

Oregon State University's Machine Learning/AI Club GPU Cluster
User Guide and Manual

Introduction

The Machine Learning/AI Club in accordance with the Center for Genome Research and Biocomputing (CGRB) has created a club account in the teaching cluster. The teaching cluster consists of 4 Nvidia K-80 GPUs. The GPUs are partitioned in half and are interfaced through VMs monitored by the CGRB, for a total of 8 accessible GPUs allowing for faster deep learning training.

Usability

Gaining Access

In order to gain access, a club member needs to visit the CGRB website and file a workshop request form. The website: <http://shell.cgrb.oregonstate.edu/node/add/workshop-request>

Create Workshop Request

NOTICE: ANY DATA STORED IN A WORKSHOP ACCOUNT WILL BE REMOVED (AND THE ACCOUNT MAY BE DEACTIVED OR REMOVED) AFTER THE CLASS HAS ENDED. NEAR THE END OF THE CLASS IN QUESTION, BE SURE TO BACK UP ANY DATA YOU HAVE CREATED AND CARE ABOUT.
WORKSHOP ACCOUNTS ARE NOT FOR RESEARCH (CGRB OFFERS RESEARCH ACCOUNTS FOR PRODUCTION-SCALE WORK), AND DISK QUOTAS FOR WORKSHOP ACCOUNTS ARE LIMITED.

First Name: *

Last Name: *

Username/Login Name (If you have ONID please provide that login): *

Please provide a Login name that is 4 to 13 characters long; use your ONID name if you have one (eg: oneils). Lower-case letters only, no ID numbers. If you do not have an ONID Username please provide a 6 to 8 lower-case letter abbreviation instead.

Your Organization or Affiliation: *

Your Unit within the organization above:

Workshop Select: *

Your Phone (Suggested format: ###-###-####): *

Your Email Address: *

☐ [Have you completed watching the OSU CGRB Workshop Computer Information Video?](#)

Please watch the OSU CGRB Workshop Computer Information Video before you sign up for a workshop account. By clicking

Make sure to specify **OSU Machine Learning Club**, Spring 2018 in the workshop select

The screenshot shows a web form for signing up for a workshop. On the left is a scrollable list of workshops. 'OSU Machine Learning Club, Spring 2018' is highlighted in blue. To the right of the list are several empty text input fields. Below the list are fields for 'Your Phone' and 'Your Email Address', both marked with a red asterisk. At the bottom, there is a link to a video and a note about watching it before signing up.

Z561, Marine and Estuarine Invertebrates, Summer 2018
MC8599, Intro to Unix and Linux, Summer 2018
Summer STEM Camp, Hendrix
GBS Summer HMSC
OSU Machine Learning Club, Spring 2018
MB422, Aquatic Microbiology Lab, Spring 2018
CH615, Cheminformatics, Winter 2018
BOT475-575, Comparative Genomics, Winter 2018
Intro to Python I and II, Winter 2018
BB485-585, Applied Bioinformatics, Winter 2018

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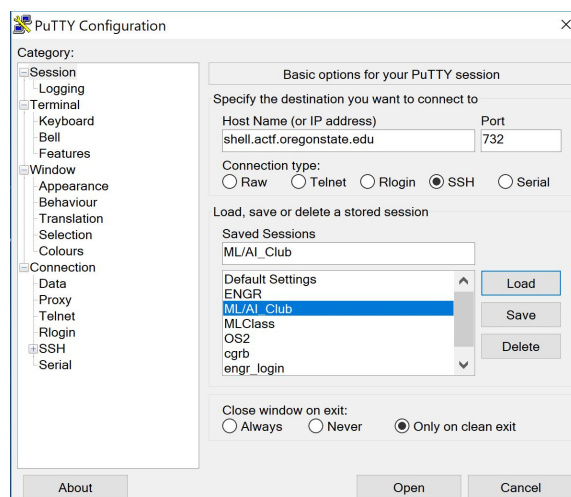
Your Phone (Suggested format: ###-###-####): *
Your Email Address: *

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Please watch the OSU CGRB Workshop Computer Information Video before you sign up for a workshop account. By clicking

Once you've created your account, expect an email with a temporary password within 48 hours confirming your account creation.

Logging In

Once your account is confirmed you will need to SSH onto the server, you can use Putty or any client of your choosing.

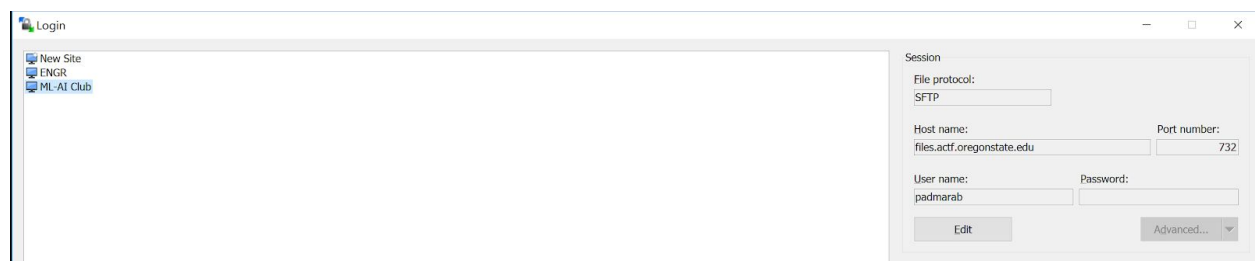


[illegible]

Entering into the class will drop you at your home directory.

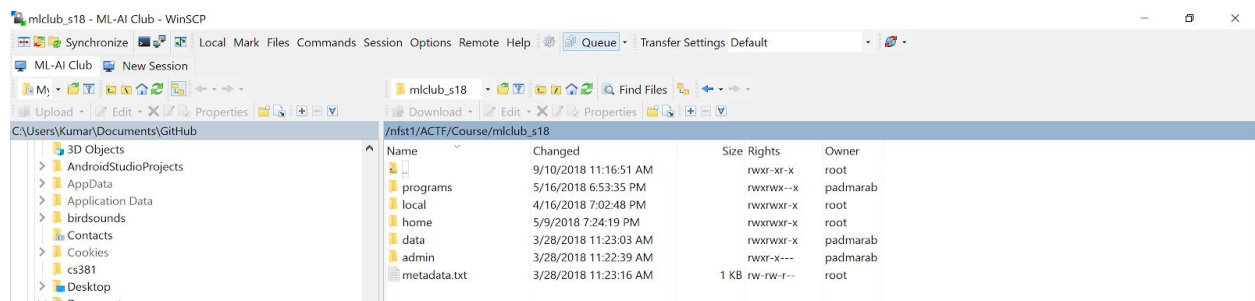
Uploading/Downloading Files

The club as a whole has 2.0 Terabytes of space available to use as storage for training data, testing data, algorithms, programs and libraries. More space can be added as needed in the future. The file space is separated from the computation cluster but is interfaced through a symlink. In order to access the filespace and quickly upload/download data you could use WinSCP if you're a windows user.



Notice that the Host name is files.actf.oregonstate.edu

Once logged in you can use the provided GUI to explore the directories and sub directories.



Note that when you initially log in you will be put into you home directory under

`/nfst1/ACTF/Course/mlclub_s18/home/${ONID_USERNAME}`

The aforementioned directory is your personal directory that no one has access to. However the club will most like be collaborating on projects as a whole, for that reason the

`/nfst1/ACTF/Course/mlclub_s18/data` directory will be used to store all our project data.

The entire cluster utilizes the Sun Grid Engine (SGE) queuing system to interface the GPUs. The command **SGE_Avail** will output the available computing resources. Running the command will yield something like this.

Crick and Franklin are the onboard CPUs, the other resources are the partitioned k-80 GPUs. We can log into a GPU using the **qrsh -q gpu** command. This will dedicate an entire GPU partition with 4 slots to you. It is worth noting that the number of slots you wish to use is configurable. Moreover, as further confirmation that your account has migrated you can see how the user changed from `${ONID_USERNAME}@stevens (mlclub_s18)` to `${ONID_USERNAME}@k80-2 (mlclub_s18)` after the **qrsh** command.

From here on out you can run jobs.

Please use the **exit** command to exit out of the GPU as soon as your job is finished, otherwise the entire GPU will be controlled by you and unable to be transferred to other users.