

Windows Troubleshooting and Network Diagnostics Lab

1. Objective

The objective of this project is to gain practical knowledge in Windows operating system troubleshooting and basic network diagnostics. This project focuses on identifying and resolving common system and internet connectivity issues using built-in Windows tools and commands.

2. Tools Used

- Windows 10 Operating System
- Command Prompt
- Network Settings
- Microsoft Outlook (Basic understanding)

3. Tasks Performed

3.1 User Account Management

- Created a new user account in Windows.
- Modified user account settings.
- Practiced password reset process.

Purpose:

To understand how Service Desk provides access to new users.

3.2 IP Configuration Check

Command used:

>> ipconfig

Result: Identified IPv4 address

Identified Default Gateway

Purpose: To verify network connectivity.

3.3 DNS Cache Clearing

Command used:

>> ipconfig /flushdns

Result: Successfully cleared DNS Resolver Cache.

Purpose:

To resolve website loading issues.

3.4 Network Connectivity Test

Command used:

ping google.com

Result: Received successful replies from server.

No packet loss observed.

Purpose:

To check internet connectivity and network stability.

3.5 Software Installation and Uninstallation

Installed Google Chrome.

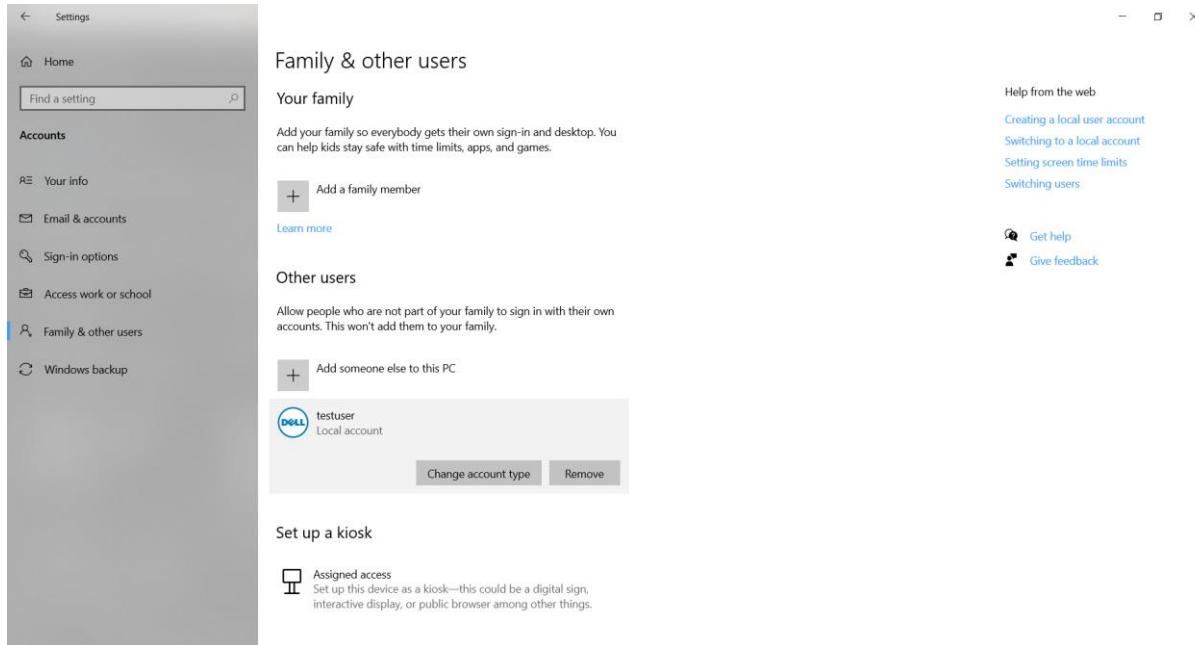
Uninstalled and reinstalled software.

Purpose:

To understand software troubleshooting process.

4. Outcome

- Gained hands-on experience in Windows troubleshooting.
- Learned network diagnostic commands.
- Understood basic Service Desk support activities.
- Improved troubleshooting and problem-solving skills.



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C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.19045.6466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\MPC>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:
  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* 2:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . :

Wireless LAN adapter Wi-Fi:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . :

Wireless LAN adapter Wi-Fi 2:
  Connection-specific DNS Suffix . :
  IPv6 Address . . . . . : 2409:40f0:1125:9282:900d:30bb:b723:f67c
  Temporary IPv6 Address . . . . . : 2409:40f0:1125:9282:1852:c44b:beb8:157c
  Link-local IPv6 Address . . . . . : fe80:ec43:47e3:c31a:a132%14
  IPv4 Address . . . . . : 10.96.140.193
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : fe80::d4c9:adff:fe4e:8b33%14
                           10.96.140.84

Ethernet adapter Bluetooth Network Connection:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . :

C:\Users\MPC>ipconfig /flushdns

Windows IP Configuration

Successfully flushed the DNS Resolver Cache.
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C:\Windows\system32\cmd.exe
successfully flushed the DNS Resolver Cache.

C:\Users\VMPC>ping google.com

Pinging google.com [2404:6800:4007:81b::200e] with 32 bytes of data:
Reply from 2404:6800:4007:81b::200e: time=89ms
Reply from 2404:6800:4007:81b::200e: time=37ms
Reply from 2404:6800:4007:81b::200e: time=99ms
Reply from 2404:6800:4007:81b::200e: time=61ms

Ping statistics for 2404:6800:4007:81b::200e:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milliseconds:
        Minimum = 37ms, Maximum = 99ms, Average = 71ms

C:\Users\VMPC>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=7ms TTL=112
Reply from 8.8.8.8: bytes=32 time=6ms TTL=112
Reply from 8.8.8.8: bytes=32 time=43ms TTL=112
Reply from 8.8.8.8: bytes=32 time=45ms TTL=112

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milliseconds:
        Minimum = 43ms, Maximum = 67ms, Average = 54ms

C:\Users\VMPC>ipconfig /all

Windows IP Configuration

 Host Name . . . . . : DESKTOP-VPHFF7T
 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 . . . . . : 60-18-95-30-04-00
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Local Area Connection* 1:

 Media State . . . . . : Media disconnected

C:\Windows\system32\cmd.exe

 Media State . . . . . : Media disconnected
 Connection-specific DNS Suffix . . . . . :
 Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
 Physical Address . . . . . : EC-63-D7-DC-7E-4B
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:

 Media State . . . . . : Media disconnected
 Connection-specific DNS Suffix . . . . . :
 Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
 Physical Address . . . . . : EE-63-D7-DC-7E-4A
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Wi-Fi:

 Media State . . . . . : Media disconnected
 Connection-specific DNS Suffix . . . . . :
 Description . . . . . : Intel(R) Wireless-AC 9462
 Physical Address . . . . . : EC-63-D7-DC-7E-4A
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Wi-Fi 2:

 Connection-specific DNS Suffix . . . . . :
 Description . . . . . : Realtek RTL8188FTV Wireless LAN 802.11n USB 2.0 Network Adapter
 Physical Address . . . . . : 00-2E-20-00-3E-28
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes
 IPv6 Address . . . . . : 2409:40f0:1125:9282:900d:30bb:b723:f67e(Preferred)
 Temporary IPv6 Address . . . . . : 2409:40f0:1125:9282:1852:c44b:bebb:157c(Preferred)
 Link-local IPv6 Address . . . . . : fe80::ecaa:47e3:c31a:a132%14(Preferred)
 IPv4 Address . . . . . : 10.96.140.193(Preferred)
 Subnet Mask . . . . . : 255.255.255.0
 Lease Obtained. . . . . : 21 February 2026 11:57:45
 Lease Expires . . . . . : 21 February 2026 13:27:50
 Default Gateway . . . . . : fe80::d4c9:adff:fe4e:8b33%14
 DHCP Server . . . . . : 10.96.140.84
 DHCPv6 IAID . . . . . : 469773869
 DHCPv6 Client DUID. . . . . : 00-01-00-01-2F-E0-E3-7E-60-18-95-3D-04-60
 DNS Servers . . . . . : 10.96.140.84
 NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Physical Address . . . . . : 00-2E-20-00-3E-28
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
IPv6 Address . . . . . : 2409:40f0:1125:9282:900d:30bb:b723:f67e(Preferred)
Temporary IPv6 Address . . . . . : 2409:40f0:1125:9282:1852:c44b:bebb:157c(Preferred)
Link-local IPv6 Address . . . . . : fe80::ecaa:47e3:c31a:a132%14(Preferred)
IPv4 Address . . . . . : 10.96.140.193(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 21 February 2026 11:57:45
Lease Expires . . . . . : 21 February 2026 13:27:50
Default Gateway . . . . . : fe80::d4c9:adff:fe4e:8b33%14
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DHCPv6 IAID . . . . . : 469773869
DHCPv6 Client DUID. . . . . : 00-01-00-01-2F-E0-E3-7E-60-18-95-3D-04-60
DNS Servers . . . . . : 10.96.140.84
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

 Media State . . . . . : Media disconnected
 Connection-specific DNS Suffix . . . . . : Bluetooth Device (Personal Area Network)
 Description . . . . . : EC-63-D7-DC-7E-4E
 Physical Address . . . . . : EC-63-D7-DC-7E-4E
 DHCP Enabled. . . . . : Yes
 Autoconfiguration Enabled . . . . . : Yes

C:\Users\VMPC>appwiz.cpl

C:\Users\VMPC>outlook
'Outlook' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\VMPC>

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5. Conclusion

This project helped in understanding real-world technical support tasks such as user account management, network troubleshooting, and software support. The knowledge gained is useful for Service Desk L1 role.