code16

PIĄTEK, 3 CZERWCA 2022

Night fuzzing session - IdaPro 6.6 - part 2

Last time during one of the "Night Fuzzing Sessions" I found few bugs in IdaPro 6.6. I decided to continue this adventure but with a 'new approach'. So I changed my *input files*. ;) Below you will find the details about it. Here we go...

This time we'll start here:

IDA - The Interactive Disassembler

Version 6.6.140604 (32-bit)

(c) 2014 Hex-Rays SA

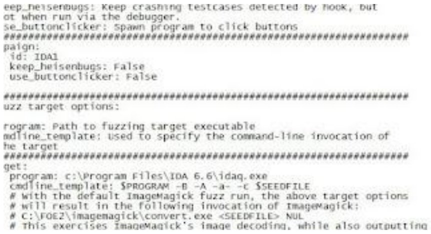
Just like during the previous part - I used similar environment (and settings for the FOE2 fuzzer) as I did before. Only thing I changed here was:

- run Kali VM and

- prepare 'payload/input file' using *msfvenom*.

If you're not familiar with *msfvenom* I will always recommend you to read the fantastic manual:

My goal was to prepare a "reverse shell" for various "platforms" (linux/bsd/macos and so on...) and run it in the same way I did before with IdaPro:



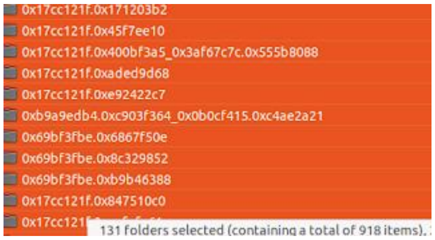
```
eep_heisenbugs: Keep crashing testcases detected by hook, but
ot when run via the debugger.
se_buttonclicker: Spawn program to click buttons
######################################################################
paign:
 id: IDA1
 keep_heisenbugs: False
 use_buttonclicker: False

######################################################################
uzz target options:

rogram: Path to fuzzing target executable
mdline_template: Used to specify the command-line invocation of
he target
######################################################################
get:
 program: c:\Program Files\IDA 6.6\idaq.exe
 cmdline_template: $PROGRAM -B -A -a- -c $SEEDFILE
 # With the default ImageMagick fuzz run, the above target options
 # will result in the following invocation of ImageMagick:
 # C:\FOE2\imagemagick\convert.exe <SEEDFILE> NUL
 # This exercises ImageMagick's image decoding, while also outputting
```

TL;DR:

After a while we should be somewhere here:



```
0x17cc121f.0x171203b2
0x17cc121f.0x45f7ee10
0x17cc121f.0x400bf3a5_0x3af67c7c.0x555b8088
0x17cc121f.0xaded9d68
0x17cc121f.0xe92422c7
0xb9a9edb4.0xc903f364_0x0b0cf415.0xc4ae2a21
0x69bf3fbe.0x6867f50e
0x69bf3fbe.0x8c329852
0x69bf3fbe.0xb9b46388
0x17cc121f.0x847510c0
0x17cc121
    131 folders selected (containing a total of 918 items), :
```

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Cody Sixteen

Wyświetl mój profil

ARCHIWUM BLOGA

- ▼ 2022 (16)
  - ► 09 (1)
  - ► 07 (3)
  - ▼ 06 (1)
    - Night fuzzing session - IdaPro 6.6 - part 2
  - ► 05 (1)
  - ► 04 (7)
  - ► 03 (1)
  - ► 02 (2)
- ► 2021 (37)
- ► 2020 (62)
- ► 2019 (97)
- ► 2018 (67)
- ► 2017 (58)
- ► 2016 (63)

ETYKIETY

- .net
- android
- binary
- crackme
- ctf
- debug
- docker
- drones
- enlil
- FortiGate
- fuzz
- infrastructure
- malware
- notes
- pentest
- poc

For example:

Case #01:

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```
(...)
Microsoft (R) Windows Debugger Version 6.11.0001.404 X86
Copyright (c) Microsoft Corporation. All rights reserved.

CommandLine: "C:\Program Files\IDA 6.6\idaq.exe" -B -A -a- -c C:\FOE2\fuzzdir\campaign_ijatnp\iteration_m_yrvq\foe-crash-l0mnvu\sf_0d75862d5d90166274cc61a363c74828-576.exe
(...)
Executable search path is:
ModLoad: 00090000 003a3000   idaq.exe
(...)
(12a0.1334): Access violation - code c0000005 (first chance)
First chance exceptions are reported before any exception handling.
This exception may be expected and handled.
eax=00000000 ebx=07de0ba8 ecx=00000007 edx=00000000 esi=02532fe8 edi=005bc114
eip=77559966 esp=005bbdf4 ebp=005bbdfc iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!memcpy+0x56:
77559966 8b448efc        mov     eax,dword ptr [esi+ecx*4-4] ds:0023:02533000=????????

0:000> r;r;!exploitable -v;kb;r;q
eax=00000000 ebx=07de0ba8 ecx=00000007 edx=00000000 esi=02532fe8 edi=005bc114
eip=77559966 esp=005bbdf4 ebp=005bbdfc iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!memcpy+0x56:
77559966 8b448efc        mov     eax,dword ptr [esi+ecx*4-4] ds:0023:02533000=????????
eax=00000000 ebx=07de0ba8 ecx=00000007 edx=00000000 esi=02532fe8 edi=005bc114
eip=77559966 esp=005bbdf4 ebp=005bbdfc iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!memcpy+0x56:
77559966 8b448efc        mov     eax,dword ptr [esi+ecx*4-4] ds:0023:02533000=????????

!exploitable 1.6.0.0
HostMachine\HostUser
Executing Processor Architecture is x86
Debuggee is in User Mode
Debuggee is a live user mode debugging session on the local machine
Event Type: Exception
Exception Faulting Address: 0x2533000
First Chance Exception Type: STATUS_ACCESS_VIOLATION (0xC0000005)
Exception Sub-Type: Read Access Violation

Faulting Instruction:77559966 mov eax,dword ptr [esi+ecx*4-4]

Basic Block:
    77559966 mov eax,dword ptr [esi+ecx*4-4]
       Tainted Input operands: 'ecx','esi'
    7755996a mov dword ptr [edi+ecx*4-4],eax
       Tainted Input operands: 'eax','ecx'
    7755996e lea eax,[ecx*4]
       Tainted Input operands: 'ecx'
    77559975 add esi,eax
       Tainted Input operands: 'eax','esi'
    77559977 add edi,eax
       Tainted Input operands: 'eax'
    77559979 jmp dword ptr msvcrt!memcpy+0xa8 (775599b8)[edx*4]

Exception Hash (Major/Minor): 0x17cc121f.0x62867b4b

 Hash Usage : Stack Trace:
Major+Minor : msvcrt!memcpy+0x56
Major+Minor : dbghelp!StackWalk64+0x1bba
Major+Minor : dbghelp!SymGetModuleInfoW64+0x549
Major+Minor : dbghelp!FindExecutableImage+0x80e
Major+Minor : dbghelp!StackWalk64+0x2a85
```

pwn
RE
web
writeup

```
Minor       : dbghelp!StackWalk64+0x2cff
Minor       : dbghelp!SymLoadModuleEx+0x44
Minor       : dbghelp!SymLoadModule64+0x23
Minor       : pdb+0x1a8d7
Minor       : IDA!run_plugin+0x3a
Minor       : dbg+0x8277
Minor       : dbg+0x9f2f
Minor       : SYSFER+0x45b1b
Minor       : SYSFER+0x45b1b
Minor       : SYSFER+0x45a1c
Minor       : idaq+0x70000
Minor       : idaq+0x70000
Minor       : idaq+0x70000
Minor       : dbg+0xa175
Instruction Address: 0x0000000077559966

Description: Data from Faulting Address controls subsequent Write Address
Short Description: TaintedDataControlsWriteAddress
Exploitability Classification: PROBABLY_EXPLOITABLE
Recommended Bug Title: Probably Exploitable - Data from Faulting Address controls subsequent Write Address starting at msvcrt!memcpy+0x0000000000000056 (Hash=0x17cc121f.0x62867b4b)

The data from the faulting address is later used as the target for a later write.
ChildEBP RetAddr  Args to Child
WARNING: Stack unwind information not available. Following frames may be wrong.
005bbdfc 66345b61 005bc114 02532fe8 0000001c msvcrt!memcpy+0x56
005bbe10 66341059 07de0ba8 00000000 02520000 dbghelp!StackWalk64+0x1bba
005bc1bc 66368036 07de0ba8 00000002 00000000 dbghelp!SymGetModuleInfoW64+0x549
005bc1d4 66346a2c 07de0ba8 3be9e1ee 00000000 dbghelp!FindExecutableImage+0x80e
005bc664 66346ca6 beeffeed 07ddb518 00400000 dbghelp!StackWalk64+0x2a85
005bcac8 66363a0e beeffeed 07ddb430 00000000 dbghelp!StackWalk64+0x2cff
005bcb28 66363aa4 beeffeed 00000000 07ddb430 dbghelp!SymLoadModuleEx+0x44
005bcb54 70cea8d7 beeffeed 00000000 02f74320 dbghelp!SymLoadModule64+0x23
005bcc28 66ad515a 00000001 00000010 03108d70 pdb+0x1a8d7
005bceb0 726a8277 03108d70 0000004a 00000001 IDA!run_plugin+0x3a
005bcee0 726a9f2f 66bff840 00000000 3bf980a6 dbg+0x8277
005bcf04 753d5b1b 00000006 753d5b1b 0000077f dbg+0x9f2f
005bcf0c 753d5b1b 0000077f 031596a0 3fe84430 SYSFER+0x45b1b
005bcf44 753d5a1c 00000006 3fe844c4 0000000f SYSFER+0x45b1b
005bcfc0 00100000 00001000 00000000 00000010 SYSFER+0x45a1c
005bd0b0 00100000 00001000 00100000 00001000 idaq+0x70000
005bd0b8 00100000 00001000 00000000 00000010 idaq+0x70000
005bd174 726aa175 66bff840 000000e8 031597c0 idaq+0x70000
00000000 00000000 00000000 00000000 00000000 dbg+0xa175
eax=00000000 ebx=07de0ba8 ecx=00000007 edx=00000000 esi=02532fe8 edi=005bc114
eip=77559966 esp=005bbdf4 ebp=005bbdfc iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!memcpy+0x56:
77559966 8b448efc        mov     eax,dword ptr [esi+ecx*4-4] ds:0023:02533000=????????
```

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Next case below.

Case #02:

---<cut>---

```
(...)

Microsoft (R) Windows Debugger Version 6.11.0001.404 X86
Copyright (c) Microsoft Corporation. All rights reserved.

CommandLine: "C:\Program Files\IDA 6.6\idaq.exe" -B -A -a- -c C:\FOE2\fuzzdir\campaign_ijatnp\iteration_uw_mli\foe-crash-reinn3\sf_0d75862d5d90166274cc61a363c74828-492.exe
(...)
Executable search path is:
ModLoad: 013c0000 016d3000   idaq.exe
(...)
```

```
(15a8.12b8): Access violation - code c0000005 (first chance)
First chance exceptions are reported before any exception handling.
This exception may be expected and handled.
eax=06bac1fc ebx=08250ba8 ecx=00000007 edx=00000000 esi=06bac1e0 edi=0025be54
eip=77559dbd esp=0025bb34 ebp=0025bb3c iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!malloc+0xcf:
77559dbd 8b448ee4        mov     eax,dword ptr [esi+ecx*4-1Ch] ds:0023:06bac1e0=????????

0:000> r;r;!exploitable -v;kb;r;q
eax=06bac1fc ebx=08250ba8 ecx=00000007 edx=00000000 esi=06bac1e0 edi=0025be54
eip=77559dbd esp=0025bb34 ebp=0025bb3c iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!malloc+0xcf:
77559dbd 8b448ee4        mov     eax,dword ptr [esi+ecx*4-1Ch] ds:0023:06bac1e0=????????
eax=06bac1fc ebx=08250ba8 ecx=00000007 edx=00000000 esi=06bac1e0 edi=0025be54
eip=77559dbd esp=0025bb34 ebp=0025bb3c iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!malloc+0xcf:
77559dbd 8b448ee4        mov     eax,dword ptr [esi+ecx*4-1Ch] ds:0023:06bac1e0=????????

!exploitable 1.6.0.0
HostMachine\HostUser
Executing Processor Architecture is x86
Debuggee is in User Mode
Debuggee is a live user mode debugging session on the local machine
Event Type: Exception
Exception Faulting Address: 0x6bac1e0
First Chance Exception Type: STATUS_ACCESS_VIOLATION (0xC0000005)
Exception Sub-Type: Read Access Violation

Faulting Instruction:77559dbd mov eax,dword ptr [esi+ecx*4-1ch]

Basic Block:
    77559dbd mov eax,dword ptr [esi+ecx*4-1ch]
       Tainted Input operands: 'ecx','esi'
    77559dc1 mov dword ptr [edi+ecx*4-1ch],eax
       Tainted Input operands: 'eax','ecx'
    77559dc5 jmp msvcrt!memset+0x8a (7755981a)

Exception Hash (Major/Minor): 0xa95bda97.0x1ca78871

 Hash Usage : Stack Trace:
Excluded    : msvcrt!malloc+0xcf
Major+Minor : dbghelp!StackWalk64+0x1bba
Major+Minor : dbghelp!SymGetModuleInfoW64+0x549
Major+Minor : dbghelp!FindExecutableImage+0x80e
Major+Minor : dbghelp!StackWalk64+0x2a85
Major+Minor : dbghelp!StackWalk64+0x2cff
Minor       : dbghelp!SymLoadModuleEx+0x44
Minor       : dbghelp!SymLoadModule64+0x23
Minor       : pdb+0x1a8d7
Minor       : IDA!run_plugin+0x3a
Minor       : dbg+0x8277
Minor       : dbg+0x9f2f
Minor       : SYSFER+0x45b1b
Minor       : SYSFER+0x45b1b
Minor       : SYSFER+0x45a1c
Instruction Address: 0x0000000077559dbd

Description: Data from Faulting Address controls subsequent Write Address
Short Description: TaintedDataControlsWriteAddress
Exploitability Classification: PROBABLY_EXPLOITABLE
Recommended Bug Title: Probably Exploitable - Data from Faulting Address controls subsequent Write Address starting at msvcrt!malloc+0x00000000000000cf called from
dbghelp!StackWalk64+0x0000000000001bba (Hash=0xa95bda97.0x1ca78871)

The data from the faulting address is later used as the target for a later write.
ChildEBP RetAddr  Args to Child
WARNING: Stack unwind information not available. Following frames may be wrong.
0025bb3c 679a5b61 0025be54 06bac1e0 0000001c msvcrt!malloc+0xcf
```

```
0025bb50 679a1059 08250ba8 00000000 06790000 dbghelp!StackWalk64+0x1bba
0025befc 679c8036 08250ba8 00000002 00000000 dbghelp!SymGetModuleInfoW64+0x549
0025bf14 679a6a2c 08250ba8 4794d435 00000000 dbghelp!FindExecutableImage+0x80e
0025c3a4 679a6ca6 beeffeed 0824b518 00400000 dbghelp!StackWalk64+0x2a85
0025c808 679c3a0e beeffeed 0824b430 00000000 dbghelp!StackWalk64+0x2cff
0025c868 679c3aa4 beeffeed 00000000 0824b430 dbghelp!SymLoadModuleEx+0x44
0025c894 6a26a8d7 beeffeed 00000000 033aa130 dbghelp!SymLoadModule64+0x23
0025c968 6677515a 00000001 00000010 03359768 pdb+0x1a8d7
0025cbf0 70ce8277 03359768 0000004a 00000001 IDA!run_plugin+0x3a
0025cc20 70ce9f2f 6689f840 00000000 4795787b dbg+0x8277
0025cc44 753d5b1b 00000006 753d5b1b fffffffe dbg+0x9f2f
0025cc4c 753d5b1b fffffffe 0333aa21 47653451 SYSFER+0x45b1b
0025cc84 753d5a1c 00000006 47653425 0000000f SYSFER+0x45b1b
0025ccfc 00000000 00100000 00001000 00000000 SYSFER+0x45a1c
eax=06bac1fc ebx=08250ba8 ecx=00000007 edx=00000000 esi=06bac1e0 edi=0025be54
eip=77559dbd esp=0025bb34 ebp=0025bb3c iopl=0         nv up ei ng nz ac pe cy
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010297
msvcrt!malloc+0xcf:
77559dbd 8b448ee4        mov     eax,dword ptr [esi+ecx*4-1Ch] ds:0023:06bac1e0=????????
```

---<cut>---

Another variant below.

Case #03:

---<cut>---

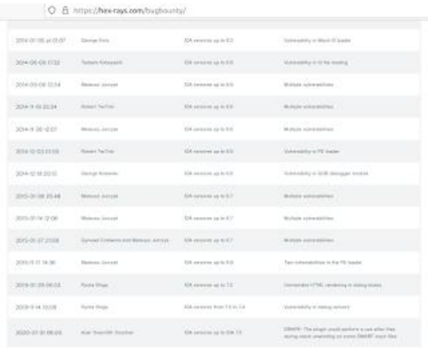
```
(...)
Microsoft (R) Windows Debugger Version 6.11.0001.404 X86
Copyright (c) Microsoft Corporation. All rights reserved.

CommandLine: "C:\Program Files\IDA 6.6\idaq.exe" -B -A -a- -c C:\FOE2\fuzzdir\campaign_egm_o8\iteration_j1fril\foe-crash-oxqtdm\sf_76ffd62a1f8250f56b56d8aa211b31a9-252
(...)
Executable search path is:
ModLoad: 000f0000 00403000   idaq.exe
(...)
ModLoad: 69020000 6904c000   C:\Program Files\IDA 6.6\loaders\macho.ldw
(1594.1f2c): Access violation - code c0000005 (first chance)
First chance exceptions are reported before any exception handling.
This exception may be expected and handled.
eax=03b8bba0 ebx=0a00001c ecx=02800007 edx=00000000 esi=f9b8bb84 edi=086a0020
eip=68ee1ed7 esp=0050d234 ebp=0050d23c iopl=0         nv up ei pl nz ac pe nc
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010216
MSVCR100!memcpy+0x57:
68ee1ed7 f3a5            rep movs dword ptr es:[edi],dword ptr [esi]

0:000> r;r;!exploitable -v;kb;r;q
eax=03b8bba0 ebx=0a00001c ecx=02800007 edx=00000000 esi=f9b8bb84 edi=086a0020
eip=68ee1ed7 esp=0050d234 ebp=0050d23c iopl=0         nv up ei pl nz ac pe nc
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010216
MSVCR100!memcpy+0x57:
68ee1ed7 f3a5            rep movs dword ptr es:[edi],dword ptr [esi]
eax=03b8bba0 ebx=0a00001c ecx=02800007 edx=00000000 esi=f9b8bb84 edi=086a0020
eip=68ee1ed7 esp=0050d234 ebp=0050d23c iopl=0         nv up ei pl nz ac pe nc
cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010216
MSVCR100!memcpy+0x57:
68ee1ed7 f3a5            rep movs dword ptr es:[edi],dword ptr [esi]

!exploitable 1.6.0.0
HostMachine\HostUser
Executing Processor Architecture is x86
Debuggee is in User Mode
Debuggee is a live user mode debugging session on the local machine
Event Type: Exception
Exception Faulting Address: 0xfffffffff9b8bb84
```

```
First Chance Exception Type: STATUS_ACCESS_VIOLATION (0xC0000005)

Exception Sub-Type: Read Access Violation


Faulting Instruction:68ee1ed7 rep movs dword ptr es:[edi],dword ptr [esi]


Exception Hash (Major/Minor): 0x37d7dcd9.0xba787c31


 Hash Usage : Stack Trace:

Major+Minor : MSVCR100!memcpy+0x57

Major+Minor : macho+0xd468

Major+Minor : macho+0x106e9

Instruction Address: 0x0000000068ee1ed7


Description: Read Access Violation on Block Data Move

Short Description: ReadAVonBlockMove

Exploitability Classification: PROBABLY_EXPLOITABLE

Recommended Bug Title: Probably Exploitable - Read Access Violation on Block Data Move starting at MSVCR100!memcpy+0x0000000000000057 (Hash=0x37d7dcd9.0xba787c31)


This is a read access violation in a block data move, and is therefore classified as probably exploitable.

ChildEBP RetAddr  Args to Child

WARNING: Stack unwind information not available. Following frames may be wrong.

0050d23c 6902d468 086a0020 f9b8bb84 0a00001c MSVCR100!memcpy+0x57

0050d26c 690306e9 f9b8bb84 0a00001c 6dc29131 macho+0xd468

00000000 00000000 00000000 00000000 00000000 macho+0x106e9

eax=03b8bba0 ebx=0a00001c ecx=02800007 edx=00000000 esi=f9b8bb84 edi=086a0020

eip=68ee1ed7 esp=0050d234 ebp=0050d23c iopl=0         nv up ei pl nz ac pe nc

cs=001b  ss=0023  ds=0023  es=0023  fs=003b  gs=0000             efl=00010216

MSVCR100!memcpy+0x57:

68ee1ed7 f3a5            rep movs dword ptr es:[edi],dword ptr [esi]
```

---<cut>---

I think it should be enough to start your own 'Night Fuzzing Session' ;)

"Probably" *nihil novi* here... ;>



https://hex-rays.com/bugbounty/

2014-01-06 at 01:07	[illegible]	IDA versions up to 6.5	Vulnerability in Mach-O loader
2014-06-06 17:32	Tadashi Kobayashi	IDA versions up to 6.6	Vulnerability in ID file loading
2014-09-08 12:34	Mateusz Jurczyk	IDA versions up to 6.6	Multiple vulnerabilities
2014-11-10 22:34	Robert Swiecki	IDA versions up to 6.6	Multiple vulnerabilities
2014-11-26 12:07	Mateusz Jurczyk	IDA versions up to 6.6	Multiple vulnerabilities
2014-12-03 23:09	Robert Swiecki	IDA versions up to 6.6	Vulnerability in PE loader
2014-12-18 20:12	[illegible]	IDA versions up to 6.6	Vulnerability in GDB debugger module
2015-01-08 20:48	Mateusz Jurczyk	IDA versions up to 6.7	Multiple vulnerabilities
2015-01-14 12:06	Mateusz Jurczyk	IDA versions up to 6.7	Multiple vulnerabilities
2015-01-27 21:08	Gynvael Coldwind and Mateusz Jurczyk	IDA versions up to 6.7	Multiple vulnerabilities
2015-11-11 14:36	Mateusz Jurczyk	IDA versions up to 6.8	Two vulnerabilities in the PE loader
2019-01-29 06:03	[illegible]	IDA versions up to 7.2	Unintended HTML rendering in dialog boxes
2019-11-14 10:08	[illegible]	IDA versions from 7.0 to 7.4	Vulnerability in debug servers
2020-01-01 06:00	[illegible]	IDA versions up to IDA 7.5	DWARF: The plugin could perform a use after free during stack unwinding on some DWARF input files

... "but" maybe you'll find it useful. ;)

If you'll have any questions or comments - feel free to ping me.

Have a nice weekend!

Cheers

Posted by code16 at 16:20

Labels: debug, fuzz, notes, RE, writeup

Brak komentarzy:

Prześlij komentarz

Wpisz komentarz

Nowszy post

Strona główna

Starszy post

Subskrybuj: Komentarze do posta (Atom)