TASK-8

OFFICIAL REPORT

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1. Overview of VPN Technology

A **Virtual Private Network (VPN)** is a secure communication channel that encrypts internet traffic between a user's device and the internet. It masks the original IP address by routing data through a remote server, thereby enhancing privacy and security.

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2. Objective of this Assessment

To:

- Evaluate the working of **Proton VPN** (as demonstrated in the screenshots)
- Verify **IP address obfuscation**
- Analyze encryption and privacy protocols employed by modern VPNs

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3. Evidence from Uploaded Screenshots

Screenshot	Details
Screenshot 1	**Proton VPN Connected** to a Netherlands server (Amsterdam NL-FREE#104), showing status as "Protected."
Screenshot 2	**WhatIsMyIPAddress.com** confirms IP address as 212.8.253.146 with the location set to **Naaldwijk, Netherlands**, ISP: **WorldStream B.V.**
Screenshot 3	**Proton VPN Disconnected**, showing status as "Unprotected." Fastest free server option visible.
Screenshot 4	Real IP Address exposed: 45.112.30.19, located in **Hyderabad, Telangana, India**, ISP: **Vision Broadband Services Pvt Ltd**

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4. Interpretation and Understanding

4.1 Working of VPN

- When **connected**, Proton VPN successfully reroutes the user's connection via a foreign server (Netherlands), thereby:

    - Changing the public IP address
    - Encrypting the user's internet traffic
    - Masking the real geographic location
- When **disconnected**, the actual IP address and location are revealed, exposing the real ISP and region (India in this case).

4.2 IP Obfuscation Validity

- The IP address change from **45.112.30.19 (India)** to **212.8.253.146 (Netherlands)** verifies that Proton VPN successfully anonymizes user identity and traffic route.

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5. VPN Encryption and Privacy Features (Research-Based)

Feature	Description
AES-256 Encryption	Industry-standard encryption ensuring data confidentiality.
OpenVPN & WireGuard Protocols	Secure tunneling protocols used for stable and private connections.
No-Logs Policy	Proton VPN enforces a strict no-logs policy ensuring user activities are not tracked or stored.
DNS Leak Protection	Prevents DNS queries from being leaked outside the encrypted tunnel.
Kill Switch	Terminates the internet connection if the VPN unexpectedly disconnects, avoiding IP exposure.
Secure Core Servers	Routes traffic through multiple servers in privacy-friendly jurisdictions to resist surveillance.

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6. Security Benefits

- Protects users on public Wi-Fi networks from packet sniffing.
- Evades regional censorship and geo-restrictions.
- Anonymizes browsing behavior, securing against trackers and advertisers.

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7. Recommendations

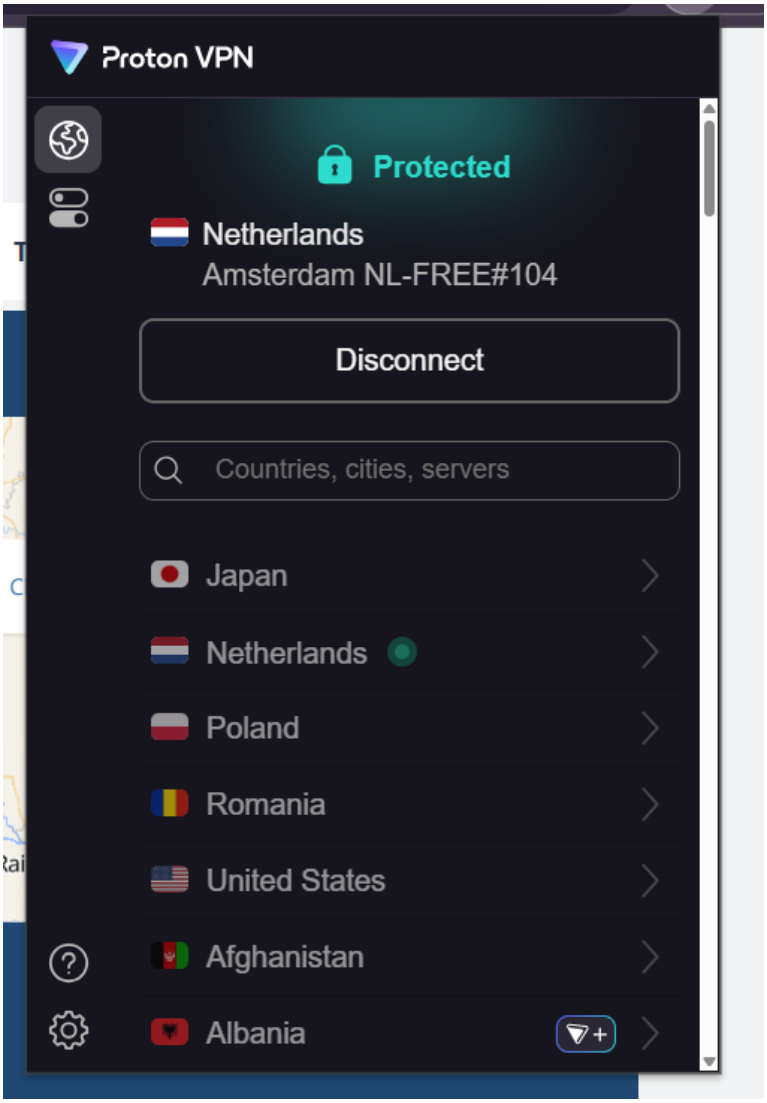
- **Always ensure VPN is active** during sensitive browsing or transactions.

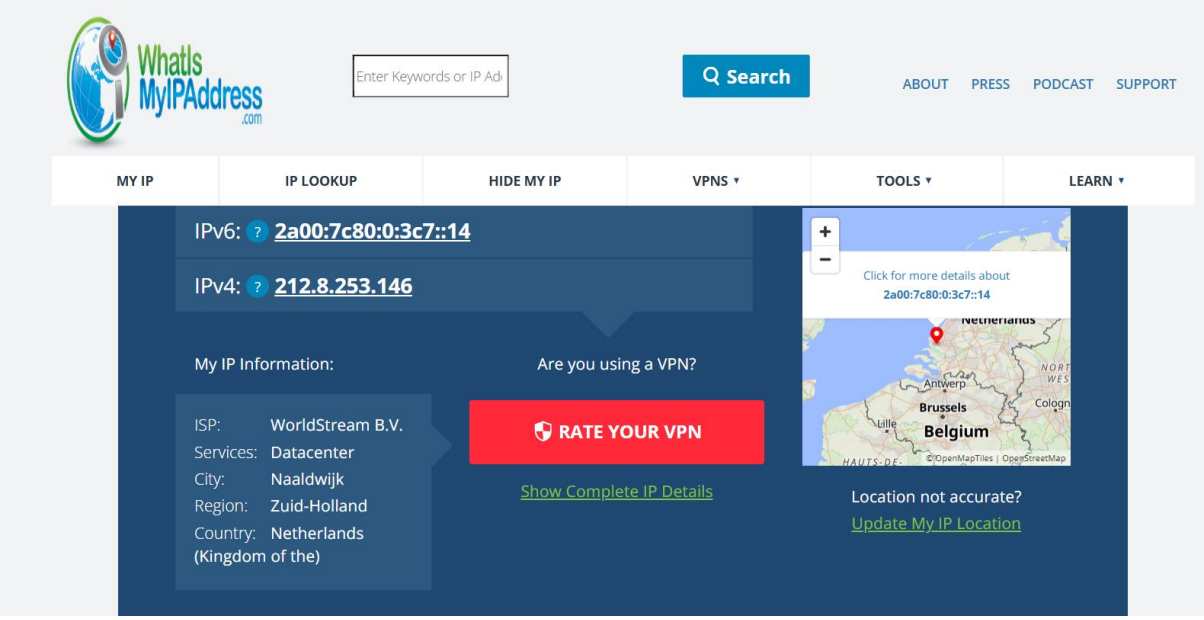
- **Enable Kill Switch** and **DNS Leak Protection** features for added safety.
- Periodically **verify IP masking** using services like whatismyipaddress.com.
- Avoid free VPNs without transparency on their privacy policy.

Conclusion

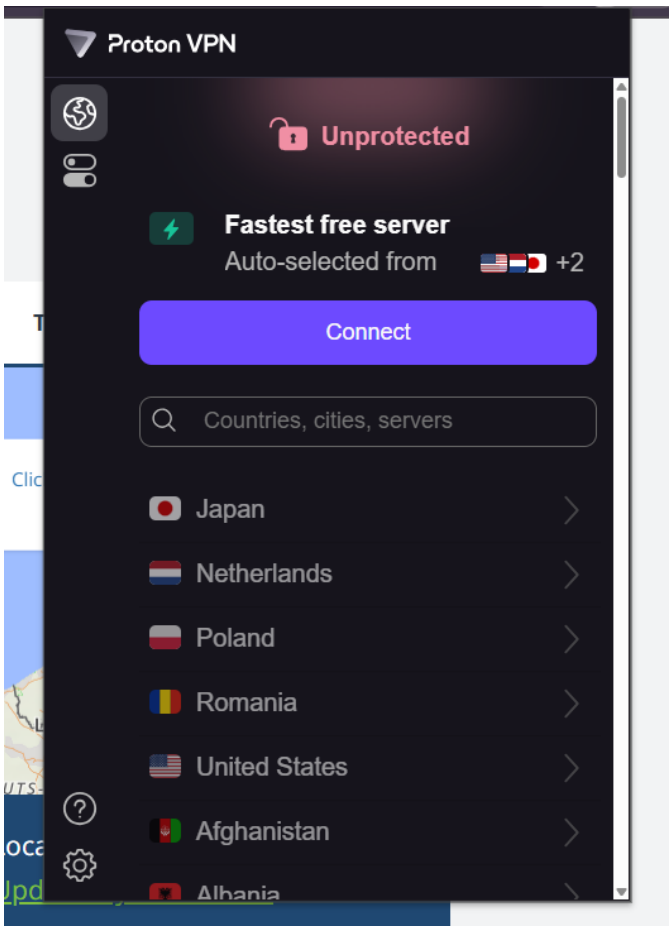
The use of Proton VPN in the provided evidence illustrates a successful implementation of IP anonymization and encryption. VPNs remain a cornerstone of modern cybersecurity hygiene when used correctly. However, users must remain vigilant to ensure the VPN remains active and configured correctly.

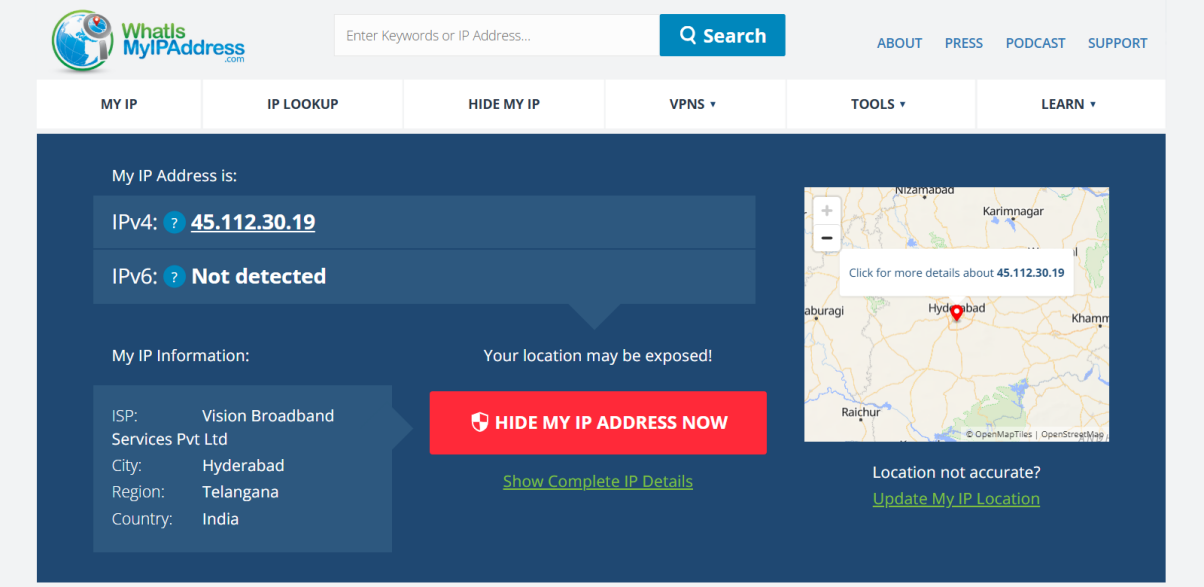
When VPN is on :





When VPN is off :




WhatIsMyIPAddress.com
Enter Keywords or IP Address...
Search
ABOUT
PRESS
PODCAST
SUPPORT
MY IP
IP LOOKUP
HIDE MY IP
VPNS
TOOLS
LEARN
My IP Address is:
IPv4: 45.112.30.19
IPv6: Not detected
My IP Information:
ISP: Vision Broadband Services Pvt Ltd
City: Hyderabad
Region: Telangana
Country: India
Your location may be exposed!
HIDE MY IP ADDRESS NOW
Show Complete IP Details
Nizamabad
Karimnagar
Click for more details about 45.112.30.19
Raichur
© OpenMapTiles | OpenStreetMap
Location not accurate?
Update My IP Location