Московский Авиационный Институт

(Национальный Исследовательский Университет)

Институт №8 "Компьютерные науки и прикладная математика" Кафедра №806 "Вычислительная математика и программирование"

Лабораторная работа №8 по курсу «Операционные системы»

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Постановка задачи

Вариант 16.

Цель работы: Приобретение практических навыков диагностики работы программного обеспечения.

Задание: при выполнении лабораторных работ по курсу ОС необходимо продемонстрировать ключевые системные вызовы, которые в них используются и то, что их использование соответствует варианту ЛР. По итогам выполнения всех лабораторных работ отчет по данной ЛР должен содержать краткую сводку по исследованию написанных программ.

Общий метод и алгоритм решения

Для демонстрации системных вызовов будем использовать утилиту strace в операционной системе linux.

Strace — это диагностическая, отладочная и обучающая утилита пользовательского пространства для Linux. Она используется для мониторинга и вмешательства во взаимодействия между процессами и ядром Linux, включая системные вызовы, доставку сигналов и изменение состояния процесса. Работа strace возможна благодаря функции ядра, известной как ptrace. Наиболее часто он используется для запуска программы и вывода списка системных вызовов, которые она выполняет. Это особенно полезно, когда программа часто аварийно завершает работу или ведет себя непредсказуемо; например, strace может показать, что программа пытается получить доступ к несуществующему или недоступному файлу.

Еще одно полезное применение strace — это использование флага -р для присоединения к уже запущенному процессу. Это может быть полезно, если процесс перестал отвечать, и strace может помочь определить, что процесс заблокирован при попытке установить сетевое соединение.

Кроме того, strace предоставляет множество других возможностей:

- Фильтрация системных вызовов: Вы можете указать, какие системные вызовы следует отслеживать, используя параметр -е trace=. Это можно сделать по имени (например, clone, fork, vfork), с использованием предопределенных групп (например, %ipc или %file) или с помощью регулярных выражений (начиная с версии strace 4.17, например, -e trace=/clock_.*).
- Трассировка путей: Вы можете указать список путей для трассировки, используя параметр -P (например, -P /etc/ld.so.cache).
- Выгрузка ввода-вывода: Вы можете указать список файловых дескрипторов для выгрузки ввода-вывода, используя параметры -е read= и -е write=.
- Подсчет времени выполнения: Strace позволяет подсчитывать время выполнения системных вызовов и их количество, используя параметры -T, -c, -С и -w. Параметр -U позволяет выводить дополнительную информацию, такую как минимальное и максимальное время выполнения системного вызова.
- Временные метки: Strace может печатать относительные или абсолютные временные метки, используя опции -t и -r.
- Изменение системных вызовов: Strace позволяет изменять выполняемые системные вызовы, включая изменение возвращаемого значения и кода ошибки, внедрение сигналов, задержек и изменение данных, на которые указывают аргументы системных вызовов. Это достигается с помощью опции -e inject=syscall specification:tampering specification:retval=:error=:signal=:delay_enter=:delay_exit=:poke_enter=:poke_exit=.
- Информация о дескрипторах файлов: Strace может извлекать информацию о дескрипторах файлов, включая сокеты, используя опцию -у. Опция -уу предоставляет дополнительную информацию, такую как адреса конечных точек для сокетов, пути и основные/дополнительные номера устройств для файлов.
- Трассировка стека: Strace может печатать трассировки стека, включая разборку символов (начиная с версии strace 4.21, используя опцию -k).

Strace также поддерживает множество других опций и параметров, которые делают его мощным инструментом для диагностики и отладки программного обеспечения.

Протокол работы программы

```
Лабораторная работа №1.
```

```
execve("./main", ["./main"], 0x7fffb628aa98 /* 30 \text{ vars }*/) = 0
    brk(NULL)
                           = 0x1269000
    mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7fbff9622000
    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=25258, ...}, AT_EMPTY_PATH) = 0
    mmap(NULL, 25258, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fbff961b000
    close(3)
                         =0
    openat(AT FDCWD, "/usr/local/lib64/libstdc++.so.6", O RDONLY|O CLOEXEC) = 3
    newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2530008, ...}, AT_EMPTY_PATH) = 0
    mmap(NULL, 2543808, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fbff93ad000
    mmap(0x7fbff9452000, 1216512, PROT READ|PROT EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa5000) = 0x7fbff9452000
    mmap(0x7fbff957b000, 581632, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7fbff957b000
    mmap(0x7fbff9609000, 57344, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x25c000) = 0x7fbff9609000
    mmap(0x7fbff9617000, 12480, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fbff9617000
    close(3)
                         =0
    openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
    newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=907784, ...}, AT_EMPTY_PATH) = 0
    mmap(NULL, 909560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fbff92ce000
    mmap(0x7fbff92de000, 471040, PROT READ|PROT EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x10000) = 0x7fbff92de000
```

```
mmap(0x7fbff9351000, 368640, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x83000) = 0x7fbff9351000
    mmap(0x7fbff93ab000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xdc000) = 0x7fbff93ab000
    close(3)
                       =0
    openat(AT FDCWD, "/usr/local/lib64/libgcc s.so.1", O RDONLY|O CLOEXEC) = 3
    newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=906528, ...}, AT_EMPTY_PATH) = 0
   mmap(NULL, 181160, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fbff92a1000
    mmap(0x7fbff92a5000, 143360, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7fbff92a5000
    mmap(0x7fbff92c8000, 16384, PROT_READ,
MAP PRIVATE MAP FIXED MAP DENYWRITE. 3. 0x27000) = 0x7fbff92c8000
    mmap(0x7fbff92cc000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2b000) = 0x7fbff92cc000
                       =0
    close(3)
    openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
    newfstatat(3, "", {st mode=S IFREG|0755, st size=1922136, ...}, AT EMPTY PATH) = 0
    mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fbff90c0000
    mmap(0x7fbff90e6000, 1396736, PROT READ|PROT EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x26000) = 0x7fbff90e6000
    mmap(0x7fbff923b000, 339968, PROT_READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x17b000) = 0x7fbff923b000
    mmap(0x7fbff928e000, 24576, PROT_READ|PROT_WRITE.
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1ce000) = 0x7fbff928e000
    mmap(0x7fbff9294000, 53072, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fbff9294000
   close(3)
                       =0
    mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1,
0) = 0x7fbff90be000
    arch_prctl(ARCH_SET_FS, 0x7fbff90bf480) = 0
    set tid address(0x7fbff90bf750)
                              = 1651
```

```
set\_robust\_list(0x7fbff90bf760, 24) = 0
     rseq(0x7fbff90bfda0, 0x20, 0, 0x53053053) = 0
     mprotect(0x7fbff928e000, 16384, PROT_READ) = 0
     mprotect(0x7fbff92cc000, 4096, PROT_READ) = 0
     mprotect(0x7fbff93ab000, 4096, PROT READ) = 0
     mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7fbff90bc000
     mprotect(0x7fbff9609000, 45056, PROT_READ) = 0
     mprotect(0x404000, 4096, PROT_READ) = 0
     mprotect(0x7fbff9654000, 8192, PROT_READ) = 0
     prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY})
=0
     munmap(0x7fbff961b000, 25258)
     futex(0x7fbff961773c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
     getrandom("\x09\x0b\x38\x95\x2f\x76\xda\xc3", 8, GRND_NONBLOCK) = 8
     brk(NULL)
                                = 0x1269000
     brk(0x128a000)
                                 = 0x128a000
     newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}, AT_EMPTY_PATH)
=0
     write(1, "Enter file name for child1: ", 28Enter file name for child1: ) = 28
     newfstatat(0, "", {st mode=S IFCHR|0620, st rdev=makedev(0x88, 0), ...}, AT EMPTY PATH)
=0
     read(0, file1
     "file1\n", 1024)
                           =6
     write(1, "Enter file name for child2: ", 28Enter file name for child2: ) = 28
     read(0, file2
     "file2\n", 1024)
                           =6
     openat(AT_FDCWD, "file1", O_RDWR|O_CREAT|O_TRUNC, 0666) = 3
     openat(AT_FDCWD, "file2", O_RDWR|O_CREAT|O_TRUNC, 0666) = 4
     pipe2([5, 6], 0)
                               =0
     pipe2([7, 8], 0)
                               =0
     clone(child stack=NULL,
flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLDstrace: Process 1693 attached
     , child\_tidptr=0x7fbff90bf750) = 1693
```

```
[pid 1693] set robust list(0x7fbff90bf760, 24 < unfinished ...>
     [pid 1651] clone(child_stack=NULL,
flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD <unfinished ...>
     [pid 1693] < ... set robust list resumed>) = 0
     strace: Process 1694 attached
     [pid 1693] close(6 < unfinished ...>
     [pid 1651] <... clone resumed>, child_tidptr=0x7fbff90bf750) = 1694
     [pid 1694] set_robust_list(0x7fbff90bf760, 24 <unfinished ...>
     [pid 1651] close(5 < unfinished ...>
     [pid 1693] <... close resumed>)
                                          =0
     [pid 1651] <... close resumed>)
                                          =0
     [pid 1694] <... set robust list resumed>) = 0
     [pid 1651] close(7 < unfinished ...>
     [pid 1693] close(7 < unfinished ...>
     [pid 1651] <... close resumed>)
                                          =0
     [pid 1694] close(8 < unfinished ...>
     [pid 1651] close(3 < unfinished ...>
     [pid 1693] <... close resumed>)
                                          =0
     [pid 1651] <... close resumed>)
                                          =0
     [pid 1694] <... close resumed>)
                                          =0
     [pid 1651] close(4 < unfinished ...>
     [pid 1693] close(8 < unfinished ...>
     [pid 1651] <... close resumed>)
                                          =0
     [pid 1694] close(5 < unfinished ...>
     [pid 1651] write(1, "Enter linens. To finish entering"..., 51 < unfinished ...>
     Enter linens. To finish entering lines, enter 'q'.
     [pid 1693] <... close resumed>)
                                          =0
     [pid 1651] <... write resumed>)
                                          = 51
     [pid 1694] <... close resumed>)
                                          =0
     [pid 1651] read(0, <unfinished ...>
     [pid 1693] close(4 < unfinished ...>
     [pid 1694] close(6 < unfinished ...>
     [pid 1693] <... close resumed>)
                                         =0
```

```
[pid 1694] <... close resumed>)
                                       =0
     [pid 1693] dup2(5, 0 < unfinished ...>
     [pid 1694] close(3 < unfinished ...>
     [pid 1693] <... dup2 resumed>)
                                        =0
     [pid 1694] <... close resumed>)
                                       =0
     [pid 1693] dup2(3, 1 < unfinished ...>
     [pid 1694] dup2(7, 0 < unfinished ...>
     [pid 1693] <... dup2 resumed>)
                                        = 1
     [pid 1694] <... dup2 resumed>)
                                        =0
     [pid 1693] close(5 < unfinished ...>
     [pid 1694] dup2(4, 1 < unfinished ...>
     [pid 1693] <... close resumed>)
                                       =0
     [pid 1694] <... dup2 resumed>)
                                        = 1
     [pid 1693] close(3 < unfinished ...>
     [pid 1694] close(7)
                                   =0
     [pid 1693] <... close resumed>)
                                       =0
     [pid 1694] close(4 < unfinished ...>
     [pid 1693] execve("./child", ["child1"], 0x7ffc67548888 /* 30 vars */ <unfinished ...>
     [pid 1694] <... close resumed>)
     [pid 1694] execve("./child", ["child2"], 0x7ffc67548888 /* 30 \text{ vars }*/) = 0
     [pid 1694] brk(NULL)
                                      =0x2101000
     [pid 1694] mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f7b3983e000
     [pid 1694] access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
     [pid 1693] <... execve resumed>)
                                        =0
     [pid 1694] openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC <unfinished ...>
     [pid 1693] brk(NULL < unfinished ...>
     [pid 1694] <... openat resumed>)
                                        =3
     [pid 1693] <... brk resumed>)
                                       =0x2279000
     [pid 1694] newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=25258, ...}, AT_EMPTY_PATH)
     [pid 1693] mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
     [pid 1694] mmap(NULL, 25258, PROT_READ, MAP_PRIVATE, 3, 0 < unfinished ...>
```

=0

7

```
[pid 1693] <... mmap resumed>)
                                     = 0x7fec8b964000
    [pid 1694] <... mmap resumed>)
                                     = 0x7f7b39837000
    [pid 1694] close(3 < unfinished ...>
    [pid 1693] access("/etc/ld.so.preload", R_OK <unfinished ...>
    [pid 1694] <... close resumed>)
                                    =0
    [pid 1693] <... access resumed>) = -1 ENOENT (No such file or directory)
    [pid 1694] openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
    [pid 1693] openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC <unfinished ...>
    [pid 1694] <... openat resumed>)
                                    =3
    [pid 1693] <... openat resumed>)
                                    =3
    [pid 1694] read(3, <unfinished ...>
    [pid 1693] newfstatat(3, "", <unfinished ...>
    832) = 832
    [pid 1693] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=25258, ...},
AT EMPTY PATH) = 0
    [pid 1694] newfstatat(3, "", <unfinished ...>
    [pid 1693] mmap(NULL, 25258, PROT_READ, MAP_PRIVATE, 3, 0 < unfinished ...>
    [pid 1694] <... newfstatat resumed>{st mode=S IFREG|0755, st size=2530008, ...},
AT EMPTY PATH) = 0
    [pid 1693] <... mmap resumed>)
                                     = 0x7fec8b95d000
    [pid 1694] mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
    [pid 1693] close(3 < unfinished ...>
    [pid 1694] <... mmap resumed>)
                                     = 0x7f7b395c9000
    [pid 1693] <... close resumed>)
                                    =0
    [pid 1694] mmap(0x7f7b3966e000, 1216512, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000 <unfinished ...>
    [pid 1693] openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
    [pid 1694] <... mmap resumed>)
                                     = 0x7f7b3966e000
    [pid 1693] <... openat resumed>)
    [pid 1694] mmap(0x7f7b39797000, 581632, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
    [pid 1693] read(3, <unfinished ...>
```

```
[pid 1694] < ... mmap resumed > 0 = 0x7f7b39797000
    832) = 832
    [pid 1694] mmap(0x7f7b39825000, 57344, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x25c000 <unfinished ...>
    [pid 1693] newfstatat(3, "", <unfinished ...>
    [pid 1694] <... mmap resumed>)
                                  = 0x7f7b39825000
    [pid 1694] mmap(0x7f7b39833000, 12480, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0 <unfinished ...>
    [pid 1693] <... newfstatat resumed>{st_mode=S_IFREG|0755, st_size=2530008, ...},
AT EMPTY PATH) = 0
    [pid 1694] <... mmap resumed>)
                                  = 0x7f7b39833000
    [pid 1693] mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fec8b6ef000
    [pid 1694] close(3 < unfinished ...>
    [pid 1693] mmap(0x7fec8b794000, 1216512, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000 <unfinished ...>
    [pid 1694] <... close resumed>)
    [pid 1694] openat(AT FDCWD, "/lib/x86 64-linux-gnu/libm.so.6", O RDONLY|O CLOEXEC
<unfinished ...>
    [pid 1693] <... mmap resumed>)
                                  = 0x7fec8b794000
    [pid 1694] <... openat resumed>)
    [pid 1693] mmap(0x7fec8b8bd000, 581632, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
    [pid 1694] read(3, <unfinished ...>
    [pid 1693] <... mmap resumed>)
                                  = 0x7fec8b8bd000
    832) = 832
    [pid 1693] mmap(0x7fec8b94b000, 57344, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x25c000 <unfinished ...>
    [pid 1694] newfstatat(3, "", <unfinished ...>
    [pid 1693] < ... mmap resumed>) = 0x7fec8b94b000
    [pid 1694] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=907784, ...},
AT EMPTY PATH) = 0
    [pid 1693] mmap(0x7fec8b959000, 12480, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
    [pid 1694] mmap(NULL, 909560, PROT_READ, MAP_PRIVATE|MAP DENYWRITE. 3. 0
<unfinished ...>
```

```
[pid 1693] <... mmap resumed>)
                                  = 0x7fec8b959000
    [pid 1694] <... mmap resumed>)
                                  = 0x7f7b394ea000
    [pid 1693] close(3 < unfinished ...>
    [pid 1694] mmap(0x7f7b394fa000, 471040, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x10000 <unfinished ...>
    [pid 1693] <... close resumed>)
                                 =0
    [pid 1694] < ... mmap resumed > 0 = 0x7f7b394fa000
    [pid 1693] openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
    [pid 1694] mmap(0x7f7b3956d000, 368640, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x83000 <unfinished ...>
    [pid 1693] <... openat resumed>)
    [pid 1694] < ... mmap resumed > 0 = 0x7f7b3956d000
    [pid 1693] read(3, <unfinished ...>
    [pid 1694] mmap(0x7f7b395c7000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xdc000 <unfinished ...>
    832) = 832
    [pid 1694] <... mmap resumed>)
                                  = 0x7f7b395c7000
    [pid 1693] newfstatat(3, "", <unfinished ...>
    [pid 1694] close(3 < unfinished ...>
    [pid 1693] <... newfstatat resumed>{st mode=S IFREG|0644, st size=907784, ...},
AT\_EMPTY\_PATH) = 0
    [pid 1694] <... close resumed>)
    [pid 1693] mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
    [pid 1694] openat(AT FDCWD, "/usr/local/lib64/libgcc s.so.1", O RDONLY|O CLOEXEC
<unfinished ...>
                                  = 0x7fec8b610000
    [pid 1693] <... mmap resumed>)
    [pid 1694] <... openat resumed>)
    [pid 1693] mmap(0x7fec8b620000, 471040, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000 <unfinished ...>
    [pid 1694] read(3, <unfinished ...>
    [pid 1693] <... mmap resumed>)
                                  = 0x7fec8b620000
    832) = 832
```

```
[pid 1693] mmap(0x7fec8b693000, 368640, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x83000 <unfinished ...>
    [pid 1694] newfstatat(3, "", <unfinished ...>
    [pid 1693] <... mmap resumed>)
                                    = 0x7fec8b693000
    [pid 1694] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=906528, ...},
AT EMPTY PATH) = 0
    [pid 1693] mmap(0x7fec8b6ed000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000 <unfinished ...>
    [pid 1694] mmap(NULL, 181160, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
    [pid 1693] <... mmap resumed>)
                                    = 0x7fec8b6ed000
    [pid 1694] <... mmap resumed>)
                                    = 0x7f7b394bd000
    [pid 1693] close(3 < unfinished ...>
    [pid 1694] mmap(0x7f7b394c1000, 143360, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
    [pid 1693] <... close resumed>)
                                   =0
    [pid 1694] <... mmap resumed>)
                                    = 0x7f7b394c1000
    [pid 1694] mmap(0x7f7b394e4000, 16384, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x27000 <unfinished ...>
    [pid 1693] openat(AT FDCWD, "/usr/local/lib64/libgcc s.so.1", O RDONLY|O CLOEXEC
<unfinished ...>
    [pid 1694] <... mmap resumed>)
                                   = 0x7f7b394e4000
    [pid 1693] <... openat resumed>)
    [pid 1694] mmap(0x7f7b394e8000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2b000 <unfinished ...>
    [pid 1693] read(3, <unfinished ...>
    [pid 1694] <... mmap resumed>)
                                    = 0x7f7b394e8000
    832) = 832
    [pid 1694] close(3 < unfinished ...>
    [pid 1693] newfstatat(3, "", <unfinished ...>
    [pid 1694] <... close resumed>)
                                   = 0
    [pid 1693] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=906528, ...},
AT EMPTY PATH) = 0
    [pid 1694] openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC
<unfinished ...>
```

```
<unfinished ...>
          [pid 1694] <... openat resumed>)
          [pid 1693] <... mmap resumed>)
                                                                                = 0x7fec8b5e3000
          [pid 1694] read(3, <unfinished ...>
          [pid 1693] mmap(0x7fec8b5e7000, 143360, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
          832) = 832
                                                                                = 0x7fec8b5e7000
          [pid 1693] <... mmap resumed>)
          [pid 1694] pread64(3, <unfinished ...>
          [pid 1693] mmap(0x7fec8b60a000, 16384, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x27000 <unfinished ...>
          [pid 1694] <... pread64
resumed > "\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0
          [pid 1693] <... mmap resumed>)
                                                                                = 0x7fec8b60a000
          [pid 1694] newfstatat(3, "", <unfinished ...>
          [pid 1693] mmap(0x7fec8b60e000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2b000 <unfinished ...>
          [pid 1694] <... newfstatat resumed>{st mode=S IFREG|0755, st size=1922136, ...},
AT\_EMPTY\_PATH) = 0
          [pid 1693] <... mmap resumed>)
                                                                                = 0x7fec8b60e000
          [pid 1694] pread64(3, <unfinished ...>
          [pid 1693] close(3 < unfinished ...>
          [pid 1694] <... pread64
[pid 1693] <... close resumed>)
                                                                             =0
          [pid 1694] mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
          [pid 1693] openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
          [pid 1694] <... mmap resumed>)
                                                                                = 0x7f7b392dc000
          [pid 1693] <... openat resumed>)
                                                                               =3
          [pid 1693] read(3, <unfinished ...>
          [pid 1694] mmap(0x7f7b39302000, 1396736, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000 <unfinished ...>
```

[pid 1693] mmap(NULL, 181160, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0

```
832) = 832
         [pid 1694] < ... mmap resumed > 0 = 0x7f7b39302000
         [pid 1693] pread64(3, <unfinished ...>
         [pid 1694] mmap(0x7f7b39457000, 339968, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x17b000 <unfinished ...>
         [pid 1693] < ... pread64
resumed > "\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0}\black{0
                                                                         = 0x7f7b39457000
         [pid 1694] <... mmap resumed>)
         [pid 1693] newfstatat(3, "", <unfinished ...>
         [pid 1694] mmap(0x7f7b394aa000, 24576, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
         [pid 1693] <... newfstatat resumed>{st_mode=S_IFREG|0755, st_size=1922136, ...},
AT EMPTY PATH) = 0
         [pid 1694] <... mmap resumed>)
                                                                         = 0x7f7b394aa000
         [pid 1693] pread64(3, <unfinished ...>
         [pid 1694] mmap(0x7f7b394b0000, 53072, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
         [pid 1693] <... pread64
[pid 1694] <... mmap resumed>)
                                                                          = 0x7f7b394b0000
         [pid 1693] mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
         [pid 1694] close(3 < unfinished ...>
         [pid 1693] <... mmap resumed>)
                                                                         = 0x7fec8b402000
         [pid 1694] <... close resumed>)
                                                                       =0
         [pid 1693] mmap(0x7fec8b428000, 1396736, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000 <unfinished ...>
         [pid 1694] mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0 <unfinished ...>
         [pid 1693] < ... mmap resumed > 0 = 0x7fec8b428000
         [pid 1694] <... mmap resumed>)
                                                                         = 0x7f7b392da000
         [pid 1693] mmap(0x7fec8b57d000, 339968, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x17b000 <unfinished ...>
         [pid 1694] arch_prctl(ARCH_SET_FS, 0x7f7b392db480 <unfinished ...>
         [pid 1693] <... mmap resumed>)
                                                                         = 0x7fec8b57d000
         [pid 1694] <... arch_prctl resumed>) = 0
```

```
[pid 1694] <... newfstatat resumed>{st_mode=S_IFIFO|0600, st_size=0, ...},
AT_EMPTY_PATH) = 0
     [pid 1694] read(0, <unfinished ...>
     [pid 1693] futex(0x7fec8b95973c, FUTEX WAKE PRIVATE, 2147483647) = 0
     [pid 1693] getrandom("\times88\times71\times0f\timesdf\times15\times10\timesd0\times33", 8, GRND_NONBLOCK) = 8
                                      =0x2279000
     [pid 1693] brk(NULL)
     [pid 1693] brk(0x229a000)
                                       = 0x229a000
     [pid 1693] newfstatat(0, "", {st_mode=S_IFIFO|0600, st_size=0, ...}, AT_EMPTY_PATH) = 0
     [pid 1693] read(0, apple
      <unfinished ...>
     [pid 1651] <... read resumed>"apple\n", 1024) = 6
     [pid 1651] write(1, "pip2\n", 5pip2
     =5
     [pid 1651] write(8, "apple\n", 6)
     [pid 1694] <... read resumed>"apple\n", 4096) = 6
     [pid 1651] write(8, "\n", 1)
     [pid 1694] newfstatat(1, "", <unfinished ...>
     [pid 1651] read(0, <unfinished ...>
     [pid 1694] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=0, ...},
AT\_EMPTY\_PATH) = 0
     [pid 1694] write(1, "ppl\n", 4)
     [pid 1694] read(0, "\n", 4096)
                                     = 1
     [pid 1694] read(0, google
      <unfinished ...>
     [pid 1651] <... read resumed>"google\n", 1024) = 7
     [pid 1651] write(1, "pip2\n", 5pip2
     = 5
     [pid 1651] write(8, "google\n", 7) = 7
     [pid 1694] <... read resumed>"google\n", 4096) = 7
     [pid 1651] write(8, "\n", 1)
     [pid 1694] write(1, "ggl\n", 4 < unfinished ...>
     [pid 1651] read(0, <unfinished ...>
     [pid 1694] <... write resumed>)
                                        =4
```

```
[pid 1694] read(0, "\n", 4096)
                                       = 1
     [pid 1694] read(0, q
      <unfinished ...>
     [pid 1651] <... read resumed>"q \ n", 1024) = 2
     [pid 1651] write(6, "q\n", 2)
                                      =2
     [pid 1693] <... read resumed>"q \ n", 4096) = 2
     [pid 1651] write(8, "q\n", 2 < unfinished ...>
     [pid 1693] lseek(0, -1, SEEK_CUR < unfinished ...>
     [pid 1651] <... write resumed>)
     [pid 1694] <... read resumed>"q \ n", 4096) = 2
     [pid 1693] <... lseek resumed>)
                                     = -1 ESPIPE (Illegal seek)
     [pid 1651] close(6 < unfinished ...>
     [pid 1693] exit_group(0 < unfinished ...>
     [pid 1651] <... close resumed>)
     [pid 1694] lseek(0, -1, SEEK_CUR < unfinished ...>
     [pid 1651] close(8 < unfinished ...>
     [pid 1693] <... exit group resumed>) = ?
     [pid 1651] <... close resumed>)
                                        =0
     [pid 1694] <... lseek resumed>)
                                     = -1 ESPIPE (Illegal seek)
     [pid 1651] wait4(1693, <unfinished ...>
                                      = ?
     [pid 1694] exit_group(0)
     [pid 1693] +++ exited with 0 +++
     [pid 1651] <... wait4 resumed>[{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) =
1693
     [pid 1651] --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=1693, si_uid=0,
si status=0, si utime=0, si stime=1 /* 0.01 s */} ---
     [pid 1651] wait4(1694, <unfinished ...>
     [pid 1694] +++ exited with 0 +++
     <... wait4 resumed>[{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 1694
     --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=1694, si_uid=0, si_status=0,
si_utime=0, si_stime=0} ---
     lseek(0, -1, SEEK CUR)
                                        = -1 ESPIPE (Illegal seek)
                                  = ?
     exit_group(0)
```

```
Лабораторная работа №2.
```

```
execve("./lab2_exe", ["./lab2_exe", "2", "f"], 0x7fff5ab2d628 /* 30 vars */) = 0
    brk(NULL)
                           = 0x56413a55e000
    mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f320048c000
    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=26022, ...}, AT EMPTY PATH) = 0
    mmap(NULL, 26022, PROT READ, MAP PRIVATE, 3, 0) = 0x7f3200485000
    close(3)
                         =0
    openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
    newfstatat(3, "", {st mode=S IFREG|0755, st size=2530008, ...}, AT EMPTY PATH) = 0
    mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f3200217000
    mmap(0x7f32002bc000, 1216512, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000) = 0x7f32002bc000
    mmap(0x7f32003e5000, 581632, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7f32003e5000
    mmap(0x7f3200473000, 57344, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x25c000) = 0x7f3200473000
    mmap(0x7f3200481000, 12480, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7f3200481000
                         =0
    close(3)
    openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
    newfstatat(3, "", {st mode=S IFREG|0644, st size=906528, ...}, AT EMPTY PATH) = 0
    mmap(NULL, 181160, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f32001ea000
    mmap(0x7f32001ee000, 143360, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7f32001ee000
    mmap(0x7f3200211000, 16384, PROT READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x27000) = 0x7f3200211000
    mmap(0x7f3200215000, 8192, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2b000) = 0x7f3200215000
```

```
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
    newfstatat(3, "", {st mode=S IFREG|0755, st size=1922136, ...}, AT EMPTY PATH) = 0
    mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f3200009000
    mmap(0x7f320002f000, 1396736, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x26000) = 0x7f320002f000
    mmap(0x7f3200184000, 339968, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x17b000) = 0x7f3200184000
    mmap(0x7f32001d7000, 24576, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1ce000) = 0x7f32001d7000
    mmap(0x7f32001dd000, 53072, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f32001dd000
    close(3)
    openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
    read(3, "177ELF(2)11(3)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=907784, ...}, AT_EMPTY_PATH) = 0
    mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f31fff2a000
    mmap(0x7f31fff3a000, 471040, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x10000) = 0x7f31fff3a000
    mmap(0x7f31fffad000, 368640, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x83000) = 0x7f31fffad000
    mmap(0x7f3200007000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000) = 0x7f3200007000
    close(3)
    mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f31fff28000
    arch_prctl(ARCH_SET_FS, 0x7f31fff29480) = 0
    set_tid_address(0x7f31fff29750)
                               =5012
    set robust list(0x7f31fff29760, 24)
    rseg(0x7f31fff29da0, 0x20, 0, 0x53053053) = 0
    mprotect(0x7f32001d7000, 16384, PROT_READ) = 0
```

close(3)

=0

```
mprotect(0x7f3200007000, 4096, PROT_READ) = 0
     mprotect(0x7f3200215000, 4096, PROT_READ) = 0
     mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f31fff26000
     mprotect(0x7f3200473000, 45056, PROT READ) = 0
     mprotect(0x564138a7c000, 4096, PROT_READ) = 0
     mprotect(0x7f32004be000, 8192, PROT_READ) = 0
     prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY})
=0
     munmap(0x7f3200485000, 26022)
                                        =0
     futex(0x7f320048173c, FUTEX WAKE PRIVATE, 2147483647) = 0
     getrandom("\xe0\x21\xad\x8c\x53\xe4\x5f\xf1", 8, GRND_NONBLOCK) = 8
     brk(NULL)
                               = 0x56413a55e000
    brk(0x56413a57f000)
                                  = 0x56413a57f000
     openat(AT_FDCWD, "test.txt", O_RDONLY) = 3
     openat(AT_FDCWD, "out.txt", O_WRONLY|O_CREAT|O_TRUNC, 0666) = 4
     read(3, "2\n3 3\n1.2 2.7 3.3\n4.1 5.4 6.8\n7."..., 8191) = 64
    read(3, "", 8191)
                               =0
     rt_sigaction(SIGRT_1, {sa_handler=0x7f320008f6a0, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_RESTART|SA_SIGINFO,
sa_restorer=0x7f3200045050}, NULL, 8) = 0
    rt sigprocmask(SIG UNBLOCK, [RTMIN RT 1], NULL, 8) = 0
     mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -
1, 0) = 0x7f31ff725000
     mprotect(0x7f31ff726000, 8388608, PROT_READ|PROT_WRITE) = 0
     rt sigprocmask(SIG BLOCK, \sim[], [], 8) = 0
     clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREA
D|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARTID,
child_tid=0x7f31fff25990, parent_tid=0x7f31fff25990, exit_signal=0, stack=0x7f31ff725000,
stack size=0x7fff80, tls=0x7f31fff256c0}strace: Process 5013 attached
     => \{parent\_tid=[5013]\}, 88) = 5013
     [pid 5013] rseq(0x7f31fff25fe0, 0x20, 0, 0x53053053 < unfinished ...>
     [pid 5012] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5013] <... rseq resumed>)
                                    =0
     [pid 5012] <... rt_sigprocmask resumed>NULL, 8) = 0
     [pid 5013] set_robust_list(0x7f31fff259a0, 24 < unfinished ...>
```

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```
[pid 5012] mmap(NULL, 8392704, PROT NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0 < unfinished ...>
     [pid 5013] < ... \text{ set\_robust\_list resumed} > ) = 0
     [pid 5012] <... mmap resumed>)
                                       = 0x7f31fef24000
     [pid 5013] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5012] mprotect(0x7f31fef25000, 8388608, PROT_READ|PROT_WRITE < unfinished ...>
     [pid 5013] <... rt_sigprocmask resumed>NULL, 8) = 0
     [pid 5012] < ... mprotect resumed >) = 0
     [pid 5013] rt_sigprocmask(SIG_BLOCK, ~[RT_1], <unfinished ...>
     [pid 5012] rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
     [pid 5013] < ... rt sigprocmask resumed>NULL, 8) = 0
     [pid 5012] <... rt_sigprocmask resumed>[], 8) = 0
     [pid 5013] madvise(0x7f31ff725000, 8368128, MADV_DONTNEED <unfinished ...>
     [pid 5012]
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLO
NE SYSVSEM|CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
child_tid=0x7f31ff724990, parent_tid=0x7f31ff724990, exit_signal=0, stack=0x7f31fef24000,
stack size=0x7fff80, tls=0x7f31ff7246c0} <unfinished ...>
     [pid 5013] <... madvise resumed>) = 0
     [pid 5013] exit(0strace: Process 5014 attached
     <unfinished ...>
     [pid 5012] < ... clone3 resumed > => {parent tid=[5014]}, 88) = 5014
     [pid 5013] <... exit resumed>)
     [pid 5012] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5014] rseq(0x7f31ff724fe0, 0x20, 0, 0x53053053 < unfinished ...>
     [pid 5012] < ... rt sigprocmask resumed>NULL, 8) = 0
     [pid 5013] +++ exited with 0 +++
     [pid 5014] <... rseq resumed>)
                                     =0
     [pid 5012] futex(0x7f31ff724990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME,
5014, NULL, FUTEX_BITSET_MATCH_ANY <unfinished ...>
     [pid 5014] set_robust_list(0x7f31ff7249a0, 24) = 0
     [pid 5014] rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
     [pid 5014] rt_sigprocmask(SIG_BLOCK, ~[RT_1], NULL, 8) = 0
     [pid 5014] madvise(0x7f31fef24000, 8368128, MADV_DONTNEED) = 0
     [pid 5014] exit(0)
                                 =?
```

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```
[pid 5014] +++ exited with 0 +++
     rt\_sigprocmask(SIG\_BLOCK, \sim[], [], 8) = 0
     clone3({flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREA
DICLONE SYSVSEMICLONE SETTLSICLONE PARENT SETTIDICLONE CHILD CLEARTID,
child tid=0x7f31ff724990, parent tid=0x7f31ff724990, exit signal=0, stack=0x7f31fef24000,
stack_size=0x7fff80, tls=0x7f31ff7246c0}strace: Process 5015 attached
     => \{parent\_tid=[5015]\}, 88) = 5015
     [pid 5015] rseq(0x7f31ff724fe0, 0x20, 0, 0x53053053 < unfinished ...>
     [pid 5012] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5015] <... rseq resumed>)
                                     =0
     [pid 5012] <... rt_sigprocmask resumed>NULL, 8) = 0
     [pid 5015] set_robust_list(0x7f31ff7249a0, 24 <unfinished ...>
     [pid 5012] rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
     [pid 5015] <... set_robust_list resumed>) = 0
     [pid 5012] <... rt sigprocmask resumed>[], 8) = 0
     [pid 5015] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5012]
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLO
NE SYSVSEMICLONE SETTLSICLONE PARENT SETTIDICLONE CHILD CLEARTID.
child tid=0x7f31fff25990, parent tid=0x7f31fff25990, exit signal=0, stack=0x7f31ff725000,
stack_size=0x7fff80, tls=0x7f31fff256c0} <unfinished ...>
     [pid 5015] <... rt_sigprocmask resumed>NULL, 8) = 0
     strace: Process 5016 attached
     [pid 5015] rt_sigprocmask(SIG_BLOCK, ~[RT_1], <unfinished ...>
     [pid 5012] <... clone3 resumed> => {parent_tid=[5016]}, 88) = 5016
     [pid 5016] rseq(0x7f31fff25fe0, 0x20, 0, 0x53053053 < unfinished ...>
     [pid 5012] rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     [pid 5015] <... rt_sigprocmask resumed>NULL, 8) = 0
     [pid 5012] < ... rt sigprocmask resumed>NULL, 8) = 0
     [pid 5016] <... rseq resumed>)
                                     =0
     [pid 5012] futex(0x7f31ff724990, FUTEX WAIT BITSET|FUTEX CLOCK REALTIME,
5015, NULL, FUTEX_BITSET_MATCH_ANY <unfinished ...>
     [pid 5015] madvise(0x7f31fef24000, 8368128, MADV DONTNEED <unfinished ...>
     [pid 5016] set robust list(0x7f31fff259a0, 24 < unfinished ...>
     [pid 5015] <... madvise resumed>)
     20
```

[pid 5012] <... futex resumed>)

=0

```
[pid 5016] < \dots  set_robust_list resumed>) = 0
[pid 5016] <... rt_sigprocmask resumed>NULL, 8) = 0
[pid 5016] madvise(0x7f31ff725000, 8368128, MADV_DONTNEED) = 0
[pid 5016] exit(0)
                         =?
[pid 5012] <... futex resumed>)
                              =0
[pid 5016] +++ exited with 0 +++
write(4, "3 3\n1.2 2.7 3.3\n4.1 5.4 6.8\n7.2 "..., 40) = 40
close(4)
                      =0
close(3)
                      =0
exit_group(0)
                        =?
+++ exited with 0 +++
Лабораторная работа №3.
execve("./main", ["./main"], 0x7ffde4631ef8 /* 25 vars */) = 0
brk(NULL)
                         = 0x1c47000
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f380a4c6000
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=26022, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 26022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f380a4bf000
close(3)
                      =0
openat(AT FDCWD, "/usr/local/lib64/libstdc++.so.6", O RDONLY|O CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2530008, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f380a251000
mmap(0x7f380a2f6000, 1216512, PROT READ|PROT EXEC.
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xa5000) = 0x7f380a2f6000
mmap(0x7f380a41f000, 581632, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7f380a41f000
mmap(0x7f380a4ad000, 57344, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25c000) = 0x7f380a4ad000
mmap(0x7f380a4bb000, 12480, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f380a4bb000
close(3)
                      =0
```

```
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libm.so.6", O RDONLY|O CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=907784, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f380a172000
mmap(0x7f380a182000, 471040, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x10000) = 0x7f380a182000
mmap(0x7f380a1f5000, 368640, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x83000) = 0x7f380a1f5000
mmap(0x7f380a24f000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xdc000) = 0x7f380a24f000
                                         =0
close(3)
openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st mode=S IFREG|0644, st size=906528, ...}, AT EMPTY PATH) = 0
mmap(NULL, 181160, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f380a145000
mmap(0x7f380a149000, 143360, PROT READ|PROT EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x4000) = 0x7f380a149000
mmap(0x7f380a16c000, 16384, PROT READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x27000) = 0x7f380a16c000
mmap(0x7f380a170000, 8192, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2b000) = 0x7f380a170000
                                         =0
close(3)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC) = 3
read(3, "177ELF(2)11(3)0)0(0)0(0)0(0)(3)0>(0)1(0)(0)(2)t(2)(0)(0)(0)"..., 832) = 832
pread 64(3, "\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\
newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=1922136, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 1970000, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f3809f64000
mmap(0x7f3809f8a000, 1396736, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000) = 0x7f3809f8a000
mmap(0x7f380a0df000, 339968, PROT READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x17b000) = 0x7f380a0df000
mmap(0x7f380a132000, 24576, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7f380a132000
```

```
mmap(0x7f380a138000, 53072, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f380a138000
close(3)
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1,
0) = 0x7f3809f62000
arch pretl(ARCH SET FS, 0x7f3809f63480) = 0
set_tid_address(0x7f3809f63750)
                                 = 44944
set_robust_list(0x7f3809f63760, 24)
rseq(0x7f3809f63da0, 0x20, 0, 0x53053053) = 0
mprotect(0x7f380a132000, 16384, PROT_READ) = 0
mprotect(0x7f380a170000, 4096, PROT READ) = 0
mprotect(0x7f380a24f000, 4096, PROT_READ) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7f3809f60000
mprotect(0x7f380a4ad000, 45056, PROT_READ) = 0
mprotect(0x403000, 4096, PROT READ) = 0
mprotect(0x7f380a4f8000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY})
=0
munmap(0x7f380a4bf000, 26022)
                                   =0
futex(0x7f380a4bb73c, FUTEX WAKE PRIVATE, 2147483647) = 0
getrandom("\x9a\xad\xf9\x23\x01\x84\xba\xbd", 8, GRND_NONBLOCK) = 8
brk(NULL)
                          = 0x1c47000
brk(0x1c68000)
                           = 0x1c68000
newfstatat(1, "", {st mode=S IFCHR|0620, st rdev=makedev(0x88, 0), ...}, AT EMPTY PATH)
=0
write(1, "Enter file name for child1: ", 28Enter file name for child1: ) = 28
newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}, AT_EMPTY_PATH)
=0
read(0, pop1
"pop1\n", 1024)
                       = 5
write(1, "Enter file name for child2: ", 28Enter file name for child2: ) = 28
read(0, pop2
"pop2\n", 1024)
                       =5
write(1, "All good\n", 9All good
```

```
= 9
)
openat(AT_FDCWD, "/dev/shm/OS1",
O_RDWR|O_CREAT|O_NOFOLLOW|O_CLOEXEC, 0666) = 3
ftruncate(3, 4096)
                         = 0
mmap(NULL, 4096, PROT WRITE, MAP SHARED, 3, 0) = 0x7f380a4c5000
openat(AT_FDCWD, "/dev/shm/OS2",
O_RDWR|O_CREAT|O_NOFOLLOW|O_CLOEXEC, 0666) = 4
ftruncate(4, 4096)
                         = 0
mmap(NULL, 4096, PROT WRITE, MAP SHARED, 4, 0) = 0x7f380a4c4000
getrandom("\times65\timesf7\times67\times87\times20\times20\times20\times33", 8, GRND NONBLOCK) = 8
newfstatat(AT FDCWD, "/dev/shm/sem.bUgla0", 0x7ffd36d2c3e0,
AT SYMLINK NOFOLLOW) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/dev/shm/sem.bUgla0", O_RDWR|O_CREAT|O_EXCL, 0666) = 5
mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 5, 0) = 0x7f380a4c3000
link("/dev/shm/sem.bUgla0", "/dev/shm/sem.sem1") = 0
newfstatat(5, "", {st_mode=S_IFREG|0644, st_size=32, ...}, AT_EMPTY_PATH) = 0
unlink("/dev/shm/sem.bUgla0")
                              =0
close(5)
getrandom("\xae\x54\x5a\x07\x83\x17\x67\xcc", 8, GRND NONBLOCK) = 8
newfstatat(AT FDCWD, "/dev/shm/sem.Iowi94", 0x7ffd36d2c3e0,
AT SYMLINK NOFOLLOW) = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/dev/shm/sem.Iowi94", O RDWR|O CREAT|O EXCL, 0666) = 5
mmap(NULL, 32, PROT READ|PROT WRITE, MAP SHARED, 5, 0) = 0x7f380a4c2000
link("/dev/shm/sem.Iowi94", "/dev/shm/sem.sem2") = 0
newfstatat(5, "", {st mode=S IFREG|0644, st size=32, ...}, AT EMPTY PATH) = 0
unlink("/dev/shm/sem.Iowi94")
                              =0
close(5)
                     =0
clone(child_stack=NULL,
flags=CLONE CHILD CLEARTID|CLONE CHILD SETTID|SIGCHLDstrace: Process
45042 attached
, child\_tidptr=0x7f3809f63750) = 45042
[pid 45042] set_robust_list(0x7f3809f63760, 24 <unfinished ...>
```

```
[pid 44944] clone(child stack=NULL,
flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD <unfinished ...>
[pid 45042] <... set robust list resumed>) = 0
strace: Process 45043 attached
[pid 45042] execve("./child", ["child1", "pop1", "/sem1", "OS1"], 0x7ffd36d2c958 /* 25 vars
*/ <unfinished ...>
[pid 44944] <... clone resumed>, child_tidptr=0x7f3809f63750) = 45043
[pid 45043] set_robust_list(0x7f3809f63760, 24 <unfinished ...>
[pid 44944] (1, "Enter linens. To finish entering"..., 52 <unfinished ...>
[pid 45043] <... set robust list resumed>) = 0
Enter linens. To finish entering lines, enter '!q'.
[pid 44944] <... write resumed>)
                                  = 52
[pid 45043] execve("./child", ["child2", "pop2", "/sem2", "OS2"], 0x7ffd36d2c958 /* 25 vars
*/ <unfinished ...>
[pid 44944] read(0, <unfinished ...>
[pid 45042] <... execve resumed>)
                                   =0
[pid 45043] <... execve resumed>)
                                   = 0
[pid 45042] brk(NULL < unfinished ...>
[pid 45043] brk(NULL)
                                = 0x1d06000
[pid 45042] <... brk resumed>)
                                 = 0x9b6000
[pid 45042] mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0 <unfinished ...>
[pid 45043] mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
[pid 45042] < ... mmap resumed>) = 0x7f17f3bc1000
[pid 45043] < ... mmap resumed > 0 = 0x7fb4683be000
[pid 45042] access("/etc/ld.so.preload", R_OK <unfinished ...>
[pid 45043] access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
[pid 45042] <... access resumed>) = -1 ENOENT (No such file or directory)
[pid 45042] openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC <unfinished ...>
[pid 45043] openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC <unfinished ...>
[pid 45042] <... openat resumed>)
                                   =3
[pid 45043] <... openat resumed>)
                                   =3
[pid 45042] newfstatat(3, "", <unfinished ...>
```

```
[pid 45043] newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=26022, ...}, AT_EMPTY_PATH)
=0
[pid 45042] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=26022, ...},
AT EMPTY PATH) = 0
[pid 45043] mmap(NULL, 26022, PROT_READ, MAP_PRIVATE, 3, 0 < unfinished ...>
[pid 45042] mmap(NULL, 26022, PROT READ, MAP PRIVATE, 3, 0 < unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb4683b7000
[pid 45042] <... mmap resumed>)
                               = 0x7f17f3bba000
[pid 45043] close(3)
                          =0
[pid 45042] close(3 < unfinished ...>
[pid 45043] openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) =
[pid 45042] <... close resumed>)
                             =0
[pid 45043] read(3, <unfinished ...>
[pid 45042] openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
832) = 832
[pid 45042] <... openat resumed>)
[pid 45043] newfstatat(3, "", <unfinished ...>
[pid 45042] read(3, <unfinished ...>
[pid 45043] <... newfstatat resumed>{st mode=S IFREG|0755, st size=2530008, ...},
AT_EMPTY_PATH) = 0
832) = 832
[pid 45043] mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
[pid 45042] newfstatat(3, "", <unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb468149000
[pid 45042] <... newfstatat resumed>{st mode=S IFREG|0755, st size=2530008, ...},
AT_EMPTY_PATH) = 0
[pid 45043] mmap(0x7fb4681ee000, 1216512, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000 <unfinished ...>
[pid 45042] mmap(NULL, 2543808, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb4681ee000
```

```
[pid 45043] mmap(0x7fb468317000, 581632, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
[pid 45042] < ... mmap resumed > 0 = 0x7f17f394c000
[pid 45042] mmap(0x7f17f39f1000, 1216512, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000 <unfinished ...>
[pid 45043] < ... mmap resumed > 0 = 0x7fb468317000
[pid 45042] <... mmap resumed>)
                               = 0x7f17f39f1000
[pid 45043] mmap(0x7fb4683a5000, 57344, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x25c000 <unfinished ...>
[pid 45042] mmap(0x7f17f3b1a000, 581632, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
[pid 45043] <... mmap resumed>)
                              = 0x7fb4683a5000
[pid 45042] < ... mmap resumed>) = 0x7f17f3b1a000
[pid 45043] mmap(0x7fb4683b3000, 12480, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
[pid 45042] mmap(0x7f17f3ba8000, 57344, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x25c000 <unfinished ...>
[pid 45043] < ... mmap resumed>) = 0x7fb4683b3000
[pid 45042] < ... mmap resumed>) = 0x7f17f3ba8000
[pid 45043] close(3 < unfinished ...>
[pid 45042] mmap(0x7f17f3bb6000, 12480, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
[pid 45043] <... close resumed>)
                              =0
[pid 45042] < ... mmap resumed>) = 0x7f17f3bb6000
[pid 45043] openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
[pid 45042] close(3 < unfinished ...>
[pid 45043] <... openat resumed>)
                               =3
[pid 45042] <... close resumed>)
                              =0
[pid 45043] read(3, <unfinished ...>
[pid 45042] openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
832) = 832
[pid 45042] <... openat resumed>)
[pid 45043] newfstatat(3, "", <unfinished ...>
```

```
[pid 45042] read(3, <unfinished ...>
[pid 45043] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=907784, ...},
AT EMPTY PATH) = 0
832) = 832
[pid 45043] mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
[pid 45042] newfstatat(3, "", <unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb46806a000
[pid 45042] <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=907784, ...},
AT EMPTY PATH) = 0
[pid 45043] mmap(0x7fb46807a000, 471040, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000 <unfinished ...>
[pid 45042] mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb46807a000
[pid 45042] < ... mmap resumed >  = 0x7f17f386d000
[pid 45043] mmap(0x7fb4680ed000, 368640, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x83000 <unfinished ...>
[pid 45042] mmap(0x7f17f387d000, 471040, PROT READ|PROT EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x10000 <unfinished ...>
[pid 45043] <... mmap resumed>)
                               = 0x7fb4680ed000
[pid 45042] < ... mmap resumed >  = 0x7f17f387d000
[pid 45043] mmap(0x7fb468147000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xdc000 <unfinished ...>
[pid 45042] mmap(0x7f17f38f0000, 368640, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x83000 <unfinished ...>
[pid 45043] <... mmap resumed>)
                            = 0x7fb468147000
[pid 45042] < ... mmap resumed>) = 0x7f17f38f0000
[pid 45043] close(3 < unfinished ...>
[pid 45042] mmap(0x7f17f394a000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000 <unfinished ...>
[pid 45043] <... close resumed>)
                              =0
[pid 45042] <... mmap resumed>)
                              = 0x7f17f394a000
[pid 45043] openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC
<unfinished ...>
[pid 45042] close(3 < unfinished ...>
```

```
[pid 45043] <... openat resumed>)
                             = 3
[pid 45042] <... close resumed>)
                             =0
[pid 45043] read(3, <unfinished ...>
[pid 45042] openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC
<unfinished ...>
832) = 832
[pid 45042] <... openat resumed>)
[pid 45043] newfstatat(3, "", <unfinished ...>
[pid 45042] read(3, <unfinished ...>
[pid 45043] <... newfstatat resumed>{st mode=S IFREG|0644, st size=906528, ...},
AT EMPTY PATH) = 0
832) = 832
[pid 45043] mmap(NULL, 181160, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fb46803d000
[pid 45042] newfstatat(3, "", <unfinished ...>
[pid 45043] mmap(0x7fb468041000, 143360, PROT READ|PROT EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x4000) = 0x7fb468041000
[pid 45042] <... newfstatat resumed>{st mode=S IFREG|0644, st size=906528, ...},
AT\_EMPTY\_PATH) = 0
[pid 45043] mmap(0x7fb468064000, 16384, PROT_READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x27000) = 0x7fb468064000
[pid 45042] mmap(NULL, 181160, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
[pid 45043] mmap(0x7fb468068000, 8192, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2b000) = 0x7fb468068000
[pid 45042] <... mmap resumed>)
                             = 0x7f17f3840000
[pid 45043] close(3 < unfinished ...>
[pid 45042] mmap(0x7f17f3844000, 143360, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
[pid 45043] <... close resumed>)
                             =0
[pid 45042] <... mmap resumed>)
                             = 0x7f17f3844000
[pid 45043] openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
[pid 45042] mmap(0x7f17f3867000, 16384, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x27000 <unfinished ...>
[pid 45043] <... openat resumed>)
                              =3
```

```
[pid 45043] read(3, <unfinished ...>
[pid 45042] <... mmap resumed>)
                                                                  = 0x7f17f3867000
832) = 832
[pid 45042] mmap(0x7f17f386b000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2b000 <unfinished ...>
[pid 45043] pread64(3, <unfinished ...>
[pid 45042] <... mmap resumed>)
                                                                  = 0x7f17f386b000
[pid 45043] < ... pread64
[pid 45042] close(3 < unfinished ...>
[pid 45043] newfstatat(3, "", <unfinished ...>
[pid 45042] <... close resumed>)
                                                               =0
[pid 45043] <... newfstatat resumed>{st_mode=S_IFREG|0755, st_size=1922136, ...},
AT EMPTY PATH) = 0
[pid 45042] openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC
<unfinished ...>
[pid 45043] pread64(3, <unfinished ...>
[pid 45042] <... openat resumed>)
                                                             = 3
[pid 45043] <... pread64
[pid 45042] read(3, <unfinished ...>
[pid 45043] mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
832) = 832
[pid 45043] <... mmap resumed>)
                                                                  = 0x7fb467e5c000
[pid 45042] pread64(3, <unfinished ...>
[pid 45043] mmap(0x7fb467e82000, 1396736, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000 <unfinished ...>
[pid 45042] <... pread64
resumed > "\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\bar{0}\ba
[pid 45043] <... mmap resumed>)
                                                                  = 0x7fb467e82000
[pid 45042] newfstatat(3, "", <unfinished ...>
[pid 45043] mmap(0x7fb467fd7000, 339968, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17b000 <unfinished ...>
```

```
[pid 45042] <... newfstatat resumed>{st_mode=S_IFREG|0755, st_size=1922136, ...},
AT_EMPTY_PATH) = 0
[pid 45043] <... mmap resumed>)
                              = 0x7fb467fd7000
[pid 45042] pread64(3, <unfinished ...>
[pid 45043] mmap(0x7fb46802a000, 24576, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1ce000 <unfinished ...>
[pid 45042] < ... pread64
[pid 45043] <... mmap resumed>)
                                = 0x7fb46802a000
[pid 45043] mmap(0x7fb468030000, 53072, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0 <unfinished ...>
[pid 45042] mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
[pid 45043] <... mmap resumed>)
                                = 0x7fb468030000
[pid 45043] close(3 < unfinished ...>
[pid 45042] <... mmap resumed>)
                                = 0x7f17f365f000
[pid 45043] <... close resumed>)
                              =0
[pid 45042] mmap(0x7f17f3685000, 1396736, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x26000 <unfinished ...>
[pid 45043] mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
[pid 45042] <... mmap resumed>)
                              = 0x7f17f3685000
[pid 45043] < ... mmap resumed > 0 = 0x7fb467e5a000
[pid 45042] mmap(0x7f17f37da000, 339968, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x17b000 <unfinished ...>
[pid 45043] arch prctl(ARCH SET FS, 0x7fb467e5b480 < unfinished ...>
[pid 45042] <... mmap resumed>)
                                = 0x7f17f37da000
[pid 45043] < ... arch_prctl resumed >) = 0
[pid 45042] mmap(0x7f17f382d000, 24576, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000 <unfinished ...>
[pid 45043] set_tid_address(0x7fb467e5b750 < unfinished ...>
[pid 45042] <... mmap resumed>)
                                = 0x7f17f382d000
[pid 45043] <... set_tid_address resumed>) = 45043
[pid 45042] mmap(0x7f17f3833000, 53072, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f17f3833000
[pid 45043] set_robust_list(0x7fb467e5b760, 24 <unfinished ...>
```

```
[pid 45042] close(3)
                            =0
[pid 45043] < ... set_robust_list resumed >) = 0
[pid 45042] mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE MAP ANONYMOUS, -1, 0 <unfinished ...>
[pid 45043] rseg(0x7fb467e5bda0, 0x20, 0, 0x53053053 < unfinished ...>
[pid 45042] <... mmap resumed>)
                                  = 0x7f17f365d000
[pid 45043] <... rseq resumed>)
                                = 0
[pid 45042] arch_prctl(ARCH_SET_FS, 0x7f17f365e480) = 0
[pid 45042] set_tid_address(0x7f17f365e750) = 45042
[pid 45043] mprotect(0x7fb46802a000, 16384, PROT_READ < unfinished ...>
[pid 45042] set robust list(0x7f17f365e760, 24 <unfinished ...>
[pid 45043] < ... mprotect resumed > ) = 0
[pid 45043] mprotect(0x7fb468068000, 4096, PROT_READ <unfinished ...>
[pid 45042] < ... set\_robust\_list resumed >) = 0
[pid 45043] < ... mprotect resumed > ) = 0
[pid 45043] mprotect(0x7fb468147000, 4096, PROT READ <unfinished ...>
[pid 45042] rseq(0x7f17f365eda0, 0x20, 0, 0x53053053 <unfinished ...>
[pid 45043] openat(AT_FDCWD, "/dev/shm/sem.sem2", O_RDWR|O_NOFOLLOW) = 4
[pid 45043] newfstatat(4, "", {st_mode=S_IFREG|0644, st_size=32, ...}, AT_EMPTY_PATH) = 0
[pid 45043] mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7fb4683bd000
[pid 45043] close(4)
                            = 0
[pid 45043] openat(AT FDCWD, "/dev/shm/OS2",
O RDWR|O NOFOLLOW|O CLOEXEC) = 4
[pid 45043] mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7fb4683bc000
[pid 45042] <... openat resumed>)
                                 =3
[pid 45043] futex(0x7fb4683bd000, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0,
NULL, FUTEX_BITSET_MATCH_ANY <unfinished ...>
[pid 45042] openat(AT FDCWD, "/dev/shm/sem.sem1", O RDWR|O NOFOLLOW) = 4
[pid 45042] newfstatat(4, "", {st_mode=S_IFREG|0644, st_size=32, ...}, AT_EMPTY_PATH) = 0
[pid 45042] mmap(NULL, 32, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7f17f3bc0000
[pid 45042] close(4)
                            =0
```

```
[pid 45042] openat(AT_FDCWD, "/dev/shm/OS1",
O_RDWR|O_NOFOLLOW|O_CLOEXEC) = 4
[pid 45042] mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_SHARED, 4, 0) =
0x7f17f3bbf000
[pid 45042] futex(0x7f17f3bc0000, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0,
NULL, FUTEX_BITSET_MATCH_ANYHello
<unfinished ...>
[pid 44944] <... read resumed>"Hello\n", 1024) = 6
[pid 44944] futex(0x7f380a4c2000, FUTEX WAKE, 1) = 1
[pid 45043] <... futex resumed>)
                                =0
[pid 44944] clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=1000000},
<unfinished ...>
[pid 45043] write(3, "Hll\n", 4)
                               =4
[pid 44944] <... clock_nanosleep resumed>NULL) = 0
[pid 45043] clock nanosleep(CLOCK REALTIME, 0, {tv sec=0, tv nsec=1000000},
<unfinished ...>
[pid 44944] read(0, <unfinished ...>
[pid 45043] <... clock_nanosleep resumed>NULL) = 0
[pid 45043] futex(0x7fb4683bd000, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0,
NULL, FUTEX BITSET MATCH ANYWorld
<unfinished ...>
[pid 44944] <... read resumed>"World\n", 1024) = 6
[pid 44944] futex(0x7f380a4c2000, FUTEX_WAKE, 1) = 1
[pid 45043] <... futex resumed>)
[pid 44944] clock nanosleep(CLOCK REALTIME, 0, {tv sec=0, tv nsec=1000000},
<unfinished ...>
[pid 45043] write(3, "Wrld\n", 5)
[pid 44944] <... clock_nanosleep resumed>NULL) = 0
[pid 44944] read(0, <unfinished ...>
[pid 45043] clock nanosleep(CLOCK REALTIME, 0, {tv sec=0, tv nsec=1000000}, NULL) = 0
[pid 45043] futex(0x7fb4683bd000, FUTEX WAIT BITSET|FUTEX CLOCK REALTIME, 0,
NULL, FUTEX_BITSET_MATCH_ANY!q
<unfinished ...>
[pid 44944] < ... read resumed > "!q\n", 1024) = 3
```

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[pid 44944] **futex**(0x7f380a4c3000, FUTEX_WAKE, 1) = 1

=0

[pid 45042] <... futex resumed>)

```
[pid 44944] clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=1000000},
<unfinished ...>
[pid 45042] munmap(0x7f17f3bbf000, 4096) = 0
[pid 45042] close(4)
                              =0
[pid 45042] munmap(0x7f17f3bc0000, 32) = 0
[pid 44944] <... clock_nanosleep resumed>NULL) = 0
[pid 45042] unlink("/dev/shm/sem.sem1" <unfinished ...>
[pid 44944] futex(0x7f380a4c2000, FUTEX_WAKE, 1 <unfinished ...>
[pid 45042] <... unlink resumed>)
                                   =0
[pid 44944] <... futex resumed>)
                                  = 1
[pid 45043] <... futex resumed>)
                                  =0
[pid 44944] clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=1000000},
<unfinished ...>
[pid 45042] close(3 < unfinished ...>
[pid 45043] munmap(0x7fb4683bc000, 4096) = 0
[pid 45043] close(4)
                              = 0
[pid 45043] munmap(0x7fb4683bd000, 32) = 0
[pid 45043] unlink("/dev/shm/sem.sem2" <unfinished ...>
[pid 44944] <... clock_nanosleep resumed>NULL) = 0
[pid 45043] <... unlink resumed>)
[pid 44944] munmap(0x7f380a4c5000, 4096) = 0
[pid 45043] close(3 < unfinished ...>
[pid 44944] close(3 < unfinished ...>
[pid 45042] <... close resumed>)
                                  =0
[pid 44944] <... close resumed>)
                                  =0
[pid 44944] unlink("/dev/shm/OS1" <unfinished ...>
[pid 45042] exit group(0)
[pid 44944] <... unlink resumed>)
[pid 44944] munmap(0x7f380a4c4000, 4096) = 0
[pid 44944] close(4)
                              =0
[pid 44944] unlink(''/dev/shm/OS2'') = 0
[pid 44944] munmap(0x7f380a4c3000, 32) = 0
[pid 45042] +++ exited with 0 +++
```

```
[pid 44944] --- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=45042,
si_uid=0, si_status=0, si_utime=0, si_stime=2 /* 0.02 s */} ---
[pid 45043] <... close resumed>)
[pid 44944] munmap(0x7f380a4c2000, 32) = 0
[pid 45043] exit_group(0 < unfinished ...>
[pid 44944] unlink("/dev/shm/sem.sem1" <unfinished ...>
[pid 45043] <... exit_group resumed>) = ?
[pid 44944] <... unlink resumed>) = -1 ENOENT (No such file or directory)
[pid 44944] unlink("/dev/shm/sem.sem2") = -1 ENOENT (No such file or directory)
[pid 44944] lseek(0, -1, SEEK_CUR) = -1 ESPIPE (Illegal seek)
[pid 44944] exit group(0)
                              = ?
[pid 45043] +++ exited with 0 +++
+++ exited with 0 +++
Лабораторная работа №4.
 32647 \text{ execve}("./Program_1", ["./Program_1"], 0x7fff8e156d18 /* 26 vars */) = 0
 32647 brk(NULL)
                              = 0x14b7000
 32647 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
 MAP\_PRIVATE|MAP\_ANONYMOUS, -1, 0) = 0x7f619b6f5000
 32647 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v3/libPr_2_real1.so",
 O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v2/libPr_2_real1.so",
 O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./tls/haswell/x86_64/libPr_2_real1.so",
 O RDONLY|O CLOEXEC) = -1 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./tls/haswell/libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = -1
 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./tls/x86_64/libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = -1
 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./tls/libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = -1 ENOENT
 (No such file or directory)
 32647 openat(AT FDCWD, "./haswell/x86 64/libPr 2 real1.so", O RDONLY|O CLOEXEC)
 = -1 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./haswell/libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = -1
 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./x86_64/libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = -1
 ENOENT (No such file or directory)
 32647 openat(AT_FDCWD, "./libPr_2_real1.so", O_RDONLY|O_CLOEXEC) = 3
```

```
32647 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=15296, ...}, AT_EMPTY_PATH) = 0
32647 getcwd("/workspaces/MAI_OS_Labs/lab4/src", 128) = 33
32647 mmap(NULL, 16400, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f619b6f0000
32647 mmap(0x7f619b6f1000, 4096, PROT_READ|PROT_EXEC.
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1000) = 0x7f619b6f1000
32647 mmap(0x7f619b6f2000, 4096, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2000) = 0x7f619b6f2000
32647 mmap(0x7f619b6f3000, 8192, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x2000) = 0x7f619b6f3000
32647 close(3)
32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v3/libstdc++.so.6",
O RDONLY|O CLOEXEC| = -1 ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v2/libstdc++.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./tls/haswell/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
32647 openat(AT FDCWD, "./tls/haswell/libstdc++.so.6", O RDONLY|O CLOEXEC) = -1
ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./tls/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./tls/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
32647 openat(AT_FDCWD, "./haswell/x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -
1 ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./haswell/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./x86_64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
32647 openat(AT_FDCWD, "./libstdc++.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No
such file or directory)
32647 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
32647 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=26022, ...}, AT_EMPTY_PATH) = 0
32647 mmap(NULL, 26022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f619b6e9000
32647 close(3)
                         =0
32647 openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
32647 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2530008, ...}, AT_EMPTY_PATH) =
32647 mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f619b47b000
```

32647 mmap(0x7f619b520000, 1216512, PROT_READ|PROT_EXEC,

 $MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa5000) = 0x7f619b520000$

```
32647 mmap(0x7f619b649000, 581632, PROT READ,
```

MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7f619b649000

32647 mmap(0x7f619b6d7000, 57344, PROT_READ|PROT_WRITE,

MAP_PRIVATE $|MAP_FIXED|MAP_DENYWRITE$, 3, 0x25c000) = 0x7f619b6d7000

32647 mmap(0x7f619b6e5000, 12480, PROT_READ|PROT_WRITE,

MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f619b6e5000

32647 close(3) = 0

32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v3/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v2/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./x86_64/libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./libm.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libm.so.6", O RDONLY|O CLOEXEC) = 3

32647 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=907784, ...}, AT_EMPTY_PATH) = 0

32647 mmap(NULL, 909560, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f619b39c000

32647 mmap(0x7f619b3ac000, 471040, PROT_READ|PROT_EXEC,

 $MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000) = 0x7f619b3ac000$

32647 mmap(0x7f619b41f000, 368640, PROT_READ,

MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x83000) = 0x7f619b41f000

32647 mmap(0x7f619b479000, 8192, PROT READ|PROT WRITE,

 $MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000) = 0x7f619b479000$

32647 close(3) = 0

32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v3/libgcc_s.so.1",

O RDONLY|O CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT FDCWD, "./glibc-hwcaps/x86-64-v2/libgcc s.so.1",

O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

```
32647 openat(AT_FDCWD, "./tls/haswell/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
```

32647 openat(AT_FDCWD, "./tls/haswell/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./x86_64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3

32647 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=906528, ...}, AT_EMPTY_PATH) = 0

32647 mmap(NULL, 181160, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f619b36f000

32647 mmap(0x7f619b373000, 143360, PROT_READ|PROT_EXEC,

 $MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7f619b373000$

32647 mmap(0x7f619b396000, 16384, PROT_READ,

MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x27000) = 0x7f619b396000

32647 mmap(0x7f619b39a000, 8192, PROT_READ|PROT_WRITE,

MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2b000) = 0x7f619b39a000

32647 close(3) = 0

32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v3/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./glibc-hwcaps/x86-64-v2/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./tls/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/x86_64/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

32647 openat(AT_FDCWD, "./haswell/libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)

```
32647 openat(AT FDCWD, "./x86 64/libc.so.6", O RDONLY|O CLOEXEC) = -1 ENOENT
(No such file or directory)
32647 openat(AT_FDCWD, "./libc.so.6", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such
file or directory)
32647 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
784
32647 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=1922136, ...}, AT_EMPTY_PATH) =
784
32647 mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f619b18e000
32647 mmap(0x7f619b1b4000, 1396736, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x26000) = 0x7f619b1b4000
32647 mmap(0x7f619b309000, 339968, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x17b000) = 0x7f619b309000
32647 mmap(0x7f619b35c000, 24576, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1ce000) = 0x7f619b35c000
32647 mmap(0x7f619b362000, 53072, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7f619b362000
32647 close(3)
                        =0
32647 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f619b18c000
32647 mmap(NULL, 12288, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f619b189000
32647 \operatorname{arch\_prctl}(ARCH\_SET\_FS, 0x7f619b189740) = 0
32647 \text{ set\_tid\_address}(0x7f619b189a10) = 32647
32647 \text{ set robust list}(0x7f619b189a20, 24) = 0
32647 \operatorname{rseq}(0x7f619b18a060, 0x20, 0, 0x53053053) = 0
32647 \text{ mprotect}(0x7f619b35c000, 16384, PROT\_READ) = 0
32647 \text{ mprotect}(0x7f619b39a000, 4096, PROT\_READ) = 0
32647 \text{ mprotect}(0x7f619b479000, 4096, PROT\_READ) = 0
32647 write(1, "Input program code: -1-exit, 1-c"..., 54) = 54
32647 read(0, "-1\n", 1024)
                           =3
32647 write(1, "Exit\n", 5)
                          =5
32647 lseek(0, -1, SEEK_CUR)
                              = -1 ESPIPE (Illegal seek)
32647 exit_group(0)
                         =?
32647 +++  exited with 0 +++
```

Program 2

36814 execve("./Program 2", ["./Program 2"], 0x7ffee39257d8/* 26 vars */) = 0

```
36814 brk(NULL)
                         = 0x1fb8000
36814 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fb16b327000
36814 access("/etc/ld.so.preload", R OK) = -1 ENOENT (No such file or directory)
36814 openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
36814 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=26022, ...}, AT_EMPTY_PATH) = 0
36814 mmap(NULL, 26022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fb16b320000
36814 close(3)
                      =0
36814 openat(AT FDCWD, "/usr/local/lib64/libstdc++.so.6", O RDONLY|O CLOEXEC) = 3
36814 newfstatat(3, "", {st mode=S IFREG|0755, st size=2530008, ...}, AT EMPTY PATH) =
0
36814 mmap(NULL, 2543808, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fb16b0b2000
36814 mmap(0x7fb16b157000, 1216512, PROT_READ|PROT_EXEC.
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xa5000) = 0x7fb16b157000
36814 mmap(0x7fb16b280000, 581632, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1ce000) = 0x7fb16b280000
36814 mmap(0x7fb16b30e000, 57344, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x25c000) = 0x7fb16b30e000
36814 mmap(0x7fb16b31c000, 12480, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_ANONYMOUS, -1, 0) = 0x7fb16b31c000
                      = 0
36814 close(3)
36814 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libm.so.6", O RDONLY|O CLOEXEC) = 3
36814 newfstatat(3, "", {st mode=S IFREG|0644, st size=907784, ...}, AT EMPTY PATH) =
36814 mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fb16afd3000
36814 mmap(0x7fb16afe3000, 471040, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x10000) = 0x7fb16afe3000
36814 mmap(0x7fb16b056000, 368640, PROT READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x83000) = 0x7fb16b056000
36814 mmap(0x7fb16b0b0000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000) = 0x7fb16b0b0000
36814 close(3)
36814 openat(AT FDCWD, "/usr/local/lib64/libgcc s.so.1", O RDONLY|O CLOEXEC) = 3
36814 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=906528, ...}, AT_EMPTY_PATH) =
36814 mmap(NULL, 181160, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
```

0x7fb16afa6000

```
36814 mmap(0x7fb16afaa000, 143360, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x4000) = 0x7fb16afaa000
36814 mmap(0x7fb16afcd000, 16384, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x27000) = 0x7fb16afcd000
36814 mmap(0x7fb16afd1000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2b000) = 0x7fb16afd1000
36814 close(3)
36814 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC) = 3
784
36814 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=1922136, ...}, AT_EMPTY_PATH) =
784
36814 mmap(NULL, 1970000, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fb16adc5000
36814 mmap(0x7fb16adeb000, 1396736, PROT_READ|PROT_EXEC,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x26000) = 0x7fb16adeb000
36814 mmap(0x7fb16af40000, 339968, PROT_READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x17b000) = 0x7fb16af40000
36814 mmap(0x7fb16af93000, 24576, PROT_READ|PROT_WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x1ce000) = 0x7fb16af93000
36814 mmap(0x7fb16af99000, 53072, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fb16af99000
36814 close(3)
                        =0
36814 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fb16adc3000
36814 arch_prctl(ARCH_SET_FS, 0x7fb16adc4480) = 0
36814 \text{ set tid address}(0x7fb16adc4750) = 36814
36814 \text{ set\_robust\_list}(0x7fb16adc4760, 24) = 0
36814 \operatorname{rseq}(0x7fb16adc4da0, 0x20, 0, 0x53053053) = 0
36814 mprotect(0x7fb16af93000, 16384, PROT_READ) = 0
36814 \text{ mprotect}(0x7\text{fb}16\text{afd}1000, 4096, PROT\_READ) = 0
36814 \text{ mprotect}(0x7\text{fb}16b0b0000, 4096, PROT READ) = 0
36814 mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7fb16adc1000
36814 \text{ mprotect}(0x7\text{fb}16\text{b}30\text{e}000, 45056, PROT \text{ READ}) = 0
36814 \text{ mprotect}(0x403000, 4096, PROT READ) = 0
36814 \text{ mprotect}(0x7\text{fb}16\text{b}359000, 8192, PROT\_READ) = 0
36814 prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024,
rlim max=RLIM64 INFINITY) = 0
36814 munmap(0x7fb16b320000, 26022)
                                  =0
```

```
36814 futex(0x7fb16b31c73c, FUTEX WAKE PRIVATE, 2147483647) = 0
      36814 \text{ getrandom}(\text{``} x63\x19\xbd\x55\x1a\x7c\xe0\xab'', 8, GRND\_NONBLOCK) = 8
      36814 brk(NULL)
                                   = 0x1fb8000
      36814 write(1, "Input program code: -1-exit, 0-c"..., 76) = 76
      36814 read(0, "0\n", 1024)
                                    =2
      36814 munmap(0x7fb16b322000, 16400)
      36814 openat(AT_FDCWD, ''./libPr_2_real2.so'', O_RDONLY|O_CLOEXEC) = 3
      36814 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=15296, ...}, AT_EMPTY_PATH) = 0
      36814 getcwd("/workspaces/MAI_OS_Labs/lab4/src", 128) = 33
      36814 mmap(NULL, 16400, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
      0x7fb16b322000
      36814 mmap(0x7fb16b323000, 4096, PROT_READ|PROT_EXEC,
      MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1000) = 0x7fb16b323000
      36814 mmap(0x7fb16b324000, 4096, PROT READ,
      MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2000) = 0x7fb16b324000
      36814 mmap(0x7fb16b325000, 8192, PROT_READ|PROT_WRITE,
      MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2000) = 0x7fb16b325000
      36814 close(3)
                                 =0
      36814 \text{ mprotect}(0x7\text{fb}16\text{b}325000, 4096, PROT \text{ READ}) = 0
      36814 write(1, "Library is loaded\n", 18) = 18
      36814 write(1, "Input program code: -1-exit, 0-c"..., 76) = 76
      36814 read(0, "1 100\n", 1024)
      36814 write(1, "Teck realization of Pi is Wallis"..., 33) = 33
      36814 write(1, "0x1fca2d0 1 1Pi number: 100 3.14"..., 36) = 36
      36814 \text{ write}(1, "Input program code: -1-exit, 0-c"..., 76) = 76
      36814 read(0, "-1\n", 1024)
                                     =3
      36814 write(1, "Exit\n", 5)
                                    =5
      36814 munmap(0x7fb16b322000, 16400)
      36814 lseek(0, -1, SEEK_CUR)
                                        = -1 ESPIPE (Illegal seek)
                                   =?
      36814 exit_group(0)
      36814 +++ exited with 0 +++
     Лабораторная работа 5-7.
     23259 execve("./control", ["./control"], 0x7ffef2951018 /* 34 vars */) = 0
     23259 brk(NULL)
                                  = 0x564651045000
     23259 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7fcafb9e7000
     23259 access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
     23259 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
     23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=26550, ...}, AT_EMPTY_PATH) = 0
     23259 mmap(NULL, 26550, PROT READ, MAP PRIVATE, 3, 0) = 0x7fcafb9e0000
     23259 close(3)
```

```
23259 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libzmg.so.5", O RDONLY|O CLOEXEC) =
3
    23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=774184, ...}, AT EMPTY PATH) = 0
    23259 mmap(NULL, 772088, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb923000
    23259 mmap(0x7fcafb93c000, 487424, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x19000) = 0x7fcafb93c000
    23259 mmap(0x7fcafb9b3000, 147456, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x90000) = 0x7fcafb9b3000
    23259 mmap(0x7fcafb9d7000, 36864, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xb4000) = 0x7fcafb9d7000
    23259 close(3)
    23259 openat(AT_FDCWD, "/usr/local/lib64/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2530008, ...}, AT_EMPTY_PATH) =
0
    23259 mmap(NULL, 2543808, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb6b5000
    23259 mmap(0x7fcafb75a000, 1216512, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xa5000) = 0x7fcafb75a000
    23259 mmap(0x7fcafb883000, 581632, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1ce000) = 0x7fcafb883000
    23259 mmap(0x7fcafb911000, 57344, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x25c000) = 0x7fcafb911000
    23259 mmap(0x7fcafb91f000, 12480, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fcafb91f000
    23259 close(3)
    23259 openat(AT_FDCWD, "/usr/local/lib64/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
    23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=906528, ...}, AT EMPTY PATH) = 0
    23259 mmap(NULL, 181160, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb688000
    23259 mmap(0x7fcafb68c000, 143360, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x4000) = 0x7fcafb68c000
    23259 mmap(0x7fcafb6af000, 16384, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x27000) = 0x7fcafb6af000
    23259 mmap(0x7fcafb6b3000, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2b000) = 0x7fcafb6b3000
    23259 close(3)
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
    784
    23259 newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=1922136, ...}, AT EMPTY PATH) =
0
    784
    23259 mmap(NULL, 1970000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb4a7000
    23259 mmap(0x7fcafb4cd000, 1396736, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x26000) = 0x7fcafb4cd000
    23259 mmap(0x7fcafb622000, 339968, PROT READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0x17b000) = 0x7fcafb622000
```

```
23259 mmap(0x7fcafb675000, 24576, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1ce000) = 0x7fcafb675000
    23259 mmap(0x7fcafb67b000, 53072, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) = 0x7fcafb67b000
    23259 close(3)
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libbsd.so.0", O_RDONLY|O_CLOEXEC) = 3
    23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=84840, ...}, AT EMPTY PATH) = 0
    23259 mmap(NULL, 86224, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fcafb491000
    23259 mmap(0x7fcafb495000, 49152, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fcafb495000
    23259 mmap(0x7fcafb4a1000, 12288, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000) = 0x7fcafb4a1000
    23259 mmap(0x7fcafb4a4000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x13000) = 0x7fcafb4a4000
    23259 mmap(0x7fcafb4a6000, 208, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fcafb4a6000
    23259 close(3)
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libsodium.so.23",
O RDONLY|O| CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=363208, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fcafb48f000
    23259 mmap(NULL, 365576, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb435000
    23259 mprotect(0x7fcafb441000, 311296, PROT NONE) = 0
    23259 mmap(0x7fcafb441000, 233472, PROT_READ|PROT_EXEC,
MAP PRIVATE MAP FIXED MAP DENYWRITE, 3, 0xc000) = 0x7fcafb441000
    23259 mmap(0x7fcafb47a000, 73728, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x45000) = 0x7fcafb47a000
    23259 mmap(0x7fcafb48d000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x57000) = 0x7fcafb48d000
    23259 close(3)
                          =0
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpgm-5.3.so.0",
O_RDONLY|O_CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=306400, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 326096, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb3e5000
    23259 mmap(0x7fcafb3e9000, 167936, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x4000) = 0x7fcafb3e9000
    23259 mmap(0x7fcafb412000, 118784, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2d000) = 0x7fcafb412000
    23259 mmap(0x7fcafb42f000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x49000) = 0x7fcafb42f000
    23259 mmap(0x7fcafb431000, 14800, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fcafb431000
    23259 close(3)
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnorm.so.1", O_RDONLY|O_CLOEXEC) =
3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=489480, ...}, AT_EMPTY_PATH) = 0
```

```
23259 mmap(NULL, 1214976, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb2bc000
    23259 mprotect(0x7fcafb2c6000, 438272, PROT_NONE) = 023259 close(3)
    23259 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libmd.so.0", O RDONLY|O CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=47312, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE MAP ANONYMOUS, -1, 0) = 0x7fcafb188000
    23259 mmap(NULL, 49384, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7fcafb17b000
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=888080, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 890784, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb09c000
    23259 mmap(0x7fcafb0bf000, 389120, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x23000) = 0x7fcafb0bf000
    23259 mmap(0x7fcafb11e000, 294912, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x82000) = 0x7fcafb11e000
    23259 mmap(0x7fcafb166000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xc9000) = 0x7fcafb166000
    23259 close(3)
                          =0
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libk5crypto.so.3",
O RDONLY|O| CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=183048, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 180952, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb06f000
    23259 mmap(0x7fcafb073000, 106496, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fcafb073000
    23259 mmap(0x7fcafb08d000, 53248, PROT_READ.
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1e000) = 0x7fcafb08d000
    23259 mmap(0x7fcafb09a000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2b000) = 0x7fcafb09a000
    23259 close(3)
    23259 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libcom err.so.2",
O RDONLY|O| CLOEXEC) = 3
    23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=18344, ...}, AT EMPTY PATH) = 0
    23259 mmap(NULL, 20552, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb069000
    23259 mmap(0x7fcafb06b000, 4096, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fcafb06b000
    23259 mmap(0x7fcafb06c000, 4096, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fcafb06c000
    23259 mmap(0x7fcafb06d000, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x3000) = 0x7fcafb06d000
    23259 close(3)
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5support.so.0",
O RDONLY|O| CLOEXEC) = 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=52224, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fcafb067000
    23259 mmap(NULL, 54632, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb059000
```

```
23259 mmap(0x7fcafb05c000, 24576, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fcafb05c000
    23259 mmap(0x7fcafb062000, 12288, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x9000) = 0x7fcafb062000
    23259 mmap(0x7fcafb065000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xb000) = 0x7fcafb065000
    23259 close(3)
     23259 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libkeyutils.so.1",
O RDONLY|O| CLOEXEC) = 3
    23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=22448, ...}, AT EMPTY PATH) = 0
    23259 mmap(NULL, 24592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb052000
    23259 mmap(0x7fcafb054000, 8192, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000) = 0x7fcafb054000
    23259 mmap(0x7fcafb056000, 4096, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fcafb056000
    23259 mmap(0x7fcafb057000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000) = 0x7fcafb057000
    23259 close(3)
                              =0
    23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libresolv.so.2", O_RDONLY|O_CLOEXEC)
= 3
    23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=60328, ...}, AT_EMPTY_PATH) = 0
    23259 mmap(NULL, 68136, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7fcafb041000
    23259 mmap(0x7fcafb044000, 32768, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7fcafb044000
    23259 mmap(0x7fcafb04c000, 8192, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xb000) = 0x7fcafb04c000
    23259 mmap(0x7fcafb04e000, 8192, PROT READ|PROT WRITE,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xd000) = 0x7fcafb04e000
    23259 mmap(0x7fcafb050000, 6696, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7fcafb050000
    23259 close(3)
                              =0
    23259 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fcafb03f000
     23259 mmap(NULL, 12288, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fcafb03c000
    23259 arch_prctl(ARCH_SET_FS, 0x7fcafb03c9c0) = 0
    23259 \text{ set\_tid\_address}(0x7fcafb03cc90) = 23259
    23259 set robust list(0x7fcafb03cca0, 24) = 0
    23259 \operatorname{rseq}(0x7\operatorname{fcafb}03d2e0, 0x20, 0, 0x53053053) = 0
    23259 mprotect(0x7fcafb675000, 16384, PROT_READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb}04\text{e}000, 4096, PROT READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb}057000, 4096, PROT READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb065000}, 4096, PROT \text{ READ}) = 0
    23259 mprotect(0x7fcafb06d000, 4096, PROT_READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb}09a000, 4096, PROT READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb}166000, 53248, PROT READ) = 0
    23259 mprotect(0x7fcafb179000, 4096, PROT_READ) = 0
    23259 mprotect(0x7fcafb186000, 4096, PROT_READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb}267000, 4096, PROT READ) = 0
    23259 mprotect(0x7fcafb2b8000, 8192, PROT_READ) = 0
    23259 \text{ mprotect}(0x7\text{fcafb6b3000}, 4096, PROT \text{ READ}) = 0
```

```
23259 mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fcafb03a000
     23259 mprotect(0x7fcafb911000, 45056, PROT_READ) = 0
     23259 \text{ mprotect}(0x7\text{fcafb}331000, 12288, PROT READ) = 0
     23259 \text{ mprotect}(0x7\text{fcafb}42\text{f}000, 4096, PROT READ) = 0
     23259 mprotect(0x7fcafb48d000, 4096, PROT READ) = 0
     23259 mprotect(0x7fcafb4a4000, 4096, PROT_READ) = 0
     23259 mprotect(0x7fcafb9d7000, 32768, PROT_READ) = 0
     23259 \text{ mprotect}(0x56464f95d000, 4096, PROT READ) = 0
     23259 mprotect(0x7fcafba19000, 8192, PROT_READ) = 0
     23259 prlimit64(0, RLIMIT STACK, NULL, {rlim cur=8192*1024,
rlim_max=RLIM64_INFINITY}) = 0
     23259 munmap(0x7fcafb9e0000, 26550)
     23259 futex(0x7fcafb91f73c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
     23259 getrandom("\x0b\xc4\x4c\x94\x0b\xbe\x5b", 8, GRND_NONBLOCK) = 8
     23259 brk(NULL)
                                    = 0x564651045000
     23259 brk(0x564651066000)
                                        = 0x564651066000
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 1 (in [0], left {tv_sec=0,
tv nsec=0)
     23259 newfstatat(0, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT\_EMPTY\_PATH) = 0
     23259 read(0, "create 1 -1\n", 1024) = 12
     23259 clone(child_stack=NULL,
flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7fcafb03cc90) = 23337
     23337 set robust list(0x7fcafb03cca0, 24 < unfinished ...>
     23259 getpid( <unfinished ...>
     23337 < \dots \text{ set\_robust\_list resumed} > 0
     23259 <... getpid resumed>)
                                      = 23259
     23337 execve("./computing", ["computing", "1"], 0x7fffcaebd3b8 /* 34 vars */ <unfinished ...>
     23259 openat(AT FDCWD, "/sys/devices/system/cpu/online", O RDONLY|O CLOEXEC) = 3
     23259 read(3, "0-17\n", 1024)
     23259 close(3)
                                 = 0
     23259 openat(AT FDCWD, "/sys/devices/system/cpu/possible", O RDONLY|O CLOEXEC) = 3
     23259 read(3, "0-17\n", 1024)
                                      =5
     23259 close(3)
                                 =0
     23259 getpid()
                                 = 23259
     23259 sched_getaffinity(23259, 128, [0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17]) = 32
     23259 newfstatat(AT_FDCWD, "/etc/nsswitch.conf", {st_mode=S_IFREG|0644, st_size=494, ...},
0) = 0
     23259 newfstatat(AT_FDCWD, "/", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
     23259 openat(AT FDCWD, "/etc/nsswitch.conf", O RDONLY|O CLOEXEC) = 3
     23259 newfstatat(3, "", {st mode=S IFREG|0644, st size=494, ...}, AT EMPTY PATH) = 0
     23259 read(3, "# /etc/nsswitch.conf\n#\n# Example"..., 4096) = 494
     23259 read(3, "", 4096)
                                    =0
     23259 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=494, ...}, AT_EMPTY_PATH) = 0
     23259 close(3)
                                 = 0
     23259 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
     23337 <... execve resumed>)
     23259 newfstatat(3, "", <unfinished ...>
     23337 brk(NULL < unfinished ...>
```

```
23259 < ... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=26550, ...},
AT\_EMPTY\_PATH) = 0
     23337 <... brk resumed>)
                                    = 0x563e8abb5000
     23259 mmap(NULL, 26550, PROT READ, MAP PRIVATE, 3, 0 <unfinished ...>
     23337 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
     23259 <... mmap resumed>)
                                      = 0x7fcafb9e0000
     23337 <... mmap resumed>)
                                      = 0x7f66c058f000
     23259 close(3 < unfinished ...>
     23337 access("/etc/ld.so.preload", R_OK <unfinished ...>
     23259 <... close resumed>)
                                    =0
                                     = -1 ENOENT (No such file or directory)
     23337 <... access resumed>)
     23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3/libnss_db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC <unfinished ...>
                                     = -1 ENOENT (No such file or directory)
     23259 <... openat resumed>)
                                     =3
     23337 <... openat resumed>)
     23259 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v3", <unfinished
...>
     23337 newfstatat(3, "", <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=26550, ...},
AT EMPTY PATH) = 0
     23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2/libnss_db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 mmap(NULL, 26550, PROT_READ, MAP_PRIVATE, 3, 0 <unfinished ...>
     23259 <... openat resumed>)
                                     = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                     = 0x7f66c0588000
     23259 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2", <unfinished
...>
     23337 close(3 < unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... close resumed>)
                                    =0
     23259 openat(AT FDCWD, "/lib/x86 64-linux-gnu/tls/haswell/x86 64/libnss db.so.2",
O RDONLY|O CLOEXEC <unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libzmq.so.5", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23259 <... openat resumed>)
                                     = -1 ENOENT (No such file or directory)
     23337 <... openat resumed>)
                                     =3
     23259 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/x86_64", <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     = 832
     23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell/libnss_db.so.2",
O RDONLY|O CLOEXEC < unfinished ...>
     23337 newfstatat(3, "", <unfinished ...>
     23259 <... openat resumed>)
                                     = -1 ENOENT (No such file or directory)
     23337 < ... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=774184, ...},
AT EMPTY PATH) = 0
     23259 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/haswell", <unfinished ...>
     23337 mmap(NULL, 772088, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                     = 0x7f66c04cb000
```

```
23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/x86_64/libnss_db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 mmap(0x7f66c04e4000, 487424, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x19000 <unfinished ...>
                               = -1 ENOENT (No such file or directory)
     23259 <... openat resumed>)
     23337 <... mmap resumed>)
                                    = 0x7f66c04e4000
     23259 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/x86_64", <unfinished ...>
     23337 mmap(0x7f66c055b000, 147456, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x90000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66c055b000
     23259 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/tls/libnss_db.so.2",
O RDONLY|O CLOEXEC <unfinished ...>
     23337 mmap(0x7f66c057f000, 36864, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xb4000 <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
     23337 <... openat resumed>)
     23259 newfstatat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v3", <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     = 832
     23259 openat(AT FDCWD, "/lib/glibc-hwcaps/x86-64-v2/libnss db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 newfstatat(3, "", <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=84840, ...},
AT EMPTY PATH) = 0
     23259 newfstatat(AT_FDCWD, "/lib/glibc-hwcaps/x86-64-v2", <unfinished ...>
     23337 mmap(NULL, 86224, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
                                = 0x7f66c0039000
     23337 <... mmap resumed>)
     23259 openat(AT_FDCWD, "/lib/tls/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 mmap(0x7f66c003d000, 49152, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
     23259 <... openat resumed>)
                                   = -1 ENOENT (No such file or directory)
                                    = 0x7f66c003d000
     23337 <... mmap resumed>)
     23259 newfstatat(AT_FDCWD, "/lib/tls/haswell/x86_64", <unfinished ...>
     23337 mmap(0x7f66c0049000, 12288, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
                                    = 0x7f66c0049000
     23337 <... mmap resumed>)
     23259 openat(AT_FDCWD, "/lib/tls/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 mmap(0x7f66c004c000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x13000 <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66c004c000
     23259 newfstatat(AT_FDCWD, "/lib/tls/haswell", <unfinished ...>
     23337 mmap(0x7f66c004e000, 208, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66c004e000
```

```
23259 openat(AT_FDCWD, "/lib/tls/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 close(3 < unfinished ...>
     23259 <... openat resumed>)
                                   = -1 ENOENT (No such file or directory)
     23337 <... close resumed>)
                                   =0
     23259 newfstatat(AT_FDCWD, "/lib/tls/x86_64", <unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libsodium.so.23",
O RDONLY|O CLOEXEC <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... openat resumed>)
                                    =3
     23259 openat(AT FDCWD, "/lib/tls/libnss db.so.2", O RDONLY|O CLOEXEC <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 <... openat resumed>)
                                   = -1 ENOENT (No such file or directory)
     = 832
     23259 newfstatat(AT_FDCWD, "/lib/tls", <unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 < ... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=363208, ...},
AT\_EMPTY\_PATH) = 0
     23259 openat(AT FDCWD, "/lib/haswell/x86 64/libnss db.so.2", O RDONLY|O CLOEXEC
<unfinished ...>
     23337 mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
                              = -1 ENOENT (No such file or directory)
= 0x7f66c0037000
     23259 <... openat resumed>)
     23337 <... mmap resumed>)
     23259 newfstatat(AT_FDCWD, "/lib/haswell/x86_64", <unfinished ...>
     23337 mmap(NULL, 365576, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66bffdd000
     23259 openat(AT_FDCWD, "/lib/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC
     23337 <... close resumed>)
                                   =0
     23259 newfstatat(AT_FDCWD, "/lib", <unfinished ...>
     23337 openat(AT FDCWD, "/lib/x86 64-linux-gnu/libpgm-5.3.so.0",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23259 <... newfstatat resumed>{st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
     23337 <... openat resumed>)
                                   =3
     23259 openat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3/libnss_db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 <... openat resumed>)
                                   = -1 ENOENT (No such file or directory)
     = 832
     23259 newfstatat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v3", <unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=306400, ...},
AT EMPTY PATH) = 0
     23259 openat(AT FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2/libnss db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 mmap(NULL, 326096, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23259 <... openat resumed>) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                   = 0x7f66bff8d000
```

```
23259 newfstatat(AT_FDCWD, "/usr/lib/glibc-hwcaps/x86-64-v2", <unfinished ...>
     23337 mmap(0x7f66bff91000, 167936, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
                                     = 0x7f66bff91000
     23337 <... mmap resumed>)
     23259 openat(AT_FDCWD, "/usr/lib/tls/haswell/x86_64/libnss_db.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 mmap(0x7f66bffba000, 118784, PROT READ.
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x2d000 <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                     = 0x7f66bffba000
     23259 newfstatat(AT_FDCWD, "/usr/lib/tls/haswell/x86_64", <unfinished ...>
     23337 mmap(0x7f66bffd7000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x49000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                     = 0x7f66bffd7000
     23259 openat(AT_FDCWD, "/usr/lib/tls/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 mmap(0x7f66bffd9000, 14800, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
                                     = 0x7f66bffd9000
     23337 <... mmap resumed>)
     23259 newfstatat(AT FDCWD, "/usr/lib/tls/haswell", <unfinished ...>
     23337 close(3 < unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... close resumed>)
                                    =0
     23259 openat(AT_FDCWD, "/usr/lib/tls/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnorm.so.1", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23259 <... openat resumed>)
                                     = -1 ENOENT (No such file or directory)
     23337 <... openat resumed>)
                                     =3
     23259 newfstatat(AT_FDCWD, "/usr/lib/tls/x86_64", <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     832) = 832
     23259 openat(AT FDCWD, "/usr/lib/tls/libnss db.so.2", O RDONLY|O CLOEXEC < unfinished
...>
     23337 newfstatat(3, "", <unfinished ...>
                                   = -1 ENOENT (No such file or directory)
     23259 <... openat resumed>)
     23337 < ... newfstatat resumed>{st mode=S IFREG|0644, st size=489480, ...},
AT EMPTY PATH) = 0
     23259 newfstatat(AT_FDCWD, "/usr/lib/tls", <unfinished ...>
     23337 mmap(NULL, 1214976, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                     = 0x7f66bfe64000
     23259 openat(AT FDCWD, "/usr/lib/haswell/x86 64/libnss db.so.2",
O RDONLY|O CLOEXEC <unfinished ...>
     23337 mprotect(0x7f66bfe6e000, 438272, PROT_NONE <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
                                     =0
     23337 <... mprotect resumed>)
     23259 newfstatat(AT_FDCWD, "/usr/lib/haswell/x86_64", <unfinished ...>
```

```
23337 mmap(0x7f66bfe6e000, 278528, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xa000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
                                    = 0x7f66bfe6e000
     23337 <... mmap resumed>)
     23259 openat(AT_FDCWD, "/usr/lib/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23337 mmap(0x7f66bfeb2000, 155648, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4e000 <unfinished ...>
                                = -1 ENOENT (No such file or directory)
     23259 <... openat resumed>)
     23337 <... mmap resumed>)
                                    = 0x7f66bfeb2000
     23259 newfstatat(AT FDCWD, "/usr/lib/haswell", <unfinished ...>
     23337 mmap(0x7f66bfed9000, 16384, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x74000 <unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66bfed9000
     23259 openat(AT FDCWD, "/usr/lib/x86 64/libnss db.so.2", O RDONLY|O CLOEXEC
<unfinished ...>
     23337 mmap(0x7f66bfedd000, 719360, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0 <unfinished ...>
     23259 <... openat resumed>)
                                 = -1 ENOENT (No such file or directory)
     23337 <... mmap resumed>)
                                    = 0x7f66bfedd000
     23259 newfstatat(AT_FDCWD, "/usr/lib/x86_64", <unfinished ...>
     23337 close(3 < unfinished ...>
     23259 < \dots newfstatat resumed>0x7fffcaeb9fd0, 0) = -1 ENOENT (No such file or directory)
     23337 <... close resumed>)
     23259 openat(AT_FDCWD, "/usr/lib/libnss_db.so.2", O_RDONLY|O_CLOEXEC < unfinished
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgssapi_krb5.so.2",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23259 <... openat resumed>)
                                    = -1 ENOENT (No such file or directory)
     23337 <... openat resumed>)
                                    =3
     23259 newfstatat(AT_FDCWD, "/usr/lib", <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 <... newfstatat resumed>{st mode=S IFDIR|0755, st size=4096, ...}, 0) = 0
     = 832
     23259 munmap(0x7fcafb9e0000, 26550 <unfinished ...>
     23337 newfstatat(3, "", <unfinished ...>
     23259 <... munmap resumed>)
                                      =0
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=338680, ...},
AT\_EMPTY\_PATH) = 0
     23259 openat(AT_FDCWD, "/etc/protocols", O_RDONLY|O_CLOEXEC <unfinished ...>
     23337 mmap(NULL, 337152, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
     23259 <... openat resumed>)
                                    =3
     23337 <... mmap resumed>)
                                    = 0x7f66bfe11000
     23259 newfstatat(3, "", <unfinished ...>
     23337 mmap(0x7f66bfe1d000, 221184, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xc000 <unfinished ...>
     23259 < ... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=3144, ...},
AT_EMPTY_PATH) = 0
     23337 <... mmap resumed>)
                                    = 0x7f66bfe1d000
     23259 lseek(3, 0, SEEK SET < unfinished ...>
     23337 mmap(0x7f66bfe53000, 53248, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x42000 <unfinished ...>
```

```
23259 <... lseek resumed>)
                                   =0
     23337 <... mmap resumed>)
                                     = 0x7f66bfe53000
     23259 read(3, <unfinished ...>
     23337 mmap(0x7f66bfe60000, 16384, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4f000 <unfinished ...>
     23259 <... read resumed>"# Internet (IP) protocols\n#\n# Up"..., 4096) = 3144
                                     = 0x7f66bfe60000
     23337 <... mmap resumed>)
     23259 read(3, <unfinished ...>
     23337 close(3 < unfinished ...>
     23259 <... read resumed>"", 4096)
                                     =0
     23337 <... close resumed>)
     23259 close(3 < unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23259 <... close resumed>)
                                   =0
     23337 <... openat resumed>)
                                    =3
     23259 eventfd2(0, EFD_CLOEXEC < unfinished ...>
     23337 read(3, <unfinished ...>
     23259 < ... eventfd2 resumed > )
                                     =3
     = 832
     23259 fcntl(3, F_GETFL < unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
     23259 <... fcntl resumed>)
                                   = 0x2 (flags O_RDWR)
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=907784, ...},
AT\_EMPTY\_PATH) = 0
     23259 fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
     23337 mmap(NULL, 909560, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0
<unfinished ...>
     23259 <... fcntl resumed>)
     23337 <... mmap resumed>)
                                     = 0x7f66bfd32000
     23259 fcntl(3, F_GETFL < unfinished ...>
     23337 mmap(0x7f66bfd42000, 471040, PROT READ|PROT EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x10000 <unfinished ...>
     23259 <... fcntl resumed>)
                                   = 0x802 (flags O RDWR|O NONBLOCK)
     23337 <... mmap resumed>)
                                     = 0x7f66bfd42000
     23259 fcntl(3, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
     23337 mmap(0x7f66bfdb5000, 368640, PROT READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x83000 <unfinished ...>
     23259 <... fcntl resumed>)
                                  = 0
     23337 <... mmap resumed>)
                                     = 0x7f66bfdb5000
     23259 getpid( <unfinished ...>
     23337 mmap(0x7f66bfe0f000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xdc000 <unfinished ...>
     23259 <... getpid resumed>)
                                   = 23259
     23337 <... mmap resumed>)
                                    = 0x7f66bfe0f000
     23259 getpid( <unfinished ...>
     23337 close(3 < unfinished ...>
     23259 <... getpid resumed>)
                                   = 23259
     23337 <... close resumed>)
     23259 getrandom( <unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libmd.so.0", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23259 < ... getrandom
resumed>"x7a\xb6\x91\x09\x26\x9b\xc2\x19\x0b\x15\x50\x15\xf1\x5f\xad\x86", 16, 0) = 16
```

```
23337 <... openat resumed>)
                                  =3
    23259 getrandom( <unfinished ...>
    23337 read(3, <unfinished ...>
    23259 < ... getrandom
resumed>"\xad\xde\x6f\xf4\x6f\x34\x78\x63\x43\x45\xfa\x8b\xbf\xc4\x35\xbb", 16, 0) = 16
    = 832
    23259 eventfd2(0, EFD_CLOEXEC < unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
    23259 <... eventfd2 resumed>)
                                   =4
    23337 < ... newfstatat resumed>{st mode=S IFREG|0644, st size=47312, ...},
AT\_EMPTY\_PATH) = 0
    23259 fcntl(4, F GETFL < unfinished ...>
    23337 mmap(NULL, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
    23259 <... fcntl resumed>)
                                = 0x2 (flags O RDWR)
    23337 <... mmap resumed>)
                                   = 0x7f66bfd30000
    23259 fcntl(4, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
    23337 mmap(NULL, 49384, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
    23259 <... fcntl resumed>)
                                 =0
    23337 <... mmap resumed>)
                                   = 0x7f66bfd23000
    23259 fcntl(4, F GETFL < unfinished ...>
    23337 mmap(0x7f66bfd25000, 28672, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000 <unfinished ...>
    23259 <... fcntl resumed>)
                                 = 0x802 (flags O_RDWR|O_NONBLOCK)
    23337 <... mmap resumed>)
                                   = 0x7f66bfd25000
    23259 fcntl(4, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
    23337 mmap(0x7f66bfd2c000, 8192, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x9000 <unfinished ...>
    23259 <... fcntl resumed>)
                              = 0
    23337 <... mmap resumed>)
                                   = 0x7f66bfd2c000
    23259 getpid( <unfinished ...>
    23337 mmap(0x7f66bfd2e000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xa000 <unfinished ...>
    23259 <... getpid resumed>)
                                  = 23259
                                   = 0x7f66bfd2e000
    23337 <... mmap resumed>)
    23259 epoll create1(EPOLL CLOEXEC < unfinished ...>
    23337 close(3 < unfinished ...>
    23259 <... epoll_create1 resumed>) = 5
    23337 <... close resumed>)
    23259 epoll_ctl(5, EPOLL_CTL_ADD, 4, {events=0, data={u32=1359313664,
u64=94860007013120}} <unfinished ...>
    23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC
<unfinished ...>
    23259 <... epoll_ctl resumed>)
                                  =0
    23337 <... openat resumed>)
                                  =3
    23259 epoll_ctl(5, EPOLL_CTL_MOD, 4, {events=EPOLLIN, data={u32=1359313664,
u64=94860007013120}} < unfinished ...>
    23337 read(3, <unfinished ...>
    23259 <... epoll_ctl resumed>)
                                   =0
    = 832
    23259 getpid( <unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
```

```
23259 <... getpid resumed>)
                                    = 23259
     23337 <... newfstatat resumed>{st_mode=S_IFREG|0644, st_size=14480, ...},
AT\_EMPTY\_PATH) = 0
     23259 rt_sigaction(SIGRT_1, {sa_handler=0x7fcafb52d6a0, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_RESTART|SA_SIGINFO,
sa restorer=0x7fcafb4e3050}, <unfinished ...>
     23337 mmap(NULL, 16400, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23259 < \dots \text{ rt signation resumed} > \text{NULL}, 8 = 0
     23337 <... mmap resumed>)
                                     = 0x7f66bfd1e000
     23259 rt sigprocmask(SIG UNBLOCK, [RTMIN RT 1], <unfinished ...>
     23337 mmap(0x7f66bfd1f000, 4096, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1000 <unfinished ...>
     23259 <... rt_sigprocmask resumed>NULL, 8) = 0
     23337 <... mmap resumed>)
                                     = 0x7f66bfd1f000
     23259 mmap(NULL, 8392704, PROT NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0 < unfinished ...>
     23337 mmap(0x7f66bfd20000, 4096, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000 <unfinished ...>
     23259 <... mmap resumed>)
                                     = 0x7fcafa839000
     23337 <... mmap resumed>)
                                     = 0x7f66bfd20000
     23259 mprotect(0x7fcafa83a000, 8388608, PROT_READ|PROT_WRITE < unfinished ...>
     23337 mmap(0x7f66bfd21000, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000 <unfinished ...>
     23259 <... mprotect resumed>)
                                     =0
     23337 <... mmap resumed>)
                                     = 0x7f66bfd21000
     23259 rt_sigprocmask(SIG_BLOCK, ~[], <unfinished ...>
     23337 close(3 < unfinished ...>
     23259 < \dots \text{ rt\_sigprocmask resumed} > [], 8) = 0
     23337 <... close resumed>)
     23259
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLO
NE SYSVSEM|CLONE SETTLS|CLONE PARENT SETTID|CLONE CHILD CLEARTID,
child tid=0x7fcafb039990, parent tid=0x7fcafb039990, exit signal=0, stack=0x7fcafa839000,
stack size=0x7ffd00, tls=0x7fcafb0396c0} <unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5.so.3", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23259 < ... clone3 resumed > = \{parent tid = [23338]\}, 88\} = 23338
     23337 <... openat resumed>)
     23259 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
     23338 rseq(0x7fcafb039fe0, 0x20, 0, 0x53053053 <unfinished ...>
     23259 <... rt_sigprocmask resumed>NULL, 8) = 0
     23337 read(3, <unfinished ...>
     23259 eventfd2(0, EFD_CLOEXEC < unfinished ...>
     23338 < ... rseq resumed>)
     23259 <... eventfd2 resumed>)
                                     =6
     = 832
     23259 fcntl(6, F_GETFL < unfinished ...>
     23338 set_robust_list(0x7fcafb0399a0, 24 <unfinished ...>
     23259 <... fcntl resumed>)
                                   = 0x2 (flags O_RDWR)
     23337 newfstatat(3, "", <unfinished ...>
     23259 fcntl(6, F_SETFL, O_RDWR|O_NONBLOCK <unfinished ...>
     23338 <... set_robust_list resumed>) = 0
     23259 <... fcntl resumed>)
                                   =0
```

```
23337 <... newfstatat resumed>{st mode=S IFREG|0644, st size=888080, ...},
AT\_EMPTY\_PATH) = 0
       23259 fcntl(6, F_GETFL < unfinished ...>
       23338 rt_sigprocmask(SIG_SETMASK, [], <unfinished ...>
                                                      = 0x802 (flags O RDWR|O NONBLOCK)
       23259 <... fcntl resumed>)
       23337 mmap(NULL, 890784, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
       23259 < ... recvmsg resumed>{msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg iov=[{iov base=[[{nlmsg len=76,
nlmsg type=RTM NEWADDR, nlmsg flags=NLM F MULTI, nlmsg seq=1734028239,
nlmsg_pid=23259}, {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}, inet_addr("127.0.0.1")], [{nla_len=8, nla_type=IFA_LOCAL},
inet_addr("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=8207426, tstamp=8207426}]]],
[{nlmsg len=88, nlmsg type=RTM NEWADDR, nlmsg flags=NLM F MULTI,
nlmsg_seq=1734028239, nlmsg_pid=23259}, {ifa_family=AF_INET, ifa_prefixlen=16,
ifa flags=IFA F PERMANENT, ifa scope=RT SCOPE UNIVERSE,
ifa_index=if_nametoindex("eth0")}, [[{nla_len=8, nla_type=IFA_ADDRESS},
inet_addr("172.17.0.2")], [{nla_len=8, nla_type=IFA_LOCAL}, inet_addr("172.17.0.2")], [{nla_type=IFA_LOCAL}, inet_addr("172.17.0.2")], [{nla_ty
nla_type=IFA_BROADCAST}, inet_addr("172.17.255.255")], [{nla_len=9, nla_type=IFA_LABEL},
"eth0"], [{nla_len=8, nla_type=IFA_FLAGS}, IFA_F_PERMANENT], [{nla_len=20,
nla type=IFA CACHEINFO}, {ifa prefered=4294967295, ifa valid=4294967295, cstamp=8207446,
tstamp=8207446}]]]], iov_len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) = 164
        = 832
       23259 recvmsg(9, <unfinished ...>
       23337 newfstatat(3, "", <unfinished ...>
       23259 < ... recvmsg resumed>{msg_name={sa_family=AF_NETLINK, nl_pid=0,
nl groups=00000000}, msg namelen=12, msg_iov=[{iov_base=[{nlmsg_len=72,
nlmsg type=RTM NEWADDR, nlmsg flags=NLM F MULTI, nlmsg seq=1734028239,
nlmsg_pid=23259}, {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}, inet_pton(AF_INET6, "::1")], [{nla_len=20,
nla type=IFA CACHEINFO}, {ifa prefered=4294967295, ifa valid=4294967295, cstamp=8207426,
tstamp=8207426}], [{nla_len=8, nla_type=IFA_FLAGS}, IFA_F_PERMANENT]]], iov_len=4096}],
msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) = 72
        23337 < ... newfstatat resumed>{st mode=S IFREG|0644, st size=18344, ...},
AT_EMPTY_PATH) = 0
       23259 recvmsg(9, <unfinished ...>
       23337 mmap(NULL, 20552, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
        23259 < ... recvmsg resumed > {msg name = {sa family = AF NETLINK, nl pid = 0,
nl_groups=00000000}, msg_namelen=12, msg_iov=[{iov_base=[{nlmsg_len=20,
nlmsg_type=NLMSG_DONE, nlmsg_flags=NLM_F_MULTI, nlmsg_seq=1734028239,
nlmsg_pid=23259}, 0], iov_len=4096}], msg_iovlen=1, msg_controllen=0, msg_flags=0}, 0) = 20
        23337 <... mmap resumed>)
                                                         = 0x7f66bfc11000
       23259 close(9 < unfinished ...>
       23337 mmap(0x7f66bfc13000, 4096, PROT READ|PROT EXEC.
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000 <unfinished ...>
       23259 <... close resumed>)
                                                      =0
       23337 <... mmap resumed>)
                                                         = 0x7f66bfc13000
       23259 socket(AF INET, SOCK STREAM|SOCK CLOEXEC, IPPROTO TCP <unfinished ...>
       23337 mmap(0x7f66bfc14000, 4096, PROT_READ,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x3000 <unfinished ...>
```

```
23259 <... socket resumed>)
                                     =9
     23337 <... mmap resumed>)
                                      = 0x7f66bfc14000
     23259 setsockopt(9, SOL_SOCKET, SO_REUSEADDR, [1], 4 < unfinished ...>
     23337 mmap(0x7f66bfc15000, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000 <unfinished ...>
     23259 <... setsockopt resumed>)
                                       =0
     23337 <... mmap resumed>)
                                      = 0x7f66bfc15000
     23259 bind(9, {sa family=AF INET, sin port=htons(5556), sin addr=inet addr("127.0.0.1")}, 16
<unfinished ...>
     23337 close(3 < unfinished ...>
     23259 <... bind resumed>)
                                     =0
     23337 <... close resumed>)
                                     =0
     23259 listen(9, 100 < unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkrb5support.so.0",
O_RDONLY|O_CLOEXEC <unfinished ...>
     23259 <... listen resumed>)
     23337 <... openat resumed>)
     23259 getsockname(9, <unfinished ...>
     23337 read(3, <unfinished ...>
     23259 < ... getsockname resumed > { sa_family = AF_INET, sin_port = htons(5556),
\sin_addr = inet_addr("127.0.0.1")\}, [128 => 16]) = 0
     = 832
     23259 getsockname(9, <unfinished ...>
     23337 newfstatat(3, "", <unfinished ...>
     23259 < ... getsockname resumed>{sa_family=AF_INET, sin_port=htons(5556),
\sin_{\text{addr}} = \arctan_{\text{addr}} ("127.0.0.1") \}, [128 => 16]) = 0
     23337 < ... newfstatat resumed>{st mode=S IFREG|0644, st size=52224, ...},
AT\_EMPTY\_PATH) = 0
     23259 getpid( <unfinished ...>
     23337 mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP_PRIVATE|MAP_ANONYMOUS, -1, 0 <unfinished ...>
     23259 <... getpid resumed>)
                                     = 23259
     23337 <... mmap resumed>)
                                      = 0x7f66bfc0f000
     23259 write(6, "1\0\0\0\0\0\0", 8 <unfinished ...>
     23337 mmap(NULL, 54632, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23259 <... write resumed>)
                                     = 8
     23339 < ... epoll_wait resumed>[{events=EPOLLIN, data={u32=1359317584,
u64=94860007017040}], 256, -1) = 1
     23259 getpid( <unfinished ...>
     23337 <... mmap resumed>)
                                      = 0x7f66bfc01000
     23259 <... getpid resumed>)
                                     = 23259
     23339 getpid( <unfinished ...>
     23259 write(8, "\1\0\0\0\0\0\0\0", 8 < unfinished ...>
     23337 mmap(0x7f66bfc04000, 24576, PROT_READ|PROT_EXEC,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x3000 <unfinished ...>
     23259 <... write resumed>)
                                     =8
     23339 <... getpid resumed>)
                                     = 23259
     23259 newfstatat(1, "", <unfinished ...>
     23337 <... mmap resumed>)
                                      = 0x7f66bfc04000
     23259 < \dots  newfstatat resumed>{st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...},
AT EMPTY PATH) = 0
     23339 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
     23259 write(1, "Ok: 23337\n", 10 < unfinished ...>
```

```
23337 mmap(0x7f66bfc0a000, 12288, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x9000 <unfinished ...>
     23259 <... write resumed>)
                                  = 10
                                  = 1 ([{fd=6, revents=POLLIN}])
     23339 <... poll resumed>)
     23259 clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=100000000}, <unfinished
...>
     23337 <... mmap resumed>)
                                    = 0x7f66bfc0a000
     23339 getpid( <unfinished ...>
     23337 mmap(0x7f66bfc0d000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xb000 <unfinished ...>
     23339 <... getpid resumed>)
                                   = 23259
     23337 <... mmap resumed>)
                                    = 0x7f66bfc0d000
     23339 read(6, <unfinished ...>
     23337 close(3 < unfinished ...>
     23339 < \dots \text{ read resumed} > "\1\0\0\0\0\0\0\0\, 8) = 8
     23337 <... close resumed>)
     23339 mmap(NULL, 134217728, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0 <unfinished ...>
     23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libkeyutils.so.1", O_RDONLY|O_CLOEXEC
<unfinished ...>
     23339 <... mmap resumed>)
                                    = 0x7fcaf2038000
     23337 <... openat resumed>)
                                    =3
     23339 munmap(0x7fcaf2038000, 33325056 < unfinished ...>
     23337 read(3, <unfinished ...>
     23339 <... munmap resumed>)
                                     =0
     = 832
     23339 munmap(0x7fcaf8000000, 33783808 < unfinished ...>
    23337 newfstatat(3, "", <unfinished ...>
     23339 <... munmap resumed>)
     23337 < ... newfstatat resumed>{st mode=S IFREG|0644, st size=22448, ...},
AT\_EMPTY\_PATH) = 0
     23339 mprotect(0x7fcaf4000000, 135168, PROT READ|PROT WRITE < unfinished ...>
     23337 mmap(NULL, 24592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0
<unfinished ...>
     23339 <... mprotect resumed>)
                                     =0
     23337 <... mmap resumed>)
                                    = 0x7f66bfbfa000
     23339 epoll ctl(7, EPOLL CTL ADD, 9, {events=0, data={u32=4093643632,
u64=140509653764976}} < unfinished ...>
     23337 mmap(0x7f66bfbfc000, 8192, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x2000 <unfinished ...>
     23339 <... epoll_ctl resumed>)
     23337 <... mmap resumed>)
                                    = 0x7f66bfbfc000
     23339 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=4093643632,
u64=140509653764976}} < unfinished ...>
     23337 mmap(0x7f66bfbfe000, 4096, PROT_READ,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
     23339 <... epoll_ctl resumed>)
                                    =0
     23337 <... mmap resumed>)
                                    = 0x7f66bfbfe000
     23339 getpid( <unfinished ...>
     23337 mmap(0x7f66bfbff000, 8192, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x4000 <unfinished ...>
     23339 <... getpid resumed>)
                                   = 23259
     23337 <... mmap resumed>)
                                    = 0x7f66bfbff000
     23339 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
```

```
23337 close(3 < unfinished ...>
    23339 <... poll resumed>)
                                  = 0 (Timeout)
    23337 <... close resumed>)
                                   =0
    23339 epoll wait(7, <unfinished ...>
    23337 openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libresolv.so.2", O_RDONLY|O_CLOEXEC)
=3
    23337 newfstatat(3, "", {st mode=S IFREG|0644, st size=60328, ...}, AT EMPTY PATH) = 0
    23337 mmap(NULL, 68136, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) =
0x7f66bfbe9000
     23337 mmap(0x7f66bfbec000, 32768, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) = 0x7f66bfbec000
     23337 mmap(0x7f66bfbf4000, 8192, PROT READ,
MAP\_PRIVATE|MAP\_FIXED|MAP\_DENYWRITE, 3, 0xb000) = 0x7f66bfbf4000
     23337 mmap(0x7f66bfbf6000, 8192, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0xd000) = 0x7f66bfbf6000
     23337 mmap(0x7f66bfbf8000, 6696, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f66bfbf8000
    23337 close(3)
    23337 mmap(NULL, 8192, PROT READ|PROT WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7f66bfbe7000
     23337 mmap(NULL, 12288, PROT_READ|PROT_WRITE,
MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7f66bfbe4000
    23337 arch_prctl(ARCH_SET_FS, 0x7f66bfbe49c0) = 0
    23337 set_tid_address(0x7f66bfbe4c90) = 23337
    23337 \text{ set\_robust\_list}(0x7f66bfbe4ca0, 24) = 0
    23337 \operatorname{rseq}(0x7f66bfbe52e0, 0x20, 0, 0x53053053) = 0
    23337 mprotect(0x7f66c021d000, 16384, PROT READ) = 0
    23337 mprotect(0x7f66bfbf6000, 4096, PROT_READ) = 0
    23337 mprotect(0x7f66bfbff000, 4096, PROT READ) = 0
    23337 mprotect(0x563e896f6000, 4096, PROT READ) = 0
    23337 mprotect(0x7f66c05c1000, 8192, PROT READ) = 0
    23337 prlimit64(0, RLIMIT STACK, NULL, {rlim cur=8192*1024,
rlim max=RLIM64 INFINITY}) = 0
    23337 munmap(0x7f66c0588000, 26550)
                                         =0
    23337 futex(0x7f66c04c773c, FUTEX_WAKE_PRIVATE, 2147483647) = 0
    23337 getrandom("\x9f\x85\x90\xfb\x76\x83\xaf\x2f", 8, GRND_NONBLOCK) = 8
    23337 brk(NULL)
                                 = 0x563e8abb5000
    23337 brk(0x563e8abd6000)
                                     = 0x563e8abd6000
    23337 getpid()
                              = 233337
    23337 openat(AT_FDCWD, "/sys/devices/system/cpu/online", O_RDONLY|O_CLOEXEC) = 3
    23337 read(3, "0-17\n", 1024)
    23337 close(3)
    23337 openat(AT_FDCWD, "/sys/devices/system/cpu/possible", O_RDONLY|O_CLOEXEC) = 3
    23337 read(3, "0-17\n", 1024)
    23337 close(3)
                              = 0
    23337 getpid()
                              = 233337
    23337 sched_getaffinity(23337, 128, [0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17]) = 32
    23337 newfstatat(AT_FDCWD, "/etc/nsswitch.conf", {st_mode=S_IFREG|0644, st_size=494, ...},
0) = 0
     23337 newfstatat(AT_FDCWD, "/", {st_mode=S_IFDIR|0755, st_size=4096, ...}, 0) = 0
    23337 openat(AT_FDCWD, "/etc/nsswitch.conf", O_RDONLY|O_CLOEXEC) = 3
    23337 newfstatat(3, "", {st mode=S IFREG|0644, st size=494, ...}, AT EMPTY PATH) = 0
    23337 read(3, "# /etc/nsswitch.conf\n#\n# Example"..., 4096) = 494
    23337 read(3, "", 4096)
```

```
23337 newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=494, ...}, AT_EMPTY_PATH) = 0
     23337 close(3)
     23337 openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
     23337 newfstatat(3, "", {st mode=S IFREG|0644, st size=26550, ...}, AT EMPTY PATH) = 0
     23337 mmap(NULL, 26550, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f66c0588000
     23337 close(3)
                                  =0
     23337 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)
     23337 newfstatat(AT FDCWD, "/lib/x86 64-linux-gnu/glibc-hwcaps/x86-64-v3",
0x7fff2a043c60, 0) = -1 ENOENT (No such file or directory)
     23337 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)
     23337 newfstatat(AT_FDCWD, "/lib/x86_64-linux-gnu/glibc-hwcaps/x86-64-v2",
0x7fff2a043c60, 0) = -1 ENOENT (No such file or directory)
     23341 <... getpid resumed>)
                                      = 233337
     23339 <... epoll ctl resumed>)
                                       =0
     23341 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
     23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN|EPOLLOUT,
data={u32=4093643728, u64=140509653765072}} <unfinished ...>
     23341 <... poll resumed>)
                                     = 1 ([{fd=6, revents=POLLIN}])
     23339 <... epoll ctl resumed>)
                                       =0
     23341 getpid( <unfinished ...>
     23339 recvfrom(10, <unfinished ...>
     23341 <... getpid resumed>)
                                      = 233337
     23339 <... recvfrom resumed>0x7fcaf40012f8, 12, 0, NULL, NULL) = -1 EAGAIN (Resource
temporarily unavailable)
     23341 read(6, <unfinished ...>
     23339 getpid( <unfinished ...>
     23341 < \dots \text{ read resumed} > "\1\0\0\0\0\0\0\0\, 8) = 8
     23339 <... getpid resumed>)
                                      = 23259
     23341 epoll ctl(7, EPOLL CTL ADD, 9, {events=0, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
     23339 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
     23341 <... epoll ctl resumed>)
                                       =0
     23339 <... poll resumed>)
                                     = 0 (Timeout)
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
     23339 epoll wait(7, <unfinished ...>
     23341 <... epoll_ctl resumed>)
                                       =0
     23339 < ... epoll_wait resumed>[{events=EPOLLOUT, data={u32=4093643728,
u64=140509653765072}], 256, 29999) = 1
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN|EPOLLOUT,
data={u32=3087012912, u64=140079150404656}} <unfinished ...>
     23339 sendto(10, "\377\0\0\0\0\0\0\0\\1\177", 10, 0, NULL, 0 < unfinished ...>
     23341 <... epoll ctl resumed>)
                                       =0
     23339 <... sendto resumed>)
                                       = 10
     23341 recvfrom(9, <unfinished ...>
     23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}} < unfinished ...>
     23341 < ... recvfrom resumed > "\377\0\0\0\0\0\0\0\0\1\177", 12, 0, NULL, NULL) = 10
     23339 <... epoll_ctl resumed>)
                                       =0
     23341 recvfrom(9, <unfinished ...>
     23339 epoll wait(7, <unfinished ...>
     23341 <... recvfrom resumed>0x7f66b8001bf2, 2, 0, NULL, NULL) = -1 EAGAIN (Resource
temporarily unavailable)
```

```
23341 getpid()
                            = 233337
    23341 poll([\{fd=6, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
    23341 epoll_wait(7, [{events=EPOLLOUT, data={u32=3087012912, u64=140079150404656}}],
256, 29998) = 1
    23341 sendto(9, "\377\0\0\0\0\0\0\0\1\177\3", 11, 0, NULL, 0) = 11
    23339 <... epoll wait resumed>[{events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}], 256, 29998) = 1
    23341 epoll ctl(7, EPOLL CTL MOD, 9, {events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
    23339 recvfrom(10, <unfinished ...>
    23341 <... epoll ctl resumed>)
                                =0
    23341 epoll_wait(7, <unfinished ...>
    23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN|EPOLLOUT,
data=\{u32=4093643728, u64=140509653765072\}\}) = 0
    23339 recvfrom(10, 0x7fcaf4001303, 53, 0, NULL, NULL) = -1 EAGAIN (Resource temporarily
unavailable)
    23339 epoll_wait(7, [{events=EPOLLOUT, data={u32=4093643728, u64=140509653765072}}],
256, 29995) = 1
    0 < unfinished ...>
    23341 <... epoll_wait resumed>[{events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}], 256, 29997) = 1
    23339 <... sendto resumed>)
                                = 54
    23341 recvfrom(9, <unfinished ...>
    23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}} < unfinished ...>
    23341 <... recvfrom resumed>"\3\1", 2, 0, NULL, NULL) = 2
    23339 <... epoll_ctl resumed>)
                                =0
    23341 epoll ctl(7, EPOLL CTL MOD, 9, {events=EPOLLIN|EPOLLOUT,
data={u32=3087012912, u64=140079150404656}} <unfinished ...>
    23339 epoll_wait(7, <unfinished ...>
    23341 <... epoll ctl resumed>)
                                =0
    NULL, NULL) = 52
    23341 recvfrom(9, 0x7f66b8003d18, 8192, 0, NULL, NULL) = -1 EAGAIN (Resource
temporarily unavailable)
    23341 epoll wait(7, [{events=EPOLLOUT, data={u32=3087012912, u64=140079150404656}}],
256, 29995) = 1
    23339 < ... epoll_wait resumed>[{events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}}], 256, 29994) = 1
    23341 epoll_wait(7, <unfinished ...>
    23339 recvfrom(10, <unfinished ...>
    23341 <... epoll_wait resumed>[{events=EPOLLOUT, data={u32=3087012912,
u64=140079150404656}], 256, 29994) = 1
    53, 0, NULL, NULL) = 53
    23341 sendto(9, "\4)\5READY\vSocket-Type\0\0\0\6DEALER\10I"..., 43, 0, NULL, 0
<unfinished ...>
    23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN|EPOLLOUT,
data={u32=4093643728, u64=140509653765072}} <unfinished ...>
    23341 <... sendto resumed>)
                                = 43
    23339 <... epoll_ctl resumed>)
                                =0
```

```
23341 epoll_wait(7, <unfinished ...>
     23339 recvfrom(10, <unfinished ...>
     23341 <... epoll_wait resumed>[{events=EPOLLOUT, data={u32=3087012912,
u64=140079150404656}], 256, 29994) = 1
     23339 <... recvfrom resumed>"\4)\5READY\vSocket-Type\0\0\0\6DEALER\10I"..., 8192, 0,
NULL, NULL) = 43
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
     23339 epoll wait(7, <unfinished ...>
     23341 <... epoll_ctl resumed>)
     23339 < ... epoll wait resumed > [{events=EPOLLOUT, data={u32=4093643728,
u64=140509653765072}], 256, 29992) = 1
     23341 epoll_wait(7, <unfinished ...>
     23339 futex(0x7fcafb91f748, FUTEX_WAKE_PRIVATE, 2147483647) = 0
     23339 sendto(10, "\4)\5READY\vSocket-Type\0\0\0\6DEALER\10I"..., 43, 0, NULL, 0
<unfinished ...>
     23341 <... epoll_wait resumed>[{events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}], 256, 29993) = 1
     23339 < ... sendto resumed > )
     23341 recvfrom(9, <unfinished ...>
     23339 epoll_wait(7, <unfinished ...>
     23341 < \dots recvfrom resumed > "\4) \SREADY \vSocket-Type \( 0 \) \( 0 \) \( 6DEALER \) \( 10I'' \) \( ..., 8192, 0, \)
NULL, NULL) = 43
     23339 < ... epoll_wait resumed > [{events = EPOLLOUT, data = {u32 = 4093643728,
u64=140509653765072}}], 256, -1) = 1
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN|EPOLLOUT,
data={u32=3087012912, u64=140079150404656}} <unfinished ...>
     23339 epoll_ctl(7, EPOLL_CTL_MOD, 10, {events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}} < unfinished ...>
     23341 <... epoll ctl resumed>)
     23339 <... epoll ctl resumed>)
                                        =0
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
     23339 epoll wait(7, <unfinished ...>
     23341 <... epoll ctl resumed>)
     23341 epoll_wait(7, <unfinished ...>
     23259 <... clock_nanosleep resumed>NULL) = 0
     23259 getpid()
                                  = 23259
     23259 poll([{fd=8, events=POLLIN}], 1, 0) = 1 ([{fd=8, revents=POLLIN}])
     23259 getpid()
                                  = 23259
     23259 read(8, "\1\0\0\0\0\0\0\0\0", 8) = 8
                                  = 23259
     23259 getpid()
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                  = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                  = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 getpid()
                                  = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid( <unfinished ...>
     23417 <... clock_nanosleep resumed>NULL) = 0
     23259 <... getpid resumed>)
                                       = 23259
```

```
23417 getpid( <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23417 <... getpid resumed>)
                                    = 23417
     23259 <... poll resumed>)
                                    = 0 (Timeout)
     23417 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23417 <... poll resumed>)
                                   = 0 (Timeout)
     23259 <... pselect6 resumed>)
                                     = 0 (Timeout)
     23417 clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=100000000}, <unfinished
...>
     23259 getpid()
                                = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
                                = 23259
     23259 getpid()
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23430 <... epoll_ctl resumed>)
                                     =0
     23259 <... pselect6 resumed>)
                                     = 0 (Timeout)
     NULL, 0 < unfinished ...>
     23259 getpid( <unfinished ...>
     23430 <... sendto resumed>)
                                     = 58
     23419 < ... epoll wait resumed > [{events=EPOLLIN, data={u32=2952793040,
u64=140079016184784}], 256, -1) = 1
     23259 <... getpid resumed>)
                                     = 23259
     23430 getpid( <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23419 recvfrom(17, <unfinished ...>
     23259 <... poll resumed>)
                                    = 0 (Timeout)
     23430 <... getpid resumed>)
                                     = 23417
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL <unfinished ...>
     8192, 0, NULL, NULL) = 58
     23259 <... pselect6 resumed>)
                                     = 0 (Timeout)
     23430 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
     23259 getpid( <unfinished ...>
     23419 getpid( <unfinished ...>
     23259 <... getpid resumed>)
                                     = 23259
     23430 <... poll resumed>)
                                    = 0 (Timeout)
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23419 <... getpid resumed>)
                                    = 23337
                                    = 0 (Timeout)
     23259 <... poll resumed>)
     23430 epoll wait(7, <unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23419 write(15, "\1\0\0\0\0\0\0\0\0", 8 < unfinished ...>
     23259 <... pselect6 resumed>)
                                     = 0 (Timeout)
     23430 < ... epoll_wait resumed>[{events=EPOLLOUT, data={u32=335549488,
u64=140570320180272}], 256, -1) = 1
     23259 getpid( <unfinished ...>
     23419 <... write resumed>)
                                    = 8
     23259 <... getpid resumed>)
                                     = 23259
     23430 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=335549488,
u64=140570320180272}} < unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23419 epoll_wait(14, <unfinished ...>
```

```
23259 <... poll resumed>)
                                       = 0 (Timeout)
     23430 <... epoll_ctl resumed>)
                                         =0
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23430 epoll wait(7, <unfinished ...>
     23259 <... pselect6 resumed>)
                                         = 0 (Timeout)
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23337 <... clock nanosleep resumed>NULL) = 0
     23259 getpid( <unfinished ...>
     23337 getpid( <unfinished ...>
     23259 <... getpid resumed>)
                                        = 23259
     23337 <... getpid resumed>)
                                        = 23337
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23337 poll([{fd=15, events=POLLIN}], 1, 0 <unfinished ...>
     23259 <... poll resumed>)
                                       = 0 (Timeout)
                                       = 1 ([{fd=15, revents=POLLIN}])
     23337 <... poll resumed>)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23337 getpid( <unfinished ...>
     23259 <... pselect6 resumed>)
                                         = 0 (Timeout)
                                        = 23337
     23337 <... getpid resumed>)
     23259 getpid( <unfinished ...>
     23337 read(15, <unfinished ...>
     23259 <... getpid resumed>)
                                        = 23259
     23337 < \dots \text{ read resumed} > "\1\0\0\0\0\0\0\0, 8) = 8
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23337 getpid( <unfinished ...>
     23259 <... poll resumed>)
                                       = 0 (Timeout)
     23337 <... getpid resumed>)
                                        = 233337
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23337 poll([{fd=15, events=POLLIN}], 1, 0 <unfinished ...>
     23259 <... pselect6 resumed>)
                                         = 0 (Timeout)
     23337 <... poll resumed>)
                                       = 0 (Timeout)
     23259 <... getpid resumed>)
                                        = 23259
     23337 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23341 <... poll resumed>)
                                       = 1 ([{fd=6, revents=POLLIN}])
     23259 <... poll resumed>)
                                       = 0 (Timeout)
     23337 <... poll resumed>)
                                       = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23341 getpid( <unfinished ...>
     23259 <... pselect6 resumed>)
                                         = 0 (Timeout)
     23337 clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=100000000}, <unfinished
     23259 getpid( <unfinished ...>
     23341 <... getpid resumed>)
                                        = 233337
     23259 <... getpid resumed>)
                                        = 23259
     23341 read(6, <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23341 < \dots \text{ read resumed} > "\1\0\0\0\0\0\0\0\, 8) = 8
     23259 <... poll resumed>)
                                       = 0 (Timeout)
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN|EPOLLOUT,
data={u32=3087012912, u64=140079150404656}} <unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL < unfinished ...>
     23341 <... epoll ctl resumed>)
     23430 epoll_wait(7, <unfinished ...>
```

...>

```
23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                = 23259
     23259 \text{ poll}([\{fd=8, events=POLLIN\}], 1, 0) = 0 \text{ (Timeout)}
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
                                = 23259
     23259 getpid()
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                = 23259
     23259 <... poll resumed>)
                                    = 0 (Timeout)
     23341 getpid( <unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23337 clock_nanosleep(CLOCK_REALTIME, 0, {tv_sec=0, tv_nsec=100000000}, <unfinished
...>
     23259 <... pselect6 resumed>)
                                      = 0 (Timeout)
     23341 <... getpid resumed>)
                                     = 233337
     23259 getpid( <unfinished ...>
     23341 read(6, <unfinished ...>
     23259 <... getpid resumed>)
                                     = 23259
     23341 < \dots \text{ read resumed} > "\1\0\0\0\0\0\0\0, 8) = 8
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN|EPOLLOUT,
data={u32=3087012912, u64=140079150404656}} <unfinished ...>
     23259 <... poll resumed>)
                                    = 0 (Timeout)
     23341 <... epoll_ctl resumed>)
                                      =0
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL <unfinished ...>
     NULL, 0 < unfinished ...>
     23259 <... pselect6 resumed>)
                                      = 0 (Timeout)
     23341 <... sendto resumed>)
                                     = 58
     23339 < ... epoll wait resumed>[{events=EPOLLIN, data={u32=4093643728,
u64=140509653765072}}], 256, -1) = 1
     23259 getpid( <unfinished ...>
     23341 getpid( <unfinished ...>
                                     = 23259
     23259 <... getpid resumed>)
     23339 recvfrom(10, <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23341 <... getpid resumed>)
                                     = 233337
     23259 <... poll resumed>)
                                    = 0 (Timeout)
     23339 <... recvfrom
58
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL <unfinished ...>
     23341 poll([{fd=6, events=POLLIN}], 1, 0 < unfinished ...>
     23259 <... pselect6 resumed>)
                                     = 0 (Timeout)
     23339 getpid( <unfinished ...>
     23259 getpid( <unfinished ...>
                                    = 0 (Timeout)
     23341 <... poll resumed>)
     23259 <... getpid resumed>)
                                     = 23259
     23339 <... getpid resumed>)
                                     = 23259
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
```

```
23341 epoll wait(7, <unfinished ...>
     23259 <... poll resumed>)
                                       = 0 (Timeout)
     23339 write(8, "1\0\0\0\0\0\0", 8 <unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL <unfinished ...>
     23341 <... epoll_wait resumed>[{events=EPOLLOUT, data={u32=3087012912,
u64=140079150404656}], 256, -1) = 1
     23259 <... pselect6 resumed>)
                                         = 0 (Timeout)
     23339 <... write resumed>)
                                       = 8
     23259 getpid( <unfinished ...>
     23341 epoll_ctl(7, EPOLL_CTL_MOD, 9, {events=EPOLLIN, data={u32=3087012912,
u64=140079150404656}} < unfinished ...>
     23259 <... getpid resumed>)
                                        = 23259
     23339 epoll wait(7, <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
     23341 <... epoll_ctl resumed>)
     23259 <... poll resumed>)
                                       = 1 ([{fd=8, revents=POLLIN}])
     23341 epoll_wait(7, <unfinished ...>
     23259 getpid()
     23259 \text{ read}(8, "\1\0\0\0\0\0\0, 8) = 8
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 write(1, "Ok: 2 is available\n", 19) = 19
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
                                   = 23259
     23259 getpid()
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23417 clock nanosleep(CLOCK REALTIME, 0, {tv sec=0, tv nsec=100000000}, <unfinished
...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 \text{ poll}([\{fd=8, events=POLLIN\}], 1, 0) = 0 \text{ (Timeout)}
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 \text{ poll}([\{fd=8, events=POLLIN\}], 1, 0) = 0 \text{ (Timeout)}
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 poll([\{fd=8, events=POLLIN\}\}], 1, 0) = 0 (Timeout)
     23259 pselect6(1, [0], NULL, NULL, {tv sec=0, tv nsec=0}, NULL) = 0 (Timeout)
     23259 getpid( <unfinished ...>
     23337 <... clock_nanosleep resumed>NULL) = 0
     23259 <... getpid resumed>)
                                        = 23259
     23337 getpid( <unfinished ...>
     23259 poll([{fd=8, events=POLLIN}], 1, 0 < unfinished ...>
```

```
23337 <... getpid resumed>)
                                       = 233337
                                       = 0 (Timeout)
     23259 <... poll resumed>)
     23337 poll([{fd=15, events=POLLIN}], 1, 0 < unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL <unfinished ...>
     23337 <... poll resumed>)
                                       = 0 (Timeout)
     =0, tv nsec=100000000}, <unfinished ...>
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 ...
     23259 pselect6(1, [0], NULL, NULL, {tv_sec=0, tv_nsec=0}, NULL) = 0 (Timeout)
     23259 getpid()
                                   = 23259
     23259 \text{ poll}([\{fd=8, events=POLLIN\}], 1, 0) = 0 \text{ (Timeout)}
     23417 <... clock_nanosleep resumed>NULL) = ? ERESTART_RESTARTBLOCK (Interrupted by
signal)
     23337 < ... clock_nanosleep resumed>NULL) = ? ERESTART_RESTARTBLOCK (Interrupted by
signal)
     23259 --- SIGINT {si_signo=SIGINT, si_code=SI_KERNEL} ---
     23417 --- SIGINT {si_signo=SIGINT, si_code=SI_KERNEL} ---
     23339 <... epoll_wait resumed> <unfinished ...>) = ?
     23338 < \dots  epoll wait resumed> < unfinished \dots >) = ?
     23337 --- SIGINT {si_signo=SIGINT, si_code=SI_KERNEL} ---
     23430 < \dots  epoll wait resumed >  cunfinished \dots > ) = ?
     23420 <... epoll_wait resumed> <unfinished ...>) = ?
     23341 <... epoll wait resumed>0x7f66bf3def60, 256, -1) = ? ERESTART RESTARTBLOCK
(Interrupted by signal)
     23339 +++ killed by SIGINT +++
     23430 +++ killed by SIGINT +++
     23420 +++ killed by SIGINT +++
     23419 < \dots  epoll wait resumed >  < unfinished \dots > ) = ?
     23418 <... epoll_wait resumed> <unfinished ...>) = ?
     23417 +++ killed by SIGINT +++
     23341 +++ killed by SIGINT +++
     23340 <... epoll_wait resumed> <unfinished ...>) = ?
     23338 +++ killed by SIGINT +++
     23259 +++ killed by SIGINT +++
     23419 +++ killed by SIGINT +++
     23418 +++ killed by SIGINT +++
     23340 +++ killed by SIGINT +++
     23337 +++ killed by SIGINT +++
```

Вывод

Выполняя лабораторные работы курса операционных систем, были изучены возможности утилиты strace, она помогала глубже познакомиться с внутренним устройством функций используемых в написании программ, а также исправлять ошибки, подсказывая, где их искать. Обладая большим числом всевозможных флагов и дополнительных возможностей Strace, является очень мощной утилитой, которую необходимо знать.