

SciServer How To's

2020-09-22

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1. Account Management

1.1. “How do I register a new account?”

- Goto the following page <https://apps.sciserver.org/login-portal>

The screenshot shows the SciServer login portal. On the left, under 'Login with SciServer', there are input fields for 'User name' and 'Password', a green 'Sign in' button, and links for 'Create a new account' and 'Forgot your password?'. On the right, under 'Login with Globus', there is a blue 'Sign in with Globus' button and a 'Sign out of Globus' link. A note states: 'Globus allows you to use your educational institution or Google login to authenticate with SciServer.'

- You will see there are two ways to Login to SciServer
 - With a SciServer Account
 - With a Linked Globus account

To Create a new SciServer account

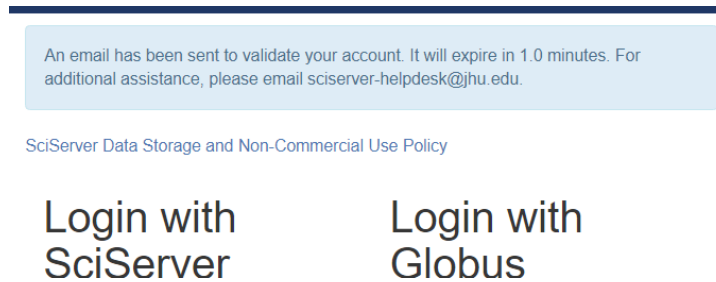
- Click the “Create a new account” link

If you have an existing CasJobs account, you must enter your existing CasJobs username and password combination to access your saved CasJobs data. If you create an account with a different username or password, you will not be able to access your CasJobs data. If you do not have an existing CasJobs account, you may disregard this notice.

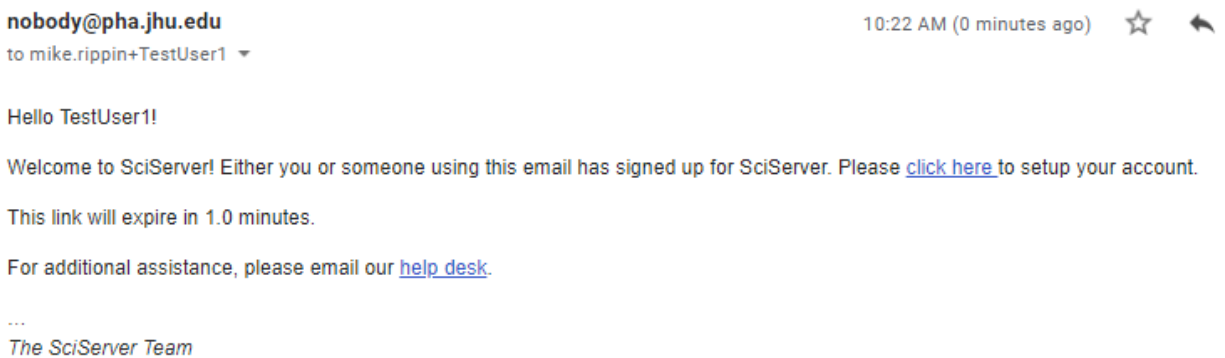
The screenshot shows the SciServer Registration page. It has a title 'Registration' and a sub-header 'By registering you agree to the SciServer Data Storage and Non-Commercial Use Policy.' Below this are input fields for 'User name', 'Email', 'Password', and 'Confirm password'. A checkbox with the text 'I have read and understand how to create a new account and migrate an existing CasJobs account to the SciServer Single Sign-on Portal.' is present. A green 'Create account' button is at the bottom. The footer includes 'SciServer 2.0.0 Compute alpha2.0.0-rc2-81-g297eb93' on the left, 'Powered by:' followed by logos for 'SSP', 'indies', and 'JOHNS HOPKINS UNIVERSITY' on the right.

- At the Registration page, enter the following:
 - User name

- Email
 - Password (twice)
 - Check terms of service
- Then click “Create Account” which will send you an email and display the following note:



- Open the email and click the “click here” link:



- This will then automatically log you in as the newly created user, and display the SciServer home page.

1.2. “How do I Login?”

- Go to the following page <https://apps.sciserver.org/login-portal>
- You will see there are two ways to Login to SciServer
 - With a SciServer Account
 - With a Linked Globus account

Login with SciServer

User name

Password

Sign in

[Create a new account](#)

[Forgot your password?](#)

Login with Globus

Globus allows you to use your educational institution or Google login to authenticate with SciServer.

Sign in with Globus

[Sign out of Globus](#)

To Login with SciServer:

- At the Login page, under the “Login with SciServer” section, enter the following:
 - User name
 - Password
- Press the “sign in” button to access your account, and you will be taken to the SciServer Dashboard:

1.3. “How do I Register and Login with External Accounts?”

SciServer supports the ability to link to a SciServer account to one of the following external accounts:

- JHU JHED ID
- Gmail
- OrcidID

Technical Note: This is achieved using the external support of Globus Auth, by creating a (separate) link between Globus and each of the above accounts, then linking that to the SciServer Account.

1.3.1. “How do I Login with my Organizational Account?”

- Click the “Sign in with Globus” button

Login with Globus

Globus allows you to use your educational institution or Google login to authenticate with SciServer.

Sign in with Globus

Sign out of Globus

- *If you have not previously linked your JHEDID to Globus, this will be the first step, otherwise you will simply sign in as per the later step below.*

Account Linking Step

- Choose the organization/school you belong to in the dropdown box:

Log in to use SciServer

Use your existing organizational login

e.g., university, national lab, facility, project

Johns Hopkins

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

Continue

- Press the “Continue” button, and it will take to the organization Portal to enter those credentials:



The image shows the Johns Hopkins University & Medicine Enterprise Authentication portal. At the top left is the Johns Hopkins University & Medicine logo. To the right is a padlock icon and the text "ENTERPRISE AUTHENTICATION 4/11/2019 10:41 AM". Below the logo, it says "Enter your Login ID and Password". There are two input fields: "Login ID" and a password field with masked characters. A "Login" button is below the password field. To the right of the input fields, it says "The purpose of Johns Hopkins Enterprise Authentication is to provide a single sign-on functionality for our customers to access many applications with just one login." At the bottom, there are links: "First time JHED User?", "Forgot Password?", "Change Password?", "Login Problems?", and "Frequently Asked Questions". At the very bottom, it says "Johns Hopkins Enterprise Authentication - v9.8.2h-22" and "Use of the Johns Hopkins Enterprise Directory (JHED)".

- Enter your credentials and Log In, then it will take you back to SciServer:

You have successfully signed in with your Globus account **mrippin3@johnshopkins.edu**. Please choose one of the two options: **a)** if you already have a SciServer account, you can link it with your Globus account by entering your SciServer credentials, or **b)** you can create a new SciServer account. The new account registration form has been pre-filled with your Globus ID information and a random password. You may change your user name, email, and password as you like, but they have to meet SciServer requirements and may not conflict with existing SciServer accounts.

Link an existing SciServer account

Please enter your SciServer login and password.

User name

Password

[Link](#)

Create a new SciServer account

By registering you agree to the [SciServer Data Storage and Non-Commercial Use Policy](#).

User name



Email

Password

Confirm password

[Create account](#)

- **Advanced:** If you are re-linking an account, you may sometimes get a Globus Auth message as follows:


globus
Powered By CILogon 

One or more of the attributes released by your organization has changed since the last time you logged on to the CILogon Service. This will affect your certificates as described below.

Attribute	Previous Value	Current Value
First Name:	Rippin	Michael


The above changes to your attributes will cause your **certificate subject** to change. You may be required to re-register with relying parties using this new certificate subject.

Previous Subject DN: /DC=org/DC=cilogon/O=Johns Hopkins/CN=Rippin Rippin A6771346
 Current Subject DN: /DC=org/DC=cilogon/C=US/O=Johns Hopkins/CN=Michael Rippin A6783476

If you have any questions, please contact us at the email address at the bottom of the page.

[Proceed](#)

For questions about this site, please see the [FAQs](#) or send email to help@cilogon.org.
 Know your [responsibilities](#) for using the CILogon Service.
 See [acknowledgements](#) of support for this site.



- Simply press Proceed to get to the SciServer screen.

You have successfully signed in with your Globus account mrippin3@johnshopkins.edu. Please choose one of the two options: a) if you already have a SciServer account, you can link it with your Globus account by entering your SciServer credentials, or b) you can create a new SciServer account. The new account registration form has been pre-filled with your Globus ID information and a random password. You may change your user name, email, and password as you like, but they have to meet SciServer requirements and may not conflict with existing SciServer accounts.

Link an existing SciServer account

Please enter your SciServer login and password.

User name

mike_GA2

Password

Link

Create a new SciServer account

By registering you agree to the [SciServer Data Storage and Non-Commercial Use Policy](#).

User name

XXXXXX

Email

XXXXXX@jhu.edu

Password

Confirm password

Create account

- After the Organization Account Linking, at the SciServer screen you are presented with two options:
 - Link the organization account to an existing SciServer account
 - Create a brand new SciServer account
- **Link Existing SciServer Account:**
 - Simply enter the username and password and press the “Link” button.
 - This will both link the two accounts (Organization credentials and SciServer)
 - And it will take you to the SciServer dashboard home page
- **Create a new SciServer Account:**
 - SciServer will pre-populate all fields to create a new SciServer account for you, based on the Organization account details (username and email), and a random password
 - You are free to change any and all of these fields (username, email and password)
 - Press the “Create Account” button to link the two accounts and take you to the SciServer dashboard

Sign-In Step

- Once you have Linked an external Account to your SciServer account, you can subsequently log in using this account (and not enter SciServer credentials).
- At the Login Portal home page <https://apps.sciserver.org/login-portal>, press the “Sign in with Globus” button
- This will take you to the page where you can pick which linked account to sign in with. In this case we will use the Organizational account, so select it:

Log in to use SciServer

Use your existing organizational login

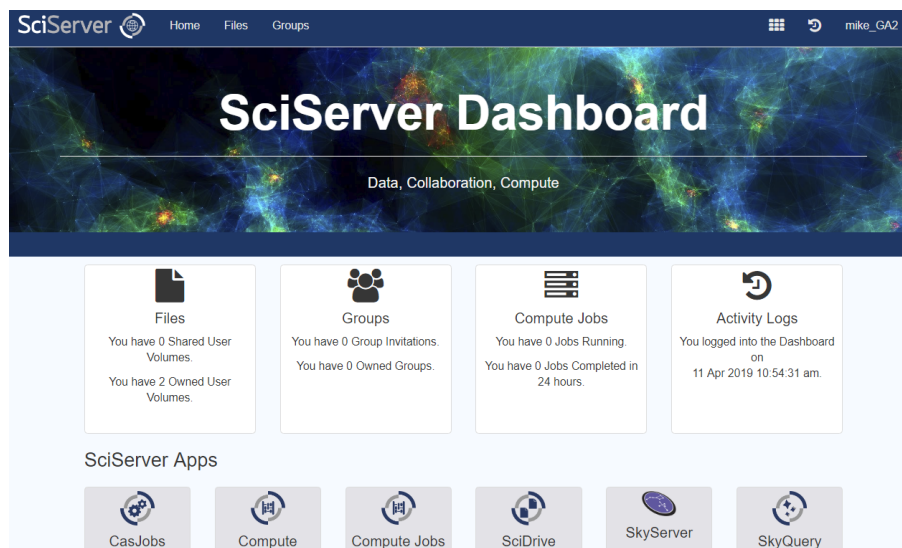
e.g., university, national lab, facility, project

Johns Hopkins

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

Continue

- Press “Continue”, and you will now be taken straight to the SciServer Dashboard:



- The Top Right Hand menu will show you logged in with the correctly Linked SciServer Username.

1.3.2. “How do I Login with my Gmail Account?”

- Click the “Sign in with Globus” button

Login with Globus

Globus allows you to use your educational institution or Google login to authenticate with SciServer.

Sign in with Globus

[Sign out of Globus](#)

- At the next screen, click the “Sign in with Google” button.

Log in to use SciServer

Use your existing organizational login

e.g., university, national lab, facility, project

Johns Hopkins

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

Continue



Globus uses CILogon to enable you to Log In from this organization. By clicking Continue, you agree to the [CILogon privacy policy](#) and you agree to share your username, email address, and affiliation with CILogon and Globus. You also agree for CILogon to issue a certificate that allows Globus to act on your behalf.

Or



Sign in with Google



Sign in with ORCID iD

- You will then follow the same steps for Account Linking and Logging as for Organizational linking as described in section [“How do I Login with my Organizational Account?”](#), except you will be taken to the Gmail Login Page to enter your Gmail credentials.

1.3.3. “How do I Login with my ORCID ID?”

- Click the “Sign in with Globus” button

Login with Globus

Globus allows you to use your educational institution or Google login to authenticate with SciServer.

Sign in with Globus

[Sign out of Globus](#)

- At the next screen, click the “Sign in with Google” button.

Log in to use SciServer

Use your existing organizational login

e.g., university, national lab, facility, project

Johns Hopkins

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

Continue



Globus uses CI Logon to enable you to Log In from this organization. By clicking Continue, you agree to the [CI Logon privacy policy](#) and you agree to share your username, email address, and affiliation with CI Logon and Globus. You also agree for CI Logon to issue a certificate that allows Globus to act on your behalf.

Or



Sign in with Google

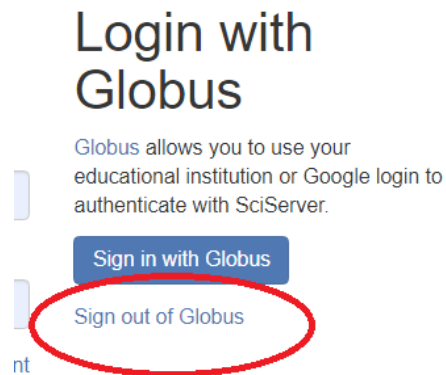


Sign in with ORCID iD

- You will then follow the same steps for Account Linking and Logging as for Organizational linking as described in section [“How do I Login with my Organizational Account?”](#), except you will be taken to the Gmail Login Page to enter your Gmail credentials.

1.4. “How do I Log Out of an External Account?”

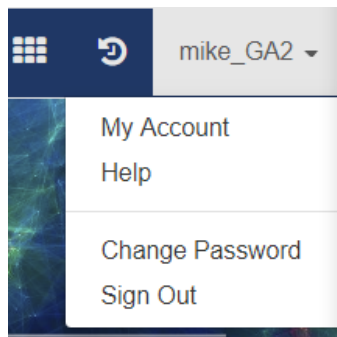
After logging in to SciServer with an external account, upon logging out of SciServer, this does not log you out of the external account. The reason for this is because you may be logged into that account for some other reason through some other application. SciServer provides a separate link to log you out, should you wish to:



- Simply click the “Sign out of Globus” link.

1.5. “How do I Unlink an External Account?”

- If you have Linked an external account (Organization, Gmail, ORCID) to your SciServer account, you can subsequently Unlink it.
- ***You must first Log In to the appropriate SciServer Account***
- From the SciServer Menu, select “My Account”



- This will show a pop-up dialog box with options down the left. Choose “Manage Linked Globus Accounts”

My Account

Account settings

Profile

Manage Linked Globus Account

Change Password

Manage Linked Globus Accounts

@johnshopkins.edu

To link other accounts, [logout](#) from the dashboard. In the login screen, click 'Sign in with Globus' button.

Close

- Press the “” icon to remove the Link.

1.6. “I have forgotten my password, how do I reset it?”

- Go to the Login Page <https://apps.sciserver.org/login-portal>
-

Login with SciServer

User name

mike_GA2

Password

.....

Sign in

Create a new account

Forgot your password?

Login with Globus

Globus allows you to use your educational institution or Google login to authenticate with SciServer.

Sign in with Globus

Sign out of Globus

- Click the link “Forgot your password?”
- This will take you to the Reset Password page:

Reset password

User name

or...

User email

Submit

- Enter either your Username or your Email, and press the Submit button.

- This will send you an email

Hello mike_GA2!

We have received a password reset request for SciServer. [Click here](#) to choose a new password for your account.

This link will expire after 1.0 minutes.

For additional assistance, or if you did not request this reset, please email our [help desk](#).

...

The SciServer Team

- Press the “Click here” link, and you will redirected to enter your new password:

Change password

New password

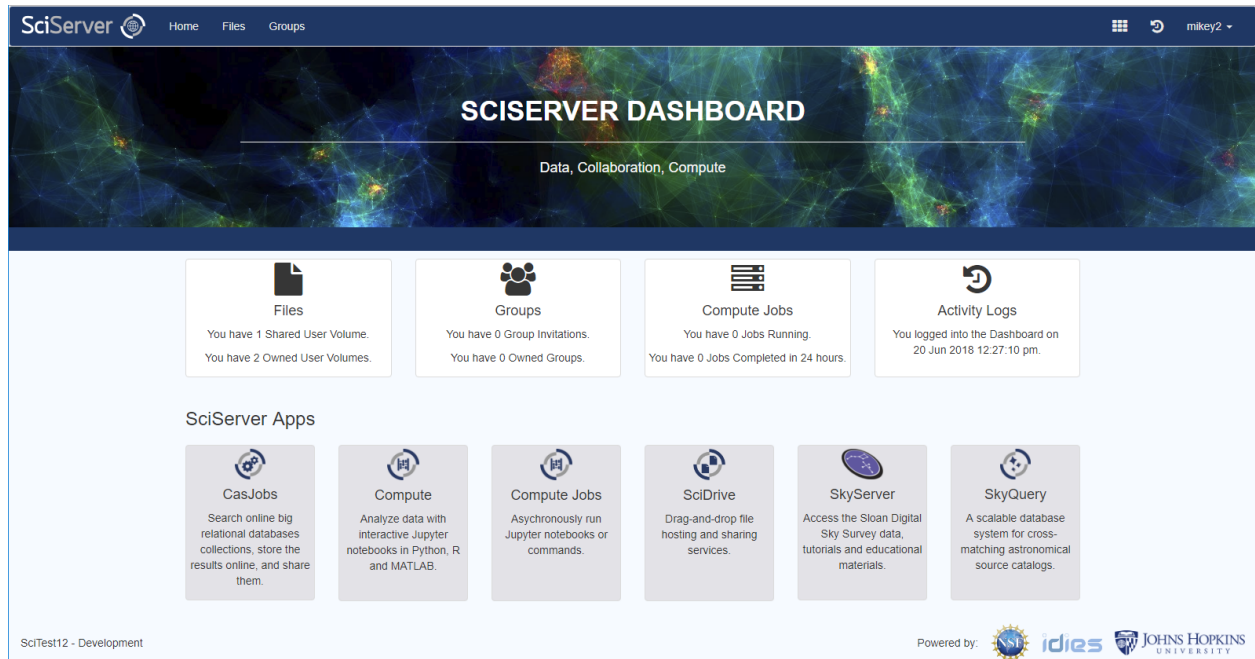
Confirm password

Submit

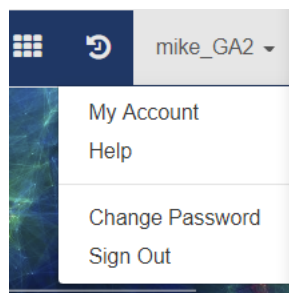
- Press the “Submit” button and your password will be reset.

1.7. “How do I Change my Password”

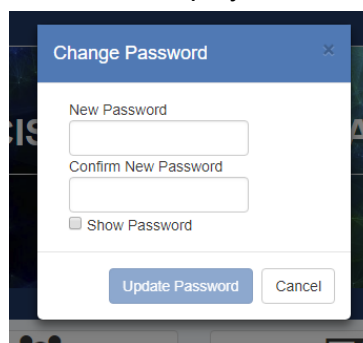
- Got to the SciServer Dashboard:



- Access the Menu in the top right hand side corner:



- Select "Change Password" which will display the "Change Password" dialog box:



- You can also select "My Account" then "Change Password"

My Account

Account settings

- Profile
- Manage Linked Globus Account
- Change Password

Change Password

New Password

Confirm New Password

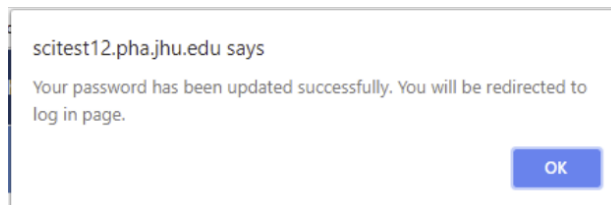
☐ Show Password Your password must be a minimum of 8 characters long.

[Forgot Password](#)

Update Password

Close

- Enter your new password (twice) and press the “Update Password” button
- This will change your password, and then display a message that you will be redirected to the Login Page to re-login

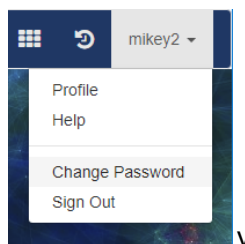


- You will then need to re-login using your new password to access your account again.

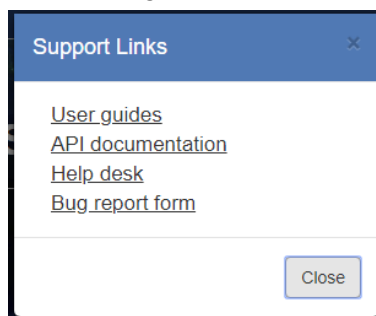
2. SciServer Help

2.1. “Where can I find Help Documentation?”

- Access the Menu in the top RHS corner:



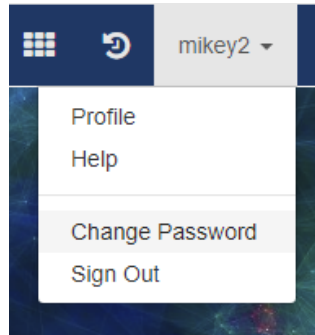
- Select “Help” to display a small dialog with a number of links:



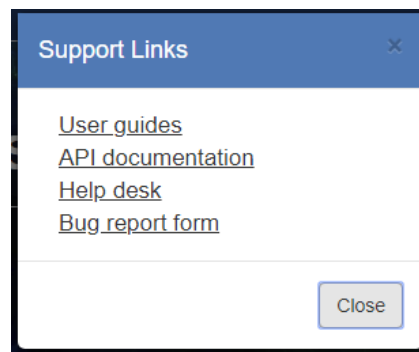
- Here you can find “User Guides”, “API Documentation” and “Help Desk”

2.2. “How do I report a Bug or Issue?”

- Access the Menu in the top RHS corner:



- Select “Help” to display a small dialog with a number of links:



- Here you can find “Bug Report Form”
- Select this and it will open a new Web Page on the sciserver.org website:

Feedback & Bug Report Form

We are always looking for feedback on our tools, documentation, and other resources. If you notice any bugs, have any suggestions, or have any questions for the team, please fill out the form below. We will get back to you by email with more information.

Bug Report and Suggestion Form

Fields marked with an * are required

Thank you for participating in the SciServer Early Adopters program!

Please fill out the form below to submit a bug report, feature request, or question to the SciServer team.

Name *

Email *

Title *

A short descriptive title

Severity

Category

Page

What webpage were you using when you experienced the issue? Paste the URL here.

Support

[Overview](#)

[Release Notes](#)

[Known Issues](#)

[Help](#)

[Policies](#)

Feedback & Bug Report Form

[API Documentation](#)

[Contact & Details](#)

Connections

[Join Our Email List for News about Events, Updates, and more!](#)

[Question or Comments? Please Email Us!](#)

[Found a Bug? Need a Feature? Let us know!](#)

2.3. “Contextual Clues”

3. Little “?” icons are on most of the UI app pages with links to specific section of the help pages “SciServer How-Tos”.

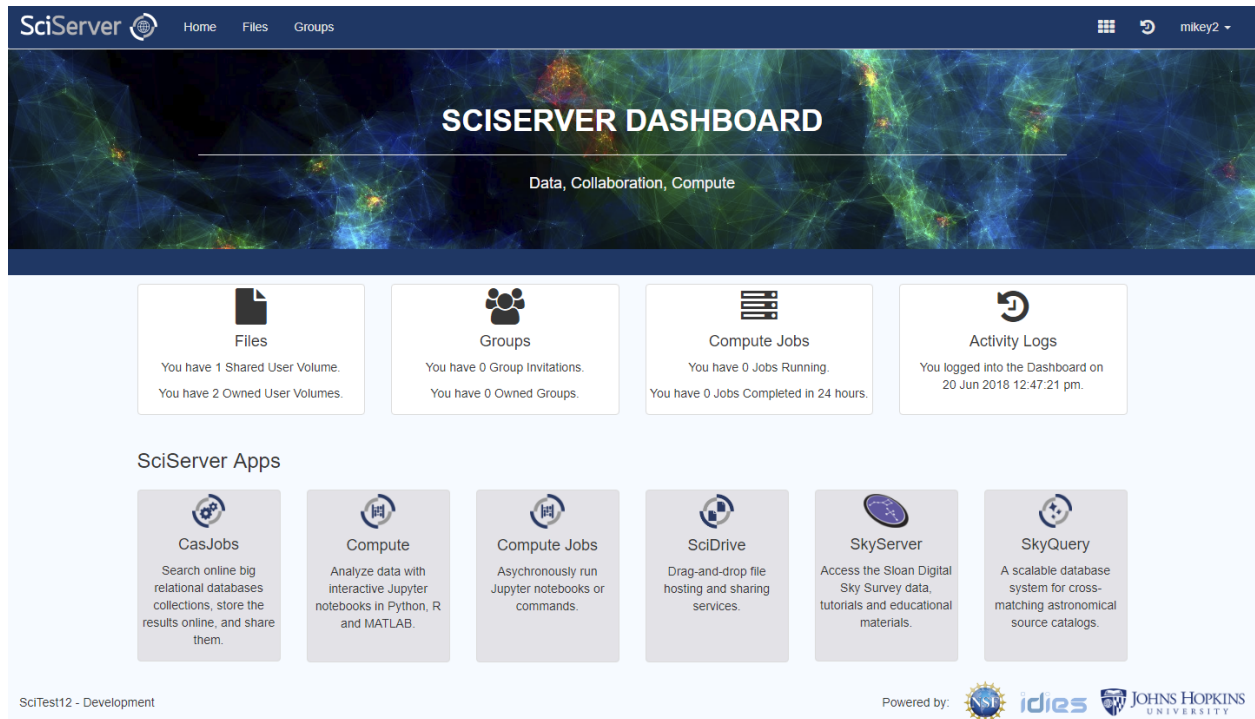
4. Dashboard

4.1. “What is the SciServer Dashboard?”

The SciServer Dashboard is the application that allows users to manage the work they are doing with SciServer and the other applications available. A user will be sent to the Dashboard Home Page after logging in from the Login Portal, and can navigate back to the Dashboard from most other SciServer Applications via shortcuts.

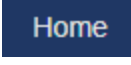
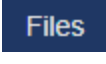
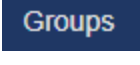


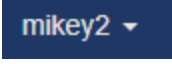
Home Page

The Homepage for the Dashboard looks like this:



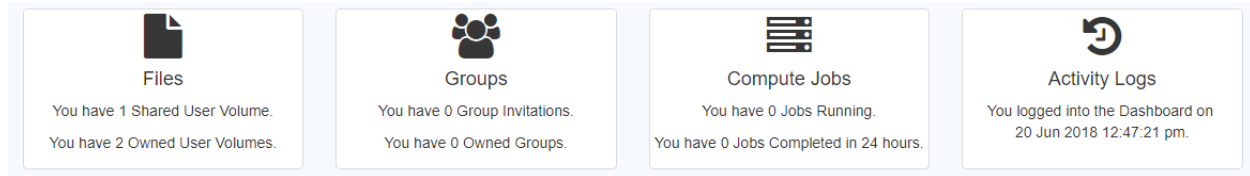
Menu and Functions

The Dashboard has a main “Menu Bar” across the top which is always visible in all views of the Dashboard, providing access to the following core features:

-  **Home** Brings the user back to the Home Page
-  **Files** Navigates the User to a Tab to manage Files and Folders
-  **Groups** Navigates the User to a Tab to manage user defined Groups and sharing
-  Displays a drop-down menu allowing the User to launch any of the supporting SciServer Applications (Home, Compute, Compute Jobs, CasJobs, SciDrive, SkyServer, SkyQuery)
-  Navigates the User to a tab displaying a tabular summary of the history of their activity with SciServer functions and applications
-  **mikey2** A Menu dropdown that displays additional options for the user (access Profile, Access Help, Change Password, Sign Out)

Function Shortcuts

A set of shortcuts are displayed to access the many functions in the Dashboard application itself:



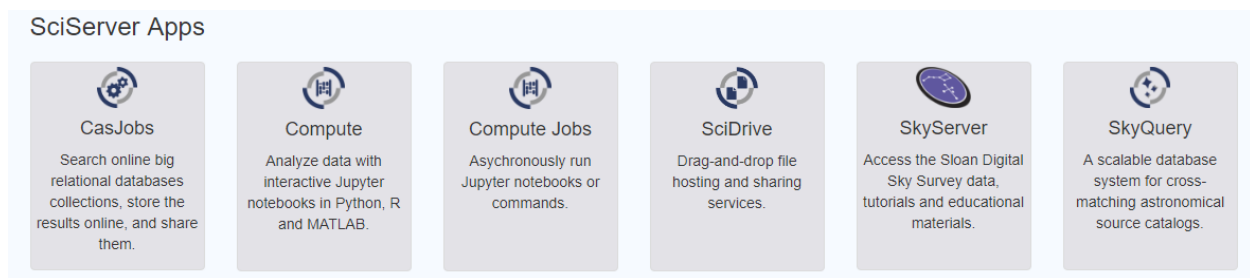
In particular the User can access:

- Files
- Groups
- Compute Jobs
- Activity Logs

Each of these shortcuts also displays information about recent activity on, or notifications about, each function.

Application Shortcuts

A second row of shortcuts allows the User to launch



Each of these shortcuts will launch a separate web app in a separate Browser tab.

Note that “Compute Jobs” is in both shortcut lists.

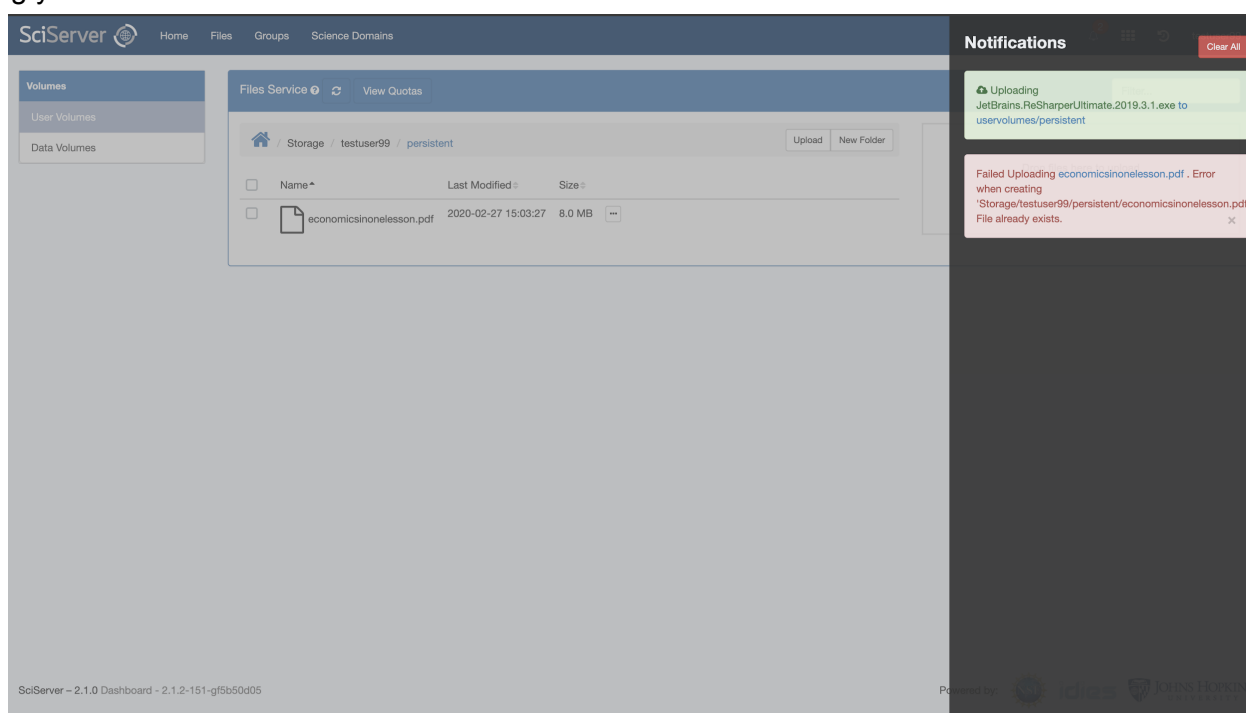
4.2. “How do Dashboard notifications work?”

The top right of the Dashboard page, next to your username, displays the bell-shaped notification icon. If you have active notifications, the number of active notifications will appear



next to the icon:

In that case, when you click on the Notifications icon, a panel will open from the right showing your active notifications:



In the Notifications panel pictured above, green sections specify actions currently in progress, while red cards specify actions that have failed, along with their error messages. Once an action has completed, it will disappear from the list; once all actions have completed, a blue “No new notifications” message will display.

You can clear the notifications for any failed actions by clicking the ‘x’ at the bottom of the notification message. You can clear all notifications by clicking the red “Clear all” button at the top of the notifications panel. To hide the notifications panel, click on the dashboard outside the notifications panel space.

Notifications will appear when you move or copy a file as well.

All notifications are cleared automatically when you log out of SciServer, or when you reload the dashboard page in your browser.

5. User Activities

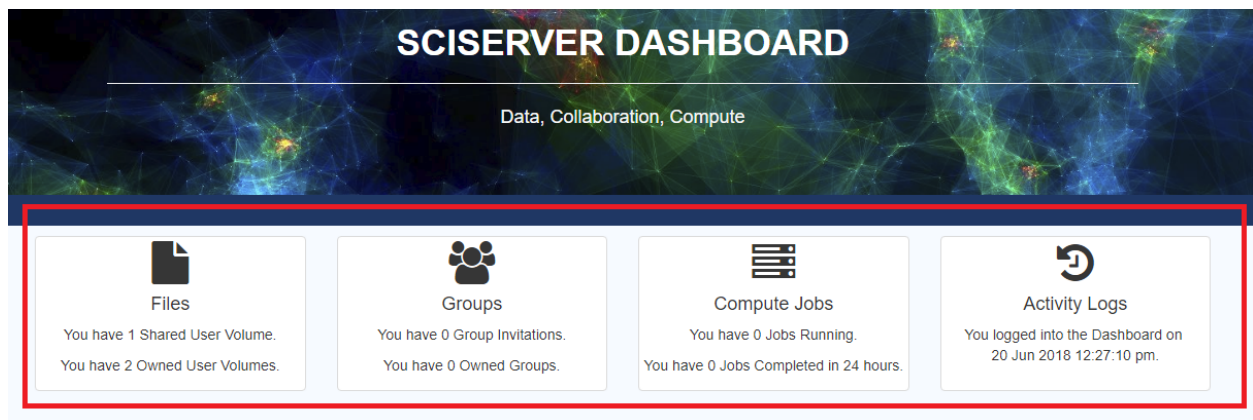
5.1. “How do I View My Recent Activities?”

SciServer provides two ways to view your recent activities:


- The Dashboard displays the most recent activity related to File Management, Group Management, and Job Execution
- A separate “Activity View” accessible from the main Menu in the RHS corner provides a detailed table of all logged activities within SciServer, with filtering and sorting.

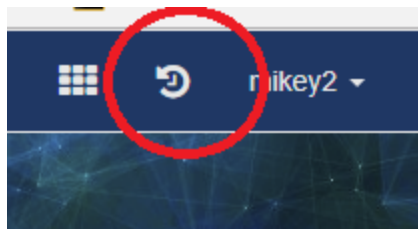
Dashboard Activity Summary

- On the main dashboard, a summary of Jobs, Groups and Files is provided as shown below
- In particular, Invites to New Group are shown, that the User can select to take them to the Groups tab in SciServer



Activities Logs

- Access the top RHS menu bar and click the  icon:



- This will display the Activities table:

6. Group Management

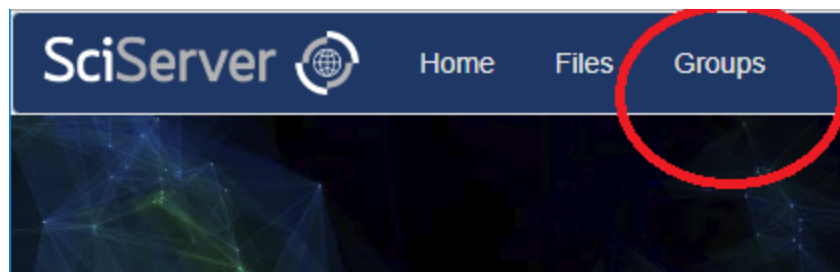
6.1. “What can I do with the ‘Groups’ feature in SciServer?”

SciServer provides a feature called ‘Groups’ for users to share their resources with their collaborators privately. The resources that users can share are file folders, databases, volume containers, and Docker images. Also SciServer provides a Group view which lists all the shared resources among group members.

SciServer Groups allow you to create lists of Users and to share resources, such as file Folders, to all of them at once. You can manage a team of people in a project by creating a group with the relevant users in, and allowing everyone to work from the same shared folder. Importantly, you can also make sure that no one who is not in the group can access the shared folder, so you can keep things private.

6.2. “How do I create a new Group?”

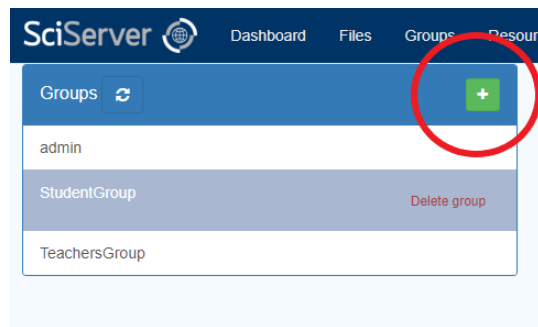
- Select the Groups tab in SciServer:



- This will show the Groups View:



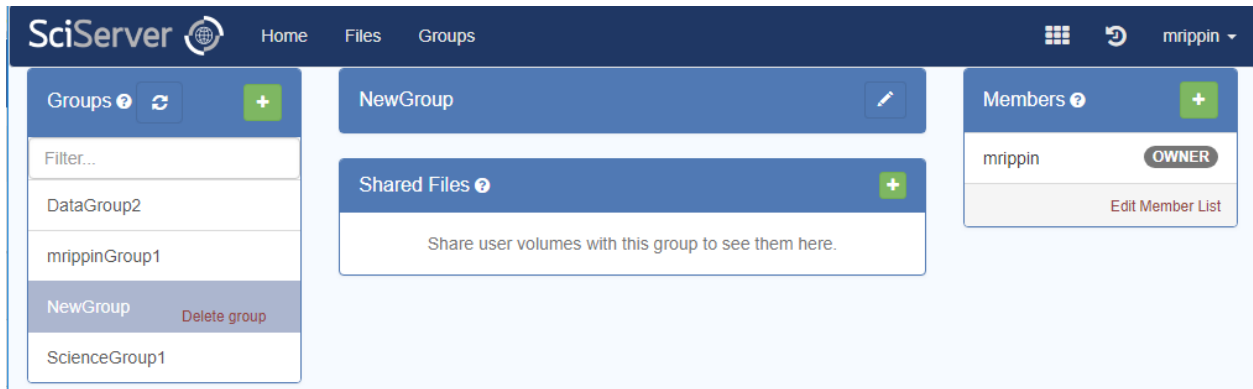
- The left hand box will show you all the groups that you are a member of. As you select each one, the middle set of boxes will show you which resources have been shared with that group, and the right hand box will show you all the members in the group.
- To Create a New Group, click the “+” button on the LHS “Groups” box:



- This will open the “New Group” dialog box:

The 'New Group' dialog box is shown. It has a title bar 'New Group' with a close button. Below the title bar, there are two input fields: 'Group Name' and 'Description'. At the bottom right, there are two buttons: 'Cancel' and 'Create'.

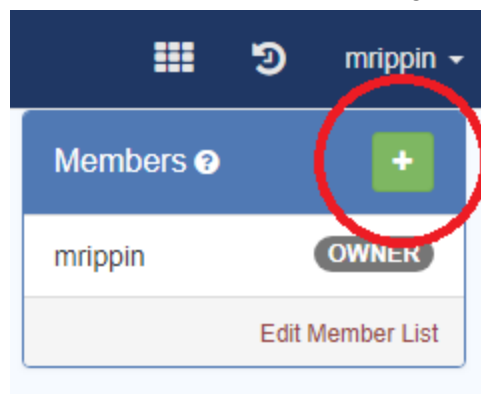
- Enter a name for the Group and an optional Description, then press the “Create” button. This will show your new Group in the “Groups” box, and will show you as the only member in the RHS box:



- This is your new group!

6.3. “How Do I Invite Users to a Group?”

- You can only **invite** users to a group that you own, or that someone else has given you the “grant” privilege on.
- In the groups view, go to the “members” box on the right hand side:



- Press the green “+” button to show the following pop-up dialog:

Available SciServer Users

Show 10 entries

Search:

Name

Abhishekchougule

abilio1

abiricz

abittner

abixel

abnerlwt

abnewman

aboden

Abraaojr

abuka711

Showing 101 to 110 of 6,172 entries

Previous

1

...

10

11

12

...

618

Next

Invite User

Members

Username	Member Role	Member Status
mrippin	OWNER	OWNER

Cancel

OK

- Select Users from the left hand panel. You can multi-select by holding down the “Ctrl” key and clicking on users. You can also search for users by typing characters into the “Search” box.
- Press the “Invite User” button:

Available SciServer Users

Show 10 entries

Search:

Name

Abhishekchougule

abilio1

abiricz

abittner

abixel

Invite User

Admin

Member

- You will need to choose “admin” or “member”:
 - Admin: means that this user will be able to invite other users to your group
 - Member: means this user will not be able to invite other users to your group
- This will add the users to your group with the status “Invited”.

Invite User

Members

Username	Member Role	Member Status
mrippin	OWNER	OWNER
abilio1	MEMBER	INVITED
abiricz	MEMBER	INVITED
abittner	MEMBER	INVITED

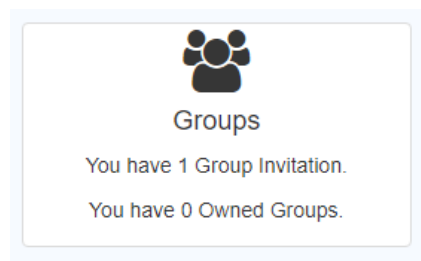
- Press the OK button in the lower right-hand corner to dismiss the dialog box.
- NOTE: This will **invite** the users. They will need to accept the invitation before being a member of the group:

Members ? +

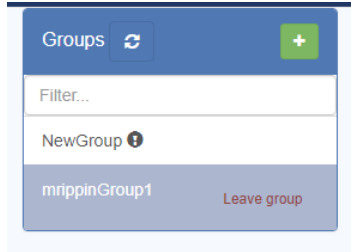
mrippin	OWNER
abilio1	INVITED
abiricz	INVITED
abittner	INVITED

6.4. “How do I Accept a Group Invite?”

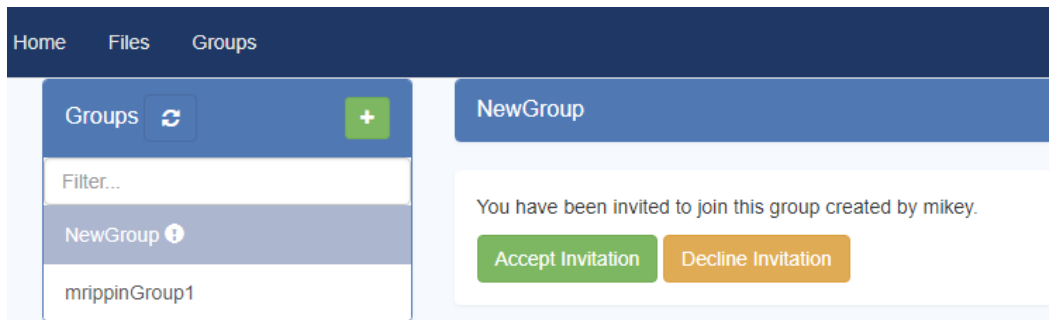
- On the Dashboard tab, you will see an Invite:



- Select the Groups tab, and you will see the Group listed with an icon next to it:




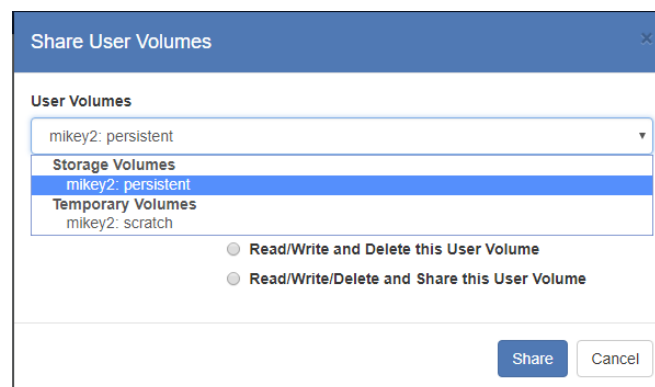
- Select the group and you will see an option to accept the invitation:



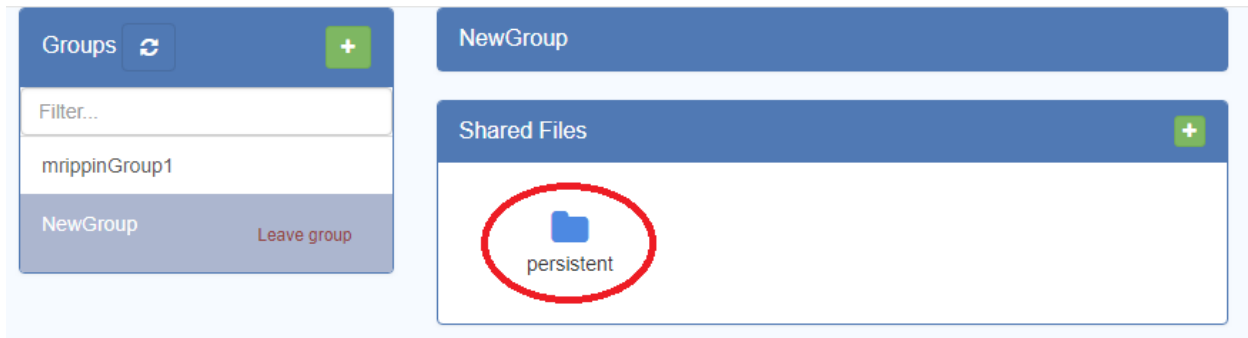
- Select “Accept Invitation”, and you will join the group and be able to access it.

6.5. “How do I Share Resources with a Group?”

- In the Groups Tab, selecting any of the groups on the left hand panel will show the resources already shared with that group. Resources that can be shared are: (1) File Folders (2) Compute Docker Images (3) Compute Volume Containers (4) Databases 9in some circumstances). It will only show each box if there are any resources that you are able to share.
- Each of these resources is shared in a separate box, and each has a  button.
- Pressing this will display a dialog box where you can select resources that you have access to:

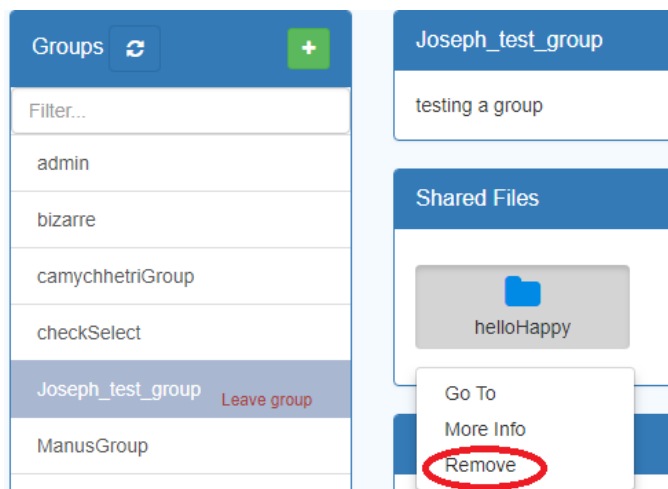


- Select the resource and permission level, then press “Share” and the resource will appear in the group:



6.6. “How do I Remove Resources from a Group?”

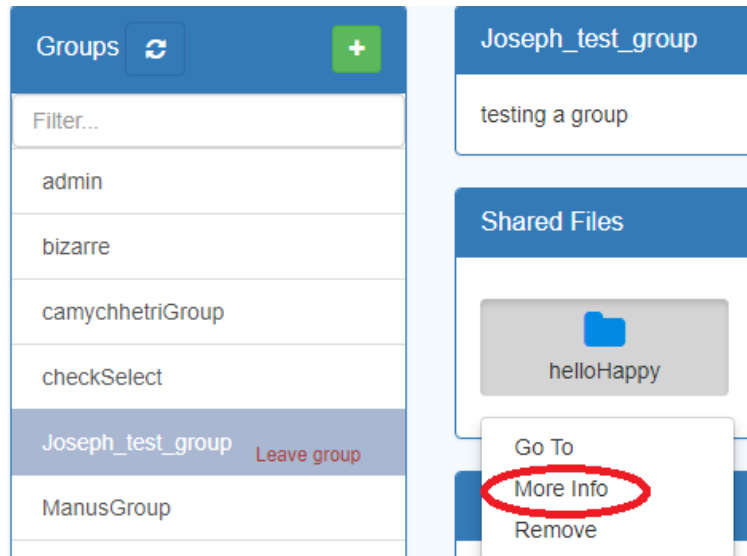
- In the Groups Tab, selecting any of the groups on the left hand panel will show the resources already shared with that group.
- Click on the shared resource
- Click “Remove”



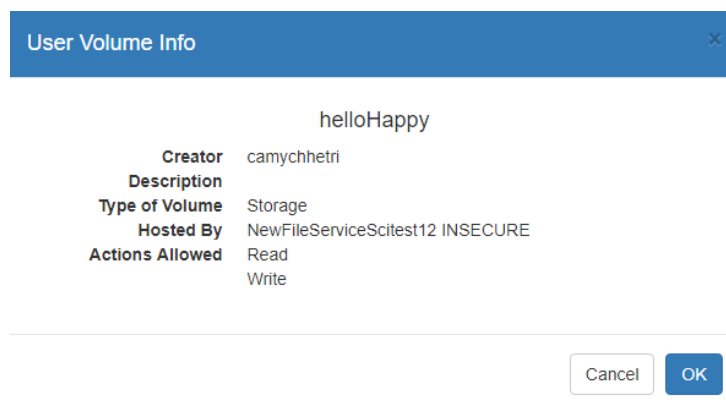
- Delete confirmation alert will appear
- Click ok to proceed

6.7. “How do I view Shared Resources Information?”

- In the Groups Tab, selecting any of the groups on the left hand panel will show the resources already shared with that group.
- Click on the shared resource
- Click “More Info”



- Pressing this will display a dialog box where you will find more information:



7. File Management: User Volumes

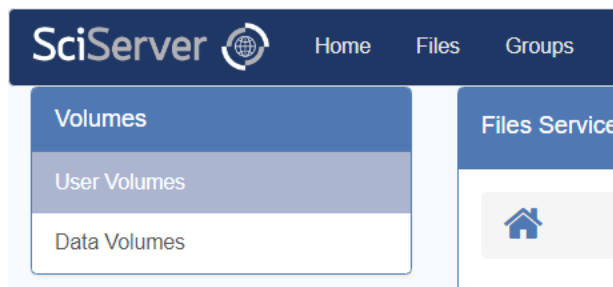
7.1. “What File Management Capabilities does SciServer provide?”

SciServer provides a number of features for managing files and compute notebooks, all of which will be made available in both the SciServer dashboard application and in SciServer Compute containers from within Jupyter Notebooks. All the common capabilities of File management are provided, such as renaming, moving, copying etc, but also sharing of “User Volumes” for collaborative work. NOTE: the File Management features provided in the SciServer UI are different to the services provided by SciDrive, which is an older storage system that is still supported for legacy applications.

7.1.1. User Volumes and Data Volumes

SciServer supports two different types of file volumes:

- **User Volumes:** These are created and owned by individual SciServer Users
- **Data Volumes:** These are Institutional or Organizational Repositories that are owned and managed (currently) by the SciServer system. In some cases, a SciServer user who (for example) provided the data set in the first place can be made an owner and given administration rights as well, and may grant teams of other users read-write access as well. Otherwise, most Data Volumes are *public* (everyone can see them) and individual users will have access to Data Volumes as read-only repositories. For those users familiar with SciServer Compute, Data Volumes are the same storage volumes as the “Volume Containers” made available in Compute.



This section of the Help documentation (“File Management: User Volumes”) will deal only with User Volumes. Data Volumes will be covered separately in the next major section (“File Management: Data Volumes”) .

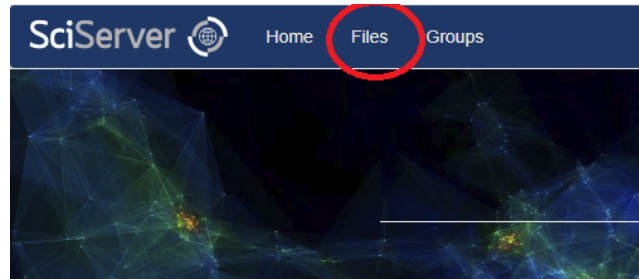
7.1.2. Permanent or Temporary Storage?

Users can create a number of top level “User Volumes” under which new folders and files may be added. User Volumes can be created in one of two different storage pools: a permanent pool called “Storage” and a short-lived pool called “Temporary”. Folders and files in User Volumes under “Storage” will be backed up and permanent, but there is a quota limit of 10GB. Folders and files in User Volumes under “Temporary” are not backed up, and will be deleted after a particular time period, but there is no imposed limit or quota on how much data can be stored (because it will be deleted).

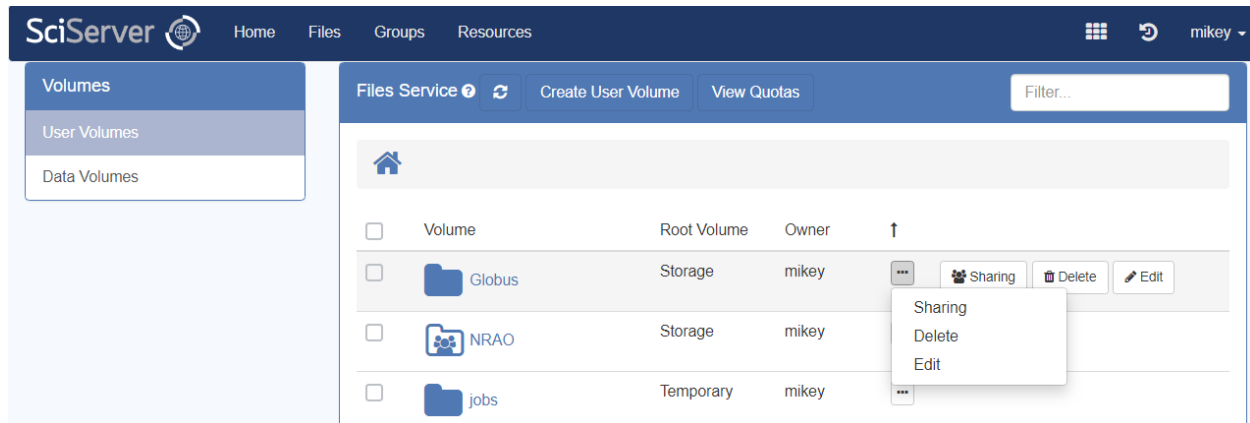
Most users should store their data and files in a “Storage” User Volume. The “Temporary” User Volumes are meant to be used as intermediate storage for SciServer Compute calculations.

7.1.3. SciServer Dashboard View

- Login to the SciServer dashboard and select the “Files” tab:



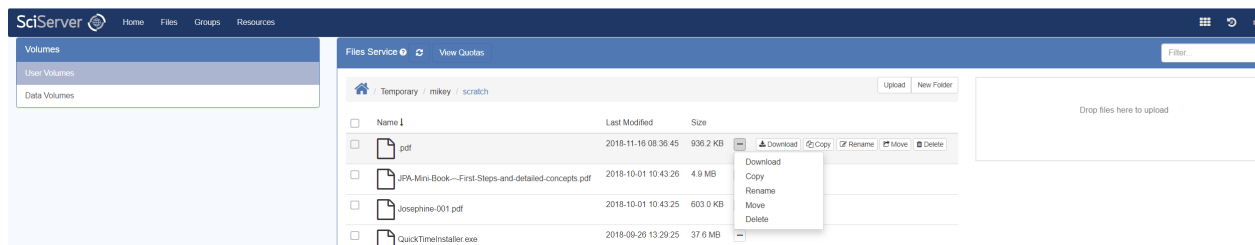
- This will show the Files View at the top level of “User Volumes”:



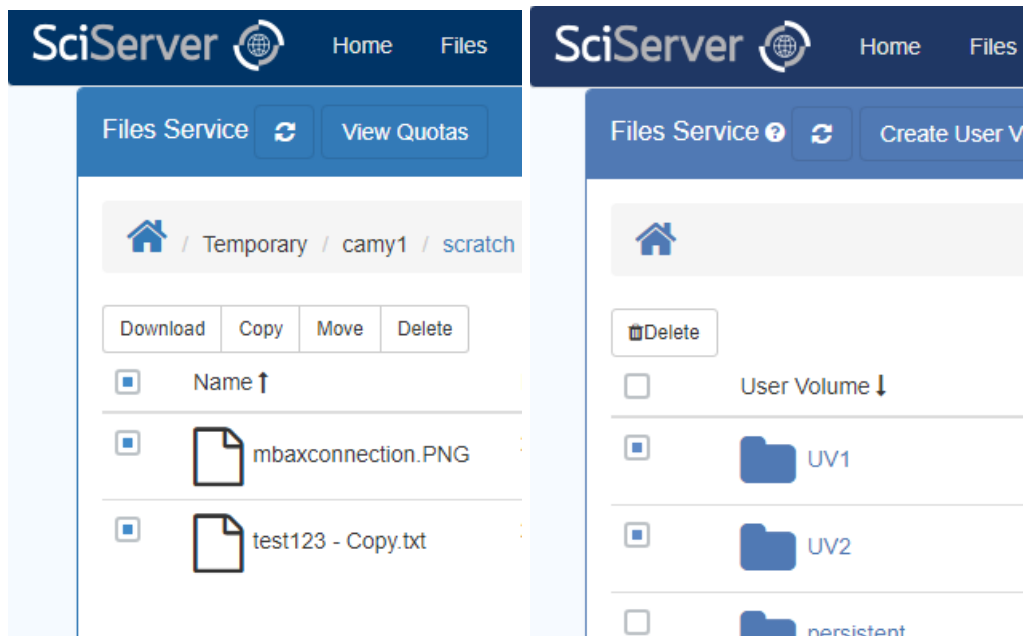
- **NEW: Volumes and files are sortable!** By default, Volumes are sorted alphabetically by volume name. Within a volume, files are sorted alphabetically by file name. You can change the sort order by clicking on the column header (e.g. Volume, Root Volume, etc.) Click on the same column header again to sort in descending order.
- There are a number of User Volume operations available in this view
- Hover over each row to view available operations
- Click on the ellipsis button to view available operations
 - *Share*: If the user has the appropriate permissions, they can share a User Volume with other users, or groups of users. A User Volume created by the user is always shareable by them.
 - *Delete*: If the user has the appropriate permissions, they can delete a User Volume. A user can always delete a User Volume they create.
 - *Edit*: The User Volume name can be changed, and a description provided for it.
- Different icons refer to different levels of sharing:
 - This User Volume is owned by the user, and has not been shared
 - This User Volume is owned by the user, but **has** been shared with another user or group.



- This User Volume is not owned by the user, but has been shared with the user by another user or group.
- Selecting a Folder in the LHS column will open that folder up, one level at a time. *It does not provide a tree view.*



- There are a number of file and folder operations available in this view
- Hover on each to view available operations
- Click on the ellipsis button to view available operations
 - Copy
 - Rename
 - Move
 - Delete
 - Download: A file can be downloaded (but a Folder cannot)

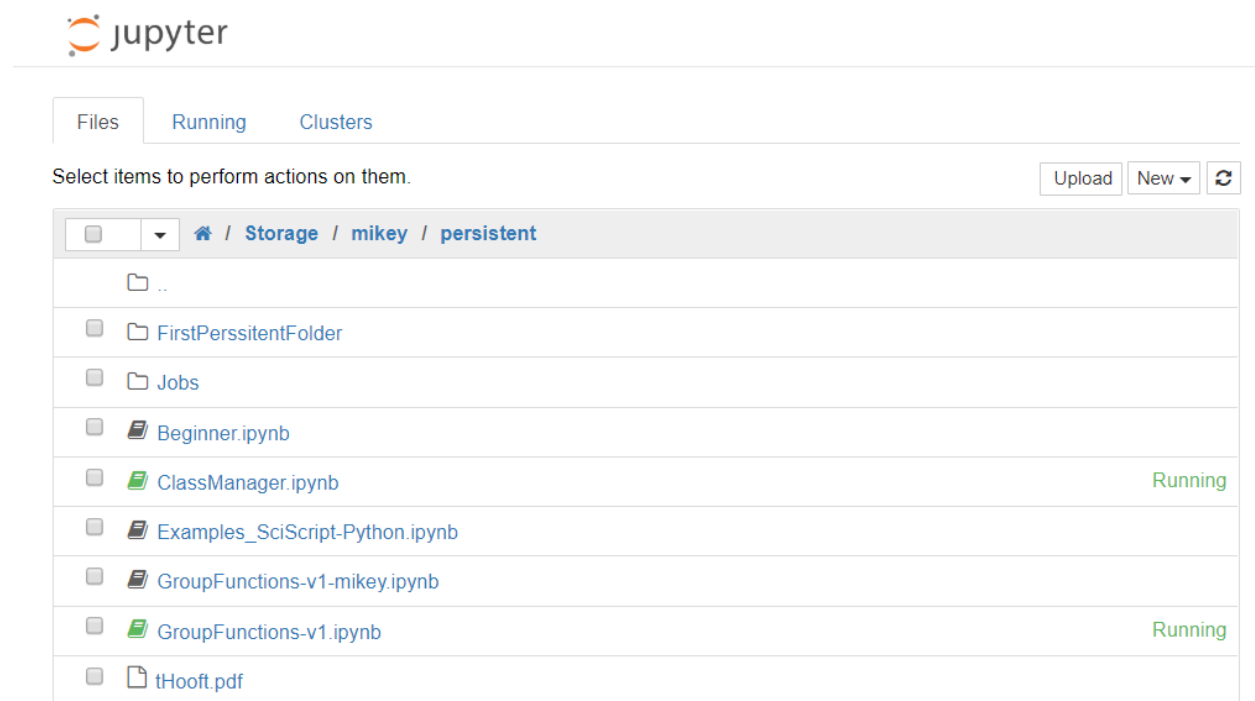
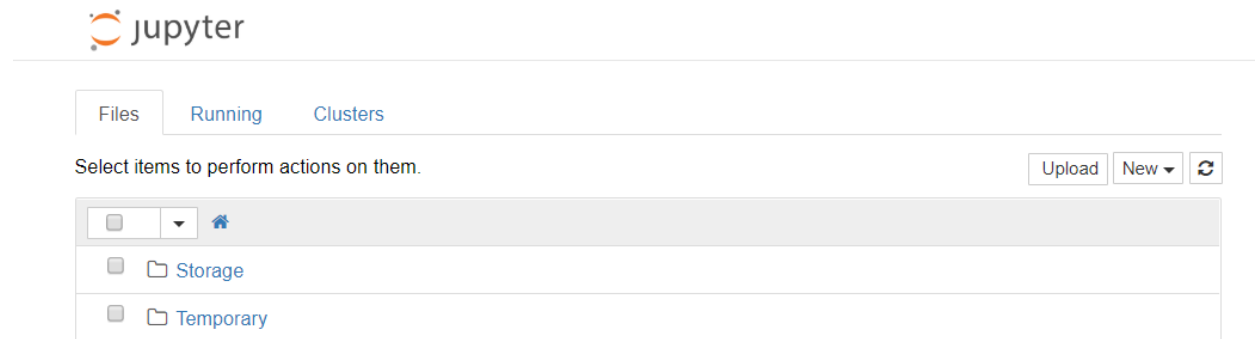


- Perform multiple operations on files or folders, or on User Volumes (currently only for “Delete” operation):
 - Check one or multiple checkboxes
 - Menu gets displayed with available operations on top

- Click on any menu item to perform an operation

7.1.4. Jupyter Notebook View

- When running SciServer Compute, the same filesystem is presented by the Jupyter application, but is presented in a more traditional hierarchical manner with a full path access that supports working with files in a Linux Console:



- The operations on files and folders available in this view are provided by Jupyter.

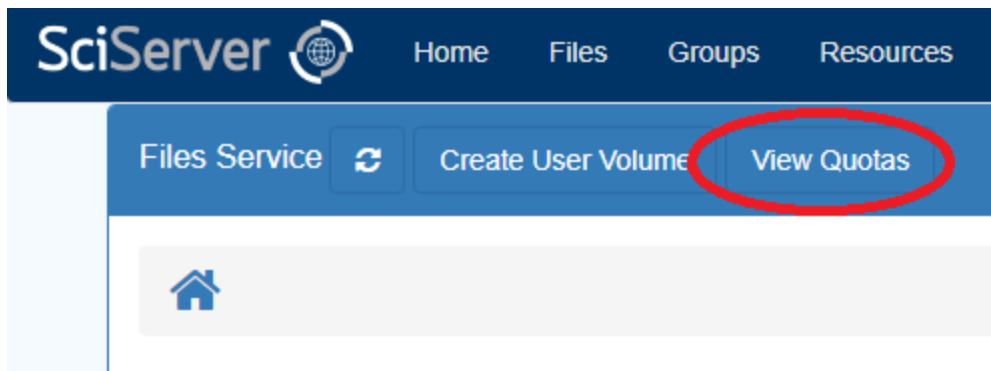
7.2. “What is a User Volume? How is that different to a Folder?”

A **User Volume** is a **top level folder** that is created and owned by a SciServer User. It is different to a ‘normal’ Folder in a few ways:

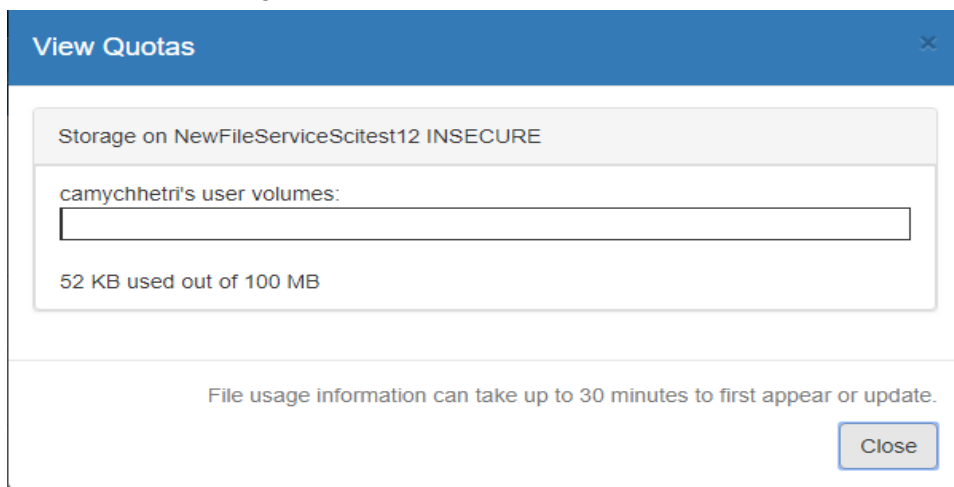
- There is only the one top level of User Volumes, all subsequent lower levels are normal Folders
- A User Volume can be shared with others users and groups, but a normal folder cannot. This is very important.
- A User Volume can be selectively “mounted” in a Compute Container, and made accessible to a Jupyter Notebook. Folders at lower levels under a Volume Container cannot be.
- A User Volume cannot be moved or copied.

7.3. “How to check Storage usage information?”

- On the SciServer “Files” tab, click the “View Quotas” button:

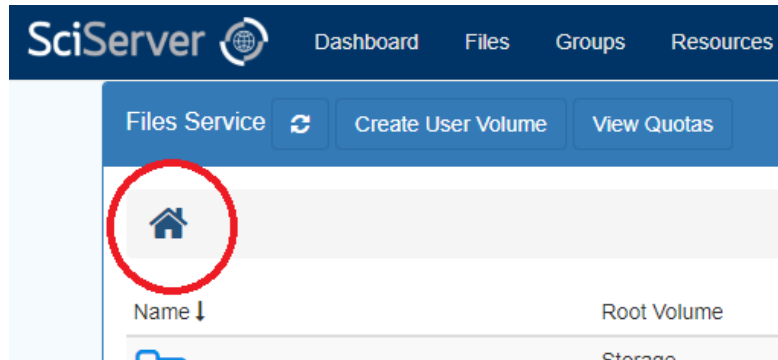


- “View Quotas” dialog pops up.

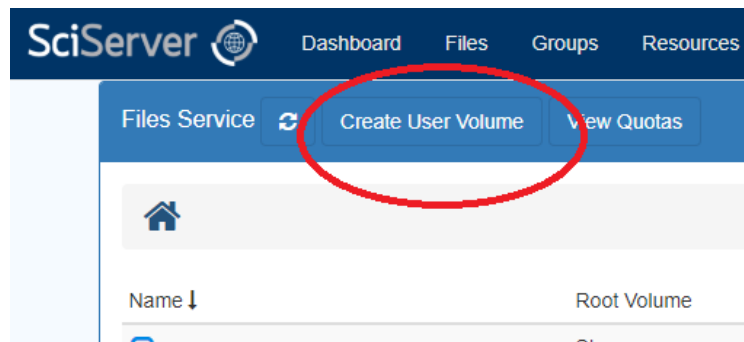


7.4. “How do I create a new User Volume?”

- On the SciServer “Files” tab, click the “Home” button to get back to the User Volume view:



- Press the “Create User Volume” button:



- In the dialog that pops up, enter a name and optional description:

A screenshot of a modal dialog box titled 'Create User Volume'. It contains three input fields: 'User Volume Name' (with placeholder text 'User Volume Name'), 'Description' (with placeholder text 'Description'), and 'Root Volume:' (a dropdown menu with placeholder text 'Select a Root Volume'). Below the dropdown is a small text note: 'Select a Root Volume to choose where this user volume is mounted. Different root volumes may have different data storage options.' At the bottom right are two buttons: 'Create User Volume' and 'Cancel'.

- Select a “Root Volume”, which means decide whether to create the new User Volume in a permanent and backed-up storage pool, or to create it in a temporary storage pool, knowing that it will be deleted after a certain period of time (defined by the SciServer Data Storage Policy Rules).

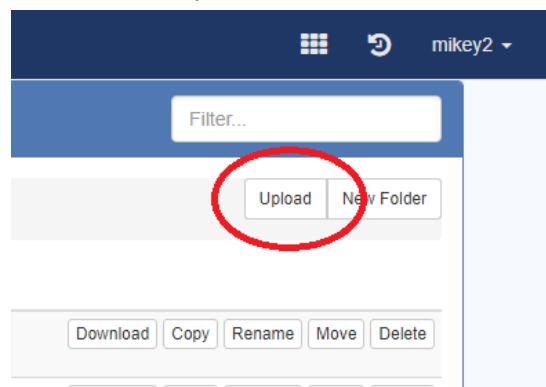
- Press the “Create User Volume” button and the new User Volume will be created.

7.5. “How do I Upload Files?”

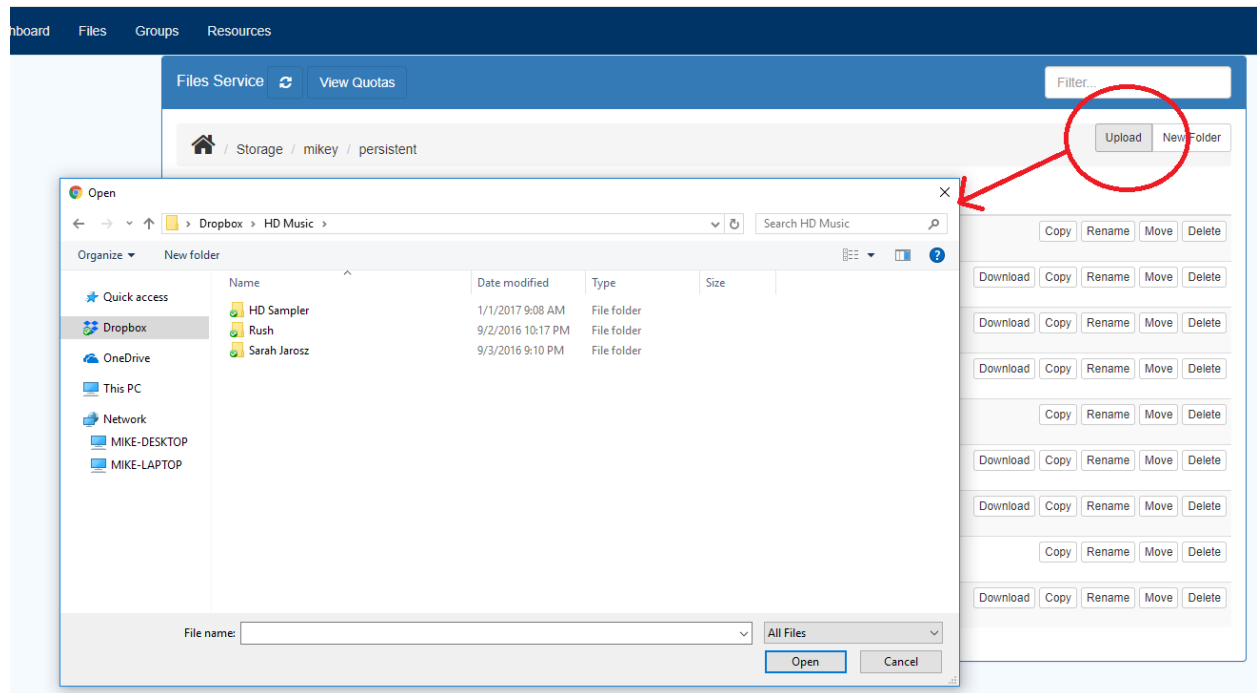
- ***Files cannot be uploaded directly to the top level User Volume level.***
- Files can be uploaded to any Folder inside an existing User Volume, including in that User Volume’s top-level directory
- When you upload a file, an “Uploading...” message appears at the top of the page, and a notification appears in the bell-shaped Notification icon. Once the file has finished uploading, the “Uploading...” message is replaced by a green “File upload successful” message.

7.5.1. Upload Files using the Upload Button

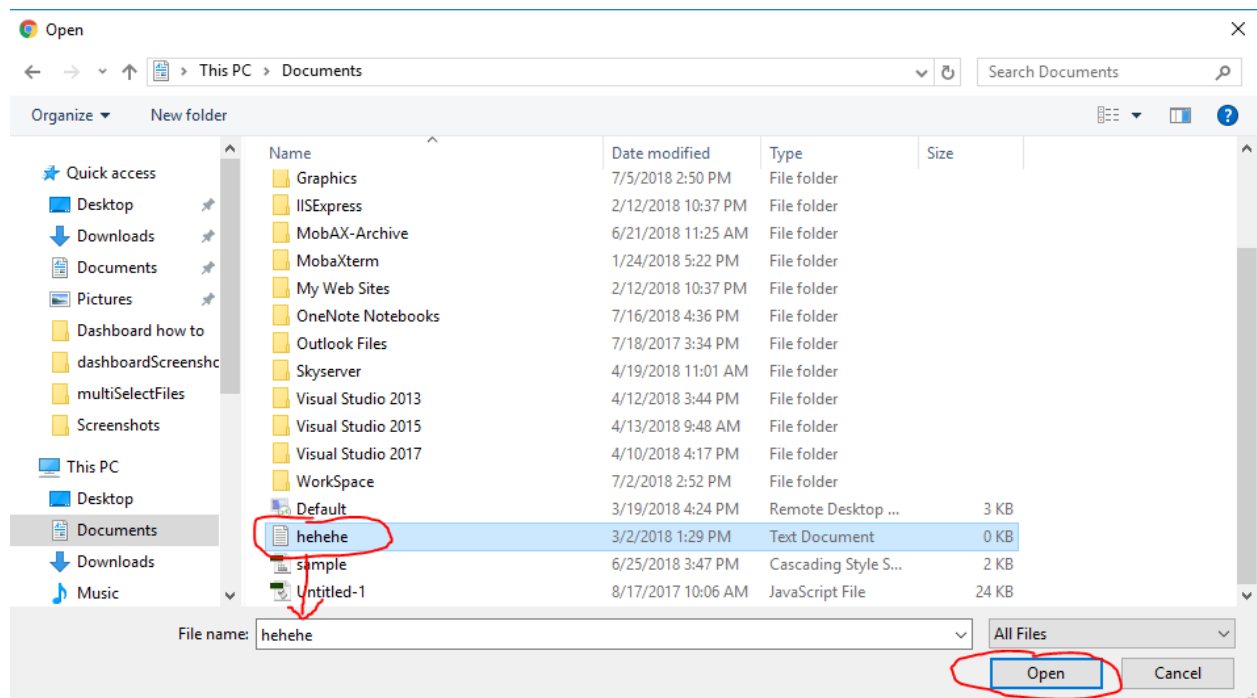
- Navigate into a User Volume and you will see an “Upload” button:



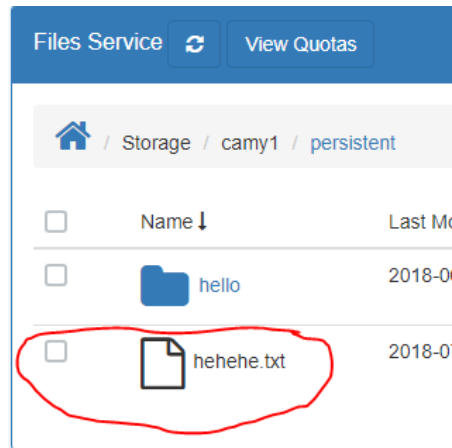
- Press the Upload button to display a dialog box:



- You must navigate to a *File*, select it then press the “Open” button”

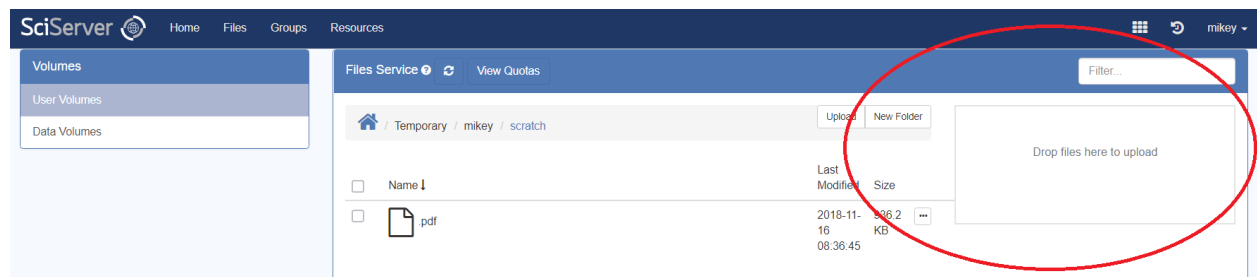


- This will then show the file you just uploaded:

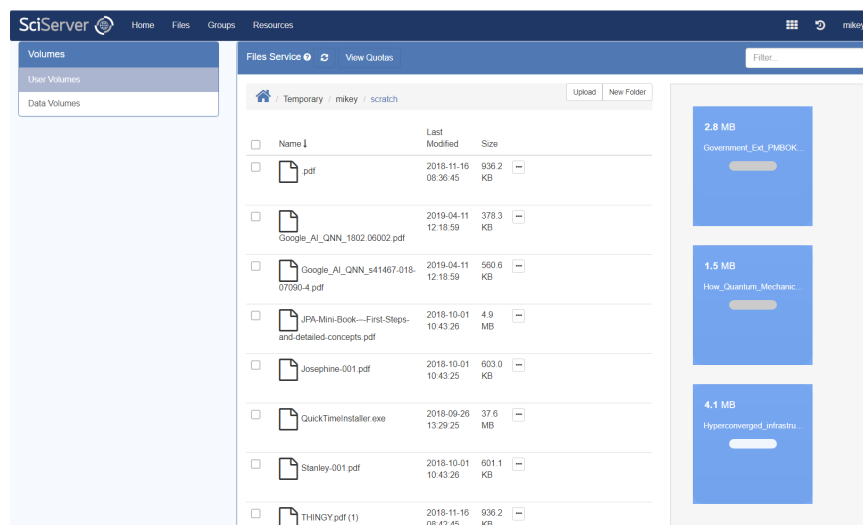


7.5.2. Upload Files using Drag and Drop

- At the User Folder level (not Root folder level), the files view displays a “Drag and Drop” box.



- You can drag and drop multiple files from, say, Windows Explorer, onto this box, and they will be uploaded to the displayed subfolder
- Upload progress is displayed



7.6. “How do I document my User Volume with a README.md file?”

Like GitHub, SciServer allows you to upload a file called README.md offering a high-level introduction to the purpose, contents, and structure of your User Volume. Adding a README.md file makes it much easier for your colleagues and others to understand your data.

The name is case-sensitive; README must be in all capitals and the file extension must be lowercase: README.md

When you upload a README.md file into a User Volume, SciServer will automatically render the file and display its formatted text at the top of the page, as shown in the image below. You can click on the “Skip to file list” link to jump down the page to the list of files.


The screenshot shows the SciServer web interface. The top navigation bar includes the SciServer logo, 'Home', 'Files', and 'Groups' links, along with a user profile 'raddick'. On the left, a sidebar shows 'Volumes' with sub-items 'User Volumes' and 'Data Volumes'. The main content area is titled 'Files Service' and 'View Quotas'. It shows a breadcrumb path: 'Storage / raddick / census'. There are 'Upload' and 'New Folder' buttons. A 'Drop files here to upload' box is on the right. Below the breadcrumb, a link '[Skip to file list]' is present. The title 'Census' is displayed, followed by a description: 'This user volume contains several scripts for retrieving and processing datasets from the U.S. Census Bureau. All datasets are retrieved from ftp2.census.gov.' A bulleted list follows: 'American Community Survey (ACS) 5-year estimates and margins of error (2010-2018)', 'ACS 1-year estimates and margins of error (2017)', and 'Shapefiles (TIGER geography files) for state, county, and populated place boundaries'. Below this is a table of files:

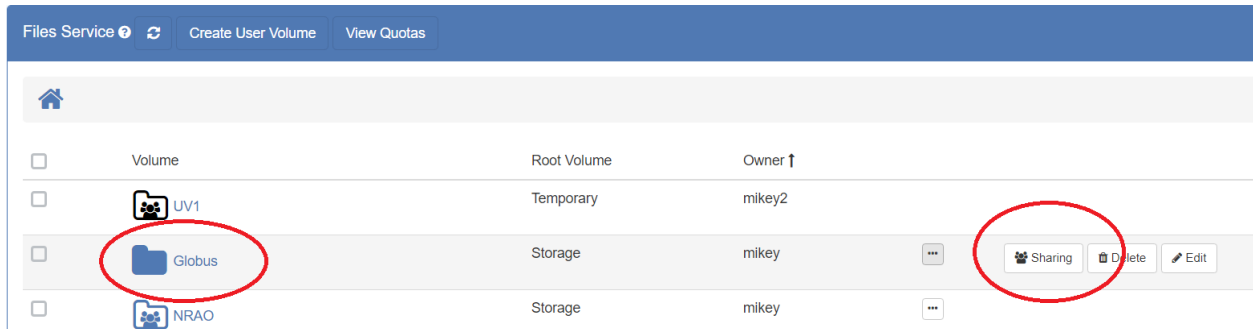
<input type="checkbox"/>	Name	Last Modified	Size	
<input type="checkbox"/>	.ipynb_checkpoints	2020-02-20 12:48:55		...
<input type="checkbox"/>	extras	2020-02-17 09:44:37		...
<input type="checkbox"/>	compare_states_for_primaries.ipynb	2020-02-	65.3	...

If you delete the README.md file from your user volume, this extra information will disappear.

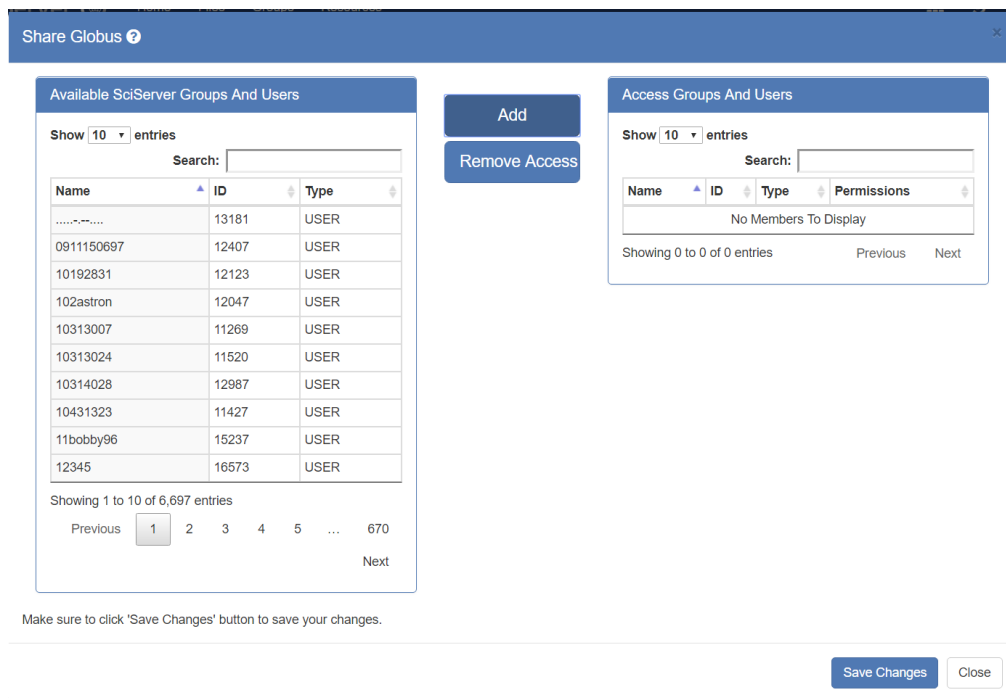
7.7. “How do I Share a User Volume?”

- You can share any User Volume that you own, and you can share others User Volumes if they assigned you that permission when they shared it with you

- At the Files tab, click the “home” button  to get to the top-level User Volume view, and you will see the list of User Volumes. All User Volumes that you are allowed to share will have a “Share” button next to them:



- Click the “Sharing” button and it will display a pop up dialog box:



- The left hand panel is where you choose, one at a time, the users, or groups of users, that you wish to share with. To find users more easily, type something in the “Search:” box and the list will be filtered:

Share User Volume

Available SciServer Groups And Users

Show 10 entries

Search: mar1

Name	ID	Type
mar1	19	USER
mar1_Group1	29	GROUP
mar1_SharedGroup1	26	GROUP

Showing 1 to 3 of 3 entries (filtered from 131 total entries)

Previous 1 Next

- Click on the name you want to add to the group to highlight it, then press the “Add” button:

Share Globus

Available SciServer Groups And Users

Show 10 entries

Search: mar1

Name	ID	Type
mar1	19	USER
mar1_Group1	29	GROUP
mar1_SharedGroup1	26	GROUP

Showing 1 to 3 of 3 entries (filtered from 6,697 total entries) 1 row selected

Previous 1 Next

Add

Remove Access

Access Groups And Users

Show 10 entries

Search:

Name	ID	Type	Permissions
No Members To Display			

Showing 0 to 0 of 0 entries

Previous Next

Make sure to click 'Save Changes' button to save your changes.

Save Changes Close

- This will add that name to the right hand panel, where you choose the Permissions that you want the user/group to have on your User Volume. These permissions are as follows:
 - **Read:** The user is able to view and read the User Volume and its contents, but not change anything
 - **Write:** The user is able to write new files and folders to the User Volume
 - **Delete:** The user is able to delete the User Volume (not recommended!)
 - **Grant:** The user has the ability to also further Share this User Volume with other users.

Share Globus ?

Available SciServer Groups And Users

Show 10 entries

Search: mar1

Name	ID	Type
mar1	19	USER
mar1_Group1	29	GROUP
mar1_SharedGroup1	26	GROUP

Showing 1 to 3 of 3 entries (filtered from 6,697 total entries) 1 row selected

Previous 1 Next

Add

Remove Access

Access Groups And Users

Show 10 entries

Search:

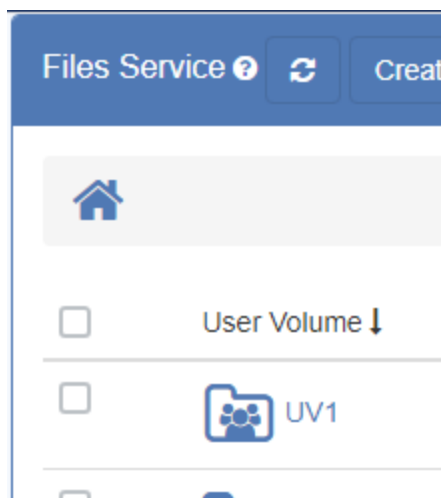
Name	ID	Type	Permissions
mar1	19	USER	<input checked="" type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Grant <input type="checkbox"/> Delete

Showing 1 to 1 of 1 entries Previous 1 Next

Make sure to click 'Save Changes' button to save your changes.


Save Changes Close

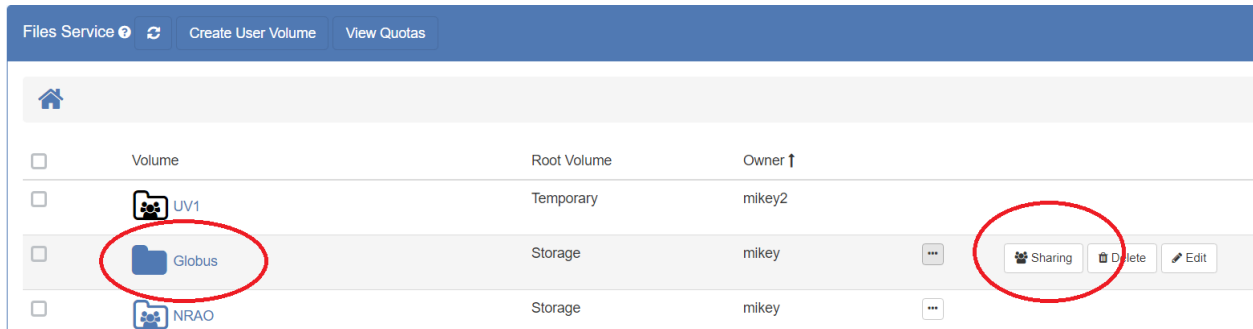
- Select the Permissions you want to assign by checking the checkboxes.
- You can keep adding more people/groups.
- Press “Save Changes” when you are done.
- The User Volume you have just shared will have its Icon changed to indicate that it has been changed:






7.8. “How do I Unshare a User Volume?”









The process for Unsharing is the same as sharing described in the section [“How do I Share a User Volume?”](#).

- At the Files tab, click the “home” button  to get to the top-level User Volume view, and you will see the list of User Volumes. All User Volumes that you are allowed to share will have a “Share” button next to them:

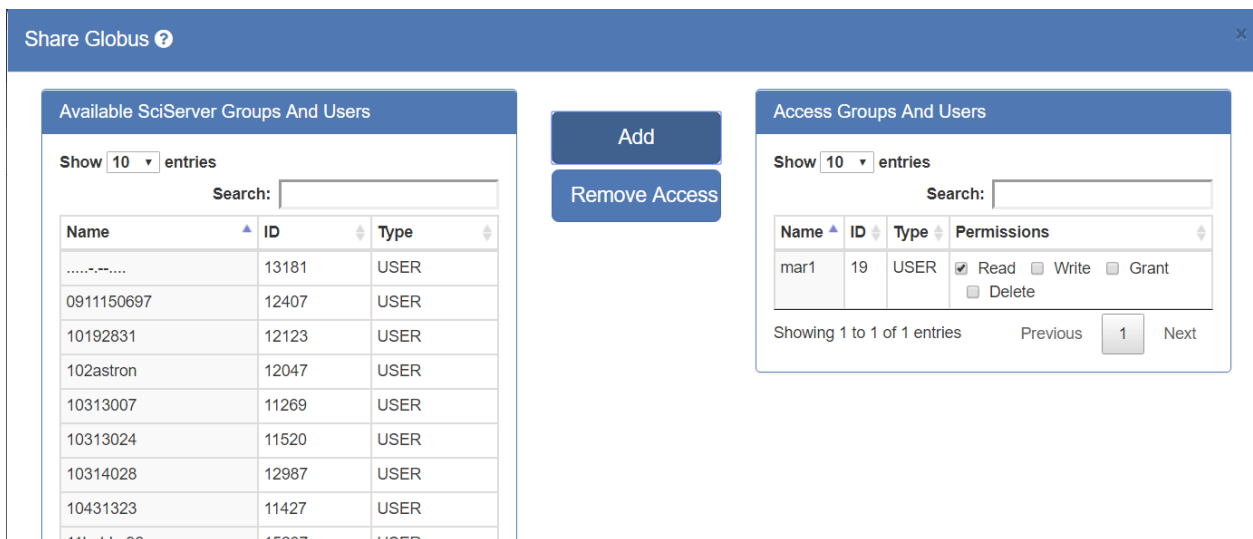



Files Service   Create User Volume View Quotas



<input type="checkbox"/>	Volume	Root Volume	Owner ↑	
<input type="checkbox"/>	 UV1	Temporary	mikey2	
<input type="checkbox"/>	 Globus	Storage	mikey	   
<input type="checkbox"/>	 NRAO	Storage	mikey	

- Click the “Sharing” button and it will display a pop up dialog box:



Share Globus  

Available SciServer Groups And Users

Show entries

Search:

Name	ID	Type
.....	13181	USER
0911150697	12407	USER
10192831	12123	USER
102astron	12047	USER
10313007	11269	USER
10313024	11520	USER
10314028	12987	USER
10431323	11427	USER
11kshy08	15237	USER

Add

Remove Access

Access Groups And Users

Show entries

Search:

Name	ID	Type	Permissions
mar1	19	USER	<input checked="" type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Grant <input type="checkbox"/> Delete

Showing 1 to 1 of 1 entries Previous Next

- On the right hand panel, select the user you wish to Unshare with

Add

Remove Access

Access Groups And Users

Show 10 entries

Search:

Name	ID	Type	Permissions
mar1	19	USER	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Delete

Showing 1 to 1 of 1 entries 1 row selected

Previous 1 Next

- Press the “Remove Access” button OR just uncheck all the checkboxes manually

Add

Remove Access


Access Groups And Users

Show 10 entries

Search:

Name	ID	Type	Permissions
mar1	19	USER	<input type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Grant <input type="checkbox"/> Delete

Showing 1 to 1 of 1 entries Previous 1 Next

- Press Save Changes, and the User Volume will be displayed with the regular blue Icon ()indicating that it is no longer shared.

7.9. “What do the different Folder Icons mean?”



- Regular Folder
- User Volume that has NOT been shared



- User Volume that has been shared BY the User



- User Volume that has been shared WITH the User

7.10. How do I Move or Copy files between Folders?

To Copy/Move files between folders in SciServer, you do this from the "Files" tab in the Dashboard:

1. Select the Files tab
2. Navigate to the files that need to be copied - hover the mouse over the file to show the "icons" (one of which is Copy, and one of which is Move), or if there are multiple files, select them using the checkbox and select the "Copy" or "Move" button that appears at the top:

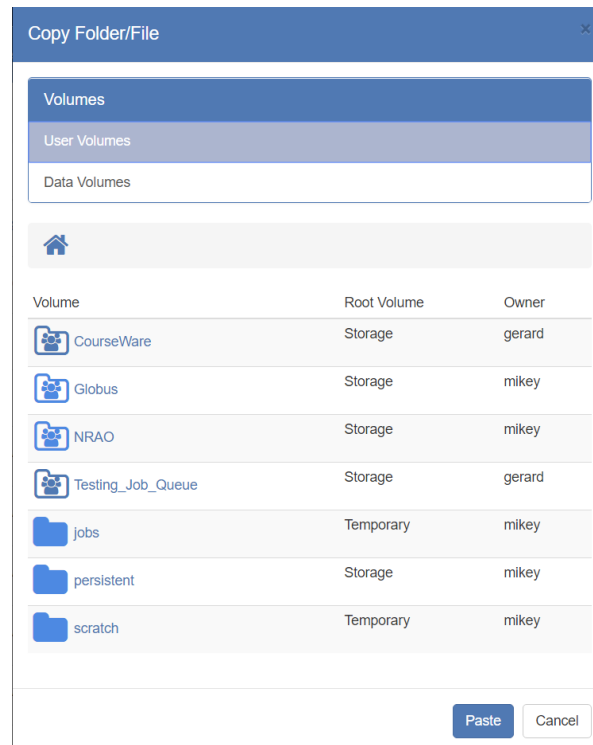
The first screenshot shows the SciServer Files interface. The breadcrumb path is 'Storage / mikey / persistent / examples'. A table lists files and folders. The file 'README.md' is highlighted, and its context menu is open, showing options: Download, Copy, Rename, Move, and Delete. The 'Copy' option is circled in red.

<input type="checkbox"/>	Name ↓	Last Modified	Size	
<input type="checkbox"/>	git	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	R	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	Workshop201604	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	python	2018-05-23 18:33:19		⋮
<input type="checkbox"/>	required-files	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	gitignore	2018-04-10 19:20:48	827 Bytes	⋮
<input type="checkbox"/>	README.md	2018-04-10 19:20:48	114 Bytes	⋮ Download Copy Rename Move Delete
<input type="checkbox"/>	install.sh.txt	2018-04-10 19:20:48	48 Bytes	⋮

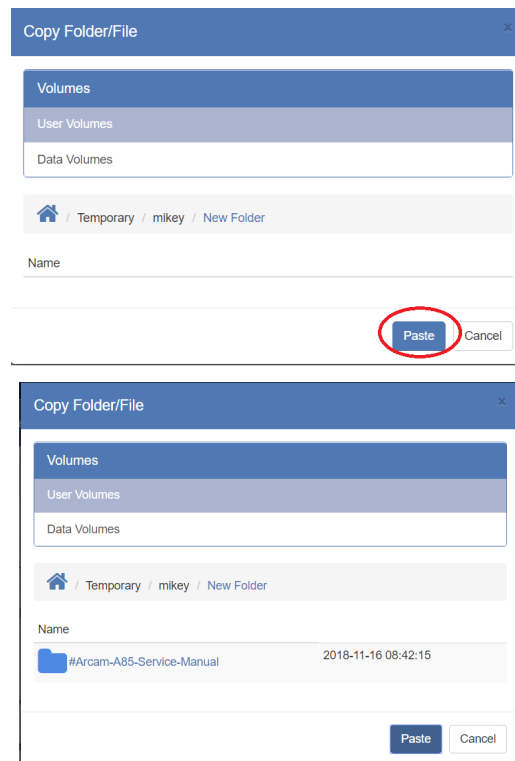
The second screenshot shows the same interface, but with the 'Copy', 'Move', and 'Delete' buttons at the top of the file list circled in red. Additionally, the checkboxes for the files 'gitignore', 'README.md', and 'install.sh.txt' are also circled in red.

<input type="checkbox"/>	Name ↓	Last Modified	Size	
<input type="checkbox"/>	git	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	R	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	Workshop201604	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	python	2018-05-23 18:33:19		⋮
<input type="checkbox"/>	required-files	2018-04-10 19:20:48		⋮
<input type="checkbox"/>	gitignore	2018-04-10 19:20:48	827 Bytes	⋮
<input checked="" type="checkbox"/>	README.md	2018-04-10 19:20:48	114 Bytes	⋮
<input checked="" type="checkbox"/>	install.sh.txt	2018-04-10 19:20:48	48 Bytes	⋮

3. When you press the "Copy" or "Move" button (in either of the above cases), this dialog will appear:



4. Navigate to where you want to copy or move the files, and then press the "Paste" button:



NOTE: You must have write permissions on the destination folder in order to move/copy a file or folder there.

8. File Management: Data Volumes

8.1. “What are Data Volumes?”

Data Volumes are hosted data sets that belong to an institution or organization and that are shared with select groups of users. Some of the JHU Data Volumes are **public**, and all users will see them. Data Volumes are not part of any given users quota, though a particular user can be given the “owner” role by JHU Admin staff for them to subsequently share their data volume with particular users in their team or domain. A good example of a Data Volume is the Sloan Digital Sky Survey (SDSS) Data Archive Server (DAS) data.

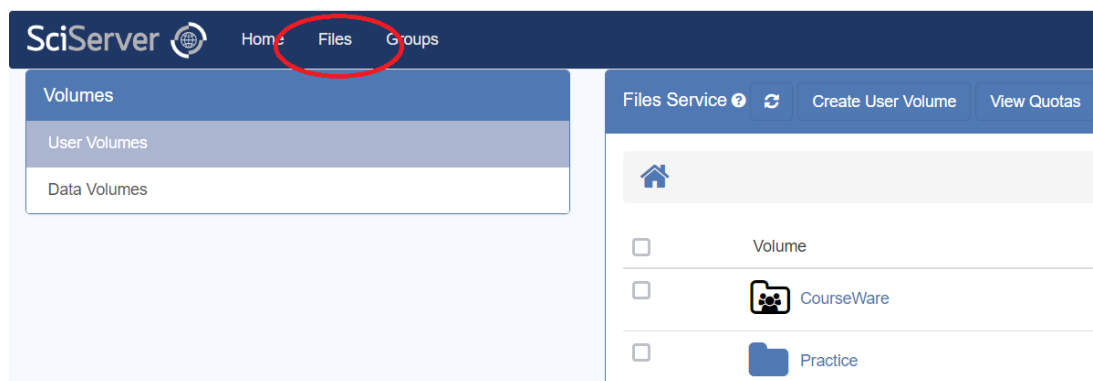
8.2. “What is the difference between a Data Volume and a Volume Container?”

Data Volumes as presented in the Files view of the dashboard are the **same** underlying datasets as Volume Containers presented (and accessible) in SciServer Compute.

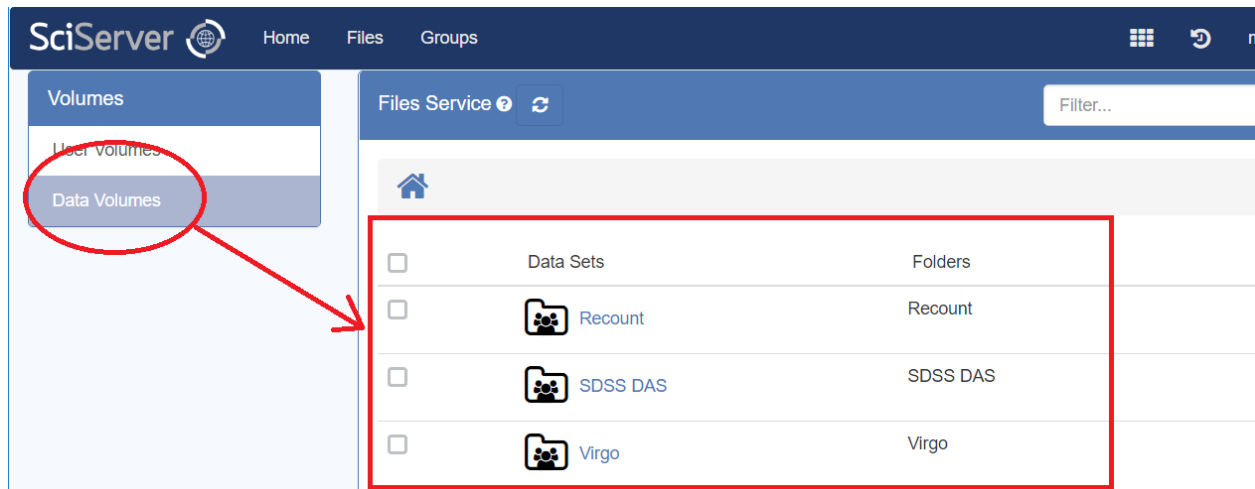
The datasets were exposed as Volume Containers in SciServer Compute very early on to support the growing number of projects that needed to do analysis on the data. Exposing the datasets through the dashboard as data volumes makes it much easier to quickly find out what you are allowed to see, to view their contents, and to copy data from them to your own personal storage. For some data volumes you may be granted write access, in which case you can add new data to a Data Volume from the dashboard.

8.3. “How do I view Data Volumes?”

- Access the SciServer “files” view from the dashboard:

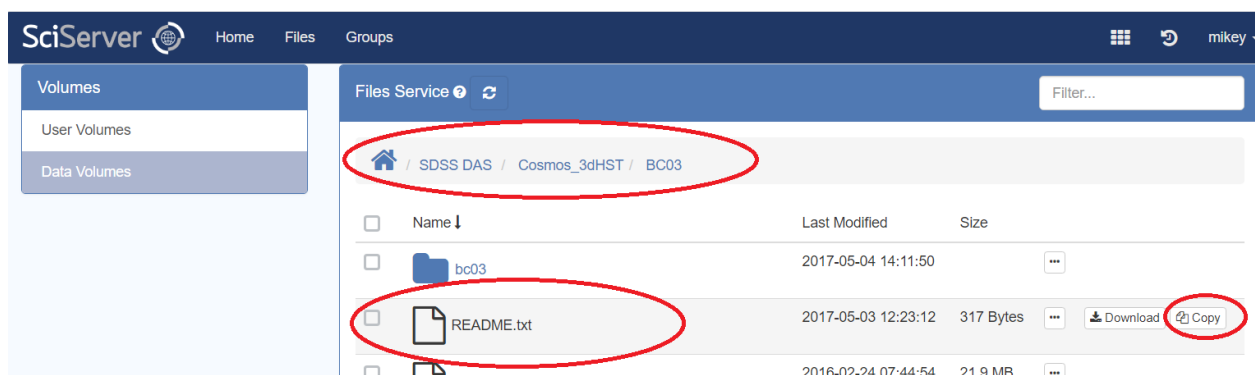


- You will see two options on the LHS: User Volumes and Data Volumes
- Pick Data Volumes and this will change the RHS view to display those data volumes that you have been given permission to see:



8.4. How do I copy data from a Data Volume to my personal storage?

- Firstly, you can only copy data and/or folders from within a Data Volume, you cannot copy an entire Data Volume
- Navigate to the folder/file inside a Data Volume of interest, and you will see an option on the RHS to “Copy” the folder/file:



- Select the “Copy” button and this will show a pop up dialog where you can select where to copy the data to:

Copy Folder/File

Volumes

User Volumes

Data Volumes

Volume	Root Volume	Owner
CourseWare	Storage	jteacher
Practice	Storage	mikey
PythonIntro_mikey	Storage	abbot
Setup Classroom	Storage	mikey
example_datasets	Storage	raddick
jobs	Temporary	mikey
mikeyVolA	Storage	mikey
montage	Storage	raddick
montage_temp	Temporary	raddick
persistent	Storage	mikey
sciserver_usage	Storage	raddick
scratch	Temporary	mikey

Paste

Cancel

- Navigate to the directory of interest, and press the “Paste” Button:

Copy Folder/File

Volumes

User Volumes

Data Volumes

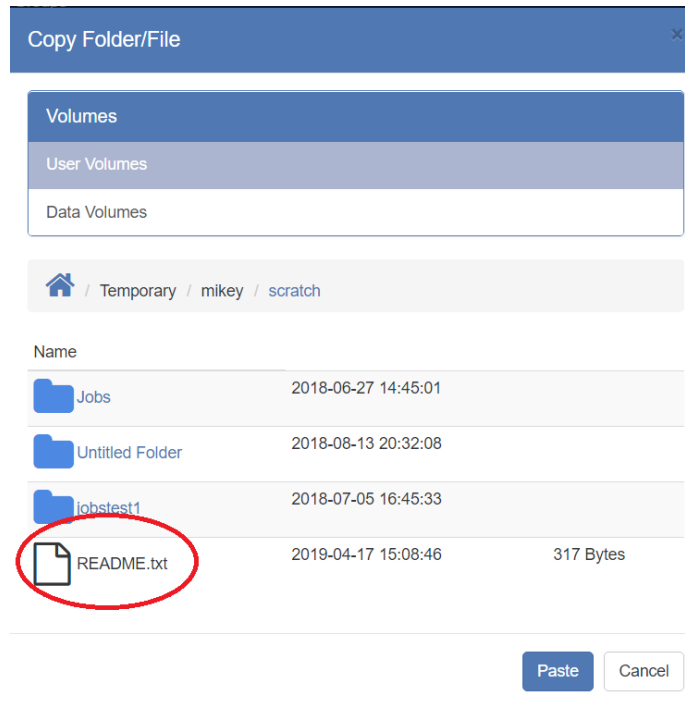
/ Temporary / mikey / scratch

Name

Jobs	2018-06-27 14:45:01
Untitled Folder	2018-08-13 20:32:08
jobstest1	2018-07-05 16:45:33

Paste

Cancel



9. Interactive Compute

9.1. “What is SciServer Compute?”

SciServer Compute is an application that allows users to easily create and run Jupyter Notebooks containing code and instructions to analyse and process SciServer hosted data sets. SciServer provides a rich API to access all aspects of SciServers resources, including databases, Filesystems, user and group management, and even Compute Jobs.

There are a couple of steps involved, which SciServer makes easy:

- Create a new “Container” to run the Jupyter Notebook in. A container defines the “environment” for the user, and is configurable
- Open the container, which will start Jupyter, and create, save and execute Notebooks.
- The full capabilities of Jupyter (which is a third party application) are available to the user and will not be covered here.

An important step in setting up a Container environment is specifying what external file systems will be accessible to the Jupyter environment.

9.2. “What is a ‘Container’?”

A ‘Container’ in SciServer Compute is a defined environment within which Jupyter Notebooks can be run. Its is technically a “Docker Container” (Docker is the technology used), and provides a way to isolate the user and their code from the rest of the SciServer system, and other users.

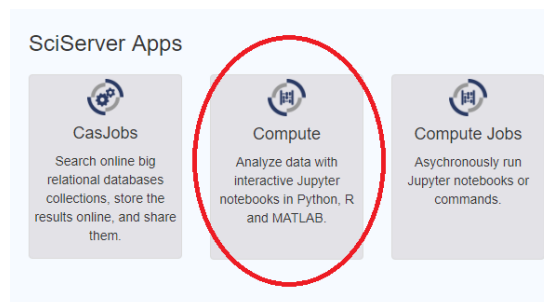
A Container in SciServer Compute is a "long-lived" resource, and as such there are some resource management issues you need to know about

- Each User can create up to 3 containers at any given time. If you need another one, you need to delete one first.
- Containers have a lifecycle, and can be "running" or "stopped". SciServer keeps Containers running for a certain period of time, even if the User is not actively working with it, to ensure that when a user comes back to it, it starts up nice and fast without delays.
- Running Containers consume system resources like memory etc, so after 24hrs (TBC) the Container will be stopped. This has two effects:
 - If code was running, it will be terminated
 - It will take a bit longer to start up the Container next time it is accessed
- SciServer could, and sometimes does, delete containers that have not been used for a long time. This frees up storage resources.
- Whereas data (files, folders) can be stored "in" the container, ***you should never do this for any data that you need to keep. Always store data files in the "Storage" or "Temporary" storage pools, which are external to the container.*** Data in these storage pools are accessible when all containers are closed or deleted, and the same data is accessible across any containers that includes those Volume Containers in their environment.

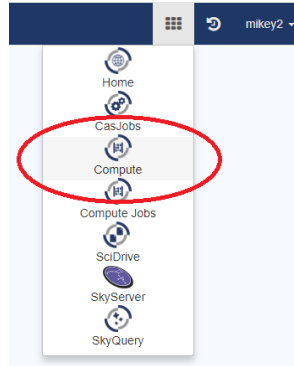
9.3. "How do I create a new Container to run my Jupyter Notebooks"?

Creating a new Compute Container is easy! However there are a few parameters required to define the compute environment that you need.

- Access the Compute Application by clicking on the "Compute" icon on the SciServer Dashboard:



- OR from the "Apps Menu"  :



- This will take you to the “Compute dashboard”

SciServer
Compute
Interactive Notebooks
Jobs
Help
Sign out

Containers

Created At	Name	Domain	Image	Status	
2018-06-12 19:50:41.0	sesf	Interactive	Python + R	stopped	▶ ⓘ ✖
2018-06-05 10:27:12.0	Mike Matlab	Interactive	MATLAB R2016a	stopped	▶ ⓘ ✖

Create container

Important Information about Compute Container File Storage

File System

Most of the folders in a Container's file system should not be used to store your files. Your initial container view is of [/home/ides/workspace](#), which may contain volumes under the [Storage](#) and [Temporary](#) folders. Any user volumes you choose to add to the container at creation will be present within these folders. Do not store your files in [workspace](#), or in any other folder except as described here. If a Compute node fails, your incorrectly stored files will be *lost permanently*.

Storage

Use [Storage](#) volumes for long term storage of your scripts and small data files. The volumes in the [Storage](#) folder are backed up. These volumes are mounted according to the username of the user who created them under the path [/home/ides/workspace/Storage/username/user volume name/](#). Files saved to this folder persist between your containers, even in the event that a container fails. Other files and folders cannot be placed in any intermediate paths, i.e., under the [Storage/username](#) or [Storage/](#) folders. Your [Storage](#) volumes are subject to size limitations described in the [SciServer Compute Data Storage Policy](#).

persistent

By default, all users start with a [Storage](#) volume named [persistent](#). The files in this volume correspond to the same [persistent](#) folder in the version of [SciServer Compute](#) that is not a component of this alpha release.

Temporary

Use [Temporary](#) volumes for temporary large file storage. The [Temporary](#) volumes persist between containers and are not affected by Compute node failure, but is not backed up. These volumes are mounted according to the username of the user who created them under the path [/home/ides/workspace/Temporary/username/user volume name/](#). Other files and folders cannot be placed in any intermediate paths, i.e., under the [Temporary/username](#) or [Temporary/](#) folders. Your [Temporary](#) volumes are subject to time limit and size limitations described in the [SciServer Compute Data Storage Policy](#).

scratch

By default, all users start with a [Temporary](#) volume named [scratch](#). The files in this volume correspond to the same [scratch](#) folder in the version of [SciServer Compute](#) that is not a component of this alpha release.

Do not save your scripts or data files anywhere in your Compute container's file system except in "Storage" or "Temporary".

- You will see a large text box explaining how to use the Storage capabilities to ensure that you do not lose data if you accidentally store it in the Container itself
- Press the “Create Container” button, and this will pop a dialog box:

Create a new container

Container name

Please enter a name...

Domain

Interactive Docker Compute Domain

Compute Image ?

JupyterLab

User volumes

☒ persistent, Storage Volume created by testingFun

☒ scratch, Temporary Volume created by testingFun

Data volumes ?

☐ Recount

☐ SDSS_DAS

☐ write-test [W]

Create

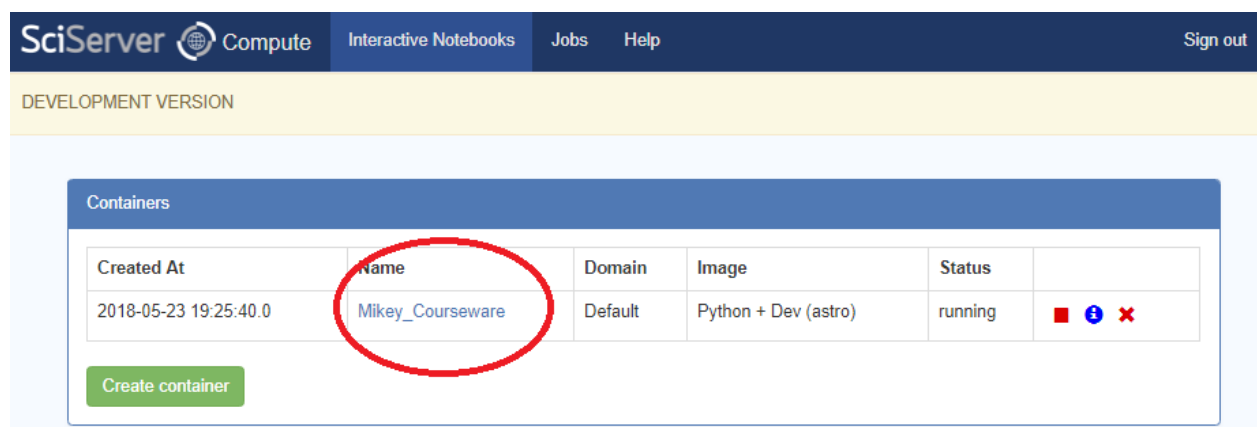
- The following needs to be entered:
 - **Container Name:** you choose this
 - **Domain:** This is a drop down from which you should most always leave at the default value “Interactive Docker Compute Domain”.
 - **Image:** This define a “software environment” for the Jupyter notebooks that you want to run. The images contain libraries tailored to different needs. For the most part you will choose an image that supports the language you are interested in (python, R, Matlab etc), but there are “specialty” science domain specific images that you may have access to if the creator of those images has shared it with you. Additional information on “Images” can be found at <http://www.sciserver.org/support/compute-images/>
 - **User Volumes:** This is a list of all User Volumes that you have access to, either which you own, or which have been shared with you. When you select some of these, on container creation these folders will be “mounted” and will be accessible as if they were local files. This makes file access and management

much simpler. NOTE: they will be mounted with the same access controls as you would have in the SciServer File UI i.e. “readonly” or “readwrite”.

- **Data Volumes:** These are a series of special Data Volumes that are either shared publicly with all users, or for which you have been given special access privileges to see. Again, selecting these Volumes will mount them, and make them appear “local” in the Container. These will always be mounted “readonly”. Additional information on “Data Volumes” can be found at <http://www.sciserver.org/datasets/>
- Once created, it is not possible to add additional User Volumes or Data Volumes, so you should be sure to get this right.
- Pressing the “Create” button will create a new Container and show it in the table with the name you provided.
- Clicking on the link in the column titled “name” will launch Jupyter

9.4. “How do I create a new Jupyter Notebook?”

- Start one of your Compute Containers to Launch Jupyter:



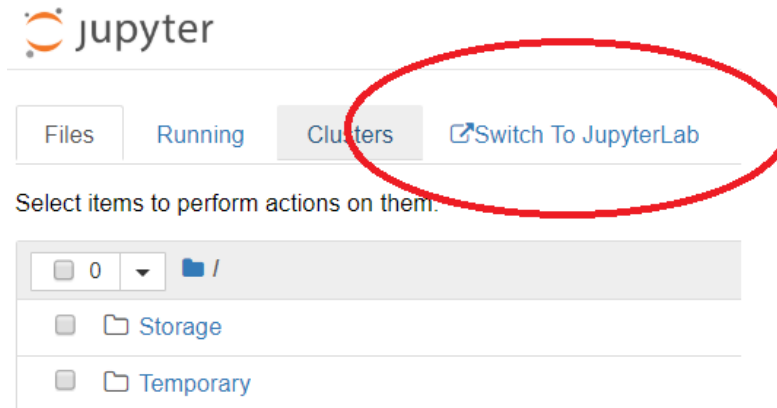
The screenshot shows the SciServer Compute interface. At the top, there's a navigation bar with 'SciServer Compute', 'Interactive Notebooks', 'Jobs', 'Help', and a 'Sign out' button. Below this is a yellow banner that says 'DEVELOPMENT VERSION'. The main content area is titled 'Containers' and features a table with the following data:

Created At	Name	Domain	Image	Status	
2018-05-23 19:25:40.0	Mikey_Courseware	Default	Python + Dev (astro)	running	■ ⓘ ✕

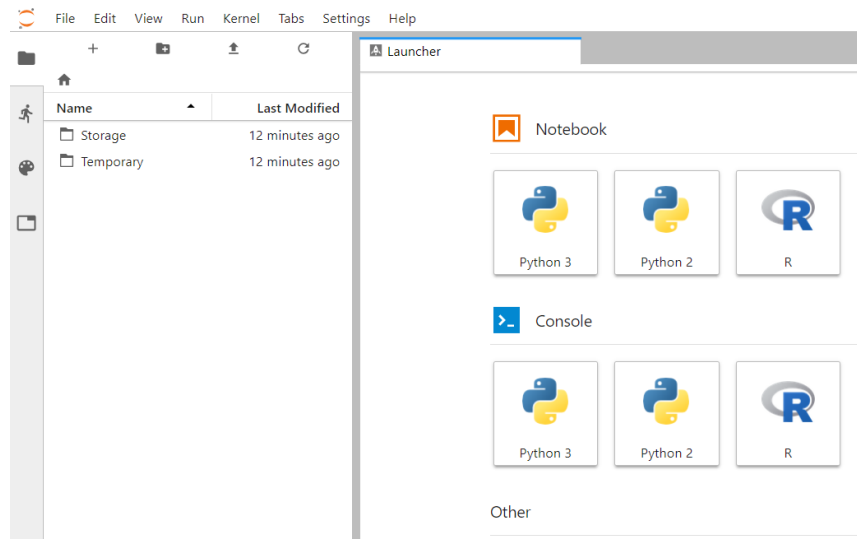
Below the table is a green button labeled 'Create container'.

9.5. “How do I run JupyterLab?”

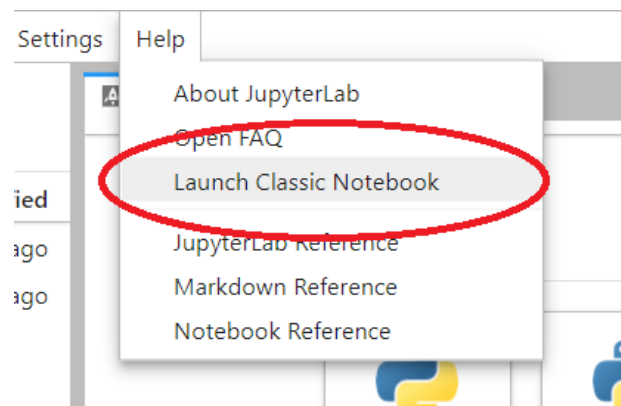
1. When you open a Container, Jupyter will start showing the files and folders, and you will see an option at the top to “switch To JupyterLab”:



2. Selecting this will put your Jupyter session



3. To get back to “Classic Jupyter” view, select the menu item “Help | Launch Classic Notebook”:



10. Compute Jobs

10.1. “What is Compute Jobs?”

Compute Jobs allows a user to run a Jupyter Notebook or a standard script in offline batch mode. The same exact capabilities are provided as for Interactive Compute:

- Compute Images and software environment
- Mounting external volume folders

Executing Job will put it in a queue, and it will be run when there are resources available on the server cluster.

10.2. “Why would I create a Job?”

You should create a Job for the following reasons:

- Executing your notebook may take a long time and you want to set it running and do something else without worrying about browser sessions timing out etc
- You may develop your code interactively to make sure the algorithm works, using a small amount of data to test it out. But you really want to run your code against a full dataset which will require massive resources for memory and CPU, as well as execution time.
- You are provided with far more resources (CPU and memory) to execute a Job than you are in an Interactive Session.

10.3. “What are the two types of Jobs I can create?”

SciServer allows you to define two “types” of job:

- Specify a script to execute, or a command line command
- Specify an existing Jupyter Notebook that you have previously developed

The second of these is the most useful in that you can develop your Jupyter Notebook interactively then “submit” the exact same notebook as a Job.

10.4. “How do I create and run a Job?”

Creating a new Job is easy! We explain how to create a notebook based job, but creating a script based job is very similar.

- Go to the Compute Jobs Page:

SciServer Compute Interactive Notebooks Jobs testingFun

Compute Jobs

Run Command Run Existing Notebook

Show 10 entries

Search Name/Command/Notebook

Submission Time	Job	Status
Wed, Jul 25, 2018 10:28 AM	333 1s	Completed after a few seconds

Showing 1 to 1 of 1 entries

- Click “Run Existing Notebook”

New Job

Compute Domain

Compute Image

Data Volumes

User Volumes

Notebook

Job Alias

eee

Compute Domain:

Select a Compute Domain to choose where this job is run. Different domains may have different computational or data resources available.

Selecting a different Compute Domain will reset this wizard.

☒ Small Jobs Batch Domain

Small Jobs Batch Domain

<

>

Create Job

- On the ‘**Compute Domain**’ Tab:
 - Choose the Compute Domain, for which in most cases currently there will only be one option
 - Optionally enter a “Job Alias” to easily identify your Job later
- On the ‘**Compute Image**’ Tab:

New Job

Compute Domain

Compute Image

Data Volumes

User Volumes

Notebook

Compute Image: ?

Select a Docker image providing the libraries and applications needed for this job.

☐ MATLAB R2013a
Image with Matlab and Python 2 and 3

☒ Python (astro)
Image with Python 2 and 3 and astronomy libraries

☐ R 3.3.0
Image with R v.3.3.0

<

>

Create Job

- Pick the 'Image' you need to use. Each image contains different tools and programming language support.
- (Compute Images are described in more detail at <http://www.sciserver.org/support/compute-images/>)
-
- On the '**Data Volumes**' tab:

New Job

Compute Domain

Compute Image

Data Volumes

User Volumes

Notebook

Data Volumes: ?

Select any data volumes needed for this job.

☐ SDSS_DAS
Volume container giving access to the SDSS DAS images and spectra

☐ write-test
write-test

<

>

Create Job

- Select all the data volumes with appropriate permissions needed for this job.

- On the **'User Volumes'** Tab:

New Job

Compute Domain Compute Image Data Volumes **User Volumes** Notebook

Personal and Shared Folders:

Select any user volumes to make available to this job.

☒ **persistent**
 Storage Volume, created by testingFun
 Default user volume
 Will be accessible to this job as `/home/idies/workspace/Storage/testingFun/persistent`

☒ **scratch**
 Temporary Volume, created by testingFun
 Default user volume
 Will be accessible to this job as `/home/idies/workspace/Temporary/testingFun/scratch`

☐ **jobs**
 Temporary Volume, created by testingFun
 UserVolume created by testingFun

< > Create Job

- Select all the Folder systems that you would like to be made accessible to your Compute notebook
 - For Folders that you own, or that have been shared with you and you were given the appropriate permissions, you can select whether a given folder is read only or writable. Folders that you do not own will be read only by default.
- On the **'Notebook'** tab:

New Job

Compute Domain

Compute Image

Data Volumes

User Volumes

Notebook

Select a Jupyter Notebook:

Storage/testingFun/persistent

No *.ipynb files found

Temporary/testingFun/jobs

Temporary/testingFun/scratch

No *.ipynb files found

Notebook Path

Parameters:

Optional Parameters

Parameters are placed in a `parameters.txt` file in the same directory as the notebook

scratch

Temporary Volume, created by testingFun

Default user volume

Press enter to select

persistent

Storage Volume, created by testingFun

Default user volume

Select a user volume (required)

Path within user volume

- Navigate to the Notebook you wish to use as the basis for your Job, and select it
- Enter any additional parameters that the Notebook can read in to affect how the code is executed
- Choose a directory where the output results will go.
 - By default these will go to jobs within which subdirectories will be created and your results written to.

- Alternatively you can choose a specific directory to output results. The directory you choose will be a 'root' within which subdirectories will be created and your results written to.
- When everything has been entered you can press 'Create Job', and the Job will be submitted, and displayed in a Jobs Table view:

Submission Time	Job	Status
Wed, Jun 20, 2018 3:10 PM	Demo Alias <i>Storage/gerard/Testing_Job_Queue/Analyze_Queues.ipynb</i>	Preparing to submit job ✕
Mon, Jun 18, 2018 2:48 PM	My New Job <i>pwd</i>	Completed after a few seconds
Mon, Jun 18, 2018 12:19 PM	<i>pwd</i>	Completed after a few seconds
Thu, May 24, 2018 11:01 AM	<i>Storage/mikey/persistent/Beginner.ipynb</i>	Completed after a few seconds


- The Table will be refreshed every several seconds, telling you the status of the Job.
- While the Job is still running there will be a red "X" button, and pressing this will Cancel the job.
- Pressing the down triangle on the RHS will expand the view and show more information about the Job. This is what you see for a completed Job:

Submission Time	Job	Status
Wed, Jun 20, 2018 3:10 PM	Demo Alias <i>Storage/gerard/Testing_Job_Queue/Analyze_Queues.ipynb</i>	Completed after a few seconds
<p>Job ID: 20820 Software Environment: Python (astro) Compute Domain: Small Jobs Batch Domain</p> <p>Started Wed, Jun 20, 2018 3:10 PM Finished Wed, Jun 20, 2018 3:11 PM</p> <p>Results were stored in /home/idies/workspace/Storage/mikey/persistent/20180620/20180620151041-20820</p> <p>Browse Working Directory Download Standard Output Download Standard Error</p>		
Mon, Jun 18, 2018 2:48 PM	My New Job <i>pwd</i>	Completed after a few seconds

- This give status information about the Job, the path to the location of the results, and links to the results output

10.5. "How do I Cancel a Job?"


- After submitting a Job, and before it has completed execution, it can be cancelled.
- Display the Jobs table, and your running Jobs will be identified by having a red "X" next to them:

time	job	status
Wed, Jun 20, 2018 3:10 PM	Demo Alias Storage/gerard/Testing_Job_Queue/Analyze Queues.ipynb	Preparing to submit job 

- Press the “X” button to cancel the job.

10.6. “How do I know when my Job is complete?”

- When your job is complete the Jobs Table will display the status:

Thu, May 24, 2018 11:01 AM	Storage/mikey/persistent/Beginner.ipynb	Completed after a few seconds 
----------------------------	---	---

10.7. “How do I access the output from my Jobs?”

- The results output will go to the location specified in the Job Definition.
- In the Jobs Table expand the job of interest:

Compute Jobs
Run Command
Run Existing Notebook

Show 10 entries
Search Name/Command/Notebook

Submission Time	Job	Status
Wed, Jun 20, 2018 3:10 PM	Demo Alias	Completed after a few seconds
<div> <div> Notebook Path: /home/ides/workspace/Storage/gerard/Testing_Job_Queue/Analyze Queues.ipynb </div> <div> Job ID: 20820 Software Environment: Python (astro) Compute Domain: Small Jobs Batch Domain </div> <div> Started Wed, Jun 20, 2018 3:10 PM Finished Wed, Jun 20, 2018 3:11 PM </div> <div> Results were stored in /home/ides/workspace/Storage/mikey/persistent/20180620/20180620151041-20820 </div> <div> Browse Working Directory Download Standard Output Download Standard Error </div> </div>		
Mon, Jun 18, 2018 2:48 PM	My New Job pwd	Completed after a few seconds

- This give status information about the Job, the path to the location of the results, and three hyperlinks:
 - **‘Browse Working Directory’** will take you to the Dashboard Files tab and show you the output files as well as the original Python Notebooks.
 - **‘Download Standard Output’** and **‘Download Standard Error’** will allow you to download these two text files as appropriate. They will be downloaded according to your Browser settings.