**Login to hypergator using putty:**

Hostname: hpg.rc.ufl.edu

port: 22

connection type: ssh

**Login to hypergator using Winscp (SFTP):**

hostname: hpg.rc.ufl.edu

**Web Interfaces to login to Hypergator**

* [https://ood.rc.ufl.edu](https://ood.rc.ufl.edu/)
* Jupyter Notebook : <https://jhub.rc.ufl.edu>

select university as University of Florida and enter Gatorlink username and password to login. After logging into [https://ood.rc.ufl.edu](https://ood.rc.ufl.edu/) there will be various options on top menu bar for Files, Jobs, Clusters, Interactive Apps.

**Some Useful Commands:**

1. ncdu – to see memory usage of the current working directory.
2. ps -- to see running processes
3. TO run a process in Background enter & in the end of the command.
4. id - - shows the user id and group id in hypergator.
5. showAssoc <username>

to get the QOS group and group name.

1. showQos <specified\_qos>

to get the Qos group limits.

**Environment Setup for StableDiffusion -** [**https://github.com/harrywang/finetune-sd#setup**](https://github.com/harrywang/finetune-sd#setup)

To run the fine-tuning Stable Diffusion Code do all the steps from step number 1 to number 8.

1. To create a environment with conda first load conda using

module load conda

1. To create an environment named StableDif2 with python 3.10.9

Conda create -n StableDif2 python= 3.10.9

1. Activate the StableDIf2 Environment using

conda activate StableDif2

1. Install Pytorch using below commands

pip install pyg\_lib torch\_scatter torch\_sparse -f <https://data.pyg.org/whl/torch-1.13.1+cu117.html>

pip install torch-geometric

1. Load the git module using

module load git

1. Clone the repository

git clone <https://github.com/harrywang/finetune-sd.git>

1. cd (change directory) in to the directory containing requirements.txt
2. Install the python libraries

pip install -r requirements.txt

1. I got an error running the accelerate launch train\_text\_to\_image\_lora.py

So I have installed triton to overcome that error.

pip install triton==2.0.0.dev20221120

**HuggingFace and WandB account creation**

1. create an account at <https://huggingface.co/settings/tokens>
2. copy the token from **User Access Tokens: section :**
3. to login to HuggingFace using your token use the command:

huggingface-cli login

It will prompt you to enter the token

paste the token copied from User Access Tokens.

1. Create an account at <https://wandb.ai/authorize>

To create the account you can signin with github.

1. To login to WandB using your API key use the command :

wandb login

1. It will prompt you to enter the API key:

You can find the API key at <https://wandb.ai/authorize>

**Fine-tune using Dreambooth with LoRA**

1. Requesting a GPU node in interactive mode

srun -p gpu --nodes=1 --gpus=a100:1 --time 600 --ntasks=1 --cpus-per-task=4 --mem=32000MB --pty -u bash -i

--time 600 is 600 minutes

--mem= 32000MB is 32 GB

2. load conda and activate the environment

module load conda

conda activate StableDif2

accelerate config default

* above command is to use the GPU

export MODEL\_NAME="runwayml/stable-diffusion-v1-5"

export INSTANCE\_DIR="./data/dreambooth/dog"

export OUTPUT\_DIR="./models/dreambooth-lora/dog"

accelerate launch train\_dreambooth\_lora.py \

--pretrained\_model\_name\_or\_path=$MODEL\_NAME \

--instance\_data\_dir=$INSTANCE\_DIR \

--output\_dir=$OUTPUT\_DIR \

--instance\_prompt="a photo of sks dog" \

--resolution=512 \

--train\_batch\_size=1 \

--gradient\_accumulation\_steps=1 \

--checkpointing\_steps=100 \

--learning\_rate=1e-4 \

--lr\_scheduler="constant" \

--lr\_warmup\_steps=0 \

--max\_train\_steps=1000 \

--validation\_prompt="A photo of sks dog in a bucket" \

--validation\_epochs=20 \

--seed=42 \

--report\_to="wandb" >logfile2 2>&1 &

Returns process id : 130457

in the accelerate launch train\_dreambooth command in the last line >logfile2 2>&1 &

>logfile2 is to write the logs to file named logfile2

2>&1 is to write the error to standard output.

the last & is to run the process in background.

To test the model:

python generate-lora.py --prompt "A photo of sks dog near lake" --model\_path "./models/dreambooth-lora/dog" --output\_folder "./outputs" --steps 400

**Link to the help document.**

<https://help.rc.ufl.edu/doc/Getting_Started#Connecting_from_Windows>

<https://help.rc.ufl.edu/doc/Checking_and_Using_Secondary_Resources>

<https://help.rc.ufl.edu/doc/Slurm_and_GPU_Use>

<https://help.rc.ufl.edu/doc/GPU_Access>