TSCC Bootcamp: Introduction to Accessing and Running Jobs on the TSCC System

Managing the Environment with Modules

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TSCC: System Environment

- **See:** https://www.sdsc.edu/support/user_guides/tscc.html#env-modules
- **Modules are used to manage environment for users.**
- **Default environment:**

  $ **module list**

  Currently Loaded Module files:

      1) intel/2013_sp1.2.144   2) mvapich2_ib/2.1   3) gnutools/2.69

- **Listing available modules:**

  $ **module av**

  ----------------------- /opt/modulefiles/mpi/.intel -------------------------
  intelmpi/2016.3.210(default) mvapich2_ib/2.1(default)
  mvapich2_gdr/2.1(default)   openmpi_ib/1.8.4(default)
  mvapich2_gdr/2.2
  -------------------- /opt/modulefiles/applications/.intel --------------------
  atlas/3.10.2(default)   lapack/3.6.0(default)   scalapack/2.0.2(default)
  boost/1.55.0(default)   mxml/2.9(default)   slepc/3.6.2(default)
  …
  …

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Modules: Common Commands

Command	Description
module list	List the modules that are currently loaded
module avail	List the modules that are available
module display <module_name>	Show the environment variables used by and how they are affected
module show <module_name>	Same as display
module unload	Remove from the environment
module load	Load into the environment
module swap or switch	Replace with in the environment

Module locations & contents

- /usr/share/Modules/modulefiles
- /etc/modulefiles
- /opt/modulefiles/mpi/
- /opt/modulefiles/applications
- /opt/modulefiles/applications/.pgi

Module Command Examples

- Default environment: list, li

```
[user]  module li
Currently Loaded Module files:   1) intel/2013_sp1.2.144   2) mvapich2_ib/2.1      3) gnutools/2.69
```

- List available modules: available, avail, av

```
[user]module av
[snip]
------------------------------- /opt/modulefiles/applications ----------------------------
abyss amber bbcp bbftp beast bioroll biotools cpmd
ddt fsa gamess gaussian idl jags matlab nwchem
octave R rapidminer scipy siesta tecplot vasp/4.6 vasp weka

[snip]
------------------------------- /opt/modulefiles/applications/.pgi --------------------------
-
fftw/2.1.5 fftw gsl hdf4 hdf5
lapack netcdf/3.6.2 netcdf parmetis
scalapack sprng sundials superlu trilinos

… MORE….
```

Scripts for Loading Modules

```
[user] module purge    #cleanup
[user] module load gnutools
[user] module load intel mvapich2_ib
[user] Module list     #check that you have what you want
```

Create module/env loading scripts

```
[user] cat loadintelenv.sh
# Using the Intel Compilers (Default/Suggested)
module purge    #cleanup
module load gnutools
module load intel mvapich2_ib
Module list       #check that you have what you want
```

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