

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source X

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

[Create Account](#)

Search the blog



Building Docker Images with Dockerfiles



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

Email

[Subscribe](#)

mages with

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source [SIGN ME UP](#)**Create your FREE Codefresh account and start making pipelines fast.**[Create Account](#)

What is a Dockerfile?

A Dockerfile is a text configuration file written using a [special syntax](#)

It describes step-by-step instructions of all the commands you need to run to assemble a Docker Image.

The `docker build` command processes this file generating a Docker Image in your Local Image Cache, which you can then start-up using the `docker run` command, or push to a permanent Image Repository.

Create a Dockerfile

Creating a Dockerfile is as easy as creating a new file named “Dockerfile” with your text editor of choice and defining some instructions. The name of the file does not really matter. Dockerfile is the default name but you can use any

 [Multiple dockerfiles in the same folder](#))



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

[Subscribe](#)

 [A layer that gets pushed to your local image cache](#))

 [s and ignored](#)

 [image on the Latest Official Ubuntu](#)

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source [SIGN ME UP](#)**Create your FREE Codefresh account and start making pipelines fast.**[Create Account](#)

Dockerfile Commands

- **ADD** – Defines files to copy from the Host file system onto the Container
 - `ADD ./local/config.file /etc/service/config.file`
- **CMD** – This is the command that will run when the Container starts
 - `CMD ["nginx", "-g", "daemon off;"]`
- **ENTRYPOINT** – Sets the default application used every time a Container is created from the Image. If used in conjunction with CMD, you can remove the application and just define the arguments there
 - `CMD Hello World!`
 - `ENTRYPOINT echo`

s within Containers created from the Image.



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

[Subscribe](#)

expose

new image on top of

u identify yourself as the maintainer of this
dicated Docker directive).

to your Image and subsequently the
ludes updating packages, installing
atabase, setting up certificates, etc. These
mmand line to install and configure your

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source X

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

Create Account



- **VOLUME** – Creates a mount point within the Container linking it back to file systems accessible by the Docker Host. New Volumes get populated with the pre-existing contents of the specified location in the image. It is specially relevant to mention is that defining Volumes in a Dockerfile can lead to issues. Volumes should be managed with docker-compose or “docker run” commands. Volumes are optional. If your application does not have any state (and most web applications work like this) then you don’t need to use volumes.
 - `VOLUME /var/log`
- **WORKDIR** – Define the default working directory for the command defined in the “ENTRYPOINT” or “CMD” instructions
 - `WORKDIR /home`

Building and Testing Dockerfiles

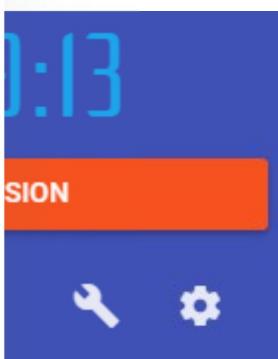
This section covers how to build Docker images and spin up Docker instances through a X

Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

[Subscribe](#)

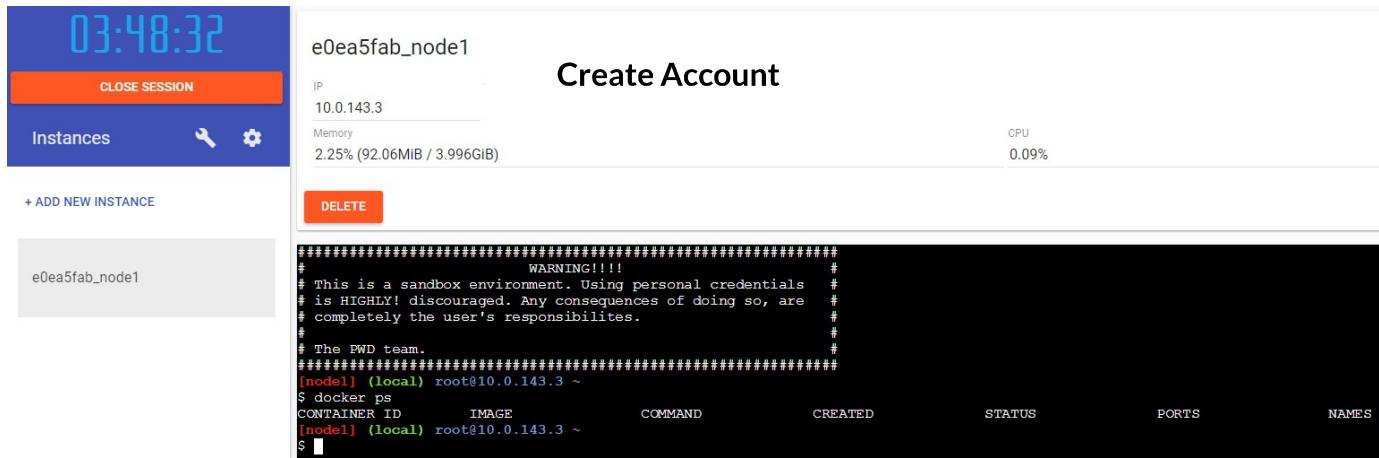
spin up Docker instances through a Codefresh and start a new session. You need to click “New Instance”:



LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source 

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.



e0ea5fab_node1

IP
10.0.143.3

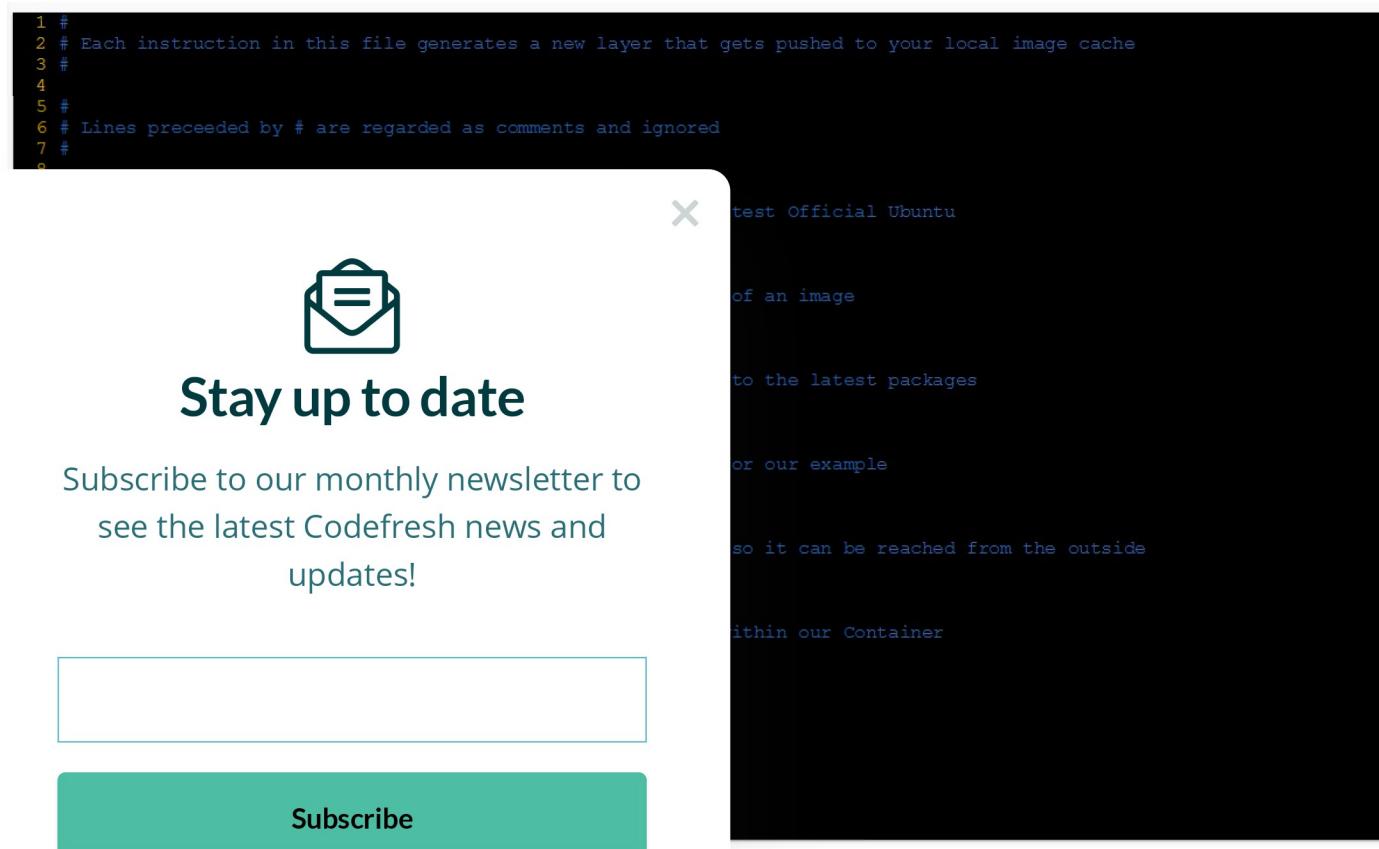
Memory
2.25% (92.06MB / 3.996GB)

CPU
0.09%

[DELETE](#)

```
#####
# WARNING!!!
# This is a sandbox environment. Using personal credentials
# is HIGHLY! discouraged. Any consequences of doing so, are
# completely the user's responsibilites.
#
# The PWD team.
#####
[node1] (local) root@10.0.143.3 ~
$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS               NAMES
[node1] (local)   root@10.0.143.3 ~
$
```

4. Next create/edit the Dockerfile. Run “vi Dockerfile”, press “i” to switch to “Insert Mode”, copy/paste the contents of our Dockerfile, press “Esc” to exit “Insert Mode”, and save+exit by typing “:x”



1 #
2 # Each instruction in this file generates a new layer that gets pushed to your local image cache
3 #
4 #
5 #
6 # Lines preceded by # are regarded as comments and ignored
7 #
8



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

test Official Ubuntu

of an image

to the latest packages

or our example

so it can be reached from the outside

ithin our Container

Subscribe

d docker build <path>. Path refers

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source X

[SIGN ME UP](#)

The screenshot shows a terminal session titled "Create Account" within the Codefresh interface. The session ID is e0ea5fab_node1. The terminal output shows the following commands being run:

```
[node] (local) root@10.0.143.3 ~
$ ls -l
Dockerfile
go
[node] (local) root@10.0.143.3 ~
$ docker build .
```

6. At the end of the process you should see the message “Successfully built <image ID>”

The screenshot shows a terminal session titled "e0ea5fab_node1". The terminal output shows the following message:

```
Setting up fontconfig-config (2.11.94-0ubuntu1.1) ...
Setting up libfreetype6:amd64 (2.6.1-0ubuntu2.3) ...
Setting up libfontconfig1:amd64 (2.11.94-0ubuntu1.1) ...
Setting up libjpeg8:amd64 (8c-2ubuntu8) ...
Setting up libtiff5:amd64 (4.0.6-6ubuntu0.2) ...
Setting up libvpx3:amd64 (1.5.0-1ubuntu1)
Setting up libxpm4:amd64 (1:3.5.11-1ubuntu0.16.04.1) ...
Setting up libgd3:amd64 (2.1.1-4ubuntu0.16.04.6) ...
```

A modal window with the title "Stay up to date" and a mail icon is overlaid on the terminal session.

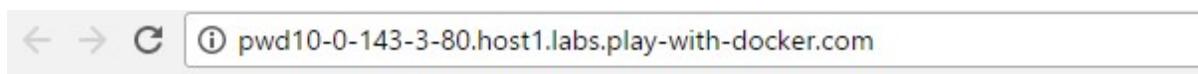
Subscribe to our monthly newsletter to
see the latest Codefresh news and
updates!

[Subscribe](#)

ty to NGINX. Run the command
ption -p 80:80 exposes the
ne world

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source [SIGN ME UP](#)**Create your FREE Codefresh account and start making pipelines fast.**[Create Account](#)

8. As a result a port 80 link should have become active next to the IP. Click on it to access your NGINX service



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org. Commercial support is available at nginx.com.

Thank you for using nginx.



Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

[Subscribe](#)

Applications

Example Docker image for nginx. But application in a Docker image?

the same folder as your source code. It mirror what you do locally on your

Docker images that uses your re:

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source 

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

Create Account

Once you have a proper base image you can use it to package your own

application. Here is an example for Python

```
1 FROM python:3.6.4-alpine3.6
2 ENV FLASK_APP=initwit
3
4 COPY . /app
5 WORKDIR /app
6
7 RUN pip install --editable .
8 RUN flask initdb
9
10 EXPOSE 5000
11
12 CMD [ "flask", "run", "--host=0.0.0.0" ]
```

Here is another example for Node.js

```
1 FROM node:10
2
```



Stay up to date

Subscribe to our monthly newsletter to
see the latest Codefresh news and
updates!

[Subscribe](#)

e from your dockerfile

cker images you also need to pay

e size possible

e only what is actually needed

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source

SIGN ME UP

Create your FREE Codefresh account and start making pipelines fast.

Create Account

Here is an example with a Node application that is using multi-stage builds:

```
1 FROM node:8.16 as build-deps
2 WORKDIR /usr/src/app
3 COPY package.json yarn.lock ./
4 RUN yarn
5 COPY . ../
6 RUN yarn build
7
8 FROM nginx:1.12-alpine
9 COPY --from=build-deps /usr/src/app/build /usr/share/nginx/html
10 EXPOSE 80
11 CMD ["nginx", "-g", "daemon off;"]
```

Go have fun building your own Images!

For more examples of Dockerfile templates, [login to Codefresh \(it's free\)](#), click



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

For more information about the study, please contact Dr. John Smith at (555) 123-4567 or via email at john.smith@researchinstitute.org.

[Subscribe](#)

Templates and examples.

1 for Docker/Kubernetes/Helm?

Don't forget to share.

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source 

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

Create Account

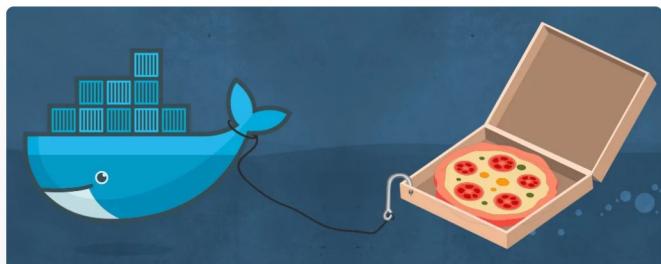


DOCKER TUTORIALS

Webinar: Creating an Efficient Docker Build Pipeline for Java Apps



Dan Garfield



DOCKER TUTORIALS

Hello Whale: Layers in Docker



Chloe Condon



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

[Subscribe](#)

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source 

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

[Create Account](#)

CONTINUOUS DEPLOYMENT & DELIVERY

Docker Tutorials

Kubernetes Tutorials

Containers

Codefresh News

Continuous Integration

DevOps Tutorials

Docker Registry

Webinars

Security Testing



Stay up to date

Subscribe to our monthly newsletter to
see the latest Codefresh news and
updates!

[Subscribe](#)

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source X

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

[Create Account](#)

Get a head start on building better pipelines!

Schedule a demo with a Codefresh expert today.

[Create Account](#)

[Request Demo](#)

(it's free)



Stay up to date

Subscribe to our monthly newsletter to
see the latest Codefresh news and
updates!

[Subscribe](#)

LIVE Webinar on 12/6: Tackling the Container Iceberg: Security Implications for Open-Source 

[SIGN ME UP](#)

Create your FREE Codefresh account and start making pipelines fast.

Create Account

Docker CI

Case Studies

Blog

Continuous Delivery for Kubernetes

Kubernetes Guides

Helm Release Management

Docker Guides

How-to Videos

Containers Academy

GitHub

Get Started

[Create Account](#)

[Schedule Demo](#)



Stay up to date

Subscribe to our monthly newsletter to see the latest Codefresh news and updates!

Microsoft
Startups
ICE AWARD

Google Cloud Platform
Technology Partner



Served Terms of Service

[Subscribe](#)