Python API for Docker

# Introduction to Docker

Docker is a container management program.

A container is a standardized unit to develop, ship, and deploy an application or an application suite (group of programs). (Docker, 2023)

A container contains all the apps and dependencies required to run an app. An image is a template that downloads and/or assembles the missing pieces. (Amazon, 2024)

# Introduction to Docker API

Python API for Docker: <https://docker-py.readthedocs.io/en/stable/> (Docker SDK, n.d.)

The Python SDK is a Python module that can be used in Python scripts to manipulate Docker, such as running a container, creating a service and terminating containers and images.

# 10/04/2024

Never had a clue what to do so here are the note I wrote in the Python file:

check if docker is running, raise exception if false.

Or don't and just go through a bunch of files per step.

Things one can do:

list containers:

client.containers.list()

run containers:

client.containers.run("fedora:latest", "echo hello world")

building containers:

docker build -t getting-started .

is the same as

client.images.build(path = "./", tag = "getting-started")

pulling:

client.images.pull(fedora:39) doesn't work

client.images.pull(platform="fedora:39") doesn't work

client.images.pull("fedora:latest") DOES

# 11/04/2024

At least I’m getting somewhere…

go to YouTube for Docker tutorials

follow videos and do your own thing

i.e. what can be done in Docker SHOULD be doable in PyDocker

PyDocker examples and tutorial

maybe install Anaconda or another useful program

this class two weeks time presentation (25th?)

# 16/04/2024

its never too late to learn a lesson

desensitize, work smarter, write/print tasks, stop using computer after 9pm.

Navy sleep technique: distract your brain with muscle exercises.

Stay organized in work with note taking. This increases your value.

Instead of watching YT vids non-stop you should instead watch one vid, then get up and walk around before watching another. One technique to stop eating biscuits is to put them far out of the way.

<https://hub.docker.com/r/continuumio/anaconda3/> here is Anaconda, which we will install using Docker.

<https://www.youtube.com/watch?v=cK7vgjOntqM> install

Jupyter is powered by Anaconda. Conda is an alt to pip.

Origin: https://docs.docker.com/reference/cli/docker/container/create/

To turn an image into a container, you use:

docker container create -i -t --name [name e.g. mycontainer] [image name e.g. "fedora:latest"]

then to start it:

docker container start --attach -i mycontainer

from here you can actually use the container.

docker start -i mycontainer

is a shorter version.

It needs to be kept open so the container can be interacted with. Now for an example:

docker exec -it mycontainer /bin/sh

it executes the basic shell command (Bash is a superset).

Orgin: <https://thenewstack.io/set-up-python-on-fedora-linux-4-steps/>

The Fedora image doesn’t install Python by default even though normal Fedora does, so:

dnf install python3 pip -y

use Ctrl-D to exit the IDLE, Ctrl-Z will exit the program.

<https://github.com/GonzagaCPSC322/U0-Introduction/blob/master/B%20Environment%20Setup.ipynb> is this a way to run Jupyter through Docker? Useful.

# 23/04/2024

Have worked on the file more, I am almost done getting the thing to actually run Jupyter but there is a snag getting it to run from the commandline.

docker start -ai "Anaconda" -> jupyter lab --ip="0.0.0.0" --port=8888 --no-browser --allow-root --notebook-dir=/home

are the commands needed to run it after starting it earlier.

# 24/04/2024

Tried to get the thing to flush STDOUT but it refuses. Maybe one day I’ll figure it out, but today is not the day.

# Bibliography

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