VPN AND ITS CONFIGURATION

Hints/Mini Guide:

1.Choose a reputable free VPN service and sign up.

2.Download and install the VPN client.

3.Connect to a VPN server (choose the closest or any location).

4.Verify your IP address has changed (use whatismyipaddress.com).

5.Browse a website to confirm traffic is encrypted.

6.Disconnect VPN and compare browsing speed and IP.

7.Research VPN encryption and privacy features.

8.Write a summary on VPN benefits and limitations.

Outcome: Hands-on experience with VPNs and understanding of privacy tools.

Step 1: Choose and Sign Up for a Free VPN

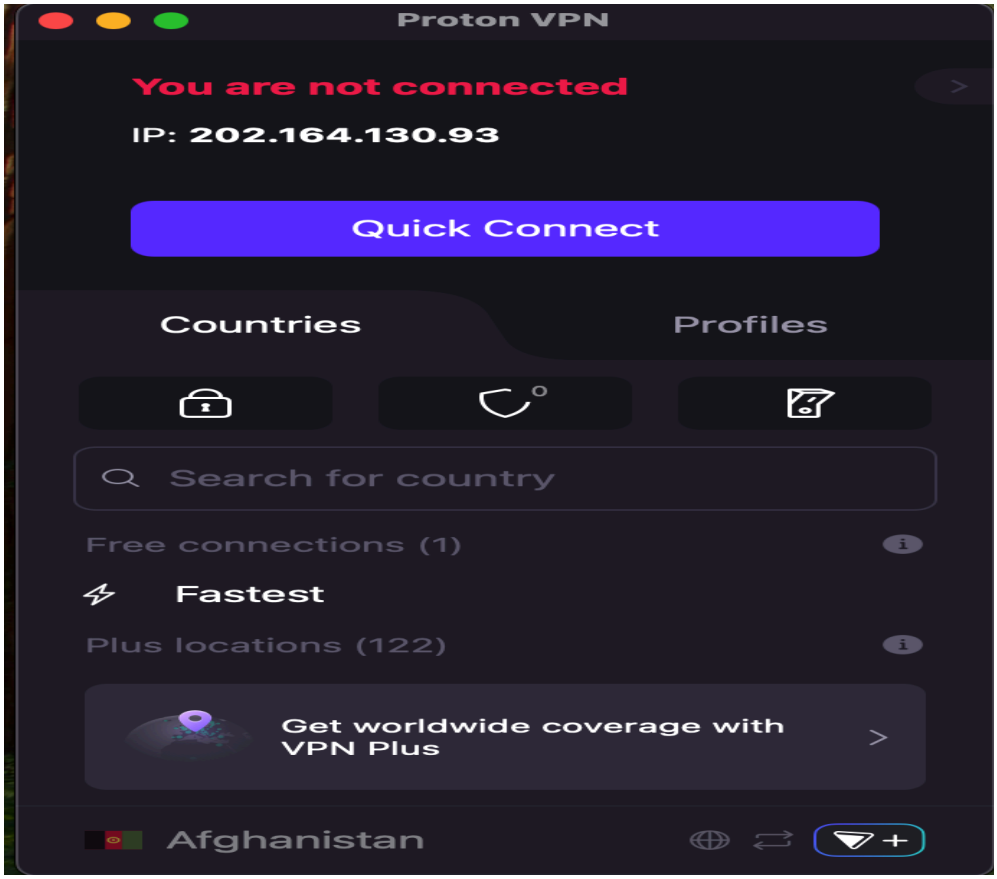
- Research a free, trusted VPN that does not log user activity.
- Create an account if needed.
- I have chosen and using protonvpn

Step 2: Download and Install the VPN Client

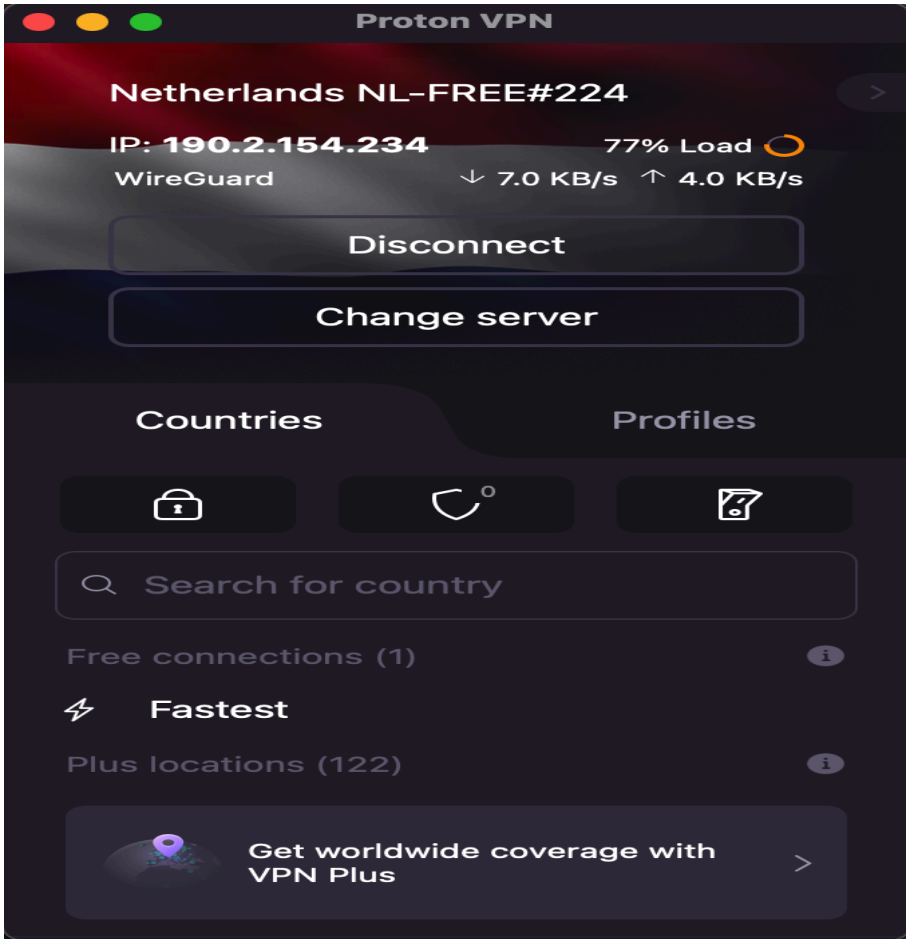
- Use the official website.
- Install it on your computer or mobile device.

Step 3: Connect to a VPN Server

- Open the VPN app.

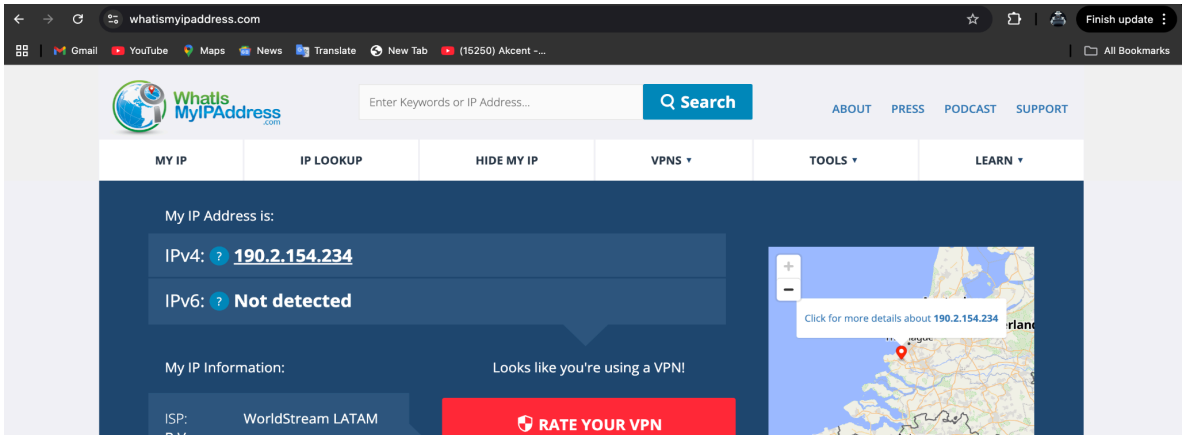


- Choose a nearby server for better speed (or any other location to test).



Step 4: Verify Your IP Address Has Changed

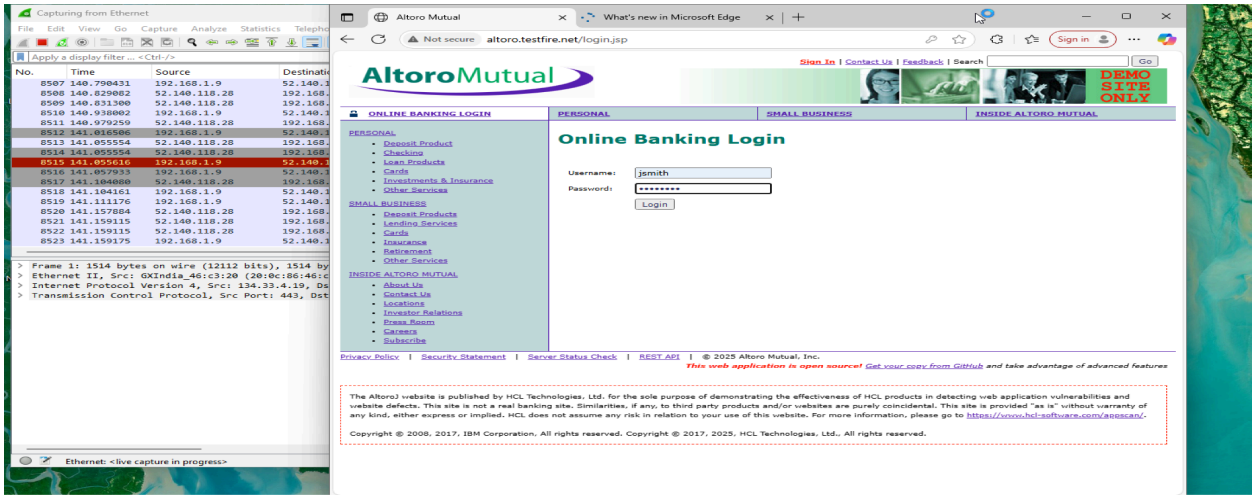
- Visit whatismyipaddress.com before and after connecting.

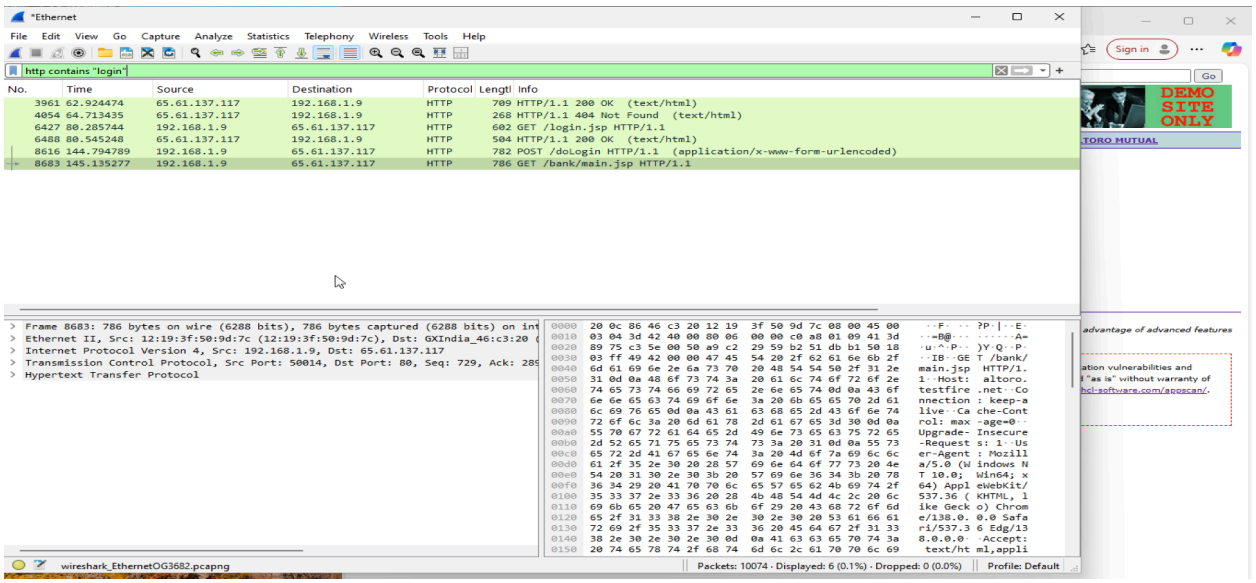


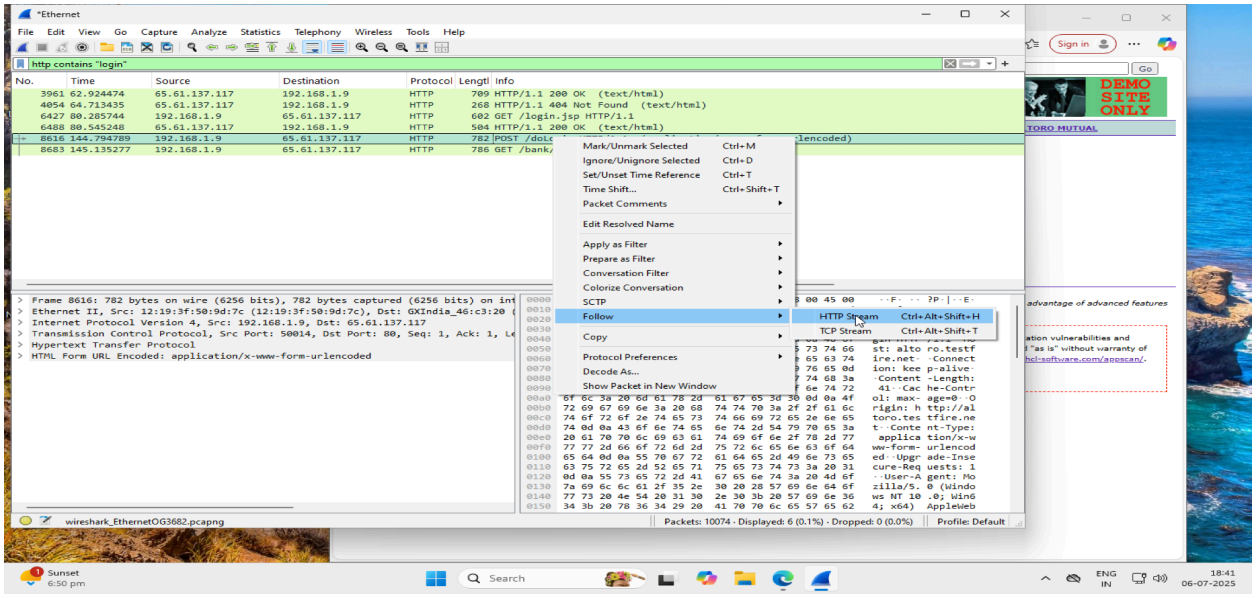
- Note your original IP vs. the new IP.

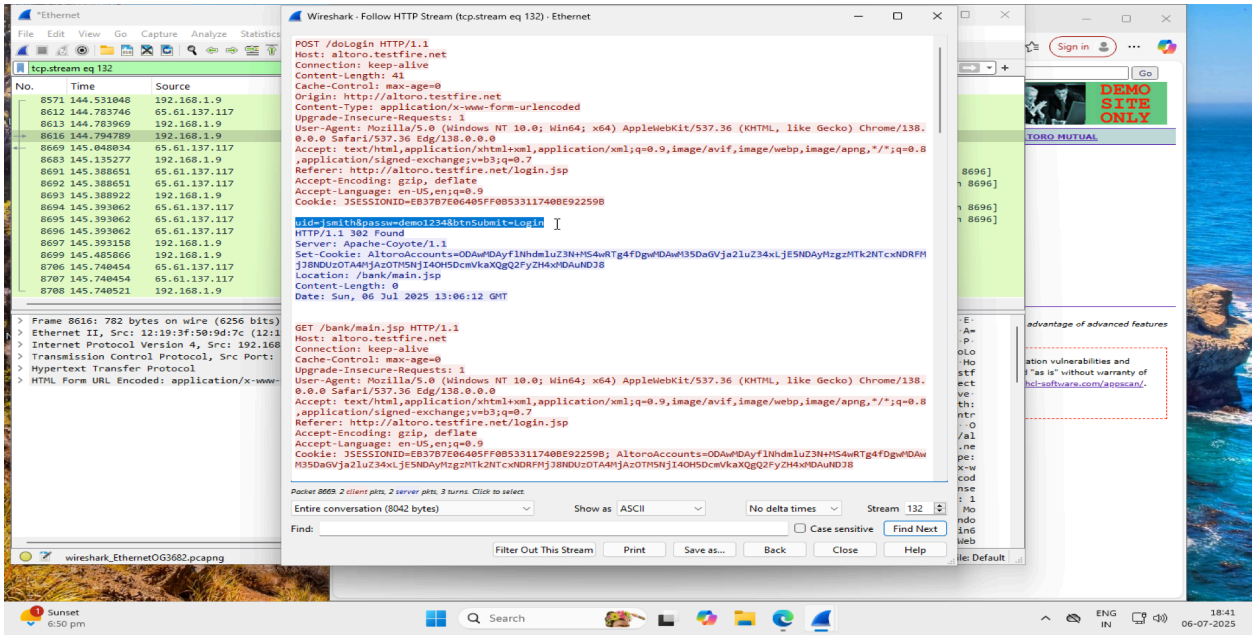
Step 5: Browse a Website to Confirm Traffic Encryption

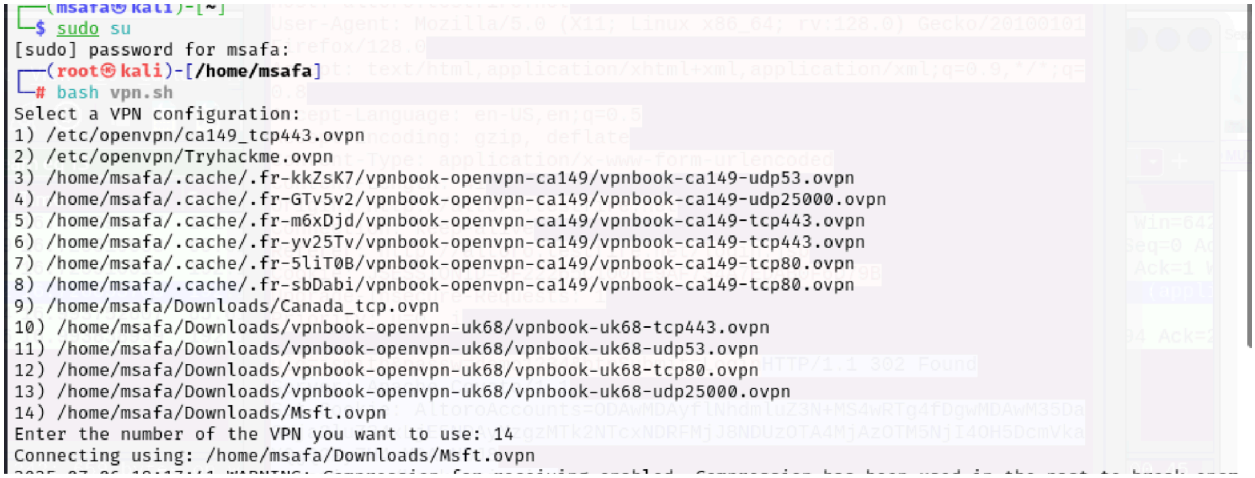
- Visit a secure website (HTTPS).
- Notice if the VPN shows a secure tunnel is active.
- Optional: Use Wireshark to observe encrypted traffic (advanced).
- Why is http dangeourous ?

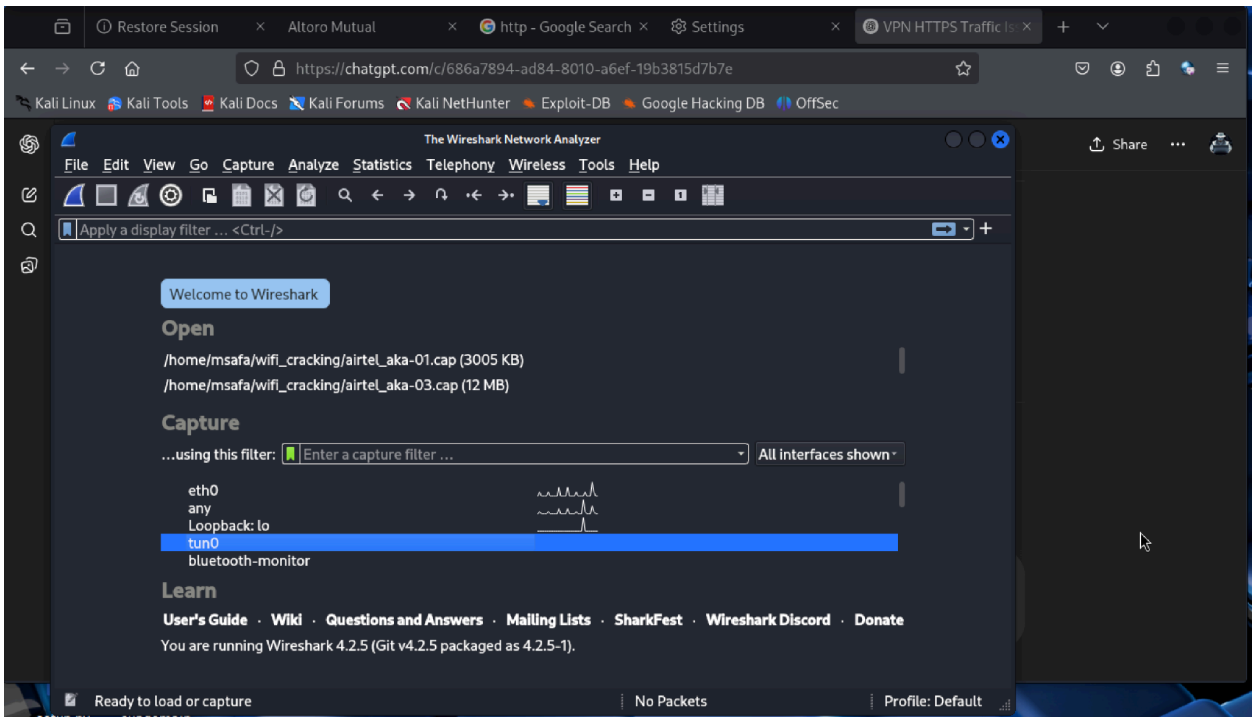





*Ethernet
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
http contains "login"
No. Time Source Destination Protocol Lengtl Info
3961 62.924474 65.61.137.117 192.168.1.9 HTTP 709 HTTP/1.1 200 OK (text/html)
4054 64.713435 65.61.137.117 192.168.1.9 HTTP 268 HTTP/1.1 404 Not Found (text/html)
6427 80.285744 192.168.1.9 65.61.137.117 HTTP 602 GET /login.jsp HTTP/1.1
6488 80.545248 65.61.137.117 192.168.1.9 HTTP 504 HTTP/1.1 200 OK (text/html)
8616 144.794789 192.168.1.9 65.61.137.117 HTTP 782 POST /doLo lencoded)
8683 145.135277 192.168.1.9 65.61.137.117 HTTP 786 GET /bank/
Mark/Unmark Selected Ctrl+M
Ignore/Unignore Selected Ctrl+D
Set/Unset Time Reference Ctrl+T
Time Shift... Ctrl+Shift+T
Packet Comments
Edit Resolved Name
Apply as Filter
Prepare as Filter
Conversation Filter
Colorize Conversation
SCTP
Follow
Copy
Protocol Preferences
Decode As...
Show Packet in New Window
HTTP Stream Ctrl+Alt+Shift+H
TCP Stream Ctrl+Alt+Shift+T
Frame 8616: 782 bytes on wire (6256 bits), 782 bytes captured (6256 bits) on int
Ethernet II, Src: 12:19:3f:50:9d:7c (12:19:3f:50:9d:7c), Dst: GXIndia_46:c3:20 (
Internet Protocol Version 4, Src: 192.168.1.9, Dst: 65.61.137.117
Transmission Control Protocol, Src Port: 50014, Dst Port: 80, Seq: 1, Ack: 1, Le
Hypertext Transfer Protocol
HTML Form URL Encoded: application/x-www-form-urlencoded
wireshark_EthernetOG3682.pcapng
Packets: 10074 · Displayed: 6 (0.1%) · Dropped: 0 (0.0%)
Profile: Default
DEMO SITE ONLY
Sign in
Go
TORO MUTUAL
advantage of advanced features
ation vulnerabilities and
"as is" without warranty of
hcl-software.com/appscan/.
Sunset 6:50 pm
Search
ENG IN
18:41 06-07-2025


*Ethernet
tcp.stream eq 132
No. Time Source
8571 144.531048 192.168.1.9
8612 144.783746 65.61.137.117
8613 144.783969 192.168.1.9
8616 144.794789 192.168.1.9
8669 145.048034 65.61.137.117
8683 145.135277 192.168.1.9
8691 145.388651 65.61.137.117
8692 145.388651 65.61.137.117
8693 145.388922 192.168.1.9
8694 145.393062 65.61.137.117
8695 145.393062 65.61.137.117
8696 145.393062 65.61.137.117
8697 145.393158 192.168.1.9
8699 145.485866 192.168.1.9
8706 145.740454 65.61.137.117
8707 145.740454 65.61.137.117
8708 145.740521 192.168.1.9
Wireshark · Follow HTTP Stream (tcp.stream eq 132) · Ethernet
POST /doLogin HTTP/1.1
Host: altoro.testfire.net
Connection: keep-alive
Content-Length: 41
Cache-Control: max-age=0
Origin: http://altoro.testfire.net
Content-Type: application/x-www-form-urlencoded
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.
0.0.0 Safari/537.36 Edg/138.0.0.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8
,application/signed-exchange;v=b3;q=0.7
Referer: http://altoro.testfire.net/login.jsp
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Cookie: JSESSIONID=EB37B7E06405FF0853311740BE92259B
uid=jsmith&passw=demo1234&btnSubmit=Login
HTTP/1.1 302 Found
Server: Apache-Coyote/1.1
Set-Cookie: AltoroAccounts=ODAwMDAyflNhdmluZ3N+MS4wRTg4fDgwMDAwM35DaGVja2luZ34xLjE5NDAyMzgzMTk2NTcxNDRFM
jJ8NDUzOTA4MjAzOTM5NjI4OH5DcmVkaXQgQ2FyZH4xMDAuND J8
Location: /bank/main.jsp
Content-Length: 0
Date: Sun, 06 Jul 2025 13:06:12 GMT
GET /bank/main.jsp HTTP/1.1
Host: altoro.testfire.net
Connection: keep-alive
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.
0.0.0 Safari/537.36 Edg/138.0.0.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8
,application/signed-exchange;v=b3;q=0.7
Referer: http://altoro.testfire.net/login.jsp
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Cookie: JSESSIONID=EB37B7E06405FF0853311740BE92259B; AltoroAccounts=ODAwMDAyflNhdmluZ3N+MS4wRTg4fDgwMDAw
M35DaGVja2luZ34xLjE5NDAyMzgzMTk2NTcxNDRFMjJ8NDUzOTA4MjAzOTM5NjI4OH5DcmVkaXQgQ2FyZH4xMDAuND J8
Packet 8669. 2 client pkts, 2 server pkts, 3 turns. Click to select.
Entire conversation (8042 bytes)
Show as ASCII
No delta times
Stream 132
Find:
Case sensitive
Find Next
Filter Out This Stream
Print
Save as...
Back
Close
Help
wireshark_EthernetOG3682.pcapng
Sunset 6:50 pm
Search
ENG IN
18:41 06-07-2025





The last two images shows how to connect into a vpn – open vpn server and capture the encrypted packets from wireshark

Step 6: Disconnect VPN and Compare Browsing Speed & IP

- Disconnect the VPN.
- Recheck your IP address — it should revert to your real one.
- Note any speed differences with/without the VPN.

Step 7: Research VPN Encryption & Privacy Features

- Learn about:
    - Tunneling protocols (OpenVPN, WireGuard, IKEv2).
    - No-logs policy.
    - DNS leak protection.
    - Kill switch features.

Step 8: Write a Short Summary

- Explain how a VPN:
    - Encrypts traffic.
    - Masks IP addresses.
    - Helps avoid tracking.
- Mention limitations:
    - Free VPN speed/data limits.
    - Some websites may block VPN IPs.
    - Not a substitute for other security measures.