



Kubernetes Tutorial

Kubernetes on Centos 7

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Table of Contents

1. Summary	1
2. Docker	2
2.1. Docker installation	2
2.2. Create an image	2
2.3. Build the image	2
2.4. Run and test the buit image	2
3. Kubernetes	3
3.1. Virtual Box installaiton	3
3.2. VirtualBox Linux kernel module not active	3
3.3. Minikube	3
3.4. Kubectl	3

1. Summary

2. Docker

2.1. Docker installation

```
sudo yum install -y yum-utils device-mapper-persistent-data lvm2
sudo yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
sudo yum install docker-ce
sudo systemctl start docker

# Tests docker
sudo docker run hello-world
```

2.2. Create an image

```
touch Dockerfile

# Add
FROM node:7
ADD app.js /app.js
ENTRYPOINT ["node", "app.js"]

touch app.js

# Add
const http = require('http');
const os = require('os');
console.log("Kubia server starting...");
var handler = function(request, response) {
  console.log("Received request from " + request.connection.remoteAddress);
  response.writeHead(200);
  response.end("You've hit " + os.hostname() + "\n");
};
var www = http.createServer(handler);
www.listen(8080);
```

2.3. Build the image

```
docker build -t image-name .
```

2.4. Run and test the built image

```
docker run --name container-name -p 8080:8080 -d image-name
curl localhost:8080
```

3. Kubernetes

3.1. Virtual Box installaiton

```
sudo vi /etc/yum.repos.d/virtualbox.repo

# Add
[virtualbox]
name=Oracle Linux / RHEL / CentOS-$releasever / $basearch - VirtualBox
baseurl=http://download.virtualbox.org/virtualbox/rpm/el/$releasever/$basearch
enabled=1
gpgcheck=1
repo_gpgcheck=1
gpgkey=https://www.virtualbox.org/download/oracle_vbox.asc

sudo yum update
sudo yum install -y VirtualBox-5.2

# Make sure VirtualBox Linux kernel module is active
systemctl status vboxdrv
```

3.2. VirtualBox Linux kernel module not active

```
yum groupinstall "Development tools"
yum install https://centos7.iuscommunity.org/ius-release.rpm
yum install dkms
# Install Kernel headers
sudo yum install "kernel-devel-uname-r == $(uname -r)"
sudo /sbin/rcvboxdrv setup
```

3.3. Minikube

The simplest and quickest path to a fully functioning Kubernetes cluster is by using Minikube. Minikube is a tool that sets up a single-node cluster that's great for both testing Kubernetes and developing apps locally. Although we can't show certain Kubernetes features related to managing apps on multiple nodes, the single-node cluster should be enough for exploring most topics discussed in this book.

```
curl -Lo minikube https://storage.googleapis.com/minikube/releases/v0.23.0/minikube-linux-amd64 && chmod +x minikube
```

3.4. Kubectl

```
curl -LO https://storage.googleapis.com/kubernetes-release/release/$(curl -s
https://storage.googleapis.com/kubernetes-release/release/stable.txt)/bin/linux/amd64/kubectl
```