steps

Bringup our docker VM

- Install vagrant Install vagrant
- Install VirtualBox Install VirtualBox
- Install Guest additions Install VirtualBox
- Bring up a centos/8 vm

```
vagrant init centos/8
 # - * - mode: ruby - * -
 # vi: set ft=ruby :
 Vagrant.configure("2") do |config|
   config.vm.box = 'centos/8'
   config.disksize.size = '20GB'
   #config.vm.network 'public_network', bridge: 'wlp1s0' # attach it to the det
   config.vm.provision "shell", inline: <<-SHELL</pre>
     yum install -y yum-utils
     yum-config-manager --add-repo https://download.docker.com/linux/centos/doc
     yum install -y docker-ce docker-ce-cli containerd.io
     systemctl start docker
     systemctl enable docker
     usermod -aG docker vagrant
   SHELL
   config.vm.provider 'virtualbox' do |v|
     v.memory = 2048
     v.cpus = 2
   end
 end
```

open up 3 terminals withing your editor

- 1st terminal vagrant up
- 2nd terminal vagrant rsync-auto
- 3rd terminal vagrant ssh

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Validate if docker is running

```
ps aux | grep docker
# si no hay ningun proceso
systemctl start docker # iniciamos el servicio
systemctl enable docker # habilitamos para que arrante auto
ps aux | grep docker
# agregamos al usuario al grupo de docker
sudo usermod -aG docker vagrant
exit
vagrant ssh
```

How to open multiple terminals in vs-code MS-windows

```
• Ctrl+Shift+P
```

- Terminal: Select Default Shell
- Select bash?
- clik on + sign

Docker help

```
vagrant ssh
docker help
docker help cp
```

Building a website monitor

1

```
mkdir mailer && cd $_

mailer.sh

#!/bin/sh
printf "Mailer has started.\n"
while true
```

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```
do
   MESSAGE=`nc -l -p 33333`
   printf "Sending email: %s\n" $MESSAGE
   sleep 1
done
```

Write a mailer Dockerfile

```
FROM busybox
COPY . /mailer
WORKDIR /mailer

RUN adduser -DHs /bin/bash example

RUN chown example mailer.sh
RUN chmod a+x mailer.sh

EXPOSE 3333

USER example
CMD ["/mailer/mailer.sh"]
```

Build the image

```
vagrant rsync
vagrant ssh
cd /vagrant/mailer
docker build . -t mvelasquez/mailer:1.0.0
cd ...
```

2

```
mkdir agent && cd $_
```

create watcher.sh

```
#!/bin/sh -x
while true
do
   if `printf "GET / HTTP/1.0\n\n" nc -w 2 $INSIDEWEB_PORT_80_TCP_ADDR $INSIDEW
   then
     echo "System up."
else
```

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```
printt "To: admin@work Message: The service is down!" | nc $INSIDEMAILER_F
    break
    fi
    sleep 1
done
```

Write agent Dockerfile

```
FROM busybox
COPY . /watcher
WORKDIR /watcher

RUN adduser -DHs /bin/bash example
RUN chown example watcher.sh
RUN chmod a+x watcher.sh

USER example

CMD ["/watcher/watcher.sh"]
```

Build image

```
vagrant rsync
vagrant ssh
cd /vagrant/agent
docker build . -t mvelasquez/agent:1.0.0
cd ..
```

Detached container

```
docker run --detach --name web nginx:latest
```

AKA demon mode

docker run -d --name mailer mvelasquez/mailer

Runing interactive container

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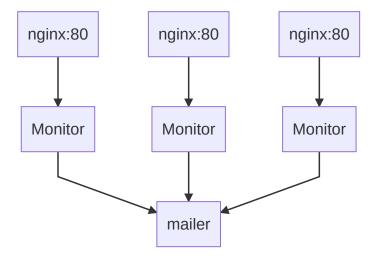
```
docker run --interactive --tty \
--link web:web \
--name web_test \
busybox:1.29 /bin/sh
```

Building up our stack

```
docker run -it \
   --name agent \
   --link web:insideweb \
   --link mailer:insidemailer \
   mvelasquez/agent:1.0.0
```

Practice

Having: nginx servers A B and C monitors D E and F Mailer G Build:



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