



MariaDB[®]

**MariaDB ColumnStore C++ API
Building Documentation**

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MariaDB Corporation

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LICENSING

1.1 Documentation Content



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1.2 MariaDB ColumnStore C++ API

The MariaDB ColumnStore C++ API (mcsapi) is licensed under the [GNU Lesser General Public License, version 2.1](https://www.gnu.org/licenses/lesser.html).

VERSION HISTORY

This is a version history of C++ API interface changes. It does not include internal fixes and changes.

BUILDING LIBMCSAPI

Note: CentOS 6 is not currently supported and it is not expected that the API will build on this platform.

libmcsapi uses CMake which is a portable cross-platform build system.

3.1 Pre-requisites

You need the development packages for **libuv**, **libxml2** and **snappy** to build mcsapi.

To build the documentation you need **python-sphinx** and **python-sphinx-latex**.

The test suite will use **cppcheck** for additional static code analysis checks if it is installed.

3.1.1 Ubuntu 16.04 (Xenial)

For the main build you need:

```
sudo apt-get install cmake g++ libuv1-dev libxml2-dev libsnapappy-dev pkg-config swig_
↳python-dev default-jdk
```

For the documentation:

```
sudo apt-get install python-sphinx texlive-latex-recommended texlive-latex-extra_
↳latexmk
```

For the test suite:

```
sudo apt-get install libgtest-dev cppcheck
cd /usr/src/gtest
sudo cmake . -DCMAKE_BUILD_TYPE=RELEASE -DBUILD_SHARED_LIBS=ON
sudo make
sudo mv libg* /usr/lib/
```

3.1.2 Debian 8 (Jessie)

Debian Jessie requires packages that are not in the main repositories. First of all you need Debian's Jessie backports repository enabled, edit the file `/etc/apt/sources.list` and add the following line:

```
deb http://httpredir.debian.org/debian jessie-backports main contrib non-free
```

Then install the following:

```
sudo apt-get install cmake g++ libuv1-dev libxml2-dev libsnappy-dev pkg-config libc++-  
↳dev swig python-dev default-jdk
```

For the documentation:

```
sudo apt-get install python-sphinx texlive-latex-recommended texlive-latex-extra_  
↳latexmk python-pip  
sudo pip install python-sphinx
```

For the test suite do the following in a directory separate from the API:

```
git clone https://github.com/google/googletest  
cd googletest  
cmake . -DCMAKE_BUILD_TYPE=RELEASE -DBUILD_SHARED_LIBS=ON  
make  
sudo make install
```

3.1.3 CentOS 7

For the main build you need the following, the devtoolset is because GCC5 minimum is required for full C++11 support:

```
sudo yum install epel-release  
sudo yum install cmake libuv-devel libxml2-devel snappy-devel  
sudo yum install centos-release-scl  
sudo yum install devtoolset-4-gcc*  
sudo yum install java-1.8.0-openjdk java-1.8.0-openjdk-devel swig python-devel  
scl enable devtoolset-4 bash
```

For the documentation:

```
sudo yum install python-sphinx texlive-scheme-full latexmk
```

For the test suite:

```
sudo yum install gtest-devel cppcheck
```

3.1.4 SUSE Enterprise Linux 12

For the main build you need GCC5 minimum. For this example we are using GCC6, you will need the SDK and Toolchain modules enabled in Yast first:

```
sudo zypper install gcc6 gcc6-c++ cmake libxml2-devel snappy-devel  
  
export CC=/usr/bin/gcc-6  
export CXX=/usr/bin/g++-6
```

Then in a directory separate from the API:

```
git clone https://github.com/libuv/libuv
cd libuv
./autogen.sh
./configure
make
sudo make install
```

Unfortunately it is not possible to build the documentation in SUSE Enterprise Linux 12 due to missing LaTeX dependencies.

For the test suite do the following in a directory separate from the API:

```
sudo zypper ar -f http://download.opensuse.org/repositories/devel:/tools/SLE_12_SP3/
↪devel:tools.repo
sudo zypper install cppcheck
git clone https://github.com/google/googletest
cmake . -DCMAKE_BUILD_TYPE=RELEASE -DBUILD_SHARED_LIBS=ON
make
sudo make install
```

3.2 CMake Options

Several options are available when execution CMake by using the following command line:

```
cmake -D<Variable>=<Value>
```

Alternatively you can use one of the CMake GUIs to set the options.

The options are as follows:

Option	Default	Definition
CMAKE_INSTALL_PREFIX	(Platform dependent)	Where to install libmcsapi
CMAKE_BUILD_TYPE	RELWITHDEBINFO	The type of build (Debug, Release or RelWithDebInfo)
TEST_RUNNER	OFF	Build the test suite
BUILD_DOCS	OFF	Build the PDF documentation
RPM	OFF	Build a RPM (and the OS name for the package)
DEB	OFF	Build a DEB (and the OS name for the package)
PYTHON	ON	Build the Python library
JAVA	ON	Build the Java library
RUN_CPPCHECK	OFF	Run cppcheck during make test or make all_cppcheck

3.3 Linux / Unix

3.3.1 Requirements

To compile on POSIX based operating systems you need a functioning C++11 compiler (for GCC version 5.0 minimum) and cmake. To compile the documentation you will also need python-sphinx version 1.0 or higher.

3.3.2 Compiling

After running CMake as described above you simple need to run `make` and then `sudo make install`. To run the test suite you can run `make check`.

3.4 Building a Package

To build an RPM or DEB package you first need to specify the OS you want to build for, for example:

```
cmake . -DRPM=centos7
```

or

```
cmake . -DDEB=xenial
```

You should of course add options as above to this as required. Then you can build the package using:

```
make package
```