

IT Support Policy

1. Introduction

The cyberinfrastructure team at SESYNC exists to support the hardware, software, and data needs of the center and its sponsored research projects; to enhance onsite and remote collaboration; and to facilitate the provision of technical resources needed to produce actionable science. This document outlines the range of IT and cyberinfrastructure support the team can provide to all sponsored research at the center, including graduate, sabbatical and postdoctoral fellows, interns, Pursuits, Ventures, and all other sponsored workgroups and visitors.

Prior to submitting a proposal to SESYNC, we strongly encourage you to communicate with the cyberinfrastructure team to ensure that your expectations for cyber support are in line with our services. If you anticipate requiring significant software or personnel resources beyond basic IT and file storage support, please contact the SESYNC Computing Manager (Mike Smorul, msmorul@sesync.org, 410-919-4809) to discuss your needs. Once a proposal has been accepted by the center, the cyber team will contact PIs to flesh out support details and allocate center resources. While we strive to meet your needs, please keep in mind that SESYNC must allocate support to a large number of diverse projects.

Many SESYNC-sponsored projects will produce databases and tools relevant to socio-environmental research in the broad scientific community. In keeping with SESYNC's mission to foster synthesis research for actionable science, all data and software created by center-sponsored activities should be documented and publicly disseminated in a timely manner to the fullest extent possible. To this end, the cyberinfrastructure team will work with the center's research teams to develop a plan for documenting and disseminating data and code upon the completion of research activities and publication of research results.

2. Initial Cyber Review

The SESYNC cyber team will contact supported PIs and fellows within one month of their award notification to arrange a time for an Initial Cyber Review. This review will begin an ongoing discussion about your project's computing needs, including hardware, software, data processing, visualization, teleconferencing, remote access, on-site requirements, and eventual dissemination formats and outlets. This early conversation along with follow-ups prior to your arrival will assist us in configuring the initial resources your project needs, allowing you to begin project work as soon as possible. In addition to these scheduled conversations, we welcome communication or questions at any time via phone or email and anticipate the dialog will continue as projects progress.

3. Support Requests

SESYNC IT Staff may be reached by sending e-mail to itrequests@sesync.org. SESYNC IT staff continually monitors the support e-mailbox from 8:30am until 5pm. Additionally, from within the center you may dial '1000' from any conference phone or handset in case of emergency during a conference or meeting.

4. Hardware Resources

a. Computing and Storage

SESYNC provides shared scientific and public workstations for use by resident scientists, as well as meeting and working group participants. These machines support common office software and provide support for high end statistical and GIS software, including Matlab, ArcGIS, Sas, and Mathematica.

For on-demand computing, SESYNC provides access to a cloud-computing platform based on OpenStack. Images can be deployed to this platform which supports a variety of research software. In addition, through collaboration with the University of Maryland Institute for Advanced Computer Studies, access to high performance computing can be made available to research that contains a novel computer science aspect. Please contact the SESYNC Director of CyberInfrastructure (Dr. Joseph JaJa, joseph@sesync.org) to discuss these needs.

SESYNC can provide short term loaner laptops, projectors and other presentation tools to use during on-site research meetings, as needed. A full list of available equipment is available on the SESYNC website under Visitor information (www.sesync.org/equipment-reservation). Please contact the SESYNC IT Staff (itrequests@sesync.org) to reserve any equipment.

b. Office Hardware

SESYNC provides a suite of commonly used office devices including copies, printers, scanners, and fax machines which are available to guests and researchers. Center IT staff and administrative personnel are available to assist in using these technologies as needed.

c. Network

SESYNC provides wireless coverage throughout the entire center and gigabit wired connectivity in any office or conference room. Wireless instructions are posted around the center prior to any event and wired connections can be supplied with a 5 business day advance notice. Use of the SESYNC network is subject to the University of Maryland Policy on the Acceptable Use of Information Technology Resources (www.nethics.umd.edu/aup/).

d. Audio/Video and Conference Support

SESYNC has four meeting rooms and a collaborative open space which can be configured in a variety of ways to support different conferencing needs. Three of SESYNC's meeting rooms are

equipped with high definition projectors which can be accessed through wired or wireless connections. The center is also able to support remote participants for audio, web, or video conferencing. For special events, SESYNC can provide support to record and stream the audio and video of center events. Please see the Conference Facilities (<http://www.sesync.org/conference-facilities>) page under Visitor information on our website for a detailed description of the capacity of each room.

In order to ensure that conference resources are available and prepared for any meeting, we require that all A/V requirements including projector, wired network, and remote connectivity needs are registered with the SESYNC Event Coordinator at least 5 business days prior to the start of any event. Requests for video streaming and recording support must contact the SESYNC Event Coordinator at least 5 business days prior to the start of the event.

5. Software Application Infrastructure

a. Application Hosting

SESYNC provides an application hosting environment based on RedHat Linux for the development of tools and community-facing services. This environment supports the following services:

- Apache-based web server.
- PHP 5, MySQL 5.x and PostgreSQL 8.x
- Java 7, Glassfish 3.x or Tomcat 6.x or 7.x

SESYNCs hosting environment is designed to give projects a prototyping platform for currently active researchers and supported projects. SESYNC staff will work with project developers to configure hosting environments and provide troubleshooting support and training as necessary. In order to ensure the long term sustainability of hosted project, the leader of any hosted project must work with center staff to develop a disposition plan identifying a support plan and steps for project archiving and/or off-site migration after a project has ended.

b. Data and Project Web space

SESYNC provides a set of project templates to use to develop web sites for projects or data sets. Project members may edit these pages, create new pages, and upload small data sets and publications for distribution. In addition to locally hosting data sets, SESYNC IT Staff is available to assist in identifying and publishing data sets to national or international repositories, such as Dataverse or Dryad.

c. On-demand Computing

SESYNC provides the OpenStack cloud-computing platform to provide on-demand virtual machines for research and development use. SESYNC staff will assist researchers in installing publically available images, as well as supplying a number of images preconfigured with common scientific software suites such as R.

d. Data Storage and Access

SESYNC is able to provide large scale data storage accessible through several mechanisms including windows file share(cifs), object-based storage, and web-accessible storage similar to box.net or dropbox. Projects requiring onsite storage are encouraged to contact the SESYNC Computing Manager to discuss their needs prior to submitting a proposal. As with Application Hosting, we will require a data disposition plan be developed for any hosted or developed collections so that long term access is ensured to all critical data.

e. Collaboration Tools

To facilitate collaboration within supported projects, SESYNC supports a number of tools for groups to communicate. These tools allow members of sponsored research groups to remotely collaborate by sharing, accessing, and analyzing data from their individual locales at any time. Each supported project within SESYNC will be given access to the SESYNC community site. This site provides small document sharing, blogging ability, mailing lists, wiki-type workspaces, and group contact information. All researchers and projects supported by the center may also request community space. This space may be public or private depending on the needs and desires of the various groups. Sharepoint and windows file shares are also available upon request.

SESYNC provides each group with web and video conferencing services as required. Groups may request Adobe Connect access for full audio/video conferencing, or a phone bridge for toll-free teleconferencing.

In order to facilitate software development, SESYNC provides support for the following development tools:

- Subversion source code repository (subversion.apache.org)
- Jenkins Continual Integration Service.(Jenkins-ci.org)
- Redmine project management software (www.redmine.org)
- Drupal Commons to support discussion lists, wiki-style editing and small document sharing (community.sesync.org)

f. Scientific Software

Please be prepared to communicate anticipated needs for analysis software during the Initial Cyber Review. In the event that you determine additional software is necessary during the course of a project, please communicate this need to itrequests@sesync.org as soon as possible to allow time for licensing and setup. This is especially important for software and virtual machine configuration on SESYNC's openstack setup. SESYNC IT is responsible for acquiring, installing, and providing basic support for all approved software installed on SESYNC computing resources.

6. Database and Application Development

In order to support the wide range of projects within SESYNC, our programming staff has been designed to assist projects in developing prototype applications rather than creating production-quality systems.

SESYNC IT staff can provide support in data modeling, database schema design and instantiation, and in programming web and standalone applications. The staff can also provide support in developing scripts and analysis workflows.

The following platforms are supported:

- Programming Languages: Python, Java
- Database platforms: PostgreSQL, MySQL
- Statistics platforms: R, Matlab, SAS
- Web Application & APIs: Python/Django, J2EE, PHP, RESTful services
- Middleware: Hibernate/Tomcat, Drupal
- GIS Support: PostGIS, ArcGIS

SESYNC is able to provide consulting and limited development time in support of sponsored projects. Visitors and projects who anticipate requiring application, database, or workflow support should contact the SESYNC Digital Information Research Specialist (Mary Shelley, mshelley@sesync.org) to discuss the projects data and processing requirements prior to accepting their award.

7. Disposition of Data and Software

In order to ensure continued access to all data and software generated through SESYNC funding, all projects and researchers must work with SESYNC IT staff to develop a long term support plan for all project and/or source code which is compatible with SESYNC's published Data and Software Policy (<http://www.sesync.org/policies>). In order to allow us to effectively plan, SESYNC IT staff will work with project leaders to develop a data plan which encompasses the following:

a. Product description

All data sets and software produced at SESYNC must be fully documented. In line with the NSF data management plan requirements, we ask that all projects provide a description of the format of data they will be using or producing, and any copyright or access restrictions which may be present.

b. Data export strategy

Modern data portals are often comprised of numerous technologies and interconnected systems. As these systems grow more complex there is large risk that the technology required to operate the portal may no longer exist, may no longer be affordable, or otherwise evolve in way

which renders it incompatible with the original code. In order to ensure these technological changes do not affect the ability to retrieve data in the future, SESYNC IT staff will work with researchers to develop a plan to export data from these systems into a format which accurately preserves the critical elements of the data set.

c. Community impact

In support of SESYNC's mission of encouraging collaboration across the social and natural sciences, all products must be evaluated for reuse across the SESYNC community.

d. Cost analysis of maintaining any developed or hosting of data

Upon request, SESYNC IT staff will develop a cost analysis describing any post project support requirements. This will include estimates for maintenance, hardware and ongoing licenses.