using docker:
a docker cheat sheet

Sven Kreienbrock

December 5, 2018

1 Getting Information

- Collect information about docker itself (*the docker daemon* dockerd)

  `$ docker info`

  `$ docker version`

- How much storage does docker use on your local hard disk?

  `$ docker system df`

- Deleting all stopped containers, all networks, the build cache and reclaim system space

  `$ docker system prune`

- Getting infos about downloaded images

  `$ docker images`

- Manage active [or inactive] Containers

  `$ docker ps [-a]`

- Check on Ressources (Container Usage)

  `$ docker stats`

- Searching for docker images (CLI based)

  `$ docker search keras` or `$ docker search tensorflow` e.g.

  → It is necessary to check Docker-Hub for Usage (Invocation)

  → `https://hub.docker.com`

2 executing/running docker images

Some basics you should consider when executing images:
The first step always: `docker run [OPTIONS]`, where OPTIONS could be one or more of:

- `-v; --volume list` adding Support for a Volume
  e.g.: `-v /path/at/host:/path/in/container`
- `-p; --publish list` publishing of container internal ports
  e.g.: `-p 8888:8888` (mapping host-Port 8888 to container Port 8888)
- `-i` interactive (mostly in combination with `-t` for tty)
- `-t` tty (mostly in combination with `-i` for interactive tty)
- `--rm` removes container after usage
- `-e` setting of environment variables
  e.g.: `-e DISPLAY=$DISPLAY`
  sets Variable DISPLAY to systems $DISPLAY.

3 Examples

Example: run the BPH Matlab Image, with X11 forwarding

```
$ xhost +; docker run -it
-v /tmp/.X11-unix:/tmp/.X11-unix
-v /bph/home/user:/data
-e DISPLAY=$DISPLAY
svekre/ml:latest matlab; xhost -
```

Example: R-Studio (login with rstudio and `MYPASSWORDX`)

- `$ docker run -d -p 8787:8787`
  `-e PASSWORD=MYPASSWORDX`
  `--name rstudio rocker/rstudio`
  → Afterwards type into your browser address bar:
  → `http://localhost:8787` and provide your login credentials.

4 stop and delete images/containers

Example: container named cringy_conti as Instance of Image rocker/rstudio

- `$ docker rm cringy_conti`
  deletes container
- `$ docker rmi rocker/rstudio`
  removes image from Host