

Developer Guide (employee-tool)

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Chapter 1. Preface

1.1. Audience

This guide is intended for developer that need to implement/enhance features in employee-tool.

1.2. Definitions, Vocabulary

Chapter 2. Setup local workspace

2.1 Setup tools

- JDK1.8.0_181
- PostgreSQL 10.5.2
- WildFly 13.0.0 Final
- Git 2.20.1 and Git Tool (Source Tree 2.6.10)
- IDE (Eclipse JavaEE IDE for Web Developers)

2.2 Configuration tool and checkout source project

I. **JDK 1.8.1_181**

1. Link download:

<https://www.oracle.com/technetwork/java/javase/downloads/jdk8downloads-2133151.html>

2. After completing the installation process, check the success by running “java-version” in cmd:

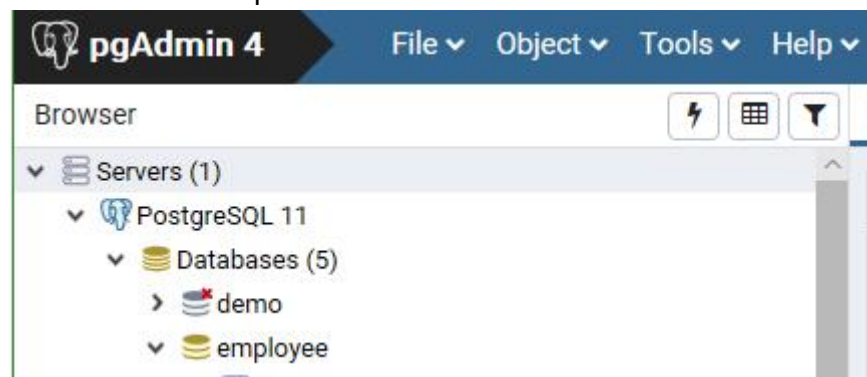
```
Z:\>java -version
java version "1.8.0_211"
Java(TM) SE Runtime Environment (build 1.8.0_211-b12)
Java HotSpot(TM) 64-Bit Server VM (build 25.211-b12, mixed mode)
```

II. **PostgreSQL 10.5.2:**

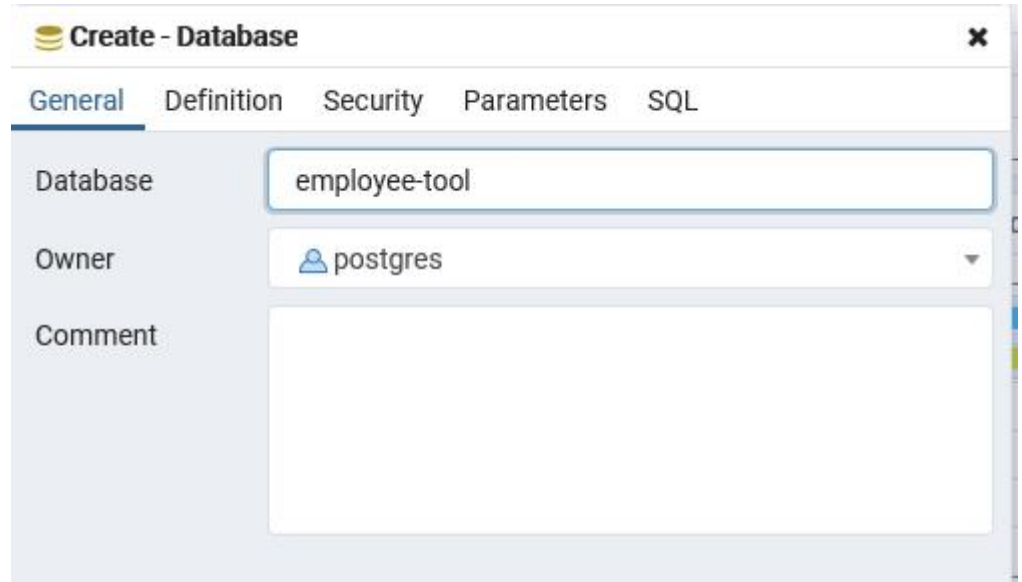
1. Link download:

<https://www.enterprisedb.com/downloads/postgres-postgresql-downloads>

2. After completing the installation process, use **pgAdmin4** to connect the database-server and create database for development:



3. create new database for “**employee-tool**”:



III. WildFly 13.0.0 Final

1. Link download:

<http://wildfly.org/downloads/>

2. After completing the installation process, check the success by open: \wildfly-11.0.0.Final\bin\standalone.bat, (you are required to add a new user, follow the guide, run **add-user.bat** on bin folder and add a new user, then restart the wildfly and reopen)

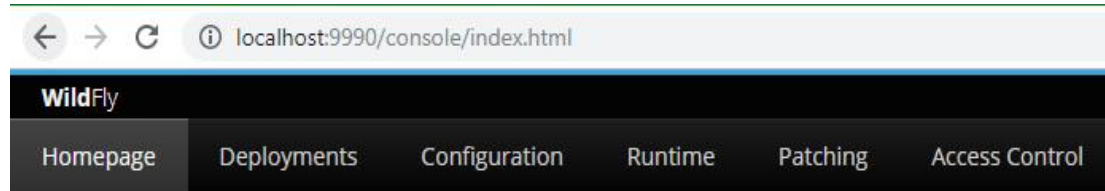
```
C:\WINDOWS\system32\cmd.exe

What type of user do you wish to add?
a) Management User (mgmt-users.properties)
b) Application User (application-users.properties)
(a): a

Enter the details of the new user to add.
Using realm 'ManagementRealm' as discovered from the existing property files.
Username : abcd
Password recommendations are listed below. To modify these restrictions edit the add-user.properties configuration file.

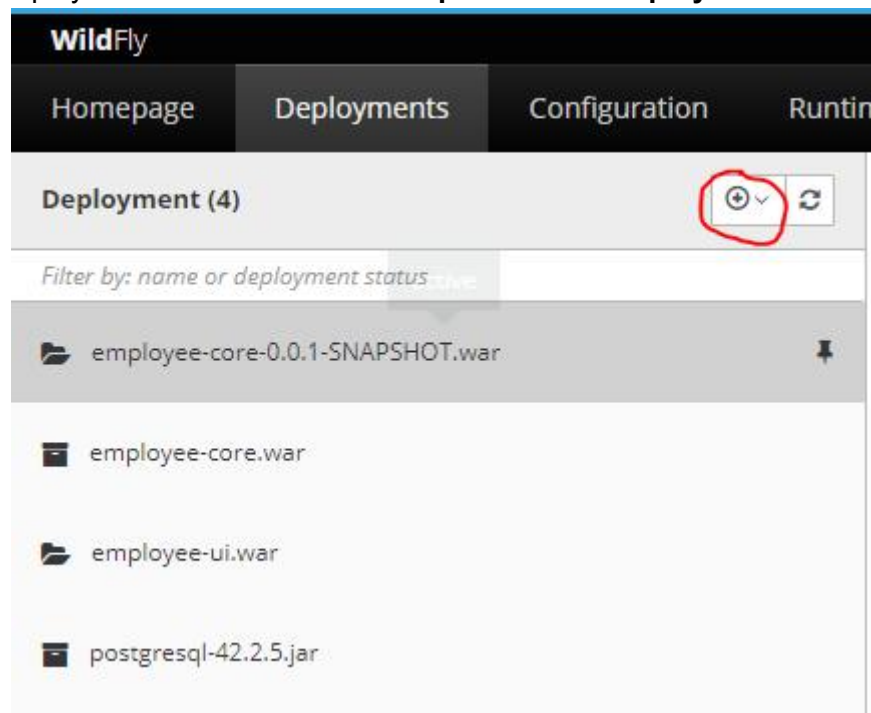
- The password should be different from the username
- The password should not be one of the following restricted values {root, admin, administrator}
- The password should contain at least 8 characters, 1 alphabetic character(s), 1 digit(s), 1 non-alphanumeric symbol(s)
)
Password :
WFLYDM0098: The password should be different from the username
Are you sure you want to use the password entered yes/no? y
Re-enter Password :
What groups do you want this user to belong to? (Please enter a comma separated list, or leave blank for none)[ ]:
About to add user 'abcd' for realm 'ManagementRealm'
Is this correct yes/no?
```

And go to WildFly's Administration located in "**localhost:9990**"

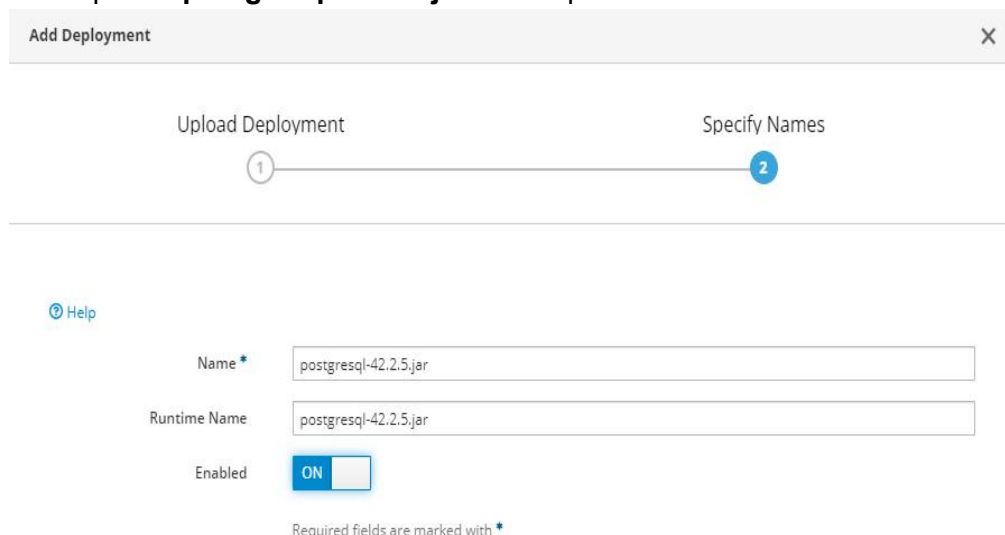


WildFly Application Server

3. Download **PostgreSQL JDBC 4.2 Driver, 42.2.5** in <https://jdbc.postgresql.org/download.html> and upload into wildfly
 - Go to Deployments -> Add -> choose "**Upload a new deployment**" and click next.



- Upload "**postgresql-42.2.5.jar**" and tap on "**Enabled**" then click Finish.



- Upload deployments file successfully:

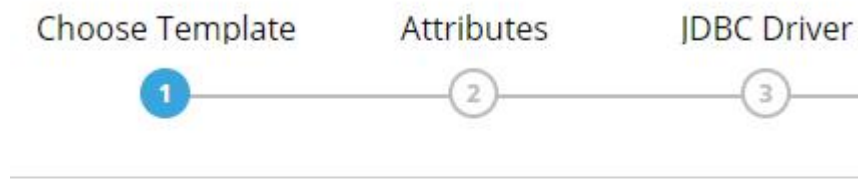
The screenshot shows the 'Deployment' tab in a management console. On the left, a list of deployments includes 'employee-core-0.0.1-SNAPSHOT.war', 'employee-core.war', 'employee-ui.war', and 'postgresql-42.2.5.jar'. The 'postgresql-42.2.5.jar' entry is selected and highlighted in blue. To the right, the details for 'postgresql-42.2.5.jar' are shown, indicating it is 'enabled and active'. Below this, there is a section for 'Main Attributes' with fields for 'Name:', 'Runtime Name:', and 'Enabled, Managed, Exploded:'.

4. Create data source:

- Go to Configuration -> SubSystems -> DataSource & Drivers -> Add

The screenshot shows the 'Datasource' configuration page. A list of datasources includes 'EmployeeCoreDS' and 'ExampleDS'. A dropdown menu is open from the top right of the list, showing options 'Add Datasource' (which is underlined in red) and 'Add XA Datasource'. The 'View' button for the selected datasource is also visible.

- The popup **Create datasource** will show, choose “**PostgreSQL Datasource**” and click next.



Choose one of the predefined templates to quickly add a datasource or

- ☐ Custom
- ☐ h2
- ☒ postgresql

- Set name: **EmployeeCoreDS** and JNDI Name: java:/ **EmployeeCoreDS**, then click Next

Name *

JNDI Name *

Required fields are marked with *

- Go to “Detected Driver”, choose postgresql-42.2.5.jar then click Next

Driver Name *

Driver Module Name

Driver Class Name

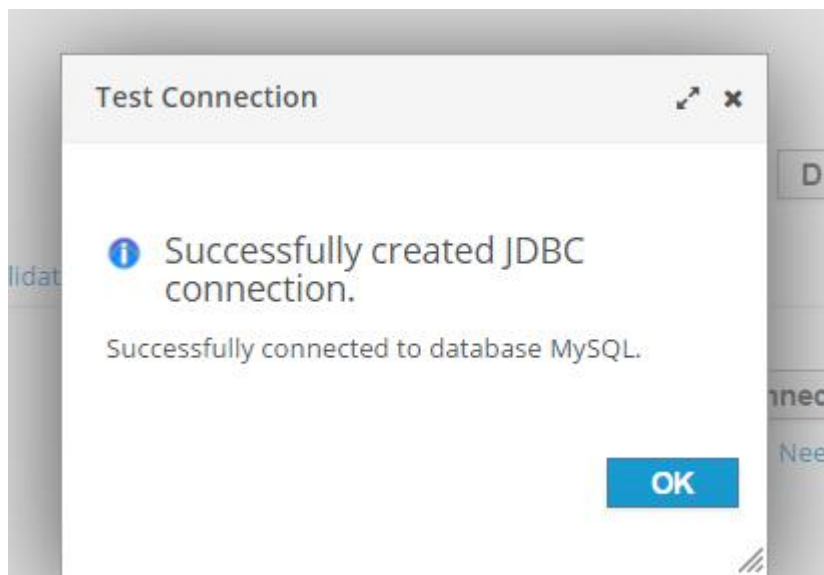
Required fields are marked with *

- Fulfill this step with information of database:
 - (a) **Connection URL** with format: jdbc:postgresql://<IP>:<Port>/<Name of database>
 - (b) Example: **`jdbc:postgresql://localhost:5432/employee`**

- Username and Password: are your username and password of PostgreSQL account.

Connection URL	jdbc:postgresql://localhost:5432/postgresdb
User Name	postgres
Password
Security Domain	need to be the same db name created above : employee or employee-tool

- Test the connection with database: Click **Test Connection**. The notification will show **Test Connection Successful**.



- EmployeeCoreDS
Datasource

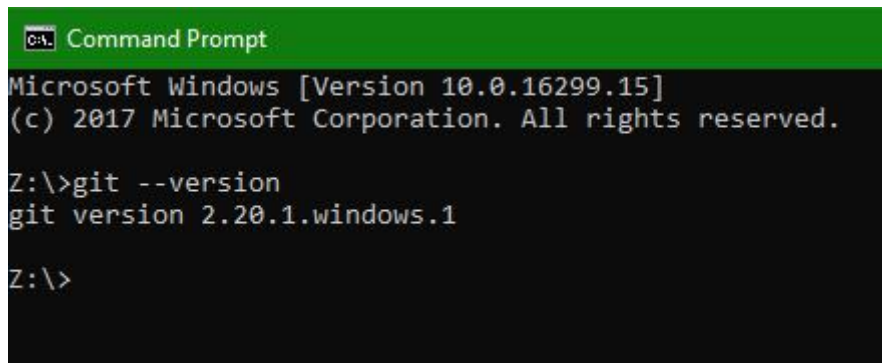
 The datasource **EmployeeCoreDS** is enabled. [Disable](#)

Main Attributes

JNDI Name:	java:/EmployeeCoreDS
Driver Name:	postgresql-42.2.5.jar
Connection URL:	jdbc:postgresql://localhost:5432/employee
Enabled:	true
Statistics Enabled:	false

IV. Git 2.19.1 and Git Tool (Source Tree 2.6.10):

1. Link download Git: <https://git-scm.com/downloads>
2. After completing the installation process, check the success by running “git --version” in cmd.

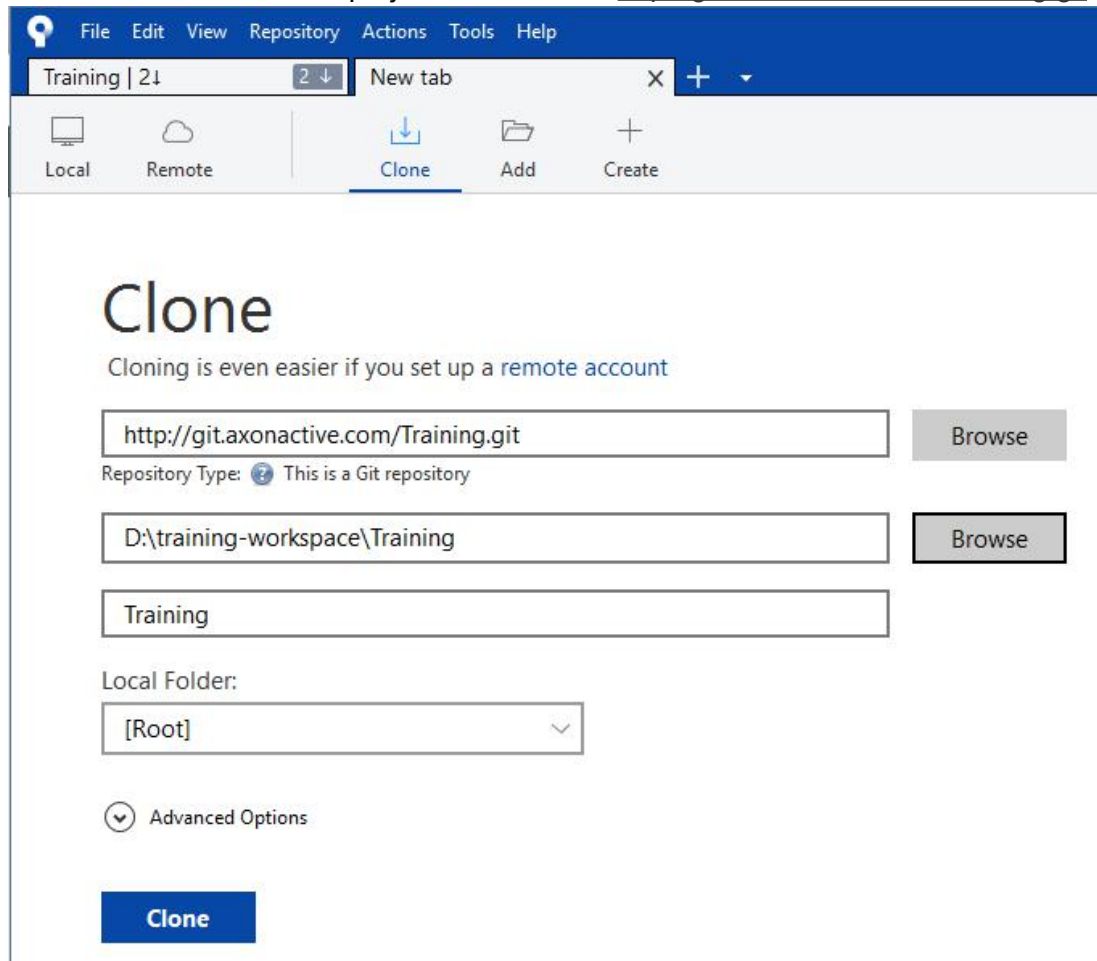


```
Command Prompt
Microsoft Windows [Version 10.0.16299.15]
(c) 2017 Microsoft Corporation. All rights reserved.

Z:\>git --version
git version 2.20.1.windows.1

Z:\>
```

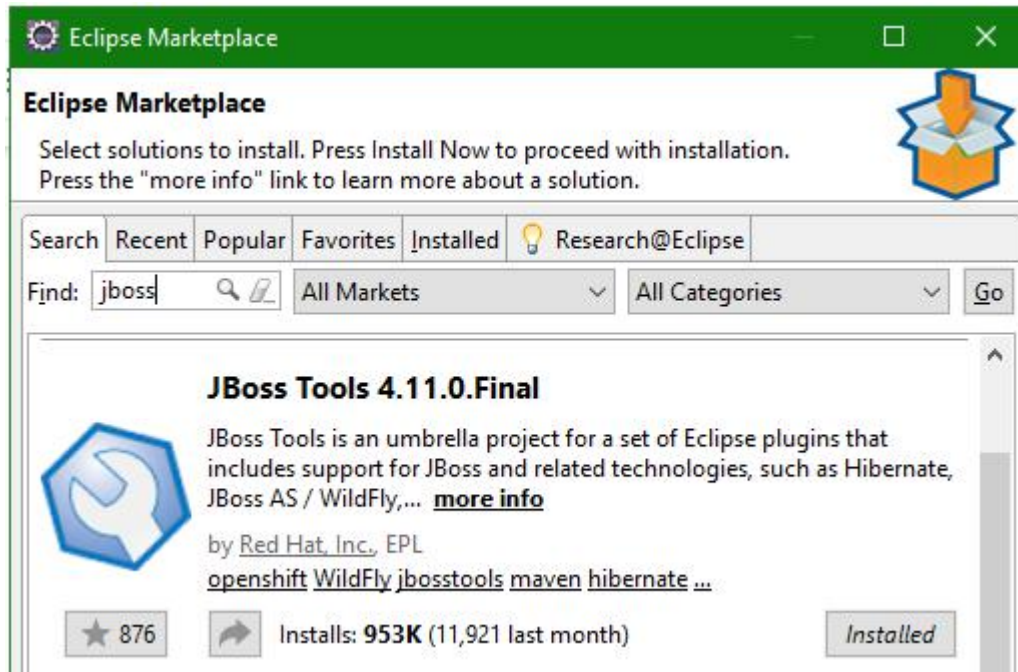
3. Link download Source Tree: <https://www.sourcetreeapp.com/>
4. Use SourceTree to clone project from this link <http://git.axonactive.com/Training.git>



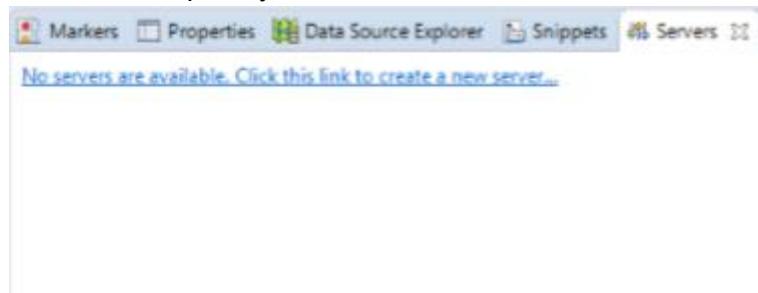
5. Tip: Source tree need authentication to access AAVN's git repository. It will wait until timeout (around 10 minutes) if Authentication accounts not set. To set it, goto: Tools>Options->Authentication.

V. IDE (Eclipse Java EE IDE for Web Developers):

1. Link download : <https://www.eclipse.org/downloads/>
2. After completing the installation process, open eclipse, go to Help -> Eclipse Marketplace. In tab Search, type "jboss tools", click Install and install step by step. This plugin help the eclipse use wildfly server to connect with postgresql database.



3. Create a new server in eclipse by click on "No servers are ..." in Servers tab.



4. In the New Server tab, choose WildFly 13 as picture below and click Next

New Server

Define a New Server

Choose the type of server to create

Select the server type:

type filter text

- JBoss AS 4.2
- JBoss AS 5.0
- JBoss AS 5.1
- JBoss AS 6.x
- JBoss AS 7.0
- JBoss AS 7.1
- WildFly 8.x
- WildFly 9.x
- WildFly 10.x
- WildFly 11
- WildFly 12
- WildFly 13

WildFly Application Server 13

Server's host name: localhost

Server name: WildFly 13 at localhost (2)

< Back **Next >** Finish Cancel

5. Click Next:

New Server

Create a new Server Adapter

WildFly Application Server 14

A Server Adapter manages starting and stopping instances of your server. It manages command line arguments and keeps track of which modules have been deployed.

The server is: ☒ Local ☐ Remote

Controlled by: ☒ Filesystem and shell operations ☐ Management Operations

☐ Server lifecycle is externally managed.

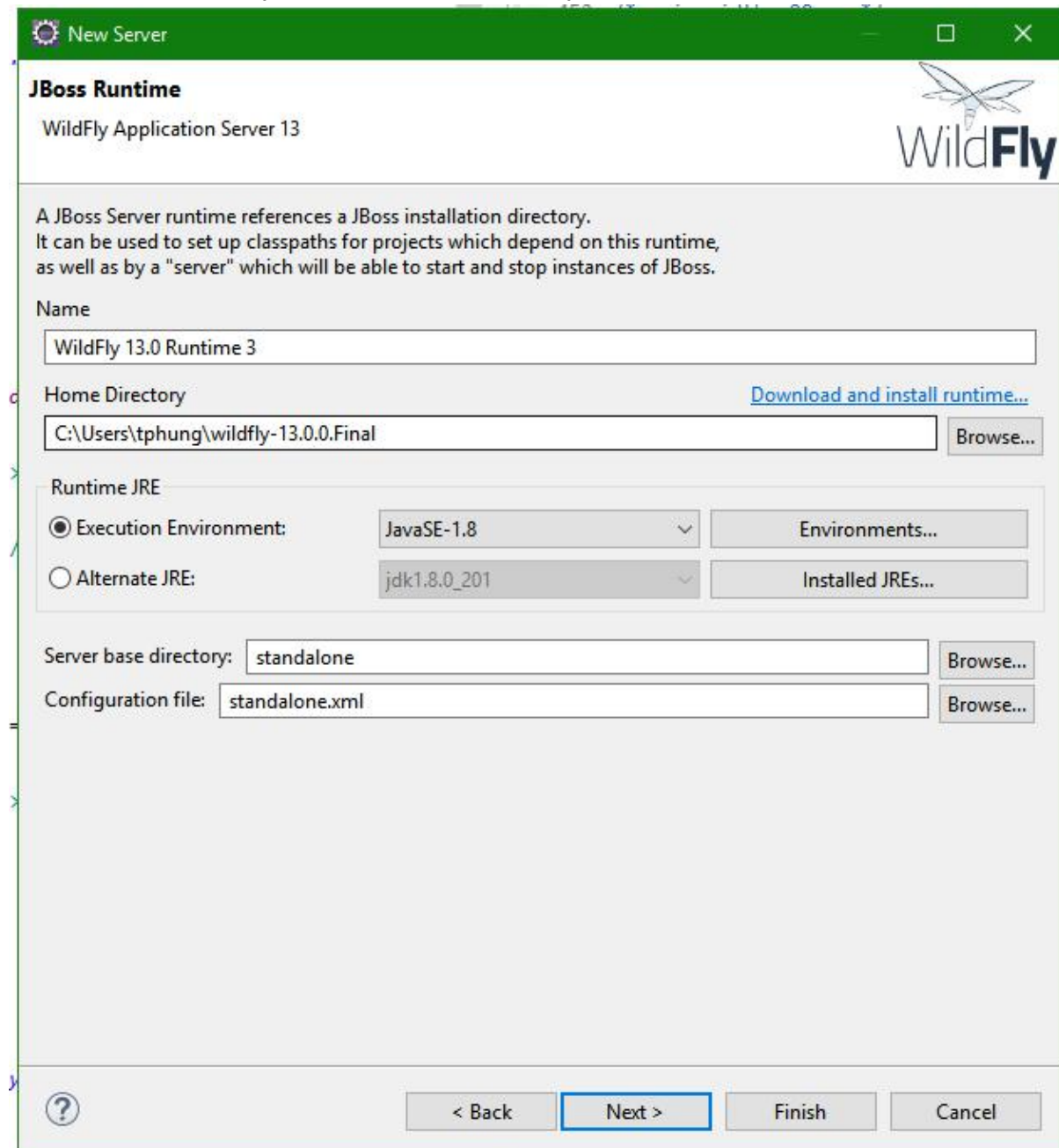
The selected profile requires a runtime.

☒ Assign a runtime to this server

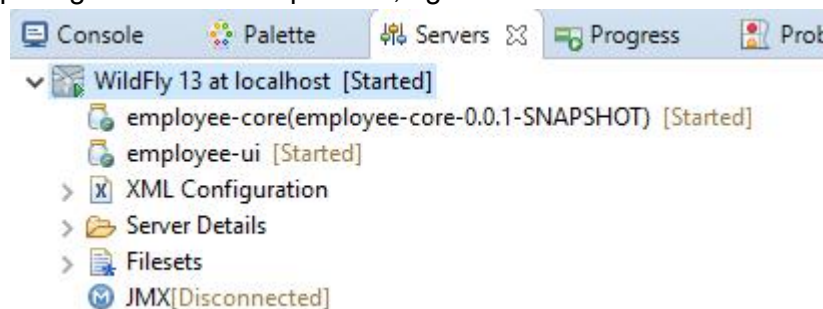
Create new runtime (next page) ▾

? < Back Next > Finish Cancel

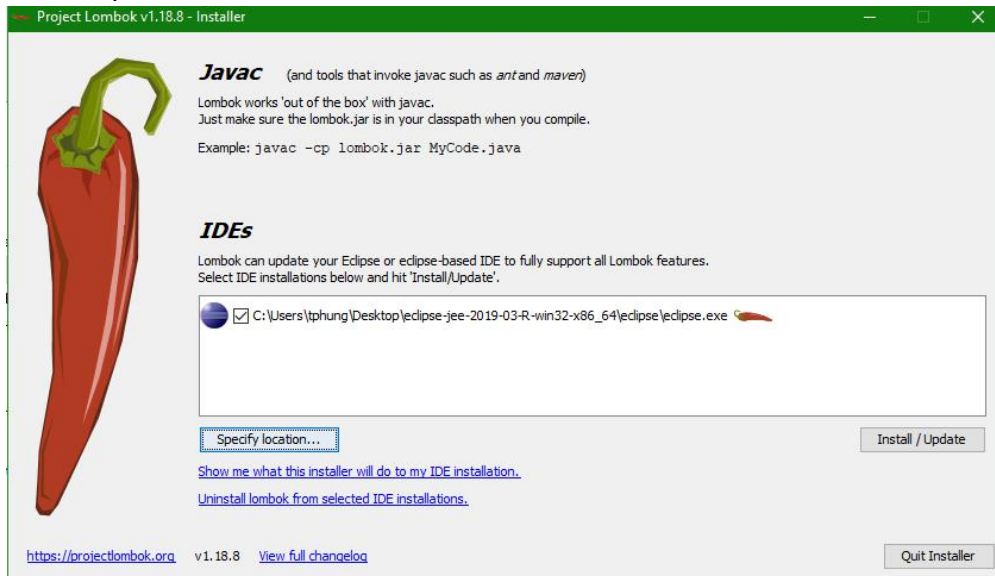
6. In “Home Directory”, put the location of wildfly server and click Finish:



7. After completing the installation process, right-click on the server and click Start:



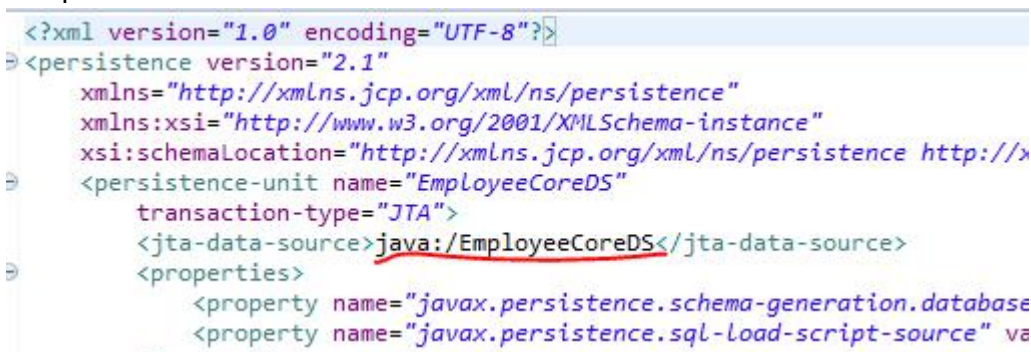
8. Download Lombok: Because the Employee-tool project use a lot of annotation from lombok library, you must download it.
- Link download: <https://projectlombok.org/download>
- Run the lombok.jar file, click on Specify location and choose the location of IDE you use to develop. Then, click Install/Update.



9. Clone Employee-tool with **git** with link <http://git.axonactive.com/Training.git>
10. Import Employee-tool maven project into Eclipse
- Import Employee-core
- Import Employee-ui
11. After imported, Eclipse will display 2 projects as shown in the picture:
- Employee-core
- Employee-ui

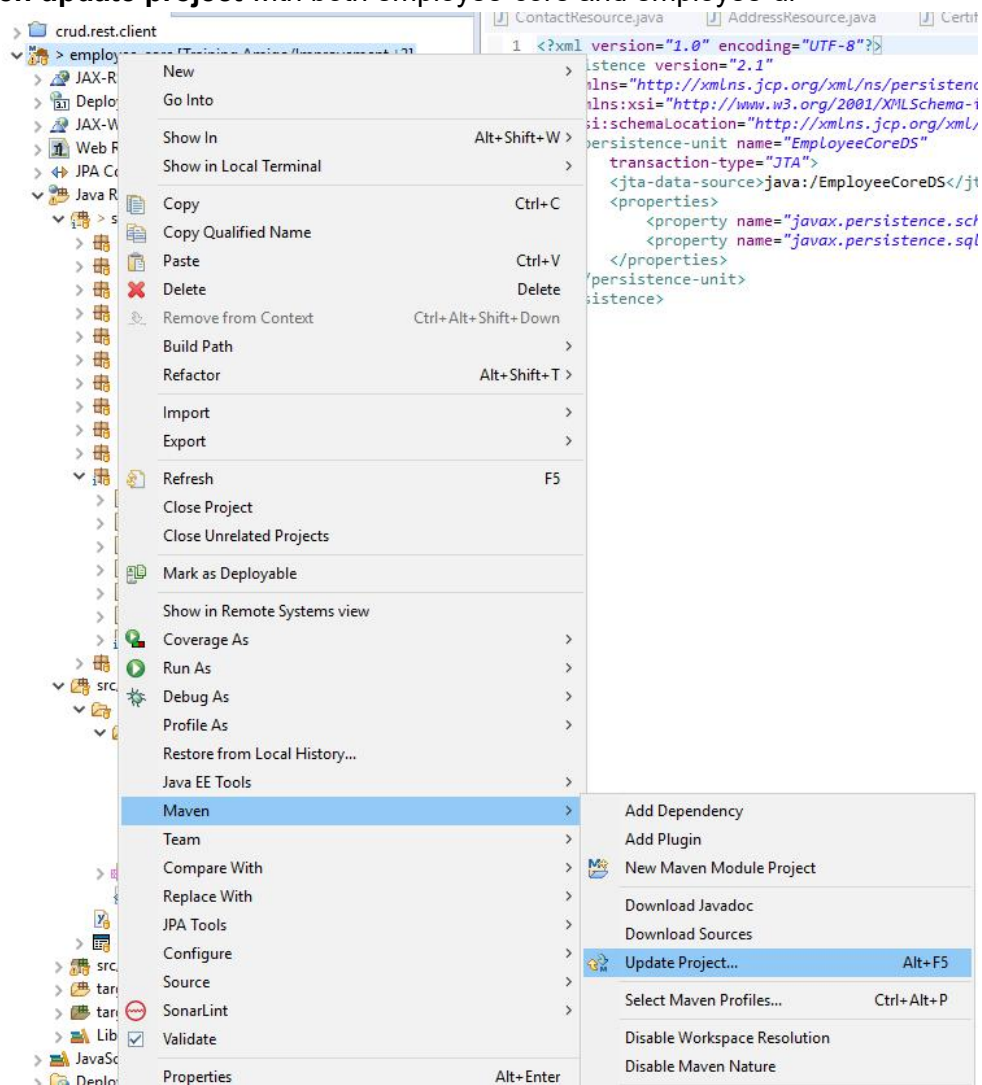


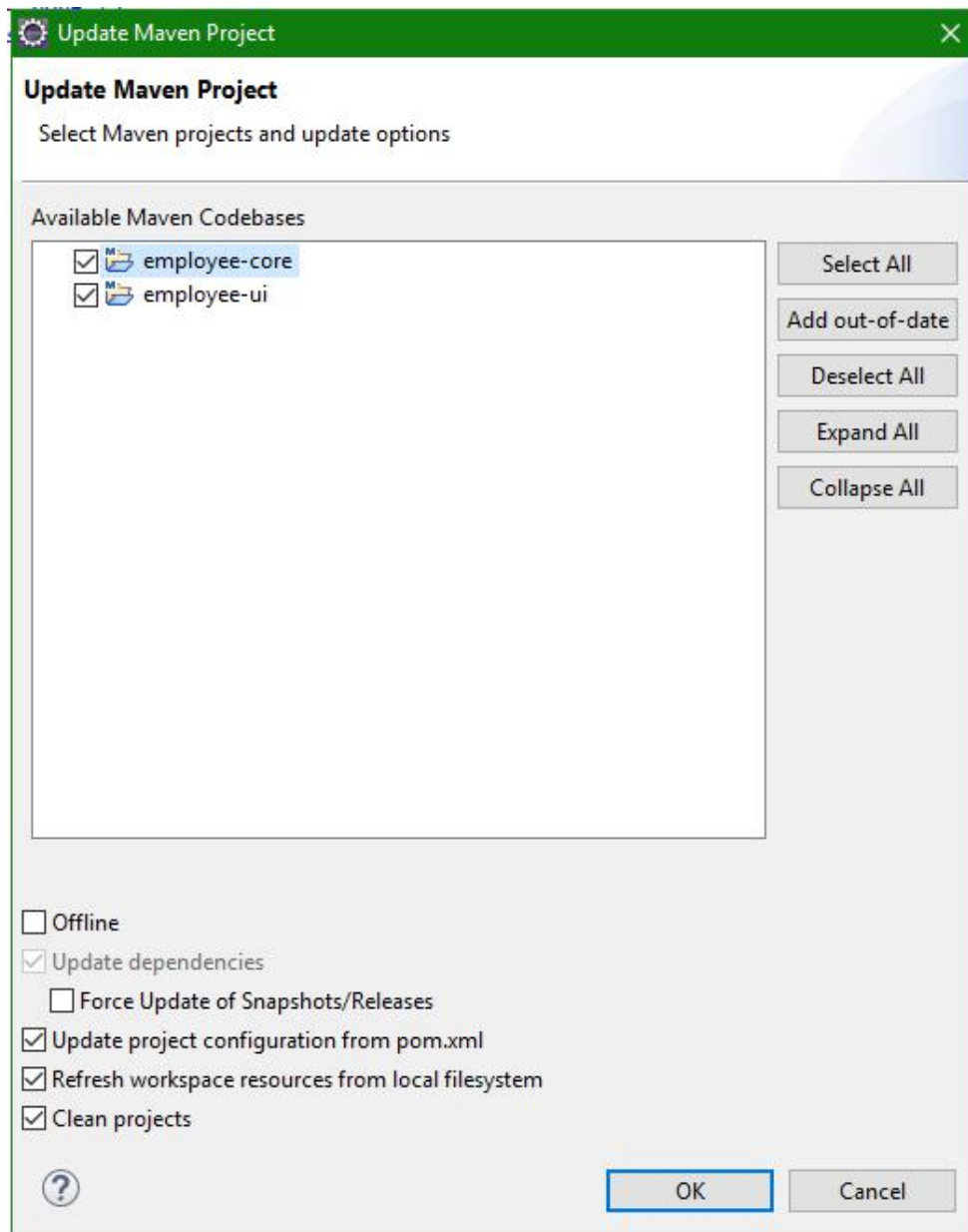
12. Insert Datasource into candidate-core/src/main/resources/META-INF/persistence.xml



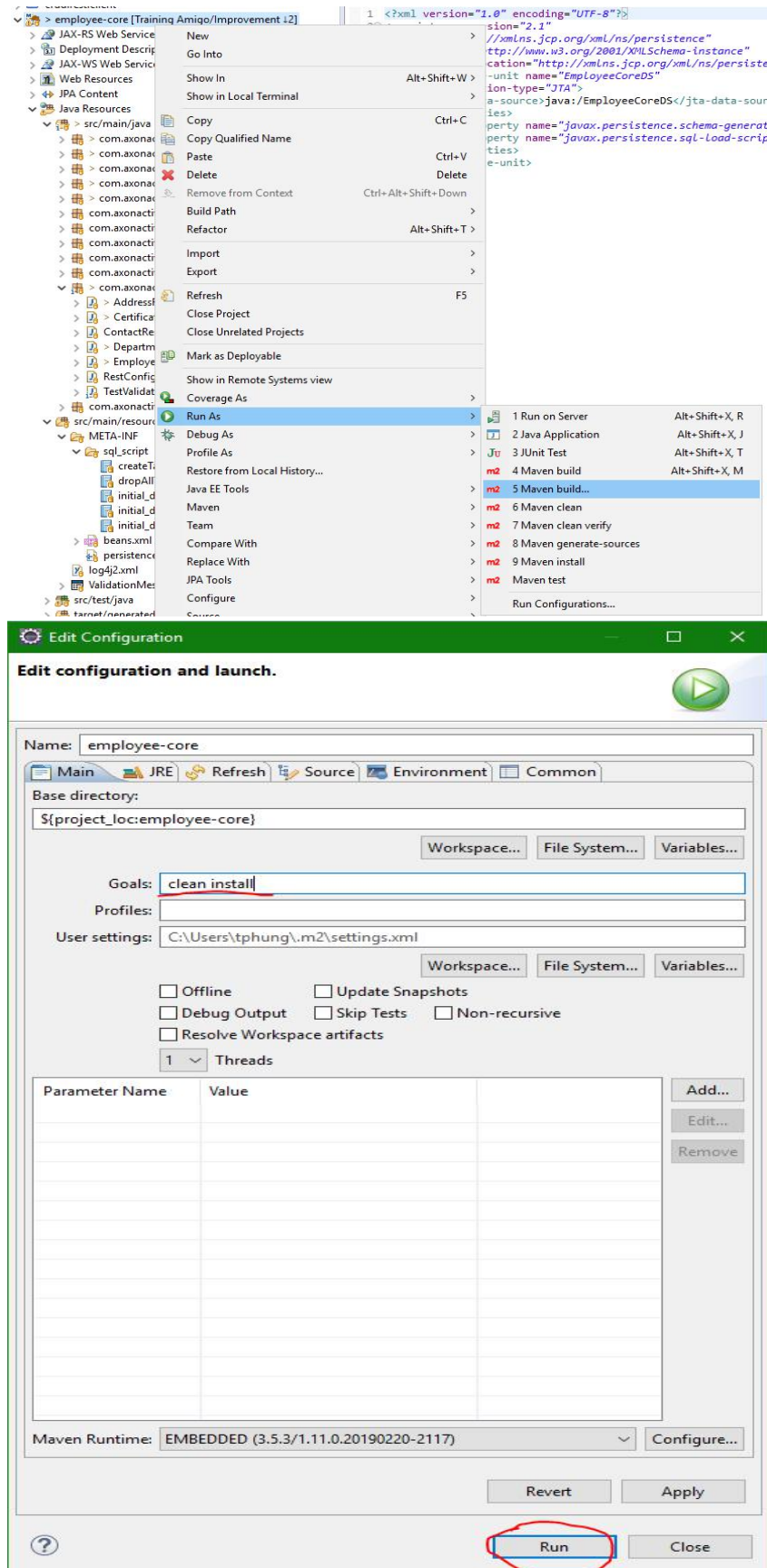
13. After all steps are completed:

- **Maven update project** with both employee-core and employee-ui

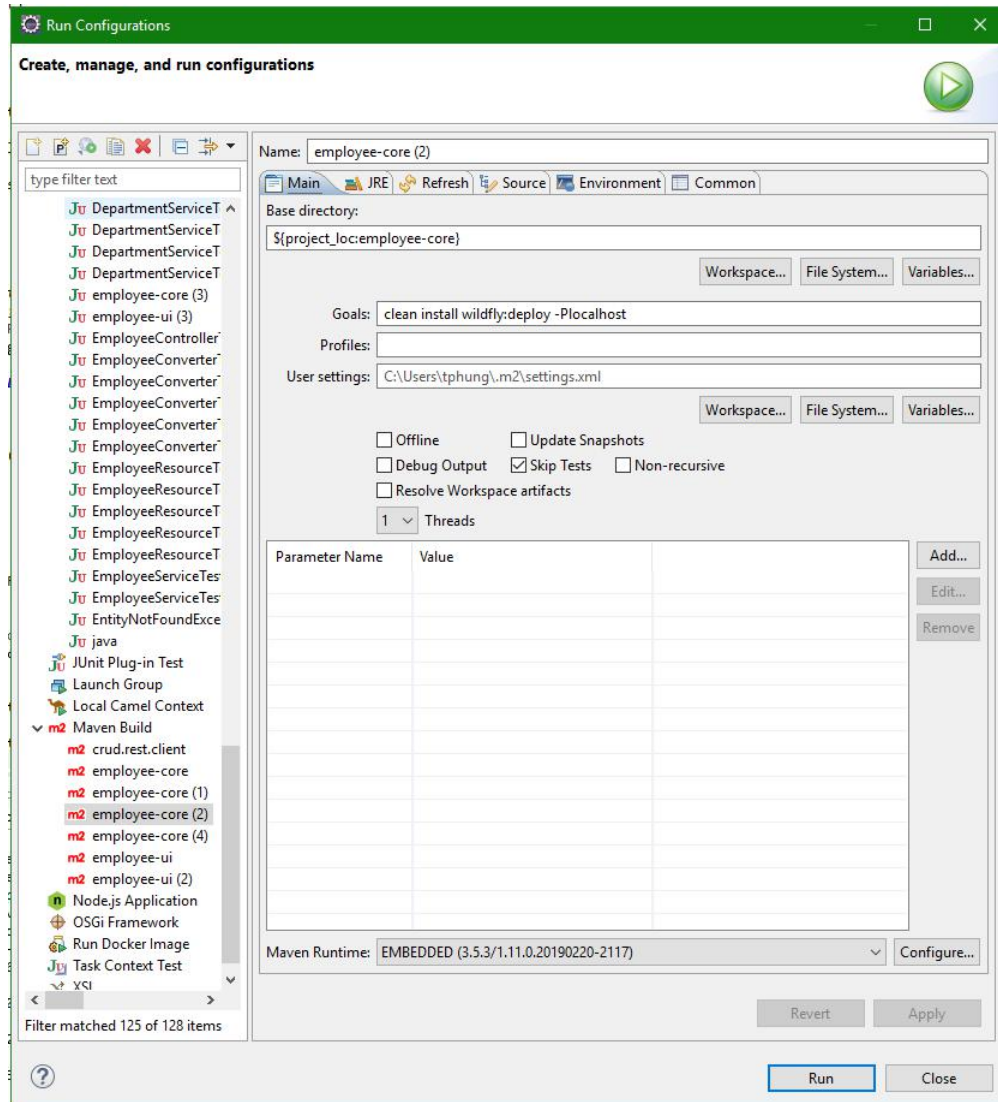




- Maven build the employee-core first with “clean install” in Goals then maven build the employee-ui as the same.



- Finally, maven build the employee-core and employee-ui with “**clean install**” in Goals, then **start** the WildFly Server, then maven build the two modules with “**wildfly:deploy -Plocalhost**”.



14. .Call the webpage of UI with “localhost:8080/employee-tool” URL

Chapter 3.Setup Develop Server

3.1. Setup Tools

- I. SonarQube
- II. PostgreSQL
- III. Wildfly Server
- IV. Jenkins

3.2. Configuration

I. Requiment Configuration

Postgres database , Wildfly server , Jenkin and SonarQube server are already configured and set up .

(If you want to know how to create and configure new server you can read documents in

..\JuniorClass\Amigo\Document)

3.3. Server's Accounts

I. Jenkin

- link: <http://192.168.70.59:9999/>
- username: admin
- pass: aavn123!@#

II. Sonar

- link:<http://192.168.70.59:8889>
- username: admin
- pass: admin

III. Ubuntu:

IP: 192.168.70.59

Username: root

Pass: aavn123!@#

IV. Wildfly:

For web: 192.168.70.59:8080

Admin console: <http://192.168.70.59:9990/console/index.html>

username: root

pass: root

V. Database server:

192.168.70.59


Username: postgres

Pass: postgres

3.4. Run/Build project in Jenkin

I. Jenkin

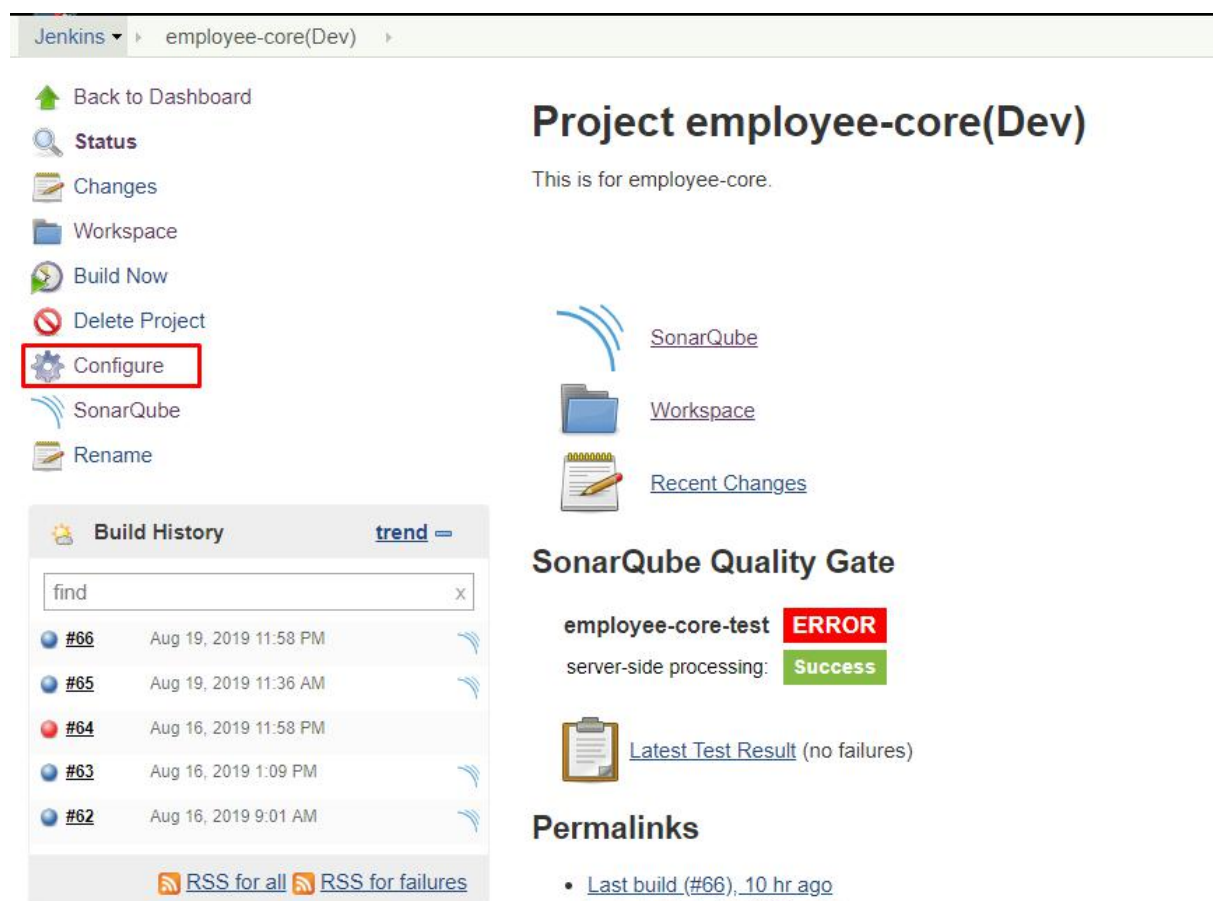
1. Go to Jenkin Dashboard (<http://192.168.70.59:9999/>)
2. You will see two projects for Dev Server



S	W	Name ↓
		build_test
		employee-core(Dev)
		employee-project
		employee-ui(Dev)
		test-sonar-jacoco-coverage

Icon: [S](#) [M](#) [L](#)

3. You can check and update the configuration of Jenkin at here if necessary



Jenkins ▾ employee-core(Dev) ▸

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Workspace](#)

[Build Now](#)

[Delete Project](#)

[Configure](#)

[SonarQube](#)

[Rename](#)

Project employee-core(Dev)

This is for employee-core.

[SonarQube](#)

[Workspace](#)

[Recent Changes](#)

SonarQube Quality Gate

employee-core-test **ERROR**

server-side processing: **Success**

[Latest Test Result](#) (no failures)

Permalinks

- [Last build \(#66\), 10 hr ago](#)
- [Last stable build \(#66\), 10 hr ago](#)
- [Last successful build \(#66\), 10 hr ago](#)
- [Last failed build \(#64\), 3 days 10 hr ago](#)
- [Last unsuccessful build \(#64\), 3 days 10 hr ago](#)
- [Last completed build \(#66\), 10 hr ago](#)

4. Git branch should be “Dev”

Source Code Management

☐ None
☒ Git

Repositories

Repository URL

Credentials

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

Add Branch

Repository browser (Auto)

Additional Behaviours

5. Maven Build Goal should be

“clean install wildfly:deploy -Pemployee-core” for employee-core and

“clean install wildfly:deploy -Pemployee-ui” for employee-ui

Invoke top-level Maven targets

Maven Version

Goals

Advanced...

Build

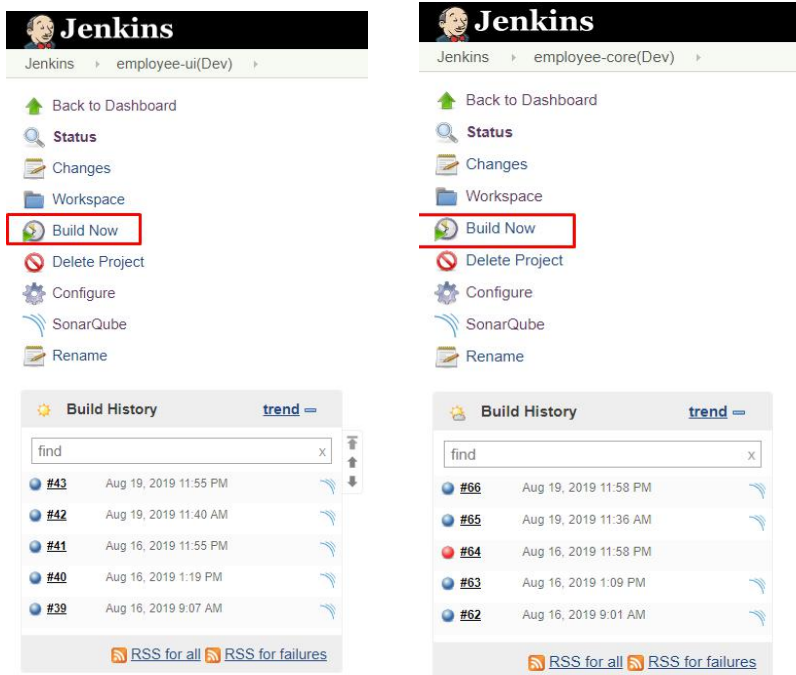
Invoke top-level Maven targets

Maven Version

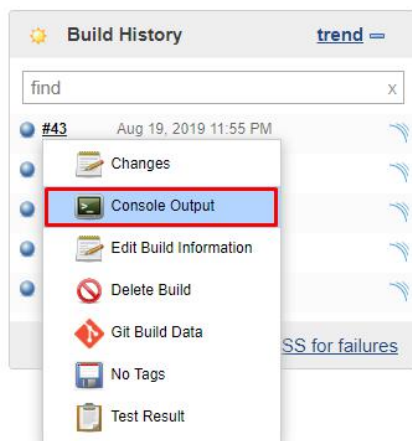
Goals

Advanced...

6. Build the project in Jenkin by clicking “Build Now”



7. You can check the output result at “Console Output”



8. You can check Sonar Qube result at “Sonar Qube”

