> Docker Cheat Sheet

Introduction

Moving towards the world of Dockerization??? Here is the cheat sheet which is going to help you in this journey of containerization and allow you to build and play with Docker Containers. But wait if you are a beginner you will still need a cheat sheet after understanding the very basic concepts of Docker. So what is Docker and why the world is moving towards it????

> Docker defines themselves as:
> A platform for developers and sysadmins to develop, deploy, and run applications with containers. The use of Linux containers to deploy applications is called containerization. Containers are not new, but their use for easily deploying applications is.

From the long list of Docker's feature, few top features are flexibility, portable, scalable, interchangeable, stackable and lightweight. Complex applications can be containerized and one can increase and automatically distribute container replicas. Services can be managed vertically and one can upgrade or update the application while it's running

Containers

Docker says,

> Containers are an abstraction at the app layer that packages code and dependencies together.

Containers share the OS kernel with other container running on the same machine but their processes are isolated.

Create a new container

```
docker create [OPTIONS] IMAGE [COMMAND] [ARG...]
```

Rename a container

docker rename ORIGINAL_NAME NEW_NAME
Example

```
docker rename nginx nginxCarbonteq
```

Run a container

docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
Example

```
docker run --name test -it nginx
```

Remove one or more containers

docker rm [OPTIONS] CONTAINER [CONTAINER...]

Examples
This will remove the container referenced under the link /nginx.

```
docker rm /nginx
```

This command will force-remove a running container.

```
docker rm --force nginx
```

This command will remove all stopped containers

```
docker rm $(docker ps -a -q)
```

This command will remove a container and its volumes

```
docker rm -v nginx
```

Update configuration

docker update [OPTIONS] CONTAINER [CONTAINER...]
Example
To limit the shares or resources a container is utilizing, one can easily update its configuration. To perform this action you will require the container ID or name. Container ID can be fetched by running "docker ps" command.

```
docker update --cpu-shares 256 -m 250M abebf7571666 hopeful_morse
docker update --kernel-memory 70M test
```

Information

To grab the information of a container, below mentioned commands can be very helpful.

List containers

```
docker ps
```

Above mentioned command only show the running containers. To see all the running and stopped containers

```
docker ps –a
```

Logs of a container

docker logs [OPTIONS] CONTAINER
Example

```
docker logs nginx
```

The docker logs command batch-retrieves logs present at the time of execution.

Docker Inspect

Get low level information about running containers

docker inspect [OPTIONS] NAME|ID [NAME|ID...]

By default, docker inspect will render results in a JSON object.
Example
Get an instance's IP address

```
docker inspect --format='{{range .NetworkSettings.Networks}}{{.IPAddress}}
{{end}}' $INSTANCE_ID
```

Get Events

```
docker events
```

Port Mappings

```
docker port nginx
```

Running Process

docker top CONTAINER [ps OPTIONS]
Example

```
docker top nginx
```

File System Diff

docker diff CONTAINER

Example

`docker diff myApp`

Starting and Stopping

Start one or more stopped containers

docker start [OPTIONS] CONTAINER [CONTAINER...]

Example

`docker start nginx`

Stop one or more running containers

docker stop [OPTIONS] CONTAINER [CONTAINER...]

Example

`docker stop nginx`

Restart one or more containers

docker restart [OPTIONS] CONTAINER [CONTAINER...]

Example

`docker restart nginx`

Pause all processes within one or more containers

docker pause [CONTAINER, [CONTAINER]]

Example

`docker pause nginx`

Import / Export content from container

Copy files/folders between a container and the local filesystem
This command allows you to copy the file from your local machine to the container or from container to your local machine. The main parameters of this command are **SRC_PATH** and **DEST_PATH** which allows to copy the file from or to your desired place

docker cp [OPTIONS] CONTAINER:SRC_PATH DEST_PATH|-
docker cp [OPTIONS] SRC_PATH|- CONTAINER:DEST_PATH

Export a container's filesystem as a tar archive

Docker export, exports the content of an underlying directory not the contents of whole volume.

docker export [OPTIONS] CONTAINER
Example
Each of these commands has the same result.

```
docker export red_panda > latest.tar
docker export --output="latest.tar" red_panda
```

Run a command in a running container

Docker execute command allows you to run a command directly into a running container.

docker exec [OPTIONS] CONTAINER COMMAND [ARG...]
Example
This will create a new file /tmp/execWorks inside the running container

ubuntu_bash, in the background.

```
docker exec -d ubuntu_bash touch /tmp/execWorks
```

Conclusion

Docker, a modern world's need, is improving the quality of work and efficiency. To handle a huge complex application, it is becoming the need of the hour. With the help of such kind of cheat sheets, one can improve his working capabilities and work more efficiently without spending a lot of time on reading and understanding one concept. Here is the first part of the cheat sheet series. Next are coming soon. STAY TUNED……!!

Admin Carbonteq

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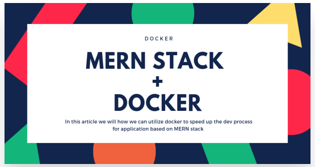
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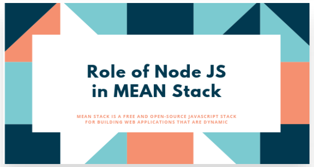
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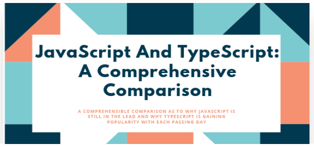
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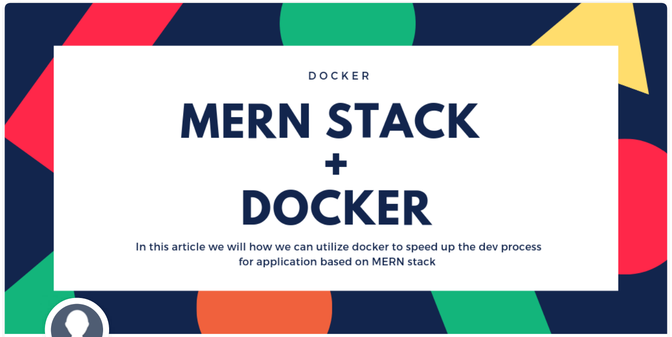
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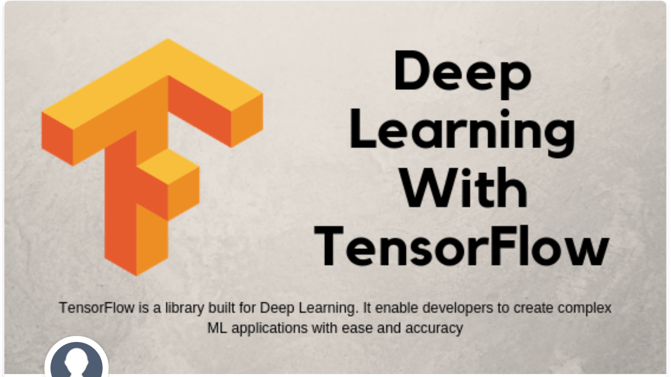
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