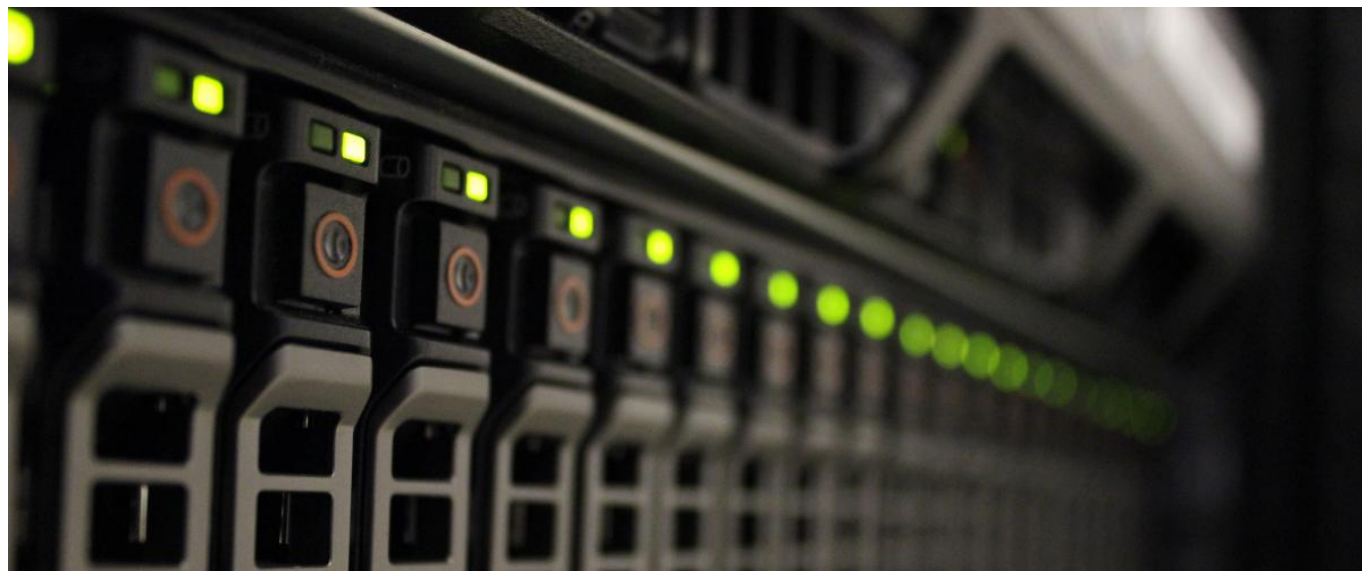
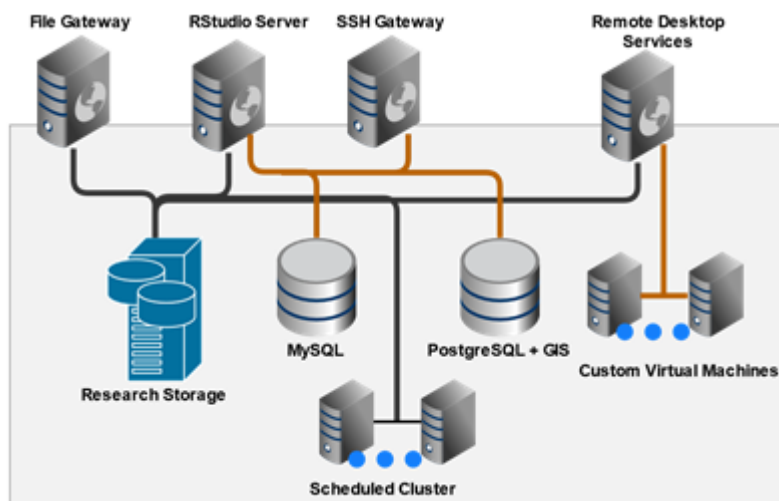


Research Infrastructure



Computational Resources

The suite of hardware and software we offer is designed to provide maximum computing power with minimal barriers to entry. Our integrated suite of data storage, database servers, processing resources, and web-based gateways can be accessed with a single login. Large data storage (100 TB) and database servers can be accessed by researchers via SSH, a web file gateway, virtual desktop, or SESYNC's RStudio Server. We also provide an R Shiny server for quick deployment of web interfaces to research products. All services SESYNC offers have been tightly integrated so that researchers have seamless access to all of their and their group's data resources regardless of which SESYNC service they are using. Our scheduled cluster supports large analyses requiring multiple nodes with 192 cores and 1.68TB of memory. In total, SESYNC's research infrastructure provides 336 cores and 3 TB memory to support our 40+ current science teams and 14 postdoctoral fellows. Our relationship to the University of Maryland Institute for Advanced Computer Studies (UMIACS) enables us to provision HPC resources for the rare cases when our own infrastructure is insufficient to meet a project's needs.



The following is a brief list of services available to supported researchers. Please see our [Research Support Site](#) [1] for a more comprehensive list of services and guides. All resources are accessible both onsite and remotely.

- **File Storage.** SESYNC provides multi-terabyte (TB) storage for large data sets that need to be shared between synthesis team participants or connected to SESYNC resources. Remote access is provided via <https://files.sesync.org> [2]. Allocated storage can also be made available locally on all allocated virtual machines or RStudio.
- **Database Access.** SESYNC provides access to MySQL and PostgreSQL for onsite researchers and synthesis teams.
- **GIS Support.** Access to virtual machines with GIS processing software, as well as support for PostgreSQL PostGIS extensions, is available.
- **R Support.** SESYNC provides remote access to [RStudio](#) [3] and a Shiny application server for developing and running R code on large-memory, multi-core computers. SESYNC-hosted databases can be accessed by these servers.
- **Virtual Desktop.** Virtual workstations are available for projects that require non-standard software. Remote desktop and Secure Shell (SSH) access are available to these machines.
- **Scheduled Cluster.** Researchers have access to a [scheduled cluster](#) [4] which they can use to execute long run or parallel computing jobs. This cluster can access any databases or shared file storage that has been allocated to a project.

Additionally, SESYNC offers supported researchers an array of utilities to assist in project management. These include, but are not limited to, software code repositories, project and bug tracking services, automated testing services, and development platforms for debugging software. While we encourage all groups to use fully open development environments, we recognize that at startup, a closed environment may be preferable.

Source URL: <https://www.sesync.umd.edu/for-you/cyberinfrastructure/services/research-infrastructure>

Links

[1] <http://cyberhelp.sesync.org/>

[2] <https://files.sesync.org>

[3] <https://cyberhelp.sesync.org/quickstart/rstudio-server.html>

[4] <https://cyberhelp.sesync.org/quickstart/Using-the-SESYNC-Cluster.html>