

Application Note: AN00190

Getting Started with the xTIMEcomposer Studio

This application note shows how to get started with binary analysis using the xTIMEcomposer studio. It shows you how to open a binary in the binary analysis tool. Browse the resource usage, modify the source code and see the change reflected in the analysis output.

To get started, simply double click on *Getting Started with the xTIMEcomposer Studio* in the Examples view, and click finish in the resulting import dialog. The sample project will then be imported and you will be switched to the XMOS edit perspective. The getting started pdf is then accessible from the *doc/pdf* folder at the top level of the imported project.

Required tools and libraries

- xTIMEcomposer Tools - Version 14.0

Required hardware

This application note is designed to run on any XMOS multicore microcontroller or the XMOS simulator.

Prerequisites

None

1 Overview

1.1 Introduction

Our comprehensive development tools suite provides everything you need to write, debug and test applications based on xCORE multicore microcontrollers. The full xTIMEcomposer tool set includes unique capabilities such as the xSCOPE logic analyzer and XMOS Timing Analyzer, that let you get the best performance from the deterministic xCORE architecture. With our collection of libraries and examples, it's easy to create and deliver xCORE applications.

xTIMEcomposer features:

- Eclipse graphical environment + plus command line tools
- LLVM C, C++ and xC compilers
- xDEBUG: GDB multicore debugger
- xSIM: Cycle accurate simulator
- xSCOPE: In-circuit instrumentation + real-time logic analyzer
- XTA: Static timing analysis
- Multiple platform support: Windows, OS X, Linux
- Enterprise/Community editions: Tools support for everyone

This application note shows how to get started using the xTIMEcomposer studio. It shows you how to create a new project, create a simple 'hello world' application, build then run.

2 Getting Started

Ensure you are in the edit perspective by clicking on the 'Edit' perspective button on the left hand side toolbar.

2.1 Updating the target

This project is currently targeting the STARTKIT development board. However, if you wish to target a different board/device, then double click the Makefile at the top level of the project. In the resulting Makefile Editor, choose the desired target from the *Target* dropdown.

2.2 Update the application code

In the *project explorer* view you will see the *app_getting_started* project.

Open *src/main.xc* by double clicking via the *project explorer*, then make the following updates:

```
#include <print.h>

int main() {
    printf("Hello World!");
    return 0;
}
```

2.3 Build the application

To build the application, select 'Project -> Build Project' in the menu, or click the 'Build' button on the toolbar. The output from the compilation process will be visible on the console.

2.4 Run the application

To run the application, select 'Run -> Run Configurations...'

In the resulting dialog:

- Double click on 'xCORE Application'. This will create a new run configuration, with the 'Project' and 'C/C++ Application:' fields pre-populated.
- If you have hardware connected, select the 'hardware' option and ensure that the 'Target:' field corresponds to the desired device. Alternatively, check the 'simulator' option.
- Select run.

You will now see 'Hello World!' displayed in the console view.

3 References

XMOS Tools User Guide

<http://www.xmos.com/published/xtimecomposer-user-guide>

XMOS xCORE Programming Guide

<http://www.xmos.com/published/xmos-programming-guide>

4 Full source code listing

4.1 Source code for main.xc

```
#include <print.h>

int main() {
    printstrln("Hello World!");
    return 0;
}
```



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