CENTER FOR COMPUTATION
& TECHNOLOGY

SAGA

A Simple API for Grid Applications

Installation and Configuration

omii-uk
www.omii.ac.uk

Installation

- SAGA consists of several components that can be installed on demand and separately:
  - ***Core Components*** (required)
    - Also contains the default adaptors (local files, local jobs and SQL-based advert and replica adaptors)
  - ***Python Language Bindings*** (optional)
  - ***Adaptors*** (optional)
    - Globus, LSF, gLite, SSH, Cloud, …
- The latest versions of all components can be downloaded from the SAGA website: http://saga.cct.lsu.edu/
- SVN: https://svn.cct.lsu.edu/repos/saga/

Installation

- SAGA is written in C++ and a little bit of Python. To build and install it, you'll need at least:
  - C++ compiler and library
  - make tools
  - Python (optional)
- All SAGA components **require** the Boost C++ libraries (>= 1.33.1). They are available as binary packages on many (Linux) systems. The source installer can be downloaded at http://www.boost.org
- Adaptors require additional libraries / tools to be installed (e.g. Globus libs, PostgreSQL client libs, etc…)

Installation (Core Components)

- Prerequisites: Boost C++ libraries and the PostgreSQL client libraries if you want to use the default advert and replica adaptors
- Download and unpack the Core Components. Decide where you want to install SAGA (local/global).
  Run **configure** and **make**:

```
$> export SAGA_LOCATION=/install/location/dir/

$> ./configure --prefix=SAGA_LOCATION --with-boost= --with-postgresql=

$> make

$> make install
```

Installation (Python Bindings)

- Prerequisites: *SAGA Core Components* and Python (>= 2.3 with shared libraries installed)
- Download and unpack the Python Bindings
  Run **configure** and **make**:

```
$> export SAGA_LOCATION=/install/location/dir/

$> ./configure --with-python=

$> make

$> make install
```

Installation (Globus Adaptors)

- Prerequisites: ***SAGA Core Components*** and the Globus Toolkit (available at http://www.globus.org)
- Download and unpack the Globus Adaptors
  Run **configure** and **make**:

```
$> export SAGA_LOCATION=/install/location/dir/
$> export GLOBUS_LOCATION=/path/to/your/globus/installation

$> ./configure --with-globus-location= --with-globus-flavor=

$> make

$> make install
```

- This works similar for all other SAGA Adaptors

Installation (Condor Adaptor)

- Prerequisites: ***SAGA Core Components*** and the Condor Client Tools (available at http://www.cs.wisc.edu/condor/)
- Download and unpack the Condor Adaptors
  Run **configure** and **make**:

```
$> export SAGA_LOCATION=/install/location/dir/

$> ./configure --with-condor=

$> make

$> make install
```

Installation Recap

- SAGA_LOCATION must point to your Core Components installation
- Different Adaptors may have different configure options. **./configure --help** might help ;-)
- Each adaptor comes with a file called:

INSTALL

Read it!

Configure Environment

- **SAGA_LOCATION** is the only required environment variable. It makes sense to put it e.g. in your .bashrc

```
export SAGA_LOCATION=/install/location/dir/
```

- You will also have to add SAGA to your loader and Python paths if it is not installed in /usr or /usr/local

```
export LD_LIBRARY_PATH=${SAGA_LOCATION}/lib:$LD_LIBRARY_PATH
export DYLD_LIBRARY_PATH=${SAGA_LOCATION}/lib:$DYLD_LIBRARY_PATH  # On MacOS

export PYTHONPATH=${SAGA_LOCATION/lib/pythonX.Y/site-packages/:${PYTHONPATH}
```

Test The Installation

- Use the SAGA file tool to print the contents of a file

```
$ SAGA_LOCATION/bin/saga-file cat file://localhost/etc/passwd
..
..
..
```

- Import the SAGA module into Python

```
$ python
Python 2.6.1 (r261:67515, Feb 11 2010, 00:51:29)
[GCC 4.2.1 (Apple Inc. build 5646)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> import saga
>>> saga
<module 'saga' from '/opt/saga-svn/lib/python2.6.1/site-packages/saga/
__init__.pyc'>
```