Application Note: AN10015

How to examine the value of a variable

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to examine the value of a variable.

Required tools and libraries

This application note is based on the following components:

- xTIMEcomposer Tools - Version 14.0.0

Required hardware

Programming how-tos are generally not specific to any particular hardware and can usually run on all XMOS devices. See the contents of the note for full details.

1 How to examine the value of a variable

XGDB can be used to examine the value of a particular variable 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 main() {
  add1(12);
  return 0;
}
```

2 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 current value of the parameter *x* can be seen by hovering over the variable in the editor. Alternatively, the values for all of the variables currently in scope can been found in the *Variables* view.

3 From the command line

On the command line, variables can examined using the *print* 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 now display the value of the parameter *x* using the *print* command as follows:

```
> xgdb a.xe
...etc...
(gdb) connect -s
0xffffc04e in ?? ()
(gdb) b add1
Breakpoint 1 at 0x100b2: file examining_variables.xc, line 11.
(gdb) run
...etc...
Breakpoint 1, add1 (x=12) at examining_variables.xc:11
11    return x + 1;
(gdb) print x
$1 = 12
(gdb) print /x x
$2 = 0xc
```

Note: The print command accepts an argument specifying the desired format. In the above example, the \/x argument can be used to display the value in hex.