XMOS XTC Tools - Installation

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XMOS

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1 System requirements

The tools are fully validated on the following platforms.

Windows

Windows 10 Pro (all releases).

Windows 11 Pro (all releases).

Linux

Ubuntu 20.04 LTS.

Ubuntu 22.04 LTS.

Ubuntu 24.04 LTS.

Mac

Apple macOS 13 (Ventura) on Intel processors.

Apple macOS 14 (Sonoma) on Apple M-series processors.

2 Installation instructions

2.1 Download the XTC Tools

The tools and related drivers are provided in a single platform-specific downloadable file. By default, the file will be available from:

https://www.xmos.com/software-tools

Click on the host operating system to download the installer file.

2.2 Install the XTC Tools

To install the tools on your host system, follow these steps:

Windows

1. Run the downloaded installer file (for example *tools-15-microsoft-15-3-0.exe*) The installer graphical interface will guide you through the installation

2. Click "Yes" when asked to allow the installer to make changes to your computer

3. For a default installation, click "Next" on every page, then "Install"

Linux

1. Uncompress the archive to your chosen installation directory. The example below will install to your home directory:

   ```
   $ tar -xf tools-15-linux-15-3-0.tgz -C ~
   ```

   In this example, the tools will install to `~/XMOS/XTC/version`. This location will henceforth be known as your tools installation location.

Mac

1. Double-click the downloaded installer to open it, and then drag the 'X' icon into your Applications folder.

2. Unmount the installer.

2.3 Check your installation

After installation, check it by following the instructions at *Configuring the command-line environment*.

2.4 Configure the xTAG USB drivers

The tools interface to target boards over USB via an xTAG adapter. Some target boards require an external xTAG adapter that connects to the board via an xSYS or xSYS2 connector. Some target boards include an integrated xTAG adaptor.
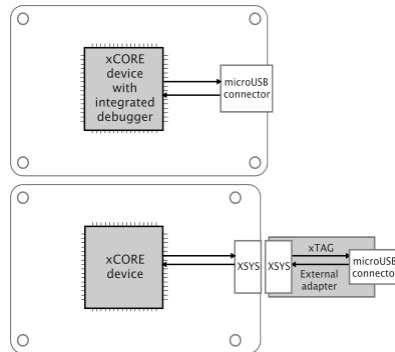

Fig. 2.1: xTAG adapter configurations used with xCORE target boards

Windows

The xTAG drivers are normally installed by the XTC Tools installer. Connect the target system to the host system after an installation to activate the drivers.

Linux

The xTAG drivers for Linux are installed as part of the normal installation process. However, to make them accessible by all users, an additional step requiring root access is needed. This step is likely only required once on a given development machine, or when new xTAG devices are released by XMOS. Change directory to the `scripts` folder of your tools installation and run the setup script:

```
$ sudo ./setup_xmos_devices.sh
```

Elevated privileges associated with the user account from which this command is run will be required. Reconnect any currently connected xTAG devices for the changes to be applied.

To check that the xTAG devices are available and accessible run the following script in the same directory:

```
$ ./check_xmos_devices.sh
```

As shown, this script should be run as the normal user, not root.

Mac

USB driver support is provided natively on OS X.

2.5   Check xTAG access

Configure the environment.   Connect a development board to your host machine via an xTAG adaptor as necessary. Ensure that the development board is powered.

Use `xrun -l` to list the devices available for debugging. The first time you issue this command, it may take several seconds for the xTAG firmware to be downloaded. An example of the expected result is:

```
$ xrun -l

Available XMOS Devices
----------------------

  ID    Name                Adapter ID      Devices
  --    ----                ----------      -------
  0     XMOS XTAG-3         wfF.G58J        XS3A[0]
```

If the 'Devices' column lists `None`, it means the xTAG itself cannot gain access to the development board. Check that the development board itself is powered, and that the XSYS/XSYS2 connection is well made.

3 Installation of required third-party tools

3.1 Third-party tools required for command-line usage

The following third-party tools must be installed on the host to use the XCommon CMake build system provided in this release of the XTC Tools.

This build system is required to use certain examples provided with the XTC Tools and to use these XTC Tools with other selected XMOS products.

3.1.1 cmake

CMake (minimum version 3.21)

Downloadable installers are available for supported Windows, Mac and Linux hosts in binary formats.

Ensure this tool is added to the the system path so it may be accessed from the command-line environment (Console or Terminal) used to run XTC Tools. On Windows hosts a step in the click-through installer asks whether this should be done. Select this option.

3.1.2 git

Git (minimum version 2.25)

Downloadable installers are available for supported Windows, Mac and Linux hosts in binary formats.

Ensure this tool is added to the the system path so it may be accessed from the command-line environment (Console or Terminal) used to run XTC Tools. On Windows a step in the click-through installer asks whether this tool is installed to be used from the command line and also from third-party software. Select this option.

3.2 Installation of the VS Code graphical code editor

Install **VS Code** from https://code.visualstudio.com/download. V1.89.0 is the earliest version supported.

Windows

Use the VS Code click-through installer. Select the check-box *Add to PATH* to ensure it is available when using the XMOS XTC Tools Command Prompt.

Mac

Follow Apple instructions to install VS Code into the `/Applications` folder, typically under `/Applications/Visual Studio Code.app`.

Linux

Download the `.deb` package and install using the the `apt` tool. See documentation on this tool for further information.

3.2.1   Terminology

VS Code terminology is referred to in the remainder of this document. For details see: https://code.visualstudio.com/docs/getstarted/userinterface.

4 Configuring the command-line environment

4.1 Configure the environment

The XTC Tools require an operating environment to be setup. This environment is formed with a set of environment variables, and these are used when the tools are searching for header files, libraries and target devices (see xcc_manual_environment_variables).

Windows

Click on the Windows Start Icon to open the Start menu, and choose *XMOS−>XTC Tools 15.x.y Command Prompt*, where *x* is the minor version of the XTC Tools release, and *y* is the patch version. This will open a Command Prompt with the environment variables set. All XTC Tools commands must be entered in this Command Prompt.

Linux

Open a Terminal window, change to the installation directory and enter the following command:

```
$ source SetEnv
```

All XTC Tools commands must be entered in this Terminal.

Mac

Open a Terminal window, change to the installation directory and enter the following command:

```
$ ./SetEnv.command
```

All XTC Tools commands must be entered in this Terminal.

4.2 Check the environment

All command-line examples in this document use the *$* character to illustrate the prompt at which the commands are entered.

Check that the environment has been correctly configured using, `xcc --help`. Type:

```
$ xcc --help
```

This will print some help text summarising the usage of this tool.

4.3   Query the XTC Tools version

To find the XTC Tools version:

```
$ xcc --version
```

The reported version should be provided in any bug report.

The build version of individual program within the XTC Tools can be found using their `--version` option. For example, `xcc --version`.

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