Transferring Data from NE-CAT by using Globus and Sftp
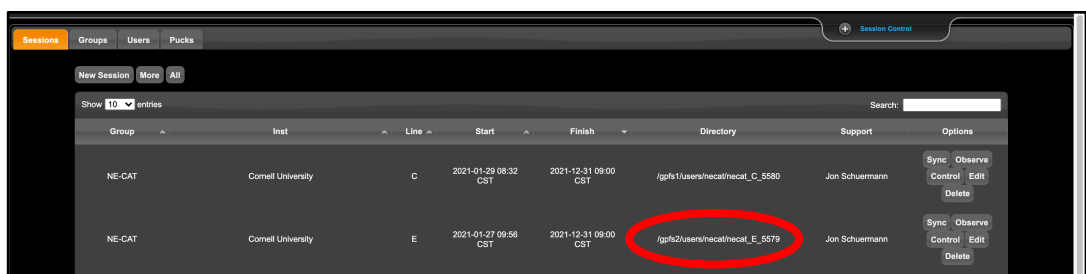
Globus is a non-profit service for secure, reliable research data management developed and operated by University of Chicago (https://www.globus.org/our-story). You can move or share your data between two endpoints (file transfer locations) using Globus interface.

To transfer data using Globus, you need to access two endpoints, source and destination. NE-CAT is using APS endpoint as a source. During the process, we will upload your session(s) into the APS endpoint, and you will download your data to your endpoint by using Globus. You don`t need to download entire session with Globus. You can select individual files or folders to download.

IMPORTANT: To transfer data from NE-CAT with Globus you must have:

- **Globus account**
- **Globus connect personal (Globus Desktop/Laptop App)**
- **Globus Endpoint**
- **Your APS login credentials**
- **You must be listed as an Experimenter on the ESAF associated with the trip data you are trying to download**

- **If you are already using Globus and have it setup in your computer, login to Globus and follow the instructions below. Otherwise, skip to second page.**

- **For Proprietary users; If you don't have Globus subscription, please use the sftp option to download your data.**

- Search aps#data for APS endpoint at File manager connection bar.
- APS will ask your credentials. **You can use either ANL domain or APS Web Account credentials.** To access with your APS Web account, please enter your badge number starting with d, such as d12345 and enter your APS password. You can find more information at **page 5**.
- This credential will expire after 7 days.
- To reach the NE-CAT files, enter " /gdata/dm/NECAT/ " in the path bar.
- Select your institution, lab (group name) and remote session
    - You can find your institution and session name at remote website. For example: In NE-CAT remote you will see directory column
   **gpfs1(or2) / users / Inst. name / group name and session number**

- Select your folder(s) or file(s)
- Select your endpoint and start transfer.
    - APS will check your credentials for data transfer.
    - To transfer data, your name must be on the ESAF which is related to your session.
    - Even if your name is in the ESAF, you may get a "Permission denied" error message at the beginning of the transfer. This should resolve after ~10-20 mins.

New Users for Globus

If you are not familiar with Globus or don't have an account, you can go to the Globus web site (https://docs.globus.org/how-to/get-started/), or you can go to the My APS portal **(1)** to get more information. Click the Globus button at the top right side in your My APS portal **(2)**. To reach the Globus web site you can click the Data Transfer via Globus **(3)**. To get the detailed information about Globus installation from APS, click "HERE" **(4)**.
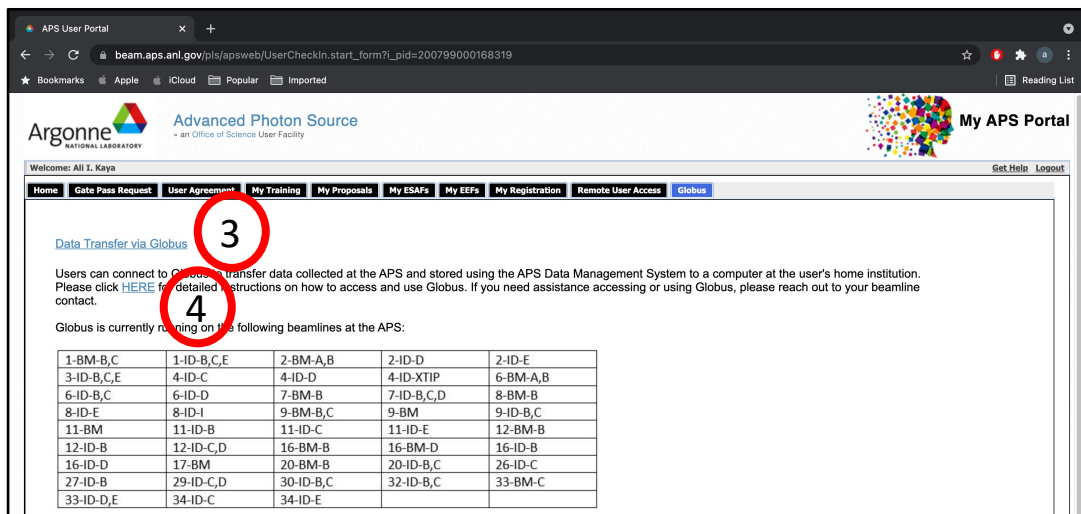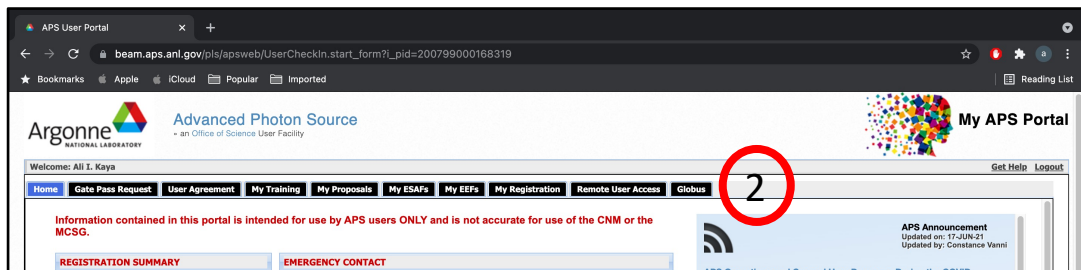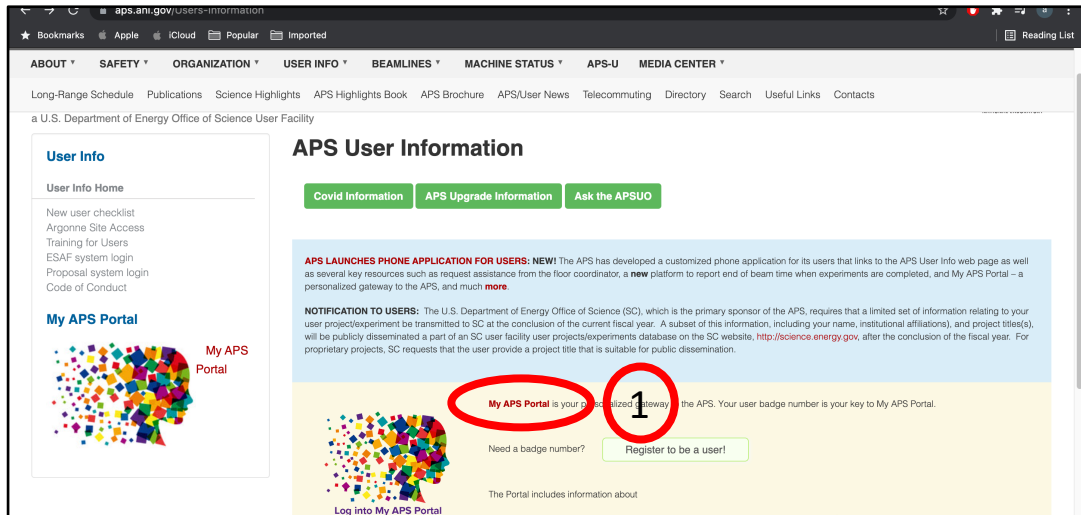
Login to Globus
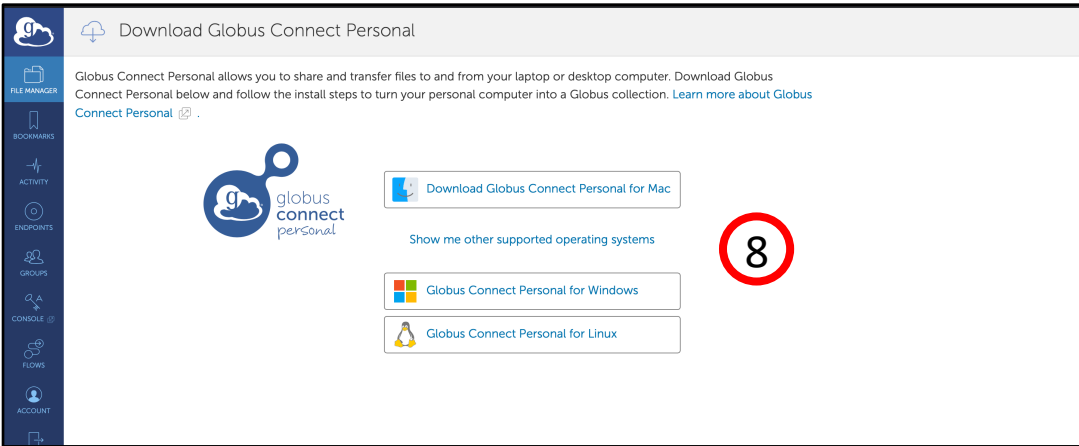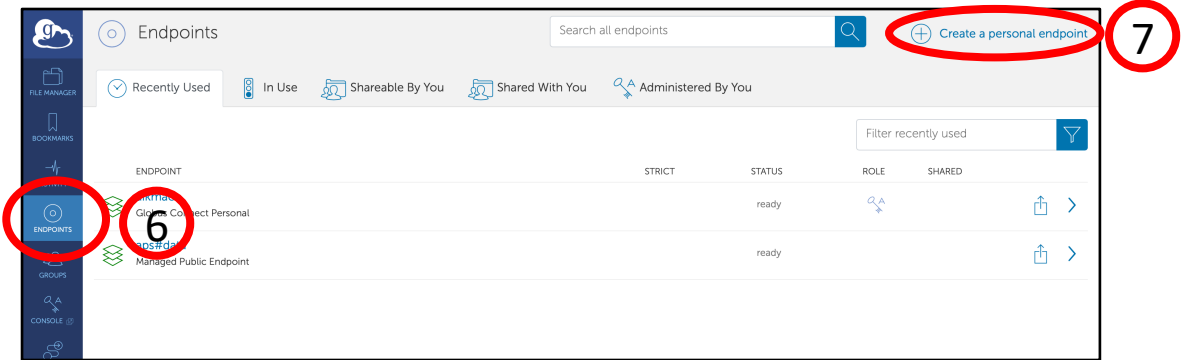
- If your institution has an association with Globus, then you can login to Globus using your existing organizational login. Navigate to https://auth.globus.org, choose your institution from the dropdown link and click "Continue".


IMPORTANT: When you login to Globus, **do not select Argonne National Laboratory as an institution (5)**. You must use your own institution. When you select your own institution, it will bring you to your institutional Globus-related login web page where you need to enter your institutional username and password. Then, your institution will authenticate you with Globus.

If your institution is not listed, you can also use your Google account, click on "Sign in with Google", or you can create and use personal GlobusID. Then follow the prompts.

- When you login, you should see the general layout of the Globus web app as shown below.
- To create an endpoint, select endpoint tab at the left side **(6)** and click "Create a personal endpoint" **(7)**.
  - Select your relevant operating system and install it **(8)**. You can find more information at the Globus website about installation and directory setup (https://www.globus.org/globus-connect-personal). During the installation, **DO NOT select "High Assurance" option**.

- Under file manager, select middle icon at the panel selection tab, to see both source and destination end points at the same time.
  - To reach the source endpoint, which is APS data management in this case, search and select aps#data **(9-10)**.
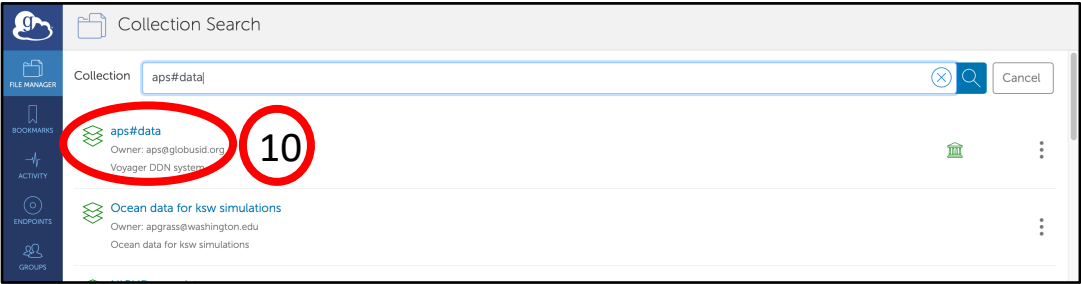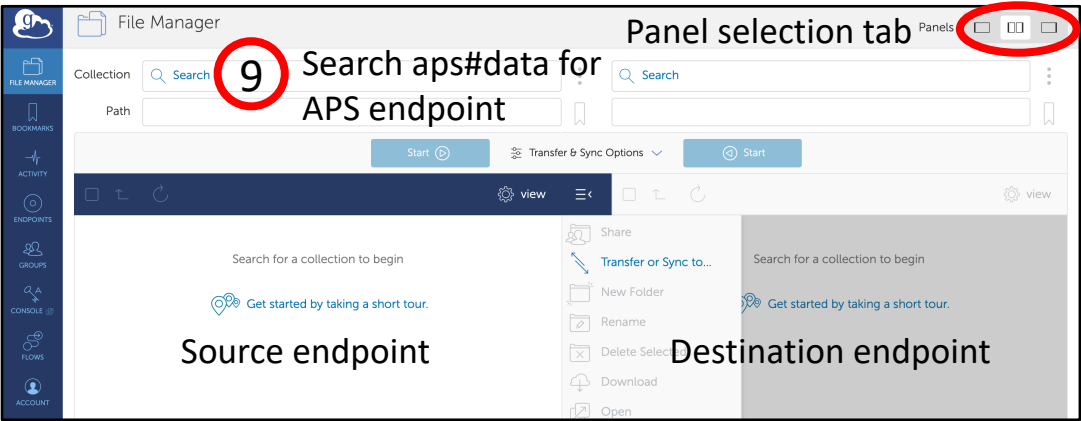
- At this point, APS will ask your credentials, select continue **(11)**.
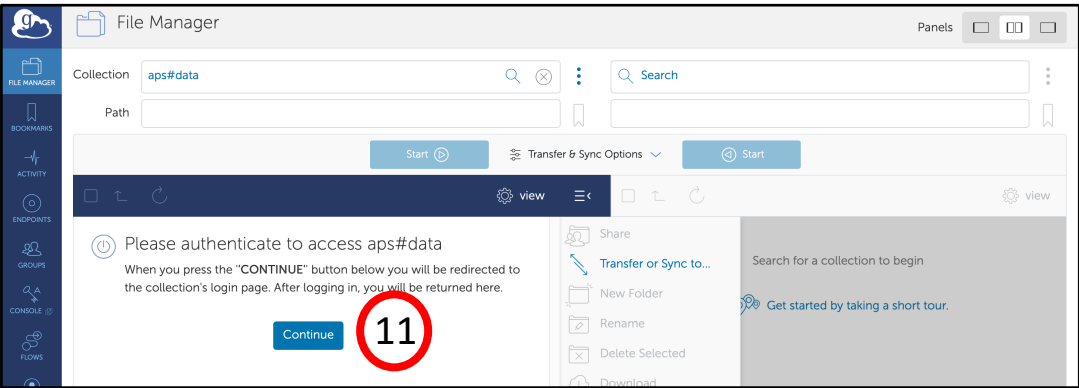
- Please follow the instructions for username and your password **(12)**.

  - Briefly, you can use both ANL Domain or APS web account credentials.

    - An **ANL Domain Account**. All current users and employees should have access to an ANL domain account **(12)**. ANL Domain accounts have been used for some time for Argonne employees for e-mail, training & other central services. These accounts have also been used internally for the APS Proposal and ESAF system. These accounts have more recently been made available to external users in an effort to standardize access across user facilities at Argonne.

    - An **APS Web Account**. The APS Web Account is used for the APS Proposal & ESAF system. **The username is the badge number prefixed by the letter 'd' (e.g. d123456) and enter your APS password (12).**

  - This credential will expire after 7 days.

Important: Note that the APS Data Management account is scheduled to be phased out as users are switched over to the ANL Domain accounts. Both accounts will be supported for a transition period but use of the ANL domain account should be considered to be the preferred account when possible.

- When your credentials are accepted by APS, you should see different directories under APS endpoint. Select dm **(13)** - NECAT **(14)** - your institution and your lab **(15)**. At this point, you can save this path into your Globus bookmark by clicking bookmark icon **(16)** to create a shortcut link.
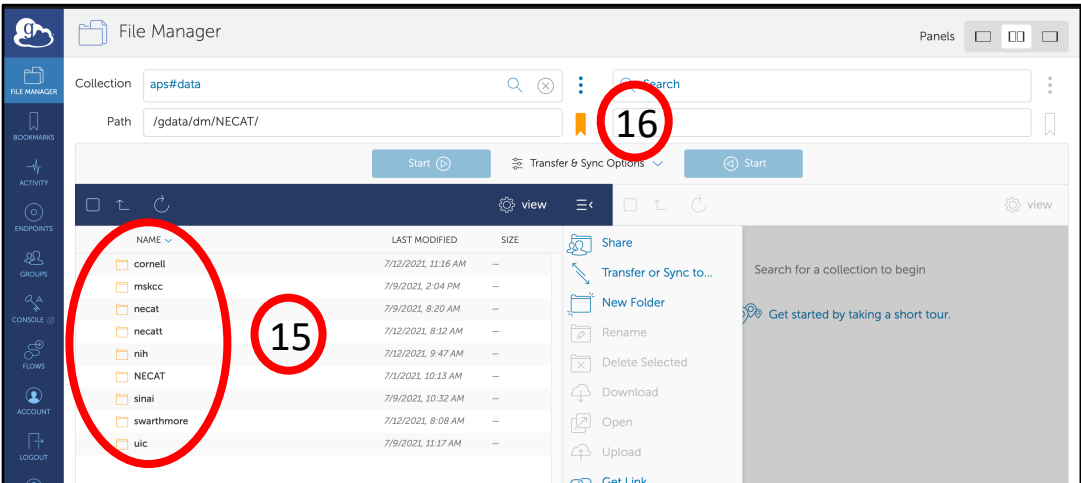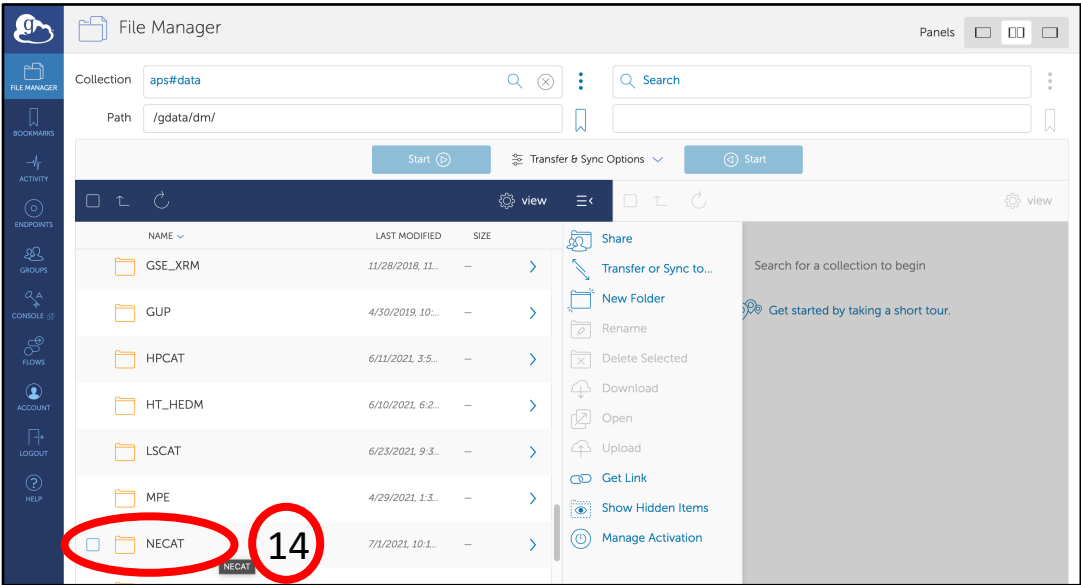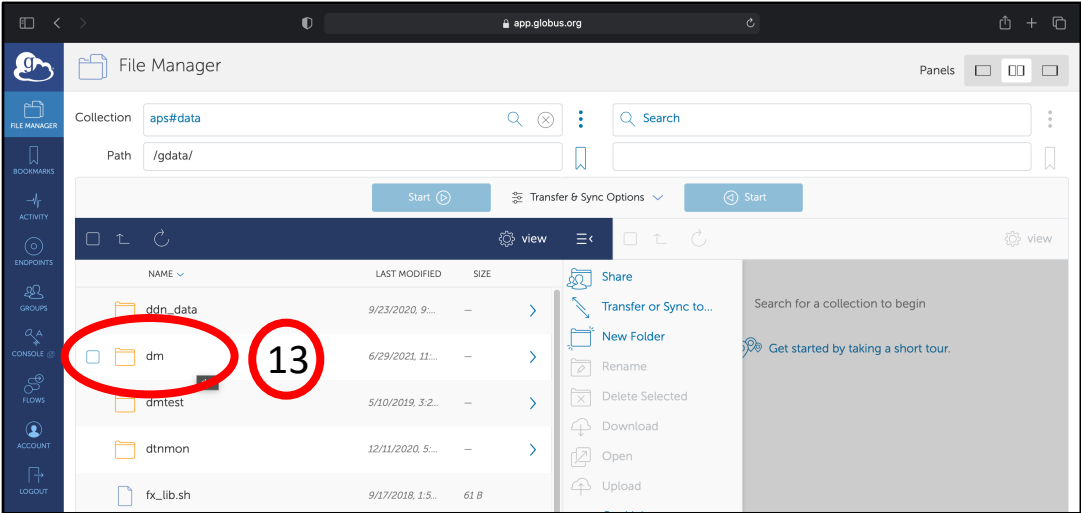
- After selecting your institution and your lab (group name), find your session name and select it.
- You can find your intuition and session name the at remote website **(17)**.
    - For example: On the NE-CAT remote website, you will see directory column
    gpfs1(or2) / users / Inst. name / group name and session number

IMPORTANT: You can select entire session or any subfolder(s) / files under your session to transfer.
    - To transfer data, your name must be in the ESAF which is related to your session.
    - APS will check your credentials for data transfer. You may get a "Permission denied" error message at the beginning of the transfer. This should resolve after ~10-20 minutes.
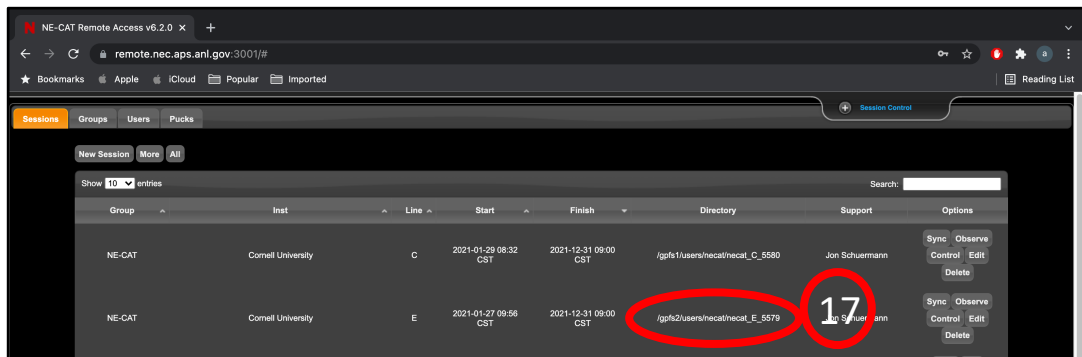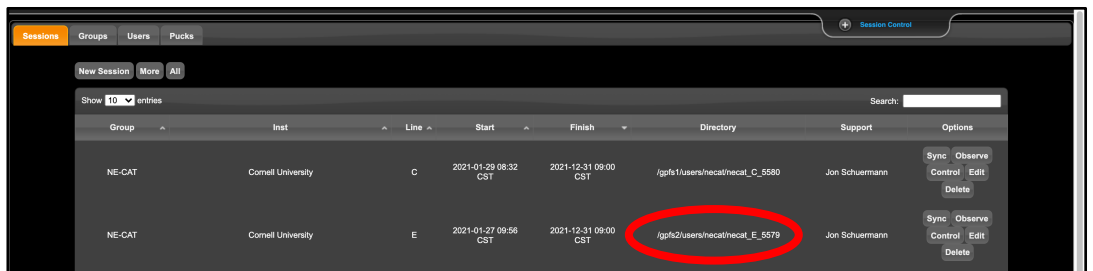

- Select your end point at the right side of the collection tab **(18)** and start the transfer **(19).**
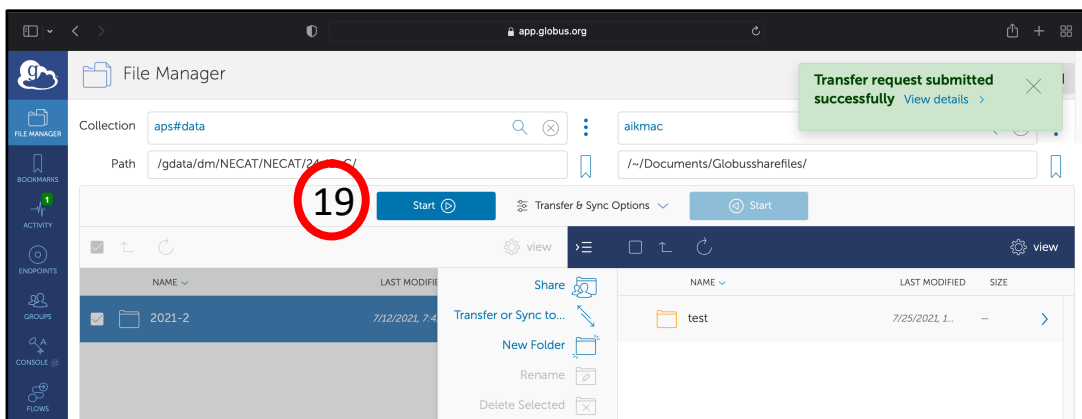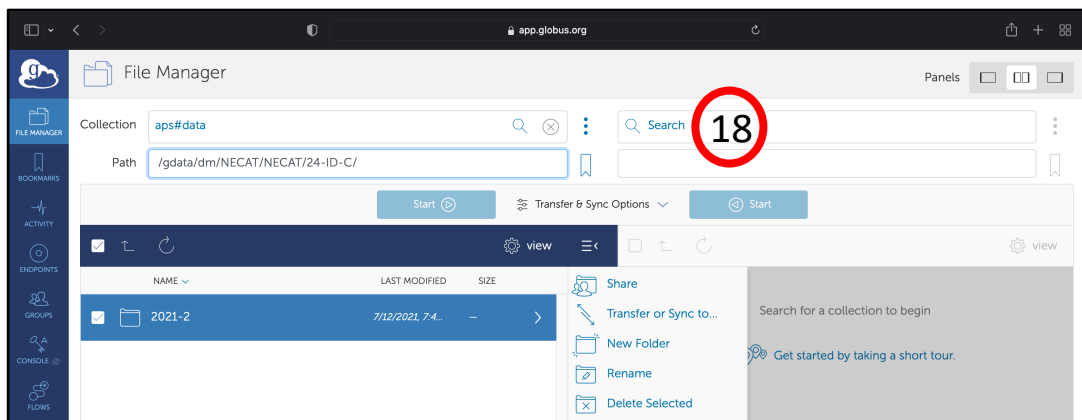
Sftp is another way to download your data from APS DM.

- To transfer data, your name must be in the ESAF which is related to your session.

- Use one of the two APS sftp servers (sftpdtn01 or 02):

  - In terminal, go to the folder which you would like to download all the data related to this session

  - "sftp d<badge>@sftpdtn01.aps.anl.gov" that provides access to files on aps#data

  - It will ask your **APS password which is the one to access APS systems, such as My APS portal or ESAF system**.

  - When you login, change the directory to NECAT (cd NECAT) to see all institutions. Find your institution, lab (group name) and session (folder or files).

    - You can find your intuition and session name at remote website. For example: In NE-CAT remote you will see directory column **gpfs1(or2) / users / Inst. name / group name and session number**

- Start data transfer by using "get" (or get -r … for directories) command (such as, get -r abc_E_1234).

  - You do not need to download entire session. You can select any individual folder (or files) to transfer.