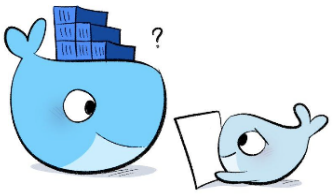
Docker Technical Workshop

Prerequisites for the Technical Workshop:

- Docker Desktop: installing Docker
- Docker Hub account
- Basic knowledge on REST



Installing Docker

To create a container we must first begin by installing the Docker Engine on our local machine.
Follow the guide on https://docs.docker.com/get-docker/
You can also download Docker directly for Windows or Mac.

DockerHub

Docker not only provides the tools to build and maintain containers, but they also provide a publicly available, free of charge repository (or Hub) of images, that anyone can use.

Begin by signing up with docker hub and creating a user:
https://hub.docker.com/

Installing an IDE

Please install an IDE on your computer.
You can install Visual studio code.

Quick Read

If you'd like to come to the Technical Workshop even more prepared, we recommend on getting to know the following topics:

- REST:
  - https://www.restapitutorial.com/
  - https://www.codecademy.com/articles/what-is-rest

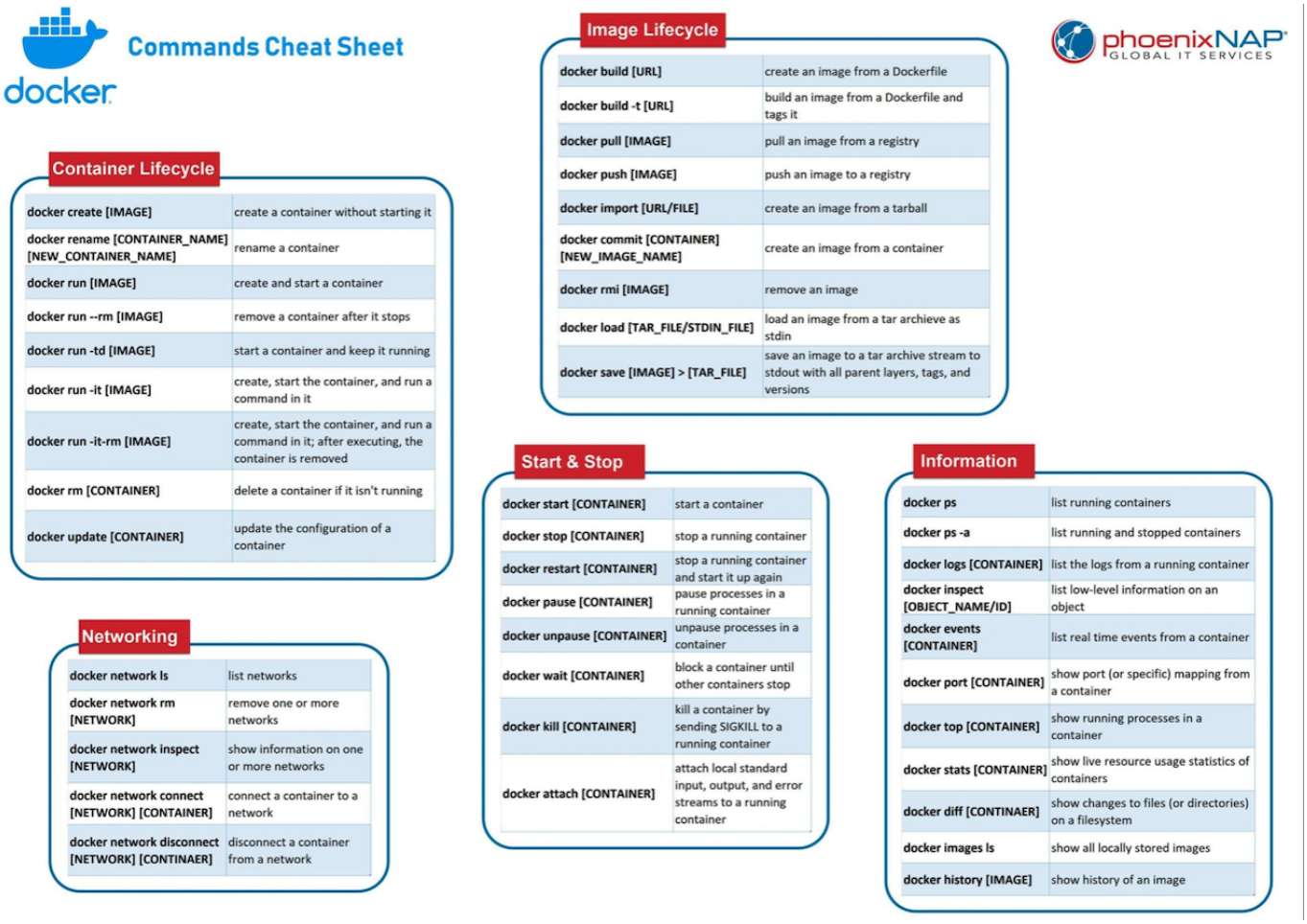
- Node.js:
  will be used as coding language for the examples in the workshop, but you can use whatever language you are most comfortable with.
  - https://nodejs.dev/learn

- Express.js:
  A library in Node for building a HTTP server in Node.js
  - http://expressjs.com/

- Other alternatives for example:
  - Flask for Python
  - Spring for Java

Docker Commands Cheat Sheet

This is a cheat sheet that contains the common commands used.



docker Commands Cheat Sheet

phoenixNAP GLOBAL IT SERVICES

Container Lifecycle

docker create [IMAGE]	create a container without starting it
docker rename [CONTAINER_NAME] [NEW_CONTAINER_NAME]	rename a container
docker run [IMAGE]	create and start a container
docker run --rm [IMAGE]	remove a container after it stops
docker run -td [IMAGE]	start a container and keep it running
docker run -it [IMAGE]	create, start the container, and run a command in it
docker run -it-rm [IMAGE]	create, start the container, and run a command in it; after executing, the container is removed
docker rm [CONTAINER]	delete a container if it isn't running
docker update [CONTAINER]	update the configuration of a container

Image Lifecycle

docker build [URL]	create an image from a Dockerfile
docker build -t [URL]	build an image from a Dockerfile and tags it
docker pull [IMAGE]	pull an image from a registry
docker push [IMAGE]	push an image to a registry
docker import [URL/FILE]	create an image from a tarball
docker commit [CONTAINER] [NEW_IMAGE_NAME]	create an image from a container
docker rmi [IMAGE]	remove an image
docker load [TAR_FILE/STDIN_FILE]	load an image from a tar archieve as stdin
docker save [IMAGE] > [TAR_FILE]	save an image to a tar archive stream to stdout with all parent layers, tags, and versions

Networking

docker network ls	list networks
docker network rm [NETWORK]	remove one or more networks
docker network inspect [NETWORK]	show information on one or more networks
docker network connect [NETWORK] [CONTAINER]	connect a container to a network
docker network disconnect [NETWORK] [CONTINAER]	disconnect a container from a network

Start & Stop

docker start [CONTAINER]	start a container
docker stop [CONTAINER]	stop a running container
docker restart [CONTAINER]	stop a running container and start it up again
docker pause [CONTAINER]	pause processes in a running container
docker unpause [CONTAINER]	unpause processes in a container
docker wait [CONTAINER]	block a container until other containers stop
docker kill [CONTAINER]	kill a container by sending SIGKILL to a running container
docker attach [CONTAINER]	attach local standard input, output, and error streams to a running container

Information

docker ps	list running containers
docker ps -a	list running and stopped containers
docker logs [CONTAINER]	list the logs from a running container
docker inspect [OBJECT_NAME/ID]	list low-level information on an object
docker events [CONTAINER]	list real time events from a container
docker port [CONTAINER]	show port (or specific) mapping from a container
docker top [CONTAINER]	show running processes in a container
docker stats [CONTAINER]	show live resource usage statistics of containers
docker diff [CONTINAER]	show changes to files (or directories) on a filesystem
docker images ls	show all locally stored images
docker history [IMAGE]	show history of an image