Московский Авиационный Институт

(Национальный Исследовательский Университет)

Институт №8 “Компьютерные науки и прикладная математика”

Кафедра №806 “Вычислительная математика и программирование”

**Лабораторная работа №8 по курсу**

**«Операционные системы»**

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Дата: 28.12.2023

Москва, 2023

**Постановка задачи**

Приобретение практических навыков диагностики работы программного обеспечения. При выполнении лабораторных работ по курсу ОС 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 ЛР должен содержать краткую сводку по исследованию написанных программ

**Общий метод и алгоритм решения**

Команда**strace** показывает все системные вызовы программы, которые та отправляет к системе во время выполнения, а также их параметры и результат выполнения. Но при необходимости можно подключиться и к уже запущенному процессу. Перед тем, как перейти к практике, разберём опции утилиты и её синтаксис:

**$ strace опции команда аргументы**

В самом простом варианте **strace** запускает переданную команду с её аргументами и выводит в стандартный поток ошибок все системные вызовы команды. Давайте разберём опции утилиты, с помощью которых можно управлять её поведением:

* **-i** - выводить указатель на инструкцию во время выполнения системного вызова;
* **-k** - выводить стек вызовов для отслеживаемого процесса после каждого системного вызова;
* **-o** - выводить всю информацию о системных вызовах не в стандартный поток ошибок, а в файл;
* **-q** - не выводить сообщения о подключении о отключении от процесса;
* **-qq** - не выводить сообщения о завершении работы процесса;
* **-r** - выводить временную метку для каждого системного вызова;
* **-s** - указать максимальный размер выводимой строки, по умолчанию 32;
* **-t** - выводить время суток для каждого вызова;
* **-tt** - добавить микросекунды;
* **-ttt** - добавить микросекунды и количество секунд после начала эпохи Unix;
* **-T** - выводить длительность выполнения системного вызова;
* **-x** - выводить все не ASCI-строки в шестнадцатеричном виде;
* **-xx** - выводить все строки в шестнадцатеричном виде;
* **-y** - выводить пути для файловых дескрипторов;
* **-yy** - выводить информацию о протоколе для файловых дескрипторов;
* **-c** - подсчитывать количество ошибок, вызовов и время выполнения для каждого системного вызова;
* **-O** - добавить определённое количество микросекунд к счетчику времени для каждого вызова;
* **-S** - сортировать информацию выводимую при опции -c. Доступны поля time, calls, name и nothing. По умолчанию используется time;
* **-w** - суммировать время между началом и завершением системного вызова;
* **-e** - позволяет отфильтровать только нужные системные вызовы или события;
* **-P** - отслеживать только системные вызовы, которые касаются указанного пути;
* **-v** - позволяет выводить дополнительную информацию, такую как версии окружения, статистику и так далее;
* **-b** - если указанный системный вызов обнаружен, трассировка прекращается;
* **-f** - отслеживать также дочерние процессы, если они будут созданы;
* **-ff** - если задана опция -o, то для каждого дочернего процесса будет создан отдельный файл с именем имя\_файла.pid.
* **-I** - позволяет блокировать реакцию на нажатия Ctrl+C и Ctrl+Z;
* **-E** - добавляет переменную окружения для запускаемой программы;
* **-p** - указывает pid процесса, к которому следует подключиться;
* **-u** - запустить программу, от имени указанного пользователя.

**Strace**

**Лабораторная 1**

ilya@ilya-ilyal:~/osi\_1$ strace -f ./main

execve("./main", ["./main"], 0x7ffefb121d68 /\* 59 vars \*/) = 0

brk(NULL) = 0x55efbe951000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffc4c3f54d0) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7fd4b2475000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53143, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53143, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7fd4b2468000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\"\233}\305\t\5?\344\337^)\350b\231\21\360"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7fd4b2200000

mmap(0x7fd4b2228000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7fd4b2228000

mmap(0x7fd4b23bd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7fd4b23bd000

mmap(0x7fd4b2415000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7fd4b2415000

mmap(0x7fd4b241b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7fd4b241b000

close(3) = 0

mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7fd4b2465000

arch\_prctl(ARCH\_SET\_FS, 0x7fd4b2465740) = 0

set\_tid\_address(0x7fd4b2465a10) = 4844

set\_robust\_list(0x7fd4b2465a20, 24) = 0

rseq(0x7fd4b24660e0, 0x20, 0, 0x53053053) = 0

mprotect(0x7fd4b2415000, 16384, PROT\_READ) = 0

mprotect(0x55efbe35a000, 4096, PROT\_READ) = 0

mprotect(0x7fd4b24af000, 8192, PROT\_READ) = 0

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

munmap(0x7fd4b2468000, 53143) = 0

getrandom("\x13\xe4\xdb\x2d\x55\x3d\x16\x28", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x55efbe951000

brk(0x55efbe972000) = 0x55efbe972000

**read(0, sdsdsfdsaf**

"s", 1) = 1

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

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

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

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

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

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

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

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

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

**read(0, "\n", 1) = 1**

creat("sdsdsfdsaf", 0700) = 3

**pipe2([4, 5], 0) = 0**

**pipe2([6, 7], 0) = 0**

**clone(child\_stack=NULL, flags=CLONE\_CHILD\_CLEARTID|CLONE\_CHILD\_SETTID|SIGCHLDstrace: Process 4897 attached**

, child\_tidptr=0x7fd4b2465a10) = 4897

[pid 4897] set\_robust\_list(0x7fd4b2465a20, 24 <unfinished ...>

[pid 4844] close(7 <unfinished ...>

[pid 4897] <... set\_robust\_list resumed>) = 0

[pid 4844] <... close resumed>) = 0

[pid 4897**] dup2(4, 0 <unfinished ...>**

[pid 4844] close(4 <unfinished ...>

[pid 4897] <... dup2 resumed>) = 0

[pid 4844] <... close resumed>) = 0

[pid 4897**] dup2(3, 1 <unfinished ...>**

[pid 4844] close(3 <unfinished ...>

[pid 4897] <... dup2 resumed>) = 1

[pid 4844] <... close resumed>) = 0

[pid 4897] **dup2(7, 2)** = 2

[pid 4897] close(6) = 0

[pid 4897] close(5 <unfinished ...>

[pid 4844] read(0, <unfinished ...>

[pid 4897] <... close resumed>) = 0

[pid 4897] **execve("./child", ["./child"], 0x7ffc4c3f56a8 /\* 59 vars \*/) = 0**

[pid 4897] brk(NULL) = 0x561cb1034000

[pid 4897] arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffe7c6de5d0) = -1 EINVAL (Недопустимый аргумент)

[pid 4897] mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f1f6fcc6000

[pid 4897] access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

[pid 4897] openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 5

[pid 4897] newfstatat(5, "", {st\_mode=S\_IFREG|0644, st\_size=53143, ...}, AT\_EMPTY\_PATH) = 0

[pid 4897] mmap(NULL, 53143, PROT\_READ, MAP\_PRIVATE, 5, 0) = 0x7f1f6fcb9000

[pid 4897] close(5) = 0

[pid 4897] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 5

[pid 4897] **read(5, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832**

[pid 4897] pread64(5, "\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 4897] pread64(5, "\4\0\0\0 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

[pid 4897] pread64(5, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\"\233}\305\t\5?\344\337^)\350b\231\21\360"..., 68, 896) = 68

[pid 4897] newfstatat(5, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 0

[pid 4897] pread64(5, "\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 4897] mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 5, 0) = 0x7f1f6fa00000

[pid 4897] mmap(0x7f1f6fa28000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 5, 0x28000) = 0x7f1f6fa28000

[pid 4897] mmap(0x7f1f6fbbd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 5, 0x1bd000) = 0x7f1f6fbbd000

[pid 4897] mmap(0x7f1f6fc15000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 5, 0x214000) = 0x7f1f6fc15000

[pid 4897] mmap(0x7f1f6fc1b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f1f6fc1b000

[pid 4897] close(5) = 0

[pid 4897] mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f1f6fcb6000

[pid 4897] arch\_prctl(ARCH\_SET\_FS, 0x7f1f6fcb6740) = 0

[pid 4897] set\_tid\_address(0x7f1f6fcb6a10) = 4897

[pid 4897] set\_robust\_list(0x7f1f6fcb6a20, 24) = 0

[pid 4897] rseq(0x7f1f6fcb70e0, 0x20, 0, 0x53053053) = 0

[pid 4897] mprotect(0x7f1f6fc15000, 16384, PROT\_READ) = 0

[pid 4897] mprotect(0x561caf7a7000, 4096, PROT\_READ) = 0

[pid 4897] mprotect(0x7f1f6fd00000, 8192, PROT\_READ) = 0

[pid 4897] prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0

[pid 4897] munmap(0x7f1f6fcb9000, 53143) = 0

[pid 4897] getrandom("\xb2\xd9\xb6\xd8\x13\xd7\x66\x2f", 8, GRND\_NONBLOCK) = 8

[pid 4897] brk(NULL) = 0x561cb1034000

[pid 4897] brk(0x561cb1055000) = 0x561cb1055000

[pid 4897] read(0, sfsd

<unfinished ...>

[pid 4844] <... read resumed>"s", 1) = 1

[pid 4844**] read(0, "f", 1) = 1**

**[pid 4844] read(0, "s", 1) = 1**

**[pid 4844] read(0, "d", 1) = 1**

**[pid 4844] read(0, "\n", 1) = 1**

**[pid 4844] write(5, "sfsd", 4) = 4**

**[pid 4897] <... read resumed>"s", 1) = 1**

**[pid 4844] write(5, "\n", 1) = 1**

**[pid 4897] read(0, <unfinished ...>**

[pid 4844] poll([{fd=6, events=POLLIN}], 1, 1 <unfinished ...>

[pid 4897] <... read resumed>"f", 1) = 1

[pid 4897] **read(0, "s", 1) = 1**

[pid 4897] **read(0, "d", 1) = 1**

**[pid 4897] read(0, "\n", 1) = 1**

**[pid 4897] write(2, "invalid string\n", 15 <unfinished ...>**

[pid 4844] <... poll resumed>) = 1 ([{fd=6, revents=POLLIN}])

[pid 4897] <... write resumed>) = 15

[pid 4897] read(0, <unfinished ...>

[pid 4844] **read(6, "i", 1) = 1**

**[pid 4844] read(6, "n", 1) = 1**

**[pid 4844] read(6, "v", 1) = 1**

**[pid 4844] read(6, "a", 1) = 1**

**[pid 4844] read(6, "l", 1) = 1**

**[pid 4844] read(6, "i", 1) = 1**

**[pid 4844] read(6, "d", 1) = 1**

**[pid 4844] read(6, " ", 1) = 1**

**[pid 4844] read(6, "s", 1) = 1**

**[pid 4844] read(6, "t", 1) = 1**

**[pid 4844] read(6, "r", 1) = 1**

**[pid 4844] read(6, "i", 1) = 1**

**[pid 4844] read(6, "n", 1) = 1**

**[pid 4844] read(6, "g", 1) = 1**

**[pid 4844] read(6, "\n", 1) = 1**

[pid 4844] newfstatat(1, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0), ...}, AT\_EMPTY\_PATH) = 0

**[pid 4844] write(1, "invalid string\n", 15invalid string**

**) = 15**

**[pid 4844] read(0, CVH**

**"C", 1) = 1**

**[pid 4844] read(0, "V", 1) = 1**

**[pid 4844] read(0, "H", 1) = 1**

**[pid 4844] read(0, "\n", 1) = 1**

**[pid 4844] write(5, "CVH", 3) = 3**

**[pid 4897] <... read resumed>"C", 1) = 1**

**[pid 4844] write(5, "\n", 1 <unfinished ...>**

**[pid 4897] read(0, <unfinished ...>**

[pid 4844] <... write resumed>) = 1

[pid 4897] <... read resumed>"V", 1) = 1

[pid 4844] poll([{fd=6, events=POLLIN}], 1, 1 <unfinished ...>

[pid 4897] **read(0, "H", 1) = 1**

**[pid 4897] read(0, "\n", 1) = 1**

[pid 4844] <... poll resumed>) = 0 (Timeout)

**[pid 4897] write(1, "CVH", 3 <unfinished ...>**

**[pid 4844] read(0, <unfinished ...>**

[pid 4897] <... write resumed>) = 3

**Лабораторная 2**

ilya@ilya-ilyal:~/osi\_11$ strace -f ./a.out < 1.in

execve("./a.out", ["./a.out"], 0x7fff9af22438 /\* 59 vars \*/) = 0

brk(NULL) = 0x55873aa09000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff653fe560) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7fc91c44f000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53143, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53143, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7fc91c442000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=2260296, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 2275520, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7fc91c200000

mprotect(0x7fc91c29a000, 1576960, PROT\_NONE) = 0

mmap(0x7fc91c29a000, 1118208, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x9a000) = 0x7fc91c29a000

mmap(0x7fc91c3ab000, 454656, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1ab000) = 0x7fc91c3ab000

mmap(0x7fc91c41b000, 57344, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x21a000) = 0x7fc91c41b000

mmap(0x7fc91c429000, 10432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7fc91c429000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=125488, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 127720, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7fc91c1e0000

mmap(0x7fc91c1e3000, 94208, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7fc91c1e3000

mmap(0x7fc91c1fa000, 16384, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1a000) = 0x7fc91c1fa000

mmap(0x7fc91c1fe000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1d000) = 0x7fc91c1fe000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\"\233}\305\t\5?\344\337^)\350b\231\21\360"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7fc91be00000

mmap(0x7fc91be28000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7fc91be28000

mmap(0x7fc91bfbd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7fc91bfbd000

mmap(0x7fc91c015000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7fc91c015000

mmap(0x7fc91c01b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7fc91c01b000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=940560, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 942344, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7fc91c0f9000

mmap(0x7fc91c107000, 507904, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xe000) = 0x7fc91c107000

mmap(0x7fc91c183000, 372736, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8a000) = 0x7fc91c183000

mmap(0x7fc91c1de000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xe4000) = 0x7fc91c1de000

close(3) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7fc91c440000

arch\_prctl(ARCH\_SET\_FS, 0x7fc91c4413c0) = 0

set\_tid\_address(0x7fc91c441690) = 23621

set\_robust\_list(0x7fc91c4416a0, 24) = 0

rseq(0x7fc91c441d60, 0x20, 0, 0x53053053) = 0

mprotect(0x7fc91c015000, 16384, PROT\_READ) = 0

mprotect(0x7fc91c1de000, 4096, PROT\_READ) = 0

mprotect(0x7fc91c1fe000, 4096, PROT\_READ) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7fc91c43e000

mprotect(0x7fc91c41b000, 45056, PROT\_READ) = 0

mprotect(0x558739810000, 4096, PROT\_READ) = 0

mprotect(0x7fc91c489000, 8192, PROT\_READ) = 0

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

munmap(0x7fc91c442000, 53143) = 0

getrandom("\x9c\x35\x25\x10\xe4\xa4\x3d\x1e", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x55873aa09000

brk(0x55873aa2a000) = 0x55873aa2a000

futex(0x7fc91c42977c, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0

newfstatat(1, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0), ...}, AT\_EMPTY\_PATH) = 0

write(1, "\320\237\320\276\321\202\320\276\320\272\320\270 \320\270\320\273\320\270 \320\277\320\276\321\202\320\276\320\272 ("..., 55Потоки или поток (количество): ) = 55

newfstatat(0, "", {st\_mode=S\_IFREG|0664, st\_size=27, ...}, AT\_EMPTY\_PATH) = 0

read(0, "1\n3 3\n3\n1\n1 2 3\n3 2 5\n1 5 6", 4096) = 27

write(1, "\320\240\320\260\320\267\320\274\320\265\321\200\321\213 \320\274\320\260\321\202\321\200\320\270\321\206\321\213: ", 31Размеры матрицы: ) = 31

write(1, "\320\240\320\260\320\267\320\274\320\265\321\200 \320\276\320\272\320\275\320\260: ", 23Размер окна: ) = 23

write(1, "\320\234\320\265\320\264\320\270\320\260\320\275\320\275\321\213\320\265 \321\204\320\270\320\273\321\214\321\202\321\200\321"..., 57Медианные фильтры(количество): ) = 57

write(1, "\320\234\320\260\321\202\321\200\320\270\321\206\320\260:\n", 16Матрица:

) = 16

read(0, "", 4096) = 0

rt\_sigaction(SIGRT\_1, {sa\_handler=0x7fc91be918f0, sa\_mask=[], sa\_flags=SA\_RESTORER|SA\_ONSTACK|SA\_RESTART|SA\_SIGINFO, sa\_restorer=0x7fc91be42520}, NULL, 8) = 0

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

mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7fc91b5ff000

mprotect(0x7fc91b600000, 8388608, PROT\_READ|PROT\_WRITE) = 0

rt\_sigprocmask(SIG\_BLOCK, ~[], [], 8) = 0

**clone3({flags=CLONE\_VM|CLONE\_FS|CLONE\_FILES|CLONE\_SIGHAND|CLONE\_THREAD|CLONE\_SYSVSEM|CLONE\_SETTLS|CLONE\_PARENT\_SETTID|CLONE\_CHILD\_CLEARTID, child\_tid=0x7fc91bdff910, parent\_tid=0x7fc91bdff910, exit\_signal=0, stack=0x7fc91b5ff000, stack\_size=0x7fff00, tls=0x7fc91bdff640}strace: Process 23622 attached**

**=> {parent\_tid=[23622]}, 88) = 23622**

[pid 23622] rseq(0x7fc91bdfffe0, 0x20, 0, 0x53053053 <unfinished ...>

[pid 23621] rt\_sigprocmask(SIG\_SETMASK, [], <unfinished ...>

[pid 23622] <... rseq resumed>) = 0

[pid 23621] <... rt\_sigprocmask resumed>NULL, 8) = 0

[pid 23622] set\_robust\_list(0x7fc91bdff920, 24 <unfinished ...>

[pid 23621] futex(0x7fc91bdff910, FUTEX\_WAIT\_BITSET|FUTEX\_CLOCK\_REALTIME, 23622, NULL, FUTEX\_BITSET\_MATCH\_ANY <unfinished ...>

[pid 23622] <... set\_robust\_list resumed>) = 0

[pid 23622] rt\_sigprocmask(SIG\_SETMASK, [], NULL, 8) = 0

[pid 23622] mmap(NULL, 134217728, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_NORESERVE, -1, 0) = 0x7fc9135ff000

[pid 23622] munmap(0x7fc9135ff000, 10489856) = 0

[pid 23622] munmap(0x7fc918000000, 56619008) = 0

[pid 23622] mprotect(0x7fc914000000, 135168, PROT\_READ|PROT\_WRITE) = 0

[pid 23622] rt\_sigprocmask(SIG\_BLOCK, ~[RT\_1], NULL, 8) = 0

[pid 23622] madvise(0x7fc91b5ff000, 8368128, MADV\_DONTNEED) = 0

[pid 23622] exit(0) = ?

[pid 23621] <... futex resumed>) = 0

[pid 23622] +++ exited with 0 +++

write(1, "\n", 1

) = 1

write(1, "2 3 5 \n", 72 3 5

) = 7

write(1, "2 3 5 \n", 72 3 5

) = 7

write(1, "3 5 5 \n", 73 5 5

) = 7

exit\_group(0) = ?

+++ exited with 0 +++

**Лабораторная 3**

ilya@ilya-ilyal:~/osi3$ strace -f ./main

execve("./main", ["./main"], 0x7ffcc1fccc78 /\* 59 vars \*/) = 0

brk(NULL) = 0x560832cbc000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffc29dc4eb0) = -1 EINVAL (Недопустимый аргумент)

**mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f70da7ea000**

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

**mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f70da7dd000**

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

**mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f70da400000**

**mmap(0x7f70da428000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7f70da428000**

**mmap(0x7f70da5bd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7f70da5bd000**

**mmap(0x7f70da615000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7f70da615000**

**mmap(0x7f70da61b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f70da61b000**

**close(3) = 0**

**mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f70da7da000**

arch\_prctl(ARCH\_SET\_FS, 0x7f70da7da740) = 0

set\_tid\_address(0x7f70da7daa10) = 5525

set\_robust\_list(0x7f70da7daa20, 24) = 0

rseq(0x7f70da7db0e0, 0x20, 0, 0x53053053) = 0

mprotect(0x7f70da615000, 16384, PROT\_READ) = 0

mprotect(0x5608328d0000, 4096, PROT\_READ) = 0

mprotect(0x7f70da824000, 8192, PROT\_READ) = 0

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

munmap(0x7f70da7dd000, 53247) = 0

getrandom("\x8c\xe1\xf5\x35\xdc\x41\xcd\xa8", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x560832cbc000

brk(0x560832cdd000) = 0x560832cdd000

newfstatat(0, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0), ...}, AT\_EMPTY\_PATH) = 0

read(0, file.txt

"file.txt\n", 1024) = 9

creat("file.txt", 0700) = 3

openat(AT\_FDCWD, "messages", O\_RDWR|O\_CREAT, 0700) = 4

openat(AT\_FDCWD, "errors", O\_RDWR|O\_CREAT, 0700) = 5

ftruncate(4, 1024) = 0

ftruncate(5, 128) = 0

getpid() = 5525

write(4, "\225\25\0\0", 4) = 4

clone(child\_stack=NULL, flags=CLONE\_CHILD\_CLEARTID|CLONE\_CHILD\_SETTID|SIGCHLDstrace: Process 5586 attached

, child\_tidptr=0x7f70da7daa10) = 5586

[pid 5586] set\_robust\_list(0x7f70da7daa20, 24 <unfinished ...>

[pid 5525] rt\_sigaction(SIGUSR1, {sa\_handler=0x5608328ce3a9, sa\_mask=[USR1], sa\_flags=SA\_RESTORER|SA\_RESTART, sa\_restorer=0x7f70da442520}, <unfinished ...>

[pid 5586] <... set\_robust\_list resumed>) = 0

[pid 5525] <... rt\_sigaction resumed>{sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=0}, 8) = 0

[pid 5525] **mmap(NULL, 1024, PROT\_WRITE, MAP\_SHARED, 4, 0 <unfinished ...>**

[pid 5586] dup2(3, 1 <unfinished ...>

[pid 5525] <... mmap resumed>) = 0x7f70da823000

[pid 5586] <... dup2 resumed>) = 1

[pid 5525] **mmap(NULL, 128, PROT\_READ, MAP\_SHARED, 5, 0 <unfinished** ...>

[pid 5586] execve("./child", ["./child"], 0x7ffc29dc5088 /\* 59 vars \*/ <unfinished ...>

[pid 5525] <... mmap resumed>) = 0x7f70da7e9000

[pid 5525] read(0, <unfinished ...>

[pid 5586] <... execve resumed>) = 0

[pid 5586] brk(NULL) = 0x55f594636000

[pid 5586] arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffcca0a34b0) = -1 EINVAL (Недопустимый аргумент)

[pid 5586] **mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7ff3ac83b000**

[pid 5586] access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

[pid 5586] openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 6

[pid 5586] newfstatat(6, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

[pid 5586] **mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 6, 0) = 0x7ff3ac82e000**

[pid 5586] close(6) = 0

[pid 5586] openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 6

[pid 5586] read(6, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832

[pid 5586] pread64(6, "\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 5586] pread64(6, "\4\0\0\0 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

[pid 5586] pread64(6, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

[pid 5586] newfstatat(6, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 0

[pid 5586] pread64(6, "\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 5586] **mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 6, 0) = 0x7ff3ac600000**

[pid 5586] **mmap(0x7ff3ac628000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 6, 0x28000) = 0x7ff3ac628000**

[pid 5586] **mmap(0x7ff3ac7bd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 6, 0x1bd000) = 0x7ff3ac7bd000**

[pid 5586] **mmap(0x7ff3ac815000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 6, 0x214000) = 0x7ff3ac815000**

[pid 5586] **mmap(0x7ff3ac81b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7ff3ac81b000**

[pid 5586] close(6) = 0

[pid 5586] **mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7ff3ac82b000**

[pid 5586] arch\_prctl(ARCH\_SET\_FS, 0x7ff3ac82b740) = 0

[pid 5586] set\_tid\_address(0x7ff3ac82ba10) = 5586

[pid 5586] set\_robust\_list(0x7ff3ac82ba20, 24) = 0

[pid 5586] rseq(0x7ff3ac82c0e0, 0x20, 0, 0x53053053) = 0

[pid 5586] mprotect(0x7ff3ac815000, 16384, PROT\_READ) = 0

[pid 5586] mprotect(0x55f593e3b000, 4096, PROT\_READ) = 0

[pid 5586] mprotect(0x7ff3ac875000, 8192, PROT\_READ) = 0

[pid 5586] prlimit64(0, RLIMIT\_STACK, NULL, {rlim\_cur=8192\*1024, rlim\_max=RLIM64\_INFINITY}) = 0

[pid 5586] munmap(0x7ff3ac82e000, 53247) = 0

[pid 5586] openat(AT\_FDCWD, "messages", O\_RDWR) = 6

[pid 5586] openat(AT\_FDCWD, "errors", O\_RDWR) = 7

[pid 5586] read(6, "\225\25\0\0", 4) = 4

[pid 5586] **mmap(NULL, 1024, PROT\_READ, MAP\_SHARED, 6, 0) = 0x7ff3ac874000**

[pid 5586] **mmap(NULL, 128, PROT\_WRITE, MAP\_SHARED, 7, 0) = 0x7ff3ac83a000**

[pid 5586] rt\_sigaction(SIGUSR1, {sa\_handler=0x55f593e392a9, sa\_mask=[USR1], sa\_flags=SA\_RESTORER|SA\_RESTART, sa\_restorer=0x7ff3ac642520}, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=0}, 8) = 0

small

[pid 5525] <... read resumed>"small\n", 1024) = 6

[pid 5525] kill(5586, SIGUSR1) = 0

[pid 5586] --- SIGUSR1 {si\_signo=SIGUSR1, si\_code=SI\_USER, si\_pid=5525, si\_uid=1000} ---

[pid 5525] read(0, <unfinished ...>

[pid 5586] getrandom("\x60\xd5\x87\xd0\x49\x8d\xaf\xda", 8, GRND\_NONBLOCK) = 8

[pid 5586] brk(NULL) = 0x55f594636000

[pid 5586] brk(0x55f594657000) = 0x55f594657000

[pid 5586] kill(5525, SIGUSR1 <unfinished ...>

[pid 5525] <... read resumed>0x560832cbc2c0, 1024) = ? ERESTARTSYS (To be restarted if SA\_RESTART is set)

[pid 5586] <... kill resumed>) = 0

[pid 5525] --- SIGUSR1 {si\_signo=SIGUSR1, si\_code=SI\_USER, si\_pid=5586, si\_uid=1000} ---

[pid 5525] write(1, "invalid string\n", 15invalid string

) = 15

[pid 5525] rt\_sigreturn({mask=[]} <unfinished ...>

[pid 5586] rt\_sigreturn({mask=[]} <unfinished ...>

[pid 5525] <... rt\_sigreturn resumed>) = 0

[pid 5525] read(0, <unfinished ...>

[pid 5586] <... rt\_sigreturn resumed>) = 0

Big

[pid 5525] <... read resumed>"Big\n", 1024) = 4

[pid 5525] kill(5586, SIGUSR1) = 0

[pid 5586] --- SIGUSR1 {si\_signo=SIGUSR1, si\_code=SI\_USER, si\_pid=5525, si\_uid=1000} ---

[pid 5525] read(0, <unfinished ...>

[pid 5586] write(1, "Big", 3) = 3

[pid 5586] rt\_sigreturn({mask=[]}) = 0

[pid 5525] <... read resumed>"", 1024) = 0

[pid 5525] kill(5586, SIGUSR1) = 0

[pid 5586] --- SIGUSR1 {si\_signo=SIGUSR1, si\_code=SI\_USER, si\_pid=5525, si\_uid=1000} ---

[pid 5525] **munmap(0x7f70da823000, 1024) = 0**

[pid 5586] exit\_group(0 <unfinished ...>

[pid 5525**] munmap(0x7f70da7e9000, 128 <unfinished ...>**

[pid 5586] <... exit\_group resumed>) = ?

[pid 5525] <... munmap resumed>) = 0

[pid 5586] +++ exited with 0 +++

--- SIGCHLD {si\_signo=SIGCHLD, si\_code=CLD\_EXITED, si\_pid=5586, si\_uid=1000, si\_status=0, si\_utime=8122, si\_stime=4} ---

wait4(5586, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 5586

exit\_group(0) = ?

+++ exited with 0 +++

**Лабораторная 4**

ilya@ilya-ilyal:~/osi4laba$ strace -f ./program1

execve("./program1", ["./program1"], 0x7ffcf29a51a8 /\* 59 vars \*/) = 0

brk(NULL) = 0x55c3777ad000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fffcfdeb330) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f2c1f59d000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f2c1f590000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f2c1f200000

mmap(0x7f2c1f228000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7f2c1f228000

mmap(0x7f2c1f3bd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7f2c1f3bd000

mmap(0x7f2c1f415000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7f2c1f415000

mmap(0x7f2c1f41b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f2c1f41b000

close(3) = 0

mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f2c1f58d000

arch\_prctl(ARCH\_SET\_FS, 0x7f2c1f58d740) = 0

set\_tid\_address(0x7f2c1f58da10) = 27942

set\_robust\_list(0x7f2c1f58da20, 24) = 0

rseq(0x7f2c1f58e0e0, 0x20, 0, 0x53053053) = 0

mprotect(0x7f2c1f415000, 16384, PROT\_READ) = 0

mprotect(0x55c376b6d000, 4096, PROT\_READ) = 0

mprotect(0x7f2c1f5d7000, 8192, PROT\_READ) = 0

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

munmap(0x7f2c1f590000, 53247) = 0

newfstatat(0, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

getrandom("\x21\xd9\x11\x65\x8a\x62\xcf\x69", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x55c3777ad000

brk(0x55c3777ce000) = 0x55c3777ce000

read(0, 1 1 5

"1 1 5\n", 1024) = 6

newfstatat(1, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

write(1, "0.083695\n", 90.083695

) = 9

read(0, 2 8

"2 8\n", 1024) = 4

write(1, "1000\n", 51000

) = 5

read(0, "", 1024) = 0

exit\_group(0) = ?

+++ exited with 0 +++

ilya@ilya-ilyal:~/osi4laba$ strace -f ./program2

execve("./program2", ["./program2"], 0x7ffcea3ba748 /\* 59 vars \*/) = 0

brk(NULL) = 0x56517a474000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffc72a29920) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f82441f9000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f82441ec000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f8243e00000

mmap(0x7f8243e28000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7f8243e28000

mmap(0x7f8243fbd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7f8243fbd000

mmap(0x7f8244015000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7f8244015000

mmap(0x7f824401b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f824401b000

close(3) = 0

mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f82441e9000

arch\_prctl(ARCH\_SET\_FS, 0x7f82441e9740) = 0

set\_tid\_address(0x7f82441e9a10) = 28249

set\_robust\_list(0x7f82441e9a20, 24) = 0

rseq(0x7f82441ea0e0, 0x20, 0, 0x53053053) = 0

mprotect(0x7f8244015000, 16384, PROT\_READ) = 0

mprotect(0x56517a40c000, 4096, PROT\_READ) = 0

mprotect(0x7f8244233000, 8192, PROT\_READ) = 0

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

munmap(0x7f82441ec000, 53247) = 0

newfstatat(0, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

getrandom("\x71\x25\x35\xb0\xb5\xb1\x17\x52", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x56517a474000

brk(0x56517a495000) = 0x56517a495000

read(0, 1 1 8

"1 1 8\n", 1024) = 6

newfstatat(1, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

write(1, "-0.366912\n", 10-0.366912

) = 10

read(0, 1 1 5

"1 1 5\n", 1024) = 6

write(1, "0.161242\n", 90.161242

) = 9

read(0, 2 9

"2 9\n", 1024) = 4

write(1, "100\n", 4100

) = 4

read(0, 1 1 5

"1 1 5\n", 1024) = 6

write(1, "0.161242\n", 90.161242

) = 9

read(0, "", 1024) = 0

exit\_group(0) = ?

+++ exited with 0 +++

ilya@ilya-ilyal:~/osi4laba$ strace -f ./programd

execve("./programd", ["./programd"], 0x7ffc9e090798 /\* 59 vars \*/) = 0

brk(NULL) = 0x55563a1d3000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff30795a10) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f08e9109000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f08e90fc000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f08e8e00000

mmap(0x7f08e8e28000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7f08e8e28000

mmap(0x7f08e8fbd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7f08e8fbd000

mmap(0x7f08e9015000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7f08e9015000

mmap(0x7f08e901b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f08e901b000

close(3) = 0

mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f08e90f9000

arch\_prctl(ARCH\_SET\_FS, 0x7f08e90f9740) = 0

set\_tid\_address(0x7f08e90f9a10) = 28622

set\_robust\_list(0x7f08e90f9a20, 24) = 0

rseq(0x7f08e90fa0e0, 0x20, 0, 0x53053053) = 0

mprotect(0x7f08e9015000, 16384, PROT\_READ) = 0

mprotect(0x555639522000, 4096, PROT\_READ) = 0

mprotect(0x7f08e9143000, 8192, PROT\_READ) = 0

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

munmap(0x7f08e90fc000, 53247) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f08e90fc000

close(3) = 0

getrandom("\xe4\x42\x72\xa3\x4a\x8b\xd4\xc3", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x55563a1d3000

brk(0x55563a1f4000) = 0x55563a1f4000

**openat(AT\_FDCWD, "/usr/local/lib/libfirst.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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=15840, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 16464, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f08e90f4000

mmap(0x7f08e90f5000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f08e90f5000

mmap(0x7f08e90f6000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f6000

mmap(0x7f08e90f7000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f7000

close(3) = 0

mprotect(0x7f08e90f7000, 4096, PROT\_READ) = 0

munmap(0x7f08e90fc000, 53247) = 0

newfstatat(0, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

read(0, 1 1 5

"1 1 5\n", 1024) = 6

newfstatat(1, "", {st\_mode=S\_IFCHR|0620, st\_rdev=makedev(0x88, 0x1), ...}, AT\_EMPTY\_PATH) = 0

write(1, "0.083695\n", 90.083695

) = 9

read(0, 0

"0\n", 1024) = 2

munmap(0x7f08e90f4000, 16464) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f08e90fc000

close(3) = 0

**openat(AT\_FDCWD, "/usr/local/lib/libsecond.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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=15840, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 16464, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f08e90f4000

mmap(0x7f08e90f5000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f08e90f5000

mmap(0x7f08e90f6000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f6000

mmap(0x7f08e90f7000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f7000

close(3) = 0

mprotect(0x7f08e90f7000, 4096, PROT\_READ) = 0

munmap(0x7f08e90fc000, 53247) = 0

write(1, "Contract has been changed\n", 26Contract has been changed

) = 26

write(1, "Contract is second\n", 19Contract is second

) = 19

read(0, 1 5

"1 5\n", 1024) = 4

read(0, 5

"5\n", 1024) = 2

write(1, "-3.543861\n", 10-3.543861

) = 10

read(0, 0

"0\n", 1024) = 2

munmap(0x7f08e90f4000, 16464) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=53247, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 53247, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f08e90fc000

close(3) = 0

openat(AT\_FDCWD, "/usr/local/lib/libfirst.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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=15840, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 16464, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f08e90f4000

mmap(0x7f08e90f5000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f08e90f5000

mmap(0x7f08e90f6000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f6000

mmap(0x7f08e90f7000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f08e90f7000

close(3) = 0

mprotect(0x7f08e90f7000, 4096, PROT\_READ) = 0

munmap(0x7f08e90fc000, 53247) = 0

write(1, "Contract has been changed\n", 26Contract has been changed

) = 26

write(1, "Contract is first\n", 18Contract is first

) = 18

read(0, 1 1 5

"1 1 5\n", 1024) = 6

write(1, "0.083695\n", 90.083695

) = 9

read(0, 1 1 1

"1 1 1\n", 1024) = 6

write(1, "-0.956449\n", 10-0.956449

) = 10

read(0, "", 1024) = 0

exit\_group(0) = ?

+++ exited with 0 +++

**Лабораторная 5-7**

execve("./client", ["./client"], 0x7ffcda879a68 /\* 59 vars \*/) = 0

brk(NULL) = 0x55f7906f6000

arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7fff7f67f9b0) = -1 EINVAL (Недопустимый аргумент)

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112d15a000

access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=54935, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 54935, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f112d14c000

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\240\233\1\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=634936, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 636784, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d0b0000

mmap(0x7f112d0c8000, 397312, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x18000) = 0x7f112d0c8000

mmap(0x7f112d129000, 106496, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x79000) = 0x7f112d129000

mmap(0x7f112d143000, 36864, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x92000) = 0x7f112d143000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=2260296, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 2275520, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112ce00000

mprotect(0x7f112ce9a000, 1576960, PROT\_NONE) = 0

mmap(0x7f112ce9a000, 1118208, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x9a000) = 0x7f112ce9a000

mmap(0x7f112cfab000, 454656, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1ab000) = 0x7f112cfab000

mmap(0x7f112d01b000, 57344, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x21a000) = 0x7f112d01b000

mmap(0x7f112d029000, 10432, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112d029000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=125488, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 127720, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d090000

mmap(0x7f112d093000, 94208, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f112d093000

mmap(0x7f112d0aa000, 16384, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1a000) = 0x7f112d0aa000

mmap(0x7f112d0ae000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1d000) = 0x7f112d0ae000

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\0P\237\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 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48

pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\244;\374\204(\337f#\315I\214\234\f\256\271\32"..., 68, 896) = 68

newfstatat(3, "", {st\_mode=S\_IFREG|0755, st\_size=2216304, ...}, AT\_EMPTY\_PATH) = 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

mmap(NULL, 2260560, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112ca00000

mmap(0x7f112ca28000, 1658880, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x28000) = 0x7f112ca28000

mmap(0x7f112cbbd000, 360448, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1bd000) = 0x7f112cbbd000

mmap(0x7f112cc15000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x214000) = 0x7f112cc15000

mmap(0x7f112cc1b000, 52816, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112cc1b000

close(3) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=89096, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 94432, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d078000

mprotect(0x7f112d07c000, 69632, PROT\_NONE) = 0

mmap(0x7f112d07c000, 53248, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f112d07c000

mmap(0x7f112d089000, 12288, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x11000) = 0x7f112d089000

mmap(0x7f112d08d000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x14000) = 0x7f112d08d000

mmap(0x7f112d08f000, 224, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112d08f000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=355040, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 357440, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112cda8000

mprotect(0x7f112cdb4000, 303104, PROT\_NONE) = 0

mmap(0x7f112cdb4000, 229376, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xc000) = 0x7f112cdb4000

mmap(0x7f112cdec000, 69632, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x44000) = 0x7f112cdec000

mmap(0x7f112cdfe000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x55000) = 0x7f112cdfe000

close(3) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112d076000

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libpgm-5.3.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\340L\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=310264, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 329808, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112cd57000

mmap(0x7f112cd5b000, 172032, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f112cd5b000

mmap(0x7f112cd85000, 118784, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2e000) = 0x7f112cd85000

mmap(0x7f112cda2000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4a000) = 0x7f112cda2000

mmap(0x7f112cda4000, 14416, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112cda4000

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 \255\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=497824, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 1223168, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112cc2c000

mprotect(0x7f112cc36000, 446464, PROT\_NONE) = 0

mmap(0x7f112cc36000, 286720, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa000) = 0x7f112cc36000

mmap(0x7f112cc7c000, 155648, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x50000) = 0x7f112cc7c000

mmap(0x7f112cca3000, 16384, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x76000) = 0x7f112cca3000

mmap(0x7f112cca7000, 719360, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112cca7000

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\0\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=338648, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 340960, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c9ac000

mprotect(0x7f112c9b7000, 282624, PROT\_NONE) = 0

mmap(0x7f112c9b7000, 229376, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb000) = 0x7f112c9b7000

mmap(0x7f112c9ef000, 49152, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x43000) = 0x7f112c9ef000

mmap(0x7f112c9fc000, 16384, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4f000) = 0x7f112c9fc000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=940560, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 942344, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c8c5000

mmap(0x7f112c8d3000, 507904, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xe000) = 0x7f112c8d3000

mmap(0x7f112c94f000, 372736, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x8a000) = 0x7f112c94f000

mmap(0x7f112c9aa000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xe4000) = 0x7f112c9aa000

close(3) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=47472, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 49384, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d069000

mmap(0x7f112d06b000, 28672, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f112d06b000

mmap(0x7f112d072000, 8192, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x9000) = 0x7f112d072000

mmap(0x7f112d074000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa000) = 0x7f112d074000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=21448, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112d067000

mmap(NULL, 16424, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d062000

mmap(0x7f112d063000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1000) = 0x7f112d063000

mmap(0x7f112d064000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f112d064000

mmap(0x7f112d065000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f112d065000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=827936, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 830576, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c7fa000

mprotect(0x7f112c81b000, 634880, PROT\_NONE) = 0

mmap(0x7f112c81b000, 380928, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x21000) = 0x7f112c81b000

mmap(0x7f112c878000, 249856, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7e000) = 0x7f112c878000

mmap(0x7f112c8b6000, 61440, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xbb000) = 0x7f112c8b6000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=182864, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 188472, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d033000

mprotect(0x7f112d037000, 163840, PROT\_NONE) = 0

mmap(0x7f112d037000, 110592, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f112d037000

mmap(0x7f112d052000, 49152, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1f000) = 0x7f112d052000

mmap(0x7f112d05f000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2b000) = 0x7f112d05f000

mmap(0x7f112d061000, 56, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112d061000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=18504, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 20552, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112d02d000

mmap(0x7f112d02f000, 4096, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f112d02f000

mmap(0x7f112d030000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f112d030000

mmap(0x7f112d031000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f112d031000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=52016, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 54224, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c7ec000

mprotect(0x7f112c7ef000, 36864, PROT\_NONE) = 0

mmap(0x7f112c7ef000, 24576, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f112c7ef000

mmap(0x7f112c7f5000, 8192, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x9000) = 0x7f112c7f5000

mmap(0x7f112c7f8000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb000) = 0x7f112c7f8000

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\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=22600, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112cc2a000

mmap(NULL, 24592, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c7e5000

mmap(0x7f112c7e7000, 8192, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f112c7e7000

mmap(0x7f112c7e9000, 4096, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f112c7e9000

mmap(0x7f112c7ea000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f112c7ea000

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\0\0\0\0\0\0\0\0"..., 832) = 832

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=68552, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 80456, PROT\_READ, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f112c7d1000

mmap(0x7f112c7d4000, 40960, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x3000) = 0x7f112c7d4000

mmap(0x7f112c7de000, 12288, PROT\_READ, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xd000) = 0x7f112c7de000

mmap(0x7f112c7e1000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xf000) = 0x7f112c7e1000

mmap(0x7f112c7e3000, 6728, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f112c7e3000

close(3) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112cc28000

mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112c7ce000

arch\_prctl(ARCH\_SET\_FS, 0x7f112c7ce9c0) = 0

set\_tid\_address(0x7f112c7cec90) = 7092

set\_robust\_list(0x7f112c7ceca0, 24) = 0

rseq(0x7f112c7cf360, 0x20, 0, 0x53053053) = 0

mprotect(0x7f112cc15000, 16384, PROT\_READ) = 0

mprotect(0x7f112c7e1000, 4096, PROT\_READ) = 0

mprotect(0x7f112c7ea000, 4096, PROT\_READ) = 0

mprotect(0x7f112c7f8000, 4096, PROT\_READ) = 0

mprotect(0x7f112d031000, 4096, PROT\_READ) = 0

mprotect(0x7f112d05f000, 4096, PROT\_READ) = 0

mprotect(0x7f112c8b6000, 53248, PROT\_READ) = 0

mprotect(0x7f112d065000, 4096, PROT\_READ) = 0

mprotect(0x7f112d074000, 4096, PROT\_READ) = 0

mprotect(0x7f112c9aa000, 4096, PROT\_READ) = 0

mprotect(0x7f112c9fc000, 8192, PROT\_READ) = 0

mprotect(0x7f112d0ae000, 4096, PROT\_READ) = 0

mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f112c7cc000

mprotect(0x7f112d01b000, 45056, PROT\_READ) = 0

mprotect(0x7f112cca3000, 12288, PROT\_READ) = 0

mprotect(0x7f112cda2000, 4096, PROT\_READ) = 0

mprotect(0x7f112cdfe000, 4096, PROT\_READ) = 0

mprotect(0x7f112d08d000, 4096, PROT\_READ) = 0

mprotect(0x7f112d143000, 32768, PROT\_READ) = 0

mprotect(0x55f7902c8000, 4096, PROT\_READ) = 0

mprotect(0x7f112d194000, 8192, PROT\_READ) = 0

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

munmap(0x7f112d14c000, 54935) = 0

getrandom("\xef\xae\x09\x8a\xa8\x13\x82\x96", 8, GRND\_NONBLOCK) = 8

brk(NULL) = 0x55f7906f6000

brk(0x55f790717000) = 0x55f790717000

futex(0x7f112d02977c, FUTEX\_WAKE\_PRIVATE, 2147483647) = 0

openat(AT\_FDCWD, "/sys/devices/system/cpu/online", O\_RDONLY|O\_CLOEXEC) = 3

read(3, "0-4\n", 1024) = 4

close(3) = 0

openat(AT\_FDCWD, "/sys/devices/system/cpu", O\_RDONLY|O\_NONBLOCK|O\_CLOEXEC|O\_DIRECTORY) = 3

newfstatat(3, "", {st\_mode=S\_IFDIR|0755, st\_size=0, ...}, AT\_EMPTY\_PATH) = 0

getdents64(3, 0x55f790707ee0 /\* 21 entries \*/, 32768) = 616

getdents64(3, 0x55f790707ee0 /\* 0 entries \*/, 32768) = 0

close(3) = 0

getpid() = 7092

sched\_getaffinity(7092, 128, [0, 1, 2, 3, 4]) = 8

newfstatat(AT\_FDCWD, "/etc/nsswitch.conf", {st\_mode=S\_IFREG|0644, st\_size=542, ...}, 0) = 0

newfstatat(AT\_FDCWD, "/", {st\_mode=S\_IFDIR|0755, st\_size=4096, ...}, 0) = 0

openat(AT\_FDCWD, "/etc/nsswitch.conf", O\_RDONLY|O\_CLOEXEC) = 3

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=542, ...}, AT\_EMPTY\_PATH) = 0

read(3, "# /etc/nsswitch.conf\n#\n# Example"..., 4096) = 542

read(3, "", 4096) = 0

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=542, ...}, AT\_EMPTY\_PATH) = 0

close(3) = 0

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

newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=54935, ...}, AT\_EMPTY\_PATH) = 0

mmap(NULL, 54935, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f112d14c000

close(3) = 0

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu", {st\_mode=S\_IFDIR|0755, st\_size=69632, ...}, 0) = 0

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu", {st\_mode=S\_IFDIR|0755, st\_size=69632, ...}, 0) = 0

openat(AT\_FDCWD, "/lib/tls/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/tls/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/tls", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/lib/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/lib", {st\_mode=S\_IFDIR|0755, st\_size=4096, ...}, 0) = 0

openat(AT\_FDCWD, "/usr/lib/tls/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/tls/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/tls/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/tls", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/x86\_64", 0x7fff7f67c840, 0) = -1 ENOENT (Нет такого файла или каталога)

openat(AT\_FDCWD, "/usr/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

newfstatat(AT\_FDCWD, "/usr/lib/

**Вывод**

strace помогает записывает все системные вызовы, выполняемые командой. Кроме того, он также записывает любой сигнал Linux, отправленный процессу. Благодаря этому я мог использовать эту информацию для отладки или диагностики программы.