A Gentle Introduction to Docker

DOCKER

- Docker is related to applications the way
  code is related to Object Oriented Programming
  - Class -> Image
  - Object -> Container
- Images are defined to inherit attributes from
  other Images
- Containers have properties, such as ports and volumes
- Applications can reside in a single container
  containing all the code, data, and OpSys support needed
- Or, applications can be built of lots of small containers

DOCKER

- Command cheat sheet
  - docker images
    Displays the images available on this system
  - docker inspect <object>
    Shows specific information about the given entity
    (in semi-readable JSON format)
- docker pull <repository image>
  Fetch a new docker image
- docker rmi <image>
  Remove an image from the local system

DOCKER

- docker build -t <new name> <path | URL>
  Create a new docker image, based on the contents
  of the Dockerfile contained in <path>

- Format of the Dockerfile
  FROM scratch -or- from <base-image>
  RUN shell/command arg1 arg2 -or-
  RUN [“command”,”arg1”,”arg2”,…]
  LABEL description=“This is a docker image”
  EXPOSE <port#>
  VOLUME [“/mountpoint”]
  ADD <srcpath> … <destpath>
  COPY <srcpath> … <destpath>
  ENTRYPOINT [“<executable>”, “param1”, “param2”]
  CMD command param1 param2

DOCKER

- docker create <imagename> <optional cmd> <args>
  Create a docker container from an existing image
  Add -p <outport>:<inport> to connect a port
  Add -v <outpath>:<inpath> to connect “volumes”
  Add —name <string> to give container a specific name
- docker run <imagename> <optional cmd> <args>
  Add -it to start the container in interactive mode
  —rm to remove the container immediately after exit
- docker <start | stop | restart> <containername>
  Start, stop or restart an existing container
- docker rm <containername>
  Delete a container
- docker ps <optional -a>
  List the running containers, or all containers if -a is given

DOCKER

- docker attach <container>
  Attach to a running container to see the console output
- docker export | import <container>
  Export or import a docker container as a tar file
- docker save | load <image>
  Save or load a docker image as a tar file
- docker info
  System-wide docker information
- docker port <container>
  List the port mappings for a container

DOCKER

- docker top -or- docker stats
  List usage statistics for the running docker containers
- docker cp <container:src-path><local-dest-path>
  Copy a file from a docker container to the local system
  or reverse the arguments to go the other direction
- docker kill <container>
- Additionally, various resource limits can be set on a per-container basis via switches to the commands.

- Live Demo…