

EPAM Systems, RD Dep., RD Dep.

**MTN.\*NIX.09**  
**Continuous Delivery with Jenkins**

# **MTN.\*NIX.09 Continuous Delivery with Jenkins**

## **Software build principles**

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**REPORT**

**Jenkins day 2**

**STSIAPAN HANCHAR**

## Task 1. Maven build

### Review

Implement Maven build script for sample project.

### Task

1. Install Maven
2. Clone GitHub project  
[git@github.com:MNT-Lab/build-tools.git](https://github.com/MNT-Lab/build-tools.git)
3. Create your own branch based on master by pattern:  
First char of name + surname

Example: The name of student - Serhei Ivanou. The branch will be **sivanou**.

4. Implement pom.xml script to clean, compile, test, create jar file and distribution artifact.  
(source code in 'src' repo).

```
File Edit View Search Terminal Help
[root@k8s-master home-task]# ll
total 8
drwxr-xr-x 9 root root 113 Nov 26 11:55 build
-rw-r--r-- 1 root root 522 Nov 26 11:52 build.gradle
-rw-r--r-- 1 root root 1571 Nov 26 10:19 pom.xml
drwxr-xr-x 4 root root 30 Nov 26 09:28 src
drwxr-xr-x 7 root root 162 Nov 26 13:16 target
[root@k8s-master home-task]# ll target/
total 12
-rw-r--r-- 1 root root 45 Nov 26 13:10 1.txt
-rw-r--r-- 1 root root 22 Nov 26 13:16 2.txt
drwxr-xr-x 3 root root 43 Nov 26 10:19 classes
-rw-r--r-- 1 root root 2652 Nov 26 10:19 hometask-maven-by-pom.jar
drwxr-xr-x 2 root root 28 Nov 26 10:19 maven-archiver
drwxr-xr-x 2 root root 6 Nov 26 10:19 surefire
drwxr-xr-x 2 root root 69 Nov 26 10:19 surefire-reports
drwxr-xr-x 3 root root 17 Nov 26 10:19 test-classes
[root@k8s-master home-task]#
```

5. All changes should be tracked by commits to own branch
6. Push to GitHub
7. Setup Jenkins job ("helloworld-**sivanou**-maven-build"):
  - a) build from repository (poll SCM)
  - b) use maven plugin
  - c) run jar and output save to file 'output.log'
  - d) archive and attach jar file  
ARTEFACT\_NAME=hello-\$BUILD\_NUMBER.tar.gz
  - e) attach log file to build (archive artifact)

General

Source Code Management

Build Triggers

Build Environment

Pre Steps

Build

Post Steps

Build Settings

Post-build Actions

Source Code Management

None

Git

Repositories

Repository URL

https://github.com/MNT-Lab/build-tools.git

?

Credentials

- none -

Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

refs/heads/shanchar

X

?

Add Branch

Repository browser

(Auto)

?

Additional Behaviours

Add

Multiple SCMs

Subversion

?

Pre Steps

Add pre-build step

Build

Root POM

home-task/pom.xml

?

Goals and options

clean install

?

Advanced...

Post Steps

Run only if build succeeds

Run only if build succeeds or is unstable

Run regardless of build result

Should the post-build steps run only for successful builds, etc.

Execute shell

X

?

Command

```
java -jar home-task/target/*.jar > home-task/target/out.log
tar czf home-task/target/hello-$BUILD_NUMBER.tar.gz home-task/target/*.jar
```

See [the list of available environment variables](#)

Advanced...

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Page: 3/8

☐ E-mail Notification

## Archive the artifacts

Files to archive | `home-task/target/*.tar.gz, home-task/target/*.log`

Advanced...

Add post-build action ▼

Save

Apply

iteration	pass	fail
1	2	0
2	2	0
3	2	0
4	2	0
5	2	0
6	2	0
7	2	0
8	2	0
9	2	0
10	1	1

(just show failures) enlarge

```

-----
T E S T S
-----
Running com.test.UnitTest
test
Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.215 sec

Results :

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0

[JENKINS] Recording test results
[INFO]
[INFO] --- maven-jar-plugin:3.1.0:jar (default-jar) @ hometask ---
[INFO] Building jar: /var/jenkins_home/workspace/by_pom/home-task/target/hometask-maven-by-pom.jar
[INFO]
[INFO] --- maven-install-plugin:2.4:install (default-install) @ hometask ---
[INFO] Installing /var/jenkins_home/workspace/by_pom/home-task/target/hometask-maven-by-pom.jar to /var/jenkins_home/.m2/repository/com/test/hometask/maven-by-pom/hometask-maven-by-pom.jar
[INFO] Installing /var/jenkins_home/workspace/by_pom/home-task/pom.xml to /var/jenkins_home/.m2/repository/com/test/hometask/maven-by-pom/hometask-maven-by-pom.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 16.478 s
[INFO] Finished at: 2019-11-26T13:30:05Z
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/jenkins_home/workspace/by_pom/home-task/pom.xml to com.test/hometask/maven-by-pom/hometask-maven-by-pom.pom
[JENKINS] Archiving /var/jenkins_home/workspace/by_pom/home-task/target/hometask-maven-by-pom.jar to com.test/hometask/maven-by-pom/hometask-maven-by-pom.jar
[by_pom] $ /bin/sh -xe /tmp/jenkins2709369455001847883.sh
channel stopped
+ java -jar home-task/target/hometask-maven-by-pom.jar
+ tar czf home-task/target/hello-7.tar.gz home-task/target/hometask-maven-by-pom.jar
Archiving artifacts
Finished: SUCCESS

```

log view:

Hello, MNT Lab!

# **BY GRADLE**

## plugin config

General **Source Code Management** Build Triggers Build Environment Build Post-build Actions

☒ Git

Repositories

Repository URL

Credentials  [Add](#)

[Advanced...](#)

[Add Repository](#)

Branches to build

Branch Specifier (blank for 'any')

[Add Branch](#)

Repository browser

Additional Behaviours [Add](#)

☐ Multiple SCMs

☐ Subversion

**Build Triggers**

☐ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

☐ Build on push

**Invoke Gradle script**

☒ Invoke Gradle

Gradle Version

☐ Use Gradle Wrapper

Tasks

[Advanced...](#)

**Execute shell**

Command 

```
java -jar home-task/build/libs/*.jar > home-task/build/libs/out.log  
tar czf home-task/build/libs/hello-$BUILD_NUMBER.tar.gz home-task/build/libs/*.jar
```

[See the list of available environment variables](#)

[Advanced...](#)

[Add build step](#)

**Post-build Actions**

**Archive the artifacts**

Files to archive

[Save](#) [Apply](#)

[Advanced...](#)


```

Building in workspace /var/jenkins_home/workspace/by_gradle
No credentials specified
> git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/MNT-Lab/build-t00ls.git # timeout=10
Fetching upstream changes from https://github.com/MNT-Lab/build-t00ls.git
> git --version # timeout=10
> git fetch --tags --progress -- https://github.com/MNT-Lab/build-t00ls.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/shanchar^{commit} # timeout=10
> git rev-parse refs/remotes/origin/refs/heads/shanchar^{commit} # timeout=10
Checking out Revision 8367aac65a0ed5894884715f17bb3f63db0a1fce (refs/remotes/origin/shanchar)
> git config core.sparsecheckout # timeout=10
> git checkout -f 8367aac65a0ed5894884715f17bb3f63db0a1fce # timeout=10
Commit message: "add gradle"
> git rev-list --no-walk 8367aac65a0ed5894884715f17bb3f63db0a1fce # timeout=10
[Gradle] - Launching build.
[home-task] $ /var/jenkins_home/tools/hudson.plugins.gradle.GradleInstallation/gradle_day2/bin/gradle clean build -b build.gradle
Starting a Gradle Daemon (subsequent builds will be faster)
> Task :clean
> Task :compileJava
> Task :processResources
> Task :classes
> Task :jar
> Task :assemble
> Task :compileTestJava
> Task :processTestResources NO-SOURCE
> Task :testClasses
> Task :test
> Task :check
> Task :build

BUILD SUCCESSFUL in 19s
6 actionable tasks: 6 executed
Build step 'Invoke Gradle script' changed build result to SUCCESS
[by_gradle] $ /bin/sh -xe /tmp/jenkins5915061421320175772.sh
+ java -jar home-task/build/libs/home-task-by-gradle.jar
+ tar czf home-task/build/libs/hello-5.tar.gz home-task/build/libs/home-task-by-gradle.jar
Archiving artifacts
Finished: SUCCESS

```

## build history by gradle


**Jenkins**

Jenkins > by\_gradle >

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Workspace](#)

[Build Now](#)

[Delete Project](#)


[Configure](#)


[Rename](#)

### Project by\_gradle

[Workspace](#)






[Last Successful Artifacts](#)


[home-task-by-gradle.jar](#) 1.13 KB [view](#)


[out.log](#) 16 B [view](#)

[Recent Changes](#)

### Build History

	<a href="#">#5</a>	Nov 26, 2019 2:04 PM
	<a href="#">#4</a>	Nov 26, 2019 2:03 PM
	<a href="#">#3</a>	Nov 26, 2019 2:01 PM
	<a href="#">#2</a>	Nov 26, 2019 1:55 PM
	<a href="#">#1</a>	Nov 26, 2019 1:53 PM

[Atom feed for all](#)
[Atom feed for failures](#)

### Permalinks

- [Last build \(#5\), 3 min 48 sec ago](#)
- [Last stable build \(#5\), 3 min 48 sec ago](#)
- [Last successful build \(#5\), 3 min 48 sec ago](#)
- [Last failed build \(#4\), 5 min 32 sec ago](#)
- [Last unsuccessful build \(#4\), 5 min 32 sec ago](#)
- [Last completed build \(#5\), 3 min 48 sec ago](#)

## output log



Report:

Email pattern: [MNT-CD-3]-FirstName-LastName

Contains: GitHub link, Plugin config, Job config, output (screenshot)