

# Objective

The objective of this lab are to familiarise yourself with

1. container and docker terminology
2. basics of docker command-line usage

In a follow-up lab we will look at building our own docker images.

# Preparation

1. Download and install docker on your computer following the instructions here: <https://docs.docker.com/install/>
2. Test your docker installation and get familiar with container terminology as explained here: <https://docs.docker.com/get-started/>

Note that on Linux you need to prefix all the docker commands with ‘sudo’.

You may optionally use the following resources to familiarise yourself with docker.

1. Watch the first 42 minutes of this video: <https://www.youtube.com/watch?v=fqMOX6JJhGo>
2. Watch the first six minutes of this video <https://www.youtube.com/watch?v=pEYjB5OIfqk>

# Exercises

1. Explain what is meant by a docker image and container.
2. Run the following command to download the nginx web server image:  
`docker image pull nginx`
3. Run the following command to verify the nginx image was downloaded. What is the purpose of the ‘TAG’ column?  
`docker image ls`
4. Where is the docker image downloaded from when you execute the command above?
5. Run an nginx container by running the following command  
`docker container run -p 8080:80 -d nginx`
6. Visit <http://localhost:8080> in your browser. What do you observe in the docker console?
7. Explain what the -p option in the docker run command in (5) does.
8. Open a new terminal, run the following command and note down the container name shown in the last column.  
`docker container ps`

9. Stop the nginx container by replacing <container\_name> with the name you got in (8)  
docker container stop <container\_name>
10. Verify the container is stopped by looking at the “status” column of the following command. What is the effect of the -a switch to the docker ps command?  
docker container ps -a
11. How do you list the logs of a stopped container?
12. How do you restart the nginx container that was stopped in (8)?
13. How do you delete the nginx docker image?
14. What happens if you try to delete the image of a running container?