

Integrate applications in JUBE

Introduction

- JUBE Benchmarking Environment: provides a script based framework to easily create benchmark sets, run those sets on different computer systems and evaluate the results.
- Documentation: <http://apps.fz-juelich.de/jsc/jube/jube2/docu/index.html>
- Current version available in the DEEP and DEEP-ER systems: 2.1.0
- Example commands:

```
ssh user@deep

$ jube2 info benchmark_directory
$ jube2 status benchmark_directory [-i run_id]
$ jube2 run benchmark_xml_file [--tag tag1 tag2 ...]
$ jube2 analyse benchmark_directory [-i run_id]
$ jube2 result benchmark_directory [-i run_id]
```

Example application

```
ssh manzano@deep

cd /usr/local/deep-er/sdv-benchmarks/applications/MAXW-DGTD
```

Compile

See for instance the JUBE xml file of the example application:

```
vim MAXW-DGTD-jube-master-SDV.compile.xml
```

Important parts in the file are:

1) Platform

```
<include-path>
  <path>/usr/local/jube2/platform/deep</path>
</include-path>
```

Under /usr/local/jube2/platform/deep there are a series of files with default values for the DEEP and DEEP-ER systems:

```
deep-chainJobs.sh
submit.job.in
platform.xml
```

These files won't be modified but the default values can be overwritten in the JUBE xml file.

2) Source files

```
<fileset name="sources">
  <copy>MAXW-DGTD.tar.gz</copy>
  <prepare>tar -xzf MAXW-DGTD.tar.gz</prepare>
</fileset>
```

The source files will be copied to the work directory and untar before the compilation.

3) Parameterset

```

<parameterset init_with="MAXW-DGTD_specs.xml" name="systemParameter">
  <parameter name="modules">intel/15.2.164 parastation/intel-5.1.4-1_1_g064e3f7</parameter>
  <parameter name="targetdir">$jube_benchmark_home/executable/k$k</parameter>
  <parameter name="FC" type="string" >mpif90</parameter>
  <parameter name="FFLAGS" type="string" >-align dcommons -openmp -no-opt-prefetch -O3 -r8 -xCORE-AVX2 -fpp</parameter>
</parameterset>

```

The values in the set of parameters with name "systemParameter" will be initialized with the default values found in the file "MAXW-DGTD_specs.xml". This last file takes in turn some of the default values of platform.xml and overwrites them. See the file for more information.

4) Step compile

```

<step name="compile">
  <use>sources</use>
  <use from="MAXW-DGTD_specs.xml">MAXW-DGTDMakefileFile</use>
  <use from="platform.xml">compileset</use>
  <use>systemParameter</use>
  <use>MAXW-DGTDParameter-head</use>
  <use from="MAXW-DGTD_specs.xml">MAXW-DGTDMakefileSub</use>
  <do>module purge; module load $modules; export LD_LIBRARY_PATH=/opt/parastation/mpi2/lib:/usr/local/deep-er/sdv-bench
</step>

```