

Day - 4 of CEH

Network Anonymity & Privacy – Tools and Concepts Documentation

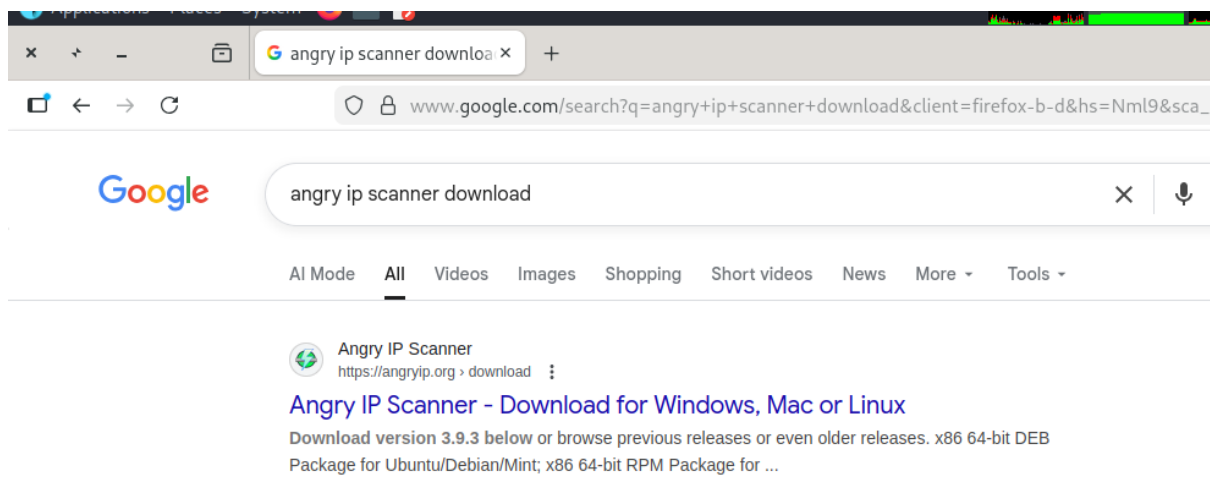
1. Installing Tools Without git clone (Using .deb Package)

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.



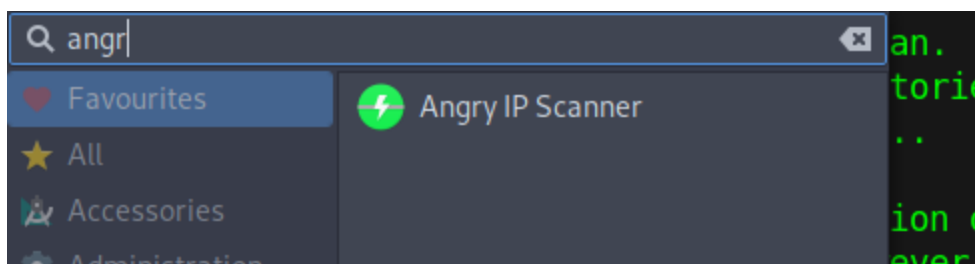
Download version 3.9.3 below or [browse previous releases](#) or [even older releases](#).

- [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.

```
[user@parrot]~$ ls
apple Desktop Documents Downloads Music Pictures Public slowloris Templates Videos
[user@parrot]~$ cd Downloads
[user@parrot]~/Downloads$ ls
ipscan_3.9.3_amd64.deb
[user@parrot]~/Downloads$ sudo dpkg -i ipscan_3.9.3_amd64.deb
Selecting previously unselected package ipscan.
(Reading database ... 436952 files and directories currently installed.)
Preparing to unpack ipscan_3.9.3_amd64.deb ...
Unpacking ipscan (3.9.3) ...
dpkg: dependency problems prevent configuration of ipscan:
 ipscan depends on java-runtime (>= 17); however:
  Package java-runtime is not installed.
  Version of java-runtime on system, provided by openjdk-17-jre:amd64, is <none>.
  Version of java-runtime on system, provided by openjdk-11-jre:amd64, is <none>.
  Version of java-runtime on system, provided by default-jre:amd64, is <none>.
dpkg: error processing package ipscan (--install):
 dependency problems - leaving unconfigured
Processing triggers for desktop-file-utils (0.26-1) ...
Processing triggers for bamfdaemon (0.5.4-2) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for mailcap (3.69) ...
Errors were encountered while processing:
 ipscan
```

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

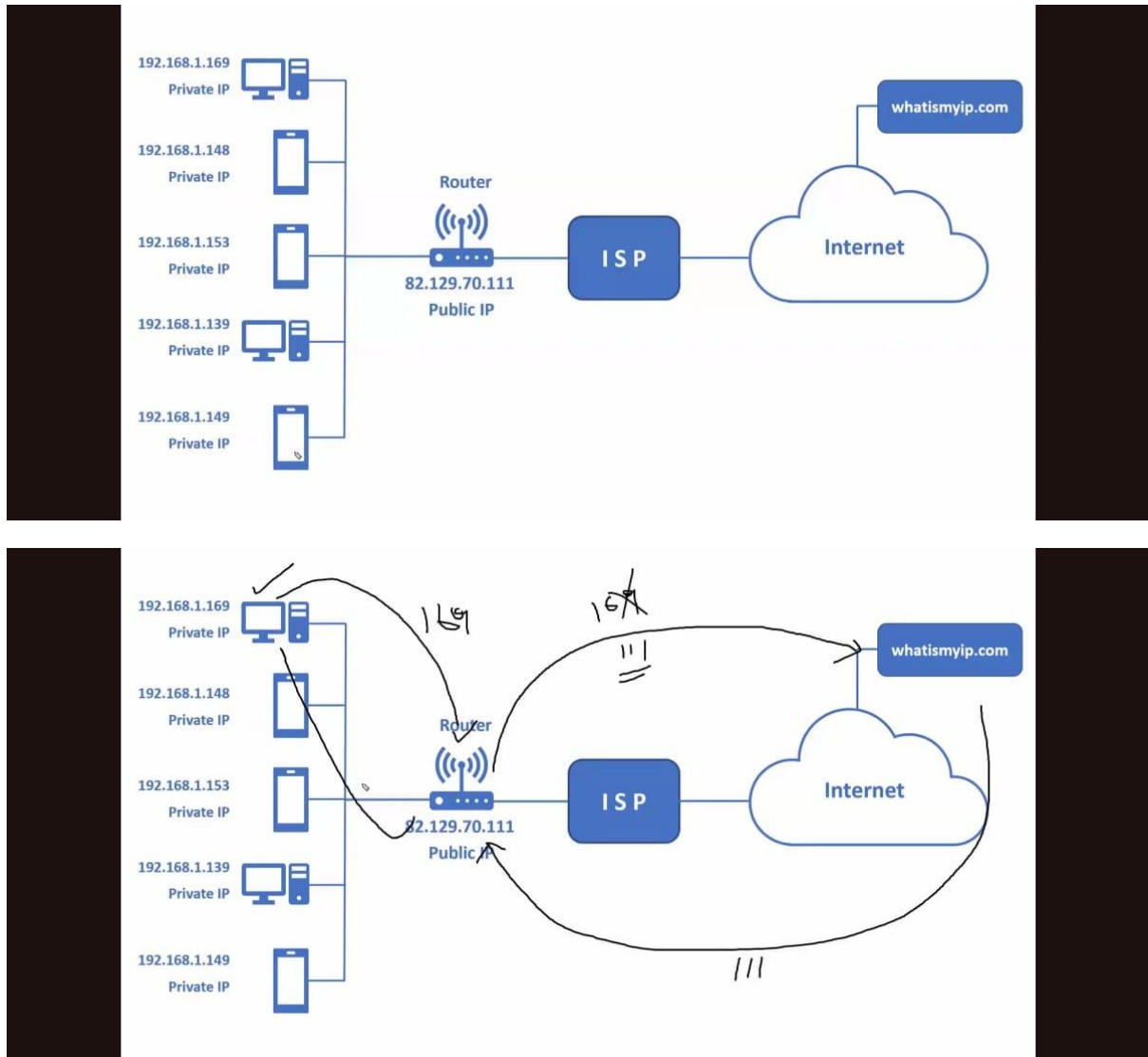
- The attacker modifies the source IP address of network packets.
- Used to hide identity or bypass IP-based restrictions.
- Common in DDoS attacks and session hijacking.

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:

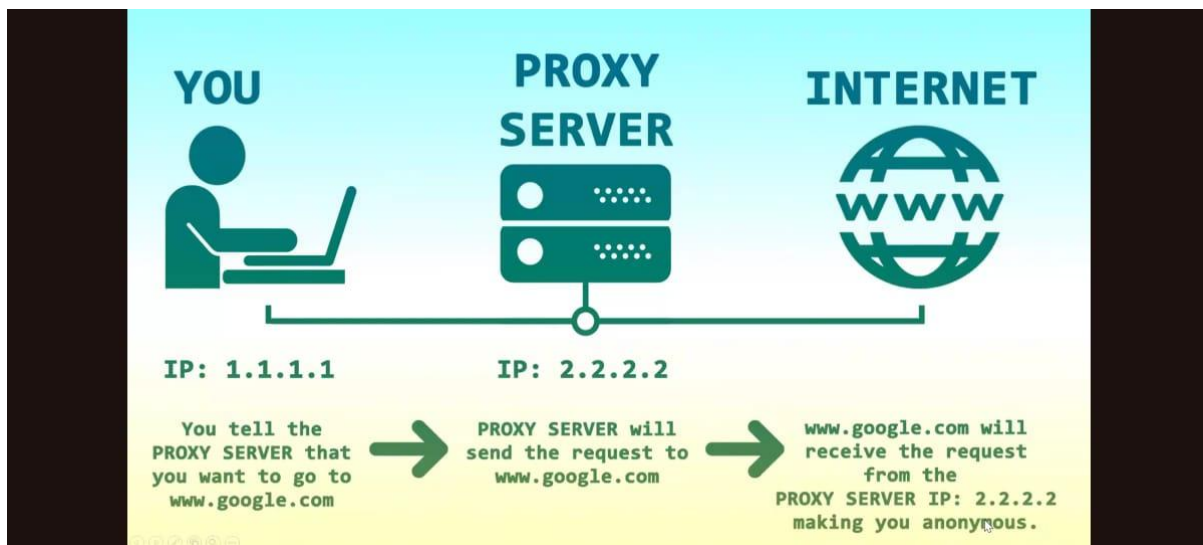
- Visit [whatismyipaddress](http://whatismyipaddress.com)
- The result will be the same in Parrot OS and Windows.

The screenshot shows the homepage of WhatIsMyIPAddress.com. At the top, there is a search bar with the text "Enter Keywords or IP Address..." and a "Search" button. Below the search bar are navigation links: ABOUT, PRESS, PODCAST, and SUPPORT. The main content area is divided into several sections. On the left, under "MY IP", it displays the IPv6 address "2409:40f0:151:366b:8336:d2f:67d:12ce" and the IPv4 address "152.59.205.31". Below this, under "My IP Information:", it lists the ISP as "Reliance Jio Infocomm Limited", the City as "Hyderabad", the Region as "Telangana", and the Country as "India". In the center, there is a red button that says "HIDE MY IP ADDRESS NOW" and a link to "Show Complete IP Details". On the right, there is a map showing the location of the IP address, with a red pin indicating the location near Hyderabad. Below the map, there is a link to "Update My IP Location".

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

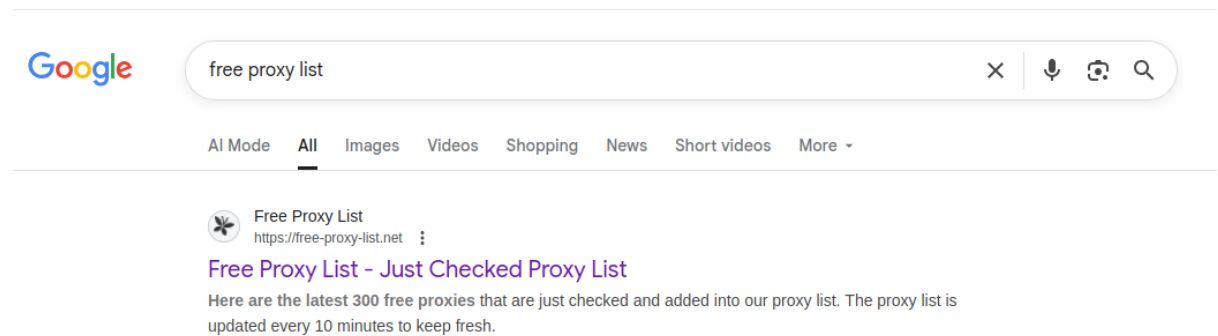
- Usually does not store logs
- Faster and more reliable

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.

Connection Settings

Configure **Proxy** Access to the Internet

☐ No **proxy**
☐ Auto-detect **proxy** settings for this network
☐ Use system **proxy** settings
☒ **Manual proxy** configuration

HTTP **Proxy** Port
☒ Also use this **proxy** for HTTPS
 HTTPS **Proxy** Port
 SOCKS Host Port
☐ SOCKS v4 ☒ SOCKS v5

☐ Automatic **proxy** configuration URL

No **proxy** for

 Example: .mozilla.org, .net.nz, 192.168.1.0/24
 Connections to localhost, 127.0.0.1, and .local are never proxied

9. Enable HTTPS proxy.

10. Save the settings.

11. Verify the IP change using whatismyipaddress.

12. Disable proxy by selecting Use system proxy settings.

My IP Address is:

IPv4: [?](#) **43.133.13.197**

IPv6: [?](#) **Not detected**

My IP Information:

ISP: Tencent Cloud Computing (Beijing) Co. Ltd.
 Services: Data Center/Transit
 City: Tokyo
 Region: Tokyo
 Country: Japan

Are you using a VPN?

[Show Complete IP Details](#)

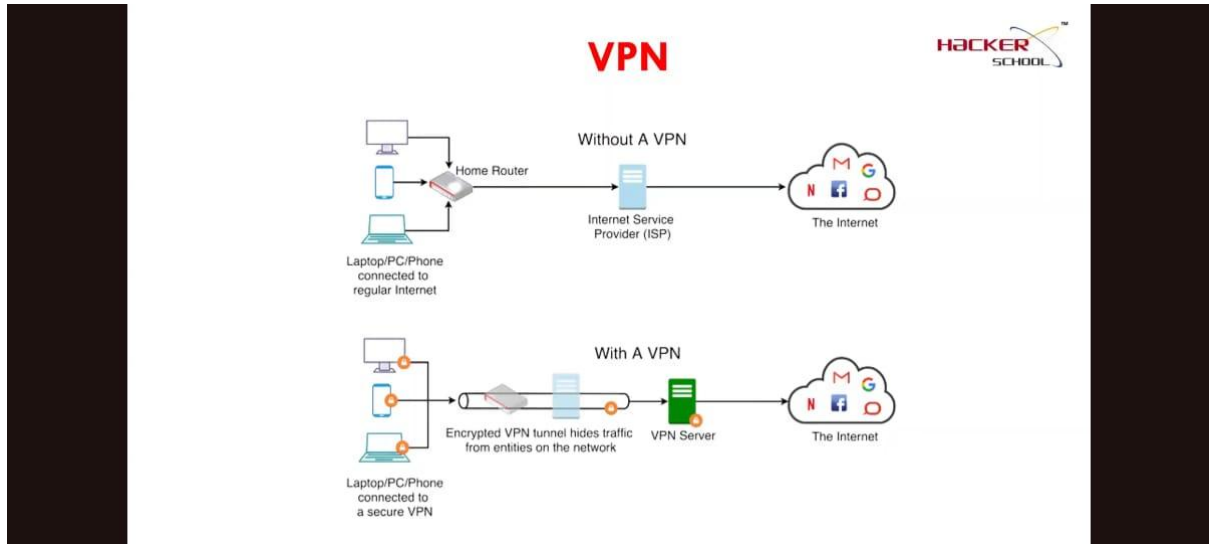
[RATE YOUR VPN](#)

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

4. VPN (Virtual Private Network)

What is VPN?

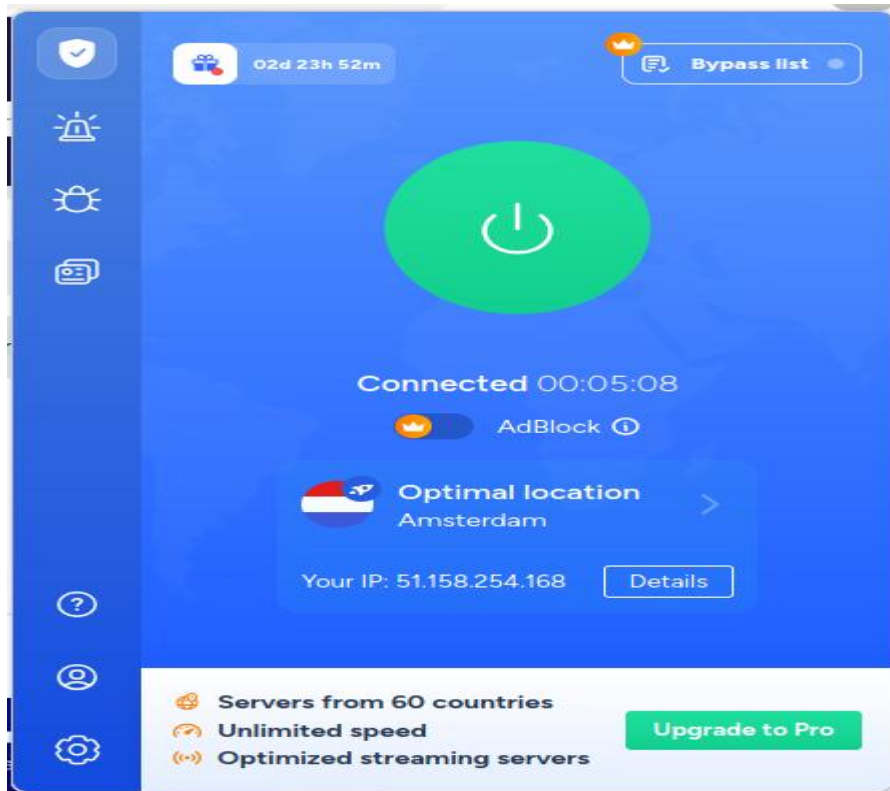
A VPN encrypts internet traffic and hides the real IP address, providing privacy and anonymity.



Free VPN (Browser-Based)

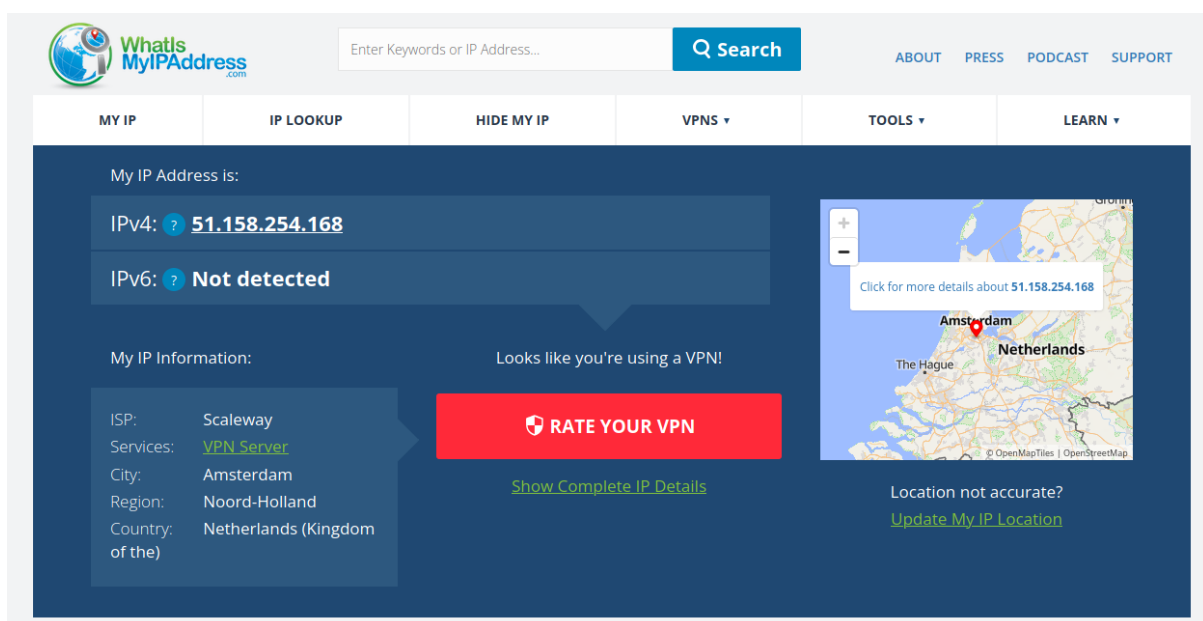
Example: VeePN for Firefox

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.



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 [View guide](#) ☐ iOS [View guide](#) ☐ Windows [View guide](#) ☐ macOS [View guide](#) ☒ GNU/Linux [View guide](#) ☐ Router [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.

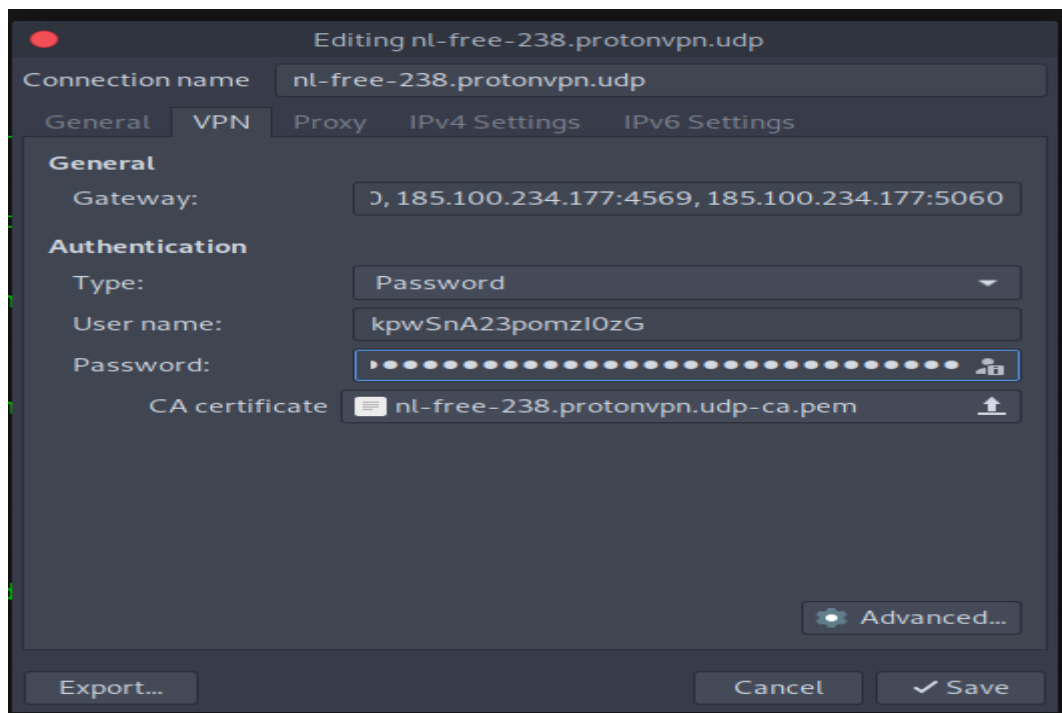
Canada		
Name	Status	Action
CA-FREE#3	91%	Download
CA-FREE#4	84%	Download
CA-FREE#11	90%	Download

Japan		
Name	Status	Action
JP-FREE#9	90%	Download
JP-FREE#10	92%	Download
JP-FREE#11	93%	Download
JP-FREE#12	89%	Download
JP-FREE#13	92%	Download

5. Download the .ovpn configuration file.

Import VPN Configuration (GUI Method)

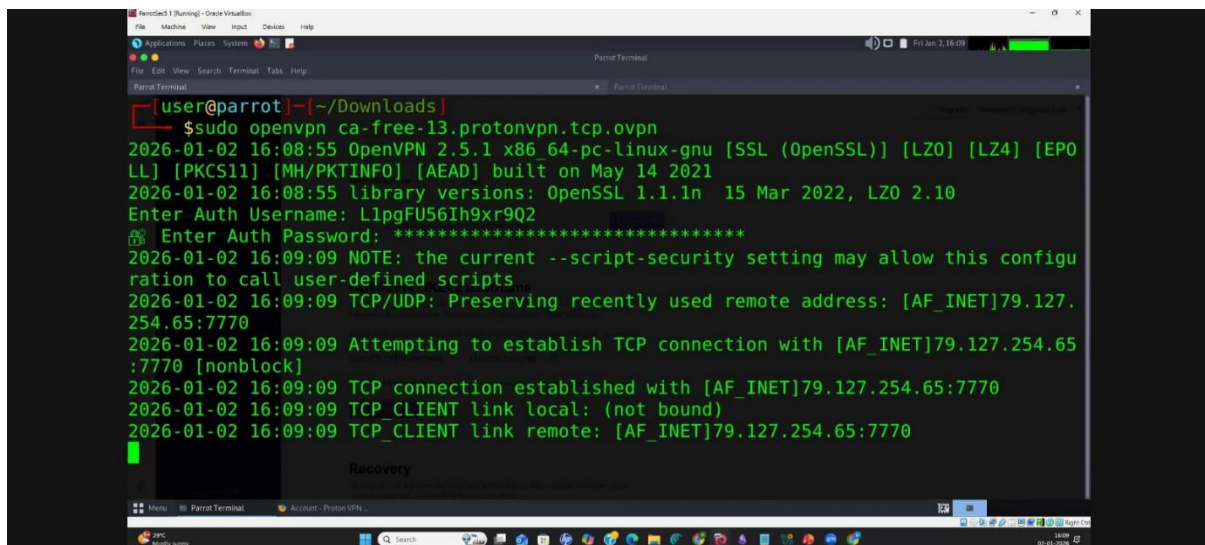
1. Open Network Connections.
2. Go to VPN and select Import VPN.
3. Choose the downloaded .ovpn file.



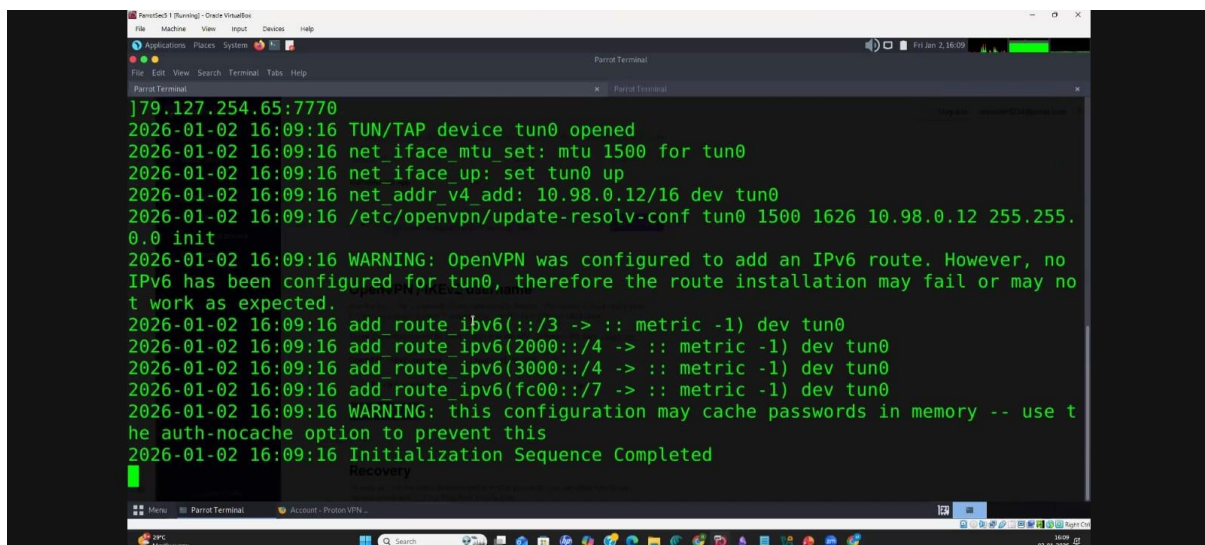
4. Enter the Proton VPN username (IKEv2 username) and password.
5. Start the VPN connection.

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.

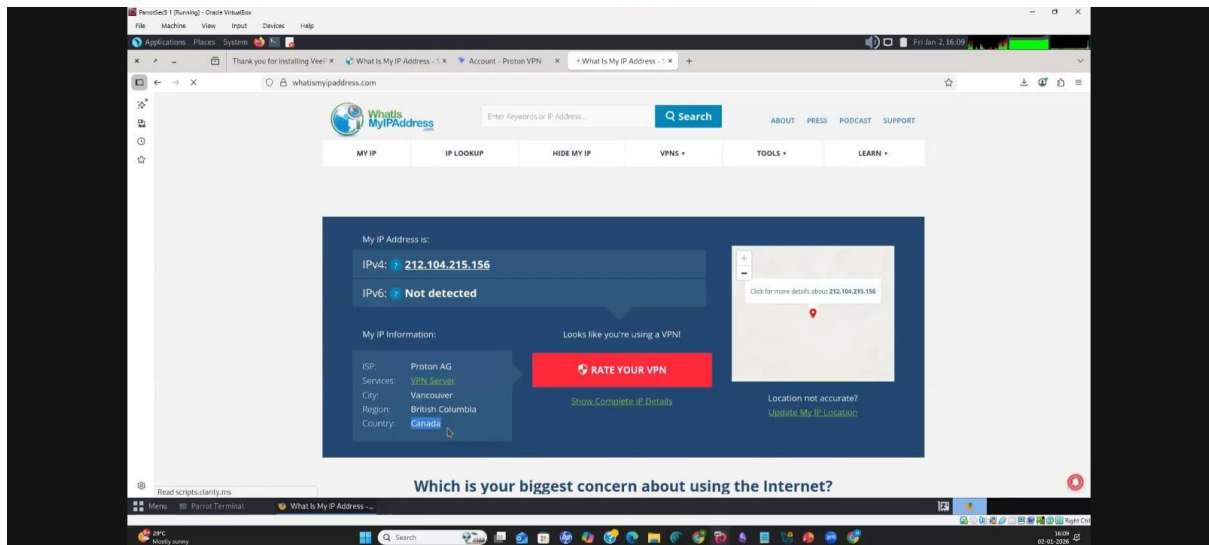


```
user@parrot: [~/Downloads]
$ sudo openvpn ca-free-13.protonvpn.tcp.ovpn
2026-01-02 16:08:55 OpenVPN 2.5.1 x86_64-pc-linux-gnu [SSL (OpenSSL)] [LZO] [LZ4] [EPOLL]
[PKCS11] [MH/TKINFO] [AEAD] built on May 14 2021
2026-01-02 16:08:55 library versions: OpenSSL 1.1.1n 15 Mar 2022, LZO 2.10
Enter Auth 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
```

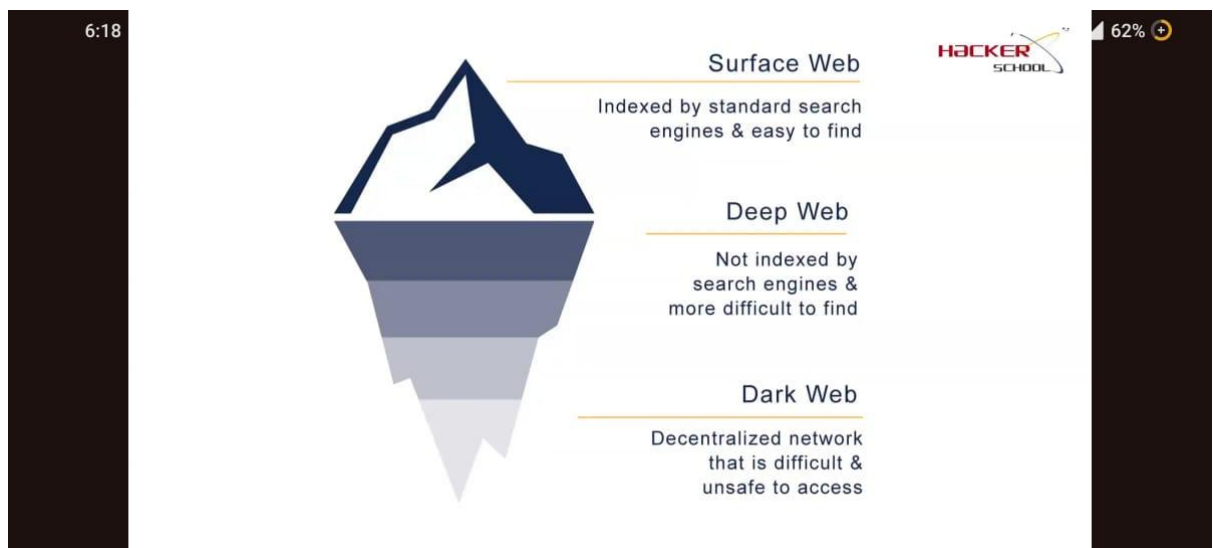


```
79.127.254.65:7770
2026-01-02 16:09:16 TUN/TAP device tun0 opened
2026-01-02 16:09:16 net_iface_mtu_set: mtu 1500 for tun0
2026-01-02 16:09:16 net_iface_up: set tun0 up
2026-01-02 16:09:16 net_addr_v4 add: 10.98.0.12/16 dev tun0
2026-01-02 16:09:16 /etc/openvpn/update-resolv-conf tun0 1500 1626 10.98.0.12 255.255.
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 no
t work as expected.
2026-01-02 16:09:16 add_route_ipv6(::/3 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ipv6(2000::/4 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ipv6(3000::/4 -> :: metric -1) dev tun0
2026-01-02 16:09:16 add_route_ipv6(fc00::/7 -> :: metric -1) dev tun0
2026-01-02 16:09:16 WARNING: this configuration may cache passwords in memory -- use t
he 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

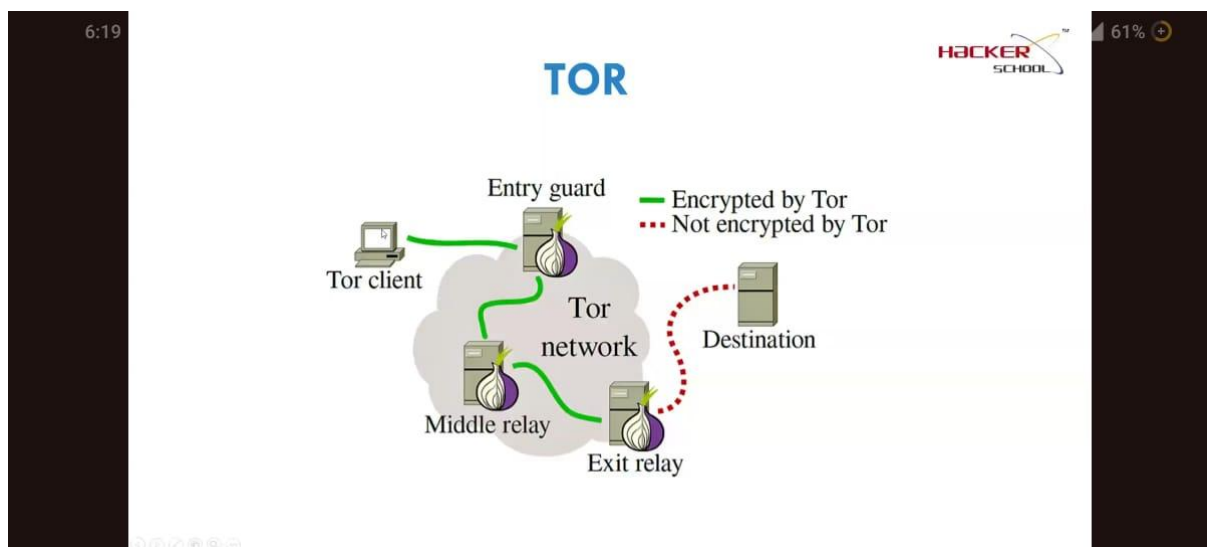
Dark Web

- 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.



tor browser



AI Mode **All** Images Videos News Shopping Short videos More ▾



Tor Project

<https://www.torproject.org> › download

Download Tor Browser

We do not recommend installing additional add-ons or plugins into Tor Browser. Plugins or addons may bypass Tor or compromise your privacy.

Download Tor Browser

Protect yourself against tracking, surveillance, and censorship.



Download for Windows

[Signature](#)



Download for macOS

[Signature](#)



Download for Linux

[Signature](#)



Download for Android

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

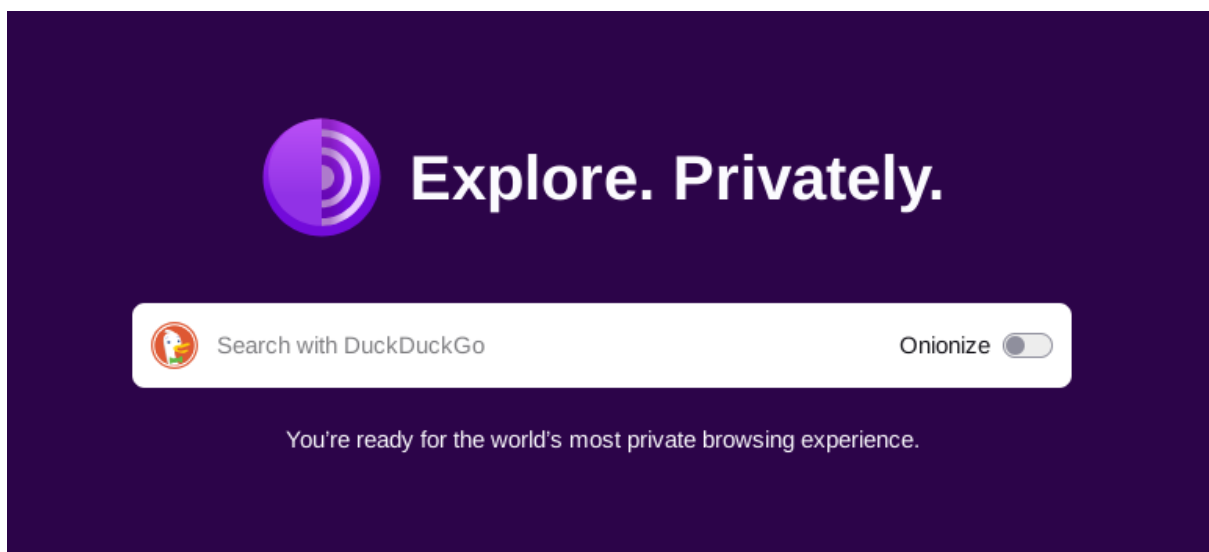
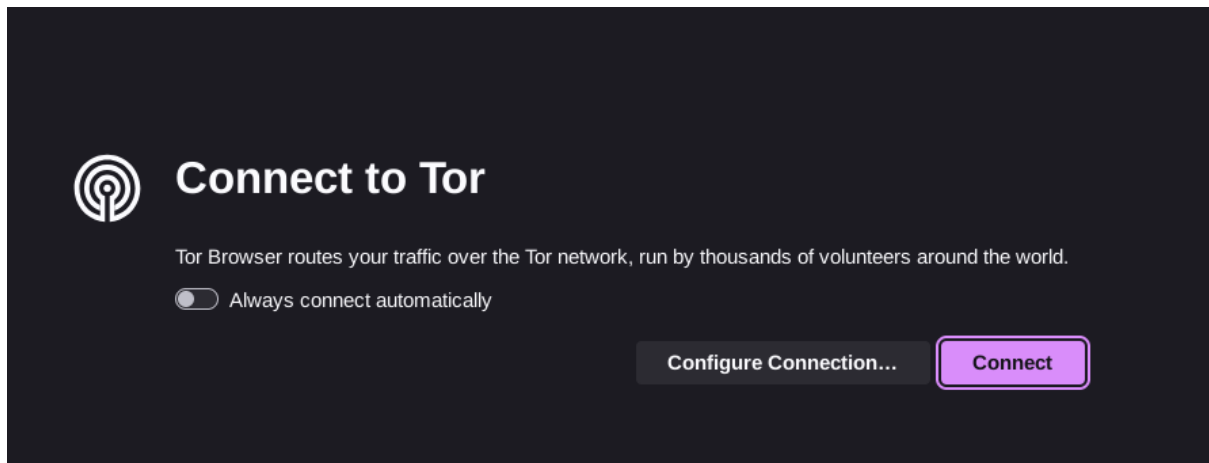
```
[user@parrot]~/Downloads$ ls
dbeaver-ce_25.3.1_amd64.deb  ipscan_3.9.3_amd64.deb  mx-free-6.protonvpn.udp.ovpn  tor-browser  tor-browser-linux-x86_64-15.0.3.tar.xz
[user@parrot]~/Downloads$ cd tor-browser
[user@parrot]~/Downloads/tor-browser$ ls
Browser
[user@parrot]~/Downloads/tor-browser$ ./start-tor-browser.desktop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

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.