UAMS
UNIVERSITY OF ARKANSAS
FOR MEDICAL SCIENCES

HPC 101

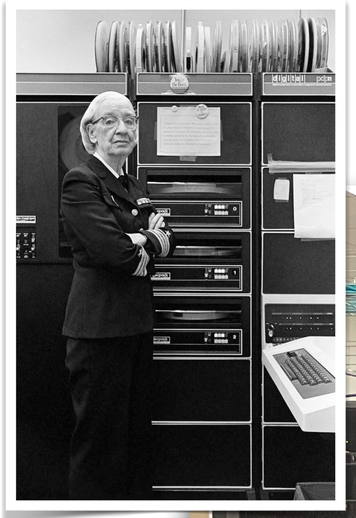
Using the Open OnDemand Portal

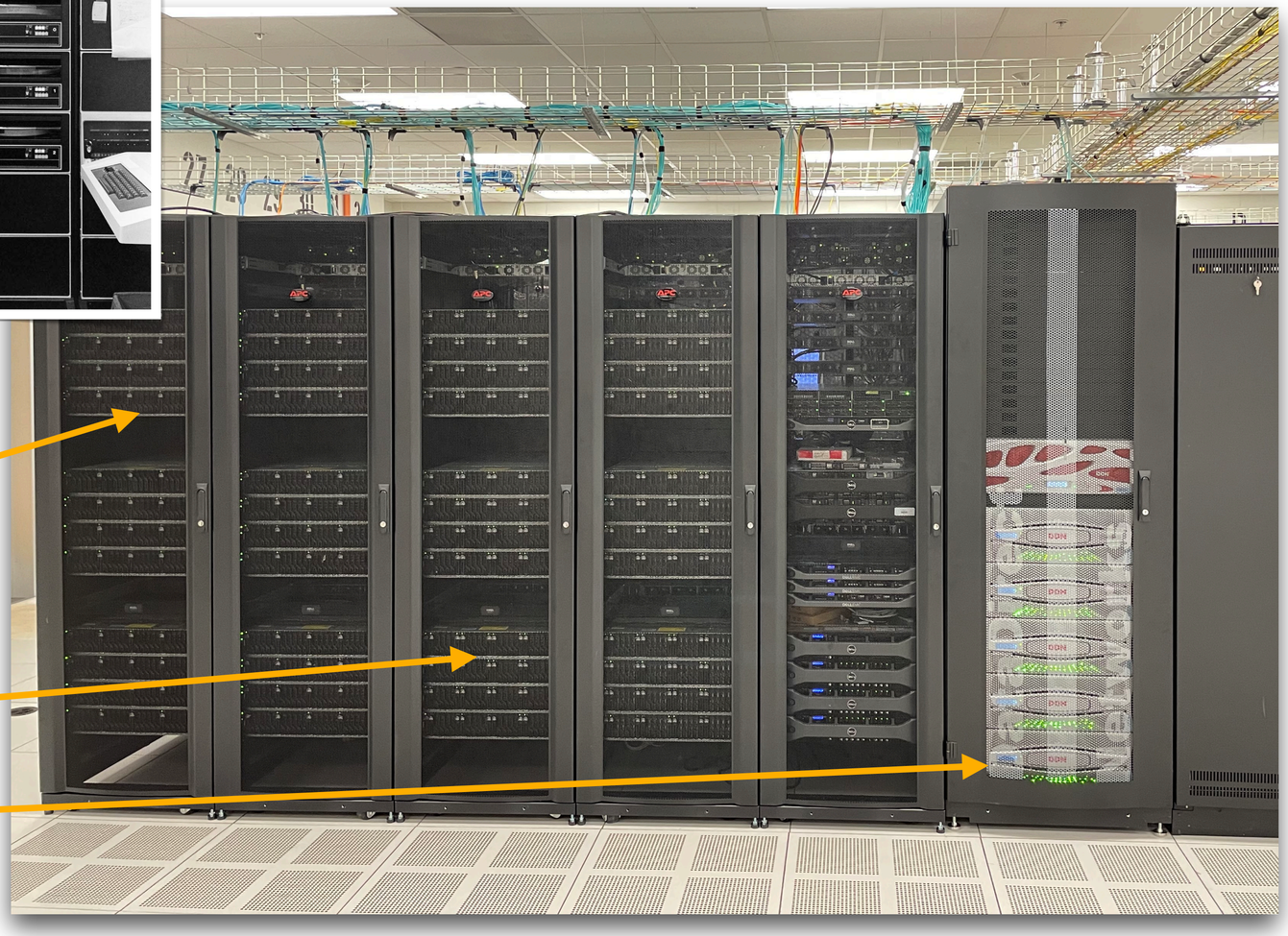
Joseph Utecht - May 17th 2021

New topics every other Monday at 11am
See hpc.uams.edu for schedule

UAMS High Performance Computer

Grace





96 Xeon CPU Nodes
    28 cores at 2.4 GHz and 128GB of memory
96 Xeon Phi CPU Nodes
    64 cores at 1.30 GHz and 192GB or 384GB of memory
1.9 PB High speed storage
    Connected via 100Gb/s Omni-Path interconnects

HPC Users

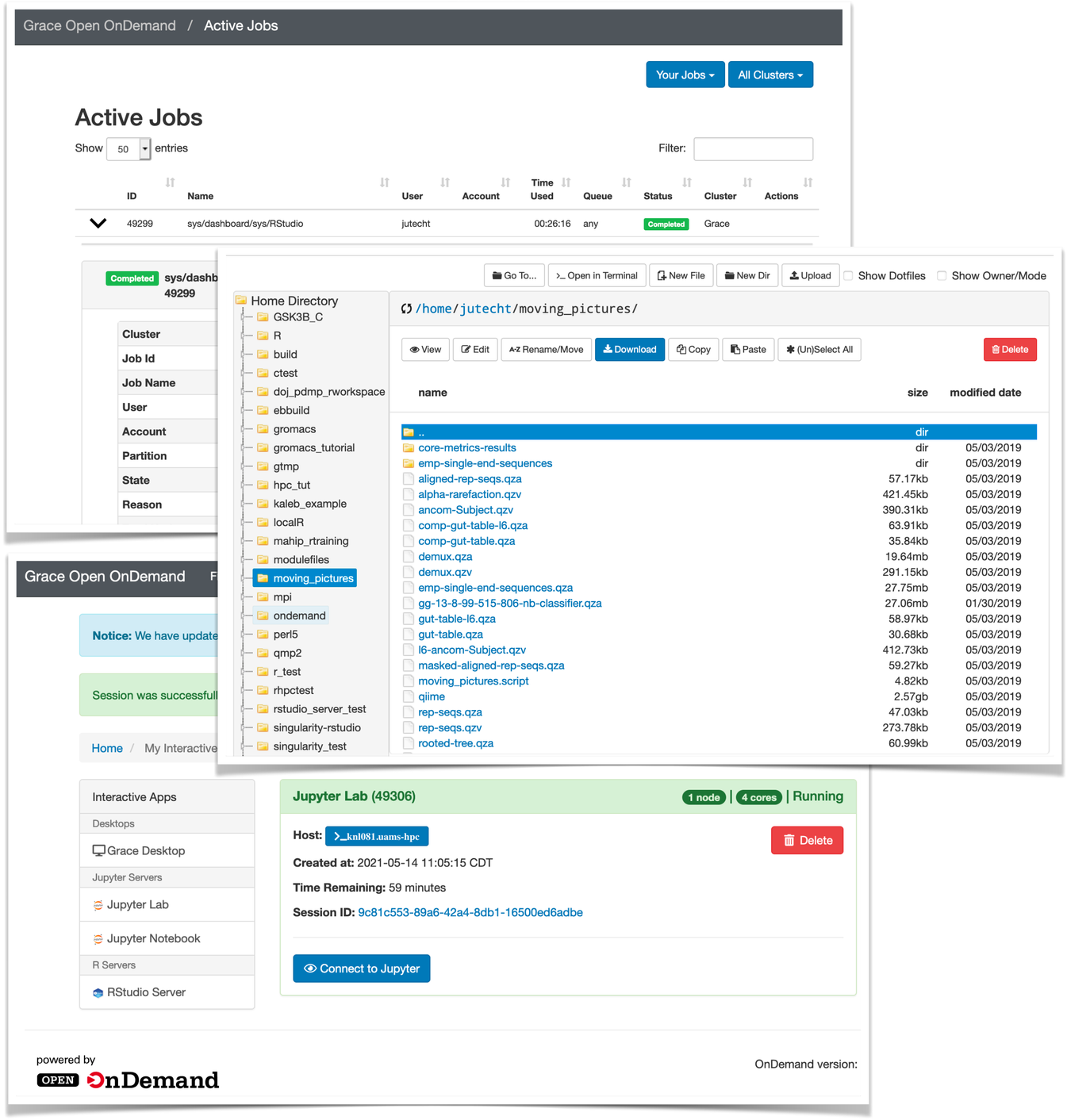
Rights and Responsibilities

- Grace's computing resources are freely available to UAMS researchers
- Grace is a shared resource
- Sensitive material should never be stored on the system
  - Grace is not a HIPAA or FERPA repository
- Storage on Grace is redundant and highly reliable but not backed up
- Grace is a self-service resource, you are mostly on your own
- Full Terms and Conditions are available on the wiki found at hpc.uams.edu

Open OnDemand Portal

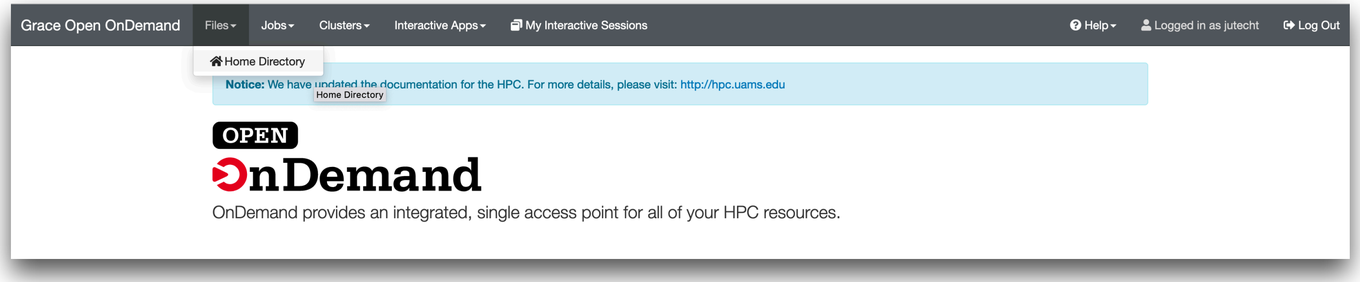
Full featured web portal to the HPC

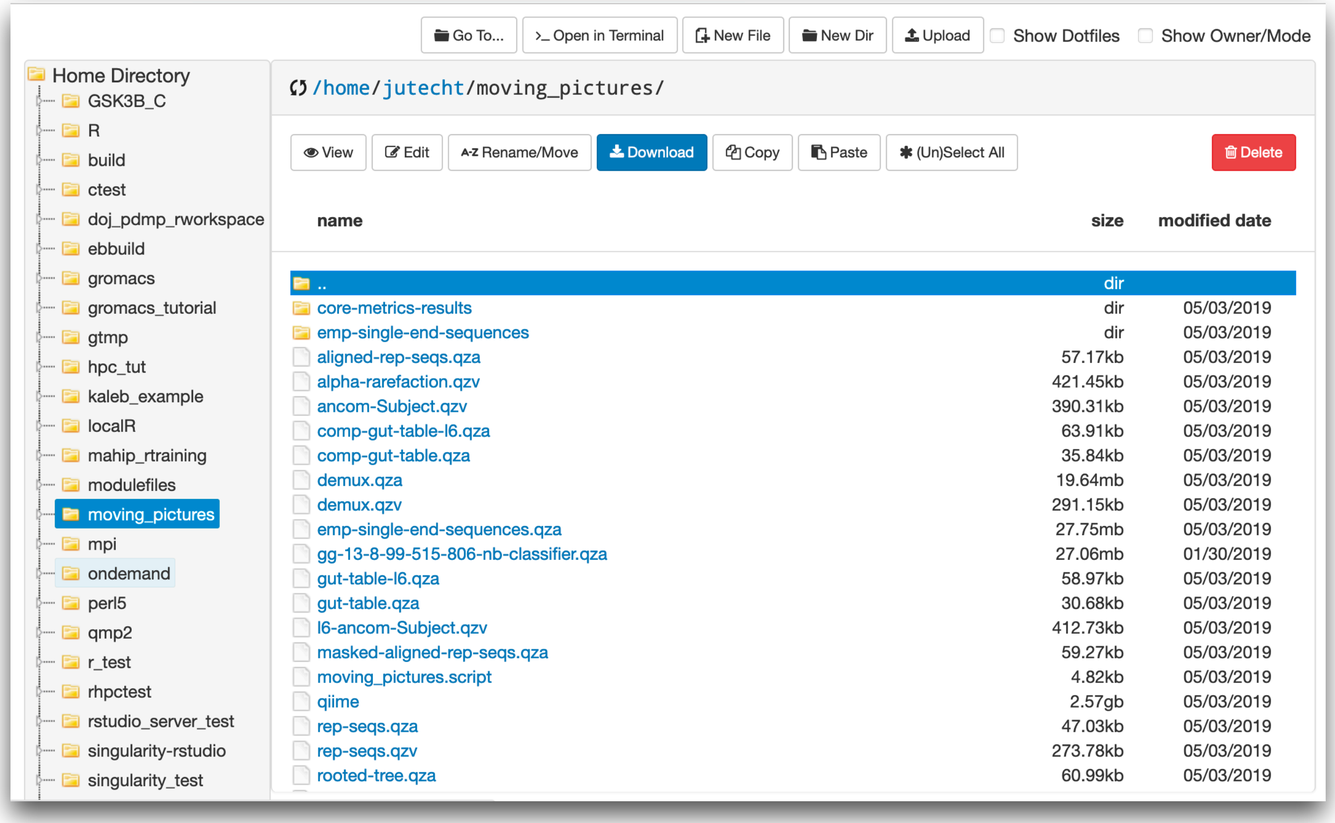
- Submit Jobs
- Transfer files
- Launch interactive sessions
- Monitor status
- Obtain shell access
- Accessible anywhere from the browser



File Management

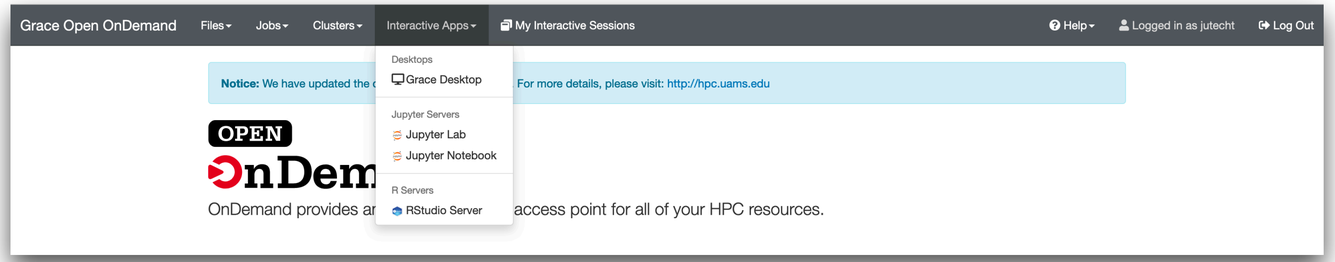
- File system is shared between login and compute nodes
- Your home directory should not be used to store large files for long time periods
- Relative vs absolute file paths
- ~/ is a shortcut to the base of your home directory

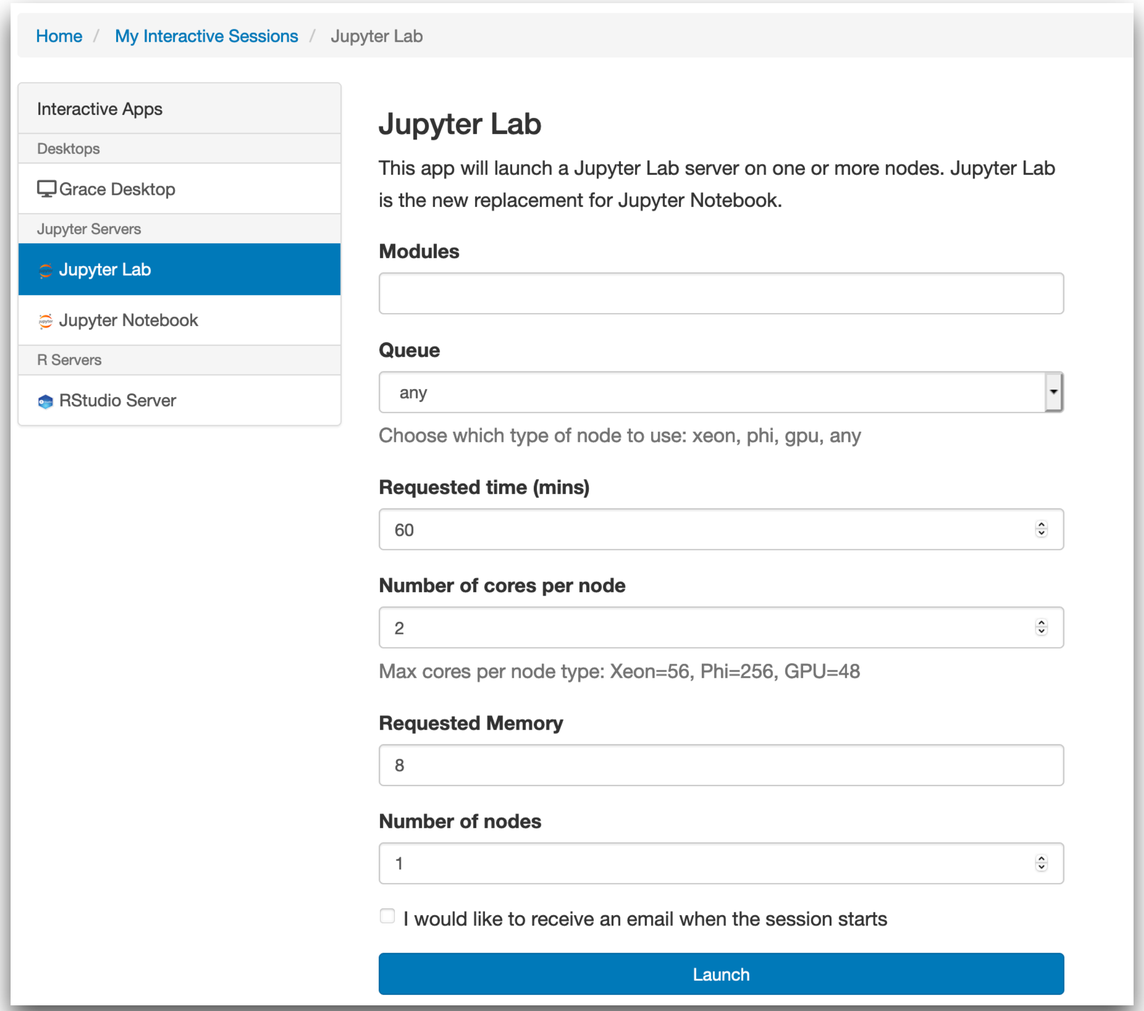




Interactive Sessions

- Use familiar tools in a powerful environment
- See results in real time
- Compute nodes have no internet access
- Modules and packages needed must be managed ahead of time
  - Conda environments are the recommended approach





Exercise

Basic Workflow

- Log in to portal.hpc.uams.edu
- Transfer file from your computer to the HPC
- Launch an interactive session Jupyter/RStudio
- Read the file you uploaded in Python/R from your interactive session
- Create a figure or file from Python/R
- Close your interactive session
- Download the file you created back to your computer

Thank you

Next Training - May 31st 11am

Slurm Basics - Submitting jobs on the HPC

Sign ups at hpc.uams.edu

Please send suggestions for
future topics of interest to
jrutecht@uams.edu