

Getting Started with Docker (Mac)

November 23, 2021

1 Prerequisites

1. At least 10 GB of free hard drive space (for help see [here](#)).

2 Setup

1. Install and run [Docker Desktop](#).
2. Navigate to **Preferences -> Resources** (open Preferences by clicking on the gear icon in the top-left), set the **Memory** slider to 4 GB, and click **Apply & Restart**. See [Figure 1](#).
3. Open a Terminal, and pull the **stat-471** Docker image onto your computer via

```
docker pull ekatsevi/stat-471
```

This will start a download that may take a few minutes. You'll only need to carry out this step once.

4. In the Terminal, navigate into your **stat-471-fall-2021** directory and type

```
git pull
```

as usual to get the latest version of the Github repository. You should see the file **docker-compose.yml** in the root of the directory. Initialize your Docker container by typing

```
docker-compose up --no-start
```

If this step succeeded, you should see a container labeled **stat-471-fall-2021** under **Containers/Apps** within Docker Desktop ([Figure 2](#)).

5. Open Docker Desktop. Start your Docker container by navigating to **Containers/Apps** within Docker Desktop, locate **stat-471-fall-2021**, and click the “Play” icon (see [Figure 2](#)). Open a web browser and navigate to **localhost:8787**. You should see an RStudio window in the browser. Note that there may be some red text displayed in the console; you can safely ignore it.
6. To test the container, open **test-docker.Rmd** under **getting-started**, and compile this document to PDF as you would normally. If this works, you should see the compiled PDF pop up.
7. To set up your Git credentials in the container, open the Terminal (in RStudio in your browser) and type

```
git config --global user.email "you@example.com"  
git config --global user.name "Your Name"  
git config --global 'credential.https://github.com.helper' ''
```

```
git config --global --add 'credential.https://github.com.helper' '!gh auth git-credential'
cd ~
wget https://github.com/cli/cli/releases/download/v2.2.0/gh_2.2.0_linux_amd64.deb
sudo dpkg -i gh_2.2.0_linux_amd64.deb
gh auth login
```

and then follow the prompts to answer the following questions:

```
? What account do you want to log into? GitHub.com
? What is your preferred protocol for Git operations? HTTPS
? Authenticate Git with your GitHub credentials? Yes
? How would you like to authenticate GitHub CLI? Paste an authentication token
```

Finally, paste your personal access token.

8. Check whether you are able to access Github by typing

```
cd ~/stat-471
git pull
```

in the Terminal. This command should work without you being prompted for authentication.

9. When you are done, close the RStudio browser window(s). Then, navigate to **Containers/Apps** within Docker Desktop, locate **stat-471-fall-2021**, and click the “Stop” icon (see Figure 2).

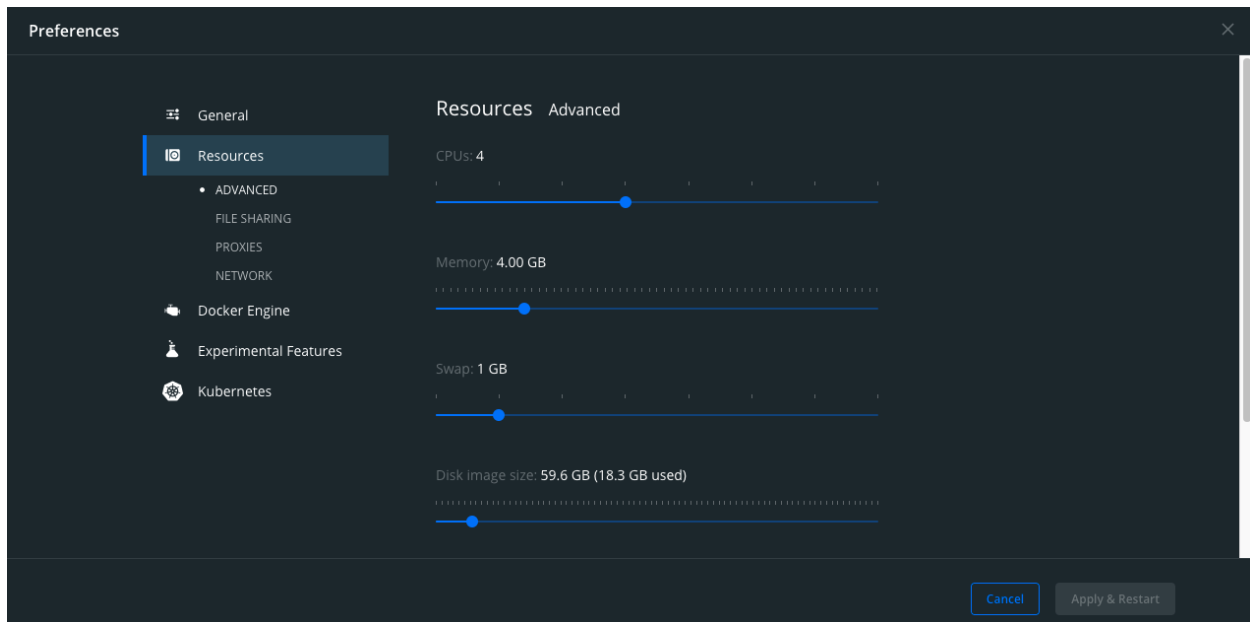


Figure 1: Docker resources settings.

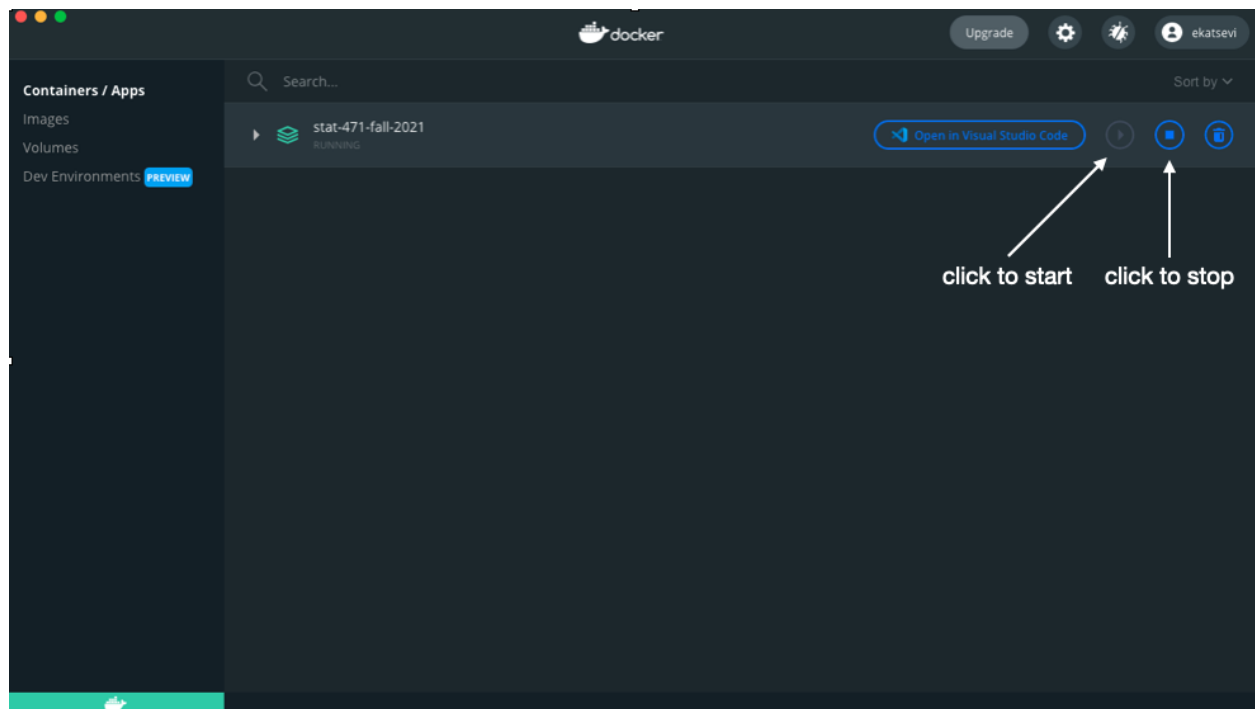


Figure 2: The Docker graphical user interface.

3 Usage ([Video](#))

1. Open Docker Desktop. Start your Docker container by navigating to **Containers/Apps** within Docker Desktop, locate `stat-471-fall-2021`, and click the “Play” icon (see Figure 2). Open a web browser and navigate to `localhost:8787`. You should see an RStudio window in the browser. Note that there may be some red text displayed in the console; you can safely ignore it.
2. To use the container, use RStudio in the browser as you normally would.
3. For Git and GitHub, please pull, commit, and push as usual, using the Terminal that is in RStudio in your browser.
4. When you are done, close the RStudio browser window(s). Then, navigate to **Containers/Apps** within Docker Desktop, locate `stat-471-fall-2021`, and click the “Stop” icon (see Figure 2).

4 Acknowledgment

Many thanks to [Da Kuang](#) for leading the effort to implement Docker for STAT 471.