

# High Performance Computing

## Run Data Analysis Jobs Much Faster

The [Research Information Services \(RIS\) Infrastructure Services](#) team at the [Children's Hospital of Philadelphia \(CHOP\) Research Institute](#) partners with researchers and administrators to utilize its capabilities to significantly its capabilities to significantly increasing computing speed and efficiency of their data analysis jobs. RIS is constantly expanding capacity to meet the HPC demands of our research community.

### What is HPC?

[Respublica - High Performance Computing \(HPC\) Services](#), HPC is a general term for a large computing system. HPC is Linux based and consists of many servers which are tied together with network, shared storage, and software such that it can compute large batches of work in parallel. Ongoing data analysis jobs on HPC currently run 24 hours a day, 7 days a week at about 80% resource utilization.

### How does HPC benefit researchers?

Data computational jobs that took days, even weeks, to run are often run within hours within HPC. HPC is needed for computational jobs that require a lot of resources, lots of memory and CPU, and storage. Running scientific queries across incredibly complex large datasets to return meaningful and scientifically actionable results. RIS HPC specialists will assist with architecting, maintaining, helping clients fine tune their jobs and submit them correctly for accurate and useful results. RIS also compiles and installs software for clients based on job dependencies and requirements, as well as ongoing troubleshooting assistance.

### Principal HPC Engineer

John Daniels, RIS Principal Engineer for RIS is the primary administrator and architect of these HPC services, specializing in technologies that are Linux based, but is also involved in a lot of other technologies and services provided by RIS. He works with clients directly to help them compile and install software, as well as correctly tune and submit their jobs, based on job dependencies and requirements, to maximize successful expedient job completions. He also compiles and installs software for clients.

Daniels has focused on increasing the systems stability, providing direct training and consultations on proper configuration, as well as client support in job troubleshooting. Through his work, jobs running within HPC do not receive any special preference, the system is configured to run jobs in parallel, adjusting and applying resources as they become available to keep the process as efficient and fair as possible. Usership has increased rapidly with the increased stability and efficiency of the cluster.

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### How do you get started?

To utilize the HPC service, go to RIS's [CIRRUS](#) application to request instant automated access. For additional information, go to [Respublica Access Request](#) service . Daniels is also available for consultations.

### Related Resources

- [Research Information Services](#)
- [RIS Infrastructure Services](#)
- [CIRRUS](#)
- [Respublica Access Request](#)
- [High Performance Computing](#)
- [Respublica Wiki](#)