

[illegible]

Name	Java WebApp
URL	https://attackdefense.com/challengedetails?cid=2037
Type	DevOps Basics: Building Project

Important Note: This document illustrates all the important steps required to complete this lab. This is by no means a comprehensive step-by-step solution for this exercise. This is only provided as a reference to various commands needed to complete this exercise and for your further research on this topic. Also, note that the IP addresses and domain names might be different in your lab.

Challenge Description

The project building process is to get the software/webapp ready for deployment. The build process depends on the project and technology/language/framework used.

A Kali machine is provided with Maven and project dependencies installed on it. The source code of a Java project is provided on the home directory of the root user.

Objective: Run compile, test, package on the source code!

Instructions:

- The source code of web applications is provided at /root/github-repos

Solution

Step 1: Check the contents of the current working directory.

Command: ls -l

```
root@attackdefense:~# ls -l
total 16
drwxr-xr-x 3 root root 4096 Sep 18 05:07 github-repos
-rw-r--r-- 1 root root 293 Feb 7 2019 README
drwxr-xr-x 1 root root 4096 Nov 21 2019 tools
drwxr-xr-x 2 root root 4096 Feb 7 2019 wordlists
root@attackdefense:~#
```

Step 2: Change to the java-mvn-hello-world-web-app directory and check its contents.

Commands:

```
cd github-repos/java-mvn-hello-world-web-app
ls -l
```

```
root@attackdefense:~# cd github-repos/java-mvn-hello-world-web-app/
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app#
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app# ls -l
total 36
-rw-rw-r-- 1 root root 860 Sep 18 05:07 ApplicationManifest.yml
-rw-rw-r-- 1 root root 138 Sep 18 05:07 Jenkinsfile
-rw-rw-r-- 1 root root 1079 Sep 18 05:07 LICENSE
-rw-rw-r-- 1 root root 3133 Sep 18 05:07 pom.xml
-rw-rw-r-- 1 root root 729 Sep 18 05:07 README.md
-rw-rw-r-- 1 root root 1019 Sep 18 05:07 sample_jenkins_file
-rw-rw-r-- 1 root root 710 Sep 18 05:07 SecurityManifest.yml
-rw-rw-r-- 1 root root 532 Sep 18 05:07 sonar-project.properties
drwxrwxr-x 4 root root 4096 Sep 18 05:07 src
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app#
```

Step 3: Run compilation on the source code of the project.

Command: mvn compile

```

root@attackdefense:~/github-repos/java-mvn-hello-world-web-app# mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.dev31.hello_world:mvn-hello-world >-----
[INFO] Building mvn-hello-world Maven Webapp 1.0-SNAPSHOT
[INFO] -----[ war ]-----
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ mvn-hello-world ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /root/github-repos/java-mvn-hello-world-web-app/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ mvn-hello-world ---
[INFO] No sources to compile
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO]
[INFO] Total time: 3.381 s
[INFO] Finished at: 2020-09-22T10:10:41Z
[INFO] -----
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app#

```

The compilation is done.

Step 4: Run the tests accompanying the project.

Command: mvn test

```

root@attackdefense:~/github-repos/java-mvn-hello-world-web-app# mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.dev31.hello_world:mvn-hello-world >-----
[INFO] Building mvn-hello-world Maven Webapp 1.0-SNAPSHOT
[INFO] -----[ war ]-----
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ mvn-hello-world ---
[INFO] Surefire report directory: /root/github-repos/java-mvn-hello-world-web-app/target/surefire-reports

-----
T E S T S
-----

Running com.dev31.hello_world.test.ExampleTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.113 sec

Results :

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

[INFO] -----

```

This command also runs compilation first and then runs tests.

Step 5: In order to deploy this web app on a tomcat server, a WAR package will be required. Package the web app into a WAR.

Command: mvn package

```
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app# mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.dev31.hello_world:mvn-hello-world >-----
[INFO] Building mvn-hello-world Maven Webapp 1.0-SNAPSHOT
[INFO] -----[ war ]-----
[INFO] Packaging webapp
[INFO] Assembling webapp [mvn-hello-world] in [/root/github-repos/java-mvn-hello-world-web-app/target/mvn-hello-world]
[INFO] Processing war project
[INFO] Copying webapp resources [/root/github-repos/java-mvn-hello-world-web-app/src/main/webapp]
[INFO] Webapp assembled in [316 msecs]
[INFO] Building war: /root/github-repos/java-mvn-hello-world-web-app/target/mvn-hello-world.war
```

The generated WAR archive is placed in “target” directory.

Command: ls -l target/

```
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app# ls -l target/
total 11180
drwxr-xr-x 3 root root    4096 Sep 22 10:10 generated-test-sources
drwxr-xr-x 2 root root    4096 Sep 22 10:12 maven-archiver
drwxr-xr-x 3 root root    4096 Sep 22 10:10 maven-status
drwxr-xr-x 4 root root    4096 Sep 22 10:12 mvn-hello-world
-rw-r--r-- 1 root root 11419811 Sep 22 10:12 mvn-hello-world.war
drwxr-xr-x 2 root root    4096 Sep 22 10:10 surefire-reports
drwxr-xr-x 3 root root    4096 Sep 22 10:10 test-classes
root@attackdefense:~/github-repos/java-mvn-hello-world-web-app#
```

The WAR file is now ready to be deployed.

Learning

Building, running test and packaging a Java web application.