Large-Scale StrelaStealer Campaign in Early 2024

unit42.paloaltonetworks.com/strelastealer-campaign/

Benjamin Chang, Goutam Tripathy, Pranay Kumar Chhaparwal, Anmol Maurya, Vishwa Thothathri

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This post is also available in: 日本語 (Japanese)

Executive Summary

StrelaStealer malware steals email login data from well-known email clients and sends them back to the attacker’s C2 server. Upon a successful attack, the threat actor would gain access to the victim's email login information, which they can then use to perform further attacks. Since the first emergence of the malware in 2022, the threat actor behind StrelaStealer has launched multiple large-scale email campaigns, and there is no sign of them slowing down.

Recently, our researchers have identified a wave of large-scale StrelaStealer campaigns impacting over 100 organizations across the EU and U.S. These campaigns come in the form of spam emails with attachments that eventually launch the StrelaStealer’s DLL payload.

In an attempt to evade detection, attackers change the initial email attachment file format from one campaign to the next, to prevent detection from the previously generated signature or patterns. The malware author often updates the DLL payload with better obfuscation and anti-analysis tricks, which makes it increasingly difficult for analysts and security products to analyze.

This article delves deeper into the timeline of these more recent attacks and the evolving tactics employed by the malware.

Through detection and intelligence provided by Advanced WildFire, Palo Alto Networks customers are better protected from StrelaStealer through the following products:

- Cortex XDR with Advanced WildFire is able to help detect new variants of StrelaStealer. Cortex XDR helps prevent StrelaStealer's attack chain.
- Next-Generation Firewalls with Cloud-Delivered Security Services, including Advanced WildFire detection, Advanced URL Filtering and DNS Security categorize known C2 domains and IPs as malicious.
- Prisma Cloud Defender agents should be deployed on cloud-based Windows VMs to ensure they are protected from these known malicious binaries. WildFire signatures can be used by both Palo Alto Networks cloud services to ensure cloud-based Windows VM runtime operations are being analyzed and those resources are protected.
- Organizations can also engage the Unit 42 Incident Response team to help with a compromise or to provide a proactive assessment to lower your risk.

Related Unit 42 Topics **Malspam**

Introduction to StrelaStealer

StrelaStealer malware is an email credential stealer first documented by DCSO_CyTec in their blog on Medium published on Nov. 8, 2022. Since the first emergence of the malware, the threat actor behind StrelaStealer has launched multiple large-scale email campaigns, typically across the EU and U.S.

For example, the last large-scale campaign launched in 2023 was around the November time frame. Our researchers have observed a new campaign launched in late January 2024 targeting multiple industries across the EU and U.S.

The basic goal of the StrelaStealer has not changed much, and the payload DLL is still identifiable with the strela string. However, we can see that the threat actor has updated the malware in an attempt to evade detection.

This new variant of StrelaStealer is now delivered through a zipped JScript and it employs an updated obfuscation technique in the DLL payload. We will provide more technical analysis and detail in this article.

Last Large-Scale Campaign of 2023

Since the emergence of StrelaStealer, we have observed its threat operators initiate multiple large-scale campaigns. WildFire researchers observed that the last large-scale campaign in 2023 happened in November, targeting organizations in the U.S. and EU. Figure 1 below shows the timeline of the 2023 November campaign.

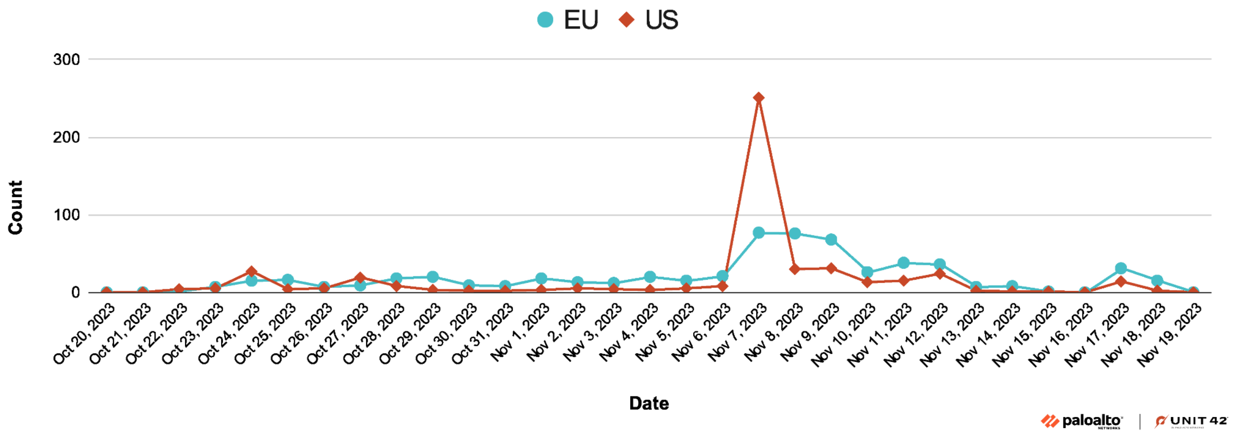


Figure 1. November 2023 campaign.

Recent Large-Scale Campaign in 2024

A month into 2024, the threat actors behind StrelaStealer launched another large-scale campaign, again targeting organizations in the same geographic regions. Figure 2 below shows the timeline of the recent campaign that peaked on Jan. 29, 2024.

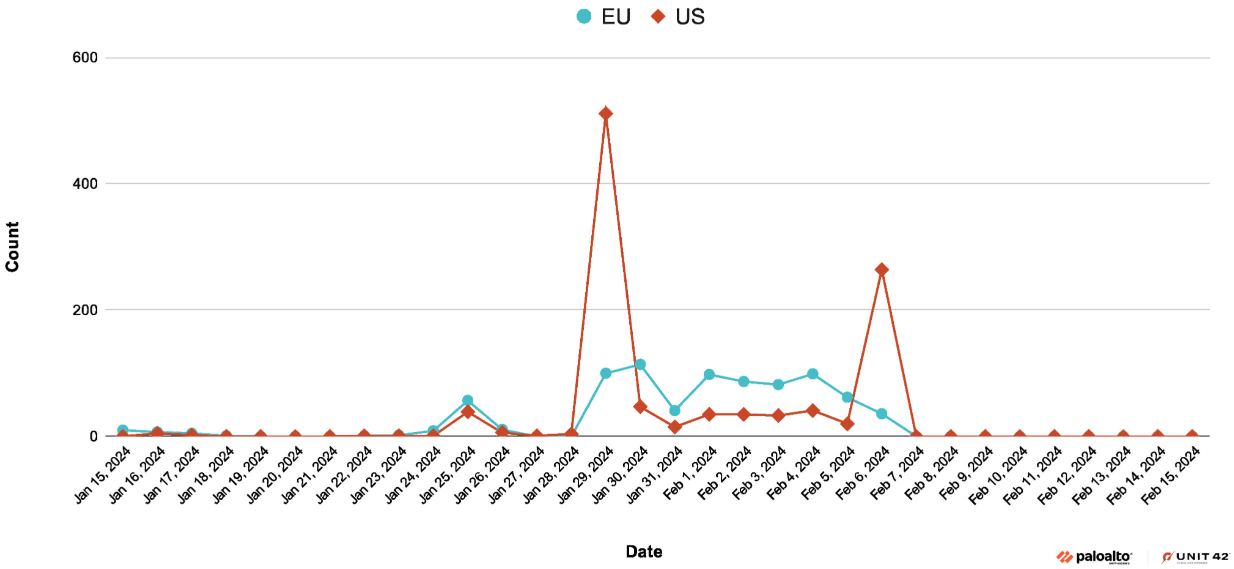
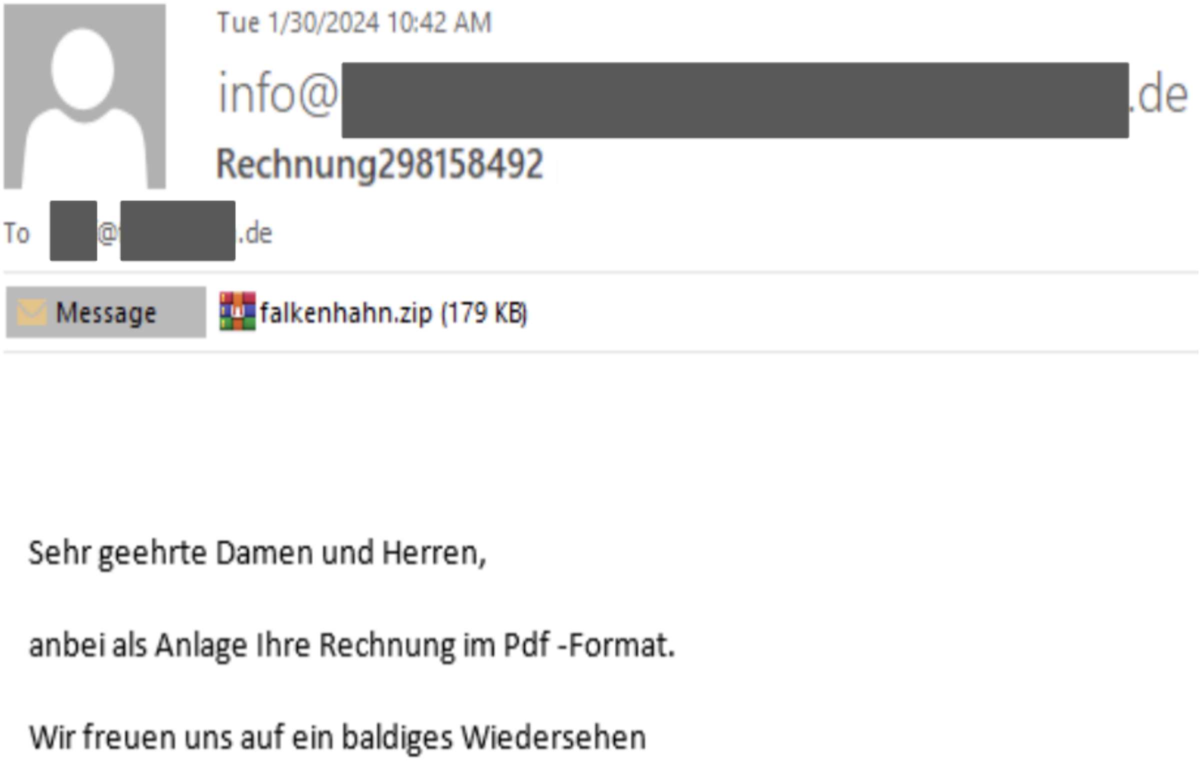


Figure 2. January 2024 campaign.

The language of the StrelaStealer spam email seen during this campaign is localized and the subject line has the pattern of Factura/Rechnung/invoice####. Figure 3, below, is a sample email in German.



Tue 1/30/2024 10:42 AM

info@[redacted].de

Rechnung298158492

To [redacted]@[redacted].de

falkenhahn.zip (179 KB)

Sehr geehrte Damen und Herren,

anbei als Anlage Ihre Rechnung im Pdf -Format.

Wir freuen uns auf ein baldiges Wiedersehen

Figure 3. Example spam email.

Figure 4 shows that while this recent campaign seems to target organizations in many industries, organizations in the high tech industry have been the largest target.

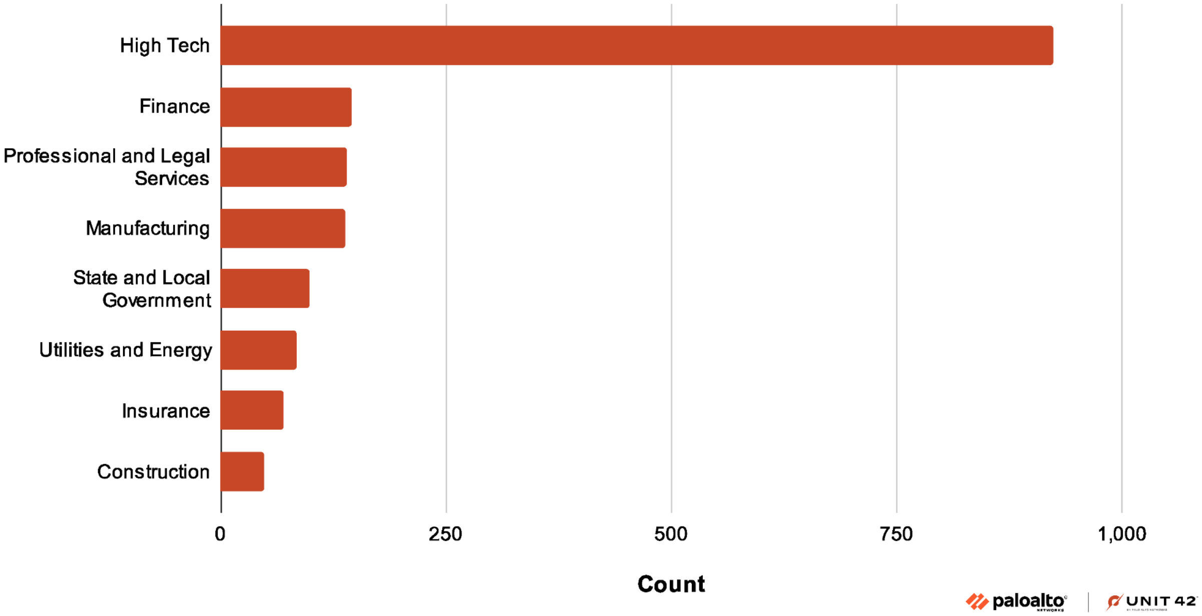


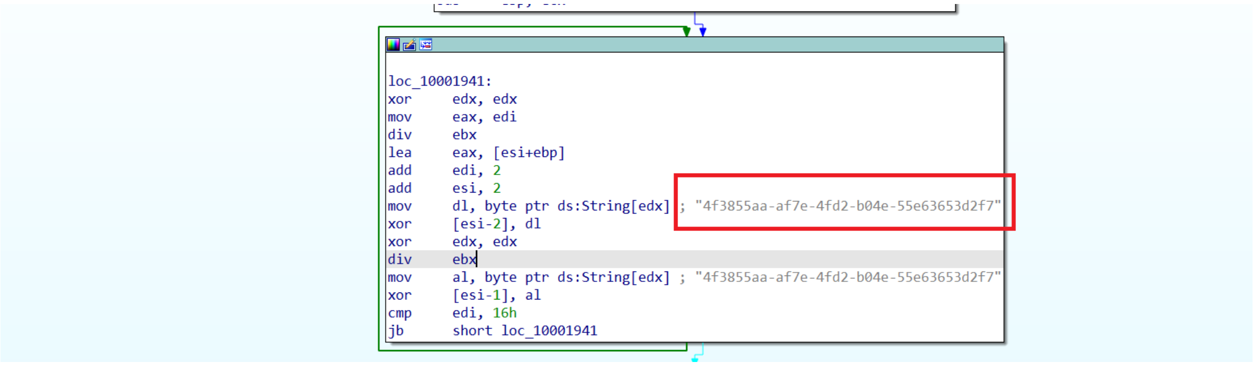
Figure 4. Count of StrelaStealer samples seen for top eight industries.

Technical Analysis of New StrelaStealer Variant

Original StrelaStealer Infection Chain and Payload Recap

As discussed in DCSO's blog on Medium, earlier versions of StrelaStealer infect the system via email with an attached .iso file. The .iso file contains a .lnk file and a HyperText Markup Language (HTML) file. The technique makes use of polyglot files, which are files that can be treated differently based on the executing application.

When the victim clicks on the .lnk file contained within the .iso file, it executes the HTML and then invokes rundll32.exe to execute the embedded StrelaStealer payload. The initial payload has some encrypted strings, which are decrypted during the execution using a fixed XOR key, as shown in Figure 5.



```
loc_10001941:
xor     edx, edx
mov     eax, edi
div     ebx
lea     eax, [esi+ebp]
add     edi, 2
add     esi, 2
mov     dl, byte ptr ds:String[edx] ; "4f3855aa-af7e-4fd2-b04e-55e63653d2f7"
xor     [esi-2], dl
xor     edx, edx
div     ebx
mov     al, byte ptr ds:String[edx] ; "4f3855aa-af7e-4fd2-b04e-55e63653d2f7"
xor     [esi-1], al
cmp     edi, 16h
jb      short loc_10001941
```

Figure 5. Decryption key.

Updated Infection Chain

The current version of StrelaStealer spreads through spear phishing emails that contain a ZIP file attachment. Once the user downloads and opens the archive, a JScript file is dropped onto the system.

The JScript file then drops a Base64-encrypted file and a batch file. The Base64-encrypted file is decoded with the certutil -f decode command, resulting in the creation of a Portable Executable (PE) DLL file. Depending on the user's privileges, the file drops into either %appdata%\temp or c:\temp on the local disk. The DLL file is then executed through the exported function hello using rundll32.exe.

Please see Figure 6 for the infection chain of the previous version and the newer variant.

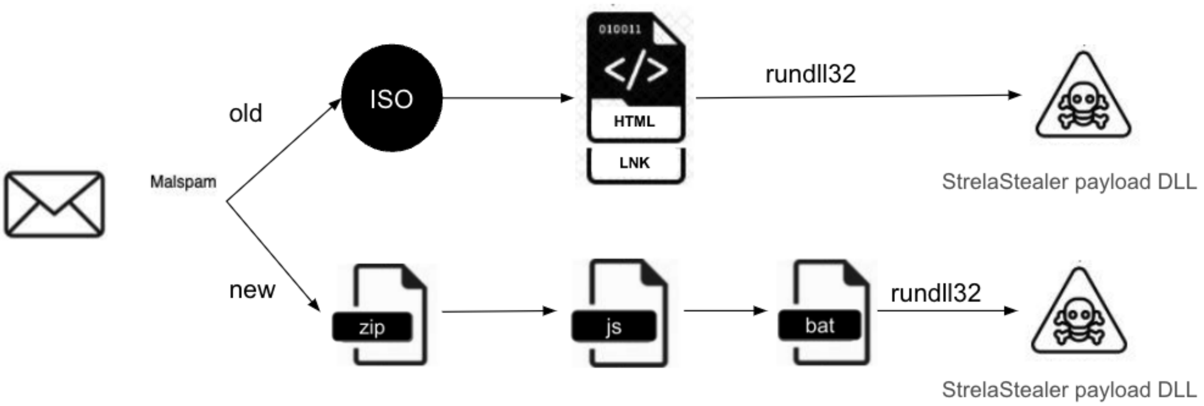
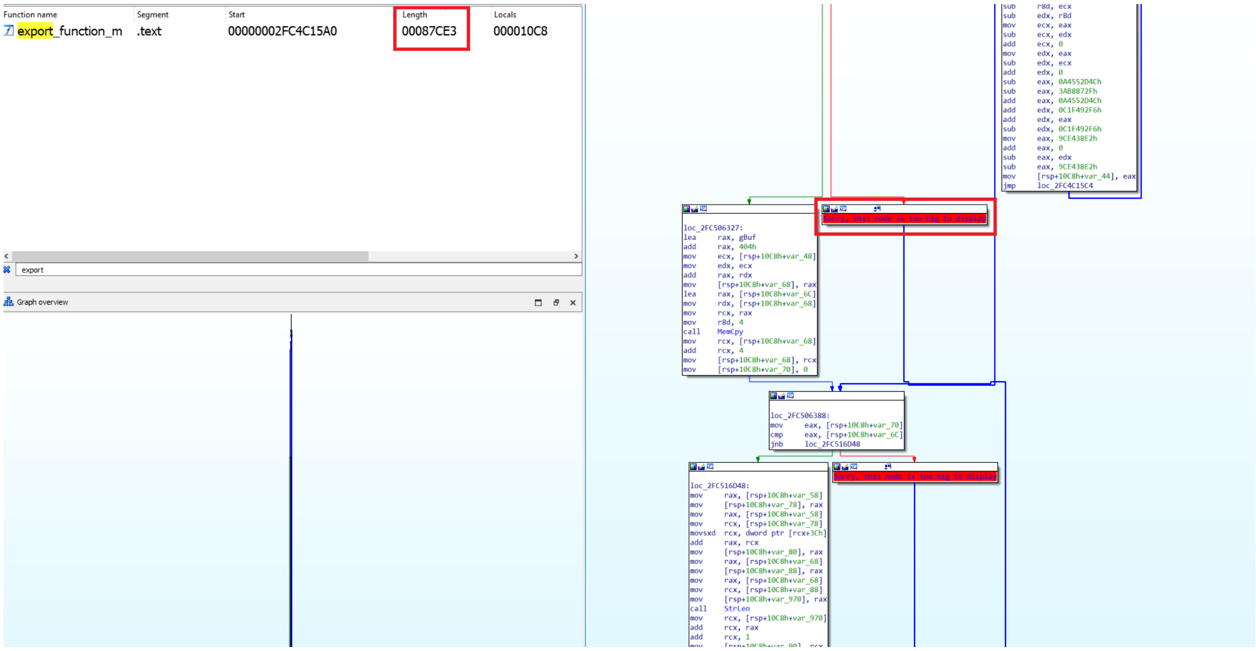


Figure 6. Infection chain.

Updated Packer

In the newest variant of StrelaStealer seen in the January 2024 campaign, the packer has evolved and employs a control flow obfuscation technique to render analysis more difficult.

The initial function shown in Figure 7 contains an example control flow obfuscation technique of excessively long code blocks consisting of numerous arithmetic instructions. This serves as an anti-analysis technique, potentially leading to timeouts during the execution of samples in a sandbox environment.



Function name	Segment	Start	Length	Locals
export_function_m	.text	00000002FC4C15A0	00087CE3	000010C8

```
sub     r8d, ecx
sub     edx, r8d
mov     ecx, eax
sub     ecx, edx
add     ecx, 0
mov     edx, eax
sub     edx, ecx
add     edx, 0
sub     eax, 0A4552D4Ch
sub     eax, 3AB8872Fh
add     eax, 0A4552D4Ch
add     edx, 0C1F492F6h
add     edx, eax
sub     edx, 0C1F492F6h
mov     eax, 9CE438E2h
add     eax, 0
sub     eax, edx
sub     eax, 9CE438E2h
mov     [rsp+10C8h+var_44], eax
jmp     loc_2FC4C15C4
```

```
loc_2FC506327:
lea     rax, gBuf
add     rax, 404h
mov     ecx, [rsp+10C8h+var_48]
mov     edx, ecx
add     rax, rdx
mov     [rsp+10C8h+var_68], rax
lea     rax, [rsp+10C8h+var_6C]
mov     rdx, [rsp+10C8h+var_68]
mov     rcx, rax
mov     r8d, 4
call    MemCpy
mov     rcx, [rsp+10C8h+var_68]
add     rcx, 4
mov     [rsp+10C8h+var_68], rcx
mov     [rsp+10C8h+var_70], 0
```

```
Sorry, this node is too big to display
```

```
loc_2FC506388:
mov     eax, [rsp+10C8h+var_70]
cmp     eax, [rsp+10C8h+var_6C]
jnb     loc_2FC516D48
```

```
loc_2FC516D48:
mov     rax, [rsp+10C8h+var_58]
mov     [rsp+10C8h+var_78], rax
mov     rax, [rsp+10C8h+var_58]
mov     rcx, [rsp+10C8h+var_78]
movsxd  rcx, dword ptr [rcx+3Ch]
add     rax, rcx
mov     [rsp+10C8h+var_80], rax
mov     rax, [rsp+10C8h+var_68]
mov     [rsp+10C8h+var_88], rax
mov     rax, [rsp+10C8h+var_68]
mov     rcx, [rsp+10C8h+var_88]
mov     [rsp+10C8h+var_970], rax
call    StrLen
mov     rcx, [rsp+10C8h+var_970]
add     rcx, rax
add     rcx, 1
mov     [rsp+10C8h+var_90], rcx
```

```
Sorry, this node is too big to display
```

Figure 7. Obfuscation (excessively large code block).

Both the original and the new StrelaStealer payload are DLL files with a malicious export function called to launch the attack. Figure 8 shows the payload DLL's malicious export function side by side.

We can see that the older version of StrelaStealer (left side of Figure 8) was not well obfuscated as these function blocks are clean and easily readable when disassembled. However, the latest version on the right side of Figure 8 shows that the threat actors have employed control flow obfuscation to evade analysis and detection.

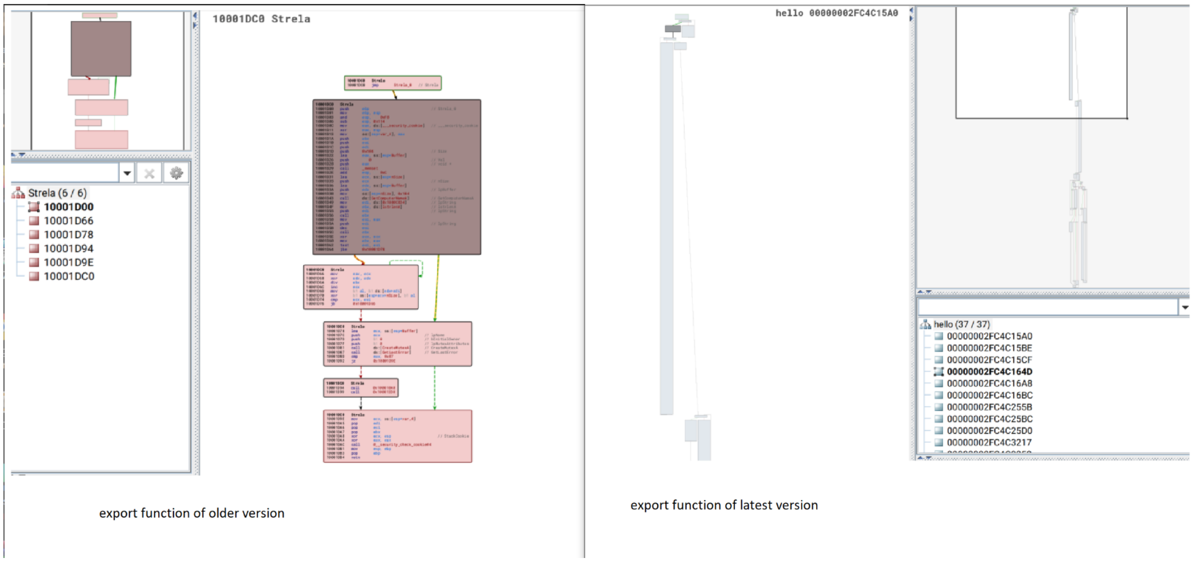
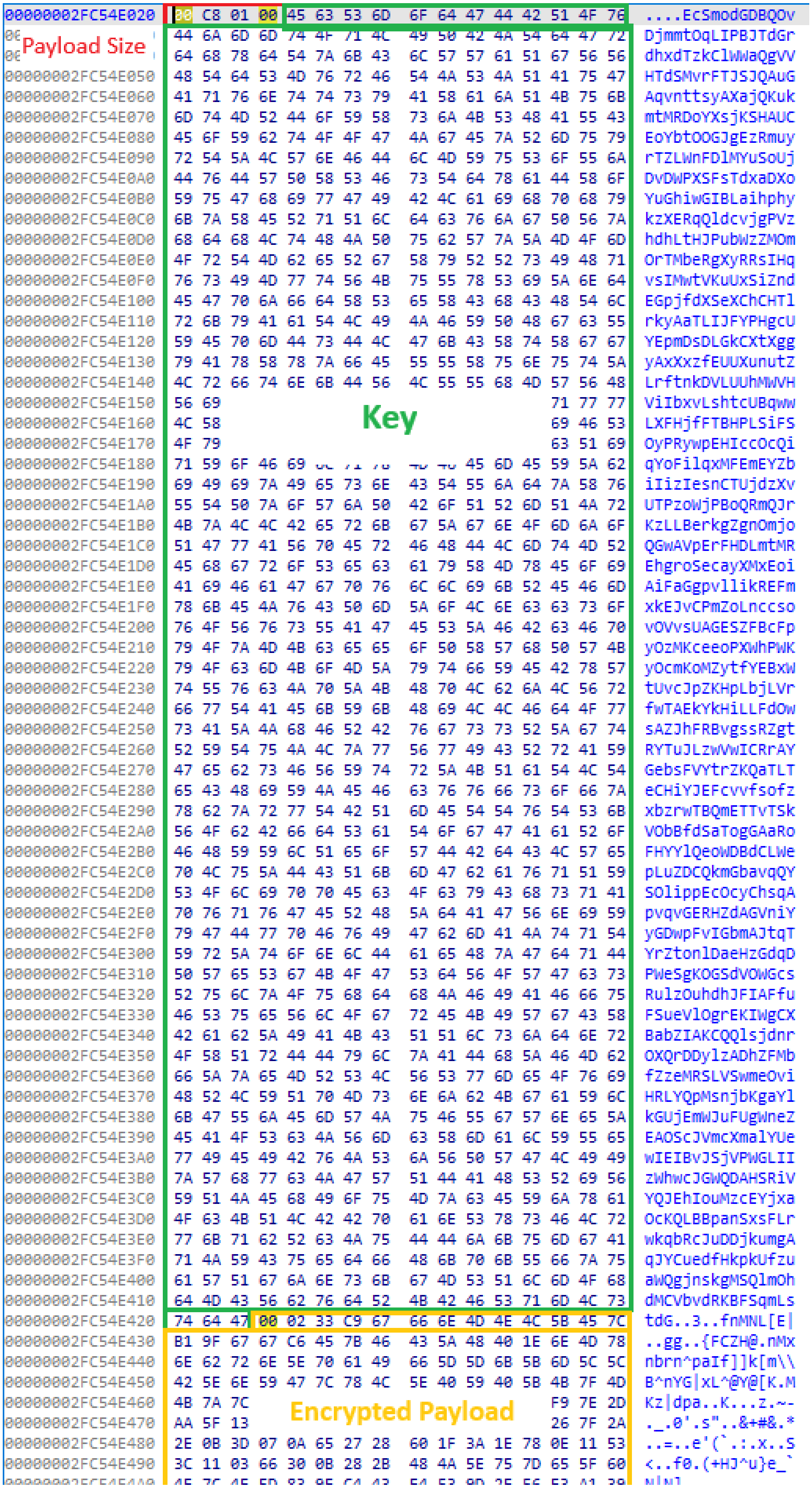
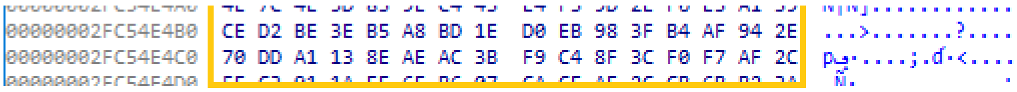


Figure 8. Export functions of old (left) and new (right) versions of StrelaStealer.

Based on the configuration shown in Figure 9, the payload size and decryption key are used to decrypt the payload. The decrypted payload is a memory-mapped PE file that is not similar to the one found in the earlier version of the StrelaStealer.



```
00000002FC54E020  00 C8 01 00 45 63 53 6D  6F 64 47 44 42 51 4F 76  ....EcSmodGDBQOv
0E                44 6A 6D 6D 74 4F 71 4C  49 50 42 4A 54 64 47 72  DjmmtOqLIPBJTdGr
0E                64 68 78 64 54 7A 6B 43  6C 57 57 61 51 67 56 56  dhxdTzkClWWaQgVV
00000002FC54E050  48 54 64 53 4D 76 72 46  54 4A 53 4A 51 41 75 47  HTdSMvrFTJSJQAuG
00000002FC54E060  41 71 76 6E 74 74 73 79  41 58 61 6A 51 4B 75 6B  AqvnttsyAXajQKuk
00000002FC54E070  6D 74 4D 52 44 6F 59 58  73 6A 4B 53 48 41 55 43  mtMRDoYXsjKSHAUC
00000002FC54E080  45 6F 59 62 74 4F 4F 47  4A 67 45 7A 52 6D 75 79  EoYbtOOGJgEzRmuy
00000002FC54E090  72 54 5A 4C 57 6E 46 44  6C 4D 59 75 53 6F 55 6A  rTZLWnFDlMYuSoUj
00000002FC54E0A0  44 76 44 57 50 58 53 46  73 54 64 78 61 44 58 6F  DvDWPXSFsTdxaDXo
00000002FC54E0B0  59 75 47 68 69 77 47 49  42 4C 61 69 68 70 68 79  YuGhiwGIBLaihphy
00000002FC54E0C0  6B 7A 58 45 52 71 51 6C  64 63 76 6A 67 50 56 7A  kzXERqQldcvjgPVz
00000002FC54E0D0  68 64 68 4C 74 48 4A 50  75 62 57 7A 5A 4D 4F 6D  hdhLtHJPubWzZMOm
00000002FC54E0E0  4F 72 54 4D 62 65 52 67  58 79 52 52 73 49 48 71  OrTMbeRgXyRRsIHq
00000002FC54E0F0  76 73 49 4D 77 74 56 4B  75 55 78 53 69 5A 6E 64  vsIMwtVKuUxSiZnd
00000002FC54E100  45 47 70 6A 66 64 58 53  65 58 43 68 43 48 54 6C  EGpjfdXSeXChCHTl
00000002FC54E110  72 6B 79 41 61 54 4C 49  4A 46 59 50 48 67 63 55  rkyAaTLIJFYPHgcU
00000002FC54E120  59 45 70 6D 44 73 44 4C  47 6B 43 58 74 58 67 67  YEpmDsDLGkCXtXgg
00000002FC54E130  79 41 78 58 78 7A 66 45  55 55 58 75 6E 75 74 5A  yAxXxzfEUUXunutZ
00000002FC54E140  4C 72 66 74 6E 6B 44 56  4C 55 55 68 4D 57 56 48  LrftnkDVLUUhMWVH
00000002FC54E150  56 69                                   71 77 77  ViIbxvLshtcUBqww
00000002FC54E160  4C 58                                   69 46 53  LXFHjfFTBHPLSiFS
00000002FC54E170  4F 79                                   63 51 69  OyPRywpEHIccOcQi
00000002FC54E180  71 59 6F 46 69 6C 71 78  4D 46 45 6D 45 59 5A 62  qYoFilqxMFEmEYZb
00000002FC54E190  69 49 69 7A 49 65 73 6E  43 54 55 6A 64 7A 58 76  iIizIesnCTUjdzXv
00000002FC54E1A0  55 54 50 7A 6F 57 6A 50  42 6F 51 52 6D 51 4A 72  UTPzoWjPBoQRmQJr
00000002FC54E1B0  4B 7A 4C 4C 42 65 72 6B  67 5A 67 6E 4F 6D 6A 6F  KzLLBerkgZgnOmjo
00000002FC54E1C0  51 47 77 41 56 70 45 72  46 48 44 4C 6D 74 4D 52  QGwAVpErFHDLmtMR
00000002FC54E1D0  45 68 67 72 6F 53 65 63  61 79 58 4D 78 45 6F 69  EhgroSecayXMxEoi
00000002FC54E1E0  41 69 46 61 47 67 70 76  6C 6C 69 6B 52 45 46 6D  AiFaGgpvllikREFm
00000002FC54E1F0  78 6B 45 4A 76 43 50 6D  5A 6F 4C 6E 63 63 73 6F  xkEJvCPmZoLnccso
00000002FC54E200  76 4F 56 76 73 55 41 47  45 53 5A 46 42 63 46 70  vOVvsUAGESZFBcFp
00000002FC54E210  79 4F 7A 4D 4B 63 65 65  6F 50 58 57 68 50 57 4B  yOzMKceeoPXWhPWK
00000002FC54E220  79 4F 63 6D 4B 6F 4D 5A  79 74 66 59 45 42 78 57  yOcmKoMZytfYEBxW
00000002FC54E230  74 55 76 63 4A 70 5A 4B  48 70 4C 62 6A 4C 56 72  tUvcJpZKHpLbjLVr
00000002FC54E240  66 77 54 41 45 6B 59 6B  48 69 4C 4C 46 64 4F 77  fwTAEkYkHiLLFdOw
00000002FC54E250  73 41 5A 4A 68 46 52 42  76 67 73 73 52 5A 67 74  sAZJhFRBvgssRZgt
00000002FC54E260  52 59 54 75 4A 4C 7A 77  56 77 49 43 52 72 41 59  RYTuJLzwVwICRrAY
00000002FC54E270  47 65 62 73 46 56 59 74  72 5A 4B 51 61 54 4C 54  GebsFVYtrZKQaTLT
00000002FC54E280  65 43 48 69 59 4A 45 46  63 76 76 66 73 6F 66 7A  eCHiYJEFcvvfsofz
00000002FC54E290  78 62 7A 72 77 54 42 51  6D 45 54 54 76 54 53 6B  xbzrwTBQmETTvTSk
00000002FC54E2A0  56 4F 62 42 66 64 53 61  54 6F 67 47 41 61 52 6F  VObBfdSaTogGAaRo
00000002FC54E2B0  46 48 59 59 6C 51 65 6F  57 44 42 64 43 4C 57 65  FHYYlQeoWDBdCLWe
00000002FC54E2C0  70 4C 75 5A 44 43 51 6B  6D 47 62 61 76 71 51 59  pLuZDCQkmGbavqQY
00000002FC54E2D0  53 4F 6C 69 70 70 45 63  4F 63 79 43 68 73 71 41  SOlippEcOcyChsqA
00000002FC54E2E0  70 76 71 76 47 45 52 48  5A 64 41 47 56 6E 69 59  pvqvGERHZdAGVniY
00000002FC54E2F0  79 47 44 77 70 46 76 49  47 62 6D 41 4A 74 71 54  yGDwpFvIGbmAJtqT
00000002FC54E300  59 72 5A 74 6F 6E 6C 44  61 65 48 7A 47 64 71 44  YrZtonlDaeHzGdqD
00000002FC54E310  50 57 65 53 67 4B 4F 47  53 64 56 4F 57 47 63 73  PWeSgKOGSdVOWGcs
00000002FC54E320  52 75 6C 7A 4F 75 68 64  68 4A 46 49 41 46 66 75  RulzOuhdhJFIAFfu
00000002FC54E330  46 53 75 65 56 6C 4F 67  72 45 4B 49 57 67 43 58  FSueVlOgrEKIWgCX
00000002FC54E340  42 61 62 5A 49 41 4B 43  51 51 6C 73 6A 64 6E 72  BabZIAKCQQlsjdnr
00000002FC54E350  4F 58 51 72 44 44 79 6C  7A 41 44 68 5A 46 4D 62  OXQrDDylzADhZFMb
00000002FC54E360  66 5A 7A 65 4D 52 53 4C  56 53 77 6D 65 4F 76 69  fZzeMRSLVSwmeOvi
00000002FC54E370  48 52 4C 59 51 70 4D 73  6E 6A 62 4B 67 61 59 6C  HRLYQpMsnjbKgaYl
00000002FC54E380  6B 47 55 6A 45 6D 57 4A  75 46 55 67 57 6E 65 5A  kGUjEmWJuFUgWneZ
00000002FC54E390  45 41 4F 53 63 4A 56 6D  63 58 6D 61 6C 59 55 65  EAOScJVmcXmalYUe
00000002FC54E3A0  77 49 45 49 42 76 4A 53  6A 56 50 57 47 4C 49 49  wIEIBvJSjVPWGLII
00000002FC54E3B0  7A 57 68 77 63 4A 47 57  51 44 41 48 53 52 69 56  zWhwcJGWQDAHSRiV
00000002FC54E3C0  59 51 4A 45 68 49 6F 75  4D 7A 63 45 59 6A 78 61  YQJEhIouMzcEYjxa
00000002FC54E3D0  4F 63 4B 51 4C 42 42 70  61 6E 53 78 73 46 4C 72  OcKQLBBpanSxsFLr
00000002FC54E3E0  77 6B 71 62 52 63 4A 75  44 44 6A 6B 75 6D 67 41  wkqbRcJuDDjkumgA
00000002FC54E3F0  71 4A 59 43 75 65 64 66  48 6B 70 6B 55 66 7A 75  qJYCuedfHkpkUfzu
00000002FC54E400  61 57 51 67 6A 6E 73 6B  67 4D 53 51 6C 6D 4F 68  aWQgjnskgMSQlmOh
00000002FC54E410  64 4D 43 56 62 76 64 52  4B 42 46 53 71 6D 4C 73  dMCVbvdRKBFSqmLs
00000002FC54E420  74 64 47 00 02 33 C9 67  66 6E 4D 4E 4C 5B 45 7C  tdG..3..fnMNL[E|
00000002FC54E430  B1 9F 67 67 C6 45 7B 46  43 5A 48 40 1E 6E 4D 78  ..gg..{FCZH@.nMx
00000002FC54E440  6E 62 72 6E 5E 70 61 49  66 5D 5D 6B 5B 6D 5C 5C  nbrn^paIf]]k[m\\
00000002FC54E450  42 5E 6E 59 47 7C 78 4C  5E 40 59 40 5B 4B 7F 4D  B^nYG|xL^@Y@[K.M
00000002FC54E460  4B 7A 7C                            F9 7E 2D  Kz|dpa..K...z.~-
00000002FC54E470  AA 5F 13                            26 7F 2A  ._.0'.s"..&+#&.*
00000002FC54E480  2E 0B 3D 07 0A 65 27 28  60 1F 3A 1E 78 0E 11 53  ..=..e'(`.:.x..S
00000002FC54E490  3C 11 03 66 30 0B 28 2B  48 4A 5E 75 7D 65 5F 60  <..f0.(+HJ^u}e_`
```

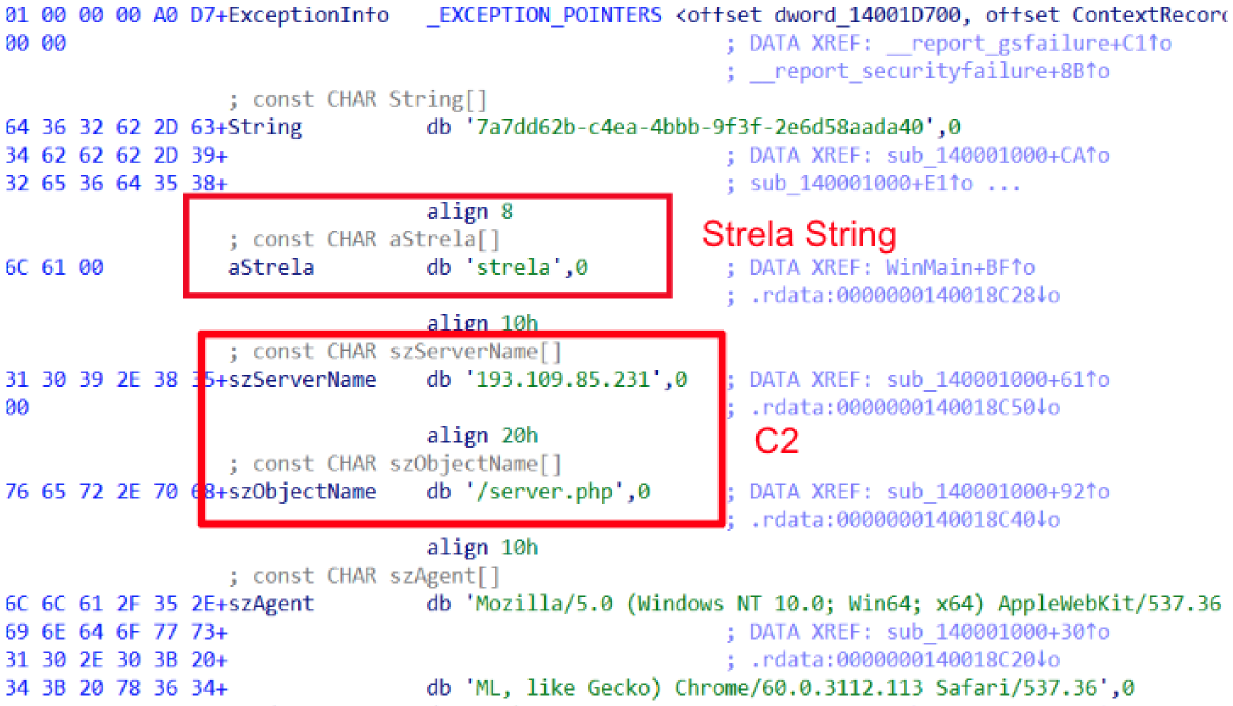


```
00000002FC54E4B0  CE D2 BE 3E B5 A8 BD 1E  D0 EB 98 3F B4 AF 94 2E  ...>.......?....
00000002FC54E4C0  70 DD A1 13 8E AE AC 3B  F9 C4 8F 3C F0 F7 AF 2C  pب·....;.ď·<....
```

Figure 9. Encrypted payload.

The presence of strings like strela, server.php, key4.db and login.json within the decrypted payload provides an indication that it is associated with StrelaStealer.

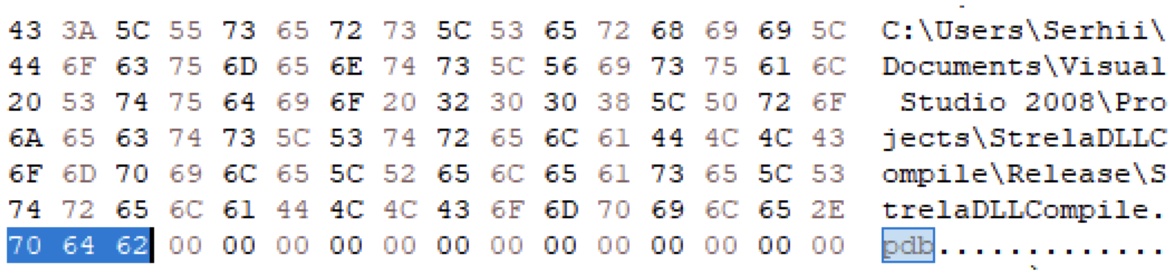
The main purpose of StrelaStealer is to steal email login data from well-known email clients and send it back to the C2 server defined in the malware configuration, as shown in Figure 10.



```
01 00 00 00 A0 D7+ExceptionInfo    _EXCEPTION_POINTERS <offset dword_14001D700, offset ContextRecor
00 00                                                   ; DATA XREF: __report_gsfailure+C1↑o
                                                        ; __report_securityfailure+8B↑o
                  ; const CHAR String[]
64 36 32 62 2D 63+String           db '7a7dd62b-c4ea-4bbb-9f3f-2e6d58aada40',0
34 62 62 62 2D 39+                                      ; DATA XREF: sub_140001000+CA↑o
32 65 36 64 35 38+                                      ; sub_140001000+E1↑o ...
                                   align 8
                  ; const CHAR aStrela[]
6C 61 00          aStrela          db 'strela',0        ; DATA XREF: WinMain+BF↑o
                                                        ; .rdata:0000000140018C28↓o
                                   align 10h
                  ; const CHAR szServerName[]
31 30 39 2E 38 35+szServerName     db '193.109.85.231',0 ; DATA XREF: sub_140001000+61↑o
00                                                      ; .rdata:0000000140018C50↓o
                                   align 20h
                  ; const CHAR szObjectName[]
76 65 72 2E 70 68+szObjectName     db '/server.php',0   ; DATA XREF: sub_140001000+92↑o
                                                        ; .rdata:0000000140018C40↓o
                                   align 10h
                  ; const CHAR szAgent[]
6C 6C 61 2F 35 2E+szAgent          db 'Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
69 6E 64 6F 77 73+                                      ; DATA XREF: sub_140001000+30↑o
31 30 2E 30 3B 20+                                      ; .rdata:0000000140018C20↓o
34 3B 20 78 36 34+                 db 'ML, like Gecko) Chrome/60.0.3112.113 Safari/537.36',0
```

Figure 10. StrelaStealer string as well as C2 server name.

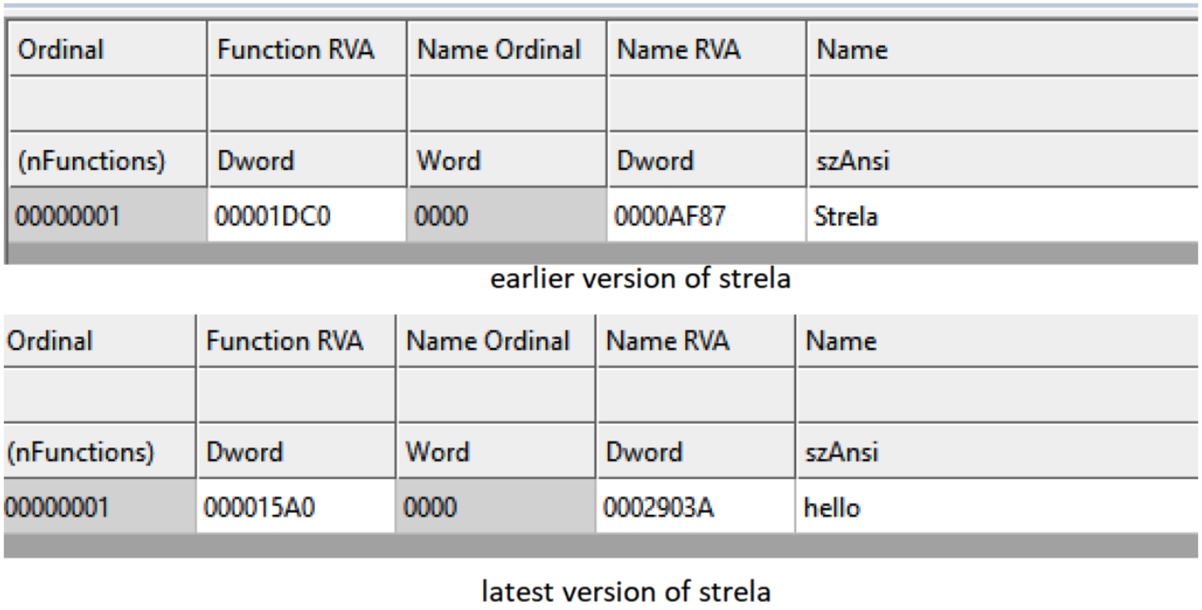
The StrelaStealer threat actor incorporated several noteworthy modifications, possibly as means to avoid being detected. For example, PDB strings (debugging symbol strings built in by the compiler) that were present in earlier versions of StrelaStealer, shown in Figure 11, can no longer be found in the samples from the latest campaign. This makes it less obvious that this is a StrelaStealer binary and could render certain naive static signatures useless if they relied on the existence of this string.



```
43 3A 5C 55 73 65 72 73 5C 53 65 72 68 69 69 5C  C:\Users\Serhii\
44 6F 63 75 6D 65 6E 74 73 5C 56 69 73 75 61 6C  Documents\Visual
20 53 74 75 64 69 6F 20 32 30 30 38 5C 50 72 6F   Studio 2008\Pro
6A 65 63 74 73 5C 53 74 72 65 6C 61 44 4C 4C 43  jects\StrelaDLLC
6F 6D 70 69 6C 65 5C 52 65 6C 65 61 73 65 5C 53  ompile\Release\S
74 72 65 6C 61 44 4C 4C 43 6F 6D 70 69 6C 65 2E  trelaDLLCompile.
70 64 62 00 00 00 00 00 00 00 00 00 00 00 00 00  pdb.............
```

Figure 11. PDB string from an early StrelaStealer sample.

Figure 12 shows that the export name has changed from StrelaStealer to hello.



Ordinal	Function RVA	Name Ordinal	Name RVA	Name
(nFunctions)	Dword	Word	Dword	szAnsi
00000001	00001DC0	0000	0000AF87	Strela

earlier version of strela

Ordinal	Function RVA	Name Ordinal	Name RVA	Name
(nFunctions)	Dword	Word	Dword	szAnsi
00000001	000015A0	0000	0002903A	hello

latest version of strela

Figure 12. Export name changes from Strela to hello.

Conclusion

StrelaStealer malware is an active email credential stealer that is always evolving. With each new wave of email campaigns, threat actors update both the email attachment, which initiates the infection chain, and the DLL payload itself. Attackers do this to evade detection by security vendors.

Information stealers are not new to the threat landscape. Though not exactly novel, the various evasion techniques and updates employed by StrelaStealer are effective at evading detection from more reactive signature or pattern-based solutions.

Palo Alto Networks Protection and Mitigation

Through the detection and intelligence provided by Advanced WildFire, Palo Alto Networks customers are better protected from StrelaStealer through the following products:

- Cortex XDR with Advanced WildFire: With cloud-delivered static and dynamic analysis capabilities, Advanced WildFire is able to help detect new variants of StrelaStealer. Cortex XDR helps prevent StrelaStealer's attack chain.
- Next-Generation Firewalls with cloud-delivered security services including Advanced WildFire detection, Advanced URL Filtering and DNS Security categorize known C2 domains and IPs as malicious.
- Prisma Cloud Defender agents should be deployed on cloud-based Windows VMs to ensure they are protected from these known malicious binaries. WildFire signatures can be used by both Palo Alto Networks cloud services to ensure cloud-based Windows VM runtime operations are being analyzed and those resources are protected.
- The Unit 42 Incident Response team can also be engaged to help with a compromise or to provide a proactive assessment to lower your risk.

If you think you may have been compromised or have an urgent matter, get in touch with the Unit 42 Incident Response team or call:

- North America Toll-Free: 866.486.4842 (866.4.UNIT42)
- EMEA: +31.20.299.3130
- APAC: +65.6983.8730
- Japan: +81.50.1790.0200

Palo Alto Networks has shared these findings with our fellow Cyber Threat Alliance (CTA) members. CTA members use this intelligence to rapidly deploy protections to their customers and to systematically disrupt malicious cyber actors. Learn more about the Cyber Threat Alliance.

Indicators of Compromise

SHA256 Hash	Filetype
0d2d0588a3a7cff3e69206be3d75401de6c69bcff30aa1db59d34ce58d5f799a e6991b12e86629b38e178fef129dfda1d454391ffbb236703f8c026d6d55b9a1	DLL
f95c6817086dc49b6485093bfd370c5e3fc3056a5378d519fd1f5619b30f3a2e aea9989e70ffa6b1d9ce50dd3af5b7a6a57b97b7401e9eb2404435a8777be054 b8e65479f8e790ba627d0deb29a3631d1b043160281fe362f111b0e080558680	EML
3189efaf2330177d2817cfb69a8bfa3b846c24ec534aa3e6b66c8a28f3b18d4b	ZIP
544887bc3f0dccb610dd7ba35b498a03ea32fca047e133a0639d5bca61cc6f45	JS
193[.]109[.]85[.]231	C2 server

Additional References

- New StrelaStealer malware steals your Outlook, Thunderbird accounts – Bleeping Computer
- Malware analysis/Digital forensic: Strela Stealer – Medium
- #ShortAndMalicious: StrelaStealer aims for mail credentials – Medium

Tags

Threat Research Center Next: Curious Serpens’ FalseFont Backdoor: Technical Analysis, Detection and Prevention

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Enlarged Image