**Docker**

# Commands in docker (<https://docs.docker.com/engine/reference/commandline/>)

* docker pull -: To download a particular image, or set of images (i.e., a repository)
* Docker images-: gives list of available images
* docker run image\_name:tag\_name -: run the images that is already pulled from repo.
* docker ps –a -: The docker ps command only shows running containers by default. To see all containers, use the -a (or --all)
* dokcer ps -: to see the running container.
* docker stop container\_ID -: to stop the running container
* docker rm $(docker ps -a -q)
* ./dockered &-: to start docker as service In background

# To run Mysql as container-: Refer this link

http://severalnines.com/blog/mysql-docker-containers-understanding-basics

# To deploy a war file to tomcat container(https://forums.docker.com/t/using-localhost-for-to-access-running-container/3148)

* docker images
* docker run tomcat:7.0 or playbook -:

**---**

**- hosts: all**

**tasks:**

**- name: Create a data container**

**docker\_container:**

**name: mydata**

**image: tomcat:7.0**

**volumes:**

**- /data**

* To deploy the war file in tomcat

docker run -it --rm --name tomcat -p 8888:8888 -v /home/swati/:/usr/local/tomcat/webapps/ tomcat:7.0

## **How to configure a linux machine to internal docker repository to pull image from internal repo-:**

1. In /etc/docker add deamon.json file -: {"insecure-registries":["10.242.138.121:5000"]}
2. In /etc/default/docker add the configuration-: DOCKER\_OPTS="-H tcp://0.0.0.0:2375 -H unix:///var/run/docker.sock --insecure-registry 10.242.138.121:5000"

## **Ansible Docker Integration- -: Install tomcat with java using ansible playbook and run that script in dockerfile taking Ubuntu as base image**

### **To install Java in Linux machine-:**

Follow this link-: <http://www.wikihow.com/Install-Oracle-Java-on-Ubuntu-Linux>

1. Download the Jdk/Jre from <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>
2. **If you downloaded the JDK then Type/Copy/Paste:** sudo cp -r jdk-7u45-linux-x64.tar.gz /usr/local/java
3. **Unpack the compressed Java binaries, in the directory /usr/local/java-:** tar -xvf jdk-7u45-linux-x64.tar.gz
4. **Edit the system PATH file /etc/profile and add the following system variables to your system path. -: vim /etc/profile**
5. **If you are installing the JDK then Type/Copy/Paste:**  
   JAVA\_HOME=/usr/local/java/**jdk1.7.0\_45**  
   JRE\_HOME=$JAVA\_HOME/jre  
   PATH=$PATH:$JAVA\_HOME/bin:$JRE\_HOME/bin  
   export JAVA\_HOME  
   export JRE\_HOME  
   export PATH
6. **Inform your Ubuntu Linux system where your Oracle Java JDK/JRE is located.** This will tell the system that the new Oracle Java version is available for use.

* **If you are installing the JDK then Type/Copy/Paste:** sudo update-alternatives --install "/usr/bin/java" "java" "/usr/local/java/jdk1.7.0\_45/jre/bin/java" 1
* **Or if you are installing the JRE then Type/Copy/Paste:** sudo update-alternatives --install "/usr/bin/java" "java" "/usr/local/java/jre1.7.0\_45/bin/java" 1
  + this command notifies the system that Oracle Java JRE is available for use
* **Only if you are installing the JDK then Type/Copy/Paste:** sudo update-alternatives --install "/usr/bin/javac" "javac" "/usr/local/java/jdk1.7.0\_45/bin/javac" 1
  + this command notifies the system that Oracle Java JDK is available for use
* **Type/Copy/Paste:** sudo update-alternatives --install "/usr/bin/javaws" "javaws" "/usr/local/java/jre1.7.0\_45/bin/javaws" 1
  + this command notifies the system that Oracle Java Web start is available for use

1. **Inform your Ubuntu Linux system that Oracle Java JDK/JRE must be the default Java.**

* **If you are installing the JDK then Type/Copy/Paste:** sudo update-alternatives --set java /usr/local/java/jdk1.7.0\_45/jre/bin/java
* **Or if you are installing the JRE then Type/Copy/Paste:** sudo update-alternatives --set java /usr/local/java/jre1.7.0\_45/bin/java
  + this command will set the java runtime environment for the system
* **Only if you are installing the JDK then Type/Copy/Paste:** sudo update-alternatives --set javac /usr/local/java/jdk1.7.0\_45/bin/javac
  + this command will set the javac compiler for the system
* **If you are installing the JDK then Type/Copy/Paste:** sudo update-alternatives --set javaws /usr/local/java/jdk1.7.0\_45/bin/javaws
* **Or if you are installing the JRE then Type/Copy/Paste:** sudo update-alternatives --set javaws /usr/local/java/jre1.7.0\_45/bin/javaws
  + this command will set Java Web start for the system

1. **Reload your system wide PATH /etc/profile by typing the following command:**

**Type/Copy/Paste:** . /etc/profile

Note your system-wide PATH /etc/profile file will reload after reboot of your Ubuntu Linux system

Check java-version, it should display the version u installed in java.

### **To install Tomcat using ansible playbook**

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- hosts: all

tasks:

- shell: echo JAVA\_HOME is $JAVA\_HOME

environment:

JAVA\_HOME: /usr/local/java/jdk1.8.0\_111

# - name: Extract archive

# command: /bin/tar xvf /home/daksha/ansible\_demo/apache-tomcat-7.0.61.tar.gz home/daksha/apache-tomcat-7.0.61

- name: Symlink install directory

file: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61 path=/usr/share/tomcat state=link

- name: Configure Tomcat server

template: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61/conf/server.xml dest=/usr/share/tomcat/conf/

notify: restart tomcat

- name: Configure Tomcat users

template: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61/conf/tomcat-users.xml dest=/usr/share/tomcat/conf/

notify: restart tomcat

- name: Install Tomcat init script

copy: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61/bin/setclasspath.sh dest=/etc/init.d/tomcat mode=0755

- name: Start Tomcat

command: /usr/share/tomcat/bin/startup.sh

- name: deploy war file

copy: src=/home/daksha/ansible\_demo/benefits.war dest=/usr/share/tomcat/webapps/

Running this playbook -: ansible-playbook –i host –c local tomcat.yml

Browse the port and check whether tomcat is up.

### **To run the ansible playbook using Dockefile**

Links-:

* <http://stackoverflow.com/questions/24738264/how-to-test-ansible-playbook-using-docker>
* <http://everythingshouldbevirtual.com/docker-building-containers-using-ansible>
* <http://blog.maestrano.com/baking-your-docker-images-with-ansible/>

FROM 10.242.138.121:5000/library/ubuntu:14.04 (loads the Ubuntu image as abse image from internal repo)

# Add ansible configuration

RUN apt-get update && \

apt-get install -y python python-dev python-pip && \

RUN pip install ansible

#Add ansible configuration

ADD tomcat.yml /etc/ansible/tomcat.yml

ADD host /etc/ansible/hosts

WORKDIR /etc/ansible

#Run palybook

RUN ansible-playbook etc/ansible/tomcat.yml -c local

EXPOSE 8080

ENTRYPOINT ["ansible-playbook"]

Run Ansible playbook with docker

Tar –

tar -tvf apache-tomcat-7.0.61.tar.gz

tar -xvf apache-tomcat-7.0.61.tar.gz

tar -cvzf /home/daksha/ansible\_demo/apache-tomcat-7.0.61.tar.gz apache-tomcat-7.0.61

check os

file /sbin/init

java home export JAVA\_HOME=/usr/local/java/jdk1.8.0\_111

root@10:/home/daksha/ansible\_demo# echo $JAVA\_HOME

set path

JAVA\_HOME=/usr/local/java/**jdk1.8.0\_111**  
JRE\_HOME=/usr/local/java/**jdk1.8.0\_111/jre**  
PATH=$PATH:$JRE\_HOME/bin:$JAVA\_HOME/bin  
export JAVA\_HOME  
export JRE\_HOME  
export PATH

sudo update-alternatives --install "/usr/bin/java" "java" "/usr/local/java/jdk1.8.0\_111/bin/java" 1

- shell: echo JAVA\_HOME is $JAVA\_HOME

environment:

JAVA\_HOME: /usr/local/java/jdk1.8.0\_111

<http://www.wikihow.com/Install-Oracle-Java-JDK-on-Ubuntu-Linux>

java install

tomcat install

run tomcat

deploy war

dockerfile

<https://github.com/rothgar/ansible-tomcat/blob/master/tasks/main.yml>

<https://github.com/ansible/ansible-examples/blob/master/tomcat-standalone/roles/tomcat/tasks/main.yml>

# Add ansible configuration

ADD /home/daksha/ansible\_demo/tomcat.yml

ADD /home/daksha/ansible\_demo/host

WORKDIR /home/daksha/ansible\_demo

# Run ansible using playbook

Ansible playbook

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- hosts: all

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environment:

JAVA\_HOME: /usr/local/java/jdk1.8.0\_111

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# command: /bin/tar xvf /home/daksha/ansible\_demo/apache-tomcat-7.0.61.tar.gz home/daksha/apache-tomcat-7.0.61

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template: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61/conf/tomcat-users.xml dest=/usr/share/tomcat/conf/

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copy: src=/home/daksha/ansible\_demo/apache-tomcat-7.0.61/bin/setclasspath.sh dest=/etc/init.d/tomcat mode=0755

- name: Start Tomcat

command: /usr/share/tomcat/bin/startup.sh

dockerfile

FROM 10.242.138.121:5000/library/ubuntu:14.04

# Add ansible configuration

# Run ansible using playbook

#RUN apt-get update

ADD tomcat.yml /etc/ansible/tomcat.yml

ADD host /etc/ansible/hosts

WORKDIR /etc/ansible

RUN ansible-playbook tomcat.yml -c local

ENTRYPOINT ["ansible-playbook"]

Links

<http://everythingshouldbevirtual.com/docker-building-containers-using-ansible>

<http://blog.maestrano.com/baking-your-docker-images-with-ansible/>

<http://stackoverflow.com/questions/29201262/deploying-java-webapp-to-tomcat-8-running-in-docker-container>

<http://stackoverflow.com/questions/27719353/dockerfile-for-tomcat>