

How to Build a Zoneminder Docker Image (with MSMTMP) using a Dockerfile & push to Docker Hub , (Ubuntu 19.10)

[B.K.Jayasundera](#)

In this tutorial ,we are going to use [“Docker: Enterprise Container Platform”](#) ([docker.io](#)) on Ubuntu 19.10.

First

Installation of Docker on Ubuntu 19.10

On the Ubuntu terminal

```
sudo apt install docker.io
```

Then a zoneminder-docker image is built using a Dockerfile and entrypoint.sh

Dockerfile contains the scripts to install free open-source software [Zoneminder](#) and entrypoint.sh has necessary commands to start Zoneminder ,Apache and other services and to keep the docker container running.

I have used my own Dockerfile and [entrypoint.sh prepared by Andrew Bauer](#)

The scripts in the Docker file are as shown in the following figure:- 1

```
FROM ubuntu:bionic
MAINTAINER B.K.Jayasundera

# Update base packages
RUN apt update \
    && apt upgrade --assume-yes

# Install pre-reqs
RUN apt install --assume-yes --no-install-recommends gnupg

# Configure Zoneminder PPA
RUN apt-key adv --keyserver keyserver.ubuntu.com --recv-keys ABE4C7F993453843F0AEB8154D0BF748776FFB04 \
    && echo deb http://ppa.launchpad.net/iconnor/zoneminder-1.32/ubuntu bionic main > /etc/apt/sources.list.d/zoneminder.list \
    && apt update
RUN apt update && apt install -y tzdata
RUN apt install -y msmtmp

# Install zoneminder
RUN apt install --assume-yes zoneminder

# Set our volumes before we attempt to configure apache
VOLUME /var/cache/zoneminder/events /var/lib/mysql /var/log/zm

RUN chmod 740 /etc/zm/zm.conf
RUN chown root:www-data /etc/zm/zm.conf
RUN adduser www-data video
RUN a2enmod cgi
RUN a2enconf zoneminder
RUN a2enmod rewrite
RUN chown -R www-data:www-data /usr/share/zoneminder/
RUN ln -s /usr/bin/msmtmp /usr/sbin/sendmail

# Expose http port
EXPOSE 80

COPY entrypoint.sh /entrypoint.sh
RUN chmod 777 /entrypoint.sh
ENTRYPOINT ["/entrypoint.sh"]
```

Figure:- 1 Scripts in the Dockerfile

For the purpose of building the zoneminder- docker image the files Dockerfile and entrypoint.sh are saved on the Documents folder of the computer as shown in the following figure:- 2.

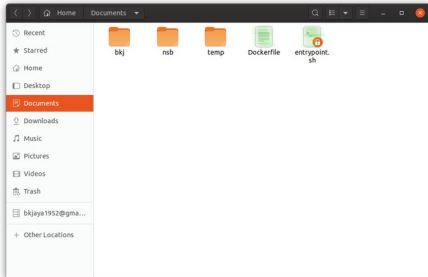


figure:- 2 Dockerfile and entrypoint.sh marked in green color saved in the Documents folder

The Dockerfile and entrypoint.sh can be downloaded from this links

[Dockerfile](#)

[entrypoint.sh](#)

Building the Zoneminder-Docker image (tagged as “yourzoneminder”)

Open the Ubuntu terminal

```
cd ~/Documents
```

```
sudo docker build --tag=yourzoneminder . # Dockerfile
```

(The process will take about 10-15 minutes)

After the image building process is finished ,you find the image by runng

```
sudo docker images
```

For the purpose of identifying the image in the Docker Hub , you will have to tag it with an appropriate name .

In our case ,I have name as “bkjaya1952/docker-zoneminder:v1.32.3.”

```
sudo docker tag yourzoneminder bkjaya1952/docker-zoneminder:v1.32.3.
```

Then push the tagged image to the Docker Hub

```
sudo docker login
```

Note : first you will have to signup & open a Docker Hub account at <https://hub.docker.com/>

sudo docker push bkjaya1952/docker-zoneminder:v1.32.3.

```
bkjaya1952@bandula:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID           CREATED            SIZE
bkjaya1952/docker-zoneminder  v1.32.3.          16aeda79b3e1     19 minutes ago   950MB
yourzoneminder       latest             16aeda79b3e1     19 minutes ago   950MB
ubuntu               bionic            549b9b86cb8d     14 hours ago     64.2MB

bkjaya1952@bandula:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID           CREATED            SIZE
yourzoneminder       latest             16aeda79b3e1     13 minutes ago   950MB
ubuntu               bionic            549b9b86cb8d     14 hours ago     64.2MB
bkjaya1952@bandula:~$ docker tag yourzoneminder bkjaya1952/docker-zoneminder:v1.32.3.
bkjaya1952@bandula:~$ docker push bkjaya1952/docker-zoneminder:v1.32.3.
The push refers to repository [docker.io/bkjaya1952/docker-zoneminder]
e99c944dfe5e: Pushed
d83dee437c6e: Pushed
f6004136490b: Pushed
f935ba2aa769: Pushed
f3fa75f30af2: Pushed
34613ef446e9: Pushed
2160c114468b: Pushed
4fbe39cbeff2: Pushed
205e4363400e: Pushed
2650a06aa060: Pushed
8f1bacf485ed: Pushed
6ef10571e193: Pushed
fa0c50810462: Pushed
020328660c6f: Pushed
78cc22ece37e: Pushed
918efb8f161b: Mounted from library/ubuntu
27dd43ea46a8: Mounted from library/ubuntu
9f3bfcc4a1a8: Mounted from library/ubuntu
2dc9f76fb25b: Mounted from library/ubuntu
v1.32.3.: digest: sha256:67ab5fd33ffbc437aff075dd964ea9083ea70b63df209ed2cc3a85f690373a09 size: 4289
bkjaya1952@bandula:~$ sudo docker images
```

Figure:- 3 Tagging and pushing the image to the Docker Hub

Now you can see my pushed image at

<https://hub.docker.com/repository/docker/bkjaya1952/docker-zoneminder>

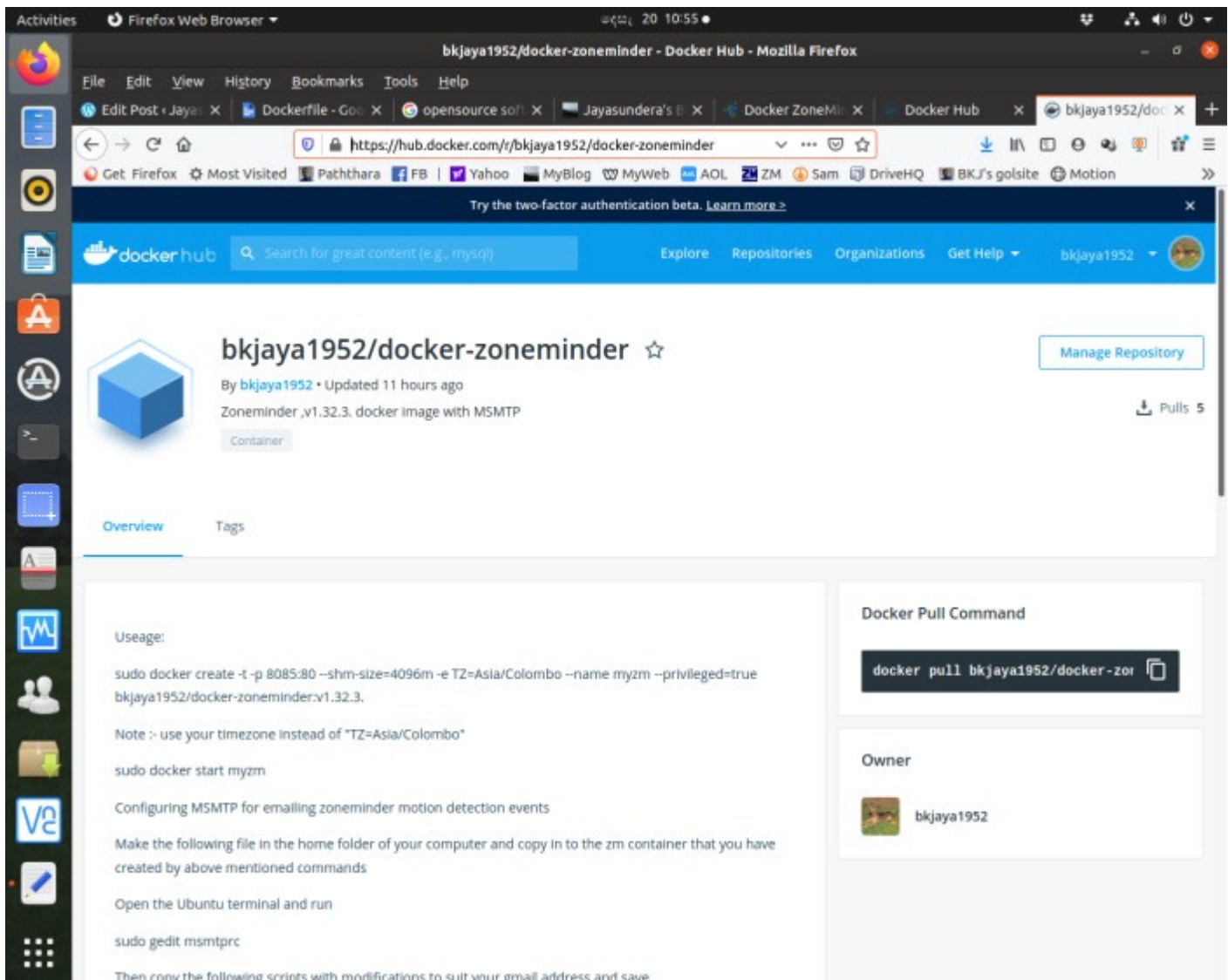


Figure:- 4 Pushed image at the Docker Hub

The instructions to use the image has been entered at the Docker Hub, after the pushing is completed .

Usage of the pushed image bkjaya1952/docker-zoneminder

```
sudo docker create -t -p 8085:80 --shm-size=4096m -e TZ=Asia/Colombo --name myzm
--privileged=true bkjaya1952/docker-zoneminder:v1.32.3.
```

Note :- use your timezone instead of “TZ=Asia/Colombo”

```
sudo docker start myzm
```

Configuring MSMTTP for emailing zoneminder motion detection events

Make the following file in the home folder of your computer and copy in to the zm container that you have created by above mentioned commands

Open the Ubuntu terminal and run

```
sudo gedit msmtprc
```

Then copy the following scripts with modifications to suit your gmail address and save

```
# Set default values for all following accounts.
defaults
auth on
tls on
tls_trust_file /etc/ssl/certs/ca-certificates.crt
logfile ~/.msmtp.log

# Gmail
account gmail
host smtp.gmail.com
port 587
from your gmail address
user your gmail address
password your gmail password

# Set a default account
account default : gmail
```

Then copy the created msmtprc file to the folder /etc/ of the zm container as follows

```
sudo docker cp msmtprc myzm:/etc/msmtprc
```

Open <http://localhost:8085/zm/> and add the camera monitors

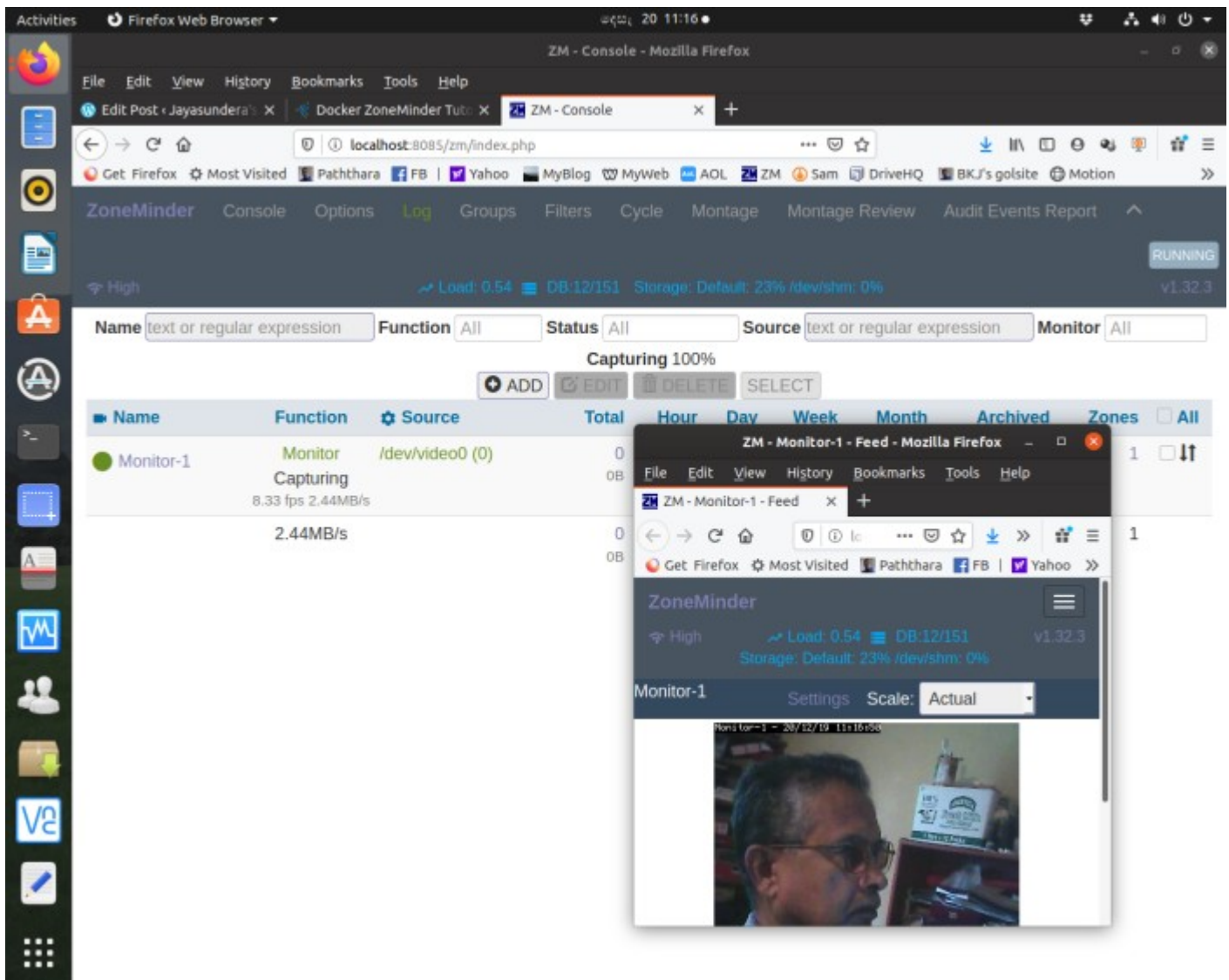


Figure:- 5 Added USB camera to Zoneminder

And fill up email details under the Options/email of the ZM-Panel

Create appropriate zm-filter to send email alerts of motion detection events

For entering e mail details and creating zm-filter please refer my following blog (After the Figure:- 3 in the blog)

[How to install Zoneminder 1.32 \(with MSMTP email support \) in Docker on Ubuntu 19.10](#)

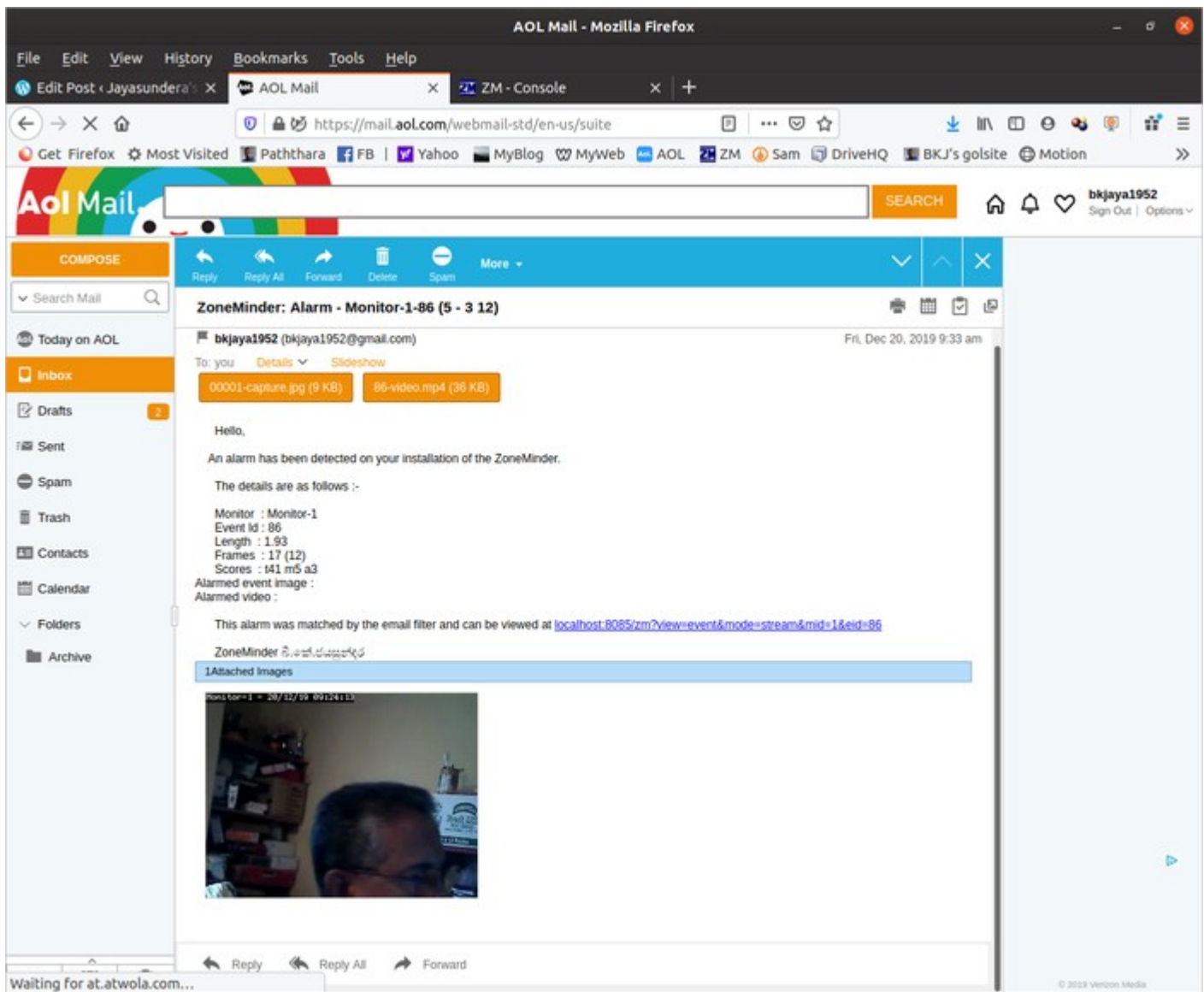


Figure:- 5 Received motion detection email alerts from Zoneminder

Acknowledgements : Based on [Isaac Connor's Zoneminder](#) and Andrew Bauer's zonexpertconsulting@outlook.com endpoint script

at <https://raw.githubusercontent.com/ZoneMinder/zmdockerfiles/master/utills/endpoint.sh>