Galaxy Overview
The Basics

Matt Gitzendanner
magitz@ufl.edu

9/26/13

UF Research Computing
Information Technology
Home of High-Performance Computing and *HiPerGator*

UF Research Computing

UF Research Computing
Information Technology
Home of High-Performance Computing and *HiPerGator*

▸ Mission
  ◦ Improve opportunities for research and scholarship
  ◦ Improve competitiveness in securing external funding
  ◦ Provide high-performance computing resources **and support** to UF researchers

---

Today's research computing

UNIVERSITY OF FLORIDA | High-Performance Computing

HiPerGator
The University of Florida Supercomputer for Research

Internet2 Network

UF was 1st in the nation

▸ Internet2 Innovation Platform
  ◦ 100 Gpbs connectivity
  ◦ Campus Research Network now 200 Gbps

UF Data Center

▸ UF Data Center on Eastside Campus
  ◦ 10,000 sq.ft and 1.75 MW total
  ◦ 5,000 sq. ft. space for Research Computing

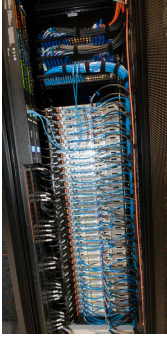## HiPerGator
The University of Florida Supercomputer for Research

  ◦ 16,384 cores
  ◦ Infiniband interconnect
  ◦ 2.1PB fast, high-availability, storage
  ◦ Current cluster will be integrated—Fall 2013

Research Computing

- Shared Hardware Resources
  - Over **22K cores** of compute capacity
  - High-speed, low-latency **InfiniBand** interconnects
  - **>3 PB**, high performance Lustre and Nexenta storage
  - **GPGPUs**— 90+, Kepler-class
  - Several large memory (**512GB to 1TB of RAM**) nodes

UF | Information Technology   www.it.ufl.edu

Approaches

UF | Information Technology   www.it.ufl.edu

UNIVERSITY OF FLORIDA | High-Performance Computing

HiPerGator

The University of Florida Supercomputer for Research

UF | Information Technology   www.it.ufl.edu
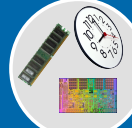
Cluster basics

User interaction

Galaxy

>_

Login node (Head node)

Scheduler

Tell the scheduler what you want to do

Compute resources

Your job runs on the cluster

UF | Information Technology   www.it.ufl.edu

What is Galaxy?

Bio-IT World

Galaxy Provides Life Support for NGS Exploration

BONUS EDITION: Open Source

Galaxy / UF HPC

powered by Galaxy

UF | Information Technology   www.it.ufl.edu

Galaxy: Data intensive biology *for everyone*

- Accessible, reproducible, transparent computational biology

- galaxy.hpc.ufl.edu
  - Local instance of Galaxy
    - Faster access to storage, easier upload
    - Local compute resources
    - Local control

UF | Information Technology   www.it.ufl.edu

Galaxy demo

http://galaxy.hpc.ufl.edu

UF Research Computing

▸ Help and Support
  ◦ Help Request Tickets
    ‣ https://support.hpc.ufl.edu
    ‣ For any kind of question or help requests
  ◦ http://wiki.hpc.ufl.edu
    ‣ Documents on hardware and software resources
    ‣ Various user guides
    ‣ Many sample submission scripts
  ◦ http://hpc.ufl.edu
    ‣ Frequently Asked Questions
    ‣ Account set up and maintenance