2024-02-28: Class

VM is like a computer but virtual

Shares a lot of properties needs a full blown operating system installed

Containers will be like a virtual machine where a WM is an entire computer where a container is like a computer for one specific task.

Splitting all the services up into their own containers

Typical containers: running all using kernel on host operating system…

Use docker for the ability to save space and portability.

Hyperviser (manages and runs containers --- docker is not a container it runs the containers)

Docker run is relative to image

Docker exc is relative to container

Docker run hello-world in command line

The image is hello-world

This is a way to double check that working well..

Ran the ubuntu thing… the docker thing is run thing command in the container you spin up… we get a bash shell we can interact with… -it means standard input with tty

We have a standard linux unbuntu os now…

The machine goes poof when you exit

apt -y update

apt install -y htop

The operation couldn’t be completed. Unable to locate a Java Runtime that supports apt.

Please visit http://www.java.com for information on installing Java. (you were in your laptop rather than the container)

Set seed group limits on containers

Start from a place as bareboned as possible with the container for work

Lot of stuff will not be there because it is super lean… nothing is stopping you from installing but it is work…

Containers are linux/unix mostly because of the licensing stuff.

Gui programs work mostly fine.

There are persistent programs that can be done.

Httpd is apache web dir

The open port is 80/tcp should go to that webserver… local host is relative to the device…

If you type local host on the vm it is on the vm…

We are hitting the wrong local host if you try to see the web server on your own laptop…

You need to forward from your machine to the container.

docker run -p 8080:80 httpd

then look at computer at <http://localhost:8080/>

it works

if you want to modify it works

use docker container ls to get the ID… you want to get a bash shell on your apache container

docker exec -it 8d3ac729891f bash the number is from looking at the properties (docker container ls)

the dash d flag is your friend

run the update for apt first so that it actually knows the repositories to look for code.

If you kill it, it will not persist… you need to rember it

docker stop 8d3ac729891f

you can use local toolsto work on the container as long as you have a mounted local directory

by default, docker will run as the root user. There are security concerns with this… if they are writing at the root level they can run commands as root on the local machine… when using for local development that is fine.. but you need to clean it up for development so that docker will not run root exposed (create a user specific to the docker image to give protection).

2 different images for local and game time development.

Docker system prune (the -a is a nuclear option and be careful because it will remove data)

<https://hub.docker.com/_/httpd>

documentation for images

don’t put anything you want private on docker

in a single stage build you will have only one instance

but multiple stage has several which then we destroy at the end

up/down versus run

this up goes from all and spins up containers

down pulls down existing containers

run better for one offs.

Pip install flask not good you want a requirements file for the python