

Using the Grid

file transfer and job submission across multiple clusters

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Logging into grid computers (Idas-grid, etc) from tunk (GC computer with LSC-DATA-GRID).

- `ssh tunk`
- `mkdir ~/.globus` on your GC accounts
- copy `usercert.pem` and `usercert.pem` to `~/.globus`
sftp should work for this
- `source /usr/local/ldg-2.0/setup.csh` for tcsh,
`setup.sh` for sh/bash, etc. . .
- `grid-proxy-init` enter your passphrase
- `gsissh Idas-grid` or `Idas-pcdev1` as appropriate, you should not need to enter a password.

If you have LSC-DATA-GRID software installed on your own machine, substitute it for tunk.



Moving files with grid certification

to machines with logins using scp and gsissh:(from tunk)

```
date > test.date
```

```
scp -S gsissh test.* mcNabb@ldas-grid:./test.new
```

```
test.date 100% 29 0.0KB/s 00:00
```

```
scp -S gsissh test.* mcNabb@ldas-grid:./
```

```
test.date 100% 29 0.0KB/s 00:00
```

```
scp -S gsissh mcNabb@ldas-grid:./\* ./
```

```
test.date 100% 29 0.0KB/s 00:00
```

```
test.new 100% 29 0.0KB/s 00:00
```

```
scp -S gsissh test.* mcNabb@ldas-grid:./test.new
```

```
scp: ./test.new: Not a directory
```

to machines without logins (from tunk)
(requires appropriate daemons on remote machine)
(one file at a time)

```
globus-url-copy -vb file://‘pwd’/test.date
```

```
gsiftp://ldas-grid/dso-test/mcnabb/test.grl
```

```
29 bytes 0.05 KB/sec avg 0.05 KB/sec inst
```

```
globusrun -o -r ldas-grid ‘&(executable=/bin/csh)  
                                (arguments=-c “ls” )’
```

```
gram_job_mgr_20308.log
```

```
gram_job_mgr_20411.log
```

```
test.date
```

```
test.grl
```

```
test.new
```



Moving files with grid certification

to machines without logins (from tunk)

Multiple file movement very painful!

perl script example (gsh.pl) available at:

<http://ligo.aset.psu.edu/users/documentation/filemanage.shtml>

may require modifications for use on particular clusters

File Moving exercise

move to Idas-grid and untar the following two files:

<http://www.gravity.psu.edu/~s3/LSCBootCamp/GRID/test.tar.gz>

<http://www.gravity.psu.edu/~s3/LSCBootCamp/GRID/simpledag.tar.gz>

LIGO Simple Job Submission with CONDOR

in test dir `cat file_test.sub`

```
universe = vanilla
```

```
Log      = test.file.log.\$(Process)
```

```
output   = test.file.out.\$(Process)
```

```
error    = test.file.error.\$(Process)
```

```
should_transfer_files = YES
```

```
when_to_transfer_output = ON_EXIT
```

```
transfer_input_files = \
```

```
    /dso-test/mcnabb/test/test1.txt, \
```

```
    /dso-test/mcnabb/test/test2.txt
```

```
Executable = \
```

```
    /dso-test/mcnabb/test/test_file.csh
```

Queue

LIGO Simple Job Submission exercise with CONDOR

on Idas-grid

- `cd test`
- edit paths in `file_test.sub` and `file_test_remote.sub`
- `condor_submit file_test.sub`
- `condor_q -submitter mcNabb`
- to kill jobs use `condor_rm`

LIGO Job Submission across the grid with CONDOR

```
universe = globus
globusscheduler = \
    ligo-grid.aset.psu.edu/jobmanager-pbs
```

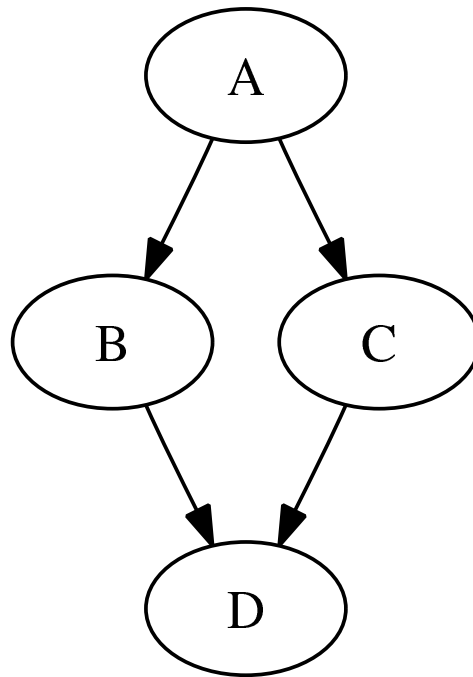
on Idas-grid

- `condor_submit file_remote_test.sub`
- `condor_q -submitter mcNabb`
- to kill jobs use `condor_rm`

Multiple Job Submission using CONDOR DAGs

- allows coordinated submission of multiple jobs
- organized recovery from failed jobs

```
JOB   A   true.sub
JOB   B   true.sub
JOB   C   false.sub
JOB   D   date.sub
PARENT A CHILD B C
PARENT B C CHILD D
RETRY  C  2
```



on Idas-grid

- `cd ../simpledag`

- `condor_submit_dag simpledag.dag`

This should fail to produce a date*.out output file.

on Idas-grid

- `cd ../simplifiedag`
- `condor_submit_dag simplifiedag.dag`
This should fail to produce a date*.out output file.
- `edit false.sub`
note that editing false.sub before the original simplifiedag has reached it, may cause the simplifiedag to succeed.
- `condor_submit simplifiedag.dag.rescue`

- Setting command line arguments and ENVIRONMENT variables with

```
arguments=01 H1  
environment= DAG_JOB_ID=5
```

- Examples:

dagsubmit.pl : <http://www.gravity.psu/~s3/LSCBootCamp/GRID/dagSubmit.pl>

pipeline.py : <http://www.lsc-group.phys.uwm.edu/skoranda/pipelineDOC/>

<http://www.cs.wisc.edu/condor/>

http://www.cs.wisc.edu/condor/manual/v6.6/2_5Submitting_Job.html#1999

<http://www.lsc-group.phys.uwm.edu/lscdatagrid/resources/index.html>