

# CSU Alpine Cheat Sheet

## Accessing Alpine

### [Get a Research Computing account](#)

#### Logging in from a terminal

```
ssh  
<CSUNetID@colostate.edu>@login.rc.col  
orado.edu  
CSUNetIDpassword,push  
Example: Cam Ram  
cram@colostate.edu@login.rc.colostate.  
edu  
goaggies1870,push
```

#### Windows/Mac Clients:

Putty: SSH client for Wins  
FileZilla: FTP client for Linux/Wins/Mac  
Xming/XQuartz: X11 server for Wins/Mac

#### Logging into OnDemand (Jupyter Notebook and webinterface access)

1. Visit [onedemand.rc.colorado.edu](http://onedemand.rc.colorado.edu)
2. Web portal to view, edit, down/upload files, manage and create job templates, and access interactive applications

## Monitoring Tools

**[Slurmtools](#)**: A module that contains a collection of functions to assess recent usage statistics

```
module load slurmtools
```

**[XDMOD](#)**: A web portal for viewing metrics at the system, partition, and user-levels

Visit: [xdmod.rc.colorado.edu](http://xdmod.rc.colorado.edu)

**Curc-Quota**: CLI utility to check the storage capacity of your directories  

```
curc-quota
```

## Alpine Resources

### High Performance Computing Clusters

Summit: 2<sup>nd</sup>-Gen Cluster (RETIRED)

Alpine: Next-Gen Cluster

#### Storage

`/home/CSUNetID@colostate.edu` (2GB)

(Backed up daily)

`/projects/CSUNetID@colostate.edu`

(250GB) (Backed up daily)

`/scratch/alpine/CSUNetID@colostate.ed  
u` (10TB) (90-day purge)

## Data Transfer

### Transferring files between Alpine and your system

```
scp source
```

```
<CSUNetID@colostate.edu>@login.rc.co  
lorado.edu:destination
```

```
scp
```

```
<CSUNetID@colostate.edu>@login.rc.co  
lorado.edu:source destination
```

### Other transfer options

1. Globus: Browser application (Recommend)
2. Rsync: CLI sync utility
3. Sftp: CLI interactive utility
4. Rclone: CLI cloud transfer utility



## Software

**Alpine uses a module system called LMOD to load most software into a user's environment.**

### LMOD Commands

module avail	Show all available module
module load <module>	Loads <module> in the environment, specify version with <module>/version**
module spider <string>	Searches for module names matching <string>
module keyword <string>	Searches for modules containing <string> in name or description
module list	List currently loaded modules
module unload <module>	Removes <module> from environment
module purge	Removes all modules from environment
module save <collection>	Saves currently loaded modules to collections
module describe	Get modules in a saved collection

## SLURM Command

**SLURM is an open-source cluster management and job scheduling system for Linux clusters**

### SLURM Scheduling

sbatch <file>	Submit a job script <file>
sinteractive	Submit interactive job
squeue -u <user>	Show job queue for <user>
scancel <jobid>	Deletes the job with <jobid>
scontrol hold <jobid>	Hold job with <jobid>
scontrol release <jobid>	Release job with <jobid>
sinfo	Cluster status
salloc	Request new resource allocation
srun	Launch parallel job step
sacct	Display job accounting info

## SLURM Command

**The template file for sbatch <file>**

### Template.sh

```
1  #!/bin/bash
2  #SBATCH --time=10          ## Time limit, either in min or dd-hh:mm:ss format
3  #SBATCH --partition=amilan ## Could be amilan, aa100, amil00, and amem
4  #SBATCH --qos=normal      ## Could be normal or long (running more than 24h)
5  #SBATCH --account=csu-general
6  #SBATCH --nodes=1        ## Number of nodes, depends on compute power you need
7  #SBATCH --ntasks=5       ## Total processes, depends on compute memory you need
8  #SBATCH --job-name=template ## Job submission name
9  #SBATCH --output=template-%j.out ## Output file name with Job ID
10 #SBATCH --mail-type=ALL   ## Enable email alerts
11 #SBATCH --mail-user=<email> ## Email address where email alerts are sent to
12 module purge
13 module load <your_package>
14 cd /scratch/alpine/<email>
15 <your_own_code>
```

