

Task 8 - VPN Setup, Testing, and Analysis (Linux)

Objective: Understand the role of VPNs in protecting privacy and secure communication. This report documents the setup and usage of ProtonVPN Free on Linux (Kali) and includes connection verification and analysis.

Step	Description
1. Choose and Sign Up	Go to https://protonvpn.com/signup and select the Free Plan. Create your account and verify your email.
2. Get VPN CLI Credentials	Log in to https://account.protonvpn.com , go to 'Account → OpenVPN/IKEv2 username'. Copy the Username & Password.
3. Install ProtonVPN CLI	Run: sudo apt update sudo apt install pipx -y pipx install protonvpn-cli pipx ensurepath (then restart terminal)
4. Initialize ProtonVPN	Run: sudo /home/\$USER/.local/bin/protonvpn init Enter OpenVPN/IKEv2 Username & Password, select Free tier, choose UDP protocol.
5. Connect to VPN	Run: protonvpn c --fastest or: protonvpn c --cc US (for specific country)
6. Verify Connection	Run: curl ifconfig.me Or visit https://whatismyipaddress.com Take a screenshot showing the new IP.
7. Test Browsing	Open an HTTPS website to confirm encrypted traffic.
8. Disconnect and Compare	Run: protonvpn d Run curl ifconfig.me again. Take screenshot showing original IP.

Troubleshooting - HTTP Error Code: 422

If you see 'HTTP Error Code: 422' during 'protonvpn init', you are likely entering your normal ProtonVPN account password instead of your OpenVPN/IKEv2 credentials.

Solution:

1. Log in to <https://account.protonvpn.com>
2. Go to 'Account → OpenVPN/IKEv2 username'
3. Use these credentials in 'protonvpn init' instead of your email/password.

VPN Benefits:

- Encrypts all internet traffic (AES-256 encryption).
- Hides your IP address and location.
- Protects privacy on public Wi-Fi.
- Can bypass geo-restrictions and censorship.

VPN Limitations (Free Plan):

- Limited server locations (US, NL, JP in ProtonVPN Free).
- Lower speeds compared to paid plans.
- No P2P or streaming servers on free tier.

Screenshot 1: Connected VPN status (IP changed)

Screenshot 2: Disconnected VPN status (original IP)