

# Task 8: Working with VPNs

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## Objective

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

## Tools Used

- **VPN Client:** ProtonVPN (Free Tier)
- **Verification Tool:** [whatismyipaddress.com](https://whatismyipaddress.com)

## Steps Performed

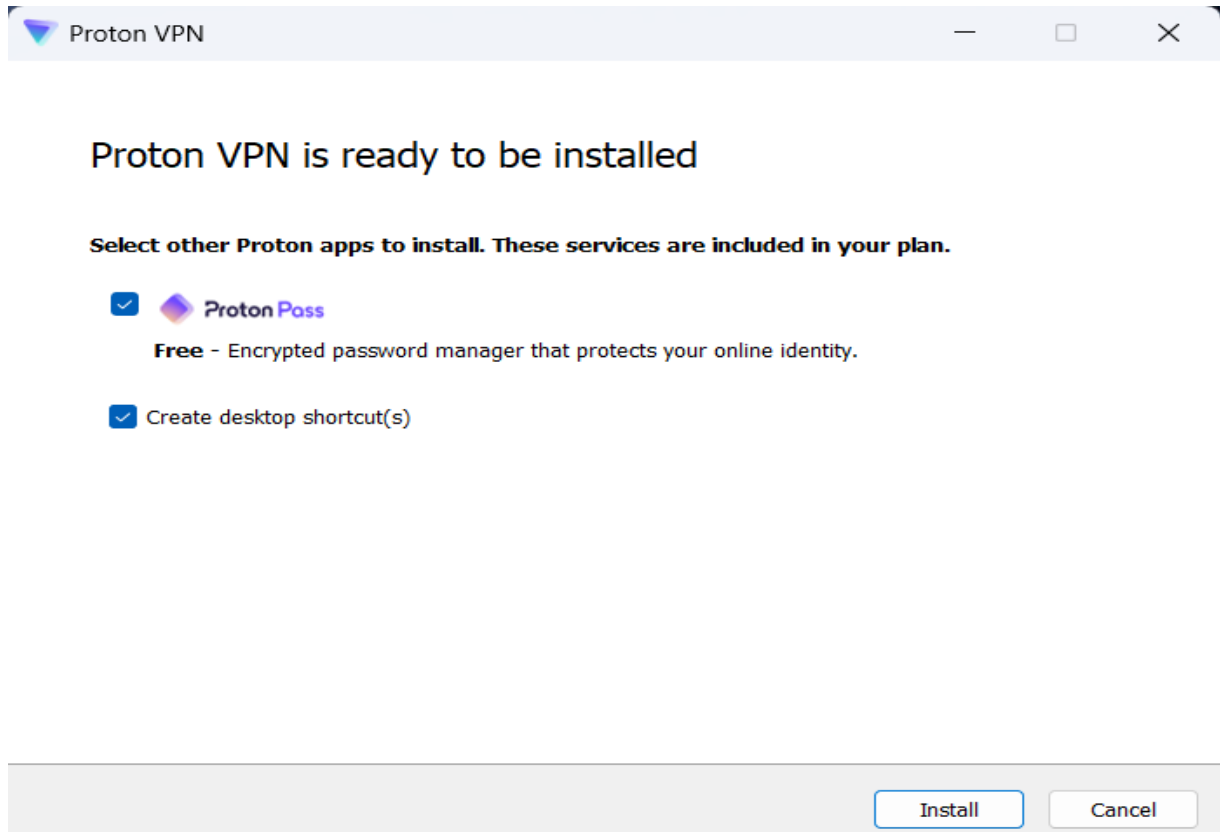
### 1. Choose a Reputable VPN Service

**ProtonVPN account at protonvpn.com.**



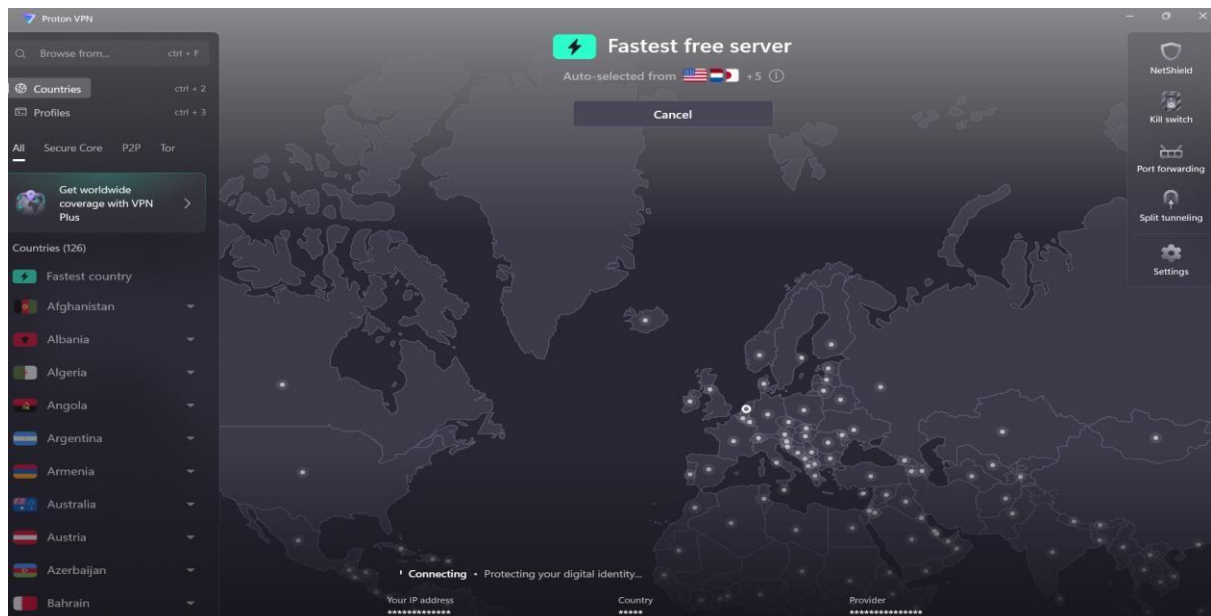
## Download & Installation:

Installed the ProtonVPN desktop client from the official website.

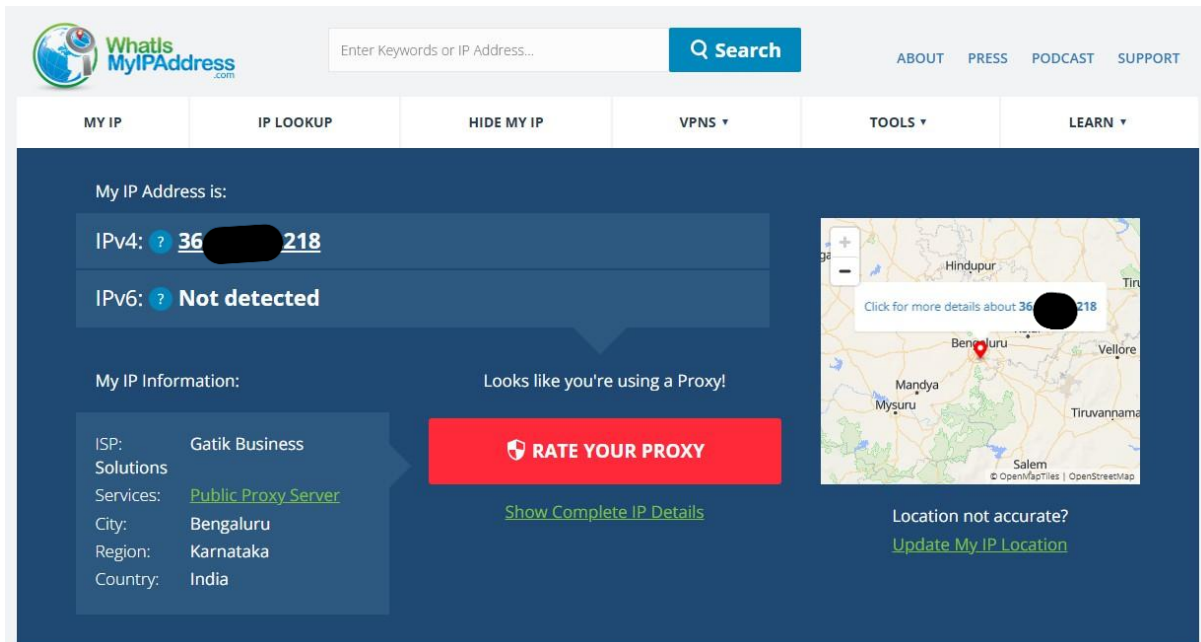


## Login & Connect:

Logged into the client and connected to a nearby VPN server (e.g., *Netherlands or India*).



## Before IP Change:



The screenshot shows the homepage of WhatIsMyIPAddress.com. The header includes the logo, a search bar, and navigation links (ABOUT, PRESS, PODCAST, SUPPORT). The main navigation bar has links for MY IP, IP LOOKUP, HIDE MY IP, VPNS, TOOLS, and LEARN. The main content area displays the current IP address as 36...218 (IPv4) and 'Not detected' (IPv6). It also shows IP information: ISP: Gatik Business Solutions, Services: Public Proxy Server, City: Bengaluru, Region: Karnataka, and Country: India. A message states 'Looks like you're using a Proxy!' with a 'RATE YOUR PROXY' button and a link to 'Show Complete IP Details'. A map on the right shows the location near Bengaluru, with a link to 'Update My IP Location'.

My IP Address is:

IPv4: ? 36...218

IPv6: ? Not detected

My IP Information:

ISP: Gatik Business Solutions

Services: [Public Proxy Server](#)

City: Bengaluru

Region: Karnataka

Country: India

Looks like you're using a Proxy!

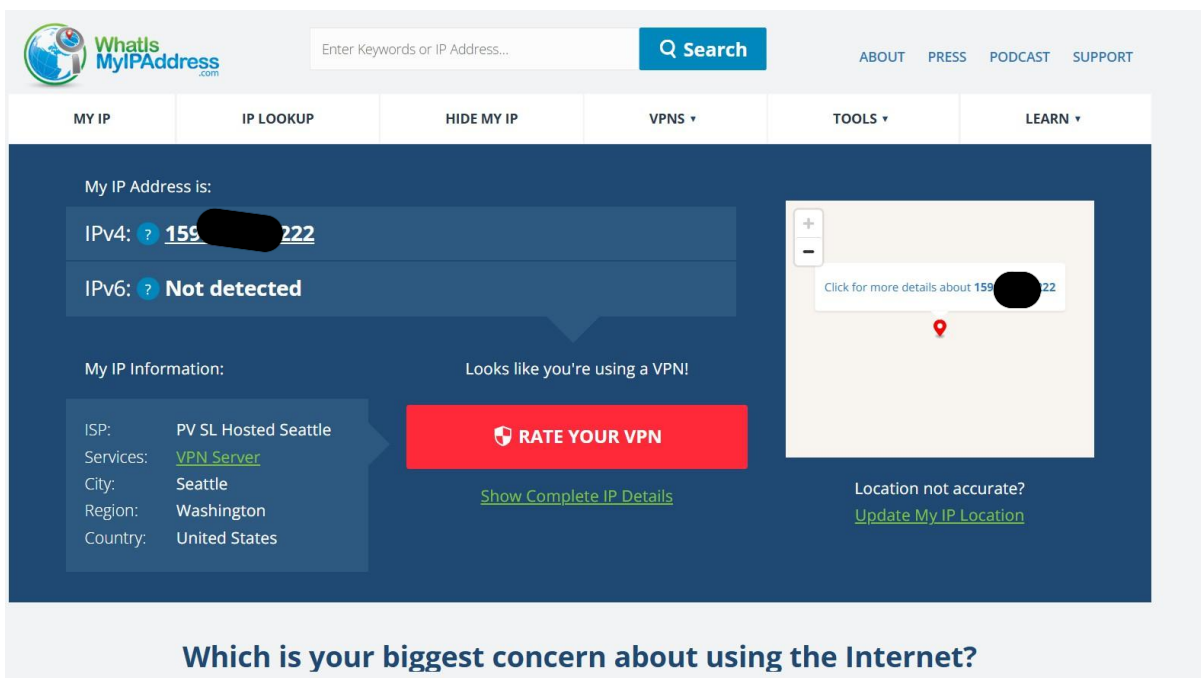
[RATE YOUR PROXY](#)

[Show Complete IP Details](#)

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

## Verify IP Change:

Checked [whatismyipaddress.com](https://whatismyipaddress.com) — confirmed that the public IP and location changed from the original one.



The screenshot shows the homepage of WhatIsMyIPAddress.com after a VPN connection. The header and navigation bar are the same. The main content area displays the current IP address as 159...222 (IPv4) and 'Not detected' (IPv6). It also shows IP information: ISP: PV SL Hosted Seattle, Services: VPN Server, City: Seattle, Region: Washington, and Country: United States. A message states 'Looks like you're using a VPN!' with a 'RATE YOUR VPN' button and a link to 'Show Complete IP Details'. A map on the right shows the location near Seattle, with a link to 'Update My IP Location'.

My IP Address is:

IPv4: ? 159...222

IPv6: ? Not detected

My IP Information:

ISP: PV SL Hosted Seattle

Services: [VPN Server](#)

City: Seattle

Region: Washington

Country: United States

Looks like you're using a VPN!

[RATE YOUR VPN](#)

[Show Complete IP Details](#)

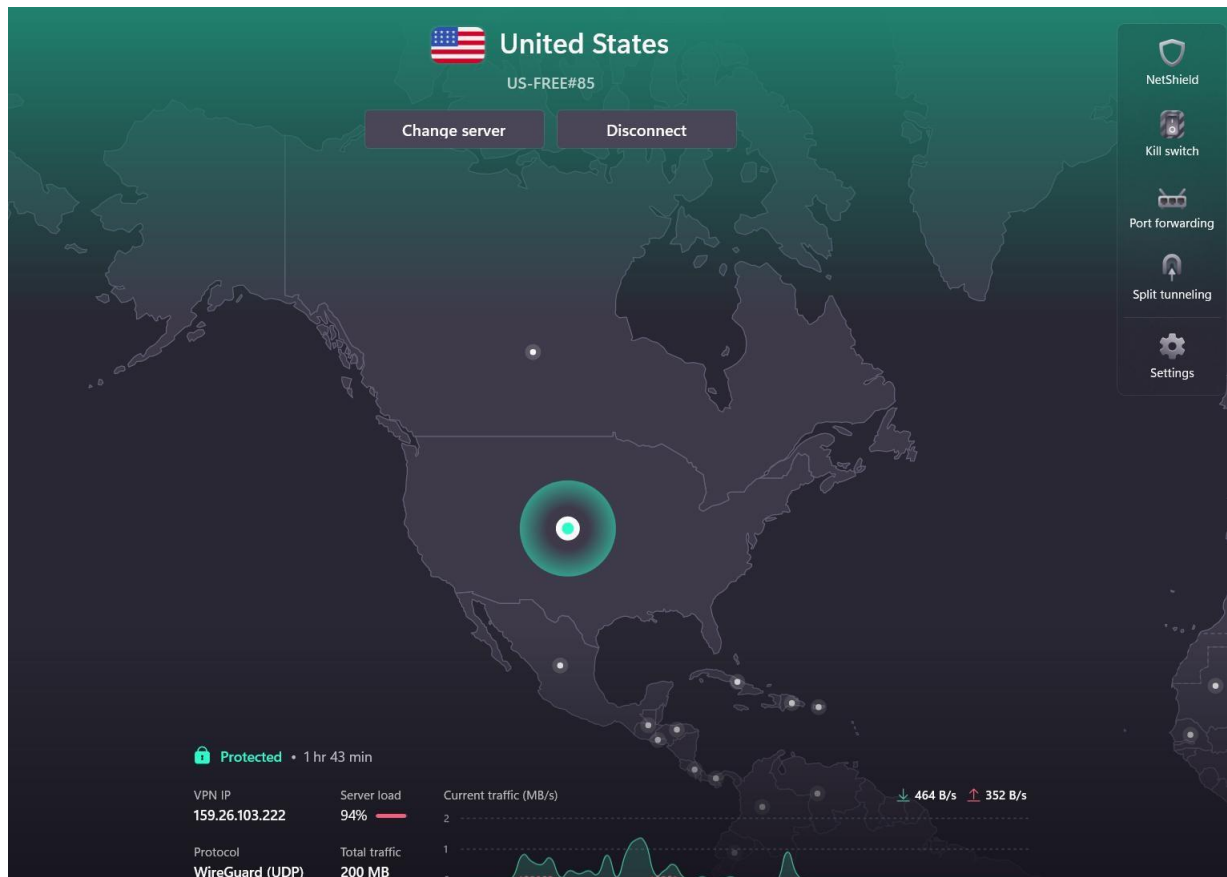
Location not accurate?  
[Update My IP Location](#)

Which is your biggest concern about using the Internet?

## Encrypted Traffic Test:

Browsed multiple websites (e.g., google.com, wikipedia.org).

Verified HTTPS traffic and encrypted tunnel via ProtonVPN dashboard.



## Disconnect & Compare:

Disconnected VPN — noted that the IP reverted to the original ISP-assigned address.

Observed slight improvement in speed after disconnection.

## Research on VPN Encryption and Privacy

ProtonVPN uses **AES-256 encryption**, **OpenVPN** and **IKEv2/IPSec protocols** ensuring confidentiality and integrity. It employs **Perfect Forward Secrecy (PFS)** and follows a **no-log policy** to maintain user privacy.

## Summary – VPN Benefits and Limitations

### Benefits:

- Encrypts online data and hides real IP address.
- Protects from tracking, snooping, and unsecured Wi-Fi risks.
- Enables access to region-restricted content.

**Limitations:**

- Free VPNs offer limited speed and servers.
- Some providers may log usage data.
- Slight latency due to encryption overhead.

**Outcome**

Successfully configured and tested a VPN connection.

Gained practical understanding of VPN setup, IP masking, and encrypted network communication.