O2

Overview

O2 is a new platform for Linux-based high performance computing at Harvard Medical School. The name is derived from being the next generation of the HMS “Orchestra” cluster, hence “O2.

• O2 is managed by the Research Computing Group, part of HMS IT.
• O2 is an HPC cluster built on Linux and the Slurm open source job scheduler.
• Please submit a request for O2 help or feedback.
• Follow us on Twitter for updates and alerts about service outages.

Getting Started with O2 and Slurm

• Basic guide to O2 and the Slurm job scheduler  New users, start here!
• Switching workflows from Orchestra to O2  Orchestra users, start here!
• How to login to O2
• Frequently Asked Questions about O2

O2 Jobs and the Slurm scheduler

• How to choose a partition (the Slurm equivalent to job queues in LSF)
• Troubleshooting your O2 jobs
• Parallel Jobs in O2
• Using O2 GPU resources
• O2 HPC Cluster and Computing Nodes Hardware Information
• Job Priority
• Examples of O2 commands
• Get information about current and past jobs

Software and Programming on O2

• Using research applications on O2
• Using MATLAB on O2
• Using Mathematica on O2
• Using Conda on O2
• Using Java on O2
• Using Jupyter on O2
• Maintain your own library of software for different languages
  • Personal Python packages
  • Personal R packages
  • Personal Perl packages
• Installing custom software
• Using Genome Browsers (IGV, UCSC Genome Browser)
• Available Software on O2

General UNIX Information

• Using X11 applications remotely
• UNIX permissions tutorial
• O2 cron service

Cluster Status

Our cluster status page has details of service outages and planned maintenance.

Two Factor Authentication:

Since December 2018, all O2 cluster logins from outside of the HMS network require two-factor authentication. Please see:

• Two Factor Authentication on O2
• Two Factor Authentication FAQ

Community Events

User Training

• Classes are offered each semester to the HMS community to help you ramp up your research skills!
• Please check the User Training page for courses, dates, and registration

Office Hours

• RC’s Office Hours are held every Wednesday, 1 - 3 PM in Gordon Hall Suite 500
• Please contact us first with a support request before dropping in at office hours so we can better help you!

Intermediate Slurm

• Research Computing Group custom workflows
• Get more informative slurm email notification
• Report CPU/Mem usage in slurm job standard output
• screen: go back to the same terminal window from anywhere, anytime
• tmux: go back to the same terminal window from anywhere, anytime
• Install and run HiC-Pro-2.10.0
• Install and run salmon-0.10.0 and Trinity-2.6.6
• SRA and GEO downloading using bcbio
• Aspera to download NCBI SRA data

Grants and Citation Information

• Text about Research Computing and O2 for grant applications
• Published papers that cite HMS Research Computing resources
Data Storage

- There are a number of storage options available for research data.
- Copying files to and from O2 (including downloading from websites)
- If you had an Orchestra account, you will get access to the same home directory and shared network storage from O2.

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  Oct 15, 2019 • updated by Rodriguez-Reillo, William Gabriel • view change
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