Globus Online

Globus Online (GO) is a fast and efficient tool for transferring data between institutions. You can use the GO interface to initiate data transfer between institutions that have servers connected to Globus. GO will then work to complete the transfer (using the gridFTP protocol) without requiring further personal interaction, even if the transfer is interrupted. If you need to transfer data directly to or from your personal computer, you can connect it to GO by installing and running the Globus Connect client software. It's not possible to transfer files between two computers both running Globus Connect clients. For more information about Globus Online, visit https://www.globus.org/.

Getting started

Visit https://app.globus.org/file-manager. You can log into the Globus website using your HawkID, or you can use your Globus account if you have one. To use your HawkID, select University of Iowa from the drop-down list of organizations. This will redirect you to the University of Iowa login page where you can log in with your HawkID. Then you can start transferring Globus Online website via the "Manage data" menu.

Collections (Endpoints)

Each source and destination for your data transfers is called a Collection (previously known as an Endpoint). Collections have names like "<ownername>#<endpointname>". At the University of Iowa, ITS Research Services operates a collection called data.hpc.uiowa.edu whose owner is uiowa data, and you will refer to it as "uiowadata". Analogously, Xsede endpoints begin with "xsede#". Thus collections are grouped together by owner institution when displayed in lists. You can configure a private collection on a personal computer using the Globus Connect software, and this is described later.

Sharing Data

You can share your data with collaborators by creating a Guest Collection. First navigate to a Globus connected filesystem you have control over, select a directory to share, the users to share with, and the permissions to grant them. You will get a URL that can be provided to users with access or they can search for the collection name in the Globus file manager interface. More detailed instructions are available at https://docs.globus.org/how-to/share-files.

Directories in the uiowadata collection

The uiowadata collection provides access to directories on the server data.hpc.uiowa.edu as follows:

<table>
<thead>
<tr>
<th>Directory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/hpchomes/argon/&lt;hawkid&gt;/</td>
<td>Your HPC home directory</td>
</tr>
<tr>
<td>/Dedicated/&lt;sharename&gt;/</td>
<td>Dedicated shares</td>
</tr>
<tr>
<td>/Shared/&lt;sharename&gt;/</td>
<td>Shared shares</td>
</tr>
<tr>
<td>/nfsscratch/argon/</td>
<td>The NFS scratch filesystem</td>
</tr>
<tr>
<td>/scratch</td>
<td>The BeeGFS scratch filesystem</td>
</tr>
</tbody>
</table>

These directories are automounts, meaning they're not mounted or visible until triggered. So you might not see your directory when browsing, but if you use it anyway, it will trigger "just in time" and work as if present all along.

Globus Connect (optional)

If you need to transfer files between your personal computer and a Globus collection, you must install the Globus Connect client, and the client must be running during transfers to or from the personal computer. Client versions are available for Linux, Mac and Windows computers here:

https://www.globus.org/globus-connect-personal

Obtain the client software and install it on the computer you want to connect. If the computer has a firewall, Globus Connect only needs it to allow outgoing connections, which is the most common firewall configuration. No additional firewall configuration for incoming connections is required.

Globus Connect configuration

Before you can use your Globus Connect client as a personal endpoint, you need to configure it with a key from Globus. Launch the (GC) client for the first time, and it will present a prompt asking for a setup key.

To obtain a new key (or retrieve your key if you already have one), go to the GO homepage and select the Endpoints option. To generate a new endpoint, select the "Create new endpoint" option (shown in blue near the top right of the page), and select either "Globus Connect Personal" for transferring to and from your personal device, or "Globus Connect Server". When finished, you'll receive a key which you should now copy and paste into your GC client.
After your Globus Connect client is configured the first time, you can enable your private endpoint simply by launching the Globus Connect.

Transferring Files

Globus offers two main interfaces for transferring files. The GO website also serves as the graphical user interface (GUI), so it's accessible using your normal web browser. Alternately, if you're comfortable using the command line and ssh, or if you need to write scripts to transfer data, you can install and use the Globus command line interface. Each method allows you to tell Globus which files to transfer, and the source and destination. When you specify your transfers, Globus will record them and start working on them, and there are various ways to monitor or check on them later.

Unless specified, file transfers are NOT encrypted. If you need transfers to be encrypted, you must enable encryption using the correct graphical menu option or command line flag.

Online GUI

After you log into the GO website, you should land on the “File Manager” page. There is where you begin.
The sequence of steps for initiating a transfer is as follows:

Specify your first desired endpoint and path and click "Transfer or Sync to" in the right menu.

The window should now be split with each endpoint.

Specify the second endpoint and path.

Then select the data you want to transfer.

Optionally, if you'd like a label for this transfer, you can enter it using the "Transfer & Sync Options" drop down menu at the bottom of the screen. Note that all transfers can be referenced by a unique ID, but you might find a label more convenient.
Optionally, if you need this transfer to be encrypted (or have other options enabled), it can also be found in the “Transfer & Sync Options” drop down at the bottom of the screen.

Finally, initiate the transfer by pressing the Start button with the arrow pointing from the source to the destination.

globus-cli command line tool

The command line client is available as a Python package named "globus-cli". The package is available from PyPI, so it’s convenient to install (along with its dependent packages) using Python’s "pip" command. If you use a Python virtual environments, activate your environment and then install the package like so:

```bash
pip install globus-cli
```

Alternately, if you don’t use Python virtual environments, you can install the package into your home directory (but also see the next step to ensure you can access it after you install it):

```bash
pip install --user globus-cli
```

If you installed globus-cli using the --user option, also make sure the command is available by running the following command (which you might also want to put in your shell startup config for convenience):

```bash
which globus >/dev/null 2>&1 || export PATH=${PATH:+$(python -c 'import site; print(site.USER_BASE)')}/bin:$PATH
```

If you have a web browser on the system where you’re using the CLI, you can simply invoke the login subcommand to bring up a web page where you can use your HawkID to log in:

```bash
globus login
```

If you don’t have access to a web browser on the system where you’re running the CLI, you can use the --no-local-server flag. You will be given a link to follow, and you must respond with the access code provided at that link. Note that this flag is implied if the CLI detects you are on a remote session.

```bash
globus endpoint search 'uiowadata'
```

<table>
<thead>
<tr>
<th>ID</th>
<th>Owner</th>
<th>Display Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>39dd0982-d784-11e6-9cd4-22000a1e3b52</td>
<td><a href="mailto:uiowadata@globusid.org">uiowadata@globusid.org</a></td>
<td>uiowadata#data</td>
</tr>
</tbody>
</table>

Globus command line method

https://github.com/globus/globus-cli

The CLI provides an interface to Globus services from the shell, and is suited to both interactive and simple scripting use cases. The Globus CLI shell provides man pages for all of the available commands so you can read about their features. More information about the CLI interface can be found at https://docs.globus.org/cli/.