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#cmake #cpp #tutorial #clang #cppcheck #static-analysis #clang-format #boost-libraries

101 commits | **3** branches | **1** release | **2** contributors | MIT

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ttroy50 refactor the clang format example and add test — Latest commit `6ceaa75` on 23 Jul

01-basic	Update from inc to include directory	3 months ago
02-sub-projects	update sub project example to use include instead of inc	3 months ago
03-code-generation	update some examples to require cmake v3	a year ago
04-static-analysis	refactor the clang format example and add test	2 months ago
05-unit-testing	update some examples to require cmake v3	a year ago
06-installer	update to include instead of inc	3 months ago

dockerfiles	refactor the clang format example and add test	2 months ago
.gitignore	update some examples to require cmake v3	a year ago
.travis.yml	update travis yaml to pass uid / gid to container	3 months ago
LICENSE	Initial commit	2 years ago
README.adoc	fix typo	a year ago
cmake-examples.sublime-project	add initial folder structure and the first basic examples	2 years ago
test.sh	refactor the clang format example and add test	2 months ago

README.adoc

CMake Examples

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Introduction

CMake is a cross-platform open-source meta-build system which can build, test and package software. It can be used to support multiple native build environments including make, Apple's xcode and Microsoft Visual Studio.

This repository includes some example CMake configurations which I have picked up when exploring it's usage for various projects. The examples are laid out in a tutorial like format. The first examples are very basic and slowly increase in complexity drawing on previous examples to show more complex use cases.

These examples have been tested on Ubuntu 14.04 but should work under any Linux system that supports CMake.

This branch works with the CMake version 3.x onwards. For examples that use CMake version 2.x see the branch v2-style-includes.

Requirements

The basic requirements for most examples are:

- CMake v3.x
- A c++ compiler (defaults to gcc)
- make

Installation on Ubuntu

The easiest way to install the above on Ubuntu is as follows

```
$ sudo apt-get install build-essential
$ sudo apt-get install cmake
```

Some specific examples may require other tools including:

- boost

```
$ sudo apt-get libboost-all-dev
```

- protobuf

```
$ sudo apt-get install libprotobuf-dev
$ sudo apt-get install protobuf-compiler
```

- cppcheck

```
$ sudo apt-get install cppcheck
```

- clang

```
$ sudo apt-get install clang-3.6
```

- ninja

```
$ sudo apt-get install ninja-build
```

Docker

Docker containers with all requirements and various versions of CMake are generated to help make testing the examples easier. These are available from the docker hub repository matrim/cmake-examples.

To build the full set of cmake-examples test cases you can run:

```
docker run -it matrim/cmake-examples:3.4.3
git clone https://github.com/ttroy50/cmake-examples.git
cd cmake-examples
./test.sh
```

For more details on build and running the docker containers dockerfiles.

Other Links

There are many CMake tutorials and examples online. The list below includes links to some of these which I have found helpful in my CMake journey.

- Modern CMake Slides
- rix0r Modern CMake Blog
- Official CMake Tutorial
- Official CMake Wiki
- CMake Useful Variables
- Derek Molloy - Intro to CMake
- Modular C++ Projects
- Common CMake Anti-Patterns
- Using clang static analyser with CMake
- Static Analysis with CDash - Includes some info about using CppCheck with CMake

- CppCheck Targets
- CMake Tips
- John Lamp - CMake Tutorial