Habbakuk Documentation

Release 0.1

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CHAPTER 1

Introduction

Habakkuk is a tool intended for analysis and performance prediction of code fragments (kernels) written in Fortran. Habakkuk is written in Python and makes use of a Fortran parser developed as part of the f2py *project* <*www.f2py.com*>.

CHAPTER 2

Getting going

2.1 Download

Habakkuk is hosted on github.

Heron, the location that you downloaded Habakkuk to (including the habakkuk directory itself) will be referred to as <HABAKKUK_HOME>.

2.2 Dependencies

Habakkuk is written in python and so needs python to be installed on the target machine. It requires the f2py package and that in turn requires the numpy package. In order to run the test suite you will require py.test.

2.3 Environment set-up

The source code of f2py (revision 93) is provided with Habakkuk in the sub-directory `f2py_93`.

To use this version of f2py you can simply set up your PYTHONPATH variable to include this directory. In order to run Habakkuk (including running the test suite and building the documentation) you will also need to add the location of its src directory to your PYTHONPATH. The simplest way to achieve this is to do:

```
> cd <HABAKKUK_HOME>
> export PYTHONPATH=${PWD}/f2py_93:${PWD}/src:${PYTHONPATH}
```

If for some reason you need to install f2py yourself then see *f2py installation*.

2.4 Running

2.5 Testing

CHAPTER 3

f2py installation

Habakkuk requires version 3 of f2py, a library designed to allow fortran to be called from python (see http://code.google.com/p/f2py/wiki/F2PYDevelopment for more information). Habakkuk makes use of the fortran parser (fparser) contained within.

The source code of f2py (revision 93) is provided with Habakkuk in the sub-directory `f2py_93`. If you would prefer to install f2py rather than simply use it as is (see the previous section) then the rest of this section explains how to do this.

f2py uses the numpy distutils package to install. In version 1.6.1 of distutils (currently the default in Ubuntu) distutils supports interactive setup. In this case to install f2py using gfortran and gcc (for example) you can perform the following (where "cgcc", "fgfortran", "1" and "2" are interactive commands to setup.py)

```
> cd f2py_93
> sudo ./setup.py
cgcc
fgfortran
1
> sudo ./setup.py
cgcc
fgfortran
2
```

For later versions of distutils (1.8.0 has been tested) where the interactive setup has been disabled you can perform the following (using g95 and gcc in this case):

```
> cd f2py_93
> sudo ./setup.py build -fcompiler=g95 -ccompiler=gcc
> sudo ./setup.py install
```

For more information about possible build options you can use the available help:

```
> ./setup.py --help
> ./setup.py build --help
> ./setup.py build --help-fcompiler
```

In particular, if you do not have root access then the python modules can be installed in your user account by specifying –user to the install command:

```
> ./setup.py install --user
```

This causes the software to be installed under ${HOME}/.local/

CHAPTER 4

Indices and tables

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