

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
```

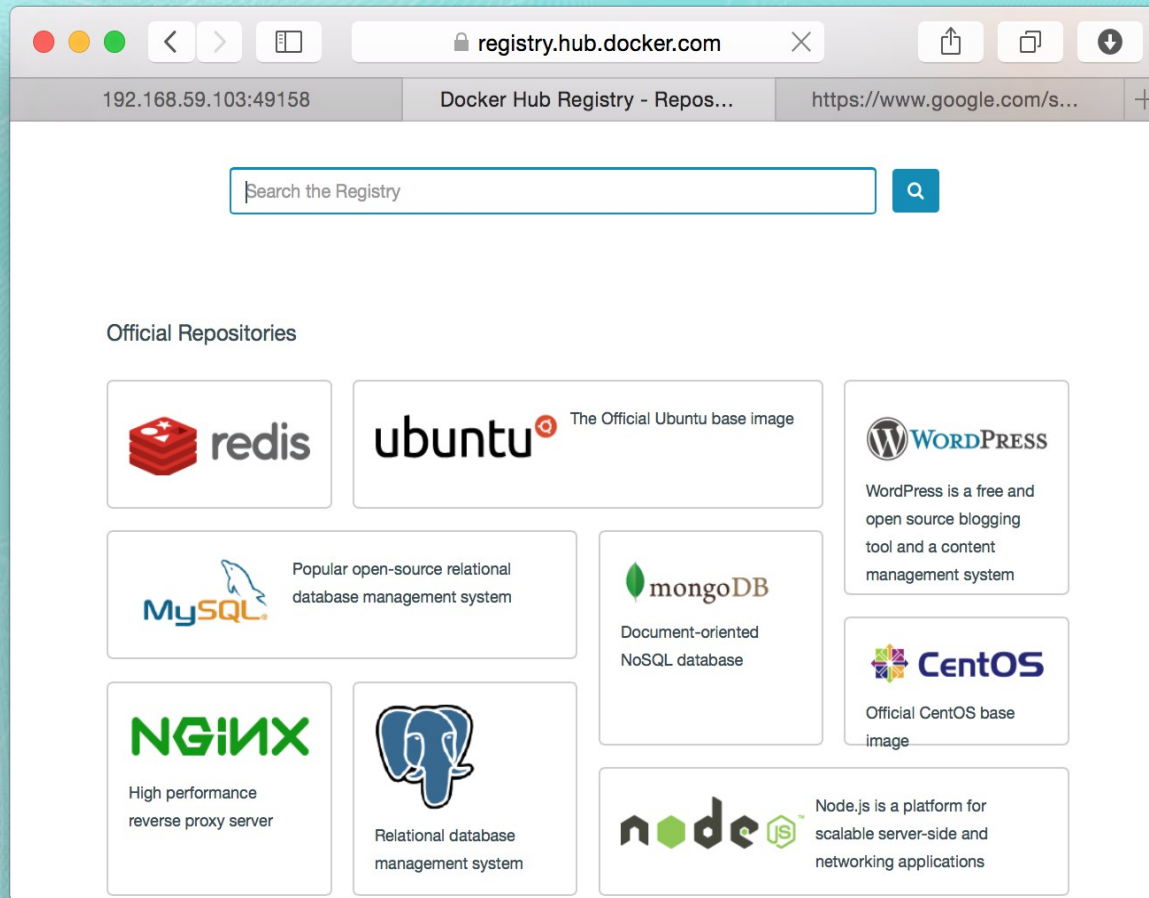
```
bash-3.2$ docker search ubuntu
```

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			
[OK]				

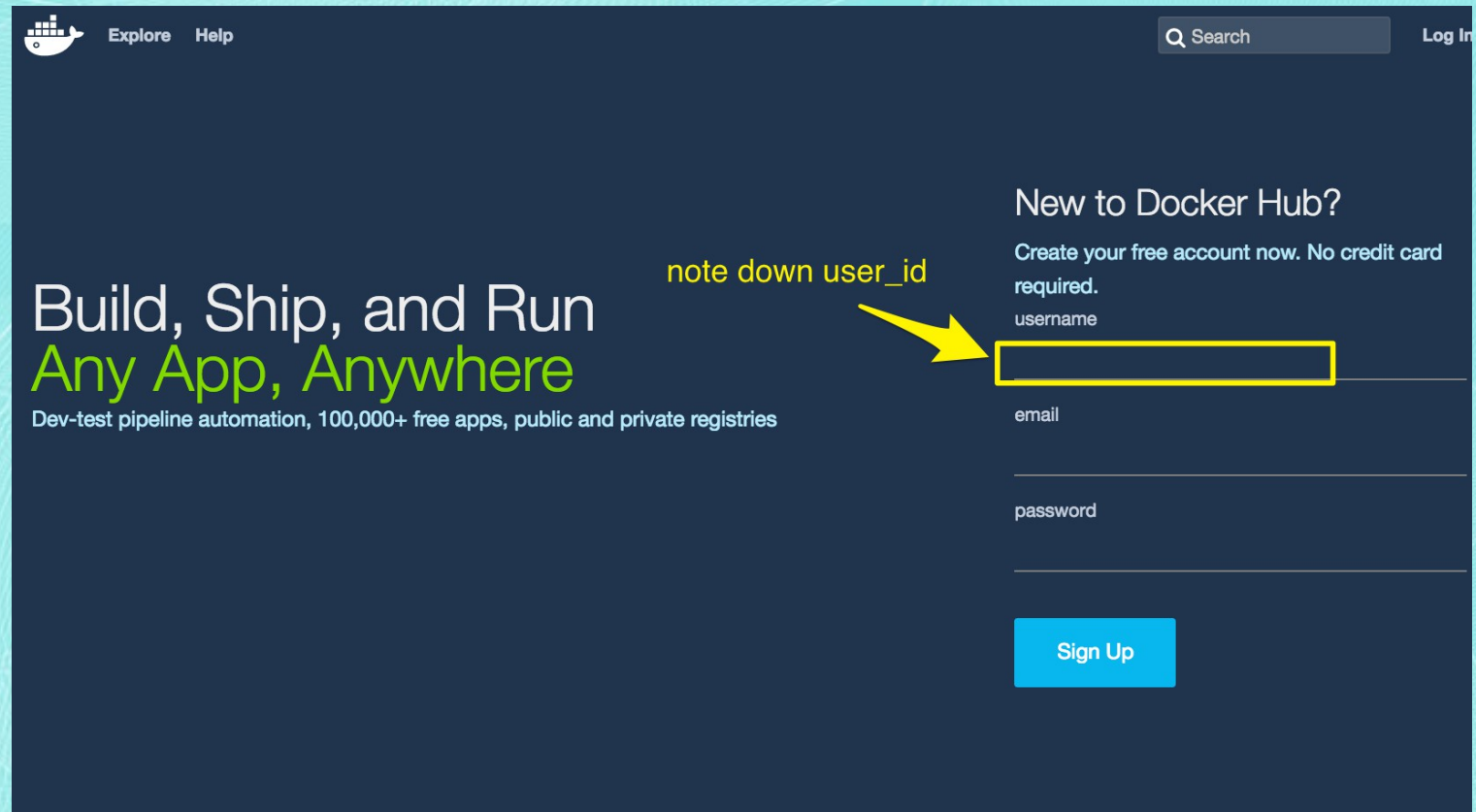
1

Docker search connects to the registry and searches for all available images matching the search query.

Searching from Docker Hub UI



Sign Up to Docker Hub



The screenshot shows the Docker Hub sign-up page. The header includes the Docker logo, 'Explore', 'Help', a search bar, and a 'Log In' link. The main content area features the text 'Build, Ship, and Run Any App, Anywhere' and 'Dev-test pipeline automation, 100,000+ free apps, public and private registries'. On the right, there is a sign-up form titled 'New to Docker Hub?' with the text 'Create your free account now. No credit card required.' The form has three input fields: 'username', 'email', and 'password'. The 'username' field is highlighted with a yellow border, and a yellow arrow points to it from the text 'note down user_id'.

Build, Ship, and Run
Any App, Anywhere

Dev-test pipeline automation, 100,000+ free apps, public and private registries

note down user_id

New to Docker Hub?

Create your free account now. No credit card required.

username

email

password

Sign Up

Pull New Image

```
$ docker pull ubuntu:14.04.3
```

```
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
```


Validate

```
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.

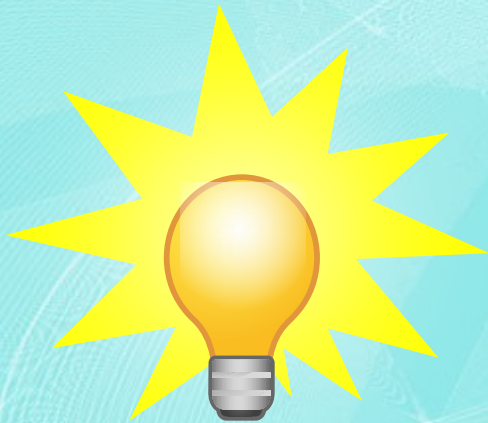
Install Nginx

```
$ 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 geopip-database libfontconfig1
  libfreetype6 libgd3 libgeopip1 libjpeg-turbo8 libjpeg62-turbo
  libpng16-1.6 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxft2
  libxslt1.1 nginx-common nginx-core sgml-base xml-core
Suggested packages:
  libgd-tools geopip-bin fcgiwrap nginx-doc sgml-base-doc debhelper
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core geopip-database libfontconfig1
  libfreetype6 libgd3 libgeopip1 libjpeg-turbo8 libjpeg62-turbo
  libpng16-1.6 libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxft2
  libxslt1.1 nginx nginx-common nginx-core sgml-base xml-core
0 upgraded, 25 newly installed, 0 to remove and 0 not upgraded
Need to get 5612 kB of archives.
After this operation, 19.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu/ trusty/main libgeopip1 amd64 1.6.0-1 ...
Get:2 http://archive.ubuntu.com/ubuntu/ trusty/main libxau6 amd64 1:1.0.8-1 ...
Get:3 http://archive.ubuntu.com/ubuntu/ trusty/main libxdmcp6 amd64 1:1.1.1-1 ...
Get:4 http://archive.ubuntu.com/ubuntu/ trusty/main libxcb1 amd64 1.10-2ubuntu1 ...
Get:5 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-data amd64 2:1.6.2-1ubuntu2 ...
Get:6 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:7 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:8 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:9 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:10 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:11 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:12 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:13 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:14 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:15 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:16 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:17 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:18 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:19 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:20 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:21 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:22 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:23 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:24 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Get:25 http://archive.ubuntu.com/ubuntu/ trusty/main libx11-6 amd64 2:1.6.2-1ubuntu2 ...
Fetched 5612 kB in 1min 44s (53.6 kB/s)
Selecting previously unselected package libgeopip1:amd64.
(Reading database ... 11527 files and directories currently installed.)
```

```
Unpacking libxslt1.1:amd64 (1.1.28-2ubuntu1) ...
Selecting previously unselected package geopip-database.
Preparing to unpack .../geopip-database_20140313-1_all.deb ...
Unpacking geopip-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 libgeopip1: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 libx11-6:amd64 (2:1.6.2-1ubuntu2) ...
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 libjpeg8:amd64 (8c-2ubuntu8) ...
Setting up libtiff5:amd64 (4.0.3-7) ...
Setting up libpng16-1.6: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 geopip-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
stop the container.

Note the container ID

```
bash-3.2$ docker ps -l
```

CONTAINER ID	PORTS	IMAGE	NAMES	COMMAND	CREATED	STATUS
08b825892b5c		ubuntu:14.04	sick_ptolemy	"/bin/bash"	11 minutes ago	Exited (0) About a m



08b825892b5c

Creating Image

```
$ docker commit \  
-m "Nginx Web Server" \  
-a "Your Name" \  
<container_id> <hub_user_id>/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" => message

-a "Your Name" => author

08b825892b5c => image id to commit

<hub_user_id>/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  
<hub_user_id>/nginx:0.1.0 nginx
```

Where,

- `-p 80` => maps port 80 inside container to host/vm
- `--name` => name of the new container
- `<hub_user_id>/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
8f6ca52afad4	initcron/nginx:0.1.0	"nginx"	5 seconds ago	Up 2 seconds
0.0.0.0:49160->80/tcp	nginx			

Note down the port

Validate

http://dockerhost:port



Writing Dockerfile

```
$ mkdir nginx
```

```
$ cd nginx
```

Edit Dockerfile

```
FROM ubuntu
```

```
MAINTAINER Your Name <name@mail.com>
```

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

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


```
EXPOSE 80
```

Source: <https://gist.github.com/initcron/733af800916a59a4b105>

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 [62.1 kB]
Get:4 http://archive.ubuntu.com trusty-security Release [62.1 kB]
Get:5 http://archive.ubuntu.com trusty/main Sources [1335 kB]
Get:6 http://archive.ubuntu.com trusty/restricted Sources [1335 kB]
Get:7 http://archive.ubuntu.com trusty/universe Sources [79.1 kB]
Get:8 http://archive.ubuntu.com trusty/main amd64 Packages [1335 kB]
Get:9 http://archive.ubuntu.com trusty/restricted amd64 Packages [1335 kB]
Get:10 http://archive.ubuntu.com trusty/universe amd64 Packages [79.1 kB]
Get:11 http://archive.ubuntu.com trusty-updates/main Source [62.1 kB]
Get:12 http://archive.ubuntu.com trusty-updates/restricted Source [62.1 kB]
Get:13 http://archive.ubuntu.com trusty-updates/universe Source [79.1 kB]
Get:14 http://archive.ubuntu.com trusty-updates/main amd64 Packages [1335 kB]
Get:15 http://archive.ubuntu.com trusty-updates/restricted amd64 Packages [1335 kB]
Get:16 http://archive.ubuntu.com trusty-updates/universe amd64 Packages [79.1 kB]
Get:17 http://archive.ubuntu.com trusty-security/main Source [62.1 kB]
Get:18 http://archive.ubuntu.com trusty-security/restricted Source [62.1 kB]
Get:19 http://archive.ubuntu.com trusty-security/universe Source [79.1 kB]
Get:20 http://archive.ubuntu.com trusty-security/main amd64 Packages [1335 kB]
Get:21 http://archive.ubuntu.com trusty-security/restricted amd64 Packages [1335 kB]
Get:22 http://archive.ubuntu.com trusty-security/universe amd64 Packages [79.1 kB]
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 -P --name nginx2  
<hub_user_id>/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 nginx2	"nginx"	4 seconds ago	Up 2 seconds
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 <image_id>  
<hub_user_id>/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
docker hub account.

Logging in

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

```
$ docker login
```


Push Image

```
$ docker push  
<hub_user_id>/nginx:0.2.0
```

```
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-registry-1.docker.io/v2/initcron/nginx/tags/0.2.1}
```


Exercise

- Build an Image for application of your choice.
- Push the image created above to docker hub.