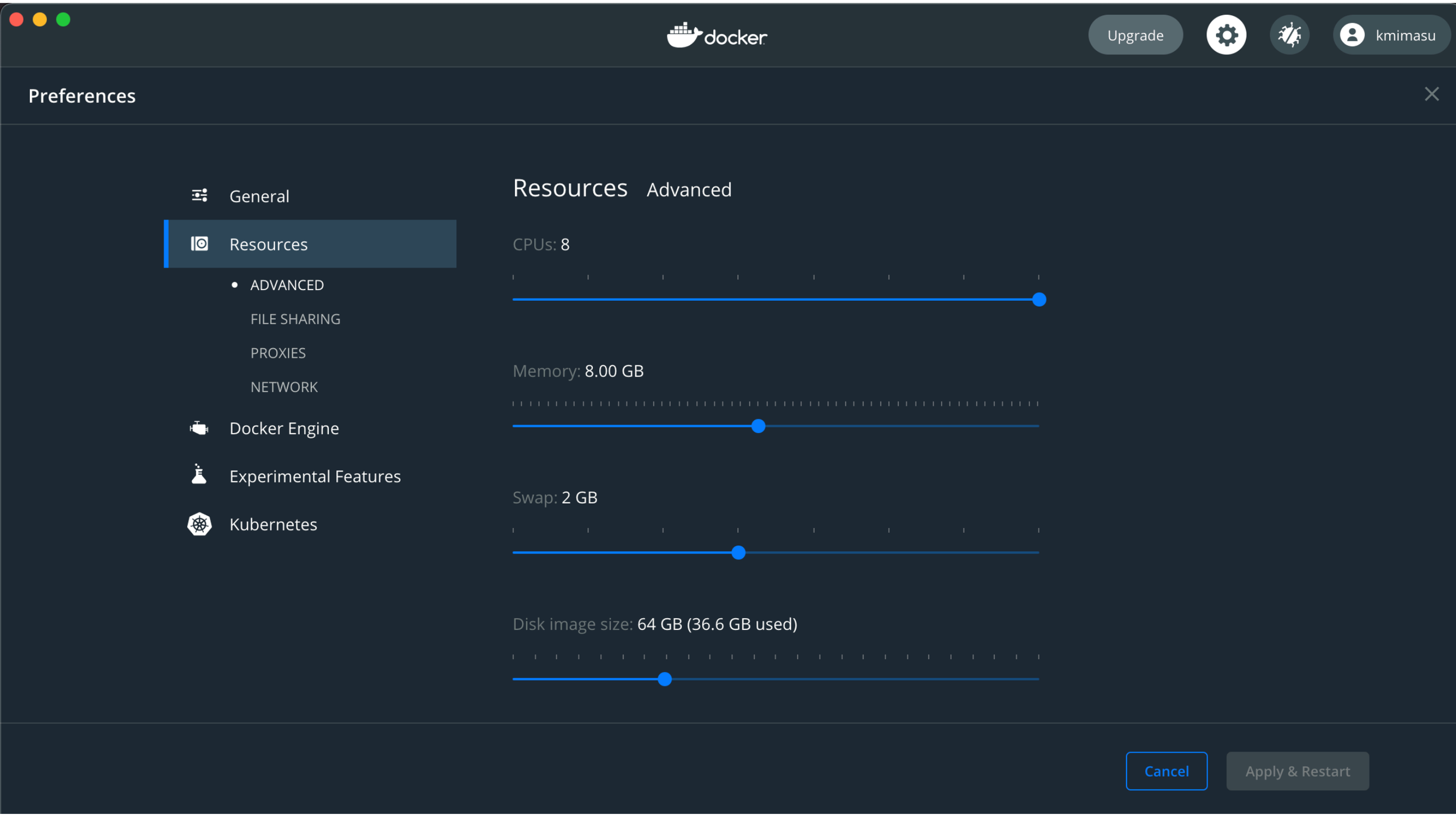
Allocate more resources



Mount

```
> mkdir portal
> docker run -it --name=test  --mount type=bind,source="$(pwd)"/portal,target=/portal  kmimasu/heptools:mg5_ma5
```

) *one line!*

Now you are inside the docker Virtual Machine

```
> cd /home
> mkdir HEFT_tutorial
> ls
```

⇒

```
root@d23ca418da90:/home# ls
HEFT_tutorial  software
```

```
> ls /home/software
```

⇒

```
root@d23ca418da90:/home# ls /home/software/
fastjet  logs  madanalysis5  mg5amcnlo  py.py
```

```
> cd /portal
```

This directory is mounted on your main file system so you can exchange files through here

```
> mg5
```

Its a good place to run mg5 from for this tutorial!

Tip: after generating your process in /portal/, you can go in the process directory and open index.html with your browser to access the process information

LO Exercise Checklist

Tutorial material on indico *https://indico.ihep.ac.cn/event/13633/contribution/16*

- tutorial_material.zip: Example `mg5`/`ma5` cards
- Some event samples (LO: SM, cHu=1)

Generate $pp \to he^+e^-$ with SMEFTsim

- Start with SM only (`NP=0` or c_i=0)
- 30k events, interfaced with PYTHIA8 (set up to decay $h \to b\bar{b}$)
- Use `MadAnalysis5` to convert `hepmc` ⇒ `lhe`
- Write analysis scripts
- Plot m_{Zh}, p_T^Z, N_j,… distributions
- Determine STXS bin predictions ⇒
- Generate samples for C_{Hu} & C_{HB} pure interference & squares

σ[fb]

p_T^Z	Nj=0	Nj=1	Nj>=2
[0,75]			
[75,150]			
…			