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

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Лабораторная работа №1

1 Описание

Приобретение практических навыков диагностики работы программного обеспечения.

Используемое средство диагностики — утилита **strace**.

2 Демонстрация полного функционала утилиты strace на примере ЛР №2

strace — утилита для Linux, которая позволяет отследить выполнение системных вызовов и сигналов к ядру системы для того, чтобы найти и исправить ошибки в программах предназначенных для ОС Linux, которые включают в себя system call-ы. Также strace позволяет отслеживать сигналы, состояние процесса, инъектировать ошибки и даже отслеживать стек программы на момент системного вызова. Strace основывается на piglet trace(сокр. ptrace) – встроенной функции ядра Linux.

Отображение всех вызовов:

```
└─sakost@sakost-pc ~/university/2 course/os/2 lab
└─$ strace ./2_lab <<EOF
1 ←
heredoc> test.txt
heredoc> EOF
execve("./2_lab", ["/2_lab"], 0x7ffe32617910 /* 55 vars */) = 0
brk(NULL)                               = 0x55ec851a6000
arch_prctl(0x3001 /* ARCH_??? */, 0x7fff68fb44b0) = -1 EINVAL (Недопустимый аргумент)
access("/etc/ld.so.preload", R_OK)      = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/haswell/x86_64", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/haswell", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
```

```

stat("/usr/local/lib/tls/x86_64", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
stat("/usr/local/lib/tls", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
stat("/usr/local/lib/haswell/x86_64", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
stat("/usr/local/lib/haswell", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
stat("/usr/local/lib/x86_64", 0x7fff68fb3650) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
stat("/usr/local/lib", {st_mode=S_IFDIR|0755, st_size=12288, ...}) = 0
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f2ac85f9000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/libc.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\220\202\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\0\0\0\0"..., 784, 64) = 784
pread64(3, "\4\0\0\0\2\0\0\0\5\0\0\0\0GNU\0\2\0\0\0\300\4\0\0\0\0\3\0\0\0\0\0\0\0", 32, 848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0\0GNU\0\207\360\21\247\344\314?\306\0\0\320\323\335\0\16t"..., 68, 880) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=2159552, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f2ac85f7000
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\0\0\0\0"..., 784, 64) = 784
mmap(NULL, 1868448, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f2ac842e000
mmap(0x7f2ac8454000, 1363968, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x26000) = 0x7f2ac8454000
mmap(0x7f2ac85a1000, 311296, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x173000)
= 0x7f2ac85a1000
mmap(0x7f2ac85ed000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1be000) = 0x7f2ac85ed000
mmap(0x7f2ac85f3000, 12960, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f2ac85f3000
close(3) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f2ac842c000
arch_prctl(ARCH_SET_FS, 0x7f2ac85f8580) = 0
mprotect(0x7f2ac85ed000, 12288, PROT_READ) = 0
mprotect(0x55ec838bf000, 4096, PROT_READ) = 0
mprotect(0x7f2ac8676000, 4096, PROT_READ) = 0
munmap(0x7f2ac85f9000, 329160) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
brk(NULL) = 0x55ec851a6000
brk(0x55ec851c7000) = 0x55ec851c7000
fstat(0, {st_mode=S_IFREG|0600, st_size=9, ...}) = 0
read(0, "test.txt\n", 4096) = 9
pipe([3, 4]) = 0
access("test.txt", R_OK) = 0
openat(AT_FDCWD, "test.txt", O_RDONLY) = 5
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,

```

```

child_tidptr=0x7f2ac85f8850) = 964023
close(4)                        = 0
close(5)                        = 0
read(3, "2", 1)                 = 1
read(3, "1", 1)                 = 1
read(3, ".", 1)                 = 1
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=964023, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "\n", 1)                = 1
write(1, "Enter a filename with tests: 21."..., 39Enter a filename with tests: 21.000000
) = 39
read(3, "7", 1)                 = 1
read(3, ".", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "\n", 1)                = 1
write(1, "7.000000\n", 97.000000
) = 9
read(3, "1", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, ".", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "\n", 1)                = 1
write(1, "100.000000\n", 11100.000000
) = 11
read(3, "2", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, ".", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "0", 1)                 = 1
read(3, "\n", 1)                = 1
write(1, "200.000000\n", 11200.000000
) = 11
read(3, "", 1)                  = 0

```

```
wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 964023
exit_group(0) = ?
+++ exited with 0 +++
```

В данном выводе не сразу можно уловить что и почему вызывается. Можно попробовать исправить это несколькими способами.

Фильтрация вызовов:

Для фильтрации по заданным параметрам необходимо использовать флаг -e. Совместно с ним можно использовать правило фильтрации «trace=*», при помощи которого можно оставить только интересующие нас вызовы(например write, close и read):

```
└─sakost@sakost-pc ~/university/2 course/os/2 lab
└─$ strace -e trace=write,close,read ./2_lab <<EOF
test.txt
EOF
close(3) = 0
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\2\0\0\0\0"..., 832) = 832
close(3) = 0
read(0, "test.txt\n", 4096) = 9
close(4) = 0
close(5) = 0
read(3, "2", 1) = 1
read(3, "1", 1) = 1
read(3, ".", 1) = 1
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=964954, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "\n", 1) = 1
write(1, "Enter a filename with tests: 21."..., 39) = 39
read(3, "7", 1) = 1
read(3, ".", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, "\n", 1) = 1
write(1, "7.000000\n", 9) = 9
read(3, "1", 1) = 1
read(3, "0", 1) = 1
read(3, "0", 1) = 1
read(3, ".", 1) = 1
read(3, "0", 1) = 1
```

```

read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "\n", 1)         = 1
write(1, "100.000000\n", 11)100.000000
)          = 11
read(3, "2", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, ".", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "0", 1)          = 1
read(3, "\n", 1)         = 1
write(1, "200.000000\n", 11)200.000000
)          = 11
read(3, "", 1)           = 0
+++ exited with 0 +++

```

Можно также сделать так, чтобы вместо файловых дескрипторов, указывался путь до файла с помощью ключа «-у»(+тут происходит фильтрация по группе вызовов process и вызовам read и write):

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -e trace=%process,write,read -y ./2_lab <<EOF
test.txt
EOF
execve("./2_lab", ["/2_lab"], 0x7ffdaf812ee8 /* 55 vars */) = 0
read(3</usr/lib/libc-2.32.so>, "\177ELF2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\2\0\0\0\0"..., 832) = 832
read(0</tmp/zshUfG8XZ (deleted)>, "test.txt\n", 4096) = 9
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7fa271f0f850) = 965309
read(3<pipe:[106274307]>, "2", 1)      = 1
read(3<pipe:[106274307]>, "1", 1)      = 1
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=965309, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
read(3<pipe:[106274307]>, ".", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1
read(3<pipe:[106274307]>, "\n", 1)     = 1
write(1</dev/pts/1>, "Enter a filename with tests: 21."..., 39)Enter a filename with tests: 21.000000
) = 39
read(3<pipe:[106274307]>, "7", 1)      = 1
read(3<pipe:[106274307]>, ".", 1)      = 1
read(3<pipe:[106274307]>, "0", 1)      = 1

```

```

read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"\\n",1) = 1
write(1</dev/pts/1>,"7.000000\\n",97.000000
) = 9
read(3<pipe:[106274307]>,"1",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,".",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"\\n",1) = 1
write(1</dev/pts/1>,"100.000000\\n",11100.000000
) = 11
read(3<pipe:[106274307]>,"2",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,".",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"0",1) = 1
read(3<pipe:[106274307]>,"\\n",1) = 1
write(1</dev/pts/1>,"200.000000\\n",11200.000000
) = 11
read(3<pipe:[106274307]>,"",1) = 0
wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 965309
exit_group(0) = ?
+++ exited with 0 +++

```

Отслеживание вызовов дочерних процессов

Очевидно, что без дополнительного флага к `strace` отслеживать вызовы в дочерних процессах нельзя. Флаг `-f` позволяет это сделать:

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -e trace=%process,write,read -y -f ./2_lab <<EOF
test.txt
EOF
execve("./2_lab", ["/2_lab"], 0x7fffd3dcfce0 /* 55 vars */) = 0
read(3</usr/lib/libc-2.32.so>,"177ELF2\\1\\1\\3\\0\\0\\0\\0\\0\\0\\0\\3\\0>\\0\\1\\0\\0\\0\\220\\202\\2\\0\\0\\0\\0\\0"..., 832) = 832
read(0</tmp/zshWjk9OP (deleted)>,"test.txt\\n", 4096) = 9
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLDstrace: Process
965478 attached
, child_tidptr=0x7f9c8e291850) = 965478

```

```

[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] execve("/2_lab_child", ["/2_lab_child"], 0x7ffa158e5f8 /* 55 vars */) = 0
[pid 965478] read(4</usr/lib/libc-2.32.so>, "\177ELF\2\1\1\3\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\2\0\0\0\0\0"...,
832) = 832
[pid 965478] read(0</home/sakost/university/2 course/os/2 lab/test.txt>, "1 2 3 4 5 6\n3 4\n56 44\n101 99\n",
4096) = 29
[pid 965478] write(1<pipe:[106278938]>, "21.000000\n", 10 <unfinished ...>
[pid 965477] <... read resumed>"2", 1) = 1
[pid 965478] <... write resumed>      = 10
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] write(1<pipe:[106278938]>, "7.000000\n", 9 <unfinished ...>
[pid 965477] <... read resumed>"1", 1) = 1
[pid 965478] <... write resumed>      = 9
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] write(1<pipe:[106278938]>, "100.000000\n", 11 <unfinished ...>
[pid 965477] <... read resumed>".", 1) = 1
[pid 965478] <... write resumed>      = 11
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] write(1<pipe:[106278938]>, "200.000000\n", 11 <unfinished ...>
[pid 965477] <... read resumed>"0", 1) = 1
[pid 965478] <... write resumed>      = 11
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] read(0</home/sakost/university/2 course/os/2 lab/test.txt>, <unfinished ...>
[pid 965477] <... read resumed>"0", 1) = 1
[pid 965478] <... read resumed>"", 4096) = 0
[pid 965477] read(3<pipe:[106278938]>, "0", 1) = 1
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] write(1, "0.000000\n", 9 <unfinished ...>
[pid 965477] <... read resumed>"0", 1) = 1
[pid 965478] <... write resumed>      = -1 EBADF (Неправильный дескриптор файла)
[pid 965477] read(3<pipe:[106278938]>, <unfinished ...>
[pid 965478] exit_group(0)          = ?
[pid 965477] <... read resumed>"0", 1) = 1
[pid 965477] read(3<pipe:[106278938]>, "0", 1) = 1
[pid 965478] +++ exited with 0 +++
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=965478, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
read(3<pipe:[106278938]>, "\n", 1)    = 1
write(1</dev/pts/1>, "Enter a filename with tests: 21."..., 39Enter a filename with tests: 21.000000
) = 39
read(3<pipe:[106278938]>, "7", 1)    = 1
read(3<pipe:[106278938]>, ".", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "\n", 1)    = 1
write(1</dev/pts/1>, "7.000000\n", 97.000000
) = 9
read(3<pipe:[106278938]>, "1", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, ".", 1)    = 1

```



```

read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "\n", 1)   = 1
write(1</dev/pts/1>, "100.000000\n", 11100.000000
) = 11
read(3<pipe:[106278938]>, "2", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, ":", 1)   = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "0", 1)    = 1
read(3<pipe:[106278938]>, "\n", 1)   = 1
write(1</dev/pts/1>, "200.000000\n", 11200.000000
) = 11
read(3<pipe:[106278938]>, "", 1)     = 0
wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 965478
exit_group(0)                  = ?
+++ exited with 0 +++

```

Время выполнения вызовов:

Ключ -t позволяет проследить время выполнения вызовов:

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -e trace=%process,write -y -t -f ./2_lab <<EOF
test.txt
EOF
11:40:00 execve("./2_lab", ["/2_lab"], 0x7fff8d419ae8 /* 55 vars */) = 0
11:40:00 clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f6e3dcfa850) = 965705
strace: Process 965705 attached
[pid 965705] 11:40:00 execve("/2_lab_child", ["/2_lab_child"], 0x7ffd70095638 /* 55 vars */) = 0
[pid 965705] 11:40:00 write(1<pipe:[106269528]>, "21.000000\n", 10) = 10
[pid 965705] 11:40:00 write(1<pipe:[106269528]>, "7.000000\n", 9) = 9
[pid 965705] 11:40:00 write(1<pipe:[106269528]>, "100.000000\n", 11) = 11
[pid 965705] 11:40:00 write(1<pipe:[106269528]>, "200.000000\n", 11) = 11
[pid 965705] 11:40:00 write(1, "0.000000\n", 9) = -1 EBADF (Неправильный дескриптор файла)
[pid 965705] 11:40:00 exit_group(0) = ?
[pid 965704] 11:40:00 write(1</dev/pts/1>, "Enter a filename with tests: 21."..., 39)Enter a filename with tests:
21.000000
) = 39
[pid 965705] 11:40:00 +++ exited with 0 +++
11:40:00 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=965705, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
11:40:00 write(1</dev/pts/1>, "7.000000\n", 97.000000
) = 9

```

```

11:40:00 write(1</dev/pts/1>, "100.000000\n", 11100.000000
) = 11
11:40:00 write(1</dev/pts/1>, "200.000000\n", 11200.000000
) = 11
11:40:00 wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 965705
11:40:00 exit_group(0) = ?
11:40:00 +++ exited with 0 +++

```

Есть опция вывода времени и относительно старта процесса:

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -e trace=%process,write -y -r -f ./2_lab <<EOF
test.txt
EOF
0.000000 execve("./2_lab", [".2_lab"], 0x7ffdf4c8898 /* 55 vars */) = 0
0.004420 clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7fb316cec850) = 965831
strace: Process 965831 attached
[pid 965831] 0.000758 execve("./2_lab_child", [".2_lab_child"], 0x7ffc468ac4f8 /* 55 vars */) = 0
[pid 965831] 0.004439 write(1<pipe:[106280972]>, "21.000000\n", 10) = 10
[pid 965831] 0.000318 write(1<pipe:[106280972]>, "7.000000\n", 9) = 9
[pid 965831] 0.000142 write(1<pipe:[106280972]>, "100.000000\n", 11) = 11
[pid 965831] 0.000126 write(1<pipe:[106280972]>, "200.000000\n", 11) = 11
[pid 965831] 0.000230 write(1, "0.000000\n", 9) = -1 EBADF (Неправильный дескриптор файла)
[pid 965831] 0.005553 exit_group(0) = ?
[pid 965830] 0.000077 write(1</dev/pts/1>, "Enter a filename with tests: 21."..., 39Enter a filename with tests:
21.000000
) = 39
[pid 965831] 0.000215 +++ exited with 0 +++
0.000034 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=965831, si_uid=1000,
si_status=0, si_utime=0, si_stime=0} ---
0.000553 write(1</dev/pts/1>, "7.000000\n", 97.000000
) = 9
0.000625 write(1</dev/pts/1>, "100.000000\n", 11100.000000
) = 11
0.000611 write(1</dev/pts/1>, "200.000000\n", 11200.000000
) = 11
0.000178 wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 965831
0.000174 exit_group(0) = ?
0.000265 +++ exited with 0 +++

```

Для разделения вывода strace и программы можно использовать флаг -o с указанием на имя файла, куда записывать вывод программы strace:

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -e trace=%process,write -y -r -f -o sample.log ./2_lab <<EOF
test.txt
EOF
Enter a filename with tests: 21.000000
7.000000
100.000000
200.000000
sakost@sakost-pc ~/university/2 course/os/2 lab
$ cat sample.log

```

```

966032 0.000000 execve("./2_lab", ["/2_lab"], 0x7ffd9b567c78 /* 55 vars */) = 0
966032 0.006079 clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child_tidptr=0x7f81d5d50850) = 966033
966033 0.000727 execve("2_lab_child", ["2_lab_child"], 0x7ffcba23268 /* 55 vars */) = 0
966033 0.004172 write(1<pipe:[106281206]>, "21.000000\n", 10) = 10
966033 0.000297 write(1<pipe:[106281206]>, "7.000000\n", 9) = 9
966033 0.000128 write(1<pipe:[106281206]>, "100.000000\n", 11) = 11
966033 0.000123 write(1<pipe:[106281206]>, "200.000000\n", 11) = 11
966033 0.000200 write(1, "0.000000\n", 9) = -1 EBADF (Неправильный дескриптор файла)
966033 0.004832 exit_group(0) = ?
966032 0.000089 write(1</dev/pts/1>, "Enter a filename with tests: 21."..., 39) = 39
966033 0.000180 +++ exited with 0 +++
966032 0.000033 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=966033, si_uid=1000,
si_status=0, si_utime=0, si_stime=0} ---
966032 0.000721 write(1</dev/pts/1>, "7.000000\n", 9) = 9
966032 0.000635 write(1</dev/pts/1>, "100.000000\n", 11) = 11
966032 0.000615 write(1</dev/pts/1>, "200.000000\n", 11) = 11
966032 0.000142 wait4(-1, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 966033
966032 0.000146 exit_group(0) = ?
966032 0.000242 +++ exited with 0 +++

```

Статистика системных вызовов

Также можно просмотреть статистику системных вызовов с помощью ключа «-c»:

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ strace -c -o sample.log ./2_lab <<EOF
test.txt
EOF
Enter a filename with tests: 21.000000
7.000000
100.000000
200.000000

```

```

sakost@sakost-pc ~/university/2 course/os/2 lab
$ cat sample.log

```

% time	seconds	usecs/call	calls	errors	syscall
44,40	0,000678	15	44		read
13,69	0,000209	26	8		mmap
8,32	0,000127	127	1		clone
6,35	0,000097	24	4		write
5,11	0,000078	26	3		mprotect
4,58	0,000070	17	4		pread64
3,47	0,000053	13	4		close
2,95	0,000045	11	4		fstat
2,55	0,000039	39	1		munmap
1,83	0,000028	9	3		brk
1,83	0,000028	28	1		wait4
1,51	0,000023	23	1		pipe
1,38	0,000021	10	2		1 access
1,11	0,000017	0	19		16 openat
0,92	0,000014	7	2		1 arch_prctl
0,00	0,000000	0	8		7 stat
0,00	0,000000	0	1		execve
100,00	0,001527	13	110		25 total

3 Диагностика других ЛР

3.1 ЛР №3

Для данной лабораторной работы будет полезным отслеживать системные вызовы всех потоков ключом -f. Также можно посмотреть время их выполнения относительно их запуска с ключом -r:

```
— sakost@sakost-pc ~/university/2 course/os/3 lab
— $ strace -r -f ./main_fast 10 10 0 0 0 100
0.000000 execve("./main_fast", ["/main_fast", "10", "10", "0", "0", "0", "100"], 0x7ffd5a5236b0 /* 55 vars */) = 0
0.000953 brk(NULL) = 0x559abbb1e000
0.000270 arch_prctl(0x3001 /* ARCH_??? */, 0x7ffc25ed2140) = -1 EINVAL (Недопустимый аргумент)
0.006686 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
0.000366 openat(AT_FDCWD, "tls/haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000275 openat(AT_FDCWD, "tls/haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
0.000251 openat(AT_FDCWD, "tls/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
0.000199 openat(AT_FDCWD, "tls/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
0.000261 openat(AT_FDCWD, "haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(Нет такого файла или каталога)
0.000193 openat(AT_FDCWD, "haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
0.000245 openat(AT_FDCWD, "x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
0.000146 openat(AT_FDCWD, "libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
0.000182 openat(AT_FDCWD, "/usr/local/lib/tls/haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (Нет такого файла или каталога)
0.000189 stat("/usr/local/lib/tls/haswell/x86_64", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или
каталога)
0.000182 openat(AT_FDCWD, "/usr/local/lib/tls/haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000140 stat("/usr/local/lib/tls/haswell", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или каталога)
0.000169 openat(AT_FDCWD, "/usr/local/lib/tls/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000128 stat("/usr/local/lib/tls/x86_64", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или каталога)
0.000112 openat(AT_FDCWD, "/usr/local/lib/tls/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(Нет такого файла или каталога)
0.000113 stat("/usr/local/lib/tls", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или каталога)
0.000117 openat(AT_FDCWD, "/usr/local/lib/haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000114 stat("/usr/local/lib/haswell/x86_64", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или
каталога)
0.000109 openat(AT_FDCWD, "/usr/local/lib/haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000118 stat("/usr/local/lib/haswell", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или каталога)
0.000109 openat(AT_FDCWD, "/usr/local/lib/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
0.000114 stat("/usr/local/lib/x86_64", 0x7ffc25ed12e0) = -1 ENOENT (Нет такого файла или каталога)
0.000120 openat(AT_FDCWD, "/usr/local/lib/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
0.000123 stat("/usr/local/lib", {st_mode=S_IFDIR|0755, st_size=12288, ...}) = 0
```



```

MAP_ANONYMOUS, -1, 0) = 0x7fba4bbba000
0.000133 close(3) = 0
0.000137 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7fba4b9f2000
0.000114 arch_prctl(ARCH_SET_FS, 0x7fba4b9f2740) = 0
0.000225 mprotect(0x7fba4bbb4000, 12288, PROT_READ) = 0
0.000160 mprotect(0x7fba4bbda000, 4096, PROT_READ) = 0
0.000108 mprotect(0x559ab9e39000, 4096, PROT_READ) = 0
0.000108 mprotect(0x7fba4bc5f000, 4096, PROT_READ) = 0
0.000130 munmap(0x7fba4bbe2000, 329160) = 0
0.000143 set_tid_address(0x7fba4b9f2a10) = 968696
0.000092 set_robust_list(0x7fba4b9f2a20, 24) = 0
0.000098 rt_sigaction(SIGRTMIN, {sa_handler=0x7fba4bbc5b90, sa_mask=[], sa_flags=SA_RESTORER|
SA_SIGINFO, sa_restorer=0x7fba4bbd20f0}, NULL, 8) = 0
0.000125 rt_sigaction(SIGRT_1, {sa_handler=0x7fba4bbc5c30, sa_mask=[], sa_flags=SA_RESTORER|
SA_RESTART|SA_SIGINFO, sa_restorer=0x7fba4bbd20f0}, NULL, 8) = 0
0.000113 rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
0.000110 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
0.000318 brk(NULL) = 0x559abbb1e000
0.000090 brk(0x559abbb3f000) = 0x559abbb3f000
0.000113 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7fba4b1f1000
0.000103 mprotect(0x7fba4b1f2000, 8388608, PROT_READ|PROT_WRITE) = 0
0.000111 rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0
0.000138 clone(child_stack=0x7fba4b9f0ef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEAR_TID|strace: Process 968697 attached
, parent_tid=[968697], tls=0x7fba4b9f1640, child_tidptr=0x7fba4b9f1910) = 968697
[pid 968697] 0.000230 set_robust_list(0x7fba4b9f1920, 24 <unfinished ...>
[pid 968696] 0.000048 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968697] 0.000042 <... set_robust_list resumed>) = 0
[pid 968696] 0.000032 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968697] 0.000032 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000048 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968697] 0.000048 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000030 <... mmap resumed>) = 0x7fba4a9f0000
[pid 968696] 0.000056 mprotect(0x7fba4a9f1000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968697] 0.000042 madvise(0x7fba4b1f1000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000039 <... mprotect resumed>) = 0
[pid 968697] 0.000031 <... madvise resumed>) = 0
[pid 968696] 0.000029 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968697] 0.000048 exit(0 <unfinished ...>
[pid 968696] 0.000042 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968697] 0.000039 <... exit resumed>) = ?
[pid 968696] 0.000032 clone(child_stack=0x7fba4b1efef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEAR_TID <unfinished ...>
[pid 968697] 0.000063 +++ exited with 0 +++
strace: Process 968698 attached
[pid 968696] 0.000067 <... clone resumed>, parent_tid=[968698], tls=0x7fba4b1f0640,
child_tidptr=0x7fba4b1f0910) = 968698
[pid 968698] 0.000047 set_robust_list(0x7fba4b1f0920, 24 <unfinished ...>
[pid 968696] 0.000041 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968698] 0.000051 <... set_robust_list resumed>) = 0

```

```

[pid 968696] 0.000029 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968698] 0.000033 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000049 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968698] 0.000045 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000034 <... mmap resumed>) = 0x7fba4a1ef000
[pid 968698] 0.000031 madvise(0x7fba4a9f0000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000041 mprotect(0x7fba4a1f0000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968698] 0.000044 <... madvise resumed>) = 0
[pid 968696] 0.000029 <... mprotect resumed>) = 0
[pid 968698] 0.000031 exit(0 <unfinished ...>
[pid 968696] 0.000041 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968698] 0.000049 <... exit resumed>) = ?
[pid 968696] 0.000032 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968698] 0.000045 +++ exited with 0 +++
0.000061 clone(child_stack=0x7fba4a9eeef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTIDstrace: Process 968699 attached
, parent_tid=[968699], tls=0x7fba4a9ef640, child_tidptr=0x7fba4a9ef910) = 968699
[pid 968696] 0.000232 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968699] 0.000058 set_robust_list(0x7fba4a9ef920, 24 <unfinished ...>
[pid 968696] 0.000039 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968699] 0.000036 <... set_robust_list resumed>) = 0
[pid 968696] 0.000034 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968699] 0.000045 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000052 <... mmap resumed>) = 0x7fba499ee000
[pid 968699] 0.000033 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000038 mprotect(0x7fba499ef000, 8388608, PROT_READ|PROT_WRITE) = 0
[pid 968699] 0.000151 madvise(0x7fba4a1ef000, 8368128, MADV_DONTNEED) = 0
[pid 968696] 0.000098 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968699] 0.000028 exit(0 <unfinished ...>
[pid 968696] 0.000022 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968699] 0.000021 <... exit resumed>) = ?
[pid 968696] 0.000033 clone(child_stack=0x7fba4a1edef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID <unfinished ...>
[pid 968699] 0.000033 +++ exited with 0 +++
strace: Process 968700 attached
[pid 968696] 0.000161 <... clone resumed>, parent_tid=[968700], tls=0x7fba4a1ee640,
child_tidptr=0x7fba4a1ee910) = 968700
[pid 968700] 0.000062 set_robust_list(0x7fba4a1ee920, 24) = 0
[pid 968700] 0.000125 rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
[pid 968700] 0.000131 madvise(0x7fba499ee000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000052 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968700] 0.000049 <... madvise resumed>) = 0
[pid 968696] 0.000032 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968700] 0.000033 exit(0 <unfinished ...>
[pid 968696] 0.000034 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968700] 0.000038 <... exit resumed>) = ?
[pid 968696] 0.000028 <... mmap resumed>) = 0x7fba491ed000
[pid 968700] 0.000038 +++ exited with 0 +++
0.000022 mprotect(0x7fba491ee000, 8388608, PROT_READ|PROT_WRITE) = 0
0.000133 rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0

```

```

0.000133 clone(child_stack=0x7fba499ecef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTIDstrace: Process 968701 attached
, parent_tid=[968701], tls=0x7fba499ed640, child_tidptr=0x7fba499ed910) = 968701
[pid 968701] 0.000203 set_robust_list(0x7fba499ed920, 24 <unfinished ...>
[pid 968696] 0.000042 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968701] 0.000048 <... set_robust_list resumed>) = 0
[pid 968696] 0.000032 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968701] 0.000033 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000053 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968701] 0.000047 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000031 <... mmap resumed>) = 0x7fba489ec000
[pid 968701] 0.000031 madvise(0x7fba491ed000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000039 mprotect(0x7fba489ed000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968701] 0.000039 <... madvise resumed>) = 0
[pid 968696] 0.000029 <... mprotect resumed>) = 0
[pid 968701] 0.000032 exit(0 <unfinished ...>
[pid 968696] 0.000038 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968701] 0.000049 <... exit resumed>) = ?
[pid 968696] 0.000032 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968701] 0.000043 +++ exited with 0 +++

0.000023 clone(child_stack=0x7fba491ebef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTIDstrace: Process 968702 attached
, parent_tid=[968702], tls=0x7fba491ec640, child_tidptr=0x7fba491ec910) = 968702
[pid 968702] 0.000189 set_robust_list(0x7fba491ec920, 24 <unfinished ...>
[pid 968696] 0.000043 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968702] 0.000048 <... set_robust_list resumed>) = 0
[pid 968696] 0.000030 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968702] 0.000033 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000045 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968702] 0.000049 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000030 <... mmap resumed>) = 0x7fba481eb000
[pid 968702] 0.000029 madvise(0x7fba489ec000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000044 mprotect(0x7fba481ec000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968702] 0.000042 <... madvise resumed>) = 0
[pid 968696] 0.000028 <... mprotect resumed>) = 0
[pid 968702] 0.000032 exit(0 <unfinished ...>
[pid 968696] 0.000039 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968702] 0.000078 <... exit resumed>) = ?
[pid 968696] 0.000032 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968702] 0.000044 +++ exited with 0 +++

0.000022 clone(child_stack=0x7fba489eaeef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTIDstrace: Process 968703 attached
, parent_tid=[968703], tls=0x7fba489eb640, child_tidptr=0x7fba489eb910) = 968703
[pid 968703] 0.000186 set_robust_list(0x7fba489eb920, 24 <unfinished ...>
[pid 968696] 0.000042 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968703] 0.000050 <... set_robust_list resumed>) = 0
[pid 968696] 0.000030 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968703] 0.000035 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000046 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>

```



```

[pid 968703] 0.000049 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000031 <... mmap resumed>) = 0x7fba479ea000
[pid 968703] 0.000030 madvise(0x7fba481eb000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000045 mprotect(0x7fba479eb000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968703] 0.000042 <... madvise resumed>) = 0
[pid 968696] 0.000028 <... mprotect resumed>) = 0
[pid 968703] 0.000033 exit(0 <unfinished ...>
[pid 968696] 0.000039 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968703] 0.000045 <... exit resumed>) = ?
[pid 968696] 0.000031 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968703] 0.000042 +++ exited with 0 +++
0.000023 clone(child_stack=0x7fba481e9ef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEAR_TIDstrace: Process 968704 attached
, parent_tid=[968704], tls=0x7fba481ea640, child_tidptr=0x7fba481ea910) = 968704
[pid 968704] 0.000214 set_robust_list(0x7fba481ea920, 24 <unfinished ...>
[pid 968696] 0.000045 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968704] 0.000045 <... set_robust_list resumed>) = 0
[pid 968696] 0.000034 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968704] 0.000031 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000051 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968704] 0.000045 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000050 <... mmap resumed>) = 0x7fba471e9000
[pid 968704] 0.000034 madvise(0x7fba479ea000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000041 mprotect(0x7fba471ea000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968704] 0.000046 <... madvise resumed>) = 0
[pid 968696] 0.000031 <... mprotect resumed>) = 0
[pid 968704] 0.000029 exit(0 <unfinished ...>
[pid 968696] 0.000038 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968704] 0.000053 <... exit resumed>) = ?
[pid 968696] 0.000031 <... rt_sigprocmask resumed>[], 8) = 0
[pid 968704] 0.000057 +++ exited with 0 +++
0.000021 clone(child_stack=0x7fba479e8ef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|
CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEAR_TIDstrace: Process 968705 attached
, parent_tid=[968705], tls=0x7fba479e9640, child_tidptr=0x7fba479e9910) = 968705
[pid 968705] 0.000211 set_robust_list(0x7fba479e9920, 24 <unfinished ...>
[pid 968696] 0.000050 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968705] 0.000045 <... set_robust_list resumed>) = 0
[pid 968696] 0.000041 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968705] 0.000040 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000051 mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0 <unfinished ...>
[pid 968705] 0.000075 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000029 <... mmap resumed>) = 0x7fba469e8000
[pid 968705] 0.000031 madvise(0x7fba471e9000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000040 mprotect(0x7fba469e9000, 8388608, PROT_READ|PROT_WRITE <unfinished ...>
[pid 968705] 0.000039 <... madvise resumed>) = 0
[pid 968696] 0.000033 <... mprotect resumed>) = 0
[pid 968705] 0.000015 exit(0) = ?
[pid 968696] 0.000077 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
[pid 968705] 0.000071 +++ exited with 0 +++
0.000021 <... rt_sigprocmask resumed>[], 8) = 0
0.000069 clone(child_stack=0x7fba471e7ef0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|

```

```

CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTID|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTIDstrace: Process 968706 attached
, parent_tid=[968706], tls=0x7fba471e8640, child_tidptr=0x7fba471e8910) = 968706
[pid 968706] 0.000212 set_robust_list(0x7fba471e8920, 24 <unfinished ...>
[pid 968696] 0.000049 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968706] 0.000051 <... set_robust_list resumed>) = 0
[pid 968696] 0.000040 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968706] 0.000035 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
[pid 968696] 0.000081 munmap(0x7fba4b1f1000, 8392704 <unfinished ...>
[pid 968706] 0.000045 <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 968696] 0.000076 <... munmap resumed>) = 0
[pid 968706] 0.000029 madvise(0x7fba469e8000, 8368128, MADV_DONTNEED <unfinished ...>
[pid 968696] 0.000042 munmap(0x7fba4a9f0000, 8392704 <unfinished ...>
[pid 968706] 0.000042 <... madvise resumed>) = 0
[pid 968696] 0.000032 <... munmap resumed>) = 0
[pid 968706] 0.000035 exit(0 <unfinished ...>
[pid 968696] 0.000046 munmap(0x7fba4a1ef000, 8392704 <unfinished ...>
[pid 968706] 0.000038 <... exit resumed>) = ?
[pid 968696] 0.000037 <... munmap resumed>) = 0
[pid 968706] 0.000046 +++ exited with 0 +++
0.000019 munmap(0x7fba499ee000, 8392704) = 0
0.000125 munmap(0x7fba491ed000, 8392704) = 0
0.000115 munmap(0x7fba489ec000, 8392704) = 0
0.000207 fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
0.000154 write(1, "First chances: 60/100 = 60.00000"..., 35First chances: 60/100 = 60.000000%
) = 35
0.000149 write(1, "Second chances: 40/100 = 40.0000"..., 36Second chances: 40/100 = 40.000000%
) = 36
0.000168 exit_group(0) = ?
0.000348 +++ exited with 0 +++

```

Статистика:

```

sakost@sakost-pc ~/university/2 course/os/3 lab
$ strace -f -c ./main_fast 10 10 0 0 0 100
strace: Process 968960 attached
strace: Process 968961 attached
strace: Process 968962 attached
strace: Process 968963 attached
strace: Process 968964 attached
strace: Process 968965 attached
strace: Process 968966 attached
strace: Process 968967 attached
strace: Process 968968 attached
strace: Process 968969 attached
First chances: 30/100 = 30.000000%
Second chances: 60/100 = 60.000000%
% time    seconds  usecs/call   calls   errors syscall
-----
25,41    0,001018    101     10      0      clone
22,82    0,000914     29     31      0      rt_sigprocmask
12,53    0,000502     50     10      0      madvise
8,46     0,000339     24     14      0      mprotect
8,41     0,000337     14     23      0      mmap
6,99     0,000280     25     11      0      set_robust_list

```

5,54	0,000222	31	7	munmap
3,57	0,000143	5	28	25 openat
1,20	0,000048	9	5	pread64
1,15	0,000046	23	2	write
0,75	0,000030	10	3	close
0,70	0,000028	9	3	brk
0,65	0,000026	6	4	fstat
0,60	0,000024	12	2	rt_sigaction
0,32	0,000013	6	2	read
0,30	0,000012	6	2	1 arch_prctl
0,30	0,000012	12	1	set_tid_address
0,30	0,000012	12	1	prlimit64
0,00	0,000000	0	8	7 stat
0,00	0,000000	0	1	1 access
0,00	0,000000	0	1	execve

100,00	0,004006	23	169	34 total

3.2 ЛР №4

Все вызовы программы:

```

sakost@sakost-pc ~/university/2 course/os/4 lab/cmake-build-debug <master*>
$ strace -f -e trace="%%process,read,write,dup2,mmap" -o ../strace.log ./4_lab
Enter a filename with tests: ../tests.txt
10.000000

sakost@sakost-pc ~/university/2 course/os/4 lab/cmake-build-debug <master*>
$ cat ../strace.log
969973 execve("./4_lab", ["/4_lab"], 0x7ffd6531d2b8 /* 55 vars */) = 0
969973 mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f2834d06000
969973 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P7\0\0\0\0\0\0"..., 832) = 832
969973 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f2834d04000
969973 mmap(NULL, 43520, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f2834cf9000
969973 mmap(0x7f2834cfc000, 16384, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f2834cfc000
969973 mmap(0x7f2834d00000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7000) = 0x7f2834d00000
969973 mmap(0x7f2834d02000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x8000) = 0x7f2834d02000
969973 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0000\201\0\0\0\0\0\0"..., 832) = 832
969973 mmap(NULL, 135600, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f2834cd7000
969973 mmap(0x7f2834cde000, 65536, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7000) = 0x7f2834cde000
969973 mmap(0x7f2834cee000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17000) = 0x7f2834cee000
969973 mmap(0x7f2834cf3000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1b000) = 0x7f2834cf3000
969973 mmap(0x7f2834cf5000, 12720, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f2834cf5000
969973 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\2\0\0\0\0\0"..., 832) = 832
969973 mmap(NULL, 1868448, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f2834b0e000
969973 mmap(0x7f2834b34000, 1363968, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|

```

```

MAP_DENYWRITE, 3, 0x26000) = 0x7f2834b34000
969973 mmap(0x7f2834c81000, 311296, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x173000) = 0x7f2834c81000
969973 mmap(0x7f2834ccd000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1be000) = 0x7f2834ccd000
969973 mmap(0x7f2834cd3000, 12960, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f2834cd3000
969973 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f2834b0b000
969973 write(1, "Enter a filename with tests: ", 29) = 29
969973 read(0, 0x564e01b5d730, 1024) = ? ERESTARTSYS (To be restarted if SA_RESTART is set)
969973 --- SIGWINCH {si_signo=SIGWINCH, si_code=SI_KERNEL} ---
969973 read(0, 0x564e01b5d730, 1024) = ? ERESTARTSYS (To be restarted if SA_RESTART is set)
969973 --- SIGWINCH {si_signo=SIGWINCH, si_code=SI_KERNEL} ---
969973 read(0, "../tests.txt\n", 1024) = 13
969973 mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) = 0x7f2834d56000
969973 mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 3, 0) = 0x7f2834d55000
969973 clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f2834b0ba10) = 970246
970246 execve("/4_lab_child", ["/4_lab_child", "../tests.txt"], 0x7ffaa189de8 /* 55 vars */) = 0
970246 mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7ff3e6578000
970246 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P7\0\0\0\0\0\0"... , 832) = 832
970246 mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7ff3e6576000
970246 mmap(NULL, 43520, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7ff3e656b000
970246 mmap(0x7ff3e656e000, 16384, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x3000) = 0x7ff3e656e000
970246 mmap(0x7ff3e6572000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x7000) = 0x7ff3e6572000
970246 mmap(0x7ff3e6574000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x8000) = 0x7ff3e6574000
970246 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0000\201\0\0\0\0\0\0"... , 832) = 832
970246 mmap(NULL, 135600, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7ff3e6549000
970246 mmap(0x7ff3e6550000, 65536, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x7000) = 0x7ff3e6550000
970246 mmap(0x7ff3e6560000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x17000) = 0x7ff3e6560000
970246 mmap(0x7ff3e6565000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1b000) = 0x7ff3e6565000
970246 mmap(0x7ff3e6567000, 12720, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7ff3e6567000
970246 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0220\202\2\0\0\0\0\0"... , 832) = 832
970246 mmap(NULL, 1868448, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7ff3e6380000
970246 mmap(0x7ff3e63a6000, 1363968, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x26000) = 0x7ff3e63a6000
970246 mmap(0x7ff3e64f3000, 311296, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x173000) = 0x7ff3e64f3000
970246 mmap(0x7ff3e653f000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1be000) = 0x7ff3e653f000
970246 mmap(0x7ff3e6545000, 12960, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7ff3e6545000
970246 mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7ff3e637d000
970246 mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) = 0x7ff3e65c8000
970246 mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 5, 0) = 0x7ff3e65c7000

```

```

970246 read(3, "1 2 3 4\n", 4096)    = 8
970246 read(3, <unfinished ...>
969973 write(1, "10.000000\n", 10 <unfinished ...>
970246 <... read resumed>"", 4096)    = 0
969973 <... write resumed>           = 10
969973 write(1, "\n", 1)              = 1
969973 wait4(-1, <unfinished ...>
970246 exit_group(0)                  = ?
970246 +++ exited with 0 +++
969973 <... wait4 resumed>[{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 970246
969973 --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=970246, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
969973 exit_group(0)                  = ?
969973 +++ exited with 0 +++

```

Статистика:

```

sakost@sakost-pc ~/university/2 course/os/4 lab/cmake-build-debug «master*»
$ strace -f -c -o ../strace.log ./4_lab <<EOF
1 ↵
../tests.txt
EOF
Enter a filename with tests: 10.000000

```

```

sakost@sakost-pc ~/university/2 course/os/4 lab/cmake-build-debug «master*»
$ cat ../strace.log

```

% time	seconds	usecs/call	calls	errors	syscall
73,14	0,002766	2766	1		wait4
6,74	0,000255	6	38		mmap
5,02	0,000190	2	82	68	openat
3,12	0,000118	14	8		munmap
2,46	0,000093	9	10		mprotect
1,64	0,000062	6	10		pread64
1,51	0,000057	6	9		read
1,24	0,000047	3	13		fstat
0,87	0,000033	2	13		close
0,71	0,000027	4	6		brk
0,69	0,000026	5	5	1	futex
0,66	0,000025	6	4		rt_sigaction
0,63	0,000024	12	2		statfs
0,32	0,000012	6	2		rt_sigprocmask
0,32	0,000012	3	4	2	arch_prctl
0,32	0,000012	6	2		set_tid_address
0,32	0,000012	6	2		prlimit64
0,29	0,000011	3	3		set_robust_list
0,00	0,000000	0	2		write
0,00	0,000000	0	16	14	stat
0,00	0,000000	0	2	2	access
0,00	0,000000	0	1		clone
0,00	0,000000	0	2		execve
0,00	0,000000	0	1		ftruncate
0,00	0,000000	0	1		unlink

3.3 ЛР № 5: strace и ltrace

strace:

```
execve("./dynMain", ["/dynMain"], 0x7ffc9dd37e00 /* 55 vars */) = 0
brk(NULL) = 0x5611987a3000
arch_prctl(0x3001 /* ARCH_??? */, 0x7ffe4043d6e0) = -1 EINVAL (Недопустимый аргумент)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/haswell/x86_64", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/haswell", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/x86_64", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/haswell/x86_64", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/haswell", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/x86_64", 0x7ffe4043c880) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib", {st_mode=S_IFDIR|0755, st_size=12288, ...}) = 0
openat(AT_FDCWD, ".tls/haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
```

```
openat(AT_FDCWD, "./haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f9690e4a000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/libdl.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\0\0\0>\0\1\0\0\0\20\22\0\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=18608, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9690e48000
mmap(NULL, 20624, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690e42000
mmap(0x7f9690e43000, 8192, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7f9690e43000
mmap(0x7f9690e45000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9690e45000
mmap(0x7f9690e46000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9690e46000
close(3) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, ".tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "../haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "../haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "../x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "../libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
```

```

openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0"..., 784, 64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0", 32, 848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0\0GNU\0\207\360\21\247\344\314?\306\nt\320\323\335\16t"..., 68, 880) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=2159552, ...}) = 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, 1868448, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690c79000
mmap(0x7f9690c9f000, 1363968, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000) = 0x7f9690c9f000
mmap(0x7f9690dec000, 311296, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x173000) = 0x7f9690dec000
mmap(0x7f9690e38000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1be000) = 0x7f9690e38000
mmap(0x7f9690e3e000, 12960, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f9690e3e000
close(3) = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9690c76000
arch_prctl(ARCH_SET_FS, 0x7f9690c76740) = 0
mprotect(0x7f9690e38000, 12288, PROT_READ) = 0
mprotect(0x7f9690e46000, 4096, PROT_READ) = 0
mprotect(0x561197db8000, 4096, PROT_READ) = 0
mprotect(0x7f9690ec7000, 4096, PROT_READ) = 0
munmap(0x7f9690e4a000, 329160) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libfirst.so", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200\20\0\0\0\0\0"..., 832) = 832
brk(NULL) = 0x5611987a3000
brk(0x5611987c4000) = 0x5611987c4000
fstat(3, {st_mode=S_IFREG|0755, st_size=17784, ...}) = 0
getcwd("/home/sakost/university/2 course/os/5 lab/cmake-build-debug", 128) = 60
mmap(NULL, 16464, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690e96000
mmap(0x7f9690e97000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7f9690e97000
mmap(0x7f9690e98000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7f9690e98000
mmap(0x7f9690e99000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7f9690e99000
close(3) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

```



```

openat(AT_FDCWD, "tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "./libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f9690c25000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/libm.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\260\363\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1332096, ...}) = 0
mmap(NULL, 1331224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690adf000
mmap(0x7f9690aee000, 638976, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x7f9690aee000
mmap(0x7f9690b8a000, 626688, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xab000) = 0x7f9690b8a000
mmap(0x7f9690c23000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x143000) = 0x7f9690c23000
close(3) = 0
mprotect(0x7f9690c23000, 4096, PROT_READ) = 0
mprotect(0x7f9690e99000, 4096, PROT_READ) = 0
munmap(0x7f9690c25000, 329160) = 0
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
read(0, 0
"0\n", 1024) = 2
munmap(0x7f9690e96000, 16464) = 0
munmap(0x7f9690adf000, 1331224) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

```

```

openat(AT_FDCWD, "tls/haswell/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/x86_64/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libsecond.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libsecond.so", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200\20\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=17864, ...}) = 0
getcwd("/home/sakost/university/2 course/os/5 lab/cmake-build-debug", 128) = 60
mmap(NULL, 16464, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690e96000
mmap(0x7f9690e97000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1000) = 0x7f9690e97000
mmap(0x7f9690e98000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) =
0x7f9690e98000
mmap(0x7f9690e99000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x2000) = 0x7f9690e99000
close(3) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "./tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "./tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "./tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "./tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "./haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "./haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "./x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)

```

```

openat(AT_FDCWD, "/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f9690c25000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/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\260\363\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1332096, ...}) = 0
mmap(NULL, 1331224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690adf000
mmap(0x7f9690aee000, 638976, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0xf000) = 0x7f9690aee000
mmap(0x7f9690b8a000, 626688, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xab000)
= 0x7f9690b8a000
mmap(0x7f9690c23000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x143000) = 0x7f9690c23000
close(3) = 0
mprotect(0x7f9690c23000, 4096, PROT_READ) = 0
mprotect(0x7f9690e99000, 4096, PROT_READ) = 0
munmap(0x7f9690c25000, 329160) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
write(1, "Ok. Contract was changed\n", 25Ok. Contract was changed
) = 25
write(1, "Now context is second\n", 22Now context is second
) = 22
read(0, 1 0 10 0.1
"1 0 10 0.1\n", 1024) = 11
write(1, "1.837538\n", 91.837538
) = 9
read(0, 2 8
"2 8\n", 1024) = 4
write(1, "Translate integer(8) from 10 bas"... , 44Translate integer(8) from 10 base to 3 base
) = 44
write(1, "22\n", 322
) = 3
read(0, 0
"0\n", 1024) = 2
munmap(0x7f9690e96000, 16464) = 0
munmap(0x7f9690adf000, 1331224) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "haswell/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libfirst.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libfirst.so", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200\20\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=17784, ...}) = 0

```

```

getcwd("/home/sakost/university/2 course/os/5 lab/cmake-build-debug", 128) = 60
mmap(NULL, 16464, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690e96000
mmap(0x7f9690e97000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1000) = 0x7f9690e97000
mmap(0x7f9690e98000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) =
0x7f9690e98000
mmap(0x7f9690e99000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x2000) = 0x7f9690e99000
close(3) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f9690c25000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\260\363\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1332096, ...}) = 0
mmap(NULL, 1331224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9690adf000
mmap(0x7f9690aee000, 638976, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0xf000) = 0x7f9690aee000
mmap(0x7f9690b8a000, 626688, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xab000)
= 0x7f9690b8a000
mmap(0x7f9690c23000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x143000) = 0x7f9690c23000

```

```

close(3) = 0
mprotect(0x7f9690c23000, 4096, PROT_READ) = 0
mprotect(0x7f9690e99000, 4096, PROT_READ) = 0
munmap(0x7f9690c25000, 329160) = 0
write(1, "Ok. Contract was changed\n", 25Ok. Contract was changed
) = 25
write(1, "Now context is first\n", 21Now context is first
) = 21
read(0, "", 1024) = 0
munmap(0x7f9690e96000, 16464) = 0
munmap(0x7f9690adf000, 1331224) = 0
exit_group(0) = ?
+++ exited with 0 +++

```

ltrace:

```

dlopen("libfirst.so", 1) =
0x5627cb9142c0
dlsym(0x5627cb9142c0, "SinIntegral") =
0x7ff4c70f5149
dlsym(0x5627cb9142c0, "translation") =
0x7ff4c70f51e5
dlerror() = nil
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 2, 0)
= 1
__isoc99_scanf(0x5627ca94d081, 0x7ffc1e93cba0, 0x7ffc1e93cba4, 0x7ffc1e93cba8)
= 3
printf("%f\n", 1.8547561.854756
) = 9
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 0)
= 1
dlclose(0x5627cb9142c0) = 0
dlopen("libsecond.so", 1) =
0x5627cb9142c0
dlsym(0x5627cb9142c0, "SinIntegral") =
0x7ff4c70f5149
dlsym(0x5627cb9142c0, "translation") =
0x7ff4c70f5218
dlerror() = nil
puts("Ok. Contract was changed"Ok. Contract was changed
) = 25
puts("Now context is second"Now context is second
) = 22
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 0x7ff4c6fc7f67)
= 1
__isoc99_scanf(0x5627ca94d08e, 0x7ffc1e93cba8, 0, 0)
= 1
printf("Translate integer(%ld) from 10 b"... , 8) = 37
putchar(51, 0x5627ca94d0ad, 0, 0) = 51
puts(" base"Translate integer(8) from 10 base to 3 base
) = 6
puts("22"22
) = 3
free(0x5627cb916690) = <void>
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 3, 0x5627cb914010)

```

```

= 1
dlclose(0x5627cb9142c0)                                = 0
dlopen("libfirst.so", 1)                               =
0x5627cb9142c0
dlsym(0x5627cb9142c0, "SinIntegral")                   =
0x7ff4c70f5149
dlsym(0x5627cb9142c0, "translation")                   =
0x7ff4c70f51e5
dlerror()                                               = nil
puts("Ok. Contract was changed"Ok. Contract was changed
)                                                       = 25
puts("Now context is first"Now context is first
)                                                       = 21
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 0x7ff4c6fc7f67)
= 1
__isoc99_scanf(0x5627ca94d08e, 0x7ffc1e93cba8, 0, 0)
= 1
printf("Translate integer(%ld) from 10 b"..., 8)        = 37
putchar(50, 0x5627ca94d0ad, 0, 0)                      = 50
puts(" base"Translate integer(8) from 10 base to 2 base
)                                                       = 6
puts("1000"1000
)                                                       = 5
free(0x5627cb916970)                                    = <void>
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 2)
= 1
dlclose(0x5627cb9142c0)                                = 0
dlopen("libsecond.so", 1)                              =
0x5627cb9142a0
dlsym(0x5627cb9142a0, "SinIntegral")                   =
0x7ff4c70f5149
dlsym(0x5627cb9142a0, "translation")                   =
0x7ff4c70f5218
dlerror()                                               = nil
puts("Ok. Contract was changed"Ok. Contract was changed
)                                                       = 25
puts("Now context is second"Now context is second
)                                                       = 22
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 0x7ff4c6fc7f67)
= 1
__isoc99_scanf(0x5627ca94d081, 0x7ffc1e93cba0, 0x7ffc1e93cba4, 0x7ffc1e93cba8)
= 3
printf("%f\n", 1.8375381.837538
)                                                       = 9
__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 0)
= 1
__isoc99_scanf(0x5627ca94d08e, 0x7ffc1e93cba8, 0, 0)
= 1
printf("Translate integer(%ld) from 10 b"..., 9)        = 37
putchar(51, 0x5627ca94d0ad, 0, 0)                      = 51
puts(" base"Translate integer(9) from 10 base to 3 base
)                                                       = 6
puts("100"100
)                                                       = 4
free(0x5627cb916bb0)                                    = <void>

```

```

__isoc99_scanf(0x5627ca94d0c6, 0x7ffc1e93cb9c, 0, 2)
= 0xffffffff
dlclose(0x5627cb9142a0)
+++ exited (status 0) +++

```

= 0

strace статистика:

% time	seconds	usecs/call	calls	errors	syscall
39,52	0,001616	10	152	137	openat
19,83	0,000811	16	48		mmap
12,11	0,000495	38	13		munmap
8,54	0,000349	24	14		write
5,62	0,000230	15	15		close
4,40	0,000180	10	17		fstat
4,06	0,000166	13	12		read
3,82	0,000156	13	12		mprotect
1,47	0,000060	15	4		getcwd
0,64	0,000026	8	3		brk
0,00	0,000000	0	8	7	stat
0,00	0,000000	0	4		pread64
0,00	0,000000	0	1	1	access
0,00	0,000000	0	1		execve
0,00	0,000000	0	2	1	arch_prctl

100,00	0,004089	13	306	146	total

ltrace статистика:

% time	seconds	usecs/call	calls	function
82.36	0.064789	16197	4	dlopen
4.46	0.003508	877	4	dlclose
4.25	0.003347	278	12	puts
3.18	0.002500	178	14	__isoc99_scanf
1.97	0.001552	194	8	dlsym
1.20	0.000946	189	5	printf
1.04	0.000819	273	3	free
0.99	0.000779	194	4	dLError
0.54	0.000423	141	3	putchar

100.00	0.078663		57	total

3.4 ЛР № 6-8

```

sakost@sakost-pc ~/university/2 course/os/6-8 lab «master*»
$ strace cmake-build-debug/6_8_lab
execve("cmake-build-debug/6_8_lab", ["cmake-build-debug/6_8_lab"], 0x7ffe9402a5c0 /* 55 vars */) = 0
brk(NULL)                               = 0x563423041000
arch_prctl(0x3001 /* ARCH_??? */, 0x7fff90bae260) = -1 EINVAL (Недопустимый аргумент)
access("/etc/ld.so.preload", R_OK)      = -1 ENOENT (Нет такого файла или каталога)

```

```

openat(AT_FDCWD, "/usr/local/lib/tls/haswell/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1
ENOENT (Нет такого файла или каталога)
stat("/usr/local/lib/tls/haswell/x86_64", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/haswell/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
stat("/usr/local/lib/tls/haswell", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
stat("/usr/local/lib/tls/x86_64", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/tls/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
stat("/usr/local/lib/tls", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(Нет такого файла или каталога)
stat("/usr/local/lib/haswell/x86_64", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/haswell/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
stat("/usr/local/lib/haswell", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
stat("/usr/local/lib/x86_64", 0x7fff90bad400) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
stat("/usr/local/lib", {st_mode=S_IFDIR|0755, st_size=12288, ...}) = 0
openat(AT_FDCWD, "tls/haswell/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "x86_64/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=329160, ...}) = 0
mmap(NULL, 329160, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f9e6d87c000
close(3) = 0
openat(AT_FDCWD, "/usr/lib/libprotobuf.so.23", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \300\w\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=3257544, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f9e6d87a000
mmap(NULL, 3266496, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d55c000
mprotect(0x7f9e6d618000, 2433024, PROT_NONE) = 0
mmap(0x7f9e6d618000, 1871872, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x7f9e6d618000) = 0x7f9e6d618000

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mmap(0x7f9e6d7e1000, 557056, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x285000)
= 0x7f9e6d7e1000
mmap(0x7f9e6d86a000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x30d000) = 0x7f9e6d86a000
mmap(0x7f9e6d878000, 6080, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1, 0) = 0x7f9e6d878000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "x86_64/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libpthread.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "/usr/lib/libpthread.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\000\201\0\0\0\0\0"... , 832) = 832
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\307Y\373z\3054\277z\21\35\225\341\273\304<\223"... , 68, 824) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=158744, ...}) = 0
mmap(NULL, 135600, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d53a000
mmap(0x7f9e6d541000, 65536, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x7000) = 0x7f9e6d541000
mmap(0x7f9e6d551000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17000) =
0x7f9e6d551000
mmap(0x7f9e6d556000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1b000) = 0x7f9e6d556000
mmap(0x7f9e6d558000, 12720, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f9e6d558000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libzmq.so.5", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\272\4\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1183096, ...}) = 0
mmap(NULL, 992600, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d447000
mmap(0x7f9e6d48e000, 520192, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x47000) = 0x7f9e6d48e000
mmap(0x7f9e6d50d000, 139264, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xc6000)
= 0x7f9e6d50d000
mmap(0x7f9e6d52f000, 45056, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0xe7000) = 0x7f9e6d52f000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого

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файла или каталога)
openat(AT_FDCWD, "tls/haswell/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/x86_64/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "x86_64/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "/usr/lib/libgnutls.so.30", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\0\0\0>\0\1\0\0\0@\0\3\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=2098592, ...}) = 0
mmap(NULL, 2107176, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d244000
mmap(0x7f9e6d278000, 1183744, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x34000) = 0x7f9e6d278000
mmap(0x7f9e6d399000, 626688, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x155000)
= 0x7f9e6d399000
mmap(0x7f9e6d432000, 77824, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1ed000) = 0x7f9e6d432000
mmap(0x7f9e6d445000, 5928, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1, 0) = 0x7f9e6d445000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libbsd.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "/usr/lib/libbsd.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\0\0\0>\0\1\0\0\0P@\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=96528, ...}) = 0
mmap(NULL, 102768, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d22a000
mprotect(0x7f9e6d22e000, 77824, PROT_NONE) = 0
mmap(0x7f9e6d22e000, 61440, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,

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[illegible]

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openat(AT_FDCWD, "/usr/local/lib/librt.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/librt.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\211\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P7\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=39408, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f9e6d1ce000
mmap(NULL, 43520, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6d1c3000
mmap(0x7f9e6d1c6000, 16384, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x3000) = 0x7f9e6d1c6000
mmap(0x7f9e6d1ca000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7000) =
0x7f9e6d1ca000
mmap(0x7f9e6d1cc000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x8000) = 0x7f9e6d1cc000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "/usr/lib/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\211\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0@\`t\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=20955936, ...}) = 0
mmap(NULL, 1951744, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6cfe6000
mprotect(0x7f9e6d07c000, 1269760, PROT_NONE) = 0
mmap(0x7f9e6d07c000, 966656, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x96000) = 0x7f9e6d07c000
mmap(0x7f9e6d168000, 299008, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x182000)
= 0x7f9e6d168000
mmap(0x7f9e6d1b2000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1cb000) = 0x7f9e6d1b2000
mmap(0x7f9e6d1c0000, 10240, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f9e6d1c0000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)

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```

openat(AT_FDCWD, "tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF2\1\13\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\260\363\0\0\0\0\0", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1332096, ...}) = 0
mmap(NULL, 1331224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6cea0000
mmap(0x7f9e6ceaf000, 638976, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x7f9e6ceaf000
mmap(0x7f9e6cf4b000, 626688, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xab000) = 0x7f9e6cf4b000
mmap(0x7f9e6cfe4000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x143000) = 0x7f9e6cfe4000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF2\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
fstat(3, {st_mode=S_IFREG|0644, st_size=594704, ...}) = 0
mmap(NULL, 103144, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6ce86000
mmap(0x7f9e6ce89000, 69632, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9e6ce89000
mmap(0x7f9e6ce9a000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x14000) = 0x7f9e6ce9a000
mmap(0x7f9e6ce9e000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17000) = 0x7f9e6ce9e000
close(3) = 0

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openat(AT_FDCWD, "/usr/local/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\202\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\0\0\0"..., 784, 64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0\0GNU\0\2\0\0\0\300\4\0\0\0\0\3\0\0\0\0\0\0\0"..., 32, 848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0\0GNU\0\207\360\21\247\344\314?\306\0\0\320\323\335\0\16t"..., 68, 880) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=2159552, ...}) = 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\0\0\0"..., 784, 64) = 784
mmap(NULL, 1868448, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6ccbd000
mmap(0x7f9e6cce3000, 1363968, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000) = 0x7f9e6cce3000
mmap(0x7f9e6ce30000, 311296, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x173000) = 0x7f9e6ce30000
mmap(0x7f9e6ce7c000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1be000) = 0x7f9e6ce7c000
mmap(0x7f9e6ce82000, 12960, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f9e6ce82000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libz.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libz.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832

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fstat(3, {st_mode=S_IFREG|0755, st_size=100096, ...}) = 0
mmap(NULL, 102416, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6cca3000
mprotect(0x7f9e6cca6000, 86016, PROT_NONE) = 0
mmap(0x7f9e6cca6000, 57344, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9e6cca6000
mmap(0x7f9e6ccb4000, 24576, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x11000) = 0x7f9e6ccb4000
mmap(0x7f9e6ccbb000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17000) = 0x7f9e6ccbb000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libp11-kit.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\0\0>\1\0\1\0\0\0@1220\2\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1261048, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9e6cca1000
mmap(NULL, 1264616, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6cb6c000
mmap(0x7f9e6cb95000, 647168, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x29000) = 0x7f9e6cb95000
mmap(0x7f9e6cc33000, 368640, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xc7000) = 0x7f9e6cc33000
mmap(0x7f9e6cc8d000, 81920, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x120000) = 0x7f9e6cc8d000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
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openat(AT_FDCWD, "haswell/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libidn2.so.0", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libidn2.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"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=128696, ...}) = 0
mmap(NULL, 131096, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6cb4b000
mmap(0x7f9e6cb4d000, 16384, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7f9e6cb4d000
mmap(0x7f9e6cb51000, 102400, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x6000) = 0x7f9e6cb51000
mmap(0x7f9e6cb6a000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1e000) = 0x7f9e6cb6a000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libunistring.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libunistring.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 \20\1\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1574712, ...}) = 0
mmap(NULL, 1579272, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c9c9000
mmap(0x7f9e6c9da000, 217088, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x11000) = 0x7f9e6c9da000
mmap(0x7f9e6ca0f000, 1273856, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x46000) = 0x7f9e6ca0f000
mmap(0x7f9e6cb46000, 20480, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17c000) = 0x7f9e6cb46000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)

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openat(AT_FDCWD, "tls/x86_64/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libtasn1.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \0\0\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=83720, ...}) = 0
mmap(NULL, 86568, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c9b3000
mprotect(0x7f9e6c9b6000, 69632, PROT_NONE) = 0
mmap(0x7f9e6c9b6000, 49152, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9e6c9b6000
mmap(0x7f9e6c9c2000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x7f9e6c9c2000
mmap(0x7f9e6c9c7000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x13000) = 0x7f9e6c9c7000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "tls/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/x86_64/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "haswell/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libnettle.so.8", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libnettle.so.8", 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 \300\0\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=288552, ...}) = 0
mmap(NULL, 290872, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c96b000
mprotect(0x7f9e6c977000, 233472, PROT_NONE) = 0
mmap(0x7f9e6c977000, 139264, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xc000) = 0x7f9e6c977000
mmap(0x7f9e6c999000, 90112, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2e000) = 0x7f9e6c999000

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mmap(0x7f9e6c9b0000, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x44000) = 0x7f9e6c9b0000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет
такого файла или каталога)
openat(AT_FDCWD, "tls/haswell/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/x86_64/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "x86_64/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "/usr/lib/libhogweed.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \220\0\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=292608, ...}) = 0
mmap(NULL, 294928, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c922000
mmap(0x7f9e6c92b000, 77824, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x9000) = 0x7f9e6c92b000
mmap(0x7f9e6c93e000, 172032, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1c000)
= 0x7f9e6c93e000
mmap(0x7f9e6c968000, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x45000) = 0x7f9e6c968000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/x86_64/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "tls/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "haswell/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/local/lib/libgmp.so.10", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "/usr/lib/libgmp.so.10", O_RDONLY|O_CLOEXEC) = 3

```

```

read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200\20\1\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=649512, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f9e6c920000
mmap(NULL, 651784, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c880000
mprotect(0x7f9e6c891000, 573440, PROT_NONE) = 0
mmap(0x7f9e6c891000, 475136, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x11000) = 0x7f9e6c891000
mmap(0x7f9e6c905000, 94208, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x85000) =
0x7f9e6c905000
mmap(0x7f9e6c91d000, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x9c000) = 0x7f9e6c91d000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)
openat(AT_FDCWD, "haswell/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "x86_64/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libffi.so.7", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "/usr/lib/libffi.so.7", O_RDONLY|O_CLOEXEC) = 3
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"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=42960, ...}) = 0
mmap(NULL, 46376, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c874000
mmap(0x7f9e6c876000, 24576, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x2000) = 0x7f9e6c876000
mmap(0x7f9e6c87c000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x8000) =
0x7f9e6c87c000
mmap(0x7f9e6c87e000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x9000) = 0x7f9e6c87e000
close(3) = 0
openat(AT_FDCWD, "/usr/local/lib/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого
файла или каталога)
openat(AT_FDCWD, "tls/haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "tls/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или
каталога)
openat(AT_FDCWD, "haswell/x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла
или каталога)

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openat(AT_FDCWD, "haswell/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "x86_64/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/local/lib/libdl.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/usr/lib/libdl.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\10\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\20\22\0\0\0\0\0...", 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=18608, ...}) = 0
mmap(NULL, 20624, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f9e6c86e000
mmap(0x7f9e6c86f000, 8192, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7f9e6c86f000
mmap(0x7f9e6c871000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9e6c871000
mmap(0x7f9e6c872000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f9e6c872000
close(3) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9e6c86c000
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9e6c86a000
arch_prctl(ARCH_SET_FS, 0x7f9e6c86b040) = 0
mprotect(0x7f9e6ce7c000, 12288, PROT_READ) = 0
mprotect(0x7f9e6c872000, 4096, PROT_READ) = 0
mprotect(0x7f9e6c87e000, 4096, PROT_READ) = 0
mprotect(0x7f9e6c91d000, 8192, PROT_READ) = 0
mprotect(0x7f9e6c9b0000, 8192, PROT_READ) = 0
mprotect(0x7f9e6c968000, 8192, PROT_READ) = 0
mprotect(0x7f9e6c9c7000, 4096, PROT_READ) = 0
mprotect(0x7f9e6cb46000, 16384, PROT_READ) = 0
mprotect(0x7f9e6cb6a000, 4096, PROT_READ) = 0
mprotect(0x7f9e6cc8d000, 40960, PROT_READ) = 0
mprotect(0x7f9e6ccbb000, 4096, PROT_READ) = 0
mprotect(0x7f9e6ce9e000, 4096, PROT_READ) = 0
mprotect(0x7f9e6cfe4000, 4096, PROT_READ) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f9e6c868000
mprotect(0x7f9e6d1b2000, 53248, PROT_READ) = 0
mprotect(0x7f9e6d556000, 4096, PROT_READ) = 0
mprotect(0x7f9e6d1cc000, 4096, PROT_READ) = 0
mprotect(0x7f9e6d228000, 4096, PROT_READ) = 0
mprotect(0x7f9e6d241000, 4096, PROT_READ) = 0
mprotect(0x7f9e6d432000, 69632, PROT_READ) = 0
mprotect(0x7f9e6d52f000, 32768, PROT_READ) = 0
mprotect(0x7f9e6d86a000, 53248, PROT_READ) = 0
mprotect(0x5634212f0000, 4096, PROT_READ) = 0
mprotect(0x7f9e6d8f9000, 4096, PROT_READ) = 0
munmap(0x7f9e6d87c000, 329160) = 0
set_tid_address(0x7f9e6c86b310) = 875700
set_robust_list(0x7f9e6c86b320, 24) = 0
rt_sigaction(SIGRTMIN, {sa_handler=0x7f9e6d541b90, sa_mask=[], sa_flags=SA_RESTORER|SA_SIGINFO, sa_restorer=0x7f9e6d54e0f0}, NULL, 8) = 0
rt_sigaction(SIGRT_1, {sa_handler=0x7f9e6d541c30, sa_mask=[], sa_flags=SA_RESTORER|SA_RESTART|SA_SIGINFO, sa_restorer=0x7f9e6d54e0f0}, NULL, 8) = 0

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rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
brk(NULL) = 0x563423041000
brk(0x563423062000) = 0x563423062000
brk(0x563423083000) = 0x563423083000
getrandom("\x9b", 1, GRND_NONBLOCK) = 1
stat("/etc/gnutls/config", 0x7fff90bae1c0) = -1 ENOENT (Нет такого файла или каталога)
futexp(0x7f9e6d1c06bc, FUTEX_WAKE_PRIVATE, 2147483647) = 0
futexp(0x7f9e6d1c06c8, FUTEX_WAKE_PRIVATE, 2147483647) = 0
readlink("/proc/self/exe", "/home/sakost/university/2 course"..., 4096) = 69
eventfd2(0, EFD_CLOEXEC) = 3
fcntl(3, F_GETFL) = 0x2 (flags O_RDONLY)
fcntl(3, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
fcntl(3, F_GETFL) = 0x802 (flags O_RDONLY|O_NONBLOCK)
fcntl(3, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
getpid() = 875700
getpid() = 875700
getrandom("\x13\x41\x12\x1d\x28\x44\x1a\x67\x26\x15\x10\x44\x95\xa4\xfb\xa7", 16, 0) = 16
getrandom("\x85\x62\xed\x35\xa3\x0f\xea\xe7\x9c\x4d\x28\xcd\x78\x5b\x0e\xbb", 16, 0) = 16
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
write(1, "Using OMQ version 4.3.4\n", 24Using OMQ version 4.3.4
) = 24
write(1, "Using Protobuf version 3.12.4\n", 30Using Protobuf version 3.12.4
) = 30
eventfd2(0, EFD_CLOEXEC) = 4
fcntl(4, F_GETFL) = 0x2 (flags O_RDONLY)
fcntl(4, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
fcntl(4, F_GETFL) = 0x802 (flags O_RDONLY|O_NONBLOCK)
fcntl(4, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
getpid() = 875700
epoll_create1(EPOCH_CLOEXEC) = 5
epoll_ctl(5, EPOCH_CTL_ADD, 4, {u32=587543984, u64=94781925832112}) = 0
epoll_ctl(5, EPOCH_CTL_MOD, 4, {EPOCHLIN, {u32=587543984, u64=94781925832112}}) = 0
getpid() = 875700
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f9e6c067000
mprotect(0x7f9e6c068000, 8388608, PROT_READ|PROT_WRITE) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0
clone(child_stack=0x7f9e6c866a70, flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARPID, parent_tid=[875701], tls=0x7f9e6c867640, child_tidptr=0x7f9e6c867910) = 875701
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
eventfd2(0, EFD_CLOEXEC) = 6
fcntl(6, F_GETFL) = 0x2 (flags O_RDONLY)
fcntl(6, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
fcntl(6, F_GETFL) = 0x802 (flags O_RDONLY|O_NONBLOCK)
fcntl(6, F_SETFL, O_RDONLY|O_NONBLOCK) = 0
getpid() = 875700
epoll_create1(EPOCH_CLOEXEC) = 7
epoll_ctl(7, EPOCH_CTL_ADD, 6, {u32=587544176, u64=94781925832304}) = 0
epoll_ctl(7, EPOCH_CTL_MOD, 6, {EPOCHLIN, {u32=587544176, u64=94781925832304}}) = 0
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f9e6b866000
mprotect(0x7f9e6b867000, 8388608, PROT_READ|PROT_WRITE) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0

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clone(child_stack=0x7f9e6c065a70, flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, parent_tid=[875702], tls=0x7f9e6c066640, child_tidptr=0x7f9e6c066910) = 875702
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
eventfd2(0, EFD_CLOEXEC) = 8
fcntl(8, F_GETFL) = 0x2 (flags O_RDWR)
fcntl(8, F_SETFL, O_RDWR|O_NONBLOCK) = 0
fcntl(8, F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(8, F_SETFL, O_RDWR|O_NONBLOCK) = 0
getpid() = 875700
eventfd2(0, EFD_CLOEXEC) = 9
fcntl(9, F_GETFL) = 0x2 (flags O_RDWR)
fcntl(9, F_SETFL, O_RDWR|O_NONBLOCK) = 0
fcntl(9, F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(9, F_SETFL, O_RDWR|O_NONBLOCK) = 0
getpid() = 875700
getpid() = 875700
poll([fd=8, events=POLLIN], 1, 0) = 0 (Timeout)
unlink("@socket_flow_0.ipc") = -1 ENOENT (Нет такого файла или каталога)
socket(AF_UNIX, SOCK_STREAM|SOCK_CLOEXEC, 0) = 10
bind(10, {sa_family=AF_UNIX, sun_path="@socket_flow_0.ipc"}, 20) = 0
listen(10, 100) = 0
getsockname(10, {sa_family=AF_UNIX, sun_path="@socket_flow_0.ipc"}, [128->20]) = 0
getpid() = 875700
write(6, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
write(8, "\1\0\0\0\0\0\0", 8) = 8
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f9e6b065000
mprotect(0x7f9e6b066000, 8388608, PROT_READ|PROT_WRITE) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8) = 0
clone(child_stack=0x7f9e6b864a70, flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, parent_tid=[875703], tls=0x7f9e6b865640, child_tidptr=0x7f9e6b865910) = 875703
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
write(1, "> ", 2) = 2
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x1), ...}) = 0
read(0, create 1
"create 1\n", 1024) = 9
stat("/home/sakost/university/2 course/os/6-8 lab/cmake-build-debug/6_8_lab", {st_mode=S_IFREG|0755,
st_size=1797944, ...}) = 0
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f9e6c86b310) = 876105
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
brk(0x5634230a4000) = 0x5634230a4000
getpid() = 875700
write(6, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
write(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, -1) = 1 ([fd=9, revents=POLLIN])
getpid() = 875700
read(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700

```

```

poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
getpid() = 875700
poll([fd=9, events=POLLIN], 1, -1) = 1 ([fd=9, revents=POLLIN])
getpid() = 875700
read(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
futex(0x7fff90bae118, FUTEX_WAKE_PRIVATE, 1) = 1
write(1, "Ok: 876105\n", 11Ok: 876105
) = 11
write(1, "> ", 2> ) = 2
read(0, create 2
"create 2\n", 1024) = 9
getpid() = 875700
poll([fd=8, events=POLLIN], 1, 0) = 1 ([fd=8, revents=POLLIN])
getpid() = 875700
read(8, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=8, events=POLLIN], 1, 0) = 0 (Timeout)
getpid() = 875700
write(6, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, -1) = 1 ([fd=9, revents=POLLIN])
getpid() = 875700
read(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
stat("/home/sakost/university/2 course/os/6-8 lab/cmake-build-debug/6_8_lab", {st_mode=S_IFREG|0755,
st_size=1797944, ...}) = 0
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f9e6c86b310) = 876177
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
getpid() = 875700
write(6, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
write(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, -1) = 1 ([fd=9, revents=POLLIN])
getpid() = 875700
read(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
getpid() = 875700
poll([fd=9, events=POLLIN], 1, -1) = 1 ([fd=9, revents=POLLIN])
getpid() = 875700
read(9, "\1\0\0\0\0\0\0", 8) = 8
getpid() = 875700
poll([fd=9, events=POLLIN], 1, 0) = 0 (Timeout)
futex(0x7fff90bae118, FUTEX_WAKE_PRIVATE, 1) = 1
write(1, "Ok: 876177\n", 11Ok: 876177
) = 11
write(1, "> ", 2> ) = 2
read(0, create 3
"create 3\n", 1024) = 9

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getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 1 ([{{fd=8, revents=POLLIN}}])
getpid()                = 875700
read(8, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ([{{fd=9, revents=POLLIN}}])
getpid()                = 875700
read(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 1 ([{{fd=8, revents=POLLIN}}])
getpid()                = 875700
read(8, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ([{{fd=9, revents=POLLIN}}])
getpid()                = 875700
read(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ([{{fd=9, revents=POLLIN}}])
getpid()                = 875700
read(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ([{{fd=9, revents=POLLIN}}])
getpid()                = 875700
read(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0)  = 0 (Timeout)
futex(0x7fff90bae118, FUTEX_WAKE_PRIVATE, 1) = 1
write(1, "Ok: 876196\n", 11)Ok: 876196
)                                = 11
write(1, "> ", 2)                = 2
read(0, exec 3 3 1 2 3
"exec 3 3 1 2 3\n", 1024)        = 15
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700

```



```

write(6, "\1\0\0\0\0\0\0", 8)      = 8
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ({{fd=9, revents=POLLIN}})
getpid()                             = 875700
read(9, "\1\0\0\0\0\0\0", 8)       = 8
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0) = 0 (Timeout)
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ({{fd=9, revents=POLLIN}})
getpid()                             = 875700
read(9, "\1\0\0\0\0\0\0", 8)       = 8
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0) = 0 (Timeout)
getpid()                             = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0) = 0 (Timeout)
getpid()                             = 875700
write(6, "\1\0\0\0\0\0\0", 8)      = 8
write(1, "> ", 2> )                 = 2
read(0, Ok: 6
remove 2
"remove 2\n", 1024)                 = 9
getpid()                             = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0) = 0 (Timeout)
getpid()                             = 875700
write(6, "\1\0\0\0\0\0\0", 8)      = 8
getpid()                             = 875700
write(6, "\1\0\0\0\0\0\0", 8)      = 8
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ({{fd=9, revents=POLLIN}})
getpid()                             = 875700
read(9, "\1\0\0\0\0\0\0", 8)       = 8
getpid()                             = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0) = 0 (Timeout)
wait4(0, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 876177
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=876177, si_uid=1000, si_status=0,
si_utime=1, si_stime=0} ---
write(1, "Ok\n", 3Ok
)                                     = 3
write(1, "> ", 2> )                 = 2
read(0, ping 1
"ping 1\n", 1024)                   = 7
getpid()                             = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0) = 1 ({{fd=8, revents=POLLIN}})
getpid()                             = 875700
read(8, "\1\0\0\0\0\0\0", 8)       = 8
getpid()                             = 875700
write(6, "\1\0\0\0\0\0\0", 8)      = 8
getpid()                             = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0) = 1 ({{fd=8, revents=POLLIN}})
getpid()                             = 875700
read(8, "\1\0\0\0\0\0\0", 8)       = 8
getpid()                             = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0) = 0 (Timeout)
getpid()                             = 875700
write(6, "\1\0\0\0\0\0\0", 8)      = 8

```

```

getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, -1) = 1 ([{fd=9, revents=POLLIN}])
getpid()                = 875700
read(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=9, events=POLLIN}}, 1, 0)  = 0 (Timeout)
write(1, "Ok: 1\n", 6Ok: 1
)                = 6
write(1, "> ", 2> )          = 2
read(0, "", 1024)          = 0
futex(0x7f9e6b865910, FUTEX_WAIT, 875703, NULL) = 0
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
poll([{{fd=8, events=POLLIN}}, 1, 0)  = 0 (Timeout)
getpid()                = 875700
write(4, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
getpid()                = 875700
write(9, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
poll([{{fd=3, events=POLLIN}}, 1, -1) = 1 ([{fd=3, revents=POLLIN}])
getpid()                = 875700
read(3, "\1\0\0\0\0\0\0\0", 8)      = 8
getpid()                = 875700
write(6, "\1\0\0\0\0\0\0\0", 8)      = 8
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=876105, si_uid=1000, si_status=0,
si_etime=1, si_stime=1} ---
close(7)                = 0
close(6)                = 0
close(5)                = 0
close(4)                = 0
close(3)                = 0
exit_group(0)           = ?
+++ exited with 0 +++

```

4 Вывод

В процессе выполнения данной лабораторной работы я освоил способы диагностики работы ПО с помощью утилиты strace в ОС Unix. Данная утилита является мощным инструментом в руках программиста, поскольку позволяет крайне детально отслеживать процесс: просматривать все возможные системные вызовы, есть возможность намеренно менять поведение программы(путем инъекций ошибок в системные вызовы) и, с недавней версией, даже отслеживать стек программы.

Я научился применять различные фильтры к выводу утилиты strace, научился применять флаги, которые позволяют дополнять и/или модифицировать основной функционал данной утилиты. При помощи нее можно даже отлаживать

многопроцессорные программы без каких-либо проблем, поскольку она позволяет отслеживать системные вызовы как в дочерних процессах, так и в различных потоках. Strace обладает функциональностью нарочно ломать программы, дабы протестировать свою программу во всех возможных и невозможных случаях.

Все вышеописанное лишь малая часть того, что strace может делать. Так, с помощью strace можно вывести подробную таблицу с тем, какой вызов сколько раз вызывался и сколько занял времени от общей работы программы. Strace может отслеживать сигналы и наблюдать за тем, как меняется стек программы с каждым системным вызовом.

Все это делает strace одновременно мощным и простым в использовании инструментом, которым стоит овладеть для упрощения разработки под ОС Unix.