

VPN Setup, Testing, and Evaluation – Detailed Report

Step-by-Step Procedure

1. Choosing a VPN Provider:

After researching free and reputable VPN services, I selected ProtonVPN due to its strong reputation in the cybersecurity community, strict no-logs policy, AES-256 encryption, and transparency.

2. Download and Installation:

I visited protonvpn.com, created a free account, and downloaded the VPN client. The installation process was smooth and quick.

3. Connecting to a VPN Server:

Connected to the Netherlands server, one of ProtonVPN's free server options. The connection was stable and secure.

4. Verifying IP Address:

Visited whatismyipaddress.com before and after connecting to the VPN. IP address changed successfully, confirming VPN functionality.

5. Confirming Encrypted Browsing:

Accessed websites like Google and Wikipedia via HTTPS and verified encrypted data transmission via the VPN interface.

6. Disconnecting and Speed Comparison:

After disconnecting, IP reverted to original, and browsing speed improved slightly, confirming expected performance differences.

Research on VPN Encryption & Privacy

ProtonVPN uses:

- AES-256 encryption
- OpenVPN, IKEv2, and WireGuard protocols
- DNS leak protection
- A strict no-logs policy

These features ensure secure, private, and anonymous browsing, especially on unsecured networks.

Benefits of Using a VPN

1. Enhanced Privacy: Hides IP and prevents ISP tracking.
2. Data Security: Encrypts data on public networks.
3. Bypassing Restrictions: Access geo-blocked content.
4. Anonymity: Provides online anonymity.
5. No Logging: Trusted VPNs do not store activity logs.

Limitations of VPNs

1. Speed Reduction: VPN may slow browsing.
2. Limited Free Features: Bandwidth/server access may be restricted.
3. Potential Privacy Risks: Some free VPNs collect user data.
4. Not a Complete Shield: Does not protect against all threats.
5. Service Blocks: Some platforms block VPN access.

Conclusion

Using ProtonVPN provides strong privacy and security features, especially for users on public Wi-Fi or restricted networks. While there are limitations such as reduced speed and restricted free features, a reliable VPN enhances your online safety when used in conjunction with other security practices.