ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ "МОСКОВСКИЙ АВИАЦИОННЫЙ ИНСТИТУТ (НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ)"

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Кафедра: 806 «Вычислительная математика и программирование»

Лабороторная работа № 1 по курсу по курсу «Операционные системы»

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1.Постановка задачи

В данной лабораторной работе нужно продемонстрировать умения работы со strace, а также протестировать все лабораторные работы с помощью strace.

3. Диагностика Strace

// Лр 2

```
nikita@nikita-HP:~/oc/lr2v14$ strace ./main < t1.txt
execve("./main", ["./main"], 0x7ffdae1aabf0 /* 56 vars */) = 0
brk(NULL)
                        = 0x556c1472a000
access("/etc/ld.so.nohwcap", F_OK)
                              = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R OK)
                             = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=96869, ...}) = 0
mmap(NULL, 96869, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f241ba3a000
close(3)
access("/etc/ld.so.nohwcap", F OK)
                               = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libm.so.6", O RDONLY|O CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=1700792, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0)
= 0x7f241ba38000
mmap(NULL, 3789144, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0)
= 0x7f241b48d000
mprotect(0x7f241b62a000, 2093056, PROT NONE) = 0
mmap(0x7f241b829000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP DENYWRITE, 3, 0x19c000) = 0x7f241b829000
close(3)
access("/etc/ld.so.nohwcap", F OK)
                              = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0755, st size=2030544, ...}) = 0
mmap(NULL, 4131552, PROT READ|PROT EXEC, MAP PRIVATE|MAP DENYWRITE, 3, 0)
= 0x7f241b09c000
mprotect(0x7f241b283000, 2097152, PROT_NONE) = 0
mmap(0x7f241b483000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP DENYWRITE, 3, 0x1e7000) = 0x7f241b483000
mmap(0x7f241b489000, 15072, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f241b489000
close(3)
                     = 0
```

```
mmap(NULL, 12288, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1,
0) = 0x7f241ba35000
arch prctl(ARCH SET FS, 0x7f241ba35740) = 0
mprotect(0x7f241b483000, 16384, PROT READ) = 0
mprotect(0x7f241b829000, 4096, PROT_READ) = 0
mprotect(0x556c143c3000, 4096, PROT READ) = 0
mprotect(0x7f241ba52000, 4096, PROT_READ) = 0
munmap(0x7f241ba3a000, 96869)
pipe([3, 4])
                             = 0
pipe([5, 6])
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child tidptr=0x7f241ba35a10) = 6775
                            = 0
close(3)
close(6)
                            = 0
fstat(0, {st_mode=S_IFREG|0644, st_size=26, ...}) = 0
brk(NULL)
                               = 0x556c1472a000
brk(0x556c1474b000)
                                    = 0x556c1474b000
read(0, "2\n3\n144\n123\n345\n100\n1000\n", 4096) = 26
write(4, "\0\0\0\0\0\0\0\@", 8)
read(5, "\315;\177f\236\240\366?", 8) = 8
fstat(1, {st mode=S IFCHR|0620, st rdev=makedev(136, 1), ...}) = 0
write(1, "2.000\land(1/2) = 1.414\landn", 202.000\land(1/2) = 1.414
= 20
write(4, "\0\0\0\0\0\0\10@", 8)
read(5, "\252LX\350z\266\373?", 8)
write(1, "3.000 \land (1/2) = 1.732 \land n", 203.000 \land (1/2) = 1.732 \land n
) = 20
write(4, \langle 0 \rangle \langle 0 \rangle \langle 0 \rangle \langle 0 \rangle \langle 0 \rangle, 8)
                                    = 8
read(5, "\0\0\0\0\0\0, 8)
                                   = 8
write(1, "144.000\land(1/2) = 12.000\landn", 23144.000\land(1/2) = 12.000
) = 23
write(4, "0\0\0\0\0\0\0, 8)
                                     = 8
read(5, "\276>\f\315Z.&@", 8)
                                      = 8
write(1, "123.000\land(1/2) = 11.091\landn", 23123.000\land(1/2) = 11.091
) = 23
write(4, "\0\0\0\0\220u@", 8)
                                     = 8
read(5, "bbj,\375\2222@", 8)
                                     = 8
write(1, "345.000\land(1/2) = 18.574\landn", 23345.000\land(1/2) = 18.574
) = 23
write(4, "0\0\0\0\0\, 8)
                                    = 8
read(5, "\0\0\0\0\0\0, 8)
                                    = 8
write(1, "100.000 \land (1/2) = 10.000 \land n", 23100.000 \land (1/2) = 10.000
) = 23
write(4, "\0\0\0\0\0@\217@", 8)
                                      = 8
read(5, "'\362\220In\237?@", 8)
                                      = 8
write(1, "1000.000^{(1/2)}) = 31.623^{(1/2)}, 241000.000^{(1/2)} = 31.623
) = 24
read(0, "", 4096)
                               = 0
close(5)
                            = 0
                            = 0
close(4)
```

```
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=6775, si uid=1000,
si status=0, si utime=0, si stime=0} ---
exit group(0)
+++ exited with 0 +++
//Лр 3
Данный вызов актуален для файла t2.txt. Также можно заметить, что создается
два потока, затем исполняются.
nikita@nikita-HP:~/oc/lr3v14$ ./det 2 < t2.txt
Determinant = 0.0
nikita@nikita-HP:~/oc/lr3v14$ strace ./det 2 < t2.txt
execve("./det", ["./det", "2"], 0x7ffdd5048898 /* 55 vars */) = 0
brk(NULL)
                         = 0x5618490fc000
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=96869, ...}) = 0
mmap(NULL, 96869, PROT READ, MAP PRIVATE, 3, 0) = 0x7fd50ae17000
                      = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libpthread.so.0", O RDONLY|
O CLOEXEC) = 3
832
fstat(3, {st mode=S IFREG|0755, st size=144976, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP ANONYMOUS, -1, 0) = 0x7fd50ae15000
mmap(NULL, 2221184, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fd50a9e9000
mprotect(0x7fd50aa03000, 2093056, PROT_NONE) = 0
mmap(0x7fd50ac02000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x19000) = 0x7fd50ac02000
mmap(0x7fd50ac04000, 13440, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fd50ac04000
close(3)
                      = 0
access("/etc/ld.so.nohwcap", F OK)
                                = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC)
=3
832
fstat(3, {st mode=S IFREG|0755, st size=2030544, ...}) = 0
mmap(NULL, 4131552, PROT READ|PROT EXEC, MAP PRIVATE)
MAP_DENYWRITE, 3, 0) = 0x7fd50a5f8000
mprotect(0x7fd50a7df000, 2097152, PROT NONE) = 0
```

```
mmap(0x7fd50a9df000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x1e7000) = 0x7fd50a9df000
mmap(0x7fd50a9e5000, 15072, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fd50a9e5000
close(3)
                       = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fd50ae12000
arch prctl(ARCH SET FS, 0x7fd50ae12740) = 0
mprotect(0x7fd50a9df000, 16384, PROT READ) = 0
mprotect(0x7fd50ac02000, 4096, PROT READ) = 0
mprotect(0x561848c83000, 4096, PROT READ) = 0
mprotect(0x7fd50ae2f000, 4096, PROT READ) = 0
munmap(0x7fd50ae17000, 96869)
                                  = 0
set tid address(0x7fd50ae12a10)
                                =6078
set_robust_list(0x7fd50ae12a20, 24)
                                = 0
rt_sigaction(SIGRTMIN, {sa_handler=0x7fd50a9eecb0, sa_mask=[],
sa flags=SA RESTORER|SA SIGINFO, sa restorer=0x7fd50a9fb890}, NULL, 8)
= 0
rt sigaction(SIGRT 1, {sa handler=0x7fd50a9eed50, sa mask=[],
sa flags=SA RESTORER|SA RESTART|SA SIGINFO,
sa_restorer = 0x7fd50a9fb890, NULL, 8) = 0
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim max=RLIM64 INFINITY}) = 0
fstat(0, {st_mode=S_IFREG|0664, st_size=39, ...}) = 0
                         = 0x5618490fc000
brk(NULL)
brk(0x56184911d000)
                             = 0x56184911d000
read(0, "4\n 3 4 9 4\n 2 5 9 2\n 2 2 5 1\n 2 "..., 4096) = 39
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP STACK, -1, 0) = 0x7fd509df7000
mprotect(0x7fd509df8000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7fd50a5f6fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
parent_tidptr=0x7fd50a5f79d0, tls=0x7fd50a5f7700, child_tidptr=0x7fd50a5f79d0)
=6079
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP\_STACK, -1, 0) = 0x7fd5095f6000
mprotect(0x7fd5095f7000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child_stack=0x7fd509df5fb0, flags=CLONE_VM|CLONE_FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARTID,
```

```
parent_tidptr=0x7fd509df69d0, tls=0x7fd509df6700, child_tidptr=0x7fd509df69d0)
=6080
clone(child stack=0x7fd509df5fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
parent tidptr=0x7fd509df69d0, tls=0x7fd509df6700, child tidptr=0x7fd509df69d0)
= 6081
clone(child stack=0x7fd50a5f6fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARTID,
parent tidptr=0x7fd50a5f79d0, tls=0x7fd50a5f7700, child tidptr=0x7fd50a5f79d0)
=6082
clone(child stack=0x7fd50a5f6fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
parent_tidptr=0x7fd50a5f79d0, tls=0x7fd50a5f7700, child_tidptr=0x7fd50a5f79d0)
=6083
clone(child stack=0x7fd509df5fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
parent_tidptr=0x7fd509df69d0, tls=0x7fd509df6700, child_tidptr=0x7fd509df69d0)
= 6084
clone(child stack=0x7fd509df5fb0, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARTID,
parent tidptr=0x7fd509df69d0, tls=0x7fd509df6700, child tidptr=0x7fd509df69d0)
=6085
fstat(1, {st mode=S IFCHR|0620, st rdev=makedev(136, 1), ...}) = 0
write(1, "Determinant = 0.0\n", 18Determinant = 0.0
   = 18
lseek(0, -2, SEEK CUR)
                              = 37
exit group(0)
                         =?
+++ exited with 0 +++
//Лр 4
nikita@nikita-HP:~/oc/lr4v14$ strace ./main
execve("./main", ["./main"], 0x7ffc37655650 /* 55 vars */) = 0
brk(NULL)
                         = 0x55e8aa327000
access("/etc/ld.so.nohwcap", F OK)
                                 = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=97629, ...}) = 0
mmap(NULL, 97629, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f06292fe000
close(3)
                       = 0
```

```
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libpthread.so.0", O RDONLY
O CLOEXEC) = 3
832
fstat(3, {st mode=S IFREG|0755, st size=144976, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP ANONYMOUS, -1, 0) = 0x7f06292fc000
mmap(NULL, 2221184, PROT READ|PROT EXEC, MAP PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7f0628ed0000
mprotect(0x7f0628eea000, 2093056, PROT NONE) = 0
mmap(0x7f06290e9000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x19000) = 0x7f06290e9000
mmap(0x7f06290eb000, 13440, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7f06290eb000
close(3)
access("/etc/ld.so.nohwcap", F OK)
                           = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|
O CLOEXEC) = 3
= 832
fstat(3, {st mode=S IFREG|0644, st size=1700792, ...}) = 0
mmap(NULL, 3789144, PROT READ|PROT EXEC, MAP PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7f0628b32000
mprotect(0x7f0628ccf000, 2093056, PROT NONE) = 0
mmap(0x7f0628ece000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x19c000) = 0x7f0628ece000
close(3)
                    = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC)
=3
832
fstat(3, {st mode=S IFREG|0755, st size=2030544, ...}) = 0
mmap(NULL, 4131552, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7f0628741000
mprotect(0x7f0628928000, 2097152, PROT_NONE) = 0
mmap(0x7f0628b28000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1e7000) = 0x7f0628b28000
mmap(0x7f0628b2e000, 15072, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f0628b2e000
close(3)
                    = 0
```

```
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP ANONYMOUS, -1, 0) = 0x7f06292f9000
arch prctl(ARCH SET FS, 0x7f06292f9740) = 0
mprotect(0x7f0628b28000, 16384, PROT READ) = 0
mprotect(0x7f0628ece000, 4096, PROT READ) = 0
mprotect(0x7f06290e9000, 4096, PROT READ) = 0
mprotect(0x55e8a86bb000, 4096, PROT READ) = 0
mprotect(0x7f0629316000, 4096, PROT READ) = 0
munmap(0x7f06292fe000, 97629)
set tid address(0x7f06292f9a10)
                                = 2972
set robust list(0x7f06292f9a20, 24)
                                = 0
rt sigaction(SIGRTMIN, {sa handler=0x7f0628ed5cb0, sa mask=[],
sa_flags=SA_RESTORER|SA_SIGINFO, sa_restorer=0x7f0628ee2890}, NULL, 8)
= 0
rt_sigaction(SIGRT_1, {sa_handler=0x7f0628ed5d50, sa_mask=[].
sa flags=SA RESTORER|SA RESTART|SA SIGINFO,
sa restorer=0x7f0628ee2890}, NULL, 8) = 0
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT STACK, NULL, {rlim cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
brk(NULL)
                         = 0x55e8aa327000
brk(0x55e8aa348000)
                             = 0x55e8aa348000
                       = 2972
getpid()
openat(AT_FDCWD, "/tmp/t_f.dewzt5", O_RDWR|O_CREAT|O_EXCL, 0600) = 3
unlink("/tmp/t_f.dewzt5")
                             = 0
                          = 4
write(3, "_gg_", 4)
mmap(NULL, 4, PROT_READ|PROT_WRITE, MAP_SHARED, 3, 0) =
0x7f0629315000
statfs("/dev/shm/", {f_type=TMPFS_MAGIC, f_bsize=4096, f_blocks=493762,
f bfree=489835, f bavail=489835, f files=493762, f ffree=493713, f fsid={val=[0,
0]}, f_namelen=255, f_frsize=4096, f_flags=ST_VALID|ST_NOSUID|
ST NODEV) = 0
futex(0x7f06290ee370, FUTEX WAKE PRIVATE, 2147483647) = 0
openat(AT FDCWD, "/dev/shm/sem.get sqrt", O RDWR|O NOFOLLOW) = -1
ENOENT (No such file or directory)
                       = 2972
getpid()
lstat("/dev/shm/3CQF2K", 0x7fffa286b440) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD, "/dev/shm/3CQF2K", O_RDWR|O_CREAT|O_EXCL, 01411)
32
```

```
mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7f0629314000
link("/dev/shm/3CQF2K", "/dev/shm/sem.get_sqrt") = 0
fstat(4, {st mode=S IFREG|S ISVTX|0411, st size=32, ...}) = 0
unlink("/dev/shm/3CQF2K")
                                 = 0
                        = 0
close(4)
openat(AT FDCWD, "/dev/shm/sem.output", O RDWR|O NOFOLLOW) = -1
ENOENT (No such file or directory)
getpid()
lstat("/dev/shm/xmTOBq", 0x7fffa286b440) = -1 ENOENT (No such file or
directory)
openat(AT FDCWD, "/dev/shm/xmTOBq", O RDWR|O CREAT|O EXCL, 01411)
32
mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7f0629313000
link("/dev/shm/xmTOBq", "/dev/shm/sem.output") = 0
fstat(4, {st mode=S IFREG|S ISVTX|0411, st size=32, ...}) = 0
unlink("/dev/shm/xmTOBq")
                                  = 0
                        = 0
close(4)
unlink("/dev/shm/sem.get sqrt")
                                 = 0
                                 = 0
unlink("/dev/shm/sem.output")
clone(child stack=NULL, flags=CLONE CHILD CLEARTID|
CLONE CHILD SETTID|SIGCHLD, child tidptr=0x7f06292f9a10) = 2973
fstat(0, \{st mode=S IFCHR | 0620, st rdev=makedev(136, 0), ...\}) = 0
read(0, 2
"2\n", 1024)
                     = 2
futex(0x7f0629314000, FUTEX_WAKE, 1) = 1
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 0), ...}) = 0
write(1, "2.000\land(1/2) = 1.414\landn", 202.000\land(1/2) = 1.414
) = 20
read(0, 4)
"4\n", 1024)
                     = 2
futex(0x7f0629314000, FUTEX_WAKE, 1)
write(1, "4.000 \land (1/2) = 2.000 \land n", 204.000 \land (1/2) = 2.000
) = 20
read(0, 12
"12\n", 1024)
                      =3
futex(0x7f0629314000, FUTEX_WAKE, 1) = 1
write(1, "12.000\land(1/2) = 3.464\landn", 2112.000\land(1/2) = 3.464
) = 21
read(0, 45
```

```
=3
"45\n", 1024)
futex(0x7f0629314000, FUTEX WAKE, 1) = 1
write(1, "45.000 \land (1/2) = 6.708 \land n", 2145.000 \land (1/2) = 6.708 \land n
) = 21
read(0, 67
"67\n", 1024)
                      =3
futex(0x7f0629314000, FUTEX WAKE, 1) = 1
write(1, "67.000\land(1/2) = 8.185\landn", 2167.000\land(1/2) = 8.185
) = 21
read(0, 7
"7\n", 1024)
                     = 2
futex(0x7f0629314000, FUTEX WAKE, 1) = 1
write(1, "7.000\land(1/2) = 2.646\landn", 207.000\land(1/2) = 2.646
) = 20
read(0, "", 1024)
                           = 0
munmap(0x7f0629314000, 32)
                                   = 0
                                   = 0
munmap(0x7f0629313000, 32)
close(3)
                        = 0
munmap(0x7f0629315000, 4)
                                  = 0
exit group(0)
+++ exited with 0 +++
//Лр5
nikita@nikita-HP:~/oc/lr5v3$ strace ./dnm
execve("./dnm", ["./dnm"], 0x7ffc3ca21030 /* 55 vars */) = 0
brk(NULL)
                           = 0x5596589db000
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
                                 = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R OK)
openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=97629, ...}) = 0
mmap(NULL, 97629, PROT READ, MAP PRIVATE, 3, 0) = 0x7fda23e5c000
close(3)
access("/etc/ld.so.nohwcap", F OK)
                                   = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libdl.so.2", O_RDONLY|
O CLOEXEC) = 3
832
fstat(3, {st_mode=S_IFREG|0644, st_size=14560, ...}) = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fda23e5a000
mmap(NULL, 2109712, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7fda23a49000
mprotect(0x7fda23a4c000, 2093056, PROT_NONE) = 0
```

```
mmap(0x7fda23c4b000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x2000) = 0x7fda23c4b000
close(3)
                      = 0
access("/etc/ld.so.nohwcap", F OK)
                             = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC)
=3
832
fstat(3, {st mode=S IFREG|0755, st size=2030544, ...}) = 0
mmap(NULL, 4131552, PROT READ|PROT EXEC, MAP PRIVATE)
MAP DENYWRITE, 3, 0) = 0x7fda23658000
mprotect(0x7fda2383f000, 2097152, PROT NONE) = 0
mmap(0x7fda23a3f000, 24576, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1e7000) = 0x7fda23a3f000
mmap(0x7fda23a45000, 15072, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fda23a45000
close(3)
mmap(NULL, 12288, PROT READ|PROT WRITE, MAP PRIVATE)
MAP ANONYMOUS, -1, 0) = 0x7fda23e57000
arch_prctl(ARCH_SET_FS, 0x7fda23e57740) = 0
mprotect(0x7fda23a3f000, 16384, PROT READ) = 0
mprotect(0x7fda23c4b000, 4096, PROT READ) = 0
mprotect(0x559657ee0000, 4096, PROT READ) = 0
mprotect(0x7fda23e74000, 4096, PROT READ) = 0
munmap(0x7fda23e5c000, 97629)
                                = 0
brk(NULL)
                        = 0x5596589db000
brk(0x5596589fc000)
                           = 0x5596589fc000
openat(AT_FDCWD, "./libdeque.so", O_RDONLY|O_CLOEXEC) = 3
832
fstat(3, {st_mode=S_IFREG|0755, st_size=16056, ...}) = 0
getcwd("/home/nikita/oc/lr5v3", 128)
mmap(NULL, 2105448, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fda23455000
mprotect(0x7fda23456000, 2097152, PROT_NONE) = 0
mmap(0x7fda23656000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7fda23656000
close(3)
                     = 0
mprotect(0x7fda23656000, 4096, PROT_READ) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 1), ...}) = 0
write(1, "PushBack: Press a\n", 18PushBack: Press a
   = 18
write(1, "PopBack: Press d\n", 17PopBack: Press d
```

```
= 17
write(1, "PushFront: Press t\n", 19PushFront: Press t
  = 19
write(1, "PopFront: press r\n", 18PopFront: press r
    = 18
write(1, "PRINT: Press p\n", 15PRINT: Press p
     = 15
write(1, "HELP: Press h\n", 14HELP: Press h
write(1, "SIZE: Press l\n", 14SIZE: Press l
      = 14
write(1, "EXIT: Press e\n", 14EXIT: Press e
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 1), ...}) = 0
read(0, h
"h\n", 1024)
write(1, "PushBack: Press a\n", 18PushBack: Press a
    = 18
write(1, "PopBack: Press d\n", 17PopBack: Press d
write(1, "PushFront: Press t\n", 19PushFront: Press t
  = 19
write(1, "PopFront: press r\n", 18PopFront: press r
    = 18
write(1, "PRINT: Press p\n", 15PRINT: Press p
     = 15
write(1, "HELP: Press h\n", 14HELP: Press h
      = 14
write(1, "SIZE: Press l\n", 14SIZE: Press l
      = 14
write(1, "EXIT: Press e\n", 14EXIT: Press e
      = 14
read(0, a
"a\n", 1024)
                        = 2
write(1, "Your element\n", 13Your element
      = 13
)
read(0, 12
"12\n", 1024)
                         =3
read(0, a
"a\n", 1024)
                        = 2
write(1, "Your element\n", 13Your element
       = 13
read(0, 23
```

```
=3
"23\n", 1024)
read(0, a 45
                      = 5
"a 45\n", 1024)
write(1, "Your element\n", 13Your element
)
      = 13
read(0, 45
"45\n", 1024)
                      =3
read(0, p)
"p\n", 1024)
                     = 2
write(1, "null <-> 12 <-> 23 <-> 45 <->"..., 38null <-> 12 <-> 23 <-> 45 <-> null
) = 38
read(0, 1
"l\n", 1024)
                     = 2
write(1, "size:3\n", 7size:3
         = 7
)
read(0, d
"d\n", 1024)
                     = 2
read(0, d
"d\n", 1024)
                     = 2
read(0, e
"e\n", 1024)
                     = 2
munmap(0x7fda23455000, 2105448)
                                     = 0
                               = -1 ESPIPE (Illegal seek)
lseek(0, -1, SEEK_CUR)
exit group(0)
                          =?
+++ exited with 0 +++
//Лр6
nikita@nikita-HP:~/oc/lr6v55/work$ strace ./terminal
execve("./terminal", ["./terminal"], 0x7fff903d2140 /* 55 vars */) = 0
                           = 0x559066ce1000
brk(NULL)
access("/etc/ld.so.nohwcap", F OK)
                                  = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=97629, ...}) = 0
mmap(NULL, 97629, PROT READ, MAP PRIVATE, 3, 0) = 0x7fb9bbf3c000
close(3)
                        = 0
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libzmq.so.5", O_RDONLY|
O CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=630464, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb9bbf3a000
```

```
mmap(NULL, 2725560, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fb9bba93000
mprotect(0x7fb9bbb26000, 2097152, PROT NONE) = 0
mmap(0x7fb9bbd26000, 28672, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x93000) = 0x7fb9bbd26000
close(3)
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/libstdc++.so.6", O RDONLY
O CLOEXEC) = 3
832) = 832
fstat(3, {st mode=S IFREG|0644, st size=1594864, ...}) = 0
mmap(NULL, 3702848, PROT READ|PROT EXEC, MAP PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7fb9bb70a000
mprotect(0x7fb9bb883000, 2097152, PROT NONE) = 0
mmap(0x7fb9bba83000, 49152, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x179000) = 0x7fb9bba83000
mmap(0x7fb9bba8f000, 12352, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fb9bba8f000
close(3)
                     = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|
O CLOEXEC) = 3
832
fstat(3, {st mode=S IFREG|0644, st size=96616, ...}) = 0
mmap(NULL, 2192432, PROT READ|PROT EXEC, MAP PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7fb9bb4f2000
mprotect(0x7fb9bb509000, 2093056, PROT_NONE) = 0
mmap(0x7fb9bb708000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x16000) = 0x7fb9bb708000
close(3)
                    = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC)
=3
832
fstat(3, {st mode=S IFREG|0755, st size=2030544, ...}) = 0
mmap(NULL, 4131552, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7fb9bb101000
mprotect(0x7fb9bb2e8000, 2097152, PROT_NONE) = 0
mmap(0x7fb9bb4e8000, 24576, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x1e7000) = 0x7fb9bb4e8000
```

```
mmap(0x7fb9bb4ee000, 15072, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fb9bb4ee000
close(3)
                     = 0
access("/etc/ld.so.nohwcap", F OK) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libsodium.so.23", O_RDONLY|
O CLOEXEC) = 3
= 832
fstat(3, {st mode=S IFREG|0644, st size=330440, ...}) = 0
mmap(NULL, 2425864, PROT READ|PROT EXEC, MAP PRIVATE)
MAP DENYWRITE, 3, 0) = 0x7fb9baeb0000
mprotect(0x7fb9baf00000, 2093056, PROT NONE) = 0
mmap(0x7fb9bb0ff000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x4f000) = 0x7fb9bb0ff000
                    = 0
close(3)
access("/etc/ld.so.nohwcap", F OK)
                             = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/libpgm-5.2.so.0", O RDONLY
O CLOEXEC) = 3
832
fstat(3, {st mode=S IFREG|0644, st size=293784, ...}) = 0
mmap(NULL, 2406448, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fb9bac64000
mprotect(0x7fb9bacab000, 2093056, PROT NONE) = 0
mmap(0x7fb9baeaa000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x46000) = 0x7fb9baeaa000
mmap(0x7fb9baeac000, 14384, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fb9baeac000
                    = 0
close(3)
access("/etc/ld.so.nohwcap", F OK)
                             = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libnorm.so.1", O_RDONLY|
O CLOEXEC) = 3
= 832
fstat(3, {st_mode=S_IFREG|0644, st_size=522248, ...}) = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb9bbf38000
mmap(NULL, 3340624, PROT READ|PROT EXEC, MAP PRIVATE)
MAP_DENYWRITE, 3, 0) = 0x7fb9ba934000
mprotect(0x7fb9ba9b1000, 2097152, PROT_NONE) = 0
mmap(0x7fb9babb1000, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP\_FIXED|MAP\_DENYWRITE, 3, 0x7d000) = 0x7fb9babb1000
```

```
mmap(0x7fb9babb4000, 719184, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fb9babb4000
close(3)
                     = 0
access("/etc/ld.so.nohwcap", F OK)
                           = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/librt.so.1", O_RDONLY|
O CLOEXEC) = 3
832
fstat(3, {st mode=S IFREG|0644, st size=31680, ...}) = 0
mmap(NULL, 2128864, PROT READ|PROT EXEC, MAP PRIVATE)
MAP DENYWRITE, 3, 0) = 0x7fb9ba72c000
mprotect(0x7fb9ba733000, 2093056, PROT NONE) = 0
mmap(0x7fb9ba932000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x6000) = 0x7fb9ba932000
                    = 0
close(3)
access("/etc/ld.so.nohwcap", F OK)
                             = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libpthread.so.0", O RDONLY
O CLOEXEC) = 3
832
fstat(3, {st_mode=S_IFREG|0755, st_size=144976, ...}) = 0
mmap(NULL, 2221184, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fb9ba50d000
mprotect(0x7fb9ba527000, 2093056, PROT NONE) = 0
mmap(0x7fb9ba726000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0x19000) = 0x7fb9ba726000
mmap(0x7fb9ba728000, 13440, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fb9ba728000
                    = 0
close(3)
access("/etc/ld.so.nohwcap", F OK)
                             = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|
O CLOEXEC) = 3
= 832
fstat(3, {st mode=S IFREG|0644, st size=1700792, ...}) = 0
mmap(NULL, 3789144, PROT READ|PROT EXEC, MAP PRIVATE|
MAP_DENYWRITE, 3, 0) = 0x7fb9ba16f000
mprotect(0x7fb9ba30c000, 2093056, PROT NONE) = 0
mmap(0x7fb9ba50b000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP\_FIXED|MAP\_DENYWRITE, 3, 0x19c000) = 0x7fb9ba50b000
                    = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_ANONYMOUS, -1, 0) = 0x7fb9bbf36000
```

```
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP ANONYMOUS, -1, 0) = 0x7fb9bbf33000
arch prctl(ARCH SET FS, 0x7fb9bbf33b80) = 0
mprotect(0x7fb9bb4e8000, 16384, PROT READ) = 0
mprotect(0x7fb9ba50b000, 4096, PROT READ) = 0
mprotect(0x7fb9ba726000, 4096, PROT READ) = 0
mprotect(0x7fb9ba932000, 4096, PROT READ) = 0
mprotect(0x7fb9bb708000, 4096, PROT READ) = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP ANONYMOUS, -1, 0) = 0x7fb9bbf31000
mprotect(0x7fb9bba83000, 40960, PROT READ) = 0
mprotect(0x7fb9babb1000, 8192, PROT READ) = 0
mprotect(0x7fb9baeaa000, 4096, PROT READ) = 0
mprotect(0x7fb9bb0ff000, 4096, PROT_READ) = 0
mprotect(0x7fb9bbd26000, 24576, PROT READ) = 0
mprotect(0x559065af4000, 4096, PROT_READ) = 0
mprotect(0x7fb9bbf54000, 4096, PROT READ) = 0
munmap(0x7fb9bbf3c000, 97629)
                                   = 0
set tid address(0x7fb9bbf33e50)
                                 = 3172
set robust list(0x7fb9bbf33e60, 24)
                                 = 0
rt_sigaction(SIGRTMIN, {sa_handler=0x7fb9ba512cb0, sa_mask=[],
sa_flags=SA_RESTORER|SA_SIGINFO, sa_restorer=0x7fb9ba51f890}, NULL, 8)
= 0
rt_sigaction(SIGRT_1, {sa_handler=0x7fb9ba512d50, sa_mask=[],
sa_flags=SA_RESTORER|SA_RESTART|SA_SIGINFO,
sa_restorer=0x7fb9ba51f890}, NULL, 8) = 0
rt sigprocmask(SIG UNBLOCK, [RTMIN RT 1], NULL, 8) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
brk(NULL)
                          = 0x559066ce1000
brk(0x559066d02000)
                              = 0x559066d02000
futex(0x7fb9bba9009c, FUTEX WAKE PRIVATE, 2147483647) = 0
futex(0x7fb9bba900a8, FUTEX_WAKE_PRIVATE, 2147483647) = 0
openat(AT FDCWD, "/sys/devices/system/cpu/online", O RDONLY|O CLOEXEC)
=3
read(3, "0-3\n", 8192)
                            =4
                        = 0
close(3)
openat(AT FDCWD, "/sys/devices/system/cpu", O RDONLY|O NONBLOCK|
O CLOEXEC|O| DIRECTORY) = 3
fstat(3, {st_mode=S_IFDIR|0755, st_size=0, ...}) = 0
getdents(3, /* 22 entries */, 32768)
                                = 656
getdents(3, /* 0 entries */, 32768)
                               = 0
close(3)
                        = 0
```

```
getpid()
                         = 3172
sched getaffinity(3172, 128, [0, 1, 2, 3]) = 8
openat(AT FDCWD, "/etc/nsswitch.conf", O RDONLY|O CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=556, ...}) = 0
read(3, "#/etc/nsswitch.conf\n#\n# Example"..., 4096) = 556
read(3, "", 4096)
close(3)
                          = 0
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=97629, ...}) = 0
mmap(NULL, 97629, PROT READ, MAP PRIVATE, 3, 0) = 0x7fb9bbf3c000
                          = 0
close(3)
access("/etc/ld.so.nohwcap", F OK)
                                    = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/tls/haswell/x86 64/libnss db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86 64-linux-gnu/tls/haswell/x86 64", 0x7ffc4341c9d0) = -1 ENOENT
(No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/tls/haswell/libnss db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86 64-linux-gnu/tls/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/x86_64/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/haswell/x86_64/libnss_db.so.2",
O RDONLY|O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86~64-linux-gnu/haswell/x86~64", 0x7ffc4341c9d0) = -1 ENOENT (No
such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/haswell/libnss_db.so.2", O_RDONLY|
O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/x86_64/libnss_db.so.2", O_RDONLY|
O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu", {st_mode=S_IFDIR|0755, st_size=12288, ...}) = 0
```

```
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/tls/haswell/x86 64/libnss db.so.2",
O RDONLY|O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86 64-linux-gnu/tls/haswell/x86 64", 0x7ffc4341c9d0) = -1 ENOENT
(No such file or directory)
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/tls/haswell/libnss db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86 64-linux-gnu/tls/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No
such file or directory)
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/tls/x86 64/libnss db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86~64-linux-gnu/tls/x86~64", 0x7ffc4341c9d0) = -1~ENOENT (No
such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86 64-linux-gnu/tls", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT FDCWD, "/usr/lib/x86 64-linux-gnu/haswell/x86 64/libnss db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86~64-linux-gnu/haswell/x86~64", 0x7ffc4341c9d0) = -1 ENOENT
(No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/haswell/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/x86_64/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libnss_db.so.2", O_RDONLY|
O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu", {st_mode=S_IFDIR|0755, st_size=69632, ...}) = 0
openat(AT FDCWD, "/lib/tls/haswell/x86 64/libnss db.so.2", O RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/tls/haswell/x86~64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT FDCWD, "/lib/tls/haswell/libnss db.so.2", O RDONLY|O CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/tls/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/tls/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/tls/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/tls/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
```

```
stat("/lib/tls", 0x7ffc4341c9d0)
                                = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/haswell/x86 64/libnss db.so.2", O RDONLY|
O CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/lib/haswell/x86~64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD, "/lib/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/lib/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/lib/x86 64", 0x7ffc4341c9d0)
                                   = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/libnss db.so.2", O RDONLY|O CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/lib", {st_mode=S_IFDIR|0755, st_size=4096, ...}) = 0
openat(AT FDCWD, "/usr/lib/tls/haswell/x86 64/libnss db.so.2", O RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/tls/haswell/x86 64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT FDCWD, "/usr/lib/tls/haswell/libnss db.so.2", O RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/tls/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/tls/x86_64/libnss_db.so.2", O_RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/tls/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/tls/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/usr/lib/tls", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/usr/lib/haswell/x86 64/libnss db.so.2", O RDONLY|
O_CLOEXEC) = -1 ENOENT (No such file or directory)
stat("/usr/lib/haswell/x86~64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or
directory)
openat(AT FDCWD, "/usr/lib/haswell/libnss db.so.2", O RDONLY|O CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/haswell", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/usr/lib/x86 64/libnss db.so.2", O RDONLY|O CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64", 0x7ffc4341c9d0) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/usr/lib/libnss db.so.2", O RDONLY|O CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/usr/lib", {st_mode=S_IFDIR|0755, st_size=4096, ...}) = 0
munmap(0x7fb9bbf3c000, 97629)
openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=97629, ...}) = 0
```

```
mmap(NULL, 97629, PROT READ, MAP PRIVATE, 3, 0) = 0x7fb9bbf3c000
close(3)
access("/etc/ld.so.nohwcap", F OK)
                                = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libnss files.so.2", O RDONLY
O CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=47568, ...}) = 0
mmap(NULL, 2168632, PROT READ|PROT EXEC, MAP PRIVATE|
MAP DENYWRITE, 3, 0) = 0x7fb9b9f5d000
mprotect(0x7fb9b9f68000, 2093056, PROT NONE) = 0
mmap(0x7fb9ba167000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|
MAP FIXED|MAP DENYWRITE, 3, 0xa000) = 0x7fb9ba167000
mmap(0x7fb9ba169000, 22328, PROT READ|PROT WRITE, MAP PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fb9ba169000
close(3)
                      = 0
mprotect(0x7fb9ba167000, 4096, PROT READ) = 0
munmap(0x7fb9bbf3c000, 97629)
openat(AT_FDCWD, "/etc/protocols", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=2932, ...}) = 0
read(3, "# Internet (IP) protocols\n#\n# Up"..., 4096) = 2932
read(3, "", 4096)
                         = 0
                      = 0
close(3)
eventfd2(0, EFD CLOEXEC)
                                =3
fcntl(3, F_GETFL)
                           = 0x2 (flags O RDWR)
fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK) = 0
                           = 0x802 (flags O RDWR|O NONBLOCK)
fcntl(3, F GETFL)
fcntl(3, F SETFL, O RDWR|O NONBLOCK)
                                        = 0
getrandom("\x05\x56\x42\x78\xb4\x2f\x93\x89\x07\x7c\x49\x63\xba\x76\xd8\x40",
16, 0) = 16
getrandom("\x71\xf9\x81\x92\xd7\x10\xcf\x99\x1a\x89\xfe\x5f\xb2\xfd\xc9\x47",
16, 0) = 16
eventfd2(0, EFD CLOEXEC)
                                =4
fcntl(4, F_GETFL)
                           = 0x2 (flags O_RDWR)
fcntl(4, F SETFL, O RDWR|O NONBLOCK) = 0
                           = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(4, F_GETFL)
fcntl(4, F SETFL, O RDWR|O NONBLOCK)
epoll create1(EPOLL CLOEXEC)
epoll ctl(5, EPOLL CTL ADD, 4, {0, {u32=1724856352, u64=94078688507936}})
= 0
epoll_ctl(5, EPOLL_CTL_MOD, 4, {EPOLLIN, {u32=1724856352,
u64=94078688507936}) = 0
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0) = 0x7fb9b975c000
```

```
mprotect(0x7fb9b975d000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7fb9b9f5bb70, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
parent tidptr=0x7fb9b9f5c9d0, tls=0x7fb9b9f5c700, child_tidptr=0x7fb9b9f5c9d0)
= 3173
openat(AT FDCWD, "/proc/self/task/3173/comm", O RDWR) = 6
write(6, "ZMQbg/0", 7)
                             = 7
close(6)
                       = 0
eventfd2(0, EFD_CLOEXEC)
                                  = 6
fcntl(6, F GETFL)
                            = 0x2 (flags O RDWR)
fcntl(6, F SETFL, O RDWR|O NONBLOCK)
fcntl(6, F GETFL)
                            = 0x802 (flags O RDWR|O NONBLOCK)
fcntl(6, F_SETFL, O_RDWR|O_NONBLOCK)
epoll create1(EPOLL CLOEXEC)
                                    = 7
epoll_ctl(7, EPOLL_CTL_ADD, 6, {0, {u32=1724871792, u64=94078688523376}})
= 0
epoll ctl(7, EPOLL CTL MOD, 6, {EPOLLIN, {u32=1724871792,
u64=94078688523376}) = 0
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP\_STACK, -1, 0) = 0x7fb9b8f5b000
mprotect(0x7fb9b8f5c000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7fb9b975ab70, flags=CLONE VM|CLONE FS|
CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|
CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARTID,
parent_tidptr=0x7fb9b975b9d0, tls=0x7fb9b975b700, child_tidptr=0x7fb9b975b9d0)
= 3174
openat(AT_FDCWD, "/proc/self/task/3174/comm", O_RDWR) = 8
write(8, "ZMQbg/1", 7)
                             = 7
                       = 0
close(8)
eventfd2(0, EFD_CLOEXEC)
                                 = 8
                            = 0x2 (flags O RDWR)
fcntl(8, F GETFL)
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)
poll([{fd=8, events=POLLIN}], 1, 0)
                                 = 0 (Timeout)
socket(AF_NETLINK, SOCK_RAW|SOCK_CLOEXEC, NETLINK_ROUTE) = 9
bind(9, {sa family=AF NETLINK, nl pid=0, nl groups=00000000}, 12) = 0
getsockname(9, {sa_family=AF_NETLINK, nl_pid=3172, nl_groups=00000000},
[12]) = 0
sendto(9, {{len=20, type=RTM_GETLINK, flags=NLM_F_REQUEST|
NLM_F_DUMP, seq=1582620655, pid=0}, {ifi_family=AF_UNSPEC, ...}}, 20, 0,
\{\text{sa family} = \text{AF NETLINK}, \text{ nl pid} = 0, \text{ nl groups} = 00000000\}, 12\} = 20
```

```
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base=[{{len=1288,
type=RTM_NEWLINK, flags=NLM_F_MULTI, seq=1582620655, pid=3172},
{ifi family=AF UNSPEC, ifi type=ARPHRD LOOPBACK,
ifi_index=if_nametoindex("lo"), ifi_flags=IFF_UP|IFF_LOOPBACK|
IFF_RUNNING|0x10000, ifi_change=0}, [{{nla_len=7, nla_type=IFLA_IFNAME}},
"lo"}, {{nla_len=8, nla_type=IFLA_TXQLEN}, 1000}, {{nla_len=5,
nla_type=IFLA_OPERSTATE}, 0}, {{nla_len=5, nla_type=IFLA_LINKMODE}, 0},
{{nla_len=8, nla_type=IFLA_MTU}, 65536}, {{nla_len=8,
nla_type=IFLA_GROUP}, 0}, {{nla_len=8, nla_type=IFLA_PROMISCUITY}, 0},
{{nla len=8, nla type=IFLA NUM TX OUEUES}, 1}, {{nla len=8,
nla type=IFLA GSO MAX SEGS}, 65535}, {{nla len=8,
nla type=IFLA GSO MAX SIZE}, 65536}, {{nla len=8,
nla_type=IFLA_NUM_RX_QUEUES}, 1}, {{nla_len=5,
nla type=IFLA CARRIER}, 1}, {{nla len=12, nla type=IFLA QDISC},
"noqueue"}, {{nla_len=8, nla_type=IFLA_CARRIER_CHANGES}, 0},
{{nla len=5, nla type=IFLA PROTO DOWN}, 0}, {{nla len=8, nla type=0x2f/*
IFLA ??? */, "\x00\x00\x00\x00"}, {{nla_len=8, nla_type=0x30 /* IFLA_??? */},
\sqrt{x00}\times00\times00, {{nla len=36, nla type=IFLA MAP}, {mem start=0,
mem_end=0, base_addr=0, irg=0, dma=0, port=0}}, {{nla_len=10,
nla_type=IFLA_ADDRESS, "\x00\x00\x00\x00\x00\x00"}, {{nla_len=10},
nla_type=IFLA_BROADCAST}, "\times 00\times 00\times 00\times 00\times 00, {{nla_len=196,
nla_type=IFLA_STATS64}, {rx_packets=987, tx_packets=987, rx_bytes=86183,
tx bytes=86183, rx errors=0, tx errors=0, rx dropped=0, tx dropped=0,
multicast=0, collisions=0, rx_length_errors=0, rx_over_errors=0, rx_crc_errors=0,
rx frame errors=0, rx fifo errors=0, rx missed errors=0, tx aborted errors=0,
tx carrier errors=0, tx fifo errors=0, tx heartbeat errors=0, tx window errors=0,
rx compressed=0, tx compressed=0, rx nohandler=0}}, {{nla len=100,
nla_type=IFLA_STATS}, {rx_packets=987, tx_packets=987, rx_bytes=86183,
tx bytes=86183, rx errors=0, tx errors=0, rx dropped=0, tx dropped=0,
multicast=0, collisions=0, rx length errors=0, rx over errors=0, rx crc errors=0,
rx frame errors=0, rx fifo errors=0, rx missed errors=0, tx aborted errors=0,
tx carrier errors=0, tx fifo errors=0, tx heartbeat errors=0, tx window errors=0,
rx compressed=0, tx compressed=0, rx nohandler=0}}, {{nla len=12,
nla type=IFLA XDP}, {{nla len=5, nla type=IFLA XDP ATTACHED}, 0}},
{{nla len=748, nla type=IFLA AF SPEC}, \x 84\x 00\x 02\x 00\x 00\x 00\x 01\x 00\
flags=NLM_F_MULTI, seq=1582620655, pid=3172}, {ifi_family=AF_UNSPEC,
ifi_type=ARPHRD_ETHER, ifi_index=if_nametoindex("eno1"), ifi_flags=IFF_UP
IFF_BROADCAST|IFF_MULTICAST, ifi_change=0}, [{{nla_len=9,
nla_type=IFLA_IFNAME}, "eno1"}, {{nla_len=8, nla_type=IFLA_TXQLEN},
1000}, {{nla len=5, nla type=IFLA OPERSTATE}, 2}, {{nla len=5,
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nla_type=IFLA_LINKMODE}, 0}, {{nla_len=8, nla_type=IFLA_MTU}, 1500},
{{nla len=8, nla type=IFLA GROUP}, 0}, {{nla len=8,
nla type=IFLA PROMISCUITY}, 0}, {{nla_len=8,
nla type=IFLA NUM TX QUEUES}, 1}, {{nla len=8,
nla type=IFLA GSO MAX SEGS}, 65535}, {{nla len=8,
nla_type=IFLA_GSO_MAX_SIZE}, 65536}, {{nla_len=8,
nla type=IFLA NUM RX QUEUES}, 1}, {{nla len=5,
nla type=IFLA CARRIER}, 0}, {{nla len=13, nla type=IFLA QDISC},
"fg_codel"}, {{nla_len=8, nla_type=IFLA_CARRIER_CHANGES}, 1},
{{nla len=5, nla type=IFLA PROTO DOWN}, 0}, {{nla len=8, nla type=0x2f/*
IFLA ??? */, "\x00\x00\x00\x00"}, {{nla len=8, nla type=0x30 /* IFLA ??? */},
\sqrt{x01}\times00\times00, {{nla len=36, nla type=IFLA MAP}, {mem start=0,
mem_end=0, base_addr=0, irg=0, dma=0, port=0}}, {{nla_len=10,
nla_type=IFLA_ADDRESS, "\x10\x62\xe5\x83\x5b\x2b"}, {{nla_len=10,
nla_type=IFLA_STATS64}, {rx_packets=0, tx_packets=0, rx_bytes=0, tx_bytes=0,
rx errors=0, tx errors=0, rx dropped=0, tx dropped=0, multicast=0, collisions=0,
rx length errors=0, rx over errors=0, rx crc errors=0, rx frame errors=0,
rx fifo errors=0, rx missed errors=0, tx aborted errors=0, tx carrier errors=0,
tx fifo errors=0, tx heartbeat errors=0, tx window errors=0, rx compressed=0,
tx_compressed=0, rx_nohandler=0}}, {{nla_len=100, nla_type=IFLA_STATS},
{rx packets=0, tx packets=0, rx bytes=0, tx bytes=0, rx errors=0, tx errors=0,
rx dropped=0, tx dropped=0, multicast=0, collisions=0, rx length errors=0,
rx over errors=0, rx crc errors=0, rx frame errors=0, rx fifo errors=0,
rx missed errors=0, tx aborted errors=0, tx carrier errors=0, tx fifo errors=0,
tx heartbeat errors=0, tx window errors=0, rx compressed=0, tx compressed=0.
rx nohandler=0}}, {{nla len=12, nla type=IFLA XDP}, {{nla len=5,
nla type=IFLA XDP ATTACHED}, 0}}, {{nla len=748,
x00''...}]}], iov_len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) =
2584
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base=[{{len=1288,
type=RTM_NEWLINK, flags=NLM_F_MULTI, seq=1582620655, pid=3172},
{ifi family=AF UNSPEC, ifi type=ARPHRD ETHER,
ifi_index=if_nametoindex("wlo1"), ifi_flags=IFF_UP|IFF_BROADCAST|
IFF RUNNING|IFF MULTICAST|0x10000, ifi change=0}, [{{nla len=9,
nla_type=IFLA_IFNAME}, "wlo1"}, {{nla_len=8, nla_type=IFLA_TXQLEN},
1000}, {{nla_len=5, nla_type=IFLA_OPERSTATE}, 6}, {{nla_len=5,
nla_type=IFLA_LINKMODE}, 1}, {{nla_len=8, nla_type=IFLA_MTU}, 1500},
{{nla_len=8, nla_type=IFLA_GROUP}, 0}, {{nla_len=8,
nla_type=IFLA_PROMISCUITY}, 0}, {{nla_len=8,
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nla type=IFLA NUM TX QUEUES}, 4}, {{nla len=8,
nla_type=IFLA_GSO_MAX_SEGS}, 65535}, {{nla_len=8.
nla type=IFLA GSO MAX SIZE}, 65536}, {{nla len=8,
nla type=IFLA NUM RX QUEUES}, 4}, {{nla len=5,
nla_type=IFLA_CARRIER\, 1\, {{nla_len=7, nla_type=IFLA_QDISC\}, "mq"\,
{{nla_len=8, nla_type=IFLA_CARRIER_CHANGES}, 1}, {{nla_len=5,
nla_type=IFLA_PROTO_DOWN\}, 0\}, {{nla_len=8, nla_type=0x2f /* IFLA_???
*/, "\x01\x00\x00\x00"}, {{nla len=8, nla type=0x30 /* IFLA ??? */}, "\x00\x00\
x00\x00"}, {{nla len=36, nla type=IFLA MAP}, {mem start=0, mem end=0,
base_addr=0, irq=0, dma=0, port=0}}, {{nla_len=10, nla_type=IFLA_ADDRESS},
"\x90\x32\x4b\x02\x00\xf5"}, {{nla len=10, nla type=IFLA BROADCAST}, "\xff\
xff\xff\xff\xff\xff\xff\xff\, {{nla len=196, nla type=IFLA STATS64}, {rx packets=4261,
tx packets=2788, rx bytes=2141666, tx bytes=449093, rx errors=0, tx errors=0,
rx_dropped=51, tx_dropped=0, multicast=0, collisions=0, rx_length_errors=0,
rx over errors=0, rx crc errors=0, rx frame errors=0, rx fifo errors=0,
rx missed errors=0, tx aborted errors=0, tx carrier errors=0, tx fifo errors=0,
tx heartbeat errors=0, tx window errors=0, rx compressed=0, tx compressed=0,
rx_nohandler=0}}, {{nla_len=100, nla_type=IFLA_STATS}, {rx_packets=4261,
tx packets=2788, rx bytes=2141666, tx bytes=449093, rx errors=0, tx errors=0,
rx_dropped=51, tx_dropped=0, multicast=0, collisions=0, rx_length_errors=0,
rx_over_errors=0, rx_crc_errors=0, rx_frame_errors=0, rx_fifo_errors=0,
rx missed errors=0, tx aborted errors=0, tx carrier errors=0, tx fifo errors=0,
tx heartbeat errors=0, tx window errors=0, rx compressed=0, tx compressed=0,
rx nohandler=0}}, {{nla len=12, nla type=IFLA XDP}, {{nla len=5,
nla_type=IFLA_XDP_ATTACHED}, 0}}, {{nla_len=748,
x00"...}]}, {{len=1700, type=RTM_NEWLINK, flags=NLM_F_MULTI,
seg=1582620655, pid=3172}, {ifi_family=AF_UNSPEC,
ifi type=ARPHRD ETHER, ifi index=if nametoindex("virbr0"), ifi flags=IFF UP|
IFF_BROADCAST|IFF_MULTICAST, ifi_change=0}, [{{nla_len=11,
nla type=IFLA IFNAME}, "virbr0"}, {{nla len=8, nla type=IFLA TXQLEN},
1000}, {{nla len=5, nla type=IFLA OPERSTATE}, 2}, {{nla len=5,
nla type=IFLA LINKMODE}, 0}, {{nla len=8, nla type=IFLA MTU}, 1500},
{{nla_len=8, nla_type=IFLA_GROUP}, 0}, {{nla_len=8,
nla type=IFLA PROMISCUITY}, 0}, {{nla len=8,
nla type=IFLA NUM TX QUEUES}, 1}, {{nla len=8,
nla_type=IFLA_GSO_MAX_SEGS}, 65535}, {{nla_len=8,
nla type=IFLA GSO MAX SIZE}, 65536}, {{nla len=8,
nla_type=IFLA_NUM_RX_QUEUES}, 1}, {{nla_len=5,
nla type=IFLA CARRIER}, 0}, {{nla len=12, nla type=IFLA QDISC},
"noqueue"}, {{nla_len=8, nla_type=IFLA_CARRIER_CHANGES}, 1},
{{nla_len=5, nla_type=IFLA_PROTO_DOWN}, 0}, {{nla_len=8, nla_type=0x2f /*
```

```
IFLA ??? */, "\x00\x00\x00\x00"}, {{nla_len=8, nla_type=0x30 /* IFLA_??? */},
\sqrt{x01}\times00\times00, {{nla len=36, nla type=IFLA MAP}, {mem start=0,
mem_end=0, base_addr=0, irg=0, dma=0, port=0}}, {{nla_len=10,
nla type=IFLA ADDRESS}, "\x52\x54\x00\xbf\x86\xa7"}, {{nla len=10,
nla_type=IFLA_STATS64}, {rx_packets=0, tx_packets=0, rx_bytes=0, tx_bytes=0,
rx errors=0, tx errors=0, rx dropped=0, tx dropped=0, multicast=0, collisions=0,
rx length errors=0, rx over errors=0, rx crc errors=0, rx frame errors=0,
rx fifo errors=0, rx missed errors=0, tx aborted errors=0, tx carrier errors=0,
tx fifo errors=0, tx heartbeat errors=0, tx window errors=0, rx compressed=0,
tx compressed=0, rx nohandler=0}}, {{nla len=100, nla type=IFLA STATS},
{rx packets=0, tx packets=0, rx bytes=0, tx bytes=0, rx errors=0, tx errors=0,
rx dropped=0, tx dropped=0, multicast=0, collisions=0, rx length errors=0,
rx over errors=0, rx crc errors=0, rx frame errors=0, rx fifo errors=0,
rx missed errors=0, tx aborted errors=0, tx carrier errors=0, tx fifo errors=0,
tx heartbeat errors=0, tx window errors=0, rx compressed=0, tx compressed=0,
rx nohandler=0}}, {{nla len=12, nla type=IFLA XDP}, {{nla len=5,
nla_type=IFLA_XDP_ATTACHED}, 0}}, {{nla_len=408,
nla type=IFLA LINKINFO}, [{{nla len=11, nla type=IFLA INFO KIND},
"bridge"}, {{nla_len=392, nla_type=IFLA_INFO_DATA}, "x0c\x00\x10\x00\x9e\
x0c\x00\x12\x00\x00\x00\x00\x00\x00\x00\x.]}, {{nla_len=748,
x00"...}]}], iov_len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) =
2988
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base={{len=1588,
type=RTM_NEWLINK, flags=NLM_F_MULTI, seq=1582620655, pid=3172},
{ifi family=AF UNSPEC, ifi type=ARPHRD ETHER,
ifi_index=if_nametoindex("virbr0-nic"), ifi_flags=IFF_BROADCAST|
IFF MULTICAST, ifi change=0}, [{{nla len=15, nla type=IFLA IFNAME},
"virbr0-nic"}, {{nla_len=8, nla_type=IFLA_TXQLEN}, 1000}, {{nla_len=5,
nla type=IFLA OPERSTATE}, 2}, {{nla len=5, nla type=IFLA LINKMODE}, 0},
{{nla_len=8, nla_type=IFLA_MTU}, 1500}, {{nla_len=8,
nla type=IFLA GROUP}, 0}, {{nla len=8, nla type=IFLA PROMISCUITY}, 1},
{{nla_len=8, nla_type=IFLA_NUM_TX_QUEUES}, 1}, {{nla_len=8,
nla type=IFLA GSO MAX SEGS}, 65535}, {{nla len=8,
nla type=IFLA GSO MAX SIZE}, 65536}, {{nla len=8,
nla_type=IFLA_NUM_RX_QUEUES}, 1}, {{nla_len=8,
nla type=IFLA MASTER}, 4}, {{nla len=5, nla type=IFLA CARRIER}, 0},
{{nla_len=13, nla_type=IFLA_QDISC}, "fq_codel"}, {{nla_len=8,
nla type=IFLA CARRIER CHANGES}, 1}, {{nla len=5,
```

```
nla_type=IFLA_PROTO_DOWN\}, 0\}, {\{nla_len=8, nla_type=0x2f /* IFLA_???
*/}, "\x00\x00\x00\x00"}, {{nla_len=8, nla_type=0x30 /* IFLA ??? */}, "\x01\x00\
x00\x00''}, {{nla len=36, nla type=IFLA MAP}, {mem start=0, mem end=0,
base addr=0, irg=0, dma=0, port=0}}, {{nla len=10, nla type=IFLA ADDRESS},
xff\xff\xff\xff\xff\xff\xff\f\., {{nla_len=196, nla_type=IFLA_STATS64}, {rx_packets=0,
tx packets=0, rx bytes=0, tx bytes=0, rx errors=0, tx errors=0, rx dropped=0,
tx dropped=0, multicast=0, collisions=0, rx length errors=0, rx over errors=0,
rx crc errors=0, rx frame errors=0, rx fifo errors=0, rx missed errors=0,
tx aborted errors=0, tx carrier errors=0, tx fifo errors=0, tx heartbeat errors=0,
tx window errors=0, rx compressed=0, tx compressed=0, rx nohandler=0}},
{{nla len=100, nla type=IFLA STATS}, {rx packets=0, tx packets=0, rx bytes=0,
tx bytes=0, rx errors=0, tx errors=0, rx dropped=0, tx dropped=0, multicast=0,
collisions=0, rx length errors=0, rx over errors=0, rx crc errors=0,
rx frame errors=0, rx fifo errors=0, rx missed errors=0, tx aborted errors=0,
tx carrier errors=0, tx fifo errors=0, tx heartbeat errors=0, tx window errors=0,
rx compressed=0, tx compressed=0, rx nohandler=0}}, {{nla len=12,
nla type=IFLA XDP}, {{nla len=5, nla type=IFLA XDP ATTACHED}, 0}},
{{nla_len=280, nla_type=IFLA_LINKINFO}, [{{nla_len=8.
nla_type=IFLA_INFO_KIND}, "tun"}, {{nla_len=11,
nla_type=IFLA_INFO_SLAVE_KIND}, "bridge"}, {{nla_len=256,
nla_type=IFLA_INFO_SLAVE_DATA}, "\x05\x00\x00\x00\x00\x00\x00\x00\x00\x06\
msg controllen=0, msg flags=0}, 0) = 1588
recvmsg(9, {msg name={sa family=AF NETLINK, nl pid=0,
nl_groups=00000000}, msg_namelen=12, msg_iov=[{iov_base={{len=20,
type=NLMSG DONE, flags=NLM F MULTI, seq=1582620655, pid=3172}, 0},
iov len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) = 20
sendto(9, {{len=20, type=RTM GETADDR, flags=NLM F REQUEST|
NLM F DUMP, seq=1582620656, pid=0}, {ifa_family=AF_UNSPEC, ...}}, 20, 0,
\{\text{sa family=AF NETLINK}, \text{nl pid=0}, \text{nl groups=00000000}\}, 12\} = 20
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base=[{{len=76,
type=RTM_NEWADDR, flags=NLM_F_MULTI, seq=1582620656, pid=3172},
{ifa family=AF INET, ifa prefixlen=8, ifa flags=IFA F PERMANENT,
ifa scope=RT_SCOPE HOST, ifa index=if nametoindex("lo")}, [{{nla_len=8,
nla_type=IFA_ADDRESS}, 127.0.0.1}, {{nla_len=8, nla_type=IFA_LOCAL},
127.0.0.1}, {{nla_len=7, nla_type=IFA_LABEL}, "lo"}, {{nla_len=8,
nla_type=IFA_FLAGS}, IFA_F_PERMANENT}, {{nla_len=20,
nla type=IFA CACHEINFO}, {ifa prefered=4294967295, ifa valid=4294967295,
```

```
cstamp=541, tstamp=541}}]}, {{len=88, type=RTM_NEWADDR,
flags=NLM F MULTI, seq=1582620656, pid=3172}, {ifa family=AF INET,
ifa prefixlen=24, ifa flags=0, ifa scope=RT SCOPE UNIVERSE,
ifa_index=if_nametoindex("wlo1")}, [{{nla_len=8, nla_type=IFA_ADDRESS},
192.168.0.158}, {{nla_len=8, nla_type=IFA_LOCAL}, 192.168.0.158},
{{nla_len=8, nla_type=IFA_BROADCAST}, 192.168.0.255}, {{nla_len=9,
nla type=IFA LABEL}, "wlo1"}, {{nla len=8, nla type=IFA FLAGS},
IFA_F_NOPREFIXROUTE}, {{nla_len=20, nla_type=IFA_CACHEINFO},
{ifa prefered=85272, ifa valid=85272, cstamp=15268, tstamp=15558}}}},
{ {len=88, type=RTM_NEWADDR, flags=NLM_F_MULTI, seq=1582620656,
pid=3172}, {ifa family=AF INET, ifa prefixlen=24,
ifa flags=IFA F PERMANENT, ifa scope=RT SCOPE UNIVERSE,
ifa index=if nametoindex("virbr0")}, [{{nla len=8, nla type=IFA ADDRESS},
192.168.122.1}, {{nla_len=8, nla_type=IFA_LOCAL}, 192.168.122.1},
{{nla len=8, nla type=IFA BROADCAST}, 192.168.122.255}, {{nla len=11,
nla_type=IFA_LABEL}, "virbr0"}, {{nla_len=8, nla_type=IFA_FLAGS},
IFA F PERMANENT}, {{nla len=20, nla type=IFA CACHEINFO},
{ifa_prefered=4294967295, ifa_valid=4294967295, cstamp=3832,
tstamp=3832}}]]], iov len=4096}], msg iovlen=1, msg controllen=0,
msg_flags=0, 0) = 252
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl_groups=00000000}, msg_namelen=12, msg_iov=[{iov_base=[{{len=72,
type=RTM_NEWADDR, flags=NLM_F_MULTI, seq=1582620656, pid=3172},
{ifa_family=AF_INET6, ifa_prefixlen=128, ifa_flags=IFA_F_PERMANENT,
ifa_scope=RT_SCOPE_HOST, ifa_index=if_nametoindex("lo")}, [{{nla_len=20,
nla_type=IFA_ADDRESS\\, ::1\\, \{\langle nla_len=20, nla_type=IFA_CACHEINFO\\,
{ifa prefered=4294967295, ifa valid=4294967295, cstamp=541, tstamp=541}},
{{nla_len=8, nla_type=IFA_FLAGS}, IFA_F_PERMANENT}]}, {{len=72,
type=RTM_NEWADDR, flags=NLM_F_MULTI, seq=1582620656, pid=3172},
{ifa family=AF INET6, ifa prefixlen=64, ifa flags=IFA F PERMANENT,
ifa_scope=RT_SCOPE_LINK, ifa_index=if_nametoindex("wlo1")}, [{{nla_len=20,
nla type=IFA ADDRESS}, fe80::3f1e:7fd0:d328:3208}, {{nla len=20,
nla type=IFA CACHEINFO}, {ifa prefered=4294967295, ifa valid=4294967295,
cstamp=15211, tstamp=15376}}, {{nla len=8, nla type=IFA FLAGS},
IFA F PERMANENT|IFA F NOPREFIXROUTE}]}], iov_len=4096}],
msg iovlen=1, msg controllen=0, msg flags=0}, 0) = 144
recvmsg(9, {msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base={{len=20,
type=NLMSG_DONE, flags=NLM_F_MULTI, seq=1582620656, pid=3172}, 0},
iov_len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) = 20
                        = 0
socket(AF INET, SOCK STREAM|SOCK CLOEXEC, IPPROTO TCP) = 9
setsockopt(9, SOL_SOCKET, SO_REUSEADDR, [1], 4) = 0
```

```
bind(9, {sa family=AF_INET, sin_port=htons(30000),
\sin \text{ addr}=\inf \text{ addr}("127.0.0.1")\}, 16) = 0
                            = 0
listen(9, 100)
getsockname(9, {sa family=AF INET, sin port=htons(30000),
\sin_{addr}=inet_{addr}("127.0.0.1"), [128->16]) = 0
write(6, "\1\0\0\0\0\0\0\0\0", 8)
write(8, "\1\0\0\0\0\0\0\0\0", 8)
                                  = 8
fstat(0, \{st mode=S IFCHR | 0620, st rdev=makedev(136, 2), ...\}) = 0
read(0, create 2
"create 2\n", 1024)
                          =9
clone(child stack=NULL, flags=CLONE CHILD CLEARTID|
CLONE CHILD SETTID|SIGCHLD, child tidptr=0x7fb9bbf33e50) = 3177
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
poll([{fd=8, events=POLLIN}], 1, 2000) = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
                                       = 1 ([{fd=8, revents=POLLIN}])
poll([{fd=8, events=POLLIN}], 1, -1)
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
poll([{fd=8, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(6, "\1\0\0\0\0\0\0, 8)
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 2), ...}) = 0
write(1, "Ok:3177\n", 8Ok:3177
)
          = 8
read(0, create 4
"create 4\n", 1024)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(6, "\1\0\0\0\0\0\0\0\0", 8)
poll([{fd=8, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(1, "Ok:3182\n", 8Ok:3182
)
          = 8
read(0, ping 4
"ping 4\n", 1024)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(6, "\1\0\0\0\0\0\0\0\", 8)
poll([{fd=8, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
```

```
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(1, "Ok:0\n", 5Ok:0
            = 5
)
read(0, exec 5 2 1 3
"exec 5 2 1 3\n", 1024)
                            = 13
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(6, "\1\0\0\0\0\0\0\0\", 8)
poll([{fd=8, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0, 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(1, "Error:5: Not found\n", 19Error:5: Not found
   = 19
read(0, exec 4 2 1 4
"exec 4 2 1 4\n", 1024)
                            = 13
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(6, "\1\0\0\0\0\0\0\0\", 8)
poll([{fd=8, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=8, revents=POLLIN}])
read(8, "\1\0\0\0\0\0\0\0\0", 8)
poll([{fd=8, events=POLLIN}], 1, 0)
                                       = 0 (Timeout)
write(1, "Ok:4:5\n", 7Ok:4:5
           = 7
)
read(0, exit
"exit\n", 1024)
write(4, "\1\0\0\0\0\0\0\0\0", 8)
                                  = 8
write(8, "\1\0\0\0\0\0\0\0\0", 8)
                                  = 8
futex(0x559066cf3908, FUTEX_WAKE_PRIVATE, 1) = 1
poll([{fd=3, events=POLLIN}], 1, -1)
                                       = 1 ([{fd=3, revents=POLLIN}])
read(3, "\1\0\0\0\0\0\0, 8)
write(6, "\1\0\0\0\0\0\0, 8)
                                  = 8
close(7)
                           = 0
close(6)
                           = 0
close(5)
                           = 0
close(4)
                           = 0
close(3)
                           = 0
lseek(0, -1, SEEK CUR)
                                    = -1 ESPIPE (Illegal seek)
exit group(0)
                              = ?
+++ exited with 0 +++
```

6.Вывод

Таким образом, с помощью утилиты strace можно отслеживать системные вызовы. Для понимания и умения работы с утилитой strace необходимы знания: и чем они глубже, тем и лучше. В ходе выполнения работ я смог научиться работать со strace на неком, как мне кажется приемлемом уровне, а также получать некую информацию о работе программы при вызове strace. Существует масса ситуаций в которых с помощью утилиты strace можно диагностировать какую-то программу, а также понять в чем ошибка, если она есть.