

HOMME CMake Configure Options

The build system for HOMME is very flexible and therefore has a lot of configure options which are listed below. In the following, "XXX" should be replaced with the development executable name for which you want to set the option (eg. PREQX).

Configure Option	Type	Default	Effect
-DCMAKE_Fortran_COMPILER	File Path	NONE	The Fortran compiler
-DCMAKE_C_COMPILER	File Path	NONE	The C compiler
-DCMAKE_CXX_COMPILER	File Path	NONE	The C++ compiler
-DOPT_FLAGS	String	Compiler dependent	Optimization flags all compilers
-DOPT_FFLAGS	String	Compiler dependent	Optimization flags for the Fortran compiler
-DOPT_CFLAGS	String	Compiler dependent	Optimization flags for the C compiler
-DOPT_CXXFLAGS	String	Compiler dependent	Optimization flags for the C++ compiler
-DDEBUG_FLAGS	String	Compiler dependent	Debug flags for all compilers
-DDEBUG_FFLAGS	String	Compiler dependent	Debug flags for the Fortran compiler
-DDEBUG_CFLAGS	String	Compiler dependent	Debug flags for the C compiler
-DDEBUG_CXXFLAGS	String	Compiler dependent	Debug flags for the C++ compiler
-DADD_Fortran_FLAGS	String	NONE	Additional Fortran compiler flags
-DADD_C_FLAGS	String	NONE	Additional C compiler flags
-DADD_CXX_FLAGS	String	NONE	Additional C++ compiler flags
-DFORCE_Fortran_FLAGS	String	NONE	Overwrite Fortran compiler flags
-DFORCE_C_FLAGS	String	NONE	Overwrite C compiler flags
-DFORCE_CXX_FLAGS	String	NONE	Overwrite C++ compiler flags
-DHOMME_BASELINE_DIR	File Path	Current build directory	Location of build containing baseline results for testing
-DUSE_MPIEXEC	String	mpiexec	The name of the MPI executable
-DUSE_MPI_OPTIONS	String	NONE	Additional options to send to mpiexec
-DUSE_QUEUING	Bool	System Dependent	If lsf or pbs queuing is available run the tests through the queue
-DHOMME_PROJID	String	None	Allocation charge account ID for queue submissions
-DUSE_NUM_PROCS	Integer	NONE	Set the number of MPI processes to use in the tests
-DENABLE_OPENMP	Bool	TRUE	Compile the code and configure the tests to use OpenMP
-DENABLE_HORIZ_OPENMP	Bool	TRUE	Whether to enable OpenMP threading over elements
-DENABLE_VERT_OPENMP	Bool	FALSE	Whether to enable OpenMP threading within an element (warning: experimental)
-DUSE_OPENACC	Bool	FALSE	Whether to compile the code with OpenACC directives (only supported through PGI)
-DUSE_CUDA_FORTRAN	Bool	FALSE	Whether to compile the code with CUDA Fortran (only supported through PGI)
-DCUDA_VERSION	String	4.1	Which version of CUDA to compile with
-DCUDA_DEVICE_CAPABILITY	String	cc2x	The compute capability of the GPU
-DNETCDF_DIR	File Path	NONE	Path to the Netcdf install
-DWITH_PNETCDF	Bool	TRUE	Whether to build HOMME with PNetcdf
-DPNETCDF_DIR	File Path	NONE	Path to the PNetcdf install
-DHDF5_DIR	File Path	NONE	Path to the HDF5 install
-DZLIB_DIR	File Path	NONE	Path to the ZLIB install
-DSZIP_DIR	File Path	NONE	Path to the SZIP install
-DHOMME_FIND_BLAS_LAPACK	Bool	FALSE	Whether to use system blas/lapack (FALSE builds HOMME version of blas/lapack)
-DXXX_USEPIO	Bool	False	Whether to output data to native cubed-sphere grid
-DXXX_USE_ENERGY	Bool	False	Whether to calculate and output energy diagnostics
-DXXX_NP	Integer	Differs	Value of NP to use
-DXXX_NC	Integer	Differs	Value of NC to use
-DXXX_PLEV	Integer	Differs	Value of PLEV to use
-DENABLE_INTEL_PHI	Bool	False	Whether to enable compilation on Intel Xeon Phi targets (adds -mmic to compiler flags)
-DPREFER_SHARED	Bool	False	Whether to prioritize linking with shared libraries (netcdf etc.)
-ENABLE_PERSISTENT_MPI	Bool	False	Whether to enable persistent message passing (potentially lower comm. overhead)