Breaking into the Bandit Stealer Malware Infrastructure

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CloudSEK's threat researchers discovered a new Bandit Stealer malware web panel on 06 July 2023, with at least 14 active instances.

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Category:

Malware Intelligence

Type/Family:

Stealer Malware

Industry:

Multiple

Region:

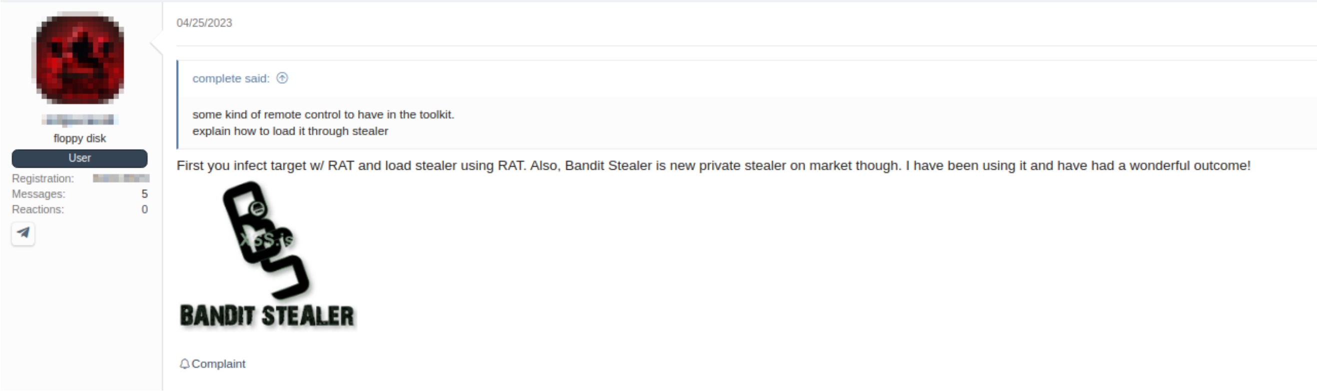
Global

Executive Summary

- On 06 July 2023, CloudSEK's threat researchers found a web panel of a relatively new Bandit Stealer malware.
- The malware is written in Go programming language.
- We found at least 14 instances of Bandit Stealer web panels which were recently active.
- The malware is being distributed through YouTube videos.
- The stealer collects data such as PC and user details, screenshots, geolocation and IP information, webcam images, and data from popular browsers, FTP applications, and digital wallets.
- The stealer targets more than 25 cryptocurrency wallets and 17 web browsers.
- The stolen data is then sent to a secure Telegram bot, packaged in a ZIP file for easy transfer.

Analysis and Attribution

CloudSEK's contextual AI digital risk platform XVigil has discovered a post mentioning Bandit Stealer malware on a Russian-speaking underground forum where a threat actor vouched for it.



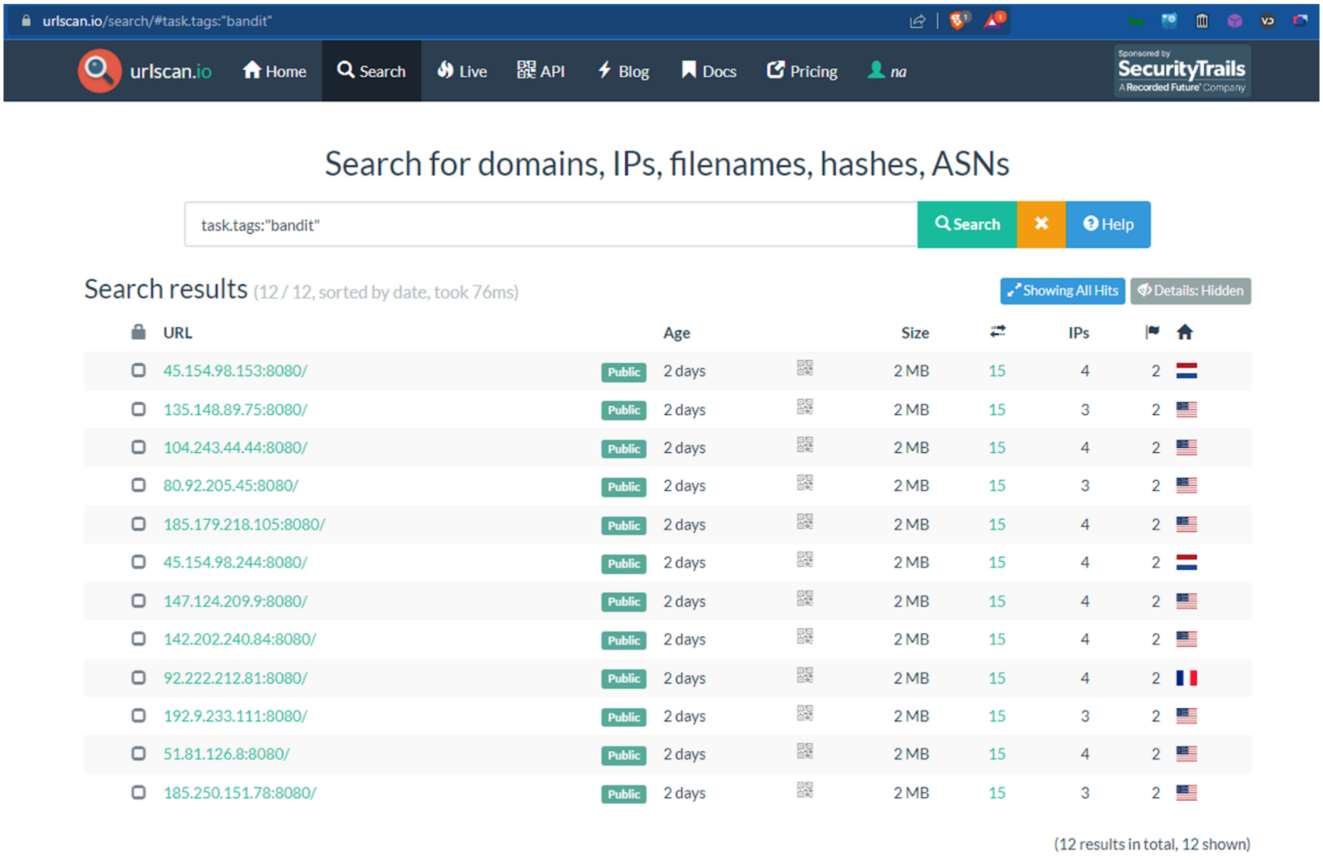
[redacted]
floppy disk
User
Registration: [redacted]
Messages: 5
Reactions: 0

04/25/2023

> complete said:
>
> some kind of remote control to have in the toolkit.
> explain how to load it through stealer

First you infect target w/ RAT and load stealer using RAT. Also, Bandit Stealer is new private stealer on market though. I have been using it and have had a wonderful outcome!

CloudSEK researchers recently discovered at least 14 IP addresses serving the Bandit Stealer web panel, most of which went down in a span of 24 hours. All of these IP addresses were running on port **8080**.



urlscan.io/search/#task.tags:"bandit"
urlscan.io
Home
Search
Live
API
Blog
Docs
Pricing
na
Sponsored by SecurityTrails A Recorded Future Company

Search for domains, IPs, filenames, hashes, ASNs

task.tags:"bandit"

Search results (12 / 12, sorted by date, took 76ms)

Showing All Hits
Details: Hidden

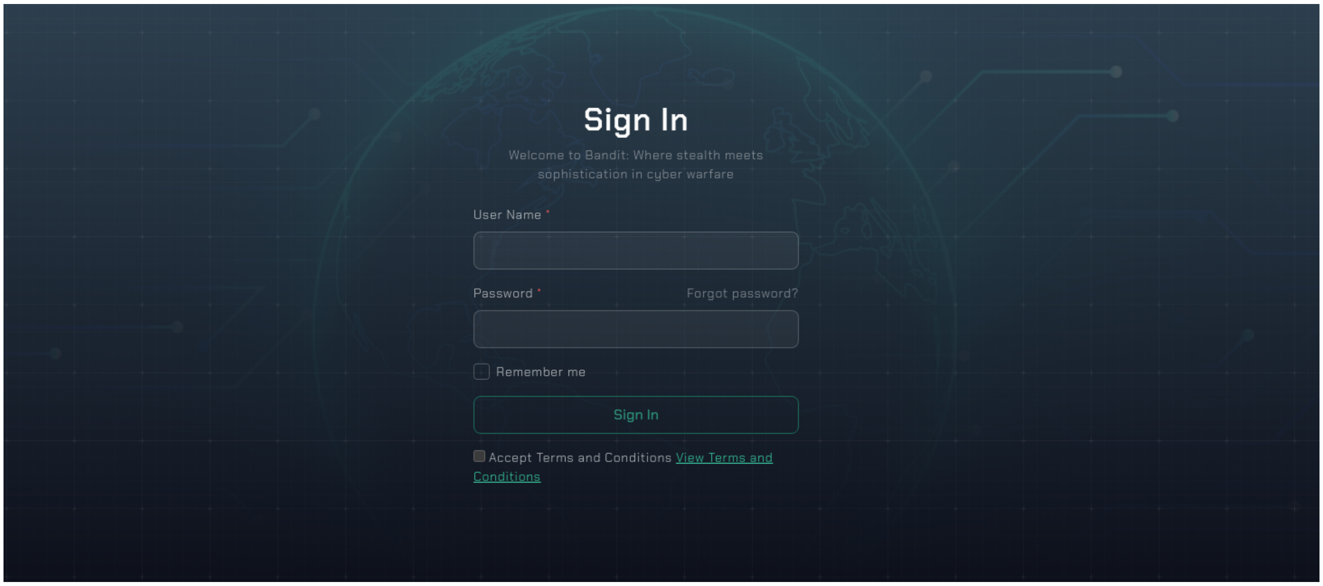
	URL		Age		Size	⇄	IPs	⚑	⌂
□	45.154.98.153:8080/	Public	2 days		2 MB	15	4	2	🇳🇱
□	135.148.89.75:8080/	Public	2 days		2 MB	15	3	2	🇺🇸
□	104.243.44.44:8080/	Public	2 days		2 MB	15	4	2	🇺🇸
□	80.92.205.45:8080/	Public	2 days		2 MB	15	3	2	🇺🇸
□	185.179.218.105:8080/	Public	2 days		2 MB	15	4	2	🇺🇸
□	45.154.98.244:8080/	Public	2 days		2 MB	15	4	2	🇳🇱
□	147.124.209.9:8080/	Public	2 days		2 MB	15	4	2	🇺🇸
□	142.202.240.84:8080/	Public	2 days		2 MB	15	4	2	🇺🇸
□	92.222.212.81:8080/	Public	2 days		2 MB	15	4	2	🇫🇷
□	192.9.233.111:8080/	Public	2 days		2 MB	15	3	2	🇺🇸
□	51.81.126.8:8080/	Public	2 days		2 MB	15	4	2	🇺🇸
□	185.250.151.78:8080/	Public	2 days		2 MB	15	3	2	🇺🇸

(12 results in total, 12 shown)

Results from URLScan.io

Bandit Web Panel Analysis

Our source identified a few website endpoints that allowed access to the website's internal system without entering the credentials due to a misconfiguration on the website.



Sign In

Welcome to Bandit: Where stealth meets sophistication in cyber warfare

User Name *

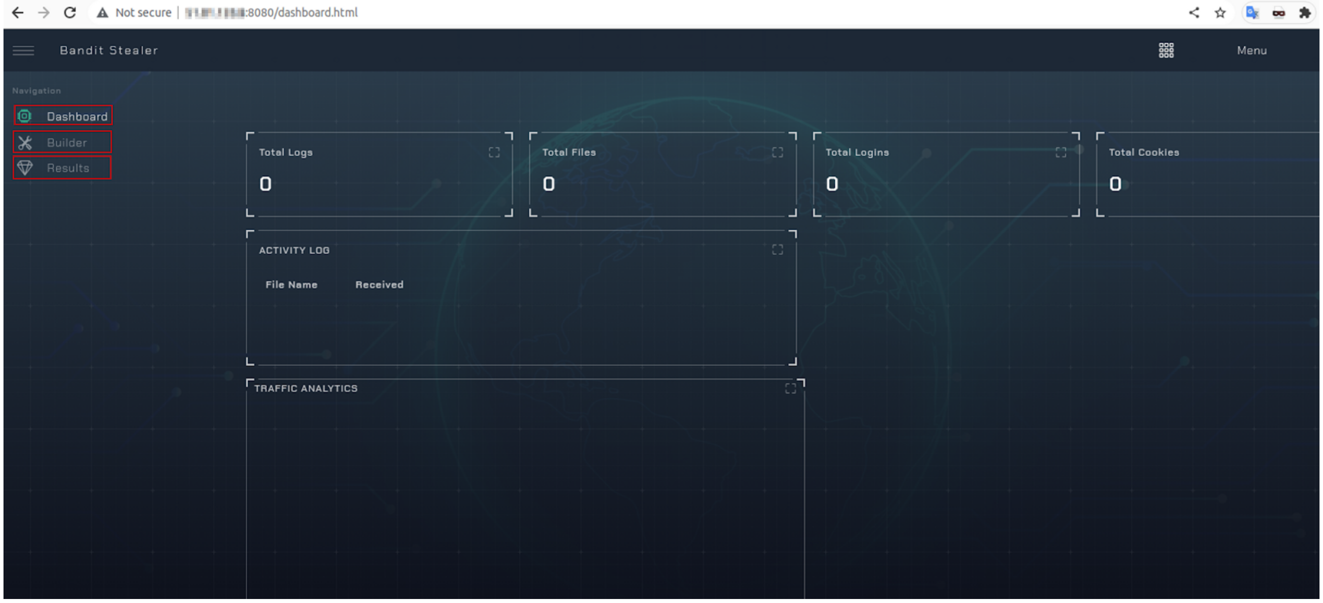
Password * Forgot password?

□ Remember me

□ Accept Terms and Conditions View Terms and Conditions

Login page of Bandit Stealer web panel

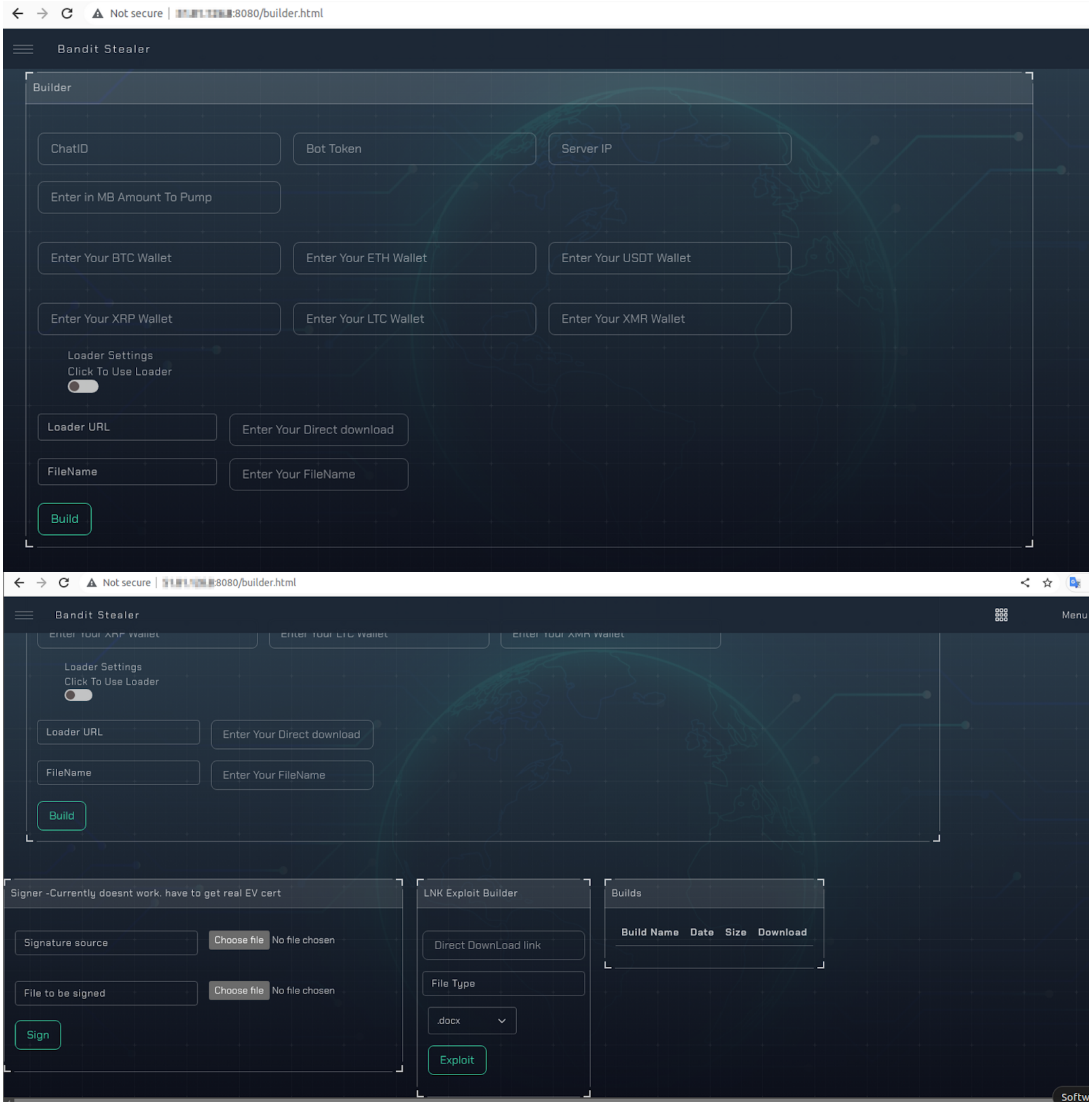
Nothing particularly significant can be noted on the dashboard except a menu for options such as **Builder** and **Results**.



Dashboard interface of the malware panel

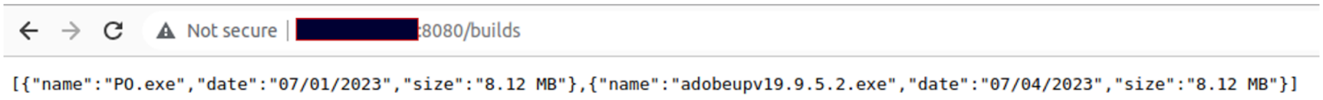
The Builder page shows the options for building a customized version of Bandit Stealer malware. And, in the stealer operation, threat actors utilize key elements to carry out their activities:

- **Communication Channel:** ChatID, Bot Token, and Server IP are utilized to establish a secure connection with Telegram. This connection enables the threat actors to receive exfiltrated data from infected users, such as compromised credentials and screenshots.
- **Cryptocurrency Wallet Addresses:** Various cryptocurrency wallet addresses are employed to transfer cryptocurrency amounts to the threat actor’s wallet.
- **Loader URL:** The Loader URL serves as a mechanism for distributing the malware. For instance, in malvertising campaigns, a hidden JavaScript code operates in the background and is responsible for dropping the executable malware file onto the victim's system. This URL is a crucial component in the initial infection process.
- **FileName:** The FileName refers to the name assigned to the executable malware file. This file contains the malicious code responsible for the intended actions, such as data theft and exfiltration.



Malware builder panel used for generating executable

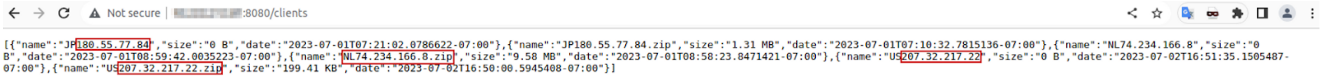
One of the discovered endpoints was **/builds** that had all the Bandit Stealer builder that had been generated so far by this particular panel. Our source was able to acquire them for further analysis.



Not secure | [redacted]:8080/builds

```
[{"name":"PO.exe","date":"07/01/2023","size":"8.12 MB"},{"name":"adobeupv19.9.5.2.exe","date":"07/04/2023","size":"8.12 MB"}]
```

Next, another identified endpoint was **/clients** with multiple instances of likely exfiltrated data from multiple IP addresses in JSON. In the JSON, the file name consists of thetarget’s **Country Code + Public IP address**, followed by **size** and the exfiltration **date and time**. While our analysis confirms the data to be sent to the Telegram bot, but we assume the malware likely also keeps a copy of the exfiltrated data in its web panel.

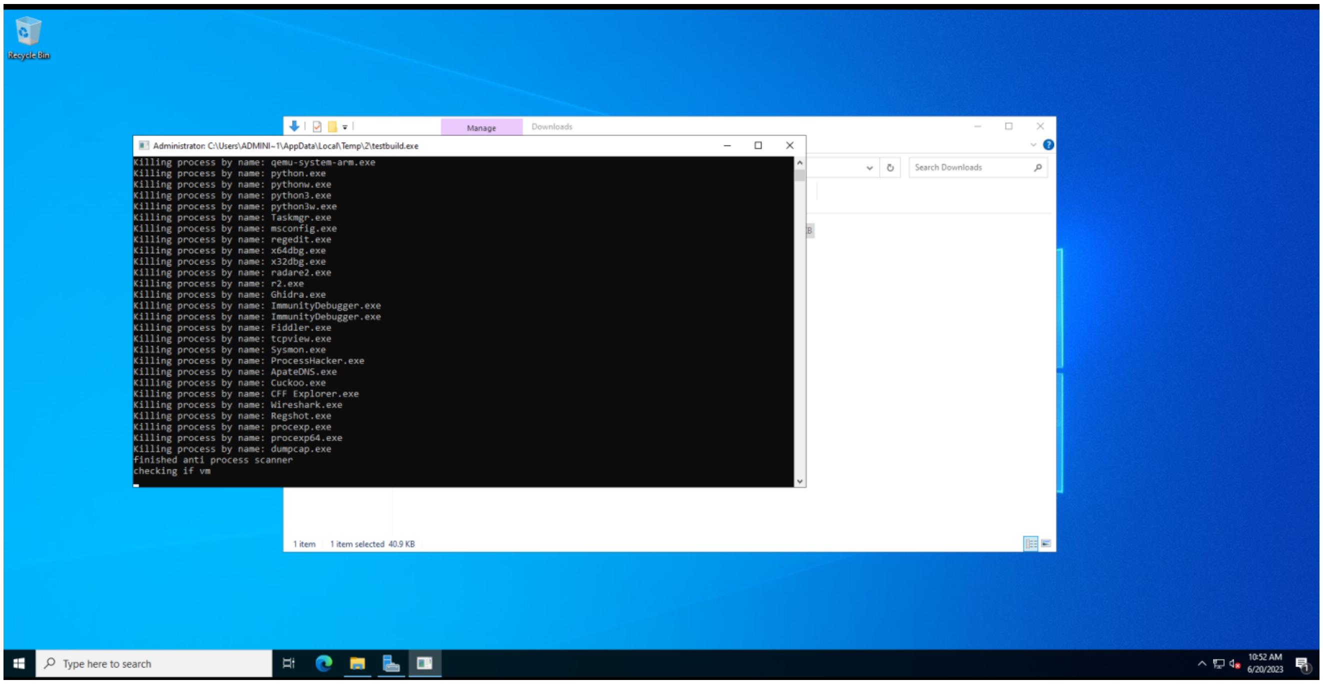


Not secure | [redacted]:8080/clients

```
[{"name":"JP180.55.77.84","size":"0 B","date":"2023-07-01T07:21:02.0786622-07:00"},{"name":"JP180.55.77.84.zip","size":"1.31 MB","date":"2023-07-01T07:10:32.7815136-07:00"},{"name":"NL74.234.166.8","size":"0
B","date":"2023-07-01T08:59:42.0035223-07:00"},{"name":"NL74.234.166.8.zip","size":"9.58 MB","date":"2023-07-01T08:58:23.8471421-07:00"},{"name":"US207.32.217.22","size":"0 B","date":"2023-07-02T16:51:35.1505487-
07:00"},{"name":"US207.32.217.22.zip","size":"199.41 KB","date":"2023-07-02T16:50:00.5945408-07:00"}]
```

Analysis of Stealer Logs

Our source was able to exfiltrate the stealer logs from their web panel for Analysis. One of the log files was from the test machine with lots of screenshots which they might have used for testing the malware. The screenshot shows the process of anti-reversing tools being killed using Command Prompt. The other screenshot shows the same process using PowerShell. As the malware has screen capture capabilities, it is assumed that the malware have captured these screenshots during the infection (likely on the test machine).

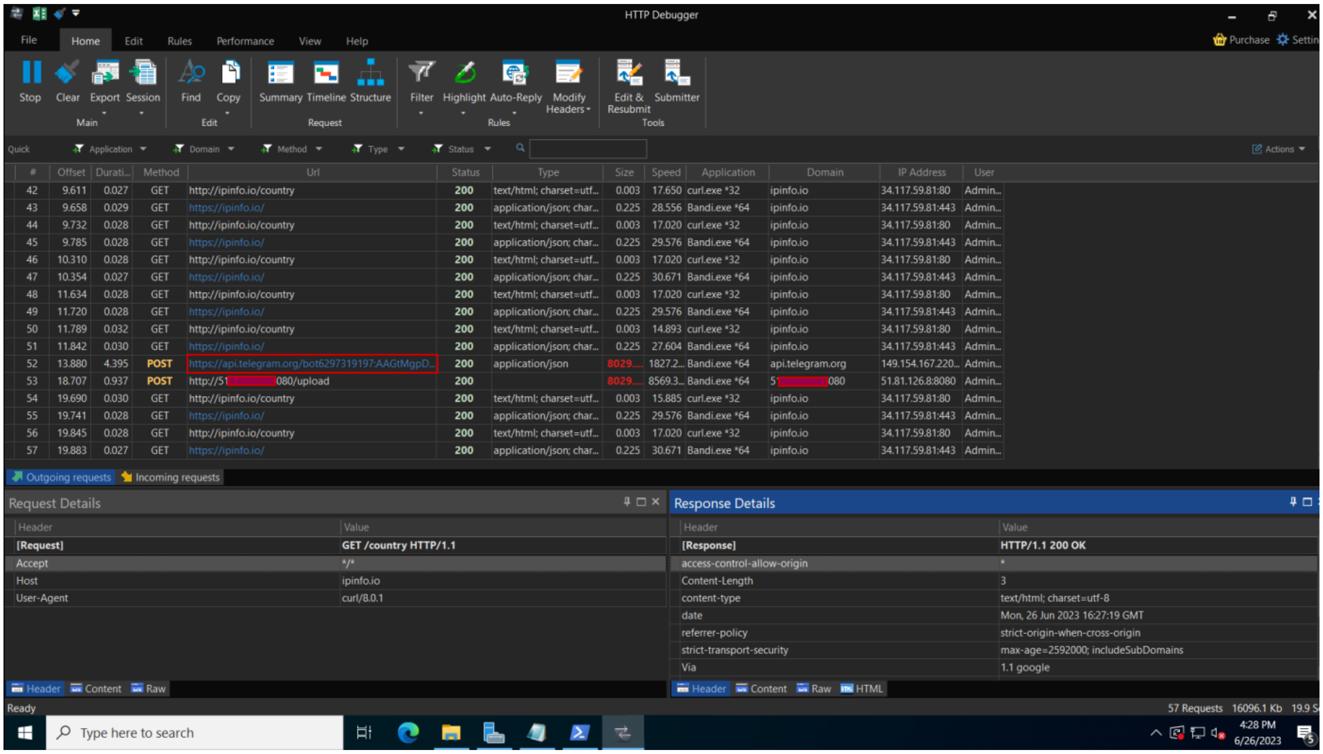


Administrator: C:\Users\ADMINI~1\AppData\Local\Temp\2\testbuild.exe

```
Killing process by name: qemu-system-arm.exe
Killing process by name: python.exe
Killing process by name: pythonw.exe
Killing process by name: python3.exe
Killing process by name: python3w.exe
Killing process by name: Taskmgr.exe
Killing process by name: msconfig.exe
Killing process by name: regedit.exe
Killing process by name: x64dbg.exe
Killing process by name: x32dbg.exe
Killing process by name: radare2.exe
Killing process by name: r2.exe
Killing process by name: Ghidra.exe
Killing process by name: ImmunityDebugger.exe
Killing process by name: ImmunityDebugger.exe
Killing process by name: Fiddler.exe
Killing process by name: tcpview.exe
Killing process by name: Sysmon.exe
Killing process by name: ProcessHacker.exe
Killing process by name: ApateDNS.exe
Killing process by name: Cuckoo.exe
Killing process by name: CFF Explorer.exe
Killing process by name: Wireshark.exe
Killing process by name: Regshot.exe
Killing process by name: procexp.exe
Killing process by name: procexp64.exe
Killing process by name: dumpcap.exe
finished anti process scanner
checking if vm
```

The process of killing anti-reversing tools

Another screenshot reveals the usages of a Telegram bot in the stealer malware as the C2 communication channel.



HTTP Debugger

#	Offset	Durati...	Method	Url	Status	Type	Size	Speed	Application	Domain	IP Address	User
42	9.611	0.027	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	17.650	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
43	9.658	0.029	GET	https://ipinfo.io/	200	application/json; char...	0.225	28.556	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
44	9.732	0.028	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	17.020	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
45	9.785	0.028	GET	https://ipinfo.io/	200	application/json; char...	0.225	29.576	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
46	10.310	0.028	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	17.020	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
47	10.354	0.027	GET	https://ipinfo.io/	200	application/json; char...	0.225	30.671	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
48	11.634	0.028	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	17.020	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
49	11.720	0.028	GET	https://ipinfo.io/	200	application/json; char...	0.225	29.576	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
50	11.789	0.032	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	14.893	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
51	11.842	0.030	GET	https://ipinfo.io/	200	application/json; char...	0.225	27.604	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
52	13.880	4.395	POST	https://api.telegram.org/bot6297319197:AAGtMgpD...	200	application/json	8029....	1827.2...	Bandi.exe *64	api.telegram.org	149.154.167.220...	Admin...
53	18.707	0.937	POST	http://51[redacted]080/upload	200		8029....	8569.3...	Bandi.exe *64	5[redacted]080	51.81.126.8:8080	Admin...
54	19.690	0.030	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	15.885	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
55	19.741	0.028	GET	https://ipinfo.io/	200	application/json; char...	0.225	29.576	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...
56	19.845	0.028	GET	http://ipinfo.io/country	200	text/html; charset=utf...	0.003	17.020	curl.exe *32	ipinfo.io	34.117.59.81:80	Admin...
57	19.883	0.027	GET	https://ipinfo.io/	200	application/json; char...	0.225	30.671	Bandi.exe *64	ipinfo.io	34.117.59.81:443	Admin...

Request Details

Header	Value
[Request]	GET /country HTTP/1.1
Accept	*/*
Host	ipinfo.io
User-Agent	curl/8.0.1

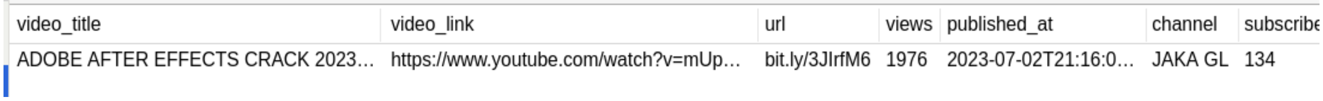
Response Details

Header	Value
[Response]	HTTP/1.1 200 OK
access-control-allow-origin	*
Content-Length	3
content-type	text/html; charset=utf-8
date	Mon, 26 Jun 2023 16:27:19 GMT
referrer-policy	strict-origin-when-cross-origin
strict-transport-security	max-age=2592000; includeSubDomains
Via	1.1 google

Using Telegram bot for C2 servers

Malware Delivery Mechanism

The malware is being distributed through YouTube videos which is a commonly seen malware delivery mechanism among threat actors. In our previous report, we highlighted that since November 2022, there has been a 200-300% month-on-month increase in Youtube videos containing links to stealer malware such as Vidar, RedLine, and Raccoon in their descriptions.



video_title	video_link	url	views	published_at	channel	subscribe
ADOBE AFTER EFFECTS CRACK 2023…	https://www.youtube.com/watch?v=mUp…	bit.ly/3JIrfM6	1976	2023-07-02T21:16:0…	JAKA GL	134

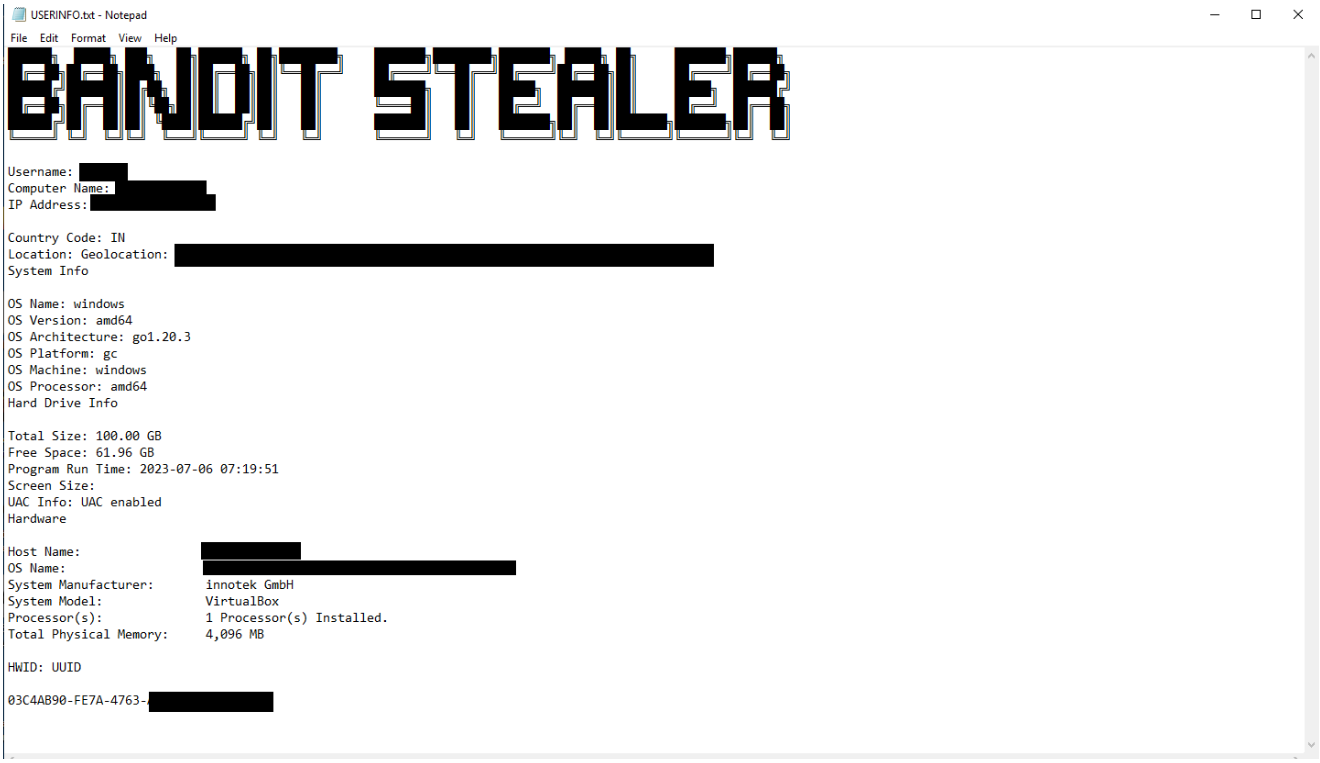
Technical Analysis

Bandit Stealer, a newly discovered form of information stealer malware, showcases advanced capabilities and evasive techniques. Written in the Go language, it employs various methods to circumvent detection by debugging tools and virtual machine environments, ensuring its covert operations remain undetected.

To avoid analysis and hinder reverse engineering efforts, Bandit Stealer employs clever tactics. It actively checks for the presence of debuggers using techniques like **IsDebuggerPresent** and **CheckRemoteDebuggerPresent**. Furthermore, it possesses the ability to detect sandbox environments, swiftly shutting itself down if such environments are detected, thereby eluding analysis attempts. The malware even terminates reverse engineering tools that could potentially interfere with its functionality.

Notably, Bandit Stealer has been observed spreading through YouTube videos to reach mass users.

In order to establish persistence on infected systems, the malware creates an autorun registry entry, named "Bandit Stealer." By doing so, it ensures that the malicious code runs each time the machine is booted up.



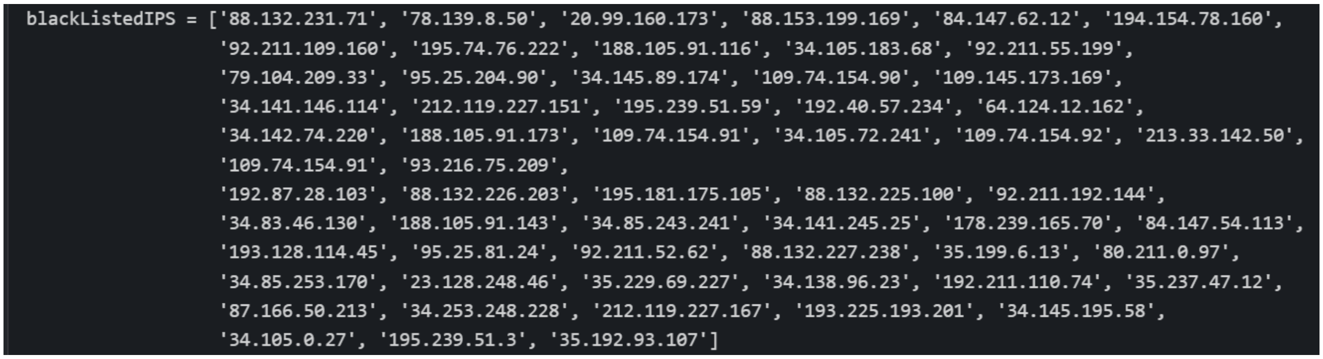
```
BANDIT STEALER

Username: [redacted]
Computer Name: [redacted]
IP Address: [redacted]

Country Code: IN
Location: Geolocation: [redacted]
System Info

OS Name: windows
OS Version: amd64
OS Architecture: go1.20.3
OS Platform: gc
OS Machine: windows
OS Processor: amd64
Hard Drive Info

Total Size: 100.00 GB
Free Space: 61.96 GB
Program Run Time: 2023-07-06 07:19:51
Screen Size:
UAC Info: UAC enabled
Hardware

Host Name:                 [redacted]
OS Name:                   [redacted]
System Manufacturer:       innotek GmbH
System Model:              VirtualBox
Processor(s):              1 Processor(s) Installed.
Total Physical Memory:     4,096 MB

HWID: UUID

03C4AB90-FE7A-4763-[redacted]
```

Collected PC, User, and IP Information

The stealer is designed to obtain valuable information from PCs and users. It discreetly collects data such as PC and user details, screenshots, geolocation and IP information, webcam images, and data from popular browsers, FTP applications, and digital wallets. The stolen data is then sent to a secure Telegram bot, packaged in a ZIP file for easy transfer.

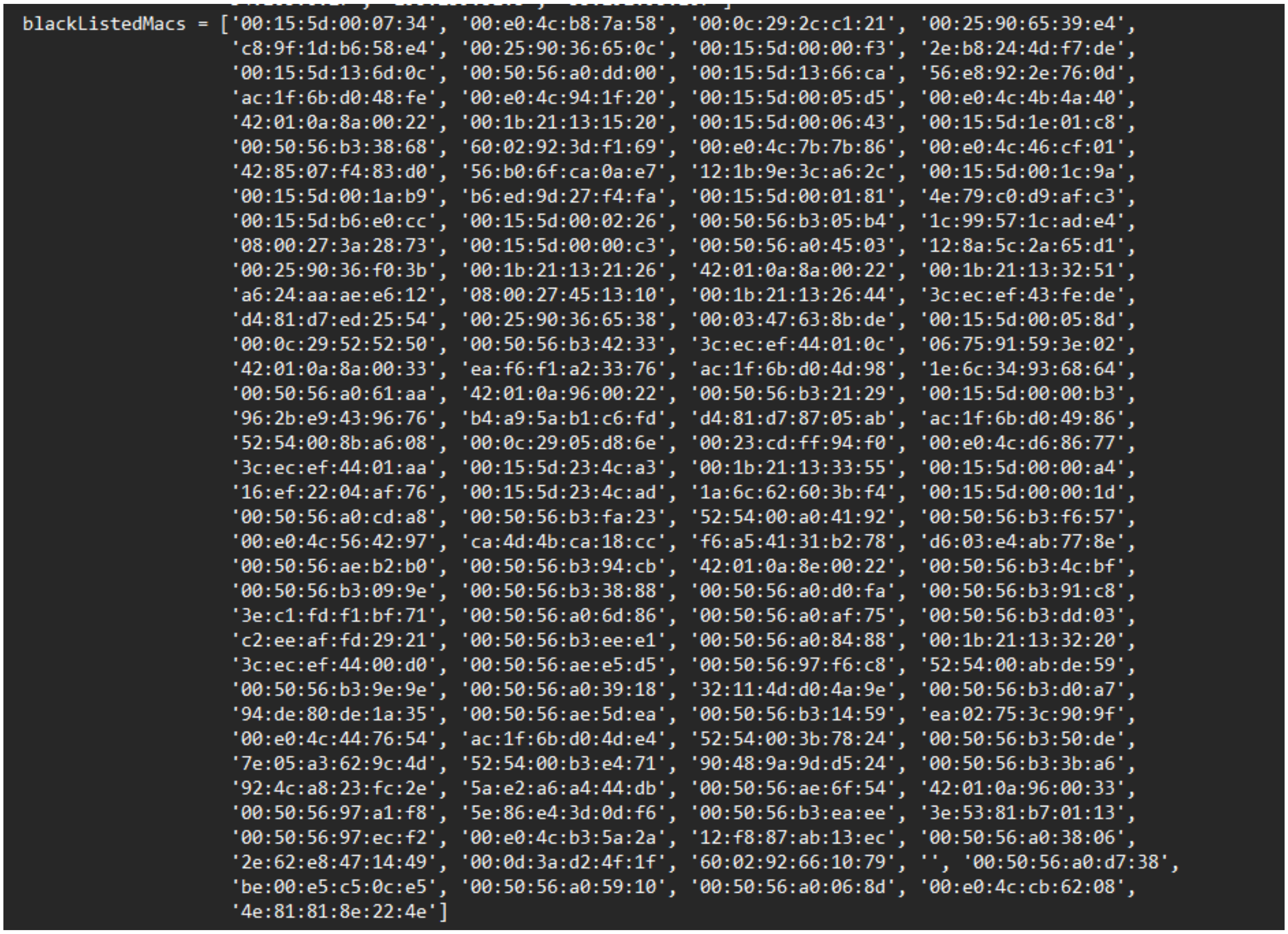
The Stealer employs a curated blacklist obtained from an external URL, in some instances a Pastebin URL, and stores it in **C:\Users\USERNAME\AppData\Roaming\blacklist.txt** and the file gets deleted once the stealer finishes execution. This blacklist serves a crucial role in determining whether the Stealer is running within a sandbox/virtual environment or on an actual system. Additionally, it aids in identifying specific processes and reversing tools that the Stealer aims to terminate in order to thwart any potential analysis or reverse engineering attempts.

Blacklisted IP Addresses:



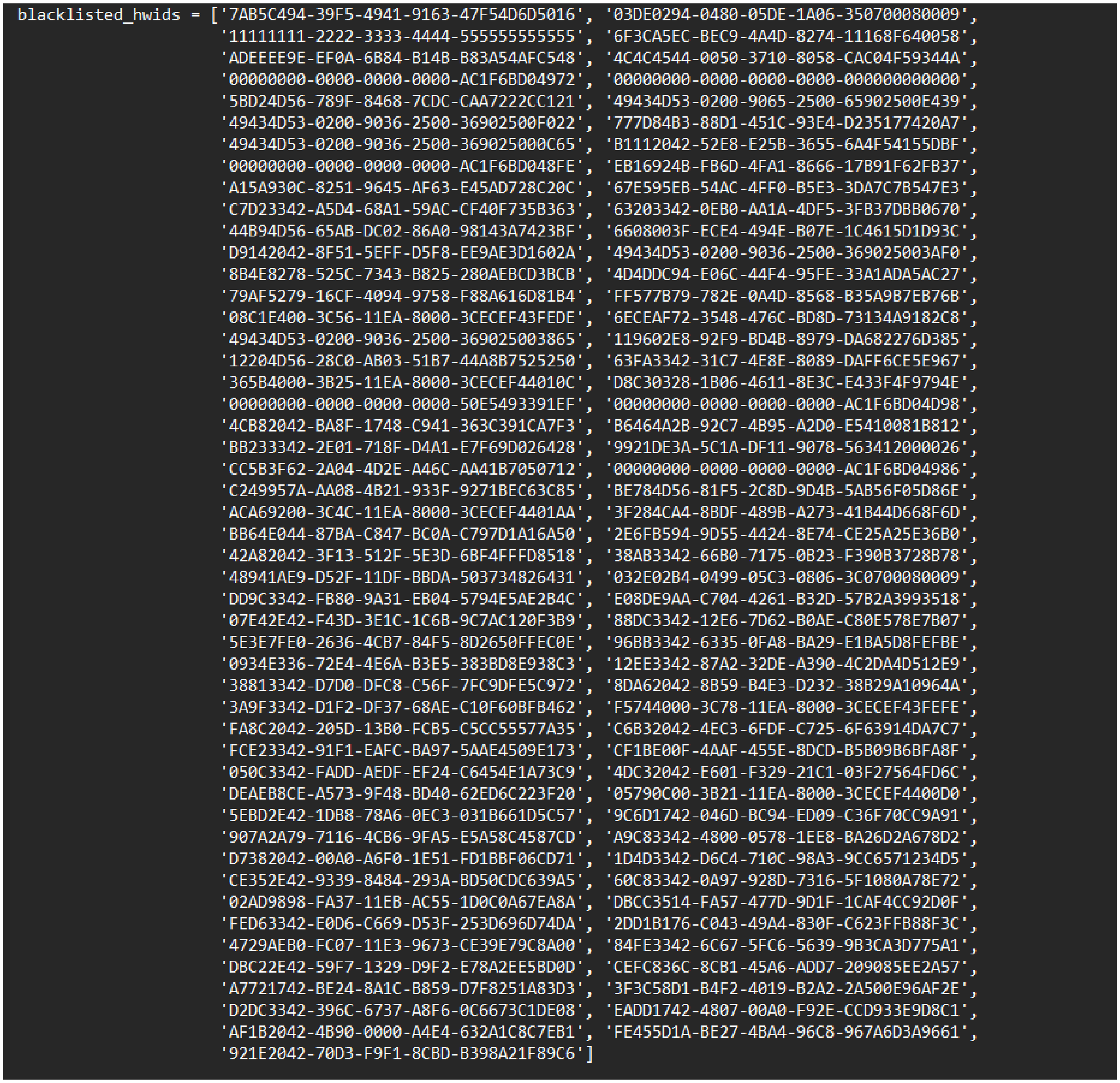
```
blackListedIPS = ['88.132.231.71', '78.139.8.50', '20.99.160.173', '88.153.199.169', '84.147.62.12', '194.154.78.160',
                  '92.211.109.160', '195.74.76.222', '188.105.91.116', '34.105.183.68', '92.211.55.199',
                  '79.104.209.33', '95.25.204.90', '34.145.89.174', '109.74.154.90', '109.145.173.169',
                  '34.141.146.114', '212.119.227.151', '195.239.51.59', '192.40.57.234', '64.124.12.162',
                  '34.142.74.220', '188.105.91.173', '109.74.154.91', '34.105.72.241', '109.74.154.92', '213.33.142.50',
                  '109.74.154.91', '93.216.75.209',
                  '192.87.28.103', '88.132.226.203', '195.181.175.105', '88.132.225.100', '92.211.192.144',
                  '34.83.46.130', '188.105.91.143', '34.85.243.241', '34.141.245.25', '178.239.165.70', '84.147.54.113',
                  '193.128.114.45', '95.25.81.24', '92.211.52.62', '88.132.227.238', '35.199.6.13', '80.211.0.97',
                  '34.85.253.170', '23.128.248.46', '35.229.69.227', '34.138.96.23', '192.211.110.74', '35.237.47.12',
                  '87.166.50.213', '34.253.248.228', '212.119.227.167', '193.225.193.201', '34.145.195.58',
                  '34.105.0.27', '195.239.51.3', '35.192.93.107']
```

Blacklisted Mac Addresses:



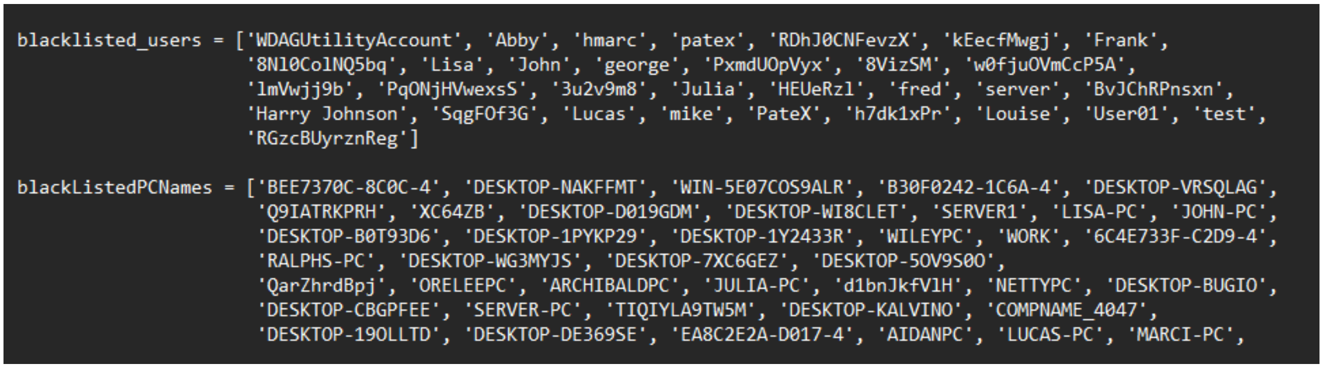
```
blackListedMacs = ['00:15:5d:00:07:34', '00:e0:4c:b8:7a:58', '00:0c:29:2c:c1:21', '00:25:90:65:39:e4',
                   'c8:9f:1d:b6:58:e4', '00:25:90:36:65:0c', '00:15:5d:00:00:f3', '2e:b8:24:4d:f7:de',
                   '00:15:5d:13:6d:0c', '00:50:56:a0:dd:00', '00:15:5d:13:66:ca', '56:e8:92:2e:76:0d',
                   'ac:1f:6b:d0:48:fe', '00:e0:4c:94:1f:20', '00:15:5d:00:05:d5', '00:e0:4c:4b:4a:40',
                   '42:01:0a:8a:00:22', '00:1b:21:13:15:20', '00:15:5d:00:06:43', '00:15:5d:1e:01:c8',
                   '00:50:56:b3:38:68', '60:02:92:3d:f1:69', '00:e0:4c:7b:7b:86', '00:e0:4c:46:cf:01',
                   '42:85:07:f4:83:d0', '56:b0:6f:ca:0a:e7', '12:1b:9e:3c:a6:2c', '00:15:5d:00:1c:9a',
                   '00:15:5d:00:1a:b9', 'b6:ed:9d:27:f4:fa', '00:15:5d:00:01:81', '4e:79:c0:d9:af:c3',
                   '00:15:5d:b6:e0:cc', '00:15:5d:00:02:26', '00:50:56:b3:05:b4', '1c:99:57:1c:ad:e4',
                   '08:00:27:3a:28:73', '00:15:5d:00:00:c3', '00:50:56:a0:45:03', '12:8a:5c:2a:65:d1',
                   '00:25:90:36:f0:3b', '00:1b:21:13:21:26', '42:01:0a:8a:00:22', '00:1b:21:13:32:51',
                   'a6:24:aa:ae:e6:12', '08:00:27:45:13:10', '00:1b:21:13:26:44', '3c:ec:ef:43:fe:de',
                   'd4:81:d7:ed:25:54', '00:25:90:36:65:38', '00:03:47:63:8b:de', '00:15:5d:00:05:8d',
                   '00:0c:29:52:52:50', '00:50:56:b3:42:33', '3c:ec:ef:44:01:0c', '06:75:91:59:3e:02',
                   '42:01:0a:8a:00:33', 'ea:f6:f1:a2:33:76', 'ac:1f:6b:d0:4d:98', '1e:6c:34:93:68:64',
                   '00:50:56:a0:61:aa', '42:01:0a:96:00:22', '00:50:56:b3:21:29', '00:15:5d:00:00:b3',
                   '96:2b:e9:43:96:76', 'b4:a9:5a:b1:c6:fd', 'd4:81:d7:87:05:ab', 'ac:1f:6b:d0:49:86',
                   '52:54:00:8b:a6:08', '00:0c:29:05:d8:6e', '00:23:cd:ff:94:f0', '00:e0:4c:d6:86:77',
                   '3c:ec:ef:44:01:aa', '00:15:5d:23:4c:a3', '00:1b:21:13:33:55', '00:15:5d:00:00:a4',
                   '16:ef:22:04:af:76', '00:15:5d:23:4c:ad', '1a:6c:62:60:3b:f4', '00:15:5d:00:00:1d',
                   '00:50:56:a0:cd:a8', '00:50:56:b3:fa:23', '52:54:00:a0:41:92', '00:50:56:b3:f6:57',
                   '00:e0:4c:56:42:97', 'ca:4d:4b:ca:18:cc', 'f6:a5:41:31:b2:78', 'd6:03:e4:ab:77:8e',
                   '00:50:56:ae:b2:b0', '00:50:56:b3:94:cb', '42:01:0a:8e:00:22', '00:50:56:b3:4c:bf',
                   '00:50:56:b3:09:9e', '00:50:56:b3:38:88', '00:50:56:a0:d0:fa', '00:50:56:b3:91:c8',
                   '3e:c1:fd:f1:bf:71', '00:50:56:a0:6d:86', '00:50:56:a0:af:75', '00:50:56:b3:dd:03',
                   'c2:ee:af:fd:29:21', '00:50:56:b3:ee:e1', '00:50:56:a0:84:88', '00:1b:21:13:32:20',
                   '3c:ec:ef:44:00:d0', '00:50:56:ae:e5:d5', '00:50:56:97:f6:c8', '52:54:00:ab:de:59',
                   '00:50:56:b3:9e:9e', '00:50:56:a0:39:18', '32:11:4d:d0:4a:9e', '00:50:56:b3:d0:a7',
                   '94:de:80:de:1a:35', '00:50:56:ae:5d:ea', '00:50:56:b3:14:59', 'ea:02:75:3c:90:9f',
                   '00:e0:4c:44:76:54', 'ac:1f:6b:d0:4d:e4', '52:54:00:3b:78:24', '00:50:56:b3:50:de',
                   '7e:05:a3:62:9c:4d', '52:54:00:b3:e4:71', '90:48:9a:9d:d5:24', '00:50:56:b3:3b:a6',
                   '92:4c:a8:23:fc:2e', '5a:e2:a6:a4:44:db', '00:50:56:ae:6f:54', '42:01:0a:96:00:33',
                   '00:50:56:97:a1:f8', '5e:86:e4:3d:0d:f6', '00:50:56:b3:ea:ee', '3e:53:81:b7:01:13',
                   '00:50:56:97:ec:f2', '00:e0:4c:b3:5a:2a', '12:f8:87:ab:13:ec', '00:50:56:a0:38:06',
                   '2e:62:e8:47:14:49', '00:0d:3a:d2:4f:1f', '60:02:92:66:10:79', '', '00:50:56:a0:d7:38',
                   'be:00:e5:c5:0c:e5', '00:50:56:a0:59:10', '00:50:56:a0:06:8d', '00:e0:4c:cb:62:08',
                   '4e:81:81:8e:22:4e']
```

The list of blacklisted HWIDs:



```
blacklisted_hwids = ['7AB5C494-39F5-4941-9163-47F54D6D5016', '03DE0294-0480-05DE-1A06-350700080009',
                     '11111111-2222-3333-4444-555555555555', '6F3CA5EC-BEC9-4A4D-8274-11168F640058',
                     'ADEEEE9E-EF0A-6B84-B14B-B83A54AFC548', '4C4C4544-0050-3710-8058-CAC04F59344A',
                     '00000000-0000-0000-0000-AC1F6BD04972', '00000000-0000-0000-0000-000000000000',
                     '5BD24D56-789F-8468-7CDC-CAA7222CC121', '49434D53-0200-9065-2500-65902500E439',
                     '49434D53-0200-9036-2500-36902500F022', '777D84B3-88D1-451C-93E4-D235177420A7',
                     '49434D53-0200-9036-2500-369025000C65', 'B1112042-52E8-E25B-3655-6A4F54155DBF',
                     '00000000-0000-0000-0000-AC1F6BD048FE', 'EB16924B-FB6D-4FA1-8666-17B91F62FB37',
                     'A15A930C-8251-9645-AF63-E45AD728C20C', '67E595EB-54AC-4FF0-B5E3-3DA7C7B547E3',
                     'C7D23342-A5D4-68A1-59AC-CF40F735B363', '63203342-0EB0-AA1A-4DF5-3FB37DBB0670',
                     '44B94D56-65AB-DC02-86A0-98143A7423BF', '6608003F-ECE4-494E-B07E-1C4615D1D93C',
                     'D9142042-8F51-5EFF-D5F8-EE9AE3D1602A', '49434D53-0200-9036-2500-369025003AF0',
                     '8B4E8278-525C-7343-B825-280AEBCD3BCB', '4D4DDC94-E06C-44F4-95FE-33A1ADA5AC27',
                     '79AF5279-16CF-4094-9758-F88A616D81B4', 'FF577B79-782E-0A4D-8568-B35A9B7EB76B',
                     '08C1E400-3C56-11EA-8000-3CECEF43FEDE', '6ECEAF72-3548-476C-BD8D-73134A9182C8',
                     '49434D53-0200-9036-2500-369025003865', '119602E8-92F9-BD4B-8979-DA682276D385',
                     '12204D56-28C0-AB03-51B7-44A8B7525250', '63FA3342-31C7-4E8E-8089-DAFF6CE5E967',
                     '365B4000-3B25-11EA-8000-3CECEF44010C', 'D8C30328-1B06-4611-8E3C-E433F4F9794E',
                     '00000000-0000-0000-0000-50E5493391EF', '00000000-0000-0000-0000-AC1F6BD04D98',
                     '4CB82042-BA8F-1748-C941-363C391CA7F3', 'B6464A2B-92C7-4B95-A2D0-E5410081B812',
                     'BB233342-2E01-718F-D4A1-E7F69D026428', '9921DE3A-5C1A-DF11-9078-563412000026',
                     'CC5B3F62-2A04-4D2E-A46C-AA41B7050712', '00000000-0000-0000-0000-AC1F6BD04986',
                     'C249957A-AA08-4B21-933F-9271BEC63C85', 'BE784D56-81F5-2C8D-9D4B-5AB56F05D86E',
                     'ACA69200-3C4C-11EA-8000-3CECEF4401AA', '3F284CA4-8BDF-489B-A273-41B44D668F6D',
                     'BB64E044-87BA-C847-BC0A-C797D1A16A50', '2E6FB594-9D55-4424-8E74-CE25A25E36B0',
                     '42A82042-3F13-512F-5E3D-6BF4FFFD8518', '38AB3342-66B0-7175-0B23-F390B3728B78',
                     '48941AE9-D52F-11DF-BBDA-503734826431', '032E02B4-0499-05C3-0806-3C0700080009',
                     'DD9C3342-FB80-9A31-EB04-5794E5AE2B4C', 'E08DE9AA-C704-4261-B32D-57B2A3993518',
                     '07E42E42-F43D-3E1C-1C6B-9C7AC120F3B9', '88DC3342-12E6-7D62-B0AE-C80E578E7B07',
                     '5E3E7FE0-2636-4CB7-84F5-8D2650FFEC0E', '96BB3342-6335-0FA8-BA29-E1BA5D8FEFBE',
                     '0934E336-72E4-4E6A-B3E5-383BD8E938C3', '12EE3342-87A2-32DE-A390-4C2DA4D512E9',
                     '38813342-D7D0-DFC8-C56F-7FC9DFE5C972', '8DA62042-8B59-B4E3-D232-38B29A10964A',
                     '3A9F3342-D1F2-DF37-68AE-C10F60BFB462', 'F5744000-3C78-11EA-8000-3CECEF43FEFE',
                     'FA8C2042-205D-13B0-FCB5-C5CC55577A35', 'C6B32042-4EC3-6FDF-C725-6F63914DA7C7',
                     'FCE23342-91F1-EAFC-BA97-5AAE4509E173', 'CF1BE00F-4AAF-455E-8DCD-B5B09B6BFA8F',
                     '050C3342-FADD-AEDF-EF24-C6454E1A73C9', '4DC32042-E601-F329-21C1-03F27564FD6C',
                     'DEAEB8CE-A573-9F48-BD40-62ED6C223F20', '05790C00-3B21-11EA-8000-3CECEF4400D0',
                     '5EBD2E42-1DB8-78A6-0EC3-031B661D5C57', '9C6D1742-046D-BC94-ED09-C36F70CC9A91',
                     '907A2A79-7116-4CB6-9FA5-E5A58C4587CD', 'A9C83342-4800-0578-1EE8-BA26D2A678D2',
                     'D7382042-00A0-A6F0-1E51-FD1BBF06CD71', '1D4D3342-D6C4-710C-98A3-9CC6571234D5',
                     'CE352E42-9339-8484-293A-BD50CDC639A5', '60C83342-0A97-928D-7316-5F1080A78E72',
                     '02AD9898-FA37-11EB-AC55-1D0C0A67EA8A', 'DBCC3514-FA57-477D-9D1F-1CAF4CC92D0F',
                     'FED63342-E0D6-C669-D53F-253D696D74DA', '2DD1B176-C043-49A4-830F-C623FFB88F3C',
                     '4729AEB0-FC07-11E3-9673-CE39E79C8A00', '84FE3342-6C67-5FC6-5639-9B3CA3D775A1',
                     'DBC22E42-59F7-1329-D9F2-E78A2EE5BD0D', 'CEFC836C-8CB1-45A6-ADD7-209085EE2A57',
                     'A7721742-BE24-8A1C-B859-D7F8251A83D3', '3F3C58D1-B4F2-4019-B2A2-2A500E96AF2E',
                     'D2DC3342-396C-6737-A8F6-0C6673C1DE08', 'EADD1742-4807-00A0-F92E-CCD933E9D8C1',
                     'AF1B2042-4B90-0000-A4E4-632A1C8C7EB1', 'FE455D1A-BE27-4BA4-96C8-967A6D3A9661',
                     '921E2042-70D3-F9F1-8CBD-B398A21F89C6']
```

Blacklisted PC User and Names:



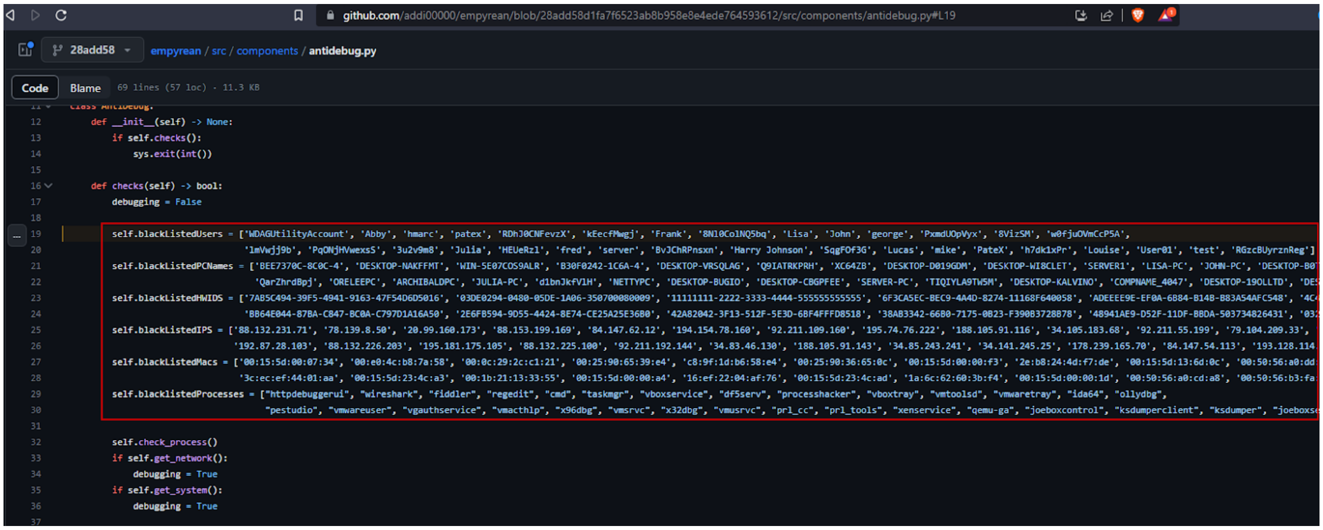
```
blacklisted_users = ['WDAGUtilityAccount', 'Abby', 'hmarc', 'patex', 'RDhJ0CNFevzX', 'kEecfMwgj', 'Frank',
                     '8Nl0ColNQ5bq', 'Lisa', 'John', 'george', 'PxmdUOpVyx', '8VizSM', 'w0fjuOVmCcP5A',
                     'lmVwjj9b', 'PqONjHVwexsS', '3u2v9m8', 'Julia', 'HEUeRzl', 'fred', 'server', 'BvJChRPnsxn',
                     'Harry Johnson', 'SqgFOf3G', 'Lucas', 'mike', 'PateX', 'h7dk1xPr', 'Louise', 'User01', 'test',
                     'RGzcBUyrznReg']

blackListedPCNames = ['BEE7370C-8C0C-4', 'DESKTOP-NAKFFMT', 'WIN-5E07COS9ALR', 'B30F0242-1C6A-4', 'DESKTOP-VRSQLAG',
                      'Q9IATRKPRH', 'XC64ZB', 'DESKTOP-D019GDM', 'DESKTOP-WI8CLET', 'SERVER1', 'LISA-PC', 'JOHN-PC',
                      'DESKTOP-B0T93D6', 'DESKTOP-1PYKP29', 'DESKTOP-1Y2433R', 'WILEYPC', 'WORK', '6C4E733F-C2D9-4',
                      'RALPHS-PC', 'DESKTOP-WG3MYJS', 'DESKTOP-7XC6GEZ', 'DESKTOP-5OV9S0O',
                      'QarZhrdBpj', 'ORELEEPC', 'ARCHIBALDPC', 'JULIA-PC', 'd1bnJkfVlH', 'NETTYPC', 'DESKTOP-BUGIO',
                      'DESKTOP-CBGPFEE', 'SERVER-PC', 'TIQIYLA9TW5M', 'DESKTOP-KALVINO', 'COMPNAME_4047',
                      'DESKTOP-19OLLTD', 'DESKTOP-DE369SE', 'EA8C2E2A-D017-4', 'AIDANPC', 'LUCAS-PC', 'MARCI-PC',
```

Reversing Tools Termination

Blacklisted Processes

httpdebuggerui	wireshark	fiddler	regedit
cmd	taskmgr	vboxservice	df5serv
processhacker	vboxtray	vmtoolsd	vmwaretray
ida64	ollydbg	pestudio	vmwareuser
vgauthservice	vmacthlp	x96dbg	vmsrvc
x32dbg	vmusrvc	prl_cc	prl_tools
xenservice	qemu-ga	joeboxcontrol	ksdumperclient
ksdumper	joeboxserver		

According to our open-source research, it appears that the Bandit Stealer uses an identical replica of the "**blacklist.txt**" file from an open-source stealer malware project called **EMPYREAN** available on **Github**.


github.com/addi00000/empyrean/blob/28add58d1fa7f6523ab8b958e8e4ede764593612/src/components/antidebug.py#L19
28add58
empyrean / src / components / antidebug.py
Code
Blame
69 lines (57 loc) · 11.3 KB

```
class AntiDebug:
    def __init__(self) -> None:
        if self.checks():
            sys.exit(int())

    def checks(self) -> bool:
        debugging = False

        self.blackListedUsers = ['WDAGUtilityAccount', 'Abby', 'hmarc', 'patex', 'RDhJ0CNFevzX', 'kEecfMwgj', 'Frank', '8N10ColNQ5bq', 'Lisa', 'John', 'george', 'PxmdUOpVyx', '8VizSM', 'w0fjuOVmCcP5A',
                                 'lmVwjj9b', 'PqONjHVwexsS', '3u2v9m8', 'Julia', 'HEUeRzl', 'fred', 'server', 'BvJChRPnsxn', 'Harry Johnson', 'SqgFOf3G', 'Lucas', 'mike', 'PateX', 'h7dk1xPr', 'Louise', 'User01', 'test', 'RGzcBUyrznReg']
        self.blackListedPCNames = ['BEE7370C-8C0C-4', 'DESKTOP-NAKFFMT', 'WIN-5E07COS9ALR', 'B30F0242-1C6A-4', 'DESKTOP-VRSQLAG', 'Q9IATRKPRH', 'XC64ZB', 'DESKTOP-D019GDM', 'DESKTOP-WI8CLET', 'SERVER1', 'LISA-PC', 'JOHN-PC', 'DESKTOP-B0T
                                   'QarZhrdBpj', 'ORELEEPC', 'ARCHIBALDPC', 'JULIA-PC', 'd1bnJkfVlH', 'NETTYPC', 'DESKTOP-BUGIO', 'DESKTOP-CBGPFEE', 'SERVER-PC', 'TIQIYLA9TW5M', 'DESKTOP-KALVINO', 'COMPNAME_4047', 'DESKTOP-19OLLTD', 'DES
        self.blackListedHWIDS = ['7AB5C494-39F5-4941-9163-47F54D6D5016', '03DE0294-0480-05DE-1A06-350700080009', '11111111-2222-3333-4444-555555555555', '6F3CA5EC-BEC9-4A4D-8274-11168F640058', 'ADEEEE9E-EF0A-6B84-B14B-B83A54AFC548', '4C4
                                 'BB64E044-87BA-C847-BC0A-C797D1A16A50', '2E6FB594-9D55-4424-8E74-CE25A25E36B0', '42A82042-3F13-512F-5E3D-6BF4FFFD8518', '38AB3342-66B0-7175-0B23-F390B3728B78', '48941AE9-D52F-11DF-BBDA-503734826431', '032
        self.blackListedIPS = ['88.132.231.71', '78.139.8.50', '20.99.160.173', '88.153.199.169', '84.147.62.12', '194.154.78.160', '92.211.109.160', '195.74.76.222', '188.105.91.116', '34.105.183.68', '92.211.55.199', '79.104.209.33', '
                               '192.87.28.103', '88.132.226.203', '195.181.175.105', '88.132.225.100', '92.211.192.144', '34.83.46.130', '188.105.91.143', '34.85.243.241', '34.141.245.25', '178.239.165.70', '84.147.54.113', '193.128.114.
        self.blackListedMacs = ['00:15:5d:00:07:34', '00:e0:4c:b8:7a:58', '00:0c:29:2c:c1:21', '00:25:90:65:39:e4', 'c8:9f:1d:b6:58:e4', '00:25:90:36:65:0c', '00:15:5d:00:00:f3', '2e:b8:24:4d:f7:de', '00:15:5d:13:6d:0c', '00:50:56:a0:dd
                                '3c:ec:ef:44:01:aa', '00:15:5d:23:4c:a3', '00:1b:21:13:33:55', '00:15:5d:00:00:a4', '16:ef:22:04:af:76', '00:15:5d:23:4c:ad', '1a:6c:62:60:3b:f4', '00:15:5d:00:00:1d', '00:50:56:a0:cd:a8', '00:50:56:b3:fa
        self.blacklistedProcesses = ["httpdebuggerui", "wireshark", "fiddler", "regedit", "cmd", "taskmgr", "vboxservice", "df5serv", "processhacker", "vboxtray", "vmtoolsd", "vmwaretray", "ida64", "ollydbg",
                                     "pestudio", "vmwareuser", "vgauthservice", "vmacthlp", "x96dbg", "vmsrvc", "x32dbg", "vmusrvc", "prl_cc", "prl_tools", "xenservice", "qemu-ga", "joeboxcontrol", "ksdumperclient", "ksdumper", "joeboxse

        self.check_process()
        if self.get_network():
            debugging = True
        if self.get_system():
            debugging = True
```

Identical blacklist.txt part of a open-source stealer malware on Github

Information Stealing & C2 Server Communication

Bandit steals web browser data that includes the theft of saved login information, crucial cookies, browsing history and sensitive credit card details stored within the browser's user profile.

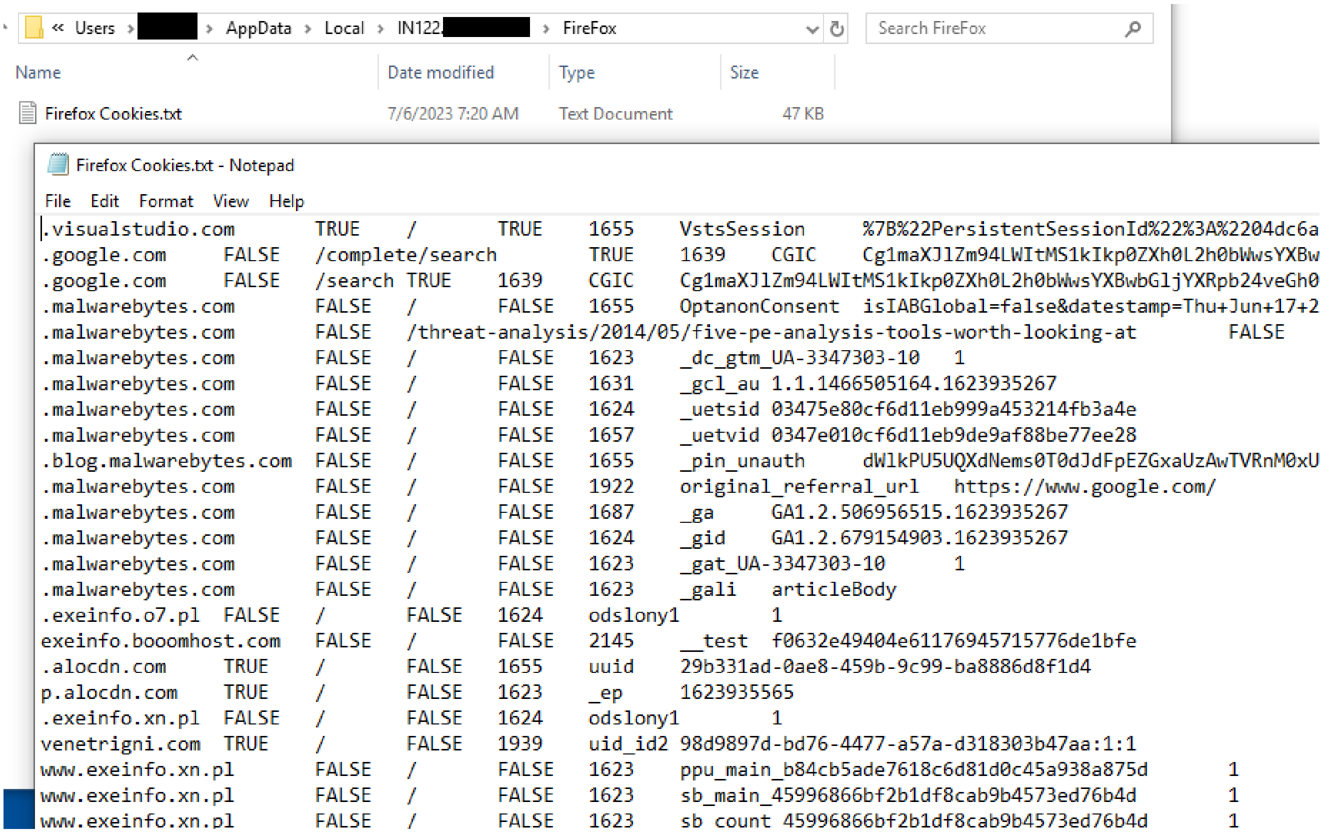
List of Target Browsers			
Chrome Browser	Iridium Browser	7Star Browser	Vivaldi Browser
Yandex Chrome	Orbitum	Orbitum	uCozMedia
Microsoft Edge	Torch Web Browser	Kometa Browser	CentBrowser
BraveSoftware	Amigo Browser	Epic Privacy Browser	SeaMonkey browser
QupZilla			

The malware also targets a large list of digital cryptocurrency wallets.

List of Cryptocurrency Wallets			
Coinbase wallet extension	Saturn Wallet extension	MetaMask extension	Bither Bitcoin wallet
Binance chain wallet extension	Coin98 Wallet	ronin wallet extension	multidoge coin
TronLink Wallet	multibit Bitcoin	Kardiachain wallet extension	LiteCoin
Terra Station	Electron Cash	Jaxx liberty Wallet	Dash Wallet

Guildwallet extension	Electrum-btcp	Math Wallet extension	Ethereum
Bitpay wallet extension	Exodus	Nifty Wallet extension	Atomic
Armory	Bytecoin Wallet	Coinomi wallet	Monero wallet
dogecoin			

Here is an example of captured Firefox cookies by the Bandit Stealer.



« Users › [redacted] › AppData › Local › IN122[redacted] › FireFox
Search FireFox
Name
Date modified
Type
Size

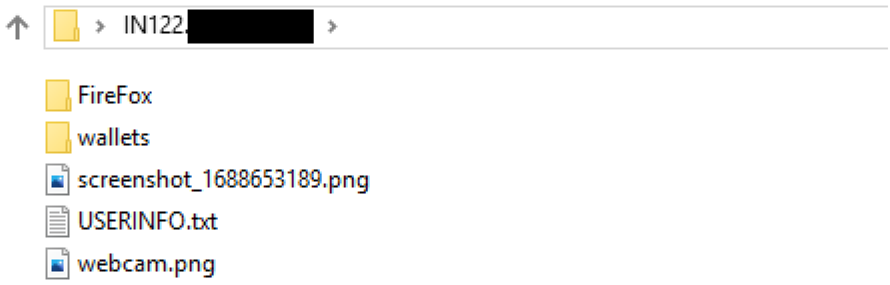
Firefox Cookies.txt 7/6/2023 7:20 AM Text Document 47 KB

Firefox Cookies.txt - Notepad
File Edit Format View Help

```
.visualstudio.com       TRUE    /       TRUE    1655    VstsSession     %7B%22PersistentSessionId%22%3A%2204dc6a
.google.com     FALSE   /complete/search        TRUE    1639    CGIC    Cg1maXJlZm94LWItMS1kIkp0ZXh0L2h0bWwsYXBw
.google.com     FALSE   /search TRUE    1639    CGIC    Cg1maXJlZm94LWItMS1kIkp0ZXh0L2h0bWwsYXBwbGljYXRpb24veGh0
.malwarebytes.com       FALSE   /       FALSE   1655    OptanonConsent  isIABGlobal=false&datestamp=Thu+Jun+17+2
.malwarebytes.com       FALSE   /threat-analysis/2014/05/five-pe-analysis-tools-worth-looking-at        FALSE
.malwarebytes.com       FALSE   /       FALSE   1623    _dc_gtm_UA-3347303-10   1
.malwarebytes.com       FALSE   /       FALSE   1631    _gcl_au 1.1.1466505164.1623935267
.malwarebytes.com       FALSE   /       FALSE   1624    _uetsid 03475e80cf6d11eb999a453214fb3a4e
.malwarebytes.com       FALSE   /       FALSE   1657    _uetvid 0347e010cf6d11eb9de9af88be77ee28
.blog.malwarebytes.com  FALSE   /       FALSE   1655    _pin_unauth     dWlkPU5UQXdNems0T0dJdFpEZGxaUzAwTVRnM0xU
.malwarebytes.com       FALSE   /       FALSE   1922    original_referral_url   https://www.google.com/
.malwarebytes.com       FALSE   /       FALSE   1687    _ga     GA1.2.506956515.1623935267
.malwarebytes.com       FALSE   /       FALSE   1624    _gid    GA1.2.679154903.1623935267
.malwarebytes.com       FALSE   /       FALSE   1623    _gat_UA-3347303-10      1
.malwarebytes.com       FALSE   /       FALSE   1623    _gali   articleBody
.exeinfo.o7.pl  FALSE   /       FALSE   1624    odslony1        1
exeinfo.booomhost.com   FALSE   /       FALSE   2145    __test  f0632e49404e61176945715776de1bfe
.alocdn.com     TRUE    /       FALSE   1655    uuid    29b331ad-0ae8-459b-9c99-ba8886d8f1d4
p.alocdn.com    TRUE    /       FALSE   1623    _ep     1623935565
.exeinfo.xn.pl  FALSE   /       FALSE   1624    odslony1        1
venetrigni.com  TRUE    /       FALSE   1939    uid_id2 98d9897d-bd76-4477-a57a-d318303b47aa:1:1
www.exeinfo.xn.pl       FALSE   /       FALSE   1623    ppu_main_b84cb5ade7618c6d81d0c45a938a875d       1
www.exeinfo.xn.pl       FALSE   /       FALSE   1623    sb_main_45996866bf2b1df8cab9b4573ed76b4d        1
www.exeinfo.xn.pl       FALSE   /       FALSE   1623    sb_count_45996866bf2b1df8cab9b4573ed76b4d       1
```

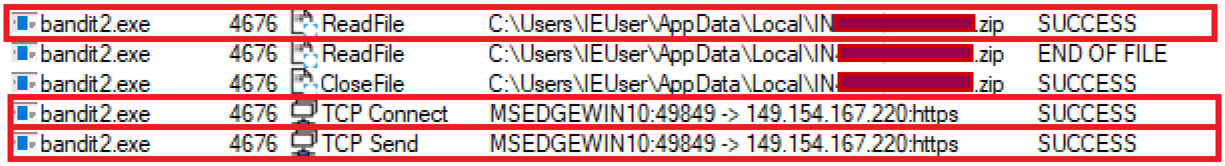
Theft of browser cookies by Bandit Stealer

The collected data is then packaged up into a ZIP file and then exfiltrated to the C2 server which points to the Telegram server (**149.154.167.220**).



IN122[redacted]

- FireFox
- wallets
- screenshot_1688653189.png
- USERINFO.txt
- webcam.png



```
bandit2.exe   4676  ReadFile     C:\Users\IEUser\AppData\Local\IN[redacted].zip   SUCCESS
bandit2.exe   4676  ReadFile     C:\Users\IEUser\AppData\Local\IN[redacted].zip   END OF FILE
bandit2.exe   4676  CloseFile    C:\Users\IEUser\AppData\Local\IN[redacted].zip   SUCCESS
bandit2.exe   4676  TCP Connect  MSEDGEWIN10:49849 -> 149.154.167.220:https       SUCCESS
bandit2.exe   4676  TCP Send     MSEDGEWIN10:49849 -> 149.154.167.220:https       SUCCESS
```

*Data exfiltration to the C2 server belonging to Telegram (**149.154.167.220**)*

Impact

- Exposed credentials can be used by threat actors to access the user's personal information, internal networks and steal sensitive files and information.
- The stolen credentials can be sold on underground forums, thus making them available to the public, competitors, and other threat actors.
- The attacks and the exfiltration of sensitive information can lead to the victim's loss of data, revenue, and reputation.

Indicators of Compromise (IoCs)

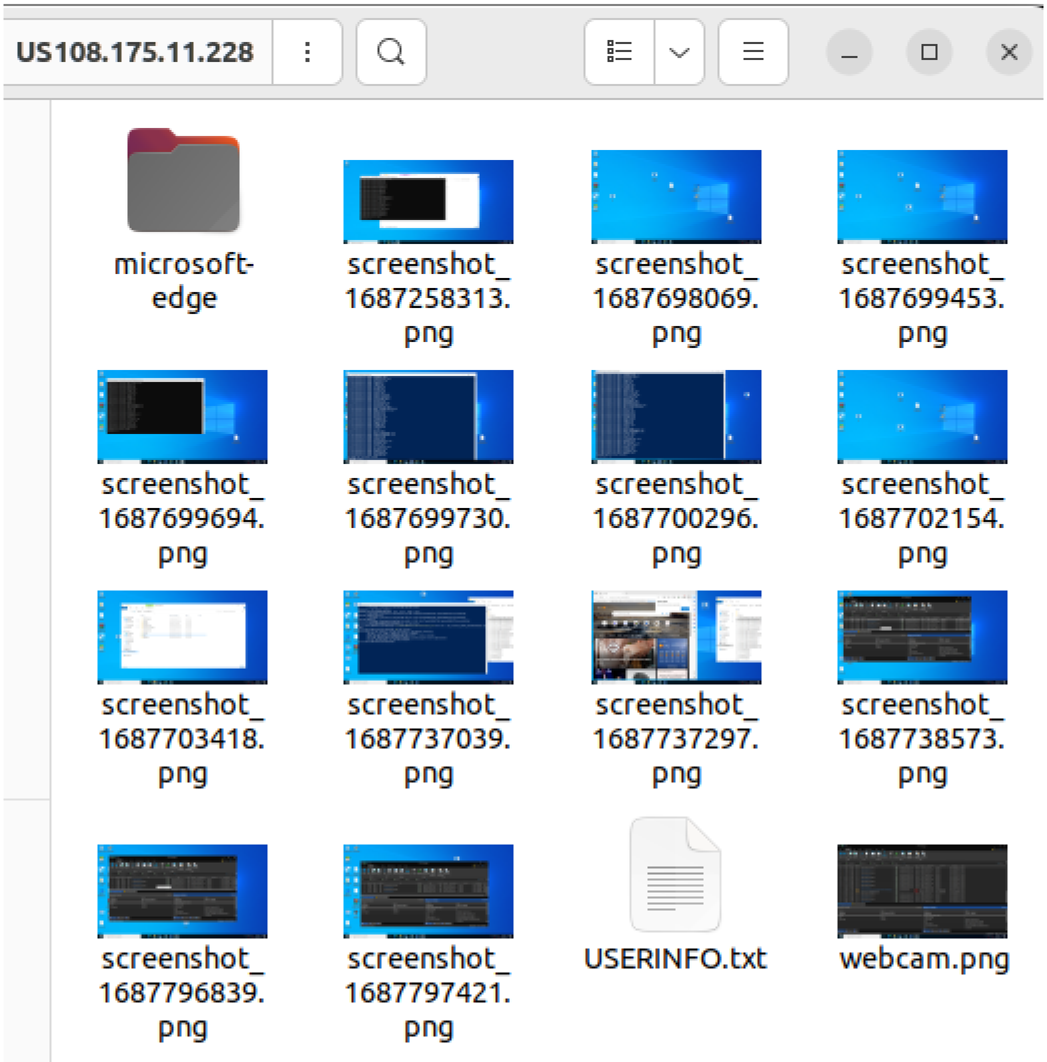
MD5 Hash
70d438da62ea90922e547a1b74d035fd
821254918e64b58040504dbb70e6f925
97c68096b23a9cb9f27598f945bcf6d0
IPv4
149.154.167.220

URL
https://www.youtube.com/watch?v=mUp2_ht8RhE

References

- https://www.shodan.io/search?query=http.favicon.hash%3A552148505
- https://www.cloudsek.com/blog/threat-actors-abuse-ai-generated-youtube-videos-to-spread-stealer-malware
- Empyrean stealer malware: https://github.com/addi00000/empyrean/blob/28add58d1fa7f6523ab8b958e8e4ede764593612/src/components/antidebug.py#L19

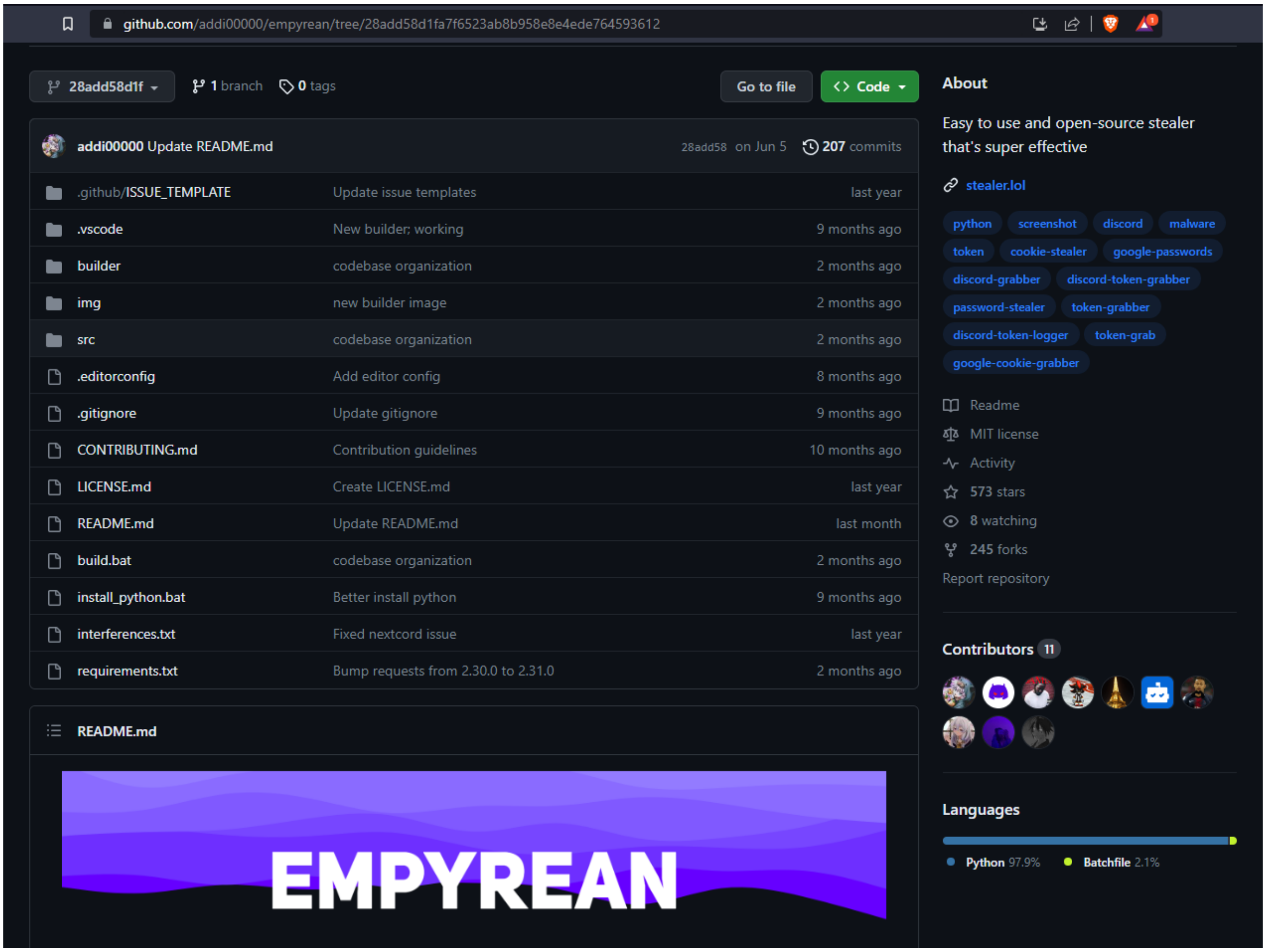
Appendix



US108.175.11.228

microsoft-edge
screenshot_1687258313.png
screenshot_1687698069.png
screenshot_1687699453.png
screenshot_1687699694.png
screenshot_1687699730.png
screenshot_1687700296.png
screenshot_1687702154.png
screenshot_1687703418.png
screenshot_1687737039.png
screenshot_1687737297.png
screenshot_1687738573.png
screenshot_1687796839.png
screenshot_1687797421.png
USERINFO.txt
webcam.png

Screenshot of the stealer logs gathered by Bandit



github.com/addi00000/empyrean/tree/28add58d1fa7f6523ab8b958e8e4ede764593612

28add58d1f · 1 branch · 0 tags · Go to file · Code

addi00000 Update README.md · 28add58 on Jun 5 · 207 commits

.github/ISSUE_TEMPLATE	Update issue templates	last year
.vscode	New builder; working	9 months ago
builder	codebase organization	2 months ago
img	new builder image	2 months ago
src	codebase organization	2 months ago
.editorconfig	Add editor config	8 months ago
.gitignore	Update gitignore	9 months ago
CONTRIBUTING.md	Contribution guidelines	10 months ago
LICENSE.md	Create LICENSE.md	last year
README.md	Update README.md	last month
build.bat	codebase organization	2 months ago
install_python.bat	Better install python	9 months ago
interferences.txt	Fixed nextcord issue	last year
requirements.txt	Bump requests from 2.30.0 to 2.31.0	2 months ago

README.md

EMPYREAN

About

Easy to use and open-source stealer that's super effective

stealer.lol

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Activity
573 stars
8 watching
245 forks
Report repository

Contributors 11

Languages

Python 97.9% · Batchfile 2.1%

Empyrean - an open source stealer malware written in Python

Contributors to this Article

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Bablu is a technology writer and an analyst with a strong focus on all things cybersecurity