Abstract

ClearSky discovered a new malware associated with the Iranian SiameseKitten (Lyceum) group with medium-high confidence.

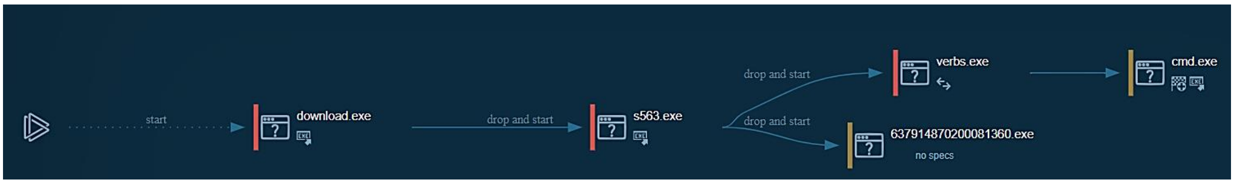
The file is downloaded from a domain registered on June 6th, and it communicates with a previously unknown command and control server whose IP address is adjacent to that of the domain. This indicates an attacker-controlled at least two IP's on the same range.

The downloaded file is a reverse shell that impersonates an Adobe update. The group has previously used this method[1]

The reverse shell is dropped by a parent file signed with a fake Microsoft certificate, along with a lure PDF document and an executable designed to establish persistence.

There seems to be a shared use of fake Microsoft certificates by a variety of Iranian groups, as Phosphorus was previously observed using the same method[2].

Additionally, the lure PDF document relates to drone attacks conducted in Iran, resembling a similar document previously employed by SiameseKitten[3].



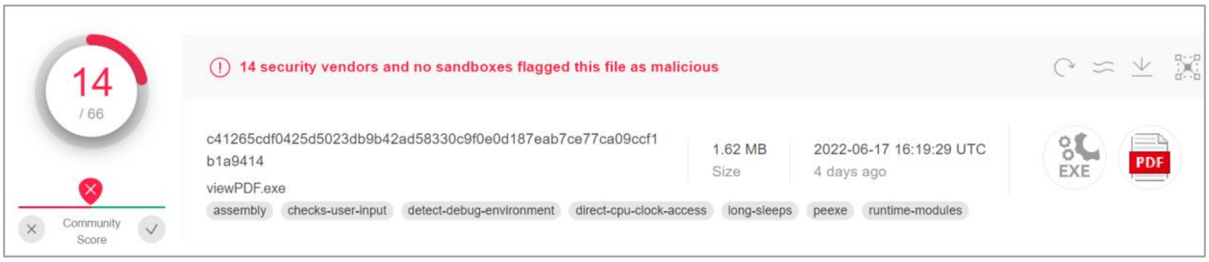
The attack scenario

[1] research.checkpoint.com/2022/state-sponsored-attack-groups-capitalise-on-russia-ukraine-war-for-cyber-espionage
[2] deepinstinct.com/blog/iranian-threat-actor-continues-to-develop-mass-exploitation-tools
[3] MD5 - 13814a190f61b36aff24d6aa1de56fe2 (File name: ir_drones.docm)

TTPs

Reverse Shell File

The reverse shell file's details are as follows:



14 / 66

14 security vendors and no sandboxes flagged this file as malicious

c41265cdf0425d5023db9b42ad58330c9f0e0d187eab7ce77ca09ccf1b1a9414
viewPDF.exe

1.62 MB
Size

2022-06-17 16:19:29 UTC
4 days ago

assembly | checks-user-input | detect-debug-environment | direct-cpu-clock-access | long-sleeps | peexe | runtime-modules

File Name: viewPDF[.]exe

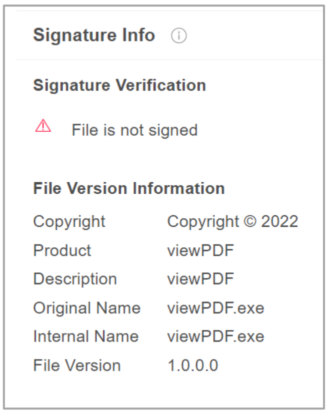
File Type: Win32 EXE

MD5: 7b4c70526b499e4d7f3d77a47235a67c

SHA-1: 8dbc4d59ba9f5c9b6b49cc9fbdbf8eef8cbdf972

SHA-256: c41265cdf0425d5023db9b42ad58330c9f0e0d187eab7ce77ca09ccf1b1a9414

The file appears to be an Adobe PDF document, using the company's icon and listing it in its details. An attempt was made by the attackers to avoid detection by registering the file as created on 29.06.2044



Signature Info

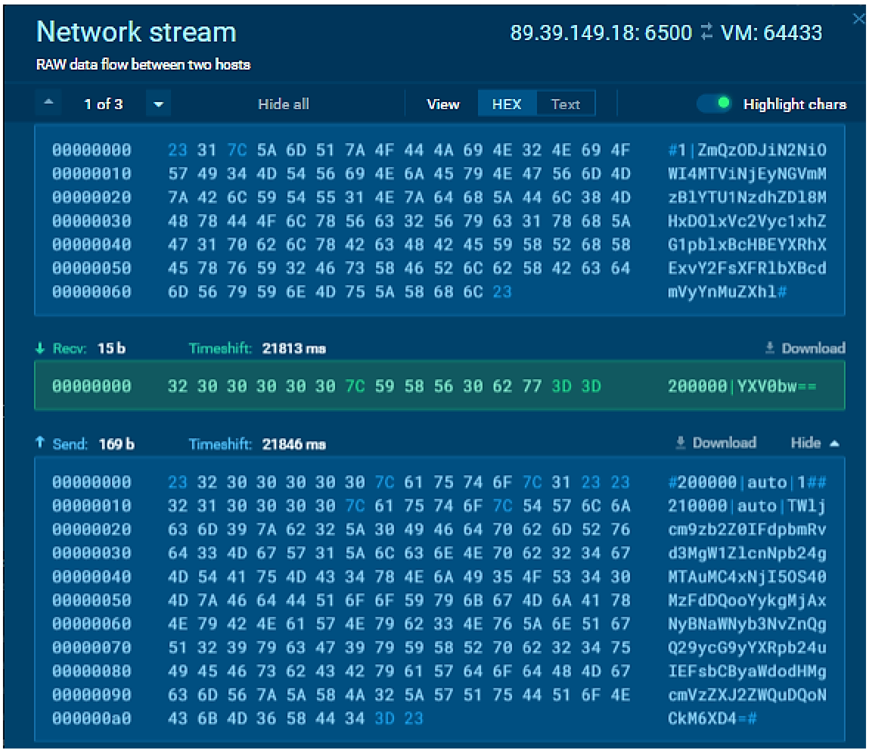
Signature Verification

⚠ File is not signed

File Version Information

Copyright	Copyright © 2022
Product	viewPDF
Description	viewPDF
Original Name	viewPDF.exe
Internal Name	viewPDF.exe
File Version	1.0.0.0

Following is the encrypted information relayed to the C&C server:



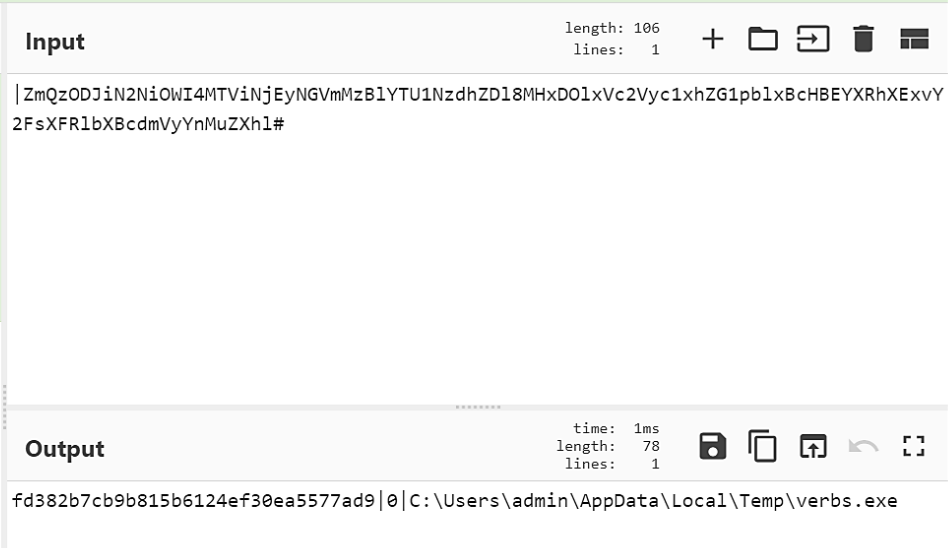
Network stream
89.39.149.18: 6500 ⇄ VM: 64433
RAW data flow between two hosts
1 of 3
Hide all
View
HEX
Text
Highlight chars

```
00000000    23 31 7C 5A 6D 51 7A 4F 44 4A 69 4E 32 4E 69 4F    #1|ZmQzODJiN2NiO
00000010    57 49 34 4D 54 56 69 4E 6A 45 79 4E 47 56 6D 4D    WI4MTViNjEyNGVmM
00000020    7A 42 6C 59 54 55 31 4E 7A 64 68 5A 44 6C 38 4D    zBlYTU1NzdhZDl8M
00000030    48 78 44 4F 6C 78 56 63 32 56 79 63 31 78 68 5A    HxDOlxVc2Vyc1xhZ
00000040    47 31 70 62 6C 78 42 63 48 42 45 59 58 52 68 58    G1pblxBcHBEYXRhX
00000050    45 78 76 59 32 46 73 58 46 52 6C 62 58 42 63 64    ExvY2FsXFRlbXBcd
00000060    6D 56 79 59 6E 4D 75 5A 58 68 6C 23                mVyYnMuZXhl#
```

```
00000000    32 30 30 30 30 30 7C 59 58 56 30 62 77 3D 3D       200000|YXV0bw==
```

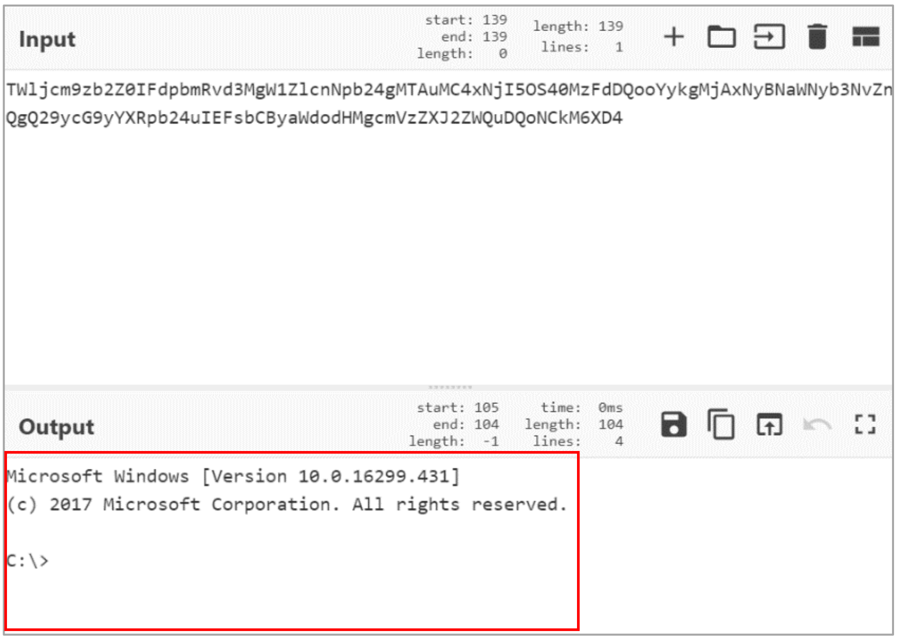
```
00000000    23 32 30 30 30 30 30 7C 61 75 74 6F 7C 31 23 23    #200000|auto|1##
00000010    32 31 30 30 30 30 7C 61 75 74 6F 7C 54 57 6C 6A    210000|auto|TWlj
00000020    63 6D 39 7A 62 32 5A 30 49 46 64 70 62 6D 52 76    cm9zb2Z0IFdpbmRv
00000030    64 33 4D 67 57 31 5A 6C 63 6E 4E 70 62 32 34 67    d3MgW1ZlcnNpb24g
00000040    4D 54 41 75 4D 43 34 78 4E 6A 49 35 4F 53 34 30    MTAuMC4xNjI5OS40
00000050    4D 7A 46 64 44 51 6F 6F 59 79 6B 67 4D 6A 41 78    MzFdDQooYykgMjAx
00000060    4E 79 42 4E 61 57 4E 79 62 33 4E 76 5A 6E 51 67    NyBNaWNyb3NvZnQg
00000070    51 32 39 79 63 47 39 79 59 58 52 70 62 32 34 75    Q29ycG9yYXRpb24u
00000080    49 45 46 73 62 43 42 79 61 57 64 6F 64 48 4D 67    IEFsbCByaWdodHMg
00000090    63 6D 56 7A 5A 58 4A 32 5A 57 51 75 44 51 6F 4E    cmVzZXJ2ZWQuDQoN
000000a0    43 6B 4D 36 58 44 34 3D 23                         CkM6XD4=#
```

After decrypting from base64, the following information is displayed:



|ZmQzODJiN2NiOWI4MTViNjEyNGVmMzBlYTU1NzdhZDl8MHxDOlxVc2Vyc1xhZG1pblxBcHBEYXRhXExvY2FsXFRlbXBcdmVyYnMuZXhl#

```
fd382b7cb9b815b6124ef30ea5577ad9|0|C:\Users\admin\AppData\Local\Temp\verbs.exe
```



```
TWljcm9zb2Z0IFdpbmRvd3MgW1ZlcnNpb24gMTAuMC4xNjI5OS40MzFdDQooYykgMjAxNyBNaWNyb3NvZn
QgQ29ycG9yYXRpb24uIEFsbCByaWdodHMgcmVzZXJ2ZWQuDQoNCkM6XD4
```

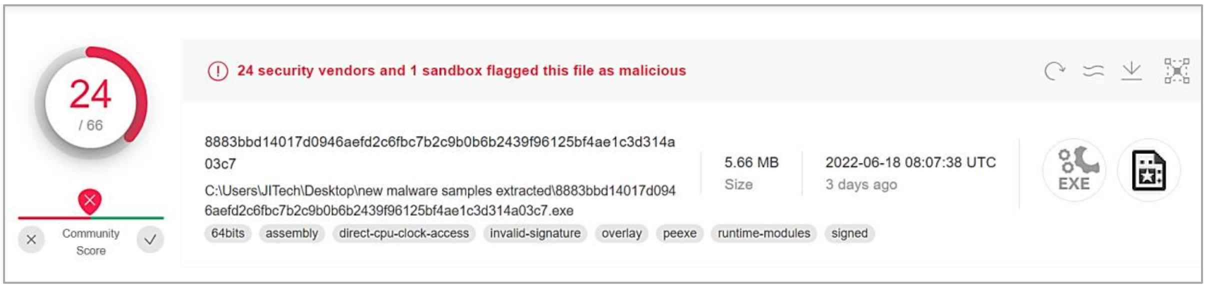
```
Microsoft Windows [Version 10.0.16299.431]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\>
```

It looks like a reverse shell waiting for instructions from the attacker, downloaded after the parent file is executed.

Parent File

The parent file's details are the following:



24 security vendors and 1 sandbox flagged this file as malicious

8883bbd14017d0946aefd2c6fbc7b2c9b0b6b2439f96125bf4ae1c3d314a03c7

C:\Users\JITech\Desktop\new malware samples extracted\8883bbd14017d0946aefd2c6fbc7b2c9b0b6b2439f96125bf4ae1c3d314a03c7.exe

5.66 MB
Size

2022-06-18 08:07:38 UTC
3 days ago

File Name: irdrones1.exe, viewPDF.scr

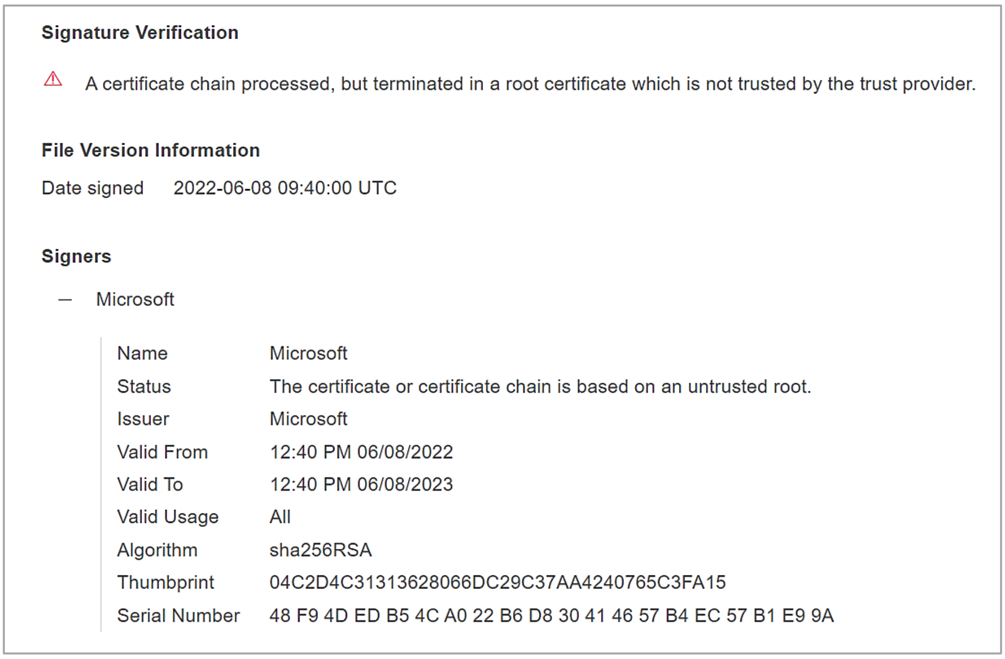
File Type: Win32 EXE

MD5: 29b6b195cf0671901b75b7d2ac6814f6

SHA-1: 6745f60a8bf6a960d2617e6387f6748e03e13f7a

SHA-256: 8883bbd14017d0946aefd2c6fbc7b2c9b0b6b2439f96125bf4ae1c3d314a03c7

The file was initially submitted on June 6th, uploaded from the United Arab Emirates. Its creation date is registered as 25.06.2020, but the certificate shows 08.06.2022 as the signing date. This also aligns with common detection avoidance methods:



Signature Verification

⚠ A certificate chain processed, but terminated in a root certificate which is not trusted by the trust provider.

File Version Information

Date signed 2022-06-08 09:40:00 UTC

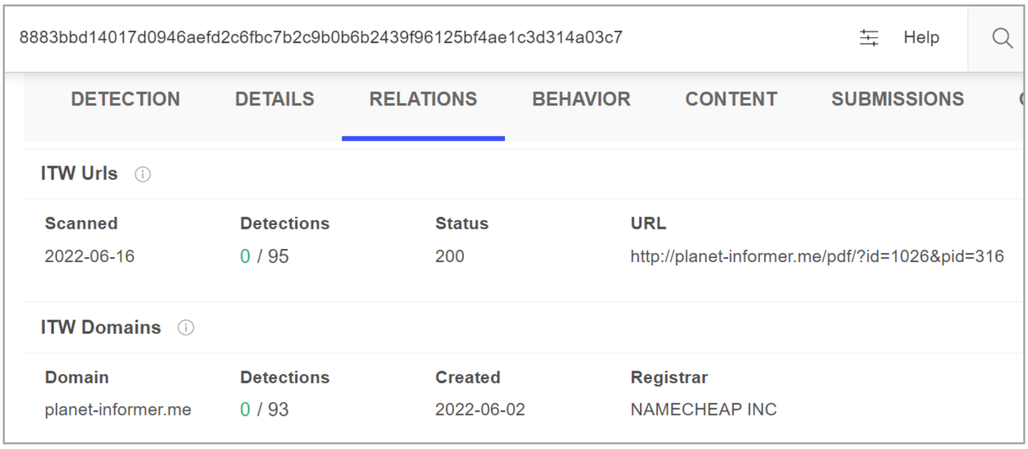
Signers

— Microsoft

Name	Microsoft
Status	The certificate or certificate chain is based on an untrusted root.
Issuer	Microsoft
Valid From	12:40 PM 06/08/2022
Valid To	12:40 PM 06/08/2023
Valid Usage	All
Algorithm	sha256RSA
Thumbprint	04C2D4C31313628066DC29C37AA4240765C3FA15
Serial Number	48 F9 4D ED B5 4C A0 22 B6 D8 30 41 46 57 B4 EC 57 B1 E9 9A

Its serial number cannot be verified, as it does not exist, indicating that it was faked to avoid detection. Checking URLs related to the file shows that it was downloaded from the following domain:

hxxp[://]planet-informer[.]me/pdf/?id=1026&pid=316



8883bbd14017d0946aefd2c6fbc7b2c9b0b6b2439f96125bf4ae1c3d314a03c7

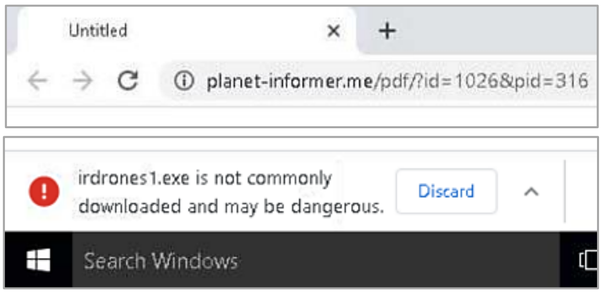
ITW Urls

Scanned	Detections	Status	URL
2022-06-16	0 / 95	200	http://planet-informer.me/pdf/?id=1026&pid=316

ITW Domains

Domain	Detections	Created	Registrar
planet-informer.me	0 / 93	2022-06-02	NAMECHEAP INC

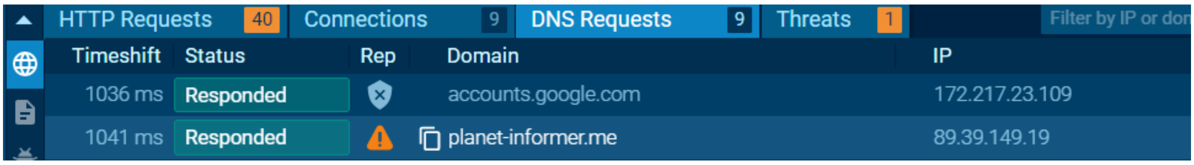
The link is active, and the file is functional at the time of writing this report:



planet-informer.me/pdf/?id=1026&pid=316

irdrones1.exe is not commonly downloaded and may be dangerous.

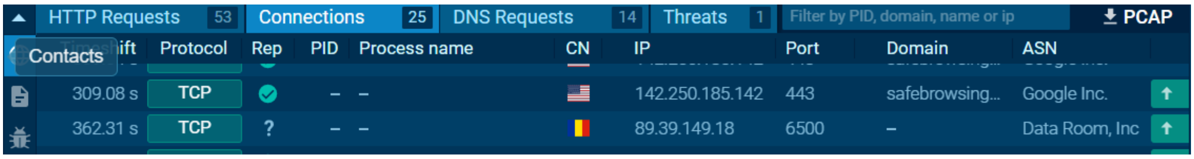
The website's IP address is 89[.]39[.]149[.]19:



HTTP Requests 40 | Connections 9 | DNS Requests 9 | Threats 1 | Filter by IP or don

Timeshift	Status	Rep	Domain	IP
1036 ms	Responded		accounts.google.com	172.217.23.109
1041 ms	Responded	⚠	planet-informer.me	89.39.149.19

Once the file is downloaded, a C&C server with an adjacent IP address is contacted, 89[.]39[.]149[.]18 using port 6500:

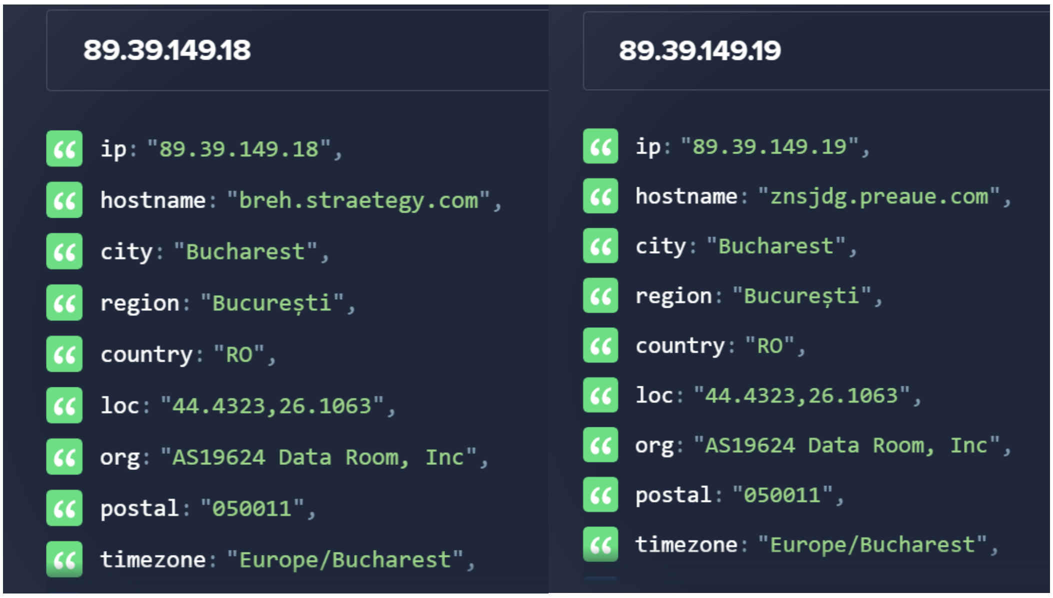


HTTP Requests 53 | Connections 25 | DNS Requests 14 | Threats 1 | Filter by PID, domain, name or ip | PCAP

Contacts

Timeshift	Protocol	Rep	PID	Process name	CN	IP	Port	Domain	ASN
309.08 s	TCP	✓	–	–		142.250.185.142	443	safebrowsing...	Google Inc.
362.31 s	TCP	?	–	–		89.39.149.18	6500	–	Data Room, Inc

Both addresses belong to the same AS, and the same registry:



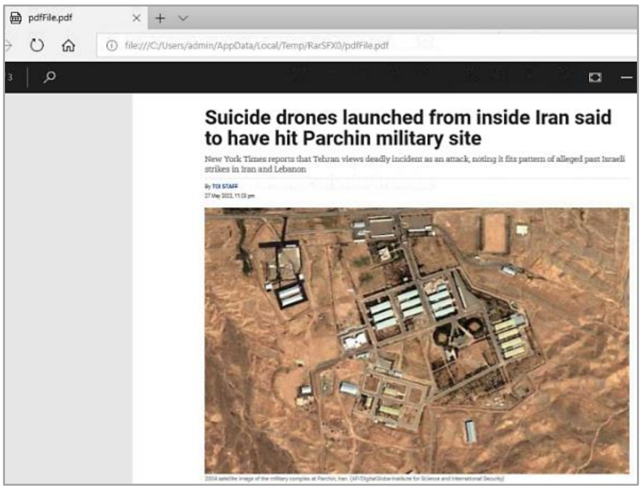
89.39.149.18

```
ip: "89.39.149.18",
hostname: "breh.straetegy.com",
city: "Bucharest",
region: "București",
country: "RO",
loc: "44.4323,26.1063",
org: "AS19624 Data Room, Inc",
postal: "050011",
timezone: "Europe/Bucharest",
```

89.39.149.19

```
ip: "89.39.149.19",
hostname: "znsjdg.preaue.com",
city: "Bucharest",
region: "București",
country: "RO",
loc: "44.4323,26.1063",
org: "AS19624 Data Room, Inc",
postal: "050011",
timezone: "Europe/Bucharest",
```

As shown in the following screenshots, the PDF File (.pdf) lure document used in this attack compares to the lure document used during a previously observed attack from March 2022:



pdfFile.pdf

file:///C:/Users/admin/AppData/Local/Temp/RarSFX0/pdfFile.pdf

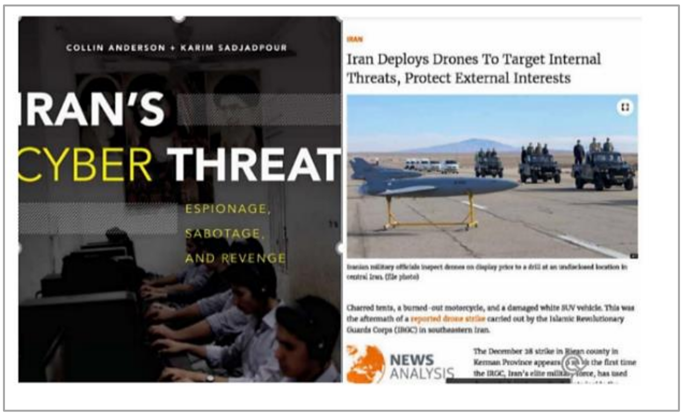
Suicide drones launched from inside Iran said to have hit Parchin military site

New York Times reports that Tehran views deadly incident as an attack, noting it fits pattern of alleged past Israeli strikes in Iran and Lebanon

By TOI STAFF
27 May 2022, 11:03 pm

2004 satellite image of the military complex at Parchin, Iran. (AP/DigitalGlobe-Institute for Science and International Security)

Lure document used during the current attack



COLLIN ANDERSON + KARIM SADJADPOUR

IRAN'S CYBER THREAT

ESPIONAGE, SABOTAGE, AND REVENGE

IRAN

Iran Deploys Drones To Target Internal Threats, Protect External Interests

Iranian military officials inspect drones on display prior to a drill at an undisclosed location in central Iran. (file photo)

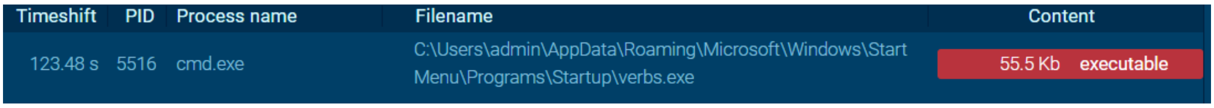
Charred tents, a burned-out motorcycle, and a damaged white SUV vehicle. This was the aftermath of a reported drone strike carried out by the Islamic Revolutionary Guards Corps (IRGC) in southeastern Iran.

NEWS ANALYSIS

The December 18 strike in Rigan county in Kerman Province appears [illegible] the first time the IRGC, Iran's elite military force, has used

Lure document from March 2022

The parent file also downloads verbs.exe, an executable designed to establish persistence using the infected machine's Startup folder:



Timeshift	PID	Process name	Filename	Content
123.48 s	5516	cmd.exe	C:\Users\admin\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup\verbs.exe	55.5 Kb executable

Indicators:

Type	Value
md5	29b6b195cf0671901b75b7d2ac6814f6
sha1	6745f60a8bf6a960d2617e6387f6748e03e13f7a
sha256	8883bbd14017d0946aefd2c6fbc7b2c9b0b6b2439f96125bf4ae1c3d314a03c7
md5	77d5ef3b26138baabf52fd14a0625298
sha1	ee2e63037f4a7717da62bb0c2c54b1f618d9df42
sha256	50e643e06c1fd6b334668439c1fb734c9d42707f80af2edbcb0e5541513546fe

md5	b10a50cb12b82bde90124aad3f48180d
sha1	2bafc1d8f996b0f26cb70beafd00d5a0482c96bb
sha256	6d051c8954c7dab8b82f79779c0c630b95a9b8ad80a49658a55e0dfe6e5aba9f
md5	7b4c70526b499e4d7f3d77a47235a67c
sha1	8dbc4d59ba9f5c9b6b49cc9fbdbf8eef8cbdf972
sha256	c41265cdf0425d5023db9b42ad58330c9f0e0d187eab7ce77ca09ccf1b1a9414
domain	planet-informer.me
ip-dst	89.39.149[.]18
ip-dst	89.39.149[.]19

Mitre attack patterns:

Boot or Logon Autostart Execution - T1547

Command-Line Interface - T1059

ClearSky Cyber Security Intelligence Report

Email: info@clearskysec.com

Website: clearskysec.com

Ahead of the Threat Curve