

Getting Started with Moving Over to Coffea-Casa

CMS Analysis Facility @ T2 US Nebraska

Go to <https://coffea.casa/hub/login>
or simply type *coffea.casa* in the
address bar



Authorized CMS Users Only!

To login into the Coffea-Casa Analysis Facility, you will need to get a CMS OAuth token.

To get a token you need to a) be member of CMS and b) register with the OAuth service at: [CMS-Auth.web.cern.ch](https://cms-auth.web.cern.ch)

Useful Links

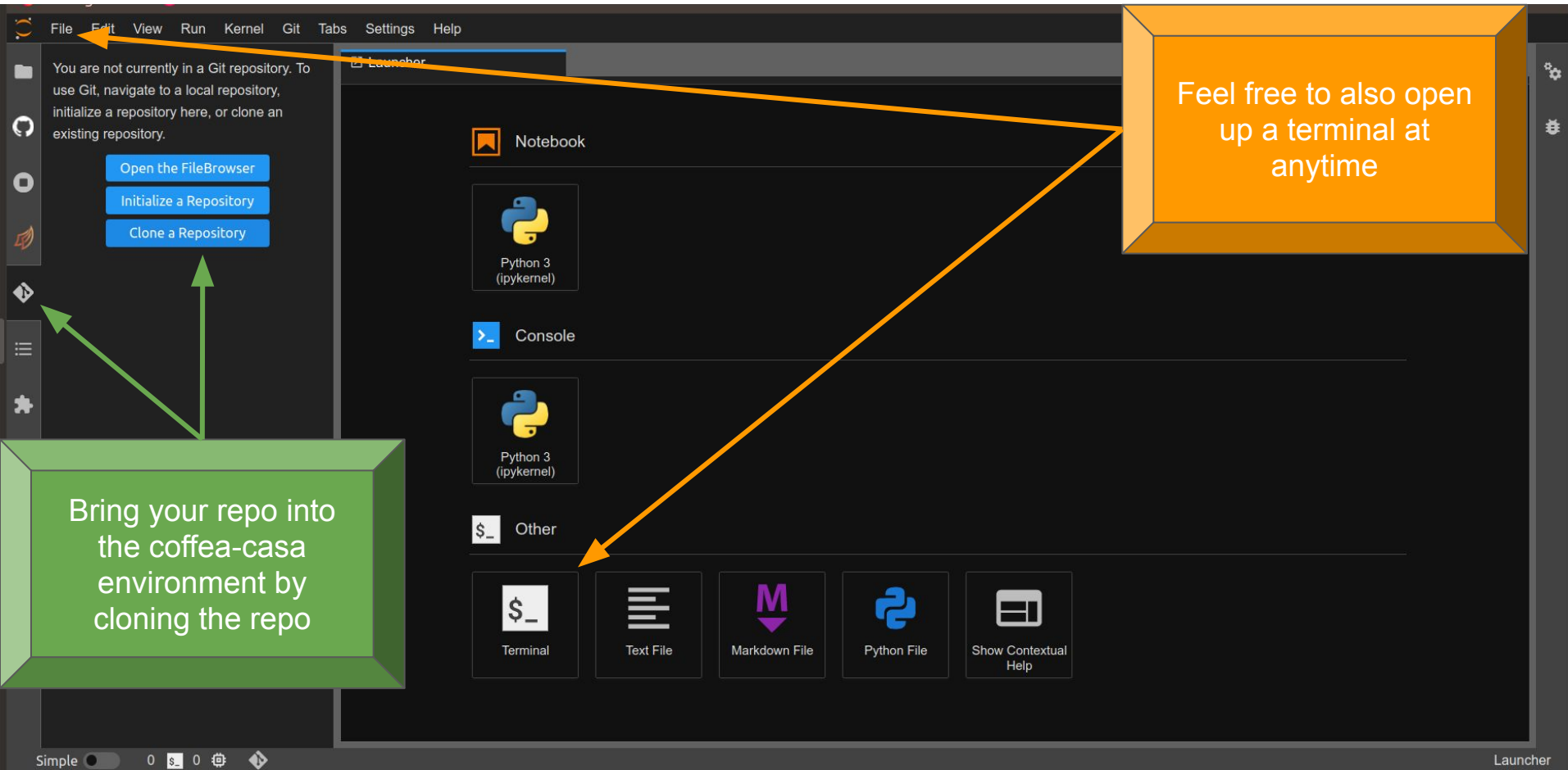
[Coffea-Casa Support Page](#) [Coffea-Casa Docs](#)

News

Watch here for announcements!

Authorized CMS Users Only:
Sign in with CMS SSO

Click Here to
Begin



Bring your repo into the coffea-casa environment by cloning the repo

Feel free to also open up a terminal at anytime

You are not currently in a Git repository. To use Git, navigate to a local repository, initialize a repository here, or clone an existing repository.

Open the FileBrowser

Initialize a Repository

Clone a Repository

Launcher

Notebook



Python 3
(ipykernel)

Console



Python 3
(ipykernel)

Other



Terminal



Text File



Markdown File



Python File



Show Contextual
Help

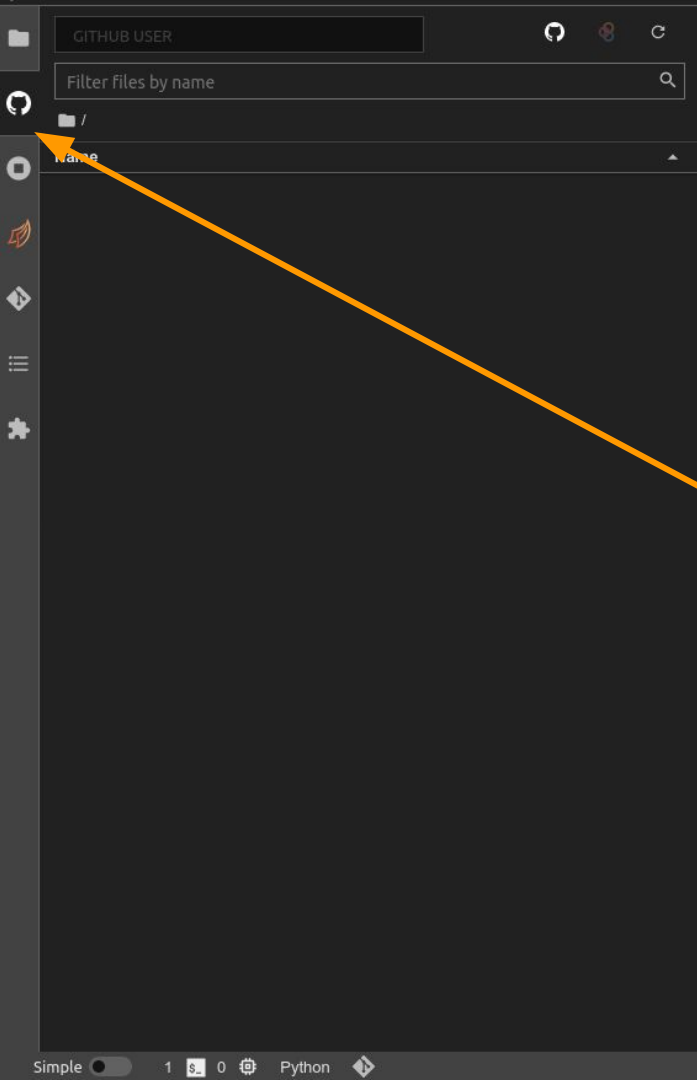
Clone a repo

Enter the Clone URI of the repository

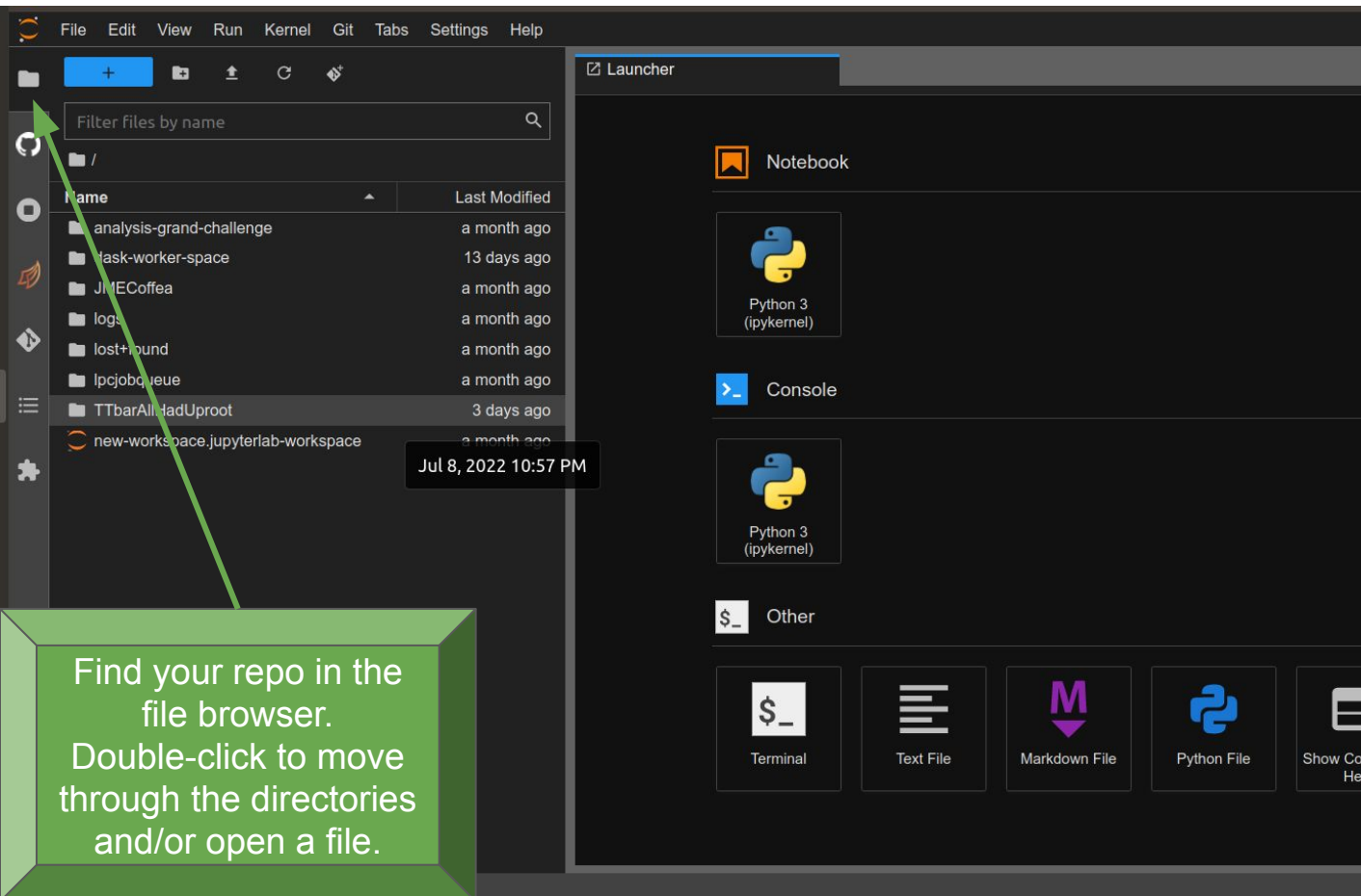
https://whatever.git

Cancel

Clone



You can also search for git repos directly from the coffea-casa interface if you'd like



Again, feel free to browse with the terminal. You can also edit files directly with vi or vim

Find your repo in the file browser. Double-click to move through the directories and/or open a file.

Using the Provided Dask Scheduler in Coffea-Casa

DASK DASHBOARD URL

Use Coffea-Casa's Dask Client

Dashboard not connected

To connect, paste a dashboard URL in the box above, or create a new Dask cluster with the cluster manager below. If you are still unable to connect, check your network setup.

CLUSTERS

UNL HTCondor Cluster
 Scheduler Address: `tls://ac-2emalik-2ewilliams-40cern-2ech.dask.coffea.casa:8786`
 Dashboard URL: `/user/ac.malik.williams@cern.ch/proxy/8787/status`
 number of cores: 4
 Memory: 12.72 GiB
 Number of Workers: 2
 Minimum Workers: 1
 Maximum Workers: 50

```

417
418 #
419 # DDDD A SSSSS K K SSSSS EEEEEEE TTTTTT U U P P P P P
420 # D D A A S K K S E T U U P P
421 # D D A A S K K S E T U U P P
422 # D D A A A A SSSSS K K SSSSS EEEEEEE T U U P P P P P
423 # D D A A S K K S E T U U P
424 # D D A A S K K S E T U U P
425 # DDDD A A SSSSS K K SSSSS EEEEEEE T U U P
426 #
427
428 client = None
429
430 if UsingDaskExecutor == True and args.casa:
431     # from coffea_casa import CoffeaCasaCluster
432     from dask.distributed import Client #, Scheduler, SchedulerPlugin
433     from dask.distributed.diagnostics.plugin import UploadDirectory
434     if __name__ == "__main__":
435
436         client = Client('tls://ac-2emalik-2ewilliams-40cern-2ech.dask.coffea.casa:8786')
437         client.register_worker_plugin(UploadDirectory('TTbarAllHadUproot', restart=True, update_path=True), nanny=True)
438         # client.upload_file('TTbarAllHadUproot/Filesets.py')
439         # client.upload_file('TTbarAllHadUproot/TTbarResProcessor.py')
440         # client.upload_file('TTbarAllHadUproot/TTbarResLookUpTables.py')
441
442
443 elif UsingDaskExecutor == True and args.lpc:
444     # from lpcjobqueue import LPCCondorCluster
445     if __name__ == "__main__":
446         tic = time.time()
447         cluster = LPCCondorCluster(
448             ship_env = True,
449             transfer_input_files = ImportFiles
450         )
451         # minimum > 0: https://github.com/CoffeaTeam/coffea/issues/465
452         cluster.adapt(minimum=1, maximum=10)
453         client = Client(cluster)
454         # client.restart()
455         client.upload_file('TTbarAllHadUproot/Filesets.py')

```

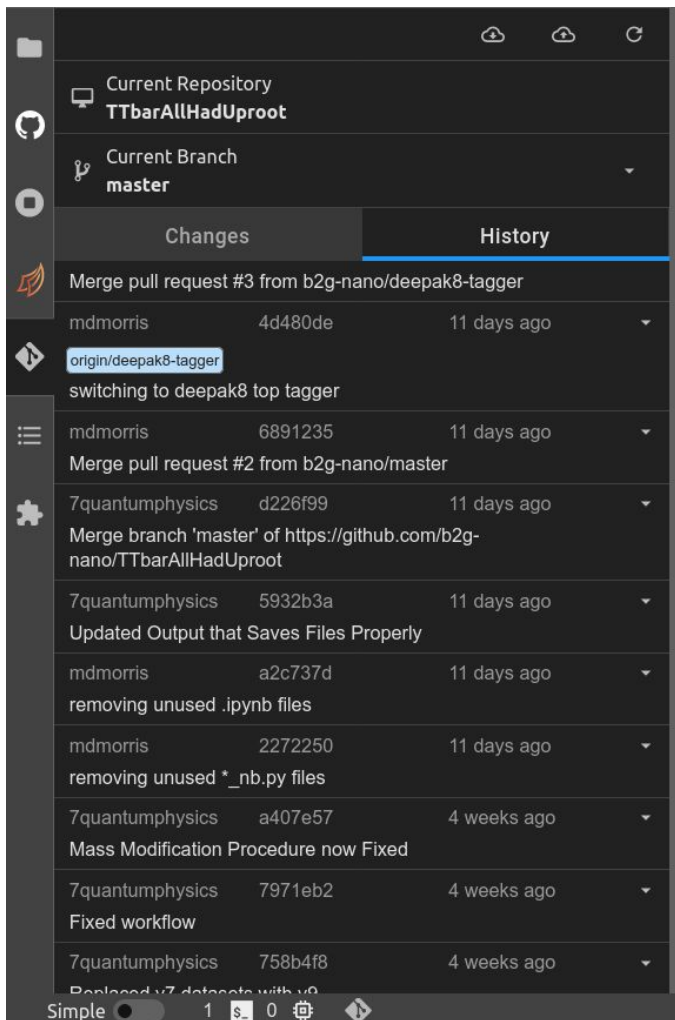
`print(client.run(os.listdir,"dask-worker-space"))`
`#Uploaded Directory should be here`

Ln 435, Col 9 Spaces: 4 TTbarResCoffeaOutputs.py

Add the Scheduler Address to the client definition

You can simply upload individual files to the client if you'd like, but if you need to upload a directory of files that an uploaded file depends on, you will need to import and use `UploadDirectory`. You can also simply upload a directory that contains everything the client needs in order for the dask-workers to access them; no need to use `client.upload_file` on individual files.

Coffea-Casa GUI for Handling Github Shenanigans



Github branch status' are always being checked.

The image shows a JupyterLab interface with a dark theme. On the left is a sidebar with navigation icons and a file browser. The main area is split into two panes. The top pane is a terminal window titled 'Terminal 1' showing the output of a `git status` command. The output indicates the repository is up to date and the working tree is clean. The bottom pane is a commit summary form with fields for 'Summary' and 'Description', and a 'COMMIT' button. A green callout box with a 3D effect is positioned in the lower right, containing text that explains the two ways to interact with the interface. Two green arrows point from the callout box to the terminal window and the commit summary form.

File Edit View Run Kernel Git Tabs Settings Help

Current Repository
TTbarAllHadUproot

Current Branch
master

Changes History

- Staged (0)
- Changed (0)
- Untracked (0)

Summary (Ctrl+Enter to commit)

Description (optional)

COMMIT

```
Terminal 1
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$
```

You can either use the GUI,
or the good 'ol terminal
commands

File Edit View Run Kernel Git Tabs Settings Help

Current Repository
TTbarAllHadUproot

Current Branch
master

Changes History

Staged (0)

Changed (1)

TTbarResCoffeaOutputs.py

Untracked (0)

Summary (Ctrl+Enter to commit)

COMMIT

Terminal 1

```
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~$ cd TTbarAllHadUproot/
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   TTbarResCoffeaOutputs.py

no changes added to commit (use "git add" and/or "git commit -a")
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$
```

Stage this change

Click the + sign next to the file that is marked as *Changed* to add it (stage it)

Simple 1 0

Terminal 1

File Edit View Run Kernel Git Tabs Settings Help

Current Repository
TTbarAllHadUproot

Current Branch
master

Changes History

Staged (1)

TTbarResCoffeaOutputs.py

Changed (0)

Untracked (0)

Removed Unnecessary Commented Lines

Made the code look prettier. Also, I made this commit for the sole purpose of demonstrating how to use `coffea-casa`

Commit

COMMIT

Terminal 1

```
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~$ cd TTbarAllHadUproot/
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   TTbarResCoffeaOutputs.py

no changes added to commit (use "git add" and/or "git commit -a")
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$
```

Once added (listed in *Staged*) you can add a commit message and click **COMMIT** at the bottom

File Edit View Run Kernel Git Tabs Settings Help

Current Repository
TTbarAllHadUproot

Current Branch
master

Changes History

Staged (0)

Changed (0)

Untracked (0)

Summary (Ctrl+Enter to commit)

Description (optional)

COMMIT

```
Terminal 1
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~$ cd TTbarAllHadUproot/
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   TTbarResCoffeaOutputs.py

no changes added to commit (use "git add" and/or "git commit -a")
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
cms-jovyan@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$
```

Push committed changes (ahead by 1 commits)

When ready, fill free to push the committed changes. You can click the cloud button with the newly made orange circle above it

File Edit View Run Kernel Git Tabs Settings Help

Current Repository
TTbarAllHadUproot

Current Branch
master

Changes History

Staged (0)

Changed (0)

Untracked (0)

Summary (Ctrl+Enter to commit)

Description (optional)

COMMIT

Terminal 1

```
cms-jovyana@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~$ cd TTbarAllHadUproot/
cms-jovyana@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   TTbarDesCoffeeOutputs.py

no changes added to commit (use "git add" and/or "git commit -a")
cms-jovyana@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
cms-jovyana@jupyter-ac-2emalik-2ewilliams-40cern-2ech:~/TTbarAllHadUproot$
```

Git credentials required

Enter credentials for remote repository

username

password / personal access token

Cancel OK

Pushing...

Terminal 1