

Stack overflow without debugger

```
(hacker@kali)-[~/Downloads]
$ g++ Stack_overflow.cpp -o stack_nodebug

(hacker@kali)-[~/Downloads]
$ ./stack_nodebug

zsh: segmentation fault (core dumped) ./stack_nodebug

(hacker@kali)-[~/Downloads]
$ mv core core_stack_nodebug

(hacker@kali)-[~/Downloads]
$ ddd ./stack_nodebug core_stack_nodebug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./stack_nodebug...
(No debugging symbols found in ./stack_nodebug)
[New LWP 15907]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./stack_nodebug'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  0x000055828ec4212d in crash() ()
(gdb) where
#0  0x000055828ec4212d in crash() ()
#1  0x000055828ec42132 in crash() ()
#2  0x000055828ec42132 in crash() ()
#3  0x000055828ec42132 in crash() ()
#4  0x000055828ec42132 in crash() ()
```

Stack overflow with debugger

```
(hacker@kali)-[~/Downloads]
$ g++ -g Stack_overflow.cpp -o stack_debug

(hacker@kali)-[~/Downloads]
$ ./stack_debug

zsh: segmentation fault (core dumped) ./stack_debug

(hacker@kali)-[~/Downloads]
$ mv core core_stack_debug

(hacker@kali)-[~/Downloads]
$ ddd ./stack_debug core_stack_debug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./stack_debug...
[New LWP 16127]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./stack_debug'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  crash () at Stack_overflow.cpp:4
/home/hacker/Downloads/Stack_overflow.cpp:4:58:begin:0x564e1f80c1
(gdb) where
#0  crash () at Stack_overflow.cpp:4
#1  0x0000564e1f80c132 in crash () at Stack_overflow.cpp:4
#2  0x0000564e1f80c132 in crash () at Stack_overflow.cpp:4
#3  0x0000564e1f80c132 in crash () at Stack_overflow.cpp:4
#4  0x0000564e1f80c132 in crash () at Stack_overflow.cpp:4
```

Division by zero without debugger

```
(hacker@kali)-[~/Downloads]
$ g++ Division_by_zero.cpp -o div_nodebug
Division_by_zero.cpp: In function 'int main()':
Division_by_zero.cpp:4:14: warning: division by zero [-Wdiv-by-zero]
    4 |     int a = 5/0;
      |           ^^^

(hacker@kali)-[~/Downloads]
$ ./div_nodebug
zsh: floating point exception (core dumped) ./div_nodebug

(hacker@kali)-[~/Downloads]
$ mv core core_div_nodebug

(hacker@kali)-[~/Downloads]
$ ddd ./div_nodebug core_div_nodebug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./div_nodebug...
(No debugging symbols found in ./div_nodebug)
[New LWP 16438]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./div_nodebug'.
Program terminated with signal SIGFPE, Arithmetic exception.
#0  0x000056110d2e9138 in main ()
(gdb) where
#0  0x000056110d2e9138 in main ()
```

Division by zero with debugger

```
(hacker@kali)-[~/Downloads]
$ g++ -g Division_by_zero.cpp -o div_debug
Division_by_zero.cpp: In function 'int main()':
Division_by_zero.cpp:4:14: warning: division by zero [-Wdiv-by-zero]
    4 |     int a = 5/0;
      |           ^^^

(hacker@kali)-[~/Downloads]
$ ./div_debug
zsh: floating point exception (core dumped) ./div_debug

(hacker@kali)-[~/Downloads]
$ mv core core_div_debug

(hacker@kali)-[~/Downloads]
$ ddd ./div_debug core_div_debug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./div_debug...
[New LWP 16590]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./div_debug'.
Program terminated with signal SIGFPE, Arithmetic exception.
#0  0x0000559aac68b138 in main () at Division_by_zero.cpp:4
(gdb) where
#0  0x0000559aac68b138 in main () at Division_by_zero.cpp:4
```

Invalid memory address without debugger

```
(hacker@kali)-[~/Downloads]
$ g++ Invalid_memory_address.cpp -o invalid_nodbug

(hacker@kali)-[~/Downloads]
$ ./invalid_nodbug
zsh: segmentation fault (core dumped) ./invalid_nodbug

(hacker@kali)-[~/Downloads]
$ mv core core_invalid_nodbug

(hacker@kali)-[~/Downloads]
$ ddd ./invalid_nodbug core_invalid_nodbug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./invalid_nodbug...
(No debugging symbols found in ./invalid_nodbug)
[New LWP 16720]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./invalid_nodbug'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  0x0000557b73b5c13a in main ()
(gdb) where
#0  0x0000557b73b5c13a in main ()
(gdb) info locals
No symbol table info available.
```

Invalid memory address with debugger

```
(hacker@kali)-[~/Downloads]
$ g++ -g Invalid_memory_address.cpp -o invalid_debug

(hacker@kali)-[~/Downloads]
$ ./invalid_debug
zsh: segmentation fault (core dumped) ./invalid_debug

(hacker@kali)-[~/Downloads]
$ mv core core_invalid_debug

(hacker@kali)-[~/Downloads]
$ ddd ./invalid_debug core_invalid_debug
```

```
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
./invalid_debug...
[New LWP 16828]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./invalid_debug'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  0x00005631beb0713a in main () at Invalid_memory_address.cpp:5
(gdb) where
#0  0x00005631beb0713a in main () at Invalid_memory_address.cpp:5
(gdb) info locals
p = 0xdeadbeef
(gdb) I
```