

Nyquist-Shannon Workstation

User guide



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1. PC specifications

Processor	Intel(R) Xeon(R) W-2255 CPU @ 3.70GHz 3.70 GHz
Installed RAM	32.0 GB
System type	64-bit operating system, x64-based processor
OS	Windows 10 Enterprise
Local drives	C: 477 GB - main/system SSD drive D: 1.8 TB - additional SSD drive <i>Local data storage is not permitted. Once processing and analysis is completed, all data must be transferred from the workstation as described in Section 4 of this document.</i>
Graphics card	NVIDIA GeForce GTX 970

2. Available software

Open-source software	Commercial software
Cellpose 1.6	Huygens Professional 26.04.0
CellProfiler 4.2.8	Imaris 8.4.2
Cellprofiler Analyst 3.0.4	Stereomap 4.2.0 and ImageStudio 3.0.4
Chromamgnon 0.9.1	
ImageJ/Fiji 1.54t	
Ilastik 1.4.0	
Inkscape 1.4.4	
Napari 0.4.17	
NGFF-Converter 2.1.0	
OMERO 5.8.4	
R 4.3.1	
Sitkibex 0.5.3	
PowerShell 7.6.3	
Python 3.10.12 – miniforge	

3. Nyquist-Shannon Graphical Tablet Manual

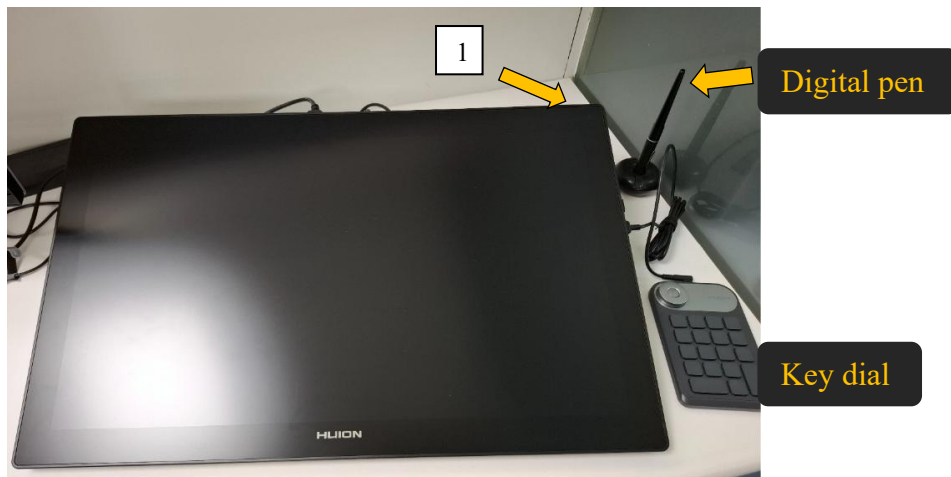
3.1 Setting up the tablet

Tablet accessories and their uses:

Digital pen: For mouse control and drawing.

Key dial: For keyboard shortcuts (*See section 3.2 for keyboard shortcuts*)

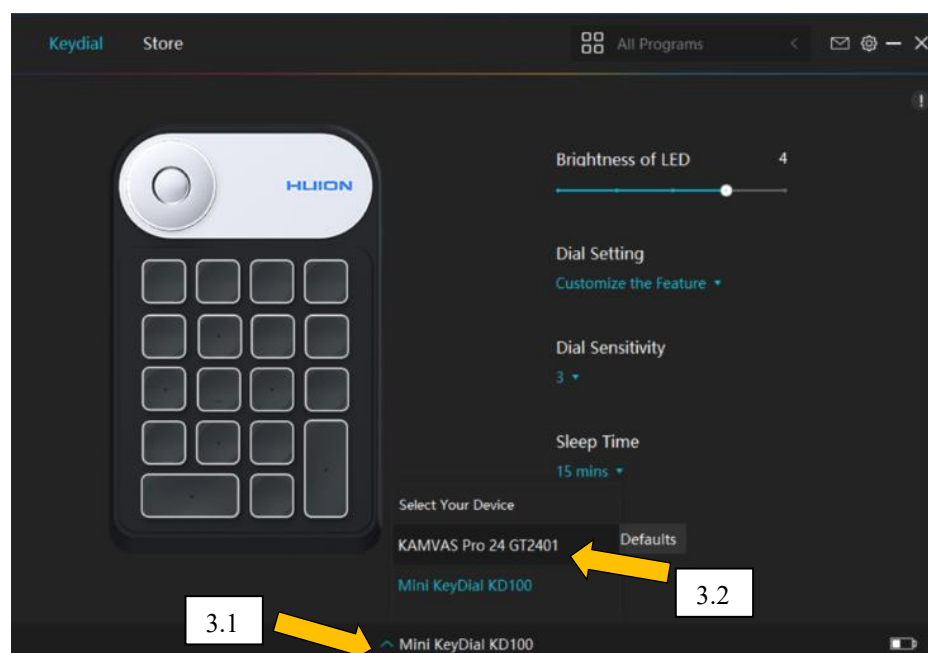
1. Turn ON the tablet by clicking on the button on the top right side.



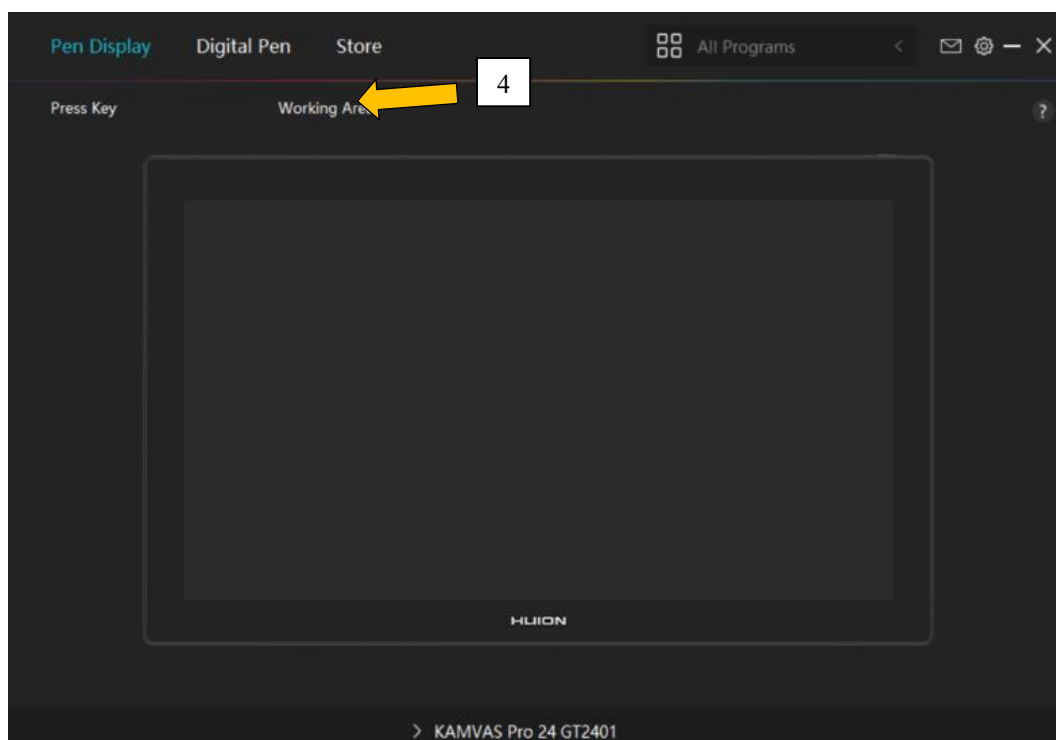
2. On the computer desktop, open the Huion app pinned on the taskbar.



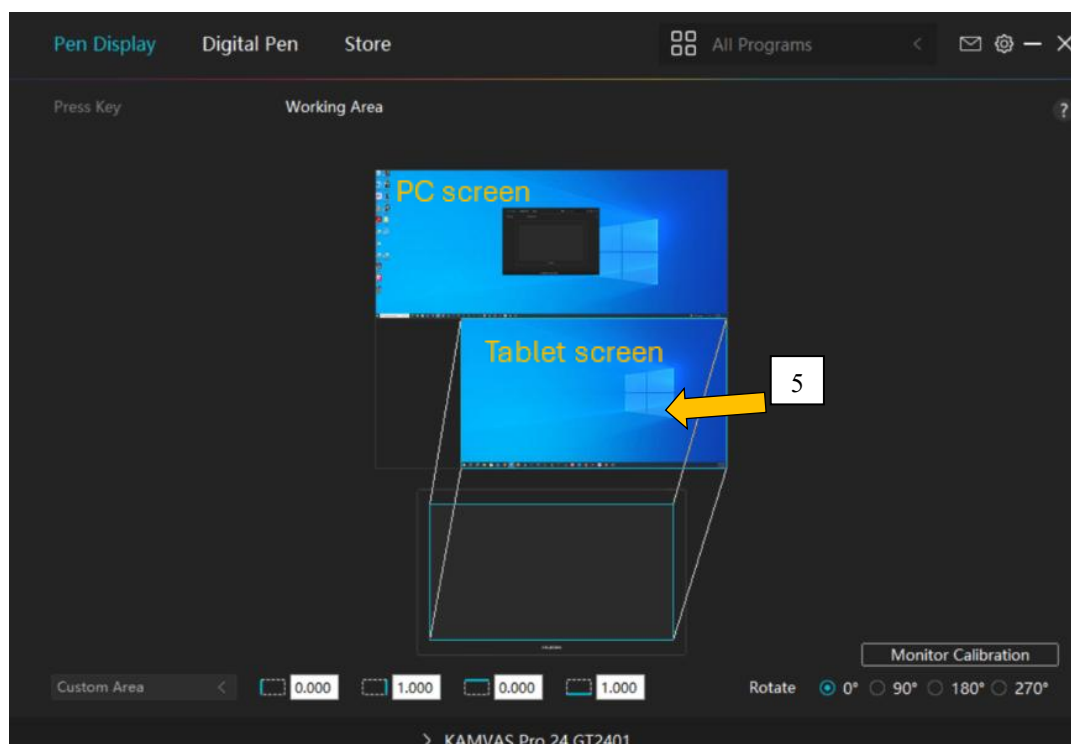
3. In the Huion app, select the device by clicking on the text **Mini KeyDial KD100** (3.1). Select **KAMVAS Pro24 GT2401** to connect to the tablet (3.2).



4. Click on **Working Area** to select the tablet screen.

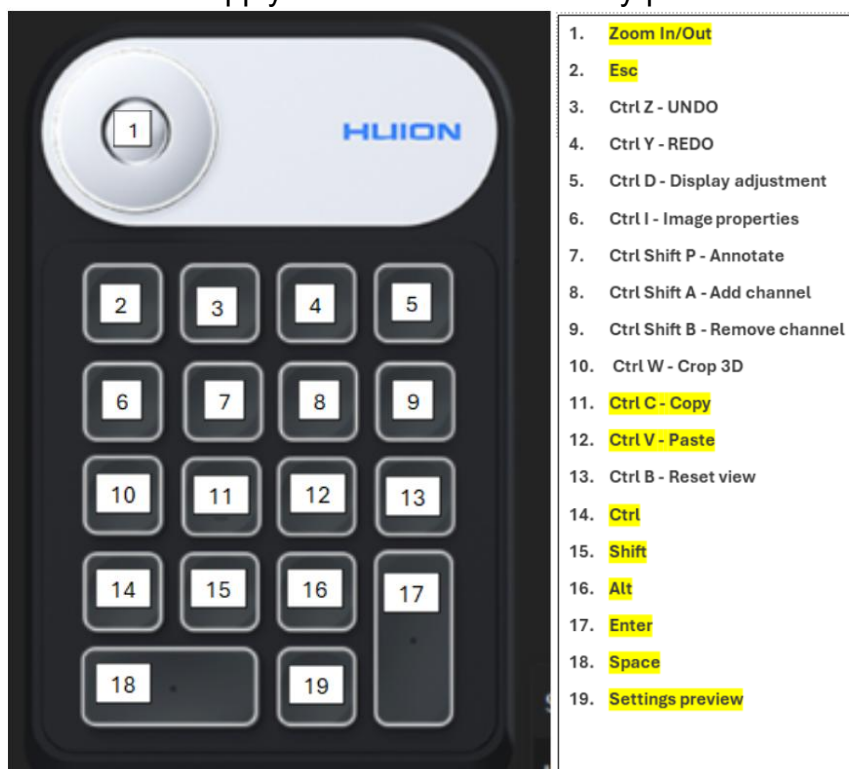


5. Click on the Tablet screen to activate the digital pen on the tablet screen.



3.2 Key dial shortcuts

The shortcuts are configured for the Imaris software. The shortcuts marked in yellow are general shortcuts that apply to all software on the Nyquist-Shannon workstation.



Huion key dial shortcuts

4. Data transfer

We remind users that data should be removed asap and never left on the workstation. The PC cannot be used if the local storage is full. In such situations ALMU staff will wipe all local data without prior notice. The following options are available for data transfer depending on affiliation.

4.1 For CRG Users

CRG users should transfer the data to scratch or to CRG's  OMERO instance using OMERO.insight. To create an OMERO account contact sit_support@request.crg.es

4.2 For PRBB Users: data transfer with FileZilla

PRBB users should transfer the data using the open-source FileZilla software, a ssh File Transfer Protocol established between CRG and PRBB institutions. This data transfer solution does not apply to companies or spin-offs residing in PRBB. For companies and spin-offs, please proceed to Section 4.3.

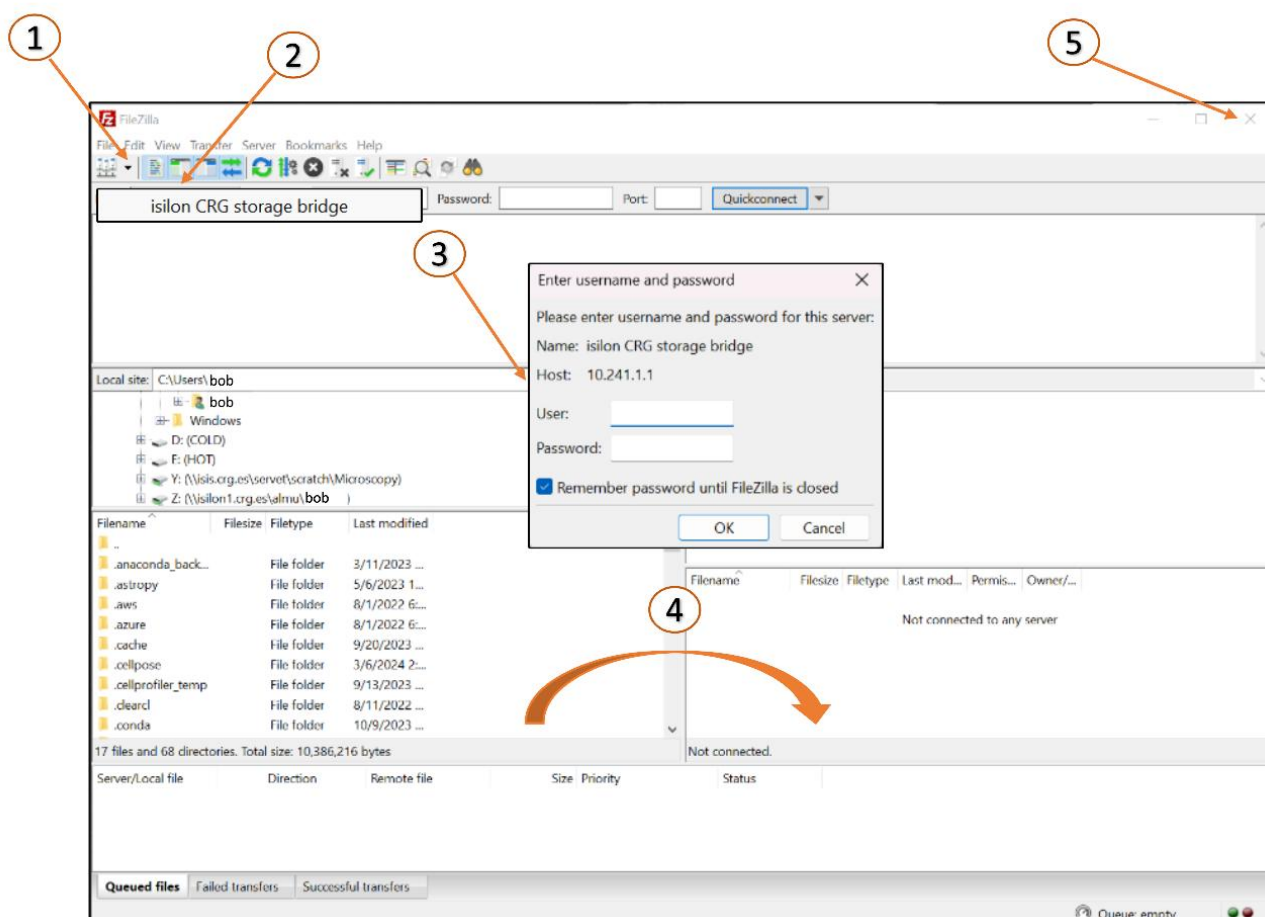
Important! Data transfer is only possible if you have obtained a FileZilla account from your institution beforehand. Please contact your IT or Scientific IT departments to create an account.

For UPF users contact: sccmelis@upf.edu

For IMIM users contact: it-helpdesk@researchmar.net

Follow the steps below to transfer data using FileZilla

1. Open FileZilla by clicking the FileZilla icon on the desktop or taskbar.
2. Click on the black arrow (▼) under the Edit tab.
3. Click on **Isilon CRG storage bridge**.
4. Input your FileZilla credentials given by your institution.
5. Drag-and-drop files you want to transfer.
6. Close FileZilla



4.3 For Users from outside PRBB: data transfer with Globus

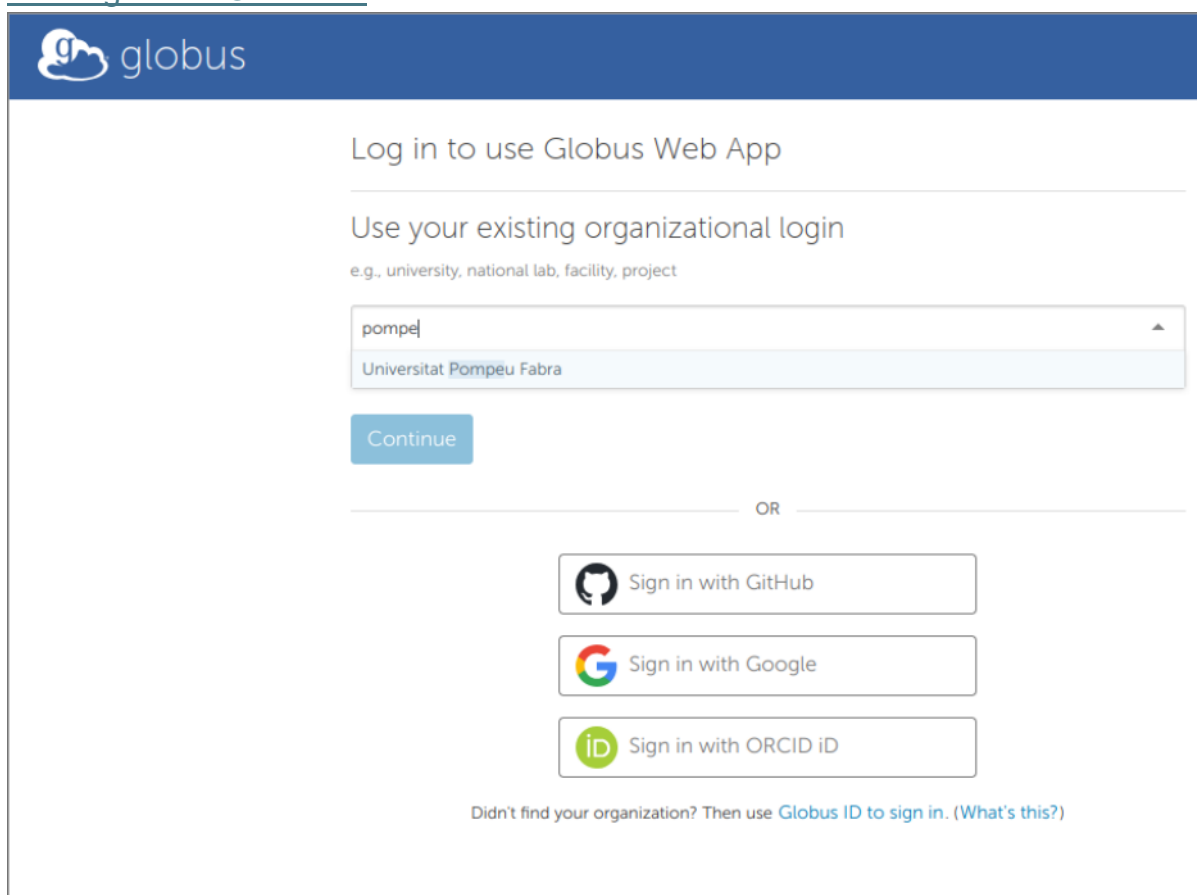
The following detailed Globus user guide provided by CRG's Scientific IT Department.

4.3.1 Globus ID Registration and Login Options

The CRG has a subscription to Globus with an associated endpoint. Information on this can be found on the Globus website: <https://www.globus.org>

To use this system, **users must set up a Globus ID**. Globus collaborates with educational network providers across the world and potentially federated access may be possible using institutional credentials. This is the case for CRG and UPF users for example which can utilize the RedIris single-sign-on federated access. Please, **first check if your institution is available under the “Use your existing organizational login” list**.

For non-institutional users (e.g. private companies), authentication to the globus system can be done with a Google account, a GitHub account, an Orcid ID or by **creating a new Globus ID**.



The screenshot shows the Globus Web App login interface. At the top, there's a blue header with the Globus logo. Below it, the text "Log in to use Globus Web App" is displayed. The main section is titled "Use your existing organizational login" with a subtext "e.g., university, national lab, facility, project". There is a search bar containing "pompe" and a dropdown menu showing "Universitat Pompeu Fabra". Below the search bar is a blue "Continue" button. Further down, there's a horizontal line with "OR" in the center. Below this line are three buttons: "Sign in with GitHub" (with GitHub logo), "Sign in with Google" (with Google logo), and "Sign in with ORCID iD" (with ORCID logo). At the bottom, there's a link: "Didn't find your organization? Then use [Globus ID to sign in](#). (What's this?)".

The above screen is accessed from the Login icon in the top right of the globus website. You need to login with one of the options available.

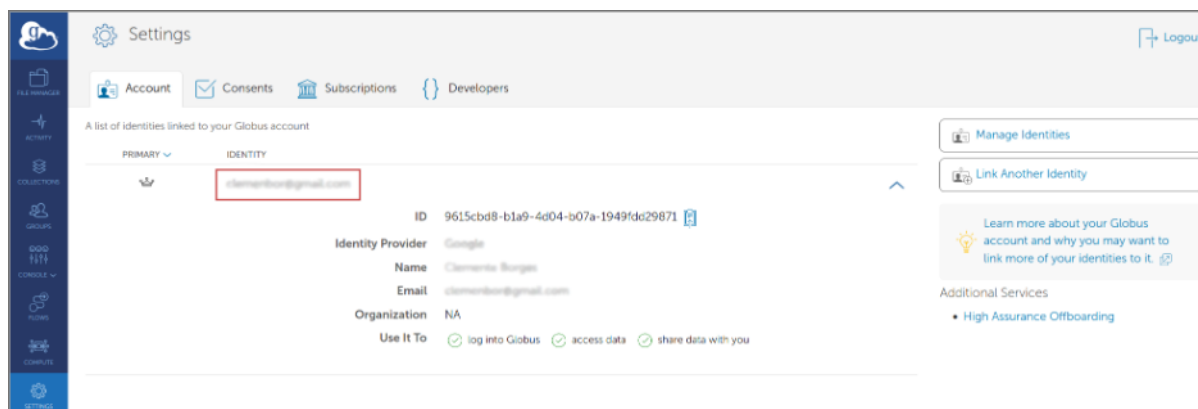
Case 1 - Use your existing organizational login

If your organization uses single sign-on (SSO) federated access via the Globus organization list, please **send us your Globus Identity (GlobusID)** so we can grant you permission to download your data set.

To check for your GlobusID you need to login with your organizational credentials, and afterwards go “**Settings --> Account**” or please go to the following URL:

<https://app.globus.org/account/identities>

There you will be able to see your primary GlobusID (see image below).



Case 2 - Link a new identity to an Existing Globus Account

If your Agendo account is registered with an email address that is not part of the Globus Federated Single Sign-On, you need to **login via Google, GitHub or ORCID** or you can just [create a new Globus ID](#). If you use the option to create a new Globus ID, you need to select “Globus ID” from the “Use your existing organizational login” to login with your newly created account (see image below).

Log in to use Globus Web App

Use your existing organizational login
e.g., university, national lab, facility, project

Globus ID

By selecting Continue, you agree to Globus [terms of service](#) and [privacy policy](#).

Continue

OR

Sign in with GitHub

Sign in with Google

Sign in with ORCID iD

Didn't find your organization? Then use [Globus ID to sign in](#). ([What's this?](#))

Once logged into Globus, you can link your Agendo email address to your Globus ID using the "[Link Another Identity](#)" option. To do this, navigate to the "Settings" menu on the left (see the next figure) and click on "Link Another Identity."

Settings

Logout

Account Consents Globus Plus Developers

A list of identities linked to your Globus account

PRIMARY	IDENTITY
	aglobususer@globusid.org

Manage Identities

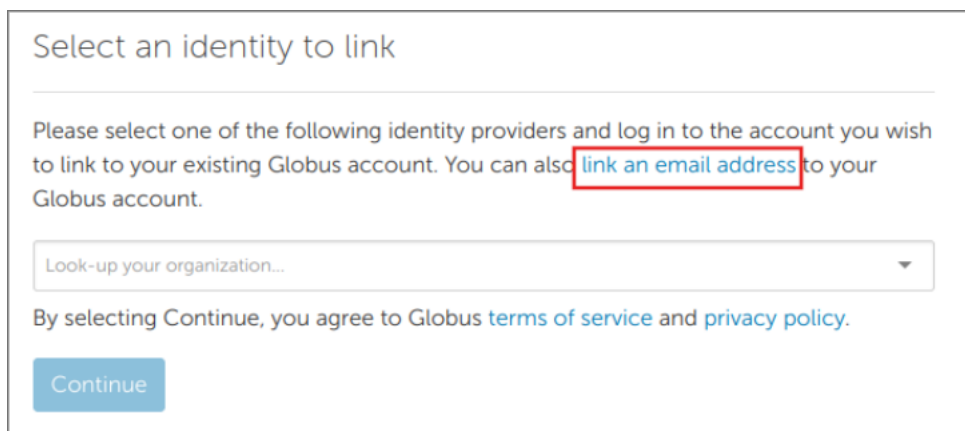
Link Another Identity

Learn more about your Globus account and why you may want to link more of your identities to it. [Learn more](#)

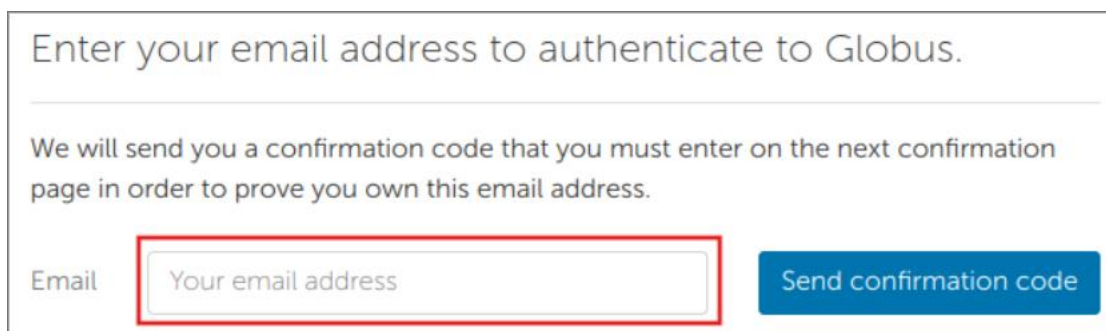
Additional Services

- High Assurance Offboarding

When linking another identity to your Globus ID, you can specifically select the option “**link an email address**” to your Globus account (see next figure).



Finally, set your Agendo email address to receive a confirmation code from Globus, which you will need to verify later.

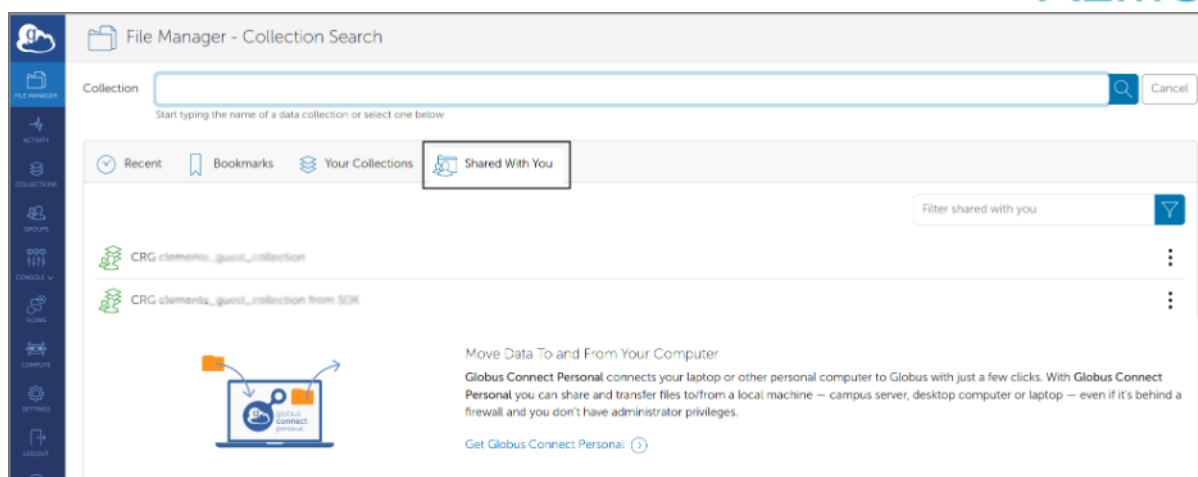


After that, check the inbox of your email address and click on the link to confirm your identity. Your Agendo email address should now be linked to your Globus ID.

If you prefer, you can also send us your primary globusID to the Genomics Unit via Agendo so that the relevant Globus collection folders and access controls can be granted.

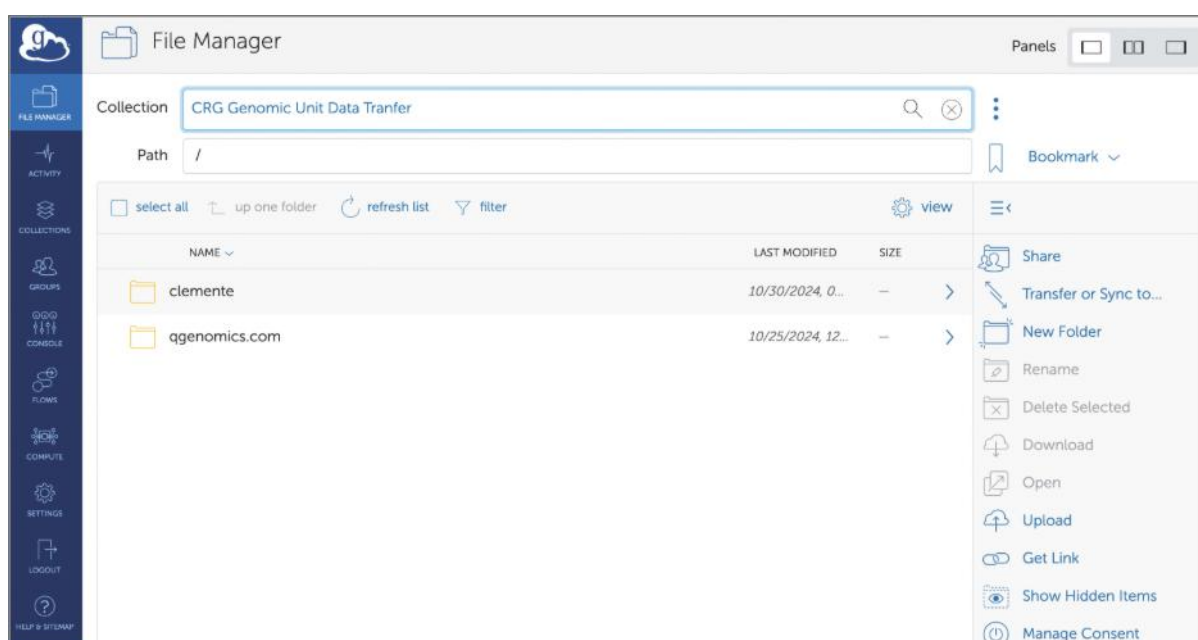
4.3.2 Accessing the data

After logging in, you will be presented with the **Globus File Manager**. From here you will be able to access your Globus Guest Collection. When in the Globus File Manager under the “**Collection**” field click on “**Search**”. Afterwards, click on the tab “**Share With You**” as shown in the image below.



Then you should be able to access the guest collections for which you have permissions.

Finally, click on the collection you want to view the data for.



You will then have access to the guest collection content view where the data can be downloaded.

4.3.2 Transferring the data

To transfer the data, you need to install and use the “**Globus Connect Personal**” client which can be downloaded from <https://www.globus.org/globus-connect-personal>.

Globus Connect Personal is available for Windows, Linux and Mac OS X. Please click on your platform below and read the corresponding guidelines:

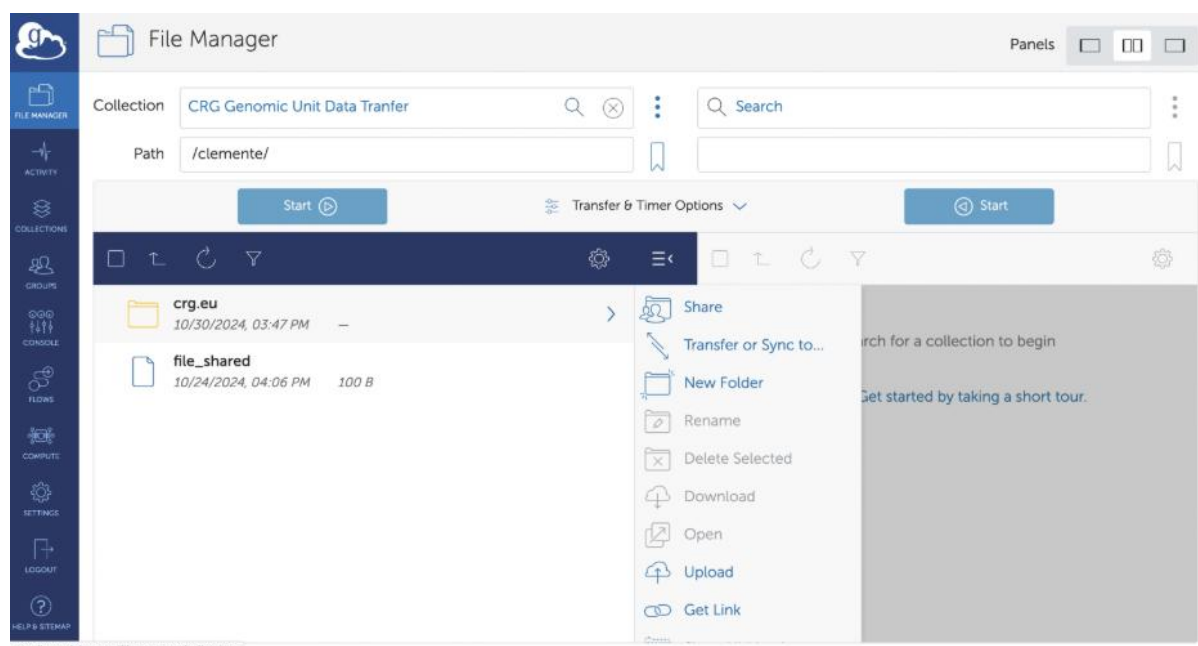
- [Windows](#)
- [Linux](#)
- [Mac OS X](#)

Once you click on the “Install Now” link for your chosen Operating System you will be provided with a page giving detailed instructions on setting up and using the client. If you have any issues installing or configuring Globus Connect Personal, you may check the [Globus Troubleshooting Guide](#). If your organization has strict firewall policies, we recommend reviewing them using the following URL:

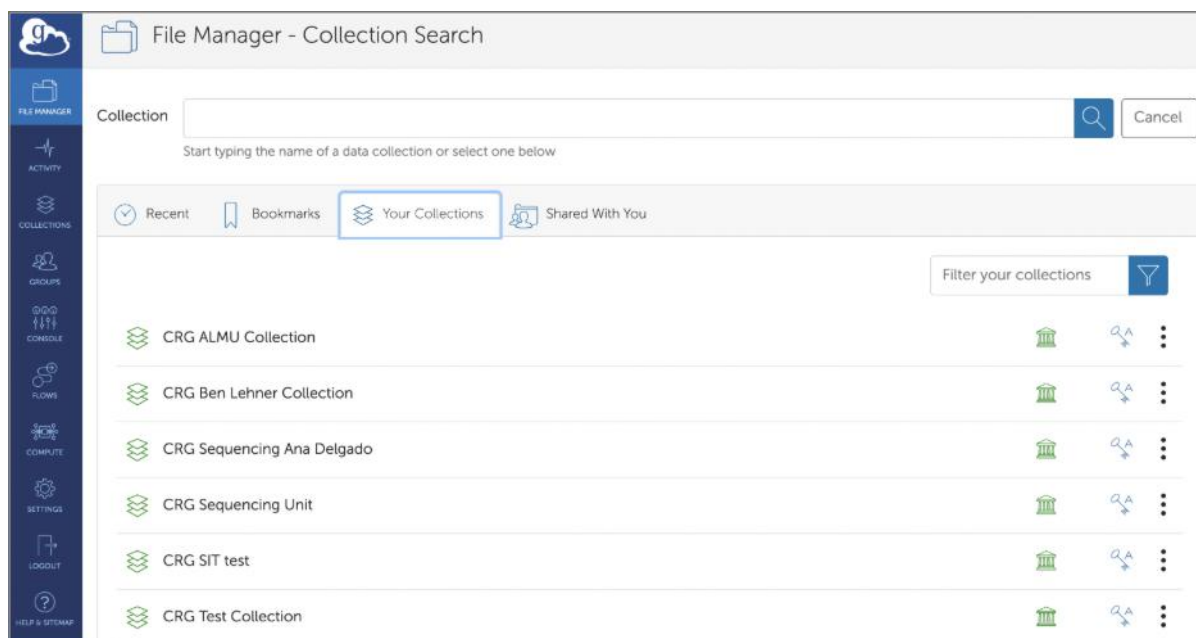
- [How to configure firewall policy for Globus Connect Personal](#)

Once the client is up and running and configured to put data into the directory of your choosing, you can use the Globus web-based file-manager to set up the transfers which will then be managed in the background by your client (or endpoint if you have one).

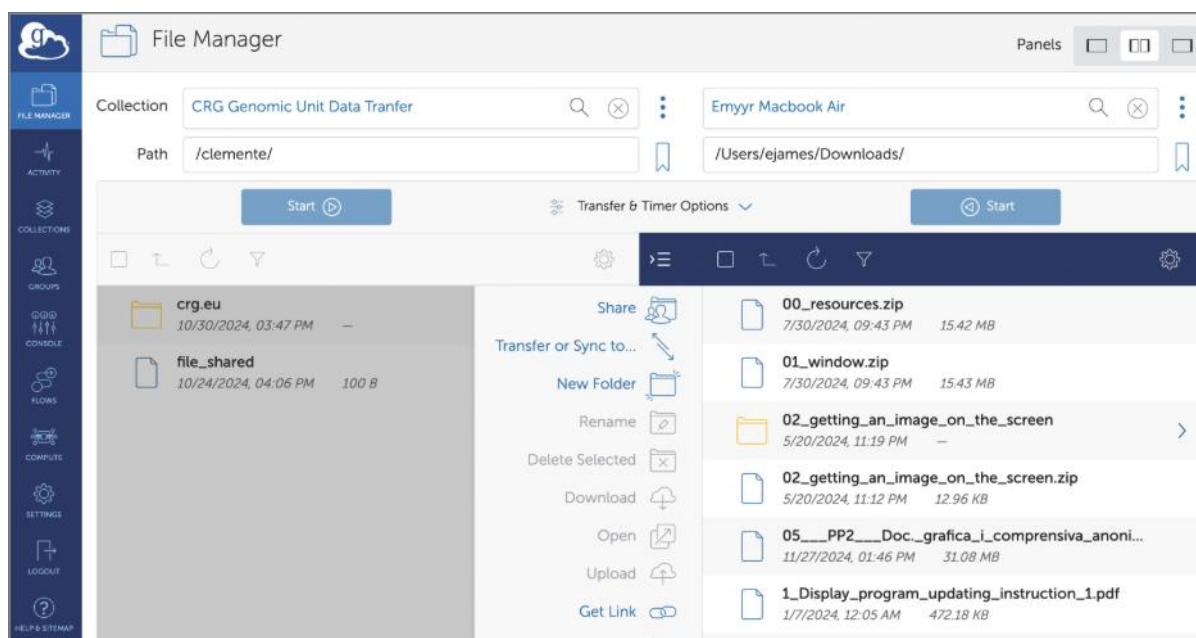
Using the file manager, browse to the folder you want to transfer in the CRG collection and then click transfer. You will then need to choose the location to transfer to.



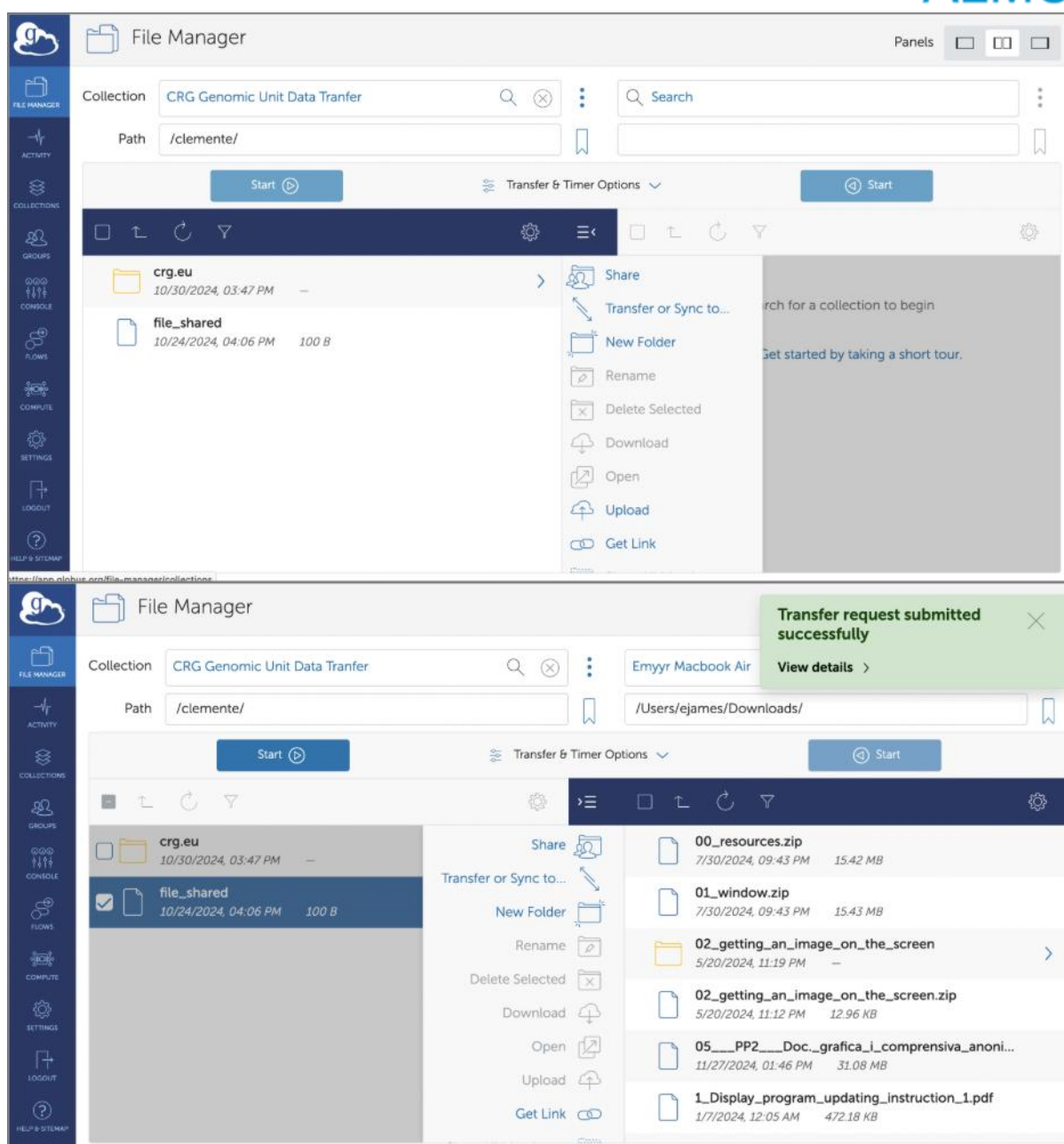
Click in the search box on the right-hand side and the collection name you set up for your client should be available in the “Your Collections” tab, your institutional endpoint should appear here if you have one, assuming you logged in with your institutional federated access.



After choosing the collection, you will be taken back to the file manager where you can select the folder you want to transfer to.

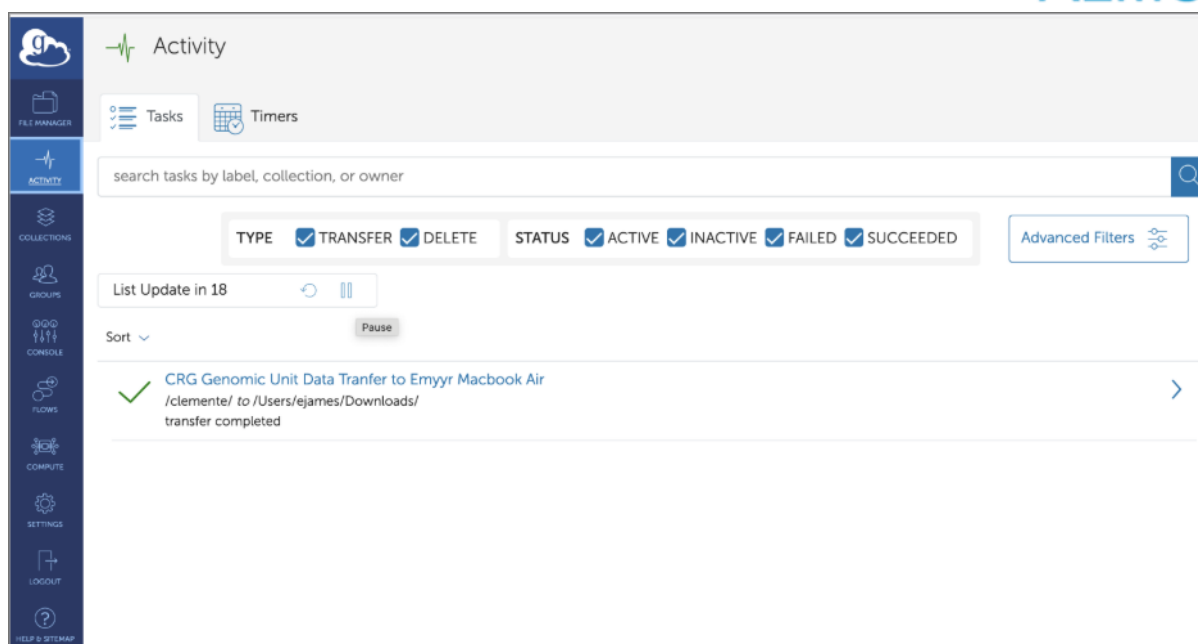


You can then click the “Start” button that is highlighted (on the left to download or on the right to upload). The transfer will be queued by the system to happen in the background.



You can click the “View Details” link to see the progress of the transfer. You can also access this from the activity link in the left-hand sidebar. If you have a lot of data to download you may need to periodically check here to see how the transfer is progressing.

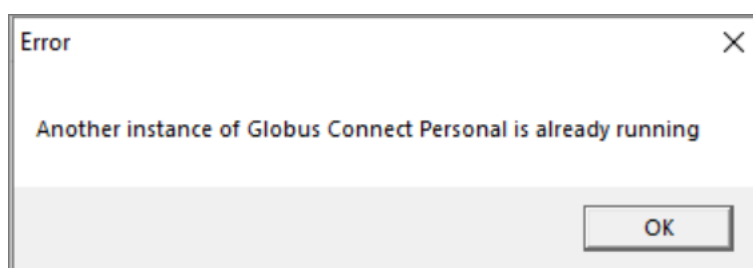
When the transfer is complete you will see something like this in the activity log.



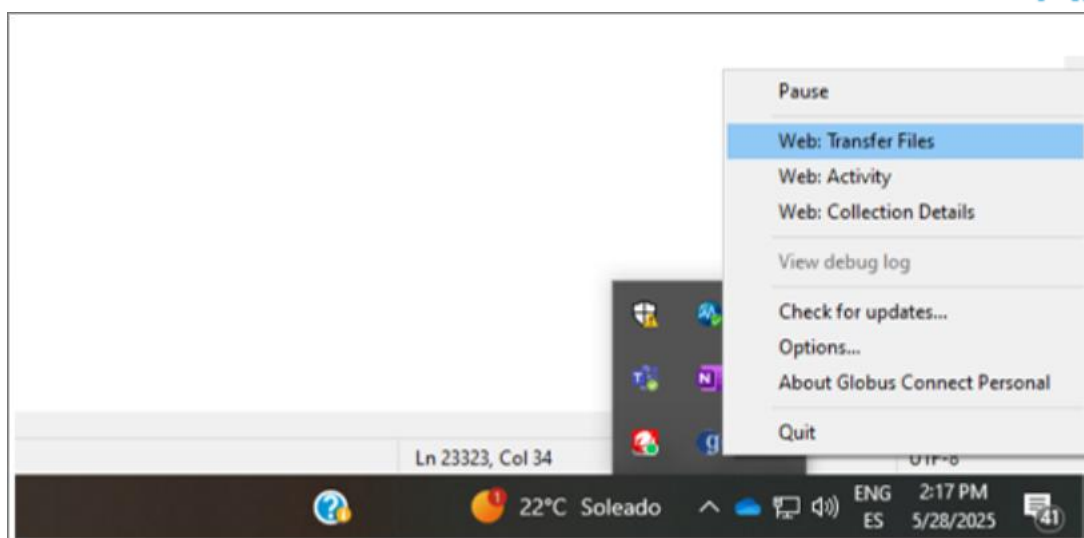
4.3.3 Frequently Asked Questions (FAQ)

If you have any issue with Globus, the first place you may check is the [Globus Troubleshooting Guide](#) and also the [Globus FAQs for transfer and sharing](#). Moreover, remember to send the [Globus firewall policies](#) to your IT department to ensure compliance. You may also check some common issues below.

1. In Windows, I get an error message “Another instance of Globus Connect Personal is already running”



You need to check under the Windows toolbar for the Globus icon, as the software is already running. When you find the Globus icon, just click over it and select the option “Web Transfer files”



2. I want to change the account configuration of my Globus Connect Personal installation:

- You need to re-configure Globus Connect Personal. Ex. For Linux you need to execute the following:

`./globusconnectpersonal -setup`