

Setting up qtcreator for use with the top level FELIX CMakeLists.txt file as project file

Jos Vermeulen, 28-Feb-2023

Setup shown in the next slides only has to be done once. Information entered is stored in the CMakeLists.txt.user file in the software directory and in the \$HOME/.config directory. Deleting the CMakeLists.txt.user file and deleting the build directory may help if qtcreator does not behave correctly. If this does not solve the issue try to delete QtProject.conf and the directory QtProject in \$HOME/.config

The script (with name setupcreator) has to be run after cd-ing to the software directory and after running setup.sh and starting qtcreator the CMakeLists.txt file from the same software directory has to be loaded

setupcreator

```
# Versions
export GDB_VERSION=11.2
export GIT_VERSION=2.28.0
export GCC_VERSION=11.3.0
export OS_VERSION=x86_64-centos7

# -> Set here the path to gdb and git
export LCG_CVMFS_BASE=/cvmfs/sft.cern.ch/lcg
export LCG_CVMFS_VERSION=$LCG_FULL_VERSION
export LCG_CVMFS_BINARYTAG=$BINARY_TAG
export LCG_CVMFS_GDB=$LCG_CVMFS_BASE/releases/LCG_$LCG_CVMFS_VERSION/gdb/$GDB_VERSION/$LCG_CVMFS_BINARYTAG
export LCG_CVMFS_GIT=$LCG_CVMFS_BASE/contrib/git/$GIT_VERSION/$OS_VERSION

# -> Next three environment variables need to be picked up by qtcreator (with %(Env:NAME})
# -> These are used for running cmake by cmake_config, only the first is essential for qtcreator
export CMAKE_MODULE_PATH=$PWD/cmake_tdaq/cmake/modulesexport BUILDNAME=$BINARY_TAG
export CMAKE_BUILD_TYPE=Release

# -> for python
export PYTHON_BASE=$LCG_BASE/releases/LCG_$LCG_FULL_VERSION/Python/$PYTHON_VERSION/$BINARY_TAG

# -> qtcreator gets confused by the LD_LIBRARY_PATH that also points to a directory with LCG qt5 libraries
# -> remove pointer to LCG qt5 libraries from LD_LIBRARY_PATH
export LD_LIBRARY_PATH=$(printenv LD_LIBRARY_PATH | sed s%:'\\n'%g | sed '/qt5/d' | tr -d '\\n')

# -> debugger (gdb)
export PATH=$LCG_CVMFS_GDB/bin:$PATH
export LD_LIBRARY_PATH=$LCG_CVMFS_GDB/lib:$LD_LIBRARY_PATH
export MANPATH=$LCG_CVMFS_GDB/share/man:$MANPATH

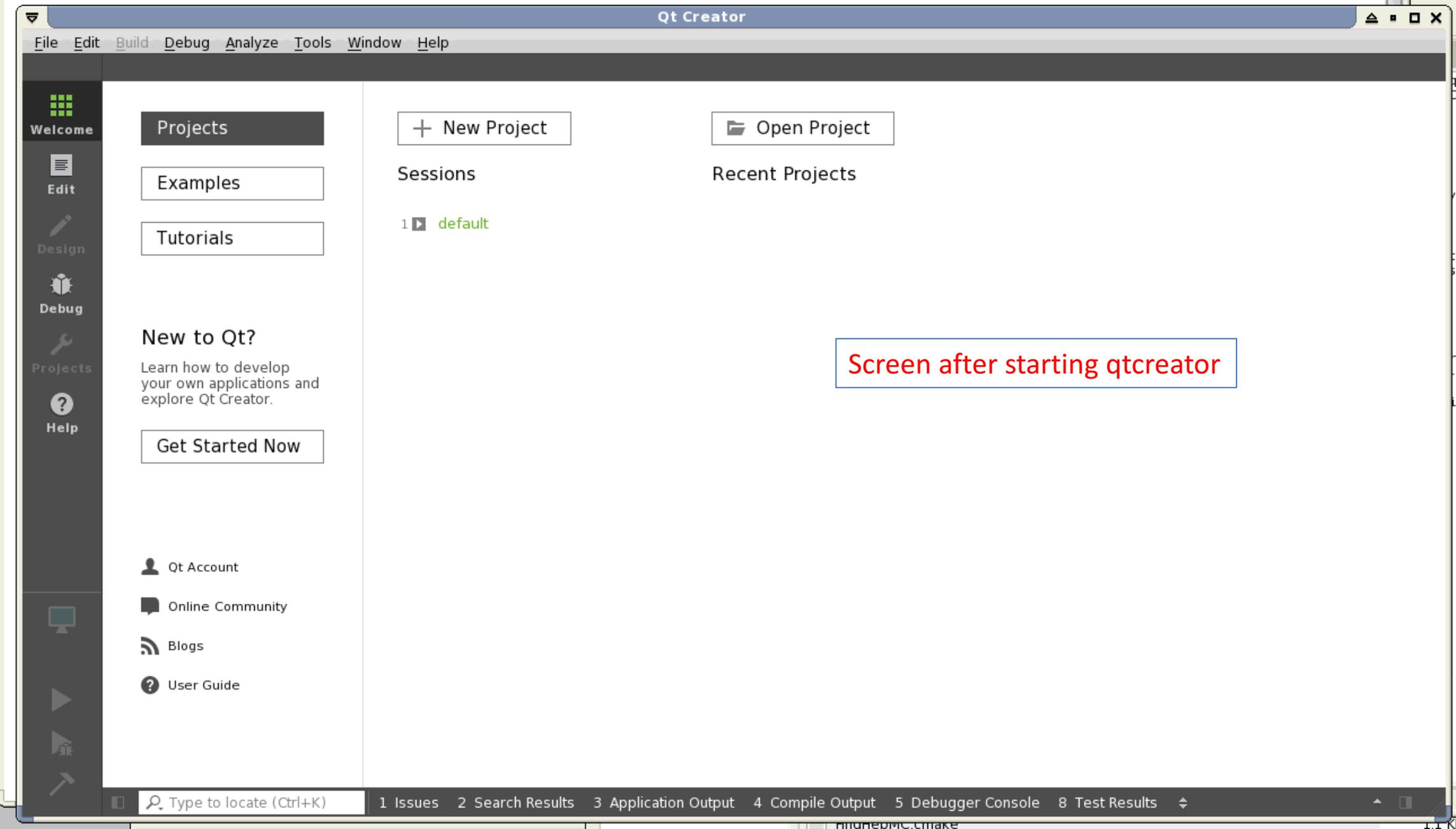
# -> git (git)
export PATH=$LCG_CVMFS_GIT/bin:$PATH
export MANPATH=$LCG_CVMFS_GIT/share/man:$MANPATH

# -> python (needed when using gdb in qtcreator):
# export PATH=$PYTHON_BASE/bin:$PATH
export LD_LIBRARY_PATH=$PYTHON_BASE/lib:$LD_LIBRARY_PATH
export MANPATH=$PYTHON_BASE/share/man:$MANPATH
export PYTHONHOME=$PYTHON_BASE

# -> sets maximum number of parallel bulding processes, typically equal to the maximum number of hyperthreads
export MAKEFLAGS="-j16 QUICK=1"
```

For starting qtcreator the correct path has to be specified, e.g. at Nikhef:
/project/atlas/tdaq/qt5121/Tools/QtCreator/bin/qtcreator &

```
agogna /data/atlas/tdaq/flx4/software 23 > bash
bash-4.1$ source startcreator
Setting up FELIX (developer)
bash-4.1$ QStandardPaths: XDG_RUNTIME_DIR not set, defaulting to '/tmp/runtime-173'
```



Projects

Examples

Tutorials

New to Qt?

Learn how to develop your own applications and explore Qt Creator.

Get Started Now

Qt Account

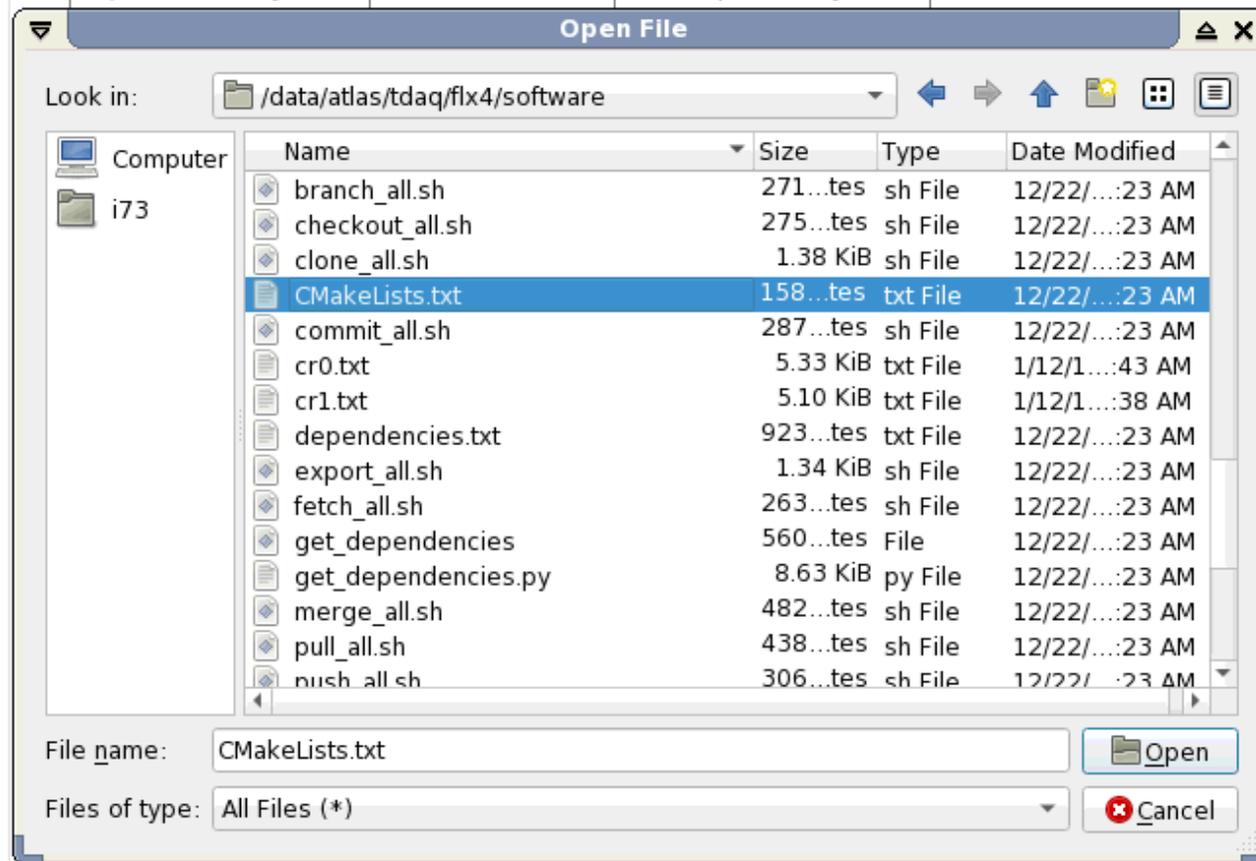
Online Community

Blogs

User Guide

+ New Project

Open Project



Select "Open File or Project..." from File Menu

- Welcome
- Edit
- Design
- Debug
- Projects
- Help

Manage Kits...

Active Project

felix57

Import Existing Build...

Build & Run

- Desktop Qt 5.12.1 GCC 64bit
- MyKit

Project Settings

- Editor
- Code Style
- Dependencies
- Clang Code Model
- Clang Tools



Configure Project

The following kits can be used for project **felix57**:

The project **felix57** is not yet configured.
Qt Creator uses the kit **MyKit** to parse the project.

Type to filter kits by name...

Select all kits

- Desktop Qt 5.12.1 GCC 64bit Details ▾
- MyKit Details ▾
- Import Build From... Details ▾

Configure Project

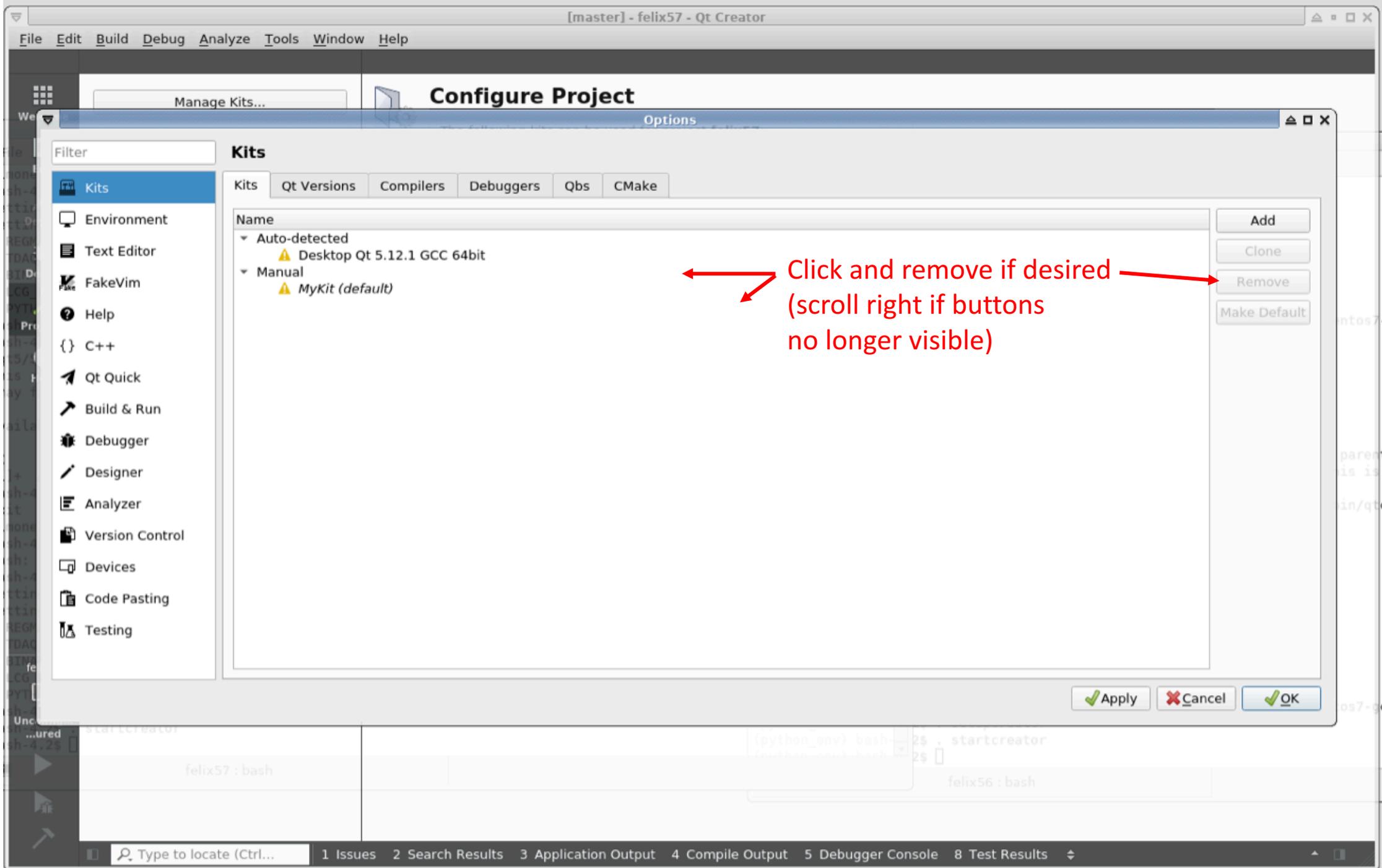
“Manage...” appears here if mouse hovers over it, click it



- felix57
- Unconfig...
...ured
- ▶
- ▶
- ▶

Type to locate (Ctrl...

1 Issues 2 Search Results 3 Application Output 4 Compile Output 5 Debugger Console 8 Test Results



Click and remove if desired
(scroll right if buttons
no longer visible)

Filter

Kits

Kits Qt Versions Compilers Debuggers Qbs CMake

| Name |
|-------------------------------|
| Auto-detected |
| ⚠ Desktop Qt 5.12.1 GCC 64bit |
| Manual |
| ⚠ MyKit (default) |

Add
Clone
Remove
Make Default

If this is not visible, click this

Name: MyKit

File system name:

Device type: Desktop

Device: Local PC (default for Desktop)

Sysroot:

Compiler: C: GCC (C, x86 64bit in /cvmfs/sft.cern.ch/lcg/releases/gcc/11.3.0-ad0f5/x86_64-centos7/bin)
C++: GCC (C++, x86 64bit in /cvmfs/sft.cern.ch/lcg/releases/gcc/11.3.0-ad0f5/x86_64-centos7/bin)

Environment: No changes to apply.

Debugger: System GDB at /cvmfs/sft.cern.ch/lcg/releases/LCG_102b/gdb/11.2/x86_64-centos7-gcc11-optimi...

Qt version: Qt 5.12.1 GCC 64bit

Qt mkspec:

Select correct versions from cvmfs

Qt not correct, but elinkconfig is correctly built, optionally manage with this button

Manage...
Browse...
Manage...
Change...
Manage...
Manage...

Apply Cancel OK

Optional

Options

Filter

Kits

Kits Qt Versions Compilers Debuggers Qbs CMake

Name qmake Location

- Auto-detected
 - Qt 5.12.1 GCC 64bit /project/atlas/tdaq/qt5121/5.12.1/gcc_64/bin/qmake
 - Manual

Add...
Remove
Clean Up

Apply Cancel OK

Click kits when done

This one could be selected, it is found in the local LCG copy. If it is not specified, click Add.. and browse for the correct version, the qmake file has to be found

Optional

The screenshot shows the 'Options' dialog box in Qt, specifically the 'Build & Run' tab. The 'Kits' sub-tab is active, displaying a list of kits. The 'Desktop (default)' kit is selected. Below the list, the configuration for the selected kit is shown. The 'Qt version' dropdown menu is open, showing 'None' and 'Qt 5.6.0 (x86_64-slc6-gcc62-opt)'. A red annotation points to the dropdown menu, stating: "With this pull-down menu a Qt version can be selected, 'None' is also OK".

Build & Run

General Kits Qt Versions Compilers Debuggers Qbs CMake

Name

- Auto-detected
- Manual
 - Desktop (default)**

Name: Desktop

File system name:

Device type: Desktop

Device: Local PC (default for Desktop)

Sysroot:

Compiler: C: GCC (C, x86 64bit in /project/atlas/tdaq/cvmfs-felix-87-5/sft.cern.ch/lcg/contrib/gcc/6.2/x86_64-slc6/bin)

C++: GCC (C++, x86 64bit in /project/atlas/tdaq/cvmfs-felix-87-5/sft.cern.ch/lcg/contrib/gcc/6.2/x86_64-slc6/bin)

Environment: No changes to apply.

Debugger: System GDB at /cvmfs/sft.cern.ch/lcg/releases/LCG_92/gdb/7.12.1/x86_64-slc6-gcc62-opt/bin/gdb

Qt version: None **With this pull-down menu a Qt version can be selected, "None" is also OK**

Qt mkspec: Qt 5.6.0 (x86_64-slc6-gcc62-opt)

Buttons: Add, Clone, Remove, Make Default, Manage..., Browse..., Change..., Manage..., Manage...

Footer: Apply, Cancel, OK

Options

Filter

Kits

Kits Qt Versions Compilers Debuggers Qbs CMake

Name: MyKit

File system name:

Device type: Desktop

Device: Local PC (default for Desktop) Manage...

Sysroot: Browse...

Compiler: C: GCC (C, x86 64bit in /cvmfs/sft.cern.ch/lcg/releases/gcc/11.3.0-ad0f5/x86_64-centos7/bin) Manage...

C++: GCC (C++, x86 64bit in /cvmfs/sft.cern.ch/lcg/releases/gcc/11.3.0-ad0f5/x86_64-centos7/bin) Manage...

Environment: No changes to apply. Change...

Debugger: System GDB at /cvmfs/sft.cern.ch/lcg/releases/LCG_102b/gdb/11.2/x86_64-centos7-gcc11-opt/bin/gdb Manage...

Qt version: Qt 5.12.1 GCC 64bit Manage...

Qt mkspec:

Additional Qbs Profile Settings Change...

CMake Tool: System CMake at /cvmfs/atlas.cern.ch/repo/sw/tdaq/tools/x86_64-centos7/CMake/3.23.1/bin/cmake Manage...

CMake generator: CodeBlocks - Unix Makefiles, Platform: <none>, Toolset: <none> Change...

CMake Configuration BUILDNAME:STRING=%{Env:BUILDNAME}; CMAKE_BUILD_TYPE:STRING=%{Env:CMAKE_BUILD_TYPE}; CMAKE_M... Change...

Apply Cancel OK

Scroll down and check for correct CMake version.
If not correct, pull down menu and select correct
version, if not available: "Manage.."

Hit this button

Configure Project

Options

The following kits can be used for project felix57:
The project felix57 is not yet configured.
Qt Creator uses the kit MyKit to parse the project.

Kits

Kits Qt Versions Compilers Debuggers Qbs CMake

Name: MyKit

File system name:

Dev:

Dev:

System:

Compiler:

Environment:

Debugger:

Qt version:

Qt module:

Additional Qbs Profile Settings

CMake Tool:

CMake generator:

CMake Configuration

```
BINARY_TAG:STRING=%{Env:BINARY_TAG}
BUILDNAME:STRING=%{Env:BUILDNAME}
CMAKE_BUILD_TYPE:STRING=%{Env:CMAKE_BUILD_TYPE}
CMAKE_MODULE_PATH:STRING=%{Env:CMAKE_MODULE_PATH}
CMAKE_PREFIX_PATH:STRING=%{Env:CMAKE_PREFIX_PATH}
```

Delete the original information, insert this text (can be pasted with ctrl-V), and hit OK for this and the "Build&Run" window

Reset

Apply

Cancel

OK

Apply

Cancel

OK

click this for modifying the CMake configuration

Manage Kits...



Configure Project

The following kits can be used for project **felix57**:

The project **felix57** is not yet configured.
Qt Creator uses the kit **MyKit** to parse the project.

Type to filter kits by name...

Select all kits

Desktop Qt 5.12.1 GCC 64bit

Details ▾

MyKit

Details ▾

MyKit

Manage...

Details ▾

Import Build From...

MyKit

Warning: CMake configuration has no CMAKE_PREFIX_PATH set that points to the kit Qt version.
Warning: CMake configuration has no path to a C compiler set, even though the kit has a valid tool chain.
Warning: CMake configuration has no path to a C++ compiler set, even though the kit has a valid tool chain.

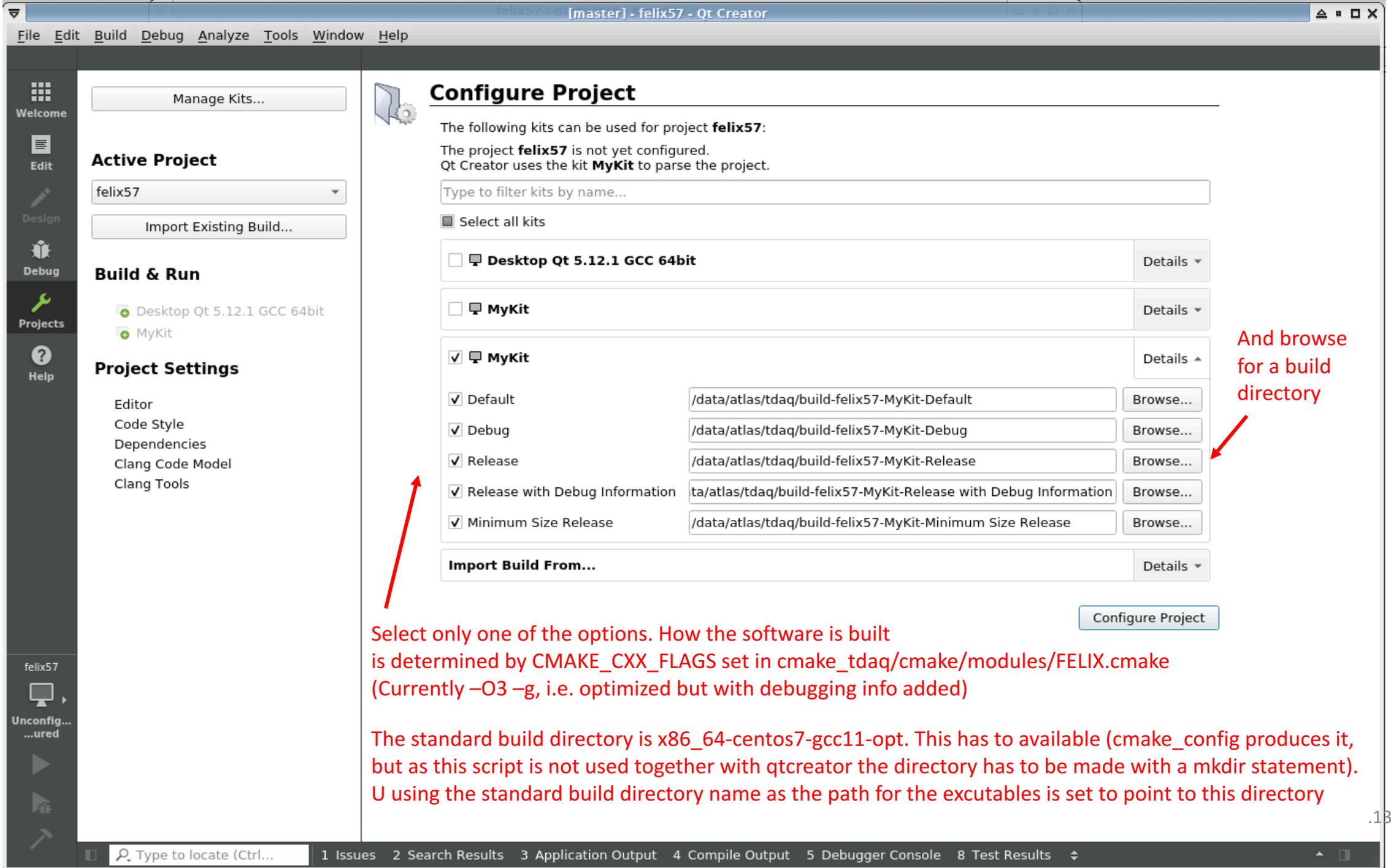
| | |
|---|---|
| Device type: | Desktop |
| Device: | Local PC |
| Sys Root: | |
| Compiler: | GCC (C++, x86 64bit in /cvmfs/sft.cern.ch/lcg/releases/gcc/11.3.0-ad0f5/x86_64-centos7/bin) |
| Environment: | |
| Debugger: | GDB Engine using "/cvmfs/sft.cern.ch/lcg/releases/LCG_102b/gdb/11.2/x86_64-centos7-gcc11-opt/bin/gdb" |
| GDB server: | |
| Qt version: | Qt 5.12.1 GCC 64bit |
| mkspec: | |
| Additional Qbs Profile Settings: | |
| CMake: | System CMake at /cvmfs/atlas.cern.ch/repo/sw/tdaq/tools/x86_64-centos7/CMake/3.23.1/bin/cmake |
| CMake Generator: | Generator: Unix Makefiles Extra generator: CodeBlocks |
| CMake Configuration: | BUILDNAME:STRING=%{Env:BUILDNAME} CMAKE_BUILD_TYPE:STRING=%{Env:CMAKE_BUILD_TYPE} CMAKE_MODULE_PATH:STRING=%{Env:CMAKE_MODULE_PATH} |
| | CMAKE_PREFIX_PATH:STRING=%{Env:CMAKE_PREFIX_PATH} |

With this button
compiler selection
etc. can be changed

And hit this box

The yellow pop-up box appears
when hovering over the region
of the kit. Check that the correct
compilers etc. are specified. Hit
the check box of the kit with the
correct compilers etc.

NB: The result of the procedure outlined in slides 7 – 11 (5 previous slides) is stored in the \$HOME/.config directory and therefore does not need to be repeated if qtcreator is used with another software directory.



Configure Project

The following kits can be used for project **felix57**:

The project **felix57** is not yet configured.
Qt Creator uses the kit **MyKit** to parse the project.

Type to filter kits by name...

Select all kits

Desktop Qt 5.12.1 GCC 64bit Details ▾

MyKit Details ▾

MyKit Details ▲

Default Browse...

Debug Browse...

Release Browse...

Release with Debug Information Browse...

Minimum Size Release Browse...

Import Build From... Details ▾

Configure Project

And browse for a build directory

Select only one of the options. How the software is built is determined by CMAKE_CXX_FLAGS set in cmake_tdaq/cmake/modules/FELIX.cmake (Currently -O3 -g, i.e. optimized but with debugging info added)

The standard build directory is x86_64-centos7-gcc11-opt. This has to be available (cmake_config produces it, but as this script is not used together with qtcreator the directory has to be made with a mkdir statement). Using the standard build directory name as the path for the executables is set to point to this directory

File Edit Build Debug Analyze Tools Window Help

Configure Project

The following kits can be used for project **felix57**:
The project **felix57** is not yet configured.
Qt Creator uses the kit **MyKit** to parse the project.

Type to filter kits by name...

- Desktop Qt 5.12.1 GCC 64bit Details ▾
- MyKit Details ▾

MyKit Details ▲

Default /data/atlas/tdaq/build-felix57-MyKit-Default Browse...

Debug /data/atlas/tdaq/build-felix57-MyKit-Debug Browse...

Release /data/atlas/tdaq/build-felix57-MyKit-Release Browse...

Project Settings

Editor
Code Style
Dependencies
Clang Code Model
Clang Tools

```
bash-4.2$ elinkconfig
bash-4.2$ . setupcreator
bash-4.2$ GtK-Message: 23:51:24.455: GtK
edit: index was invalid
edit: editing failed

[2]+ Done
bash-4.2$ /project/atlas/tdaq/qt5121/Tool
GtK-Message: 11:55:44.282: GtKDialog mapp
```

Choose Directory

data atlas tdaq felix57

| Name | Size | Modified |
|--------------------------|-----------|----------|
| st2 | 76 bytes | 14 Feb |
| st2-loop | 134 bytes | 14 Feb |
| st2-loop-0-3 | 66 bytes | 14 Feb |
| st2-loopd0 | 83 bytes | 14 Feb |
| st2-loopgrep | 131 bytes | 14 Feb |
| startcreator | 60 bytes | 14 Feb |
| stat-dmp.txt | 26.9 kB | 14 Feb |
| stat-loop | 58 bytes | 14 Feb |
| status_all.sh | 267 bytes | 14 Feb |
| tag_all.sh | 262 bytes | 14 Feb |
| tdaq_tools | | Wed |
| update_all.sh | 340 bytes | 14 Feb |
| versions.cmake | 1.6 kB | 14 Feb |
| wuppercodegen | | 14 Feb |
| x86_64-centos7-gcc11-opt | | 11:55 |

Cancel Open

Choose

- Welcome
- Edit
- Design
- Debug
- Projects
- Help

Manage Kits...

Active Project

felix57

Import Existing Build...

Build & Run

- Desktop Qt 5.12.1 GCC 64bit
- MyKit

Project Settings

- Editor
- Code Style
- Dependencies
- Clang Code Model
- Clang Tools



Configure Project

The following kits can be used for project **felix57**:
The project **felix57** is not yet configured.
Qt Creator uses the kit **MyKit** to parse the project.

Type to filter kits by name...

Select all kits

Desktop Qt 5.12.1 GCC 64bit Details ▾

MyKit Details ▾

MyKit Details ▲

- Default Browse...
- Debug Browse...
- Release Browse...
- Release with Debug Information Browse...
- Minimum Size Release Browse...

Import Build From... Details ▾

Configure Project

Click this first
and wait until
processing is
finished

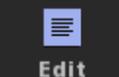
- felix57
- Unconfig...
...ured
- ▶
- ▶
- ▶

Projects

<no document>



Welcome



Edit



Design



Debug



Projects



Help

felix [master]

This appears only after
running cmake has
finished

Hit "Projects"

Open a document

- File > Open File or Project (Ctrl+O)
- File > Recent Files
- Tools > Locate (Ctrl+K) and
 - type to open file from any open project
 - type c<space><pattern> to jump to a class definition
 - type m<space><pattern> to jump to a function definition
 - type f<space><filename> to open file from file system
 - select one of the other filters for jumping to a location
- Drag and drop files here

Open Documents

General Messages

```
-- external json - 2.1.1
-- Found PythonLibs: /project/atlas/tdaq/cvmfs-felix-87-5/sft.cern.ch/lcg/releases/LCG_87/Python/2.7.10/x86_64-slc6-gcc62-opt/lib/libpython2.7.so (found
version "2.7.10")
-- felixpy : felix-03-09-00
-- wuppercodegen : wuppercodegen-00-08-00-6-g3dad71b
-- test : UNKNOWN
-- examples : UNKNOWN
-- Binary Tag (BUILDNAME): x86_64-slc6-gcc62-opt
-- software : felix-03-04-02-48-g39e7667
-- Configuring done
-- Generating done
-- Build files have been written to: /data/atlas/tdaq/flx4/software/x86_64-slc6-gcc62-opt
```

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Manage Kits...

Welcome

Edit

Design

Debug

Projects

Help

Active Project

felix57

Import Existing Build...

Build & Run

- Desktop Qt 5.12.1 GCC 64bit
- MyKit**
 - Build
 - Run

Project Settings

- Editor
- Code Style
- Dependencies
- Clang Code Model
- Clang Tools

Build Settings

Edit build configuration: Default Add Remove Rename...

CMake

Build directory: /data/atlas/tdaq/felix57/x86_64-centos7-gcc11-opt Browse...

Filter

| Key | Value |
|---------------------------------|---|
| BUILDNAME | x86_64-centos7-gcc11-opt |
| BUILD_TESTING | <input checked="" type="checkbox"/> ON |
| ▼ CMAKE | |
| CMAKE_BUILD_TYPE | Release |
| CMAKE_CODEBLOCKS_COMPILER_ID | |
| CMAKE_CODEBLOCKS_EXECUTABLE | CMAKE_CODEBLOCKS_EXECUTABLE-NOTFOUND |
| CMAKE_CODEBLOCKS_MAKE_ARGUMENTS | -j32 |
| CMAKE_INSTALL_PREFIX | /usr/local |
| CMAKE_MODULE_PATH | /data/atlas/tdaq/felix57/cmake_tdaq/cmake/mo... |
| CMAKE_PREFIX_PATH | /data/atlas/tdaq/felix57/cmake_tdaq/cmake |
| ▼ TDAQ | |

Add Edit Unset Reset Advanced

Apply Configuration Changes

Build Steps

Build: cmake --build . --target all Details

Add Build Step

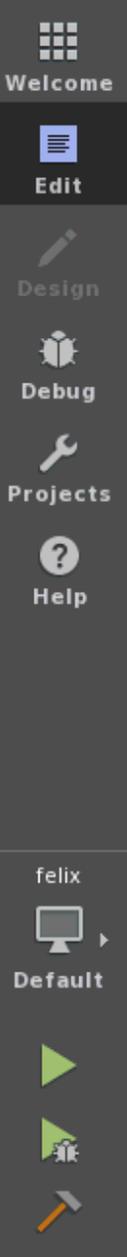
Clean Steps

Build: cmake --build . --target clean Details

Without this step the debugger cannot find the executable selected (it is not understood why), needs to be redone if a CMakeLists.txt file is loaded for the first time

Hit "Edit" after processing finished

Scroll down to CMAKE-PREFIX_PATH and click item, and then click "Unset", then click "Apply Configuration Changes"



felix [master]

Expand to see all directories and files included in project. Double click any file to edit

<no document>

Open a document

- File > Open File or Project (Ctrl+O)
- File > Recent Files
- Tools > Locate (Ctrl+K) and
 - type to open file from any open project
 - type c<space><pattern> to jump to a class definition
 - type m<space><pattern> to jump to a function definition
 - type f<space><filename> to open file from file system
 - select one of the other filters for jumping to a location
- Drag and drop files here

For deleting contents of list

Collapse list

Expand list to full window

felix

Default

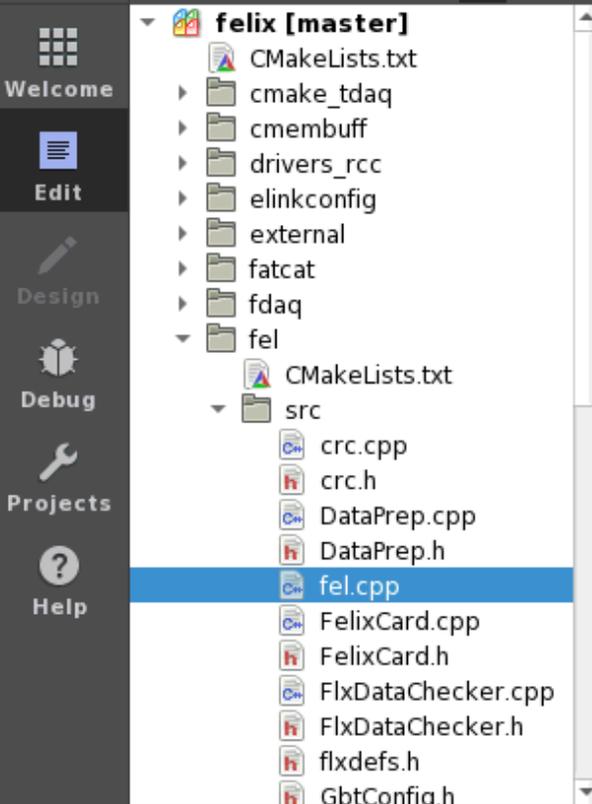
Play button

Hammer icon

```
-- external json - 2.1.1
-- Found PythonLibs: /project/atlas/tdaq/cvmfs-felix-87-5/sft.cern.ch/lcg/releases/LCG_87/Python/2.7.10/x86_64-slc6-gcc62-opt/lib/libpython2.7.so (found version "2.7.10")
-- felixpy : felix-03-09-00
-- wuppercodegen : wuppercodegen-00-08-00-6-g3dad71b
-- test : UNKNOWN
-- examples : UNKNOWN
-- Binary Tag (BUILDNAME): x86_64-slc6-gcc62-opt
-- software : felix-03-04-02-48-g39e7667
-- Configuring done
-- Generating done
-- Build files have been written to: /data/atlas/tdaq/flx4/software/x86_64-slc6-gcc62-opt
```

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After scrolling up somewhat



```

1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <fcntl.h>
4  #include <unistd.h>
5  #include <errno.h>
6  #include <string.h>
7  #include <sys/types.h>
8  #include <sys/ioctl.h>
9  #include <sys/mman.h>
10 #include <linux/types.h>
11 #include <time.h>
12
13 #include "version.h"
14
15 #include "GbtConfig.h"
16 #include "FelixCard.h"
17 #include "FlxDataChecker.h"
18 #include "TtcDataChecker.h"
19 #include "TtcChecker.h"
20 #include "DataPrep.h"
21 #include "flxdefs.h"
22
23 // Additional definitions for FelixCard registers and register contents
24 #define GBT_EGROUP_CTRL_I          CR_TH_GBT00_EGROUP0_CTRL_OFFSET
25 #define GBT_EGROUP_CTRL_SIZE      (0x10*(7+5))
26 #define GBT_EGROUP_CTRL_TOGBT_OFFS (0x10*7)
27 #define EGROUP_CTRL_MODE_SHIFT    15
28 #define EGROUP_CTRL_MAXCHUNK_SHIFT 31
29
30 const char *HELP_TEXT =
31     "Options:\n"
32     "-a: allocate cmem memory, sleep 10 s and de-allocate\n"
33     "-b <size>[4]: size of buffer in MByte to allocate\n"
34     "-d <n>[0]: select FLX-card <n>\n"
35     "-f <n>[1024]: hex dump only first <n> bytes of each dumped block (see -F/-0)\n"
36     "-g: display number of FLX-cards and exit\n"
37     "-h: this output\n"
38     "-I[cdeiVWMU] [<m>] [<u>]:\n"
39     "  c : cancel waiting for interrupts\n"

```

Click here for pop-up menu with list of functions etc. and for selecting item to jump to

Click here to compile everything that needs to be compiled

Click here to see output of compilation

Click here to see side bar with list of functions etc.

Welcome

Edit

Design

Debug

Projects

Help

felix

Default

```

felix [master]
├── CMakeLists.txt
├── cmake_tdaq
├── cmembuff
├── drivers_rcc
├── elinkconfig
├── external
├── fatcat
├── fdaq
├── fel
│   ├── CMakeLists.txt
│   └── src
│       ├── crc.cpp
│       ├── crc.h
│       ├── DataPrep.cpp
│       ├── DataPrep.h
│       ├── fel.cpp
│       ├── FelixCard.cpp
│       ├── FelixCard.h
│       ├── FlxDataChecker.cpp
│       ├── FlxDataChecker.h
│       ├── flxdefs.h
│       └── GbtConfig.h

```

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <fcntl.h>
4  #include <unistd.h>
5  #include <errno.h>
6  #include <string.h>
7  #include <sys/types.h>
8  #include <sys/ioctl.h>
9  #include <sys/mman.h>
10 #include <linux/types.h>
11 #include <time.h>
12
13 #include "version.h"
14
15 #include "GbtConfig.h"
16 #include "FelixCard.h"
17 #include "FlxDataChecker.h"
18 #include "TtcDataChecker.h"
19 #include "TtcChecker.h"
20 #include "DataPrep.h"
21 #include "flxdefs.h"
22
23 // Additional definitions for FelixCard registers and register contents
24 #define GBT_EGROUP_CTRL_I      CR_TH_GBT00_EGROUP0_CTRL_OFFSET
25 #define GBT_EGROUP_CTRL_SIZE  (0x10*(7+5))

```

Click here for selecting an executable

fel.cpp

```

[ 67%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/src/FlxReceiver.cpp.o
[ 67%] Built target packetformat_test
[ 67%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/src/FlxUpload.cpp.o
[ 67%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/src/JtagPort.cpp.o
[ 68%] Linking CXX executable elinkconfig
[ 68%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/src/McsReader.cpp.o
[ 69%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/src/crc.cpp.o
[ 69%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/moc_FileWriter.cpp.o
[ 72%] Built target elinkconfig
[ 72%] Building CXX object fdaq/CMakeFiles/FlxDaq.dir/moc_FlxReceiver.cpp.o
[ 72%] Linking CXX executable netio_test

```

If there are any issues click here for information and double click to jump to source of problem



Welcome



Edit



Design



Debug



Projects



Help

felix



Default



Manage Kits...

Import Existing Build...

Active Project

felix

Build & Run**Desktop**

Build

Run

Project Settings

Editor

Code Style

Dependencies

Clang Static Analyzer

Click
here**Run Settings****Deployment**

Method:

Deploy locally

Add

Remove

Rename...

No Deploy Steps

Add Deploy Step

Click here for
selecting an
executable**Run**

Run configuration:

CmemBuff_test

Add

Remove

Rename...

Command line arguments
can be specified here

Executable:

CmemBuff_test

Command line arguments:

Working directory:

/data/atlas/tdaq/flx4/software/x86_64-slc6-gcc62-opt/cmembuff

Browse...

 Run in terminalThe working directory
can be set here**Debugger Settings** Enable C++ Enable QML [What are the prerequisites?](#)**Valgrind Settings**

Use Global Settings

Details

21

Selection of fel as executable

Click here for browsing / editing

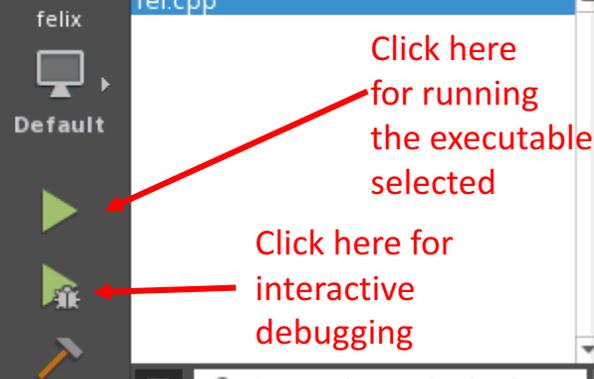
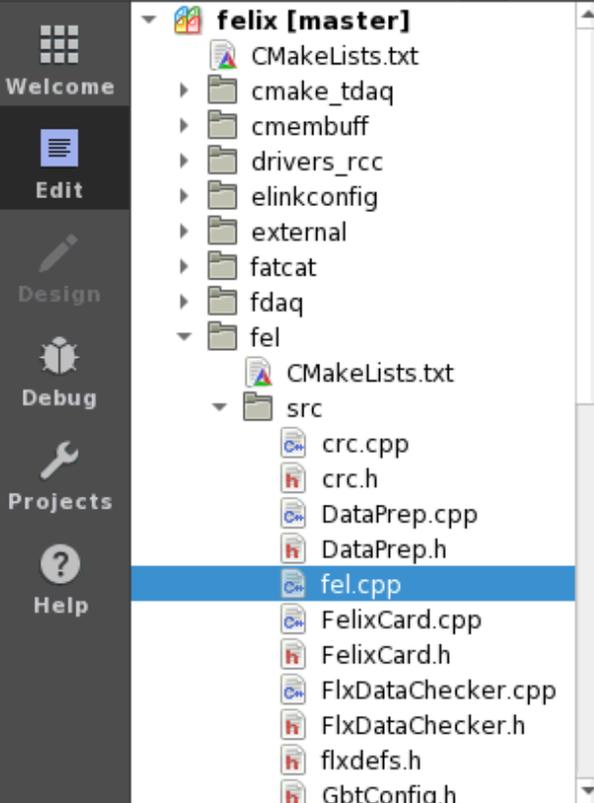
The image shows a screenshot of an IDE (likely Qt Creator) with the 'Run Settings' dialog open for a project named 'felix'. The 'Executable' field is set to 'fel'. A dropdown menu is open, showing a list of executables including 'fel', 'felix', 'felix-core', 'felix-dcs', 'felix-mon', 'felix-mon_test', 'felixbase_test', 'felixcore', 'felixcore_test', 'femu', 'fereverse', 'feto', 'fexoff', 'fexofftx', 'ffile', 'fflash', 'fgconf', 'fgpolar', 'fic', 'flx-config', 'flx-dma-stat', 'flx-dma-test', 'flx-dump-blocks', 'flx-i2c', 'flx-info', 'flx-init', 'flx-irq-test', 'flx-monitor', 'flx-reset', 'flx-spi', 'flx-throughput', and 'fpepo'. The 'Run' section is active, and the 'Executable' field is highlighted. The IDE interface includes a sidebar with 'Edit', 'Build & Run', and 'Project Settings' sections. The bottom status bar shows '401 items (6.2 GB), Free space: 589.2 GB'.

Projects

fel.cpp

main(int, char **): int

Line: 225, Col: 5



```

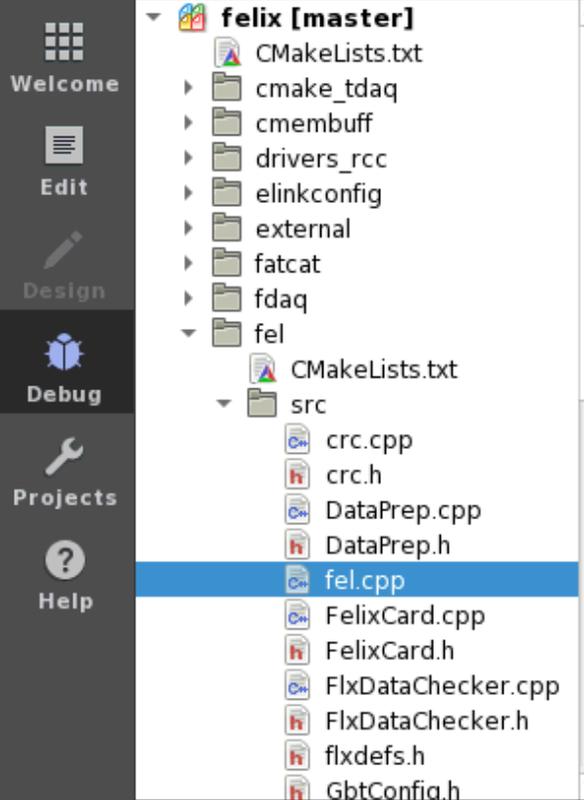
300 // To store the E-link configurations for all GBT links
301 //GbtConfig      gbtConfig[MAXCARDS][FLX_GBT_LINKS];
302 GbtConfig      gbtConfig[FLX_GBT_LINKS];
303
304 strcpy(fileName,"fel.dmp");
305
306 int i;
307
308 // ***** handle command line arguments *****
309 // Verbose option?
310 bool verbose = false;
311 for( i=1; i<argc; ++i )
312     if (argv[i][0] == '-' && argv[i][1] == 'v')
313     {
314         verbose = true;
315         printf( "Going verbose!\n" );
316         break;
317     }
318
319 // Scan options
320 char ch;
321 i = 1;
322 while( i < argc )
323     {
324     if( argv[i][0] != '-' )
325     {
326         printf("Command line: expected option, got \"%c\" -> stop\n",
327             argv[i][0]);
328         exit(0);
329     }
330     ch = argv[i][1];
331     i++;
332     switch( ch )
333     {
334     case 'a':
335         allocateCmemTestFlag = true;
336         continue;
337     case 'b':
338         if( i < argc && argv[i][0] != '-' )

```

Click a line for
setting a breakpoint

Click here for the output
produced by running the
executable selected

Projects



fel.cpp

```

306 int i;
307
308 // ***** handle command line arguments *****
309 // Verbose option?
310 bool verbose = false;
311 for( i=1; i<argc; ++i )
312     if (argv[i][0] == '-' && argv[i][1] == 'v')
313     {
314         verbose = true;
315         printf( "Going verbose!\n" );
316         break;

```

point to variable
to see its value

| Name | Value |
|-------------------------|-----------------|
| allocateCmemTestFlag | false |
| argc | 1 |
| argv | <1 items> |
| bufSize | 4194304 |
| cancelInterruptsFlag | false |
| ch | <optimized out> |
| checkEmulatorOutputFlag | false |
| circularDmaReadFlag | false |
| circularDmaWriteFlag | false |
| disableInterruptsFlag | false |
| dmald | 0 |
| dumpOnErrorFlag | true |

Debugger

Threads: #1 fel

Stopped at breakpoint 5 (1) in thread 1.

| Level | Function | File | Line | Number | Function | File | Line | Address |
|-------|----------|---------|------|--------|--------------------|-------------------|------|---------|
| 1 | main | fel.cpp | 311 | 5 | main(int, char **) | ...el/src/fel.cpp | 311 | 0x402a2 |

call stack

thread selection

Continue, Stop, Step over, Step into, Step out

Debugging

Open Documents

fel.cpp

Application Output

fel X

auto-loading has been declined by your `auto-load safe-path' set to "\$debugdir:\$datadir/auto-load".

Debugging has finished

Debugging starts

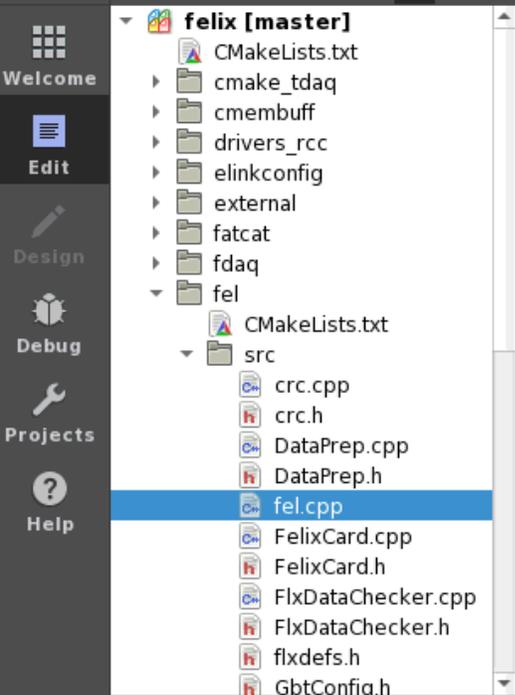
File "/project/atlas/tdaq/cvmfs-felix-87-5/sft.cern.ch/lcg/contrib/gcc/6.2.0native/x86_64-slc6/lib64/libstdc++.so.6.0.22-gdb.py"

auto-loading has been declined by your `auto-load safe-path' set to "\$debugdir:\$datadir/auto-load".

Debugging has finished

Debugging starts

put "set auto-load safe-path /" in
\$HOME/.gdbinit to get rid of this.



```

306 int i;
307
308 // ***** handle command line arguments *****
309 // Verbose option?
310 bool verbose = false;
311 for( i=1; i<argc; ++i )
312     if (argv[i][0] == '-' && argv[i][1] == 'v')
313     {
314         verbose = true;
315         printf( "Going verbose!\n" );
316         break;
317     }
318
319 // Scan options
320 char ch;
321 i = 1;
322 while( i < argc )
323 {
324     if( argv[i][0] != '-' )
325     {
326         printf("Command line: expected option, got \"%c\" -> stop\n",
327             argv[i][0]);
328         exit(0);
329     }
330     ch = argv[i][1];
331     i++;
332     switch( ch )
333     {
334     case 'a':
335         allocateCmemTestFlag
336         continue;
337     case 'b':
338         if( i < argc && argv
339         {
340             // In MByte
341             if( sscanf( argv
342                 missing_par( c
343                 bufSize *= 0x100
344                 i++;

```

Code browsing

- Switch Header/Source
- Follow Symbol Under Cursor
- Switch Between Function Declaration/Definition
- Find Usages
- Open Type Hierarchy
- Open Include Hierarchy
- Refactor
- Auto-indent Selection
- Toggle Comment Selection
- Add Expression Evaluator
- Paste
- Paste from Clipboard History
- Add UTF-8 BOM on Save

right click on
variable for
menu