

Containerization, Docker, and Docker Hub

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SUBMITTED TO : MR. VIKUL SIR

BATCH NO. SA240931

DATE: 13/12/2024

L1 - Create Docker file and build the docker container Application Image for the application build in Jenkins Module

STEP 1 : LAUNCH EC2 INSTANCE

CONFIGURE THE INBOUND RULE(1312)

STEP 2: CONNECT INSTANCE

STEP 3: ADD GIT REPOSITIRY TO THE MACHINE

- Clone the repository

Git clone <https://github.com/adesh8484/addressbook-cicd-project>

- *Remove unnecesrory file
(rm file name)*
 - *Apt update*
- *Apt install openjdk-17-jdk -y*
 - *Apt install maven*
 - *Mvn package*
 - *Apt install docker.io*

STEP 4: CREATE DOCKER FILE

vi Dockerfile

*[FROM tomcat:9
COPY target/*.war /usr/local/tomcat/webapps/addressbook.war
EXPOSE 8080
CMD ["catalina.sh","run"] }*

STEP 5: CREATE IMAGE

Docker build -t addressbook1

STEP 6: CREAETE CANTAINER

Docker run -it -p 1312:8080 addressbook1

The screenshot displays the AWS Management Console interface for the EC2 service. The left-hand navigation pane includes links to the Dashboard, EC2 Global View, Events, and various instance management options like Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. Under the 'Instances' section, there are links for Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. The main content area shows a list of EC2 instances under the heading 'Instances (1/2)'. The list includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IP. Two instances are listed: 'docker1' (ID: i-0c40bf6438e08ec8f) which is in a 'Running' state with a 't2.micro' instance type, and 'docker' (ID: i-0077a17af6a552229) which is in a 'Terminated' state with a 't2.micro' instance type. Below the list, the details for the 'docker1' instance are expanded, showing its Instance ID, Public IPv4 address (13.203.75.130), Private IPv4 addresses (172.31.1.27), and Instance state (Running).

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
docker1	i-0c40bf6438e08ec8f	Running	t2.micro	Initializing	View alarms +	ap-south-1b	ec2-13-
docker	i-0077a17af6a552229	Terminated	t2.micro	-	View alarms +	ap-south-1b	-

i-0c40bf6438e08ec8f (docker1)

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0c40bf6438e08ec8f	13.203.75.130 open address	172.31.1.27
IPv6 address	Instance state	Public IPv4 DNS
-	Running	

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EC2

EC2 > Security Groups > sg-0e7b337b5b2347afd - launch-wizard-12 > Edit inbound rules

Inbound rules

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
sg-02f1548ce4bdee56b	HTTP	TCP	80	Cu...	0.0.0.0/0	Delete
sg-0265bd047fe0c39fc	SSH	TCP	22	Cu...	0.0.0.0/0	Delete
-	Custom TCP	TCP	1312	An...	0.0.0.0/0	Delete

Add rule

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Preview changes Save rules

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EC2

Rendering build context to Docker daemon 48.09MB

Step 1/4 : FROM tomcat:9

9: Pulling from library/tomcat

4e44b265507a: Pull complete

1c2afd91a87d: Pull complete

99e9bbcfaf697: Pull complete

11be3e613582: Pull complete

1b9d1e181a2a: Pull complete

fc68c0117916: Pull complete

1f4fb700ef54: Pull complete

99f7ace6014e: Pull complete

Digest: sha256:49f92b415416c22e8ada507179bff7b0cded9687732068906292a6f960b3f917

Status: Downloaded newer image for tomcat:9

---> 39642322f89a

Step 2/4 : COPY target/*.war /usr/local/tomcat/webapps/addressbook.war

---> 77cfd178879

Step 3/4 : EXPOSE 8080

---> Running in 60c556e112ad

---> Removed intermediate container 60c556e112ad

---> 6a000228693c

Step 4/4 : CMD ["catalina.sh","run"]

---> Running in baf1f7496a31

---> Removed intermediate container baf1f7496a31

---> edb01cb7478d

Successfully built edb01cb7478d

Successfully tagged addressbook:latest

root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project#

i-0c40bf6438e08ec8f (docker1)

PublicIPs: 13.203.75.130 PrivateIPs: 172.31.1.27

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EC2

FROM tomcat:9

COPY target/*.war /usr/local/tomcat/webapps/addressbook.war

EXPOSE 8080

MD ["catalina.sh","run"]

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EC2

root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

addressbook1 latest edb01cb7478d 3 minutes ago 491MB

tomcat 9 39642322f89a 4 days ago 469MB

root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker run -itd -p 1312:8080 addressbook1

7de0a230c117fc0f041aa61b9446cf56018d7bb1467c02348a453af7d24bbcd2

root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker ps

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

7de0a230c117 addressbook1 "catalina.sh run" 7 seconds ago Up 6 seconds 0.0.0.0:1312->8080/tcp, :::1312->8080/tcp crazy_dewdney

root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project#

i-0c40bf6438e08ec8f (docker1)

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ooot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
addressbook1	latest	edb01cb7478d	11 minutes ago	491MB
omcat	9	39642322f89a	4 days ago	469MB

ooot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker ps

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
de0a230c117	addressbook1	"catalina.sh run"	7 minutes ago	Up 7 minutes	0.0.0.0:1312->8080/tcp, :::1312->8080/tcp	crazy_dewdney

ooot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker run -itd -p 1312:8080 addressbook1

76b40376567538409fcce5410a37a14f8603cb98c08231f3c055d67bd5f28e7

ocker: Error response from daemon: driver failed programming external connectivity on endpoint interesting_sutherland (ab9f871a89250d2a0c4b86997d0c005a043fd26d8681153167683692f2ee783): Bind for 0.0.0.0:1312 failed: port is already allocated.

ooot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project#

i-0c40bf6438e08ec8f (docker1)

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```
pot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
addressbook1         latest              edb01cb7478d       3 minutes ago      491MB
mcmtat               9                  39642322f89a       4 days ago         469MB
pot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker run -itd -p 1312:8080 addressbook1
e0a230c117fc0f041aa61b9446cf56018d7bb1467c02348a453af7d24bbcd2
pot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS                               NAMES
e0a230c117          addressbook1        "catalina.sh run"   7 seconds ago      Up 6 seconds       0.0.0.0:1312->8080/tcp, :::1312->8080/tcp    crazy_dewdney
pot@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project# history
1 git clone https://github.com/adesh8484/addressbook-cicd-project.git
2 ls
3 cd addressbook-cicd-project
4 ls
5 apt install openjdk-17-jdk -y
6 apt update
7 apt install openjdk-17-jdk -y
8 java --version
9 apt install maven -y
10 mvn package
11 ls
12 cd target
13 ls
14 cd..
15 cd ..
16 vi Dockerfile
17 docker build -t addressbook .
```

i-0c40bf6438e08ec8f (docker1)

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```
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EC2
/ apt install openjdk-17-jdk -y
8 java --version
9 apt install maven -y
10 mvn package
11 ls
12 cd target
13 ls
14 cd..
15 cd ..
16 vi Dockerfile
17 docker build -t addressbook .
18 apt install docker.io
19 docker build -t addressbook .
20 docker build -t addressbook1 .
21 vi Dockerfile
22 docker build -t addressbook1 .
23 vi Dockerfile
24 docker build -t addressbook1 .
25 vi Dockerfile
26 docker build -t addressbook1 .
27 docker images
28 clear
29 docker images
30 docker run -itd -p 1312:8080 addressbook1
31 docker ps
32 history
root@ip-172-31-1-27:/home/ubuntu/addressbook-cicd-project#
```

i-Oc40bf6438e08ec8f (docker1)

PublicIPs: 13.203.75.130 PrivateIPs: 172.31.1.27