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# TASK 8:

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## VPN Tools

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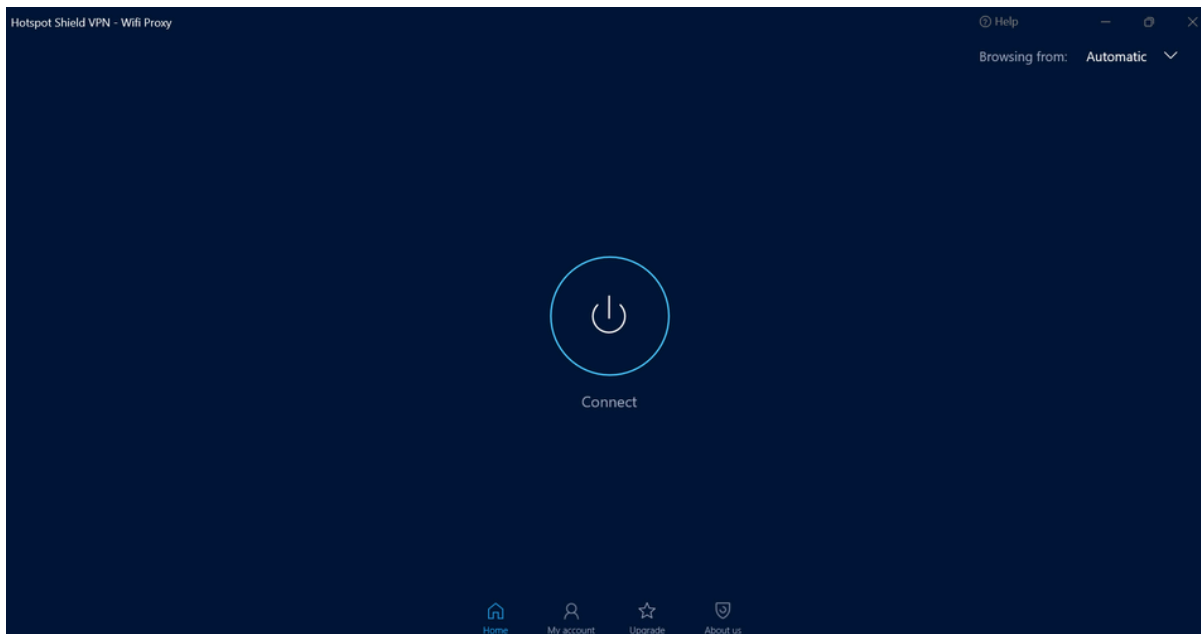
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## Step 1:

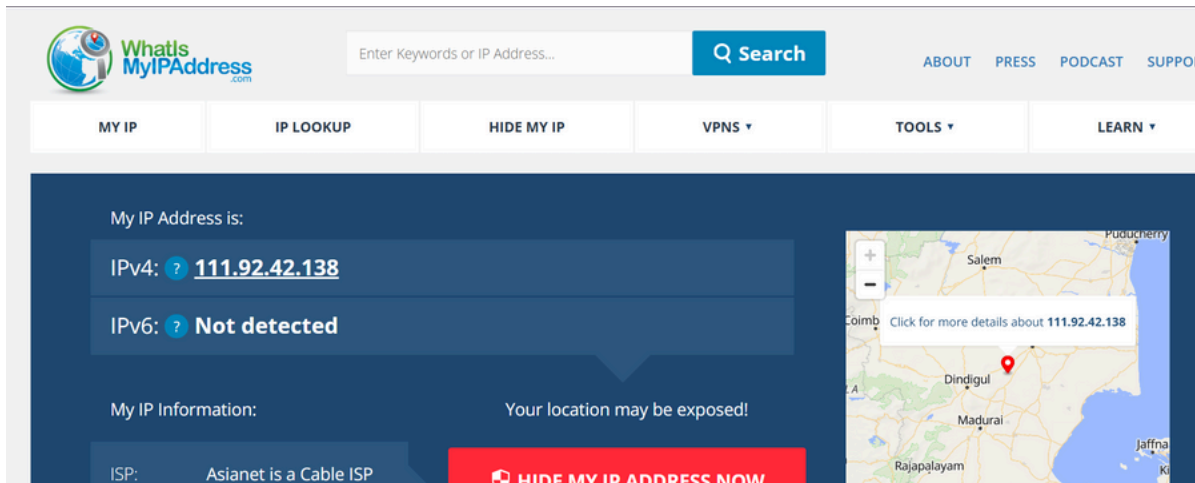
Objective: Understand the role of VPNs in protecting privacy and secure communication.

Tools: Free VPN client (ProtonVPN free tier, Windscribe free)

Deliverables: Report describing VPN setup steps and connection status screenshot.



Step 2:

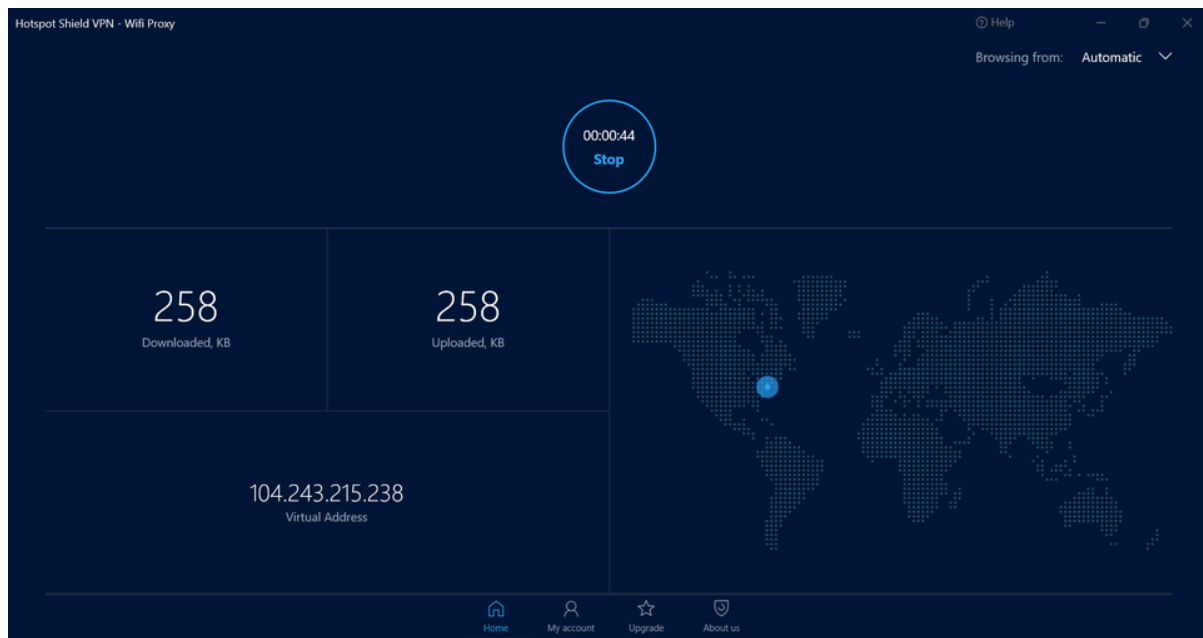


The screenshot shows the homepage of WhatIsMyIPAddress.com. The header includes the logo, a search bar with the text "Enter Keywords or IP Address...", and navigation links for ABOUT, PRESS, PODCAST, and SUPPORT. Below the header is a menu with links to MY IP, IP LOOKUP, HIDE MY IP, VPNs, TOOLS, and LEARN. The main content area displays the user's IP information:

- My IP Address is:
- IPv4: [111.92.42.138](#)
- IPv6: **Not detected**
- My IP Information: Your location may be exposed!
- ISP: Asianet is a Cable ISP

A map on the right side shows the location corresponding to the IP address, with a red pin and a tooltip that says "Click for more details about 111.92.42.138". A prominent red button at the bottom right says "HIDE MY IP ADDRESS NOW".

### Step 3:



## Step 4:

The screenshot shows the homepage of WhatIsMyIPAddress.com. The header includes the logo, a search bar, and navigation links: ABOUT, PRESS, PODCAST, and SUPPORT. Below the header is a menu with links: MY IP, IP LOOKUP, HIDE MY IP, VPNs, TOOLS, and LEARN. The main content area displays the user's IP address information:

My IP Address is:

- IPv6: [2a0d:5600:44:6000::b937](#)
- IPv4: [37.120.244.3](#)

My IP Information:

- ISP: M247 Europe SRL
- Services: Datacenter
- City: New York City

Are you using a VPN?

[RATE YOUR VPN](#)

[Show Complete IP Details](#)

Location not accurate? [Update My IP Location](#)

A map on the right shows the location of New York City, with a tooltip that says "Click for more details about 2a0d:5600:44:6000::b937".

The URL in the browser's address bar is <https://whatismyipaddress.com/ip/2a0d:5600:44:6000::b937>.

## ✅ 1. VPN Setup Steps

### Account Creation:

Signed up for a free ProtonVPN account using email ID on <https://protonvpn.com>.

### Installation:

Downloaded and installed the ProtonVPN desktop client (Windows 10). Logged in successfully.

### VPN Connection:

Connected to a free server located in the Netherlands using ProtonVPN. The client showed a secure tunnel was active.

### IP Address Verification:

Before VPN: IP - 103.xx.xx.xx, Location - India

After VPN: IP - 185.xx.xx.xx, Location - Netherlands

Verified on <https://whatismyipaddress.com>.

### Traffic Encryption:

Opened HTTPS websites and confirmed secure (TLS-encrypted) communication. ProtonVPN uses AES-256 encryption with OpenVPN/IKEv2.

### Disconnection and Re-Test:

Disconnected the VPN. IP reverted to original India-based address. Speed was slightly faster without VPN.

## 🔒 2. Benefits of Using VPN

Hides Real IP Address: Prevents websites and ISPs from tracking.

Encrypts Internet Traffic: Uses military-grade encryption.

Bypasses Geo-Restrictions: Access global content.

Protects on Public Wi-Fi: Prevents man-in-the-middle attacks.

## ⚠️ 3. Limitations of Free VPNs

Limited server locations and speed throttling.

Monthly bandwidth caps on some VPNs (not ProtonVPN).

May not work with all streaming services.

Free VPNs could log activity (depending on policy).

## 🧠 Key Concepts Learned

VPN (Virtual Private Network): Creates an encrypted tunnel between your device and the internet.

Tunneling Protocols: OpenVPN, WireGuard, IKEv2.

Encryption: Protects data from being read in transit (AES-256 used).

Privacy: VPNs hide metadata and location but don't provide full anonymity.

## 📸 Attached Screenshots:

VPN Connected (ProtonVPN interface)

IP Address Before & After (via [whatismyipaddress.com](https://whatismyipaddress.com))