
# How Threat Actors Deceive Researchers via Unpopular Software

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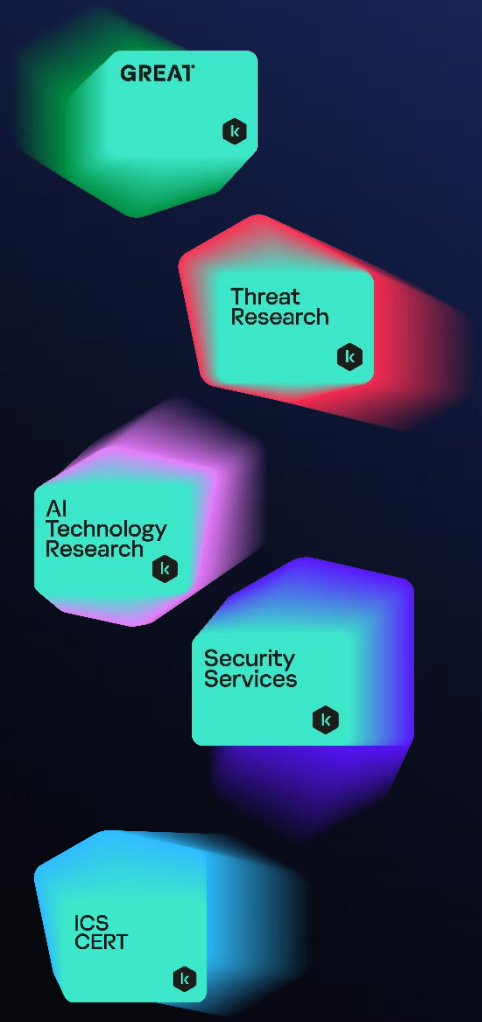
Kaspersky

# About what I do

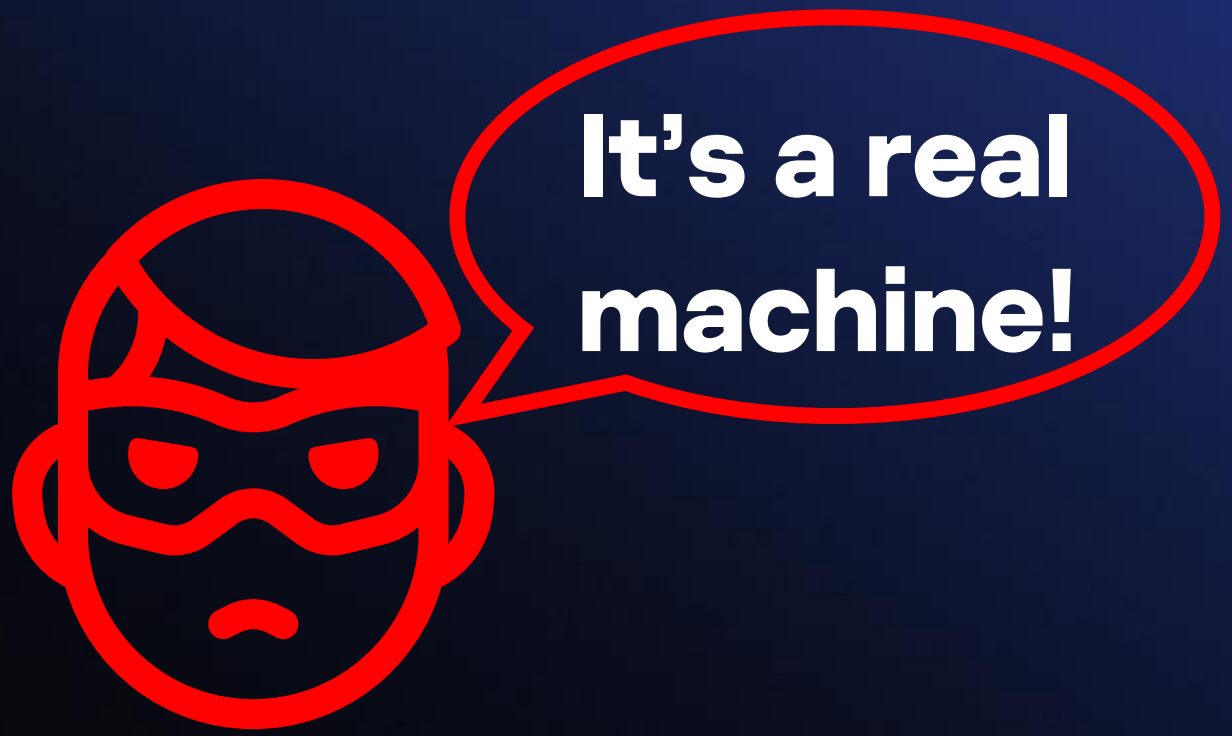
- Kaspersky Security Network
- Search robots
- Botnets monitoring
- Spam traps
- Honeypots
- Partners
- OSINT
- Darknet
- Other




**Kaspersky Threat Intelligence**

**People we protect**

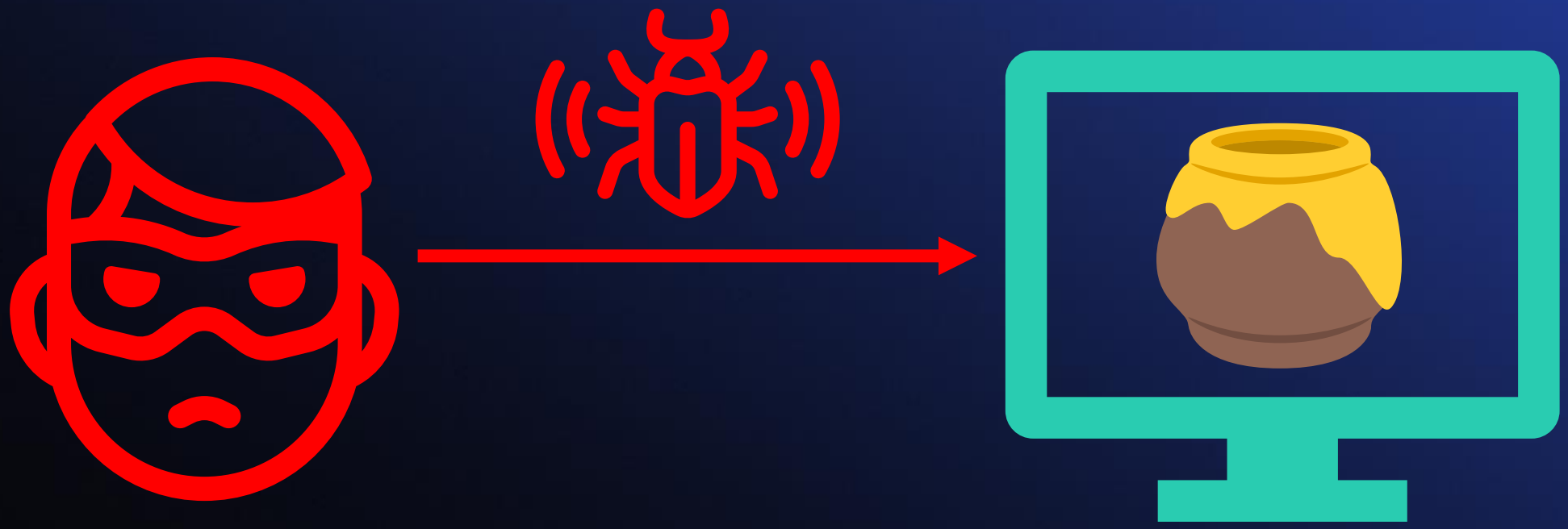
# Deception how it is




Attacker

Honeypot

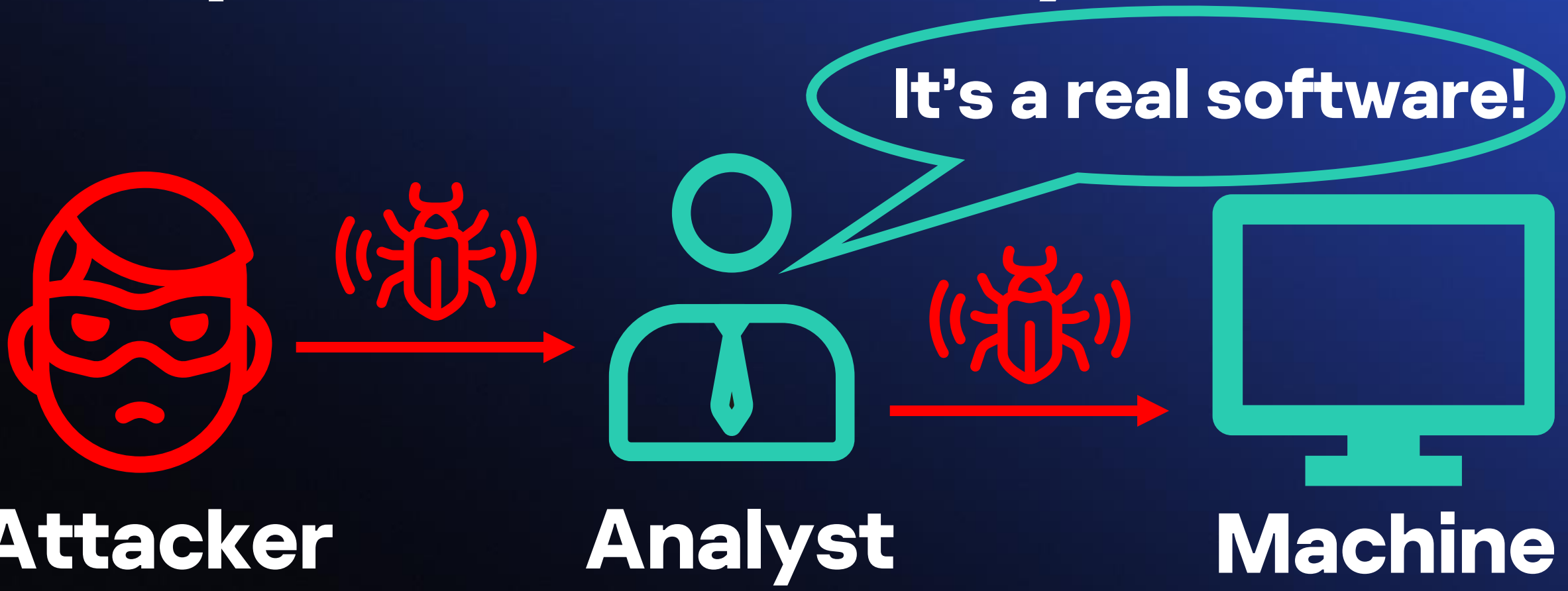
# Deception how it is



Attacker

Honeypot

# Deception the other way



# Malware visible in plain sight

You see the malware on the filesystem.

You see the malware in memory.

**Still, you don’t realize it’s malware.**

# The case for today

You are a network analyst.

Your job is to inspect suspicious domains and check if they are related to malware.

Domain name from SIEM: eventuallogic[.]com

Objectives for today:

- Is the domain malicious?
- If so, what is the infection chain?
- If so, what is the malware type?

# Checking the domain

| | | | | | |
|---|---|---|---|---|---|
| eventuallogic.com | 1 / 94 | 104.21.48.1 | 104.21.16.1 | 104.21.112.1 | ... |
| www.eventuallogic.com | 1 / 94 | 104.21.32.1 | 104.21.48.1 | 104.21.16.1 | ... |

**URLs (2)**

| Scanned | Detections | Status | URL |
|---|---|---|---|
| 2025-05-02 | 1 / 97 | 404 | http://www.eventuallogic.com/ |
| 2025-05-02 | 1 / 97 | 404 | http://eventuallogic.com/ |

**Downloaded Files (1)**

| Scanned | Detections | Type | Name |
|---|---|---|---|
| 2025-05-20 | 0 / 63 | HTML | ). |

**Not many clues. 1 detection out of 97 may be a false positive**

# Checking the domain

## Overview

### General Information

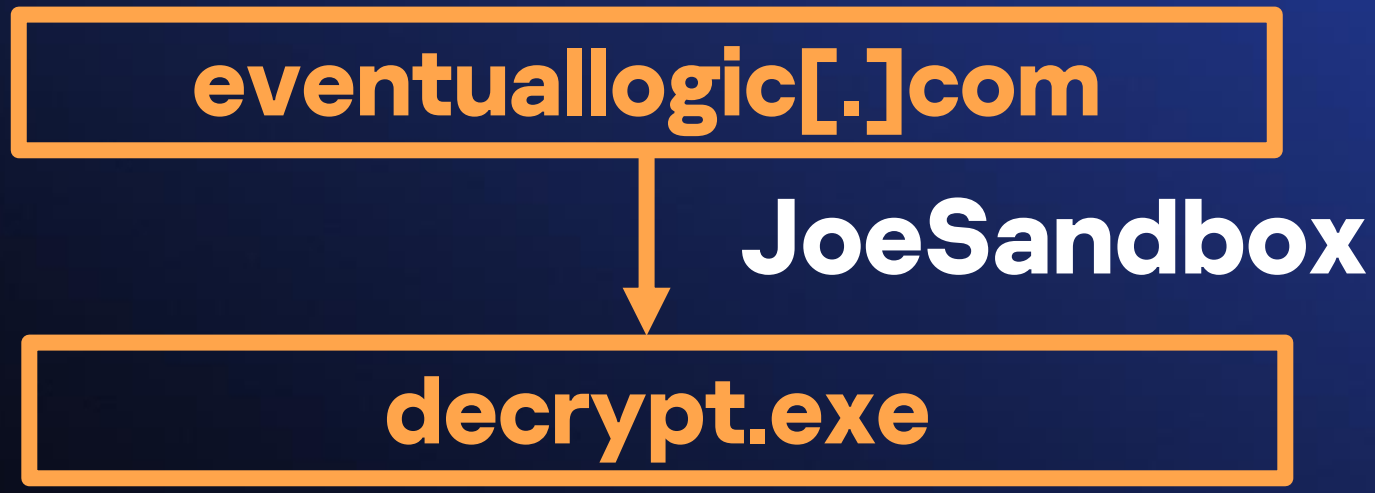
| | |
|---|---|
| Sample name: | decrypt.exe |
| Analysis ID: | 1582909 |
| MD5: | 0a08cc36… |
| SHA1: | 580ccc43… |
| SHA256: | db433f67… |
| Infos: | |

| | |
|---|---|
| Score: | 56 |
| Range: | 0 - 100 |
| Whitelisted: | false |
| Confidence: | 100% |

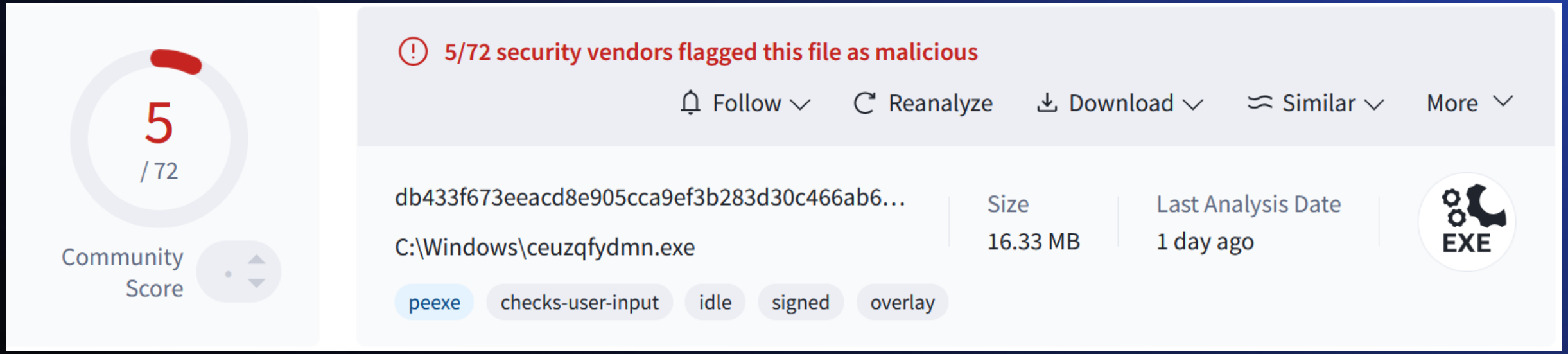
ponding DNS lookups

DNS traffic detected: DNS query: www.eventuallogic.com

# Relations graph



# Checking out decrypt.exe




**Compressed Parents (2)**

| Scanned | Detections | Type | Name |
|---|---|---|---|
| 2025-05-16 | 0 / 63 | ZIP | decrypt.zip |

# Was found inside a decrypt.zip file

The VirusTotal detection scores have been hereinafter adjusted to match the ones observed in December 2024 (time of research), to make the demos look realistic.

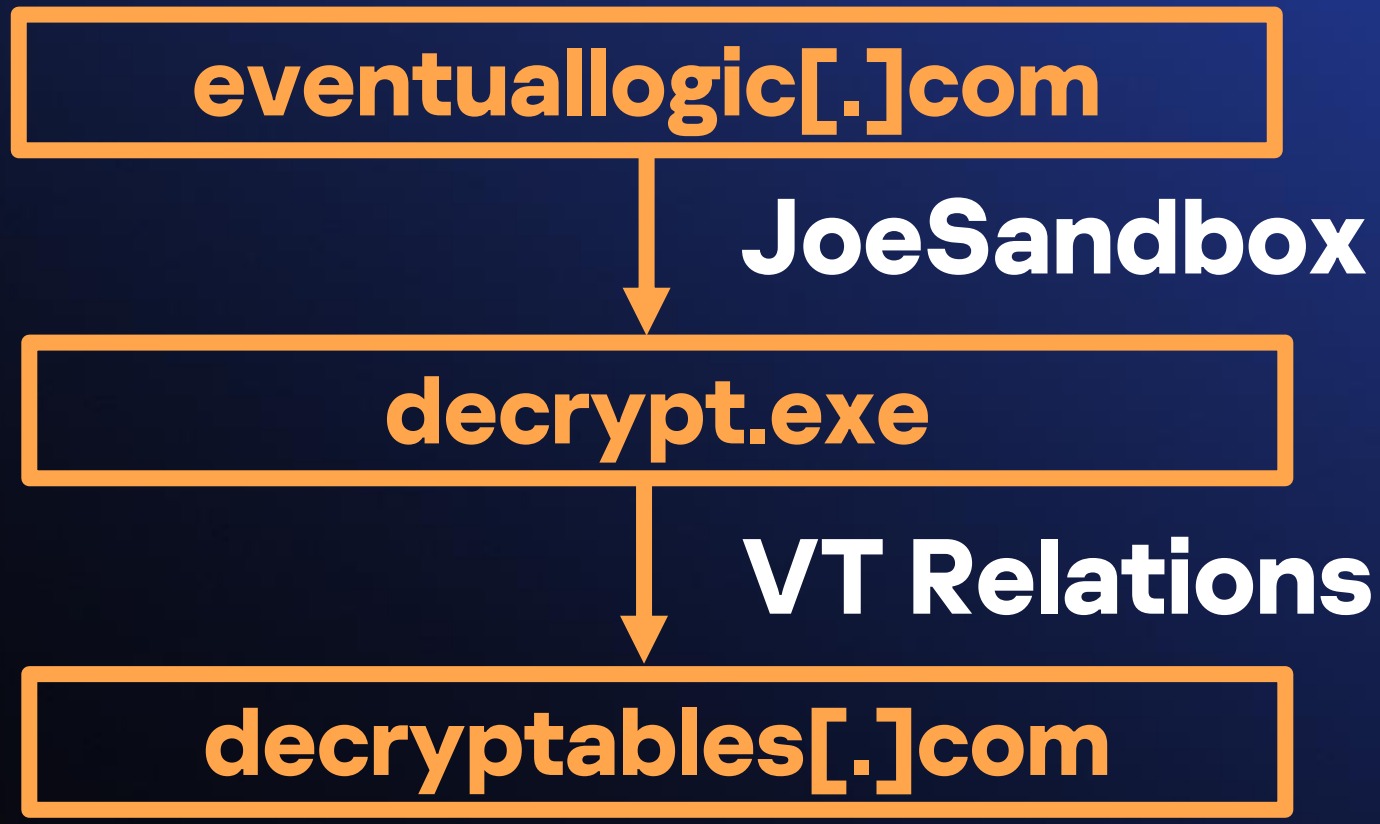
# Checking out decrypt.zip

**ITW Urls (2)**

| Scanned | Detections | Status | URL |
|---|---|---|---|
| 2025-02-13 | 1 / 96 | 403 | http://decryptables.com/decrypt.zip |
| 2025-05-20 | 2 / 97 | 403 | https://decrypta-bles.com/decrypt.zip |

**decrypt.zip was downloaded from decryptables[.]com**

# Relations graph



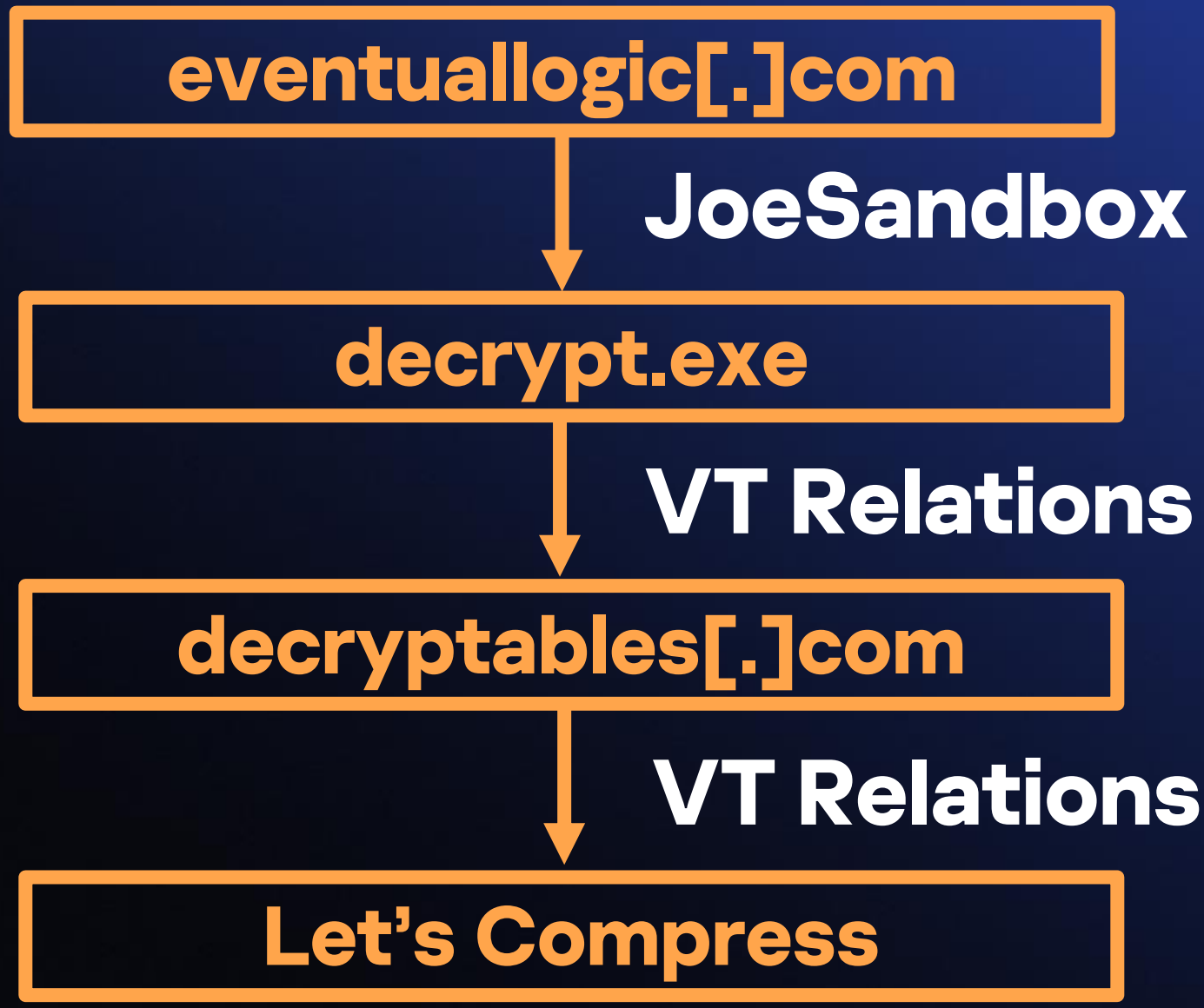
# Checking out decryptables[.]com

**Communicating Files (10/11)**

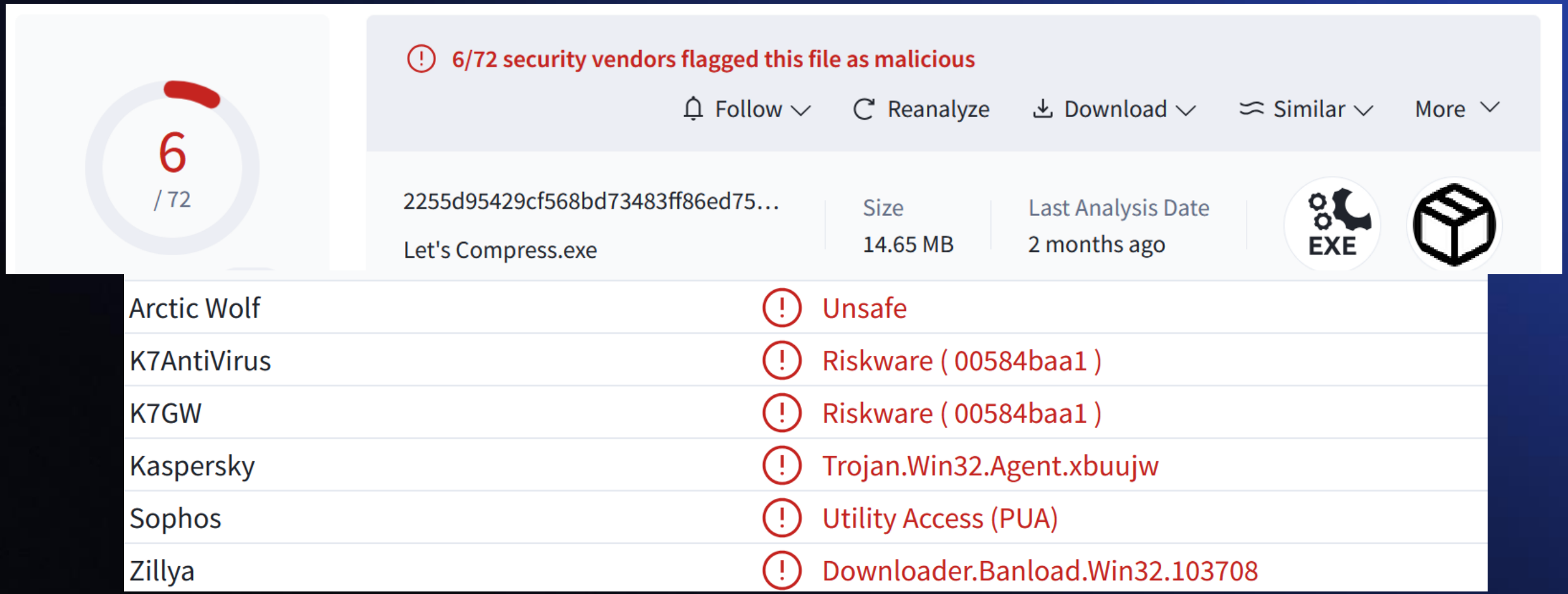
| Name | Detections | Type | Communicated date |
|---|---|---|---|
| 0a6deb9496cf8fb61a78dd5f576296a8a15e54493f4c1ef9fda0d7d292c43d9a<br>*No meaningful names*<br>peexe signed overlay detect-debug-environment long-sleeps calls-wmi 64bits | 10 / 73 | Win32 EXE | 2024-09-03 19:51:23 UTC |
| 2255d95429cf568bd73483ff86ed7526cfdcb6759f313fe7743de128ac53094e<br>Let's Compress.exe<br>peexe overlay long-sleeps calls-wmi signed checks-usb-bus detect-debug-environment | 6 / 73 | Win32 EXE | 2024-12-06 18:16:41 UTC |

# decryptables[.]com communicates With “Let’s Compress.exe”

# Relations graph



# Checking out Let's Compress




**6 detections, some of them related to PUAs**

# Malware vs. PUA

## Malware

Software that clearly conducts malicious actions (e.g. backdoors, ransomware)

## PUA

Software that is not malicious by itself but is still unwanted (e.g. adware)

# Checking out Let's Compress

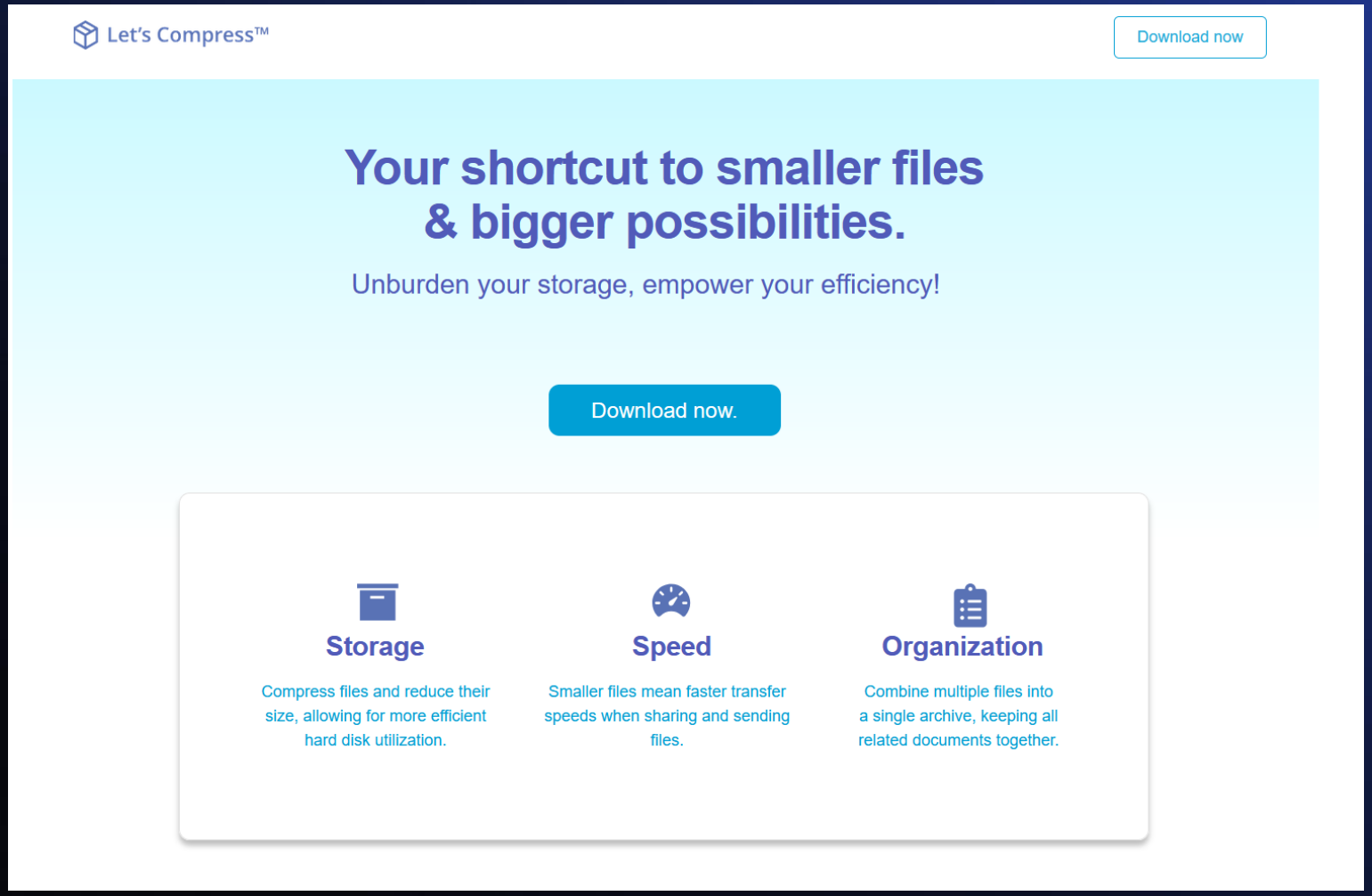
**Signers**

— UTILITY ACCESS (SMC-PRIVATE) LIMITED

| | |
|---|---|
| Name | UTILITY ACCESS (SMC-PRIVATE) LIMITED |
| Issuer | GlobalSign GCC R45 EV CodeSigning CA 2020 |
| Valid From | 12:37 PM 09/26/2024 |
| Valid To | 12:37 PM 09/27/2025 |
| Valid Usage | Code Signing |
| Algorithm | sha256RSA |
| Thumbprint | 24097FB790D82FE390B9DCB3456675F96CEF4B2B |
| Serial Number | 46 BC 9E 64 8B 50 DD B3 39 0A 8A 8A |

**This file is signed!**

# Checking out Let's Compress



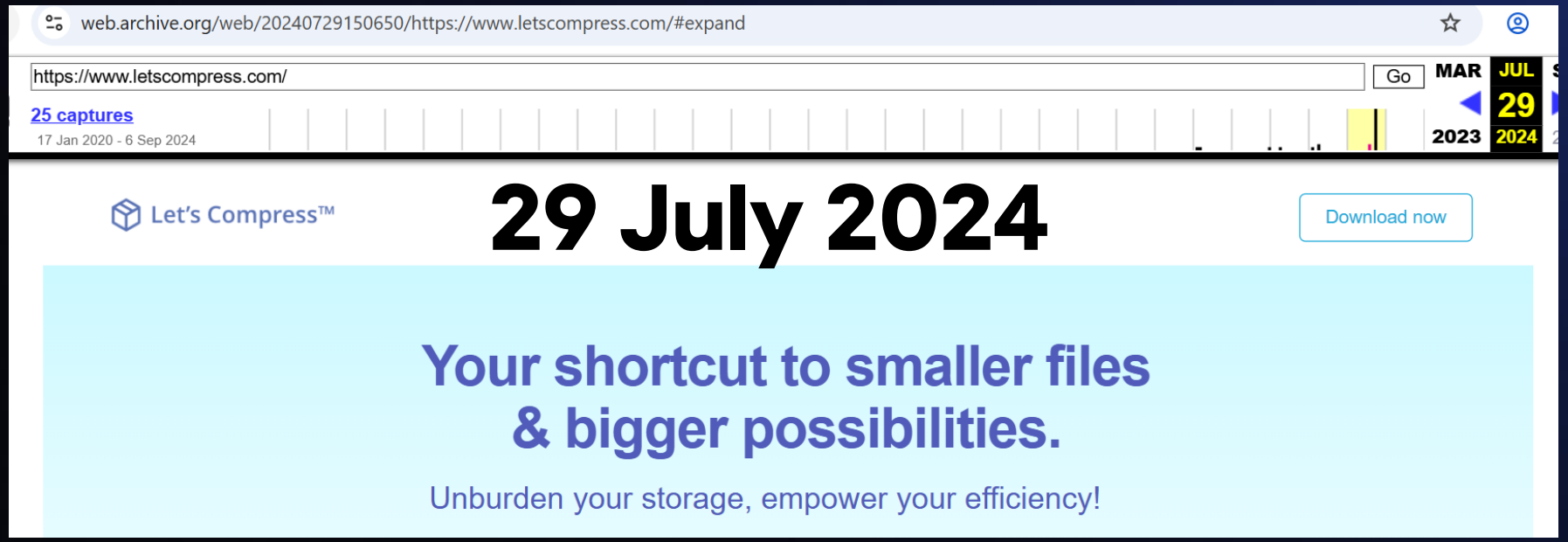

# It's a real tool!

# Checking out Let's Compress

## Domain Information

| | |
|---|---|
| Domain: | letscompress.com |
| Registered On: | 2024-05-23 |
| Expires On: | 2026-05-23 |
| Updated On: | 2025-05-08 |

**23 May 2024**




**29 July 2024**

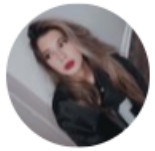
# A discussion on X / Twitter

**Aura**
@SecurityAura

**30 December 2024**

There's something going on with this (caught earlier this week by our SOC). I don't know what that is but it looks like it's masquerading Let's Compress?

Doesn't look legitimate at all. Gotta jump for now but I'll dig more into this later. cc @RussianPanda9xx



**RussianPanda** 🐼 🇺🇦
@RussianPanda9xx

Suivre

ahh, it's a PUA, all it does is just archiving the files you fetch to it, I think.

Traduire le post

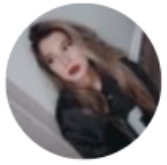
https://x.com/SecurityAura/status/1873460044706275459

# A discussion on X / Twitter

**Aura** @SecurityAura · 29 déc. 2024

I can see that at some point it uses 7z.exe to decrypt a password protected (PW is 123456 IIRC) 7z named decrypt.7z.

It's all bits and pieces since I was in a hurry. But that initial command I showed is encoded and launched through PS. There's a lot of suspicious stuff here 😂



**RussianPanda** 🐼 🇺🇦 @RussianPanda9xx · 29 déc. 2024

If you look for the signature on VT, they have another PUA too (signature:"UTILITY ACCESS (SMC-PRIVATE) LIMITED") - Flip Player :D

virustotal.com/gui/file/edbe2...

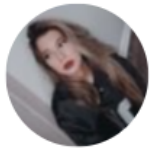
1 4 285

# A discussion on X / Twitter

**Aura** @SecurityAura · 30 déc. 2024

I went down the OSINT route and found that Utility Access is just one of many companies that are owned/directed by the same person. All seems to be in the customer support, web design, digital marketing field. It probably goes deeper than that but yeah, PUA it would be 😂

1 2 220



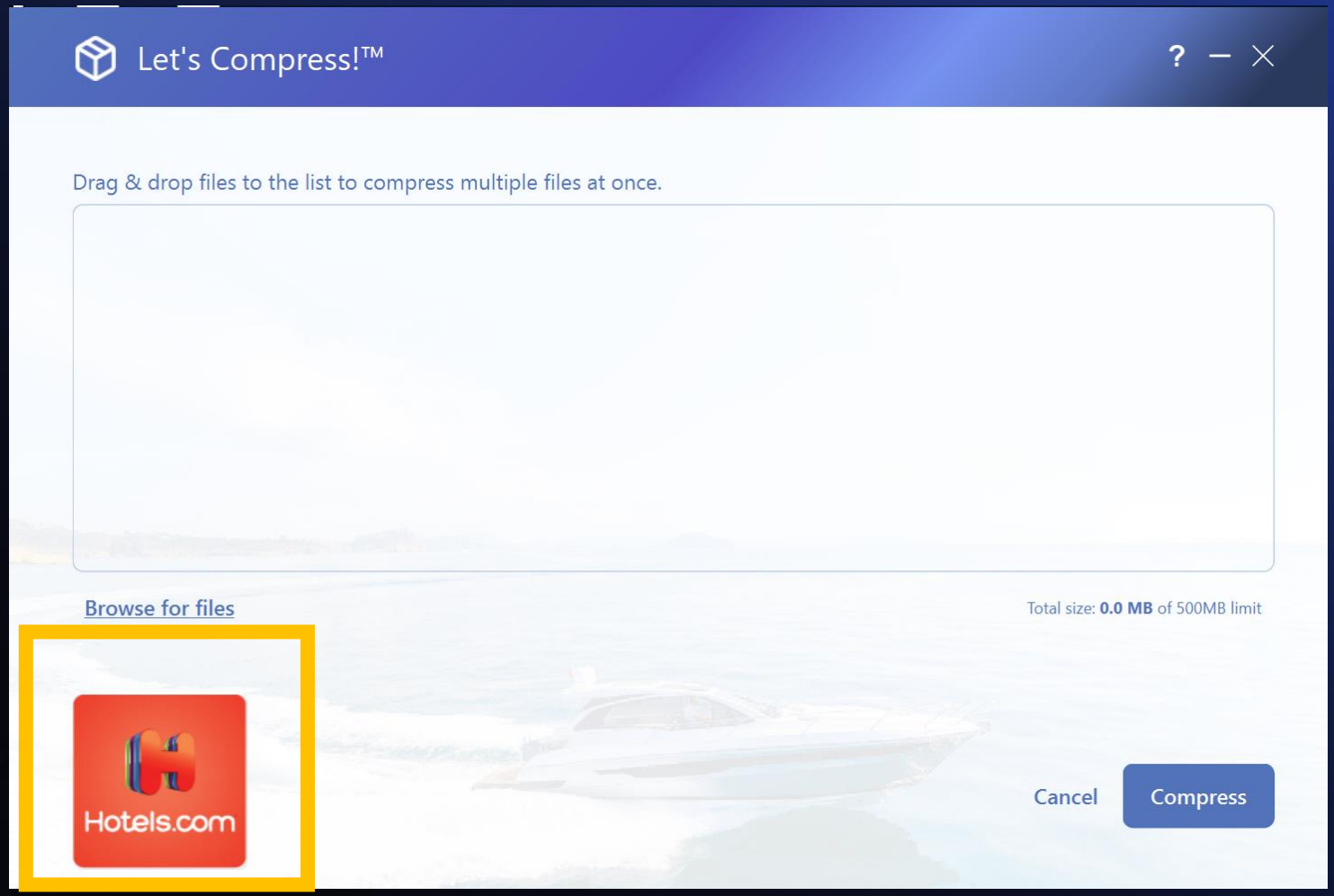
**RussianPanda** 🐼 🇺🇦 @RussianPanda9xx · 30 déc. 2024

Nice find as always 💙

You should tag me more 😊

1 3 284

# Software window




Sign of a PUA

# Is Let's Compress a PUA or a malware? What do you think?

It's a PUA, we start examining other clues

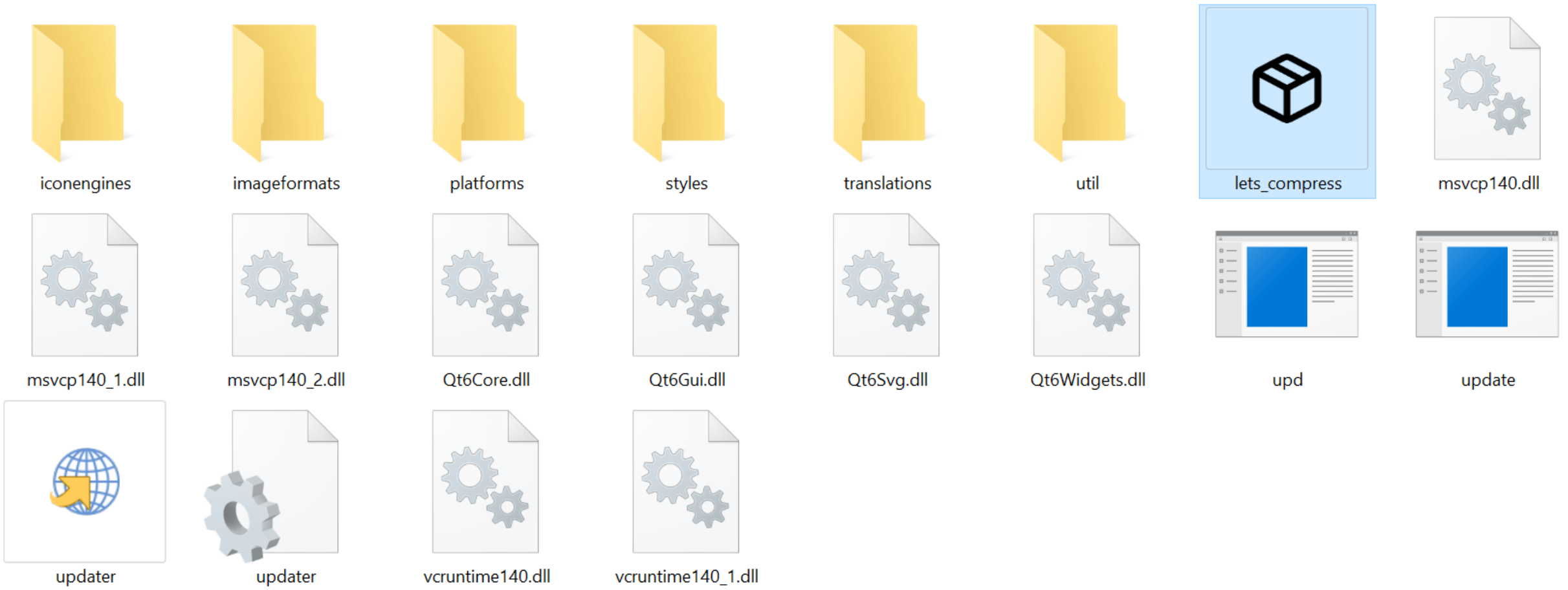
It's malware, we continue looking at it

**Communicating Files (10/11)**

| Name | Detections | Type | Communicated date |
|---|---|---|---|
| 0a6deb9496cf8fb61a78dd5f576296a8a15e54493f4... | | | |
| No meaningful names | 10 / 73 | Win32 EXE | 2024-09-03 19:51:23 UTC |
| peexe signed overlay detect-debug-environment ... | | | |

# Relations graph

# Folder contents




**Let's scan them for the domain name we saw!**

# Folder contents

```
rule decryptables {
strings:
    $s1 = "decryptables.com" ascii wide
condition:
    all of them
}
```

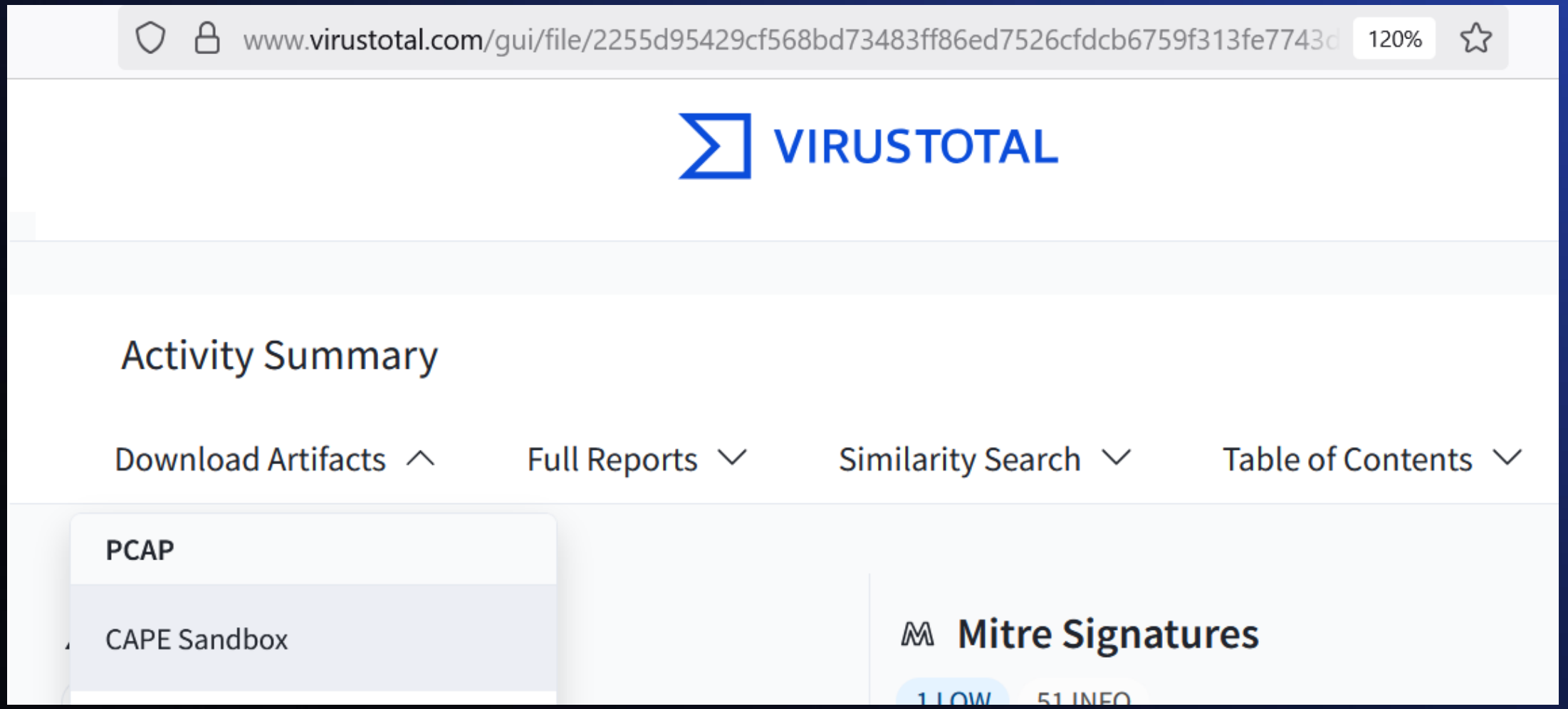
# Folder contents

```
rule decryptables {
strings:
    $s1 = "decryptables.com" ascii wide
condition:
    all of them
}
```

```
C:\Users\user\Desktop>yara64.exe decryptables.yara "C:\Users\user\AppData\Roaming\Let's Compress"
decryptables C:\Users\user\AppData\Roaming\Let's Compress\update.exe
```

**Found an executable named “update.exe”**

# Getting the PCAPs




## Download sandbox PCAP from VT

# Traffic analysis

```
  256 GET /letscompress_finish_install HTTP/1.1
  581 HTTP/1.1 200 OK
  239 GET /update.txt HTTP/1.1
 1098 HTTP/1.1 200 OK  (text/html)
  244 GET /starting_script HTTP/1.1
  581 HTTP/1.1 200 OK
  245 GET /script_succeeded HTTP/1.1
  206 GET /decrypt.zip HTTP/1.1
  581 HTTP/1.1 200 OK
```

**decrypt.zip in sight**

# Traffic analysis

```
[Update]
Name = Let's Compress
NoGUICommandLineSwitch = /exenoui /qn
ProductVersion = 1.4.2.0
URL = https://compressing-lets-3.com/lets_compress_390.exe
Size = 15338144
CommandLine = /qn
ServerFileName = Let's Compress.exe
Flags = NoCache|Advertises
RegistryKey = HKUD\Software\Let's Compress\Let's Compress\Ve
rsion
Version = 1.4.2.0
AdditionaaplAttributes=c=dXBkYXRlLmV4ZQ==
```

**Find an anomaly here**

# Traffic analysis

```
[Update]
Name = Let's Compress
NoGUICommandLineSwitch = /exenoui /qn
ProductVersion = 1.4.2.0
URL = https://compressing-lets-3.com/lets_compress_390.exe
Size = 15338144
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Flags = NoCache|Advertises
RegistryKey = HKUD\Software\Let's Compress\Let's Compress\Ve
rsion
Version = 1.4.2.0
AdditionaaplAttributes=c=dXBkYXRlLmV4ZQ==
```
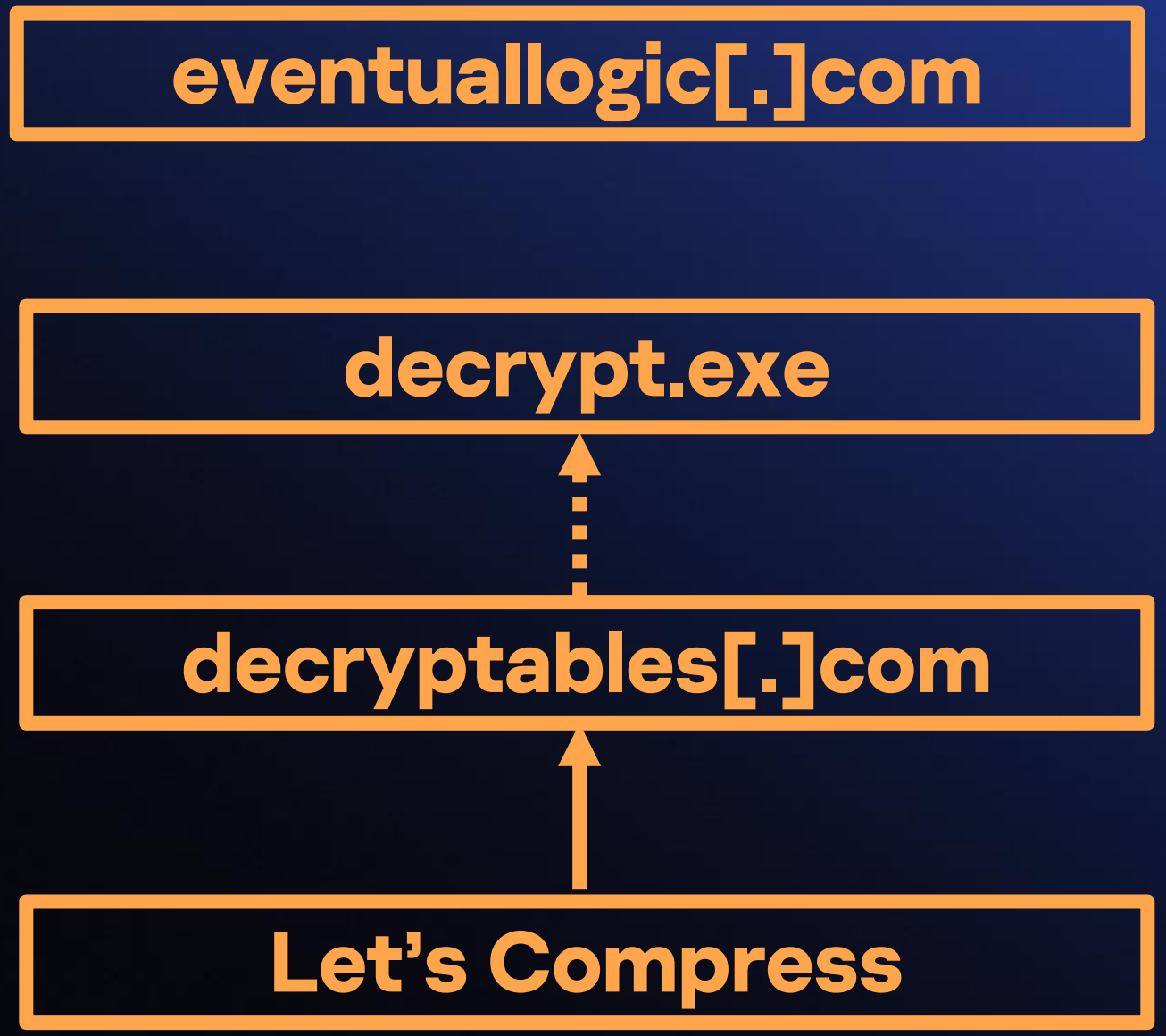
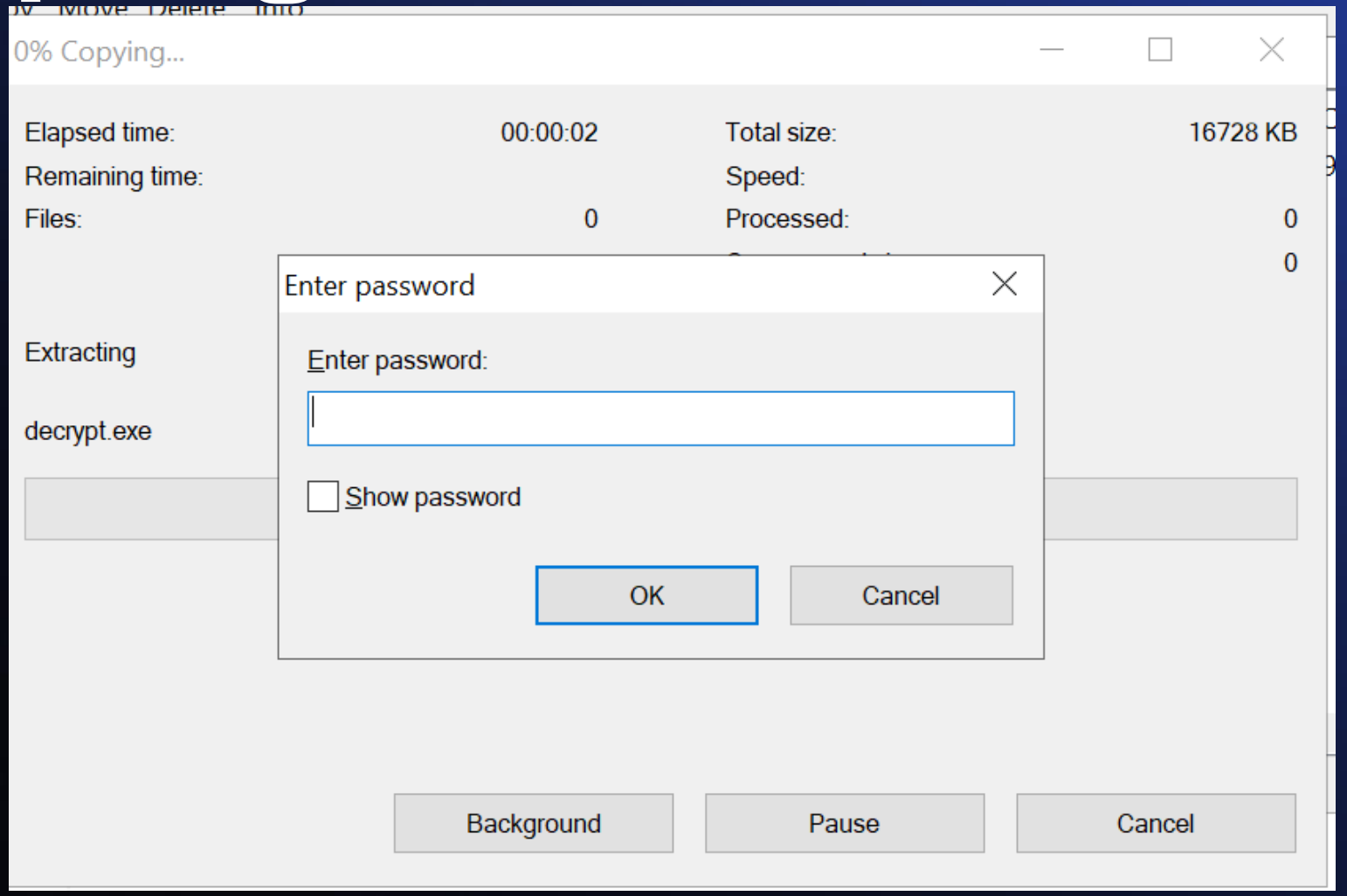

**Base64(“update.exe”)**

# Relations graph

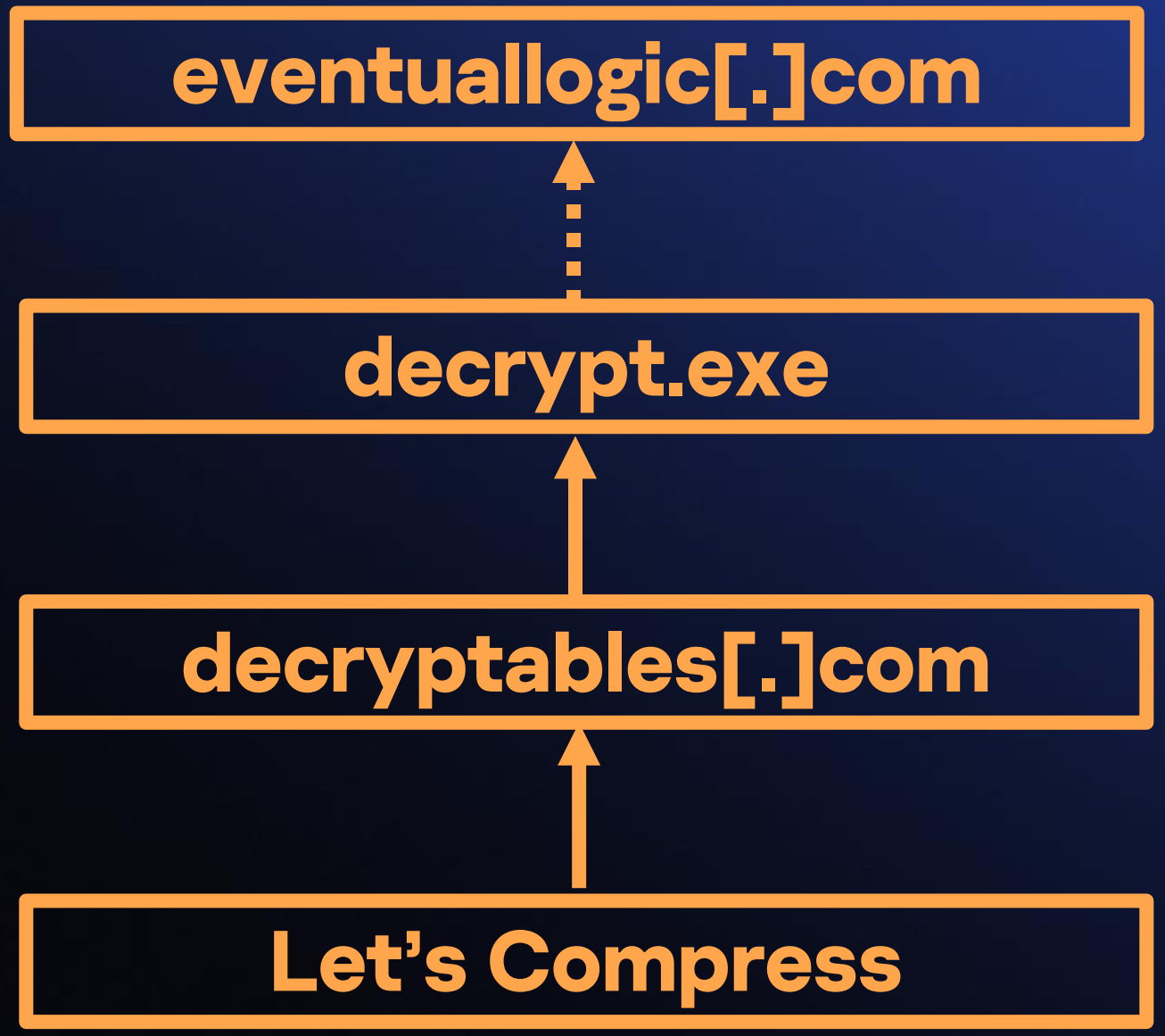


# Decrypting the archive

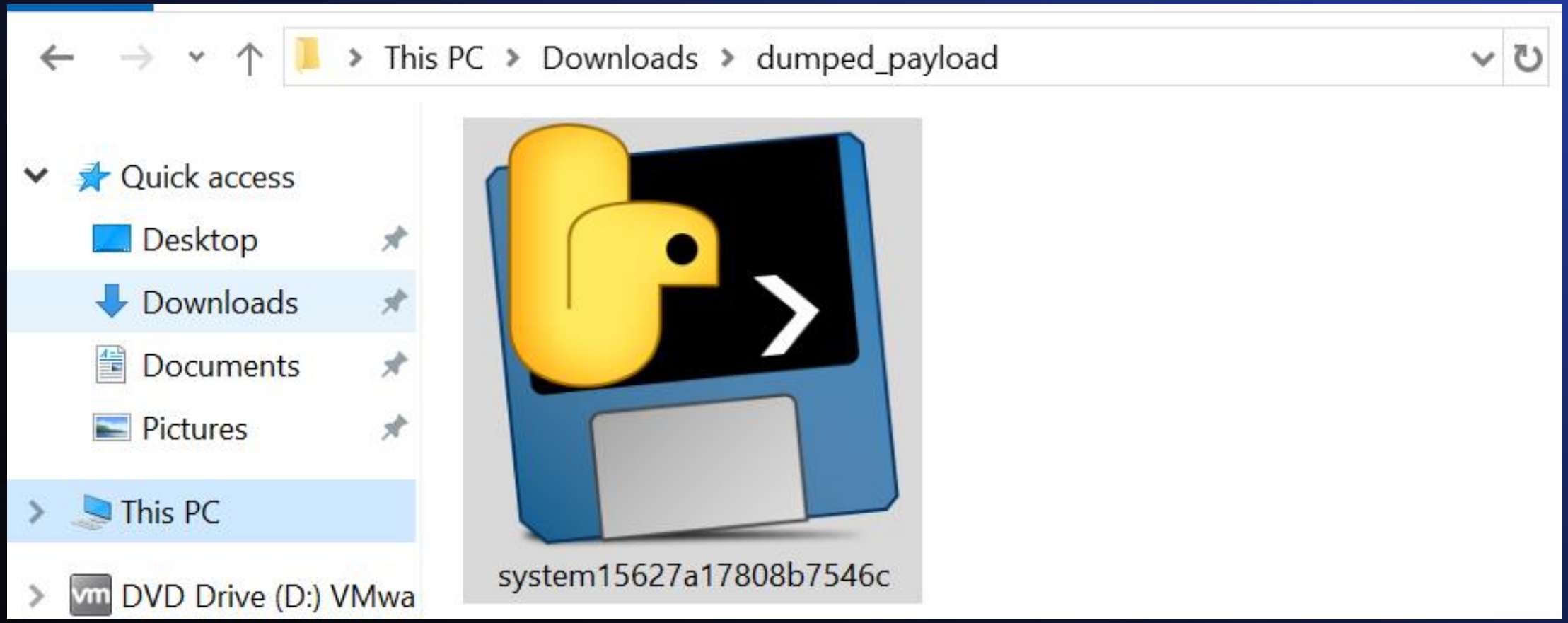



## What is the archive password?

# Relations graph



# Dumped file contents




## Python compiled file (PyInstaller)

# Python malware analysis

## Step 1: extract executable contents with the pyinstxtractor tool

# Python malware analysis

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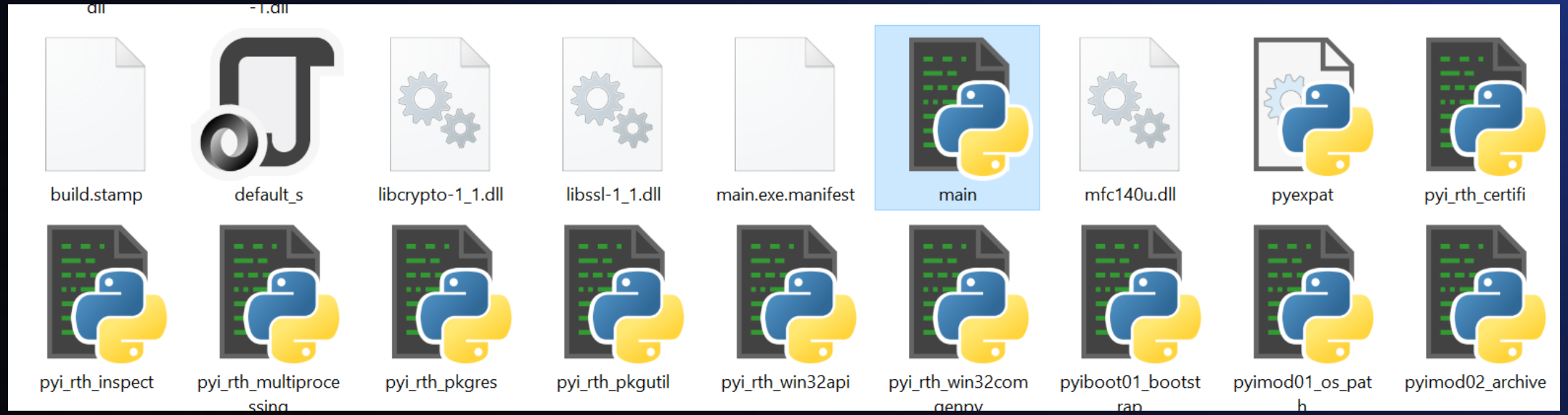


## Step outcome

# Python malware analysis

## Step 2: convert main.pyc to Python code

# Python malware analysis

## Step 2: convert main.pyc to Python code

```
C:\Users\user\Downloads\dumped_payload>uncompyle6 system15627a1780
8b7546c.exe_extracted\main.pyc
# uncompyle6 version 3.9.2
# Python bytecode version base 3.7.0 (3394)
# Decompiled from: Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 0
4:59:51) [MSC v.1914 64 bit (AMD64)]
# Embedded file name: dist\obf\main.py
from pytransform import pyarmor_runtime
pyarmor_runtime()
__pyarmor__(__name__, __file__, b'PYARMOR\x00\x00\x03\x07\x00B\r\r
```

## Step outcome: file is obfuscated

# Python malware analysis

## Step 3: deobfuscate file with bonedensity tool

# Python malware analysis

## Step 3: deobfuscate file with bonedensity tool

```
def main():
    global browser_whitelist
    events.set_active_browser('none')
    config = utils.config(True, **('check_hash',))
    if utils.is_cloud_mode():
        cloudconfig = None
```

## Step outcome: can read Python code

# Python malware analysis

```
def descramble_string(key, data):
    ret = ''.join((lambda .0: pass)(zip(data, cycle(key))))
    return ret
```

## Incorrect decompilation

# Python malware analysis

```
[Disassembly]
    0          LOAD_FAST                0: .0
    2          FOR_ITER                 30 (to 34)
    4          UNPACK_SEQUENCE          2
    6          STORE_FAST               1: c
    8          STORE_FAST               2: k
   10          LOAD_GLOBAL              0: chr
   12          LOAD_GLOBAL              1: ord
   14          LOAD_FAST                1: c
   16          CALL_FUNCTION            1
   18          LOAD_GLOBAL              1: ord
   20          LOAD_FAST                2: k
   22          CALL_FUNCTION            1
   24          BINARY_XOR
   26          CALL_FUNCTION            1
   28          YIELD_VALUE
   30          POP_TOP
   32          JUMP_ABSOLUTE            2
   34          LOAD_CONST               0: None
```

# Decrypted configuration

```
        "noconfighash",
        "cloud"
    ],
    "partner":
    {},
    "cloud_api": "https://www.eventuallogic.com",
    "token": "dfbe082364bf46b195d49915634886da",
    "if_platform":
    {
        "windows":
        {
```

# Outcome

## Objectives for today:

- Is the domain malicious?
- If so, what is the infection chain?
- If so, what is the malware type?

# Outcome

The eventuallogic[.]com domain name is malicious.

Infection chain: user downloads Let's Compress software with a malicious updater

Malicious capabilities: backdoor, infostealer

# Lessons learned

**Keep PUAs**
**out of your network.**

**They can deceive you**
**very easily.**

# Thank you!

Feedback form

My LinkedIn

https://linkedin.com/in/georgy-kucherin

My Twitter / X

https://x.com/kucher1n