IT Support Portfolio – Project 1: Network Connectivity Troubleshooting

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🔧 Project 1: Diagnosing & Fixing a DNS Issue on Windows

Tools Used: Windows 10, Command Prompt, Notepad
Skills Demonstrated: Network troubleshooting, command-line diagnostics, DNS configuration

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🧩 Objective:

Simulate and resolve a common user issue where websites can't be accessed due to a DNS misconfiguration.

🛠️ Problem Scenario:

> A user reports they can’t open websites like `www.google.com`, but can ping the IP address `8.8.8.8`.

🧪 Troubleshooting Steps:

1. **Confirm Internet access via IP**
    - `ping 8.8.8.8` → Successful
    - Conclusion: Internet access is available.
2. **Test DNS resolution**
    - `ping www.google.com` → Failed

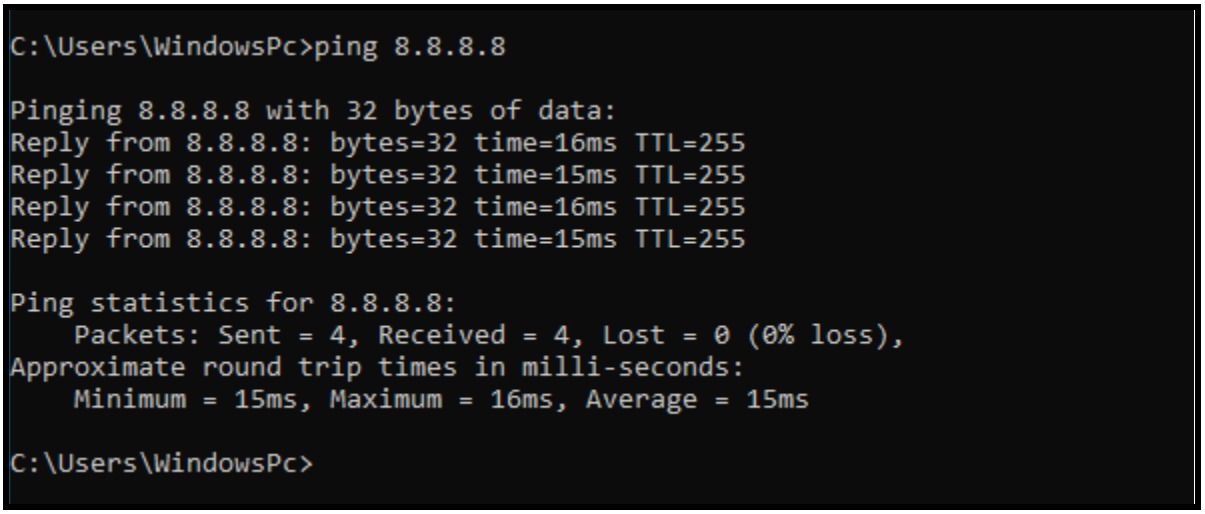
- `nslookup www.google.com` → Error message (DNS not resolving)

3. **Check current DNS settings**
   - `ipconfig /all` → DNS set to local or invalid IP
4. **Fix the issue**
   - Changed DNS settings to use Google DNS (`8.8.8.8`)
   - Flushed DNS cache: `ipconfig /flushdns`
5. **Re-test**
   - `ping www.google.com` → Success
   - Browser now loads websites correctly

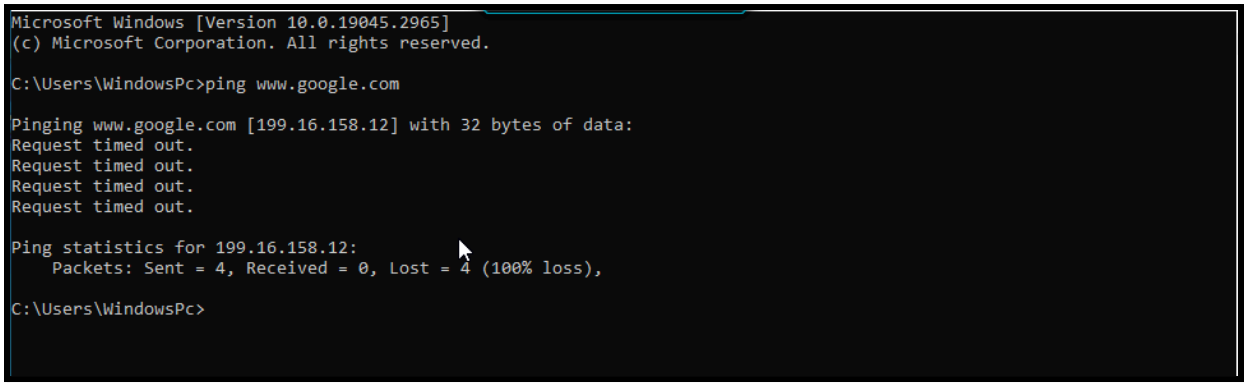
📸 Screenshots :

Ping results before fix:

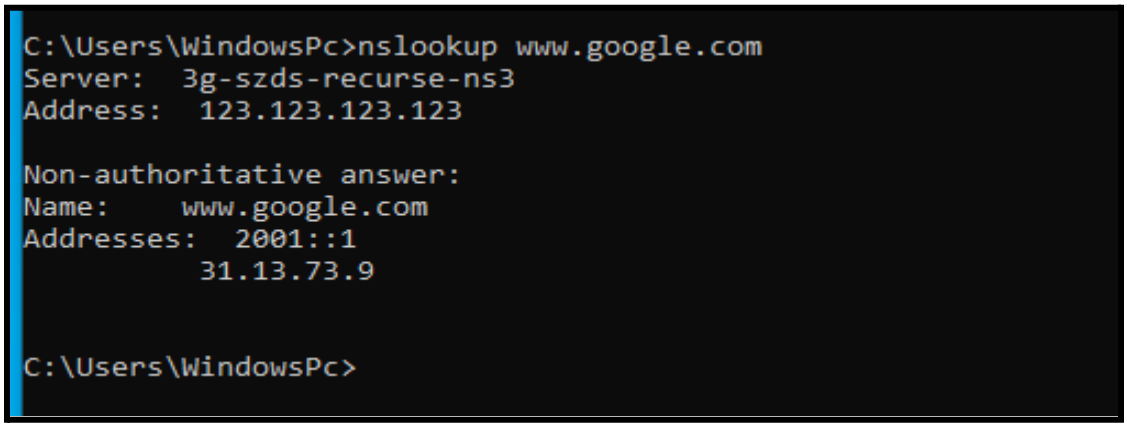
- Ping to `8.8.8.8` → Successful



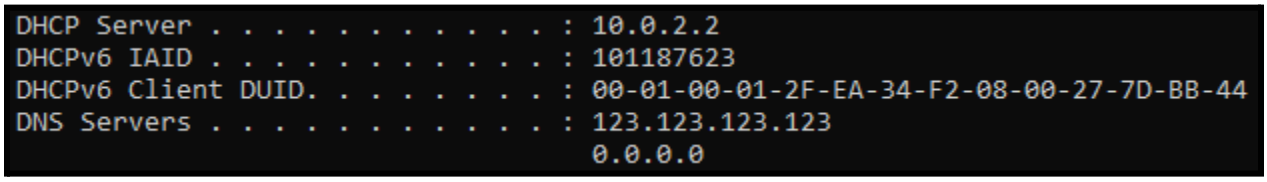
- Ping to `www.google.com` → Failed



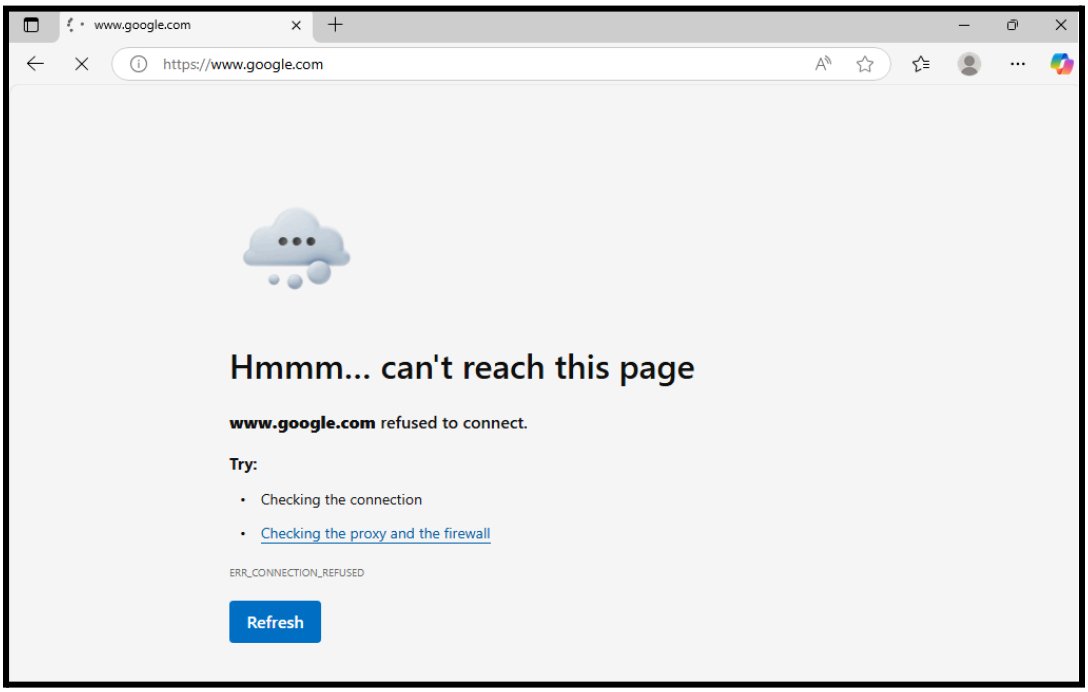
- `nslookup` → Timed out / No DNS response



- DNS set to local address (invalid)



- Browser shows “This site can’t be reached” error

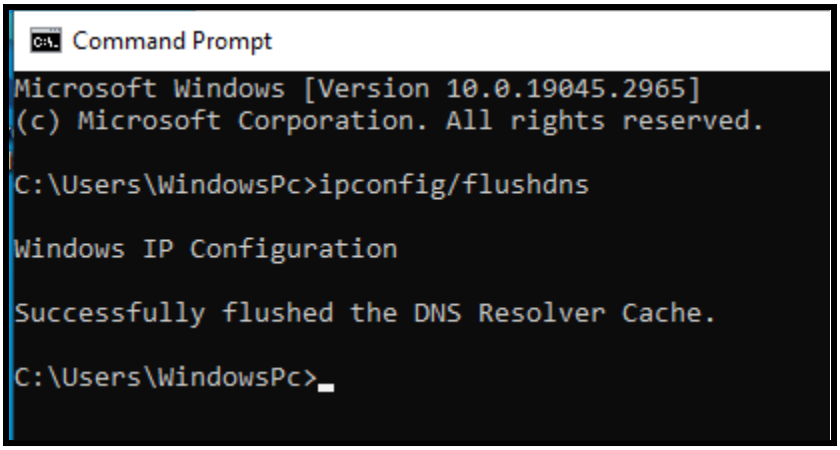


Ping results after

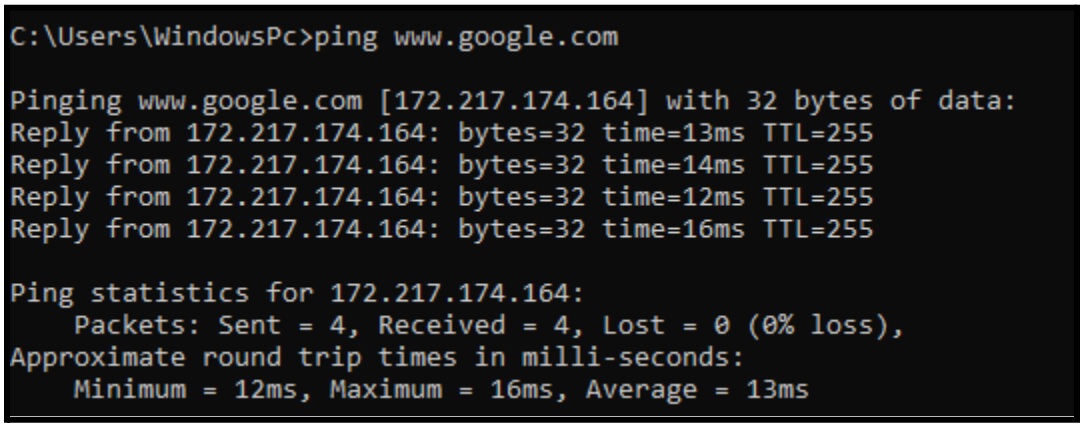
- DNS set to Google DNS (8.8.8.8)

```
DHCP Server . . . . . . . . . . . : 10.0.2.2
DHCPv6 IAID . . . . . . . . . . . : 101187623
DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-2F-EA-34-F2-08-00-27-7D-BB-44
DNS Servers . . . . . . . . . . . : 8.8.8.8
                                    8.8.4.4
NetBIOS over Tcpip. . . . . . . . : Enabled
```

- `ipconfig /flushdns` executed



- Ping to `www.google.com` → Successful



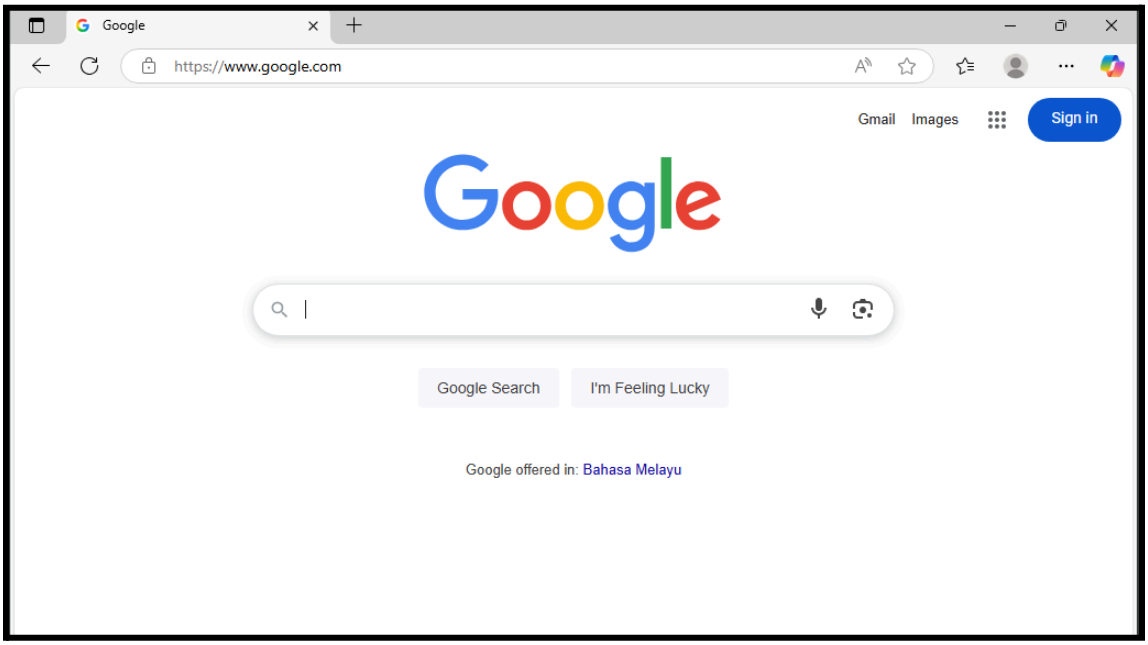
- DNS settings screenshots
- DNS set to local address(invalid)

```
DHCP Server . . . . . . . . . . . : 10.0.2.2
DHCPv6 IAID . . . . . . . . . . . : 101187623
DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-2F-EA-34-F2-08-00-27-7D-BB-44
DNS Servers . . . . . . . . . . . : 123.123.123.123
                                    0.0.0.0
```

- DNS set to Google DNS (8.8.8.8)

```
DHCP Server . . . . . . . . . . . : 10.0.2.2
DHCPv6 IAID . . . . . . . . . . . : 101187623
DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-2F-EA-34-F2-08-00-27-7D-BB-44
DNS Servers . . . . . . . . . . . : 8.8.8.8
                                    8.8.4.4
NetBIOS over Tcpip. . . . . . . . : Enabled
```

- Successful browser access



✅ Result:

- Successfully configured a static IP address on a Windows 10 VM
- Verified network configuration using `ipconfig`
- Demonstrated network connectivity with `ping 8.8.8.8`
- Simulated and resolved a DNS failure scenario
- Screenshots serve as evidence of each step completed

💡 What I Learned:

- Diagnosing DNS-related issues using ping, nslookup, and ipconfig
- Importance of understanding layers of connectivity (IP vs DNS)
- How to guide a user through step-by-step resolution remotely or in person