

Building HPX

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CMake

- Alternative to configure, etc.
- Generates Makefiles, VS solutions.
- Used to build HPX.
- **Syntax:**

```
cmake -DDEFINITION /path/to/code  
make
```

Build Options

- **HPX CMake definitions**

- DCMAKE_BUILD_TYPE=some_type
- DCMAKE_INSTALL_PREFIX=/some/path
- DCMAKE_CXX_COMPILER=some_compiler
- DBOOST_ROOT=/some/path
- D<library>_ROOT=/some/path
- D<something>_DISABLE=ON
- DHPX_<some_option>=ON

Build Options

- `-D<library>_ROOT=/some/path`
 - Only necessary if the library is not in `/usr` or `/.`
 - Library name should be in capitals.
- `-DCMAKE_BUILD_TYPE=some_type`
 - Allowed options are:
 - `Release`: Full release build (default).
 - `MinSizeRel`: Full release build, optimized for size.
 - `RelWithDebInfo`: Release build with debugging on.
 - `Debug`: Full debug build, no optimizations.

Boost

- Collection of C++ libraries
- Used heavily in HPX
 - Only required library dependency.
- Uses a custom build system
- HPX utility (docs/build_boost.sh)
`build_boost.sh -d boost_1.52.0 -v 1.52.0`

Other Dependencies

- **Memory allocators**
 - **Jemalloc** (-DHPX_MALLOC="jemalloc", -DJEMALLOC_ROOT=/some/path)
sudo apt-get install libjemalloc-dev
 - **Tcmalloc** (-DHPX_MALLOC="tcmalloc", -DTCMALLOC_ROOT=/some/path)
sudo apt-get install libgoogle-perftools-dev
- **Hwloc** (-DHWLOC_ROOT=/some/path)
sudo apt-get install libhwloc-dev
- **HDF5 (for GTCX, -DHDF5_ROOT=/some/path)**

```
./configure --enable-threadsafe \
            --enable-unsupported \
            --enable-cxx \
            --disable-hl \
            --with-pthread=/usr \
            --enable-fortran \
            --prefix=/some/path \
```

Build Process

```
cd ~/development
build_boost.sh -v 1.52.0 -d boost_1.52.0
git clone https://github.com/STELLAR-GROUP/hpx.git
cd hpx
mkdir build
cd build
cmake -DBOOST_ROOT=~/development/boost_1.52.0/release ..
make examples.quickstart.hello_world -j4
```

HPX Support

- Mailing list
 - gopx@cct.lsu.edu
- Documentation
 - <http://stellar.cct.lsu.edu/docs>
- IRC
 - #stellar on Freenode
 - hkaiser = Hartmut Kaiser
 - wash = Bryce Lebach
 - heller = Thomas Heller