

# TP5-ARSE

November 2022

## 1 User space

### 1.1

On liste les processus de root:

```
ps -f -U root -u root
```

```
UID      PID  PPID  C  STIME TTY      TIME CMD
root      1    0    1 13:53 ?        00:00:01 /usr/lib/systemd/systemd --switched-root --system --
deserialize 21
root      2    0    0 13:53 ?        00:00:00 [kthreadd]
root      3    2    0 13:53 ?        00:00:00 [ksoftirqd/0]
root      4    2    0 13:53 ?        00:00:00 [kworker/0:0]
root      5    2    0 13:53 ?        00:00:00 [kworker/0:0H]
root      6    2    0 13:53 ?        00:00:00 [kworker/u4:0]
root      7    2    0 13:53 ?        00:00:00 [migration/0]
root      8    2    0 13:53 ?        00:00:00 [rcu_bh]
root      9    2    0 13:53 ?        00:00:00 [rcu_sched]
root     10    2    0 13:53 ?        00:00:00 [lru-add-drain]
root     11    2    0 13:53 ?        00:00:00 [watchdog/0]
root     12    2    0 13:53 ?        00:00:00 [watchdog/1]
root     13    2    0 13:53 ?        00:00:00 [migration/1]
root     14    2    0 13:53 ?        00:00:00 [ksoftirqd/1]
root     15    2    0 13:53 ?        00:00:00 [kworker/1:0]
root     16    2    0 13:53 ?        00:00:00 [kworker/1:0H]
root     18    2    0 13:53 ?        00:00:00 [kdevtmpfs]
root     19    2    0 13:53 ?        00:00:00 [netns]
root     20    2    0 13:53 ?        00:00:00 [khungtaskd]
root     21    2    0 13:53 ?        00:00:00 [writeback]
root     22    2    0 13:53 ?        00:00:00 [kintegrityd]
root     23    2    0 13:53 ?        00:00:00 [bioaset]
root     24    2    0 13:53 ?        00:00:00 [bioaset]
root     25    2    0 13:53 ?        00:00:00 [bioaset]
root     26    2    0 13:53 ?        00:00:00 [kblockd]
root     27    2    0 13:53 ?        00:00:00 [md]
root     28    2    0 13:53 ?        00:00:00 [edac-poller]
root     29    2    0 13:53 ?        00:00:00 [kworker/0:1]
root     30    2    0 13:53 ?        00:00:00 [kworker/1:1]
root     35    2    0 13:53 ?        00:00:00 [kswapd0]
root     36    2    0 13:53 ?        00:00:00 [ksmd]
root     37    2    0 13:53 ?        00:00:00 [khugepaged]
root     38    2    0 13:53 ?        00:00:00 [crypto]
root     46    2    0 13:53 ?        00:00:00 [kthrotld]
: _
```

```

root      47      2 0 13:53 ?      00:00:00 [kworker/u4:1]
root      48      2 0 13:53 ?      00:00:00 [kmpath_rdacd]
root      49      2 0 13:53 ?      00:00:00 [kalluad]
root      50      2 0 13:53 ?      00:00:00 [kpsmouse]
root      51      2 0 13:53 ?      00:00:00 [ip6_addrconf]
root      52      2 0 13:53 ?      00:00:00 [kworker/0:2]
root      65      2 0 13:53 ?      00:00:00 [deferwq]
root     104      2 0 13:53 ?      00:00:00 [kworker/1:2]
root     112      2 0 13:53 ?      00:00:00 [kauditd]
root     196      2 0 13:53 ?      00:00:00 [rpciod]
root     197      2 0 13:53 ?      00:00:00 [xpriod]
root     268      2 0 13:53 ?      00:00:00 [ata_sff]
root     269      2 0 13:53 ?      00:00:00 [scsi_eh_0]
root     270      2 0 13:53 ?      00:00:00 [scsi_tmf_0]
root     271      2 0 13:53 ?      00:00:00 [scsi_eh_1]
root     273      2 0 13:53 ?      00:00:00 [scsi_tmf_1]
root     274      2 0 13:53 ?      00:00:00 [kworker/u4:2]
root     277      2 0 13:53 ?      00:00:00 [scsi_eh_2]
root     278      2 0 13:53 ?      00:00:00 [scsi_tmf_2]
root     285      2 0 13:53 ?      00:00:00 [kworker/u4:3]
root     287      2 0 13:53 ?      00:00:00 [kworker/0:1H]
root     302      2 0 13:53 ?      00:00:00 [bioset]
root     303      2 0 13:53 ?      00:00:00 [xfsalloc]
root     304      2 0 13:53 ?      00:00:00 [xfs_mru_cache]
root     305      2 0 13:53 ?      00:00:00 [xfs-buf/sda1]
root     306      2 0 13:53 ?      00:00:00 [xfs-data/sda1]
root     307      2 0 13:53 ?      00:00:00 [xfs-conv/sda1]
root     308      2 0 13:53 ?      00:00:00 [xfs-cil/sda1]
root     309      2 0 13:53 ?      00:00:00 [xfs-reclaim/sda1]
root     310      2 0 13:53 ?      00:00:00 [xfs-log/sda1]
root     311      2 0 13:53 ?      00:00:00 [xfs-eofblocks/s]
root     312      2 0 13:53 ?      00:00:00 [xfsaild/sda1]
root     400      1 0 13:53 ?      00:00:00 /usr/lib/systemd/systemd-journald
root     436      1 0 13:53 ?      00:00:00 /usr/lib/systemd/systemd-udev
root     466      2 0 13:53 ?      00:00:00 [kworker/1:1H]
root     522      1 0 13:53 ?      00:00:00 /sbin/auditd
;

root     304      2 0 13:53 ?      00:00:00 [xfs_mru_cache]
root     305      2 0 13:53 ?      00:00:00 [xfs-buf/sda1]
root     306      2 0 13:53 ?      00:00:00 [xfs-data/sda1]
root     307      2 0 13:53 ?      00:00:00 [xfs-conv/sda1]
root     308      2 0 13:53 ?      00:00:00 [xfs-cil/sda1]
root     309      2 0 13:53 ?      00:00:00 [xfs-reclaim/sda1]
root     310      2 0 13:53 ?      00:00:00 [xfs-log/sda1]
root     311      2 0 13:53 ?      00:00:00 [xfs-eofblocks/s]
root     312      2 0 13:53 ?      00:00:00 [xfsaild/sda1]
root     400      1 0 13:53 ?      00:00:00 /usr/lib/systemd/systemd-journald
root     436      1 0 13:53 ?      00:00:00 /usr/lib/systemd/systemd-udev
root     466      2 0 13:53 ?      00:00:00 [kworker/1:1H]
root     522      1 0 13:53 ?      00:00:00 /sbin/auditd
root     528      2 0 13:53 ?      00:00:00 [ttm_swap]
root     529      2 0 13:53 ?      00:00:00 [irq/18-vmmgfx]
root     552      1 0 13:53 ?      00:00:00 /usr/lib/systemd/systemd-logind
root     555      1 0 13:53 ?      00:00:00 /usr/sbin/gssproxy -D
root     566      1 0 13:53 ?      00:00:00 /usr/sbin/irqbalance --foreground
root     578      1 0 13:53 ?      00:00:00 login -- root
root     579      1 0 13:53 ?      00:00:00 /usr/sbin/crond -n
root     738      579 0 13:53 ?      00:00:00 /usr/sbin/CROND -n
root     739      579 0 13:53 ?      00:00:00 /usr/sbin/CROND -n
root     742      738 0 13:53 ?      00:00:00 /usr/bin/python /root/what_am_i_doing.py
root     743      739 99 13:53 ?      00:02:07 /root/crazy /etc/fstab
root     776      1 0 13:53 ?      00:00:00 /usr/sbin/sshd -D
root     778      1 0 13:53 ?      00:00:00 /usr/bin/python -Es /usr/sbin/tuned -l -P
root     781      1 0 13:53 ?      00:00:00 /usr/sbin/rsyslogd -n
root     909      2 0 13:53 ?      00:00:00 [nfsiod]
root     932      2 0 13:53 ?      00:00:00 [nfsv4.1-svc]
root    1059      1 0 13:53 ?      00:00:00 /usr/libexec/postfix/master -w
root    1133      578 0 13:53 tty1      00:00:00 -bash
root    1175      436 0 13:55 ?      00:00:00 /usr/lib/systemd/systemd-udev
root    1176      436 0 13:55 ?      00:00:00 /usr/lib/systemd/systemd-udev
root    1177    1133 0 13:55 tty1      00:00:00 ps -f -U root -u root
root    1178    1133 0 13:55 tty1      00:00:00 less
(END)[ 253.412809] nfs: server 127.0.0.1 not responding, still trying
-

```

## 1.2

Affichage des fichiers lus par ps:

```
lssof -c ps
```

### 1.3

Il y a 20 appels systèmes effectués par `ps -elf`:

`strace -c ps -elf`

```

4 S postfix 1063 1059 0 00 0 - 23619 ep_pol 14:22 ? 00:00:00 qmgr -l -t unix -u
4 S root 1136 593 0 00 0 - 28858 do_wai 14:23 tty1 00:00:00 -bash
4 S root 1157 1136 0 00 0 - 1797 do_wai 14:23 tty1 00:00:00 strace -c ps -elf
0 R root 1159 1157 0 00 0 - 38831 - 14:23 tty1 00:00:00 ps -elf
% time seconds usecs/call calls errors syscall
-----
42.78 0.019119 191 100 write
24.97 0.011178 25 451 12 open
20.21 0.009051 29 307 4 stat
8.15 0.003649 8 467 read
2.17 0.000972 2 442 close
0.43 0.000191 2 84 mmap
0.36 0.000163 3 47 mprotect
0.34 0.000153 77 2 statfs
0.25 0.000113 7 16 munmap
0.18 0.000046 1 41 fstat
0.18 0.000044 22 2 getdents
0.06 0.000026 1 24 rt_sigaction
0.04 0.000017 9 2 socket
0.03 0.000012 6 2 2 connect
0.02 0.000010 3 3 2 access
0.01 0.000006 2 3 brk
0.01 0.000005 2 3 ioctl
0.01 0.000003 1 3 lseek
0.00 0.000002 2 1 rt_sigprocmask
0.00 0.000002 2 1 getrlimit
0.00 0.000002 2 1 arch_prctl
0.00 0.000002 2 1 futex
0.00 0.000002 2 1 set_tid_address
0.00 0.000002 2 1 openat
0.00 0.000002 2 1 set_robust_list
0.00 0.000001 1 1 uname
0.00 0.000001 1 1 geteuid
0.00 0.000000 0 1 execve
-----
100.00 0.044774 2009 20 total
[root@vm0 ~]#

```

## 1.4

Liste des appels systèmes effectués par lsof -e /mnt

```
lsof 4.87
latest revision: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/
latest FAQ: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ
latest man page: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof_man
usage: [-?abhKlnMoOPRtUvXX] [+!-c c] [+!-d s] [+D D] [+!-f[gG]] [+!-e s]
[-F [f]] [-g [s]] [-i [i]] [+!-L [l]] [+m [m]] [+!-M] [-o [o]] [-p s]
[+!-r [t]] [-s [p:s]] [-S [t]] [-T [t]] [-u s] [+!-w] [-x [f]] [-Z [Z]] [--] [names]
Use the '-h' option to get more help information.
% time    seconds  usecs/call   calls   errors syscall
-----
70.53    0.001319         1    1029    1021 close
24.60    0.000460        31     15      15 write
2.62     0.000049         6      8      8 open
1.12     0.000021         1     19     19 mmap
0.32     0.000006         1      7      7 fstat
0.21     0.000004         4      1      1 umask
0.16     0.000003         3      1      1 getuid
0.16     0.000003         3      1      1 getgid
0.16     0.000003         3      1      1 getegid
0.11     0.000002         2      1      1 geteuid
0.00     0.000000         0      5      5 read
0.00     0.000000         0      1      1 stat
0.00     0.000000         0     12     12 mprotect
0.00     0.000000         0      1      1 munmap
0.00     0.000000         0      3      3 brk
0.00     0.000000         0      2      2 rt_sigaction
0.00     0.000000         0      1      1 rt_sigprocmask
0.00     0.000000         0      2      1 access
0.00     0.000000         0      1      1 execve
0.00     0.000000         0      2      2 getrlimit
0.00     0.000000         0      2      2 statfs
0.00     0.000000         0      1      1 arch_prctl
0.00     0.000000         0      1      1 set_tid_address
0.00     0.000000         0      1      1 set_robust_list
-----
100.00    0.001870         0    1118    1022 total
[root@vm0 ~]# _
```

Fichiers ouverts par la commande précédente:

```
lsof -c lsof -e /mnt
```

Liste des appels aux bibliothèques externes

```

[root@vm0 ~]# ltrace -c lsof -elf /mnt
lsof: -e not followed by a file system path: "lf"
lsof 4.87
latest revision: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/
latest FAQ: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ
latest man page: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof_man
usage: [-?abhKlnMoOPRtUvXX] [+!-c c] [+!-d s] [+D D] [+!-f[gG]] [+!-e s]
[-F [f]] [-g [s]] [-i [i]] [+!-L [l]] [+m [m]] [+!-M] [-o [o]] [-p s]
[+!-r [t]] [-s [p:s]] [-S [t]] [-T [t]] [-u s] [+!-w] [-x [f]] [-Z [Z]] [--] [names]
Use the '-h' option to get more help information.
% time      seconds  usecs/call   calls    function
-----
53.11      0.198813      198813         1  __libc_start_main
45.49      0.178311        166      1022  close
0.41      0.001541         192         8  __fprintf_chk
0.33      0.001223         174         7  fwrite
0.07      0.000265         265         1  exit
0.07      0.000261         261         1  setlocale
0.06      0.000217         217         1  getegid
0.05      0.000192         192         1  umask
0.04      0.000155         155         1  open64
0.04      0.000146         146         1  __snprintf_chk
0.04      0.000146         146         1  getgid
0.04      0.000144         144         1  geteuid
0.04      0.000144         144         1  getuid
0.03      0.000129         129         1  getpid
0.03      0.000127         127         1  malloc
0.03      0.000127         127         1  strchr
0.03      0.000117         117         1  exit_group
0.03      0.000114         114         1  getdtablesize
0.03      0.000098          98         1  strrchr
0.03      0.000096          96         1  is_selinux_enabled
-----
100.00      0.374366      1054 total
[root@vm0 ~]# [ 346.088314] nfs: server 127.0.0.1 not responding, timed out

```

On remarque qu'`exit` est l'appel le plus utilisé. Il permet d'arrêter un thread.

## 2 La pile

### 2.1

Le programme suivant dépasse la taille de la pile à coup sûr, à cause d'une récursivité infinie.

```
[root@vm0 ~]# cat test.c
#include <stdlib.h>
#include <stdio.h>

void a(){
    a();
}

int main(){
    a();
    return 0;
}

[root@vm0 ~]# gcc -o test test.c
[root@vm0 ~]# ./test
[ 877.098134] test[1305]: segfault at 7fff4e194ff8 ip 00000000004004d6 sp 00007fff4e195000 error 6
in test[400000+1000]
Segmentation fault
[root@vm0 ~]# ulimit -a
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 7177
max locked memory       (kbytes, -l) 64
max memory size         (kbytes, -m) unlimited
open files              (-n) 1024
pipe size               (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) 8192
cpu time                (seconds, -t) unlimited
max user processes      (-u) 7177
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
[root@vm0 ~]#
```

### 2.2

Le segfault signifie que le programme a tenté d'accéder, en dépassant la pile, à une zone mémoire auquel il n'a pas l'accès. Pour corriger l'erreur on peut remplacer `a()` par un `printf` ou déboguer le programme.

## 3 Compilation /GDB

### 3.1

On crée les exécutable avec les symboles de debug et sans.

```
[root@vm0 ~]# cat infinite.c
#include <stdlib.h>
#include <unistd.h>

int check(char cond){
    return(cond == 0);
}

void loop(void){
    int a=0;

    while(check(a)){
        usleep(1000);
    }
}

int main(void){
    loop();
    exit(0);
}

[root@vm0 ~]# gcc -o infinite_sansdebug infinite.c
[root@vm0 ~]# gcc -g infinite.c -o infinite_debug
[root@vm0 ~]# diff infinite_sansdebug infinite_debug
Binary files infinite_sansdebug and infinite_debug differ
[root@vm0 ~]#
```

### 3.2

On observe les détails dans gdb avec l'exécutable contenant les symboles de debug

```

(gdb) file infinite_debug
Reading symbols from /root/infinite_debug...done.
(gdb) r infinite_debug
Starting program: /root/infinite_debug infinite_debug

^C
Program received signal SIGINT, Interrupt.
0x00007ffff7ad3550 in __nanosleep_nocancel () from /lib64/libc.so.6
Missing separate debuginfos, use: debuginfo-install glibc-2.17-222.el7.x86_64
(gdb) where
#0 0x00007ffff7ad3550 in __nanosleep_nocancel () from /lib64/libc.so.6
#1 0x00007ffff7b04404 in usleep () from /lib64/libc.so.6
#2 0x000000000040058d in loop () at infinite.c:11
#3 0x00000000004005a9 in main () at infinite.c:16
(gdb) file infinite_sansdebug
A program is being debugged already.
Are you sure you want to change the file? (y or n) y

Load new symbol table from "/root/infinite_sansdebug"? (y or n) y
Reading symbols from /root/infinite_sansdebug...(no debugging symbols found)...done.
(gdb) r infinite_sansdebug
The program being debugged has been started already.
Start it from the beginning? (y or n) y
Starting program: /root/infinite_sansdebug infinite_sansdebug

^C
Program received signal SIGINT, Interrupt.
0x00007ffff7ad3550 in __nanosleep_nocancel () from /lib64/libc.so.6
Missing separate debuginfos, use: debuginfo-install glibc-2.17-222.el7.x86_64
(gdb) where
#0 0x00007ffff7ad3550 in __nanosleep_nocancel () from /lib64/libc.so.6
#1 0x00007ffff7b04404 in usleep () from /lib64/libc.so.6
#2 0x000000000040058d in loop ()
#3 0x00000000004005a9 in main ()
(gdb)

```

### 3.3

Génération du corefile bash

```
gcore 1121
```

```

752 ?      00:00:00 tuned
870 ?      00:03:38 crazy
871 ?      00:00:00 python
934 ?      00:00:00 rpc.statd
941 ?      00:00:00 rpcbind
997 ?      00:00:00 master
1006 ?     00:00:00 pickup
1007 ?     00:00:00 qmgr
1071 ?     00:00:00 nfsiod
1076 ?     00:00:00 nfs4.1-svc
1121 tty1   00:00:00 bash
1167 tty1   00:00:00 ps
[root@vm0 ~]# gcore 1121
0x00007fe9a894b17c in waitpid () from /lib64/libc.so.6
Saved corefile core.1121
[root@vm0 ~]# strings core.1121 | head -n 20
CORE
-bash
-bash
CORE
CORE
/root
n:/root/bin
01:36:*.oga=01:36:*.spc=01:36:*.xspf=01:36:
LINUX
/root
n:/root/bin
01:36:*.oga=01:36:*.spc=01:36:*.xspf=01:36:
IGISCORE
CORE
ELIFCORE
/usr/bin/bash
/usr/bin/bash
/usr/lib64/libnss_files-2.17.so
/usr/lib64/libnss_files-2.17.so
/usr/lib64/libc-2.17.so
[root@vm0 ~]# _

```



On lance gdb sur le corefile et on affiche la pile d'appel:

```
ulimit -c unlimited
gdb -q /usr/bin/bash core.1121
where
```

```
[root@vm0 ~]# ulimit -c unlimited
[root@vm0 ~]# gdb -q /usr/bin/bash core.1121
Reading symbols from /usr/bin/bash...Reading symbols from /usr/bin/bash...(no debugging symbols found)...done.
(no debugging symbols found)...done.

warning: core file may not match specified executable file.
[New LWP 1121]
Core was generated by '-bash'.
#0  0x00007fe9a894b17c in waitpid () from /lib64/libc.so.6
Missing separate debuginfos, use: debuginfo-install bash-4.2.46-30.el7.x86_64
(gdb) bt full
#0  0x00007fe9a894b17c in waitpid () from /lib64/libc.so.6
No symbol table info available.
#1  0x0000000000440b24 in waitchld.isra.10 ()
No symbol table info available.
#2  0x0000000000441ddc in wait_for ()
No symbol table info available.
#3  0x0000000000433aae in execute_command_internal ()
No symbol table info available.
#4  0x0000000000433cce in execute_command ()
No symbol table info available.
#5  0x000000000041e305 in reader_loop ()
No symbol table info available.
#6  0x000000000041c96e in main ()
No symbol table info available.
(gdb) where
#0  0x00007fe9a894b17c in waitpid () from /lib64/libc.so.6
#1  0x0000000000440b24 in waitchld.isra.10 ()
#2  0x0000000000441ddc in wait_for ()
#3  0x0000000000433aae in execute_command_internal ()
#4  0x0000000000433cce in execute_command ()
#5  0x000000000041e305 in reader_loop ()
#6  0x000000000041c96e in main ()
(gdb)
```

### 3.4

On debug l'exécutable crazy

```
gdb -q crazy
disass main
b main:12
r
bt full
set count = 1
c
```

```

[root@vm0 ~]# gdb -q crazy
Reading symbols from /root/crazy...done.
(gdb) disass main
Dump of assembler code for function main:
   0x000000004005bd <+0>:    push    %rbp
   0x000000004005be <+1>:    mov     %rsp,%rbp
   0x000000004005c1 <+4>:    sub     $0x20,%rsp
   0x000000004005c5 <+8>:    mov     %edi,-0x14(%rbp)
   0x000000004005c8 <+11>:   mov     %rsi,-0x20(%rbp)
   0x000000004005cc <+15>:   movl    $0x1,-0x4(%rbp)
   0x000000004005d3 <+22>:   jmp     0x400614 <main+87>
   0x000000004005d5 <+24>:   mov     -0x20(%rbp),%rax
   0x000000004005d9 <+28>:   mov     (%rax),%rax
   0x000000004005dc <+31>:   mov     $0x0,%esi
   0x000000004005e1 <+36>:   mov     %rax,%rdi
   0x000000004005e4 <+39>:   mov     $0x0,%eax
   0x000000004005e9 <+44>:   callq   0x4004c0 <open@plt>
   0x000000004005ee <+49>:   mov     %eax,-0x8(%rbp)
   0x000000004005f1 <+52>:   lea     -0x9(%rbp),%rcx
   0x000000004005f5 <+56>:   mov     -0x8(%rbp),%eax
   0x000000004005f8 <+59>:   mov     $0x1,%edx
   0x000000004005fd <+64>:   mov     %rcx,%rsi
   0x00000000400600 <+67>:   mov     %eax,%edi
   0x00000000400602 <+69>:   callq   0x400490 <read@plt>
   0x00000000400607 <+74>:   mov     %eax,-0x4(%rbp)
   0x0000000040060a <+77>:   mov     -0x8(%rbp),%eax
   0x0000000040060d <+80>:   mov     %eax,%edi
   0x0000000040060f <+82>:   callq   0x400480 <close@plt>
   0x00000000400614 <+87>:   cmpl    $0x0,-0x4(%rbp)
   0x00000000400618 <+91>:   jne     0x4005d5 <main+24>
   0x0000000040061a <+93>:   mov     $0x0,%eax
   0x0000000040061f <+98>:   leaveq  0
   0x00000000400620 <+99>:   retq
End of assembler dump.
(gdb) b main:12
Breakpoint 1 at 0x4005cc: file crazy.c, line 8.
(gdb)

```

```

(gdb) r
Starting program: /root/crazy

Breakpoint 1, main (argc=1, argv=0x7fffffff698) at crazy.c:8
warning: Source file is more recent than executable.
8      int fd, count=1;
Missing separate debuginfos, use: debuginfo-install glibc-2.17-222.el7.x86_64
(gdb) bt full
#0  main (argc=1, argv=0x7fffffff698) at crazy.c:8
    buff = 0 '\000'
    fd = 0
    count = 0
(gdb) set count = 1
(gdb) c
Continuing.

```