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**Факультет информационных технологий и прикладной  
математики**

**Кафедра вычислительной математики и программирования**

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

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**Москва, 2020**

# 1 Описание

Приобретение практических навыков диагностики работы программного обеспечения.

Strace показывает все системные вызовы программы, которые она отправляет к системе во время выполнения, а также их параметры и результат выполнения.

Проведём диагностику лабораторных работ.

## 2 Демонстрация работы программы ЛР 2

```
dobriy_alien@LAPTOP-2MM40K81:/mnt/c/Users/shoro/Desktop/MAI/2course/os/lab2/final$
strace ./run
execve("./run",["./run"],0x7fffd5740 /* 20 vars */) = 0
brk(NULL)                                = 0x13ce000
arch_prctl(0x3001 /* ARCH_??? */,0x7ffe5547080) = -1 EINVAL (Invalid argument)
access("/etc/ld.so.preload",R_OK)        = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/etc/ld.so.cache",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=42122,...}) = 0
mmap(NULL,42122,PROT_READ,MAP_PRIVATE,3,0) = 0x7fdad17b2000
close(3)                                = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libc.so.6",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0"... ,832)
= 832
pread64(3,"\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0"... ,784,64)
= 784
pread64(3,"\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0",32,848)
= 32
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,
68,880) = 68
fstat(3,{st_mode=S_IFREG|0755,st_size=2029224,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fdad17b0000
pread64(3,"\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0"... ,784,64)
= 784
pread64(3,"\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0",32,848)
= 32
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,
68,880) = 68
mmap(NULL,2036952,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,
3,0) = 0x7fdad1580000
mprotect(0x7fdad15a5000,1847296,PROT_NONE) = 0
mmap(0x7fdad15a5000,1540096,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3
= 0x7fdad15a5000
mmap(0x7fdad171d000,303104,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x19d000) = 0x7fdad171d000
mmap(0x7fdad1768000,24576,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x1e7000) = 0x7fdad1768000
mmap(0x7fdad176e000,13528,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1,0) = 0x7fdad176e000
close(3)                                = 0
```

```

arch_prctl(ARCH_SET_FS,0x7fdad17b1380) = 0
mprotect(0x7fdad1768000,12288,PROT_READ) = 0
mprotect(0x601000,4096,PROT_READ)      = 0
mprotect(0x7fdad17ad000,4096,PROT_READ) = 0
munmap(0x7fdad17b2000,42122)           = 0
pipe([3,4])                           = 0
pipe([5,6])                           = 0
clone(child_stack=NULL,flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7fdad17b1650) = 90
client
fstat(1,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(1,TCGETS,{B38400 opost isig icanon echo ...}) = 0
brk(NULL)                                = 0x13ce000
brk(0x13ef000)                          = 0x13ef000
write(1,"server\n",7server
)                                         = 7
---SIGCHLD {si_signo=SIGCHLD,si_code=CLD_EXITED,si_pid=90,si_uid=1000,si_status=0,
si_utime=0,si_stime=0} ---
close(3)                                = 0
close(6)                                = 0
openat(AT_FDCWD,"output.txt",O_WRONLY|O_CREAT|O_TRUNC,0666) = 3
read(5,"2\0\0\0",4)                     = 4
read(5,"T\33\0\0",4)                    = 4
read(5,"\236\16\0\0",4)                  = 4
read(5,"\306\372\377\377",4)              = 4
read(5,"L\3\0\0",4)                     = 4
read(5,"r\364\377\377",4)                = 4
read(5,"\235\355\377\377",4)              = 4
read(5,"\233\337\377\377",4)              = 4
read(5,"\215\337\377\377",4)              = 4
read(5,"\322\34\0\0",4)                  = 4
read(5,"\250\377\377\377",4)              = 4
read(5,"j\22\0\0",4)                    = 4
read(5,"\275\22\0\0",4)                  = 4
read(5,"\254\33\0\0",4)                  = 4
read(5,"\307\333\377\377",4)              = 4
read(5,"*\374\377\377",4)                = 4
read(5,"\241\3\0\0",4)                   = 4
read(5,"\377\370\377\377",4)              = 4
read(5,"n\365\377\377",4)                = 4
read(5,"0\357\377\377",4)                = 4

```

```

read(5,"{\36\0\0",4)           = 4
read(5,"\0\346\377\377",4)      = 4
read(5,"\232\365\377\377",4)    = 4
read(5,"\212\367\377\377",4)    = 4
read(5,".\$\0\0",4)             = 4
read(5,";\22\0\0",4)            = 4
read(5,"\334\376\377\377",4)    = 4
read(5,"\212\345\377\377",4)    = 4
read(5,"\362\365\377\377",4)    = 4
read(5,"\254\341\377\377",4)    = 4
read(5,"+\35\0\0",4)            = 4
read(5,"\341\2\0\0",4)          = 4
read(5,"\241\31\0\0",4)         = 4
read(5,"\263\362\377\377",4)    = 4
read(5,"\6\20\0\0",4)           = 4
read(5,"Z\344\377\377",4)       = 4
read(5,"\236\34\0\0",4)         = 4
read(5,"\335\32\0\0",4)         = 4
read(5,"\256\342\377\377",4)    = 4
read(5,"\345\f\0\0",4)          = 4
read(5,"A\346\377\377",4)       = 4
read(5,"*\333\377\377",4)       = 4
read(5,"F\347\377\377",4)       = 4
read(5,"\200\25\0\0",4)         = 4
read(5,"\245\v\0\0",4)          = 4
read(5,"\355\24\0\0",4)         = 4
read(5,"K&\0\0",4)              = 4
read(5,"Z\""\0\0",4)            = 4
read(5,"\211\353\377\377",4)    = 4
read(5,"\272\t\0\0",4)          = 4
read(5,"\233\35\0\0",4)         = 4
fstat(3,{st_mode=S_IFREG|0777,st_size=0,...}) = 0
write(3,"50\n69960 37420 -13380 8440 -2958"...,321) = 321
close(3)                               = 0
close(4)                               = 0
close(5)                               = 0
exit_group(0)                          = ?
+++ exited with 0 +++

```

### 3 Демонстрация работы программы ЛР 3

```
dobriy_alien@LAPTOP-2MM40K81:/mnt/c/Users/shoro/Desktop/MAI/2course/os/lab3/
nonRecursive_$ strace ./run
execve("./run",["./run"],0x7ffff24d4e90 /* 20 vars */) = 0
brk(NULL)                                = 0x25e2000
arch_prctl(0x3001 /* ARCH_??? */,0x7ffff139da30) = -1 EINVAL (Invalid argument)
access("/etc/ld.so.preload",R_OK)        = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/etc/ld.so.cache",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=42122,...}) = 0
mmap(NULL,42122,PROT_READ,MAP_PRIVATE,3,0) = 0x7f9ac5715000
close(3)                                = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libpthread.so.0",O_RDONLY|O_CLOEXEC)
= 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\201\0\0\0\0\0"... ,832)
= 832
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"...
68,824) = 68
fstat(3,{st_mode=S_IFREG|0755,st_size=157224,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7f9ac5750000
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"...
...,68,824) = 68
mmap(NULL,140408,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f9ac56f2000
mmap(0x7f9ac56f9000,69632,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,
0x7000) = 0x7f9ac56f9000
mmap(0x7f9ac570a000,20480,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x18000)
= 0x7f9ac570a000
mmap(0x7f9ac570f000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,
0x1c000) = 0x7f9ac570f000
mmap(0x7f9ac5711000,13432,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1,0) = 0x7f9ac5711000
close(3)                                = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libstdc++.so.6",O_RDONLY|O_CLOEXEC)
= 3
read(3,"\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240\341\t\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=1952928,...}) = 0
mmap(NULL,1968128,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f9ac5510000
mprotect(0x7f9ac55a6000,1286144,PROT_NONE) = 0
mmap(0x7f9ac55a6000,983040,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,
= 0x7f9ac55a6000
```

```

mmap(0x7f9ac5696000,299008,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x186000) = 0x7f9ac5696000
mmap(0x7f9ac56e0000,57344,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3
,0x1cf000) = 0x7f9ac56e0000
mmap(0x7f9ac56ee000,10240,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1,0) = 0x7f9ac56ee000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libgcc_s.so.1",O_RDONLY|O_CLOEXEC) =
3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\3405\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=104984,...}) = 0
mmap(NULL,107592,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f9ac54f0000
mmap(0x7f9ac54f3000,73728,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x3000) = 0x7f9ac54f3000
mmap(0x7f9ac5505000,16384,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x15000)
= 0x7f9ac5505000
mmap(0x7f9ac5509000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x18000) = 0x7f9ac5509000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libc.so.6",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0\0"... ,832)
= 832
pread64(3,"\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0"... ,784,64)
= 784
pread64(3,"\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0",32,848)
= 32
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,
68,880) = 68
fstat(3,{st_mode=S_IFREG|0755,st_size=2029224,...}) = 0
pread64(3,"\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0@ \0\0\0\0\0\0"... ,784,64)
= 784
pread64(3,"\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0",32,848)
= 32
pread64(3,"\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,68
= 68
mmap(NULL,2036952,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,
3,0) = 0x7f9ac52f0000
mprotect(0x7f9ac5315000,1847296,PROT_NONE) = 0
mmap(0x7f9ac5315000,1540096,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3,0x25000) = 0x7f9ac5315000

```

```

mmap(0x7f9ac548d000,303104,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x19d000)
= 0x7f9ac548d000
mmap(0x7f9ac54d8000,24576,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7f9ac54d8000
mmap(0x7f9ac54de000,13528,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0)
= 0x7f9ac54de000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libm.so.6",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\300\363\0\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=1369352,...}) = 0
mmap(NULL,1368336,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f9ac51a1000
mmap(0x7f9ac51b0000,684032,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0xf000) = 0x7f9ac51b0000
mmap(0x7f9ac5257000,618496,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0xb6000) = 0x7f9ac5257000
mmap(0x7f9ac52ee000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7f9ac52ee000
close(3) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7f9ac5190000
mmap(NULL,12288,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7f9ac5180000
arch_prctl(ARCH_SET_FS,0x7f9ac5180740) = 0
mprotect(0x7f9ac54d8000,12288,PROT_READ) = 0
mprotect(0x7f9ac52ee000,4096,PROT_READ) = 0
mprotect(0x7f9ac5509000,4096,PROT_READ) = 0
mprotect(0x7f9ac56e0000,45056,PROT_READ) = 0
mprotect(0x7f9ac570f000,4096,PROT_READ) = 0
mprotect(0x604000,4096,PROT_READ) = 0
mprotect(0x7f9ac574d000,4096,PROT_READ) = 0
munmap(0x7f9ac5715000,42122) = 0
set_tid_address(0x7f9ac5180a10) = 98
set_robust_list(0x7f9ac5180a20,24) = 0
rt_sigaction(SIGRTMIN,{sa_handler=0x7f9ac56f9bf0,sa_mask=[],sa_flags=SA_RESTORER|SA_SIGINFO,sa_restorer=0x7f9ac57073c0},NULL,8) = 0
rt_sigaction(SIGRT_1,{sa_handler=0x7f9ac56f9c90,sa_mask=[],sa_flags=SA_RESTORER|SA_RESTART|SA_SIGINFO,sa_restorer=0x7f9ac57073c0},NULL,8) = 0
rt_sigprocmask(SIG_UNBLOCK,[RTMIN RT_1],NULL,8) = 0
prlimit64(0,RLIMIT_STACK,NULL,{rlim_cur=8192*1024,rlim_max=8192*1024}) = 0
brk(NULL) = 0x25e2000

```



```

brk(0x2603000) = 0x2603000
futexp(0x7f9ac56ee6bc,FUTEX_WAKE_PRIVATE,2147483647) = 0
futexp(0x7f9ac56ee6c8,FUTEX_WAKE_PRIVATE,2147483647) = 0
fstat(1,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(1,TCGETS,{B38400 opost isig icanon echo ...}) = 0
write(1,"NO ARGV GIVEN\n",14NO ARGV GIVEN
) = 14
openat(AT_FDCWD,"input.txt",O_RDONLY) = 3
openat(AT_FDCWD,"output.txt",O_WRONLY|O_CREAT|O_TRUNC,0666) = 4
read(3,"32\r\noVwYSdgkuISsvfmyoaNpciRIEJrF"... ,8191) = 1766
mmap(NULL,8392704,PROT_NONE,MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK,-1,0) = 0x7f9ac4970000
mprotect(0x7f9ac4971000,8388608,PROT_READ|PROT_WRITE) = 0
clone(child_stack=0x7f9ac516ffb0,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARARTID,paren
= 99
clone(child_stack=0x7f9ac516ffb0,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARARTID,paren
= 100
clone(child_stack=0x7f9ac516ffb0,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARARTID,paren
= 101
clone(child_stack=0x7f9ac516ffb0,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|CLONE_CHILD_CLEARARTID,paren
= 102
close(3) = 0
write(4,"wwoXfRqInxjFgICghEnX0bQnLqeGhadU"... ,1730) = 1730
close(4) = 0
write(1,"Program used 4 threads!\n",24Program used 4 threads!
) = 24
exit_group(0) = ?
+++ exited with 0 +++

```

## 4 Демонстрация работы программы ЛР 4

```

dobriy_alien@LAPTOP-2MM40K81:/mnt/c/Users/shoro/Desktop/MAI/2course/os/lab4$
strace ./run
execve("./run",["./run"],0x7fffcdd229ae0 /* 20 vars */) = 0
brk(NULL) = 0x1257000
arch_prctl(0x3001 /* ARCH_??? */,0x7ffff12b8bf0) = -1 EINVAL (Invalid argument)
access("/etc/ld.so.preload",R_OK) = -1 ENOENT (No such file or directory)

```

```

openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=42122, ...}) = 0
mmap(NULL, 42122, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f8e74081000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC)
= 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\201\0\0\0\0\0"..., 832)
= 832
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"
..., 68, 824) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=157224, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f8e74040000
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"
..., 68, 824) = 68
mmap(NULL, 140408, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f8e7401d000
mmap(0x7f8e74024000, 69632, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x7000) = 0x7f8e74024000
mmap(0x7f8e74035000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x18000)
= 0x7f8e74035000
mmap(0x7f8e7403a000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1c000) = 0x7f8e7403a000
mmap(0x7f8e7403c000, 13432, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,
-1, 0) = 0x7f8e7403c000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0"..., 832)
= 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64)
= 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 32, 848)
= 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"...,
68, 880) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=2029224, ...}) = 0
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 784, 64)
= 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"..., 32, 848)
= 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"...,
68, 880) = 68
mmap(NULL, 2036952, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f8e73e20000

```



```

lstat("/dev/shm/0q3fAg",0x7ffff12b88d0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/dev/shm/0q3fAg",O_RDWR|O_CREAT|O_EXCL,01411) = 4
write(4,"\0\0\0\0\0\0\0\0\200\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0",32)
= 32
mmap(NULL,32,PROT_READ|PROT_WRITE,MAP_SHARED,4,0) = 0x7f8e7408a000
link("/dev/shm/0q3fAg","/dev/shm/sem.o_s") = 0
fstat(4,{st_mode=S_IFREG|S_ISVTX|0411,st_size=32,...}) = 0
brk(NULL) = 0x1257000
brk(0x1278000) = 0x1278000
unlink("/dev/shm/0q3fAg") = 0
close(4) = 0
clone(client
child_stack=NULL,flags=CLONE_CHILD_CLEAR_TID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f8e73e10a10) = 108
futex(0x7f8e7408a000,FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME,0,NULL,
FUTEX_BITSET_MATCH_ANY) = 0
---SIGCHLD {si_signo=SIGCHLD,si_code=CLD_EXITED,si_pid=108,si_uid=1000,si_status=0,
si_utime=0,si_stime=0} ---
fstat(1,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(1,TCGETS,{B38400 opost isig icanon echo ...}) = 0
write(1,"server\n",7server
) = 7
openat(AT_FDCWD,"output.txt",O_WRONLY|O_CREAT|O_TRUNC,0666) = 4
fstat(4,{st_mode=S_IFREG|0777,st_size=0,...}) = 0
write(4,"76890 72470 37840 35670 16050 -5"... ,320) = 320
close(4) = 0
exit_group(0) = ?
+++ exited with 0 +++

```

## 5 Демонстрация работы программы ЛР 5

```
execve("./rundy",["./rundy"],0x7ffff91adb00 /* 20 vars */) = 0
brk(NULL)                                = 0x2042000
arch_prctl(0x3001 /* ARCH_??? */,0x7ffff9efe6c0) = -1 EINVAL (Invalid argument)
access("/etc/ld.so.preload",R_OK)        = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/etc/ld.so.cache",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=42122,...}) = 0
mmap(NULL,42122,PROT_READ,MAP_PRIVATE,3,0) = 0x7f7cdc455000
close(3)                                = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libdl.so.2",O_RDONLY|O_CLOEXEC) = 3
```

```

read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \22\0\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=18816,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7f7cdc490000
mmap(NULL,20752,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f7cdc440000
mmap(0x7f7cdc441000,8192,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7f7cdc441000)
= 0x7f7cdc441000
mmap(0x7f7cdc443000,4096,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x3000)
= 0x7f7cdc443000
mmap(0x7f7cdc444000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7f7cdc444000)
= 0x7f7cdc444000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0\0"... ,832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0"... ,784,64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0",
32,848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,
68,880) = 68
fstat(3,{st_mode=S_IFREG|0755,st_size=2029224,...}) = 0
pread64(3, "\6\0\0\0\4\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0@ \0\0\0\0\0\0\0"... ,
784,64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0",
32,848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,
68,880) = 68
mmap(NULL,2036952,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f7cdc240000
mprotect(0x7f7cdc265000,1847296,PROT_NONE) = 0
mmap(0x7f7cdc265000,1540096,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7f7cdc265000)
= 0x7f7cdc265000
mmap(0x7f7cdc3dd000,303104,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x19d000) = 0x7f7cdc3dd000
mmap(0x7f7cdc428000,24576,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7f7cdc428000)
= 0x7f7cdc428000
mmap(0x7f7cdc42e000,13528,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0x7f7cdc42e000)
= 0x7f7cdc42e000
close(3) = 0
mmap(NULL,12288,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7f7cdc450000
arch_prctl(ARCH_SET_FS,0x7f7cdc450740) = 0

```

```

mprotect(0x7f7cdc428000,12288,PROT_READ) = 0
mprotect(0x7f7cdc444000,4096,PROT_READ) = 0
mprotect(0x601000,4096,PROT_READ) = 0
mprotect(0x7f7cdc48d000,4096,PROT_READ) = 0
munmap(0x7f7cdc455000,42122) = 0
brk(NULL) = 0x2042000
brk(0x2063000) = 0x2063000
openat(AT_FDCWD,"./libpowers.so",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\300\7\0\0\0\0\0\0"
...,832) = 832
fstat(3,{st_mode=S_IFREG|0777,st_size=8520,...}) = 0
getcwd("/mnt/c/Users/shoro/Desktop/MAI/2course/os/lab5/fuckingShit",128) =
59
mmap(NULL,2101336,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7f7cdc030000
mprotect(0x7f7cdc031000,2093056,PROT_NONE) = 0
mmap(0x7f7cdc230000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7f7cdc230000
close(3) = 0
mprotect(0x7f7cdc230000,4096,PROT_READ) = 0
fstat(1,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(1,TCGETS,{B38400 opost isig icanon echo ...}) = 0
write(1,"enter\n",6enter
) = 6
write(1,"1-print\n",81-print
) = 8
write(1,"2-insert\n",92-insert
) = 9
write(1,"3-delete\n",93-delete
) = 9
write(1,"4-delete all\n",134-delete all
) = 13
write(1,"5-end\n",75-end
) = 7
fstat(0,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(0,TCGETS,{B38400 opost isig icanon echo ...}) = 0
read(0,5
"5\n",4096) = 2
lseek(0,-1,SEEK_CUR) = -1 ESPIPE (Illegal seek)
exit_group(0) = ?
+++ exited with 0 +++

```

## 6 Демонстрация работы программы ЛР 6

```
dobriy_alien@LAPTOP-2MM40K81:/mnt/c/Users/shoro/Desktop/MAI/2course/os/lab6_46/build$  
strace ./out  
execve("./out", ["/out"], 0x7fffe28d8700 /* 20 vars */) = 0  
brk(NULL) = 0x7ffffcf859000  
arch_prctl(0x3001 /* ARCH_??? */, 0x7fffd6792f20) = -1 EINVAL (Invalid argument)  
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)  
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3  
fstat(3, {st_mode=S_IFREG|0644, st_size=42122, ...}) = 0  
mmap(NULL, 42122, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fba2c3d0000  
close(3) = 0  
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libzmq.so.5", O_RDONLY|O_CLOEXEC) = 3  
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0'z\1\0\0\0\0\0"... , 832)  
= 832  
fstat(3, {st_mode=S_IFREG|0644, st_size=675776, ...}) = 0  
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7fba2c390000  
mmap(NULL, 678128, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2c2e0000  
mmap(0x7fba2c2f6000, 430080, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,  
= 0x7fba2c2f6000  
mmap(0x7fba2c35f000, 126976, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7f000)  
= 0x7fba2c35f000  
mmap(0x7fba2c37e000, 32768, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,  
= 0x7fba2c37e000  
close(3) = 0  
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC)  
= 3  
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240\341\t\0\0\0\0\0"... , 832)  
= 832  
fstat(3, {st_mode=S_IFREG|0644, st_size=1952928, ...}) = 0  
mmap(NULL, 1968128, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2c0f0000  
mprotect(0x7fba2c186000, 1286144, PROT_NONE) = 0  
mmap(0x7fba2c186000, 983040, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,  
= 0x7fba2c186000  
mmap(0x7fba2c276000, 299008, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x186000)  
= 0x7fba2c276000  
mmap(0x7fba2c2c0000, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,  
= 0x7fba2c2c0000  
mmap(0x7fba2c2ce000, 10240, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1  
= 0x7fba2c2ce000  
close(3) = 0
```

```

openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) =
3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\3405\0\0\0\0\0"... ,832)
= 832
fstat(3, {st_mode=S_IFREG|0644, st_size=104984, ...}) = 0
mmap(NULL, 107592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2c0d0000
mmap(0x7fba2c0d3000, 73728, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2c0d3000
mmap(0x7fba2c0e5000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x15000)
= 0x7fba2c0e5000
mmap(0x7fba2c0e9000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2c0e9000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\0\0\0\0"... ,832)
= 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"... ,784,64)
= 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"... ,32,848)
= 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,68)
= 68
fstat(3, {st_mode=S_IFREG|0755, st_size=2029224, ...}) = 0
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"... ,784,64)
= 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0\0"... ,32,848)
= 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0cBR\340\305\370\2609W\242\345)q\235A\1"... ,68)
= 68
mmap(NULL, 2036952, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2bed0000
mprotect(0x7fba2bef5000, 1847296, PROT_NONE) = 0
mmap(0x7fba2bef5000, 1540096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bef5000
mmap(0x7fba2c06d000, 303104, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x19d000)
= 0x7fba2c06d000
mmap(0x7fba2c0b8000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2c0b8000
mmap(0x7fba2c0be000, 13528, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fba2c0be000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libsodium.so.23", O_RDONLY|O_CLOEXEC)

```



```

= 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200\302\0\0\0\0\0"...,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=355016,...}) = 0
mmap(NULL,357384,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2be70000
mmap(0x7fba2be7c000,229376,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2be7c000
mmap(0x7fba2beb4000,73728,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x44000)
= 0x7fba2beb4000
mmap(0x7fba2bec6000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2bec6000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpgm-5.2.so.0",O_RDONLY|O_CLOEXEC)
= 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240L\0\0\0\0\0"...,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=302056,...}) = 0
mmap(NULL,321584,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2be20000
mmap(0x7fba2be24000,163840,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2be24000
mmap(0x7fba2be4c000,118784,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x2c000)
= 0x7fba2be4c000
mmap(0x7fba2be69000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2be69000
mmap(0x7fba2be6b000,14384,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0)
= 0x7fba2be6b000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libnorm.so.1",O_RDONLY|O_CLOEXEC) =
3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\257\0\0\0\0\0"...,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=690344,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fba2be10000
mmap(NULL,1420000,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2bcb0000
mmap(0x7fba2bcba000,421888,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2bcba000
mmap(0x7fba2bd21000,217088,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x71000)
= 0x7fba2bd21000
mmap(0x7fba2bd56000,16384,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2bd56000
mmap(0x7fba2bd5a000,723680,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0)

```

```

= 0x7fba2bd5a000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgssapi_krb5.so.2", O_RDONLY|O_CLOEXEC)
= 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0P\321\0\0\0\0\0"..., 832)
= 832
fstat(3, {st_mode=S_IFREG|0644, st_size=309712, ...}) = 0
mmap(NULL, 312128, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2bc60000
mmap(0x7fba2bc6b000, 204800, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bc6b000
mmap(0x7fba2bc9d000, 49152, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3d000)
= 0x7fba2bc9d000
mmap(0x7fba2bca9000, 16384, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bca9000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC)
= 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\220\201\0\0\0\0\0"..., 832)
= 832
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"..., 68)
= 68
fstat(3, {st_mode=S_IFREG|0755, st_size=157224, ...}) = 0
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0w\\\273\377\370\24Ef'xg\200\260\263\264\0"..., 68)
= 68
mmap(NULL, 140408, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2bc3d000
mmap(0x7fba2bc44000, 69632, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bc44000
mmap(0x7fba2bc55000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x18000)
= 0x7fba2bc55000
mmap(0x7fba2bc5a000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bc5a000
mmap(0x7fba2bc5c000, 13432, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0)
= 0x7fba2bc5c000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\300\363\0\0\0\0\0"..., 832)
= 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1369352, ...}) = 0
mmap(NULL, 1368336, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7fba2baee000
mmap(0x7fba2bafd000, 684032, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0)
= 0x7fba2bafd000

```

```

mmap(0x7fba2bba4000,618496,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0xb6000)
= 0x7fba2bba4000
mmap(0x7fba2bc3b000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2bc3b000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libkrb5.so.3",O_RDONLY|O_CLOEXEC) =
3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 ?\2\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=902016,...}) = 0
mmap(NULL,904640,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2ba10000
mprotect(0x7fba2ba32000,700416,PROT_NONE) = 0
mmap(0x7fba2ba32000,397312,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2ba32000
mmap(0x7fba2ba93000,299008,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x83000)
= 0x7fba2ba93000
mmap(0x7fba2badd000,65536,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2badd000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libk5crypto.so.3",O_RDONLY|O_CLOEXEC)
= 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\240D\0\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=191040,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fba2ba00000
mmap(NULL,196696,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b9c0000
mprotect(0x7fba2b9c4000,172032,PROT_NONE) = 0
mmap(0x7fba2b9c4000,114688,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b9c4000
mmap(0x7fba2b9e0000,53248,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x20000)
= 0x7fba2b9e0000
mmap(0x7fba2b9ee000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b9ee000
mmap(0x7fba2b9f0000,88,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0)
= 0x7fba2b9f0000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libcom_err.so.2",O_RDONLY|O_CLOEXEC)
= 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200$\0\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=22600,...}) = 0

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```

mmap(NULL,24744,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b9b0000
mmap(0x7fba2b9b2000,8192,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9b2000) = 0x7fba2b9b2000
mmap(0x7fba2b9b4000,4096,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9b4000) = 0x7fba2b9b4000
mmap(0x7fba2b9b5000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9b5000) = 0x7fba2b9b5000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libkrb5support.so.0",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\3605\0\0\0\0\0"... ,832) = 832
fstat(3,{st_mode=S_IFREG|0644,st_size=56096,...}) = 0
mmap(NULL,58344,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b9a0000
mmap(0x7fba2b9a3000,28672,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9a3000) = 0x7fba2b9a3000
mmap(0x7fba2b9aa000,12288,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9aa000) = 0x7fba2b9aa000
mmap(0x7fba2b9ad000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b9ad000) = 0x7fba2b9ad000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libkeyutils.so.1",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\00@\" \0\0\0\0\0\0"... ,832) = 832
fstat(3,{st_mode=S_IFREG|0644,st_size=22600,...}) = 0
mmap(NULL,24592,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b990000
mmap(0x7fba2b992000,8192,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b992000) = 0x7fba2b992000
mmap(0x7fba2b994000,4096,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b994000) = 0x7fba2b994000
mmap(0x7fba2b995000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x7fba2b995000) = 0x7fba2b995000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libresolv.so.2",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 G\0\0\0\0\0\0"... ,832) = 832
fstat(3,{st_mode=S_IFREG|0644,st_size=101320,...}) = 0
mmap(NULL,113280,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b970000
mprotect(0x7fba2b974000,81920,PROT_NONE) = 0

```

```

mmap(0x7fba2b974000,65536,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b974000
mmap(0x7fba2b984000,12288,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x14000)
= 0x7fba2b984000
mmap(0x7fba2b988000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b988000
mmap(0x7fba2b98a000,6784,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1,0)
= 0x7fba2b98a000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libdl.so.2",O_RDONLY|O_CLOEXEC) = 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0 \22\0\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=18816,...}) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fba2b960000
mmap(NULL,20752,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b950000
mmap(0x7fba2b951000,8192,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b951000
mmap(0x7fba2b953000,4096,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0x3000)
= 0x7fba2b953000
mmap(0x7fba2b954000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b954000
close(3) = 0
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fba2b940000
mmap(NULL,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_ANONYMOUS,-1,0) = 0x7fba2b930000
arch_prctl(ARCH_SET_FS,0x7fba2b941600) = 0
mprotect(0x7fba2c0b8000,12288,PROT_READ) = 0
mprotect(0x7fba2b954000,4096,PROT_READ) = 0
mprotect(0x7fba2b988000,4096,PROT_READ) = 0
mprotect(0x7fba2b995000,4096,PROT_READ) = 0
mprotect(0x7fba2b9ad000,4096,PROT_READ) = 0
mprotect(0x7fba2bc5a000,4096,PROT_READ) = 0
mprotect(0x7fba2b9b5000,4096,PROT_READ) = 0
mprotect(0x7fba2b9ee000,4096,PROT_READ) = 0
mprotect(0x7fba2badd000,57344,PROT_READ) = 0
mprotect(0x7fba2bc3b000,4096,PROT_READ) = 0
mprotect(0x7fba2bca9000,8192,PROT_READ) = 0
mprotect(0x7fba2c0e9000,4096,PROT_READ) = 0
mprotect(0x7fba2c2c0000,45056,PROT_READ) = 0
mprotect(0x7fba2bd56000,12288,PROT_READ) = 0
mprotect(0x7fba2be69000,4096,PROT_READ) = 0
mprotect(0x7fba2bec6000,4096,PROT_READ) = 0

```

```

mprotect(0x7fba2c37e000,28672,PROT_READ) = 0
mprotect(0x7fba2c3f1000,4096,PROT_READ) = 0
mprotect(0x7fba2c3cd000,4096,PROT_READ) = 0
munmap(0x7fba2c3d0000,42122) = 0
set_tid_address(0x7fba2b9418d0) = 149
set_robust_list(0x7fba2b9418e0,24) = 0
rt_sigaction(SIGRTMIN,{sa_handler=0x7fba2bc44bf0,sa_mask=[],sa_flags=SA_RESTORER|SA_S
= 0
rt_sigaction(SIGRT_1,{sa_handler=0x7fba2bc44c90,sa_mask=[],sa_flags=SA_RESTORER|SA_RE
= 0
rt_sigprocmask(SIG_UNBLOCK,[RTMIN RT_1],NULL,8) = 0
prlimit64(0,RLIMIT_STACK,NULL,{rlim_cur=8192*1024,rlim_max=8192*1024}) = 0
brk(NULL) = 0x7ffffcf859000
brk(0x7ffffcf87a000) = 0x7ffffcf87a000
gettimeofday({tv_sec=1608158341,tv_usec=994213},{tz_minuteswest=0,tz_dsttime=0})
= 0
futex(0x7fba2c2ce6bc,FUTEX_WAKE_PRIVATE,2147483647) = 0
futex(0x7fba2c2ce6c8,FUTEX_WAKE_PRIVATE,2147483647) = 0
clock_gettime(CLOCK_REALTIME_COARSE,{tv_sec=1608158342,tv_nsec=111487400})
= 0
openat(AT_FDCWD,"/sys/devices/system/cpu/online",O_RDONLY|O_CLOEXEC) = 3
read(3,"0-7\n",8192) = 4
close(3) = 0
openat(AT_FDCWD,"/sys/devices/system/cpu",O_RDONLY|O_NONBLOCK|O_CLOEXEC|O_DIRECTORY)
= 3
fstat(3,{st_mode=S_IFDIR|0755,st_size=0,...}) = 0
getdents64(3,/* 13 entries */,32768) = 336
getdents64(3,/* 0 entries */,32768) = 0
close(3) = 0
getpid() = 149
sched_getaffinity(149,128,[0,1,2,3,4,5,6,7]) = 64
openat(AT_FDCWD,"/etc/nsswitch.conf",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=510,...}) = 0
read(3,"# /etc/nsswitch.conf\n#\n# Example"... ,4096) = 510
read(3,"",4096) = 0
close(3) = 0
openat(AT_FDCWD,"/etc/ld.so.cache",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=42122,...}) = 0
mmap(NULL,42122,PROT_READ,MAP_PRIVATE,3,0) = 0x7fba2c3d0000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/tls/haswell/x86_64/libnss_db.so.2",O_RDONLY|O_C

```

```

= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls/haswell/x86_64",0x7fffd678fde0) = -1 ENOENT
(No such file or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/tls/haswell/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls/haswell",0x7fffd678fde0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/tls/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls/x86_64",0x7fffd678fde0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/tls/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/tls",0x7fffd678fde0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/haswell/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/haswell/x86_64",0x7fffd678fde0) = -1 ENOENT (No
such file or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/haswell/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/haswell",0x7fffd678fde0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/x86_64-linux-gnu",{st_mode=S_IFDIR|0755,st_size=4096,...}) = 0
openat(AT_FDCWD,"/usr/lib/x86_64-linux-gnu/tls/haswell/x86_64/libnss_db.so.2",O_RDONLY)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/tls/haswell/x86_64",0x7fffd678fde0) = -1 ENOENT
(No such file or directory)
openat(AT_FDCWD,"/usr/lib/x86_64-linux-gnu/tls/haswell/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/tls/haswell",0x7fffd678fde0) = -1 ENOENT (No
such file or directory)
openat(AT_FDCWD,"/usr/lib/x86_64-linux-gnu/tls/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/tls/x86_64",0x7fffd678fde0) = -1 ENOENT (No

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```

such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/tls/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/tls", 0x7fffd678fde0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_C
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/haswell/x86_64", 0x7fffd678fde0) = -1 ENOENT
(No such file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/haswell", 0x7fffd678fde0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu/x86_64", 0x7fffd678fde0) = -1 ENOENT (No such
file or directory)
openat(AT_FDCWD, "/usr/lib/x86_64-linux-gnu/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/x86_64-linux-gnu", {st_mode=S_IFDIR|0755, st_size=4096, ...}) =
0
openat(AT_FDCWD, "/lib/tls/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/lib/tls/haswell/x86_64", 0x7fffd678fde0) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD, "/lib/tls/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/lib/tls/haswell", 0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/tls/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
stat("/lib/tls/x86_64", 0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/tls/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT (No
such file or directory)
stat("/lib/tls", 0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/haswell/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) =
-1 ENOENT (No such file or directory)
stat("/lib/haswell/x86_64", 0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/haswell/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
stat("/lib/haswell", 0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/lib/x86_64/libnss_db.so.2", O_RDONLY|O_CLOEXEC) = -1 ENOENT

```



```

(No such file or directory)
stat("/lib/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/lib/libnss_db.so.2",O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such
file or directory)
stat("/lib",{st_mode=S_IFDIR|0755,st_size=4096,...}) = 0
openat(AT_FDCWD,"/usr/lib/tls/haswell/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/tls/haswell/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file
or directory)
openat(AT_FDCWD,"/usr/lib/tls/haswell/libnss_db.so.2",O_RDONLY|O_CLOEXEC) =
-1 ENOENT (No such file or directory)
stat("/usr/lib/tls/haswell",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/usr/lib/tls/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC) =
-1 ENOENT (No such file or directory)
stat("/usr/lib/tls/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/usr/lib/tls/libnss_db.so.2",O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
stat("/usr/lib/tls",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/usr/lib/haswell/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC)
= -1 ENOENT (No such file or directory)
stat("/usr/lib/haswell/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file or
directory)
openat(AT_FDCWD,"/usr/lib/haswell/libnss_db.so.2",O_RDONLY|O_CLOEXEC) = -1
ENOENT (No such file or directory)
stat("/usr/lib/haswell",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/usr/lib/x86_64/libnss_db.so.2",O_RDONLY|O_CLOEXEC) = -1 ENOENT
(No such file or directory)
stat("/usr/lib/x86_64",0x7fffd678fde0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,"/usr/lib/libnss_db.so.2",O_RDONLY|O_CLOEXEC) = -1 ENOENT (No
such file or directory)
stat("/usr/lib",{st_mode=S_IFDIR|0755,st_size=4096,...}) = 0
munmap(0x7fba2c3d0000,42122) = 0
openat(AT_FDCWD,"/etc/ld.so.cache",O_RDONLY|O_CLOEXEC) = 3
fstat(3,{st_mode=S_IFREG|0644,st_size=42122,...}) = 0
mmap(NULL,42122,PROT_READ,MAP_PRIVATE,3,0) = 0x7fba2c3d0000
close(3) = 0
openat(AT_FDCWD,"/lib/x86_64-linux-gnu/libnss_files.so.2",O_RDONLY|O_CLOEXEC)
= 3
read(3,"\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\3005\0\0\0\0\0"... ,832)
= 832
fstat(3,{st_mode=S_IFREG|0644,st_size=51832,...}) = 0

```

```

mmap(NULL,79672,PROT_READ,MAP_PRIVATE|MAP_DENYWRITE,3,0) = 0x7fba2b910000
mmap(0x7fba2b913000,28672,PROT_READ|PROT_EXEC,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b913000
mmap(0x7fba2b91a000,8192,PROT_READ,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0xa000)
= 0x7fba2b91a000
mmap(0x7fba2b91c000,8192,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,3,0)
= 0x7fba2b91c000
mmap(0x7fba2b91e000,22328,PROT_READ|PROT_WRITE,MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS,-1)
= 0x7fba2b91e000
close(3) = 0
mprotect(0x7fba2b91c000,4096,PROT_READ) = 0
munmap(0x7fba2c3d0000,42122) = 0
openat(AT_FDCWD,"/etc/protocols",O_RDONLY|O_CLOEXEC) = 3
lseek(3,0,SEEK_CUR) = 0
fstat(3,{st_mode=S_IFREG|0644,st_size=2932,...}) = 0
read(3,"# Internet (IP) protocols\n#\n# Up"... ,4096) = 2932
lseek(3,0,SEEK_CUR) = 2932
read(3,"",4096) = 0
close(3) = 0
gettimeofday({tv_sec=1608158342,tv_usec=425693},NULL) = 0
eventfd2(0,EFD_CLOEXEC) = 3
fcntl(3,F_GETFL) = 0x2 (flags O_RDWR)
fcntl(3,F_SETFL,O_RDWR|O_NONBLOCK) = 0
fcntl(3,F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(3,F_SETFL,O_RDWR|O_NONBLOCK) = 0
getrandom("\xd0\xa0\x4c\x9a\x50\x96\x75\xd1\x76\xe6\x5f\x70\x1b\xa0\xef\x10",16,0)
= 16
getrandom("\xfd\xdf\x06\xf4\xc3\x80\xea\x76\x09\x85\x4b\xcb\x1d\xc2\xbf\xd0",16,0)
= 16
eventfd2(0,EFD_CLOEXEC) = 4
fcntl(4,F_GETFL) = 0x2 (flags O_RDWR)
fcntl(4,F_SETFL,O_RDWR|O_NONBLOCK) = 0
fcntl(4,F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(4,F_SETFL,O_RDWR|O_NONBLOCK) = 0
clock_gettime(CLOCK_MONOTONIC,{tv_sec=15483,tv_nsec=968012700}) = 0
epoll_create1(EPoll_CLOEXEC) = 5
epoll_ctl(5,EPOLL_CTL_ADD,4,{0,{u32=3481714016,u64=140736675102048}}) = 0
epoll_ctl(5,EPOLL_CTL_MOD,4,{EPOLLIN,{u32=3481714016,u64=140736675102048}})
= 0
mmap(NULL,8392704,PROT_NONE,MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK,-1,0) = 0x7fba2b100000
mprotect(0x7fba2b101000,8388608,PROT_READ|PROT_WRITE) = 0

```

```

clone(child_stack=0x7fba2b8ffd30,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CL
= 150
eventfd2(0,EFD_CLOEXEC) = 6
fcntl(6,F_GETFL) = 0x2 (flags O_RDWR)
fcntl(6,F_SETFL,O_RDWR|O_NONBLOCK) = 0
fcntl(6,F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(6,F_SETFL,O_RDWR|O_NONBLOCK) = 0
clock_gettime(CLOCK_MONOTONIC,{tv_sec=15484,tv_nsec=12756100}) = 0
epoll_create1(E POLL_CLOEXEC) = 7
epoll_ctl(7,E POLL_CTL_ADD,6,{0,{u32=3481713344,u64=140736675101376}}) = 0
epoll_ctl(7,E POLL_CTL_MOD,6,{E POLLIN,{u32=3481713344,u64=140736675101376}})
= 0
mmap(NULL,8392704,PROT_NONE,MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK,-1,0) = 0x7fba2a8f0000
mprotect(0x7fba2a8f1000,8388608,PROT_READ|PROT_WRITE) = 0
clone(child_stack=0x7fba2b0efd30,flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CL
= 151
clock_gettime(CLOCK_MONOTONIC,{tv_sec=15484,tv_nsec=23250200}) = 0
eventfd2(0,EFD_CLOEXEC) = 8
fcntl(8,F_GETFL) = 0x2 (flags O_RDWR)
fcntl(8,F_SETFL,O_RDWR|O_NONBLOCK) = 0
fcntl(8,F_GETFL) = 0x802 (flags O_RDWR|O_NONBLOCK)
fcntl(8,F_SETFL,O_RDWR|O_NONBLOCK) = 0
poll([{fd=8,events=POLLIN}],1,0) = 0 (Timeout)
socket(AF_NETLINK,SOCK_RAW|SOCK_CLOEXEC,NETLINK_ROUTE) = 9
bind(9,{sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},12) = 0
getsockname(9,{sa_family=AF_NETLINK,nl_pid=149,nl_groups=00000000},[12]) =
0
clock_gettime(CLOCK_REALTIME_COARSE,{tv_sec=1608158342,tv_nsec=592692200})
= 0
sendto(9,"\24\0\0\0\22\0\1\3\206\214\332_\0\0\0\0\0\0\0",20,0,{sa_family=AF_NETLINK
= 20
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */ ,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x01\x00\x0f\x00\x
= 80
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */ ,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x01\x00\x0a\x00\x
= 80
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */ ,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x04\x03\x01\x00\x
= 76
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12

```

```

/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x21\x03\x11\x00\x
= 80
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x21\x03\x0d\x00\x
= 80
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158342,pid=149},"\x00\x00\x21\x03\x0c\x00\x
= 80
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
= 20
sendto(9,"\24\0\0\0\26\0\1\3\207\214\332_\0\0\0\0\0\0\0",20,0,{sa_family=AF_NETLINK
= 20
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x10\x00\x00\x0f\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\xfd\x0f\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x10\x00\x00\x0a\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\xfd\x0a\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x08\x00\x00\x01\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x80\x00\xfe\x01\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x18\x00\x00\x11\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\x00\x11\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\x00\x11\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? */,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x80\x00\x00\x11\x00\x

```

```
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x80\x00\x00\x11\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x80\x00\x00\x11\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\xfd\x11\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x10\x00\x00\x0d\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\xfd\x0d\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x02\x10\x00\x00\x0c\x00\x
= 60
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
/* NLMSG_??? *//,flags=NLM_F_MULTII,seq=1608158343,pid=149},"\x0a\x40\x00\xfd\x0c\x00\x
= 64
recvmsg(9,{msg_name={sa_family=AF_NETLINK,nl_pid=0,nl_groups=00000000},msg_namelen=12
= 20
close(9) = 0
socket(AF_INET,SOCK_STREAM|SOCK_CLOEXEC,IPPROTO_TCP) = 9
setsockopt(9,SOL_SOCKET,SO_REUSEADDR,[1],4) = 0
bind(9,{sa_family=AF_INET,sin_port=htons(30000),sin_addr=inet_addr("127.0.0.1")},16)
= 0
listen(9,100) = 0
getsockname(9,{sa_family=AF_INET,sin_port=htons(30000),sin_addr=inet_addr("127.0.0.1"),
= 0
getsockname(9,{sa_family=AF_INET,sin_port=htons(30000),sin_addr=inet_addr("127.0.0.1"),
= 0
write(6,"\1\0\0\0\0\0\0\0",8) = 8
write(8,"\1\0\0\0\0\0\0\0",8) = 8
fstat(0,{st_mode=S_IFCHR|0660,st_rdev=makedev(0x4,0x1),...}) = 0
ioctl(0,TCGETS,{B38400 opost isig icanon echo ...}) = 0
read(0,"",4096) = 0
write(4,"\1\0\0\0\0\0\0\0",8) = 8
poll([fd=3,events=POLLIN],1,-1) = 1 ([fd=3,revents=POLLIN])
```

read(3,"\\1\\0\\0\\0\\0\\0\\0\\0",8)	= 8
write(6,"\\1\\0\\0\\0\\0\\0\\0\\0",8)	= 8
close(7)	= 0
close(6)	= 0
close(5)	= 0
close(4)	= 0
close(3)	= 0
exit_group(0)	= ?
+++ exited with 0 +++	

## 7 Выводы

В результате выполнения лабораторной работы я узнал, как утилита `strace` даёт возможность посмотреть на системные вызовы в ходе выполнения программ.