

# Jetstream Instructions

## Setting up a virtual machine and opening Jupyter

### Let's make an XSEDE account!

- Go to <https://portal.xsede.org> (<https://portal.xsede.org>).
- Click the blue "Create Account" button on the left.
- Once the "Create an XSEDE User Portal account" page loads, follow the instructions.
- After you have created an account, add your XSEDE username to [https://docs.google.com/spreadsheets/d/1M0oismSTDrgk\\_z4esYTPxS2P9wR900\\_vW3P4\\_T0pyzo](https://docs.google.com/spreadsheets/d/1M0oismSTDrgk_z4esYTPxS2P9wR900_vW3P4_T0pyzo) ([https://docs.google.com/spreadsheets/d/1M0oismSTDrgk\\_z4esYTPxS2P9wR900\\_vW3P4\\_T0pyzo](https://docs.google.com/spreadsheets/d/1M0oismSTDrgk_z4esYTPxS2P9wR900_vW3P4_T0pyzo))
  - You will be notified once you've been added.

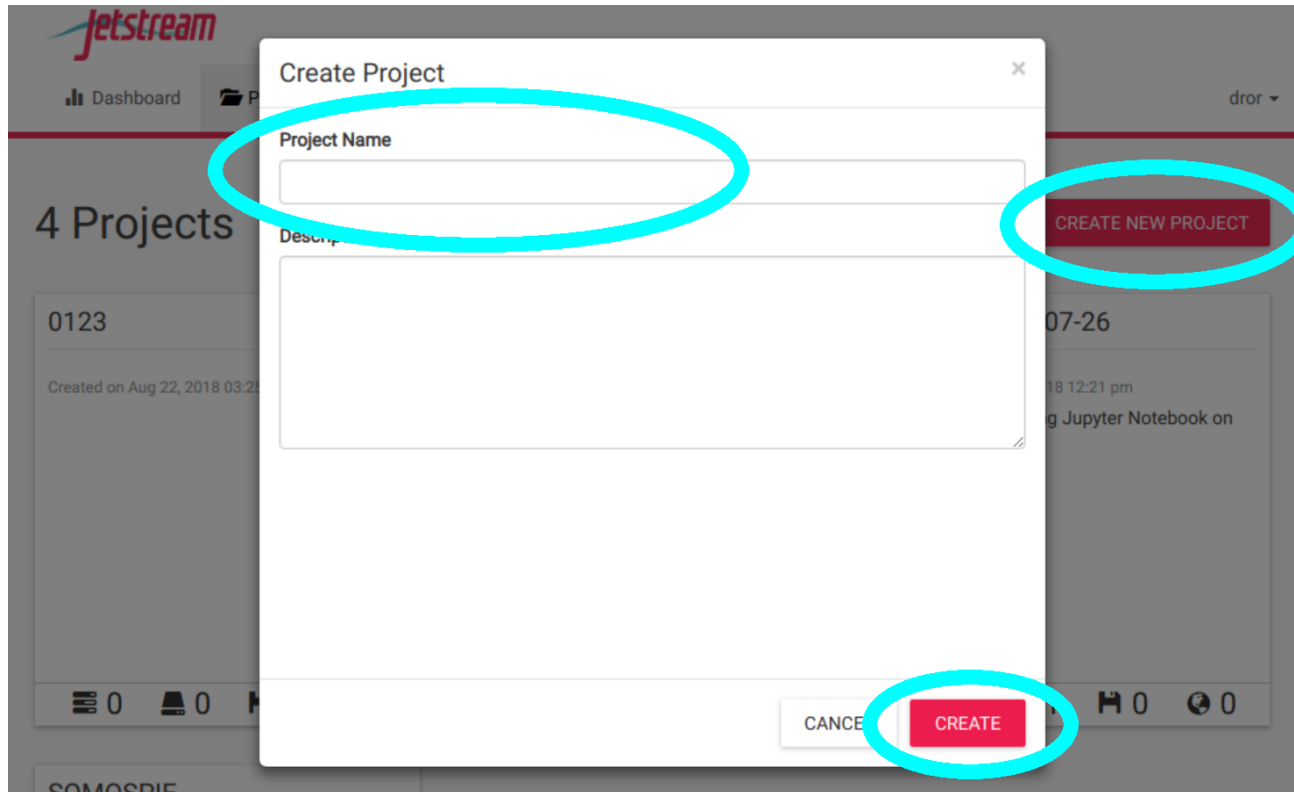
### Let's log in to Jetstream!

- Go to <https://use.jetstream-cloud.org> (<https://use.jetstream-cloud.org>).
- Click "Login" in upper-right corner.
- Select XSEDE from the drop-down menu and click the blue "Continue" button.
- Enter XSEDE credentials and click the "SIGN IN" button.

## Let's create a Jetstream project!

You should now be logged into Jetstream.

- Click "Projects" tab.
- Click pink "CREATE NEW PROJECT" button.
- Enter "2018F-CS594-CS690" under "Project Name" and click the pink "CREATE" button.



The screenshot shows the Jetstream web interface with a 'Create Project' modal dialog box open. Three red circles highlight key elements: the 'Project Name' input field, the 'CREATE NEW PROJECT' button in the top right, and the 'CREATE' button at the bottom right of the dialog. The background shows a dashboard with a '4 Projects' section and a sidebar with navigation icons.

**Jetstream**

Dashboard Projects

4 Projects

0123

Created on Aug 22, 2018 03:21

07-26

18 12:21 pm

g Jupyter Notebook on

SOMOSPIE

**Create Project**

Project Name

Description

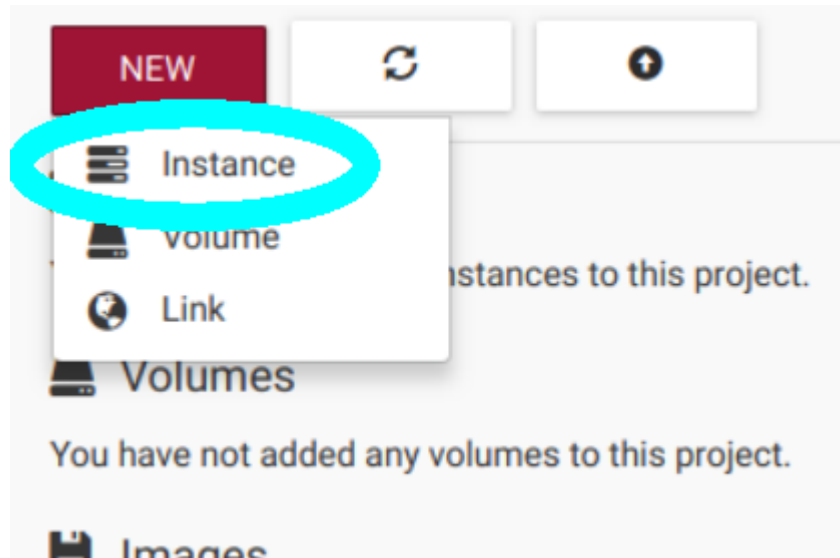
CANCEL CREATE

CREATE NEW PROJECT

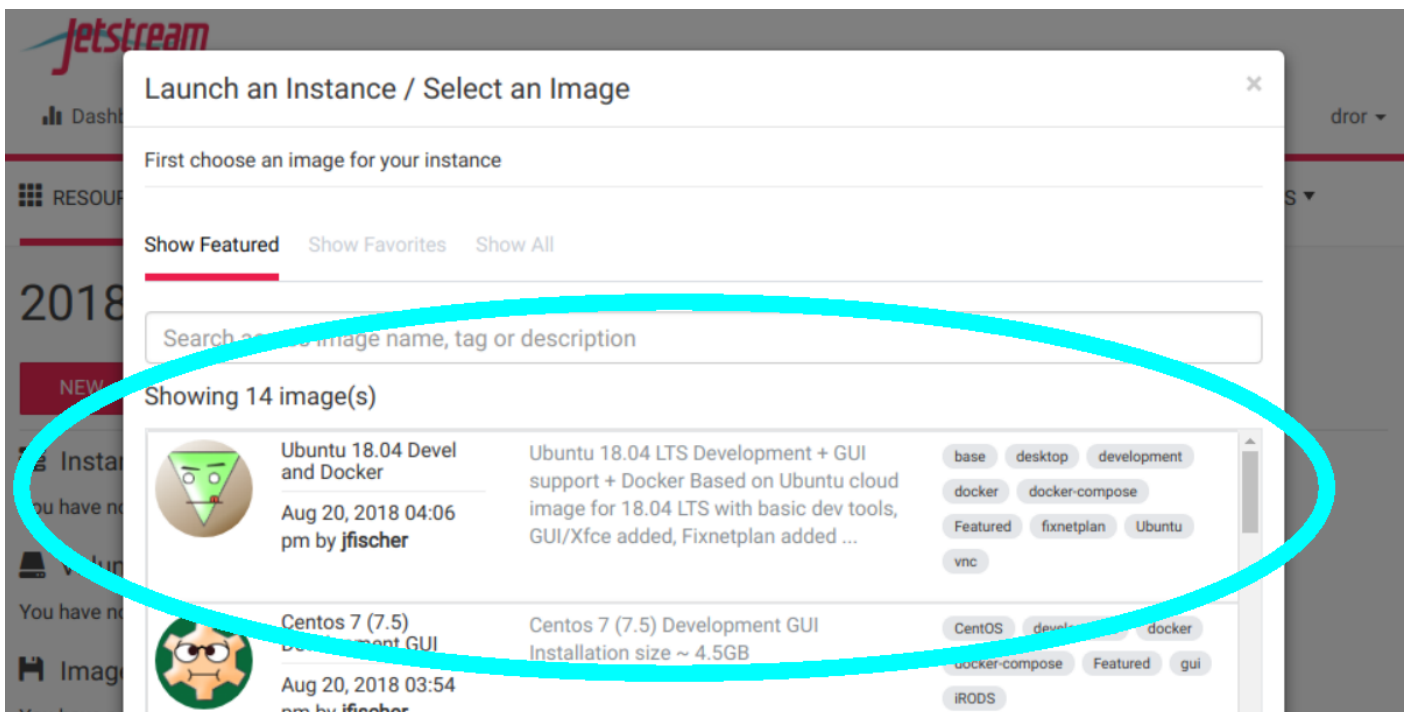
## Let's create a Jetstream virtual machine (VM)!

You should now be in the Jetstream project page.

- Click on the project where you want your VM.
- Now click the pink "NEW" button, and select "Instance" from the drop-down menu that appears.



- Under "Showing ## image(s)", select "Ubuntu 18.04 Devel and Docker".



- The "Launch and Instance / Basic Options" form should appear.
- Under "Basic Info" type your netid for the "Instance Name".
- Under "Resources", make sure **TG-TRA180041** is selected for the "Allocation Source".  
**IMPORTANT:** Do not launch more than one virtual machine with this Allocation Source; we only have enough VMs for each person in the course to have one!

- Under "Instance Size", make sure **m1.medium** (CPU: 6, Mem: 16 GB, Disk: 60 GB) is selected for "Instance Size".  
**IMPORTANT:** Anything smaller than m1.medium cannot fit Jupyter, anything bigger takes more than your share of our allocation.
- Click the pink "LAUNCH INSTANCE" button.

Launch an Instance / Basic Options

**Basic Info**

Instance Name: your\_utk\_netid

Base Image Version: 1.7

Project: 2018

**Resources**

Allocation Source: TG-TRA180041

Provider: Jetstream - Indiana University

Instance Size: m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)

Allocation: 0% of 250000 SUs from TG-TRA180041

**Resources Instance will Use**

A total 37 of 132 allotted CPUs

A total 94 of 360 allotted GBs of Memory

Back Advanced Options CANCEL LAUNCH INSTANCE

- A spinning blue ring icon will appear next to the text "LAUNCHING ..."; wait.

## Let's access your virtual machine (VM)!

You should be in the page for the specific jetstream project.

- Look for your VM listed under "Instances".
- Click on the name of the VM, a blue, underlined hyperlink.

RESOURCES


DETAILS

# 2018F-CS594-CS690

NEW



## Instances

<input type="checkbox"/>	Name	Status	Activity	IP Address	Size
<input type="checkbox"/>	 <a href="#">dror</a>	● Shelved_offloaded	N/A	N/A	M1.Mec

## Volumes

- If the "Status" has a grey circle, click "Resume"/"Start"/"Unshelve" under "Actions" on the right, then the pink "YES, \_\_ THIS INSTANCE" button that pops up.

### 2018F-CS594-CS6

Resources > dror



dror

Allocation Source

TG-TRA180041

Allocation Used

0% of 250000 SUs from TG-TRA180041

Instance Details

Status ● Shelved\_offloaded

Activity N/A

Size m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)

Your instance's IP address will have change once it is available.

CANCEL YES, UNSHELVE THIS INSTANCE

### Actions

Report

**Unshelve**

Delete

### Links

Open Old Web Shell

Open Old Web Desktop

Open Web Shell

Open Web Desktop

- If the "Status" has a yellow circle, wait.
  - If the "Status" has a yellow circle and the "Activity" hasn't changed in 20 minutes, you can try the "Reboot" option under the "Actions" on the right.

0% of 250000 SUs from TG-TRA180041		
Instance Details		
Status	● Shelved	
Activity	Unshelving	
Size	m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)	

0% of 250000 SUs from TG-TRA180041		
Instance Details		
Status	● Active	
Activity	Networking	
Size	m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)	

0% of 250000 SUs from TG-TRA180041		
Instance Details		
Status	● Active	
Activity	Deploying	
Size	m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)	

- Once "Status" has a green circle, you are ready to connect to your VM.
- Click "Open Web Shell" under "Links" on the right; this should open a new tab with a green-text, black-background command-line interface.

0% of 250000 SUs from TG-TRA180041

### Instance Details

Status	● Active
Activity	N/A
Size	m1.medium (CPU: 6, Mem: 16 GB, Disk: 60 GB)
IP Address	149.165.170.107 <a href="#">Copy</a>
Launched	Aug 21, 2018 (a day ago)
Based on	<a href="#">Ubuntu 18.04 Devel and Docker v1.7</a>
Provider	Jetstream - Indiana University
ID	25120

Reboot

Redeploy

Delete

#### Links

Open Old Web Shell

Open Old Web Desktop

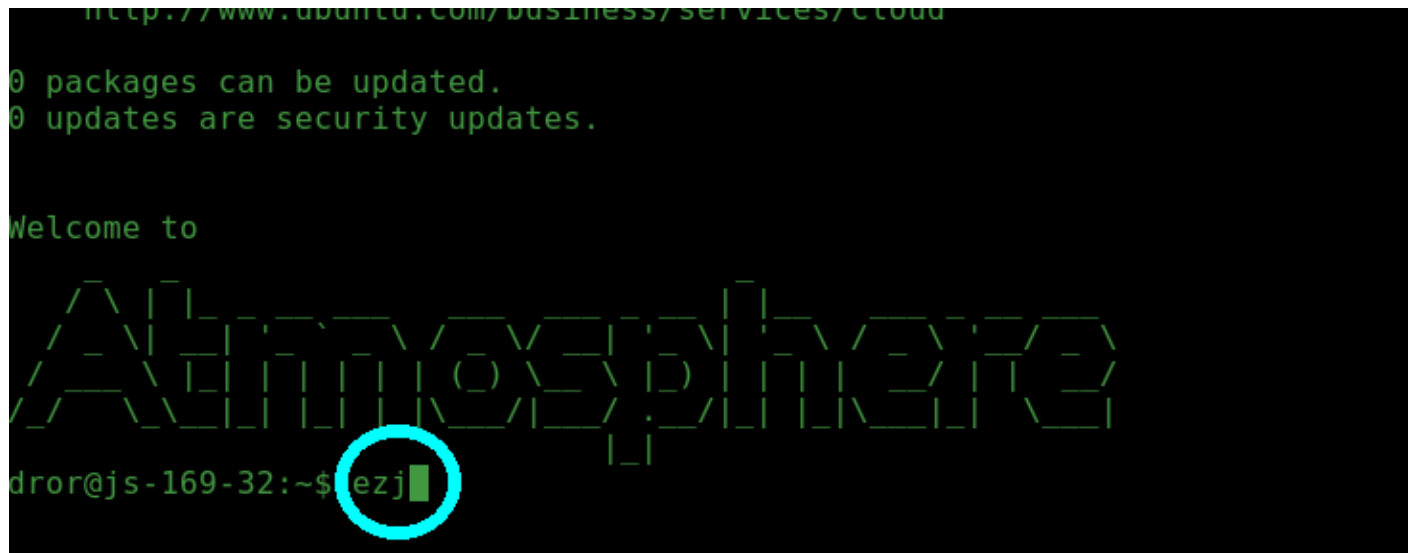
Open Web Shell

Open Web Desktop

## Let's install Jupyter on your VM!

You should be in the green-text, black-background command-line interface.

- Type `ezj` and press ENTER.



A terminal window with a black background and green text. At the top, a URL is partially visible: `http://www.ubuntu.com/business/services/cloud`. Below it, two lines of text state: `0 packages can be updated.` and `0 updates are security updates.`. Further down, it says `Welcome to`. The word `Amnosphere` is displayed in a large, stylized, green, blocky font. At the bottom, the prompt `dror@js-169-32:~$` is followed by the command `ezj` and a green cursor. A red circle highlights the `ezj` command.

- Python3-dependent `anaconda` and `jupyter` will install, but it will take several minutes.
- When installation has finished a `jupyter` notebook will automatically launch; press `CTRL+C` twice to cancel.

## Let's clone the class repository to your VM!

You should be in the green-text, black-background command-line interface (CLI).

- (If you want the repo somewhere other than your home directory, cd to the desired location.)
- Type `git clone https://github.com/CISC879-BigData/2018F-CS594-CS690.git` and press ENTER.
- You should be prompted to enter your GitHub credentials.

NOTE: If you wish to paste text into Jetstream's web-browser CLI:

- Press CTRL+ALT+SHIFT to open the grey control panel on the left;
- Paste the text within the Clipboard box;
- Press CTRL+ALT+SHIFT to close the control panel;
- Press CTRL+SHIFT+V to paste.



## Let's open a Jupyter notebook!

You should be in the green-text, black-background command-line interface (CLI).

- Type `ezj` and press ENTER.
- There will be a URL you can copy/paste to access the notebook.  
NOTE: Do not launch with `jupyter notebook`, or it will launch under `localhost:8888` and you won't be able to access it.

```
dror@js-169-32:~$ ezj
/usr/bin/python3
DEBUG: using python version 3
DEBUG: downloading anaconda binary, may take a few minutes
DEBUG: Anaconda already installed to /opt/anaconda3
/opt/anaconda3/bin/python3
DEBUG: using python version 3
[I 18:06:18.022 NotebookApp] JupyterLab beta preview extension loaded from /opt/anaconda3/lib/python3.6/site-packages/jupyterlab
[I 18:06:18.022 NotebookApp] JupyterLab application directory is /opt/anaconda3/share/jupyter/lab
[I 18:06:18.027 NotebookApp] Serving notebooks from local directory: /home/dror
[I 18:06:18.027 NotebookApp] 0 active kernels
[I 18:06:18.027 NotebookApp] The Jupyter Notebook is running at:
[I 18:06:18.027 NotebookApp] http://149.165.169.32:8888/?token=bc7bd24d4182aecbd3b420b966516e937f45164689979568
[I 18:06:18.027 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 18:06:18.028 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to launch with a token:
http://149.165.169.32:8888/?token=bc7bd24d4182aecbd3b420b966516e937f45164689979568
```

- Highlight the URL with your mouse, then use CTRL+ALT+SHIFT to open the grey control panel.
- Copy the url from the Clipboard box.

Learn more about using the web shell and web Desktop [here](#)

**Clipboard**

Text copied/cut within Guacamole will appear here. Changes to the text below will affect the remote clipboard.

<http://149.165.168.252:8888/?token=03eeb19ea313a52c179f47498191d0bc8ad40d1b1314be21>

**Devices**

ew minutes  
da3

view extension loaded from /opt/anaconda3/lib/python3.6/site-packages/jupyterlab  
ion directory is /opt/anaconda3/share/jupyter/lab  
from local directory: /home/dror

k is running at:  
252:8888/?token=03eeb19ea313a52c179f47498191d0bc8ad40d1b1314be21  
op this server and shut down all kernels (twice to skip confirmation).

ou connect for the first time,  
19ea313a52c179f47498191d0bc8ad40d1b1314be21

- Open a new tab, paste the URL into the address bar, and press ENTER.
- You should now be in a Jupyter notebook on your VM.

← → ↻ ⓘ Not secure | 149.165.168.252:8888/tree ☆ ABP ⋮

**jupyter** Logout

Files Running Clusters

Select items to perform actions on them. Upload New ↻

	Name ↓	Last Modified
<input type="checkbox"/>	/	
<input type="checkbox"/>	2018F-CS594-CS690	10 minutes ago



## Let's close out everything!

If you are in the Jupyter notebook menu:

- Click the "Logout" button in the upper-right corner;
- Close the tab.

If you are in the CLI:

- If Jupyter is running, press CTRL+C twice in succession;
- If nothing is running, type `exit` and press ENTER;

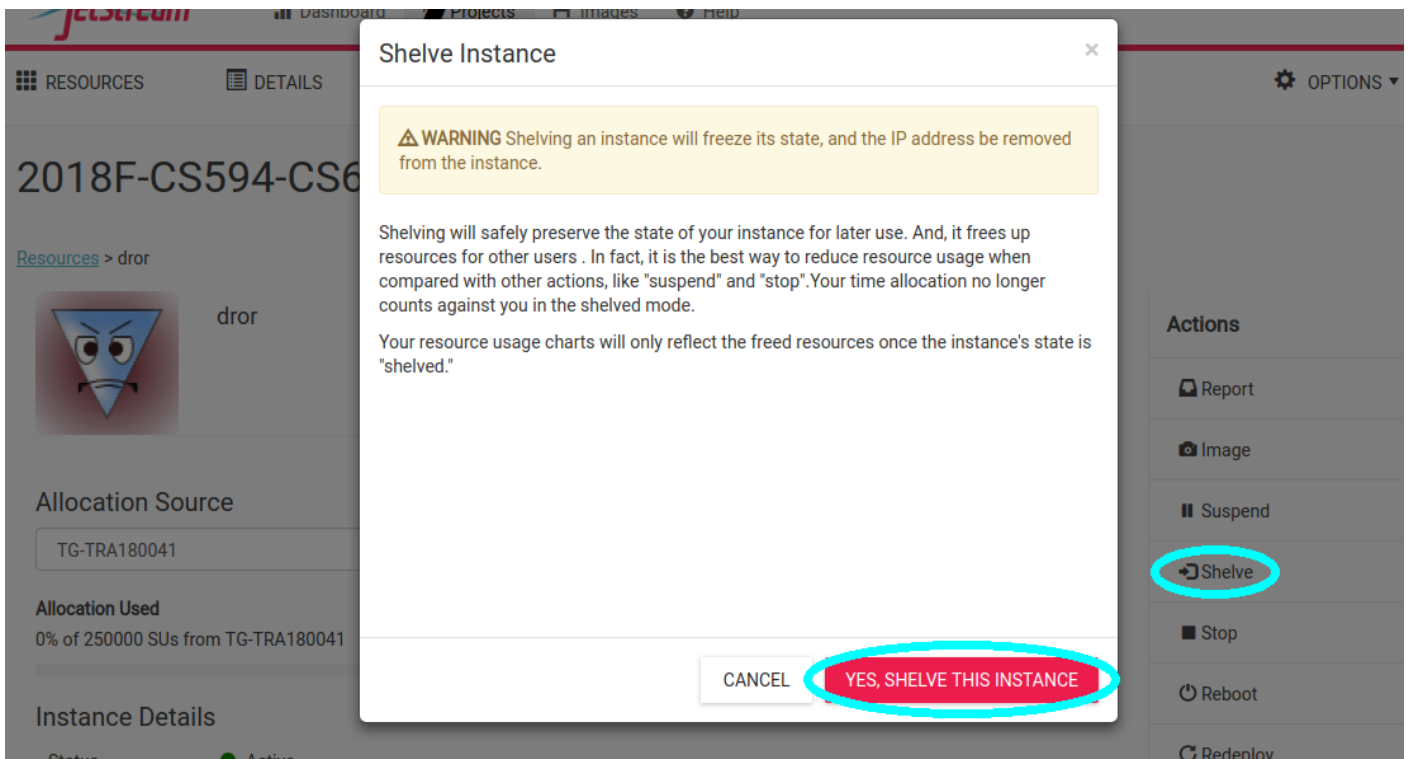
```
[I 13:41:40.155 NotebookApp] http://149.165.168.252:8888/?token=03eeb19ea313a52c179f47498191d0bc8ad40d1b1314be21
[I 13:41:40.155 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 13:41:40.156 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://149.165.168.252:8888/?token=03eeb19ea313a52c179f47498191d0bc8ad40d1b1314be21
3:51:15.650 NotebookApp] 302 GET /?token=03eeb19ea313a52c179f47498191d0bc8ad40d1b1314be21 (192.249.3.134) 4.10ms
root@js-168-252:~$ exit
```

- When a "DISCONNECTED" notice appears, click "Logout";
- Close the tab.

If you are in your VM window in Jetstream:

- Click "Shelve" under "Actions" on the right;
- In the "Shelve Instance" box that pops up, click the pink "YES, SHELVE THIS INSTANCE" button;



- The "Status" should have a yellow circle and the "Activity" should say "Shelving";
- You may now log out, but if you wait a while the "Status" should become "Shelved\_offloaded" with a grey circle.

**IMPORTANT: You MUST shelve your VM when you are not using it, or else you will use up our limited compute-time resources.** (Shelved units are deleted after 6 months.)