System & Network Administration

Assignment 2

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Q#1 (5 Marks)

Access a remote computer using any three different remote access tools (e.g., TeamViewer, AnyDesk, Windows Remote Desktop).
- Explain the setup process for each tool.
- Provide screenshots showing connection steps.
- Compare their features (security, ease of use, performance).

ANYDESK:

Step 1: Download

- Go to official website
- Download AnyDesk on both computers

Step 2: Install / Run

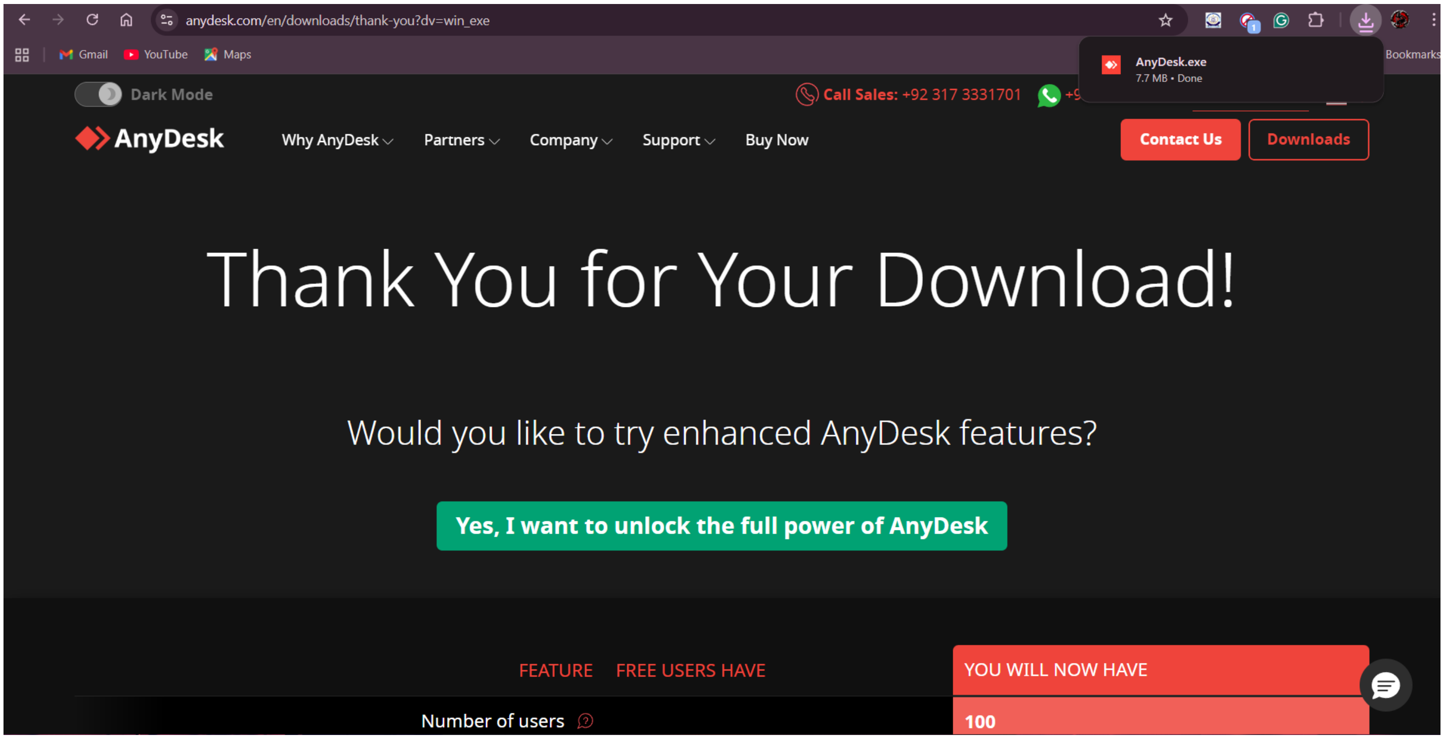
- You can run it directly (portable)
- Or install normally

Step 3: Get Remote ID

- Open AnyDesk on remote PC
- You will see “Your Address” (ID number)

Step 4: Connect

- On your PC:
  - Enter remote computer's ID
  - Click Connect
- Remote user clicks Accept

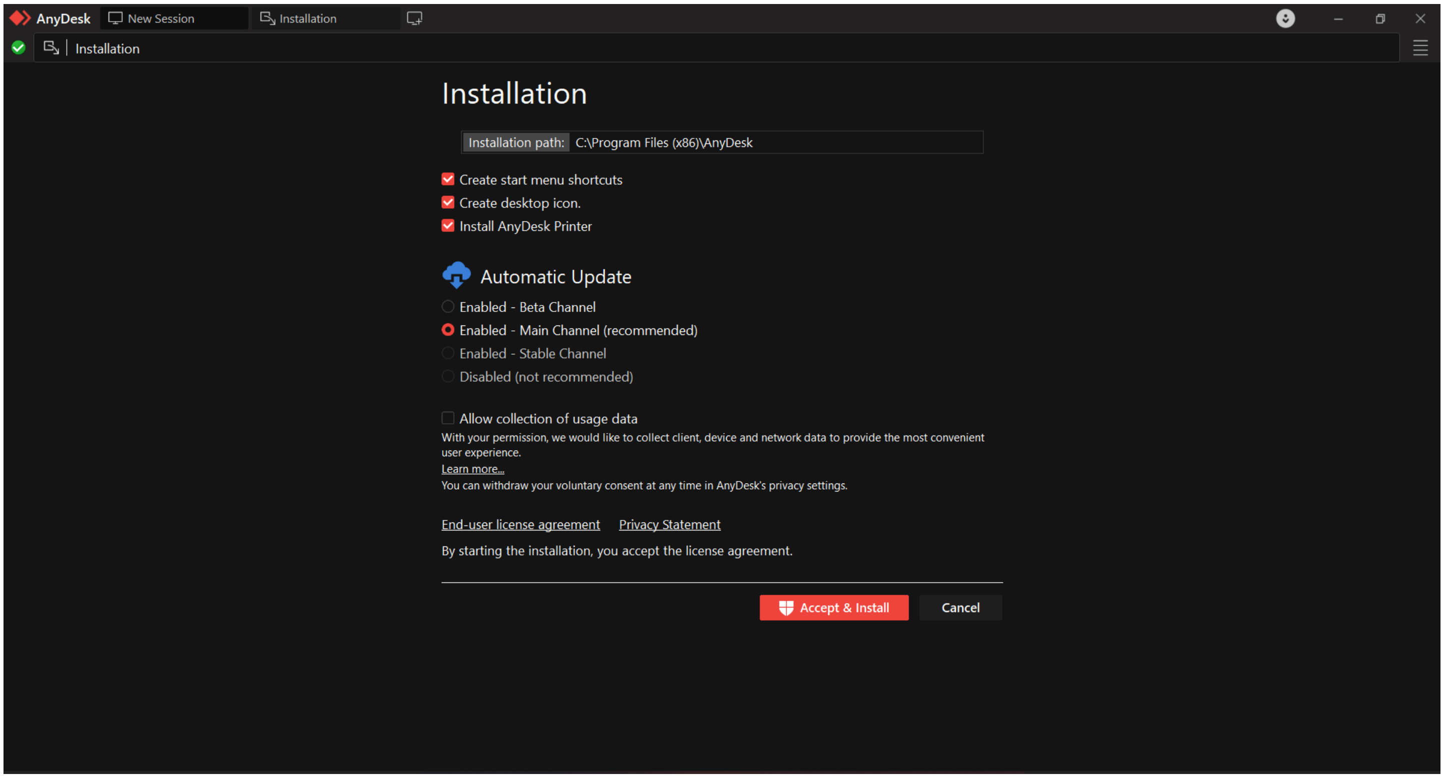


Thank You for Your Download!

Would you like to try enhanced AnyDesk features?

Yes, I want to unlock the full power of AnyDesk

FEATURE	FREE USERS HAVE	YOU WILL NOW HAVE
Number of users		100



Installation

Installation path: C:\Program Files (x86)\AnyDesk

☑ Create start menu shortcuts
☑ Create desktop icon.
☑ Install AnyDesk Printer

Automatic Update

○ Enabled - Beta Channel
● Enabled - Main Channel (recommended)
○ Enabled - Stable Channel
○ Disabled (not recommended)

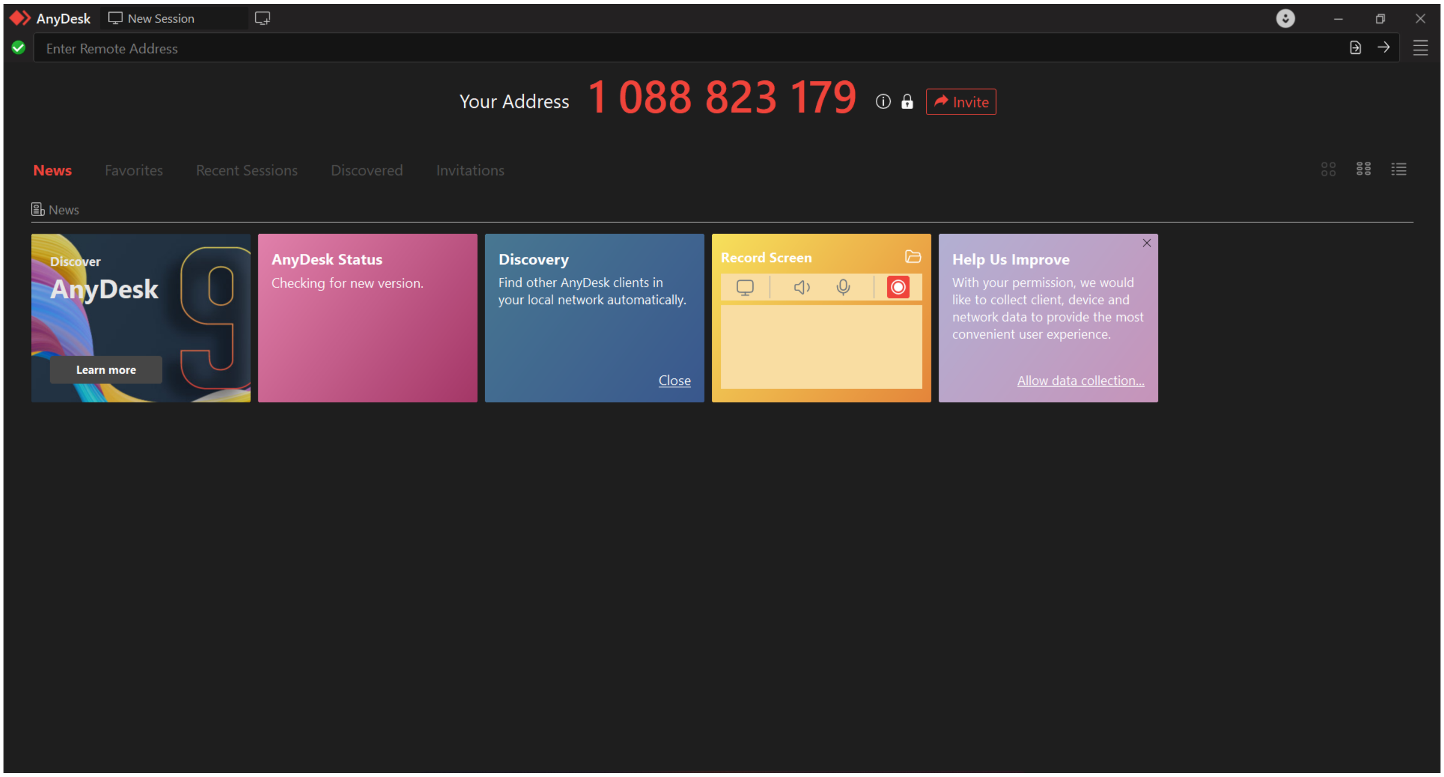
□ Allow collection of usage data

With your permission, we would like to collect client, device and network data to provide the most convenient user experience.
Learn more...
You can withdraw your voluntary consent at any time in AnyDesk's privacy settings.

End-user license agreement   Privacy Statement

By starting the installation, you accept the license agreement.

PC-1:



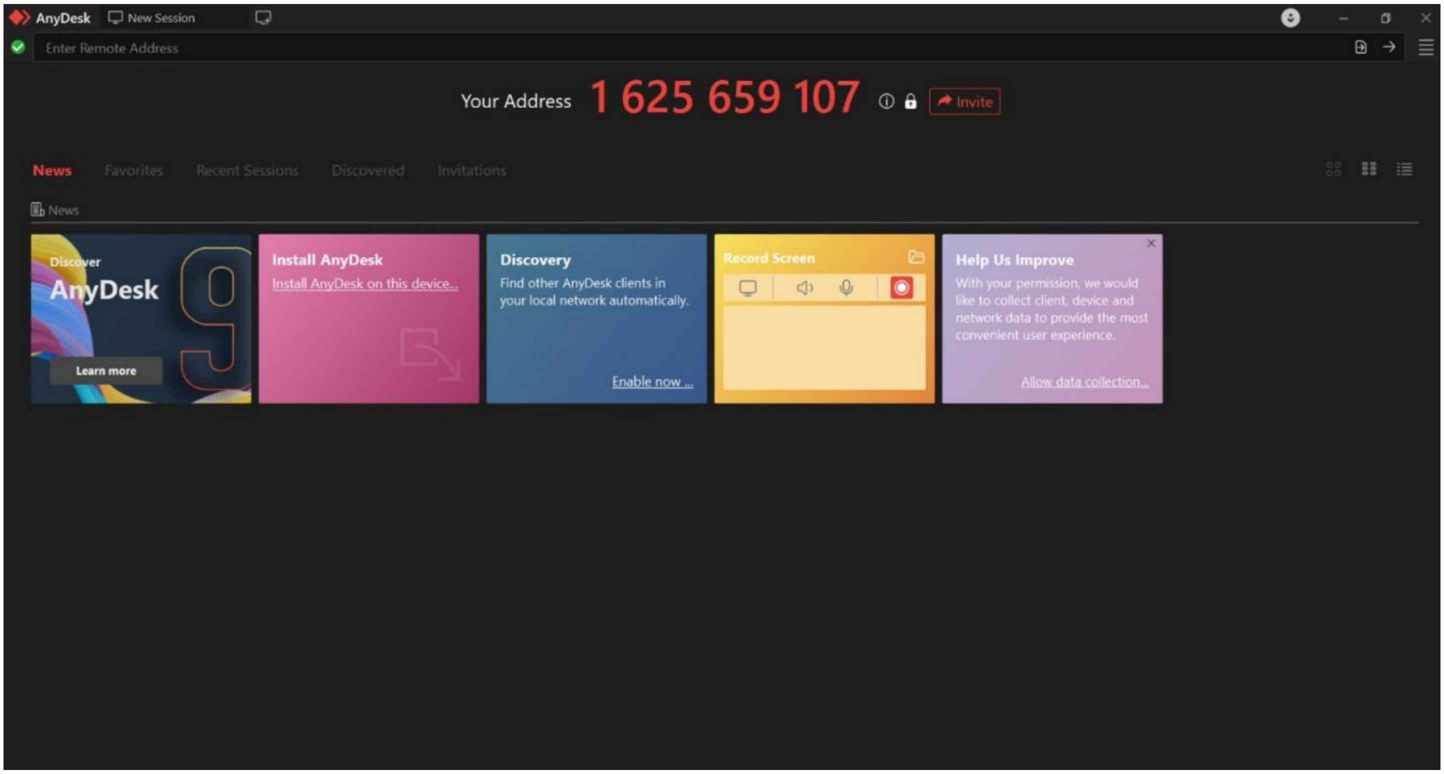
Your Address 1 088 823 179

AnyDesk Status
Checking for new version.

Discovery
Find other AnyDesk clients in your local network automatically.

Help Us Improve
With your permission, we would like to collect client, device and network data to provide the most convenient user experience.

PC-2:



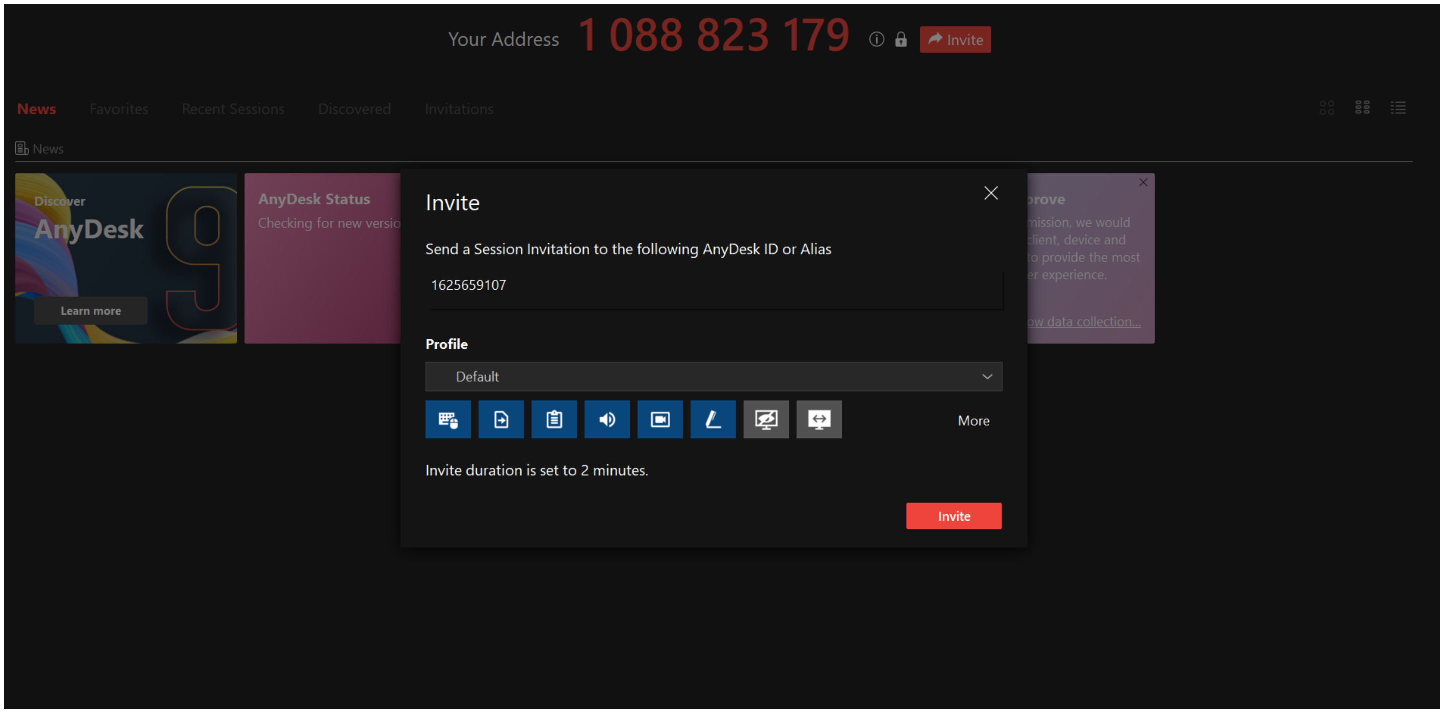
Your Address 1 625 659 107

Install AnyDesk

Discovery
Find other AnyDesk clients in your local network automatically.

Help Us Improve
With your permission, we would like to collect client, device and network data to provide the most convenient user experience.

PC-1:



Your Address 1 088 823 179

Invite

Send a Session Invitation to the following AnyDesk ID or Alias

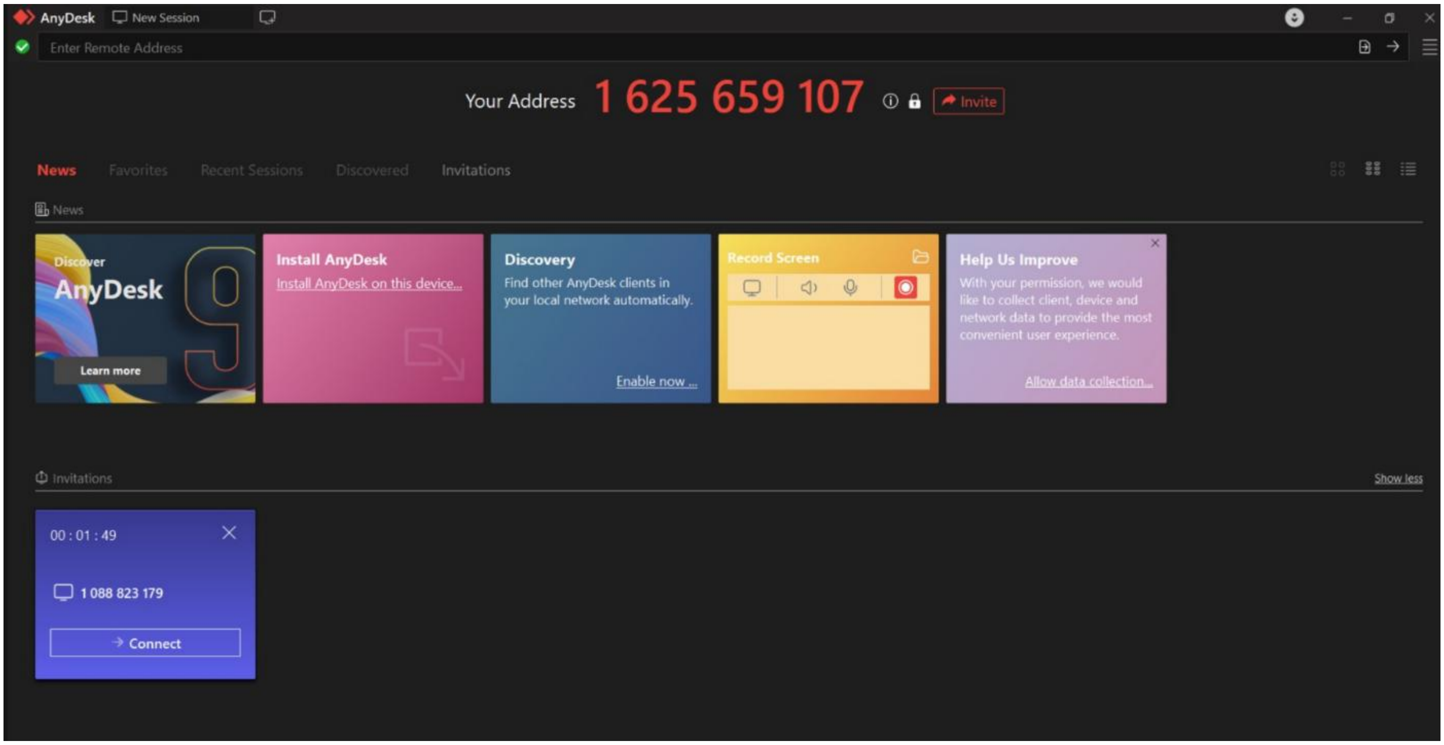
1625659107

Profile

Default

Invite duration is set to 2 minutes.

PC-2:



Enter Remote Address

Your Address 1 625 659 107

Install AnyDesk on this device...

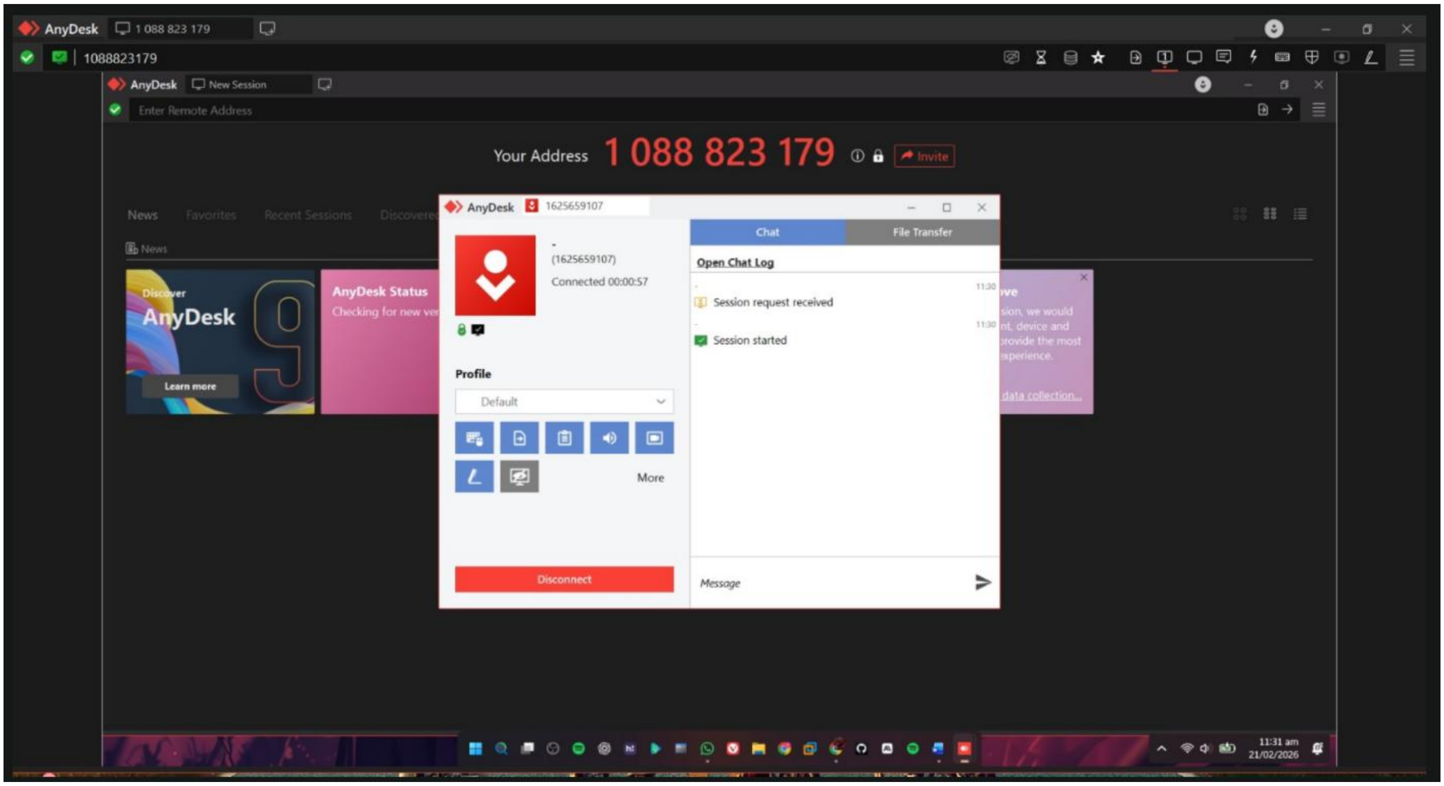
Find other AnyDesk clients in your local network automatically.

With your permission, we would like to collect client, device and network data to provide the most convenient user experience.

00 : 01 : 49

1 088 823 179

PC-2:



(1625659107)
Connected 00:00:57

11:30 Session request received

11:30 Session started

TEAMVIEWER:

Step 1: Install on Both Systems

Download and install TeamViewer on:

- Local (client) computer
- Remote computer

Step 2: Open TeamViewer on Remote Computer

Remote system shows:

- **Your ID**
- **Password**

Step 3: Share Credentials

Remote user shares:

- ID
- Password

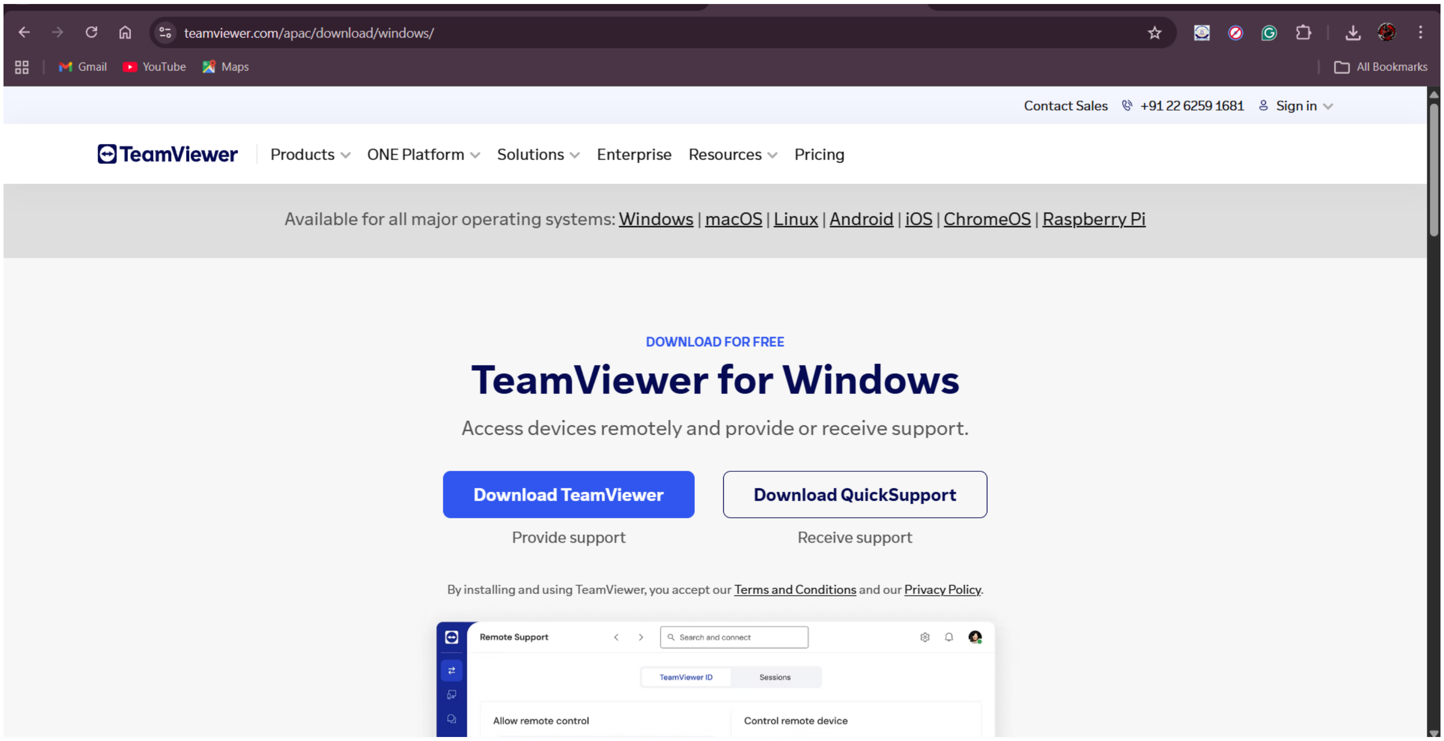
Step 4: Enter ID on Client Computer

On client PC:

- Enter Partner ID
- Click **Connect**

Step 5: Authentication

Enter password when prompted



Available for all major operating systems: Windows | macOS | Linux | Android | iOS | ChromeOS | Raspberry Pi

DOWNLOAD FOR FREE

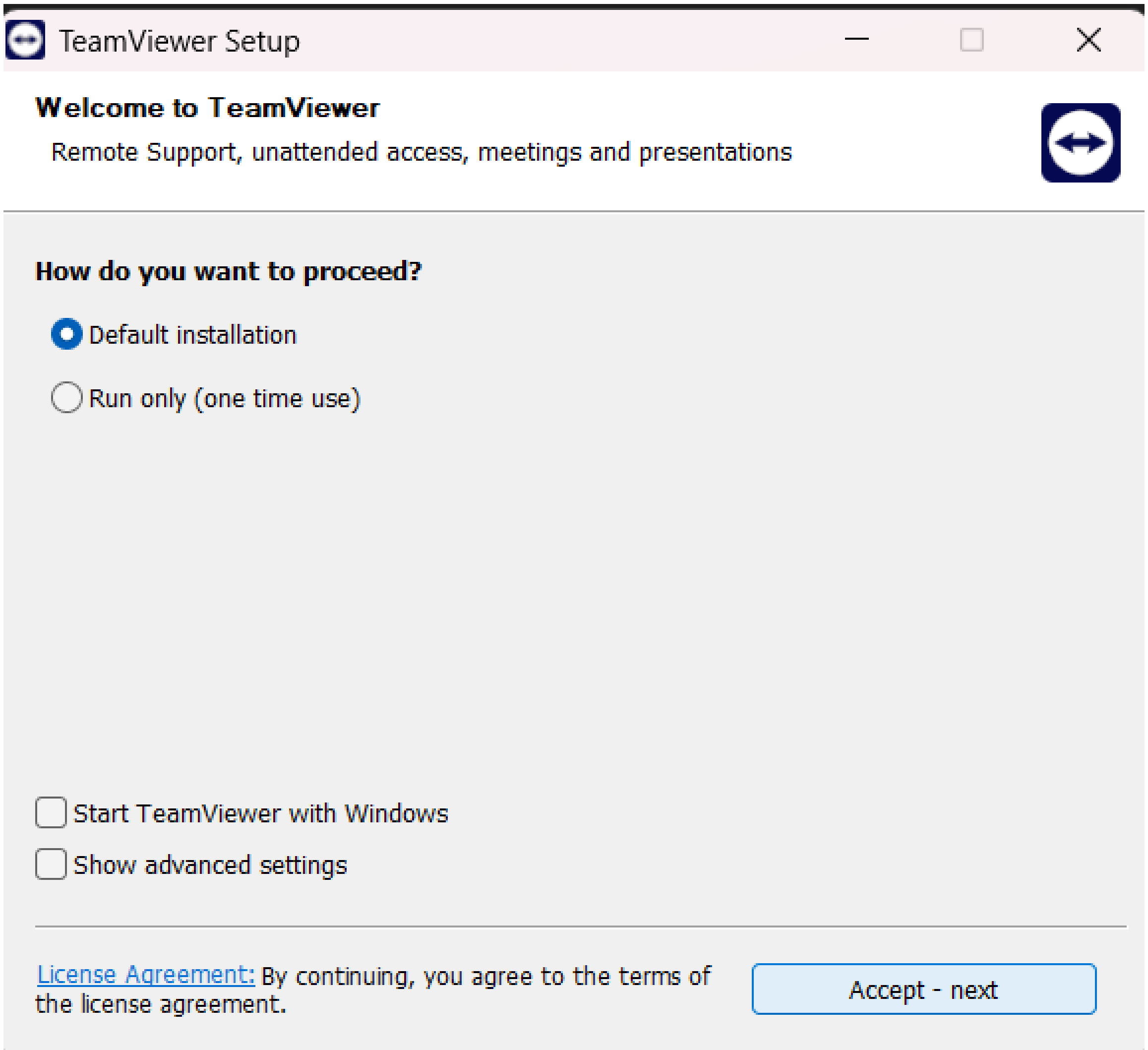
TeamViewer for Windows

Access devices remotely and provide or receive support.

Download TeamViewer — Provide support

Download QuickSupport — Receive support

By installing and using TeamViewer, you accept our Terms and Conditions and our Privacy Policy.



TeamViewer Setup

Welcome to TeamViewer

Remote Support, unattended access, meetings and presentations

How do you want to proceed?

● Default installation

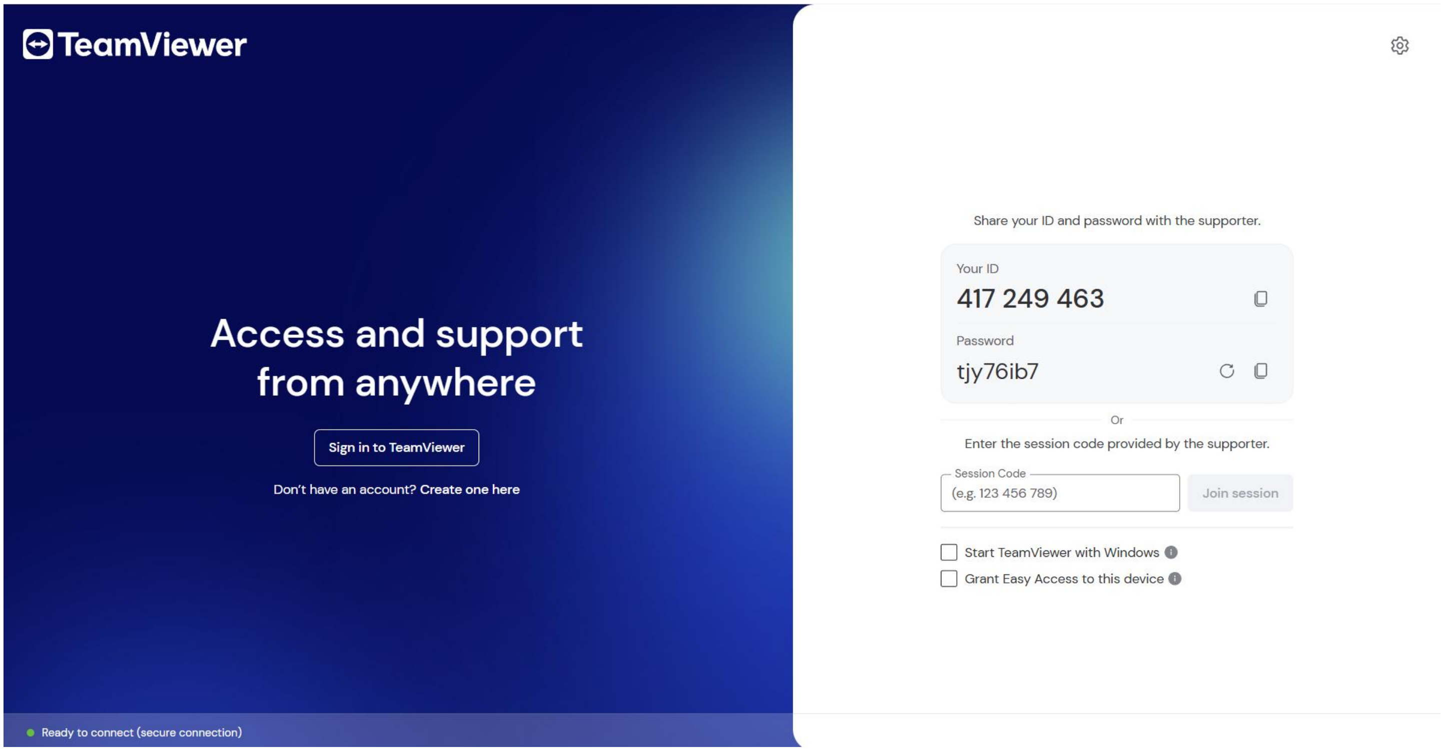
○ Run only (one time use)

□ Start TeamViewer with Windows

□ Show advanced settings

License Agreement: By continuing, you agree to the terms of the license agreement.

PC-1:



TeamViewer

Access and support from anywhere

Don't have an account? **Create one here**

● Ready to connect (secure connection)

Share your ID and password with the supporter.

Your ID
417 249 463

Password
tjy76ib7

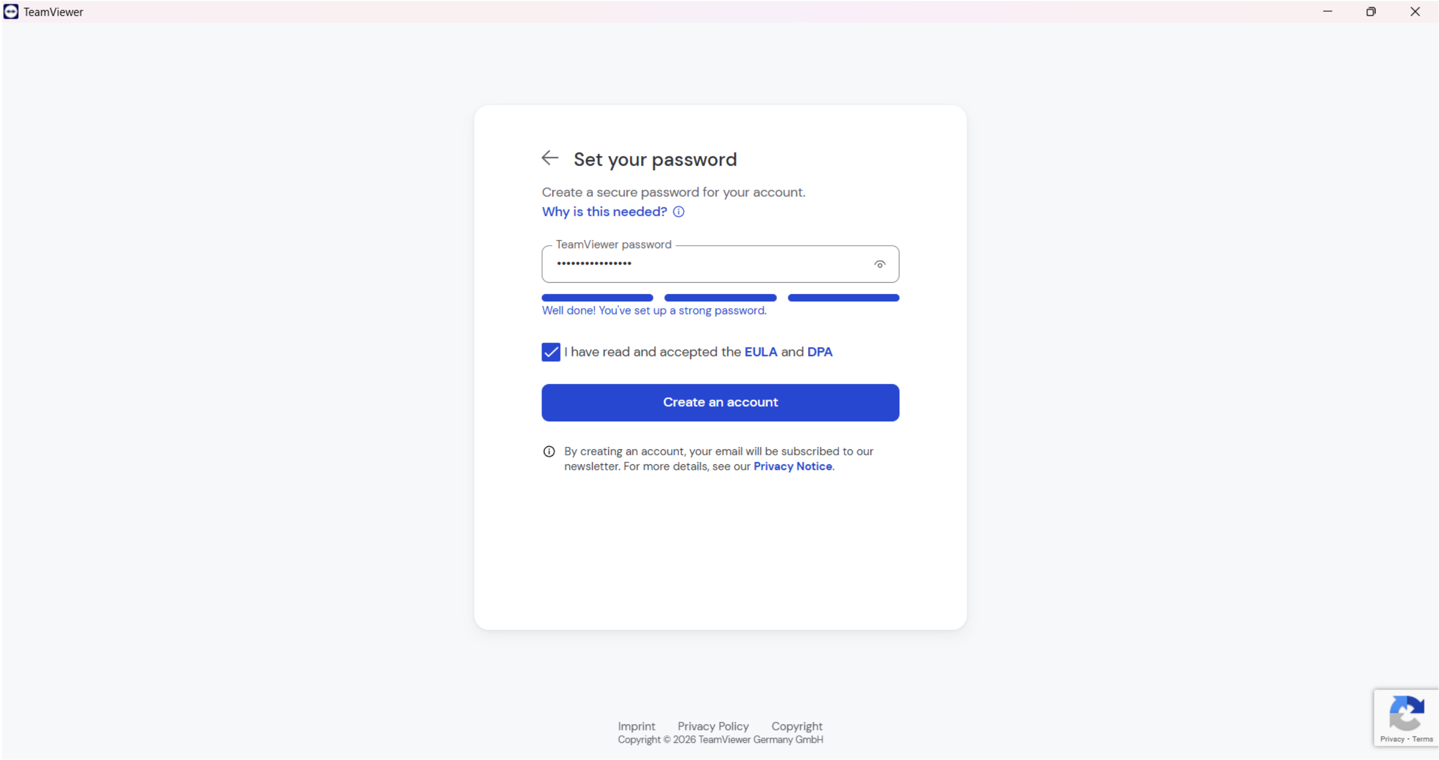
Or

Enter the session code provided by the supporter.

Session Code
(e.g. 123 456 789)

□ Start TeamViewer with Windows

□ Grant Easy Access to this device



TeamViewer

Set your password

Create a secure password for your account.
Why is this needed? ⓘ

TeamViewer password
••••••••••••••••

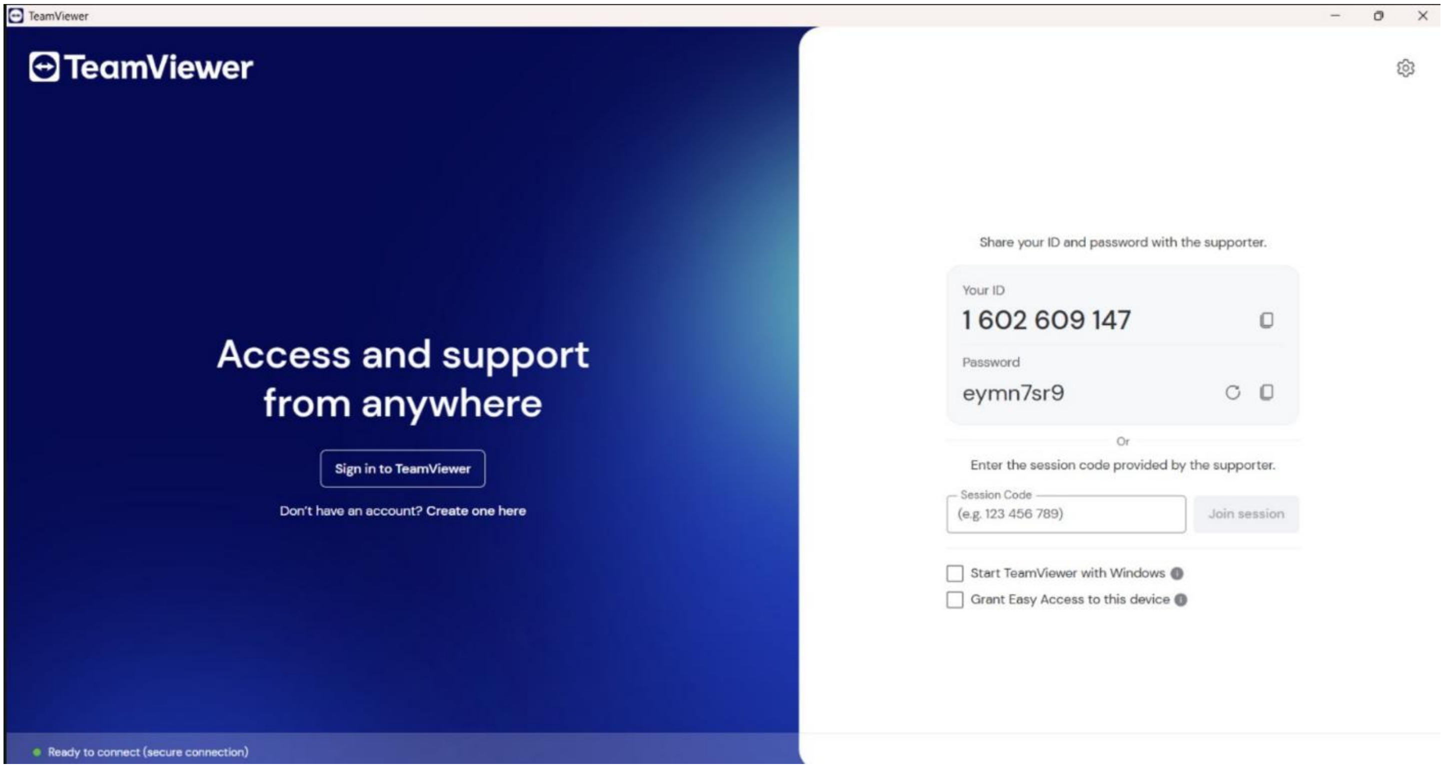
Well done! You've set up a strong password.

☑ I have read and accepted the **EULA** and **DPA**

ⓘ By creating an account, your email will be subscribed to our newsletter. For more details, see our **Privacy Notice**.

Imprint   Privacy Policy   Copyright
Copyright © 2026 TeamViewer Germany GmbH

PC-2:


TeamViewer
Access and support from anywhere
Sign in to TeamViewer
Don't have an account? Create one here
Or
Join session

Share your ID and password with the supporter.

Your ID
1 602 609 147

Password
eymn7sr9

Enter the session code provided by the supporter.

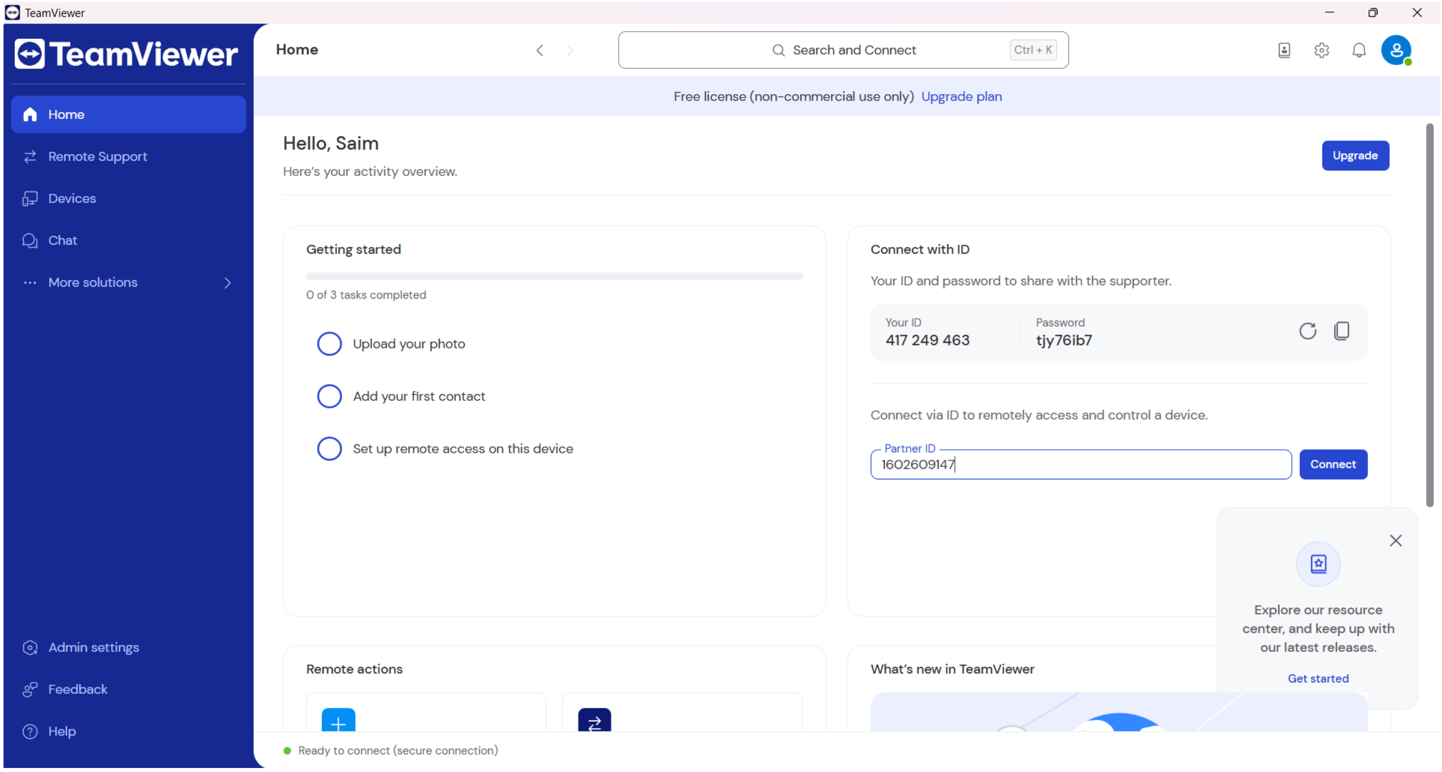
Session Code
(e.g. 123 456 789)

□ Start TeamViewer with Windows

□ Grant Easy Access to this device

● Ready to connect (secure connection)

PC-1:



Free license (non-commercial use only) Upgrade plan

Hello, Saim

Here's your activity overview.

Getting started

0 of 3 tasks completed

○ Upload your photo

○ Add your first contact

○ Set up remote access on this device

Connect with ID

Your ID and password to share with the supporter.

Your ID
417 249 463

Password
tjy76ib7

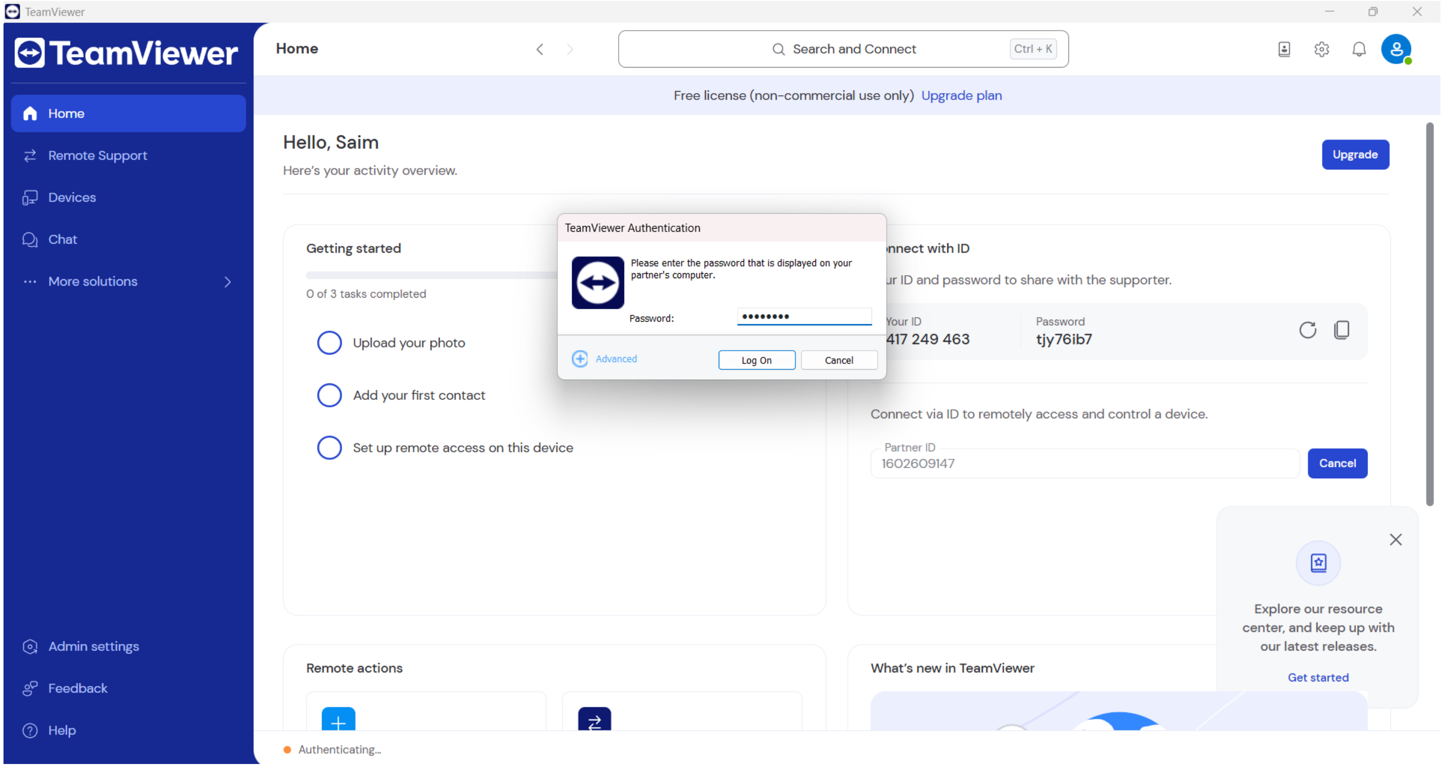
Connect via ID to remotely access and control a device.

Partner ID
1602609147

Explore our resource center, and keep up with our latest releases.

● Ready to connect (secure connection)

PC-1:



Free license (non-commercial use only) Upgrade plan

Hello, Saim

Here's your activity overview.

TeamViewer Authentication

Please enter the password that is displayed on your partner's computer.

Password: ••••••••

nnect with ID

ur ID and password to share with the supporter.

Your ID 417 249 463

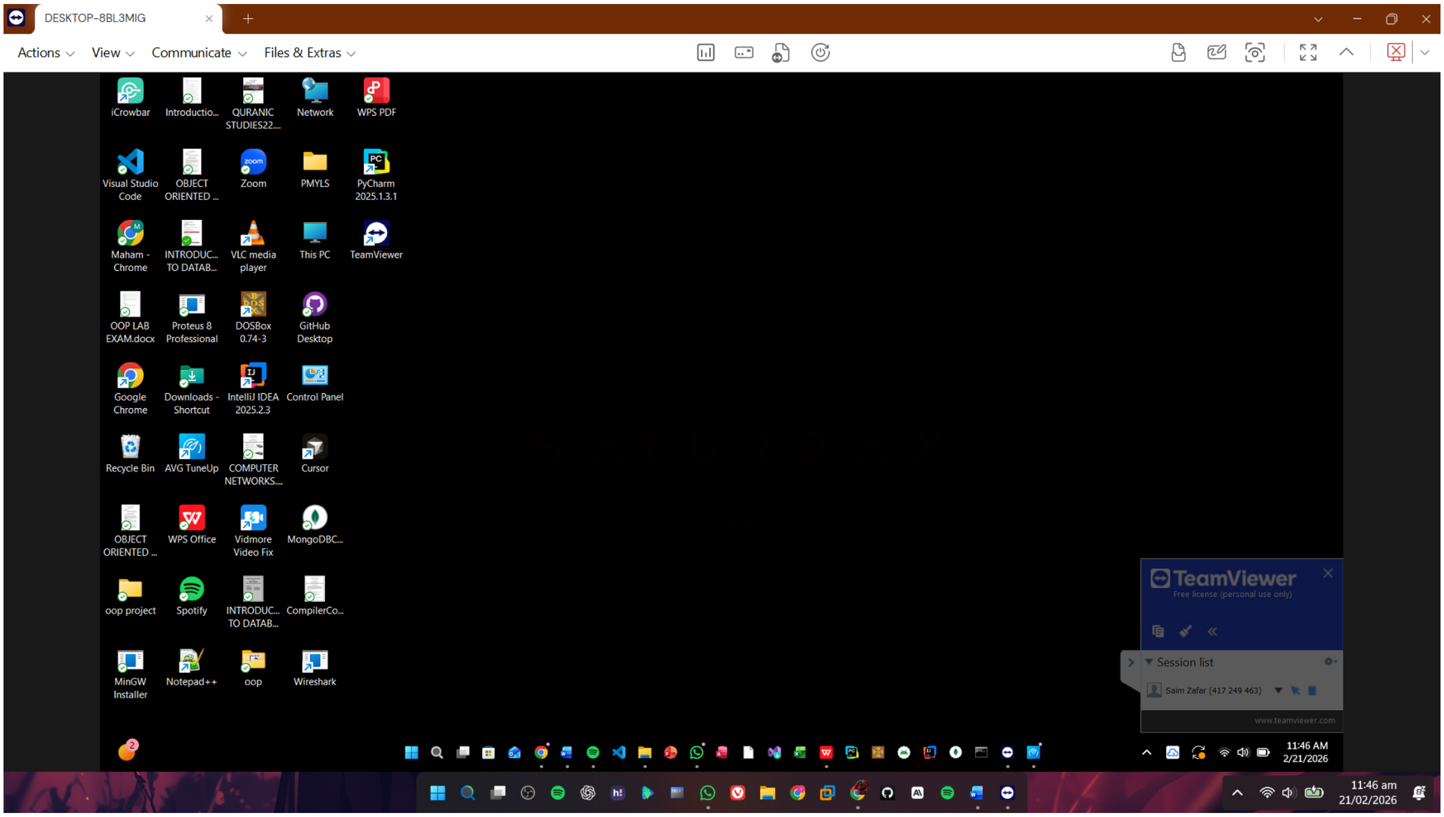
Password tjy76ib7

Connect via ID to remotely access and control a device.

Partner ID 1602609147

Authenticating...

PC-1 HAVING REMOTE ACCESS TO PC-2:



CHROME REMOTE DESKTOP:

Step 1: Install Google Chrome
Make sure Google Chrome browser is installed on both computers.

Step 2: Install Chrome Remote Desktop

- Open Chrome
- Search for Chrome Remote Desktop
- Install the extension

Step 3: Sign In
Sign in with your Google account on both computers.

Step 4: Setup Remote Computer
On the remote PC:

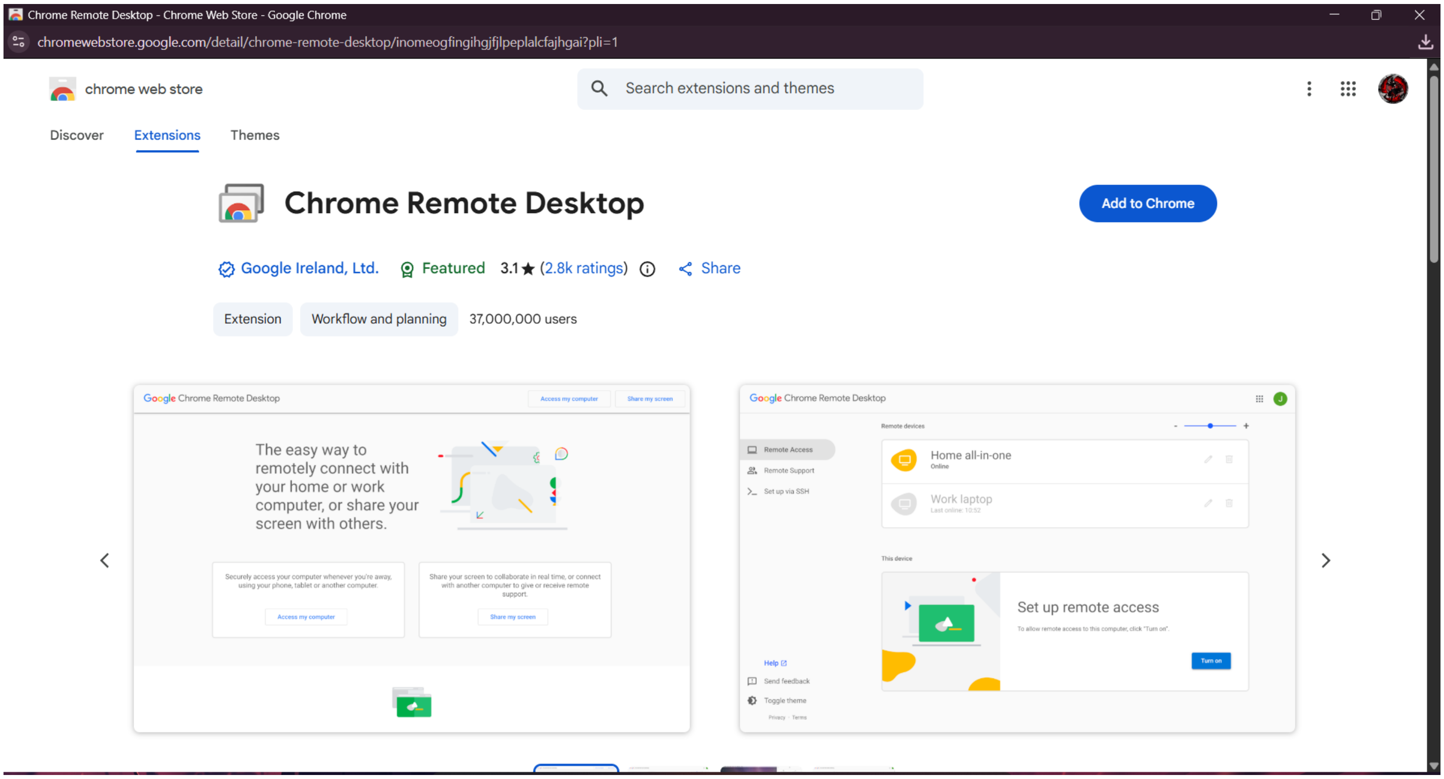
- Click Set up remote access
- Download the setup file (if prompted)
- Install it
- Set a device name
- Create a 6-digit PIN

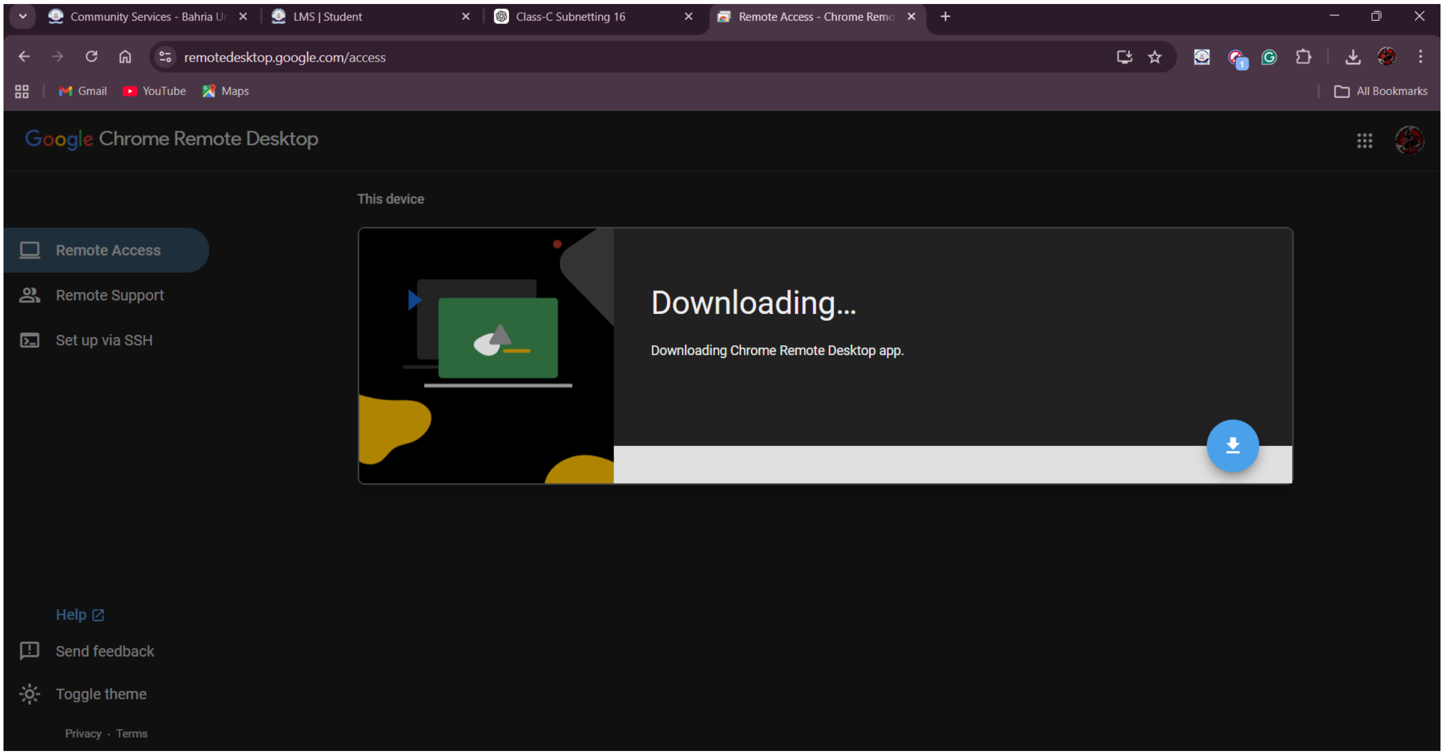
Step 5: Connect from Client Computer
On your computer:

- Open Chrome Remote Desktop
- Log in with same Google account
- Select the remote device name
- Enter the PIN

Step 6: Remote Desktop Opens
You now have full control of the remote computer.

Connection successful.

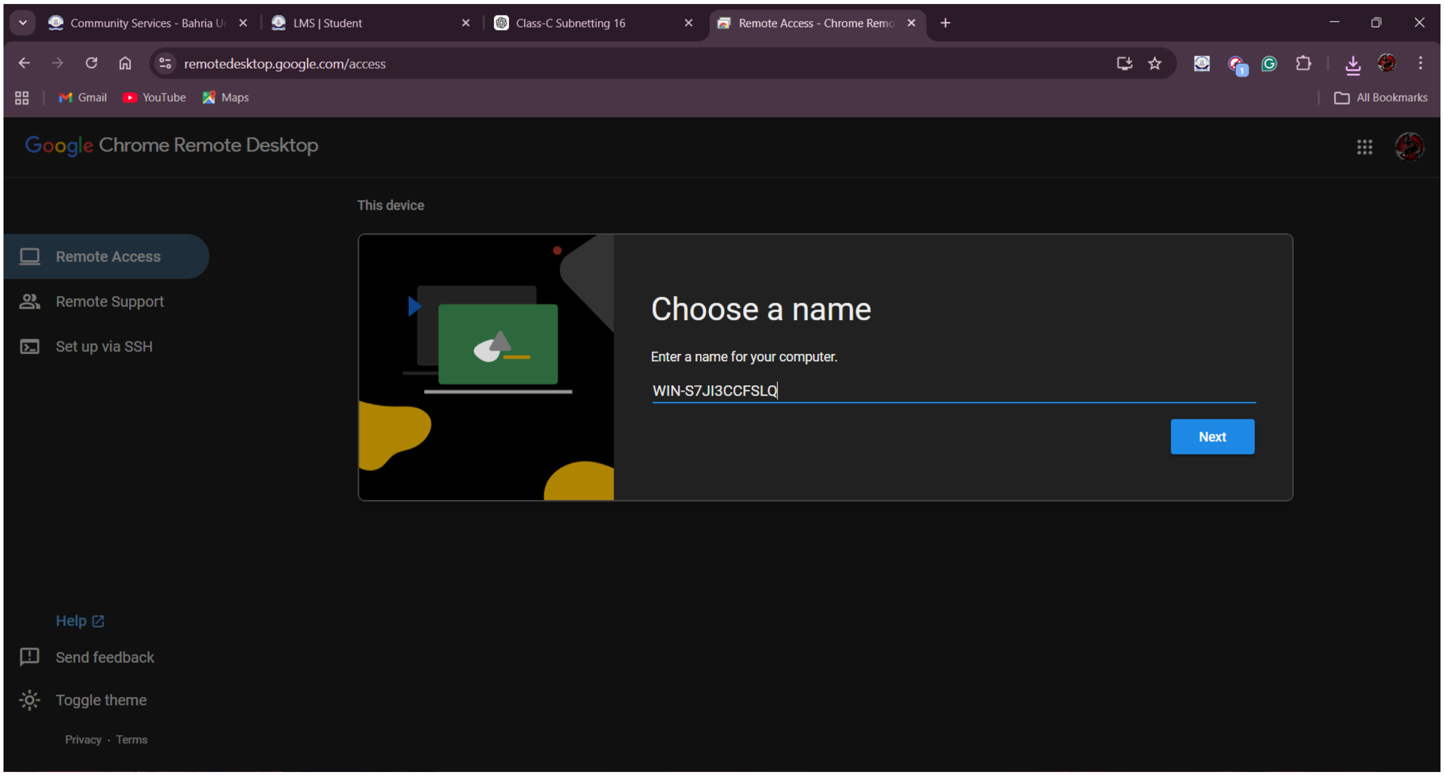

Chrome Remote Desktop - Chrome Web Store - Google Chrome
chromewebstore.google.com/detail/chrome-remote-desktop/inomeogfingihgjfjlpeplalcfajhgai?pli=1
chrome web store
Search extensions and themes
Discover
Extensions
Themes
Chrome Remote Desktop
Add to Chrome
Google Ireland, Ltd.
Featured
3.1★ (2.8k ratings)
Share
Extension
Workflow and planning
37,000,000 users
Google Chrome Remote Desktop
Access my computer
Share my screen
The easy way to remotely connect with your home or work computer, or share your screen with others.
Securely access your computer whenever you're away, using your phone, tablet or another computer.
Share your screen to collaborate in real time, or connect with another computer to give or receive remote support.
Remote devices
Remote Access
Remote Support
Set up via SSH
Home all-in-one
Online
Work laptop
This device
Set up remote access
To allow remote access to this computer, click "Turn on".
Turn on
Help
Send feedback
Toggle theme
Privacy · Terms



Downloading...

Downloading Chrome Remote Desktop app.

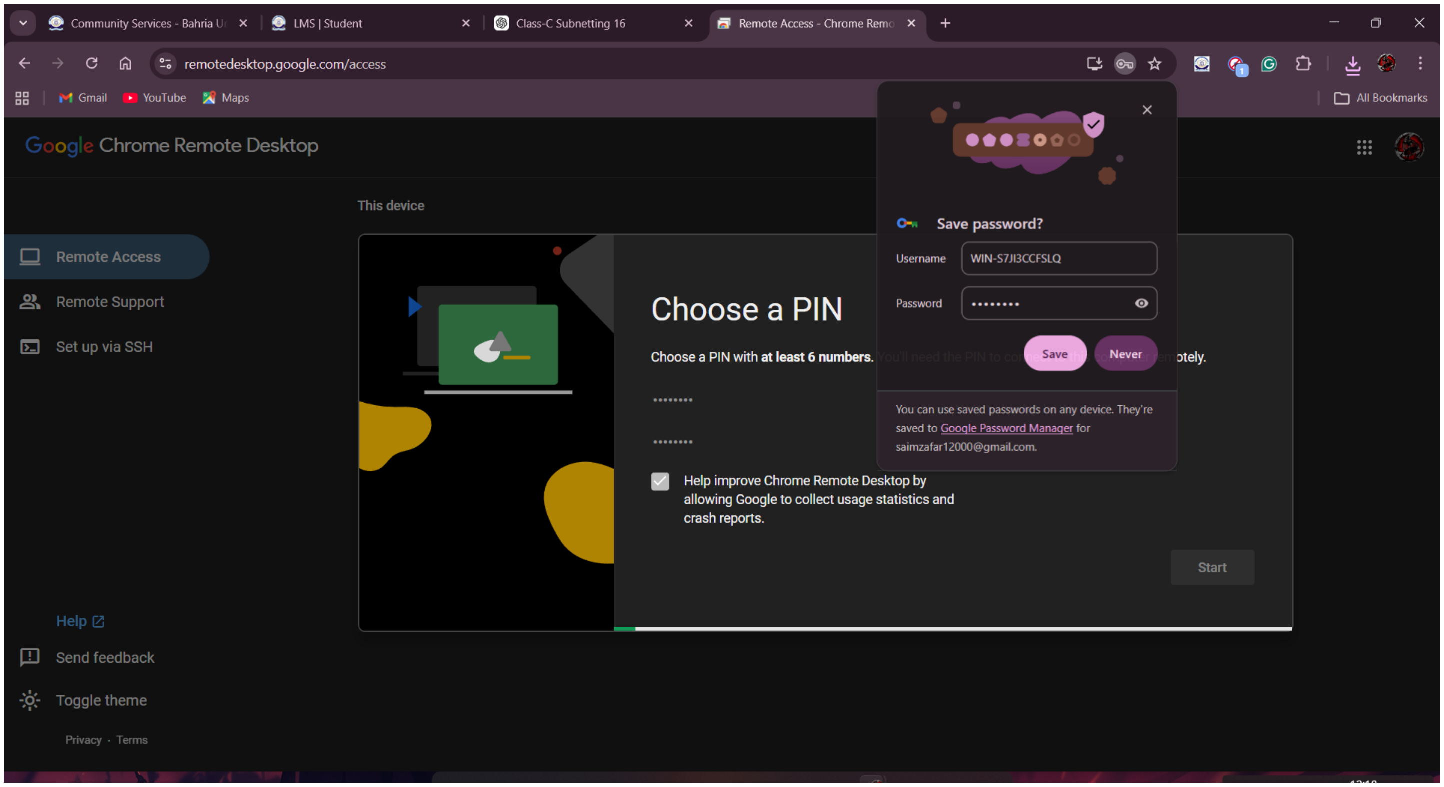
PC-1:



Choose a name

Enter a name for your computer.

WIN-S7JI3CCFSLQ



Choose a PIN

Choose a PIN with **at least 6 numbers.**

••••••••

••••••••

☑ Help improve Chrome Remote Desktop by allowing Google to collect usage statistics and crash reports.

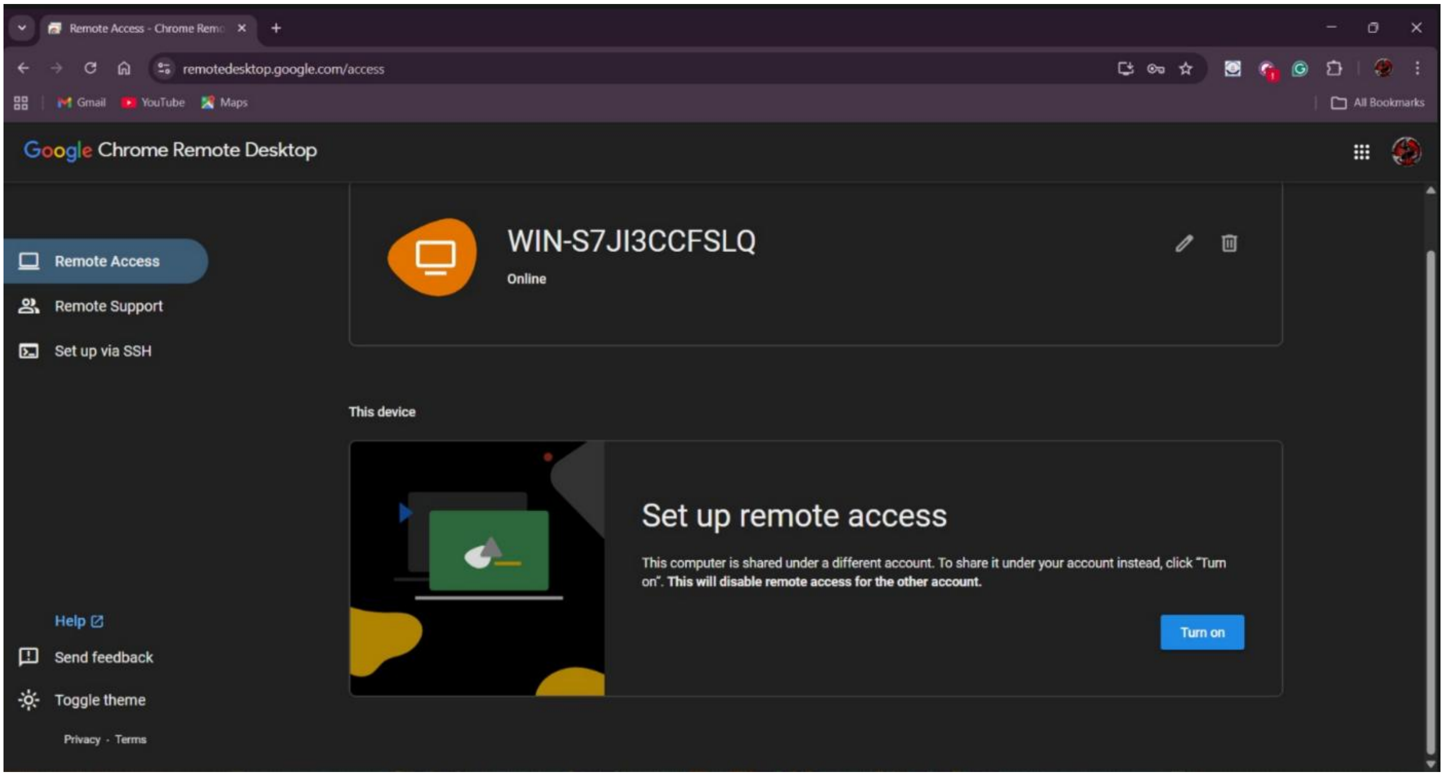
Save password?

Username: WIN-S7JI3CCFSLQ

Password: ••••••••

You can use saved passwords on any device. They're saved to Google Password Manager for saimzafar12000@gmail.com.

PC-2:



remotedesktop.google.com/access

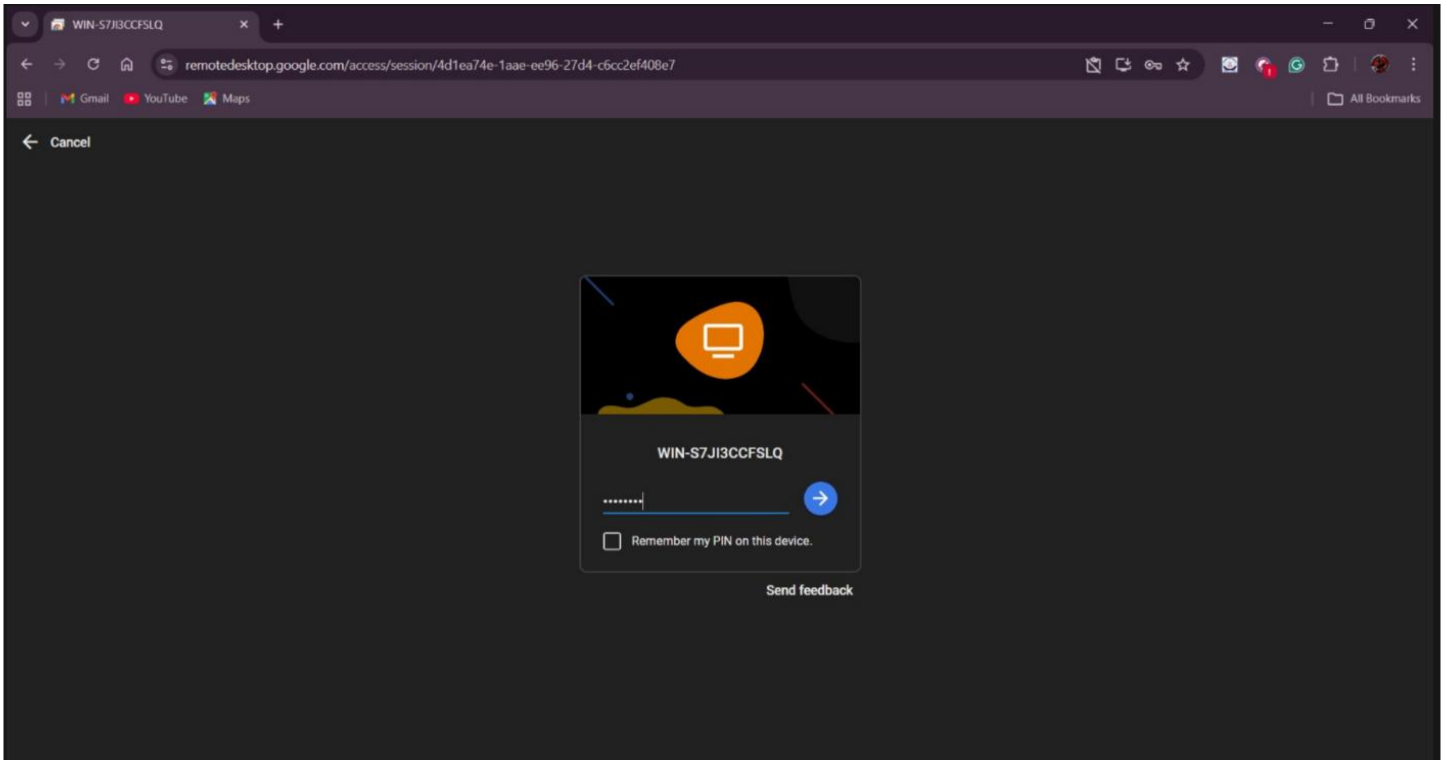
WIN-S7JI3CCFSLQ

Online

This device

Set up remote access

This computer is shared under a different account. To share it under your account instead, click "Turn on". **This will disable remote access for the other account.**



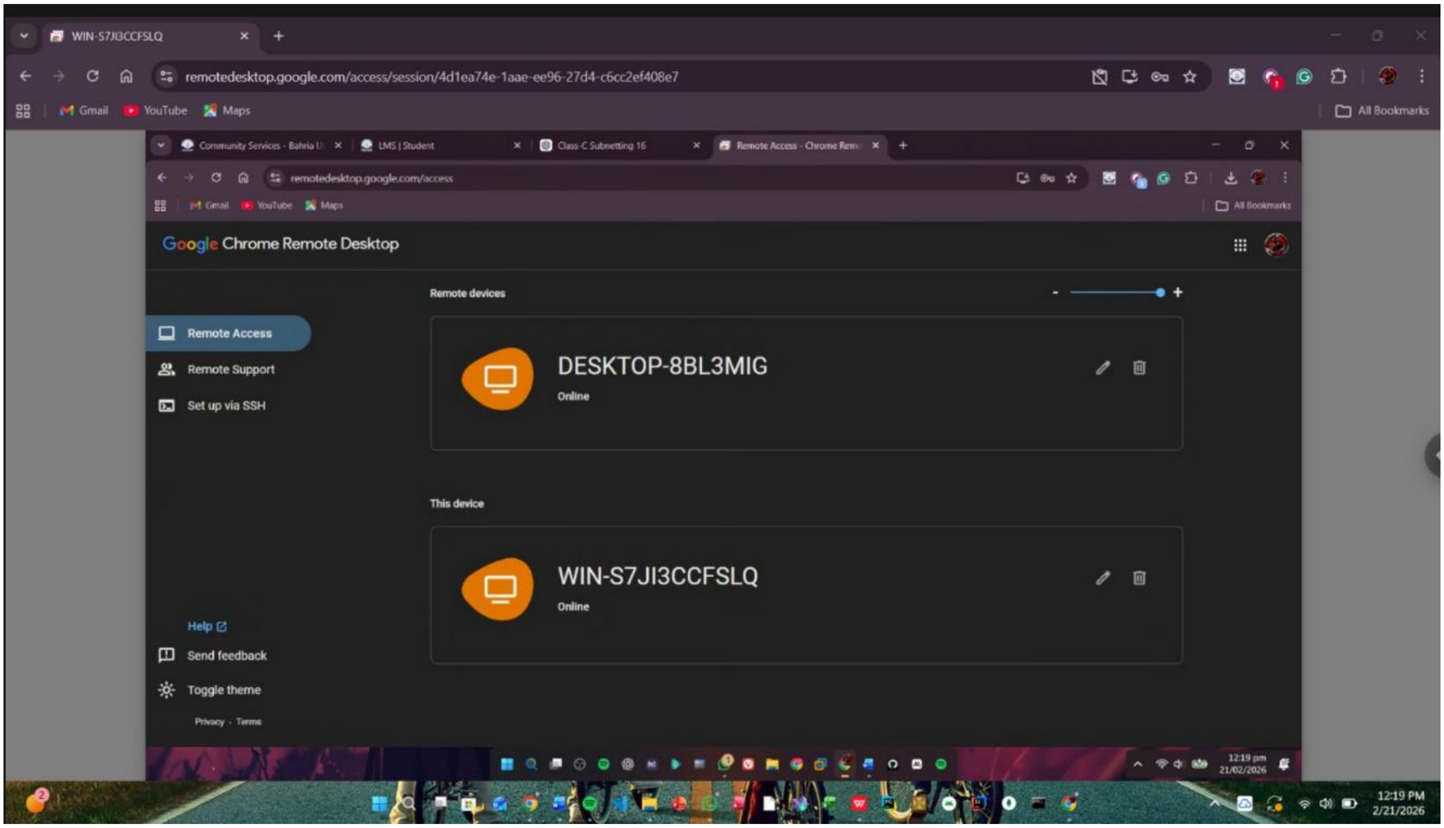
remotedesktop.google.com/access/session/4d1ea74e-1aae-ee96-27d4-c6cc2ef408e7

WIN-S7JI3CCFSLQ

••••••••

□ Remember my PIN on this device.

PC-2:



Comparison of their Features (security, ease of use, performance):

Chrome Remote Desktop, AnyDesk and TeamViewer are popular remote access tools and each offers different strengths in security, ease of use and performance.

In terms of security, TeamViewer provides the strongest protection among the three. It uses strong encryption, secure ID and password authentication and also supports two-factor authentication for additional account security. AnyDesk also offers secure encrypted connections and allows users to control permissions and set passwords for unattended access. Chrome Remote Desktop depends on Google account login and a PIN for access, which is secure for personal use but provides fewer advanced security controls compared to TeamViewer.

Regarding ease of use, Chrome Remote Desktop is the simplest to set up. It only requires signing in with a Google account and setting a PIN, which makes it very beginner-friendly. AnyDesk is also very easy, since users only need to enter an ID and connect. It can even run without full installation. TeamViewer includes more features so the setup process can take slightly more time, but it is still user-friendly and widely used.

In terms of performance, AnyDesk is usually the fastest and most responsive, especially on slow internet connections, because it is lightweight and optimized for speed. TeamViewer also provides stable and smooth performance, which makes it suitable for professional environments. Chrome Remote Desktop works well for basic tasks but may not be as smooth as AnyDesk when handling heavy graphics or multimedia tasks.

In conclusion, Chrome Remote Desktop is best for simple personal use, AnyDesk offers excellent performance with easy setup and TeamViewer provides the highest level of security and advanced features for professional use.

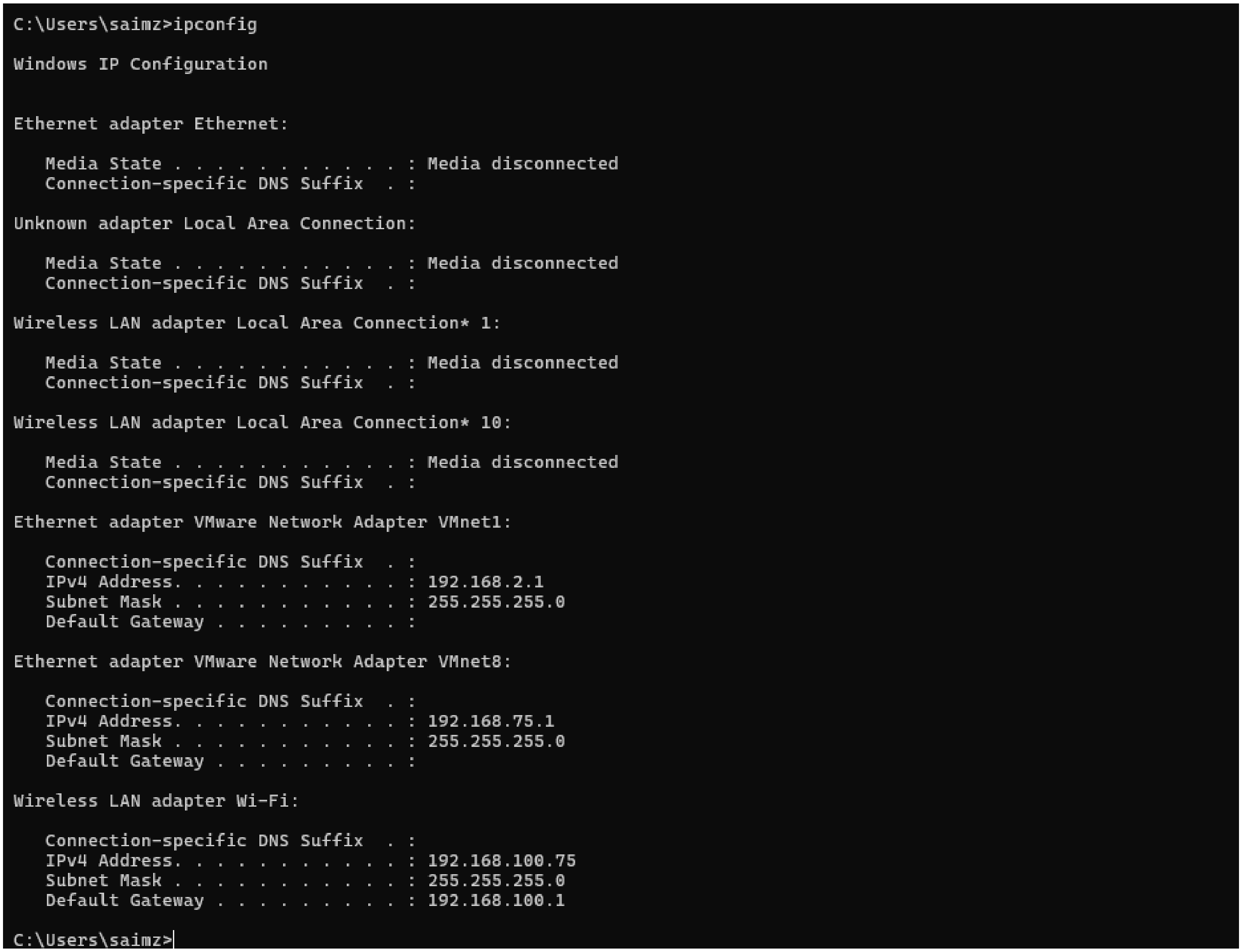
Q#2 (5 Marks)

On your PC, open the Command Prompt and execute the following commands. For each:
1. Write the purpose of the command.
2. Provide screenshots of execution.
3. Explain a practical use case in system & network administration.

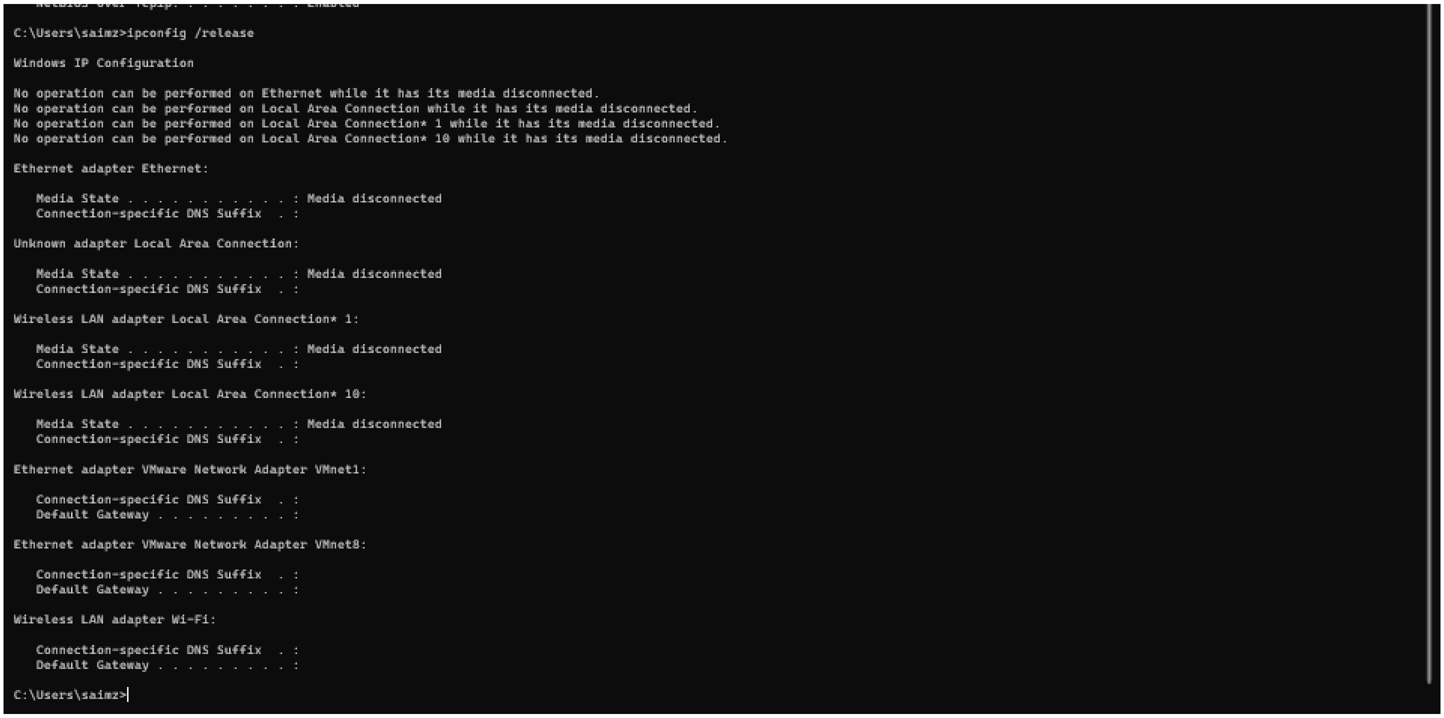
Commands:
- ipconfig, ipconfig /all, ipconfig /release, ipconfig /renew
- ping, chkdsk /f, chkdsk /r
- netstat, netstat -a
- tracert www.bahria.edu.pk
- net users, nslookup

1. ipconfig, ipconfig /all, ipconfig /release, ipconfig /renew

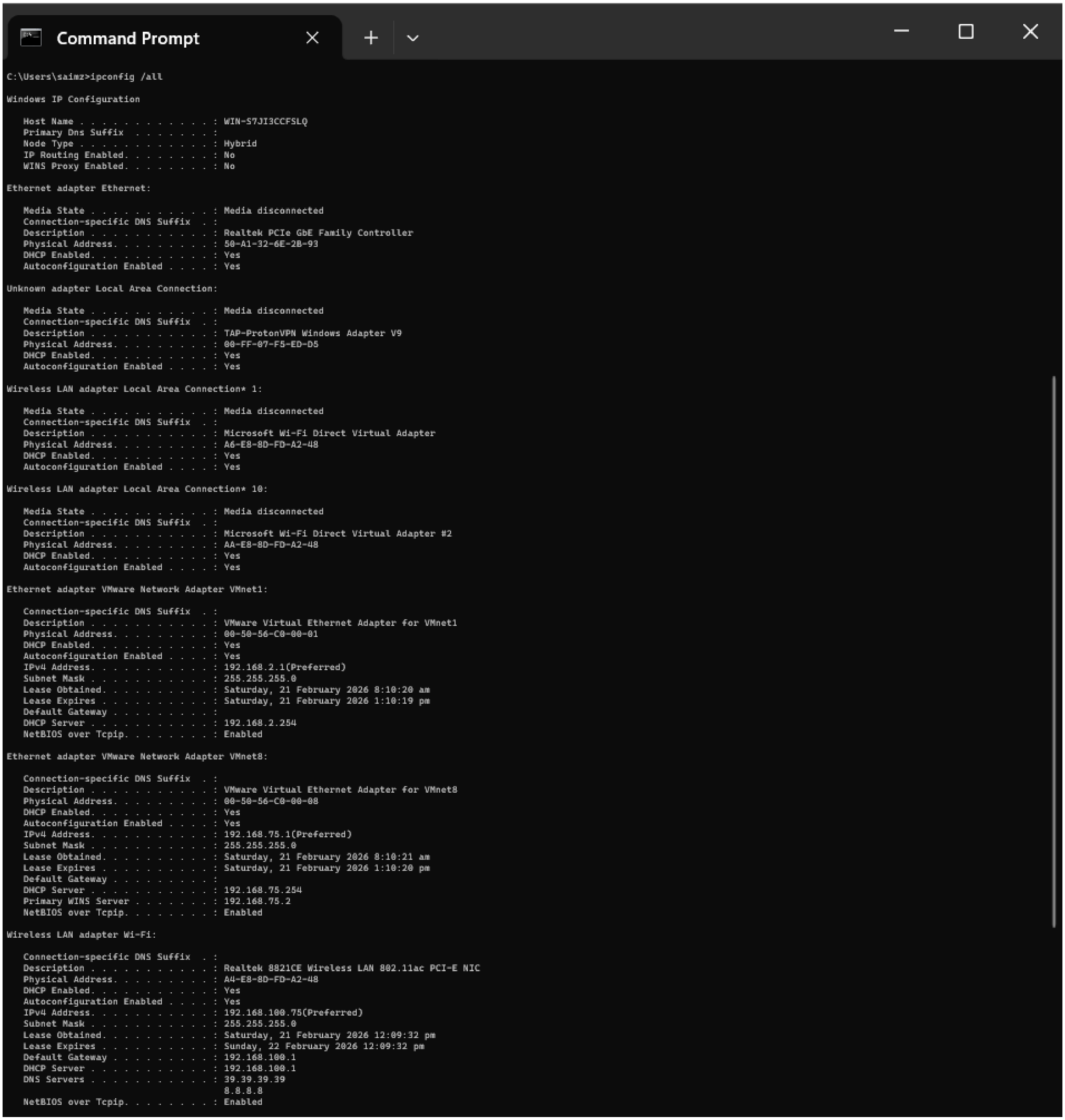
Command	Purpose	Practical Use Case
ipconfig	Displays the IP address, subnet mask, and default gateway of all network interfaces	Quickly check the IP configuration of a PC to troubleshoot connectivity
ipconfig /all	Shows full configuration details including MAC address, DHCP status, DNS servers	Useful to check detailed network settings for network administration or troubleshooting DHCP/DNS issues
ipconfig /release	Releases the current DHCP-assigned IP address	Used before renewing IP or changing network settings, especially in troubleshooting IP conflicts
ipconfig /renew	Requests a new IP address from the DHCP server	Useful to re-establish network connectivity if a device lost connection or has invalid IP



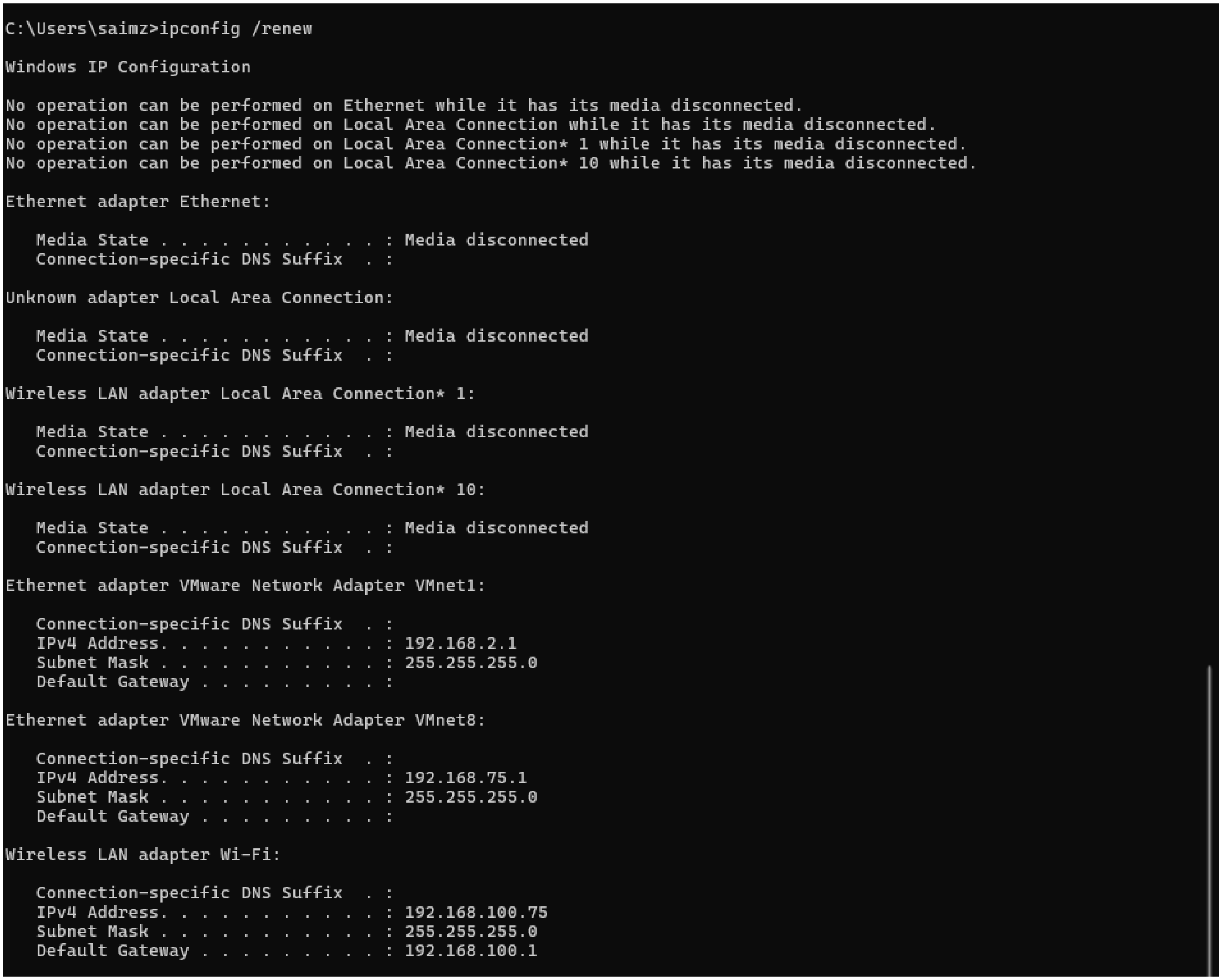
```
C:\Users\saimz>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Unknown adapter Local Area Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.2.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.75.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.100.75
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.100.1

C:\Users\saimz>
```



```
   NetBIOS over Tcpip. . . . . . . . : Enabled

C:\Users\saimz>ipconfig /release

Windows IP Configuration

No operation can be performed on Ethernet while it has its media disconnected.
No operation can be performed on Local Area Connection while it has its media disconnected.
No operation can be performed on Local Area Connection* 1 while it has its media disconnected.
No operation can be performed on Local Area Connection* 10 while it has its media disconnected.

Ethernet adapter Ethernet:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Unknown adapter Local Area Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   Default Gateway . . . . . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   Default Gateway . . . . . . . . . :

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   Default Gateway . . . . . . . . . :

C:\Users\saimz>
```



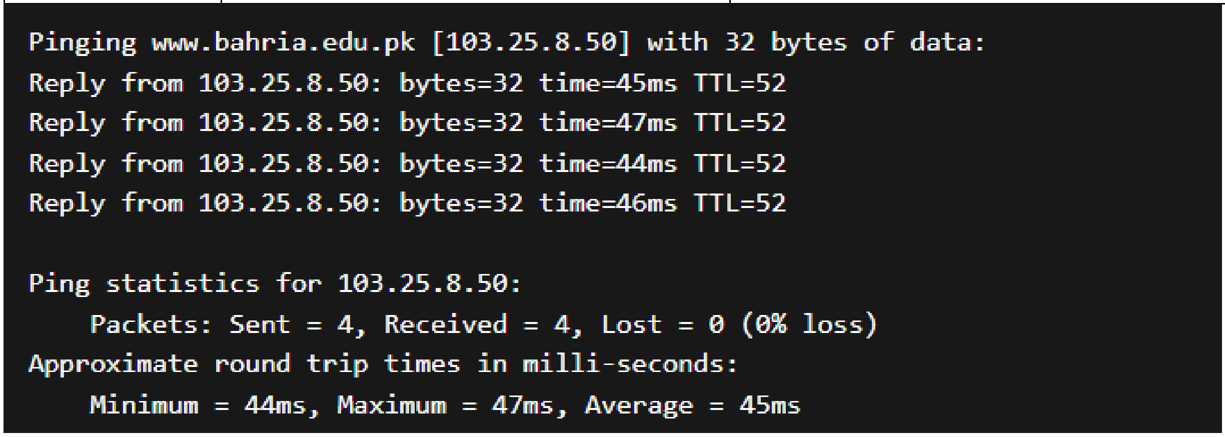
```
C:\Users\saimz>ipconfig /all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : WIN-S7JI3CCFSLQ
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter Ethernet:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Realtek PCIe GbE Family Controller
   Physical Address. . . . . . . . . : 50-A1-32-6E-2B-93
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Unknown adapter Local Area Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : TAP-ProtonVPN Windows Adapter V9
   Physical Address. . . . . . . . . : 00-FF-07-F5-ED-D5
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
   Physical Address. . . . . . . . . : A6-E8-8D-FD-A2-48
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 10:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
   Physical Address. . . . . . . . . : AA-E8-8D-FD-A2-48
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : VMware Virtual Ethernet Adapter for VMnet1
   Physical Address. . . . . . . . . : 00-50-56-C0-00-01
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 192.168.2.1(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Saturday, 21 February 2026 8:10:20 am
   Lease Expires . . . . . . . . . . : Saturday, 21 February 2026 1:10:19 pm
   Default Gateway . . . . . . . . . :
   DHCP Server . . . . . . . . . . . : 192.168.2.254
   NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : VMware Virtual Ethernet Adapter for VMnet8
   Physical Address. . . . . . . . . : 00-50-56-C0-00-08
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 192.168.75.1(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Saturday, 21 February 2026 8:10:21 am
   Lease Expires . . . . . . . . . . : Saturday, 21 February 2026 1:10:20 pm
   Default Gateway . . . . . . . . . :
   DHCP Server . . . . . . . . . . . : 192.168.75.254
   Primary WINS Server . . . . . . . : 192.168.75.2
   NetBIOS over Tcpip. . . . . . . . : Enabled

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
   Physical Address. . . . . . . . . : A4-E8-8D-FD-A2-48
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 192.168.100.75(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Saturday, 21 February 2026 12:09:32 pm
   Lease Expires . . . . . . . . . . : Sunday, 22 February 2026 12:09:32 pm
   Default Gateway . . . . . . . . . : 192.168.100.1
   DHCP Server . . . . . . . . . . . : 192.168.100.1
   DNS Servers . . . . . . . . . . . : 39.39.39.39
                                       8.8.8.8
   NetBIOS over Tcpip. . . . . . . . : Enabled
```



```
C:\Users\saimz>ipconfig /renew

Windows IP Configuration

No operation can be performed on Ethernet while it has its media disconnected.
No operation can be performed on Local Area Connection while it has its media disconnected.
No operation can be performed on Local Area Connection* 1 while it has its media disconnected.
No operation can be performed on Local Area Connection* 10 while it has its media disconnected.

Ethernet adapter Ethernet:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Unknown adapter Local Area Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.2.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.75.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.100.75
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.100.1
```

2. ping

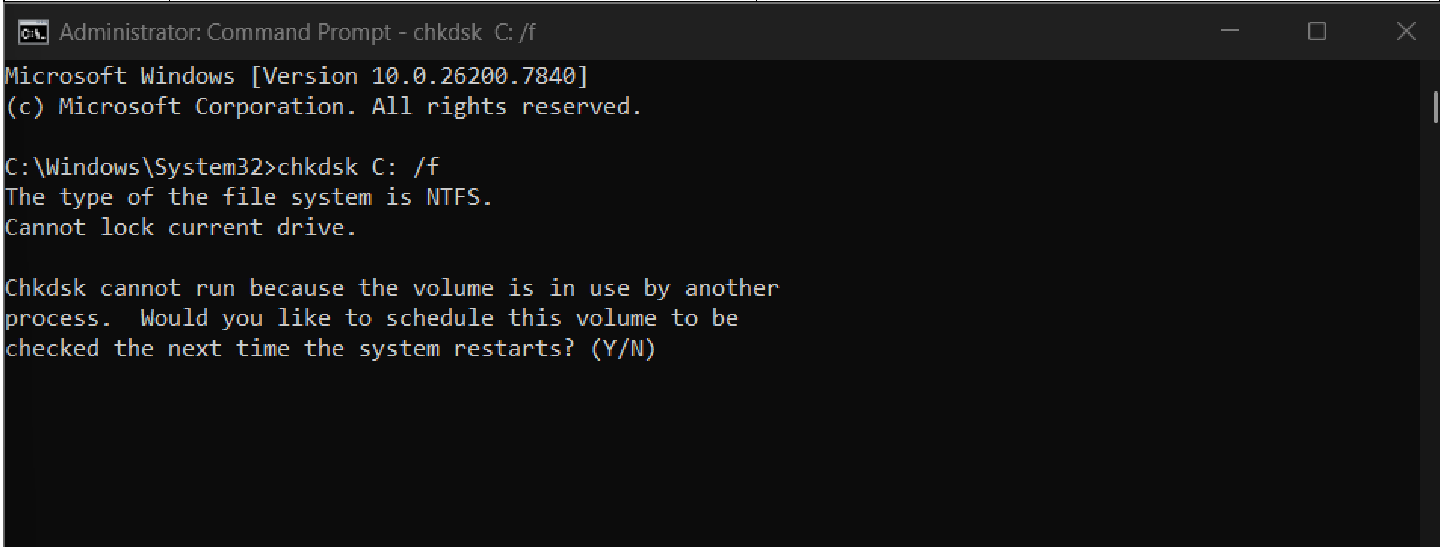
Command	Purpose	Practical Use Case
ping [IP or domain]	Tests connectivity between your PC and another device or website	Verify network connectivity and latency. For example, ping 8.8.8.8 checks if the internet is reachable



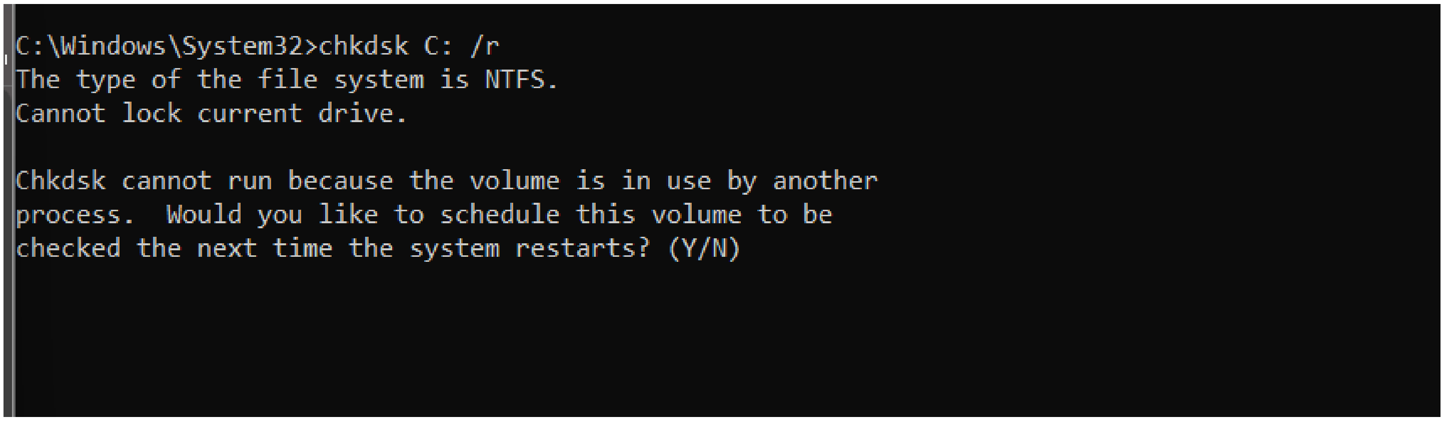
```
Pinging www.bahria.edu.pk [103.25.8.50] with 32 bytes of data:
Reply from 103.25.8.50: bytes=32 time=45ms TTL=52
Reply from 103.25.8.50: bytes=32 time=47ms TTL=52
Reply from 103.25.8.50: bytes=32 time=44ms TTL=52
Reply from 103.25.8.50: bytes=32 time=46ms TTL=52

Ping statistics for 103.25.8.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
Approximate round trip times in milli-seconds:
    Minimum = 44ms, Maximum = 47ms, Average = 45ms
```

3. chkdsk /f, chkdsk /r

Command	Purpose	Practical Use Case
chkdsk /f	Checks the disk for errors and fixes logical file system errors	Run when files are not opening or you suspect corruption
chkdsk /r	Checks for bad sectors and recovers readable data	Useful when a disk is physically damaged or causing read/write errors



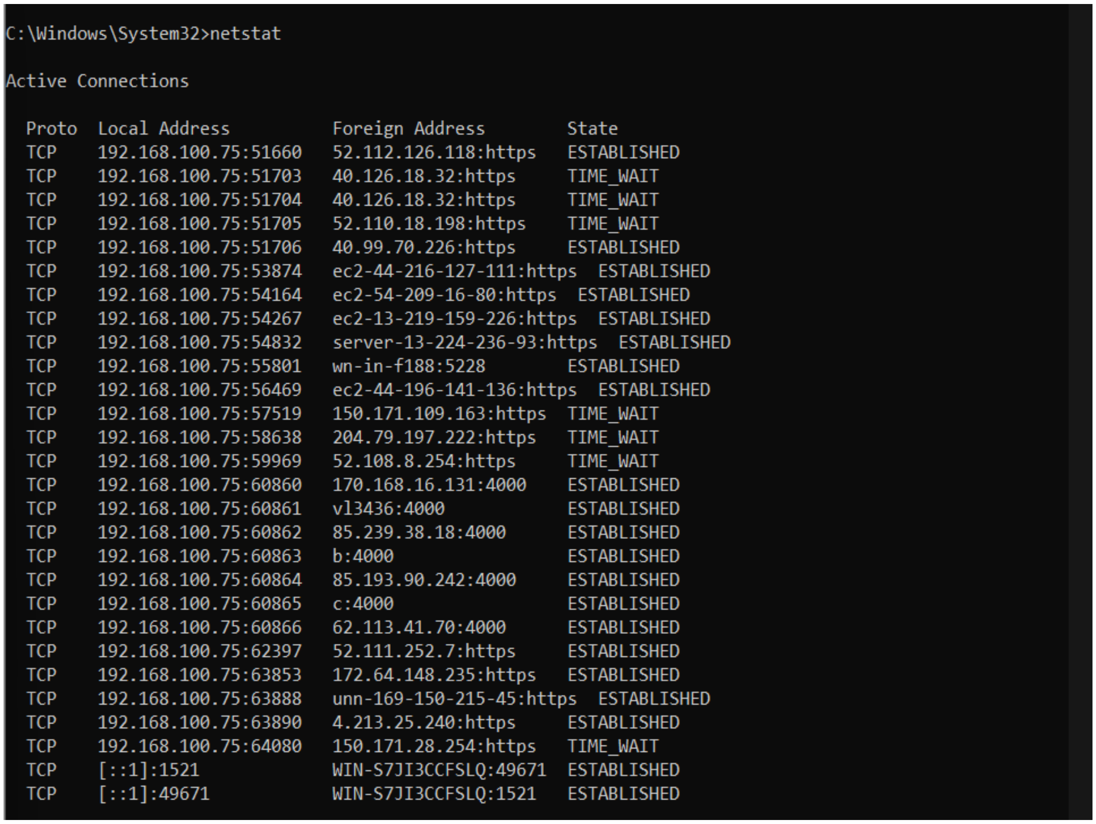
```
Microsoft Windows [Version 10.0.26200.7840]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>chkdsk C: /f
The type of the file system is NTFS.
Cannot lock current drive.

Chkdsk cannot run because the volume is in use by another
process.  Would you like to schedule this volume to be
checked the next time the system restarts? (Y/N)
```



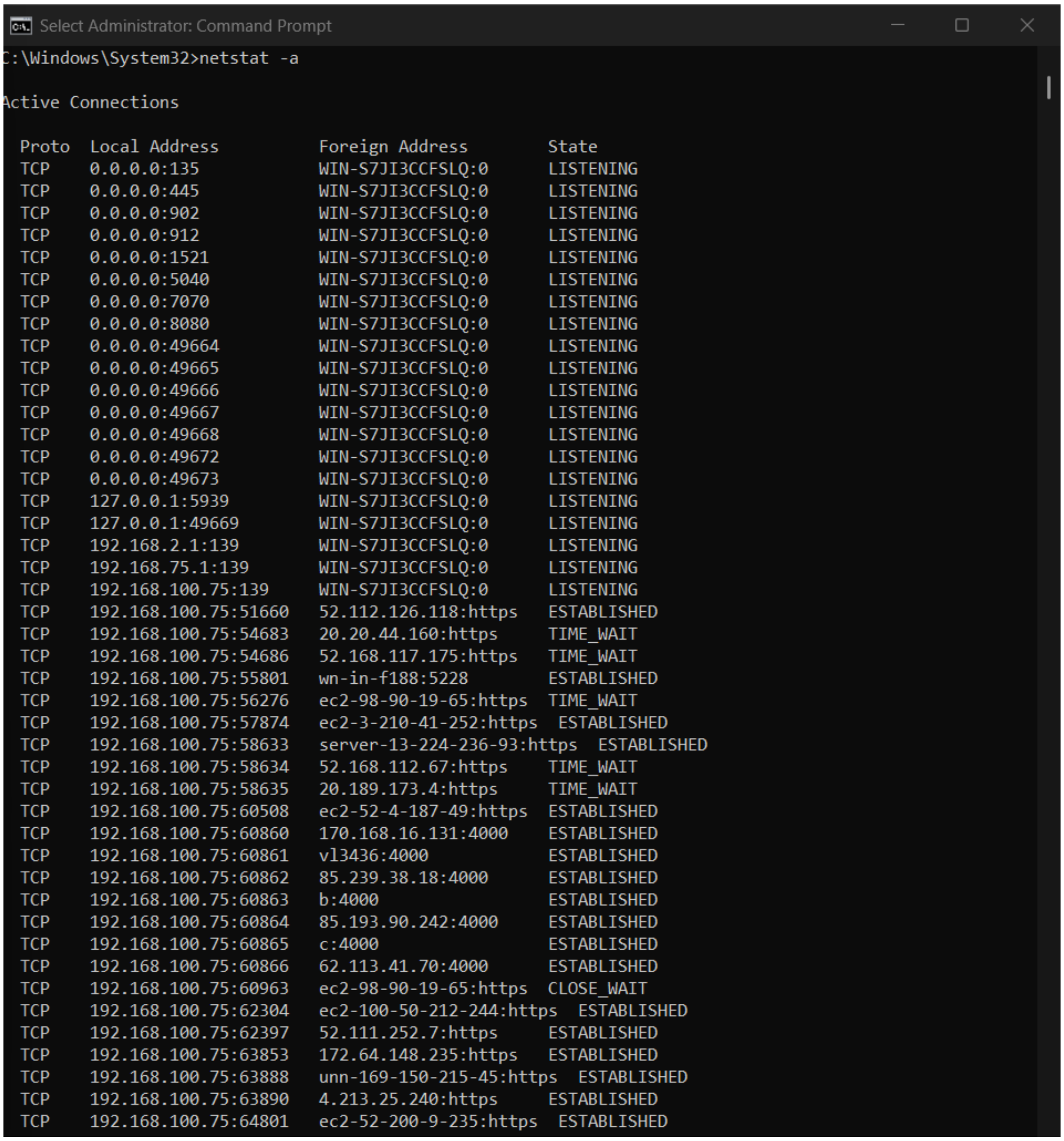
```
C:\Windows\System32>chkdsk C: /r
The type of the file system is NTFS.
Cannot lock current drive.

Chkdsk cannot run because the volume is in use by another
process.  Would you like to schedule this volume to be
checked the next time the system restarts? (Y/N)
```

4. netstat, netstat -a

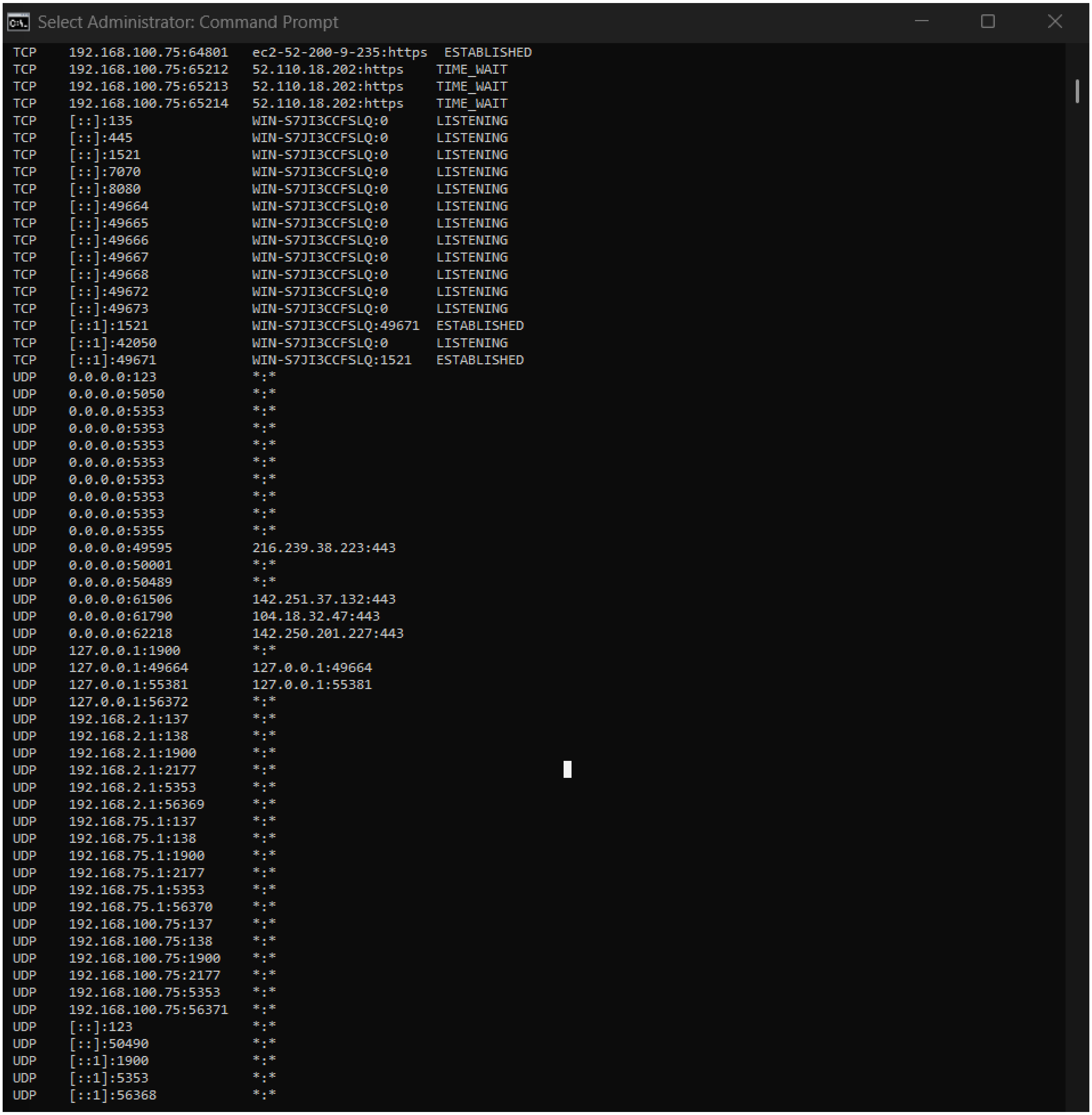
Command	Purpose	Practical Use Case
netstat	Shows which connections your computer currently has with other computers or websites.	Monitor open connections to see which apps are using the network
netstat -a	Shows all connections, even the ones that are just waiting for someone to connect (listening).	Check for services running, monitor unauthorized access attempts



```
C:\Windows\System32>netstat

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    192.168.100.75:51660   52.112.126.118:https   ESTABLISHED
  TCP    192.168.100.75:51703   40.126.18.32:https     TIME_WAIT
  TCP    192.168.100.75:51704   40.126.18.32:https     TIME_WAIT
  TCP    192.168.100.75:51705   52.110.18.198:https    TIME_WAIT
  TCP    192.168.100.75:51706   40.99.70.226:https     ESTABLISHED
  TCP    192.168.100.75:53874   ec2-44-216-127-111:https  ESTABLISHED
  TCP    192.168.100.75:54164   ec2-54-209-16-80:https  ESTABLISHED
  TCP    192.168.100.75:54267   ec2-13-219-159-226:https  ESTABLISHED
  TCP    192.168.100.75:54832   server-13-224-236-93:https  ESTABLISHED
  TCP    192.168.100.75:55801   wn-in-f188:5228        ESTABLISHED
  TCP    192.168.100.75:56469   ec2-44-196-141-136:https  ESTABLISHED
  TCP    192.168.100.75:57519   150.171.109.163:https  TIME_WAIT
  TCP    192.168.100.75:58638   204.79.197.222:https   TIME_WAIT
  TCP    192.168.100.75:59969   52.108.8.254:https     TIME_WAIT
  TCP    192.168.100.75:60860   170.168.16.131:4000    ESTABLISHED
  TCP    192.168.100.75:60861   vl3436:4000            ESTABLISHED
  TCP    192.168.100.75:60862   85.239.38.18:4000      ESTABLISHED
  TCP    192.168.100.75:60863   b:4000                 ESTABLISHED
  TCP    192.168.100.75:60864   85.193.90.242:4000     ESTABLISHED
  TCP    192.168.100.75:60865   c:4000                 ESTABLISHED
  TCP    192.168.100.75:60866   62.113.41.70:4000      ESTABLISHED
  TCP    192.168.100.75:62397   52.111.252.7:https     ESTABLISHED
  TCP    192.168.100.75:63853   172.64.148.235:https   ESTABLISHED
  TCP    192.168.100.75:63888   unn-169-150-215-45:https  ESTABLISHED
  TCP    192.168.100.75:63890   4.213.25.240:https     ESTABLISHED
  TCP    192.168.100.75:64080   150.171.28.254:https   TIME_WAIT
  TCP    [::1]:1521             WIN-S7JI3CCFSLQ:49671  ESTABLISHED
  TCP    [::1]:49671            WIN-S7JI3CCFSLQ:1521   ESTABLISHED
```



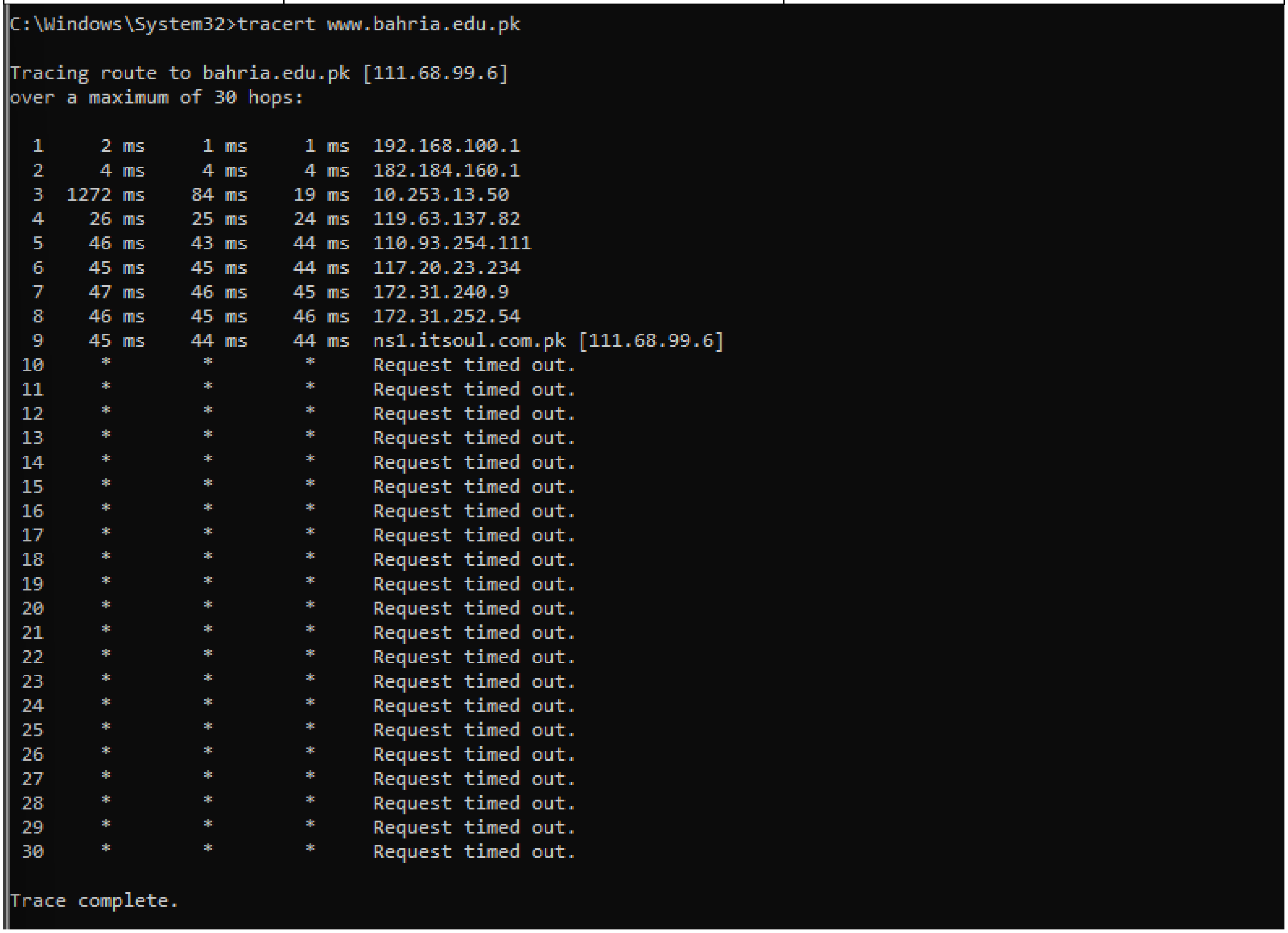
```
C:\Windows\System32>netstat -a

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    0.0.0.0:135            WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:445            WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:902            WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:912            WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:1521           WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:5040           WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:7070           WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:8080           WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49664          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49665          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49666          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49667          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49668          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49672          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    0.0.0.0:49673          WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    127.0.0.1:5939         WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    127.0.0.1:49669        WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    192.168.2.1:139        WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    192.168.75.1:139       WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    192.168.100.75:139     WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    192.168.100.75:51660   52.112.126.118:https   ESTABLISHED
  TCP    192.168.100.75:54683   20.20.44.160:https     TIME_WAIT
  TCP    192.168.100.75:54686   52.168.117.175:https   TIME_WAIT
  TCP    192.168.100.75:55801   wn-in-f188:5228        ESTABLISHED
  TCP    192.168.100.75:56276   ec2-98-90-19-65:https  TIME_WAIT
  TCP    192.168.100.75:57874   ec2-3-210-41-252:https  ESTABLISHED
  TCP    192.168.100.75:58633   server-13-224-236-93:https  ESTABLISHED
  TCP    192.168.100.75:58634   52.168.112.67:https    TIME_WAIT
  TCP    192.168.100.75:58635   20.189.173.4:https     TIME_WAIT
  TCP    192.168.100.75:60508   ec2-52-4-187-49:https  ESTABLISHED
  TCP    192.168.100.75:60860   170.168.16.131:4000    ESTABLISHED
  TCP    192.168.100.75:60861   vl3436:4000            ESTABLISHED
  TCP    192.168.100.75:60862   85.239.38.18:4000      ESTABLISHED
  TCP    192.168.100.75:60863   b:4000                 ESTABLISHED
  TCP    192.168.100.75:60864   85.193.90.242:4000     ESTABLISHED
  TCP    192.168.100.75:60865   c:4000                 ESTABLISHED
  TCP    192.168.100.75:60866   62.113.41.70:4000      ESTABLISHED
  TCP    192.168.100.75:60963   ec2-98-90-19-65:https  CLOSE_WAIT
  TCP    192.168.100.75:62304   ec2-100-50-212-244:https  ESTABLISHED
  TCP    192.168.100.75:62397   52.111.252.7:https     ESTABLISHED
  TCP    192.168.100.75:63853   172.64.148.235:https   ESTABLISHED
  TCP    192.168.100.75:63888   unn-169-150-215-45:https  ESTABLISHED
  TCP    192.168.100.75:63890   4.213.25.240:https     ESTABLISHED
  TCP    192.168.100.75:64801   ec2-52-200-9-235:https  ESTABLISHED
```



```
  TCP    192.168.100.75:64801   ec2-52-200-9-235:https  ESTABLISHED
  TCP    192.168.100.75:65212   52.110.18.202:https    TIME_WAIT
  TCP    192.168.100.75:65213   52.110.18.202:https    TIME_WAIT
  TCP    192.168.100.75:65214   52.110.18.202:https    TIME_WAIT
  TCP    [::]:135               WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:445               WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:1521              WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:7070              WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:8080              WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49664             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49665             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49666             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49667             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49668             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49672             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::]:49673             WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::1]:1521             WIN-S7JI3CCFSLQ:49671  ESTABLISHED
  TCP    [::1]:42050            WIN-S7JI3CCFSLQ:0      LISTENING
  TCP    [::1]:49671            WIN-S7JI3CCFSLQ:1521   ESTABLISHED
  UDP    0.0.0.0:123            *:*
  UDP    0.0.0.0:5050           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5355           *:*
  UDP    0.0.0.0:49595          216.239.38.223:443
  UDP    0.0.0.0:50001          *:*
  UDP    0.0.0.0:50489          *:*
  UDP    0.0.0.0:61506          142.251.37.132:443
  UDP    0.0.0.0:61790          104.18.32.47:443
  UDP    0.0.0.0:62218          142.250.201.227:443
  UDP    127.0.0.1:1900         *:*
  UDP    127.0.0.1:49664        127.0.0.1:49664
  UDP    127.0.0.1:55381        127.0.0.1:55381
  UDP    127.0.0.1:56372        *:*
  UDP    192.168.2.1:137        *:*
  UDP    192.168.2.1:138        *:*
  UDP    192.168.2.1:1900       *:*
  UDP    192.168.2.1:2177       *:*
  UDP    192.168.2.1:5353       *:*
  UDP    192.168.2.1:56369      *:*
  UDP    192.168.75.1:137       *:*
  UDP    192.168.75.1:138       *:*
  UDP    192.168.75.1:1900      *:*
  UDP    192.168.75.1:2177      *:*
  UDP    192.168.75.1:5353      *:*
  UDP    192.168.75.1:56370     *:*
  UDP    192.168.100.75:137     *:*
  UDP    192.168.100.75:138     *:*
  UDP    192.168.100.75:1900    *:*
  UDP    192.168.100.75:2177    *:*
  UDP    192.168.100.75:5353    *:*
  UDP    192.168.100.75:56371   *:*
  UDP    [::]:123               *:*
  UDP    [::]:50490             *:*
  UDP    [::1]:1900             *:*
  UDP    [::1]:5353             *:*
  UDP    [::1]:56368            *:*
```

5. tracert www.bahria.edu.pk

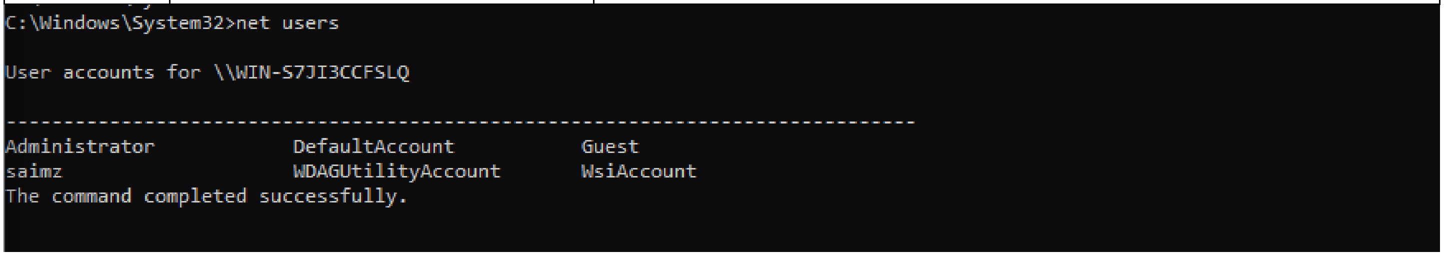
Command	Purpose	Practical Use Case
tracert www.bahria.edu.pk	Shows the path packets take to reach the destination website and latency at each hop	Identify network bottlenecks or routing issues between your PC and a remote server



```
C:\Windows\System32>tracert www.bahria.edu.pk

Tracing route to bahria.edu.pk [111.68.99.6]
over a maximum of 30 hops:

  1     2 ms     1 ms     1 ms  192.168.100.1
  2     4 ms     4 ms     4 ms  182.184.160.1
  3  1272 ms    84 ms    19 ms  10.253.13.50
  4    26 ms    25 ms    24 ms  119.63.137.82
  5    46 ms    43 ms    44 ms  110.93.254.111
  6    45 ms    45 ms    44 ms  117.20.23.234
  7    47 ms    46 ms    45 ms  172.31.240.9
  8    46 ms    45 ms    46 ms  172.31.252.54
  9    45 ms    44 ms    44 ms  ns1.itsoul.com.pk [111.68.99.6]
 10     *        *        *     Request timed out.
 11     *        *        *     Request timed out.
 12     *        *        *     Request timed out.
 13     *        *        *     Request timed out.
 14     *        *        *     Request timed out.
 15     *        *        *     Request timed out.
 16     *        *        *     Request timed out.
 17     *        *        *     Request timed out.
 18     *        *        *     Request timed out.
 19     *        *        *     Request timed out.
 20     *        *        *     Request timed out.
 21     *        *        *     Request timed out.
 22     *        *        *     Request timed out.
 23     *        *        *     Request timed out.
 24     *        *        *     Request timed out.
 25     *        *        *     Request timed out.
 26     *        *        *     Request timed out.
 27     *        *        *     Request timed out.
 28     *        *        *     Request timed out.
 29     *        *        *     Request timed out.
 30     *        *        *     Request timed out.

Trace complete.
```

6. net users

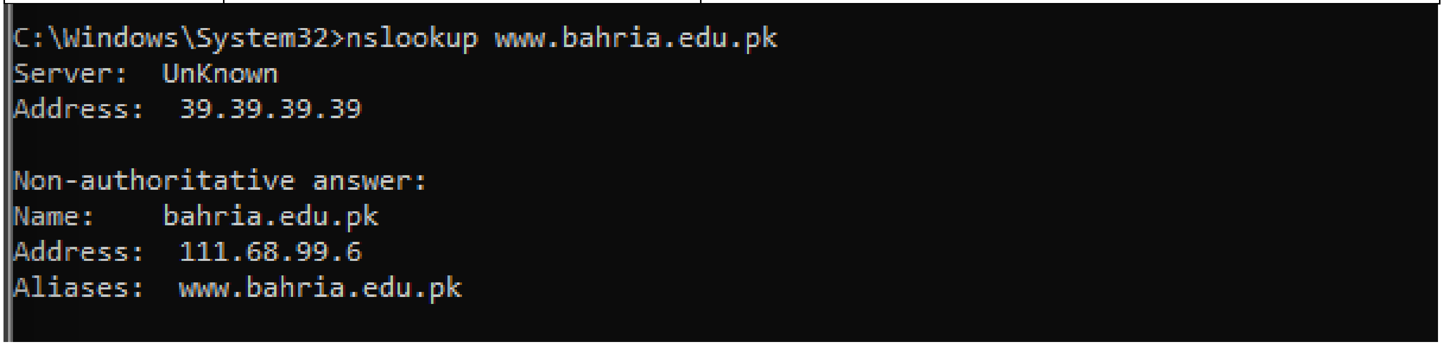
Command	Purpose	Practical Use Case
net users	Lists all user accounts on the local PC	Useful in system administration to audit user accounts and check permissions



```
C:\Windows\System32>net users

User accounts for \\WIN-S7JI3CCFSLQ

-------------------------------------------------------------------------------
Administrator            DefaultAccount           Guest
saimz                    WDAGUtilityAccount       WsiAccount
The command completed successfully.
```

7. nslookup

Command	Purpose	Practical Use Case
nslookup [domain]	Queries DNS to find IP address or other DNS information	Troubleshoot DNS issues, verify domain resolution, or check correct DNS records for a website



```
C:\Windows\System32>nslookup www.bahria.edu.pk
Server:  UnKnown
Address:  39.39.39.39

Non-authoritative answer:
Name:    bahria.edu.pk
Address:  111.68.99.6
Aliases:  www.bahria.edu.pk
```

Total Marks: 10