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Introduction

Globus is an application that lets you transfer large amounts of research data efficiently and securely to your personal computer, institution’s storage systems or a cloud provider. It eliminates the use of big portable external hard drives that needs to be mounted to a local storage to transfer data. The New York Structural Biology Center primarily use Globus to transfer data that is collected on-site from electron microscopes. To get started with, follow the instructions below.

How to register?

1. Open a web browser and navigate to https://www.globusid.org/create
2. Create a Globus ID
   - Make sure you select the non-profit option
   - Please use your institution provided email address for registration, if possible. You can also use your personal email ID but it should be valid
3. After you click on Create ID, you will shortly receive a conformational email to verify your email address
   It is possible that the verification email has been sent to your spam folders. Please check it for confirmation
4. In the verification email, you will receive a verification code which you need to enter on the Globus website

To verify your email address and complete your Globus ID activation, copy the verification code below to the Globus ID verification page.

**Verification Code: f50ffa5d-3c0f-484f-97a6-88debe33877b**

Thank you for using Globus ID.

The Globus Team

If this wasn't you, please let us know: support@globus.org

5. Copy paste the verification code into the Globus website

How to login?

There are 2 ways to login into Globus.

1. Use the account id from which you registered or
2. You can look up for your institution name under the login page and directly sign in using your institution credentials
Some institutions have already signed up with Globus which enables the users to sign with their existing email ID without registering for a new account on Globus. If your institution’s name is not on the list, you have to create a new Globus ID described in the above step.

Once you log in, you will see the following screen:

A collection is a named location containing data you can access with Globus. Collections can be hosted on many different kinds of systems, including campus storage, HPC clusters, laptops, Amazon S3 buckets, Google Drive, and scientific instruments. A collection allows authorized Globus users to browse and transfer files. Collections can also be used for sharing data with others or data publication. For us, the collection name is ‘NYSBC-SEMC’
How to transfer files?

a. Transferring files from NYSBC to your personal endpoint

1. Click on the Collections tab and type ‘NYSBC-SEMC’ This will act as your source endpoint, where you will be transferring files from

2. You will see a login widget below which will ask for your username and password to authenticate.
   Please take a note that, you need to enter the username which is provided by SEMC/NRAMM when you first registered for your project.
   Also, note that this username is all lowercase

3. After you authenticate, you will see your default path which is currently set at /gpfs/
4. You can transfer raw frames and references by selecting the ‘frames’ folder
   - Select your username
   - Then, select the session you want to transfer frames from eg: (19mar07c)
   - Under the rawdata folder, you will see all your raw frames

5. You can also transfer aligned images by selecting the ‘leginon’ folder
   - Select your username
   - Then select the session you want to transfer frames from eg: (19marc07c)
   - Under the rawdata folder you will see all your aligned images

6. Now, you need to select the destination endpoint. For transferring files to your personal computer, you need to install Globus Connect Personal.
   Click on ‘Endpoints’ on the left navigation bar and select ‘Globus Connect Personal’
7. You will see the following screen

- Enter your endpoint display name. eg: MyPersonalEndpoint
- Click on generate key and a setup key will be generated.
- Copy the key to any safe location because you will need it while installing the software on your personal laptop
- Download and install the Globus Connect Personal as per your OS distribution
  For specific installation instructions,
  Mac installation: https://docs.globus.org/how-to/globus-connect-personal-mac/
  Windows: https://docs.globus.org/how-to/globus-connect-personal-windows/
  Linux: https://docs.globus.org/how-to/globus-connect-personal-linux/

8. Next, select your personal endpoint as your destination endpoint.
   Go back to the file manager and select NYSBC-SEMC in the Collection tab
9. Then select, transfer and sync to option.
10. On the right side, select your personal endpoint as the destination endpoint. Please see the screenshot.

You will now see the folders on your laptop.

11. Once you select the appropriate source and destination folder, then click on Start to initiate the transfer process.

12. To monitor the transfer process, click on the Activity tab on the left sidebar.

You will see the transfer logs and the message when the transfer is completed.
Note: Sometimes, your personal computer will be under firewall which will not allow transferring files. To configure your firewall settings, please follow the link https://docs.globus.org/how-to/configure-firewall-gcp/

b. Transferring files from NYSBC to your home institution endpoint

1. Follow steps 1 - 5 as described above
2. Then select your home institution endpoint as the destination endpoint. Please contact your organization's IT team to acquire the name of the endpoint authorized by your institution and for the login credentials and queries related to your directory permissions
3. For this tutorial, New York University is used as the destination endpoint
4. When you click on the Activity tab, you’ll see the following message when the transfer is complete:

You will also get an email notification when the transfer is complete.

For any issues related to Globus please contact semcit@nysbc.org