

YETI Contur (+Rivet) tutorial

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Environment setup

- Based on Docker, intended to run on local machine for ease, should be fairly standard obtainable via package manager,
 - <https://docs.docker.com/install> (docker-ce package on Ubuntu & Fedora)
Maybe necessary:
 - > sudo groupadd docker
 - > sudo usermod -aG docker \$USER
- Install Tutorial docker image
 - > docker pull dyallup/contur
 - Needs ~2GB of space
- Helpful commands
 - docker run: run an image
 - docker ps: list active containers
 - docker cp: copy files between host and container
 - docker image ls: list available images/apps
 - docker help: useful!
 - Install new system packages with dnf on the images (e.g. if you like emacs, > dnf install emacs within the image. Exit with Ctrl-d; detach with Ctrl-p Ctrl-q, reattach with "docker attach")

Environment setup

- You can work with docker however you like, these are my steps
- Make a directory in your filesystem, so we can mount this to easily get things in and out (in my case ~/YETITutorial/runArea)
- > docker run -v ~/YETITutorial/runArea:/runArea -it dyallup/contur bash
 - This runs the container and mounts the directory inside the container at the path /runArea
 - >dnf install xyz can be used (as one would use any other package manager), I already put emacs, vi and nano in
 - Ctrl+p ctrl+q to detach, >docker ps to list containers, >docker attach xyz to reattach
 - You should start in the contur directory, to test things are working run the commands below
 - > . setupContur.sh ; > make ; > Herwig --version

```
[root@5366b3e66366 contur]# ls
AnalysisTools Makefile Models README.md herwigPath.sh modified_analyses setupContur.sh
[root@5366b3e66366 contur]# . setupContur.sh
[root@5366b3e66366 contur]# make
rm -f AnalysisTools/contur/contur/TestingFunctions/analyses.db
sqlite3 AnalysisTools/contur/contur/TestingFunctions/analyses.db < AnalysisTools/contur/contur/TestingFunctions/analyses.sql
modified_analyses/Analyses/buildrivet.sh
/usr/bin/g++ -o "Rivet-ConturOverload.so" -shared -fPIC -I/usr/local/include -I/usr/local/include -I/usr/local/include -I/usr/local/include -pedantic -Wall -Wno-long-long -Wno-format -Werror-uninitialized -Werror=delete-non-virtual-dtor -fopenmp -O2 -Wl,-no-as-needed -L/usr/local/lib -L/usr/local/lib -L/usr/local/lib -Wl,-rpath,/usr/local/lib -lm -L/usr/local/lib -lfastjettools -lfastjet -lfastjetplugins -lsliscone_spherical -lsliscone -lRivet CMS_2013_I1256943.cc --std=c++11
make[1]: Entering directory '/contur/modified_analyses/Analyses'
make[1]: Leaving directory '/contur/modified_analyses/Analyses'
[root@5366b3e66366 contur]# Herwig --version
Herwig 7.1.4
ThePEG 2.1.4
```

Container

Environment setup

- Now switch to the directory we mounted
- > cd ../runArea
- Clone the git repository (maybe preferable to do this from your host pc) into the linked runArea folder
- <https://bitbucket.org/dyallup/conturtutorial/src/master/>
 - > git clone <https://bitbucket.org/dyallup/conturtutorial.git> runArea
- Check you can see the files and open them in your desired console text editor inside the container