

Day - 4 of CEH

Network Anonymity & Privacy – Tools and Concepts Documentation

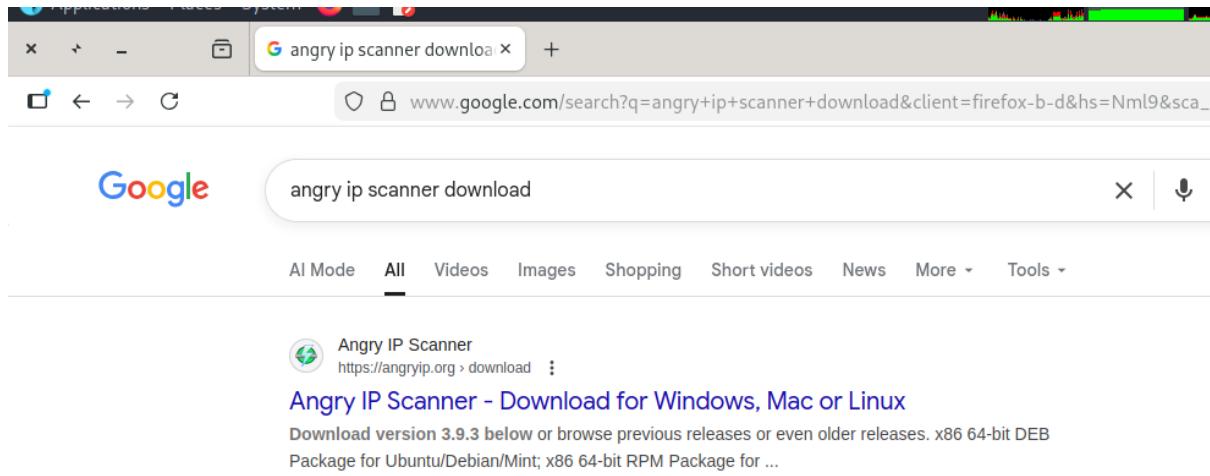
1. Installing Tools Without git clone (Using .deb Package)

In Linux, tools can be installed without using GitHub or git clone by directly installing package files.

Example: Angry IP Scanner Installation (Linux)

Steps

1. Download Angry IP Scanner from the official website using the .deb package.

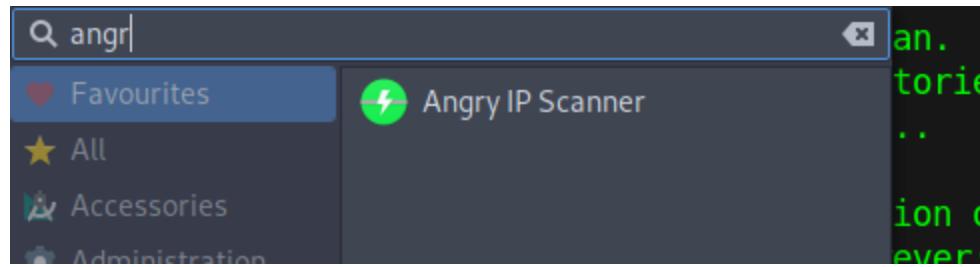


Download version 3.9.3 below or [browse previous releases](#) or [even older releases](#).

- [x86 64-bit DEB Package](#) for Ubuntu/Debian/Mint

2. Go to the Downloads directory.
3. List the downloaded files.
4. Identify the .deb package file.
5. Install the package using dpkg with the install option.
 - `dpkg -i` refers to install.

6. Verify installation by searching the tool in the system search bar.



2. Spoofing

What is Spoofing?

Spoofing is a technique used to falsify identity information in order to impersonate another system or device on a network.

IP Spoofing

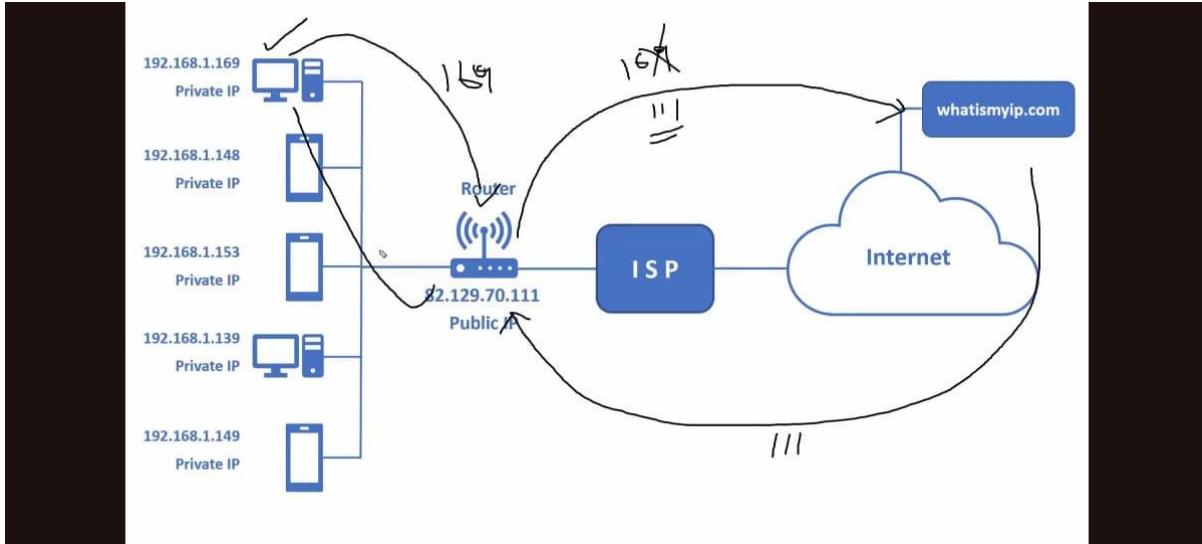
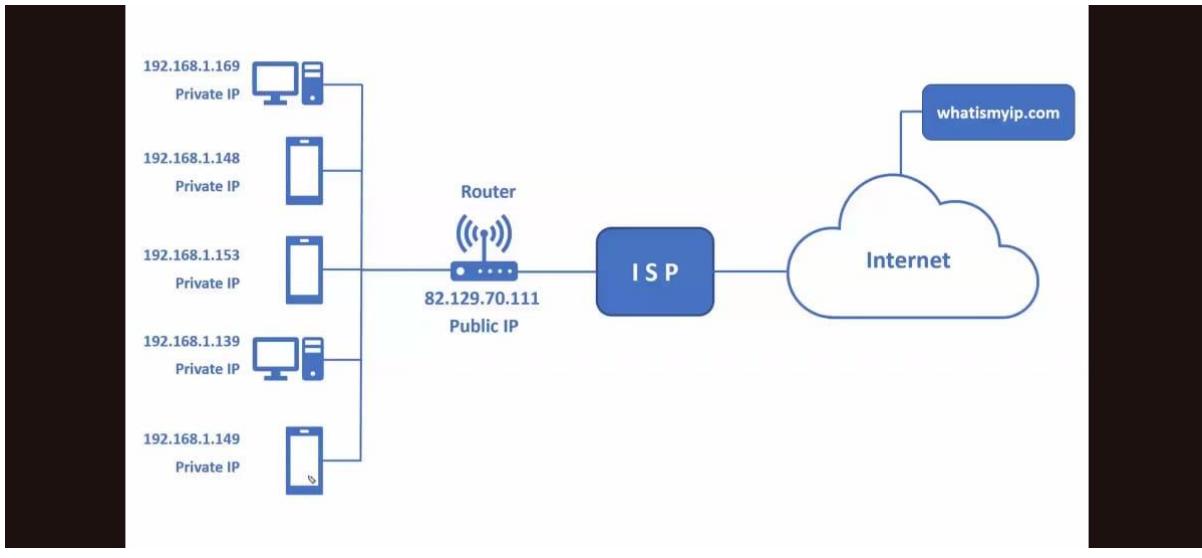
- The attacker modifies the source IP address of network packets.
 - Used to hide identity or bypass IP-based restrictions.
 - Common in DDoS attacks and session hijacking.

MAC Spoofing

- The attacker changes the MAC address of a network interface.
- Used to bypass MAC filtering and impersonate trusted devices.

Important Note

Whenever an attack is performed on a server, the public IP address is logged. Using this public IP address, attackers can be tracked.



To check the public IP address:

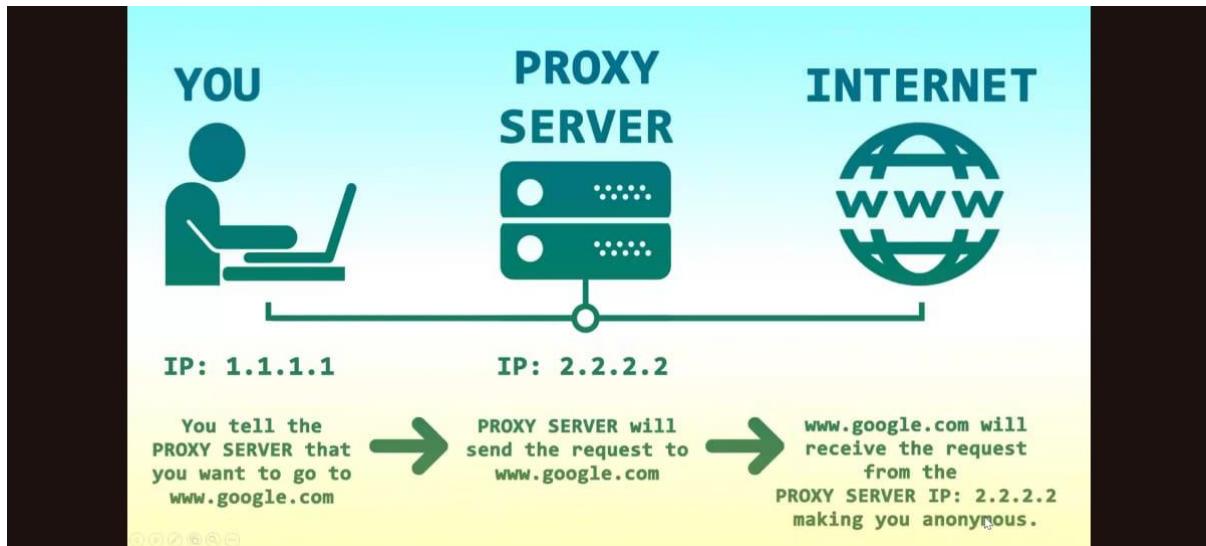
- Visit whatismyipaddress
- The result will be the same in Parrot OS and Windows.

The screenshot shows the homepage of [What's My IP Address](https://www.whatismyipaddress.com/). At the top, there is a search bar with the placeholder "Enter Keywords or IP Address..." and a "Search" button. Below the search bar are navigation links for "ABOUT", "PRESS", "PODCAST", and "SUPPORT". A main menu bar includes "MY IP", "IP LOOKUP", "HIDE MY IP", "VPNS", "TOOLS", and "LEARN". The central area displays "My IP Address is:" followed by "IPv6: 2409:40f0:151:366b:8336:d2f:67d:12ce" and "IPv4: 152.59.205.31". Below this, "My IP Information" is listed: ISP Reliance Jio Infocomm Limited, City Hyderabad, Region Telangana, Country India. To the right, a map of Hyderabad, India, is shown with a red location pin. A tooltip over the map says "Click for more details about 2409:40f0:151:366b:8336:d2f:67d:12ce". Below the map are links for "Location not accurate?" and "Update My IP Location". A red button labeled "HIDE MY IP ADDRESS NOW" is prominently displayed.

3. Proxy

What is a Proxy?

A proxy server acts as an intermediary between a user and the internet, masking the real IP address.



Types of Proxies

1. Paid Proxy

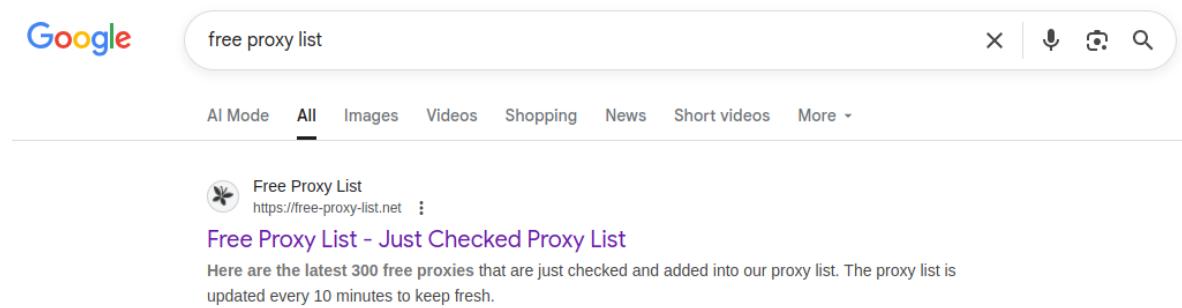
- Usually does not store logs
- Faster and more reliable

2. Free Proxy

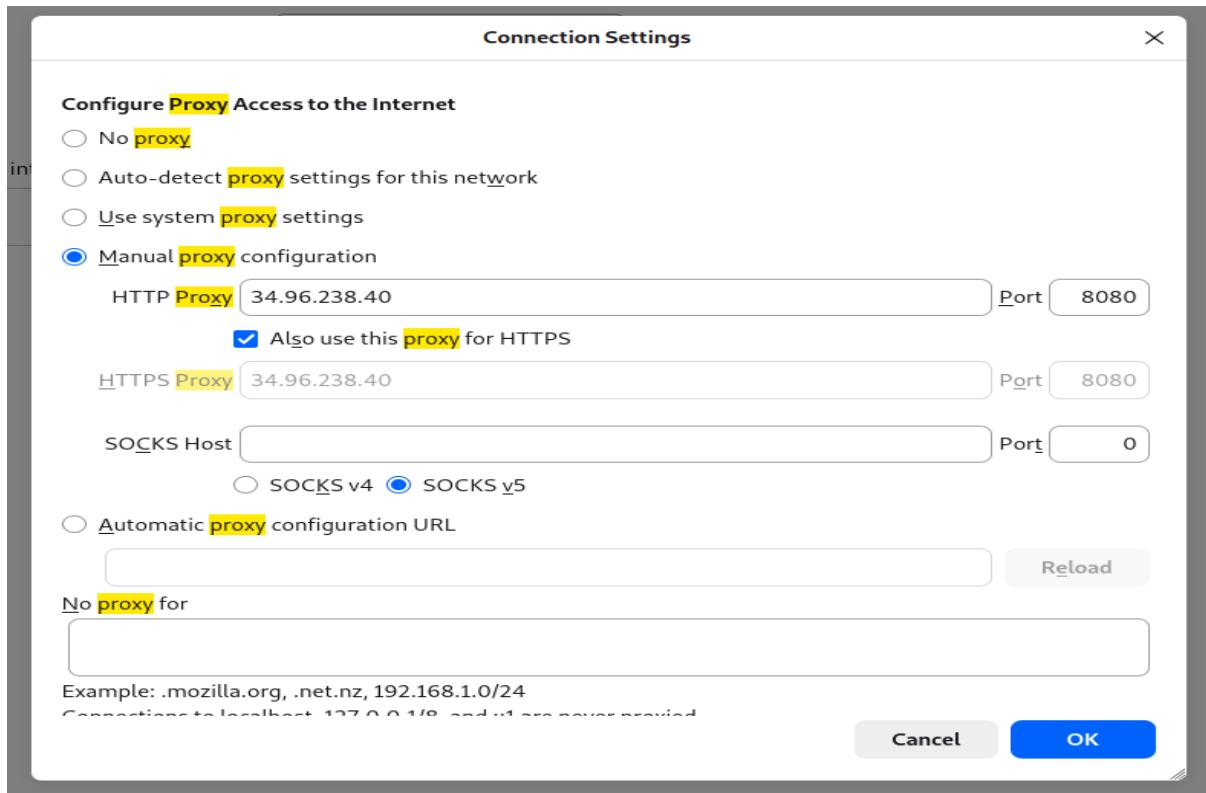
- May or may not store logs
 - Slower and less secure
-

Configuring Proxy in Firefox (Parrot OS)

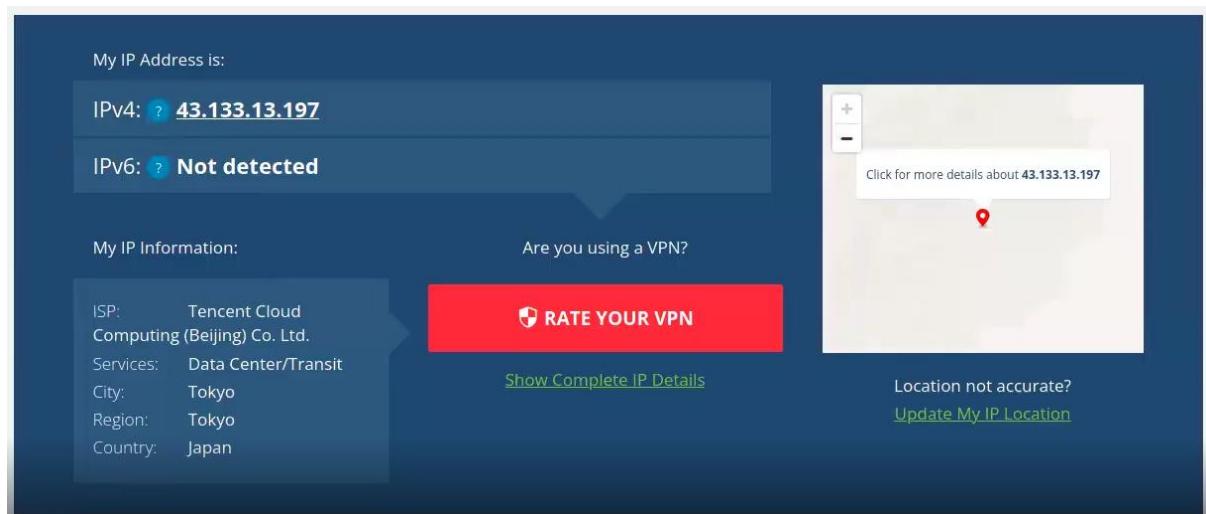
1. Open Firefox.
2. Search for Free Proxy List.



3. Copy the proxy IP address and port number.
4. Open Firefox Settings.
5. Search for Proxy.
6. Open Network Settings.
7. Select Manual Proxy Configuration.
8. Paste the IP address in HTTP Proxy and the port number.



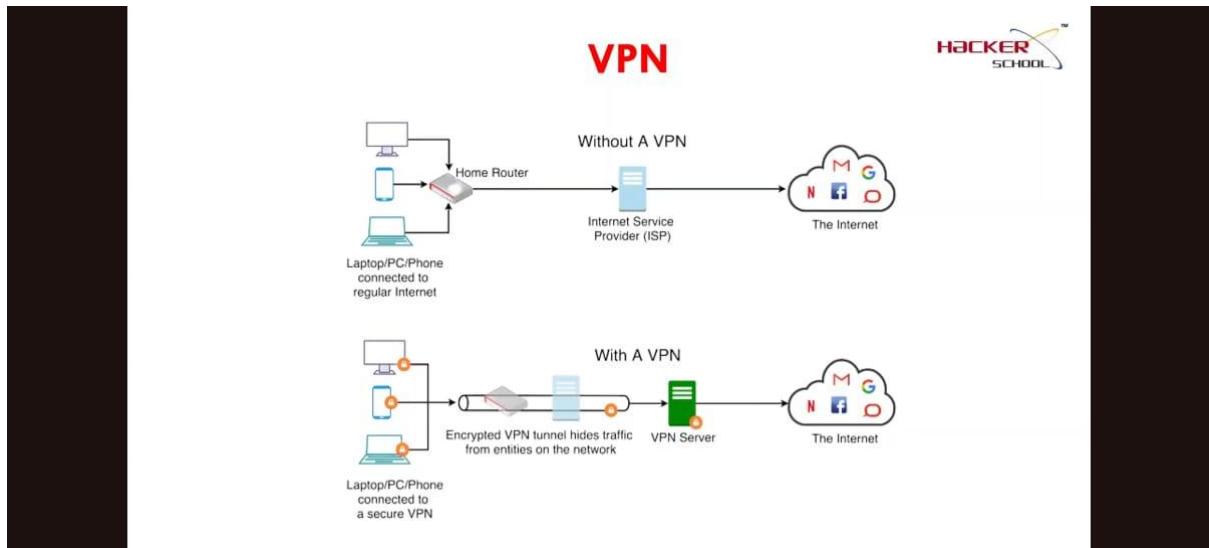
9. Enable HTTPS proxy.
10. Save the settings.
11. Verify the IP change using whatismyipaddress.
12. Disable proxy by selecting Use system proxy settings.



4. VPN (Virtual Private Network)

What is VPN?

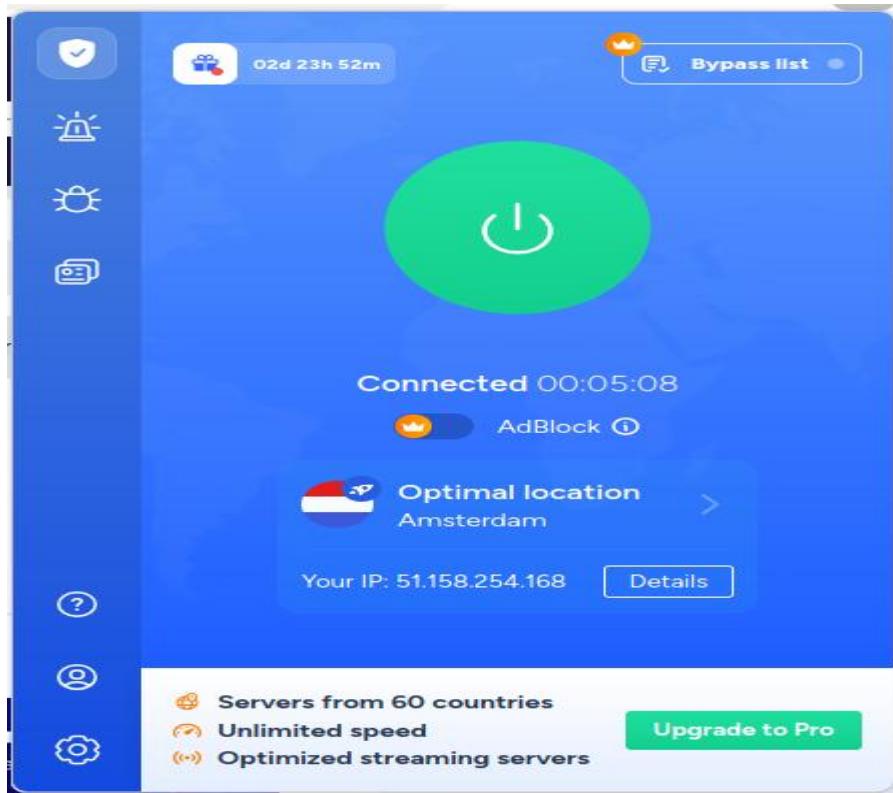
A VPN encrypts internet traffic and hides the real IP address, providing privacy and anonymity.



Free VPN (Browser-Based)

Example: VeePN for Firefox

1. Search for VeePN Firefox.
2. Open the official link.
3. Click Add to Firefox.
4. Accept permissions.
5. Open the extension.



6. Click Connect.
7. Verify the IP address using whatismyipaddress.com

WhatIsMyIPAddress.com

Enter Keywords or IP Address...

ABOUT PRESS PODCAST SUPPORT

MY IP IP LOOKUP HIDE MY IP VPNS TOOLS LEARN

My IP Address is:

IPv4: 51.158.254.168

IPv6: Not detected

My IP Information:

| | |
|---------------------------------------|--------------------------------------|
| ISP: Scaleway | Services: VPN Server |
| City: Amsterdam | Region: Noord-Holland |
| Country: Netherlands (Kingdom of the) | |

Looks like you're using a VPN!

[RATE YOUR VPN](#)

[Show Complete IP Details](#)

Click for more details about 51.158.254.168

Amsterdam
Netherlands
The Hague

Location not accurate?
[Update My IP Location](#)

5. Proton VPN Installation (Linux / Parrot OS)

Account Creation

1. Visit the Proton VPN website.
 2. Click Get Proton VPN.
 3. Select Proton Free.
 4. Create an account.
 5. Complete verification if required.
 6. Set a password.
-

Download OpenVPN Configuration File

1. Go to the Downloads page.
2. Select Platform as Linux.
3. Choose protocol UDP or TCP.

OpenVPN configuration files

These configuration files let you choose which Proton VPN server you connect to when using a third-party VPN app or setting up a VPN connection on a router.

1. Select platform

- Android iOS Windows macOS GNU/Linux Router
[View guide](#) [View guide](#) [View guide](#) [View guide](#) [View guide](#) [View guide](#)

2. Select protocol

- UDP TCP

[What is the difference between UDP and TCP protocols?](#)

3. Select config file and download

- Country configs Standard server configs Free server configs Secure Core configs

4. Select a server with low load.

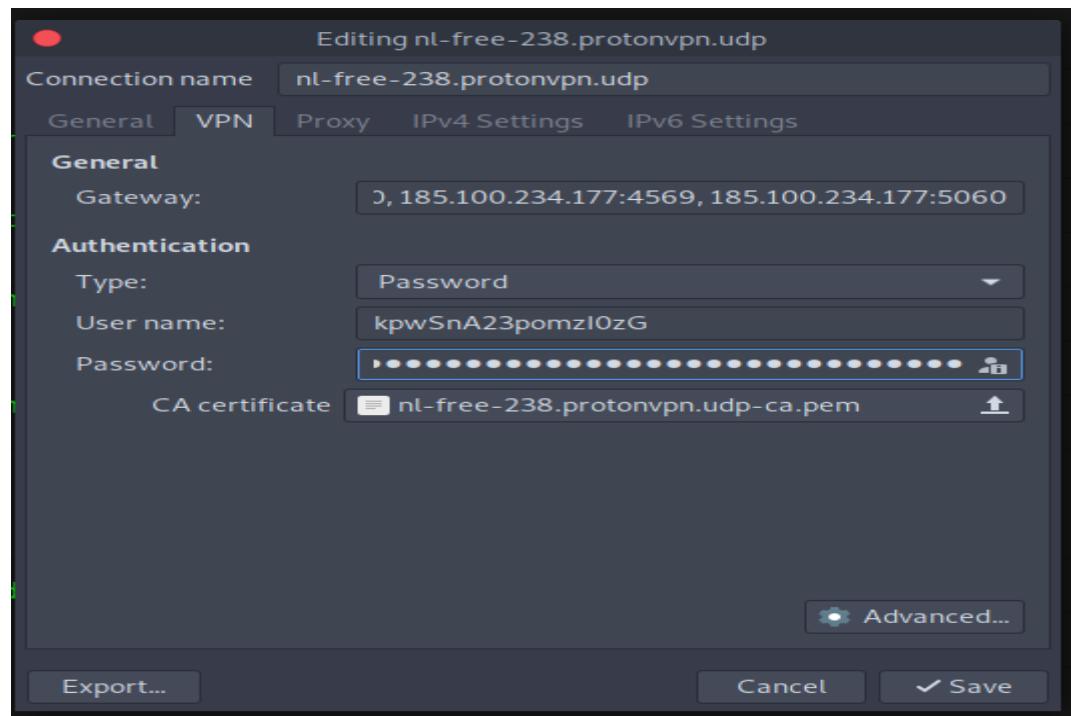
| Canada | | |
|------------|--------|---|
| Name | Status | Action |
| CA-FREE#3 | 91% | <input type="button" value="Download"/> |
| CA-FREE#4 | 84% | <input type="button" value="Download"/> |
| CA-FREE#11 | 90% | <input type="button" value="Download"/> |

| Japan | | |
|------------|--------|---|
| Name | Status | Action |
| JP-FREE#9 | 90% | <input type="button" value="Download"/> |
| JP-FREE#10 | 92% | <input type="button" value="Download"/> |
| JP-FREE#11 | 93% | <input type="button" value="Download"/> |
| JP-FREE#12 | 89% | <input type="button" value="Download"/> |
| JP-FREE#13 | 92% | <input type="button" value="Download"/> |

5. Download the .ovpn configuration file.

Import VPN Configuration (GUI Method)

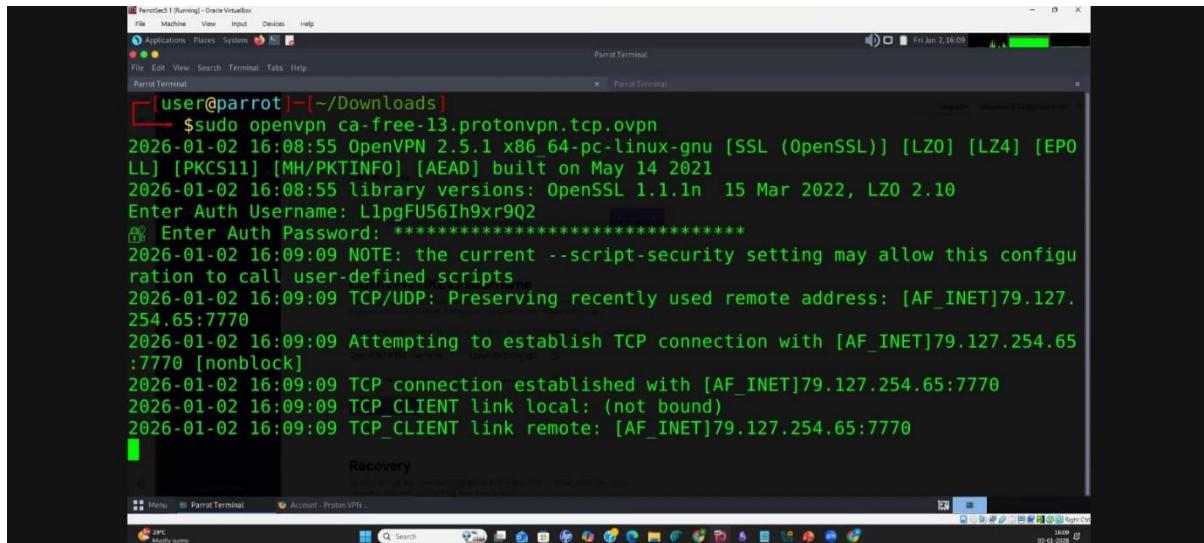
1. Open Network Connections.
2. Go to VPN and select Import VPN.
3. Choose the downloaded .ovpn file.



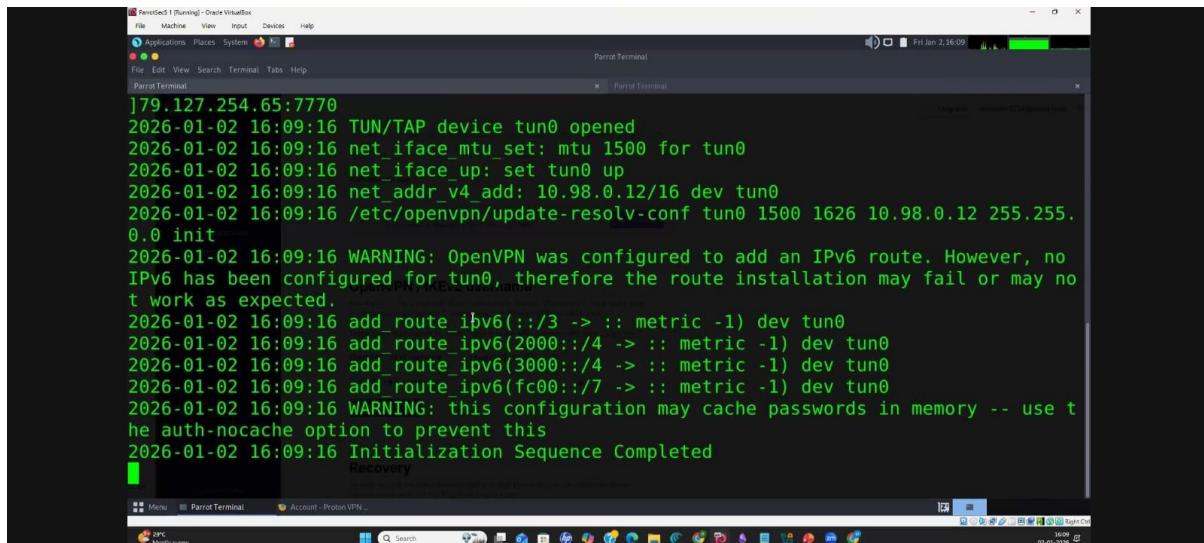
4. Enter the Proton VPN username (IKEv2 username) and password.
 5. Start the VPN connection.
-

Terminal Method (If GUI Fails)

1. Start the VPN using the OpenVPN configuration file.
2. If the message "Initialization Sequence Completed" appears, the VPN is connected.

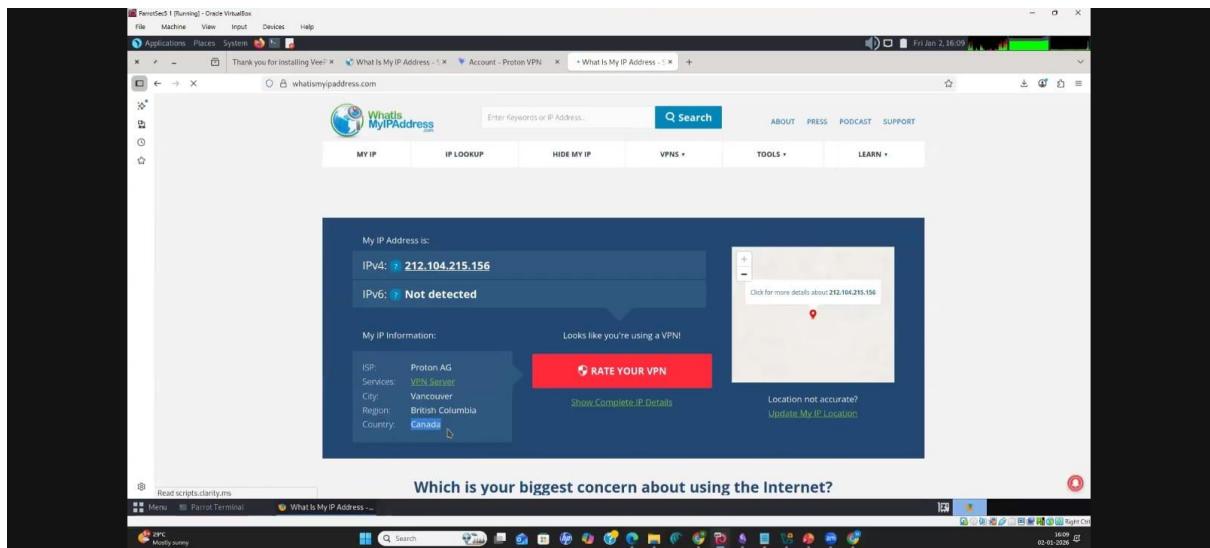


```
[user@parrot]~[~/Downloads]
$ sudo openvpn ca-free-13.protonvpn.tcp.ovpn
2026-01-02 16:08:55 OpenVPN 2.5.1 x86_64-pc-linux-gnu [SSL (OpenSSL)] [LZO] [EPOLLY] [PKCS11] [MH/PKTINFO] [AEAD] built on May 14 2021
2026-01-02 16:08:55 library versions: OpenSSL 1.1.1n 15 Mar 2022, LZO 2.10
Enter Auth Username: L1pgFU56Ih9xr9Q2
Enter Auth Password: *****
2026-01-02 16:09:09 NOTE: the current --script-security setting may allow this configuration to call user-defined scripts
2026-01-02 16:09:09 TCP/UDP: Preserving recently used remote address: [AF_INET]79.127.254.65:7770
2026-01-02 16:09:09 Attempting to establish TCP connection with [AF_INET]79.127.254.65:7770 [nonblock]
2026-01-02 16:09:09 TCP connection established with [AF_INET]79.127.254.65:7770
2026-01-02 16:09:09 TCP_CLIENT link local: (not bound)
2026-01-02 16:09:09 TCP_CLIENT link remote: [AF_INET]79.127.254.65:7770
```

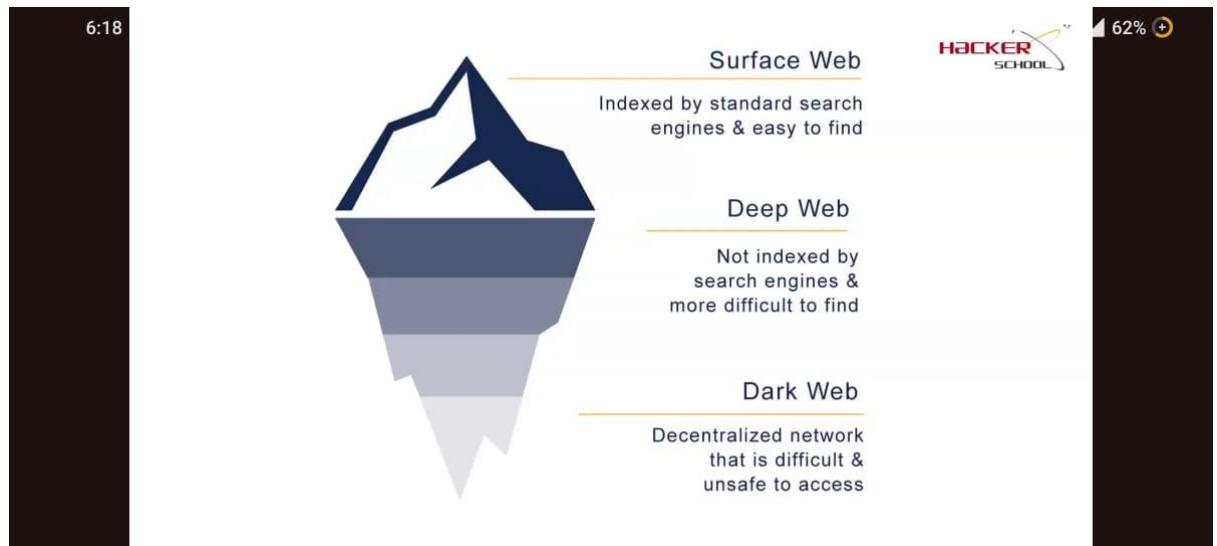


```
[79.127.254.65:7770
2026-01-02 16:09:16 TUN/TAP device tun0 opened
2026-01-02 16:09:16 net_iface_mtu_set: mtu 1500 for tun0
2026-01-02 16:09:16 net_iface_up: set tun0 up
2026-01-02 16:09:16 net_addr_v4_add: 10.98.0.12/16 dev tun0
2026-01-02 16:09:16 /etc/openvpn/update-resolv-conf tun0 1500 1626 10.98.0.12 255.255.0.0 init
2026-01-02 16:09:16 WARNING: OpenVPN was configured to add an IPv6 route. However, no IPv6 has been configured for tun0, therefore the route installation may fail or may not work as expected.
2026-01-02 16:09:16 add_route_ip6(::/3 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ip6(2000::/4 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ip6(3000::/4 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ip6(fc00::/7 -> :: metric -1) dev tun0
2026-01-02 16:09:16 WARNING: this configuration may cache passwords in memory -- use the auth-nocache option to prevent this
2026-01-02 16:09:16 Initialization Sequence Completed
```

3. Stop the VPN using Ctrl + C.
4. Verify the connection using whatismyipaddress.



5. Types of Web



Surface Web

- Indexed by search engines
- Publicly accessible
- Examples: Google, Wikipedia, YouTube

Deep Web

- Not indexed by search engines

- Requires authentication
 - Examples: Gmail, banking portals, college portals
-

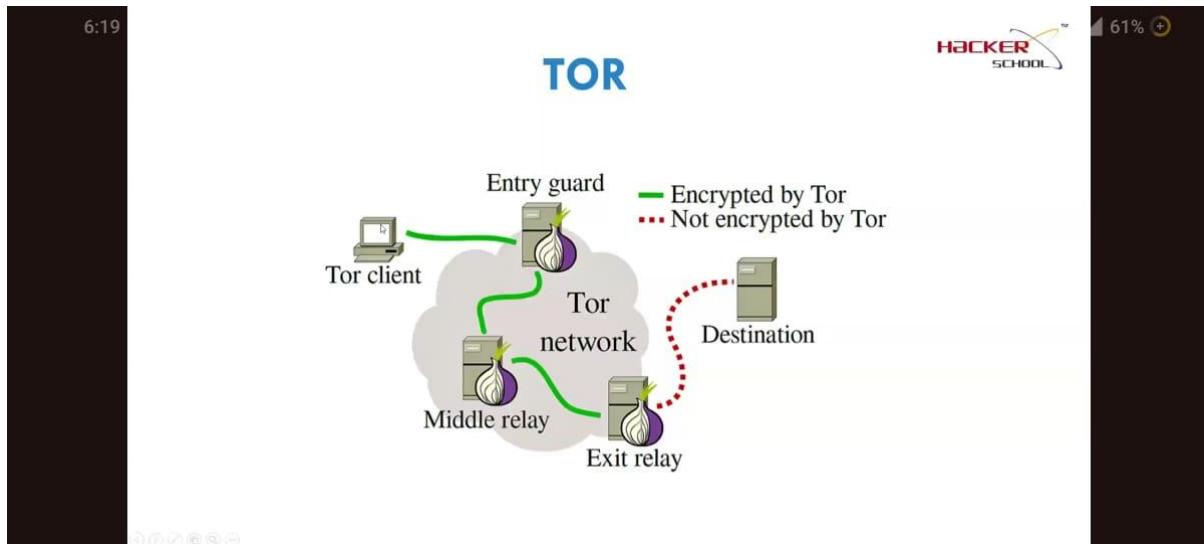
Dark Web

- Requires special browsers
 - Provides anonymity
 - Contains both legal and illegal content
-

7. Tor (The Onion Router)

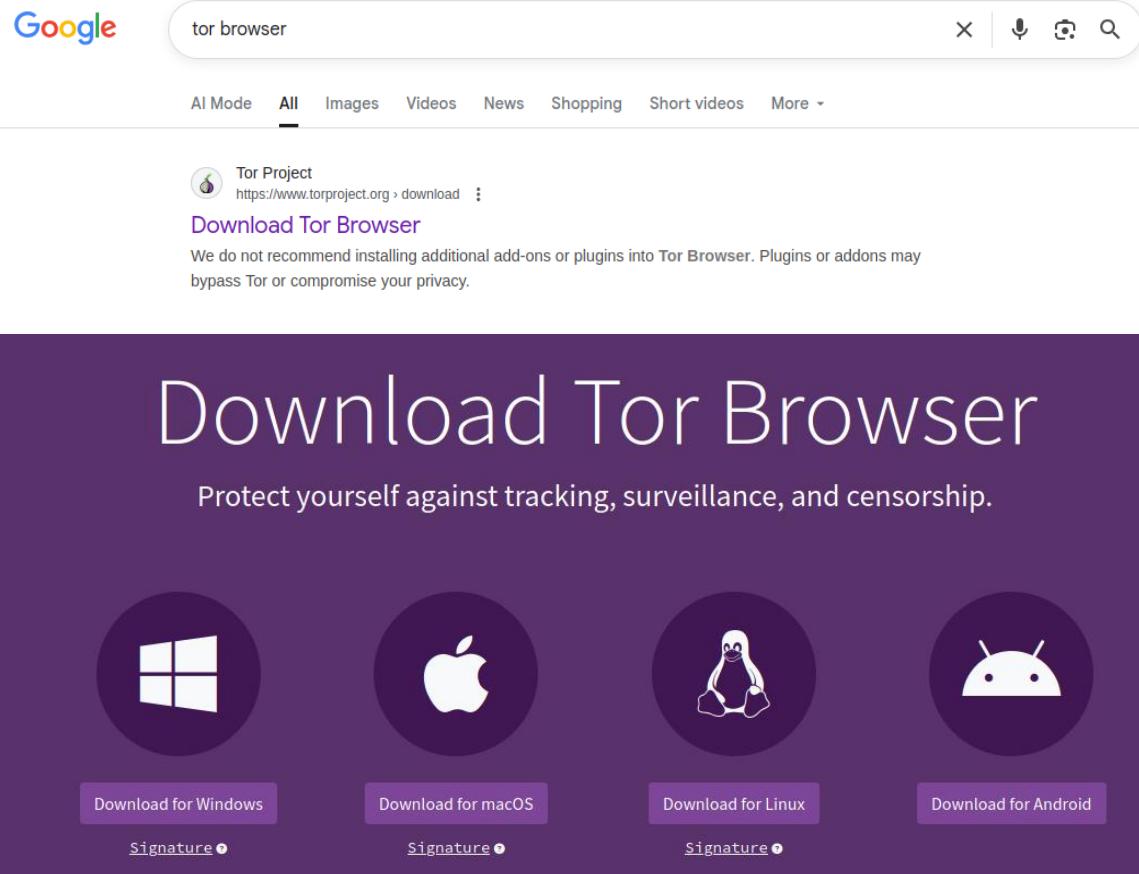
What is Tor?

Tor routes internet traffic through multiple encrypted nodes, hiding the user's identity.



Installing Tor Browser (Parrot OS)

1. Open Firefox.
2. Search for Tor Browser Linux.



3. Download the .xz file.
4. Fix broken packages.
5. Install xz utilities.
6. Extract the downloaded file.

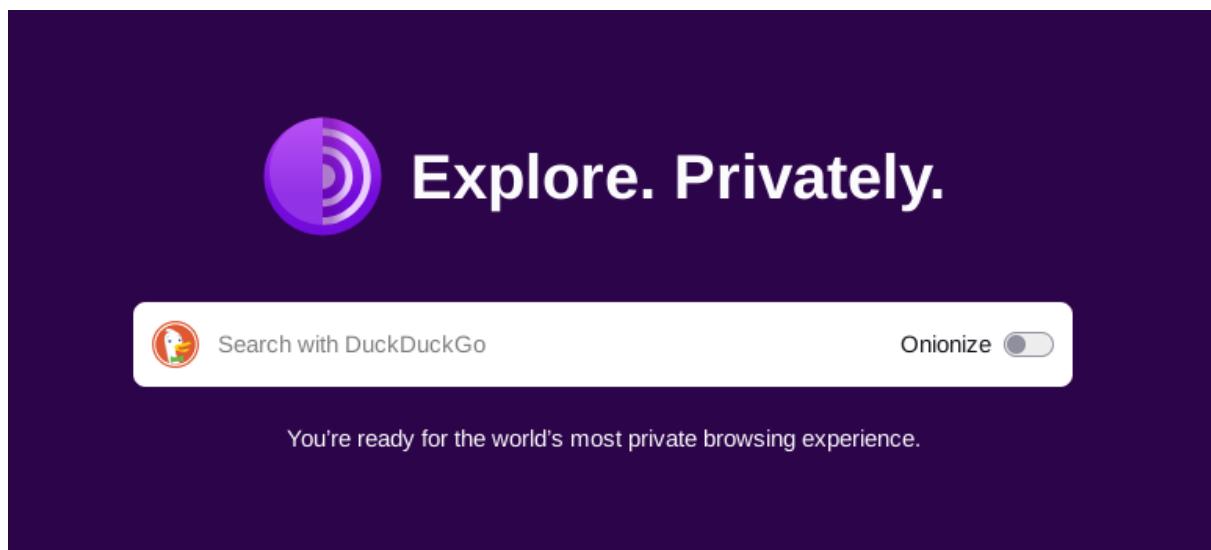
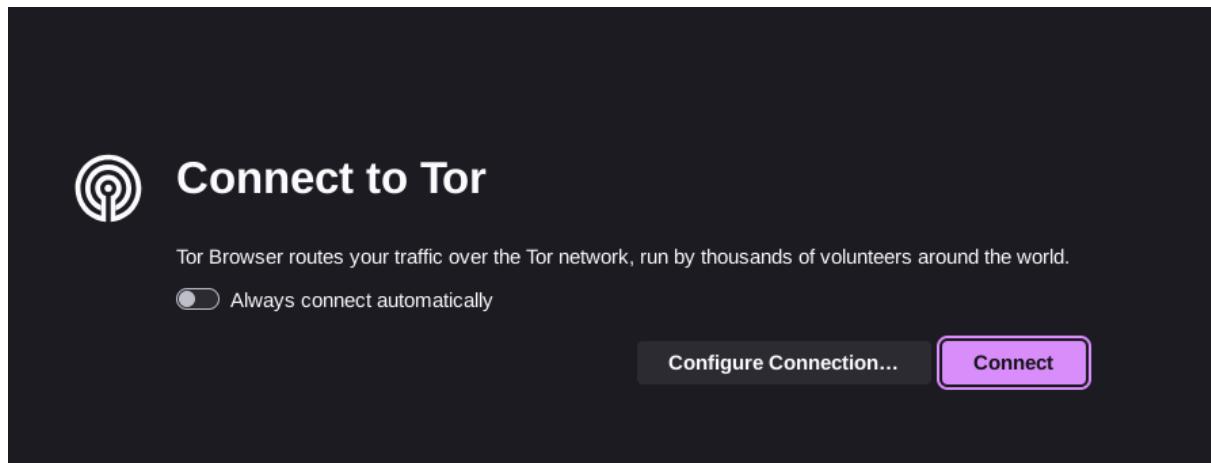
```
[*]-[user@parrot]~/Downloads$ ls
dbeaver-ce_25.3.1_amd64.deb ipscan_3.9.3_amd64.deb mx-free-6.protovpn udp.ovpn tor-browser tor-browser-linux-x86_64-15.0.3.tar.xz
[*]-[user@parrot]~/Downloads$ cd tor-browser
[*]-[user@parrot]~/Downloads/tor-browser$ ls
Browser start-tor-browser.desktop
[*]-[user@parrot]~/Downloads/tor-browser$ ./start-tor-browser.desktop
Launching './Browser/start-tor-browser --detach'...
[*]-[user@parrot]~/Downloads/tor-browser$
```

Meaning of -xf

- -x means extract.
- -f specifies the file name.

Launching Tor Browser

1. Open the Tor Browser directory.
2. Start the Tor Browser launcher.
3. Click Connect.



4. Wait for the Tor network connection.

Accessing the Dark Web

1. Open Chrome.
 2. Search for Hidden Wiki.
 3. Copy any .onion link.
 4. Paste the link into Tor Browser.
 5. The site will open only inside Tor Browser.
-

Conclusion

- .deb packages can be used instead of git clone.
- Spoofing hides identity but public IP addresses are traceable.
- Proxies provide limited anonymity.
- VPNs encrypt traffic and hide IP addresses.
- Tor provides maximum anonymity.
- Dark Web access is possible only through Tor Browser.