Cypress with Docker

**What is docker?**

* Docker is an open-source software platform that uses OS-level virtualization and helps you create, deploy, and run applications securely using containers.
* Containers are like virtual boxes that keep your software parts organized and separate from each other and add an extra layer of security.
* Docker runs as a discrete process on the host machine, providing a stable and predictable environment for the application. Its flexibility allows it to be run on local machines that run Windows, Mac, or Linux, as well as on cloud infrastructure like AWS, Azure, and others.

**Containers in Docker:**

* container is a live execution of a Docker image
* it packages the code and dependencies in a closed environment and to a portable package
* it is unaware of hosts files or os instead it makes use if docker desktop for application execution
* light weight , multiple containers can be run on same machine

**Advantages of docker:**

* Scalability
* Security
* Efficiency
* Consistency

**Should we use Docker for Cypress?**

* For consistency and reliable test environment
* We can easily move tests between environments.
* Deploy to cloud while performing end to end testing.
* Isolation 🡪 Completely isolated from the host machine and any other dependencies
* Reproducibility 🡪 Docker allows you to create a consistent testing environment that can be easily reproduced across multiple operating systems
* Scalability 🡪 Docker makes it easy to run multiple instances of Cypress tests in parallel on the same machine or across multiple machines.
* Portability 🡪Cypress tests and their dependencies between different machines and environments without worrying about setting up and configuring the environment each time.
* Easy Deployment 🡪easily deploy your tests to any Docker-compatible environment, such as a cloud service provider or a Kubernetes cluster, without having to worry about installation or configuration issues.

Docker commands:

* cypress/base:<Node version> 🡪 has the operating system dependencies required to run Cypress.
* cypress/browsers:<tag>  🡪 extends the base images with pre-installed browsers.
* cypress/included:<Cypress version> 🡪 extends the base images with pre-installed Cypress versions.
* cypress/factory:<tag> 🡪 is a docker image that can be used with docker args to generate a docker container with specific versions of node, yarn, chrome, firefox, edge and cypress. It's used to create the above docker images and can be used by you to create a custom docker image with versions of your choice.

**Command to be executed:**

docker run -it -v $PWD:/e2e -w /e2e cypress/included:12.8.1

* docker runtells Docker to run a container.
* -it specifies that the container should be run in interactive mode.
* -v argumentsto Docker run are for creating storage space inside a container.
* $PWDmounts the current working directory (represented by the "$PWD" variable).

Running on different browser

docker run -it -v $PWD:/e2e -w /e2e cypress/included:13.0.0 --browser firefox

docker run -it -v $PWD:/e2e -w /e2e cypress/included:13.0.0 --browser chrome

how to check the images available in docker ?

aravindbalaji@AravindBalajis-MacBook-Air CypressPOMDemo\_v1 % docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

cypress/included 13.0.0 6f48f6f04eca 6 days ago 1.25GB

cypress/included 12.8.1 a386a8c351f6 5 months ago 1.24GB

nginx latest 23fc29c92689 8 months ago 135MB

how to run a specific docker image ?

docker run imagename:tagname