Introduction to Kamiak
Follow Along

Logging into Kamiak

Open a terminal window
Terminal >> New Window  (for Windows, Start >> Ubuntu)

Log into Kamiak
ssh your.name@kamiak.wsu.edu
exit

Transferring Files to and from Kamiak

Make sure you are on your laptop, not logged into Kamiak

Copy from Kamiak to your laptop
scp -r your.name@kamiak.wsu.edu:/opt/apps/samples/training .
  Recursive, copies all files  From Kamiak  To current folder
ls -l training

Copy from your laptop to Kamiak
scp -r training your.name@kamiak.wsu.edu:~/
  From my laptop  To my home directory on Kamiak

Synchronize folder contents  (copies changed or added files, does not delete)
rsync -rvx training/ your.name@kamiak.wsu.edu:~/training
  All files  From laptop  To Kamiak

Submitting Batch Jobs to Kamiak

Log back into Kamiak
ssh your.name@kamiak.wsu.edu

One-time setup only for this training
  cd training
  source training_only_setup.sh

Create/edit a job script
  cat myJob.sh
Submit the job script to the job queue
sbatch myJob.sh  # To test: sbatch --test-only myJob.sh

View the job queue
squeue -u your.name  # Shows pending and running jobs
squeue -j jobNumber

See output
cat myJob*.out

Cancel the job
scancel jobNumber

View past and active jobs
sacct -u your.name  # Past job history
scontrol show job jobNumber  # Job details

Viewing Information about the Cluster
What partitions and nodes are available
sinfo -a | more  # Availability (alloc, idle, mix)

View all running and queued jobs
squeue -a | more  # Queued jobs for all partitions

View node details
scontrol show node cn93  # Amount of memory, cpus, GPUs

Interactive Jobs
Create interactive session on a compute node
i dev -N 1 --ntasks=1 --cpus-per-task=2 -t 360

Module commands set up app environment
module avail  # Shows available apps for loaded compiler
module help python3/3.9.5  # See app-specific instructions, resources differ for each app
module load python3/3.9.5  # Loads specific version (recommended)
module list  # See loaded modules

Do not run compute jobs on the login nodes
Run the app (use srun only for multiple nodes, runs program once for each task)

```python
python3 -i
    print("Hello World!")
exit()
```

```
srun -l python3 helloWorld.py  # Use srun -l to avoid hanging if resources not available
exit
```

Job Arrays

**Placeholder to create instances of a job as resources become available**

```
#SBATCH --array=1-5  # Creates 5 job instances, one for each index 1,2,3,4,5
```

**Each instance is an individual job with the same resources** (index is $SLURM_ARRAY_TASK_ID)

```
cat  jobArray.sh
sbatch  jobArray.sh
squeue -u your.name
cat output/myJobArray*.out
scancel  jobNumber
```

Using Scratch Storage

**Create a scratch directory that expires in two weeks**

```
export myscratch="$(mkworkspace)"  # Can use inside or outside a job script
echo $myscratch
```

**List your scratch allocations**

```
lsworkspace
```

**Can optionally delete contents when done**

```
rm -r -l $myscratch/*
```

Snapshots

**Three days of read-only backups of home and data folders**

```
ls /home/.snapshots
ls /home/.snapshots/daily.2022-03-21_0000/your.name
ls /data/.snapshots/daily.2022-03-21_0000
```
Using Available Software on Kamiak

module avail
# Available modules compatible with compiler
module load python3/3.9.5
# Load specific version (recommended)
module list
# See loaded modules
module avail python3
# See available python3 modules
module load python3
# Load latest version
module unload python3
# Unload a module
module spider
# See all modules
module whatis anaconda3
# See what a module does
module help anaconda3
# See help for a module
which python3
# See that python is in your path
printenv PATH
# See effects of loading modules
printenv LD_LIBRARY_PATH

Getting Help

hpc.wsu.edu
hpc.wsu.edu/cheat-sheet
hpc.wsu.edu/training/slides
hpc.wsu.edu/training/follow-along

Support & Zoom Help Desk Hours
User’s Guide / Kamiak Cheat Sheet