Installing Docker, Portainer, Influxdb, Telegraf and Grafana for Ubuntu (16.04)

**Note: This is the exact way I have set everything up on my server. Some of the directories and ports can be changed if you would like/if needed. The current configurations should work if you follow exactly and there are no port conflicts.

Install Docker-ce (https://docs.docker.com/install/linux/docker-ce/ubuntu/#install-using-the-repository)

Docker is the prerequisite for the containers that the instruction will be following after this installation. Step 1: Install needed packages for Docker

1. Type in

```
sudo apt-get install \
apt-transport-https \
ca-certificates \
curl \
software-properties-common
```

2. Type in

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
```

3. Add the repo that you will get docker-ce from. Type

```
sudo add-apt-repository \
  "deb [arch=amd64] https://download.docker.com/linux/ubuntu \
  $(lsb_release -cs) \
  stable"
```

4. Type

```
sudo apt-get update
```

5. Install docker-ce by typing

```
sudo apt-get install docker-ce -y
```

Install Portainer (https://hub.docker.com/r/portainer/portainer/) (https://portainer.readthedocs.io/en/latest/deployment.html)

Recommended for Portainer is to have a persistant dir.

1. Type in

```
docker run -d \
-p 9000:9000 \
--name portainer \
--restart always \
-v /var/run/docker.sock:/var/run/docker.sock \
-v /docker/portainer:/data \
portainer/portainer
```

(If you changed the path in step 1, be sure to update the 2nd -v in the command above to reflect the same directory as well)

You can now go to http://localhost:9000 and access portainer. Or if you are accessing from a separate computer, go to http://<enter.the.ip.here>:9000 and that will allow you to get to portainer and set up credentials there. If

everything will be installed on the same machine, you will want to select local. If you are going to be managing docker containers from separate servers, you should select remote.

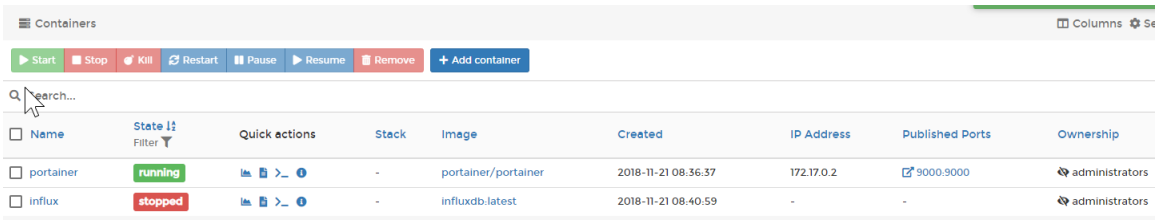
Install Influxdb

1. Type in (port 8087 can be a different port if you would like, but you will have to reconfigure telegraf.conf ports if changed.)

   docker run \
   -p 8087:8086 \
   -v influxdb:/var/lib/influxdb \
   influxdb

```
devin@graf:/docker$ sudo docker run \
> -p 8087:8086 \
> -v influxdb:/var/lib/influxdb \
> influxdb
Unable to find image 'influxdb:latest' locally
latest: Pulling from library/influxdb
54f7e8ac135a: Pull complete
d6341e30912f: Pull complete
087a57faf949: Pull complete
d648defeaeff: Pull complete
f526167800af: Pull complete
aff2c493cd0f: Pull complete
dc4416a30721: Pull complete
af4d5d822b4a: Waiting
```

If it looks like it is hung up and not doing anything, press the keys ctrl+c to stop it running in the foreground. At this point, you will need to log into portainer (http://localhost:9000 or http://<enter.the.ip.here>:9000) Then place a check next to influx, then click on Start and it should display the "State" as "running."



Install Telegraf (https://hub.docker.com/r/bender77/telegraf-snmp/)

1. Create the following directories(If you wish to change the "docker" container to another location you can as well)

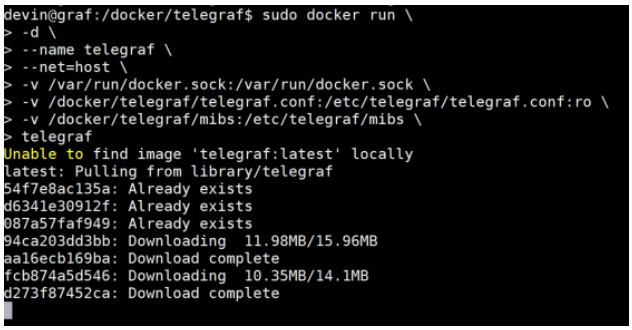
   /docker/telegraf
   /docker/telegraf/mibs (inside this directory type "touch testfile")
   /docker/telegraf/telegraf.conf (this file should be attached or received with this walkthrough)

2. Go to the telegraf.conf file and we will need to edit that file to match your ip.
   a. Go to the OUTPUT PLUGINS
   b. In the [[outputs.influxdb]] fine urls
   c. Where you see 192.168.1.90, change that IP to be either localhost, or your IP that influx is installed on. The port will be the first port you input for the Install Influx. On here it shows -p 8087:8086. So your url will show urls = ["http://192.168.1.90:8087"]

3. Install Telegraf by typing in

   docker run \
   -d \

--name telegraf \
--restart always \
--net=host \
-v /var/run/docker.sock:/var/run/docker.sock \
-v /docker/telegraf/telegraf.conf:/etc/telegraf/telegraf.conf:ro \
-v /docker/telegraf/mibs:/etc/telegraf/mibs/ \
bender77/telegraf-snmp



**note: if you changed the directory in step 1, you will need to change it in step 2 as well to make it reflect the same directory as was created in step 1.

Log into Portainer and double check that telegraf is running there. If not, type in “docker ps -a” and find the one that is not running and find the first 2 characters of the image id.

Then type in

Docker logs <first 2 characters>

This will then give the log as to why it is not starting and can be troubleshot from this point.

Install Grafana (http://docs.grafana.org/installation/docker/)

1. Type in
   docker volume create grafana-storage
2. Type in
   docker run \
   -d \
   -p 3000:3000 \
   --name=grafana \
   -v grafana-storage:/var/lib/grafana \
   grafana/grafana

You can now log in at either http://localhost:3000 or http://<enter.ip.here>:3000 and log in with the username **admin** and password **admin.**

Once logged into Grafana, click on Add DataSource.
Name = telegraf
Type = Influxdb
HTTP URL = http://<enter.ip.here>:8087
** Mine shows http://192.168.1.90:8087 the port should be the one we set as the host port when setting up influxdb… you can still look this up in portainer in the influx container.
Under InfluxDB Details

Database = telegraf

Leave the user and password blank

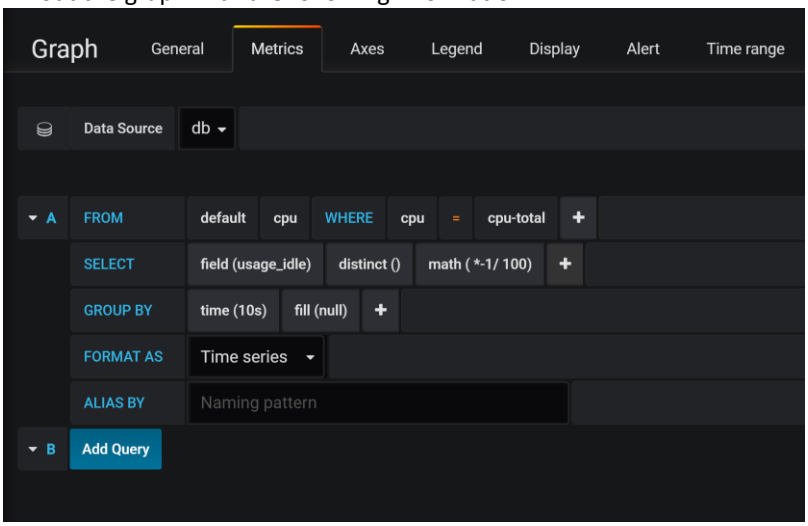
Then save and test and it should connect successfully.

Test Grafana!

Click on the + on the left, then click on graph.

Click on the drop down for “Panel Title” for the graph and click on edit.

Fill out the graph with the following information



Once filled out, you should see a graph similar to this