

OS 作業系統 HW2

資工碩一

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呂聖文

環境:Ubuntu 18.4

語言:C++

4.15(manager pid):

程式碼:HW2_4_15.cpp

執行檔:HW2_4-15.out

strace 檔:HW1-3.strace

執行結果:

我使用 `rand()%5` 隨機產出 0~4 秒 `sleep()` 後釋放 pid

```
bigdata@master:~/Desktop/OSPlace/HW2/HW2-4_15$ strace -o ./HW2_4_15.strace ./HW2_4_15.out
creat thread pid:300
creat thread pid:301
creat thread pid:302
creat thread pid:303
creat thread pid:304
release pid:303
creat thread pid:305
creat thread pid:303
release pid:305
creat thread pid:306
creat thread pid:305
creat thread pid:307
creat thread pid:308
creat thread pid:309
creat thread pid:310
release pid:310
creat thread pid:311
creat thread pid:310
creat thread pid:312
creat thread pid:313
creat thread pid:314
release pid:313
creat thread pid:315
creat thread pid:313
```

strace:

```
bigdata@master:~/Desktop/OSPlace/HW2/HW2-4_15$ cat HW2_4_15.strace
execve("./HW2_4_15.out", [ "./HW2_4_15.out" ], [ /* 68 vars */ ]) = 0
brk(NULL) = 0x134f000
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=89874, ...}) = 0
mmap(NULL, 89874, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f5fe455a000
close(3) = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/usr/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \235\10\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1566440, ...}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f5fe4559000
mmap(NULL, 3675136, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f5fe3fc9000
mprotect(0x7f5fe413b000, 2097152, PROT_NONE) = 0
mmap(0x7f5fe433b000, 49152, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x172000) = 0x7f5fe433b000
mmap(0x7f5fe4347000, 13312, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f5fe4347000
close(3) = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\260`\0\0\0\0\0"... , 83
```

4.19(multithread prime number):

程式碼:HW2_4_19.cpp(無 sleep)

執行檔: HW2_4_19.out

strace 檔:HW2_4_19.strace

執行結果:

Thread0 負責找出基數

Thread1 負責印出結果

```
bigdata@master:~/Desktop/OSPlace/HW2/HW2-4-19$ strace -o ./HW2_4_19.strace ./HW2_4_19.out
pls input the number:50
treadid0 found prime number:47
threadid1 print prime number:47
treadid0 found prime number:43
threadid1 print prime number:43
treadid0 found prime number:41
threadid1 print prime number:41
treadid0 found prime number:37
threadid1 print prime number:37
treadid0 found prime number:31
threadid1 print prime number:31
treadid0 found prime number:29
threadid1 print prime number:29
treadid0 found prime number:23
threadid1 print prime number:23
treadid0 found prime number:19
threadid1 print prime number:19
treadid0 found prime number:17
threadid1 print prime number:17
treadid0 found prime number:13
threadid1 print prime number:13
treadid0 found prime number:11
```

strace:

```
bigdata@master:~/Desktop/OSPlace/HW2/HW2-4-19$ cat HW2_4_19.strace
execve("./HW2_4_19.out", ["/HW2_4_19.out"], [/* 68 vars */]) = 0
brk(NULL) = 0x93d000
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=89874, ...}) = 0
mmap(NULL, 89874, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fead4821000
close(3) = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/usr/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \235\10\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1566440, ...}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fead4820000
mmap(NULL, 3675136, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fead4290000
mprotect(0x7fead4402000, 2097152, PROT_NONE) = 0
mmap(0x7fead4602000, 49152, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x172000) = 0x7fead4602000
mmap(0x7fead460e000, 13312, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fead460e000
```