OAK RIDGE National Laboratory

Summit Training Workshop – Knoxville, TN

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Oak Ridge Leadership Computing Facility

February 11-13, 2019

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U.S. DEPARTMENT OF ENERGY

Summit Training Workshop Agenda

	Monday, February 11, 2019	Tuesday, February 12, 2019	Wednesday, February 13, 2019
8:00	Registration	Registration	Registration
8:00	Working Breakfast	Working Breakfast	Working Breakfast
8:15	Welcome Address + Notes	Welcome Address + Notes	Welcome Address + Notes
8:30 - 9:00	Summit System Overview *Scott Atchley*	CUDA Unified Memory *Jeff Larkin*	Debugging (Arm DDT) *Nick Forrington*
9:00 - 9:30	Programming Environment *Matt Belhorn*	GPU Direct, RDMA, CUDA-Aware MPI *Steve Abbott*	Arm MAP / Performance Reports *Nick Forrington*
9:30 - 10:00	Programming Environment (cont.) *Matt Belhorn*	Targeting Summit's Multi-GPU Nodes *Steve Abbott*	GPFS *George Markomanolis*
10:00 - 10:30	Storage Areas / Data Transfers *George Markomanolis*	Targeting Summit's Multi-GPU Nodes (cont.) *Steve Abbott*	SSDs / Burst Buffers *George Markomanolis & Chris Zimmer*
10:30 - 11:00	Break	Break	Break
11:00 - 11:30	LSF Batch Scheduler & jsrun Job Launcher *Chris Fuson*	GPU Accelerated Libraries *Jeff Larkin*	Network Features and MPI Tuning *Chris Zimmer*
11:30 - 12:00	LSF Batch Scheduler & jsrun Job Launcher (cont.) *Chris Fuson*	NVIDIA Profilers *Jeff Larkin*	CAAR Porting Experience: FLASH *Austin Harris*
12:00 - 12:30	Working Lunch	Working Lunch	Working Lunch
12:30 - 13:00	Working Lunch - Python Environments *Matt Belhorn*	Working Lunch - Using V100 Tensor Cores *Jeff Larkin*	Working Lunch - CAAR Porting Experience: LS-DALTON *Ashleigh Barnes*
13:00 - 13:30	Working Lunch - Practical Tips for Running on Summit *David Appelhans*	Working Lunch - Node Performance *Wayne Joubert*	Working Lunch - CAAR Porting Experiences: RAPTOR *Ramanan Sankaran*
13:30 - 17:00	Hands-On with OLCF Staff and Vendors	Hands-On with OLCF Staff and Vendors	Hands-On with OLCF Staff and Vendors
17:00	Adjourn	Adjourn	Adjourn

Ascent

- 18-Node cabinet with the same architecture/nodes as Summit (only 16 nodes available for scheduling).
- **NOTE:** Many in-person participants will be sharing access to Ascent during the workshop, so the following resource scheduling policies will be in place:
  - 1 Node per job, 20 minute walltime limit, 1 job running & 1 job eligible
  - If you need more nodes, we will handle requests individually

For the most part, Ascent users can reference the Summit User Guide, but there are differences between the 2 systems pointed out in the section

- Training System (Ascent)

Available File Systems / Storage Areas on Ascent

`/ccsopen/home/userid`

- Upon logging in to Ascent, you will be placed in your personal home (NFS) directory,

`/ccsopen/proj/gen115`

- You also have access to a shared NFS directory, which can be accessed by all members of the GEN115 project (so many workshop participants); if you need a collaborative workspace, I suggest that you create a directory here (with an appropriate name).

Both of these directories are within NFS, *and are places you might want to keep source code and build your application.*

In addition, you have access to a (GPFS) parallel file system, called wolf. *This is where you should write data when running on Ascent's compute nodes.* Under **`/gpfs/wolf/gen115`**, there are 3 directories:

```
[ascent ~]$ ls /gpfs/wolf/gen115/
proj-shared  scratch  world-shared
```

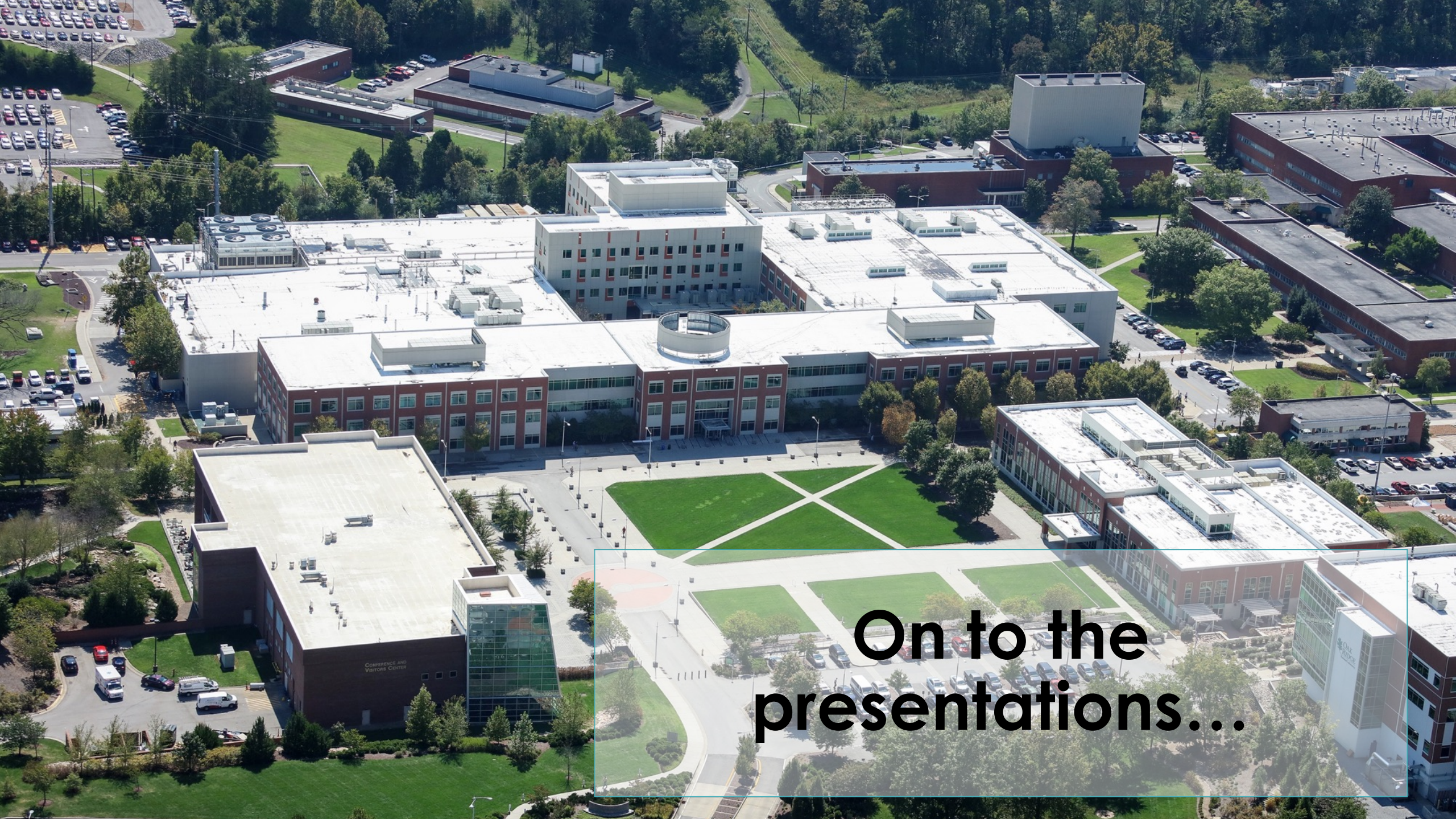
- **`proj-shared`** can be accessed by all members of GEN115, so this is where you should create a directory (with some appropriate name) to collaborate with your team. So you would possibly have 2 shared directories for collaboration – 1 on NFS (for source code, scripts, compiling, etc.) and 1 on GPFS (for writing data from compute nodes that needs to be shared among your team members).

- **`scratch`** contains directories for each user, and only that user can access his/her own scratch directory. So you could write here from the compute nodes if you don't need to share the resulting files with the rest of your team.

- **`world-shared`** can accessed by any user on the system in any project (e.g. STF007). This is meant for collaborating across groups.

Additional Notes

- Please make sure to wait for a mic when asking questions
  - If not, (presenters) please repeat the question
- If you are attending in-person, and you do not know how to obtain access to Ascent, please
  - Visit the page Obtaining Access to Ascent
  - Or, email Tom Papatheodore at papatheodore@ornl.gov



On to the presentations…