

# Introduction to GACRC Teaching Cluster

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Georgia Advanced Computing Resource Center (GACRC)

Enterprise Information Technology Services(EITS)

The University of Georgia

# Outline

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- GACRC
- Overview
- Working Environment
  - Three Folders
  - Three Computational Partitions
  - Software on Cluster
- Submit a Computational Batch Job
- Run Interactive Jobs
- GACRC Wiki and Support

# GACRC

- A high-performance-computing (HPC) center at the UGA
- Provide to the UGA research and education community an advanced computing environment:
  - HPC computing and networking infrastructure located at the Boyd Data Center
  - Comprehensive collection of scientific, engineering and business applications
  - Consulting and training services

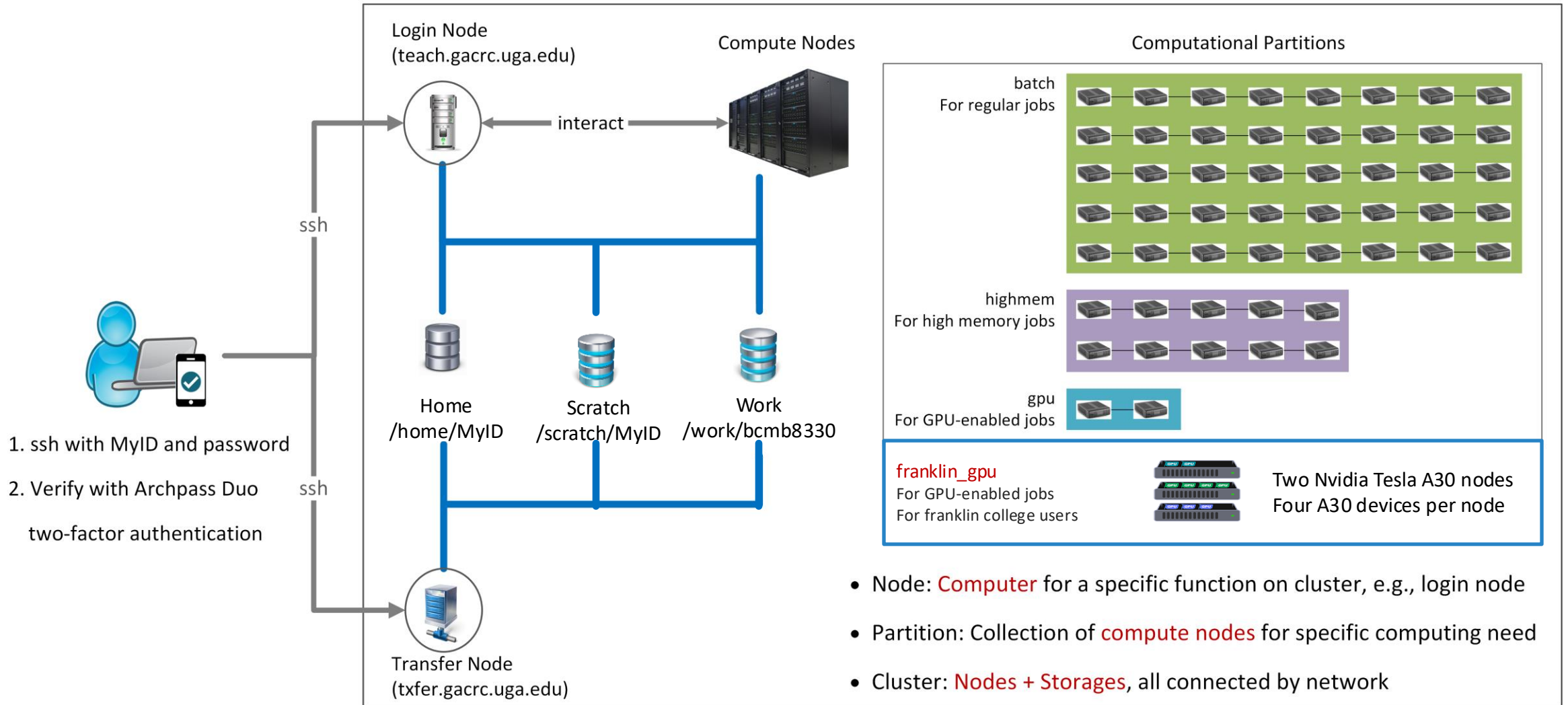
Wiki: <http://wiki.gacrc.uga.edu>

Support: [https://wiki.gacrc.uga.edu/wiki/Getting\\_Help](https://wiki.gacrc.uga.edu/wiki/Getting_Help)

Web Site: <http://gacrc.uga.edu>

Kaltura Channel: <https://kaltura.uga.edu/channel/GACRC/176125031>

# Teaching Cluster



Note: You need to connect to the **UGA VPN** at first when accessing from outside of the UGA main campus.

# Working Environment

[https://wiki.gacrc.uga.edu/wiki/Systems#Teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Systems#Teaching_cluster)

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- Two nodes, your "username" is your MyID for both:
  1. For batch job workflow, the host to log into is **teach.gacrc.uga.edu**
  2. For file transfers, the host to log into is **txfer.gacrc.uga.edu**
  
- Three Directories:
  1. /home/MyID: directory for static data (e.g., scripts, software, etc...)
  2. /scratch/MyID: working space for running computational jobs
  3. /work/bcmb8330: directory for storing data
    - a. /work/bcmb8330/MyID : data storage space for individual user in class
    - b. /work/bcmb8330/instructor\_data : data shared with class by the instructor
  
- Three Partitions:
  1. batch: for running regular computational jobs
  2. highmem: for running high-memory jobs
  3. **franklin\_gpu** or gpu: for running GPU jobs

# Working Environment (cont.)

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## ➤ Software

1. Software names are long and have a Easybuild toolchain name associated to it
2. Complete module name: **Name/Version**-toolchain, e.g., **Python/3.11.3-GCCcore-12.3.0**
3. Software names are case-sensitive!
  - `module spider pattern` : Search modules using a name pattern (case-insensitive)
  - `module load/unload moduleName` : Load/remove a module
  - `module avail` : List all available modules on the cluster
  - `module list` : List modules currently loaded
  - `module purge` : Remove all modules from working environment

# Submit a Batch Job

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_the_teaching_cluster)

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1. Log on to Login node using MyID and password, and two-factor authentication with Archpass Duo:  
`ssh MyID@teach.gacrc.uga.edu`
2. Change directory to /scratch directory: `cd /scratch/MyID`
3. Create a working subdirectory for a job : `mkdir workDir`
4. Change directory to workDir : `cd workDir`
5. Transfer data from local computer to workDir : use `scp` or **WinSCP** to connect Transfer node  
Transfer data on cluster to workDir : log on to Transfer node and then use `cp` or `mv`
6. Make a job submission script in workDir : `nano sub_mpi.sh`
7. Submit a job from workDir : `sbatch sub_mpi.sh`
8. Check job status : `sq --me` or Cancel a job : `scancel JobID`

# Step1: Log on to Login node

[https://wiki.gacrc.uga.edu/wiki/Connecting#Connecting\\_to\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Connecting#Connecting_to_the_teaching_cluster)

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1. Teaching cluster access requires verification using two-factor authentication with **Archpass Duo**. If you are not enrolled in Archpass Duo, please refer to [https://eits.uga.edu/access\\_and\\_security/infosec/tools/archpass/](https://eits.uga.edu/access_and_security/infosec/tools/archpass/) how to enroll
2. If you are connecting from **off-campus**, please first connect to the **UGA VPN** and then connect to teach.gacrc.uga.edu. Information on how to use the VPN is available at [https://eits.uga.edu/access\\_and\\_security/infosec/tools/vpn/](https://eits.uga.edu/access_and_security/infosec/tools/vpn/)



## Step1: Log on to Login node - Mac/Linux using ssh

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1. Open **Terminal** utility
2. Type command line: `ssh MyID@teach.gacrc.uga.edu`
3. You will be prompted for your **UGA MyID password**
4. You will verify your login using **Archpass Duo** authentication

ssh zhuofei@teach.gacrc.uga.edu ← 1. use ssh to open connection

UGA DUO authentication is required for SSH/SCP access to GACRC systems. For additional help with UGA DUO authentication or to report an issue please visit: [https://eits.uga.edu/access\\_and\\_security...](https://eits.uga.edu/access_and_security...)

Password: ← 2. Enter your MyID password  
When you enter password, no stars or dots will show as you are typing. Please type password carefully!

Duo two-factor login for zhuofei

Enter a passcode or select one of the following options:

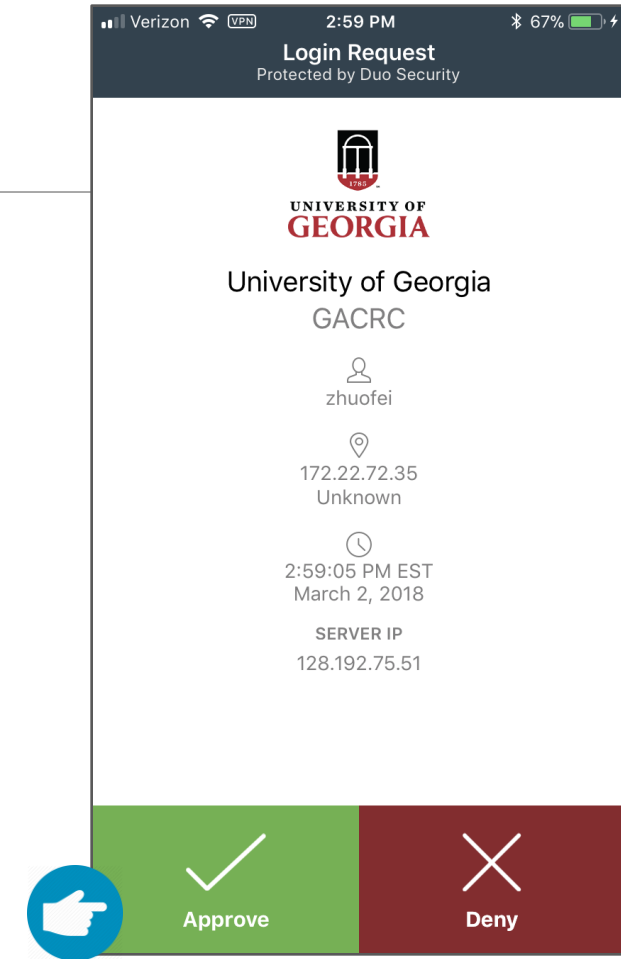
1. Duo Push to XXX-XXX-5758
2. Phone call to XXX-XXX-5758
3. Phone call to XXX-XXX-1925
- 4 5. SMS passcodes to XXX-XXX-5758 (next code starts with: 1)

Passcode or option (1-5): 1 ← 3. Select Duo option

Success. Logging you in...

Last login: Mon Aug 3 11:11:58 2020 from 172.18.114.119

zhuofei@teach-sub1 ~\$ ← 4. Logged on!



5. Verify login using Duo

## Step1 (Cont.) - Windows using PuTTY

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1. Download and install PuTTY: <https://www.putty.org/>

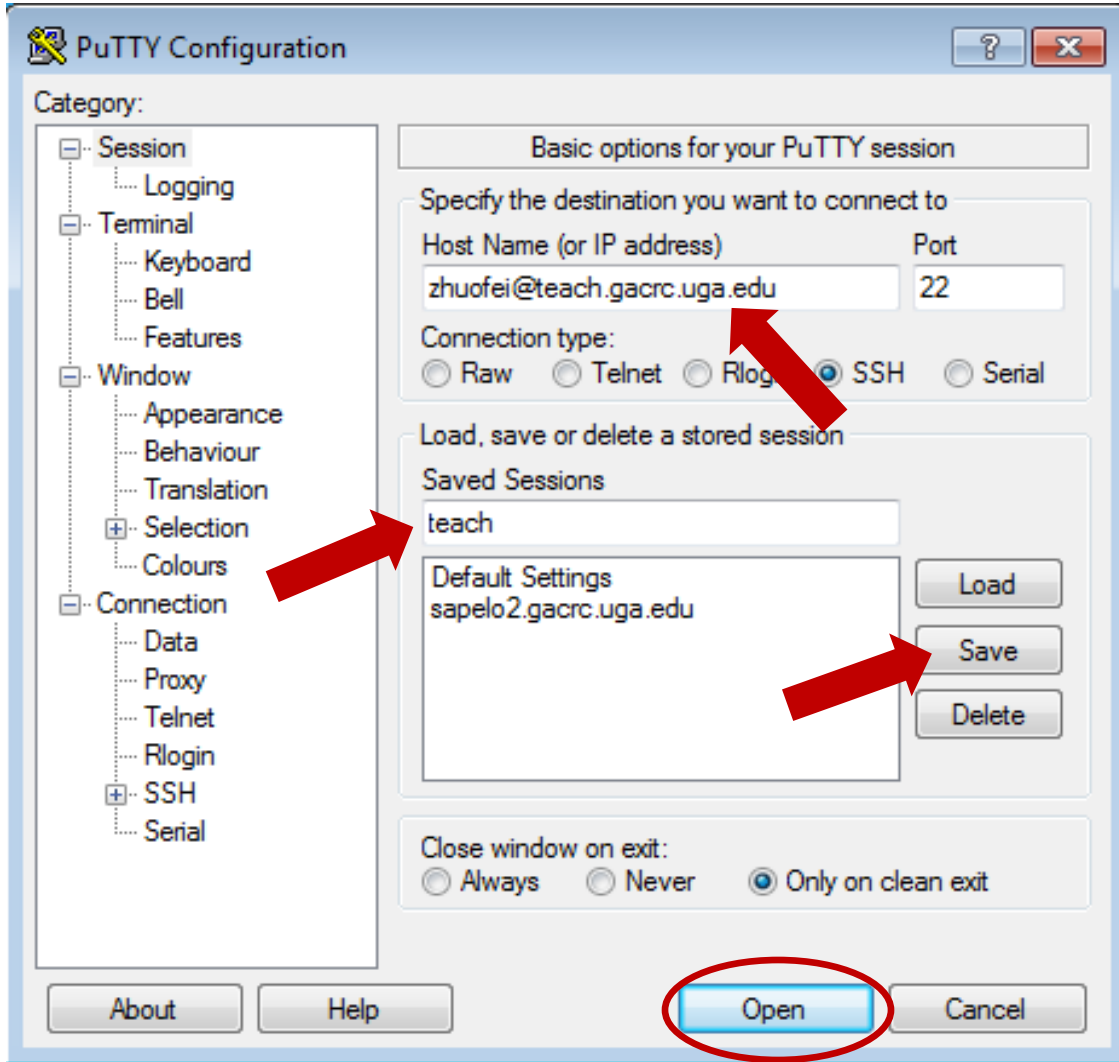
2. Detailed downloading and installation instructions:

[https://wiki.gacrc.uga.edu/wiki/How\\_to\\_Install\\_and\\_Configure\\_PuTTY](https://wiki.gacrc.uga.edu/wiki/How_to_Install_and_Configure_PuTTY)

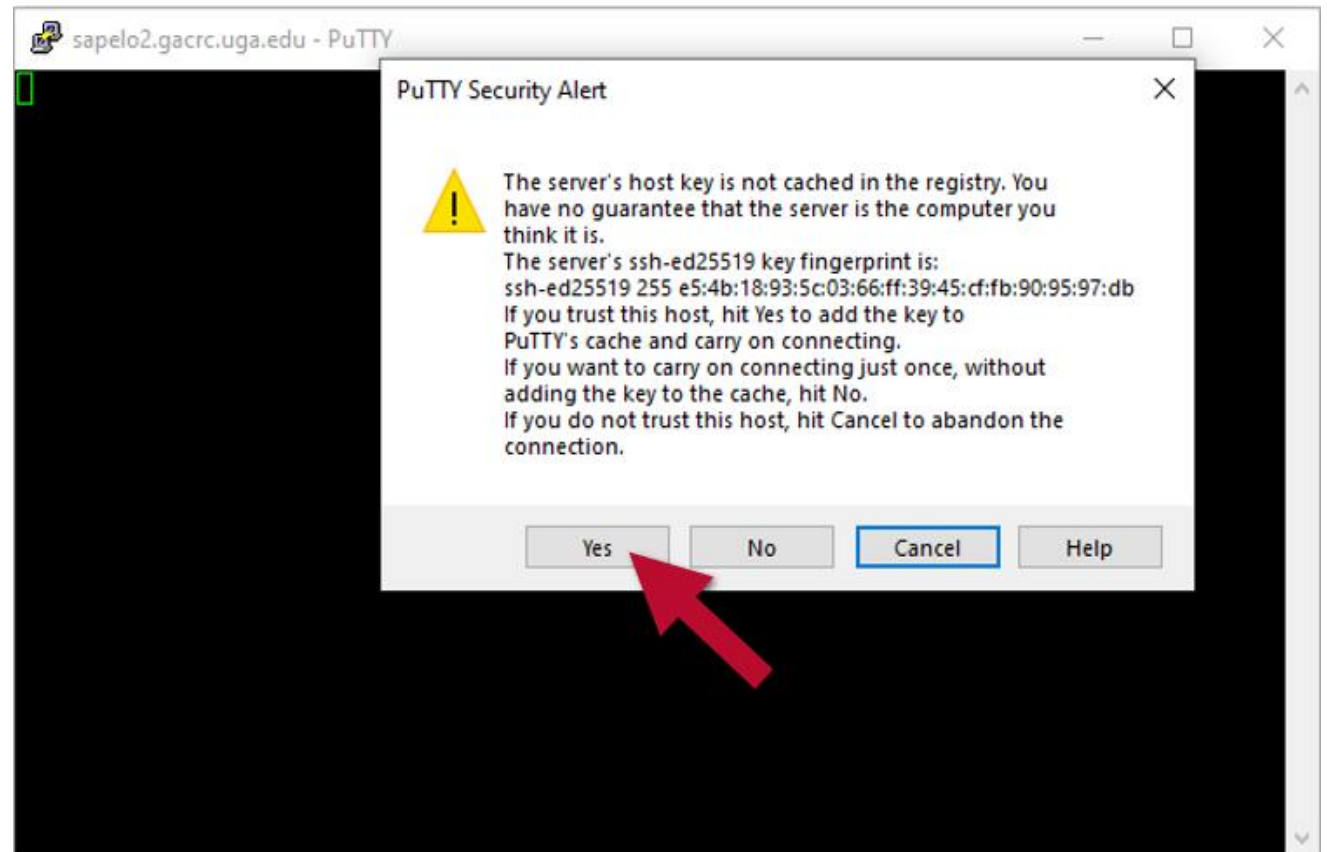
3. Detailed configuring and usage instructions:

[https://wiki.gacrc.uga.edu/wiki/How\\_to\\_Install\\_and\\_Configure\\_PuTTY#Configuring\\_PuTTY](https://wiki.gacrc.uga.edu/wiki/How_to_Install_and_Configure_PuTTY#Configuring_PuTTY)

# Step1 (Cont.) - Windows using PuTTY



The first time you connect to login node, PuTTY will give you this security alert window. Please click "Yes"



# Step1 (Cont.) - Windows using PuTTY

Next you will enter your UGA MyID password and initiate DUO authentication procedure:

```
zhuofei@teach-sub1:~  
Using username "zhuofei".  
Keyboard-interactive authentication prompts from server:  
Password: ← UGA MyID password  
Duo two-factor login for zhuofei  
Enter a passcode or select one of the following options:  
1. Duo Push to XXX-XXX-5758  
2. Phone call to XXX-XXX-5758  
3. Phone call to XXX-XXX-1925  
4. Phone call to XXX-XXX-3535  
5. SMS passcodes to XXX-XXX-5758  
Passcode or option (1-5): 1 ← Select DUO option  
End of keyboard-interactive prompts from server  
Success. Logging you in..  
Last login: Thu Jan  7 10:20:01 2021 from 128.192.240.123  
zhuofei@teach-sub1 ~$ █ ← Logged on!
```

## Step2 - 4: cd to /scratch dir, make and cd into workDir

---

```
zhuofei@teach-sub1 ~$ cd /scratch/zhuofei ← cd command to change directory
zhuofei@teach-sub1 zhuofei$ mkdir workDir ← mkdir command to create a subdirectory
zhuofei@teach-sub1 zhuofei$ cd workDir/ ← cd command to change directory
zhuofei@teach-sub1 workDir$ ls ← ls command to list contents of directory
zhuofei@teach-sub1 workDir$ ← it is empty in workDir!
```

## Step 5: Transfer data from local computer to workDir - Mac/Linux

[https://wiki.gacrc.uga.edu/wiki/Transferring\\_Files#Using\\_scp\\_2](https://wiki.gacrc.uga.edu/wiki/Transferring_Files#Using_scp_2)

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1. Connect to Transfer node (**txfer.gacrc.uga.edu**) in Terminal from your local computer
2. Use **scp** command: `scp (-r) [Source] [Target]`
3. Enter your MyID password, then select Duo option to verify connection

*E.g. 1:* use scp on local computer, from Local → workDir on cluster

```
scp ./file zhuofei@txfer.gacrc.uga.edu:/home/zhuofei/workDir
```

```
scp -r ./folder/ zhuofei@txfer.gacrc.uga.edu:/home/zhuofei/workDir
```

*E.g. 2:* use scp on local computer, from workDir on cluster → Local

```
scp zhuofei@txfer.gacrc.uga.edu:/home/zhuofei/workDir/file .
```

```
scp -r zhuofei@txfer.gacrc.uga.edu:/home/zhuofei/workDir/folder/ .
```

## Step 5 (Cont.) - Windows using WinSCP

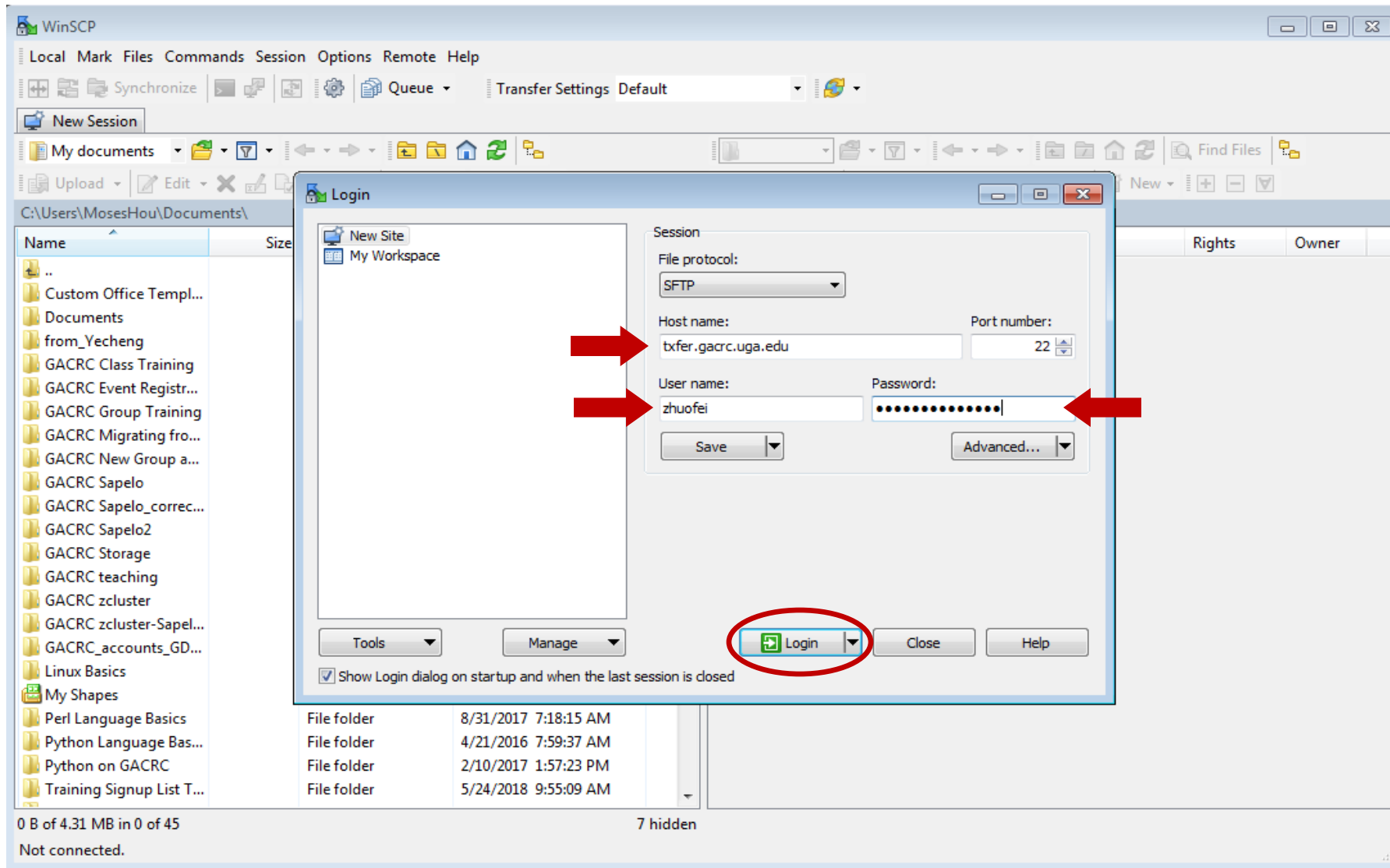
[https://wiki.gacrc.uga.edu/wiki/Transferring\\_Files#Using\\_WinSCP\\_2](https://wiki.gacrc.uga.edu/wiki/Transferring_Files#Using_WinSCP_2)

---

1. You need to connect to cluster's Transfer node ([txfer.gacrc.uga.edu](https://txfer.gacrc.uga.edu))
2. Use **WinSCP** on local computer
  - WinSCP can be downloaded from <https://winscp.net/eng/index.php>
  - Default installation procedure is simple
3. Alternative FileZilla [https://wiki.gacrc.uga.edu/wiki/Transferring\\_Files#Using\\_FileZilla\\_2](https://wiki.gacrc.uga.edu/wiki/Transferring_Files#Using_FileZilla_2)



# Step 5 (Cont.) - Windows using WinSCP



# Step 5 (Cont.) - Windows using WinSCP

zhuofei@xfer.gacrc.uga.edu - WinSCP

Local Mark Files Commands Session Options Remote Help

Synchronize Queue Transfer Settings Default

zhuofei@xfer.gacrc.uga.edu X New Session

My documents Upload Edit Properties New Download Edit Properties New

C:\Users\MosesHou\Documents\

Name	Size	Type	Changed	Name	Size	Changed	Rights	Owner
..		Parent directory						
Custom Office Templ...		File folder						
Documents		File folder						
from_Yecheng		File folder						
GACRC Class Training		File folder						
GACRC Event Registr...		File folder						
GACRC Group Training		File folder						
GACRC Migrating fro...		File folder						
GACRC New Group a...		File folder						
GACRC Sapelo		File folder						
GACRC Sapelo_correc...		File folder						
GACRC Sapelo2		File folder						
GACRC Storage		File folder						
GACRC teaching		File folder						
GACRC zcluster		File folder						
GACRC zcluster-Sapel...		File folder						
GACRC_accounts_GD...		File folder						
Linux Basics		File folder						
My Shapes		File folder						
Perl Language Basics		File folder						
Python Language Bas...		File folder						
Python on GACRC		File folder						
Training Signup List T...		File folder						

0 B of 4.31 MB in 0 of 45  
Not connected.

Server prompt - zhuofei@xfer.gacrc.uga.edu

UGA DUO authentication is required for SSH/SCP access to GACRC systems.

UGA DUO is a two-factor authentication service which requires a password (one factor) and a code, phone, or device (second factor) to successfully authenticate.

If you are not enrolled in the UGA DUO service please visit the UGA DUO service self-service portal to enroll and configure or manage your DUO enabled devices.

[https://eits.uga.edu/access\\_and\\_security/infosec/tools/duo/portal/](https://eits.uga.edu/access_and_security/infosec/tools/duo/portal/)

For additional help with UGA DUO authentication or to report an issue please visit:

[https://eits.uga.edu/access\\_and\\_security/infosec/tools/archpass/](https://eits.uga.edu/access_and_security/infosec/tools/archpass/)

Duo two-factor login for zhuofei

Enter a passcode or select one of the following options:

1. Duo Push to XXX-XXX-5758
2. Phone call to XXX-XXX-5758
3. Phone call to XXX-XXX-1925
4. Phone call to XXX-XXX-3535
5. SMS passcodes to XXX-XXX-5758

Passcode or option (1-5):

OK Cancel Help

Select DUO option

# Step 5 (Cont.) - Windows using WinSCP

Change paths on your local computer and transfer node

Drag to transfer files or folders

Name	Size	Type	Changed	Name	Size	Changed	Rights	Owner
..		Parent directory	7/10/2020 6:29:42 AM	..		12/22/2020 2:35:28 PM	rw-r--r--	root
Contacts		File folder	6/24/2020 5:30:50 AM	class_test		9/5/2019 9:26:34 AM	rw-r--r--	zhuofei
Desktop		File	1/6/2021 9:32:41 AM	CytoscapeConfigurati...		8/11/2020 10:47:52 AM	rw-r--r--	zhuofei
Documents		File folder	11/18/2020 1:04:09 PM	ens		10/13/2020 8:39:53 AM	rw-r--r--	zhuofei
Downloads		File folder	1/5/2021 6:40:34 AM	intel		10/9/2020 10:03:39 AM	rw-r--r--	zhuofei
Favorites		File folder	6/24/2020 5:30:50 AM	notification		8/17/2018 5:43:27 AM	rw-r--r--	zhuofei
Links		File folder		scripts		8/8/2018 2:14:03 PM	rw-r--r--	zhuofei
Music		File folder		term-account		1/4/2021 1:01:58 PM	rw-r--r--	zhuofei
Pictures		File folder		templates		8/9/2018 8:18:34 AM	rw-r--r--	zhuofei
Saved Ga...		File folder		workDir		10/29/2020 9:00:13 AM	rw-r--r--	zhuofei
Searches		File folder	6/24/2020 5:30:50 AM	workDir_template		7/30/2020 12:17:24 PM	rw-r--r--	zhuofei
Tracing		File folder	7/7/2015 10:45:05 AM	gcc-4.4.sif	128,788 KB	10/9/2020 10:25:27 AM	rw-r--r--	zhuofei
Videos		File folder	6/24/2020 5:30:50 AM	ling6570_config.sh	1 KB	11/19/2019 6:19:22 AM	rw-r--r--	zhuofei
				ml-search-gacrc	3 KB	1/4/2021 1:03:39 PM	rw-r--r--	zhuofei
						9/25/2019 7:12:13 AM	rw-r--r--	zhuofei

## Step 5 (Cont.): Transfer data on cluster to workDir

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- Log on to Transfer node ([txfer.gacrc.uga.edu](https://txfer.gacrc.uga.edu))
  - ✓ Mac/Linux: `ssh MyID@txfer.gacrc.uga.edu` (page 9-10)
  - ✓ Windows: use PuTTY to log in `MyID@txfer.gacrc.uga.edu` (page 11-13)
- Directories you can access on transfer node (page 5):
  1. `/home/MyID`
  2. `/scratch/MyID`
  3. `/work/bcmb8330/MyID`
  4. `/work/bcmb8330/instructor_data`
- Transfer data between two folders on cluster using `cp` or `mv`, e.g.:

```
mv /work/bcmb8330/MyID/datafile /scratch/MyID/workDir
```

## Step 6: Make a job submission script in workDir using nano

[https://wiki.gacrc.uga.edu/wiki/Sample\\_batch\\_job\\_submission\\_scripts\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Sample_batch_job_submission_scripts_on_the_teaching_cluster)

```
$ nano sub_mpi.sh
```

nano is a simple text editor on Linux. You are welcome to use other editors like vim or emacs.

Ctrl-x to save file and quit from nano



```
zhuofei@n124:lustre1/zhuofei/workDir
GNU nano 2.0.9 File: sub.sh Modified
hello nano! I am Zhuofei!
[ New File ]
^G Get Help      ^O WriteOut      ^R Read File     ^Y Prev Page    ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify       ^W Where Is     ^V Next Page    ^U UnCut Text    ^T To Spell
```

## Step 6 (Cont.)

1. Copy sample job to workDir:

```
cp -r /usr/local/gacrc/training/bcmb8330/* .
```

2. Job submission script:

```
sub_mpi.sh
```

3. Amber Wiki:

<https://wiki.gacrc.uga.edu/wiki/AMBER->

[Sapelo2](https://wiki.gacrc.uga.edu/wiki/AMBER-Sapelo2)

```
#!/bin/bash
#SBATCH --job-name=Amber_MPI           # Job name
#SBATCH --partition=batch              # Computational partition
#SBATCH --ntasks=10                   # MPI processes/rank number
#SBATCH --cpus-per-task=1              # Number of CPU cores per task/MPI process
#SBATCH --mem-per-cpu=2gb              # Memory per CPU core
#SBATCH --time=24:00:00                # Time limit hrs:mins:secs
#SBATCH --output=log.%j.out            # Standard output log
#SBATCH --error=log.%j.err             # Standard error log
#SBATCH --mail-user=MyID@uga.edu       # Where to send mail
#SBATCH --mail-type=ALL                 # Mail events (BEGIN, END, FAIL, ALL)

cd $SLURM_SUBMIT_DIR                    # cd /scratch/MyID/workDir

ml Amber/22.0-foss-2021b-AmberTools-22.3 # Load Amber module
source ${AMBERHOME}/amber.sh           # Config software environment for Amber

# PMEMD: Job1: minimization, solvent
srun ${AMBERHOME}/bin/pmemd.MPI -O \
-i min_solvent.in \
-o min_solvent.out \
-p gfp.parm7 \
-c gfp.rst7 \
-ref gfp.rst7 \
-r gfp_min_solvent.rst7
```

## Step 6 (Cont.)

1. Copy sample job to workDir:

```
cp -r /usr/local/gacrc/training/bcmb8330/* .
```

2. Job submission script:

```
sub_gpu.sh
```

3. Amber Wiki:

<https://wiki.gacrc.uga.edu/wiki/AMBER->

[Sapelo2](#)

```
#!/bin/bash
#SBATCH --job-name=Amber_GPU
#SBATCH --partition=franklin_gpu
#SBATCH --gres=gpu:1
#SBATCH --ntasks=4
#SBATCH --cpus-per-task=1
#SBATCH --mem-per-cpu=2gb
#SBATCH --time=24:00:00
#SBATCH --output=log.%j.out
#SBATCH --error=log.%j.err
#SBATCH --mail-user=MyID@uga.edu
#SBATCH --mail-type=ALL

cd $SLURM_SUBMIT_DIR

ml Amber/22.0-foss-2021b-AmberTools-22.3-CUDA-11.4.1 # Load GPU Amber module
source ${AMBERHOME}/amber.sh # Config software environment for Amber

# PMEMD: Job1: minimization, solvent
$AMBERHOME/bin/pmemd.cuda -O \
-i min_solvent.in \
-o min_solvent.out \
-p gfp.parm7 \
-c gfp.rst7 \
-ref gfp.rst7 \
-r gfp_min_solvent.rst7

# Job name
# Computational partition (franklin_gpu or gpu)
# Request 1 GPU device
# Run 4 tasks
# Number of CPU cores per task
# Memory per CPU core
# Time limit hrs:mins:secs
# Standard output log
# Standard error log
# Where to send mail
# Mail events (BEGIN, END, FAIL, ALL)

# cd /scratch/MyID/workDir
```

## Step 7: Submit a job from workDir using sbatch

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_the\\_teaching\\_cluster#How\\_to\\_submit\\_a\\_job\\_to\\_the\\_batch\\_queue](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_the_teaching_cluster#How_to_submit_a_job_to_the_batch_queue)

---

```
$ sbatch sub_mpi.sh  
Submitted batch job 5386
```

**Tips:** sub\_mpi.sh is a job submission script for

1. specifying computing resources
2. loading software using **module load**
3. running any Linux commands that you want to run
4. running the Amber MPI command





## Step 8: Check job status using `sq --me`

[https://wiki.gacrc.uga.edu/wiki/Monitoring\\_Jobs\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Monitoring_Jobs_on_the_teaching_cluster)

---

```
$ sq --me
```

JOBID	NAME	PARTITION	USER	NODES	CPUS	MIN_MEMORY	PRIORITY	TIME	TIME_LIMIT	STATE	NODELIST (REASON)
5386	Amber_MPI	batch	zhuofei	1	10	2G	992	1:23	1-00:00:00	RUNNING	rb1-3

# Step 8 (Cont.): Cancel job using scancel

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_the\\_teaching\\_cluster#How\\_to\\_delete\\_a\\_running\\_or\\_pending\\_job](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_the_teaching_cluster#How_to_delete_a_running_or_pending_job)

---

```
$ sq --me
```

JOBID	NAME	PARTITION	USER	NODES	CPUS	MIN_MEMORY	PRIORITY	TIME	TIME_LIMIT	STATE	NODELIST (REASON)
5386	Amber_MPI	batch	zhuofei	1	10	2G	992	1:23	1-00:00:00	RUNNING	rb1-3

```
$ scancel 5386
```

```
$ sq --me
```

JOBID	NAME	PARTITION	USER	NODES	CPUS	MIN_MEMORY	PRIORITY	TIME	TIME_LIMIT	STATE	NODELIST (REASON)
-------	------	-----------	------	-------	------	------------	----------	------	------------	-------	-------------------

# Step8 (Cont.): Check job details using sacct-gacrc -X and seff

[https://wiki.gacrc.uga.edu/wiki/Monitoring\\_Jobs\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Monitoring_Jobs_on_the_teaching_cluster)

```
$ sacct-gacrc -X
```

JobID	JobName	User	Partition	NNode	NCPUS	ReqMem	CPUTime	Elapsed	Timelimit	State	ExitCode	NodeList
5385	Amber_MPI	zhuofei	batch	1	10	20G	01:44:00	00:10:24	1-00:00:00	COMPLETED	0:0	rb1-3
5386	Amber_MPI	zhuofei	batch	1	10	20G	01:28:20	00:08:50	1-00:00:00	CANCELLED+	0:0	rb1-3

```
$ seff 5385
```

# seff is useful if you wan to check computing resources used by a COMPLETED job

```
Job ID: 5385
```

```
Cluster: gacrc-teach
```

```
User/Group: zhuofei/gacrc-instruction
```

```
State: COMPLETED (exit code 0)
```

```
Nodes: 1
```

```
Cores per node: 10
```

```
CPU Utilized: 01:39:53
```

```
CPU Efficiency: 96.04% of 01:44:00 core-walltime
```

```
Job Wall-clock time: 00:10:24
```

```
Memory Utilized: 1.59 GB (estimated maximum)
```

```
Memory Efficiency: 7.95% of 20.00 GB (2.00 GB/core)
```

# Step 8 (Cont.): Check node info using sinfo-gacrc

[https://wiki.gacrc.uga.edu/wiki/Monitoring\\_Jobs\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Monitoring_Jobs_on_the_teaching_cluster)

```
$ sinfo-gacrc
```

PARTITION	NODELIST	STATE	CPUS	MEMORY(MB)	AVAIL_FEATURES	GRES
allnodes	c4-23	down*	32	190111	Intel,Skylake,EDR	gpu:P100:1(S:0),lscratch:890
allnodes	b8-[6-7]	idle	96	1021256	Intel,SapphireRapids,x86_64-v4,R760xa,EDR	gpu:A30:4(S:0-1),lscratch:1490
allnodes	rb1-[1-12]	idle	32+	128561+	(null)	(null)
<b>batch</b>	<b>rb1-[3-10]</b>	idle	32	128561	(null)	(null)
gpu	c4-23	down*	32	190111	Intel,Skylake,EDR	gpu:P100:1(S:0),lscratch:890
highmem	rb1-[1-2]	idle	64	1027693	(null)	(null)
interactive	rb1-[11-12]	idle	32	128561	(null)	(null)
<b>franklin_gpu</b>	<b>b8-[6-7]</b>	idle	96	1021256	Intel,SapphireRapids,x86_64-v4,R760xa,EDR	<b>gpu:A30:4(S:0-1),lscratch:1490</b>
fsr4601	rb1-[3-10]	idle	32	128561	(null)	(null)
fsr8602	rb1-[3-10]	idle	32	128561	(null)	(null)

# Obtain Job Details

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_the\\_teaching\\_cluster#How\\_to\\_check\\_resource\\_utilization\\_of\\_a\\_running\\_or\\_finished\\_job](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_the_teaching_cluster#How_to_check_resource_utilization_of_a_running_or_finished_job)

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Option 1: `sq --me` for details of a running or pending jobs

Option 2: `sacct-gacrc -X` for details of computing resource usage of a running or finished job

Option 3: `seff` for details of computing resource usage of a finished job

Option 4: Email notification from finished jobs (completed, canceled, or crashed), if using:

```
#SBATCH --mail-user=username@uga.edu
```

```
#SBATCH --mail-type=ALL
```

# Run Interactive Jobs

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_Sapelo2#How\\_to\\_open\\_an\\_interactive\\_session](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_Sapelo2#How_to_open_an_interactive_session)

[https://wiki.gacrc.uga.edu/wiki/Running\\_Jobs\\_on\\_Sapelo2#How\\_to\\_run\\_an\\_interactive\\_job\\_with\\_Graphical\\_User\\_Interface\\_capabilities](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_Sapelo2#How_to_run_an_interactive_job_with_Graphical_User_Interface_capabilities)

Description	Command
Start an interactive session	<code>interact</code>
Start an interactive session with X forwarding	<code>interact --x11</code>

<code>interact</code>	<code>srun --pty --cpus-per-task=1 --job-name=interact --ntasks=1 --nodes=1 --partition=inter_p --time=12:00:00 --mem=2GB /bin/bash -l</code>
<code>interact --x11</code>	<code>srun --pty --cpus-per-task=1 --job-name=interact --ntasks=1 --nodes=1 --partition=inter_p --time=12:00:00 --mem=2GB --x11 /bin/bash -l</code>



GACRC Wiki <http://wiki.gacrc.uga.edu>

Kaltura Channel <https://kaltura.uga.edu/channel/GACRC/176125031>

Connecting: [https://wiki.gacrc.uga.edu/wiki/Connecting#Connecting to the teaching cluster](https://wiki.gacrc.uga.edu/wiki/Connecting#Connecting_to_the_teaching_cluster)

Running Jobs: [https://wiki.gacrc.uga.edu/wiki/Running Jobs on the teaching cluster](https://wiki.gacrc.uga.edu/wiki/Running_Jobs_on_the_teaching_cluster)

Monitoring Jobs: [https://wiki.gacrc.uga.edu/wiki/Monitoring Jobs on the teaching cluster](https://wiki.gacrc.uga.edu/wiki/Monitoring_Jobs_on_the_teaching_cluster)

Transfer File:

[https://wiki.gacrc.uga.edu/wiki/Transferring Files#The File Transfer node for the teaching cluster](https://wiki.gacrc.uga.edu/wiki/Transferring_Files#The_File_Transfer_node_for_the_teaching_cluster) .

[28txfer.gacrc.uga.edu.29](https://wiki.gacrc.uga.edu/wiki/Transferring_Files#The_File_Transfer_node_for_the_teaching_cluster)

Sample Job Scripts:

[https://wiki.gacrc.uga.edu/wiki/Sample\\_batch\\_job\\_submission\\_scripts\\_on\\_the\\_teaching\\_cluster](https://wiki.gacrc.uga.edu/wiki/Sample_batch_job_submission_scripts_on_the_teaching_cluster)

Linux Command: [https://wiki.gacrc.uga.edu/wiki/Command\\_List](https://wiki.gacrc.uga.edu/wiki/Command_List)

# GACRC Support

[https://wiki.gacrc.uga.edu/wiki/Getting\\_Help](https://wiki.gacrc.uga.edu/wiki/Getting_Help)

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## ➤ **Job Troubleshooting:**

Please tell us details of your question or problem, including but not limited to:

- ✓ Your user name
- ✓ Your job ID
- ✓ Your working directory
- ✓ The partition name and command you used to submit the job

## ➤ **Software Installation:**

- ✓ Specific name and version of the software
- ✓ Download website
- ✓ Supporting package information if have

Please note to make sure the correctness of datasets being used by your jobs!





[Service Catalog](#) / [Academics, Learning & Research](#) / [GACRC Service Catalog](#)

## GACRC Service Catalog

Georgia Advanced Computing Resource Center (GACRC) service catalog.

If you would like to reach out to GACRC and do not have a UGA MyID, please send an email to [gacrc-help@uga.edu](mailto:gacrc-help@uga.edu), and we will respond promptly.

### Categories (3)



#### Services For Users

General user support, request software installation or update, request training.

#### Services for PIs

For PIs only: Lab registration, user account creation/modification, class account requests, storage quota modifications.

#### For GACRC Staff

For GACRC's internal use only.

#### My Recent Requests

[Class provision on the teaching cluster - phys8601-dlandau](#)

[Class provision on the teaching cluster - bcmb8330 - rjwoods](#)

[Class provision on the teaching cluster - binf8211 - szhao, lm43161](#)

[MATLAB License Request](#)

[Create cider lab group](#)

[View All Recent Requests >](#)

#### Popular Services

Service - General Support - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Mail - zhuofei@uga.edu x Service - General Support x

https://uga.teamdynamix.com/TDClient/Requests/ServiceDet?ID=25844

90%

UNIVERSITY OF GEORGIA

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Zhuofei Hou

Home IT Help Desks Projects/Workspaces **Services** Knowledge Base News

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## General Support


If you do not have a myid, please mail [gacrc-help@uga.edu](mailto:gacrc-help@uga.edu), and we will respond promptly.


The purpose of this form is to provide a method to report issues and to request help with GACRC systems.


Please use this form for all questions and support needs (e.g. to report issues, to troubleshoot jobs, to request resources or grant writing help, etc). Please do not use this form for software installation requests or lab/user account management, which all have separate forms.

Please refer to the GACRC documentation for information on GACRC resources, how to connect and transfer files, how to run jobs, installed software list, training schedule, and a FAQ.

The link to this documentation is <https://wiki.gacrc.uga.edu>

 Request Service

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This site is operated by [Enterprise Information Technology Services \(EITS\)](#) at the University of Georgia.

[Privacy](#) | [Accessibility](#) | [Website Feedback](#)

<https://uga.teamdynamix.com/TDClient/Requests/ServiceCatalogSearch>

Need Support? <http://help.gacrc.uga.edu>

