

# Resource and Application Discovery in SURAGrid

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# Easing the Path to the Grid

- Users and support staff need to know
  - What resources are available to the SURAGrid VO
  - What applications are installed on those resources
- Use information in OSG BDII LDAP service
- Generation of template scripts
- Documentation currently stored at  
[https://docs.uabgrid.uab.edu/suragrid/SURAGrid\\_Resource\\_and\\_Application\\_Discovery](https://docs.uabgrid.uab.edu/suragrid/SURAGrid_Resource_and_Application_Discovery)

# Resource Discovery

- GIP scripts push info up to OSG BDII
  - Available queues
  - Corresponding globus resource names
  - Job slots available/used
  - CPU time available
- Use this info via LDAP search
  - Find resources available to SURAGrid
  - Present details on web page for end user to make submit time decision
  - Information is approximate

# Application Discovery

- Installed applications can be published to OSG BDII
- Define your applications
  - `app_dir/etc/grid3-locations.txt`
  - `app_dir` as defined in `VDT_LOCATION/osg/etc/config.ini`
  - 3 fields separated by whitespace
    - Name, Version, Path

# Application Discovery

- Use the Name field to identify SURAgrid apps
- VO-suragrid-OS-Arch-App
  - VO-suragrid is used in the LDAP search to find SURAgrid apps in BDII. Patterned after CMS and ATLAS app definitions.
  - OS – identify the OS.
    - rhel5, rhel6, centos5, sles11, aix5
  - Arch – identify the architecture
    - x86\_64, i386, power5
  - App – name of the application
    - r, octave, openmpi

# Application Discovery

- Version – simple
  - 2.4.2, 1.8a1
- Path
  - Restricted to being Unix path with no spaces:  
`/usr/bin/octave`
  - How do we handle apps that need environmental help (e.g., modules)?
  - Publish as `/module%20load%20octave/3.6.1`
  - Easy to parse off leading '/' and '%20'.

# Discovery PHP Scripts

- <http://www.math.tamu.edu/osg/sgstatus.php>
- <http://www.math.tamu.edu/osg/sgapps.php>
  - Use information to create your own scripts, or
  - Click on application name to generate Condor-G script
- This is a 0.1 version, feedback is encouraged!

# Example Condor-G Script

```
# Condor script for running R on TAMU_Calclab resource
# Generated at 03/04/2012 18:30:17 CST
# Executable is in PATH
executable=/usr/bin/R
transfer_executable=false
# Arguments passed to R command
arguments="--slave --quiet --file=R_in16 --args $(Process)"
# Output and Error files will be named by process
output=shortR-$(Process).out
error=shortR-$(Process).err
should_transfer_files = YES
when_to_transfer_output = ON_EXIT
# Name of input file to transfer.
transfer_input_files=R_in16
# Name of output file to transfer (optional).
# Usually graphics output generated by your script.
# Comment out if unused.
transfer_output_files=shortR-$(Process).pdf
# Condor log file for this job
log=shortR.log
notification=never
universe=grid
# Name of Globus resource to use.
grid_resource=gt2 calclab-ce.math.tamu.edu:2119/jobmanager-pbs-night
queue 100
```



# Next Steps

- Further enhancement of discovery PHP scripts
- Move PHP scripts to a sura.org server
- Collect special-case templates from sites
- *Register more resources and apps w/ OSG!*
- *Register projects w/ SURAGrid and get users running!*
- Continue to update wiki – best practices
- Run periodic test jobs to test applications

Q?