

# SIXTE on SciServer

## User Guide

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This document describes how to run [SIXTE](#) simulations on the [SciServer](#) platform. For detailed SciServer documentation, see the [SciServer User Guide](#).

### 1. Getting Started

- Log in or create a new account at <https://apps.sciserver.org/login-portal/>.
- Please write an email with your username to [sixte-support@lists.fau.de](mailto:sixte-support@lists.fau.de) to invite you to the SciServer `sixte_users` group.
- Go to your **Dashboard** (you should automatically start here after log-in. Otherwise, navigate there via the Home button in the top panel). Open the **Groups** tab under **Your Activities**, and accept the invitation.

The screenshot displays the SciServer Dashboard interface. At the top, there is a navigation bar with the SciServer logo and links for Home, Files, Groups, and Science Domains. The main header area features the text "SciServer Dashboard" and the tagline "Data, Collaboration, Compute".

The "Your Activities" section contains four cards:

- Files:** You have 0 Shared User Volumes. You have 2 Owned User Volumes.
- Groups:** You have 1 Group Invitation. You have 0 Owned Groups. This card is circled in red.
- Compute Jobs:** You have 0 Jobs Running. You have 0 Jobs Completed in 24 hours.
- Science Domains:** You have joined 0 domains. There are 1 domains available.

The "SciServer Apps" section contains six cards:

- CasJobs:** Search online big relational databases collection, store the results online, and share them.
- Compute:** Analyze data with interactive Jupyter notebooks in Python, R and MATLAB.
- Compute Jobs:** Asynchronously run Jupyter notebooks in Python, R and MATLAB or commands.
- SciDrive:** Drag-and-drop file hosting and sharing services.
- SkyServer:** Access the Sloan Digital Sky Survey data, tutorials and educational materials.
- SkyQuery:** A scalable database system for cross-matching astronomical source catalogs.

## 2. Create a new Compute Container

- To run applications and access the SciServer resources, you need to create a new **Compute Container**.
- On your Dashboard, click on **Compute** from the SciServer Apps. Then press **Create container**.

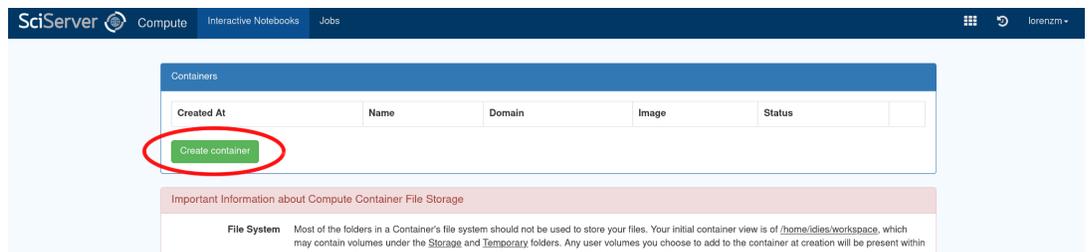


Your Activities

<b>Files</b> You have 0 Shared User Volumes. You have 2 Owned User Volumes.	<b>Groups</b> You have 0 Group Invitations. You have 0 Owned Groups.	<b>Compute Jobs</b> You have 0 Jobs Running. You have 0 Jobs Completed in 24 hours.	<b>Science Domains</b> You have joined 0 domains. There are 1 domains available.
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SciServer Apps

<b>CasJobs</b> Search online big relational databases collection, store the results online, and share them.	<b>Compute</b> Analyze data with interactive Jupyter notebooks in Python, R and MATLAB.	<b>Compute Jobs</b> Asynchronously run Jupyter notebooks in Python, R and MATLAB or commands.	<b>SciDrive</b> Drag-and-drop file hosting and sharing services.	<b>SkyServer</b> Access the Sloan Digital Sky Survey data, tutorials and educational materials.	<b>SkyQuery</b> A scalable database system for cross-matching astronomical source catalogs.
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Containers

Created At	Name	Domain	Image	Status
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[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/sci/ies/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 incrementally stored files

- Choose a **Container name** and select the **HEASARCV6.34 Compute Image**. Check **all User volumes** and the **HEASARC Data volume** as shown below, then press **Create**.

Create a new container
✕

**Container name**

**Domain**

Shared Intel Xeon E7 systems. All containers are limited to 100GiB of RAM. Unused containers are shut down after 3 days.

**Compute Image** ?

Contains Heasoft packages and software. Based on Ubuntu 22.04

**User volumes**  All

- persistent, Storage Volume created by sixte
- scratch, Temporary Volume created by carlo\_ferrigno
- sixte\_scratch, Temporary Volume created by sixte
- sixte\_volume, Storage Volume created by sixte

**Data volumes** ?  All

- AstroPath Data Public
- Getting Started
- HEASARC data
- Manga
- Ocean Circulation
- Poseidon
- Recount
- SDSS Associated Data
- SDSS DAS
- SDSS DR9 Imaging
- SDSS SAS
- SDSS Spectra

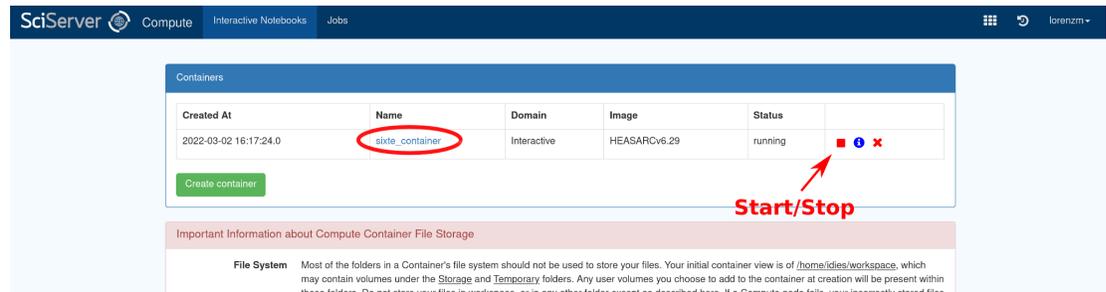
Create

- Since this Compute Container is based on the HEASARCV6.34 image, all HEASoft tools will be available within the container by default. For a detailed documentation of this image, see also the [HEASARC@SciServer User Guide](#).

### 3. Start the Compute Container

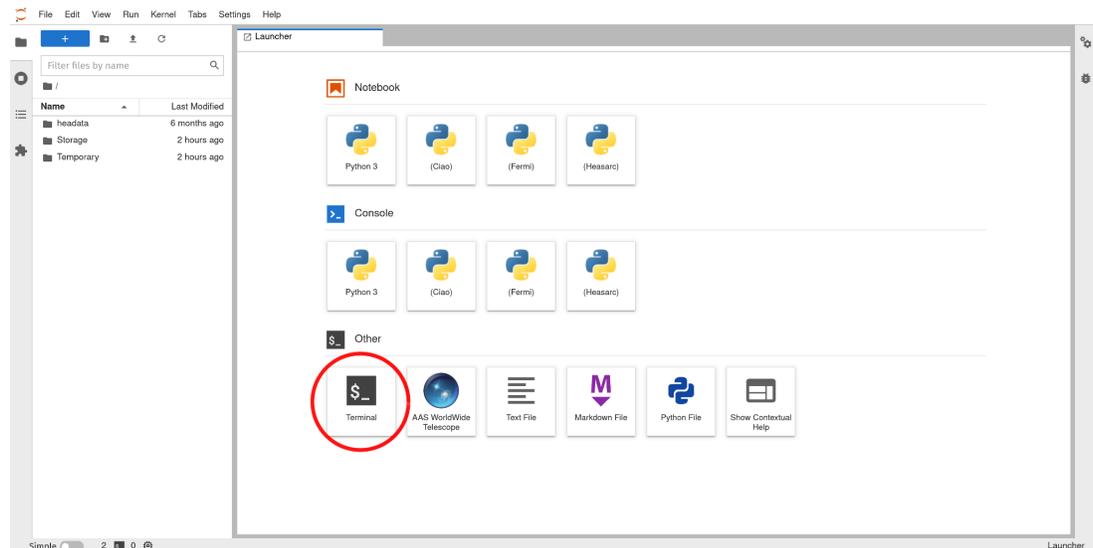
- Your new container will now show up in the Containers section. If the container is not already running, press the green arrow to start it. To stop a container, press the red square.

- Click on the name of your container to open a new browser tab with a Jupyter session.



## 4. Initialize SIXTE

- If you are not already on the JupyterLab interface, click on “Switch to JupyterLab” to open your workspace. The surface should now look like in the image below.
- Open a **Terminal** from the **Other** section of the Launcher:



- Initialize SIXTE by sourcing the setup script:

```
idies@5e7eab316ed8:~$ source $HOME/workspace/Storage/sixte/sixte_volume/sixte_setup.sh
```

- Verify that SIXTE is initialized correctly by running the **sixteversion** tool:

```
idies@5e7eab316ed8:~$ sixteversion
SIXTE version 2.7.1.7-f54f3
Compiled Mar  2 2022, 17:07:48
```

## 5. SciServer Overview

- **Filesystem:**

Your files and data are stored in **User Volumes** on SciServer. By default, you have two User Volumes (*persistent* and *scratch*) to begin with at

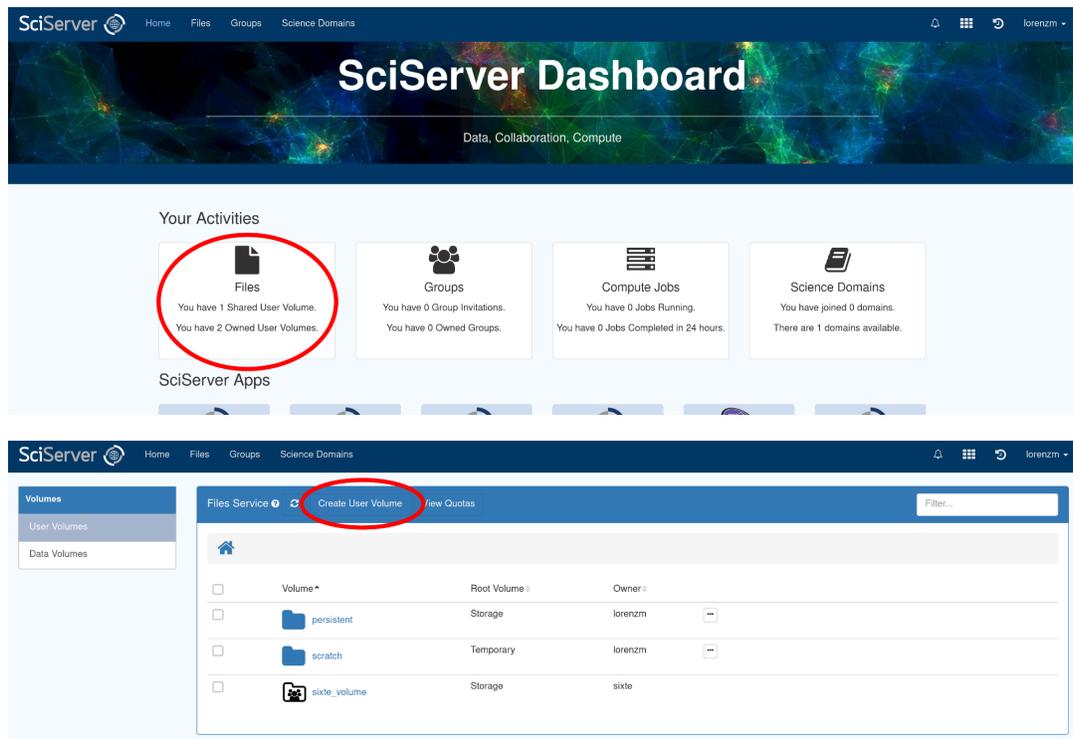
```
$HOME/workspace/Storage/username/persistent/  
$HOME/workspace/Temporary/username/scratch/
```

Files in User Volumes under the **Storage** directory are backed up, permanent (quota limit of 10 GB), and persist between your Compute Containers. Use these Volumes for long-term storage of scripts and data.

Files under **Temporary** are not backed up and will be deleted automatically after some time. Use these Volumes for temporary and intermediate data products.

**Important:** Only store data within User Volumes (e.g., in `/persistent` or `/scratch`), **not** in any other directory (e.g., `$HOME`).

You can find an overview of all your User Volumes in the **Files** tab under **Your Activities** on the SciServer Dashboard. Here you can also create new User Volumes as needed.

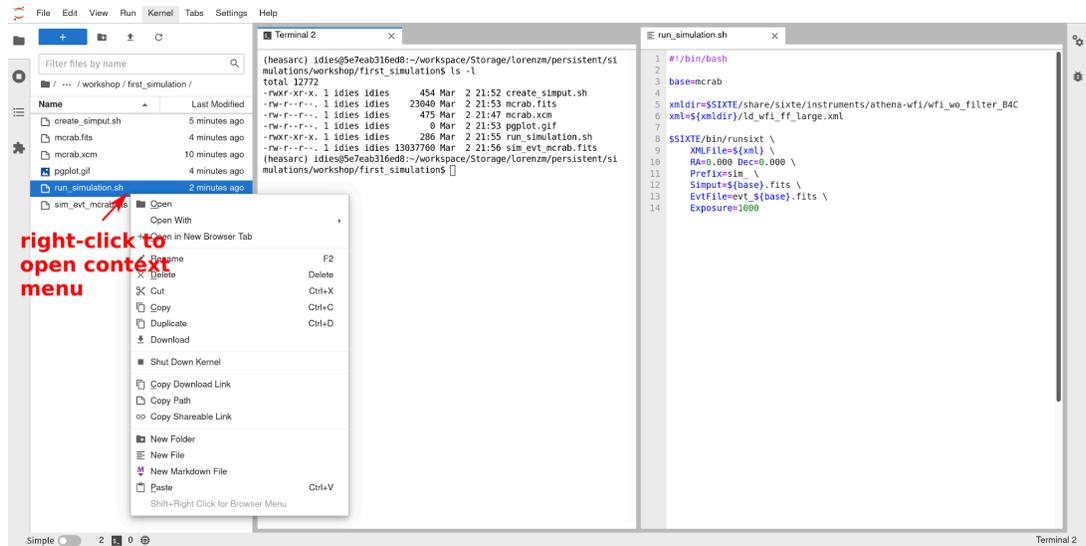


- **Navigation and File Editing:**

SciServer compute images are based on Scientific Linux 7. You can navigate the filesystem and edit files with standard Linux commands in the Terminal.

Alternatively, you can also navigate the filesystem via the file browser on the left. Right-clicking within the file browser opens a context menu that allows creation, deletion, copying, and renaming files and folders. Double-clicking on a text file opens

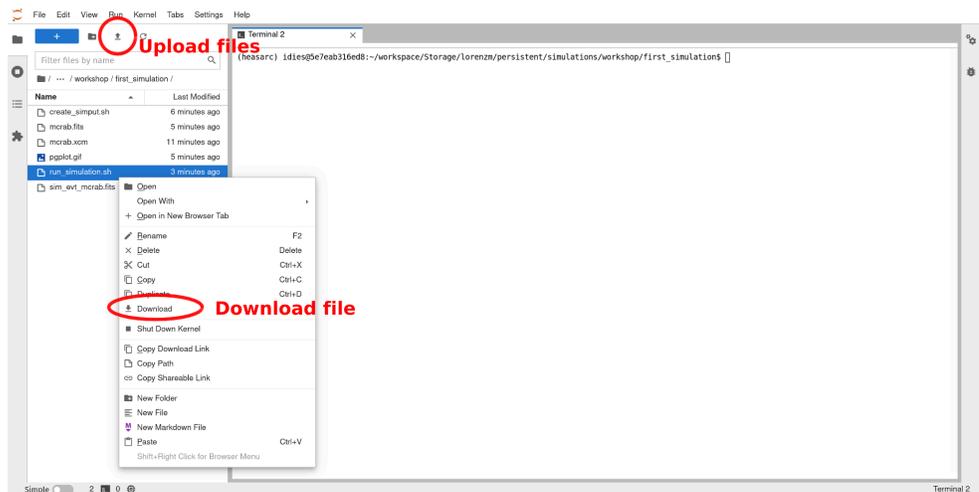
it in a basic editor.



- **Up- & Downloading Files:**

There are two ways to move files in and out of a User Volume:

1. Using the file browser in a Jupyter session:



2. Within the Files section of the SciServer Dashboard:

