

How to examine the register state in a core

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version	1.0.1
scope	Example. This code is provided as example code for a user to base their code on.
description	How to examine the register state in a core
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 memory at a given point in time. For example, compile the following code ensuring that debug is enabled (-g):

```
int main() {  
    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 *main* then start debugging. Execution will now break when *main* is reached. The contents of the registers, and some core specific internal registers, are visible via the *Registers* view.

2 From the command line

On the command line, register state can be examined using the *print* command. For example, start XGDB, connect to the simulator and set a breakpoint on *main*. When run, execution will break at the start of *main*. You can now display the register contents using the *print* command as follows:

```
> xgdb a.xe  
...etc...  
(gdb) connect -s  
0xffffc04e in ?? ()  
(gdb) b main
```

```
Breakpoint 1 at 0x100b0: file examining_core_state.xc, line 9.
(gdb) r
...etc...
Breakpoint 1, main () at examining_core_state.xc:9
9   return 0;
(gdb) print /x $r0
$1 = 0x0
(gdb) print /x $r1
$2 = 0x10240
(gdb) print /x $r2
$3 = 0x1f
(gdb) print /x $lr
$4 = 0x10062
(gdb) print /x $pc
$5 = 0x100b0
...etc...
```

Note: If required, the *info registers* command can be used to display the complete state of all of the registers.



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