

# CHS Makefile Project

## What's the aim?

The goal is to provide a common Makefile for FORTRAN, C and mixed projects for the CHS department.

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What you have to do?  
Makefile Header  
License

## What you have to do?

You have to checkout the *Makefile* and the directory *make.config*.

Open the file *Makefile* and make the proper settings for your source code (select compiler, IMSL, MKL, LAPACK, etc.).

Now, you just have to type *make* on the command line (in the directory of your source code) and the executable will be compiled.

## Makefile Header

```
# PURPOSE
#   Makefile for CHS projects
#
# CALLING SEQUENCE
#   make [options] [VARIABLE=VARIABLE ...] [targets]
#
#   Variables can be set on the command line [VAR=VAR] or in the SWITCHES section in this file.
#
# INPUTS
#   targets    all (default), check (=test), clean, cleanclean, cleanccheck (=cleantest), html
#
# OPTIONS
#   All make options such as -f makefile. See 'man make'.
#
# VARIABLES
#   All variables defined in this makefile.
#   This makefile has lots of conditional statements depending on variables.
#   If the variable functions as a switch then the condition checks for variable = true,
#   otherwise the variable can have different values.
#   See individual variables in SWITCHES section below.
#
#   Variables can be empty for disabling a certain behaviour,
#   e.g. if you do not want to use IMSL, set: imsl=no or imsl=
#
#   Current variables are
#       system    eve, mcimac, mcpowerbook, mcair, jmmacbookpro, gdmacbookpro
#       release    debug, release
#       netcdf     netcdf3, netcdf4
#       static     static, shared, dynamic (last two are equal)
#       proj       true, [anything else]
#       imsl       vendor, imsl, [anything else]
#       mkl        mkl, mkl95, [anything else]
#       lapack     true, [anything else]
#       compiler   intel11, intel12, gnu41, gnu42, gnu44, gnu45, gnu46, absoft, nag51, nag52, nag53, sun1
#
#       alternative names are:
#       On eve.ufz.de
#       gnu, gfortran, gcc=gnu44
#       gfortran41, gcc41=gnu41
#       gfortran44, gcc44=gnu44
#       gfortran45, gcc45=gnu45
#       gfortran46, gcc46=gnu46
#       intel, ifort, ifort11=intel11
#       ifort12=intel12
#       sun=sun12
#       nag=nag53
#       On Matthias' Macbook Air
```

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#      gnu, gfortran, gcc, gfortran46, gcc44=gnu46
#      On Matthias' iMac
#      gnu, gfortran, gcc, gfortran45, gcc44=gnu45
#      intel, ifort, ifort12=intel12
#      nag=nag52 nag53
#      On Matthias' Powerbook
#      gnu, gfortran, gcc, gfortran42, gcc42=gnu42 for mcpowerbook
#      nag=nag52 nag53
#      On Jule's MacBook Pro
#      gnu, gfortran, gcc, gfortran46=gcc46
#      On Stephan's Desktop
#      ifort=intel12
#      On Stephan's Laptop
#      ifort=intel12
#      openmp    true, [anything else]
#
# DEPENDENCIES
# This make file uses the following files:
# $(MAKEDPATH)/make.d.pl, $(CONFIGPATH)/$(system).$(compiler)
# The default $(MAKEDPATH) and $(CONFIGPATH) is make.config
#
# RESTRICTIONS
# Not all packages work with or are compiled for all compilers.
# The script does check some but not all of these dependencies.
#
# EXAMPLE
# make release=debug compiler=intel11 imsl=vendor mkl=mkl95
#
# LITERATURE
# The following links provide general documentation:
# Make
# GNU      http://www.gnu.org/s/make/
# Compiler
# GFORTRAN http://gcc.gnu.org/fortran/
# INTEL     http://software.intel.com/en-us/articles/intel-composer-xe/
# NAG       http://www.nag.co.uk/nagware/np.asp
#           http://www.nag.co.uk/nagware/np/doc_index.asp
# ABSOFT    http://www.absoft.com/Support/Documentation/fortran_documentation.html
# Libraries
# MKL       http://software.intel.com/en-us/articles/intel-mkl/
# IMSL      http://www.roguewave.com/products/imsl-numerical-libraries.aspx
# NETCDF    http://www.unidata.ucar.edu/software/netcdf/
# PROJ4     http://trac.osgeo.org/proj/
# LAPACK    http://www.netlib.org/lapack/
#
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```

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[Goto MainPage](#)

