

# Docker 스터디

8. Docker로 애플리케이션 배포하기  
~ 9. Docker 모니터링하기

고다경

서버 한 대에 애플리케이션 배포하기

# 1. 개발자 PC에서 Git 설치 및 저장소 생성

```
sudo apt-get install git  
git init example app  
cd example app
```

```
git config --global user.email mail@mail.com  
git config --global user.name "Hong, Gildong"
```

## 2. 개발자 PC에서 애플리케이션 개발

# app.js / package.json

```
exampleapp — vi /Users/KoDakyung/exampleapp — vi app.js — 91x11
1 var express = require('express');
2 var app = express();
3
4 app.get(['/', '/index.html'], function (req, res) {
5     res.send('Hello Docker');
6 });
7
8 app.listen(80);
~
NORMAL master ./app.js unix utf-8 javascript 13% 1:1
```

```
exampleapp — vi /Users/KoDakyung/exampleapp — vi package.json — 87x11
1 {
2     "name": "exampleapp",
3     "description": "Hello Docker",
4     "version": "0.0.1",
5     "dependencies": {
6         "express": "4.4.x"
7     }
8 }
~
NORMAL master ./package.json unix utf-8 json 13% 1:1
```

### **3. 개발자 PC에서 Dockerfile 작성**

# Dockerfile

```
exampleapp — vi /Users/KoDakyung/exampleapp — vi Dockerfile — 87x15
1 FROM ubuntu:14.04
2
3 RUN apt-get update
4 RUN apt-get install -y nodejs npm
5
6 ADD app.js /var/www/app.js
7 ADD package.json /var/www/package.json
8
9 WORKDIR /var/www
10 RUN npm install
11
12 CMD nodejs app.js
13
```

ubuntu 14.04 기반  
RUN으로 nodejs, npm설치  
해당 파일을 이미지의 /var/www/...에 복사  
실행 디렉토리 변경

NORMAL master > ./Dockerfile < unix < utf-8 < dockerfile < 46% < 6:1

## 4. 개발자 PC에서 SSH키 생성

```
TestDeployment — fish /Users/KoDakyung/Documents/TIL/Docker/TestDeployment — -fish —...
KoDakyung@KoDakyungui-MacBook-Pro ~/D/T/Docker> cd TestDeployment/
KoDakyung@KoDakyungui-MacBook-Pro ~/D/T/D/TestDeployment> ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/KoDakyung/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /Users/KoDakyung/.ssh/id_rsa.
Your public key has been saved in /Users/KoDakyung/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:LLpB3obghU3vaqP2592j0Dj50A0P3WSDMGPI8z5hapc KoDakyung@KoDakyungui-MacBook
-Pro.local
The key's randomart image is:
+---[RSA 2048]-----+
|      . =          |
|      . o + .     |
|      . o . +     |
|      + . + . + . |
|      o + o S . . |
|      . = = X B    |
|      . = % E o    |
|      . o*.B o.    |
|      ..+++ . +... |
+-----[SHA256]-----+
KoDakyung@KoDakyungui-MacBook-Pro ~/
```

```
.ssh — fish /Users/KoDakyung/.ssh — -fish — 80x12
fish /Users/KoDakyung/Documents/TIL/Docker/Te...  ~/.ssh — fish /Users/KoDakyung/.ssh — -fish
Last login: Tue Jul 24 10:09:09 on ttys001
KoDakyung@KoDakyungui-MacBook-Pro ~/D/T/D/TestDeployment> cd ~/.ssh
KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh> ll
total 40
drwx-----  7 KoDakyung  staff   238  7 24 10:12 .
drwxr-xr-x+ 95 KoDakyung  staff  3230  7 24 10:05 ..
-rw-----  1 KoDakyung  staff  1679 11 24  2016 id_boot2docker
-rw-r--r--  1 KoDakyung  staff   421 11 24  2016 id_boot2docker.pub
-rw-----  1 KoDakyung  staff  1679  7 24 10:12 id_rsa
-rw-r--r--  1 KoDakyung  staff   421  7 24 10:12 id_rsa.pub
-rw-r--r--  1 KoDakyung  staff  1323  5 11  2017 known_hosts
KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh>
```

# 5. 서버에 Git 설치 및 저장소 생성

```
sudo apt-get install git  
git init example app  
cd example app
```

```
git config receive.denycurrentbranch ignore
```

: 개발자 PC에서 push한 소스 받도록 설정

# 5. 서버에 Docker 설치

```
sudo apt-get install docker.io  
sudo ln -sf /usr/bin/docker.io /usr/local/bin/docker  
  
sudo usermod -aG docker ${USER}  
sudo service docker restart
```

## 6. 서버에 SSH 키 설정하기

개발자 PC에서 비밀번호 없이 서버에 접속할  
수 있도록 SSH를 설정

~/.ssh 폴더의 id\_rsa.pub 공개키 복사

```
eth0 Link encap:Ethernet HWaddr 00:0c:29:b9:c7:1a
inet addr:192.168.54.138 Bcast:192.168.54.255 Mask:255.255.255.0
inet6 addr: fe80::20c:29ff:feb9:5416/64 Scope:Link
UP BROADCAST RUNNING MULTICAST
RX packets:990 errors:0 dropped:0 total:990 frame:0
TX packets:542 errors:0 dropped:0 frame:0
collisions:0 txqueuelen:1000
RX bytes:1407874 (1.4 MB) TX bytes:32751 (32.7 KB)
Interrupt:19 Base address:0x2000

[KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh> pwd
~/Users/KoDakyung/.ssh
[KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh> ll
total 40
drwx----- 7 KoDakyung  staff  238  7 24 10:12 .
drwxr-xr-x+ 95 KoDakyung  staff 3230  7 24 10:05 ..
-rw-----  1 KoDakyung  staff  1679 11 24  2016 id_boot2docker
-rw-r--r--  1 KoDakyung  staff   421 11 24  2016 id_boot2docker.pub
-rw-----  1 KoDakyung  staff  1679  7 24 10:12 id_rsa
-rw-r--r--  1 KoDakyung  staff   421  7 24 10:12 id_rsa.pub
-rw-r--r--  1 KoDakyung  staff  1499  7 24 12:18 known_hosts
[KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh>
scp /Users/KoDakyung/.ssh/id_rsa.pub koda@192.168.54.138:/home/koda/.ssh
[koda@192.168.54.138's password:
Permission denied, please try again.
[koda@192.168.54.138's password:
id_rsa.pub 100% 421 856.5KB/s 00:00
KoDakyung@KoDakyungui-MacBook-Pro ~/.ssh>
```

```
koda@ubuntu:~/ssh$ pwd
/home/koda/.ssh
koda@ubuntu:~/ssh$ ll
total 16
drwx----- 2 koda koda 4096 Jul 24 12:20 ./
drwxr-xr-x 5 koda koda 4096 Jul 24 12:18 ../
-rw-r--r-- 1 koda koda 421 Jul 24 12:20 id_rsa.pub
-rw-r--r-- 1 koda koda 222 Jul 24 12:14 known_hosts
koda@ubuntu:~/ssh$ _
```

```
koda@ubuntu:~/ssh$ ll
total 16
drwx----- 2 koda koda 4096 Jul 24 12:20 ./
drwxr-xr-x 5 koda koda 4096 Jul 24 12:18 ../
-rw-r--r-- 1 koda koda 421 Jul 24 12:20 id_rsa.pub
-rw-r--r-- 1 koda koda 222 Jul 24 12:14 known_hosts
koda@ubuntu:~/ssh$ mv id_rsa.pub authorized_keys
koda@ubuntu:~/ssh$ ll
total 16
drwx----- 2 koda koda 4096 Jul 24 12:21 ./
drwxr-xr-x 5 koda koda 4096 Jul 24 12:18 ../
-rw-r--r-- 1 koda koda 421 Jul 24 12:20 authorized_keys
-rw-r--r-- 1 koda koda 222 Jul 24 12:14 known_hosts
koda@ubuntu:~/ssh$ chmod 600 authorized_keys
koda@ubuntu:~/ssh$ ll
total 16
drwx----- 2 koda koda 4096 Jul 24 12:21 ./
drwxr-xr-x 5 koda koda 4096 Jul 24 12:18 ../
-rw----- 1 koda koda 421 Jul 24 12:20 authorized_keys
-rw-r--r-- 1 koda koda 222 Jul 24 12:14 known_hosts
koda@ubuntu:~/ssh$ _
```

# 7. 서버에 Git Hook 설정하기

# /home/user/exampleapp/.git/ hooks/post-receive

```
#!/bin/bash

APP_NAME=exampleapp
APP_DIR=$HOME/$APP_NAME
REVISION=$(expr substr $(git rev-parse --verify HEAD) 1 7)

GIT_WORK_TREE=$APP_DIR git checkout -f

cd $APP_DIR
docker build --tag $APP_NAME:$REVISION .
docker stop $APP_NAME
docker rm $APP_NAME
docker run -d --name $APP_NAME -p 80:80 $APP_NAME:$REVISION
```

## 8. 개발자 PC에서 소스 Push하기

**git remote add origin  
<serveruser>@<serverip>:exampleapp**

```
KoDakyung@KoDakyungui-MacBook-Pro ~/exampleapp>  
git remote add origin koda@192.168.54.138:exampleapp
```

**git add**  
**git commit**  
**git push origin master**  
**...**

# error..

```
exampleapp — fish /Users/KoDakyung/exampleapp — -fish — 80x24
fish /Users/KoDakyung/Docu...  fish /Users/KoDakyung/.ssh...  fish /Users/KoDakyung/exam...
remote: 6efd492ffc59: Pull complete
remote: daacb541d219: Pull complete
remote: Digest: sha256:4851d1986c90c60f3b19009824c417c4a0426e9cf38ecfeb28598457c
efe3f56
remote: Status: Downloaded newer image for ubuntu:14.04
remote: ---> daacb541d219
remote: Step 1 : RUN apt-get update
remote: ---> Running in 378c691d6b32
remote: time="2018-07-24T12:37:01+09:00" level=info msg="[8] System error: exec
format error"
remote: Error response from daemon: no such id: exampleapp
remote: time="2018-07-24T12:37:01+09:00" level=fatal msg="Error: failed to stop
one or more containers"
remote: Error response from daemon: no such id: exampleapp
remote: time="2018-07-24T12:37:02+09:00" level=fatal msg="Error: failed to remov
e one or more containers"
remote: Unable to find image 'exampleapp:9690ae1' locally
remote: Pulling repository exampleapp
remote: time="2018-07-24T12:37:22+09:00" level=fatal msg="Error: image library/e
xampleapp:9690ae1 not found"
To koda@192.168.54.138:exampleapp
* [new branch]      master -> master
KoDakyung@KoDakyungui-MacBook-Pro ~/exampleapp>
git remote add origin koda@192.168.54.138:exampleapp
```

**64bit ubuntu 설치 후 다시 함**

# error..

```
exampleapp — fish /Users/KoDakyung/exampleapp — -fish — 80x24
fish /Users/KoDakyung/Docu... fish /Users/KoDakyung/.ssh... fish /Users/KoDakyung/exam...
remote: Step 6 : RUN npm install
remote: ---> Running in 91e3c25e0ed0
remote: npm WARN package.json exampleapp@0.0.1 No repository field.
remote: npm WARN package.json exampleapp@0.0.1 No README data
remote: npm http GET https://registry.npmjs.org/express
remote: npm http GET https://registry.npmjs.org/express
remote: npm http GET https://registry.npmjs.org/express
remote: npm ERR! Error: CERT_UNTRUSTED
remote: npm ERR!   at SecurePair.<anonymous> (tls.js:1370:32)
remote: npm ERR!   at SecurePair.EventEmitter.emit (events.js:92:17)
remote: npm ERR!   at SecurePair.maybeInitFinished (tls.js:982:10)
remote: npm ERR!   at CleartextStream.read [as _read] (tls.js:469:13)
remote: npm ERR!   at CleartextStream.Readable.read (_stream_readable.js:320:1
0)
remote: npm ERR!   at EncryptedStream.write [as _write] (tls.js:366:25)
remote: npm ERR!   at doWrite (_stream_writable.js:223:10)
remote: npm ERR!   at writeOrBuffer (_stream_writable.js:213:5)
remote: npm ERR!   at EncryptedStream.Writable.write (_stream_writable.js:180:
11)
remote: npm ERR!   at write (_stream_readable.js:583:24)
remote: npm ERR! If you need help, you may report this log at:
remote: npm ERR!   <http://github.com/isaacs/npm/issues>
remote: npm ERR! or email it to:
remote: npm ERR!   <npm-@googlegroups.com>
```

FROM node:latest로 수정

# 9. 실행



서버 ip로 접속하면 app.js에서 출력한 메시지가 표시됨.

상황에 따라 Dockerfile과 post-receive 파일을 수정하면된다.

서버에 push하면 새 docker 컨테이너가 생성됨

끝