

How to examine the stack contents

IN THIS DOCUMENT

- ▶ From within xTIMEcomposer Studio
 - ▶ From the command line
-

version	1.1.0
scope	Example. This code is provided as example code for a user to base their code on.
description	How to examine the stack contents
boards	Unless otherwise specified, this example runs on the SliceKIT Core Board, but can easily be run on any XMOS device by using a different XN file.

XGDB can be used to examine the contents of the stack memory at a given point in time. For example, compile the following code ensuring that debug is enabled (-g):

```
int add1(int x) {
    return x + 1;
}

int sub1(int x, int y) {
    return add1(x) - add1(y);
}

int main() {
    sub1(6, 3);
    return 0;
}
```

1 From within xTIMEcomposer Studio

Create a new debug configuration via *Run->debug Configurations->xCORE Applications*. Set a breakpoint at the start of *add1* then start debugging. Execution will now break when *add1* is reached. The contents of the stack can be viewed from the *Debug* view. Note: Clicking on the previous stack frames in the *Debug* view causes the *Variables* view to be updated with the variables in scope for this stack frame.

2 From the command line

On the command line, stack contents can be displayed using the *backtrace* command. For example, start XGDB, connect to the simulator and set a breakpoint on *add1*. When run, execution will break at the start of *add1*. You can display the stack contents using the *backtrace* command as follows:

```
> xgdb a.xe
...etc...
(gdb) connect -s
0xffffc04e in ?? ()
(gdb) b add1
Breakpoint 1 at 0x100b2: file examining_the_stack.xc, line 9.
(gdb) r
...etc...
Breakpoint 1, add1 (x=6) at examining_the_stack.xc:9
9     return x + 1;
(gdb) backtrace
#0  add1 (x=6) at examining_the_stack.xc:9
#1  0x000100ca in sub1 (x=6, y=3) at examining_the_stack.xc:13
#2  0x000100e4 in main () at examining_the_stack.xc:17
```



Copyright © 2013, All Rights Reserved.

Xmos Ltd. is the owner or licensee of this design, code, or Information (collectively, the "Information") and is providing it to you "AS IS" with no warranty of any kind, express or implied and shall have no liability in relation to its use. Xmos Ltd. makes no representation that the Information, or any particular implementation thereof, is or will be free from any claims of infringement and again, shall have no liability in relation to any such claims.