Docker

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1. Creating Docker Images

- Dockerfile will be passed to Docker CLI
- Which is fed to Docker server and creates image
- Flow of creating Dockerfile:
  - Specify base image
  - Run commands to install additional programs
  - Specify command to run on container startup

2. Building a Docker file

- **docker build .**

This command creates the image by running the Dockerfile in the provided directory.

E.g. Creating an image that runs redis server:

```
# Use an existing docker image as a base
FROM alpine
# Download and install a dependency
RUN apk add --update redis
# Tell the image what to do when it starts
# as a container.
CMD ["redis-server"]
```

```
[harshs-MacBook-Pro:redis-image harshnasit$ docker build .
 Sending build context to Docker daemon  2.048kB
 Step 1/3 : FROM alpine
  ---> f70734b6a266
 Step 2/3 : RUN apk add --update redis
  ---> Using cache
  ---> 540b6ea56f1b
 Step 3/3 : CMD ["redis-server"]
  ---> Using cache
  ---> fbf5fcd72c9d
 Successfully built fbf5fcd72c9d
 harshs-MacBook-Pro:redis-image harshnasit$ 
```

Copy the id and execute docker run <image id>

```
Successfully built fbf5fcd72c9d
[harshs-MacBook-Pro:redis-image harshnasit$ docker run fbf5fcd72c9d
1:C 09 Jun 2020 23:47:52.367 # oO0oo000o000o Redis is starting oO0o000o000o
1:C 09 Jun 2020 23:47:52.369 # Redis version=5.0.7, bits=64, commit=bed89672, modified=0, pid=1, just s
tarted
1:C 09 Jun 2020 23:47:52.369 # Warning: no config file specified, using the default config. In order to
 specify a config file use redis-server /path/to/redis.conf
1:M 09 Jun 2020 23:47:52.375 * Running mode=standalone, port=6379.
1:M 09 Jun 2020 23:47:52.376 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc
/sys/net/core/somaxconn is set to the lower value of 128.
1:M 09 Jun 2020 23:47:52.376 # Server initialized
1:M 09 Jun 2020 23:47:52.377 # WARNING you have Transparent Huge Pages (THP) support enabled in your ke
rnel. This will create latency and memory usage issues with Redis. To fix this issue run the command 'e
cho never > /sys/kernel/mm/transparent_hugepage/enabled' as root, and add it to your /etc/rc.local in o
rder to retain the setting after a reboot. Redis must be restarted after THP is disabled.
1:M 09 Jun 2020 23:47:52.377 * Ready to accept connections
```

3. Docker file teardown
4. Whats a Base Image
5. Build process in detail
6. Recap
7. Rebuilds with Cache
8. Tagging an image
9. Manual image Generation, Docker Commit