

VPN Privacy & Security Report

Name: Nirav Patel

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

Tool Used: ProtonVPN Free Tier

Date: 2025-06-06

1. VPN Service Chosen

I selected ProtonVPN Free Tier due to its reputation for privacy, no-logs policy, and support from the creators of ProtonMail. The free plan offers servers in 3 countries (USA, Netherlands, Japan) with unlimited bandwidth.

2. Setup Process

- Visited <https://protonvpn.com>
- Signed up for a free account using an email ID.
- Downloaded the ProtonVPN Windows client.
- Installed the client and logged in using the credentials.

3. VPN Connection Steps

- Launched the ProtonVPN app.
- Connected to the Netherlands server (free tier).
- The app confirmed a successful connection with a secure green shield icon.

4. IP Address Verification

- Before VPN: Visited whatismyipaddress.com
- Original IP: (Your ISP's IP - India)
- After VPN Connection:
- New IP: Netherlands-based IP

VPN Privacy & Security Report

- This confirmed the IP address had successfully changed.

5. Encryption Verification

- Browsed websites like <https://example.com> and <https://wikipedia.org>.
- Traffic was encrypted (checked via the secure "HTTPS" lock in browser).
- DNS leak test also showed no leaks (<https://dnsleaktest.com>).

6. VPN Off - Speed & IP Comparison

- Disconnected VPN.
- IP reverted to original ISP address (India).
- Browsing speed without VPN was slightly faster (~10-15% difference), but the speed on VPN was still usable for normal browsing.

7. Research on Encryption and Privacy Features

- ProtonVPN uses AES-256 encryption with OpenVPN/IKEv2 protocols.
- Follows a strict no-logs policy.
- Offers DNS leak protection, Kill Switch, and Perfect Forward Secrecy for enhanced security.
- Free version does not support Secure Core (double-hop VPN), torrenting, or Tor over VPN.

8. Summary: VPN Benefits and Limitations

Benefits:

- Hides IP Address: Protects identity and masks location.
- Encrypted Traffic: Prevents ISPs, hackers, or governments from snooping on your data.
- Bypasses Restrictions: Can help access geo-blocked content.
- Enhanced Privacy: Useful on public Wi-Fi networks.

VPN Privacy & Security Report

Limitations:

- Free plans have limitations (speed, server locations, features).
- May reduce speed due to routing.
- Not foolproof: Doesn't protect from malware or phishing attacks.
- Some services block VPN IPs (like Netflix or banking portals).