

Application Note: AN10062

How to automate the repetition of XGDB commands

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to automate the repetition of XGDB commands.

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 automate the repetition of XGDB commands

Sometimes it is useful to be able to repeat a sequence of XGDB commands a number of times. For example, in order to better understand the reason why a program traps, it might be instructive to 'single step' your way to the trap instead of just continuing. This might give us an indication of the route taken leading up to the trap. As a simple example of using this mechanism, compile the following code ensuring that debug is enabled (-g):

```
int main() {
    int i, j = 0;
    for (i = 0; i < 5; ++i) {
        j += i;
    }
    return 0;
}
```

For example, start XGDB, connect to the simulator, set a breakpoint on *main* and start debugging. Execution will now break when *main* is reached. The following example tells XGDB to single step while $i < 5$, and on each step, print the value of the loop index i :

```
> xgdb a.xe
...etc...
(gdb) connect -s
0xffffc070 in ?? ()
(gdb) b main
Breakpoint 1 at 0x100b0: file repeating_commands_interactively.xc, line 13.
(gdb) run
...etc...
Breakpoint 1, main () at repeating_commands_interactively.xc:13
13   int i, j = 0;
(gdb) while i < 5
>step
>print i
>end
14   for (i = 0; i < 5; ++i) {
$1 = -1159860211
15     j += i;
$2 = 0
14   for (i = 0; i < 5; ++i) {
$3 = 0
15     j += i;
$4 = 1
14   for (i = 0; i < 5; ++i) {
$5 = 1
15     j += i;
$6 = 2
14   for (i = 0; i < 5; ++i) {
$7 = 2
15     j += i;
$8 = 3
14   for (i = 0; i < 5; ++i) {
$9 = 3
15     j += i;
$10 = 4
14   for (i = 0; i < 5; ++i) {
$11 = 4
17   return 0;
$12 = 5
(gdb)
```