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**Лабораторная работа №1 по курсу  
«Операционные системы»**

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Подпись: \_\_\_\_\_

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## Постановка задачи

Приобретение практических навыков диагностики работы программного обеспечения. Используемое средство диагностики — утилита strace.

## Демонстрация полного функционала утилиты strace на примере ЛР №2

Strace - это утилита для диагностики, отладки и поиска неисправностей программ для Linux. Она используется для мониторинга взаимодействий между процессами и ядром Linux, которые включают в себя системные вызовы, доставку сигналов и изменение состояния процесса. Работа strace становится возможной благодаря функции ядра, известной как ptrace.

### Отображение всех вызовов:

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace ./lab2 child
execve("./lab2", [ "./lab2", "child"], 0x7fff1e8c72d8 /* 66 vars */) = 0
brk(NULL)                               = 0x562cf4d66000
arch_prctl(0x3001 /* ARCH_??? */, 0x7ffe5dabe110) = -1 EINVAL (Недопустимый аргумент)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f39021b5000
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=81795, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f39021a1000
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\3\0>\0\1\0\0\0\0\0\0\0\0\0\0...", 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2252096, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 2267328, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f3901f77000
mmap(0x7f3902011000, 1114112, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x9a000) = 0x7f3902011000
2
```

```

mmap(0x7f3902121000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1aa000) = 0x7f3902121000
mmap(0x7f3902190000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x218000) = 0x7f3902190000
mmap(0x7f390219e000, 10432, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f390219e000
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"...
, 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) =
0x7f3901f57000
mmap(0x7f3901f5a000, 94208, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x3000) = 0x7f3901f5a000
mmap(0x7f3901f71000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1a000) = 0x7f3901f71000
mmap(0x7f3901f75000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1d000) = 0x7f3901f75000
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"...
, 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"...
, 48,
848) = 48
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352,\223\340."..., 68, 896) = 68
newfstatat(3, "", {st_mode=S_IFREG|0644, 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) =
0x7f3901d2f000

```

```

mmap(0x7f3901d57000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7f3901d57000
mmap(0x7f3901eec000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bd000) = 0x7f3901eec000
mmap(0x7f3901f44000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7f3901f44000
mmap(0x7f3901f4a000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f3901f4a000
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\0\0\0\0>\0\1\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) =
0x7f3901c48000
mmap(0x7f3901c56000, 507904, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe000) = 0x7f3901c56000
mmap(0x7f3901cd2000, 372736, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x8a000) = 0x7f3901cd2000
mmap(0x7f3901d2d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0xe4000) = 0x7f3901d2d000
close(3) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f3901c46000
arch_prctl(ARCH_SET_FS, 0x7f3901c473c0) = 0
set_tid_address(0x7f3901c47690) = 13323
set_robust_list(0x7f3901c476a0, 24) = 0
rseq(0x7f3901c47d60, 0x20, 0, 0x53053053) = 0
mprotect(0x7f3901f44000, 16384, PROT_READ) = 0
mprotect(0x7f3901d2d000, 4096, PROT_READ) = 0
mprotect(0x7f3901f75000, 4096, PROT_READ) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f3901c44000
mprotect(0x7f3902190000, 45056, PROT_READ) = 0
mprotect(0x562cf3216000, 4096, PROT_READ) = 0
mprotect(0x7f39021ef000, 8192, PROT_READ) = 0

```

```

prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
munmap(0x7f39021a1000, 81795)      = 0
getrandom("\x78\xd5\x8e\x72\xf4\x4f\x2e\xc0", 8, GRND_NONBLOCK) = 8
brk(NULL)                        = 0x562cf4d66000
brk(0x562cf4d87000)              = 0x562cf4d87000
newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
write(1, "Input name of file\n", 19Input name of file
) = 19
newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
read(0, input1.txt
"input1.txt\n", 1024)      = 11
pipe2([3, 4], 0)          = 0
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child_tidptr=0x7f3901c47690) = 13371
close(4)                   = 0
read(3, "\4\0\0\0", 4)     = 4
read(3, "\377\377\377\377", 4) = 4
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=13371, si_uid=1000,
si_status=1, si_utime=0, si_stime=0} ---
write(1, "4 \n", 34
) = 3
lseek(0, -1, SEEK_CUR)      = -1 ESPIPE (Недопустимая операция
смещения)
exit_group(0)              = ?
+++ exited with 0 +++

```

**Опция -e служит для отображения лишь определенных вызовов.**

```

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -e pipe ./lab2 child
Input name of file
input1.txt
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=14735, si_uid=1000,
si_status=1, si_utime=0, si_stime=0} ---
4
+++ exited with 0 +++
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -e read ./lab2 child
5

```

```

read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) =
832
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) =
832
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) =
832
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) =
832
Input name of file
read(0, input1.txt
"input1.txt\n", 1024)      = 11
read(3, "\4\0\0\0", 4)      = 4
read(3, "\377\377\377\377", 4)      = 4
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=14833, si_uid=1000,
si_status=1, si_utime=0, si_stime=0} ---
4
+++ exited with 0 +++

```

**Можно и несколько типов вызовов сразу: -e trace= и через запятую —  
СПИСОК ВЫЗОВОВ.**

```

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -e trace=close,read ./lab2 child
close(3)          = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)          = 0
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)          = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832
close(3)          = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)          = 0
Input name of file
read(0, input1.txt
"input1.txt\n", 1024)      = 11
close(4)          = 0
read(3, "\4\0\0\0", 4)      = 4
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=15108, si_uid=1000, si_status=1,
si_utime=0, si_stime=0} ---

```

```
read(3, "\377\377\377\377", 4)      = 4
4
+++ exited with 0 +++
```

### Отслеживание дочерних процессов:

Отслеживать дерево процессов целиком помогает флаг **-f**, с которым **strace** отслеживает системные вызовы в процессах-потомках. К каждой строке вывода при этом добавляется **pid** процесса, делающего системный вывод:

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -f -e trace=close,read ./lab2 child
close(3)                                = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)                                = 0
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)                                = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
close(3)                                = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
close(3)                                = 0
Input name of file
read(0, input1.txt
"input1.txt\n", 1024)      = 11
strace: Process 15261 attached
[pid 15239] close(4)        = 0
[pid 15239] read(3, <unfinished ...>
[pid 15261] close(3)        = 0
[pid 15261] close(3)        = 0
[pid 15261] close(3)        = 0
[pid 15261] read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
[pid 15261] close(3)        = 0
[pid 15261] read(0, "4\n-3 \n22\n12 \n46 \n89 \n91 \n42 \n12 "..., 4096) = 48
[pid 15239] <... read resumed>"4\0\0\0", 4) = 4
[pid 15239] read(3, "\377\377\377\377", 4) = 4
4
[pid 15261] +++ exited with 1 +++
+++ exited with 0 +++
```

**Пути к файлам вместо дескрипторов: Ключ -у позволяет взглянуть на название файлов, с которыми работает процесс, вместо файловых дескрипторов:**

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -y -e read ./lab2 child
read(3</usr/lib/x86_64-linux-gnu/libstdc++.so.6.0.30>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
read(3</usr/lib/x86_64-linux-gnu/libgcc_s.so.1>, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
read(3</usr/lib/x86_64-linux-gnu/libc.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832
read(3</usr/lib/x86_64-linux-gnu/libm.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
Input name of file
read(0</dev/pts/0>, input1.txt
"input1.txt\n", 1024) = 11
read(3<pipe:[116321]>, "\4\0\0\0", 4) = 4
read(3<pipe:[116321]>, "\377\377\377\377", 4) = 4
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=15400, si_uid=1000, si_status=1, si_utime=0, si_stime=0} ---
4
+++ exited with 0 +++
```

**Отображение времени выполнения вызова: Посмотреть время выполнения того или иного вызова позволяет ключ -t:**

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -t -y -e read ./lab2 child
09:33:35 read(3</usr/lib/x86_64-linux-gnu/libstdc++.so.6.0.30>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
09:33:35 read(3</usr/lib/x86_64-linux-gnu/libgcc_s.so.1>, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
09:33:35 read(3</usr/lib/x86_64-linux-gnu/libc.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832
09:33:35 read(3</usr/lib/x86_64-linux-gnu/libm.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
Input name of file
09:33:35 read(0</dev/pts/0>, input1.txt
"input1.txt\n", 1024) = 11
09:33:39 read(3<pipe:[117389]>, "\4\0\0\0", 4) = 4
09:33:39 read(3<pipe:[117389]>, "\377\377\377\377", 4) = 4
```



```
09:33:39 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=15509, si_uid=1000,
si_status=1, si_utime=0, si_stime=0} ---
```

```
4
```

```
09:33:39 +++ exited with 0 +++
```

### **Печать “относительного” времени вызова системных процессов:**

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -r -y -e read ./lab2 child
```

```
0.000000 read(3</usr/lib/x86_64-linux-gnu/libstdc++.so.6.0.30>, "\177ELF\
2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000359 read(3</usr/lib/x86_64-linux-gnu/libgcc_s.so.1>, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\
0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000290 read(3</usr/lib/x86_64-linux-gnu/libc.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\
0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
0.000498 read(3</usr/lib/x86_64-linux-gnu/libm.so.6>, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\
0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
Input name of file
0.004381 read(0</dev/pts/0>, input1.txt
"input1.txt\n", 1024) = 11
12.318888 read(3<pipe:[116483]>, "\4\0\0\0", 4) = 4
0.001541 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=15603, si_uid=1000,
si_status=1, si_utime=0, si_stime=0} ---
0.000179 read(3<pipe:[116483]>, "\377\377\377\377", 4) = 4
4
0.000945 +++ exited with 0 +++
```

### **Статистика системных вызовов: С помощью опции -c — можно получить наглядную статистику выполнения программы:**

```
yorokobeshounen@YS:~/Рабочий стол/OpSys/lab2/build$ strace -c ./lab2 child
```

```
Input name of file
```

```
input1.txt
```

```
4
```

% time	seconds	usecs/call	calls	errors	syscall
0,00	0,000000	0	7		read
0,00	0,000000	0	2		write
0,00	0,000000	0	6		close

0,00	0,000000	0	1	1 lseek
0,00	0,000000	0	22	mmap
0,00	0,000000	0	6	mprotect
0,00	0,000000	0	1	munmap
0,00	0,000000	0	3	brk
0,00	0,000000	0	4	pread64
0,00	0,000000	0	1	1 access
0,00	0,000000	0	1	clone
0,00	0,000000	0	1	execve
0,00	0,000000	0	2	1 arch_prctl
0,00	0,000000	0	1	set_tid_address
0,00	0,000000	0	5	openat
0,00	0,000000	0	7	newfstatat
0,00	0,000000	0	1	set_robust_list
0,00	0,000000	0	1	pipe2
0,00	0,000000	0	1	prlimit64
0,00	0,000000	0	1	getrandom
0,00	0,000000	0	1	rseq

---

100,00	0,000000	0	75	3 total
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## Диагностика Strace других ЛР

### ЛР №3

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab3/build\$ strace -f -r ./lab3 1 < input.txt

0.000000 execve("./lab3", ["/lab3", "1"], 0x7ffac941128 /\* 65 vars \*/) = 0

0.000339 brk(NULL) = 0x55a243c5c000

0.000053 arch\_prctl(0x3001 /\* ARCH\_??? \*/, 0x7ffe28029a60) = -1 EINVAL (Недопустимый аргумент)

0.000260 mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f52aeae2000

0.000048 access("/etc/ld.so.preload", R\_OK) = -1 ENOENT (Нет такого файла или каталога)

0.000115 openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3

0.000057 newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=81795, ...}, AT\_EMPTY\_PATH) = 0

0.000067 mmap(NULL, 81795, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f52aeace000

0.000036 close(3) = 0

0.000052 openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libc.so.6", O\_RDONLY|O\_CLOEXEC) = 3

0.000053 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0...", 832) = 832

```

0.000043 pread64(3, "\6\0\0\4\0\0\0@\0\0\0\0\0\0@\0\0\0\0\0\0@\0\0\0\0\0\0"..., 784, 64) =
784
0.000032 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"..., 48, 848) = 48
0.000029 pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352,\223\340."..., 68, 896) = 68
0.000030 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...}, AT_EMPTY_PATH) = 0
0.000049 pread64(3, "\6\0\0\4\0\0\0@\0\0\0\0\0\0@\0\0\0\0\0\0@\0\0\0\0\0\0"..., 784, 64) =
784
0.000030 mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f52ae8a6000
0.000039 mmap(0x7f52ae8ce000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7f52ae8ce000
0.000075 mmap(0x7f52aea63000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bd000) = 0x7f52aea63000
0.000046 mmap(0x7f52aeabb000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7f52aeabb000
0.000073 mmap(0x7f52aeac1000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f52aeac1000
0.000066 close(3) = 0
0.000070 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f52ae8a3000
0.000045 arch_prctl(ARCH_SET_FS, 0x7f52ae8a3740) = 0
0.000034 set_tid_address(0x7f52ae8a3a10) = 11081
0.000026 set_robust_list(0x7f52ae8a3a20, 24) = 0
0.000026 rseq(0x7f52ae8a40e0, 0x20, 0, 0x53053053) = 0
0.000172 mprotect(0x7f52aeabb000, 16384, PROT_READ) = 0
0.000063 mprotect(0x55a24238e000, 4096, PROT_READ) = 0
0.000053 mprotect(0x7f52aeb1c000, 8192, PROT_READ) = 0
0.000076 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
0.000084 munmap(0x7f52aeace000, 81795) = 0
0.000095 clock_gettime(CLOCK_PROCESS_CPUTIME_ID, {tv_sec=0, tv_nsec=1155807}) = 0
0.000049 getrandom("\xe8\x43\x44\xf2\xf7\x20\xb3\x1a", 8, GRND_NONBLOCK) = 8
0.000063 brk(NULL) = 0x55a243c5c000
0.000032 brk(0x55a243c7d000) = 0x55a243c7d000
0.000314 rt_sigaction(SIGRT_1, {sa_handler=0x7f52ae9378f0, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_RESTART|SA_SIGINFO,
sa_restorer=0x7f52ae8e8520}, NULL, 8) = 0

```

```

0.001944 rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
0.000064 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0) = 0x7f52ae0a2000
0.000043 mprotect(0x7f52ae0a3000, 8388608, PROT_READ|PROT_WRITE) = 0
0.000047 rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0
0.000039 clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEAR_TID, child_tid=0x7f52ae8a2910, parent_tid=0x7f52ae8a2910, exit_signal=0,
stack=0x7f52ae0a2000, stack_size=0x7fff00, tls=0x7f52ae8a2640})strace: Process 11082 attached
=> {parent_tid=[11082]}, 88) = 11082
[pid 11082] 0.000559 rseq(0x7f52ae8a2fe0, 0x20, 0, 0x53053053 <unfinished ...>
[pid 11081] 0.000010 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 11082] 0.000012 <... rseq resumed>) = 0
[pid 11081] 0.000012 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 11082] 0.000007 set_robust_list(0x7f52ae8a2920, 24 <unfinished ...>
[pid 11081] 0.000009 futex(0x7f52ae8a2910, FUTEX_WAIT_BITSET|
FUTEX_CLOCK_REALTIME, 11082, NULL, FUTEX_BITSET_MATCH_ANY <unfinished ...>
[pid 11082] 0.000010 <... set_robust_list resumed>) = 0
[pid 11082] 0.000019 rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
[pid 11082] 0.000043 newfstatat(0, "", {st_mode=S_IFREG|0664, st_size=39, ...},
AT_EMPTY_PATH) = 0
[pid 11082] 0.000039 mmap(NULL, 134217728, PROT_NONE, MAP_PRIVATE|
MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x7f52a60a2000
[pid 11082] 0.000024 munmap(0x7f52a60a2000, 32890880) = 0
[pid 11082] 0.000031 munmap(0x7f52ac000000, 34217984) = 0
[pid 11082] 0.000024 mprotect(0x7f52a8000000, 135168, PROT_READ|PROT_WRITE) = 0
[pid 11082] 0.000034 read(0, "8991 993 34 345609 43185 4 56431"..., 4096) = 39
[pid 11082] 0.000036 read(0, "", 4096) = 0
[pid 11082] 0.000032 rt_sigprocmask(SIG_BLOCK, ~[RT_1], NULL, 8) = 0
[pid 11082] 0.000029 madvise(0x7f52ae0a2000, 8368128, MADV_DONTNEED) = 0
[pid 11082] 0.000030 exit(0) = ?
[pid 11081] 0.000033 <... futex resumed>) = 0
[pid 11082] 0.000005 +++ exited with 0 +++
0.000012 clock_gettime(CLOCK_PROCESS_CPUTIME_ID, {tv_sec=0, tv_nsec=1615459}) = 0
0.000032 newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
0.000035 write(1, "Min value is 1\n", 15Min value is 1
) = 15

```

```

0.001197 write(1, "Time of executing: 0\n", 21Time of executing: 0
) = 21
0.000510 exit_group(0)          = ?
0.000424 +++ exited with 0 +++

```

## ЛП №4

```

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab4/build$ strace -r -f ./lab4

```

```

0.000000 execve("./lab4", ["/lab4"], 0x7ffead025f90 /* 66 vars */) = 0
0.000818 brk(NULL)          = 0x5580d6267000
0.000134 arch_prctl(0x3001 /* ARCH_??? */, 0x7fffb41d4e0) = -1 EINVAL (Недопустимый
аргумент)
0.000365 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f5366026000
0.000089 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
0.000117 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
0.000113 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=81795, ...}, AT_EMPTY_PATH) = 0
0.000091 mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f5366012000
0.000062 close(3)           = 0
0.000075 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC)
= 3
0.000075 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000071 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2252096, ...}, AT_EMPTY_PATH) = 0
0.000076 mmap(NULL, 2267328, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f5365de8000
0.000064 mmap(0x7f5365e82000, 1114112, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x9a000) = 0x7f5365e82000
0.000082 mmap(0x7f5365f92000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1aa000) = 0x7f5365f92000
0.000068 mmap(0x7f5366001000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x218000) = 0x7f5366001000
0.000079 mmap(0x7f536600f000, 10432, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f536600f000
0.000092 close(3)           = 0
0.000071 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) =
3
0.000078 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000065 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=125488, ...}, AT_EMPTY_PATH) = 0
0.000075 mmap(NULL, 127720, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f5365dc8000

```

```

0.000081 mmap(0x7f5365dcb000, 94208, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f5365dcb000
0.000194 mmap(0x7f5365de2000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1a000) = 0x7f5365de2000
0.000071 mmap(0x7f5365de6000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1d000) = 0x7f5365de6000
0.000095 close(3) = 0
0.000088 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000129 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
0.000087 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"..., 784, 64) =
784
0.000090 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"..., 48, 848) = 48
0.000080 pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352\223\340."..., 68, 896) = 68
0.000082 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...}, AT_EMPTY_PATH) = 0
0.000148 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"..., 784, 64) =
784
0.000088 mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f5365ba0000
0.000085 mmap(0x7f5365bc8000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7f5365bc8000
0.000133 mmap(0x7f5365d5d000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bd000) = 0x7f5365d5d000
0.000095 mmap(0x7f5365db5000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7f5365db5000
0.000126 mmap(0x7f5365dbb000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f5365dbb000
0.000099 close(3) = 0
0.000077 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000096 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000070 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=940560, ...}, AT_EMPTY_PATH) = 0
0.000080 mmap(NULL, 942344, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f5365ab9000
0.000066 mmap(0x7f5365ac7000, 507904, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe000) = 0x7f5365ac7000
0.000076 mmap(0x7f5365b43000, 372736, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x8a000) = 0x7f5365b43000

```

```

0.000067 mmap(0x7f5365b9e000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe4000) = 0x7f5365b9e000
0.000096 close(3) = 0
0.000097 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f5365ab7000
0.000083 arch_prctl(ARCH_SET_FS, 0x7f5365ab83c0) = 0
0.000056 set_tid_address(0x7f5365ab8690) = 12373
0.000054 set_robust_list(0x7f5365ab86a0, 24) = 0
0.000054 rseq(0x7f5365ab8d60, 0x20, 0, 0x53053053) = 0
0.000189 mprotect(0x7f5365db5000, 16384, PROT_READ) = 0
0.000106 mprotect(0x7f5365b9e000, 4096, PROT_READ) = 0
0.000069 mprotect(0x7f5365de6000, 4096, PROT_READ) = 0
0.000282 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f5365ab5000
0.000804 mprotect(0x7f5366001000, 45056, PROT_READ) = 0
0.000100 mprotect(0x5580d450d000, 4096, PROT_READ) = 0
0.000080 mprotect(0x7f5366060000, 8192, PROT_READ) = 0
0.000103 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
0.000116 munmap(0x7f5366012000, 81795) = 0
0.000182 getrandom("\x99\xf6\xf2\xb0\xdb\xf2\x4b\x34", 8, GRND_NONBLOCK) = 8
0.000077 brk(NULL) = 0x5580d6267000
0.000058 brk(0x5580d6288000) = 0x5580d6288000
0.000139 newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
0.000107 write(1, "Input name of file\n", 19Input name of file
) = 19
0.000088 newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
0.000077 read(0, input1.txt
"input1.txt\n", 1024) = 11
4.516703 openat(AT_FDCWD, "/dev/shm/shared_memory", O_RDWR|O_CREAT|O_NOFOLLOW|
O_CLOEXEC, 0700) = 3
0.000152 ftruncate(3, 4096) = 0
0.000090 clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child_tidptr=0x7f5365ab8690) = 12377
strace: Process 12377 attached
[pid 12373] 0.000406 wait4(-1, <unfinished ...>

```

```

[pid 12377] 0.000076 set_robust_list(0x7f5365ab86a0, 24) = 0
[pid 12377] 0.000150 openat(AT_FDCWD, "input1.txt", O_RDWR) = 4
[pid 12377] 0.000119 mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7f536605f000
[pid 12377] 0.000092 execve("./child", [".child", "16\n0\n49\n27\n35\n64\n144\n169\n",
"shared_memory"], 0x7ffbb41d6b8 /* 66 vars */) = 0
[pid 12377] 0.000659 brk(NULL) = 0x55b4c554a000
[pid 12377] 0.000111 arch_prctl(0x3001 /* ARCH_??? */, 0x7ff739b7360) = -1 EINVAL
(Недопустимый аргумент)
[pid 12377] 0.000159 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f3c98704000
[pid 12377] 0.000096 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или
каталога)
[pid 12377] 0.000116 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
[pid 12377] 0.000100 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=81795, ...},
AT_EMPTY_PATH) = 0
[pid 12377] 0.000109 mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f3c986f0000
[pid 12377] 0.000083 close(3) = 0
[pid 12377] 0.000098 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|
O_CLOEXEC) = 3
[pid 12377] 0.000095 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"...,
832) = 832
[pid 12377] 0.000098 pread64(3, "\6\0\0\04\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 12377] 0.000086 pread64(3, "\4\0\0\0\0\0\05\0\0\0GNU\0\2\0\0\300\4\0\0\03\0\0\0\0\0\0"...,
48, 848) = 48
[pid 12377] 0.000084 pread64(3, "\4\0\0\0\24\0\0\03\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352,\223\340."..., 68, 896) = 68
[pid 12377] 0.000084 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...},
AT_EMPTY_PATH) = 0
[pid 12377] 0.000097 pread64(3, "\6\0\0\04\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 12377] 0.000093 mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE,
3, 0) = 0x7f3c984c8000
[pid 12377] 0.000093 mmap(0x7f3c984f0000, 1658880, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7f3c984f0000
[pid 12377] 0.000102 mmap(0x7f3c98685000, 360448, PROT_READ, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1bd000) = 0x7f3c98685000

```



```

[pid 12377] 0.000089 mmap(0x7f3c986dd000, 24576, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7f3c986dd000
[pid 12377] 0.000110 mmap(0x7f3c986e3000, 52816, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f3c986e3000
[pid 12377] 0.000122 close(3) = 0
[pid 12377] 0.000097 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7f3c984c5000
[pid 12377] 0.000103 arch_prctl(ARCH_SET_FS, 0x7f3c984c5740) = 0
[pid 12377] 0.000068 set_tid_address(0x7f3c984c5a10) = 12377
[pid 12377] 0.000075 set_robust_list(0x7f3c984c5a20, 24) = 0
[pid 12377] 0.000075 rseq(0x7f3c984c60e0, 0x20, 0, 0x53053053) = 0
[pid 12377] 0.000208 mprotect(0x7f3c986dd000, 16384, PROT_READ) = 0
[pid 12377] 0.000102 mprotect(0x55b4c4281000, 4096, PROT_READ) = 0
[pid 12377] 0.000101 mprotect(0x7f3c9873e000, 8192, PROT_READ) = 0
[pid 12377] 0.000144 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
[pid 12377] 0.000131 munmap(0x7f3c986f0000, 81795) = 0
[pid 12377] 0.000180 openat(AT_FDCWD, "/dev/shm/shared_memory", O_RDWR|O_CREAT|
O_NOFOLLOW|O_CLOEXEC, 0700) = 3
[pid 12377] 0.000099 mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 3, 0) =
0x7f3c9873d000
[pid 12377] 0.000047 exit_group(0) = ?
[pid 12377] 0.000114 +++ exited with 0 +++
0.000031 <... wait4 resumed>NULL, 0, NULL) = 12377
0.000018 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=12377, si_uid=1000,
si_status=0, si_utime=0, si_stime=0} ---
0.000026 mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 3, 0) =
0x7f536605f000
0.000057 munmap(NULL, 4096) = 0
0.000034 unlink("/dev/shm/shared_memory") = 0
0.000051 write(1, "16 0 49 27 35 64 144 169 \n", 2616 0 49 27 35 64 144 169
) = 26
0.000075 lseek(0, -1, SEEK_CUR) = -1 ESPIPE (Недопустимая операция смещения)
0.000041 exit_group(0) = ?
0.000201 +++ exited with 0 +++

```

## ЛП №5

```

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab5/build/test2$ strace -f -r ./prog2 2 1000
0.000000 execve("./prog2", [".prog2", "2", "1000"], 0x7ffdcbf18a70 /* 66 vars */) = 0

```

```

0.035505 brk(NULL)          = 0x5586fb8b1000
0.000233 arch_prctl(0x3001 /* ARCH_??? */, 0x7fff3eb051f0) = -1 EINVAL (Недопустимый
аргумент)
0.000326 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb65e13f000
0.000097 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
0.000132 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/glibc-hwcaps/x86-64-v3/libstdc++.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000098 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/glibc-hwcaps/x86-64-v3", 0x7fff3eb04410, 0)
= -1 ENOENT (Нет такого файла или каталога)
0.000078 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/glibc-hwcaps/x86-64-v2/libstdc++.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000054 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/glibc-hwcaps/x86-64-v2", 0x7fff3eb04410, 0)
= -1 ENOENT (Нет такого файла или каталога)
0.000054 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/tls/haswell/x86_64/libstdc++.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000059 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/tls/haswell/x86_64", 0x7fff3eb04410, 0) = -1
ENOENT (Нет такого файла или каталога)
0.000056 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/tls/haswell/libstdc++.so.6", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000047 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/tls/haswell", 0x7fff3eb04410, 0) = -1
ENOENT (Нет такого файла или каталога)

```

```

0.000055 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/tls/x86_64/libstdc++.so.6", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000067 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/tls/x86_64", 0x7fff3eb04410, 0) = -1
ENOENT (Нет такого файла или каталога)
0.000066 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/tls/libstdc++.so.6", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000059 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/tls", 0x7fff3eb04410, 0) = -1 ENOENT (Нет
такого файла или каталога)
0.000048 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/haswell/x86_64/libstdc++.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000051 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/haswell/x86_64", 0x7fff3eb04410, 0) = -1
ENOENT (Нет такого файла или каталога)
0.000062 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/haswell/libstdc++.so.6", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000060 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/haswell", 0x7fff3eb04410, 0) = -1 ENOENT
(Нет такого файла или каталога)
0.000053 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys/lab5/build/test2/x86_64/libstdc++.so.6", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000054 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271

```

```

\321\201\321\202\320\276\320\273\OpSys\lab5\build\test2\x86_64", 0x7fff3eb04410, 0) = -1 ENOENT
(Нет такого файла или каталога)
0.000050 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys\lab5\build\test2\libstdc++.so.6", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (Нет такого файла или каталога)
0.000056 newfstatat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys\lab5\build\test2", {st_mode=S_IFDIR|0775,
st_size=4096, ...}, 0) = 0
0.000057 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
0.000061 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=81795, ...}, AT_EMPTY_PATH) = 0
0.000053 mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fb65e12b000
0.000049 close(3) = 0
0.000056 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC)
= 3
0.000056 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000049 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2252096, ...}, AT_EMPTY_PATH) = 0
0.000053 mmap(NULL, 2267328, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fb65df01000
0.000048 mmap(0x7fb65df9b000, 1114112, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x9a000) = 0x7fb65df9b000
0.000057 mmap(0x7fb65e0ab000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1aa000) = 0x7fb65e0ab000
0.000049 mmap(0x7fb65e11a000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x218000) = 0x7fb65e11a000
0.000102 mmap(0x7fb65e128000, 10432, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fb65e128000
0.000063 close(3) = 0
0.000050 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273\OpSys\lab5\build\test2\libgcc_s.so.1", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (Нет такого файла или каталога)
0.000064 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) =
3
0.000053 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000048 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=125488, ...}, AT_EMPTY_PATH) = 0

```

```

0.000053 mmap(NULL, 127720, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fb65dee1000
0.000046 mmap(0x7fb65dee4000, 94208, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fb65dee4000
0.000053 mmap(0x7fb65defb000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1a000) = 0x7fb65defb000
0.000048 mmap(0x7fb65deff000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1d000) = 0x7fb65deff000
0.000063 close(3) = 0
0.000043 openat(AT_FDCWD, "/home/yorokobeshounen/\
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2/libc.so.6", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000072 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000052 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
0.000047 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"..., 784, 64) =
784
0.000047 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"..., 48, 848) = 48
0.000073 pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352,\223\340."..., 68, 896) = 68
0.000054 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...}, AT_EMPTY_PATH) = 0
0.000106 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"..., 784, 64) =
784
0.000070 mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fb65dcb9000
0.000059 mmap(0x7fb65dce1000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7fb65dce1000
0.000070 mmap(0x7fb65de76000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bd000) = 0x7fb65de76000
0.000060 mmap(0x7fb65dece000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7fb65dece000
0.000072 mmap(0x7fb65ded4000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fb65ded4000
0.000086 close(3) = 0
0.000073 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000094 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000063 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=940560, ...}, AT_EMPTY_PATH) = 0

```

```

0.000074 mmap(NULL, 942344, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fb65dbd2000
0.000072 mmap(0x7fb65dbe0000, 507904, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe000) = 0x7fb65dbe0000
0.000124 mmap(0x7fb65dc5c000, 372736, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x8a000) = 0x7fb65dc5c000
0.000078 mmap(0x7fb65dcb7000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe4000) = 0x7fb65dcb7000
0.000105 close(3) = 0
0.000079 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb65dbd0000
0.000093 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb65dbcd000
0.000082 arch_prctl(ARCH_SET_FS, 0x7fb65dbcd740) = 0
0.000080 set_tid_address(0x7fb65dbcd10) = 13947
0.000068 set_robust_list(0x7fb65dbcd20, 24) = 0
0.000068 rseq(0x7fb65dbce0e0, 0x20, 0, 0x53053053) = 0
0.000420 mprotect(0x7fb65dece000, 16384, PROT_READ) = 0
0.000229 mprotect(0x7fb65dcb7000, 4096, PROT_READ) = 0
0.000142 mprotect(0x7fb65deff000, 4096, PROT_READ) = 0
0.000915 mprotect(0x7fb65e11a000, 45056, PROT_READ) = 0
0.000083 mprotect(0x5586fad47000, 4096, PROT_READ) = 0
0.000067 mprotect(0x7fb65e179000, 8192, PROT_READ) = 0
0.000082 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
0.000114 munmap(0x7fb65e12b000, 81795) = 0
0.000125 getrandom("\x93\x03\x51\xfe\x4c\x58\x28\xfb", 8, GRND_NONBLOCK) = 8
0.000059 brk(NULL) = 0x5586fb8b1000
0.000048 brk(0x5586fb8d2000) = 0x5586fb8d2000
0.000112 futex(0x7fb65e12877c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
0.000179 openat(AT_FDCWD, "./libmath2.so", O_RDONLY|O_CLOEXEC) = 3
0.000078 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000282 newfstatat(3, "", {st_mode=S_IFREG|0775, st_size=15232, ...}, AT_EMPTY_PATH) = 0
0.000076 getcwd("/home/yorokobeshounen/
320\240\320\260\320\261\320\276\321\207\320\270\320\271
\321\201\321\202\320\276\320\273/OpSys/lab5/build/test2", 128) = 69
0.000058 mmap(NULL, 16424, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fb65e13a000

```

```

0.000057 mmap(0x7fb65e13b000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7fb65e13b000
0.000089 mmap(0x7fb65e13c000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x7fb65e13c000
0.000070 mmap(0x7fb65e13d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fb65e13d000
0.000100 close(3) = 0
0.000083 mprotect(0x7fb65e13d000, 4096, PROT_READ) = 0
0.000108 munmap(0x7fb65e13a000, 16424) = 0
0.000199 newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT_EMPTY_PATH) = 0
0.000115 write(1, "3.140590\n", 93.140590
) = 9
0.000320 exit_group(0) = ?
0.000482 +++ exited with 0 +++

```

## ЛП №6-8

```

yorokobeshounen@YS:~/Рабочий стол/OpSys/lab6/build$ strace -r -f ./client
0.000000 execve("./client", ["/client"], 0x7ffc3d1b1ac0 /* 66 vars */) = 0
0.000368 brk(NULL) = 0x5646b7b2d000
0.000519 arch_prctl(0x3001 /* ARCH_??? */, 0x7ffe66d1d5b0) = -1 EINVAL (Недопустимый
аргумент)
0.000323 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fdaf9000
0.000048 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
0.000067 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
0.000313 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=81795, ...}, AT_EMPTY_PATH) = 0
0.000054 mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fd5fdae5000
0.000032 close(3) = 0
0.000038 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libzmq.so.5", O_RDONLY|O_CLOEXEC) =
3
0.000037 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240\233\1\0\0\0\0"..., 832) = 832
0.000027 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=634936, ...}, AT_EMPTY_PATH) = 0
0.000036 mmap(NULL, 636784, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fda49000
0.000031 mmap(0x7fd5fda61000, 397312, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x18000) = 0x7fd5fda61000

```

```

0.000049 mmap(0x7fd5fdac2000, 106496, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x79000) = 0x7fd5fdac2000
0.000032 mmap(0x7fd5fdadc000, 36864, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x92000) = 0x7fd5fdadc000
0.000045 close(3) = 0
0.000031 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC)
= 3
0.000038 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000031 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2252096, ...}, AT_EMPTY_PATH) = 0
0.000029 mmap(NULL, 2267328, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd81f000
0.000032 mmap(0x7fd5fd8b9000, 1114112, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x9a000) = 0x7fd5fd8b9000
0.000035 mmap(0x7fd5fd9c9000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1aa000) = 0x7fd5fd9c9000
0.000032 mmap(0x7fd5fda38000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x218000) = 0x7fd5fda38000
0.000037 mmap(0x7fd5fda46000, 10432, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fda46000
0.000041 close(3) = 0
0.000033 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) =
3
0.000030 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000031 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=125488, ...}, AT_EMPTY_PATH) = 0
0.000037 mmap(NULL, 127720, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd7ff000
0.000032 mmap(0x7fd5fd802000, 94208, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fd5fd802000
0.000035 mmap(0x7fd5fd819000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1a000) = 0x7fd5fd819000
0.000047 mmap(0x7fd5fd81d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1d000) = 0x7fd5fd81d000
0.000110 close(3) = 0
0.000029 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000045 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0"..., 832) = 832
0.000036 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"..., 784, 64) =
784
0.000032 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"..., 48, 848) = 48

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0.000032 pread64(3, "\4\0\0\24\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\
360\352,\223\340."..., 68, 896) = 68
0.000031 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...}, AT_EMPTY_PATH) = 0
0.000038 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"..., 784, 64) =
784
0.000025 mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd5d7000
0.000028 mmap(0x7fd5fd5ff000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7fd5fd5ff000
0.000038 mmap(0x7fd5fd794000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bd000) = 0x7fd5fd794000
0.000030 mmap(0x7fd5fd7ec000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x214000) = 0x7fd5fd7ec000
0.000043 mmap(0x7fd5fd7f2000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fd7f2000
0.000047 close(3) = 0
0.000035 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libbsd.so.0", O_RDONLY|O_CLOEXEC) = 3
0.000046 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
0.000039 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=89096, ...}, AT_EMPTY_PATH) = 0
0.000042 mmap(NULL, 94432, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd5bf000
0.000038 mprotect(0x7fd5fd5c3000, 69632, PROT_NONE) = 0
0.000039 mmap(0x7fd5fd5c3000, 53248, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fd5fd5c3000
0.000042 mmap(0x7fd5fd5d0000, 12288, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x11000) = 0x7fd5fd5d0000
0.000032 mmap(0x7fd5fd5d4000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x14000) = 0x7fd5fd5d4000
0.000030 mmap(0x7fd5fd5d6000, 224, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fd5d6000
0.000040 close(3) = 0
0.000031 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libsodium.so.23", O_RDONLY|
O_CLOEXEC) = 3
0.000032 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
0.000027 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=355040, ...}, AT_EMPTY_PATH) = 0
0.000029 mmap(NULL, 357440, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd567000
0.000034 mprotect(0x7fd5fd573000, 303104, PROT_NONE) = 0

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0.000031 mmap(0x7fd5fd573000, 229376, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xc000) = 0x7fd5fd573000
0.000037 mmap(0x7fd5fd5ab000, 69632, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x44000) = 0x7fd5fd5ab000
0.000034 mmap(0x7fd5fd5bd000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x55000) = 0x7fd5fd5bd000
0.000039 close(3) = 0
0.000027 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd565000
0.000035 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpgm-5.3.so.0", O_RDONLY|
O_CLOEXEC) = 3
0.000529 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\340L\0\0\0\0\0"..., 832) = 832
0.000034 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=310264, ...}, AT_EMPTY_PATH) = 0
0.000040 mmap(NULL, 329808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd514000
0.000032 mmap(0x7fd5fd518000, 172032, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fd5fd518000
0.000038 mmap(0x7fd5fd542000, 118784, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2e000) = 0x7fd5fd542000
0.000031 mmap(0x7fd5fd55f000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4a000) = 0x7fd5fd55f000
0.000039 mmap(0x7fd5fd561000, 14416, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fd561000
0.000040 close(3) = 0
0.000026 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnorm.so.1", O_RDONLY|O_CLOEXEC) =
3
0.000038 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\255\0\0\0\0\0"..., 832) = 832
0.000036 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=497824, ...}, AT_EMPTY_PATH) = 0
0.000043 mmap(NULL, 1223168, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd3e9000
0.000032 mprotect(0x7fd5fd3f3000, 446464, PROT_NONE) = 0
0.000031 mmap(0x7fd5fd3f3000, 286720, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xa000) = 0x7fd5fd3f3000
0.000025 mmap(0x7fd5fd439000, 155648, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x50000) = 0x7fd5fd439000
0.000029 mmap(0x7fd5fd460000, 16384, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x76000) = 0x7fd5fd460000

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0.000035 mmap(0x7fd5fd464000, 719360, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fd464000
0.000038 close(3) = 0
0.000042 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgssapi_krb5.so.2", O_RDONLY|
O_CLOEXEC) = 3
0.000051 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000039 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=338648, ...}, AT_EMPTY_PATH) = 0
0.000042 mmap(NULL, 340960, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd395000
0.000038 mprotect(0x7fd5fd3a0000, 282624, PROT_NONE) = 0
0.000038 mmap(0x7fd5fd3a0000, 229376, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xb000) = 0x7fd5fd3a0000
0.000040 mmap(0x7fd5fd3d8000, 49152, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x43000) = 0x7fd5fd3d8000
0.000037 mmap(0x7fd5fd3e5000, 16384, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4f000) = 0x7fd5fd3e5000
0.000051 close(3) = 0
0.000041 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
0.000043 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000037 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=940560, ...}, AT_EMPTY_PATH) = 0
0.000040 mmap(NULL, 942344, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd2ae000
0.000037 mmap(0x7fd5fd2bc000, 507904, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe000) = 0x7fd5fd2bc000
0.000041 mmap(0x7fd5fd338000, 372736, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x8a000) = 0x7fd5fd338000
0.000038 mmap(0x7fd5fd393000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xe4000) = 0x7fd5fd393000
0.000049 close(3) = 0
0.000038 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libmd.so.0", O_RDONLY|O_CLOEXEC) = 3
0.000043 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000036 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=47472, ...}, AT_EMPTY_PATH) = 0
0.000041 mmap(NULL, 49384, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd2a1000
0.000055 mmap(0x7fd5fd2a3000, 28672, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fd5fd2a3000
0.000037 mmap(0x7fd5fd2aa000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x9000) = 0x7fd5fd2aa000

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```

0.000026 mmap(0x7fd5fd2ac000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xa000) = 0x7fd5fd2ac000
0.000040 close(3) = 0
0.000036 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC)
= 3
0.000033 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000028 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=21448, ...}, AT_EMPTY_PATH) = 0
0.000028 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd29f000
0.000033 mmap(NULL, 16424, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd29a000
0.000029 mmap(0x7fd5fd29b000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7fd5fd29b000
0.000029 mmap(0x7fd5fd29c000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x7fd5fd29c000
0.000024 mmap(0x7fd5fd29d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fd5fd29d000
0.000038 close(3) = 0
0.000032 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5.so.3", O_RDONLY|O_CLOEXEC) =
3
0.000034 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000032 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=827936, ...}, AT_EMPTY_PATH) = 0
0.000028 mmap(NULL, 830576, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd1cf000
0.000048 mprotect(0x7fd5fd1f0000, 634880, PROT_NONE) = 0
0.000023 mmap(0x7fd5fd1f0000, 380928, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x21000) = 0x7fd5fd1f0000
0.000029 mmap(0x7fd5fd24d000, 249856, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x7e000) = 0x7fd5fd24d000
0.000028 mmap(0x7fd5fd28b000, 61440, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xbb000) = 0x7fd5fd28b000
0.000036 close(3) = 0
0.000022 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libk5crypto.so.3", O_RDONLY|
O_CLOEXEC) = 3
0.000026 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000030 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=182864, ...}, AT_EMPTY_PATH) = 0
0.000027 mmap(NULL, 188472, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd1a0000

```

```

0.000024 mprotect(0x7fd5fd1a4000, 163840, PROT_NONE) = 0
0.000029 mmap(0x7fd5fd1a4000, 110592, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fd5fd1a4000
0.000024 mmap(0x7fd5fd1bf000, 49152, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1f000) = 0x7fd5fd1bf000
0.000029 mmap(0x7fd5fd1cc000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2b000) = 0x7fd5fd1cc000
0.000030 mmap(0x7fd5fd1ce000, 56, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd1ce000
0.000036 close(3) = 0
0.000026 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libcom_err.so.2", O_RDONLY|
O_CLOEXEC) = 3
0.000035 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000029 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=18504, ...}, AT_EMPTY_PATH) = 0
0.000034 mmap(NULL, 20552, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd19a000
0.000023 mmap(0x7fd5fd19c000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fd5fd19c000
0.000027 mmap(0x7fd5fd19d000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x3000) = 0x7fd5fd19d000
0.000029 mmap(0x7fd5fd19e000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fd5fd19e000
0.000039 close(3) = 0
0.000022 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5support.so.0", O_RDONLY|
O_CLOEXEC) = 3
0.000031 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000029 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=52016, ...}, AT_EMPTY_PATH) = 0
0.000027 mmap(NULL, 54224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd18c000
0.000029 mprotect(0x7fd5fd18f000, 36864, PROT_NONE) = 0
0.000029 mmap(0x7fd5fd18f000, 24576, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fd5fd18f000
0.000023 mmap(0x7fd5fd195000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x9000) = 0x7fd5fd195000
0.000028 mmap(0x7fd5fd198000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xb000) = 0x7fd5fd198000
0.000038 close(3) = 0

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```

0.000026 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkeyutils.so.1", O_RDONLY|O_CLOEXEC)
= 3
0.000028 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000029 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=22600, ...}, AT_EMPTY_PATH) = 0
0.000031 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd18a000
0.000031 mmap(NULL, 24592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd183000
0.000022 mmap(0x7fd5fd185000, 8192, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fd5fd185000
0.000028 mmap(0x7fd5fd187000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x4000) = 0x7fd5fd187000
0.000029 mmap(0x7fd5fd188000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fd5fd188000
0.000038 close(3) = 0
0.000023 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libresolv.so.2", O_RDONLY|O_CLOEXEC)
= 3
0.000031 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
0.000030 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=68552, ...}, AT_EMPTY_PATH) = 0
0.000028 mmap(NULL, 80456, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fd5fd16f000
0.000030 mmap(0x7fd5fd172000, 40960, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fd5fd172000
0.000031 mmap(0x7fd5fd17c000, 12288, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0xd000) = 0x7fd5fd17c000
0.000029 mmap(0x7fd5fd17f000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x7fd5fd17f000
0.000026 mmap(0x7fd5fd181000, 6728, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd5fd181000
0.000033 close(3) = 0
0.000042 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd16d000
0.000059 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd16a000
0.000026 arch_prctl(ARCH_SET_FS, 0x7fd5fd16a9c0) = 0
0.000027 set_tid_address(0x7fd5fd16ac90) = 14896
0.000027 set_robust_list(0x7fd5fd16aca0, 24) = 0
0.000022 rseq(0x7fd5fd16b360, 0x20, 0, 0x53053053) = 0

```

```

0.000082 mprotect(0x7fd5fd7ec000, 16384, PROT_READ) = 0
0.000035 mprotect(0x7fd5fd17f000, 4096, PROT_READ) = 0
0.000036 mprotect(0x7fd5fd188000, 4096, PROT_READ) = 0
0.000329 mprotect(0x7fd5fd198000, 4096, PROT_READ) = 0
0.000046 mprotect(0x7fd5fd19e000, 4096, PROT_READ) = 0
0.000057 mprotect(0x7fd5fd1cc000, 4096, PROT_READ) = 0
0.000177 mprotect(0x7fd5fd28b000, 53248, PROT_READ) = 0
0.000052 mprotect(0x7fd5fd29d000, 4096, PROT_READ) = 0
0.000062 mprotect(0x7fd5fd2ac000, 4096, PROT_READ) = 0
0.000079 mprotect(0x7fd5fd393000, 4096, PROT_READ) = 0
0.000122 mprotect(0x7fd5fd3e5000, 8192, PROT_READ) = 0
0.000055 mprotect(0x7fd5fd81d000, 4096, PROT_READ) = 0
0.001323 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd5fd168000
0.000661 mprotect(0x7fd5fda38000, 45056, PROT_READ) = 0
0.000179 mprotect(0x7fd5fd460000, 12288, PROT_READ) = 0
0.000054 mprotect(0x7fd5fd55f000, 4096, PROT_READ) = 0
0.000052 mprotect(0x7fd5fd5bd000, 4096, PROT_READ) = 0
0.000078 mprotect(0x7fd5fd5d4000, 4096, PROT_READ) = 0
0.000109 mprotect(0x7fd5fdadc000, 32768, PROT_READ) = 0
0.000408 mprotect(0x5646b717f000, 4096, PROT_READ) = 0
0.000095 mprotect(0x7fd5fdb33000, 8192, PROT_READ) = 0
0.000097 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
0.000102 munmap(0x7fd5fdae5000, 81795) = 0
0.000235 getrandom("\x5d\x71\xec\xef\xbf\xed\x93\xc2", 8, GRND_NONBLOCK) = 8
0.000053 brk(NULL) = 0x5646b7b2d000
0.000037 brk(0x5646b7b4e000) = 0x5646b7b4e000
0.000368 futex(0x7fd5fda4677c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
0.000422 openat(AT_FDCWD, "/sys/devices/system/cpu/online", O_RDONLY|O_CLOEXEC) = 3
0.000118 read(3, "0-3\n", 1024) = 4
0.000041 close(3) = 0
0.000034 openat(AT_FDCWD, "/sys/devices/system/cpu", O_RDONLY|O_NONBLOCK|
O_CLOEXEC|O_DIRECTORY) = 3
0.000042 newfstatat(3, "", {st_mode=S_IFDIR|0755, st_size=0, ...}, AT_EMPTY_PATH) = 0
0.000046 getdents64(3, 0x5646b7b3eee0 /* 22 entries */, 32768) = 656
0.000042 getdents64(3, 0x5646b7b3eee0 /* 0 entries */, 32768) = 0
0.000064 close(3) = 0

```

```

0.000030 getpid()          = 14896
0.000040 sched_getaffinity(14896, 128, [0, 1, 2, 3]) = 8
0.000082 newfstatat(AT_FDCWD, "/etc/nsswitch.conf", {st_mode=S_IFREG|0644, st_size=553, ...},
0) = 0
0.000045 newfstatat(AT_FDCWD, "/", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
0.000037 openat(AT_FDCWD, "/etc/nsswitch.conf", O_RDONLY|O_CLOEXEC) = 3
0.000036 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=553, ...}, AT_EMPTY_PATH) = 0
0.000041 read(3, "# /etc/nsswitch.conf\n#\n# Example"..., 4096) = 553
0.000043 read(3, "", 4096)      = 0
0.000031 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=553, ...}, AT_EMPTY_PATH) = 0
0.000031 close(3)              = 0
0.000048 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
0.000039 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=81795, ...}, AT_EMPTY_PATH) = 0
0.000032 mmap(NULL, 81795, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fd5fdae5000
0.000038 close(3)              = 0
0.000033 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcap/x86_64-v3/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000034 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcap/x86_64-v3",
0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)
0.000028 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcap/x86_64-v2/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000035 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcap/x86_64-v2",
0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)
0.000032 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/x86_64/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000037 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/x86_64", 0x7ffe66d1a3b0, 0) =
-1 ENOENT (Нет такого файла или каталога)
0.000028 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
0.000029 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell", 0x7ffe66d1a3b0, 0) = -1
ENOENT (Нет такого файла или каталога)
0.000030 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)
0.000033 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/x86_64", 0x7ffe66d1a3b0, 0) = -1
ENOENT (Нет такого файла или каталога)
0.000028 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

```



0.000029 newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/tls", 0x7ffe66d1a3b0, 0) = -1 ENOENT  
(Нет такого файла или каталога)

0.000035 openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/haswell/x86\_64/libnss\_db.so.2",  
O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000031 newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1  
ENOENT (Нет такого файла или каталога)

0.000027 openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/haswell/libnss\_db.so.2", O\_RDONLY|  
O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000028 newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/haswell", 0x7ffe66d1a3b0, 0) = -1  
ENOENT (Нет такого файла или каталога)

0.000032 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)

0.000033 newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/x86\_64", 0x7ffe66d1a3b0, 0) = -1  
ENOENT (Нет такого файла или каталога)

0.000026 openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC)  
= -1 ENOENT (Нет такого файла или каталога)

0.000028 newfstatat(AT\_FDCWD, "/lib/x86\_64-linux-gnu", {st\_mode=S\_IFDIR|0755,  
st\_size=102400, ...}, 0) = 0

0.000030 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/glibc-hwcaps/x86-64-v3/libnss\_db.so.2",  
O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000034 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/glibc-hwcaps/x86-64-v3",  
0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000030 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/glibc-hwcaps/x86-64-v2/libnss\_db.so.2",  
O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000028 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/glibc-hwcaps/x86-64-v2",  
0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000034 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/haswell/x86\_64/libnss\_db.so.2",  
O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000030 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/haswell/x86\_64", 0x7ffe66d1a3b0,  
0) = -1 ENOENT (Нет такого файла или каталога)

0.000027 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/haswell/libnss\_db.so.2", O\_RDONLY|  
O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000027 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/haswell", 0x7ffe66d1a3b0, 0) = -1  
ENOENT (Нет такого файла или каталога)

0.000031 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)

0.000034 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls/x86\_64", 0x7ffe66d1a3b0, 0) = -1  
ENOENT (Нет такого файла или каталога)

0.000027 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)

0.000027 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/tls", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000027 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/haswell/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000027 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000026 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/haswell/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000032 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/haswell", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000032 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)

0.000028 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000027 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000028 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu", {st\_mode=S\_IFDIR|0755, st\_size=102400, ...}, 0) = 0

0.002736 openat(AT\_FDCWD, "/lib/glibc-hwcaps/x86-64-v3/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000123 newfstatat(AT\_FDCWD, "/lib/glibc-hwcaps/x86-64-v3", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000034 openat(AT\_FDCWD, "/lib/glibc-hwcaps/x86-64-v2/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000036 newfstatat(AT\_FDCWD, "/lib/glibc-hwcaps/x86-64-v2", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000032 openat(AT\_FDCWD, "/lib/tls/haswell/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000038 newfstatat(AT\_FDCWD, "/lib/tls/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000028 openat(AT\_FDCWD, "/lib/tls/haswell/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000030 newfstatat(AT\_FDCWD, "/lib/tls/haswell", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000035 openat(AT\_FDCWD, "/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000030 newfstatat(AT\_FDCWD, "/lib/tls/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000032 openat(AT\_FDCWD, "/lib/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000027 newfstatat(AT\_FDCWD, "/lib/tls", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000032 openat(AT\_FDCWD, "/lib/haswell/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000037 newfstatat(AT\_FDCWD, "/lib/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000033 openat(AT\_FDCWD, "/lib/haswell/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000038 newfstatat(AT\_FDCWD, "/lib/haswell", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000028 openat(AT\_FDCWD, "/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000036 newfstatat(AT\_FDCWD, "/lib/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000060 openat(AT\_FDCWD, "/lib/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000040 newfstatat(AT\_FDCWD, "/lib", {st\_mode=S\_IFDIR|0755, st\_size=4096, ...}, 0) = 0

0.000047 openat(AT\_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000035 newfstatat(AT\_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000039 openat(AT\_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000037 newfstatat(AT\_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000028 openat(AT\_FDCWD, "/usr/lib/tls/haswell/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000033 newfstatat(AT\_FDCWD, "/usr/lib/tls/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000035 openat(AT\_FDCWD, "/usr/lib/tls/haswell/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000031 newfstatat(AT\_FDCWD, "/usr/lib/tls/haswell", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000037 openat(AT\_FDCWD, "/usr/lib/tls/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000033 newfstatat(AT\_FDCWD, "/usr/lib/tls/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000027 openat(AT\_FDCWD, "/usr/lib/tls/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000040 newfstatat(AT\_FDCWD, "/usr/lib/tls", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000036 openat(AT\_FDCWD, "/usr/lib/haswell/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000036 newfstatat(AT\_FDCWD, "/usr/lib/haswell/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000032 openat(AT\_FDCWD, "/usr/lib/haswell/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000039 newfstatat(AT\_FDCWD, "/usr/lib/haswell", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000040 openat(AT\_FDCWD, "/usr/lib/x86\_64/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000041 newfstatat(AT\_FDCWD, "/usr/lib/x86\_64", 0x7ffe66d1a3b0, 0) = -1 ENOENT (Нет такого файла или каталога)

0.000041 openat(AT\_FDCWD, "/usr/lib/libnss\_db.so.2", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000040 newfstatat(AT\_FDCWD, "/usr/lib", {st\_mode=S\_IFDIR|0755, st\_size=4096, ...}, 0) = 0

0.000083 munmap(0x7fd5fdae5000, 81795) = 0

0.000125 openat(AT\_FDCWD, "/etc/ld.so.cache", O\_RDONLY|O\_CLOEXEC) = 3

0.000060 newfstatat(3, "", {st\_mode=S\_IFREG|0644, st\_size=81795, ...}, AT\_EMPTY\_PATH) = 0

0.000038 mmap(NULL, 81795, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7fd5fdae5000

0.000042 close(3) = 0

0.000041 openat(AT\_FDCWD, "/lib/x86\_64-linux-gnu/libnss\_db-2.35.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000032 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/libnss\_db-2.35.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000035 openat(AT\_FDCWD, "/lib/libnss\_db-2.35.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000055 openat(AT\_FDCWD, "/usr/lib/libnss\_db-2.35.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

0.000119 munmap(0x7fd5fdae5000, 81795) = 0

0.000043 openat(AT\_FDCWD, "/etc/protocols", O\_RDONLY|O\_CLOEXEC) = 3

```

0.000034 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2932, ...}, AT_EMPTY_PATH) = 0
0.000045 lseek(3, 0, SEEK_SET) = 0
0.000031 read(3, "# Internet (IP) protocols\n#\n# Up"..., 4096) = 2932
0.000092 read(3, "", 4096) = 0
0.000026 close(3) = 0
0.000063 eventfd2(0, EFD_CLOEXEC) = 3
0.000027 fcntl(3, F_GETFL) = 0x2 (flags O_RDWR)
0.000029 fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000029 fcntl(3, F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
0.000974 fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000045 getpid() = 14896
0.000031 getpid() = 14896
0.000047 getRandom("\xa6\xa6\xf8\xc1\xd8\x1c\xd2\x46\xec\xbb\x12\xd5\xce\xe8\x3d\xef", 16, 0) =
16
0.000051 getRandom("\x85\x9a\xd3\x1f\xab\x53\xa2\x8a\xb5\x69\xc9\xf3\xc5\x20\x02\x70", 16, 0) =
16
0.000080 eventfd2(0, EFD_CLOEXEC) = 4
0.000041 fcntl(4, F_GETFL) = 0x2 (flags O_RDWR)
0.000028 fcntl(4, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000027 fcntl(4, F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
0.000028 fcntl(4, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000026 getpid() = 14896
0.000035 epoll_create1(EPOCH_CLOEXEC) = 5
0.000039 epoll_ctl(5, EPOLL_CTL_ADD, 4, {events=0, data={u32=3082023520,
u64=94861729722976}}) = 0
0.000043 epoll_ctl(5, EPOLL_CTL_MOD, 4, {events=EPOLLIN, data={u32=3082023520,
u64=94861729722976}}) = 0
0.000034 getpid() = 14896
0.000081 rt_sigaction(SIGRT_1, {sa_handler=0x7fd5fd6688f0, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_RESTART|SA_SIGINFO,
sa_restorer=0x7fd5fd619520}, NULL, 8) = 0
0.000039 rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
0.000027 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0) = 0x7fd5fc967000
0.000034 mprotect(0x7fd5fc968000, 8388608, PROT_READ|PROT_WRITE) = 0
0.000051 rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0
0.000037 clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|

```

```

CLONE_CHILD_CLEARTID, child_tid=0x7fd5fd167910, parent_tid=0x7fd5fd167910, exit_signal=0,
stack=0x7fd5fc967000, stack_size=0x7ffc80, tls=0x7fd5fd167640} => {parent_tid=[14897]}, 88) =
14897
0.000098 rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
0.000030 eventfd2(0, EFD_CLOEXEC) = 6
0.000026 fcntl(6, F_GETFL) = 0x2 (flags O_RDWR)
0.000022 fcntl(6, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000020 fcntl(6, F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
0.000020 fcntl(6, F_SETFL, O_RDWR|O_NONBLOCK) = 0
0.000019 getpid() = 14896
0.000021 epoll_create1(EPOLL_CLOEXEC) = 7
0.000022 epoll_ctl(7, EPOLL_CTL_ADD, 6, {events=0, data={u32=3082045152,
u64=94861729744608}}) = 0
0.000025 epoll_ctl(7, EPOLL_CTL_MOD, 6, {events=EPOLLIN, data={u32=3082045152,
u64=94861729744608}}) = 0
0.000027 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0) = 0x7fd5fc166000
0.000023 mprotect(0x7fd5fc167000, 8388608, PROT_READ|PROT_WRITE) = 0
0.000029 rt_sigprocmask(SIG_BLOCK, ~[], strace: Process 14897 attached
[], 8) = 0
[pid 14897] 0.000033 rseq(0x7fd5fd167fe0, 0x20, 0, 0x53053053 <unfinished ...>
[pid 14896] 0.000011 clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7fd5fc966910, parent_tid=0x7fd5fc966910, exit_signal=0,
stack=0x7fd5fc166000, stack_size=0x7ffc80, tls=0x7fd5fc966640} <unfinished ...>
[pid 14897] 0.000014 <... rseq resumed>) = 0
[pid 14897] 0.000018 set_robust_list(0x7fd5fd167920, 24 <unfinished ...>
[pid 14896] 0.000012 <... clone3 resumed> => {parent_tid=[14898]}, 88) = 14898
[pid 14897] 0.000010 <... set_robust_list resumed>) = 0
[pid 14896] 0.000007 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 14897] 0.000011 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 14896] 0.000012 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 14897] 0.000007 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 14896] 0.000024 eventfd2(0, EFD_CLOEXEC <unfinished ...>
[pid 14897] 0.000011 rt_sigprocmask(SIG_BLOCK, ~[RTMIN RT_1], <unfinished ...>
[pid 14896] 0.000021 <... eventfd2 resumed>) = 8
[pid 14897] 0.000005 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 14896] 0.000007 fcntl(8, F_GETFL <unfinished ...>

```

```

[pid 14897] 0.000010 sched_getparam(14897, <unfinished ...>
[pid 14896] 0.000009 <... fcntl resumed>) = 0x2 (flags O_RDWR)
[pid 14897] 0.000007 <... sched_getparam resumed>[0]) = 0
strace: Process 14898 attached
[pid 14896] 0.000016 fcntl(8, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
[pid 14897] 0.000009 sched_getscheduler(14897 <unfinished ...>
[pid 14898] 0.000008 rseq(0x7fd5fc966fe0, 0x20, 0, 0x53053053) = 0
[pid 14898] 0.000396 set_robust_list(0x7fd5fc966920, 24) = 0
[pid 14898] 0.000024 rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
[pid 14898] 0.000112 rt_sigprocmask(SIG_BLOCK, ~[RTMIN RT_1], NULL, 8) = 0
[pid 14898] 0.000024 sched_getparam(14898, [0]) = 0
[pid 14898] 0.000022 sched_getscheduler(14898) = 0 (SCHED_OTHER)
[pid 14898] 0.000025 sched_setscheduler(14898, SCHED_OTHER, [0]) = 0
[pid 14898] 0.000029 prctl(PR_SET_NAME, "ZMQbg/IO/0") = 0
[pid 14898] 0.000029 epoll_wait(7, <unfinished ...>
[pid 14896] 0.005788 <... fcntl resumed>) = 0
[pid 14897] 0.000009 <... sched_getscheduler resumed>) = 0 (SCHED_OTHER)
[pid 14896] 0.000023 fcntl(8, F_GETFL <unfinished ...>
[pid 14897] 0.000007 sched_setscheduler(14897, SCHED_OTHER, [0] <unfinished ...>
[pid 14896] 0.000029 <... fcntl resumed>) = 0x802 (flags O_RDWR|O_NONBLOCK)
[pid 14897] 0.000007 <... sched_setscheduler resumed>) = 0
[pid 14896] 0.000014 fcntl(8, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
[pid 14897] 0.000006 prctl(PR_SET_NAME, "ZMQbg/Reaper" <unfinished ...>
[pid 14896] 0.000019 <... fcntl resumed>) = 0
[pid 14897] 0.000004 <... prctl resumed>) = 0
[pid 14896] 0.000019 getpid( <unfinished ...>
[pid 14897] 0.000006 epoll_wait(5, <unfinished ...>
[pid 14896] 0.000013 <... getpid resumed>) = 14896
[pid 14896] 0.000041 newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...},
AT_EMPTY_PATH) = 0
[pid 14896] 0.000044 read(0, ping -1
"ping -1\n", 1024) = 8
[pid 14896] 10.896056 newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...},
AT_EMPTY_PATH) = 0
[pid 14896] 0.000110 write(1, "Ok: 0\n", 6Ok: 0
) = 6
[pid 14896] 0.000066 read(0, exit
"exit\n", 1024) = 5

```

```

[pid 14896] 3.368360 getpid() = 14896
[pid 14896] 0.000097 write(4, "\1\0\0\0\0\0", 8) = 8
[pid 14897] 0.000074 <... epoll_wait resumed>[{events=EPOLLIN, data={u32=3082023520,
u64=94861729722976}}], 256, -1) = 1
[pid 14896] 0.000085 getpid( <unfinished ...>
[pid 14897] 0.000028 getpid( <unfinished ...>
[pid 14896] 0.000104 <... getpid resumed>) = 14896
[pid 14897] 0.000020 <... getpid resumed>) = 14896
[pid 14896] 0.000041 getpid( <unfinished ...>
[pid 14897] 0.000018 getpid( <unfinished ...>
[pid 14896] 0.000044 <... getpid resumed>) = 14896
[pid 14897] 0.000013 <... getpid resumed>) = 14896
[pid 14896] 0.000046 write(8, "\1\0\0\0\0\0", 8 <unfinished ...>
[pid 14897] 0.000032 poll([{fd=4, events=POLLIN}], 1, 0 <unfinished ...>
[pid 14896] 0.000035 <... write resumed>) = 8
[pid 14897] 0.000018 <... poll resumed>) = 1 ([{fd=4, revents=POLLIN}])
[pid 14896] 0.000028 getpid( <unfinished ...>
[pid 14897] 0.000021 getpid( <unfinished ...>
[pid 14896] 0.000020 <... getpid resumed>) = 14896
[pid 14897] 0.000017 <... getpid resumed>) = 14896
[pid 14896] 0.000016 poll([{fd=3, events=POLLIN}], 1, -1 <unfinished ...>
[pid 14897] 0.000029 read(4, "\1\0\0\0\0\0", 8) = 8
[pid 14897] 0.000131 mmap(NULL, 134217728, PROT_NONE, MAP_PRIVATE|
MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x7fd5f4166000
[pid 14897] 0.000116 munmap(0x7fd5f4166000, 65642496) = 0
[pid 14897] 0.000118 munmap(0x7fd5fc000000, 1466368) = 0
[pid 14897] 0.000077 mprotect(0x7fd5f8000000, 135168, PROT_READ|PROT_WRITE) = 0
[pid 14897] 0.000084 epoll_ctl(5, EPOLL_CTL_ADD, 8, {events=0, data={u32=4160752496,
u64=140556965514096}}) = 0
[pid 14897] 0.000082 epoll_ctl(5, EPOLL_CTL_MOD, 8, {events=EPOLLIN,
data={u32=4160752496, u64=140556965514096}}) = 0
[pid 14897] 0.000067 epoll_ctl(5, EPOLL_CTL_DEL, 8, 0x7fd5f8000b74) = 0
[pid 14897] 0.000070 close(8) = 0
[pid 14897] 0.000077 getpid() = 14896
[pid 14897] 0.000055 getpid() = 14896
[pid 14897] 0.000053 getpid() = 14896
[pid 14897] 0.000054 write(3, "\1\0\0\0\0\0", 8) = 8
[pid 14896] 0.000061 <... poll resumed>) = 1 ([{fd=3, revents=POLLIN}])

```



```

[pid 14896] 0.000049 getpid( <unfinished ...>
[pid 14897] 0.000020 epoll_ctl(5, EPOLL_CTL_DEL, 4, 0x5646b7b3f264 <unfinished ...>
[pid 14896] 0.000025 <... getpid resumed>) = 14896
[pid 14896] 0.000045 read(3, <unfinished ...>
[pid 14897] 0.000018 <... epoll_ctl resumed>) = 0
[pid 14896] 0.000018 <... read resumed>"\1\0\0\0\0\0\0", 8) = 8
[pid 14896] 0.000061 getpid( <unfinished ...>
[pid 14897] 0.000031 getpid( <unfinished ...>
[pid 14896] 0.000039 <... getpid resumed>) = 14896
[pid 14897] 0.000015 <... getpid resumed>) = 14896
[pid 14896] 0.000035 write(6, "\1\0\0\0\0\0\0", 8 <unfinished ...>
[pid 14897] 0.000032 getpid( <unfinished ...>
[pid 14896] 0.000032 <... write resumed>) = 8
[pid 14897] 0.000013 <... getpid resumed>) = 14896
[pid 14896] 0.000027 futex(0x7fd5fc966910, FUTEX_WAIT_BITSET|
FUTEX_CLOCK_REALTIME, 14898, NULL, FUTEX_BITSET_MATCH_ANY <unfinished ...>
[pid 14898] 0.000023 <... epoll_wait resumed>[{events=EPOLLIN, data={u32=3082045152,
u64=94861729744608}}], 256, -1) = 1
[pid 14897] 0.000029 poll([fd=4, events=POLLIN]), 1, 0 <unfinished ...>
[pid 14898] 0.000030 getpid( <unfinished ...>
[pid 14897] 0.000027 <... poll resumed>) = 0 (Timeout)
[pid 14898] 0.000020 <... getpid resumed>) = 14896
[pid 14897] 0.000042 rt_sigprocmask(SIG_BLOCK, ~[RT_1], <unfinished ...>
[pid 14898] 0.000034 poll([fd=6, events=POLLIN]), 1, 0 <unfinished ...>
[pid 14897] 0.000030 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 14898] 0.000018 <... poll resumed>) = 1 ([fd=6, revents=POLLIN])
[pid 14897] 0.000025 madvise(0x7fd5fc967000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 14898] 0.000022 getpid( <unfinished ...>
[pid 14897] 0.000021 <... madvise resumed>) = 0
[pid 14898] 0.000016 <... getpid resumed>) = 14896
[pid 14897] 0.000017 exit(0 <unfinished ...>
[pid 14898] 0.000022 read(6, <unfinished ...>
[pid 14897] 0.000018 <... exit resumed>) = ?
[pid 14898] 0.000016 <... read resumed>"\1\0\0\0\0\0\0", 8) = 8
[pid 14897] 0.000042 +++ exited with 0 +++
[pid 14898] 0.000010 epoll_ctl(7, EPOLL_CTL_DEL, 6, 0x5646b7b446e4) = 0
[pid 14898] 0.000082 getpid() = 14896
[pid 14898] 0.000059 poll([fd=6, events=POLLIN]), 1, 0) = 0 (Timeout)

```

```

[pid 14898] 0.000073 rt_sigprocmask(SIG_BLOCK, ~[RT_1], NULL, 8) = 0
[pid 14898] 0.000065 madvise(0x7fd5fc166000, 8368128, MADV_DONTNEED) = 0
[pid 14898] 0.000081 exit(0) = ?
[pid 14896] 0.000081 <... futex resumed> = 0
[pid 14898] 0.000012 +++ exited with 0 +++
0.000027 close(7) = 0
0.000062 close(6) = 0
0.000057 close(5) = 0
0.000082 close(4) = 0
0.000095 close(3) = 0
0.000226 lseek(0, -1, SEEK_CUR) = -1 ESPIPE (Недопустимая операция смещения)
0.000103 exit_group(0) = ?
0.000736 +++ exited with 0 +++

```

## Выводы

По мере выполнения данной лабораторной работы я освоил диагностику работы ПО с помощью утилиты `strace` — простого и надёжного инструмента. `Strace` позволяет отслеживать выполнение системных вызовов и сигналов к ядру системы. Ее функционал прост, но широк; работать с ней комфортно и, главное, полезно. Я научился просматривать как все вызовы сразу, так и несколько отдельных; получилось отследить работу и дочерних процессов. Научился отображать названия, пути к файлам, с которыми работает программа, вместо дескрипторов. Получилось взглянуть на удобную статистику системных вызовов и наблюдать время выполнения (обычное и относительное) тех или иных вызовов. Смог подключиться к уже запущенному процессу. Все это — лишь малая часть функционала утилиты `strace`. С ее помощью можно делать еще много интересных вещей: намеренно ломать программу (инъекция ошибок) для выявления уязвимостей, наблюдать стек процесса в момент системного вызова и другое. Но больше всего мне понравилась возможность отследить время тех или иных вызовов, т.к. это в будущем позволит определить, в каком участке кода программа могла зациклиться; или понять, в каком месте стоит произвести оптимизацию. Также интересной и полезной я нахожу возможность отобразить статистику системных вызовов в удобной форме, в виде таблицы.