



Gaea Quickstart Guide

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Login

Users can log into Gaea via their rsa fob with

```
ssh gaea-rsa.rdhpcs.noaa.gov
```

During the first login attempt, users will be prompted to set up a proxy certificate.

1. Enter your rsa pin + fob
2. Answer yes for any yes/no questions.
3. Create a minimum of 3 words passphrase for your grid certificate. This will only occur if you did not already generate a passphrase for the new analysis nodes.
4. Confirm your passphrase
5. It will then prompt you for a "PASSCODE" -- at this point there's nothing further for you to do; hit Control-C to log off and wait until your certificate has been processed.

This set has generated your certificates. **NOTE-** You will not be able to fully log on until your certificate is signed and recognized. This will take some time on the system side. You may keep attempting to log into gaea but anytime it asks you for a PASSCODE, it means your certificate is not ready yet. This process usually takes between 1-2 hours.

Your certificate is approved (if generated on gaea) when you can do the following:

1. ssh gaea-rsa.rdhpcs.noaa.gov
2. enter rsa pin & fob
3. enter passphrase (the one you generated in previously in the above steps)
4. enter rsa pin & fob again (wait for new number to generate)
5. you will be brought to your home directory which will have your First.Last on either home1 or home2> e.g. home1/Tara.McQueen>

AGAIN, if you can't log on or your are not prompted for the above inputs, you **MUST WAIT** and **TRY AGAIN** later

Certificates

Certificates are renewed every time a user logs onto Gaea. These certificates last 30 days. Going over 30 days without renewing will give you an expired certificate. The next time a user with an expired certificate logs on, they will need to generate a new certificate similar with terminal provided instructions. Users can use their passphrase to authenticate their renewed certificate. Users who cannot remember their passphrase will need to enter it incorrectly until they are prompted to create a new passphrase. Only during this process of making a new passphrase will a user have to go through the certificate signing delay again as noted in the first 5 steps of this document.

Modules

Gaea applications and software are loaded via modules. Please use the following commands for viewing available modules, viewing modules currently loaded, loading and unloading a module. Users can load the default version or version specific.

module avail module list module load moduleName module unload moduleName

Example:

```
module load matlab
```

Moab tips

Moab is the batch scheduler and work load manager on Gaea. Moab is made by a company named Adaptive Computing (<http://www.adaptivecomputing.com>) .

Submitting Jobs with msub

- **msub -q eslogin scriptname** : to run scripts on the login nodes.
- **msub -q batch scriptname** : to run scripts in the batch queue.
- **msub -q ldtn scriptname** (or **msub -l partition=es -q ldtn scriptname**) : to

run jobs on the local data transfer nodes.

- **msub -I** : to request an interactive session (default gives you 24 cores for 1 hour)
- **msub -I -l walltime=2:00:00,size=48** : to request an interactive session with 48 cores for 2 hours
- **msub -I -X -l walltime=2:00:00,size=48** : to request an interactive session with 48 cores for 2 hours and forward xwindow sessions

- **msub -l partition=c1ms** : to submit a job to the Gaea compute resources
- **msub -l partition=t1ms** : to submit a job to the TDS (test and development system)
- **msub -V -l partition=gfdl** : to submit a job to GFDL's local compute resources
- **msub -r y** : to submit a job with rerun capabilities

Checking Jobs, System Information

showq like qstat, lists jobs in the system. It has a -u option like qstat and a -v option which will show you the partition information.

- **showq -n** : show the job name instead of the job number
- **showq -n -v** : show the job name and job number, with a wider column
 - Documentation of showq options.
 - Utility to print job number, job name, number of processors, and job state:
~Amy.Langenhorst/local/bin/mq

- **checkjob jobnumber** is like qstat -f jobnumber
- **checkjob -v jobnumber** : verbose, more complete job information, including the stdout file location
- **mdiag -f** : to show available queues

- What is a blocked job?
 - All jobs are initially put in the "blocked" queue. The job will remain "blocked" until it becomes "eligible" to run.
 - jobs that the system finds a problem with are automatically put in the "blocked" queue.
 - If you find your jobs are blocked and you do not know why, please call Operations (609) 452-6560.

Job Control

- **mjobctl -c jobnumber** or **canceljob jobnumber** : to cancel, kill, or delete a job --Rich.gudgel 08:07, 24 March 2011 (EDT)
- **mjobctl -h jobnumber** : to place a job on hold
- **mjobctl -u jobnumber** : to remove a hold from a job
- **mjobctl -R jobnumber** : to requeue (rerun) a job

Case usages:

Cancel all jobs for a particular user:

```
mjobctl -c -w user=$USER
```

Cancel all jobs that have a userhold:

```
mjobctl -c -w state=USERHOLD
```

You can change state to running, batchhold, idle...etc.

You can use the -w option to specify user, acct, class, state and partition.

Inserting Scheduler Options in Scripts

Here is an example of msub options at the top of a script.

```
#!/PBS -o [LOCATION FOR STDOUT]
#!/PBS -N [JOBNAME]
#!/PBS -q batch
#!/PBS -v [VARIABLE]=[VALUE]
#!/PBS -A [PROJECT NAME]
#!/PBS -l walltime=12:00:00
#!/PBS -l size=[NUMBER OF CORES]
#!/PBS -m abe
#!/PBS -j oe
```

```
-q batch the queue to send the job to
-v [VARIABLE]=[VALUE] sets a variable that can be used in the job script
-m abe send email to the user on abort, begin, and end of running the job
!(when a job gets killed because it reaches its wallclock time limit, MOAB considers this an "end", not an "
-j oe write script stdout and stderr to same file
```