

# Introduction to Modern CMake

C++ dependency tutorial

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Available at

[https://homepages.laas.fr/gsaurel/  
modern-cmake.pdf](https://homepages.laas.fr/gsaurel/modern-cmake.pdf)

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## Source

[https://gitlab.laas.fr/gsaurel/talks :  
modern-cmake.md](https://gitlab.laas.fr/gsaurel/talks : modern-cmake.md)

## Discussions

<https://im.laas.fr/#/room/#modern-cmake:laas.fr>

## Configure

- Find the dependencies you need
- Declare the options you want

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## Run

- Start your executable with its associated \*.so

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```

└─ $A_DEP_INSTALL_PREFIX
   └─ include
      └─ a-dep
         └─ fwd.hpp
   └─ lib
      └─ liba-dep.so
  
```

## FindA-dep.cmake

```
find_path(a_dep_INCLUDE_DIRS NAMES a-dep/fwd.hpp)
```

```
find_library(a_dep_LIBRARIES NAMES liba-dep.so)
```

## FindA-dep.cmake

```
find_path(a_dep_INCLUDE_DIRS NAMES a-dep/fwd.hpp)  
find_library(a_dep_LIBRARIES NAMES liba-dep.so)
```

## CMakeLists.txt

```
find_package(a-dep REQUIRED)  
include_directories(${a_dep_INCLUDE_DIRS})  
link_libraries(${a_dep_LIBRARIES})  
add_library(my-prog main.cpp include/my-proj/fwd.hpp)
```

## CMakeLists.txt

```
find_package(a-dep REQUIRED)  
add_library(my-lib main.cpp include/my-prog/fwd.hpp)  
target_link_libraries(my-prog PUBLIC a-dep::a-dep)
```

## a-dep-config.cmake

```
add_library(a-dep::a-dep SHARED IMPORTED)  
set_target_properties(a-dep::a-dep PROPERTIES  
  LINK_LIBRARIES "liba-dep.so"  
  INCLUDE_DIRECTORIES "${_IMPORTED_PREFIX}/include")
```

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```
set(A_DEP_INCLUDE_DIRS ${a_dep_INCLUDE_DIRS})  
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set(A_DEP_INCLUDE_DIRS ${a_dep_INCLUDE_DIRS})  
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```

- 3 Relocatable packages

my-lib-config.cmake from legacy a-dep

```
add_library(my-lib::my-lib SHARED IMPORTED)
set_target_properties(my-lib::my-lib PROPERTIES
  LINK_LIBRARIES "libmy-lib.so;/usr/lib/liba-dep.so"
  INCLUDE_DIRECTORIES
  "${_IMPORTED_PREFIX}/include;/usr/include")
```

my-lib-config.cmake from legacy a-dep

```
add_library(my-lib::my-lib SHARED IMPORTED)
set_target_properties(my-lib::my-lib PROPERTIES
  LINK_LIBRARIES "libmy-lib.so;/usr/lib/liba-dep.so"
  INCLUDE_DIRECTORIES
  "${_IMPORTED_PREFIX}/include;/usr/include")
```

my-lib-config.cmake from modern a-dep

```
find_dependency(a-dep REQUIRED)
add_library(my-lib::my-lib SHARED IMPORTED)
set_target_properties(my-lib::my-lib PROPERTIES
  LINK_DEPENDENT_LIBRARIES "a-dep::a-dep"
  LINK_LIBRARIES "libmy-lib.so"
  INCLUDE_DIRECTORIES "${_IMPORTED_PREFIX}/include")
```

That's all folks !

Thanks for your time :)