Working with Images

Objectives

- Understand what docker images are and how they work

- Image Operations: List, Create, Customize

- Create custom image for Nginx Web Server

- Push image to Docker Hub

Docker Images are fundamental building block of docker.

Images

- Images are downloaded from docker hub
- Once downloaded, all layers for the image are stored on the local docker host

We will launch a container from an existing image and start a web application.

Listing Local Images

```
$ docker images
```

```
bash-3.2$ docker images
REPOSITORY          TAG           IMAGE ID         CREATED          VIRTUAL SIZE
ubuntu              14.04         5ba9dab47459     5 days ago       188.3 MB
ubuntu              14.04.1       5ba9dab47459     5 days ago       188.3 MB
ubuntu              latest        5ba9dab47459     5 days ago       188.3 MB
ubuntu              trusty        5ba9dab47459     5 days ago       188.3 MB
centos              centos7       8efe422e6104     4 weeks ago      210 MB
centos              latest        8efe422e6104     4 weeks ago      210 MB
centos              7             8efe422e6104     4 weeks ago      210 MB
training/webapp     latest        31fa814ba25a     8 months ago     278.8 MB
```

Search for Images

`$ docker search ubuntu`

```
bash-3.2$ docker search ubuntu
NAME                          DESCRIPTION                                 STARS    OFFICIAL    A
UTOMATED
ubuntu                        Official Ubuntu base image                  1233     [OK]
dockerfile/ubuntu             Trusted automated Ubuntu (http://www.ubunt... 41                  [
OK]
ansible/ubuntu14.04-ansible   Ubuntu 14.04 LTS with ansible               35                  [
OK]
dockerfile/ubuntu-desktop     Trusted automated Ubuntu Desktop (LXDE) (h... 20                  [
OK]
ubuntu-upstart                Upstart is an event-based replacement for ... 20       [OK]
tutum/ubuntu                  Ubuntu image with SSH access. For the root... 14                  [
OK]
sequenceiq/hadoop-ubuntu      An easy way to try Hadoop on Ubuntu         9                   [
OK]
guilhem/vagrant-ubuntu                                                    5                   [
OK]
ubuntu-debootstrap            debootstrap --variant=minbase --components... 3        [OK]
webhippie/cedarish-ubuntu     Heroku cedar-ish base images for Docker bu... 2                  [
OK]
nuagebec/ubuntu               Simple always updated Ubuntu docker images... 2                  [
OK]
sylvainlasnier/ubuntu         Ubuntu 14.10 root docker images with commo... 1                  [
OK]
tleyden5iwx/ubuntu-cuda       Ubuntu 14.04 with CUDA drivers pre-installed 1                  [
OK]
maxexcloo/ubuntu              Docker base image built on Ubuntu with Sup... 1                  [
OK]
rastasheep/ubuntu-sshd        Dockerized SSH service, built on top of of... 1                  [
OK]
seetheprogress/ubuntu         Ubuntu image provided by SeeTheProgress us... 1                  [
OK]
alsanium/ubuntu               Ubuntu Core image for Docker                1                   [
OK]
fike/ubuntu-postgresql        PostgreSQL 9.4 beta until 9.0 version runn... 1                  [
OK]
densuke/ubuntu-jp-remix       Ubuntu Linuxの日本語remix風味です                         1
          [OK]
```
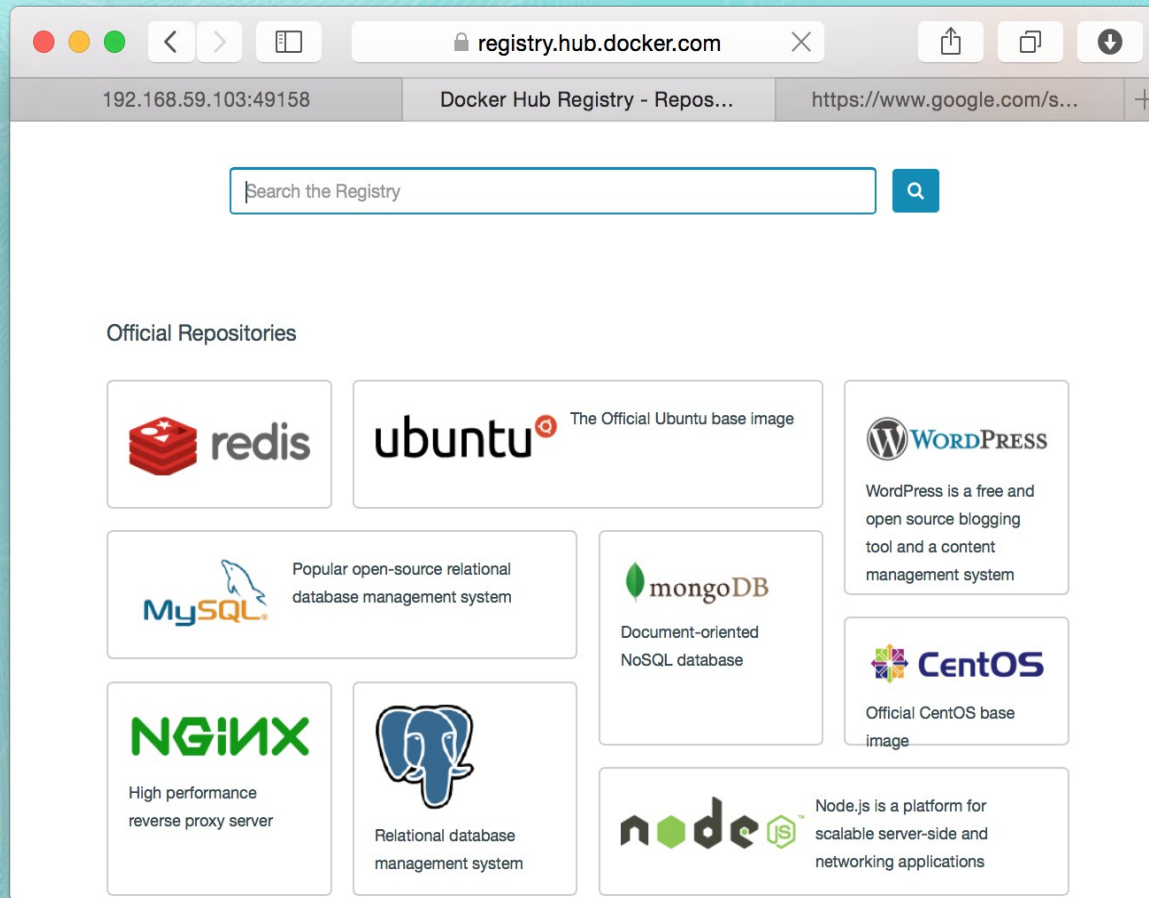
Docker search connects to the registry and searches for all available images matching the search query.

Searching from Docker Hub UI

Pull New Image

```
$ docker pull ubuntu:14.04.1
```

```
bash-3.2$ docker pull ubuntu:14.04.1
Pulling repository ubuntu
5ba9dab47459: Download complete
511136ea3c5a: Download complete
27d47432a69b: Download complete
5f92234dcf1e: Download complete
51a9c7c1f8bb: Download complete
```

Validating

```
$ docker images
```

```
bash-3.2$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED         VIRTUAL SIZE
ubuntu              14.04           5ba9dab47459    5 days ago      188.3 MB
ubuntu              14.04.1         5ba9dab47459    5 days ago      188.3 MB
ubuntu              trusty          5ba9dab47459    5 days ago      188.3 MB
ubuntu              latest          5ba9dab47459    5 days ago      188.3 MB
```

Lets now create our own custom image for running Nginx Web Server

Creating Transient Container

```
$ docker run -i -t
ubuntu:latest /bin/bash
```

```
bash-3.2$ docker run -i -t ubuntu:latest /bin/bash
root@08b825892b5c:/# cat /etc/issue
Ubuntu 14.04.1 LTS \n \l

root@08b825892b5c:/# uptime
 16:30:09 up  1:01,  0 users,  load average: 0.00, 0.01, 0.05
```

That created a transient container and logged us in to it. We will update the image now by installing nginx application and configuring it.

Install Nginx

$ apt-get install nginx -y

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  fontconfig-config fonts-dejavu-core geoip-database libfont
  libfreetype6 libgd3 libgeoip1 libjbig0 libjpeg-turbo8 libjp
  libvpx1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libx
  libxslt1.1 nginx-common nginx-core sgml-base xml-core
Suggested packages:
  libgd-tools geoip-bin fcgiwrap nginx-doc sgml-base-doc debh
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core geoip-database libfont
  libfreetype6 libgd3 libgeoip1 libjbig0 libjpeg-turbo8 libjp
  libvpx1 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libx
  libxslt1.1 nginx nginx-common nginx-core sgml-base xml-core
0 upgraded, 25 newly installed, 0 to remove and 0 not upgrade
Need to get 5612 kB of archives.
After this operation, 19.8 MB of additional disk space will b
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu/ trusty/main libgeoip1
Get:2 http://archive.ubuntu.com/ubuntu/ trusty/main libxau6 a
Get:3 http://archive.ubuntu.com/ubuntu/ trusty/main libxdmcp6
Get:4 http://archive.ubuntu.com/ubuntu/ trusty/main libxcb1 a
Get:5 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-da
Get:6 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6
Get:7 http://archive.ubuntu.com/ubuntu/ trusty/main libxml2 a
Get:8 http://archive.ubuntu.com/ubuntu/ trusty/main sgml-base
Get:9 http://archive.ubuntu.com/ubuntu/ trusty/main fonts-dej
Get:10 http://archive.ubuntu.com/ubuntu/ trusty/main fontcon
Get:11 http://archive.ubuntu.com/ubuntu/ trusty/main libfree1
Get:12 http://archive.ubuntu.com/ubuntu/ trusty/main libfont
Get:13 http://archive.ubuntu.com/ubuntu/ trusty/main libjpeg-
Get:14 http://archive.ubuntu.com/ubuntu/ trusty/main libjpeg8
Get:15 http://archive.ubuntu.com/ubuntu/ trusty/main libjbig0
Get:16 http://archive.ubuntu.com/ubuntu/ trusty/main libtiff5
Get:17 http://archive.ubuntu.com/ubuntu/ trusty/main libvpx1
Get:18 http://archive.ubuntu.com/ubuntu/ trusty/main libxpm4
Get:19 http://archive.ubuntu.com/ubuntu/ trusty/main libgd3 a
Get:20 http://archive.ubuntu.com/ubuntu/ trusty/main libxslt1
Get:21 http://archive.ubuntu.com/ubuntu/ trusty/main geoip-da
Get:22 http://archive.ubuntu.com/ubuntu/ trusty/main xml-core
Get:23 http://archive.ubuntu.com/ubuntu/ trusty/main nginx-co
Get:24 http://archive.ubuntu.com/ubuntu/ trusty/main nginx-co
Get:25 http://archive.ubuntu.com/ubuntu/ trusty/main nginx a
Fetched 5612 kB in 1min 44s (53.6 kB/s)
Selecting previously unselected package libgeoip1:amd64.
(Reading database ... 11527 files and directories currently :
```

```
Unpacking libxslt1.1:amd64 (1.1.28-2build1) ...
Selecting previously unselected package geoip-database.
Preparing to unpack .../geoip-database_20140313-1_all.deb ...
Unpacking geoip-database (20140313-1) ...
Selecting previously unselected package xml-core.
Preparing to unpack .../xml-core_0.13+nmu2_all.deb ...
Unpacking xml-core (0.13+nmu2) ...
Selecting previously unselected package nginx-common.
Preparing to unpack .../nginx-common_1.4.6-1ubuntu3_all.deb .
Unpacking nginx-common (1.4.6-1ubuntu3) ...
Selecting previously unselected package nginx-core.
Preparing to unpack .../nginx-core_1.4.6-1ubuntu3_amd64.deb .
Unpacking nginx-core (1.4.6-1ubuntu3) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.4.6-1ubuntu3_all.deb ...
Unpacking nginx (1.4.6-1ubuntu3) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up libgeoip1:amd64 (1.6.0-1) ...
Setting up libxau6:amd64 (1:1.0.8-1) ...
Setting up libxdmcp6:amd64 (1:1.1.1-1) ...
Setting up libxcb1:amd64 (1.10-2ubuntu1) ...
Setting up libx11-data (2:1.6.2-1ubuntu2) ...
Setting up libx11-6:amd64 (2:1.6.2-1ubuntu2) ...
Setting up libxml2:amd64 (2.9.1+dfsg1-3ubuntu4) ...
Setting up sgml-base (1.26+nmu4ubuntu1) ...
Setting up fonts-dejavu-core (2.34-1ubuntu1) ...
Setting up fontconfig-config (2.11.0-0ubuntu4) ...
Setting up libfreetype6:amd64 (2.5.2-1ubuntu2) ...
Setting up libfontconfig1:amd64 (2.11.0-0ubuntu4) ...
Setting up libjpeg-turbo8:amd64 (1.3.0-0ubuntu2) ...
Setting up libjpeg8:amd64 (8c-2ubuntu8) ...
Setting up libjbig0:amd64 (2.0-2ubuntu4) ...
Setting up libtiff5:amd64 (4.0.3-7) ...
Setting up libvpx1:amd64 (1.3.0-2) ...
Setting up libxpm4:amd64 (1:3.5.10-1) ...
Setting up libgd3:amd64 (2.1.0-3) ...
Setting up libxslt1.1:amd64 (1.1.28-2build1) ...
Setting up geoip-database (20140313-1) ...
Setting up xml-core (0.13+nmu2) ...
Setting up nginx-common (1.4.6-1ubuntu3) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up nginx-core (1.4.6-1ubuntu3) ...
invoke-rc.d: policy-rc.d denied execution of start.
Setting up nginx (1.4.6-1ubuntu3) ...
Processing triggers for libc-bin (2.19-0ubuntu6.5) ...
Processing triggers for sgml-base (1.26+nmu4ubuntu1) ...
```

Foregrounding Apps
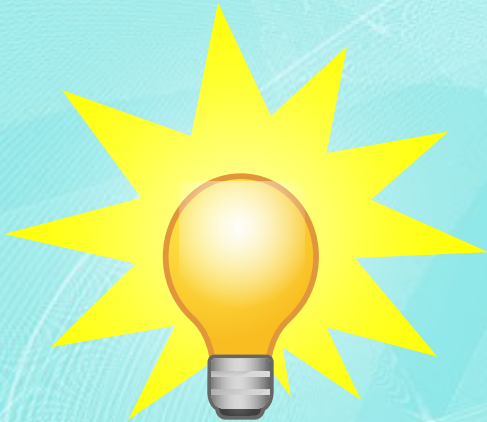
Docker containers only last till process is running. This mandates apps being dockerized to run in foreground, and not as a daemon.

We will need to make sure nginx is able to run in foreground. For this to happen we will add a parameter to nginx config file.

Updating Nginx Configs

File:

/etc/nginx/nginx.conf

parameter

daemon off;

```
user www-data;
worker_processes 4;
pid /run/nginx.pid;

daemon off;

events {
        worker_connections 768;
        # multi_accept on;
}

http {

        ##
        # Basic Settings
        ##

        sendfile on;
        tcp_nopush on;
        tcp_nodelay on;
        keepalive_timeout 65;
        types_hash_max_size 2048;
        # server_tokens off;

        # server_names_hash_bucket_size 64
        # server_name_in_redirect off;
```

Exit from the container shell. This will also terminate the container.

Note the container ID

```
bash-3.2$ docker ps -l
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS
         PORTS                     NAMES
08b825892b5c        ubuntu:14.04        "/bin/bash"         11 minutes ago      Exited (0) About a m
inute ago                          sick_ptolemy
```

08b825892b5c

Creating Image

```
$ docker commit \
-m "Installed Nginx" \
-a "Gourav Shah" \
08b825892b5c  initcron/nginx:0.1.0
```

```
bash-3.2$ docker commit \
> -m "Installed Nginx" \
> -a "Gourav Shah" \
> 08b825892b5c  initcron/nginx:0.1.0
8d7ff042df9cf922df80b912891a00afbde3c7bf5050cf59430be38f161af657
```

Where,

-m "Installed Nginx"   =>   messege

-a "Gourav Shah"   =>   author

08b825892b5c   => image id to commit

initcron/nginx:0.1.0   => user/image:ver

Validate

```
$ docker images
```

```
bash-3.2$ docker images
REPOSITORY        TAG         IMAGE ID        CREATED          VIRTUAL SIZE
initcron/nginx    0.1.0       8d7ff042df9c    4 minutes ago    206.4 MB
ubuntu            trusty      5ba9dab47459    5 days ago       188.3 MB
ubuntu            14.04       5ba9dab47459    5 days ago       188.3 MB
ubuntu            14.04.1     5ba9dab47459    5 days ago       188.3 MB
ubuntu            latest      5ba9dab47459    5 days ago       188.3 MB
centos            centos7     8efe422e6104    4 weeks ago      210 MB
```

Testing Image

```
$docker run -d -p 80 --name nginx
initcron/nginx:0.1.0
```

Where,

- -p 80   => maps port 80 inside container to host/vm
- --name => name of the new container
- Initcron/nginx => dockerhub user name / image name
- 0.1.0 => version

Note the port mapping

`$ docker ps`

```
bash-3.2$ docker ps
CONTAINER ID        IMAGE                     COMMAND        CREATED          STATUS
    PORTS                    NAMES         Note down the port
8f6ca52afad4        initcron/nginx:0.1.0      "nginx"        5 seconds ago    Up 2 seconds
    0.0.0.0:49160->80/tcp    nginx
```

Validate

http://dockerhost:port

Writing Dockerfile

```
$ cd nginx
```

Edit Dockerfile

FROM ubuntu

MAINTAINER Iron Man <ironman@superhumans.com>

RUN apt-get update && apt-get install -y nginx

RUN echo "daemon off;" >> /etc/nginx/nginx.conf

Building Container

```
$ docker build -t
initcron/nginx:0.2.0 .
```

This is dot
(current dir
path)

Build output

```
bash-3.2$ docker build -t initcron/nginx:0.2.0 .
Sending build context to Docker daemon  2.56 kB
Sending build context to Docker daemon
Step 0 : FROM ubuntu
 ---> 5ba9dab47459
Step 1 : MAINTAINER Gourav Shah <gs@initcron.org>
 ---> Running in 07fc91ac91ab
 ---> f7a0569bbb56
Removing intermediate container 07fc91ac91ab
Step 2 : RUN apt-get update && apt-get install -y nginx
 ---> Running in 62782d8cf148
Ign http://archive.ubuntu.com trusty InRelease
Ign http://archive.ubuntu.com trusty-updates InRelease
Ign http://archive.ubuntu.com trusty-security InRelease
Hit http://archive.ubuntu.com trusty Release.gpg
Get:1 http://archive.ubuntu.com trusty-updates Release.gpg
Get:2 http://archive.ubuntu.com trusty-security Release.gpg
Hit http://archive.ubuntu.com trusty Release
Get:3 http://archive.ubuntu.com trusty-updates Release [62.0
Get:4 http://archive.ubuntu.com trusty-security Release [62
Get:5 http://archive.ubuntu.com trusty/main Sources [1335 k
Get:6 http://archive.ubuntu.com trusty/restricted Sources [
Get:7 http://archive.ubuntu.com trusty/universe Sources [79
Get:8 http://archive.ubuntu.com trusty/main amd64 Packages
Get:9 http://archive.ubuntu.com trusty/restricted amd64 Pac
Get:10 http://archive.ubuntu.com trusty/universe amd64 Pack
Get:11 http://archive.ubuntu.com trusty-updates/main Source
Get:12 http://archive.ubuntu.com trusty-updates/restricted
Get:13 http://archive.ubuntu.com trusty-updates/universe So
Get:14 http://archive.ubuntu.com trusty-updates/main amd64
Get:15 http://archive.ubuntu.com trusty-updates/restricted
Get:16 http://archive.ubuntu.com trusty-updates/universe am
Get:17 http://archive.ubuntu.com trusty-security/main Sourc
Get:18 http://archive.ubuntu.com trusty-security/restricted
Get:19 http://archive.ubuntu.com trusty-security/universe S
Get:20 http://archive.ubuntu.com trusty-security/main amd64
Get:21 http://archive.ubuntu.com trusty-security/restricted
Get:22 http://archive.ubuntu.com trusty-security/universe a
Fetched 20.4 MB in 3min 5s (110 kB/s)
Reading package lists...
Reading package lists...
Building dependency tree...
Reading state information...
```

```
Unpacking xml-core (0.13+nmu2) ...
Selecting previously unselected package nginx-common.
Preparing to unpack .../nginx-common_1.4.6-1ubuntu3.1_all.deb
Unpacking nginx-common (1.4.6-1ubuntu3.1) ...
Selecting previously unselected package nginx-core.
Preparing to unpack .../nginx-core_1.4.6-1ubuntu3.1_amd64.deb
Unpacking nginx-core (1.4.6-1ubuntu3.1) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.4.6-1ubuntu3.1_all.deb ...
Unpacking nginx (1.4.6-1ubuntu3.1) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up libgeoip1:amd64 (1.6.0-1) ...
Setting up libxau6:amd64 (1:1.0.8-1) ...
Setting up libxdmcp6:amd64 (1:1.1.1-1) ...
Setting up libxcb1:amd64 (1.10-2ubuntu1) ...
Setting up libx11-data (2:1.6.2-1ubuntu2) ...
Setting up libx11-6:amd64 (2:1.6.2-1ubuntu2) ...
Setting up libxml2:amd64 (2.9.1+dfsg1-3ubuntu4.4) ...
Setting up sgml-base (1.26+nmu4ubuntu1) ...
Setting up fonts-dejavu-core (2.34-1ubuntu1) ...
Setting up fontconfig-config (2.11.0-0ubuntu4.1) ...
Setting up libfreetype6:amd64 (2.5.2-1ubuntu2.2) ...
Setting up libfontconfig1:amd64 (2.11.0-0ubuntu4.1) ...
Setting up libjpeg-turbo8:amd64 (1.3.0-0ubuntu2) ...
Setting up libjpeg8:amd64 (8c-2ubuntu8) ...
Setting up libjbig0:amd64 (2.0-2ubuntu4.1) ...
Setting up libtiff5:amd64 (4.0.3-7ubuntu0.1) ...
Setting up libvpx1:amd64 (1.3.0-2) ...
Setting up libxpm4:amd64 (1:3.5.10-1) ...
Setting up libgd3:amd64 (2.1.0-3) ...
Setting up libxslt1.1:amd64 (1.1.28-2build1) ...
Setting up geoip-database (20140313-1) ...
Setting up xml-core (0.13+nmu2) ...
Setting up nginx-common (1.4.6-1ubuntu3.1) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up nginx-core (1.4.6-1ubuntu3.1) ...
invoke-rc.d: policy-rc.d denied execution of start.
Setting up nginx (1.4.6-1ubuntu3.1) ...
Processing triggers for libc-bin (2.19-0ubuntu6.5) ...
Processing triggers for sgml-base (1.26+nmu4ubuntu1) ...
 ---> 86a18ce77aab
Removing intermediate container 62782d8cf148
Step 3 : RUN echo "daemon off;" >> /etc/nginx/nginx.conf
 ---> Running in b3718b90ce3b
 ---> c5deef49353b
Removing intermediate container b3718b90ce3b
Successfully built c5deef49353b
```

Retry Build

```
$ docker build -t
initcron/nginx:0.2.0 .
```

```
bash-3.2$ docker build -t initcron/nginx:0.2.0 .
Sending build context to Docker daemon  2.56 kB
Sending build context to Docker daemon
Step 0 : FROM ubuntu
 ---> 5ba9dab47459
Step 1 : MAINTAINER Gourav Shah <gs@initcron.org>
 ---> Using cache
 ---> f7a0569bbb56
Step 2 : RUN apt-get update && apt-get install -y nginx
 ---> Using cache
 ---> 86a18ce77aab
Step 3 : RUN echo "daemon off;" >> /etc/nginx/nginx.conf
 ---> Using cache
 ---> c5deef49353b
Successfully built c5deef49353b
```

Validate

```
$ docker images
```

```
bash-3.2$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED           VIRTUAL SIZE
initcron/nginx      0.2.0           c5deef49353b    2 minutes ago     227.2 MB
initcron/nginx      0.1.0           8d7ff042df9c    About an hour ago 206.4 MB
ubuntu              14.04           5ba9dab47459    5 days ago        188.3 MB
ubuntu              14.04.1         5ba9dab47459    5 days ago        188.3 MB
ubuntu              latest          5ba9dab47459    5 days ago        188.3 MB
```

Test new image

```
$ docker run -d  --name nginx2
initcron/nginx:0.2.0 nginx


$ docker ps
```

```
bash-3.2$ docker ps
CONTAINER ID        IMAGE                 COMMAND         CREATED              STATUS
    PORTS                   NAMES
5a7872035e6b        initcron/nginx:0.2.0  "nginx"         4 seconds ago        Up 2 seconds
                            nginx2
8f6ca52afad4        initcron/nginx:0.1.0  "nginx"         About an hour ago    Up About an hour
    0.0.0.0:49160->80/tcp   nginx
```

Oops !! we dont see a port mapped to the host/vm from container. We can not get to its http port !

Lets first stop the test instance

```
$ docker stop nginx2
$ docker rm nginx2
```

Exposing Port from Dockerfile

```
FROM ubuntu
MAINTAINER Gourav Shah <gs@initcron.org>
RUN apt-get update && apt-get install -y nginx
RUN echo "daemon off;" >> /etc/nginx/nginx.conf
EXPOSE 80
```

Build a new image

```
$ docker build -t initcron/nginx:0.2.1
```

.

```
bash-3.2$ docker build -t initcron/nginx:0.2.1 .
Sending build context to Docker daemon 3.584 kB
Sending build context to Docker daemon
Step 0 : FROM ubuntu
 ---> 5ba9dab47459
Step 1 : MAINTAINER Gourav Shah <gs@initcron.org>
 ---> Using cache
 ---> f7a0569bbb56
Step 2 : RUN apt-get update && apt-get install -y nginx
 ---> Using cache
 ---> 86a18ce77aab
Step 3 : RUN echo "daemon off;" >> /etc/nginx/nginx.conf
 ---> Using cache
 ---> c5deef49353b
Step 4 : EXPOSE 80
 ---> Using cache
 ---> ea228ef8cdcf
Successfully built ea228ef8cdcf
```

Test Again

```
$ docker run -d -P  --name nginx3
initcron/nginx:0.2.1 nginx

$ docker ps
```

```
bash-3.2$ docker run -d -P  --name nginx3 initcron/nginx:0.2.1 nginx
deaf8eb4eb394578470fd55c737217eea5113874ceea93250e35f4ef78f778d5
bash-3.2$ docker ps
CONTAINER ID        IMAGE                    COMMAND        CREATED              STATUS
   PORTS                      NAMES
deaf8eb4eb39        initcron/nginx:0.2.1     "nginx"        5 seconds ago        Up 4 seconds
   0.0.0.0:49162->80/tcp    nginx3
8f6ca52afad4        initcron/nginx:0.1.0     "nginx"        About an hour ago    Up About an hour
   0.0.0.0:49160->80/tcp    nginx
```

Test Again

```
$ docker run -d -P  --name nginx3
initcron/nginx:0.2.1 nginx

$ docker ps
```

```
bash-3.2$ docker run -d -P  --name nginx3 initcron/nginx:0.2.1 nginx
deaf8eb4eb394578470fd55c737217eea5113874ceea93250e35f4ef78f778d5
bash-3.2$ docker ps
CONTAINER ID        IMAGE                   COMMAND         CREATED              STATUS
   PORTS                        NAMES
deaf8eb4eb39        initcron/nginx:0.2.1    "nginx"         5 seconds ago        Up 4 seconds
   0.0.0.0:49162->80/tcp    nginx3
8f6ca52afad4        initcron/nginx:0.1.0    "nginx"         About an hour ago    Up About an hour
   0.0.0.0:49160->80/tcp    nginx
```

Tagging Images

```
$ docker tag ea228ef8cdcf
initcron/nginx:latest
```

```
bash-3.2$ docker tag ea228ef8cdcf initcron/nginx:latest
bash-3.2$ docker images
REPOSITORY          TAG         IMAGE ID        CREATED             VIRTUAL SIZE
initcron/nginx      0.2.3       ea228ef8cdcf    16 minutes ago      227.2 MB
initcron/nginx      latest      ea228ef8cdcf    16 minutes ago      227.2 MB
initcron/nginx      0.2.1       ea228ef8cdcf    16 minutes ago      227.2 MB
initcron/nginx      0.2.0       c5deef49353b    32 minutes ago      227.2 MB
initcron/nginx      0.1.0       8d7ff042df9c    About an hour ago   206.4 MB
```

Lets now push this custom image to our dockerhub account.

Logging in

We first need to login to the docker account to push the image.

```
$ docker login
```

Push Image

```
$ docker push
initcron/nginx:0.2.1
```

```
bash-3.2$ docker push initcron/nginx:0.2.1
The push refers to a repository [initcron/nginx] (len: 1)
Sending image list
Pushing repository initcron/nginx (1 tags)
511136ea3c5a: Image already pushed, skipping
27d47432a69b: Image already pushed, skipping
5f92234dcf1e: Image already pushed, skipping
51a9c7c1f8bb: Image already pushed, skipping
5ba9dab47459: Image already pushed, skipping
f7a0569bbb56: Image successfully pushed
86a18ce77aab: Image successfully pushed
c5deef49353b: Image successfully pushed
ea228ef8cdcf: Image successfully pushed
Pushing tag for rev [ea228ef8cdcf] on {https://cdn-registr
nx/tags/0.2.1}
```