Московский Авиационный Институт

(Национальный Исследовательский Университет)

Факультет информационных технологий и прикладной математики

Кафедра вычислительной математики и программирования

**Лабораторная работ №1 по курсу**

**«Операционные системы»**

**ИСПОЛЬЗОВАНИЕ STRACE**

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Вариант: 03

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Оценка: \_\_\_\_\_\_\_\_\_\_\_

Дата: \_\_\_\_\_\_\_\_\_\_\_

Подпись: \_\_\_\_\_\_\_\_\_\_\_

Москва, 2019

**1.** **Постановка задачи**

Проанализировать поведение программы используя утилиту **strace**.

**2.** **Описание программы**

**Strace** – утилита для отладки и диагностики программ. Утилита выводит все системные вызовы, сделанные программой, в последовательности их вызовов (т.е трассировка системных вызовов).

**Программа запущена через команду: strace -o out.txt ./ReformerMapped.out, где *out.txt* – выходной файл трассировки, а *ReformerMapped.out* – бинарный файл программы.'**

**3.** **Результат трассировки.**

|  |
| --- |
| execve("/usr/bin/man", ["man"], 0x7fffc5a44590 /\* 18 vars \*/) = 0 brk(NULL) = 0x7ffff10dc000 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, "/usr/lib/man-db/tls/haswell/x86\_64/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/tls/haswell/x86\_64", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/tls/haswell/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/tls/haswell", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/tls/x86\_64/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/tls/x86\_64", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/tls/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/tls", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/haswell/x86\_64/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/haswell/x86\_64", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/haswell/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/haswell", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/x86\_64/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) stat("/usr/lib/man-db/x86\_64", 0x7ffff9959930) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/man-db/libmandb-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = 3 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\20\30\0\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=22368, ...}) = 0 mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f22be180000 mmap(NULL, 2117936, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bdbf0000 mprotect(0x7f22bdbf5000, 2093056, PROT\_NONE) = 0 mmap(0x7f22bddf4000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f22bddf4000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/man-db/libman-2.8.3.so", O\_RDONLY|O\_CLOEXEC) = 3 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0@\203\0\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=160768, ...}) = 0 mmap(NULL, 2258800, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bd9c0000 mprotect(0x7f22bd9e5000, 2097152, PROT\_NONE) = 0 mmap(0x7f22bdbe5000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25000) = 0x7f22bdbe5000 mmap(0x7f22bdbe7000, 1904, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f22bdbe7000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/man-db/libpipeline.so.1", O\_RDONLY|O\_CLOEXEC) = -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=28906, ...}) = 0 mmap(NULL, 28906, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be178000 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/libpipeline.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\0000$\0\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=55136, ...}) = 0 mmap(NULL, 2152912, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bd7b0000 mprotect(0x7f22bd7bd000, 2093056, PROT\_NONE) = 0 mmap(0x7f22bd9bc000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xc000) = 0x7f22bd9bc000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/man-db/libc.so.6", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) 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 read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\260\34\2\0\0\0\0\0"..., 832) = 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) = 0x7f22bd3b0000 mprotect(0x7f22bd597000, 2097152, PROT\_NONE) = 0 mmap(0x7f22bd797000, 24576, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1e7000) = 0x7f22bd797000 mmap(0x7f22bd79d000, 15072, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f22bd79d000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/man-db/libgdbm.so.5", O\_RDONLY|O\_CLOEXEC) = -1 ENOENT (No such file or directory) access("/etc/ld.so.nohwcap", F\_OK) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/libgdbm.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)\0\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=51224, ...}) = 0 mmap(NULL, 2146360, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bd1a0000 mprotect(0x7f22bd1ac000, 2093056, PROT\_NONE) = 0 mmap(0x7f22bd3ab000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb000) = 0x7f22bd3ab000 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/libseccomp.so.2", O\_RDONLY|O\_CLOEXEC) = 3 read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\20#\2\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=288968, ...}) = 0 mmap(NULL, 2384104, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bcf50000 mprotect(0x7f22bcf7f000, 2097152, PROT\_NONE) = 0 mmap(0x7f22bd17f000, 98304, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2f000) = 0x7f22bd17f000 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/libz.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\220\37\0\0\0\0\0\0"..., 832) = 832 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=116960, ...}) = 0 mmap(NULL, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f22be170000 mmap(NULL, 2212016, PROT\_READ|PROT\_EXEC, MAP\_PRIVATE|MAP\_DENYWRITE, 3, 0) = 0x7f22bcd30000 mprotect(0x7f22bcd4c000, 2093056, PROT\_NONE) = 0 mmap(0x7f22bcf4b000, 8192, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1b000) = 0x7f22bcf4b000 close(3) = 0 mmap(NULL, 12288, PROT\_READ|PROT\_WRITE, MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f22be160000 arch\_prctl(ARCH\_SET\_FS, 0x7f22be160740) = 0 mprotect(0x7f22bd797000, 16384, PROT\_READ) = 0 mprotect(0x7f22bcf4b000, 4096, PROT\_READ) = 0 mprotect(0x7f22bd17f000, 94208, PROT\_READ) = 0 mprotect(0x7f22bd3ab000, 4096, PROT\_READ) = 0 mprotect(0x7f22bd9bc000, 4096, PROT\_READ) = 0 mprotect(0x7f22bdbe5000, 4096, PROT\_READ) = 0 mprotect(0x7f22bddf4000, 4096, PROT\_READ) = 0 mprotect(0x7f22be418000, 4096, PROT\_READ) = 0 mprotect(0x7f22be027000, 4096, PROT\_READ) = 0 munmap(0x7f22be178000, 28906) = 0 brk(NULL) = 0x7ffff10dc000 brk(0x7ffff10fd000) = 0x7ffff10fd000 fcntl(2, F\_GETFL) = 0x2 (flags O\_RDWR) fcntl(0, F\_GETFL) = 0x2 (flags O\_RDWR) fcntl(1, F\_GETFL) = 0x2 (flags O\_RDWR) brk(0x7ffff111e000) = 0x7ffff111e000 openat(AT\_FDCWD, "/etc/ld.so.preload", O\_RDONLY) = -1 ENOENT (No such file or directory) brk(0x7ffff113f000) = 0x7ffff113f000 umask(022) = 000 openat(AT\_FDCWD, "/usr/lib/locale/locale-archive", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=1683056, ...}) = 0 mmap(NULL, 1683056, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22bde8c000 close(3) = 0 openat(AT\_FDCWD, "/usr/share/locale/locale.alias", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=2995, ...}) = 0 read(3, "# Locale name alias data base.\n#"..., 4096) = 2995 read(3, "", 4096) = 0 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_IDENTIFICATION", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=252, ...}) = 0 mmap(NULL, 252, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be183000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/x86\_64-linux-gnu/gconv/gconv-modules.cache", O\_RDONLY) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=26376, ...}) = 0 mmap(NULL, 26376, PROT\_READ, MAP\_SHARED, 3, 0) = 0x7f22be179000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_MEASUREMENT", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=23, ...}) = 0 mmap(NULL, 23, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be182000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_TELEPHONE", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=47, ...}) = 0 mmap(NULL, 47, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be178000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_ADDRESS", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=131, ...}) = 0 mmap(NULL, 131, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be177000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_NAME", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=62, ...}) = 0 mmap(NULL, 62, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be176000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_PAPER", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=34, ...}) = 0 mmap(NULL, 34, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be175000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_MESSAGES", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFDIR|0755, st\_size=4096, ...}) = 0 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_MESSAGES/SYS\_LC\_MESSAGES", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=48, ...}) = 0 mmap(NULL, 48, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be174000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_MONETARY", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=270, ...}) = 0 mmap(NULL, 270, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be173000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_COLLATE", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=1516558, ...}) = 0 mmap(NULL, 1516558, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22bcbbd000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_TIME", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=3360, ...}) = 0 mmap(NULL, 3360, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be172000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_NUMERIC", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=50, ...}) = 0 mmap(NULL, 50, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be16f000 close(3) = 0 openat(AT\_FDCWD, "/usr/lib/locale/C.UTF-8/LC\_CTYPE", O\_RDONLY|O\_CLOEXEC) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=199772, ...}) = 0 mmap(NULL, 199772, PROT\_READ, MAP\_PRIVATE, 3, 0) = 0x7f22be12f000 close(3) = 0 getuid() = 1000 geteuid() = 1000 getgid() = 1000 getegid() = 1000 rt\_sigaction(SIGHUP, NULL, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 rt\_sigaction(SIGHUP, {sa\_handler=0x7f22bd9c87e0, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7f22bd3eef20}, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 rt\_sigaction(SIGINT, NULL, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 rt\_sigaction(SIGINT, {sa\_handler=0x7f22bd9c87e0, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7f22bd3eef20}, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 rt\_sigaction(SIGTERM, NULL, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 rt\_sigaction(SIGTERM, {sa\_handler=0x7f22bd9c87e0, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7f22bd3eef20}, {sa\_handler=SIG\_DFL, sa\_mask=[], sa\_flags=SA\_RESTORER, sa\_restorer=0x7fcc72ffef20}, 8) = 0 openat(AT\_FDCWD, "/home/mamoon/.manpath", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/etc/manpath.config", O\_RDONLY) = 3 fstat(3, {st\_mode=S\_IFREG|0644, st\_size=5174, ...}) = 0 read(3, "# manpath.config\n#\n# This file i"..., 4096) = 4096 read(3, "in\n# the expected way.\n# If a pa"..., 4096) = 1078 read(3, "", 4096) = 0 close(3) = 0 ioctl(1, TCGETS, {B38400 opost isig icanon echo ...}) = 0 ioctl(0, TCGETS, {B38400 opost isig icanon echo ...}) = 0 getpid() = 2554 stat("/usr/local/sbin/pager", 0x7ffff995a060) = -1 ENOENT (No such file or directory) stat("/usr/local/bin/pager", 0x7ffff995a060) = -1 ENOENT (No such file or directory) stat("/usr/sbin/pager", 0x7ffff995a060) = -1 ENOENT (No such file or directory) stat("/usr/bin/pager", {st\_mode=S\_IFREG|0755, st\_size=170760, ...}) = 0 openat(AT\_FDCWD, "/usr/share/locale/C.UTF-8/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/share/locale/C.utf8/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/share/locale/C/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/share/locale-langpack/C.UTF-8/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/share/locale-langpack/C.utf8/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) openat(AT\_FDCWD, "/usr/share/locale-langpack/C/LC\_MESSAGES/man-db.mo", O\_RDONLY) = -1 ENOENT (No such file or directory) write(2, "What manual page do you want?\n", 30) = 30 getpid() = 2554 ioctl(0, TCGETS, {B38400 opost isig icanon echo ...}) = 0 ioctl(0, SNDCTL\_TMR\_START or TCSETS, {B38400 opost isig icanon echo ...}) = 0 ioctl(0, TCGETS, {B38400 opost isig icanon echo ...}) = 0 exit\_group(1) = ? +++ exited with 1 +++ |

**5.** **Вывод**

Strace позволяет отследить процессов момента запуска до самого конца, параллельно описывая получение прав доступа к тем или иным данным системы, а также позволяет выяснить поток работы программы в случае отсутствия исходников.