

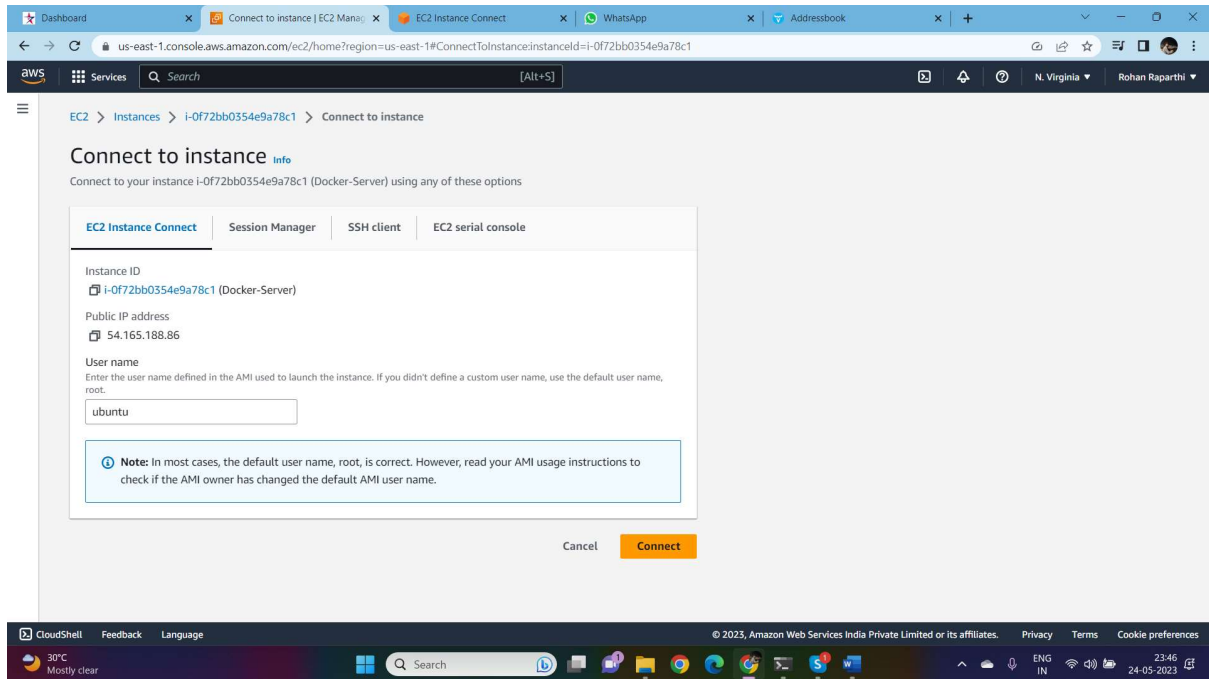
DevOps Certification Training

Docker Assignment 1

Name: Raparathi Rohan

Batch: 27th March 2023

Launch EC2 Instance (Docker Server)



\$vi Dockerfile

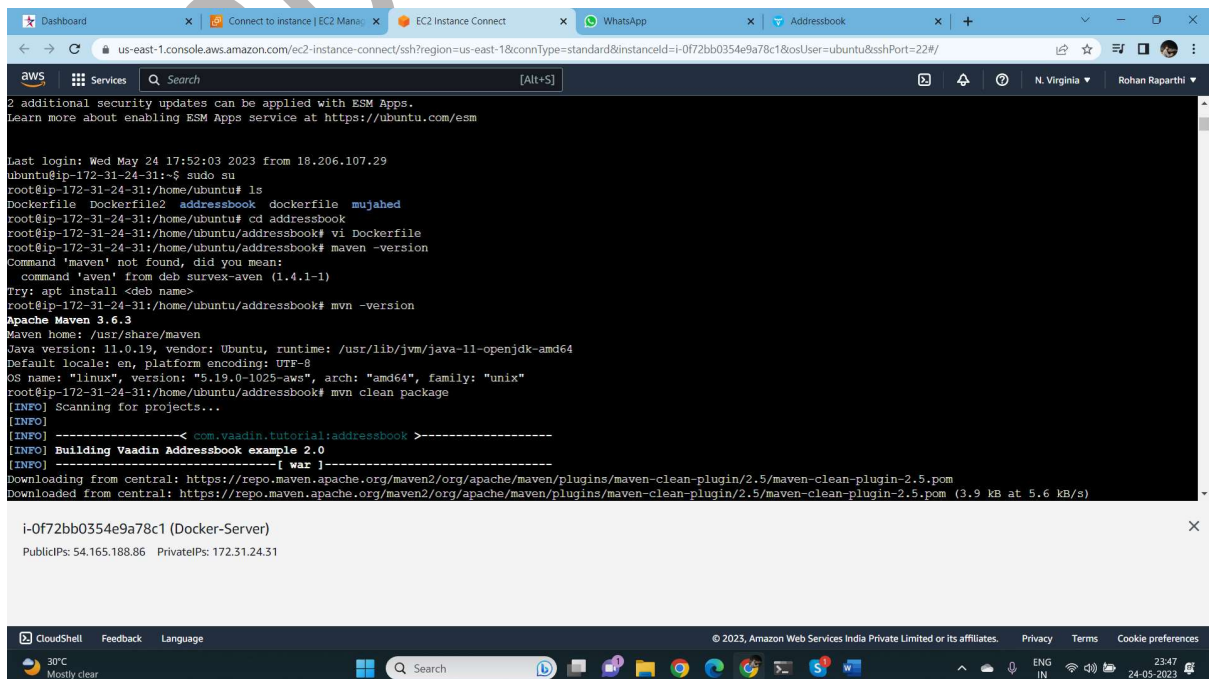
FROM tomcat:9

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

EXPOSE 8080

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

\$mvn clean package



```
Dashboard | Connect to instance | EC2 Manag... | EC2 Instance Connect | WhatsApp | Addressbook | +
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0f72bb0354e9a78c1&osUser=ubuntu&sshPort=22#/

[Alt+S] N. Virginia Rohan Raparthy

Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/2.0.2/plexus-io-2.0.2.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/2.1/plexus-archiver-2.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-interpolation/1.15/plexus-interpolation-1.15.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/2.5/maven-archiver-2.5.jar (22 kB at 623 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/thoughtworks/xstream/xstream/1.3.1/xstream-1.3.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/2.0.2/plexus-io-2.0.2.jar (58 kB at 971 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-filtering/1.0-beta-2/maven-filtering-1.0-beta-2.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-interpolation/1.15/plexus-interpolation-1.15.jar (60 kB at 796 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-filtering/1.0-beta-2/maven-filtering-1.0-beta-2.jar (33 kB at 467 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/2.1/plexus-archiver-2.1.jar (184 kB at 1.5 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/thoughtworks/xstream/xstream/1.3.1/xstream-1.3.1.jar (431 kB at 2.4 MB/s)
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by com.thoughtworks.xstream.core.util.Fields (file:/root/.m2/repository/com/thoughtworks/xstream/xstream/1.3.1/xstream-1.3.1.jar) to field java.util.Properties.defaults
WARNING: Please consider reporting this to the maintainers of com.thoughtworks.xstream.core.util.Fields
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Packaging webapp
[INFO] Assembling webapp [addressbook] in [/home/ubuntu/addressbook/target/addressbook-2.0]
[INFO] Processing war project
[INFO] Webapp assembled in 183 msecs
[INFO] Building war: /home/ubuntu/addressbook/target/addressbook-2.0.war
[INFO] BUILD SUCCESS
[INFO] Total time: 21.060 s

i-0f72bb0354e9a78c1 (Docker-Server)
PublicIPs: 54.165.188.86 PrivateIPs: 172.31.24.31

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30°C Mostly clear Search 23:48 24-05-2023
```

Write a docker file to containerize the application.

Build the docker image for the application.

\$docker build -t addressbook .

```
Dashboard | Connect to instance | EC2 Manag... | EC2 Instance Connect | WhatsApp | Addressbook | +
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0f72bb0354e9a78c1&osUser=ubuntu&sshPort=22#/

[Alt+S] N. Virginia Rohan Raparthy

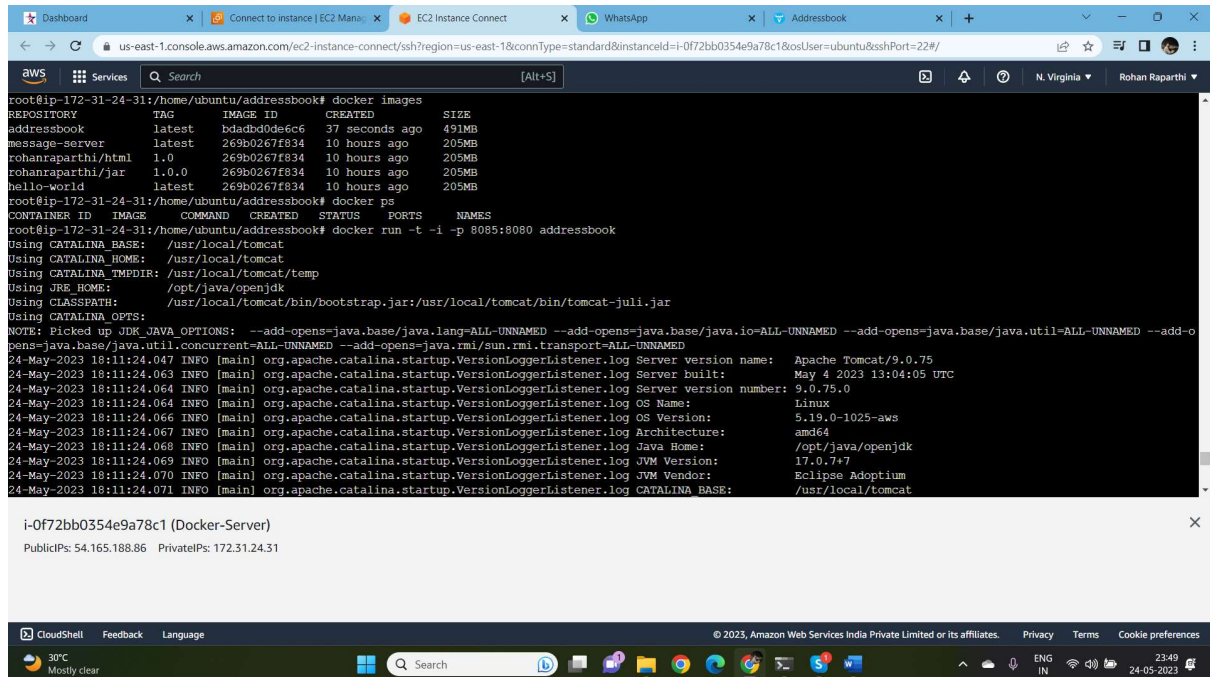
[INFO] Total time: 21.060 s
[INFO] Finished at: 2023-05-24T18:04:53Z
[INFO] -----
root@ip-172-31-24-31:/home/ubuntu/addressbook# ls
Dockerfile README.md addressbook_screenshot.png dockerfile dockerfile1 mywebsite.html pom.xml src target
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker build -t addressbook .
(+) Building 14.9s (8/8) FINISHED
=> [internal] load build definition from Dockerfile
=> transferring dockerfile: 196B
=> [internal] load .dockerignore
=> transferring context: 2B
=> [internal] load metadata for docker.io/library/tomcat:9
=> [auth] library/tomcat:pull token for registry-1.docker.io
=> [internal] load build context
=> transferring context: 14.14MB
=> [1/2] FROM docker.io/library/tomcat:9@sha256:92bdc746db04e2bb7764e19c68fcb68e3bb6eeebc0ee765b964526c13bb5598b3
=> resolve docker.io/library/tomcat:9@sha256:92bdc746db04e2bb7764e19c68fcb68e3bb6eeebc0ee765b964526c13bb5598b3
=> sha256:00de0ebc256ae3eb7625494ed35189f545766552b7159a17f634706e28a9687 17.05MB / 17.05MB
=> sha256:c24bf4c725c221ddb66e056716cf961f79001fedf2e8a0cddab34724398bac 192.59MB / 192.59MB
=> sha256:fa667b05e9ab1564d648c1c5758406b12f892bedf23886eb7fd4d30f98e79e7 1.79kB / 1.79kB
=> sha256:1bc677758ad7fa4503417ae5be18809c5a8679b5b36fcd1464d5a8e41cb13305 30.43MB / 30.43MB
=> sha256:92bdc746db04e2bb7764e19c68fcb68e3bb6eeebc0ee765b964526c13bb5598b3 1.21kB / 1.21kB
=> sha256:150ba632d0b0e0d81e19cf30a677d4e852b7900619c8e90b4d4f0eb8a299a 13.08kB / 13.08kB
=> sha256:4fb255c76461d67abc91f408e97fa9ebae8509a5d6d94a905e52946bab9aa90 176B / 176B
=> extracting sha256:1bc677758ad7fa4503417ae5be18809c5a8679b5b36fcd1464d5a8e41cb13305 4.6s
=> sha256:b388fec40c218ebb7a17d0c15b7bd6ffbe6d053b45bb1a993e6243ac0ee9955 171B / 171B
=> sha256:99a8fb48e61c0a0663301a2d5389e4b30c4127ded191a665f8bc24974223e93 12.71MB / 12.71MB
=> sha256:44f4facf54e7666fccc6dcf310b30e47f95b145414af3efbe289d146455203c 130B / 130B

i-0f72bb0354e9a78c1 (Docker-Server)
PublicIPs: 54.165.188.86 PrivateIPs: 172.31.24.31

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```

Run the docker image of your application with proper port binding.

\$docker run -t -i -p 8085:8080 addressbook



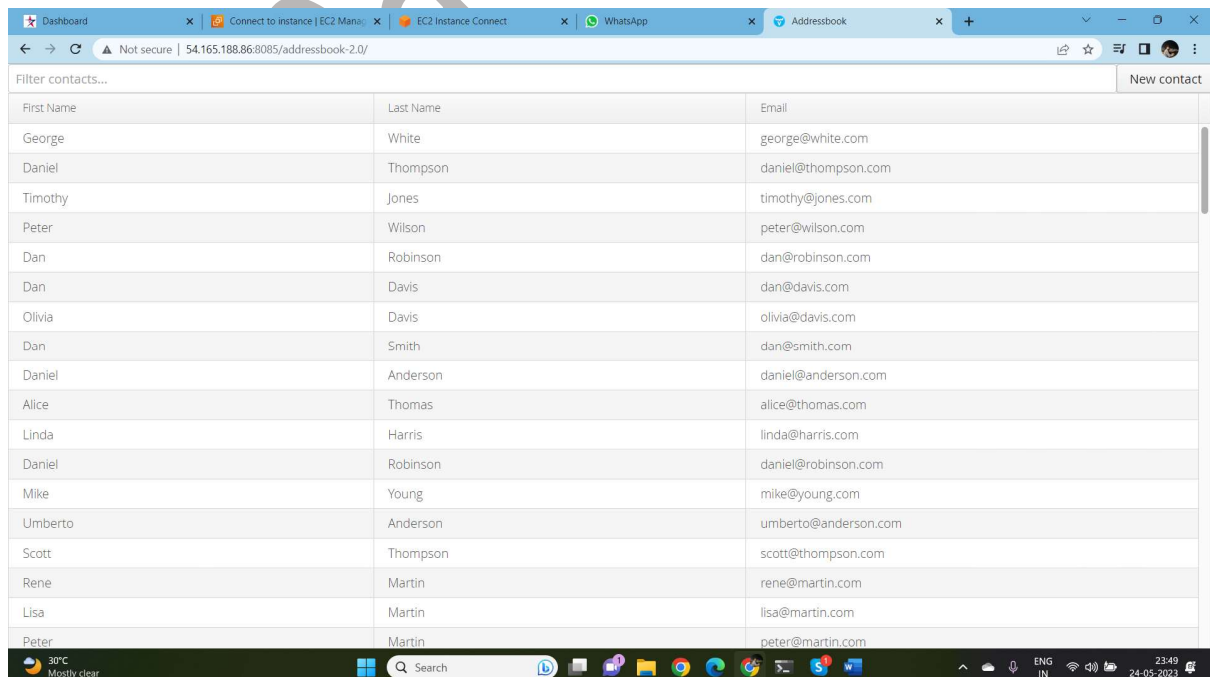
```
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
addressbook         latest     bdadb0d0defc6 37 seconds ago 491MB
message-server       latest     269b0267f834 10 hours ago 205MB
rohanraparathi/html 1.0        269b0267f834 10 hours ago 205MB
rohanraparathi/jar   1.0.0      269b0267f834 10 hours ago 205MB
hello-world          latest     269b0267f834 10 hours ago 205MB

root@ip-172-31-24-31:/home/ubuntu/addressbook# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS          NAMES
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker run -t -i -p 8085:8080 addressbook
Using CATALINA_BASE:   /usr/local/tomcat
Using CATALINA_HOME:   /usr/local/tomcat
Using CATALINA_TMPDIR: /usr/local/tomcat/temp
Using JRE_HOME:        /opt/java/openjdk
Using CLASSPATH:        /usr/local/tomcat/bin/bootstrap.jar:/usr/local/tomcat/bin/tomcat-juli.jar
Using CATALINA_OPTS:
NOTE: Picked up JDK_JAVA_OPTIONS:  --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
24-May-2023 18:11:24.047 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version name:   Apache Tomcat/9.0.75
24-May-2023 18:11:24.063 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server built:      May 4 2023 13:04:05 UTC
24-May-2023 18:11:24.064 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version number: 9.0.75.0
24-May-2023 18:11:24.064 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log OS Name:         Linux
24-May-2023 18:11:24.066 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log OS Version:      5.19.0-1025-aws
24-May-2023 18:11:24.067 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Architecture:   amd64
24-May-2023 18:11:24.068 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Java Home:       /opt/java/openjdk
24-May-2023 18:11:24.069 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log JVM Version:     17.0.7+7
24-May-2023 18:11:24.070 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log JVM Vendor:      Eclipse Adoptium
24-May-2023 18:11:24.071 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log CATALINA_BASE:   /usr/local/tomcat

i-0f72bb0354e9a78c1 (Docker-Server)
PublicIPs: 54.165.188.86  PrivateIPs: 172.31.24.31
```

Verify the containerize application is running and accessible

\$publicIPAddress:8085/addressbook-2.0/



Push it to your docker hub repository

\$docker tag addressbook:latest rohanraparthy/war

\$ docker push rohanraparthy/war

The screenshot shows a terminal window in AWS CloudShell. The user is logged in as root on an EC2 instance. They run the following commands:

```
root@ip-172-31-24-31:/home/ubuntu/addressbook# ls
Dockerfile  README.md  addressbook_screenshot.png  dockerfile  dockerfile1  mywebsite.html  pom.xml  src  target
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
addressbook         latest      bdadb0de6c6  15 minutes ago  491MB
message-server      latest      269b0267f834 10 hours ago  205MB
rohanraparthy/html  1.0        269b0267f834 10 hours ago  205MB
rohanraparthy/jar    1.0.0      269b0267f834 10 hours ago  205MB
hello-world         latest      269b0267f834 10 hours ago  205MB
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                    NAMES
8ffe2d8164d4   addressbook "catalina.sh run"        13 minutes ago Up 13 minutes  0.0.0.0:8085->8080/tcp, :::8085->8080/tcp  recurring_roentgen
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker tag addressbook:latest rohanraparthy/war
root@ip-172-31-24-31:/home/ubuntu/addressbook# docker push rohanraparthy/war
Using default tag: latest
The push refers to repository [docker.io/rohanraparthy/war]
708ee193a328: Pushed
9a3d3d978b9b: Mounted from library/tomcat
817f175f3d94: Mounted from library/tomcat
74d620724878: Mounted from library/tomcat
57b27cfbd6e6: Mounted from library/tomcat
b421f864ecf0: Mounted from library/tomcat
b09de1b6a666: Mounted from library/tomcat
b8a36d10656a: Mounted from library/tomcat
latest: digest: sha256:4de80ccd39c84aa320369382b928a21d04707deb571524564c1afb6d33a60bd1 size: 2000
root@ip-172-31-24-31:/home/ubuntu/addressbook#
```

Below the terminal output, a box displays the instance ID: i-0f72bb0354e9a78c1 (Docker-Server) and its public and private IP addresses.

Verify in Docker Hub

The screenshot shows the Docker Hub repository page for 'rohanraparthy/war'. The page includes the following sections:

- General**: Repository name, description (empty), and last pushed time (4 minutes ago).
- Tags**: A table showing the 'latest' tag, pushed 4 minutes ago.
- Docker commands**: A box showing the command 'docker push rohanraparthy/war:tagname'.
- Automated Builds**: A section explaining how to connect to GitHub or Bitbucket for automated builds.
- Repository overview**: A section at the bottom providing more details about the repository.

My Courses | Connect to instance | EC2 | EC2 Instance Connect | WhatsApp | Addressbook | rohanraparthy/war Tags | Docker Hub

hub.docker.com/repository/docker/rohanraparthy/war/tags?page=1&ordering=last_updated

dockerhub Search Docker Hub Explore Repositories Organizations Help Upgrade rohanraparthy

rohanraparthy Repositories war Tags Using 0 of 1 private repositories. Get more

General Tags Builds Collaborators Webhooks Settings

Sort by Newest Filter Tags Go to Advanced Image Management Delete

TAG latest Last pushed 5 minutes ago by rohanraparthy

DIGEST 4de80ccd39c8 OS/ARCH linux/amd64 SCANNED --- LAST PULL --- COMPRESSED SIZE 254.54 MB

Pull command copied docker pull rohanraparthy/war:latest

30°C Mostly clear Search ENG IN 00:03 25-05-2023