

Environment Modules on OASIS

- Using a variant of Modules software called Lmod.
 - <http://sourceforge.net/projects/lmod/>
 - Lmod supports both the original TCL modulefiles as well as modulefiles written in Lua (a fast scripting interpreter)
- Current progress:
 - Lmod installed and working along with Lua
 - Python 2.7 and 3.4 available through module system
 - Python chosen since it's a fairly self-contained package and also used by one of the users that will be testing modules system
 - Modules for a set of packages (scipy, numpy, matplotlib, nltk, pandas) for python 2.7 and 3.4 currently being worked on
 - Working with KnowledgeLab group to use modules for their OSG Connect workflow, hope to have successful runs this week
- Spoke with group at Harvard and an idea of how to track module usage
 - will implement proof of concept after working KnowledgeLab group

Modules usage

- Source shell specific file from `/cvmfs/oasis.opensciencegrid.org/osg/modules/lmod/5.6.2/init/` ,
e.g. `/cvmfs/oasis.opensciencegrid.org/osg/modules/lmod/5.6.2/init/bash`
- List modules available using `module avail` command
- Load module using `module load` (e.g. `module load python/3.4`)
- Unload module using `module unload`
- See <https://www.tacc.utexas.edu/tacc-projects/lmod/user-guide/> for more commands/full usage

Modules example

```
[sthapa@uc3-c015 ~]$ source /cvmfs/oasis.opensciencegrid.org/osg/modules/lmod/5.6.2/init/zsh
[sthapa@uc3-c015 ~]$ module avail

----- /cvmfs/oasis.opensciencegrid.org/osg/modules/modulefiles/Core -----
lmod/5.6.2  python/2.7 (D)  python/3.4  settarg/5.6.2

Where:
(D): Default Module

Use "module spider" to find all possible modules.
Use "module keyword key1 key2 ..." to search for all possible modules matching any of the "keys".

[sthapa@uc3-c015 ~]$ module load python/2.7
[sthapa@uc3-c015 ~]$ module avail

----- /cvmfs/oasis.opensciencegrid.org/osg/modules/modulefiles/python/2.7.7 -----
all-pkgs

----- /cvmfs/oasis.opensciencegrid.org/osg/modules/modulefiles/Core -----
lmod/5.6.2  python/2.7 (D)  python/3.4  settarg/5.6.2

Where:
(D): Default Module

Use "module spider" to find all possible modules.
Use "module keyword key1 key2 ..." to search for all possible modules matching any of the "keys".

[sthapa@uc3-c015 ~]$ python
Python 2.7.7 (default, Jun 16 2014, 13:36:59)
[GCC 4.4.7 20120313 (Red Hat 4.4.7-3)] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>>
[sthapa@uc3-c015 ~]$ module unload python/2.7
[sthapa@uc3-c015 ~]$ python
Python 2.6.6 (r266:84292, Nov 21 2013, 12:39:37)
[GCC 4.4.7 20120313 (Red Hat 4.4.7-3)] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Next Steps

- Test functionality on all sites supporting the OSG VO
- Add Octave package to modules
- Add NAMD package to modules
- Develop an initial curation list based on common installations at HPC clusters and XSEDE.
- Include environment setup in OSG Connect wrapper script
- Create OSG Connect-specific documentation (update to ConnectBook) & advertise to users