

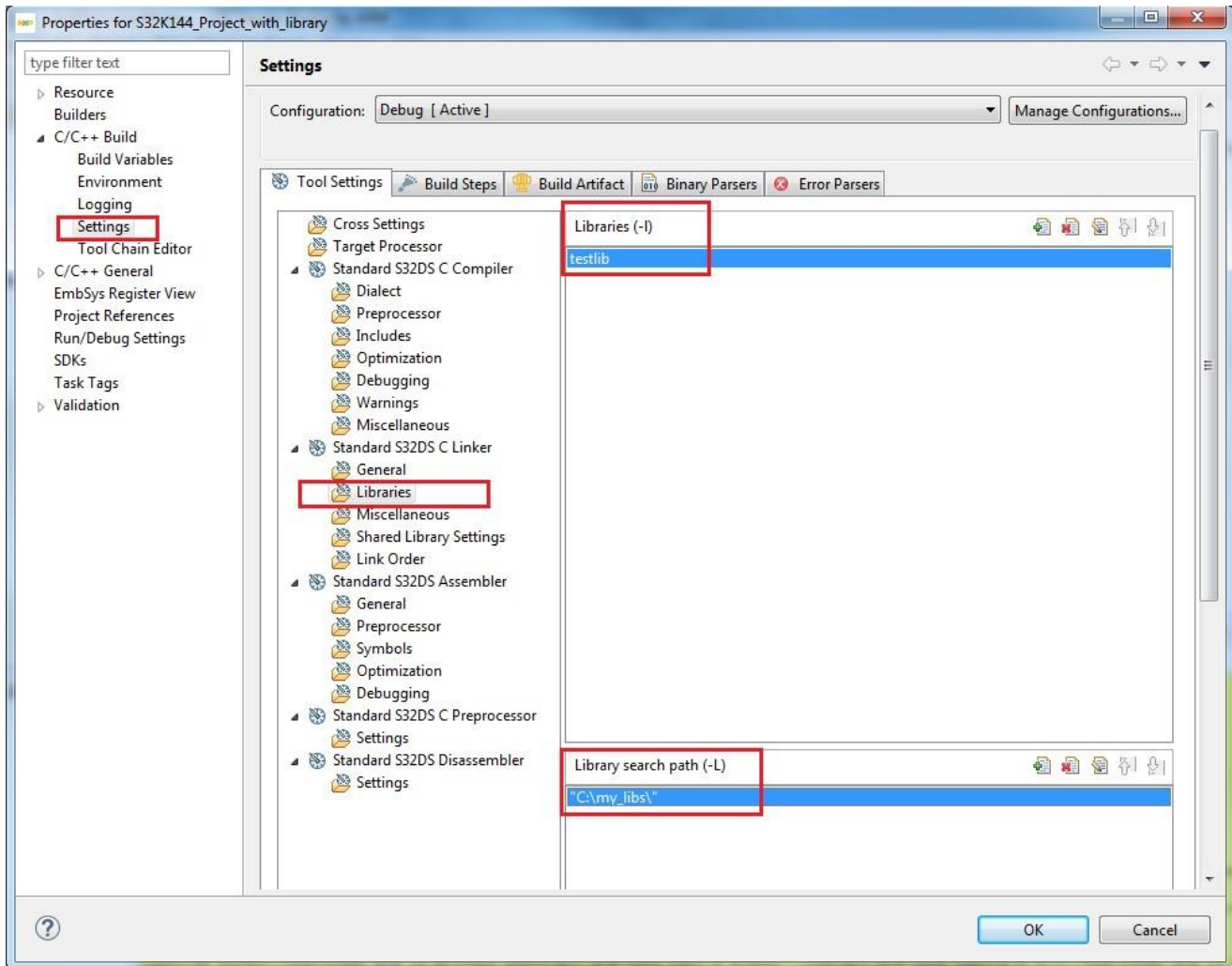
HOWTO: Add a static library file into S32DS GCC project

This document describes two ways how to add a static library file (*.a) into your S32 Design Studio GCC project. These methods differ from each other in sense how a library update is reflected into project build process.

Adding a static library WITHOUT dependency to executable (elf) file

This approach assumes a library does not change. An update of the library does not trigger project rebuild process. If the library changes the project needs to be manually cleaned (assuming no other source file has changed) and next build links the updated library.

The path to the library and the library name shall be entered into *Project Properties -> C/C++ Build -> Settings*
> *Standard S32DS C Linker -> Libraries*



Please note that GCC adds prefix **"lib"** and the extension **".a"** to the library name entered into the above dialog by default.

GCC linker will search for the library file named: **"libtestlib.a"** in the folder **"c:\my_libs"** In the example above.

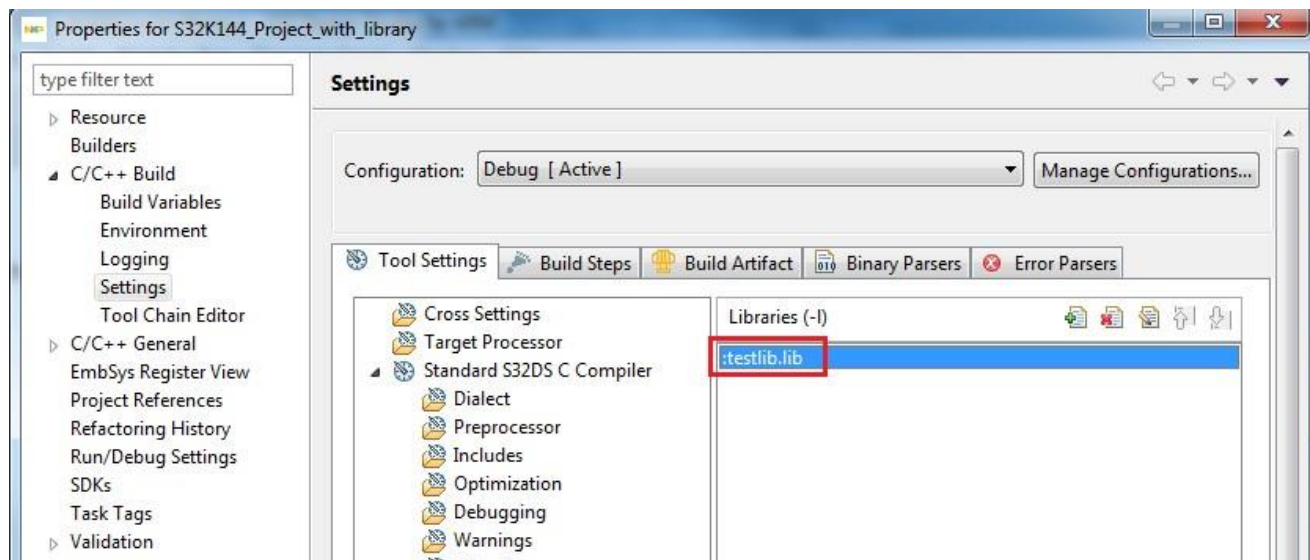
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In case a library cannot be found, the linker error occurs e.g. one depicted below. The linker library file name option `-ltestlib.a` is expanded into file name `"libtestlib.a.a"` which does not exist.

```
10:28:53 **** Incremental Build of configuration Debug for project
S32K144_Project_with_library **** make -j8 all Building target:
S32K144_Project_with_library.elf Executing target #5
S32K144_Project_with_library.elf Invoking: Standard S32DS C Linker
arm-none-eabi-gcc -o "S32K144_Project_with_library.elf"
"@S32K144_Project_with_library.args"
c:/nxp/s32ds_arm_v2.0/cross_tools/gcc-arm-none-eabi-
4_9/bin/./lib/gcc/arm-noneeabi/4.9.3/./././././arm-none-
eabi/bin/ld.exe: cannot find -ltestlib.a collect2.exe: error: ld
returned 1 exit status make: *** [makefile:49:
S32K144_Project_with_library.elf] Error 1
10:28:54 Build Finished (took 1s.332ms)
```

For a custom library name add colon character ":" at the beginning of the library name to disable the default prefix/extension expansion.

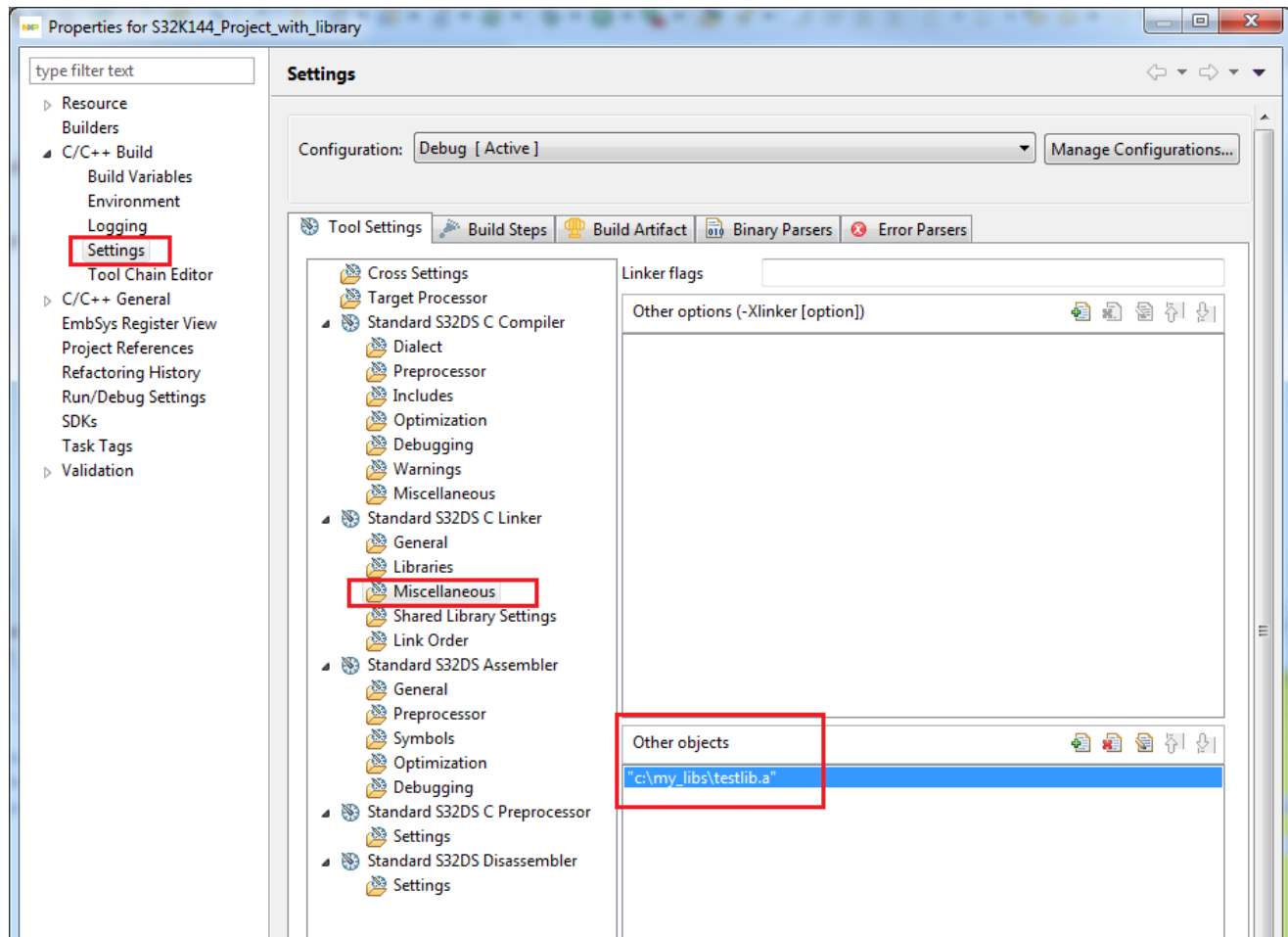
GCC linker now searches for file name `"testlib.lib"` in the example below:



Adding a static library WITH dependency to executable (elf) file

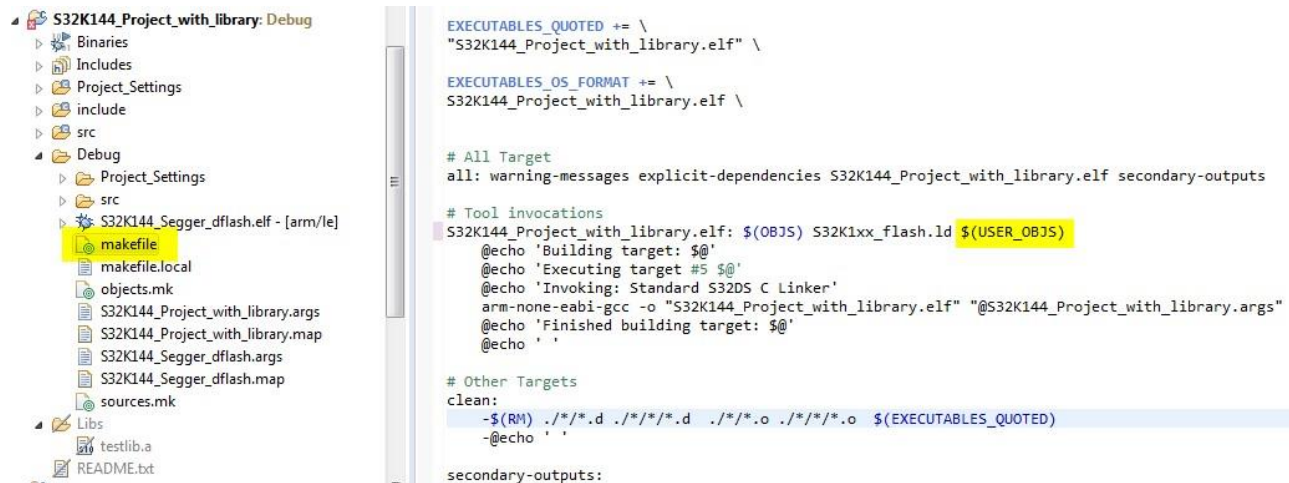
If a static library has changed - "touched" it is sometimes desired to trigger project rebuild. In this scenario the library shall be added into a different project dialog:

Project Properties -> C/C++ Build -> Settings -> Standard S32DS C Linker -> Miscellaneous -> Other objects



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The items from "Other objects" list is propagated into USER_OBJS makefile variable which is prerequisite for auto-generated makefile rule that build the target (elf):



Enjoy linking static libraries in S32DS!