Yacine Manseur

11/17/15

Operating Systems

Problem Set 8

**OUTPUT:**

Problem 2:

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ as --64 -o a.o problem2.S

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ld -m elf\_x86\_64 a.o

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ./a.out

Hello World.

Segmentation fault

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ strace ./a.out

execve("./a.out", ["./a.out"], [/\* 52 vars \*/]) = 0

write(1, "Hello World.\n", 13Hello World.

) = 13

--- SIGSEGV {si\_signo=SIGSEGV, si\_code=SI\_KERNEL, si\_addr=0} ---

+++ killed by SIGSEGV +++

Segmentation fault

Problem 3:

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ as --64 -o a.o problem3.S

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ld -m elf\_x86\_64 a.o

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ./a.out

Hello World.

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ strace ./a.out

execve("./a.out", ["./a.out"], [/\* 52 vars \*/]) = 0

write(1, "Hello World.\n", 13Hello World.

) = 13

\_exit(1) = ?

+++ exited with 1 +++

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ echo $?

1

Problem 4:

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ as --64 -o a.o problem4.S

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ld -m elf\_x86\_64 a.o

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ ./a.out

yacine@yacine-N53SV ~/Documents/OS/OS/PS8 $ strace ./a.out

execve("./a.out", ["./a.out"], [/\* 52 vars \*/]) = 0

write(1, 0x1, 13) = -1 EFAULT (Bad address)

\_exit(1) = ?

+++ exited with 1 +++

**APPENDIX:**

// Yacine Manseur

// Cooper Union Fall 2015

// ECE 357: Operating Systems

// Problem Set 8

// Problem 1

// hello.c

// gcc hello.c -o p1

// strace ./p1

#include <stdio.h>

int main(int argc, char \*argv[])

{

printf("Hello World.\n");

return 0;

}

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# Problem 2

# >as --64 -o a.o problem2.S

# >ld -m elf\_x86\_64 a.o

.global \_start

.text

\_start:

movq $1, %rax

movq $1, %rdi

movq $msg, %rsi

movq $len, %rdx

syscall

.data

msg:

.ascii "Hello World.\n"

len = . - msg

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# Problem 3

# >as --64 -o a.o problem3.S

# >ld -m elf\_x86\_64 a.o

# ANSWER TO THE QUESTION:

# After the write, a seg fault occurred.

# This is because there was no return

# value when the program exited.

.global \_start

.text

\_start:

movq $1, %rax

movq $1, %rdi

movq $msg, %rsi

movq $len, %rdx

syscall

movq $60, %rax

movq $1, %rdi

syscall

.data

msg:

.ascii "Hello World.\n"

len = . - msg

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# PS8

# Problem 4

# >as --64 -o a.o problem4.S

# >ld -m elf\_x86\_64 a.o

.global \_start

.text

\_start:

movq $1, %rax

movq $1, %rdi

movq $1, %rsi

movq $len, %rdx

syscall

movq $60, %rax

movq $1, %rdi

syscall

.data

msg:

.ascii "Hello World.\n"

len = . - msg