Task 8 VPN Task Completion Report

Report Type: Manual Report

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Tool: Free VPN client (Proton VPN free tier, Windscribe free)

Date: 06/06/2025 Friday

Objective: To understand the role of VPNs in protecting privacy and secure communication through hands-on experience.

Tools Used: A free VPN client (Proton VPN Free or Windscribe Free).

Steps Performed:

1. **VPN Service Selection and Signup:**

   o I chose Proton VPN Free as my reputable free VPN service.

   o I successfully signed up for an account on their platform.

2. **VPN Client Download and Installation:**

   o I downloaded the Proton VPN Free client software from their official website.

   o The installation process was straightforward and completed successfully.

3. **Connection to a VPN Server:**

   o Upon launching the VPN client, I connected to a server located in Japan

4. **IP Address Verification:**

   o Before connecting to the VPN, my IP address was 223.228.45.18

   o After connecting to the VPN, I navigated to whatismyipaddress.com.

   o The website confirmed that my IP address had changed to **138.199.21.211**, indicating a successful VPN connection.

5. **Traffic Encryption Confirmation:**

   o I browsed several websites that are hackthebox.org, cyberdefenders.org, Xcom(Twitter), Linkedin.com, while connected to the VPN to confirm that my internet traffic was routed through the encrypted tunnel. The Browse experience was normal, indicating the encryption was active without major interruptions.

6. **VPN Disconnection and Comparison:**

   o I disconnected from the VPN.

- My IP address reverted to my original IP address.

- I observed a speed difference, e.g., slight increase/decrease/no significant change in Browse speed compared to when the VPN was active

7. **Research on VPN Encryption and Privacy Features:**

- I researched key aspects of VPNs, including their encryption standards and privacy features.

- **Encryption in VPNs:** VPNs utilize various encryption protocols (like AES-256) to scramble data, making it unreadable to unauthorized parties. This protects data privacy during transmission.

- **Privacy Features:** Reputable VPNs often implement a strict no-logs policy, meaning they do not record user activity. They also mask your true IP address, enhancing anonymity.

8. **Summary on VPN Benefits and Limitations:**

Benefits of VPNs:

- **Enhanced Privacy:** VPNs protect privacy by encrypting internet traffic and masking the user's IP address, making online activities more anonymous.

- **Secure Communication:** They create a secure tunnel for data transmission, protecting against eavesdropping, especially on public Wi-Fi networks.

- **Bypassing Geo-Restrictions:** VPNs can allow users to access content or services that are geographically restricted by connecting to servers in different countries.

- **Protection from ISP Throttling:** Some ISPs might throttle internet speeds for certain types of traffic; a VPN can help bypass this by encrypting the traffic.

Limitations of VPNs:

- **Reduced Network Speed:** Encryption and routing traffic through a remote server can sometimes lead to a reduction in internet speed.

- **Not a Guarantee of Complete Anonymity:** While VPNs significantly enhance privacy, they cannot guarantee complete anonymity, especially if users engage in activities that reveal their identity (e.g., logging into personal accounts).

- **Reliance on VPN Provider:** The level of privacy and security depends heavily on the trustworthiness and policies of the VPN provider (e.g., their logging policies).

- **Cost of Premium Services:** While free tiers exist, premium VPN services offer more features, better speeds, and more server locations, which come at a cost.

o **Potential for Blocks:** Some websites or services actively try to block VPN connections.

Outcome:

This task provided valuable hands-on experience with VPNs, allowing me to understand their setup, functionality, and impact on network communication. I gained a practical understanding of how VPNs contribute to online privacy and security by encrypting data and masking IP addresses.