

# OSC Training:

Laptop X 10,000.

High End computers connected  
^  
Several

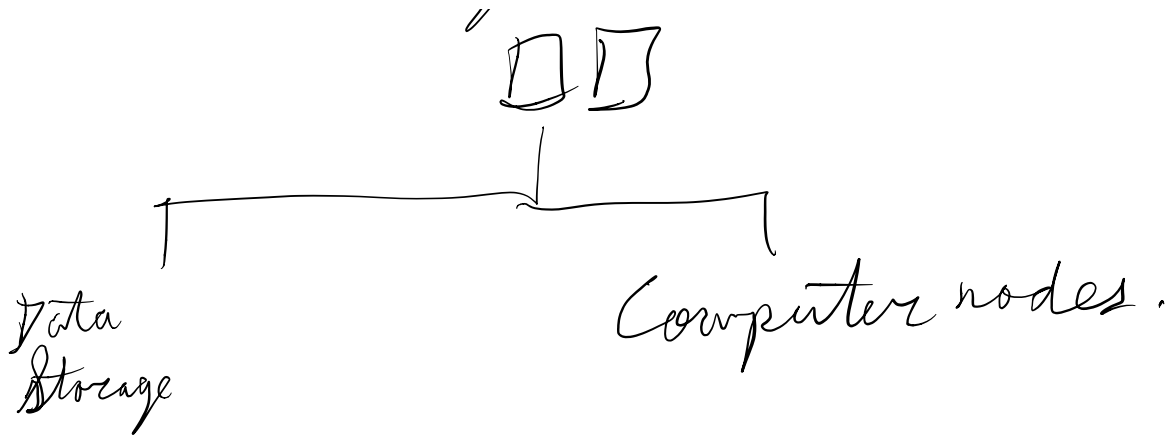
Cluster - Group of computers

Node - Stand alone computer

Core - processor, multiple cores  
per processor chip

FLOPS ~ Computational power.

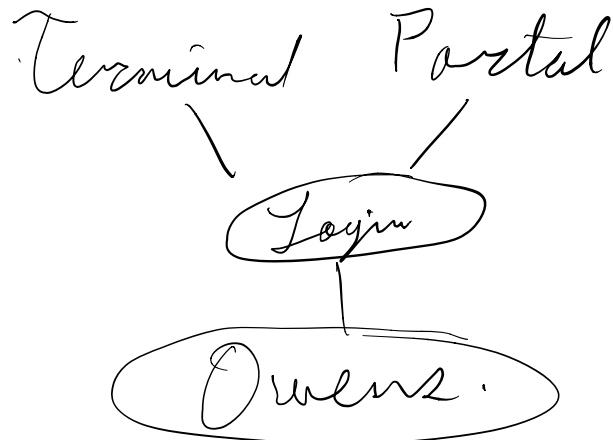
Login Nodes



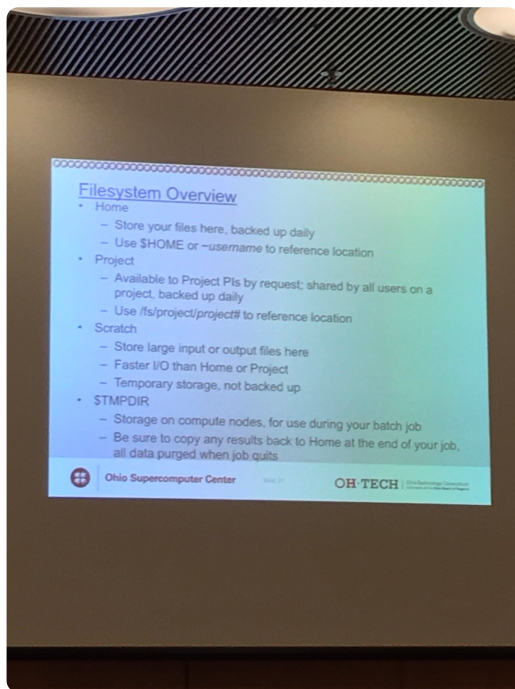
Current computing is PFLOPS.

CCAPP has access to Ruby  
~144 TF

Owens is where it is usually  
computed



Login Nodes - Submit Jobs  
Edit Files  
Manage Files



| Filesystem            | Quota                              | Backed-Up? | Purged?                  |
|-----------------------|------------------------------------|------------|--------------------------|
| Home (\$HOME)         | 500GB                              | Yes        | No                       |
| Project (\$project)   | By request                         | Yes        | No                       |
| Scratch (/fs/scratch) | None                               | No         | Yes - 120 days           |
| Compute (STMPDIR)     | 800GB (Oakley), 1TB (Ruby & Owens) | No         | Yes - when job completes |

Logos for Ohio Supercomputer Center and OH TECH are at the bottom.

Backups are kept for 30 days.

How to connect

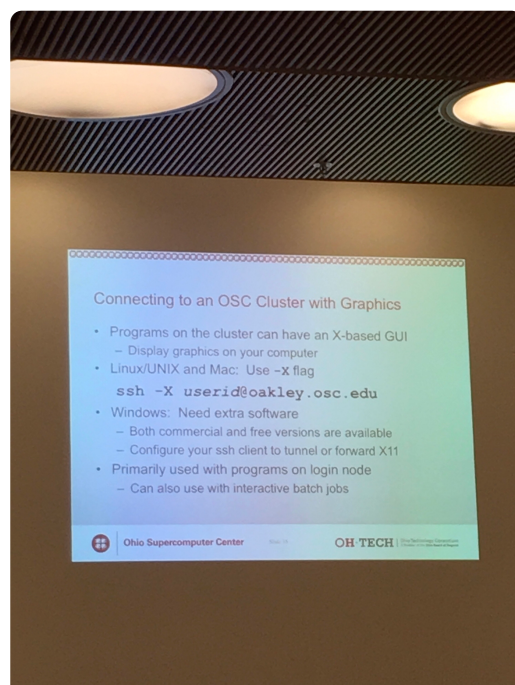
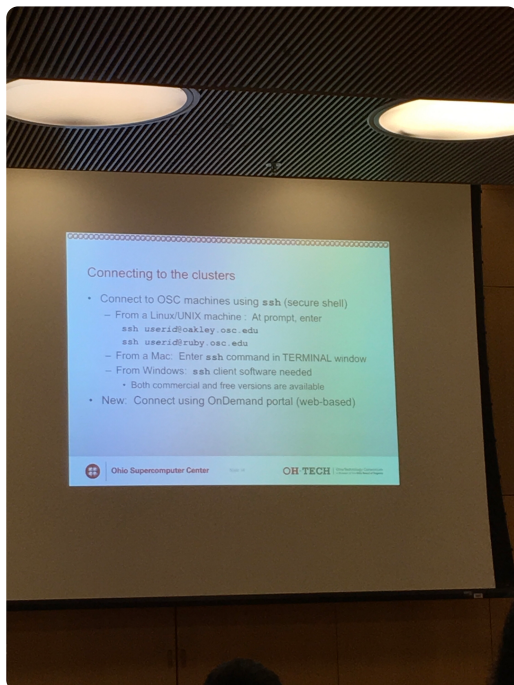
Run "Unix-like" Red hat.

Mostly command line

Choice of shells (Bash is default)

linux.org

Connect by ssh.



For OSC w/ graphics  
more needs a program.

osc.edu/ondemand.

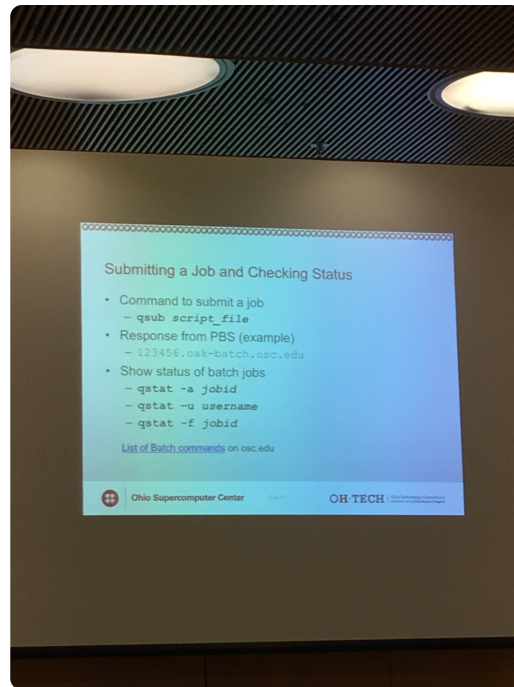
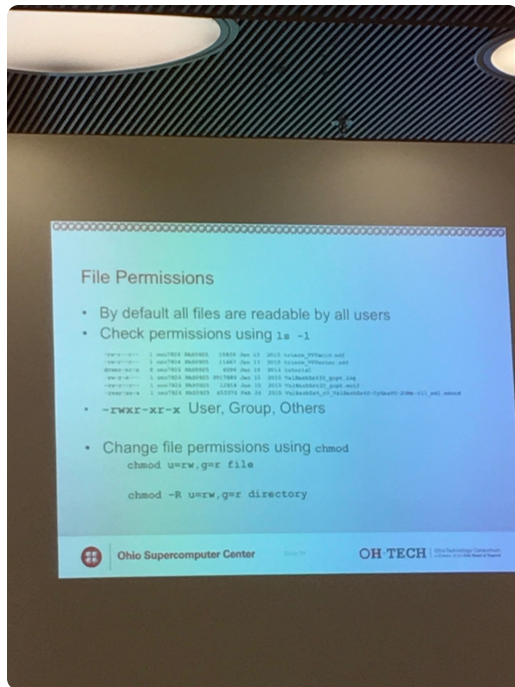
for ondemand: osc.edu.

Can access matlab c++ and  
others available

Transfer sftp, scp.

Small files use login node  
oakley.osc.edu.

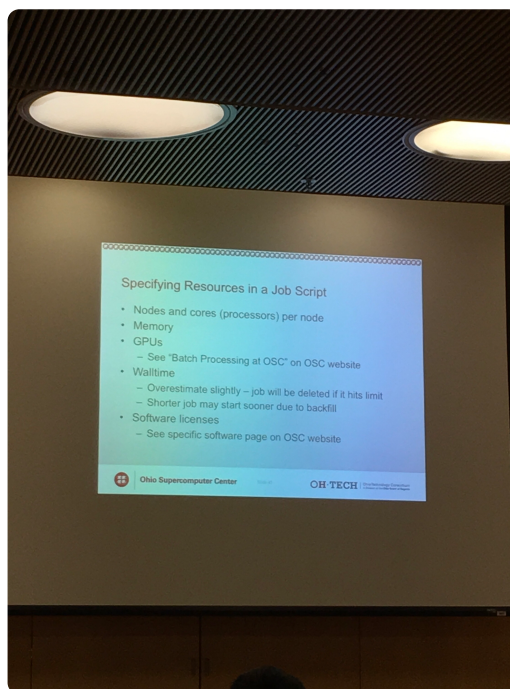
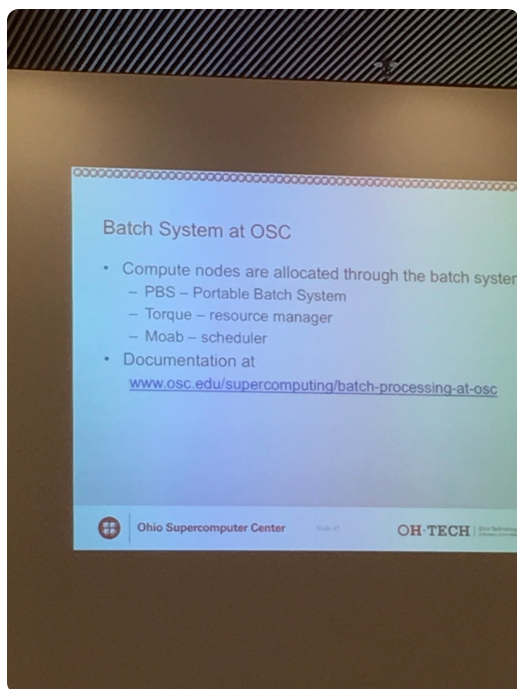
Large files use other.



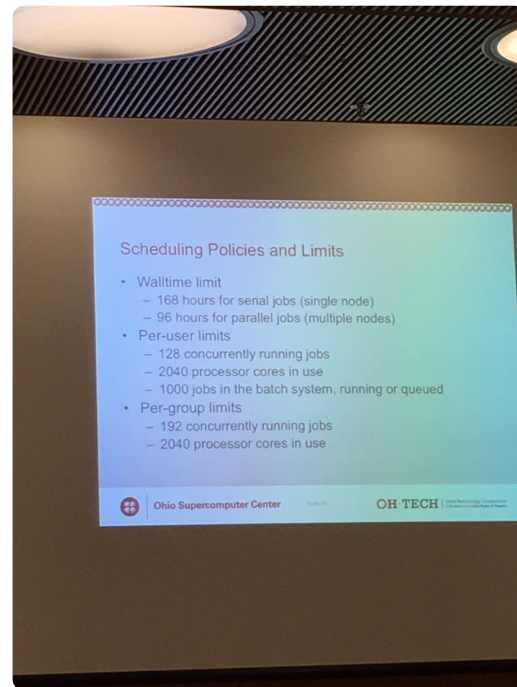
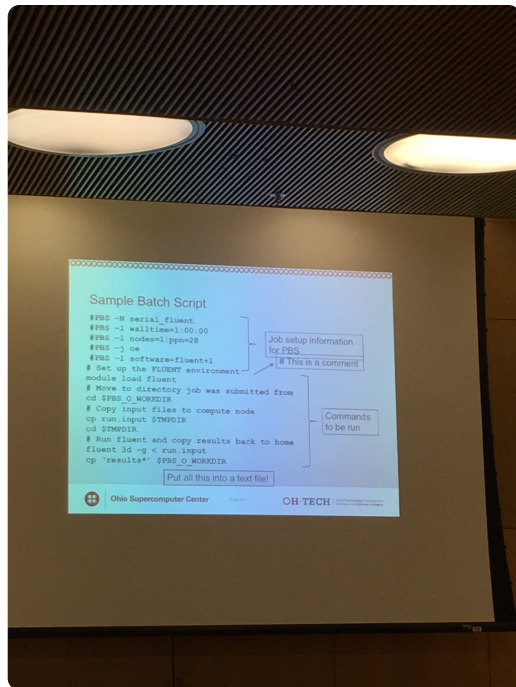
Batch Processing

Supercomputers use queuing  
Not always first come  
first serve.

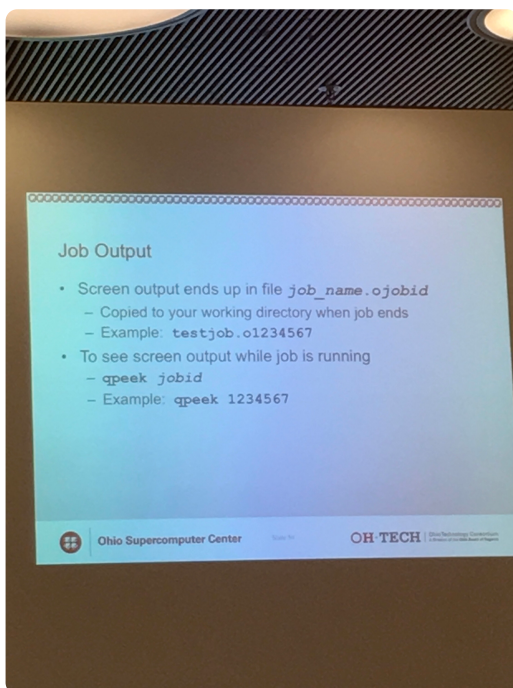
Batch script  
Submit



Checkpoint if anything



Wall time limit 168 hours.

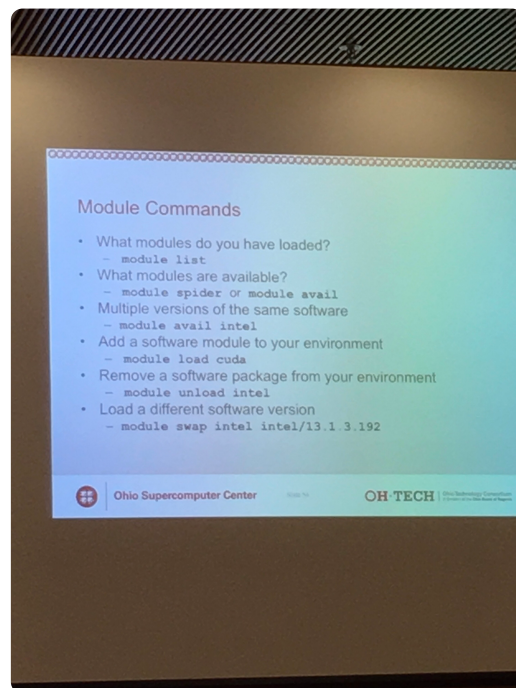
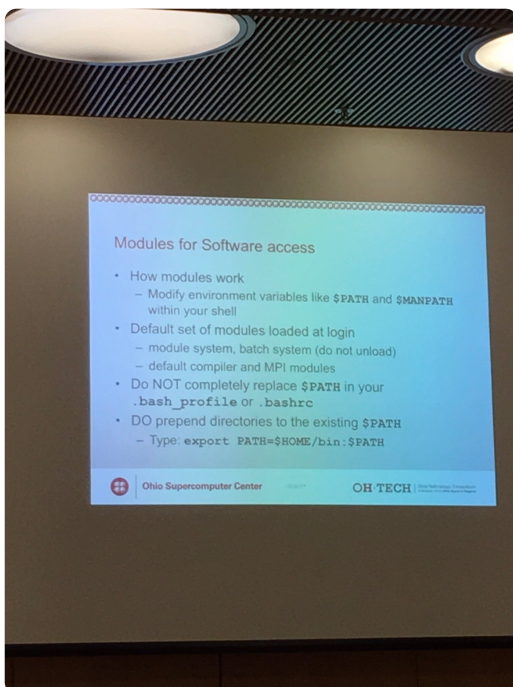


peek to see output

Has capability for interactive  
Batch job.

Three clusters. Separate Batch  
systems.

Multithreading  
Message passing (MPI)



Open-Source can be installed  
in home-directory

Fill out request for installing

Read message of the day on  
login.

ondemand can be used  
to submit jobs

Templates also on ondemand.