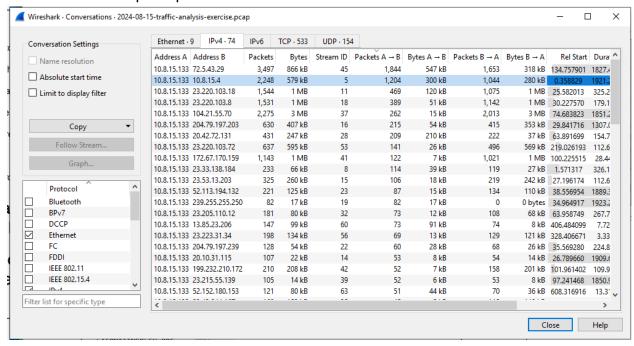
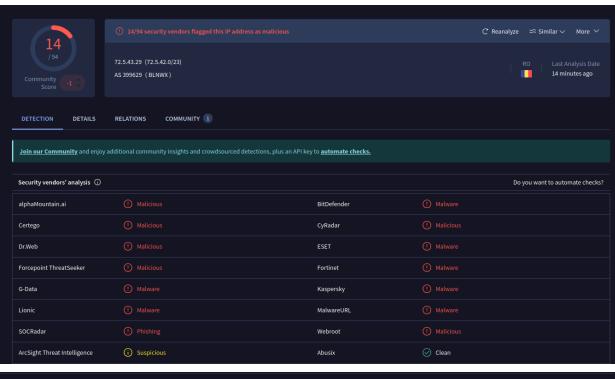
WarmCookie Malware Traffic Analysis

Analyzing the Traffic

My first step in analyzing the traffic from the malware was looking at the conversations between the infected machine and other IPs. The reason for this being that high amounts of packets being sent and received from specific IPs could indicate data exfiltration or contacting a command and control server. As you can see from the screenshot below, we can see some outliers in terms of packet count. Notably, 72.5.43.29 sits atop the packet count list.

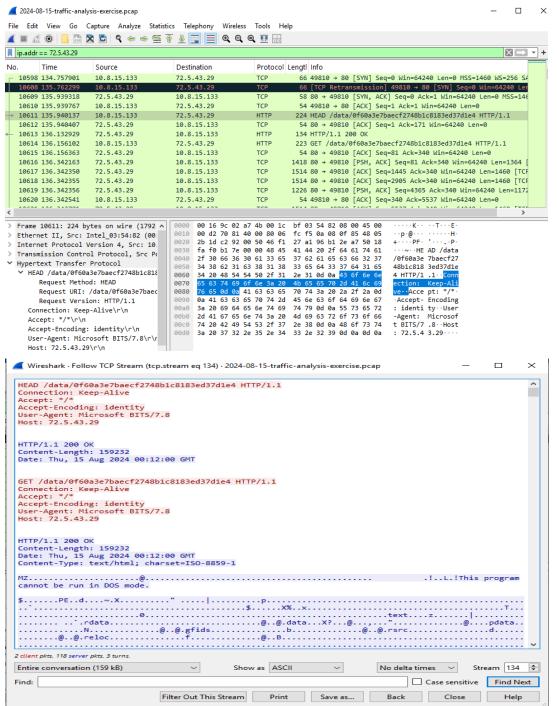


Because of the high amount of data being transferred between 72.5.43.29 and the infected machine, I used VirusTotal to check if the IP is associated with anything malicious. The following results show that the IP is associated with malicious attacks, therefore it is necessary to analyze interactions with this IP further. VirusTotal gives us some more detail to work with as well by showing files associated with the IP.

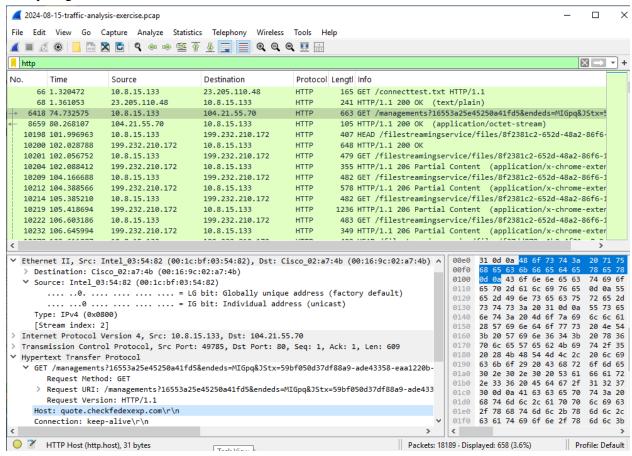


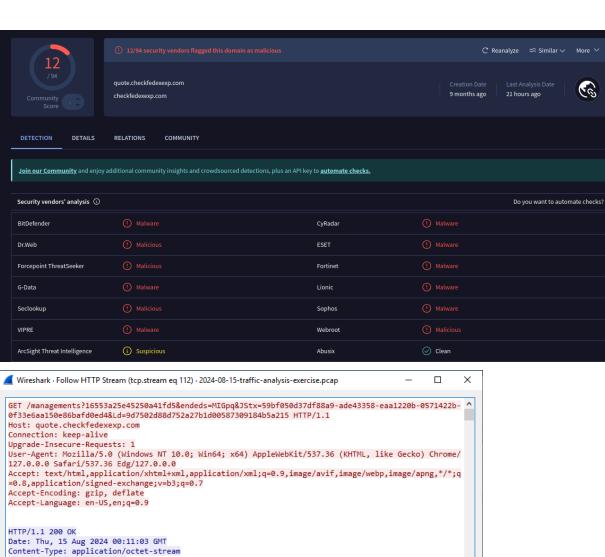
Passive DNS Replication (2) O				
Date resolved 2024-09-03	Detections 9 / 94	Resolver VirusTotal	Domain checking-bots.site	
2024-09-03	0 / 94	VirusTotal	www.checking-bots.site	
Communicating Files (4) ①				
Scanned	Detections	Туре	Name	
2025-01-22	31 / 60	JavaScript	87f57a7a4b4c83ecb3cdd5f274c95cd452c703de604f68aff6e59964b662e3f8.js	
2024-11-05	55 / 72	Win32 DLL	Updater.dll	
2025-01-22	55 / 72	Win32 DLL	0f60a3e7baecf2748b1c8183ed37d1e4	
2024-11-05	57 / 72	Win32 DLL	f4d2c9470b322af29b9188a3a590cbe85bacb9cc8fcd7c2e94d82271ded3f659.dll	
Files Referring (5)) ©			
Scanned	Detections	Туре	Name	
2024-08-19	17 / 65	unknown	malicious.exe	
2025-01-28	0 / 61	Network capture	2024-08-15-traffic-analysis-exercise.pcap	
		file	e4337a9c8ec9b6eef007c0be6b492a7c8d64ee0610f0da597104ecd60b63d7a0	
2024-12-05	0 / 62	Text	2024-08-15-traffic-analysis-exercise-alerts.txt	
	0 / 62	Text	attack 2	

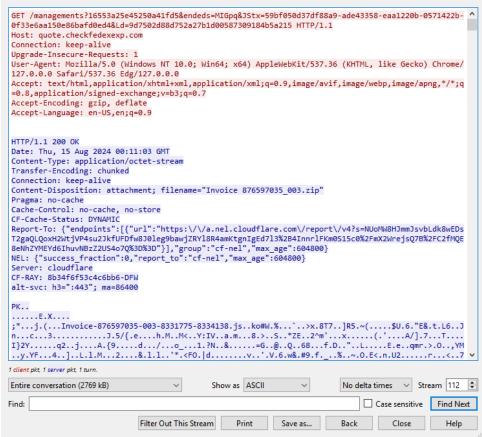
When filtering the traffic to show only packets sent or received by 72.5.43.29, we can see one of the malicious files noted previously in VirusTotal. Following the TCP stream of the GET request with the malicious "0f60a3e7baecf2748b1c8183ed37d1e4" file shows the phrase "This program cannot be run in DOS mode." which indicates that an executable is being downloaded.



So we can see that known malicious files are being downloaded to the infected host. In order to broaden the scope of the analysis, I searched through the HTTP traffic to see if there are any other odd GET requests. After some searching, I found a GET request to the IP 104.21.55.70. This IP was also one of the outliers found when analyzing the different conversations between the infected machine and other IPs. I was able to resolve the hostname of this traffic, the hostname being "quote.checkfedexexp.com". Searching this domain in VirusTotal shows that this is a malicious domain, and further analysis of the HTTP stream for this conversation shows that the infected machine is using a GET request to download a malicious file named "Invoice_876597035_003.zip". Analyzing this conversation also revealed the MAC address for the victim machine.

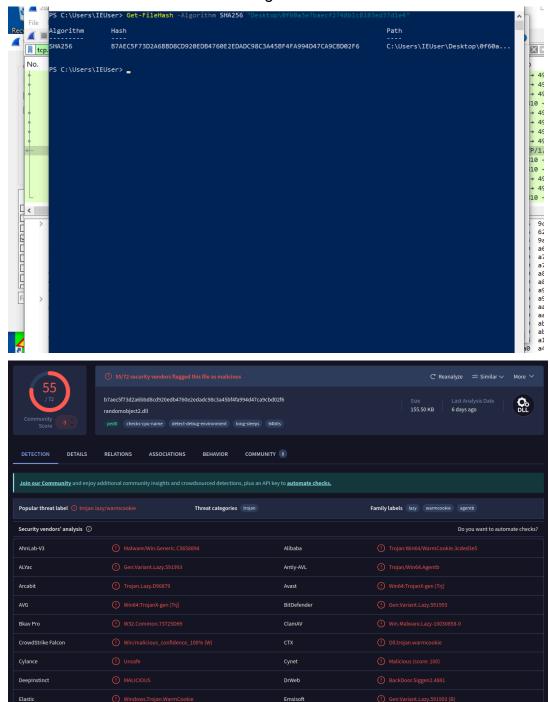




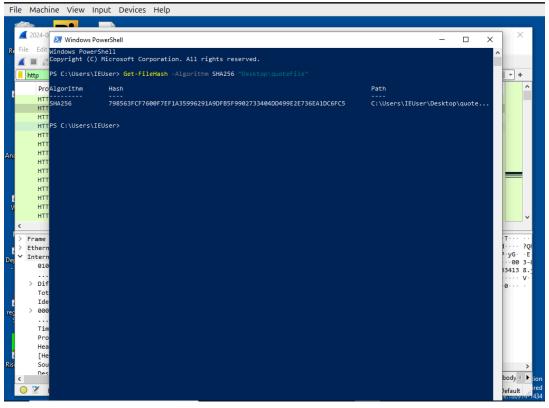


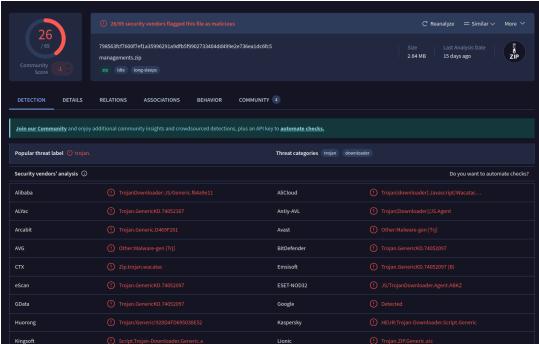
I then exported the files associated with the GET requests to check their SHA-256 hashes in the VirusTotal database.

For the .dll file I received the following:

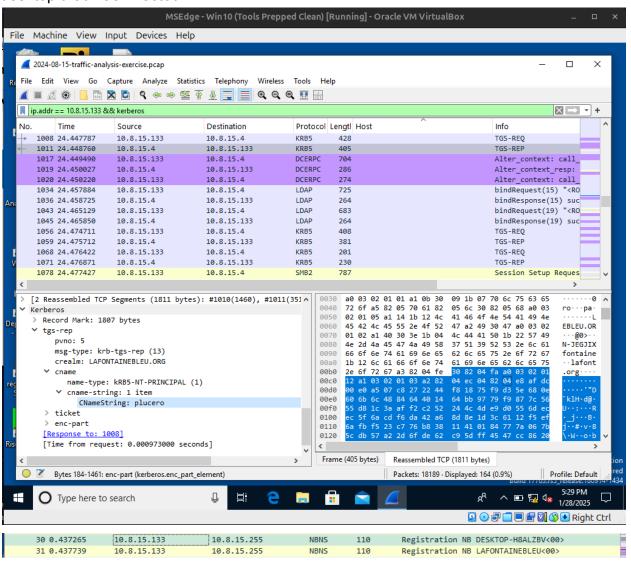


For the .zip file I received the following:





As we can see, the results for .dll show that the file is associated with the WarmCookie malware, confirming we have correctly identified the malicious files. The results for the .zip file show that the malware is a Trojan. Lastly, I found the Windows username used on the infected machine by searching through Kerberos for the CNameString associated with the victim IP, and searched through the NBNS traffic for the name of the desktop that was infected .



Summary

Victim Details:

Host Name: DESKTOP-H8ALZBV

• IP Address: 10.8.15.133

MAC Address: 00:1c:bf:03:54:82Windows Username: plucero

Malicious IP Addresses:

• 72.5.43.29

• 104.21.55.70

Domain:

• quote[.]checkfedexexp[.]com

Malware File Names:

- Invoice_876597035_003.zip
- 0f60a3e7baecf2748b1c8183ed37d1e4

Malware SHA-256 Hashes:

• DLL File:

b7aec5f73d2a6bbd8cd920edb4760e2edadc98c3a45bf4fa994d47ca9cbd02f6

• ZIP File:

798563fcf7600f7ef1a35996291a9dfb5f9902733404dd499e2e736ea1dc6fc5