

# VPN Setup and Privacy Report

## Objective

To understand the role of VPNs (Virtual Private Networks) in protecting online privacy and ensuring secure communication.

## Tools Used

- **VPN Client:** ProtonVPN (Free Tier)
- **IP Check Tool:** <https://whatismyipaddress.com>
- **Web Browsing:** Google Chrome (for test browsing)

## Steps Taken

### 1. VPN Selection and Installation

I chose **ProtonVPN** because it offers a trustworthy free plan, does not keep logs, and is backed by a reputable security company.

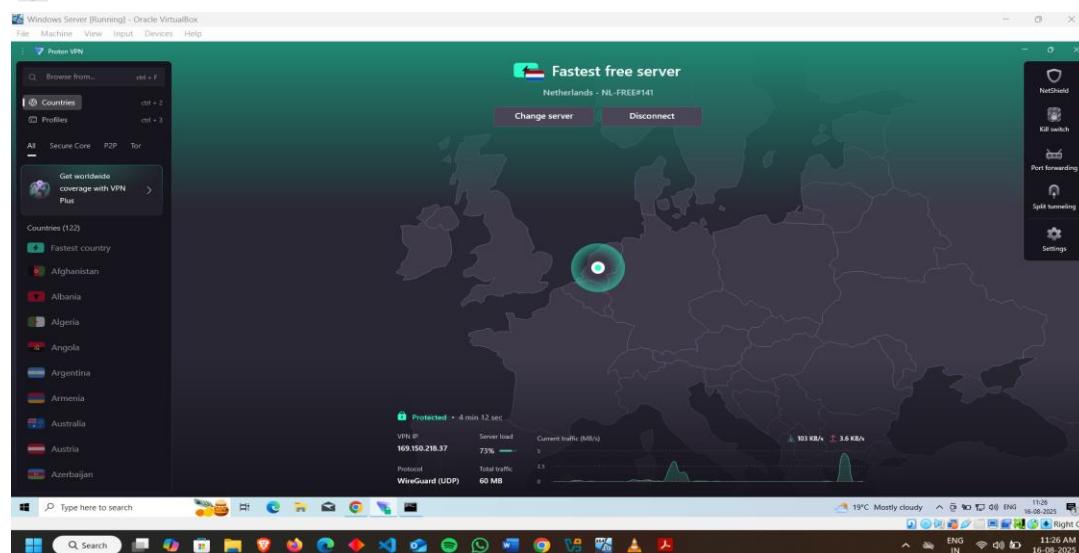
Steps:

- Visited <https://protonvpn.com>
- Signed up for a free account
- Downloaded and installed the ProtonVPN client for Windows

### 2. Connecting to a VPN Server

- Logged into the ProtonVPN application
- Selected the nearest free server (Netherlands)
- Clicked “Connect” and waited for confirmation

 **Screenshot 1:** ProtonVPN connected to server in the Netherlands

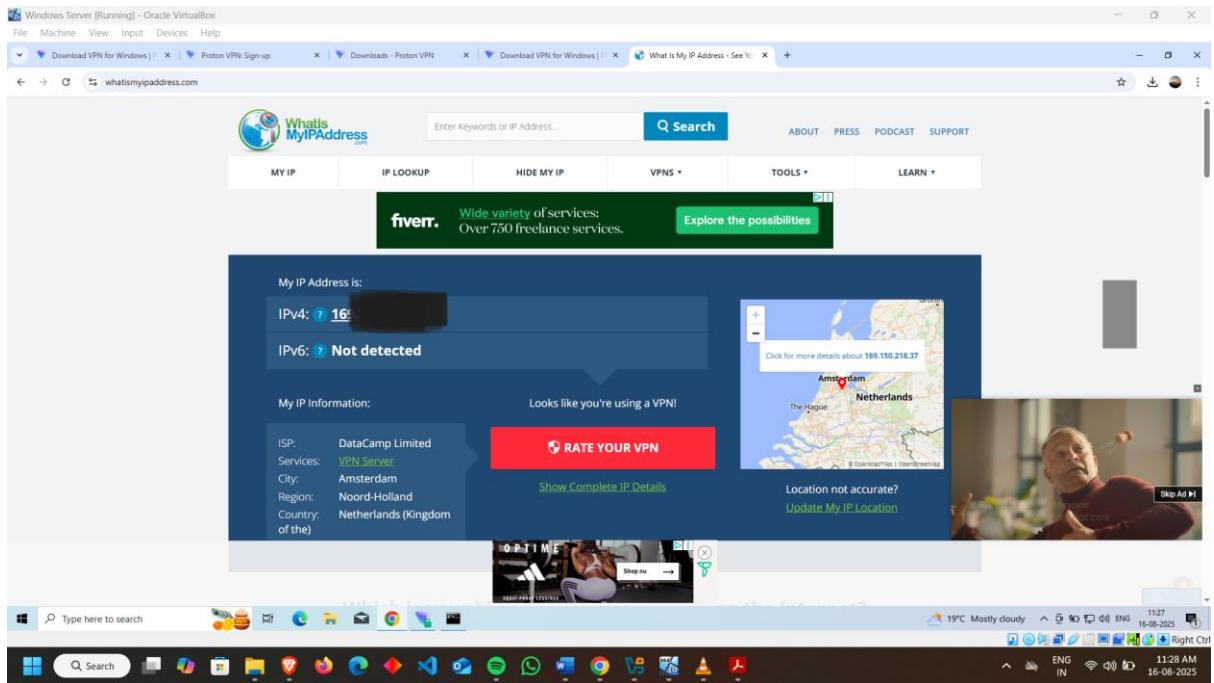


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### 3. Verifying IP Address Change

- Visited <https://whatismyipaddress.com>
- Confirmed my IP address and location were now shown as the Netherlands instead of my actual location

 **Screenshot 2:** IP address showing Netherlands



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### 4. Testing Encrypted Browsing

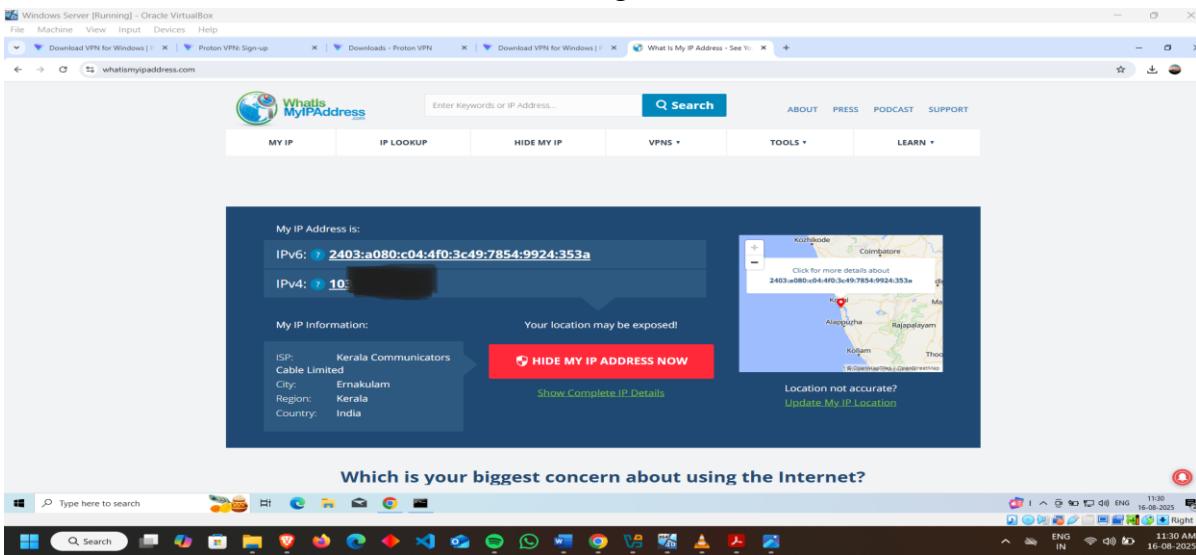
- Visited <https://google.com> and other HTTPS websites
- Verified secure connection via lock icon in browser
- Also used <https://ipleak.net> to check for DNS and WebRTC leaks (none found)

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### 5. Disconnecting and Comparing

- Disconnected ProtonVPN
- Rechecked IP at [whatismyipaddress.com]
- My original IP address and correct location were now visible
- Noted faster browsing without VPN, but less privacy

### Screenshot 3: IP address after disconnecting VPN



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## Research: How VPNs Work

### What is a VPN?

A **VPN (Virtual Private Network)** encrypts your internet connection and routes it through a remote server, masking your real IP address and location.

### Key Features of VPNs:

- **Encryption:** Protects data from eavesdroppers (AES-256 encryption commonly used)
  - **Anonymity:** Hides your IP and location
  - **Bypass Geo-blocks:** Lets users access content restricted to specific countries
  - **Secure Public Wi-Fi:** VPNs protect data on open networks like cafes, airports
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### Benefits of Using a VPN

- **Enhanced privacy and anonymity**
  - **Encrypted traffic keeps hackers and trackers out**
  - **Protection when using public Wi-Fi**
  - **Ability to bypass censorship and content restrictions**
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### Limitations of VPNs

- **Reduced speed due to encryption and server distance**
  - **Some websites may block known VPN IPs**
  - **You must trust your VPN provider to not log your data**
  - **Free plans usually have fewer servers and slower speed**
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## **Conclusion**

Using a VPN like ProtonVPN significantly enhances online privacy and security. While there are some performance trade-offs, the benefits of encrypted communication and anonymity are vital—especially on unsecured networks.