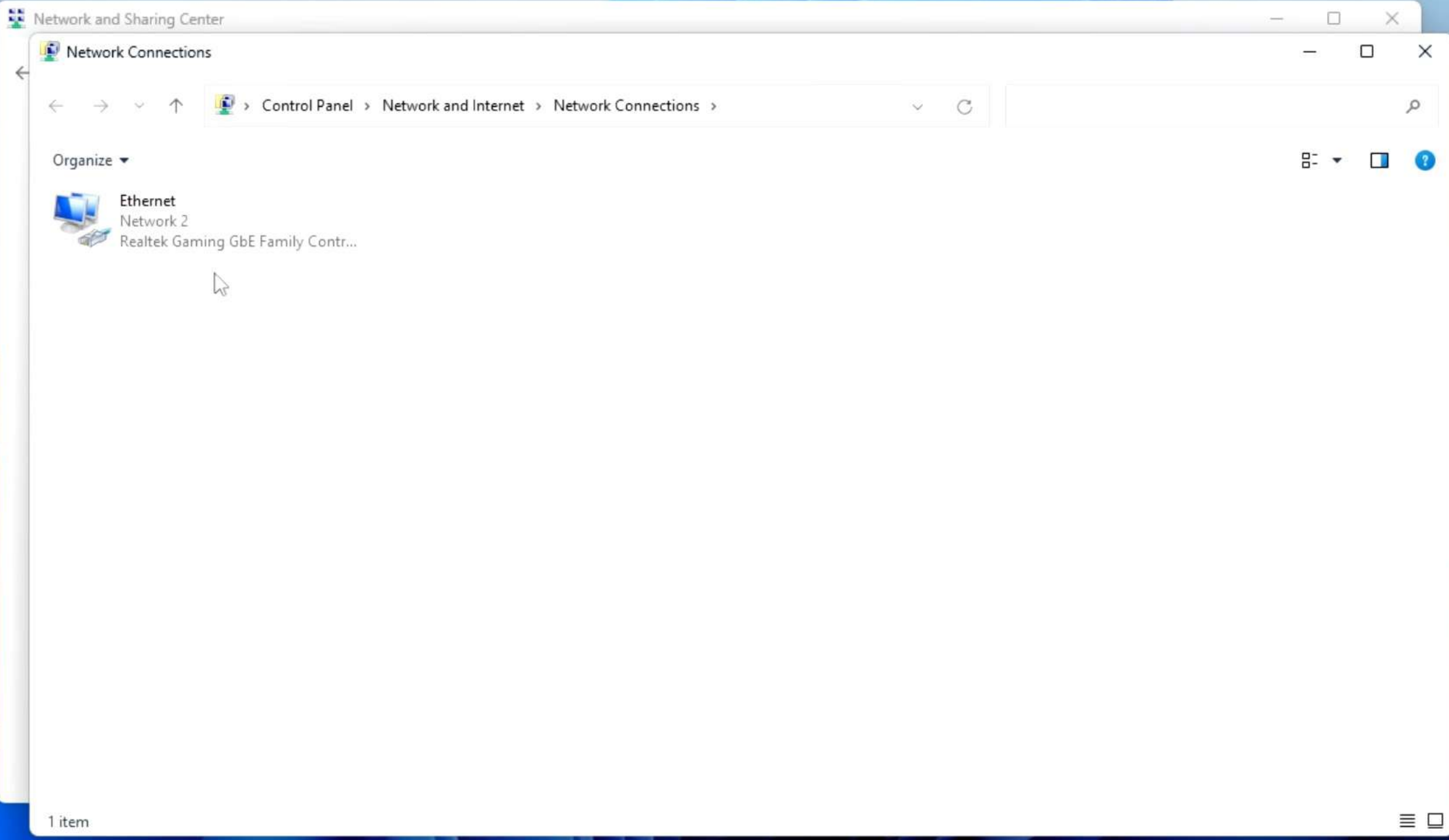
Sleep

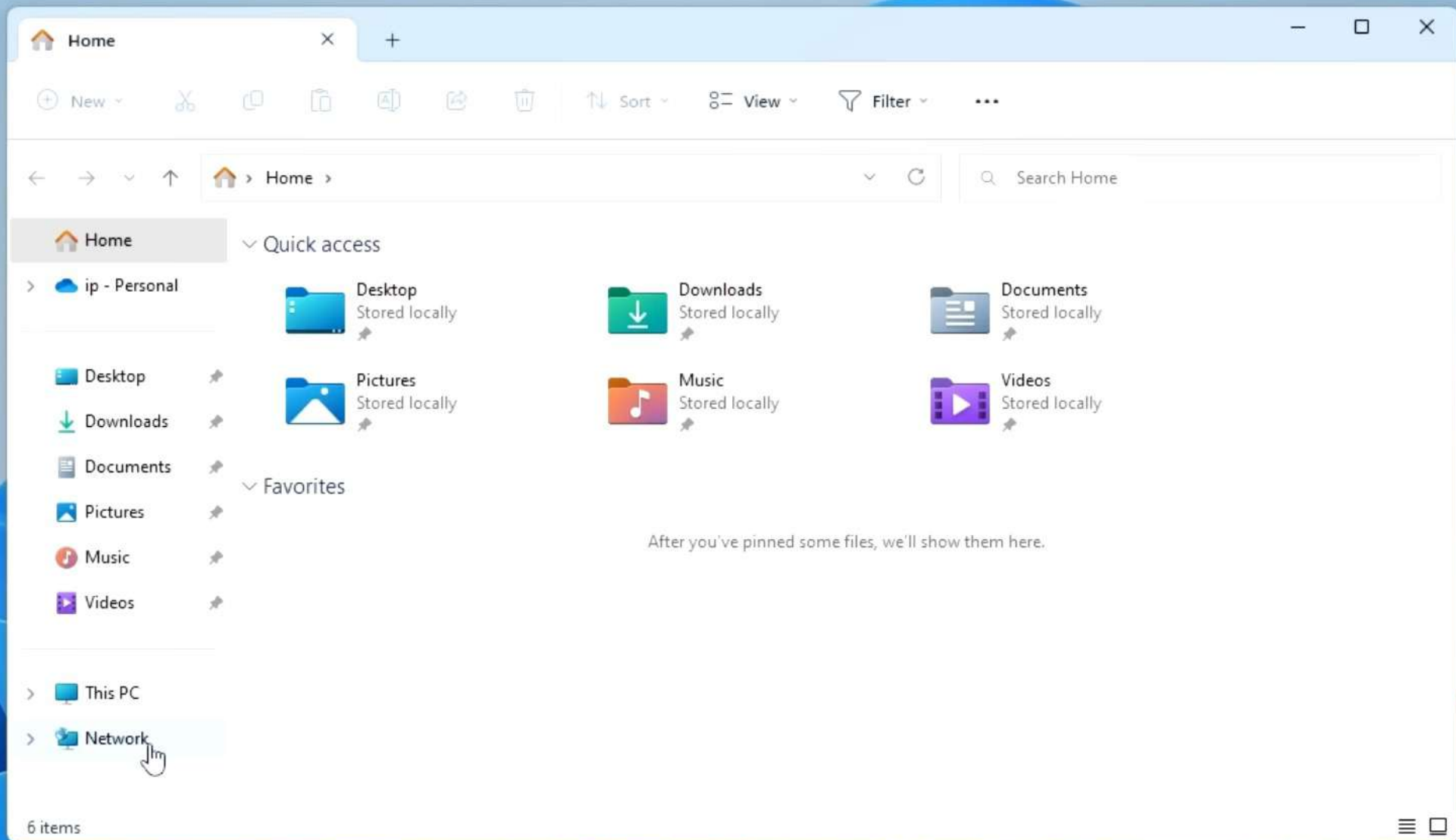
Shut down

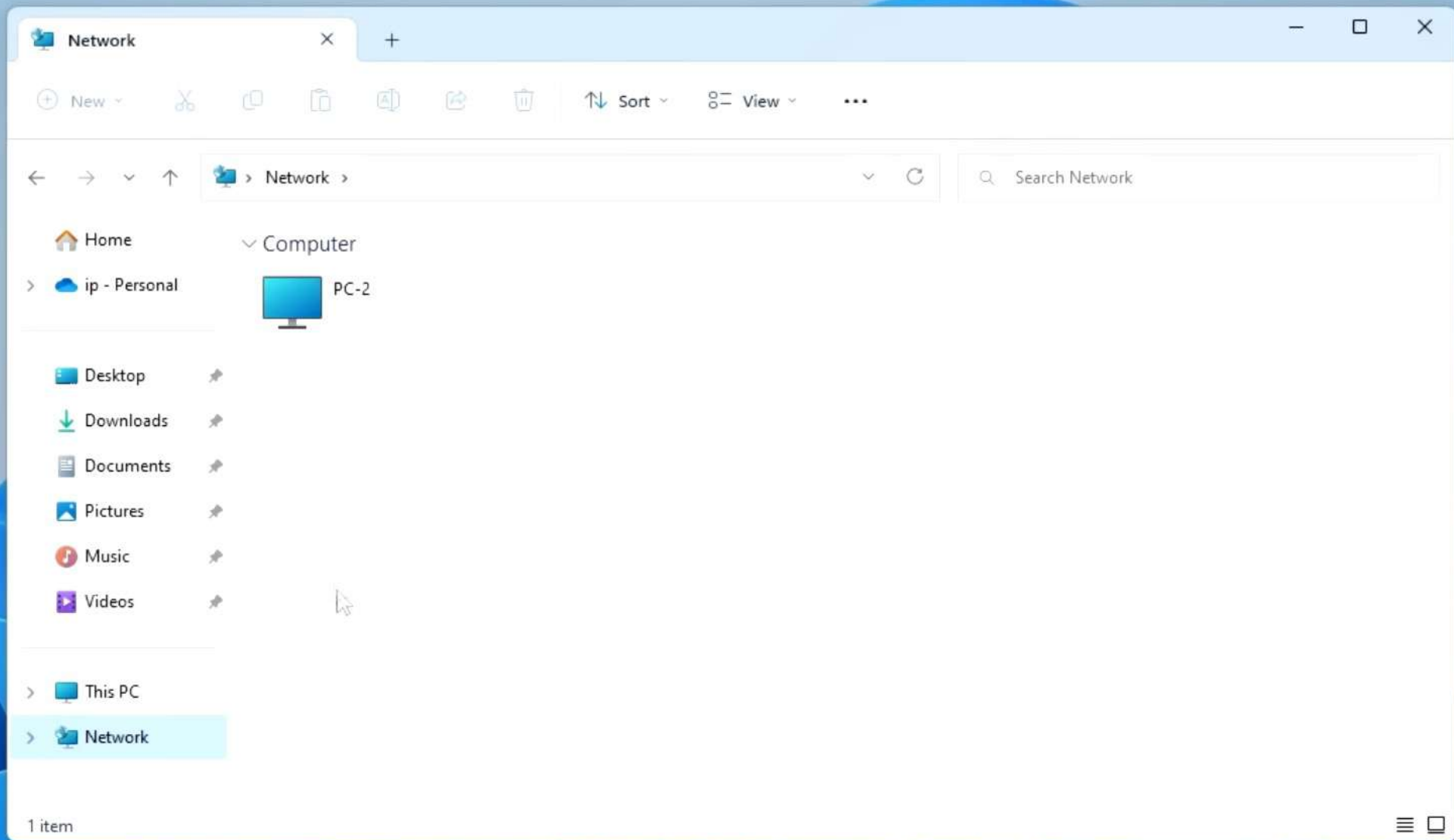
Restart











- This PC
- Storage (D:)
- N: folder
- HPUSB Disk
- Document
- MiniTool Video Converter
- Foto
- video
- OBS Studio
- rufus-3.21



View

Sort by

Refresh

Undo Delete

New

Display settings

Personalize

Open in Terminal

Show more options

Ctrl+Z

Shift+F10

Folder

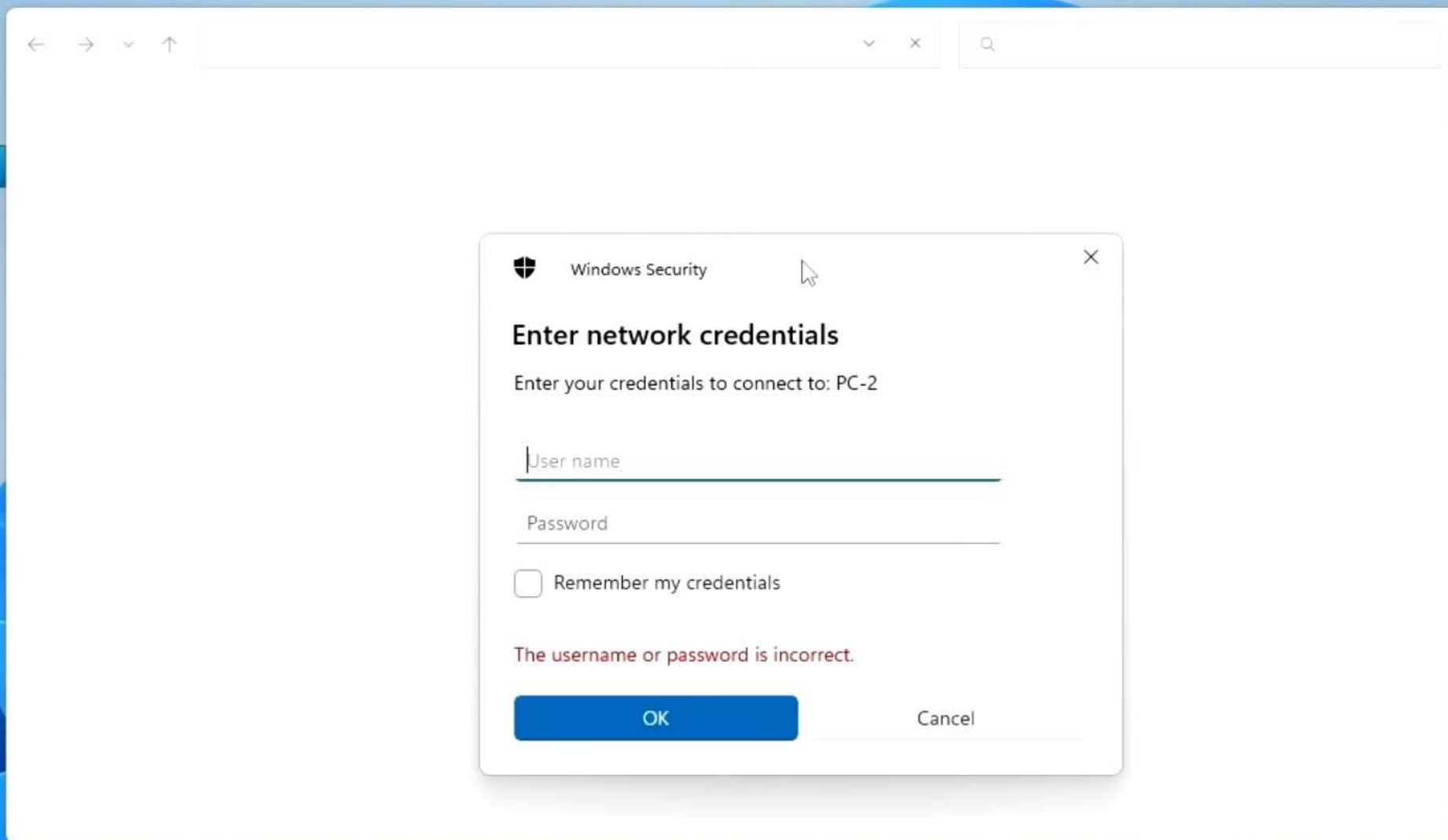
Shortcut

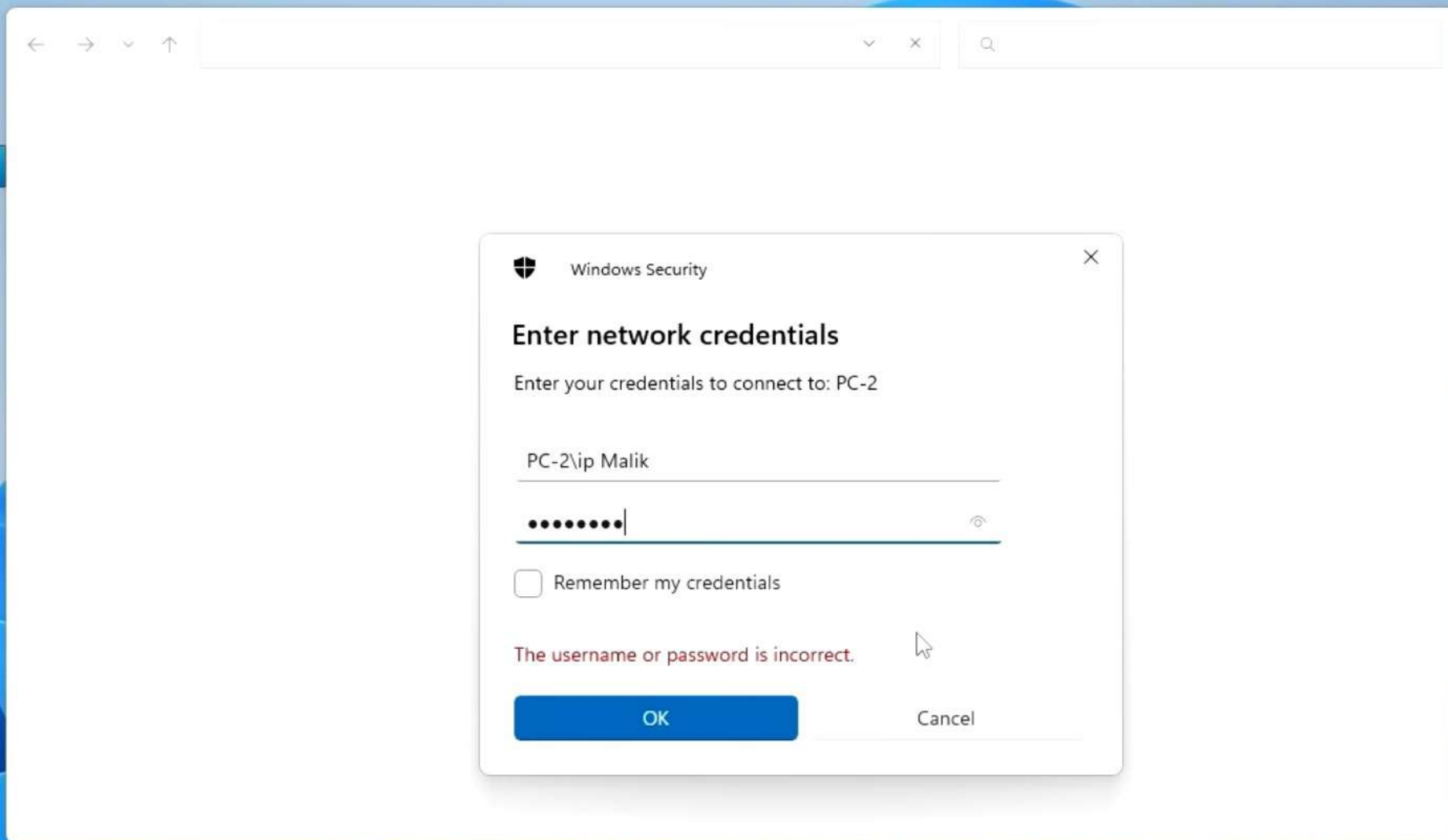
Bitmap image

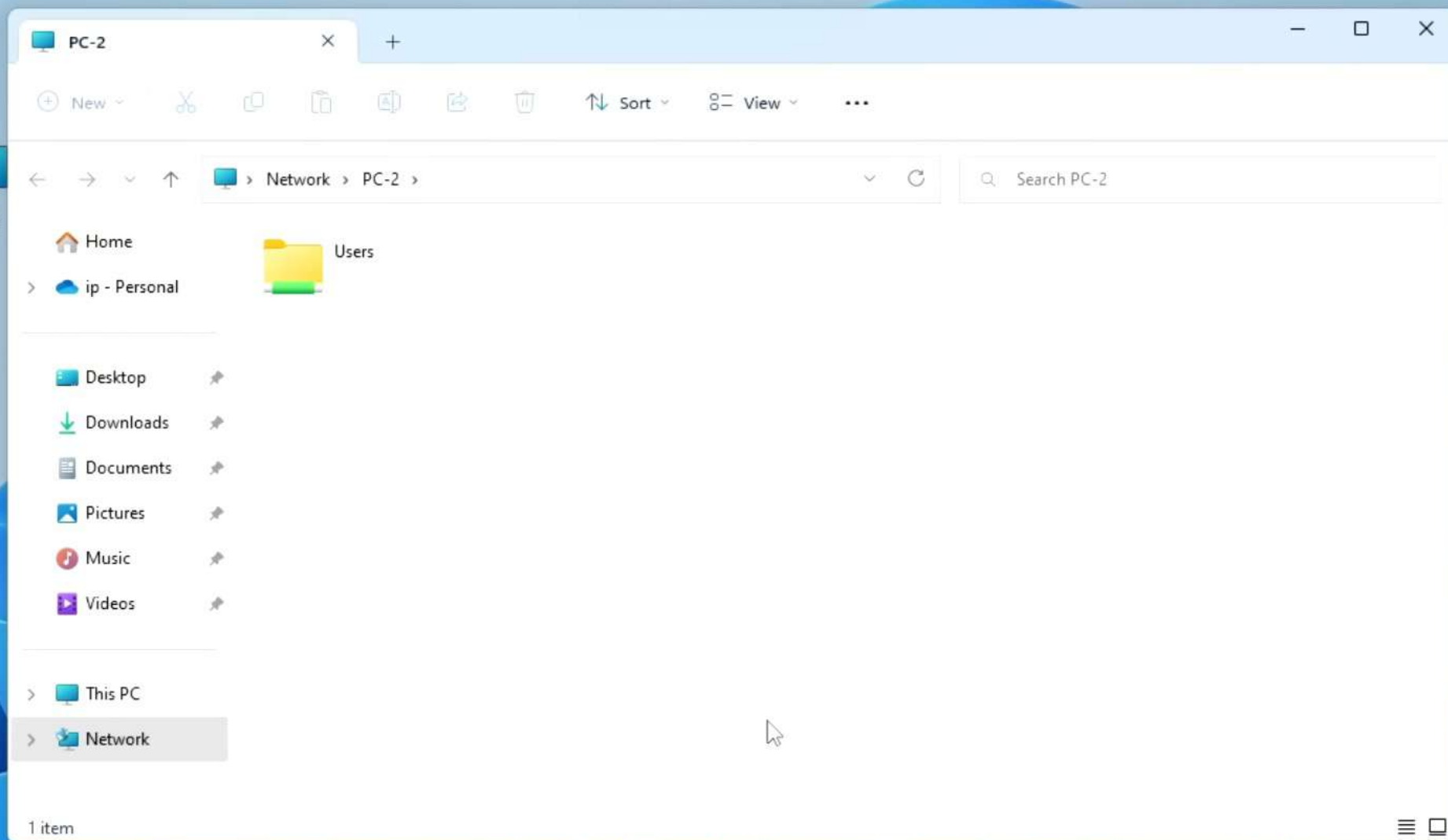
Text Document

Compressed (zipped) Folder









Conclusion and next steps

Congratulations! You're now equipped with the knowledge to create your own LAN. Explore further networking technologies like switches and routers to expand your network capabilities.

THANK YOU