**МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ  
ФЕДЕРАЦИИ МОСКОВСКИЙ АВИАЦИОННЫЙ ИНСТИТУТ  
(НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)**

**ЛАБОРАТОРНАЯ РАБОТА №1**

**по курсу операционные системы I семестр, 2021/22  
уч. год**

Студент: Белоусов Егор Владимирович

Группа: М8О-207Б-20

Преподаватель: Миронов Е. С.

Дата:

Оценка:

**Цель работы**

Приобретение практических навыков диагностики работы программного обеспечения.

**Задание**

При выполнении последующих лабораторных работ необходимо продемонстрировать ключевые системные вызовы, которые в них используются и то, что их использование соответствует варианту ЛР.

По итогам выполнения всех лабораторных работ отчет по данной должен содержать краткую сводку по исследованию последующих ЛР.

**Лабораторная работа 2.**

В данной лабораторной работе применяется множество системных вызовов: *fopen, dup2, fork, pipe, execl*. strace показал всю статистику по данным системным вызовам. Так же показана диагностика для дочернего процесса (при этом в начале строки указывается pid).

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab2$ strace -f ./parent << EOF*

*> out.txt*

*> 2 4*

*> 8 6*

*> 8 9*

*> 2 0*

*> 3 5*

*> EOF*

*execve("./parent", ["./parent"], 0x7ffd922c0228 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x55f9947de000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffea384ac70) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=34691, ...}) = 0*

*mmap(NULL, 34691, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f76dfc88000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f76dfc86000*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f76dfa94000*

*mprotect(0x7f76dfab9000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f76dfab9000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f76dfab9000*

*mmap(0x7f76dfc31000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f76dfc31000*

*mmap(0x7f76dfc7c000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f76dfc7c000*

*mmap(0x7f76dfc82000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f76dfc82000*

*close(3) = 0*

*arch\_prctl(ARCH\_SET\_FS, 0x7f76dfc87540) = 0*

*mprotect(0x7f76dfc7c000, 12288, PROT\_READ) = 0*

*mprotect(0x55f9946fc000, 4096, PROT\_READ) = 0*

*mprotect(0x7f76dfcbe000, 4096, PROT\_READ) = 0*

*munmap(0x7f76dfc88000, 34691) = 0*

*brk(NULL) = 0x55f9947de000*

*brk(0x55f9947ff000) = 0x55f9947ff000*

*fstat(0, {st\_mode=S\_IFREG|0400, st\_size=28, ...}) = 0*

*read(0, "out.txt\n2 4\n8 6\n8 9\n2 0\n3 5\n", 4096) = 28*

*pipe([3, 4]) = 0*

*pipe([5, 6]) = 0*

*clone(child\_stack=NULL, flags=CLONE\_CHILD\_CLEARTID|CLONE\_CHILD\_SETTID|SIGCHLDstrace: Process 2114 attached*

*, child\_tidptr=0x7f76dfc87810) = 2114*

*[pid 2114] close(5 <unfinished ...>*

*[pid 2113] write(4, "2", 1 <unfinished ...>*

*[pid 2114] <... close resumed>) = 0*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] close(4 <unfinished ...>*

*[pid 2113] write(4, " ", 1 <unfinished ...>*

*[pid 2114] <... close resumed>) = 0*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] dup2(6, 1 <unfinished ...>*

*[pid 2113] write(4, "4", 1 <unfinished ...>*

*[pid 2114] <... dup2 resumed>) = 1*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] close(6 <unfinished ...>*

*[pid 2113] write(4, "\n", 1 <unfinished ...>*

*[pid 2114] <... close resumed>) = 0*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] dup2(3, 0 <unfinished ...>*

*[pid 2113] write(4, "8", 1 <unfinished ...>*

*[pid 2114] <... dup2 resumed>) = 0*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] close(3 <unfinished ...>*

*[pid 2113] write(4, " ", 1 <unfinished ...>*

*[pid 2114] <... close resumed>) = 0*

*[pid 2113] <... write resumed>) = 1*

*[pid 2114] execve("child", ["child", "out.txt"], 0x7ffea384ad58 /\* 29 vars \*/ <unfinished ...>*

*[pid 2113] write(4, "6", 1) = 1*

*[pid 2113] write(4, "\n", 1) = 1*

*[pid 2113] write(4, "8", 1) = 1*

*[pid 2113] write(4, " ", 1) = 1*

*[pid 2113] write(4, "9", 1) = 1*

*[pid 2113] write(4, "\n", 1) = 1*

*[pid 2113] write(4, "2", 1) = 1*

*[pid 2113] write(4, " ", 1) = 1*

*[pid 2113] write(4, "0", 1) = 1*

*[pid 2113] write(4, "\n", 1) = 1*

*[pid 2113] write(4, "3", 1) = 1*

*[pid 2113] write(4, " ", 1) = 1*

*[pid 2113] write(4, "5", 1) = 1*

*[pid 2113] write(4, "\n", 1) = 1*

*[pid 2113] read(0, "", 4096) = 0*

*[pid 2113] close(4) = 0*

*[pid 2113] close(3) = 0*

*[pid 2113] close(6) = 0*

*[pid 2113] read(5, <unfinished ...>*

*[pid 2114] <... execve resumed>) = 0*

*[pid 2114] brk(NULL) = 0x556e001af000*

*[pid 2114] arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff189582f0) = -1 EINVAL (Invalid argument)*

*[pid 2114] access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*[pid 2114] openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2114] fstat(3, {st\_mode=S\_IFREG|0644, st\_size=34691, ...}) = 0*

*[pid 2114] mmap(NULL, 34691, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f57eed34000*

*[pid 2114] close(3) = 0*

*[pid 2114] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2114] read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0\0"..., 832) = 832*

*[pid 2114] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 2114] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 2114] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"..., 68, 880) = 68*

*[pid 2114] fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*[pid 2114] mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f57eed32000*

*[pid 2114] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 2114] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 2114] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"..., 68, 880) = 68*

*[pid 2114] mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f57eeb40000*

*[pid 2114] mprotect(0x7f57eeb65000, 1847296, PROT\_NONE) = 0*

*[pid 2114] mmap(0x7f57eeb65000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f57eeb65000*

*[pid 2114] mmap(0x7f57eecdd000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f57eecdd000*

*[pid 2114] mmap(0x7f57eed28000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f57eed28000*

*[pid 2114] mmap(0x7f57eed2e000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f57eed2e000*

*[pid 2114] close(3) = 0*

*[pid 2114] arch\_prctl(ARCH\_SET\_FS, 0x7f57eed33540) = 0*

*[pid 2114] mprotect(0x7f57eed28000, 12288, PROT\_READ) = 0*

*[pid 2114] mprotect(0x556dff77a000, 4096, PROT\_READ) = 0*

*[pid 2114] mprotect(0x7f57eed6a000, 4096, PROT\_READ) = 0*

*[pid 2114] munmap(0x7f57eed34000, 34691) = 0*

*[pid 2114] brk(NULL) = 0x556e001af000*

*[pid 2114] brk(0x556e001d0000) = 0x556e001d0000*

*[pid 2114] openat(AT\_FDCWD, "out.txt", O\_WRONLY|O\_CREAT|O\_TRUNC, 0666) = 3*

*[pid 2114] fstat(0, {st\_mode=S\_IFIFO|0600, st\_size=0, ...}) = 0*

*[pid 2114] read(0, "2 4\n8 6\n8 9\n2 0\n3 5\n", 4096) = 20*

*[pid 2114] fstat(3, {st\_mode=S\_IFREG|0777, st\_size=0, ...}) = 0*

*[pid 2114] fstat(1, {st\_mode=S\_IFIFO|0600, st\_size=0, ...}) = 0*

*[pid 2114] write(3, "0.500000\n1.333333\n0.888889\n", 27) = 27*

*[pid 2114] write(1, "Zero division!\n", 15 <unfinished ...>*

*[pid 2113] <... read resumed>"Z", 1) = 1*

*[pid 2114] <... write resumed>) = 15*

*[pid 2113] fstat(1, <unfinished ...>*

*[pid 2114] lseek(0, -4, SEEK\_CUR <unfinished ...>*

*[pid 2113] <... fstat resumed>{st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*[pid 2114] <... lseek resumed>) = -1 ESPIPE (Illegal seek)*

*[pid 2113] read(5, <unfinished ...>*

*[pid 2114] exit\_group(1 <unfinished ...>*

*[pid 2113] <... read resumed>"e", 1) = 1*

*[pid 2114] <... exit\_group resumed>) = ?*

*[pid 2113] read(5, "r", 1) = 1*

*[pid 2113] read(5, "o", 1) = 1*

*[pid 2113] read(5, " ", 1) = 1*

*[pid 2113] read(5, "d", 1) = 1*

*[pid 2113] read(5, "i", 1) = 1*

*[pid 2113] read(5, "v", 1) = 1*

*[pid 2113] read(5, "i", 1) = 1*

*[pid 2113] read(5, "s", 1) = 1*

*[pid 2114] +++ exited with 1 +++*

*--- SIGCHLD {si\_signo=SIGCHLD, si\_code=CLD\_EXITED, si\_pid=2114, si\_uid=1000, si\_status=1, si\_utime=0, si\_stime=0} ---*

*read(5, "i", 1) = 1*

*read(5, "o", 1) = 1*

*read(5, "n", 1) = 1*

*read(5, "!", 1) = 1*

*read(5, "\n", 1) = 1*

*write(1, "Zero division!\n", 15Zero division!*

*) = 15*

*read(5, "", 1) = 0*

*close(5) = 0*

*wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 1}], 0, NULL) = 2114*

*write(2, "Error in child process!\n", 24Error in child process!*

*) = 24*

*exit\_group(1) = ?*

*+++ exited with 1 +++*

Отдельно статистика по системным вызовам:

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab2$ strace -c ./parent << EOF*

*> out.txt*

*> 2 4*

*> 8 6*

*> 8 9*

*> 2 0*

*> 3 5*

*> EOF*

*Zero division!*

*Error in child process!*

*% time seconds usecs/call calls errors syscall*

*------ ----------- ----------- --------- --------- ----------------*

*0.00 0.000000 0 19 read*

*0.00 0.000000 0 22 write*

*0.00 0.000000 0 6 close*

*0.00 0.000000 0 4 fstat*

*0.00 0.000000 0 7 mmap*

*0.00 0.000000 0 4 mprotect*

*0.00 0.000000 0 1 munmap*

*0.00 0.000000 0 3 brk*

*0.00 0.000000 0 6 pread64*

*0.00 0.000000 0 1 1 access*

*0.00 0.000000 0 2 pipe*

*0.00 0.000000 0 1 clone*

*0.00 0.000000 0 1 execve*

*0.00 0.000000 0 1 wait4*

*0.00 0.000000 0 2 1 arch\_prctl*

*0.00 0.000000 0 2 openat*

*------ ----------- ----------- --------- --------- ----------------*

*100.00 0.000000 82 2 total*

**Лабораторная работа 3.**

В данной лабораторной работе нас больше всего интересуют системные вызовы, связанные с потоками.

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab3$ strace -f ./main 10 2*

*execve("./main", ["./main", "10", "2"], 0x7ffe98b236e8 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x558923f36000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffdbb26dc00) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=35431, ...}) = 0*

*mmap(NULL, 35431, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f85ec9ef000*

*close(3) = 0*

*openat(AT\_FDCWD, "/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\220\201\0\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f85ec9ed000*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f85ec9ca000*

*mmap(0x7f85ec9d1000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f85ec9d1000*

*mmap(0x7f85ec9e2000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f85ec9e2000*

*mmap(0x7f85ec9e7000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f85ec9e7000*

*mmap(0x7f85ec9e9000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f85ec9e9000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f85ec7d8000*

*mprotect(0x7f85ec7fd000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f85ec7fd000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f85ec7fd000*

*mmap(0x7f85ec975000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f85ec975000*

*mmap(0x7f85ec9c0000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f85ec9c0000*

*mmap(0x7f85ec9c6000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f85ec9c6000*

*close(3) = 0*

*mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f85ec7d5000*

*arch\_prctl(ARCH\_SET\_FS, 0x7f85ec7d5740) = 0*

*mprotect(0x7f85ec9c0000, 12288, PROT\_READ) = 0*

*mprotect(0x7f85ec9e7000, 4096, PROT\_READ) = 0*

*mprotect(0x558923423000, 4096, PROT\_READ) = 0*

*mprotect(0x7f85eca25000, 4096, PROT\_READ) = 0*

*munmap(0x7f85ec9ef000, 35431) = 0*

*set\_tid\_address(0x7f85ec7d5a10) = 722*

*set\_robust\_list(0x7f85ec7d5a20, 24) = 0*

*rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f85ec9d1bf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f85ec9df3c0}, NULL, 8) = 0*

*rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f85ec9d1c90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f85ec9df3c0}, NULL, 8) = 0*

*rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*brk(NULL) = 0x558923f36000*

*brk(0x558923f57000) = 0x558923f57000*

*fstat(0, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*read(0,*

*2 5 3 1 4 6 6 6 6 6 "\n", 1024) = 1*

*read(0,*

*"2 5 3 1 4 6 6 6 6 6 \n", 1024) = 21*

*mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f85ebfd4000*

*mprotect(0x7f85ebfd5000, 8388608, PROT\_READ|PROT\_WRITE) = 0*

*clone(child\_stack=0x7f85ec7d3fb0, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTIDstrace: Process 723 attached*

*, parent\_tid=[723], tls=0x7f85ec7d4700, child\_tidptr=0x7f85ec7d49d0) = 723*

*[pid 723] set\_robust\_list(0x7f85ec7d49e0, 24 <unfinished ...>*

*[pid 722] mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0 <unfinished ...>*

*[pid 723] <... set\_robust\_list resumed>) = 0*

*[pid 722] <... mmap resumed>) = 0x7f85eb7d3000*

*[pid 723] madvise(0x7f85ebfd4000, 8368128, MADV\_DONTNEED <unfinished ...>*

*[pid 722] mprotect(0x7f85eb7d4000, 8388608, PROT\_READ|PROT\_WRITE <unfinished ...>*

*[pid 723] <... madvise resumed>) = 0*

*[pid 722] <... mprotect resumed>) = 0*

*[pid 723] exit(0 <unfinished ...>*

*[pid 722] clone(child\_stack=0x7f85ebfd2fb0, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID <unfinished ...>*

*[pid 723] <... exit resumed>) = ?*

*strace: Process 724 attached*

*[pid 723] +++ exited with 0 +++*

*[pid 722] <... clone resumed>, parent\_tid=[724], tls=0x7f85ebfd3700, child\_tidptr=0x7f85ebfd39d0) = 724*

*[pid 724] set\_robust\_list(0x7f85ebfd39e0, 24 <unfinished ...>*

*[pid 722] futex(0x7f85ebfd39d0, FUTEX\_WAIT, 724, NULL <unfinished ...>*

*[pid 724] <... set\_robust\_list resumed>) = 0*

*[pid 724] madvise(0x7f85eb7d3000, 8368128, MADV\_DONTNEED) = 0*

*[pid 724] exit(0) = ?*

*[pid 722] <... futex resumed>) = 0*

*[pid 724] +++ exited with 0 +++*

*fstat(1, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*write(1, "Result is: 1\n", 13Result is: 1*

*) = 13*

*lseek(0, -2, SEEK\_CUR) = -1 ESPIPE (Illegal seek)*

*exit\_group(0) = ?*

*+++ exited with 0 +++*

**Лабораторная работа 4.**

Без деления на ноль:

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab4$ strace -f ./parent*

*execve("./parent", ["./parent"], 0x7ffc3f8cad88 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x55d60ad54000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffcc393a950) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=35431, ...}) = 0*

*mmap(NULL, 35431, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f6acf5e6000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/librt.so.1", 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 7\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=40040, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f6acf5e4000*

*mmap(NULL, 44000, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f6acf5d9000*

*mprotect(0x7f6acf5dc000, 24576, PROT\_NONE) = 0*

*mmap(0x7f6acf5dc000, 16384, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f6acf5dc000*

*mmap(0x7f6acf5e0000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f6acf5e0000*

*mmap(0x7f6acf5e2000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8000) = 0x7f6acf5e2000*

*close(3) = 0*

*openat(AT\_FDCWD, "/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\220\201\0\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f6acf5b6000*

*mmap(0x7f6acf5bd000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f6acf5bd000*

*mmap(0x7f6acf5ce000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f6acf5ce000*

*mmap(0x7f6acf5d3000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f6acf5d3000*

*mmap(0x7f6acf5d5000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f6acf5d5000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f6acf3c4000*

*mprotect(0x7f6acf3e9000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f6acf3e9000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f6acf3e9000*

*mmap(0x7f6acf561000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f6acf561000*

*mmap(0x7f6acf5ac000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f6acf5ac000*

*mmap(0x7f6acf5b2000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f6acf5b2000*

*close(3) = 0*

*mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f6acf3c1000*

*arch\_prctl(ARCH\_SET\_FS, 0x7f6acf3c1740) = 0*

*mprotect(0x7f6acf5ac000, 12288, PROT\_READ) = 0*

*mprotect(0x7f6acf5d3000, 4096, PROT\_READ) = 0*

*mprotect(0x7f6acf5e2000, 4096, PROT\_READ) = 0*

*mprotect(0x55d60a5de000, 4096, PROT\_READ) = 0*

*mprotect(0x7f6acf61c000, 4096, PROT\_READ) = 0*

*munmap(0x7f6acf5e6000, 35431) = 0*

*set\_tid\_address(0x7f6acf3c1a10) = 2207*

*set\_robust\_list(0x7f6acf3c1a20, 24) = 0*

*rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f6acf5bdbf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f6acf5cb3c0}, NULL, 8) = 0*

*rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f6acf5bdc90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f6acf5cb3c0}, NULL, 8) = 0*

*rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*brk(NULL) = 0x55d60ad54000*

*brk(0x55d60ad75000) = 0x55d60ad75000*

*fstat(0, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*read(0, out.txt*

*"out.txt\n", 1024) = 8*

*statfs("/dev/shm/", {f\_type=TMPFS\_MAGIC, f\_bsize=4096, f\_blocks=702382, f\_bfree=702378, f\_bavail=702378, f\_files=702382, f\_ffree=702377, f\_fsid={val=[0, 0]}, f\_namelen=255, f\_frsize=4096, f\_flags=ST\_VALID|ST\_NOSUID|ST\_NODEV|ST\_NOATIME}) = 0*

*futex(0x7f6acf5d8390, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*openat(AT\_FDCWD, "/dev/shm/input.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 3*

*openat(AT\_FDCWD, "/dev/shm/error.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 4*

*ftruncate(3, 4096) = 0*

*ftruncate(4, 4096) = 0*

*mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 3, 0) = 0x7f6acf61b000*

*mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 4, 0) = 0x7f6acf5ee000*

*openat(AT\_FDCWD, "/dev/shm/sem.input.semaphore", O\_RDWR|O\_NOFOLLOW) = 5*

*fstat(5, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f6acf5ed000*

*close(5) = 0*

*openat(AT\_FDCWD, "/dev/shm/sem.error.semaphore", O\_RDWR|O\_NOFOLLOW) = 5*

*fstat(5, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f6acf5ec000*

*close(5) = 0*

*clone(child\_stack=NULL, flags=CLONE\_CHILD\_CLEARTID|CLONE\_CHILD\_SETTID|SIGCHLDstrace: Process 2211 attached*

*, child\_tidptr=0x7f6acf3c1a10) = 2211*

*[pid 2211] set\_robust\_list(0x7f6acf3c1a20, 24 <unfinished ...>*

*[pid 2207] read(0, <unfinished ...>*

*[pid 2211] <... set\_robust\_list resumed>) = 0*

*[pid 2211] munmap(0x7f6acf5ed000, 32) = 0*

*[pid 2211] munmap(0x7f6acf5ec000, 32) = 0*

*[pid 2211] munmap(0x7f6acf61b000, 4096) = 0*

*[pid 2211] munmap(0x7f6acf5ee000, 4096) = 0*

*[pid 2211] execve("child", ["child", "out.txt"], 0x7ffcc393aa38 /\* 29 vars \*/) = 0*

*[pid 2211] brk(NULL) = 0x555adce51000*

*[pid 2211] arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffe7e6ca870) = -1 EINVAL (Invalid argument)*

*[pid 2211] access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*[pid 2211] openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2211] fstat(3, {st\_mode=S\_IFREG|0644, st\_size=35431, ...}) = 0*

*[pid 2211] mmap(NULL, 35431, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f828f884000*

*[pid 2211] close(3) = 0*

*[pid 2211] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/librt.so.1", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2211] read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 7\0\0\0\0\0\0"..., 832) = 832*

*[pid 2211] fstat(3, {st\_mode=S\_IFREG|0644, st\_size=40040, ...}) = 0*

*[pid 2211] mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f828f882000*

*[pid 2211] mmap(NULL, 44000, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f828f877000*

*[pid 2211] mprotect(0x7f828f87a000, 24576, PROT\_NONE) = 0*

*[pid 2211] mmap(0x7f828f87a000, 16384, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f828f87a000*

*[pid 2211] mmap(0x7f828f87e000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f828f87e000*

*[pid 2211] mmap(0x7f828f880000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8000) = 0x7f828f880000*

*[pid 2211] close(3) = 0*

*[pid 2211] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libpthread.so.0", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2211] read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\201\0\0\0\0\0\0"..., 832) = 832*

*[pid 2211] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*[pid 2211] fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*[pid 2211] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*[pid 2211] mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f828f854000*

*[pid 2211] mmap(0x7f828f85b000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f828f85b000*

*[pid 2211] mmap(0x7f828f86c000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f828f86c000*

*[pid 2211] mmap(0x7f828f871000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f828f871000*

*[pid 2211] mmap(0x7f828f873000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f828f873000*

*[pid 2211] close(3) = 0*

*[pid 2211] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 2211] read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0\0"..., 832) = 832*

*[pid 2211] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 2211] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 2211] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*[pid 2211] fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*[pid 2211] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 2211] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 2211] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*[pid 2211] mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f828f662000*

*[pid 2211] mprotect(0x7f828f687000, 1847296, PROT\_NONE) = 0*

*[pid 2211] mmap(0x7f828f687000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f828f687000*

*[pid 2211] mmap(0x7f828f7ff000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f828f7ff000*

*[pid 2211] mmap(0x7f828f84a000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f828f84a000*

*[pid 2211] mmap(0x7f828f850000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f828f850000*

*[pid 2211] close(3) = 0*

*[pid 2211] mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f828f65f000*

*[pid 2211] arch\_prctl(ARCH\_SET\_FS, 0x7f828f65f740) = 0*

*[pid 2211] mprotect(0x7f828f84a000, 12288, PROT\_READ) = 0*

*[pid 2211] mprotect(0x7f828f871000, 4096, PROT\_READ) = 0*

*[pid 2211] mprotect(0x7f828f880000, 4096, PROT\_READ) = 0*

*[pid 2211] mprotect(0x555adb08c000, 4096, PROT\_READ) = 0*

*[pid 2211] mprotect(0x7f828f8ba000, 4096, PROT\_READ) = 0*

*[pid 2211] munmap(0x7f828f884000, 35431) = 0*

*[pid 2211] set\_tid\_address(0x7f828f65fa10) = 2211*

*[pid 2211] set\_robust\_list(0x7f828f65fa20, 24) = 0*

*[pid 2211] rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f828f85bbf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f828f8693c0}, NULL, 8) = 0*

*[pid 2211] rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f828f85bc90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f828f8693c0}, NULL, 8) = 0*

*[pid 2211] rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*[pid 2211] prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*[pid 2211] statfs("/dev/shm/", {f\_type=TMPFS\_MAGIC, f\_bsize=4096, f\_blocks=702382, f\_bfree=702378, f\_bavail=702378, f\_files=702382, f\_ffree=702377, f\_fsid={val=[0, 0]}, f\_namelen=255, f\_frsize=4096, f\_flags=ST\_VALID|ST\_NOSUID|ST\_NODEV|ST\_NOATIME}) = 0*

*[pid 2211] futex(0x7f828f876390, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*[pid 2211] openat(AT\_FDCWD, "/dev/shm/error.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 3*

*[pid 2211] mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 3, 0) = 0x7f828f8b9000*

*[pid 2211] openat(AT\_FDCWD, "/dev/shm/sem.error.semaphore", O\_RDWR|O\_NOFOLLOW) = 4*

*[pid 2211] fstat(4, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*[pid 2211] brk(NULL) = 0x555adce51000*

*[pid 2211] brk(0x555adce72000) = 0x555adce72000*

*[pid 2211] mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 4, 0) = 0x7f828f88c000*

*[pid 2211] close(4) = 0*

*[pid 2211] ftruncate(3, 4096) = 0*

*[pid 2211] openat(AT\_FDCWD, "out.txt", O\_WRONLY|O\_CREAT|O\_TRUNC, 0666) = 4*

*[pid 2211] openat(AT\_FDCWD, "/dev/shm/input.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 5*

*[pid 2211] ftruncate(5, 4096) = 0*

*[pid 2211] mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f828f88b000*

*[pid 2211] openat(AT\_FDCWD, "/dev/shm/sem.input.semaphore", O\_RDWR|O\_NOFOLLOW) = 6*

*[pid 2211] fstat(6, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*[pid 2211] mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 6, 0) = 0x7f828f88a000*

*[pid 2211] close(6) = 0*

*1 2 3*

*[pid 2207] <... read resumed>"1 2 3\n", 1024) = 6*

*[pid 2207] read(0, <unfinished ...>*

*[pid 2211] futex(0x7f828f88a000, FUTEX\_WAKE, 1) = 0*

*[pid 2211] fstat(4, {st\_mode=S\_IFREG|0777, st\_size=0, ...}) = 0*

*4 5 6*

*[pid 2207] <... read resumed>"4 5 6\n", 1024) = 6*

*[pid 2207] read(0, 2 3*

*"2 3\n", 1024) = 4*

*[pid 2207] read(0, "", 1024) = 0*

*[pid 2207] wait4(-1, <unfinished ...>*

*[pid 2211] munmap(0x7f828f88a000, 32) = 0*

*[pid 2211] munmap(0x7f828f88c000, 32) = 0*

*[pid 2211] munmap(0x7f828f8b9000, 4096) = 0*

*[pid 2211] munmap(0x7f828f88b000, 4096) = 0*

*[pid 2211] write(4, "0.166667\n0.133333\n0.666667\n", 27) = 27*

*[pid 2211] close(4) = 0*

*[pid 2211] exit\_group(0) = ?*

*[pid 2211] +++ exited with 0 +++*

*<... wait4 resumed>[{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 2211*

*--- SIGCHLD {si\_signo=SIGCHLD, si\_code=CLD\_EXITED, si\_pid=2211, si\_uid=1000, si\_status=0, si\_utime=466, si\_stime=1} ---*

*munmap(0x7f6acf5ee000, 4096) = 0*

*munmap(0x7f6acf61b000, 4096) = 0*

*munmap(0x7f6acf5ed000, 32) = 0*

*munmap(0x7f6acf5ec000, 32) = 0*

*exit\_group(0) = ?*

*+++ exited with 0 +++*

В случае, если происходит деление на 0.

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab4$ strace -f ./parent*

*execve("./parent", ["./parent"], 0x7fff494c32a8 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x561c78747000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffc8cba74e0) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=35431, ...}) = 0*

*mmap(NULL, 35431, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f898d27e000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/librt.so.1", 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 7\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=40040, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f898d27c000*

*mmap(NULL, 44000, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f898d271000*

*mprotect(0x7f898d274000, 24576, PROT\_NONE) = 0*

*mmap(0x7f898d274000, 16384, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f898d274000*

*mmap(0x7f898d278000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f898d278000*

*mmap(0x7f898d27a000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8000) = 0x7f898d27a000*

*close(3) = 0*

*openat(AT\_FDCWD, "/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\220\201\0\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f898d24e000*

*mmap(0x7f898d255000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f898d255000*

*mmap(0x7f898d266000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f898d266000*

*mmap(0x7f898d26b000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f898d26b000*

*mmap(0x7f898d26d000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f898d26d000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f898d05c000*

*mprotect(0x7f898d081000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f898d081000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f898d081000*

*mmap(0x7f898d1f9000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f898d1f9000*

*mmap(0x7f898d244000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f898d244000*

*mmap(0x7f898d24a000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f898d24a000*

*close(3) = 0*

*mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f898d059000*

*arch\_prctl(ARCH\_SET\_FS, 0x7f898d059740) = 0*

*mprotect(0x7f898d244000, 12288, PROT\_READ) = 0*

*mprotect(0x7f898d26b000, 4096, PROT\_READ) = 0*

*mprotect(0x7f898d27a000, 4096, PROT\_READ) = 0*

*mprotect(0x561c78431000, 4096, PROT\_READ) = 0*

*mprotect(0x7f898d2b4000, 4096, PROT\_READ) = 0*

*munmap(0x7f898d27e000, 35431) = 0*

*set\_tid\_address(0x7f898d059a10) = 3044*

*set\_robust\_list(0x7f898d059a20, 24) = 0*

*rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f898d255bf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f898d2633c0}, NULL, 8) = 0*

*rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f898d255c90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f898d2633c0}, NULL, 8) = 0*

*rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*brk(NULL) = 0x561c78747000*

*brk(0x561c78768000) = 0x561c78768000*

*fstat(0, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*read(0, out.txt*

*"out.txt\n", 1024) = 8*

*statfs("/dev/shm/", {f\_type=TMPFS\_MAGIC, f\_bsize=4096, f\_blocks=702382, f\_bfree=702378, f\_bavail=702378, f\_files=702382, f\_ffree=702377, f\_fsid={val=[0, 0]}, f\_namelen=255, f\_frsize=4096, f\_flags=ST\_VALID|ST\_NOSUID|ST\_NODEV|ST\_NOATIME}) = 0*

*futex(0x7f898d270390, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*openat(AT\_FDCWD, "/dev/shm/input.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 3*

*openat(AT\_FDCWD, "/dev/shm/error.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 4*

*ftruncate(3, 4096) = 0*

*ftruncate(4, 4096) = 0*

*mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 3, 0) = 0x7f898d2b3000*

*mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 4, 0) = 0x7f898d286000*

*openat(AT\_FDCWD, "/dev/shm/sem.input.semaphore", O\_RDWR|O\_NOFOLLOW) = 5*

*fstat(5, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f898d285000*

*close(5) = 0*

*openat(AT\_FDCWD, "/dev/shm/sem.error.semaphore", O\_RDWR|O\_NOFOLLOW) = 5*

*fstat(5, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f898d284000*

*close(5) = 0*

*clone(child\_stack=NULL, flags=CLONE\_CHILD\_CLEARTID|CLONE\_CHILD\_SETTID|SIGCHLDstrace: Process 3048 attached*

*, child\_tidptr=0x7f898d059a10) = 3048*

*[pid 3048] set\_robust\_list(0x7f898d059a20, 24 <unfinished ...>*

*[pid 3044] read(0, <unfinished ...>*

*[pid 3048] <... set\_robust\_list resumed>) = 0*

*[pid 3048] munmap(0x7f898d285000, 32) = 0*

*[pid 3048] munmap(0x7f898d284000, 32) = 0*

*[pid 3048] munmap(0x7f898d2b3000, 4096) = 0*

*[pid 3048] munmap(0x7f898d286000, 4096) = 0*

*[pid 3048] execve("child", ["child", "out.txt"], 0x7ffc8cba75c8 /\* 29 vars \*/) = 0*

*[pid 3048] brk(NULL) = 0x5599be591000*

*[pid 3048] arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff92d7a520) = -1 EINVAL (Invalid argument)*

*[pid 3048] access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*[pid 3048] openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 3048] fstat(3, {st\_mode=S\_IFREG|0644, st\_size=35431, ...}) = 0*

*[pid 3048] mmap(NULL, 35431, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f8597fd8000*

*[pid 3048] close(3) = 0*

*[pid 3048] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/librt.so.1", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 3048] read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 7\0\0\0\0\0\0"..., 832) = 832*

*[pid 3048] fstat(3, {st\_mode=S\_IFREG|0644, st\_size=40040, ...}) = 0*

*[pid 3048] mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f8597fd6000*

*[pid 3048] mmap(NULL, 44000, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f8597fcb000*

*[pid 3048] mprotect(0x7f8597fce000, 24576, PROT\_NONE) = 0*

*[pid 3048] mmap(0x7f8597fce000, 16384, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f8597fce000*

*[pid 3048] mmap(0x7f8597fd2000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f8597fd2000*

*[pid 3048] mmap(0x7f8597fd4000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8000) = 0x7f8597fd4000*

*[pid 3048] close(3) = 0*

*[pid 3048] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libpthread.so.0", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 3048] read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\201\0\0\0\0\0\0"..., 832) = 832*

*[pid 3048] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*[pid 3048] fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*[pid 3048] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*[pid 3048] mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f8597fa8000*

*[pid 3048] mmap(0x7f8597faf000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f8597faf000*

*[pid 3048] mmap(0x7f8597fc0000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f8597fc0000*

*[pid 3048] mmap(0x7f8597fc5000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f8597fc5000*

*[pid 3048] mmap(0x7f8597fc7000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f8597fc7000*

*[pid 3048] close(3) = 0*

*[pid 3048] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 3*

*[pid 3048] read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0\0"..., 832) = 832*

*[pid 3048] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 3048] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 3048] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*[pid 3048] fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*[pid 3048] pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*[pid 3048] pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*[pid 3048] pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*[pid 3048] mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f8597db6000*

*[pid 3048] mprotect(0x7f8597ddb000, 1847296, PROT\_NONE) = 0*

*[pid 3048] mmap(0x7f8597ddb000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f8597ddb000*

*[pid 3048] mmap(0x7f8597f53000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f8597f53000*

*[pid 3048] mmap(0x7f8597f9e000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f8597f9e000*

*[pid 3048] mmap(0x7f8597fa4000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f8597fa4000*

*[pid 3048] close(3) = 0*

*[pid 3048] mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f8597db3000*

*[pid 3048] arch\_prctl(ARCH\_SET\_FS, 0x7f8597db3740) = 0*

*[pid 3048] mprotect(0x7f8597f9e000, 12288, PROT\_READ) = 0*

*[pid 3048] mprotect(0x7f8597fc5000, 4096, PROT\_READ) = 0*

*[pid 3048] mprotect(0x7f8597fd4000, 4096, PROT\_READ) = 0*

*[pid 3048] mprotect(0x5599bd285000, 4096, PROT\_READ) = 0*

*[pid 3048] mprotect(0x7f859800e000, 4096, PROT\_READ) = 0*

*[pid 3048] munmap(0x7f8597fd8000, 35431) = 0*

*[pid 3048] set\_tid\_address(0x7f8597db3a10) = 3048*

*[pid 3048] set\_robust\_list(0x7f8597db3a20, 24) = 0*

*[pid 3048] rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f8597fafbf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f8597fbd3c0}, NULL, 8) = 0*

*[pid 3048] rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f8597fafc90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f8597fbd3c0}, NULL, 8) = 0*

*[pid 3048] rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*[pid 3048] prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*[pid 3048] statfs("/dev/shm/", {f\_type=TMPFS\_MAGIC, f\_bsize=4096, f\_blocks=702382, f\_bfree=702378, f\_bavail=702378, f\_files=702382, f\_ffree=702377, f\_fsid={val=[0, 0]}, f\_namelen=255, f\_frsize=4096, f\_flags=ST\_VALID|ST\_NOSUID|ST\_NODEV|ST\_NOATIME}) = 0*

*[pid 3048] futex(0x7f8597fca390, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*[pid 3048] openat(AT\_FDCWD, "/dev/shm/error.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 3*

*[pid 3048] mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 3, 0) = 0x7f859800d000*

*[pid 3048] openat(AT\_FDCWD, "/dev/shm/sem.error.semaphore", O\_RDWR|O\_NOFOLLOW) = 4*

*[pid 3048] fstat(4, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*[pid 3048] brk(NULL) = 0x5599be591000*

*[pid 3048] brk(0x5599be5b2000) = 0x5599be5b2000*

*[pid 3048] mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 4, 0) = 0x7f8597fe0000*

*[pid 3048] close(4) = 0*

*[pid 3048] ftruncate(3, 4096) = 0*

*[pid 3048] openat(AT\_FDCWD, "out.txt", O\_WRONLY|O\_CREAT|O\_TRUNC, 0666) = 4*

*[pid 3048] openat(AT\_FDCWD, "/dev/shm/input.shared", O\_RDWR|O\_CREAT|O\_NOFOLLOW|O\_CLOEXEC, 0777) = 5*

*[pid 3048] ftruncate(5, 4096) = 0*

*[pid 3048] mmap(NULL, 4096, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 5, 0) = 0x7f8597fdf000*

*[pid 3048] openat(AT\_FDCWD, "/dev/shm/sem.input.semaphore", O\_RDWR|O\_NOFOLLOW) = 6*

*[pid 3048] fstat(6, {st\_mode=S\_IFREG|0755, st\_size=32, ...}) = 0*

*[pid 3048] mmap(NULL, 32, PROT\_READ|PROT\_WRITE, MAP\_SHARED, 6, 0) = 0x7f8597fde000*

*[pid 3048] close(6) = 0*

*2 3*

*[pid 3044] <... read resumed>"2 3\n", 1024) = 4*

*[pid 3044] read(0, <unfinished ...>*

*[pid 3048] fstat(4, {st\_mode=S\_IFREG|0777, st\_size=0, ...}) = 0*

*1 0*

*[pid 3044] <... read resumed>"1 0\n", 1024) = 4*

*[pid 3044] read(0, <unfinished ...>*

*[pid 3048] write(4, "0.666667\n", 9) = 9*

*[pid 3048] exit\_group(1) = ?*

*[pid 3048] +++ exited with 1 +++*

*<... read resumed>0x561c78747320, 1024) = ? ERESTARTSYS (To be restarted if SA\_RESTART is set)*

*--- SIGCHLD {si\_signo=SIGCHLD, si\_code=CLD\_EXITED, si\_pid=3048, si\_uid=1000, si\_status=1, si\_utime=182, si\_stime=1} ---*

*read(0, "", 1024) = 0*

*fstat(1, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}) = 0*

*write(1, "Zero division!\n", 15Zero division!*

*) = 15*

*wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 1}], 0, NULL) = 3048*

*write(2, "Error in child process!\n", 24Error in child process!*

*) = 24*

*exit\_group(1) = ?*

*+++ exited with 1 +++*

**Лабораторная работа 5**

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab5$ strace ./dynamic*

*execve("./dynamic", ["./dynamic"], 0x7ffcf72cb610 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x555b4dbaa000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fffc378b500) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=36953, ...}) = 0*

*mmap(NULL, 36953, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f5dc6b0f000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libdl.so.2", 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 \22\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=18816, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5dc6b0d000*

*mmap(NULL, 20752, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6b07000*

*mmap(0x7f5dc6b08000, 8192, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5dc6b08000*

*mmap(0x7f5dc6b0a000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5dc6b0a000*

*mmap(0x7f5dc6b0b000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5dc6b0b000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6915000*

*mprotect(0x7f5dc693a000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f5dc693a000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f5dc693a000*

*mmap(0x7f5dc6ab2000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f5dc6ab2000*

*mmap(0x7f5dc6afd000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f5dc6afd000*

*mmap(0x7f5dc6b03000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5dc6b03000*

*close(3) = 0*

*mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5dc6912000*

*arch\_prctl(ARCH\_SET\_FS, 0x7f5dc6912740) = 0*

*mprotect(0x7f5dc6afd000, 12288, PROT\_READ) = 0*

*mprotect(0x7f5dc6b0b000, 4096, PROT\_READ) = 0*

*mprotect(0x555b4cfeb000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5dc6b46000, 4096, PROT\_READ) = 0*

*munmap(0x7f5dc6b0f000, 36953) = 0*

*brk(NULL) = 0x555b4dbaa000*

*brk(0x555b4dbcb000) = 0x555b4dbcb000*

*openat(AT\_FDCWD, "./lib1.so", 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@\20\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0777, st\_size=15672, ...}) = 0*

*getcwd("/mnt/d/os/lab5", 128) = 15*

*mmap(NULL, 16424, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6b14000*

*mmap(0x7f5dc6b15000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5dc6b15000*

*mmap(0x7f5dc6b16000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b16000*

*mmap(0x7f5dc6b17000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b17000*

*close(3) = 0*

*mprotect(0x7f5dc6b17000, 4096, PROT\_READ) = 0*

*fstat(1, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x4), ...}) = 0*

*write(1, "Enter a command: 0 - swap lib\n", 30Enter a command: 0 - swap lib*

*) = 30*

*write(1, "1 - PrimeCount\n", 151 - PrimeCount*

*) = 15*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*fstat(0, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x4), ...}) = 0*

*read(0, 0x555b4dbaac50, 1024) = ? ERESTARTSYS (To be restarted if SA\_RESTART is set)*

*--- SIGWINCH {si\_signo=SIGWINCH, si\_code=SI\_KERNEL} ---*

*read(0, 0*

*"0\n", 1024) = 2*

*munmap(0x7f5dc6b14000, 16424) = 0*

*openat(AT\_FDCWD, "./lib2.so", 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\200\20\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0777, st\_size=16184, ...}) = 0*

*getcwd("/mnt/d/os/lab5", 128) = 15*

*mmap(NULL, 16440, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6b14000*

*mmap(0x7f5dc6b15000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5dc6b15000*

*mmap(0x7f5dc6b16000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b16000*

*mmap(0x7f5dc6b17000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b17000*

*close(3) = 0*

*mprotect(0x7f5dc6b17000, 4096, PROT\_READ) = 0*

*write(1, "Swapped! Current lib is: ./lib2."..., 35Swapped! Current lib is: ./lib2.so*

*) = 35*

*write(1, "Enter a command: 0 - swap lib\n1 "..., 45Enter a command: 0 - swap lib*

*1 - PrimeCount*

*) = 45*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*read(0, 0*

*"0\n", 1024) = 2*

*munmap(0x7f5dc6b14000, 16440) = 0*

*openat(AT\_FDCWD, "./lib1.so", 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@\20\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0777, st\_size=15672, ...}) = 0*

*getcwd("/mnt/d/os/lab5", 128) = 15*

*mmap(NULL, 16424, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6b14000*

*mmap(0x7f5dc6b15000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5dc6b15000*

*mmap(0x7f5dc6b16000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b16000*

*mmap(0x7f5dc6b17000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b17000*

*close(3) = 0*

*mprotect(0x7f5dc6b17000, 4096, PROT\_READ) = 0*

*write(1, "Swapped! Current lib is: ./lib1."..., 35Swapped! Current lib is: ./lib1.so*

*) = 35*

*write(1, "Enter a command: 0 - swap lib\n1 "..., 45Enter a command: 0 - swap lib*

*1 - PrimeCount*

*) = 45*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*read(0, 1*

*"1\n", 1024) = 2*

*write(1, "Enter values for PrimeCount: ", 29Enter values for PrimeCount: ) = 29*

*read(0, 1 1000*

*"1 1000\n", 1024) = 7*

*write(1, "168\n", 4168*

*) = 4*

*write(1, "Enter a command: 0 - swap lib\n1 "..., 45Enter a command: 0 - swap lib*

*1 - PrimeCount*

*) = 45*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*read(0, 0*

*"0\n", 1024) = 2*

*munmap(0x7f5dc6b14000, 16424) = 0*

*openat(AT\_FDCWD, "./lib2.so", 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\200\20\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0777, st\_size=16184, ...}) = 0*

*getcwd("/mnt/d/os/lab5", 128) = 15*

*mmap(NULL, 16440, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5dc6b14000*

*mmap(0x7f5dc6b15000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5dc6b15000*

*mmap(0x7f5dc6b16000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b16000*

*mmap(0x7f5dc6b17000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5dc6b17000*

*close(3) = 0*

*mprotect(0x7f5dc6b17000, 4096, PROT\_READ) = 0*

*write(1, "Swapped! Current lib is: ./lib2."..., 35Swapped! Current lib is: ./lib2.so*

*) = 35*

*write(1, "Enter a command: 0 - swap lib\n1 "..., 45Enter a command: 0 - swap lib*

*1 - PrimeCount*

*) = 45*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*read(0, 2*

*"2\n", 1024) = 2*

*write(1, "Enter values for GCF: ", 22Enter values for GCF: ) = 22*

*read(0, 1 50*

*"1 50\n", 1024) = 5*

*write(1, "1\n", 21*

*) = 2*

*write(1, "Enter a command: 0 - swap lib\n1 "..., 45Enter a command: 0 - swap lib*

*1 - PrimeCount*

*) = 45*

*write(1, "2 - GCF\n", 82 - GCF*

*) = 8*

*read(0, "", 1024) = 0*

*exit\_group(0) = ?*

*+++ exited with 0 +++*

**Лабораторная работа 6**

*egorb@LAPTOP-TIFMO0IA:/mnt/d/os/lab6$ strace ./main*

*execve("./main", ["./main"], 0x7ffc056601f0 /\* 29 vars \*/) = 0*

*brk(NULL) = 0x5572d7c74000*

*arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff0948af10) = -1 EINVAL (Invalid argument)*

*access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (No such file or directory)*

*openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=45305, ...}) = 0*

*mmap(NULL, 45305, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f5c17d49000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libzmq.so.5", 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`z\1\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=675776, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17d47000*

*mmap(NULL, 678128, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17ca1000*

*mmap(0x7f5c17cb7000, 430080, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x16000) = 0x7f5c17cb7000*

*mmap(0x7f5c17d20000, 126976, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7f000) = 0x7f5c17d20000*

*mmap(0x7f5c17d3f000, 32768, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x9d000) = 0x7f5c17d3f000*

*close(3) = 0*

*openat(AT\_FDCWD, "/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`\341\t\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=1956992, ...}) = 0*

*mmap(NULL, 1972224, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17abf000*

*mprotect(0x7f5c17b55000, 1290240, PROT\_NONE) = 0*

*mmap(0x7f5c17b55000, 987136, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x96000) = 0x7f5c17b55000*

*mmap(0x7f5c17c46000, 299008, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x187000) = 0x7f5c17c46000*

*mmap(0x7f5c17c90000, 57344, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1d0000) = 0x7f5c17c90000*

*mmap(0x7f5c17c9e000, 10240, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17c9e000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libgcc\_s.so.1", 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\3405\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=104984, ...}) = 0*

*mmap(NULL, 107592, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17aa4000*

*mmap(0x7f5c17aa7000, 73728, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5c17aa7000*

*mmap(0x7f5c17ab9000, 16384, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x15000) = 0x7f5c17ab9000*

*mmap(0x7f5c17abd000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f5c17abd000*

*close(3) = 0*

*openat(AT\_FDCWD, "/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\220\201\0\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=157224, ...}) = 0*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"..., 68, 824) = 68*

*mmap(NULL, 140408, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17a81000*

*mmap(0x7f5c17a88000, 69632, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7000) = 0x7f5c17a88000*

*mmap(0x7f5c17a99000, 20480, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f5c17a99000*

*mmap(0x7f5c17a9e000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1c000) = 0x7f5c17a9e000*

*mmap(0x7f5c17aa0000, 13432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17aa0000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.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\360q\2\0\0\0\0\0"..., 832) = 832*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*fstat(3, {st\_mode=S\_IFREG|0755, st\_size=2029224, ...}) = 0*

*pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784*

*pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32*

*pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) = 68*

*mmap(NULL, 2036952, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c1788f000*

*mprotect(0x7f5c178b4000, 1847296, PROT\_NONE) = 0*

*mmap(0x7f5c178b4000, 1540096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f5c178b4000*

*mmap(0x7f5c17a2c000, 303104, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19d000) = 0x7f5c17a2c000*

*mmap(0x7f5c17a77000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f5c17a77000*

*mmap(0x7f5c17a7d000, 13528, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17a7d000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libsodium.so.23", 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\200\302\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=355016, ...}) = 0*

*mmap(NULL, 357384, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17837000*

*mmap(0x7f5c17843000, 229376, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xc000) = 0x7f5c17843000*

*mmap(0x7f5c1787b000, 73728, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x44000) = 0x7f5c1787b000*

*mmap(0x7f5c1788d000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x55000) = 0x7f5c1788d000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libpgm-5.2.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\240L\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=302056, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17835000*

*mmap(NULL, 321584, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c177e6000*

*mmap(0x7f5c177ea000, 163840, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c177ea000*

*mmap(0x7f5c17812000, 118784, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2c000) = 0x7f5c17812000*

*mmap(0x7f5c1782f000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x48000) = 0x7f5c1782f000*

*mmap(0x7f5c17831000, 14384, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17831000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libnorm.so.1", 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\0\257\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=690344, ...}) = 0*

*mmap(NULL, 1420000, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c1768b000*

*mmap(0x7f5c17695000, 421888, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa000) = 0x7f5c17695000*

*mmap(0x7f5c176fc000, 217088, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x71000) = 0x7f5c176fc000*

*mmap(0x7f5c17731000, 16384, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa5000) = 0x7f5c17731000*

*mmap(0x7f5c17735000, 723680, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17735000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libgssapi\_krb5.so.2", 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\0P\321\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=309712, ...}) = 0*

*mmap(NULL, 312128, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c1763e000*

*mmap(0x7f5c17649000, 204800, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb000) = 0x7f5c17649000*

*mmap(0x7f5c1767b000, 49152, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3d000) = 0x7f5c1767b000*

*mmap(0x7f5c17687000, 16384, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x48000) = 0x7f5c17687000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libm.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\300\363\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=1369352, ...}) = 0*

*mmap(NULL, 1368336, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c174ef000*

*mmap(0x7f5c174fe000, 684032, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xf000) = 0x7f5c174fe000*

*mmap(0x7f5c175a5000, 618496, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb6000) = 0x7f5c175a5000*

*mmap(0x7f5c1763c000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x14c000) = 0x7f5c1763c000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libkrb5.so.3", 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 ?\2\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=902016, ...}) = 0*

*mmap(NULL, 904640, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c17412000*

*mprotect(0x7f5c17434000, 700416, PROT\_NONE) = 0*

*mmap(0x7f5c17434000, 397312, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x22000) = 0x7f5c17434000*

*mmap(0x7f5c17495000, 299008, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x83000) = 0x7f5c17495000*

*mmap(0x7f5c174df000, 65536, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xcc000) = 0x7f5c174df000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libk5crypto.so.3", 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\240D\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=191040, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c17410000*

*mmap(NULL, 196696, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c173df000*

*mprotect(0x7f5c173e3000, 172032, PROT\_NONE) = 0*

*mmap(0x7f5c173e3000, 114688, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173e3000*

*mmap(0x7f5c173ff000, 53248, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x20000) = 0x7f5c173ff000*

*mmap(0x7f5c1740d000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2d000) = 0x7f5c1740d000*

*mmap(0x7f5c1740f000, 88, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c1740f000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libcom\_err.so.2", 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\200$\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=22600, ...}) = 0*

*mmap(NULL, 24744, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c173d8000*

*mmap(0x7f5c173da000, 8192, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5c173da000*

*mmap(0x7f5c173dc000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173dc000*

*mmap(0x7f5c173dd000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173dd000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libkrb5support.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\3605\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=56096, ...}) = 0*

*mmap(NULL, 58344, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c173c9000*

*mmap(0x7f5c173cc000, 28672, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5c173cc000*

*mmap(0x7f5c173d3000, 12288, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa000) = 0x7f5c173d3000*

*mmap(0x7f5c173d6000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xc000) = 0x7f5c173d6000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libkeyutils.so.1", 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@\"\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=22600, ...}) = 0*

*mmap(NULL, 24592, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c173c2000*

*mmap(0x7f5c173c4000, 8192, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f5c173c4000*

*mmap(0x7f5c173c6000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173c6000*

*mmap(0x7f5c173c7000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173c7000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libresolv.so.2", 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 G\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=101320, ...}) = 0*

*mmap(NULL, 113280, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c173a6000*

*mprotect(0x7f5c173aa000, 81920, PROT\_NONE) = 0*

*mmap(0x7f5c173aa000, 65536, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f5c173aa000*

*mmap(0x7f5c173ba000, 12288, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x14000) = 0x7f5c173ba000*

*mmap(0x7f5c173be000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x17000) = 0x7f5c173be000*

*mmap(0x7f5c173c0000, 6784, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f5c173c0000*

*close(3) = 0*

*openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libdl.so.2", 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 \22\0\0\0\0\0\0"..., 832) = 832*

*fstat(3, {st\_mode=S\_IFREG|0644, st\_size=18816, ...}) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c173a4000*

*mmap(NULL, 20752, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f5c1739e000*

*mmap(0x7f5c1739f000, 8192, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f5c1739f000*

*mmap(0x7f5c173a1000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5c173a1000*

*mmap(0x7f5c173a2000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f5c173a2000*

*close(3) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c1739c000*

*arch\_prctl(ARCH\_SET\_FS, 0x7f5c1739d180) = 0*

*mprotect(0x7f5c17a77000, 12288, PROT\_READ) = 0*

*mprotect(0x7f5c173a2000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c173be000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c173c7000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c173d6000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c17a9e000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c173dd000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c1740d000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c174df000, 57344, PROT\_READ) = 0*

*mprotect(0x7f5c1763c000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c17687000, 8192, PROT\_READ) = 0*

*mprotect(0x7f5c17abd000, 4096, PROT\_READ) = 0*

*mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f5c1739a000*

*mprotect(0x7f5c17c90000, 45056, PROT\_READ) = 0*

*mprotect(0x7f5c17731000, 12288, PROT\_READ) = 0*

*mprotect(0x7f5c1782f000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c1788d000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c17d3f000, 28672, PROT\_READ) = 0*

*mprotect(0x5572d7913000, 4096, PROT\_READ) = 0*

*mprotect(0x7f5c17d82000, 4096, PROT\_READ) = 0*

*munmap(0x7f5c17d49000, 45305) = 0*

*set\_tid\_address(0x7f5c1739d450) = 1782*

*set\_robust\_list(0x7f5c1739d460, 24) = 0*

*rt\_sigaction(SIGRTMIN, {sa\_handler=0x7f5c17a88bf0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_SIGINFO, sa\_restorer=0x7f5c17a963c0}, NULL, 8) = 0*

*rt\_sigaction(SIGRT\_1, {sa\_handler=0x7f5c17a88c90, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7f5c17a963c0}, NULL, 8) = 0*

*rt\_sigprocmask(SIG\_UNBLOCK, [RTMIN RT\_1], NULL, 8) = 0*

*prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0*

*brk(NULL) = 0x5572d7c74000*

*brk(0x5572d7c95000) = 0x5572d7c95000*

*futex(0x7f5c17c9e6bc, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*futex(0x7f5c17c9e6c8, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0*

*fstat(1, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x3), ...}) = 0*

*write(1, "Enter a command!\n", 17Enter a command!*

*) = 17*

*fstat(0, {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x3), ...}) = 0*

*read(0, create 2*

*"create 2\n", 1024) = 9*

*mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5c16b99000*

*mprotect(0x7f5c16b9a000, 8388608, PROT\_READ|PROT\_WRITE) = 0*

*clone(child\_stack=0x7f5c17398d30, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, parent\_tid=[1786], tls=0x7f5c17399700, child\_tidptr=0x7f5c173999d0) = 1786*

*write(1, "Ok: Enter a command!\n", 21Ok: Enter a command!*

*) = 21*

*futex(0x7f5c17a7d4c0, FUTEX\_WAKE\_PRIVATE, 11787*

*) = 1*

*read(0, create 1*

*"create 1\n", 1024) = 9*

*clone(child\_stack=0x7f5c17398d30, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, parent\_tid=[1829], tls=0x7f5c17399700, child\_tidptr=0x7f5c173999d0) = 1829*

*write(1, "Enter a command!\n", 17Enter a command!*

*) = 17*

*read(0, Ok:1853*

*pingall*

*"pingall\n", 1024) = 8*

*clone(child\_stack=0x7f5c17398d30, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, parent\_tid=[1907], tls=0x7f5c17399700, child\_tidptr=0x7f5c173999d0) = 1907*

*write(1, "Enter a command!\n", 17Enter a command!*

*) = 17*

*read(0, Ok:-1*

*exec 2 time*

*"exec 2 time\n", 1024) = 12*

*clone(child\_stack=0x7f5c17398d30, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, parent\_tid=[1970], tls=0x7f5c17399700, child\_tidptr=0x7f5c173999d0) = 1970*

*write(1, "Enter a command!\n", 17Enter a command!*

*) = 17*

*read(0, Ok:2:0*

*exec 2 start*

*"exec 2 start\n", 1024) = 13*

*clone(child\_stack=0x7f5c17398d30, flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, parent\_tid=[2024], tls=0x7f5c17399700, child\_tidptr=0x7f5c173999d0) = 2024*

*write(1, "Enter a command!\n", 17Enter a command!*

*) = 17*

*read(0, Ok:2*

*0x5572d7c86560, 1024) = ? ERESTARTSYS (To be restarted if SA\_RESTART is set)*

*--- SIGWINCH {si\_signo=SIGWINCH, si\_code=SI\_KERNEL} ---*

*read(0,*

**Вывод**

В данной лабораторной работе я познакомился с очень полезным инструментом для отладки *strace*. С его помощью можно детально контролировать каждый системный вызов в программе.