Московский Авиационный Институт

(Национальный Исследовательский Университет)

Факультет информационных технологий и прикладной математики

Кафедра вычислительной математики и программирования

Лабораторная работа №1 по курсу

«Операционные системы»

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Оценка: _____

Дата: _____

Подпись: _____

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Москва, 2022

Содержание

Репозиторий

Постановка задачи

Подробно рассказать о каждом системном вызове из утилиты strace на примере лабораторной работы №6.

Демонстрация работы strace

```
nucyc@LAPTOP-3MT9IPNG:~/OS_mai/build/lab6$ strace ./control
execve("./control", ["./control"], 0x7ffeb2c0c3c0 /* 34 vars */) = 0
brk(NULL)                               = 0x56155ed38000
arch_prctl(0x3001 /* ARCH_??? */, 0x7fff4aedee50) = -1 EINVAL (Invalid argument)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc298f9f000
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
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=18043, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 18043, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fc298f9a000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libzmq.so.5", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240\233\1\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=634936, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 636784, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298efe000
mmap(0x7fc298f16000, 397312, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x18000) = 0x7fc298f16000
mmap(0x7fc298f77000, 106496, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x79000) =
0x7fc298f77000
mmap(0x7fc298f91000, 36864, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x92000) = 0x7fc298f91000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2252096, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 2267328, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298cd4000
mmap(0x7fc298d6e000, 1114112, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x9a000) = 0x7fc298d6e000
mmap(0x7fc298e7e000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1aa000) =
0x7fc298e7e000
mmap(0x7fc298eed000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x218000) = 0x7fc298eed000
mmap(0x7fc298efb000, 10432, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fc298efb000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=125488, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 127720, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298cb4000
mmap(0x7fc298cb7000, 94208, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x3000) = 0x7fc298cb7000
mmap(0x7fc298cce000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1a000) =
0x7fc298cce000
mmap(0x7fc298cd2000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x1d000) = 0x7fc298cd2000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\237\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784
pread64(3, "\4\0\0\0 \0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 48, 848) = 48
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pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0i8\235HZ\227\223\333\350s\360\352,\223\340."..., 68,
896) = 68
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2216304, ...}, AT_EMPTY_PATH) = 0
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64) = 784
mmap(NULL, 2260560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298a8c000
mmap(0x7fc298ab4000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x28000) = 0x7fc298ab4000
mmap(0x7fc298c49000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1bd000) =
0x7fc298c49000
mmap(0x7fc298ca1000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x214000) = 0x7fc298ca1000
mmap(0x7fc298ca7000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fc298ca7000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libbsd.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=89096, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 94432, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298a74000
mprotect(0x7fc298a78000, 69632, PROT_NONE) = 0
mmap(0x7fc298a78000, 53248, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4000) = 0x7fc298a78000
mmap(0x7fc298a85000, 12288, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x11000) =
0x7fc298a85000
mmap(0x7fc298a89000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x14000) = 0x7fc298a89000
mmap(0x7fc298a8b000, 224, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) =
0x7fc298a8b000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libsodium.so.23", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=355040, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 357440, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298a1c000
mprotect(0x7fc298a28000, 303104, PROT_NONE) = 0
mmap(0x7fc298a28000, 229376, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xc000) = 0x7fc298a28000
mmap(0x7fc298a60000, 69632, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x44000) =
0x7fc298a60000
mmap(0x7fc298a72000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x55000) = 0x7fc298a72000
close(3)                                = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc298a1a000
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpgm-5.3.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\340L\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=310264, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 329808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc2989c9000
mmap(0x7fc2989cd000, 172032, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4000) = 0x7fc2989cd000
mmap(0x7fc2989f7000, 118784, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2e000) =
0x7fc2989f7000
mmap(0x7fc298a14000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4a000) = 0x7fc298a14000
mmap(0x7fc298a16000, 14416, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fc298a16000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnorm.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \255\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=497824, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 1223168, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc29889e000
mprotect(0x7fc2988a8000, 446464, PROT_NONE) = 0
mmap(0x7fc2988a8000, 286720, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xa000) = 0x7fc2988a8000
mmap(0x7fc2988ee000, 155648, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x50000) =
0x7fc2988ee000
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mmap(0x7fc298915000, 16384, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x76000) = 0x7fc298915000
mmap(0x7fc298919000, 719360, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fc298919000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgssapi_krb5.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3>\0\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=338712, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 340960, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc29884a000
mprotect(0x7fc298855000, 282624, PROT_NONE) = 0
mmap(0x7fc298855000, 229376, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xb000) = 0x7fc298855000
mmap(0x7fc29888d000, 49152, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x43000) =
0x7fc29888d000
mmap(0x7fc29889a000, 16384, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4f000) = 0x7fc29889a000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\3>\0\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=940560, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 942344, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298763000
mmap(0x7fc298771000, 507904, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xe000) = 0x7fc298771000
mmap(0x7fc2987ed000, 372736, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x8a000) =
0x7fc2987ed000
mmap(0x7fc298848000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xe4000) = 0x7fc298848000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libmd.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3>\0\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=47472, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 49384, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298756000
mmap(0x7fc298758000, 28672, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x2000) = 0x7fc298758000
mmap(0x7fc29875f000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x9000) =
0x7fc29875f000
mmap(0x7fc298761000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xa000) = 0x7fc298761000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3>\0\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=21448, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc298754000
mmap(NULL, 16424, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc29874f000
mmap(0x7fc298750000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x1000) = 0x7fc298750000
mmap(0x7fc298751000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) =
0x7fc298751000
mmap(0x7fc298752000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x2000) = 0x7fc298752000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5.so.3", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3>\0\0\1\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=828000, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 830576, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298684000
mprotect(0x7fc2986a5000, 634880, PROT_NONE) = 0
mmap(0x7fc2986a5000, 380928, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x21000) = 0x7fc2986a5000
mmap(0x7fc298702000, 249856, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7e000) =
0x7fc298702000
mmap(0x7fc298740000, 61440, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xbb000) = 0x7fc298740000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libk5crypto.so.3", O_RDONLY|O_CLOEXEC) = 3
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read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=182928, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 188472, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298655000
mprotect(0x7fc298659000, 163840, PROT_NONE) = 0
mmap(0x7fc298659000, 110592, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4000) = 0x7fc298659000
mmap(0x7fc298674000, 49152, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1f000) =
0x7fc298674000
mmap(0x7fc298681000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x2b000) = 0x7fc298681000
mmap(0x7fc298683000, 56, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) =
0x7fc298683000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libcom_err.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=18504, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 20552, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc29864f000
mmap(0x7fc298651000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x2000) = 0x7fc298651000
mmap(0x7fc298652000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) =
0x7fc298652000
mmap(0x7fc298653000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x3000) = 0x7fc298653000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5support.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=52080, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 54224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298641000
mprotect(0x7fc298644000, 36864, PROT_NONE) = 0
mmap(0x7fc298644000, 24576, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x3000) = 0x7fc298644000
mmap(0x7fc29864a000, 8192, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x9000) =
0x7fc29864a000
mmap(0x7fc29864d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xb000) = 0x7fc29864d000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkeyutils.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=22600, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc29863f000
mmap(NULL, 24592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298638000
mmap(0x7fc29863a000, 8192, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x2000) = 0x7fc29863a000
mmap(0x7fc29863c000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) =
0x7fc29863c000
mmap(0x7fc29863d000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x4000) = 0x7fc29863d000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libresolv.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=68552, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 80456, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fc298624000
mmap(0x7fc298627000, 40960, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x3000) = 0x7fc298627000
mmap(0x7fc298631000, 12288, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xd000) =
0x7fc298631000
mmap(0x7fc298634000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0xf000) = 0x7fc298634000
mmap(0x7fc298636000, 6728, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) =
0x7fc298636000
close(3)                                = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc298622000
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc29861f000
arch_prctl(ARCH_SET_FS, 0x7fc29861f9c0) = 0
```

```
set_tid_address(0x7fc29861fc90)         = 1475
set_robust_list(0x7fc29861fca0, 24)     = 0
rseq(0x7fc298620360, 0x20, 0, 0x53053053) = 0
mprotect(0x7fc298ca1000, 16384, PROT_READ) = 0
mprotect(0x7fc298634000, 4096, PROT_READ) = 0
mprotect(0x7fc29863d000, 4096, PROT_READ) = 0
mprotect(0x7fc29864d000, 4096, PROT_READ) = 0
mprotect(0x7fc298653000, 4096, PROT_READ) = 0
mprotect(0x7fc298681000, 4096, PROT_READ) = 0
mprotect(0x7fc298740000, 53248, PROT_READ) = 0
mprotect(0x7fc298752000, 4096, PROT_READ) = 0
mprotect(0x7fc298761000, 4096, PROT_READ) = 0
mprotect(0x7fc298848000, 4096, PROT_READ) = 0
mprotect(0x7fc29889a000, 8192, PROT_READ) = 0
mprotect(0x7fc298cd2000, 4096, PROT_READ) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fc29861d000
mprotect(0x7fc298eed000, 45056, PROT_READ) = 0
mprotect(0x7fc298915000, 12288, PROT_READ) = 0
mprotect(0x7fc298a14000, 4096, PROT_READ) = 0
mprotect(0x7fc298a72000, 4096, PROT_READ) = 0
mprotect(0x7fc298a89000, 4096, PROT_READ) = 0
mprotect(0x7fc298f91000, 32768, PROT_READ) = 0
mprotect(0x56155e291000, 4096, PROT_READ) = 0
mprotect(0x7fc298fd9000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
munmap(0x7fc298f9a000, 18043)           = 0
getrandom("\x87\xa2\x20\xee\xbd\xa3\xdd\x3c", 8, GRND_NONBLOCK) = 8
brk(NULL)                               = 0x56155ed38000
brk(0x56155ed59000)                     = 0x56155ed59000
futex(0x7fc298efb77c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
openat(AT_FDCWD, "/sys/devices/system/cpu/online", O_RDONLY|O_CLOEXEC) = 3
read(3, "0-3\n", 1024)                  = 4
close(3)                                = 0
openat(AT_FDCWD, "/sys/devices/system/cpu", O_RDONLY|O_NONBLOCK|O_CLOEXEC|O_DIRECTORY) = 3
newfstatat(3, "", {st_mode=S_IFDIR|0755, st_size=0, ...}, AT_EMPTY_PATH) = 0
getdents64(3, 0x56155ed49ee0 /* 19 entries */, 32768) = 560
getdents64(3, 0x56155ed49ee0 /* 0 entries */, 32768) = 0
close(3)                                = 0
getpid()                                = 1475
sched_getaffinity(1475, 128, [0, 1, 2, 3]) = 32
newfstatat(AT_FDCWD, "/etc/nsswitch.conf", {st_mode=S_IFREG|0644, st_size=510, ...}, 0) = 0
newfstatat(AT_FDCWD, "/", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
openat(AT_FDCWD, "/etc/nsswitch.conf", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=510, ...}, AT_EMPTY_PATH) = 0
read(3, "# /etc/nsswitch.conf\n#\n# Example"..., 4096) = 510
read(3, "", 4096)                       = 0
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=510, ...}, AT_EMPTY_PATH) = 0
close(3)                                = 0
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=18043, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 18043, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fc298f9a000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3", 0x7fff4aedbcc0, 0) = -1
ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu", {st_mode=S_IFDIR|0755, st_size=20480, ...}, 0) =
0
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3", 0x7fff4aedbcc0, 0) =
-1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2/libnss_db.so.2",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2", 0x7fff4aedbcc0, 0) =
-1 ENOENT (No such file or directory)
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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu", {st_mode=S_IFDIR|0755, st_size=20480, ...},
0) = 0
openat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v3/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
newfstatat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v3", 0x7fff4aedbcc0, 0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v2/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
newfstatat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v2", 0x7fff4aedbcc0, 0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/lib/tls/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No
such file or directory)
newfstatat(AT_FDCWD, "/lib/tls/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/tls/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/tls/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/tls", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/lib", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
openat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3", 0x7fff4aedbcc0, 0) = -1 ENOENT (No
such file or directory)
openat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2", 0x7fff4aedbcc0, 0) = -1 ENOENT (No
such file or directory)
openat(AT_FDCWD, "/usr/lib/tls/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
newfstatat(AT_FDCWD, "/usr/lib/tls/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/tls/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/tls/x86_64", 0x7fff4aedbcc0, 0) = -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)
```

```
newfstatat(AT_FDCWD, "/usr/lib/tls", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/haswell/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/haswell", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib/x86_64", 0x7fff4aedbcc0, 0) = -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)
newfstatat(AT_FDCWD, "/usr/lib", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
munmap(0x7fc298f9a000, 18043)           = 0
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=18043, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 18043, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fc298f9a000
close(3)                                = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnss_db-2.35.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libnss_db-2.35.so", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/libnss_db-2.35.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD, "/usr/lib/libnss_db-2.35.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file
or directory)
munmap(0x7fc298f9a000, 18043)           = 0
openat(AT_FDCWD, "/etc/protocols", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=2932, ...}, AT_EMPTY_PATH) = 0
lseek(3, 0, SEEK_SET)                   = 0
read(3, "# Internet (IP) protocols\n#\n# Up"..., 4096) = 2932
read(3, "", 4096)                       = 0
close(3)                                = 0
eventfd2(0, EFD_CLOEXEC)                = 3
fcntl(3, F_GETFL)                       = 0x2 (flags O_RDWR)
fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK)    = 0
fcntl(3, F_GETFL)                       = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK)    = 0
getpid()                                = 1475
getpid()                                = 1475
getrandom("\x54\x64\xa8\xc4\x05\x31\x82\x1d\x79\x16\x69\x70\x7f\x84\x9a\xc0", 16, 0) = 16
getrandom("\x6e\xa4\xc1\xac\x1b\x9f\x60\xc2\x83\xb9\x66\x33\xd4\xa4\x71\x0a", 16, 0) = 16
newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0xa), ...}, AT_EMPTY_PATH) = 0
read(0,
```

Вывод

Проделав лабораторную работу, я приобрёл навыки, необходимые для работы с strace, а также изучил системные вызовы.