

IntelliJ IDEA

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Setup IDE (18:24)

Play

Part 1: Setting up development environment

Checklist

✓	Ensure all required libraries and software is installed as per install from source guide
✓	Ensure all required path variables are setup as per install from source guide

Checkout the project

Navigate to directory of your choice where you want the sources to reside on your file system.
For this guide we will be using:

```
/development/projects/java
```

Create a new directory for project.

For this guide we will be using:

```
yc-idea
```

The repository is located at GitHub <https://github.com/inspire-software/yes-cart>.

Please refer to instruction on GitHub <https://help.github.com/articles/which-remote-url-should-i-use/> on the cloning/forking options available.

Cloning is the typical way of getting repository for developers. For changes to be pushed to repository you need write permissions. If you plan create your own version of the platform you should consider forking repository instead (see GitHub guide <https://help.github.com/articles/fork-a-repo/>).

The easiest way to clone is to use GitHub application but you will need a GitHub account for that.

Alternatively you can use command line but you will need to setup git (see guide <https://help.github.com/articles/set-up-git/>). And then run:

```
$ mkdir yc-idea
$ cd yc-idea
$ git clone git@github.com:inspire-software/yes-cart.git .
```

This will put all sources to the yc-idea directory which will look something like this:

```
denispavlov@denis-pavlovs-macbook-pro: /development/projects/java/yc-idea$ ll
total 936
drwxr-xr-x@ 24 denispavlov  admin   816B Jun  8 19:31 .
drwxr-xr-x@ 23 denispavlov  admin   782B Jun  8 18:22 ..
drwxr-xr-x@  3 denispavlov  admin  102B Apr 16 22:48 .idea
drwxr-xr-x@ 10 denispavlov  admin  340B Jun  8 19:31 .svn
drwxr-xr-x@  7 denispavlov  admin  238B Jun  8 15:50 core
drwxr-xr-x@  7 denispavlov  admin  238B Jun  8 16:00 core-dto
drwxr-xr-x@ 16 denispavlov  admin  544B Jun  8 15:49 core-modules
drwxr-xr-x@  7 denispavlov  admin  238B Jun  8 15:48 domain-api
drwxr-xr-x@ 14 denispavlov  admin  476B Jun  4 20:36 env
drwxr-xr-x@  7 denispavlov  admin  238B Dec  4 2014 imagevault
drwxr-xr-x@  6 denispavlov  admin  204B Jun  5 11:29 installer
drwxr-xr-x@  8 denispavlov  admin  272B Jun  8 11:42 manager
drwxr-xr-x@  7 denispavlov  admin  238B Jun  8 15:48 payment-api
drwxr-xr-x@  8 denispavlov  admin  272B Jun  8 15:48 persistence
-rw-r--r--@  1 denispavlov  admin   27K Jun  8 15:27 pom.xml
drwxr-xr-x@  3 denispavlov  admin  102B Jun  8 15:48 target
drwxr-xr-x@  7 denispavlov  admin  238B Jun  8 16:02 theme
drwxr-xr-x@  9 denispavlov  admin  306B Mar 23 21:41 util
drwxr-xr-x@  9 denispavlov  admin  306B Jun  8 16:02 web
-rwxr-xr-x@  1 denispavlov  admin  9.2K Jun  8 14:23 yc.bat
-rwxr-xr-x@  1 denispavlov  admin  9.0K Jun  8 14:22 yc.sh
-rw-r--r--@  1 denispavlov  admin  4.4K Apr 21 10:46 yes-cart.iml
-rw-r--r--@  1 denispavlov  admin 187K Jun  8 08:06 yes-cart.ipr
-rw-r--r--@  1 denispavlov  admin 217K Jun  8 19:31 yes-cart.iws
denispavlov@denis-pavlovs-macbook-pro: /development/projects/java/yc-idea$ _
```

Setting up the environment

On *nix systems you need to add executable permission to ./yc.sh script like so: "chmod +x yc.sh"

Use the yc.sh or yc.bat file in order to setup the environment.

This script uses mvn executable therefore if you have abnormal maven installation please open the script and ensure that MVN

variable points to the correct executable.

Add manual dependencies to maven

Use the script command to add 3rd party dependencies that are not available through maven central:

```
$ ./yc.sh i3rd
```

Run the maven install

Use standard maven install command from *the root of project directory* to ensure that all modules are built.

```
$ mvn clean install -PdevIntelliJIDEA,derby,ftEmbeddedLucene,paymentAll  
-DskipTests=true
```

If you are planning to use IDEA setup as your primary development option you must always use **devIntelliJIDEA** when building from command line

For this setup we are using the devIntelliJIDEA profile for a derby build. Please consult [this page](#) for details on the available profiles

The build process will take some time. Note that we are using **clean install** as clean phase will ensure that all node_modules dependencies for jam-jacient are correctly installed. skipTests option will allow us to save some time by skipping the tests during this build

Setup derby database

If you encounter `java.security.AccessControlException: access denied ("java.net.SocketPermission" "localhost:1527" "listen,resolve")` refer to [Derby quick start guide](#).

Start the derby in background

```
$ ./yc.sh derbygob
```

Ensure that you see the following message that signifies that Derby has started and ready:

```
=====
Starting Derby database (background mode)
=====
```

```
Derby server started on port 1527...
```

```
Mon Dec 31 14:38:06 GMT 2012 : Security manager installed using the
Basic server security policy.
```

```
Mon Dec 31 14:38:11 GMT 2012 : Apache Derby Network Server - 10.8.1.2 -
(1095077) started and ready to accept connections on port 1527
```

Run the dbi (database initialisation)

```
$ ./yc.sh dbiderby
```

This will generate the following message:

```
=====
Initialise Derby database
=====
```

```
Setting Derby environment variables
```

```
Running init script
```

```
/development/projects/java/yc-idea/env/setup/dbi/derby/dbinit.sql
```

```
Initialisation complete. See log:
```

```
/development/projects/java/yc-idea/derbyinit.log
```

Ensure that **derbyinit.log** file does not have any critical errors in it (e.g. Table not created or insert failed).

At this point you have a blank Derby database.

We recommend backing up the database files so that a clean version is always available.

When working with Derby files **ALWAYS shutdown the Derby server prior doing the backup - or the database will become corrupt.**

Shutdown derby

```
$ ./yc.sh derbyend
```

Ensure that you see that shutdown message:

```
=====
Stopping Derby database
=====
```

```
Mon Dec 31 14:45:28 GMT 2012 : Apache Derby Network Server - 10.8.1.2 -
(1095077) shutdown
```

```
Derby server stopped...
```

```
Mon Dec 31 14:45:29 GMT 2012 : Apache Derby Network Server - 10.8.1.2 -
(1095077) shutdown
```

Optionally backup the files

The Derby files will be located in

```
/env/derby/lib/yes - the main database
/env/derby/lib/yespay - payment transactions database
```

In order to back up just copy these two directories. When you need to reinitialise the database just replace these with backed up versions. **ALWAYS** do this with Derby shutdown otherwise the database files will become corrupt.

Setup the project

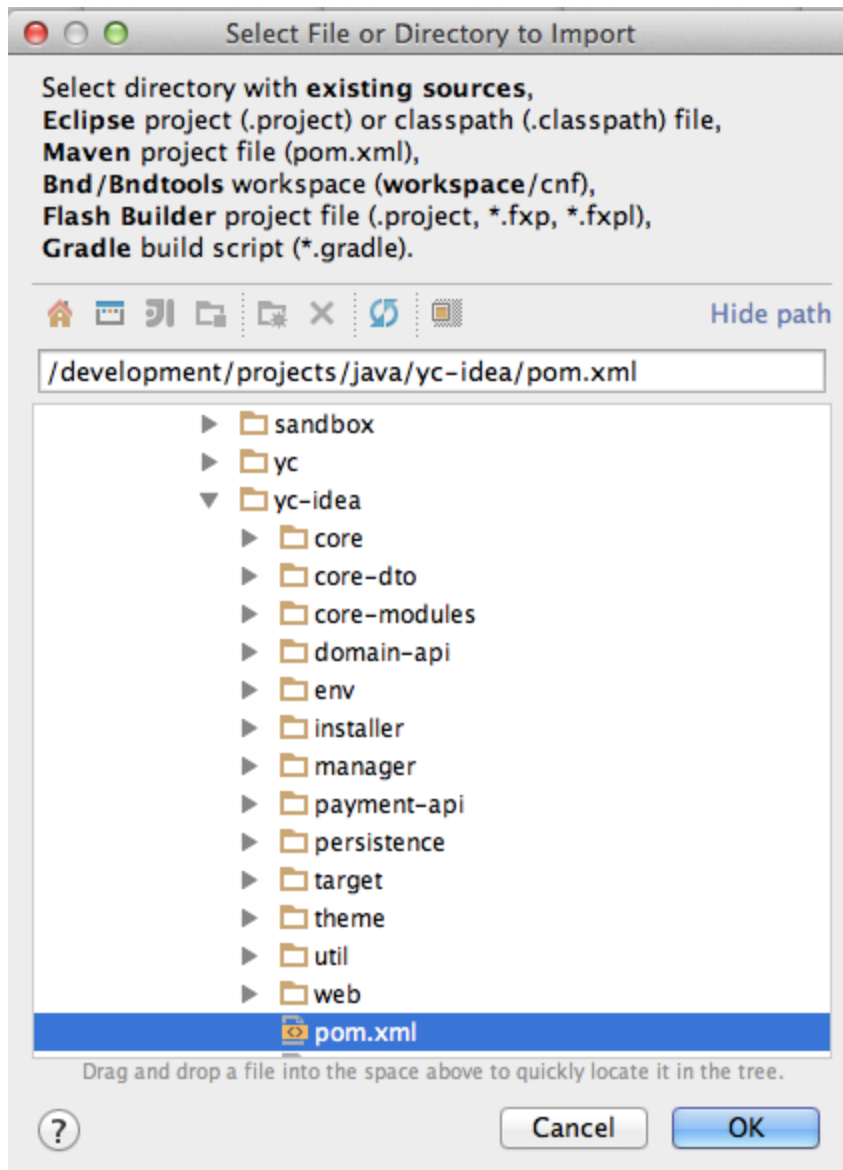
Initial project setup

IntelliJ IDEA comes bundled with Maven 3, we highly recommend not to use it and reconfigure Maven home to point to your local installation that you use to perform command line builds (Preferences > Build, Execution, Deployment > Build Tools > Maven)

Open IDEA and select **Import Project**



Point to the **pom.xml** in your project root directory



Leave the directory path as is and click next

Import Project from Maven

Root directory ...

☐ Search for projects recursively

Project format:

☐ Keep project files in: ...

☐ Import Maven projects automatically

☒ Create IntelliJ IDEA modules for aggregator projects (with 'pom' packaging)

☐ Create module groups for multi-module Maven projects

☒ Keep source and test folders on reimport

☒ Exclude build directory (%PROJECT_ROOT%/target)

☒ Use Maven output directories

Generated sources folders:

Phase to be used for folders update:

IDEA needs to execute one of the listed phases in order to discover all source folders that are configured via Maven plugins.
Note that all test-* phases firstly generate and compile production sources.

Automatically download: ☐ Sources ☐ Documentation

Dependency types:

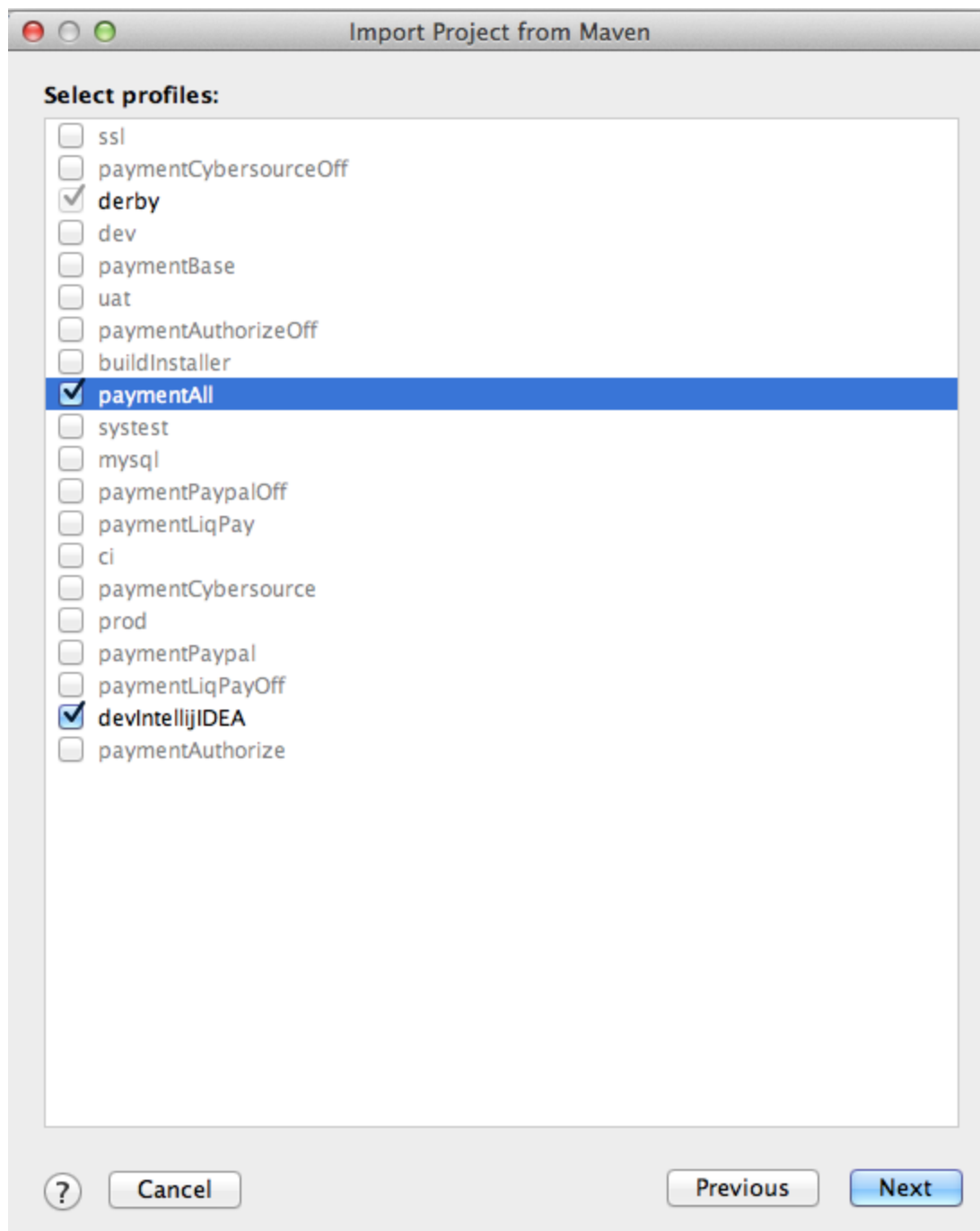
Comma separated list of dependency types that should be imported

Environment settings...

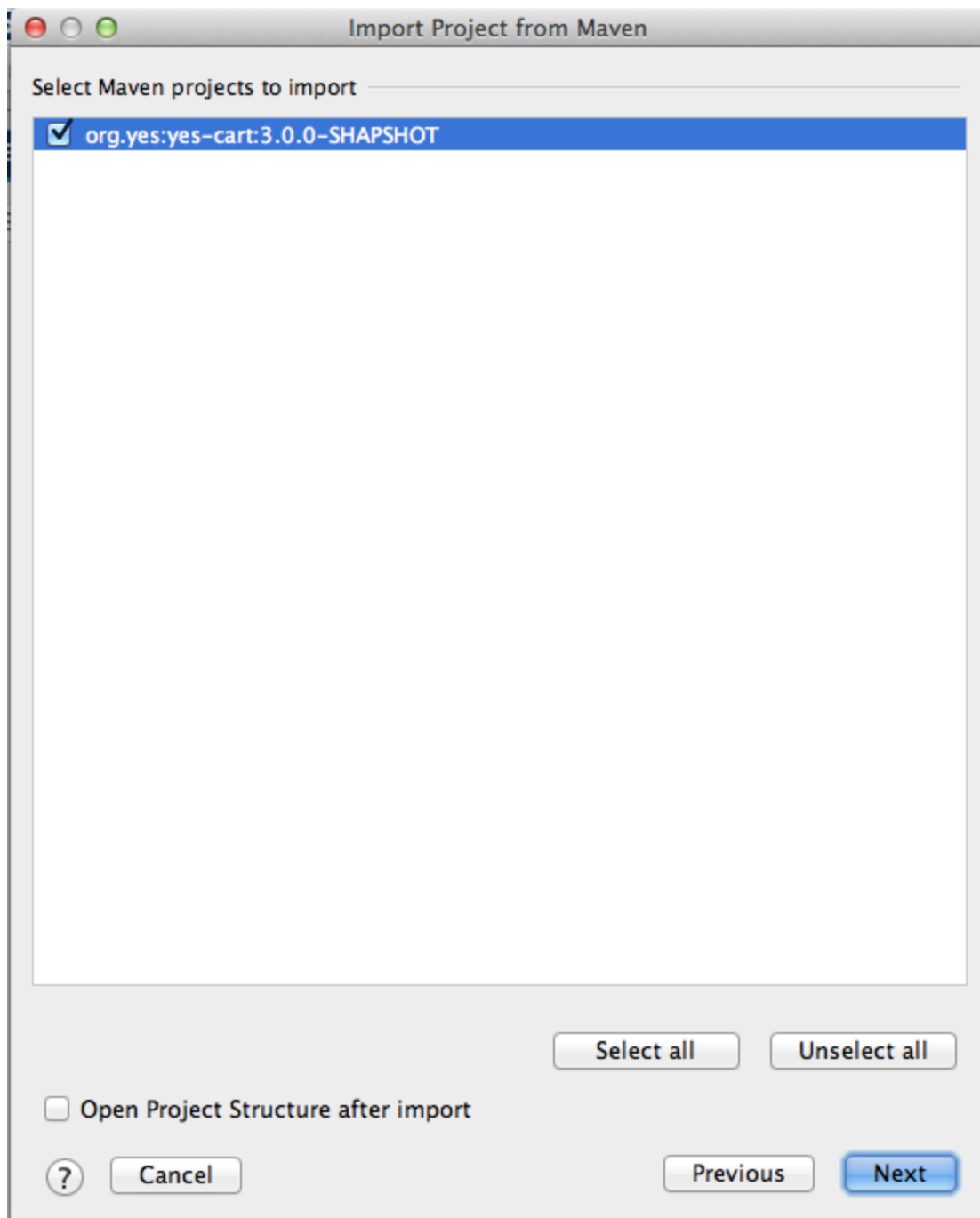
? Cancel Previous Next

Select then following profiles: **derby**, **devIntelliJIDEA**, **ftEmbeddedLucene** and **paymentAll**. Make sure that other profiles are unticked.

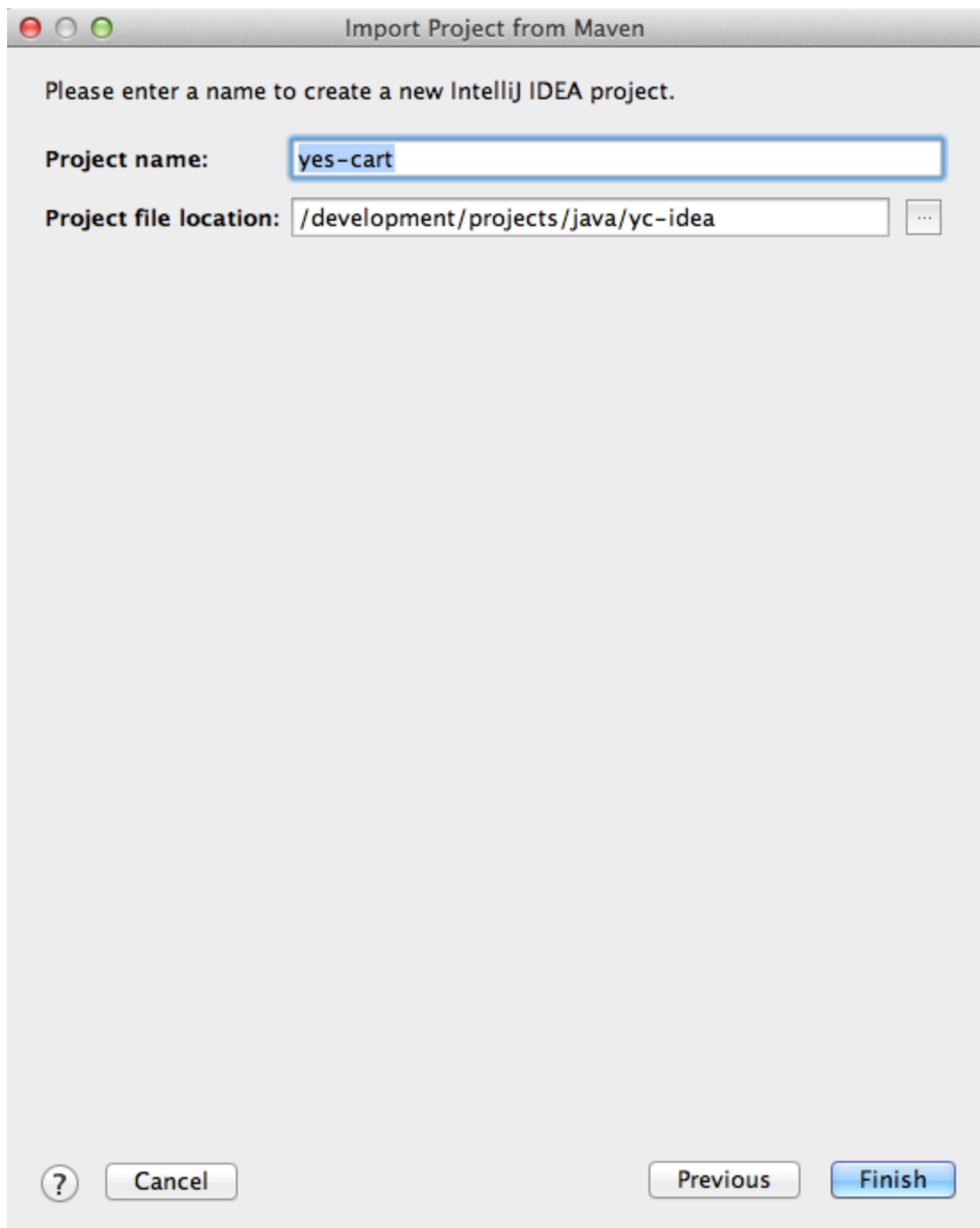
Ensure that you select ALL relevant profiles for the version you are using, as new versions may introduce new mandatory profiles that must be selected



Select the maven project to import:



Select project SDK:



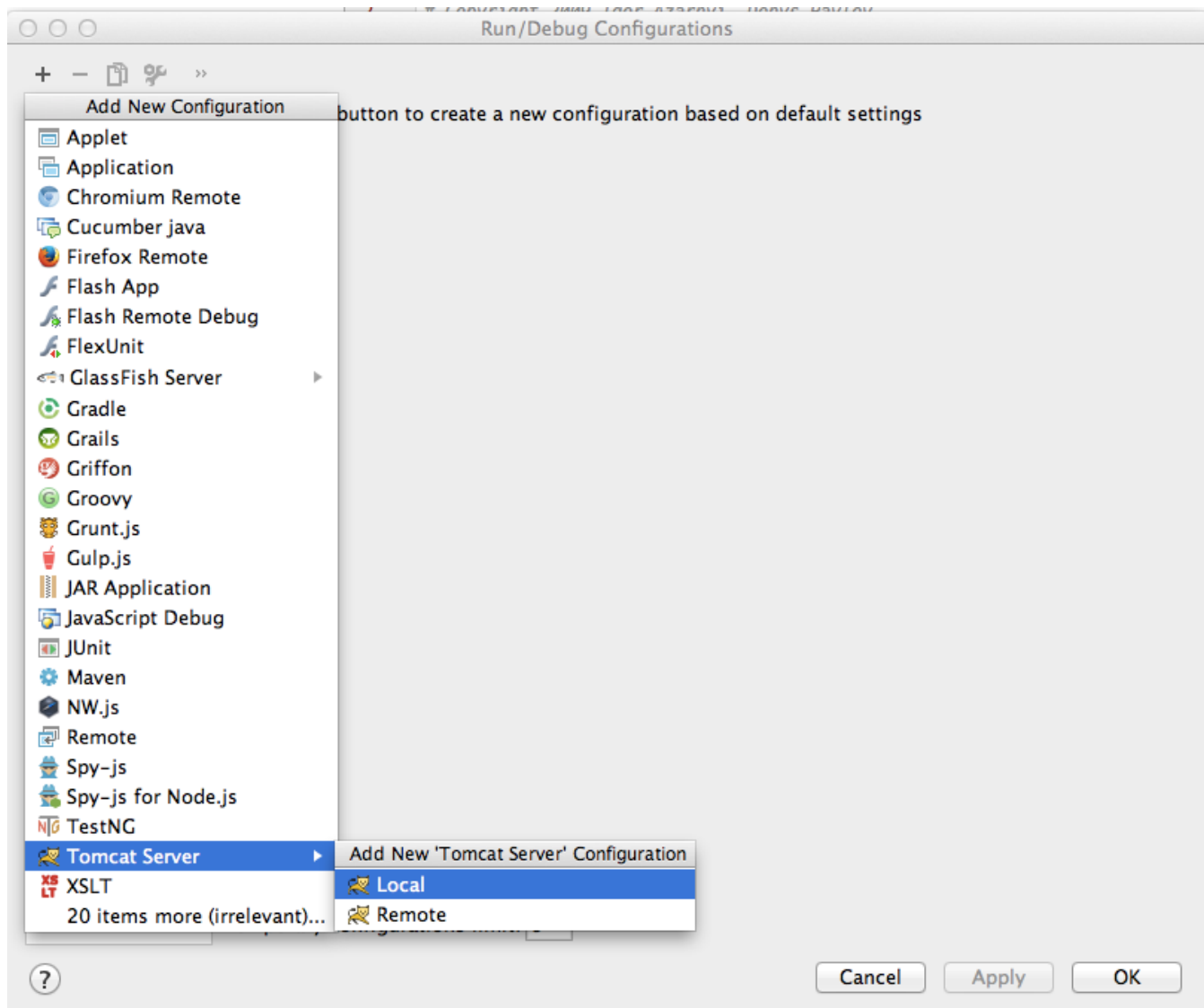
Let IDEA process the files (this will take some time).

Run/Debug configurations

Webapp Yes Shop

Open configurations window: Run > Edit Configurations

Click "+" in the top left corner and select "Tomcat Server > Local" from the menu

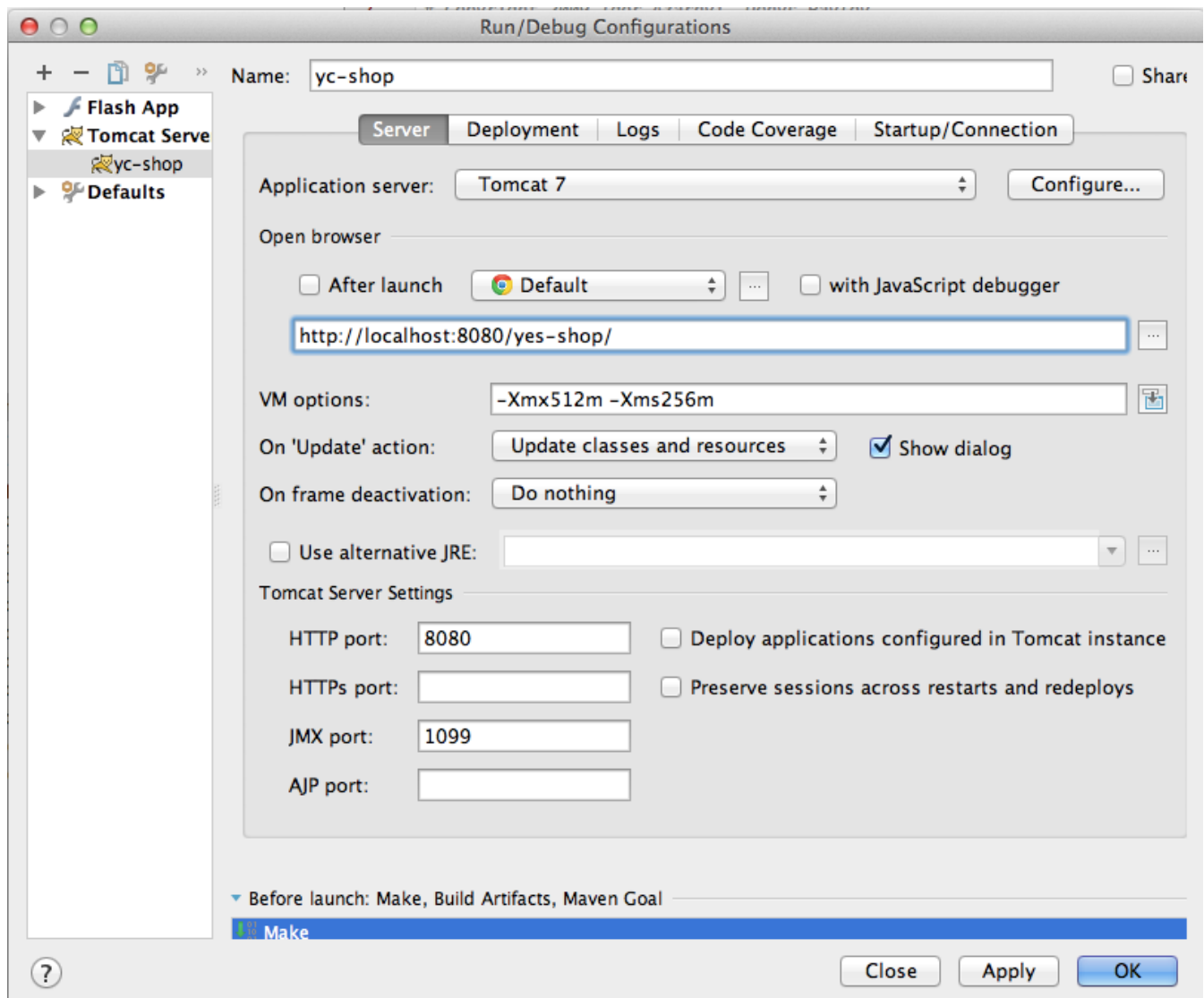


In the window specify:

- Name: yc-shop
- Select Tomcat 7 as the application server (add it using configure button if not listed)
- Set VM options: -Xmx512m -Xms256m
- Select on 'Update' action as "Update classes and Resources"

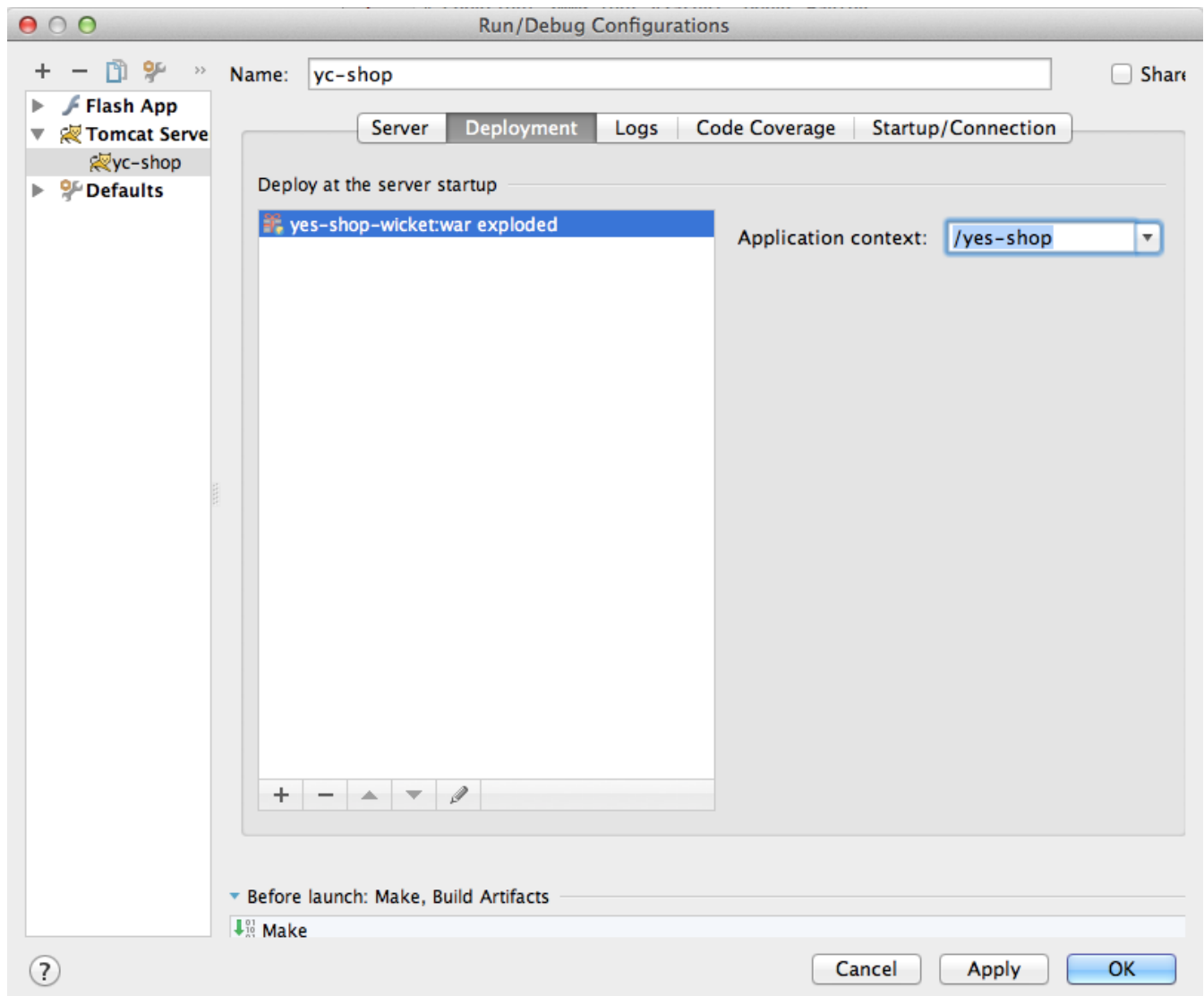
You need to come back from "deployment tab" (next step) to set this option as it is only available once WAR files are added to deployment.

- Uncheck open browser after launch
- Ensure HTTP port number is 8080 and JMX is 1099



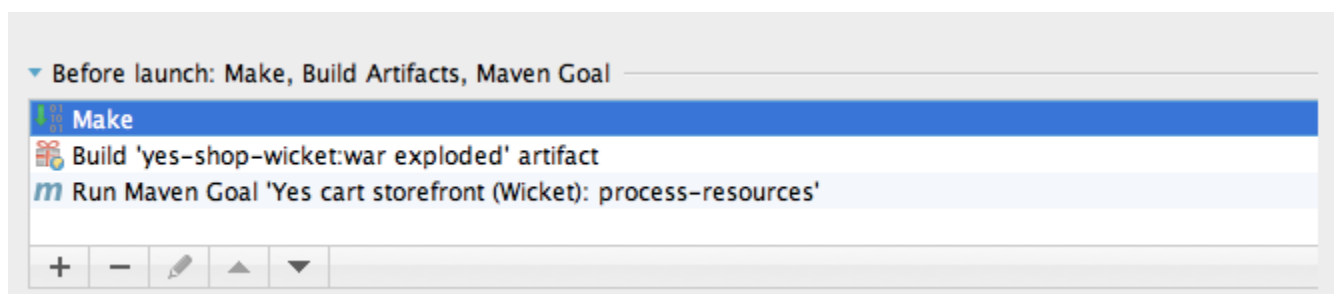
Click "Apply" and select deployment tab the following:

- Click "+", then "Artifact" and select "yes-shop-wicket:war exploded"
- Set application context to / (i.e. root) **Note:** 3.4.0+ now has default mapping of storefront to root (and not /yes-shop)



On the "Before launch" section at the bottom of the window:

- Click "+", "Run maven goal"
- Select working directory as "YC_HOME/yc-idea/web/store-wicket"
- Type "process-resources" into Command Line



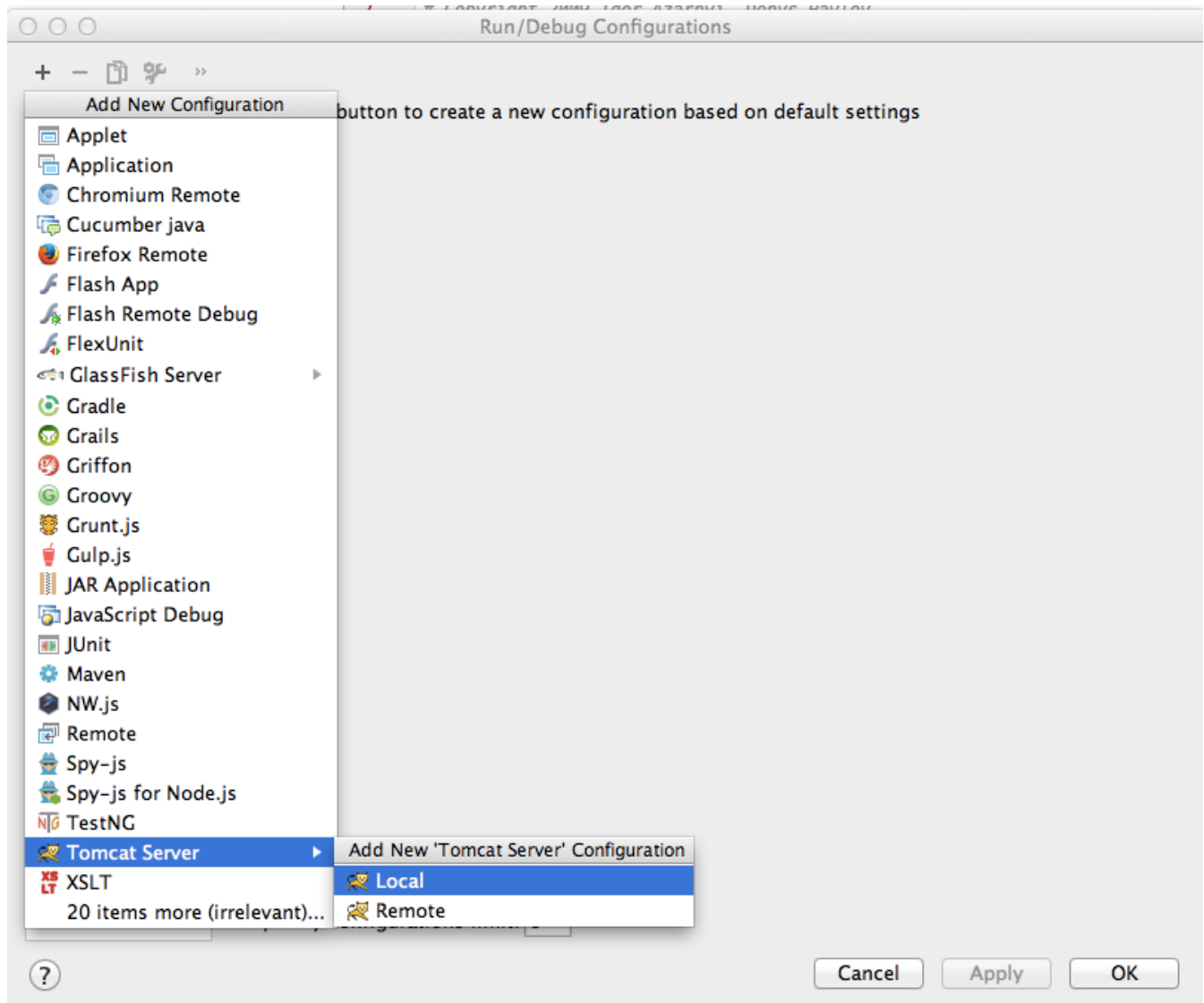
Click "Apply", then "OK" to save configuration

Now you will be able to run storefront from IDEA by using the Run menu choice **yc-shop** or from the Application Servers window (View > Tool Windows > Application Servers).

Webapp REST API

Open configurations window: Run > Edit Configurations

Click "+" in the top left corner and select "Tomcat Server > Local" from the menu

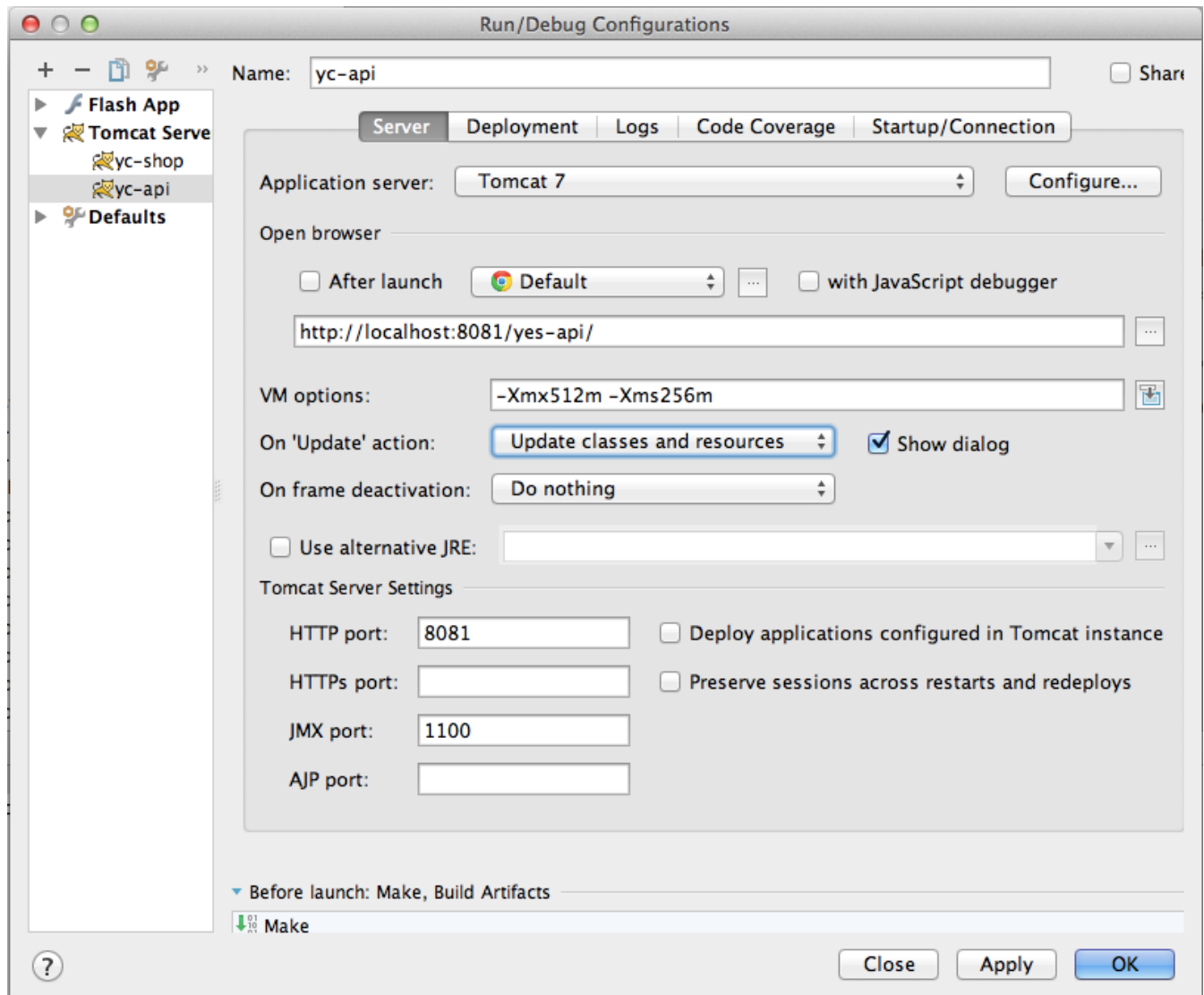


In the window specify:

- Name: yc-api
- Select Tomcat 7 as the application server (add it using configure button if not listed)
- Set VM options: -Xmx512m -Xms256m
- Select on 'Update' action as "Update classes and Resources"

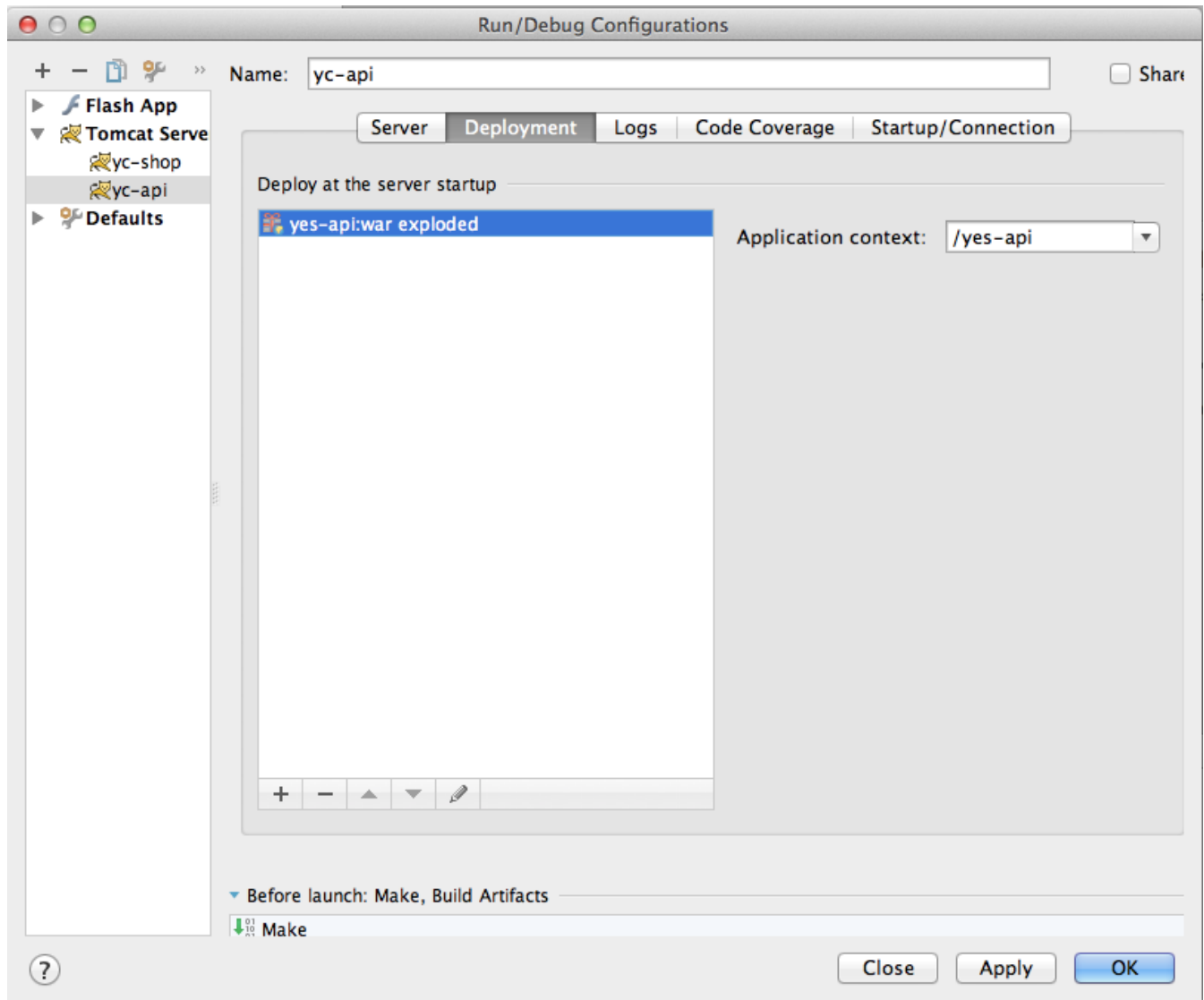
You need to come back from "deployment tab" (next step) to set this option as it is only available once WAR files are added to deployment

- Uncheck open browser after launch
- Ensure HTTP port number is 8081 and JMX is 1100



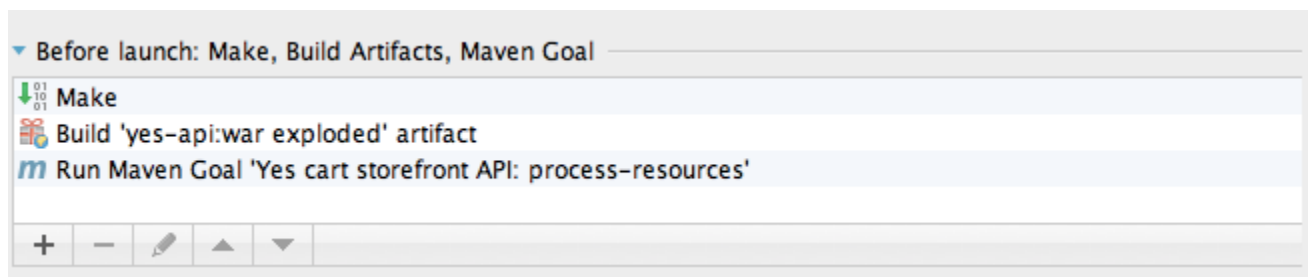
Click "Apply" and select deployment tab the following:

- Click "+", then "Artifact" and select "yes-api:war exploded"
- Set application context to /yes-api



On the "Before launch" section at the bottom of the window:

- Click "+", "Run maven goal"
- Select working directory as "YC_HOME/yc-idea/web/api"
- Type "process-resources" into Command Line



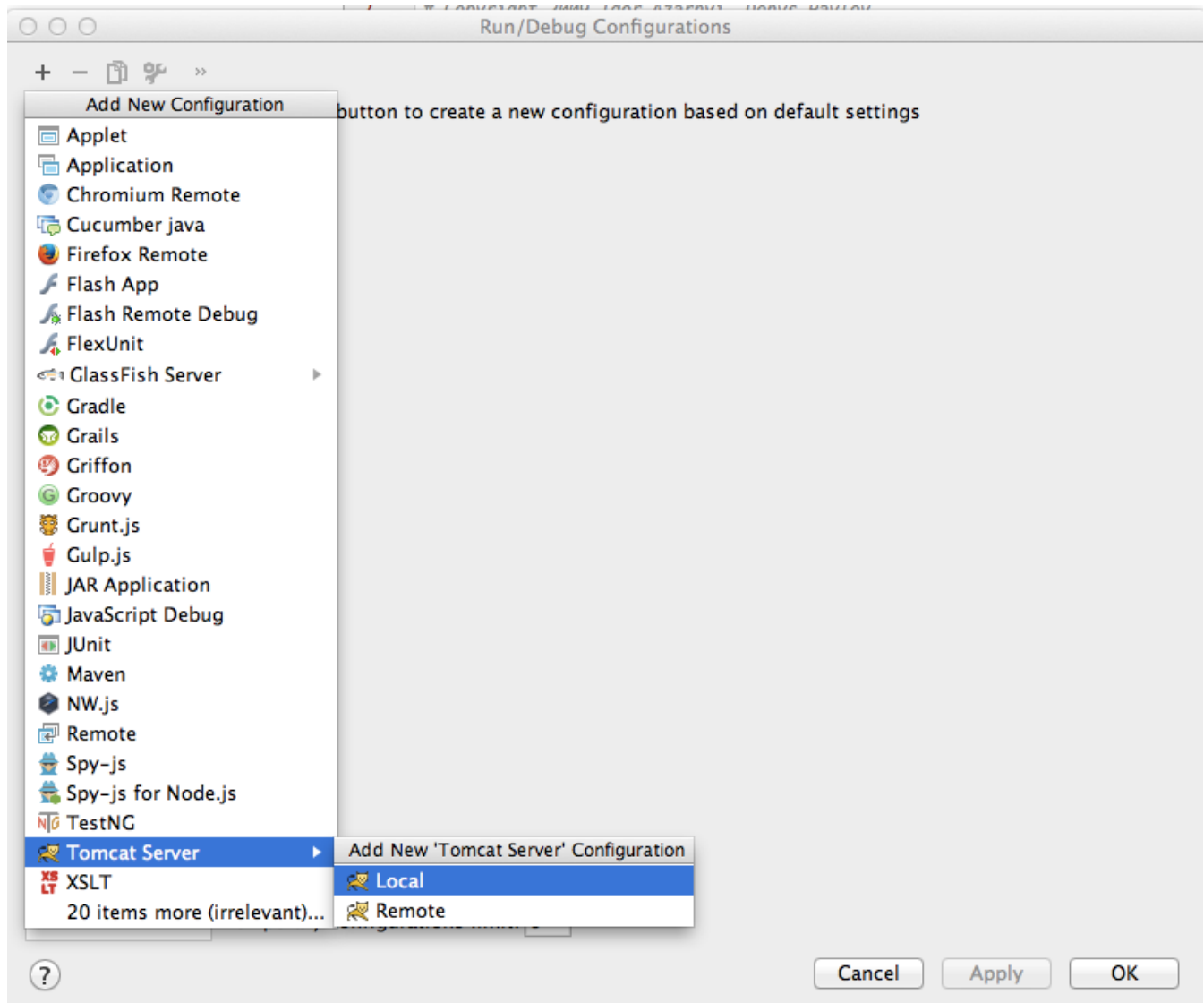
Click "Apply", then "OK" to save configuration

Now you will be able to run REST API from IDEA by using the Run menu choice **yc-api** or from the Application Servers window (View > Tool Windows > Application Servers).

Webapp JAM server

Open configurations window: Run > Edit Configurations

Click "+" in the top left corner and select "Tomcat Server > Local" from the menu

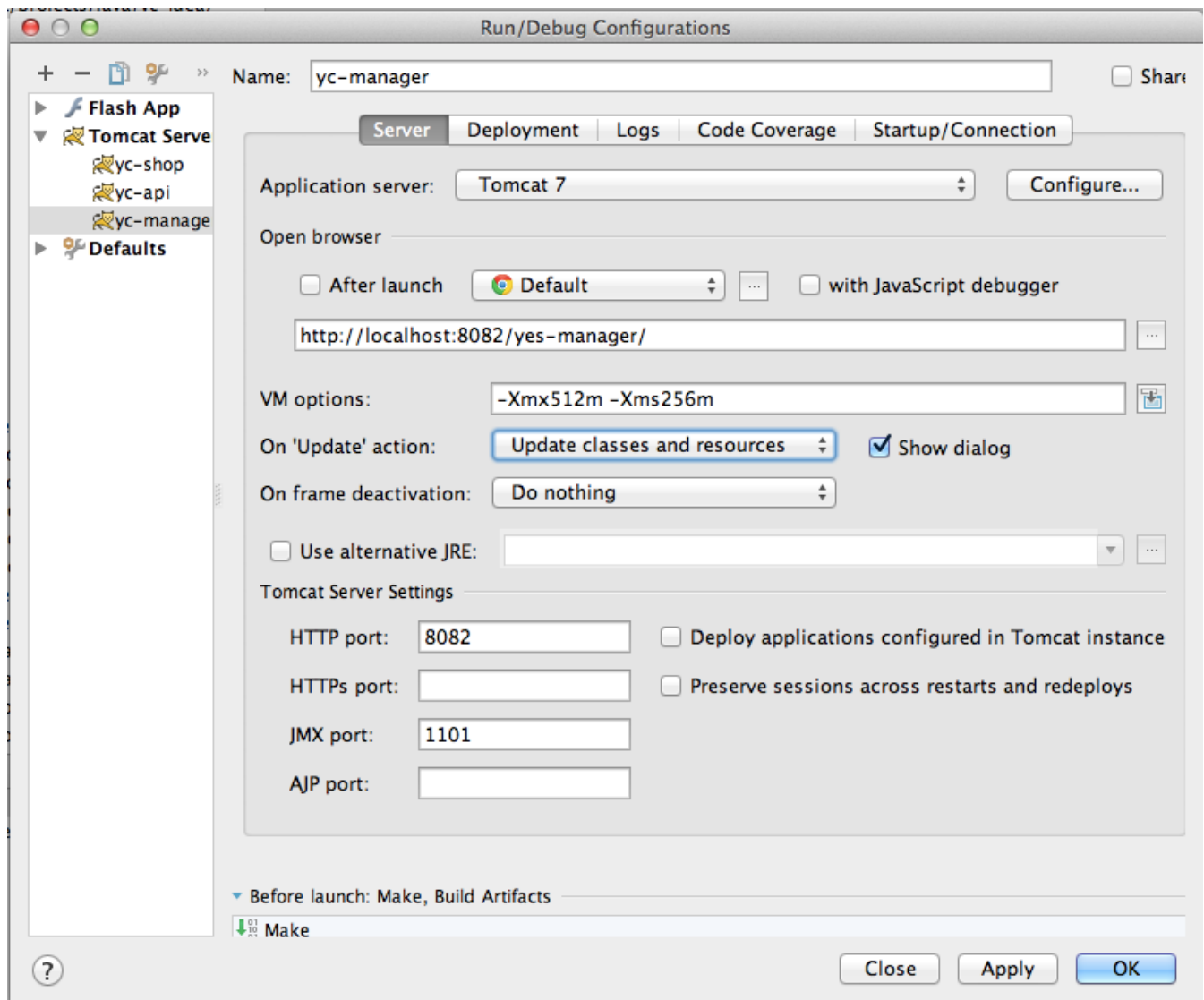


In the window specify:

- Name: yc-manager
- Select Tomcat 7 as the application server (add it using configure button if not listed)
- Set VM options: -Xmx512m -Xms256m
- Select on 'Update' action as "Update classes and Resources"

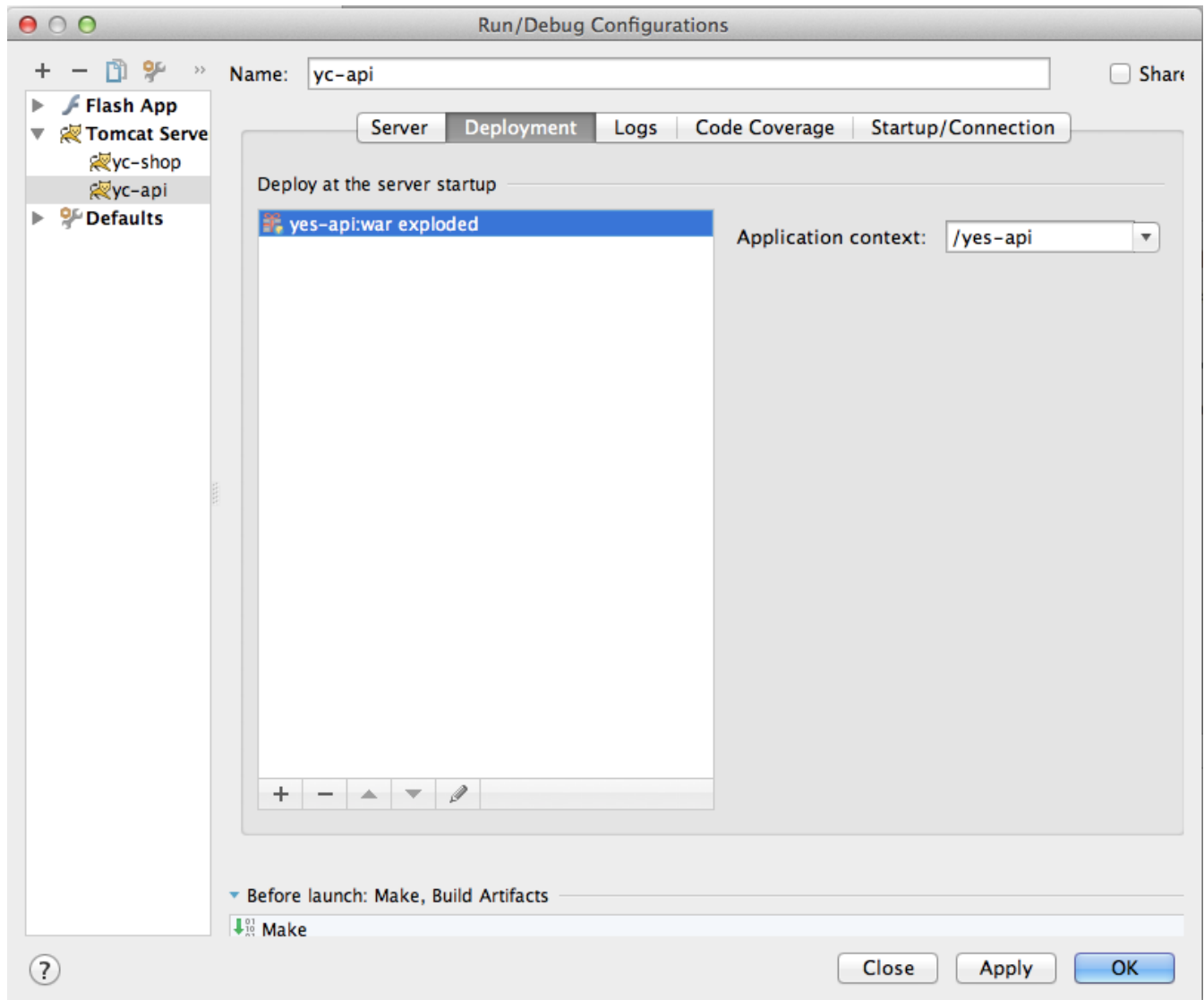
You need to come back from "deployment tab" (next step) to set this option as it is only available once WAR files are added to deployment.

- Uncheck open browser after launch
- Ensure HTTP port number is 8082 and JMX is 1101



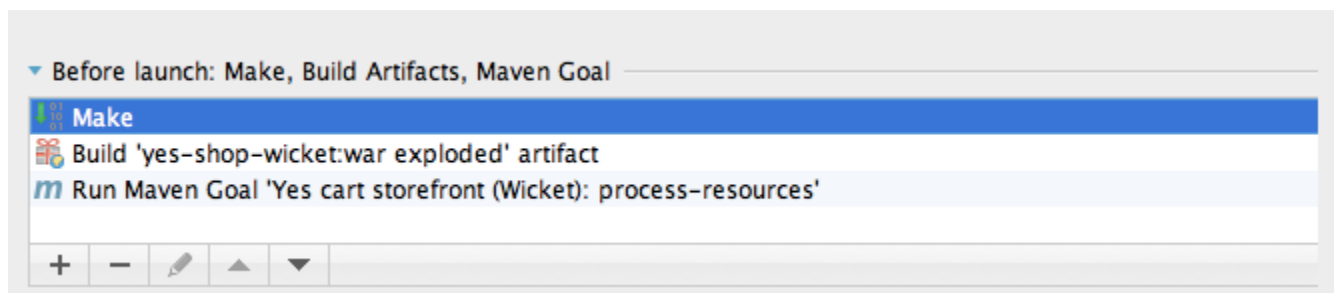
Click "Apply" and select deployment tab the following:

- Click "+", then "Artifact" and select "jam:war exploded"
- Set application context to /yes-manager



On the "Before launch" section at the bottom of the window:

- Click "+", "Run maven goal"
- Select working directory as "YC_HOME/yc-idea/yc-idea/manager/jam"
- Type "process-resources" into Command Line



Click "Apply", then "OK" to save configuration

Now you will be able to run JAM server from IDEA by using the Run menu choice **yc-manager** or from the Application Servers window (View > Tool Windows > Application Servers).

Running the project

When running the platform locally using above configuration you have the following components:

Component	Dependency	Notes
Derby database		Derby server is started and stopped using yc.sh/yc.bat from command line. You must have derby server running before starting up any of the webapps
Storefront	Derby	Client facing storefront that is launched from IDEA run option yc-shop
REST API	Derby	REST API that is launched from IDEA run option yc-api
JAM server	Derby,  Storefront (partial),  REST API (partial)	Java Angular Manager (JAM) is administrative application server that is launched from IDEA run option yc-manager . Some operations in JAM are communicating update messages to Storefront and REST applications, so those need to be running for some operations to be performed (e.g. Indexing)

Derby

Navigate to \$YC_HOME in command line and start Derby database using command:

```
$ ./yc.sh derbygob
```

If you need to work with DB directly then connect using command:

```
$ ./yc.sh derbycon
```

When you finished working you can shutdown Derby using command:

```
$ ./yc.sh derbyend
```

Webapps

Running all web apps is straightforward from IDEA, simply launch the appropriate Run configuration.

Remember that all web apps require Derby DB running.

- Follow dependency table above to see in which order web apps need to be started

Webapp	IDEA Run configuration	URL	Notes
--------	------------------------	-----	-------

Storefront	yc-shop	http://localhost:8080/	You will need to set up connection to smtp server in order to see customer registration and order details update. Look for config-mail.properties in YC_HOME/env/maven/(yourenvironment) , default environment is dev
REST API	yc-api	http://localhost:8081/yes-api/	Use REST client of your choice to work with API (some examples: Chrome REST plugin, CooocaRestClient, SOAP UI). Data formats supported are: XML, JSON
JAM server	jam	http://localhost:8082/yes-manager/	This URL should redirect to client in appropriate language. If the page is blank it could be that maven build was not done and client Flex app was not build. You can run it from IDEA as well.

If you encounter problems because missing resources, such as mail templates or swf, this could be because IDEA did a clean build and those files are not available. You need to copy those files either by running "mvn validate -Ptemplates" (see maven profiles section), or you could use "\$./yc.sh cpres" command that will copy all necessary resources to all webapps

JAM Client

JAM consists of two components: server (jam) and client (jam-jsclient).

The server must be running when developing the client. In order to track your modifications **npm start** command must be run from the **manager/jam-jsclient/src/main/typescript** directory. This will **only track** the modifications you make and compile the typescript into javascript. In order to update the files on the running server you must run **mvn validate -Pdev,nodejs,derby,ftEmbeddedLucene** from **manager/jam** which will update the resources on your currently running server.

Default user/password to connect is:

username	admin@yes-cart.com
password	1234567

Final configurations

Configuring shared image vault

By default the image vault is configured in the environment specific configuration file **yc-config.properties** to point to **theme/imagevault/src/main/resources/default** which contains the default layout for this directory. We highly recommend copying this outside of the project directory structure and changing the paths in yc-config.properties

IDE recommended settings

We recommend to enable the following settings:

Tool Windows bars

From preferences: Appearance & Behaviour > Appearance
Click "Show tool window bars"

This will create buttons on edges of the IDE window to allow you quickly navigate between Tools Windows.

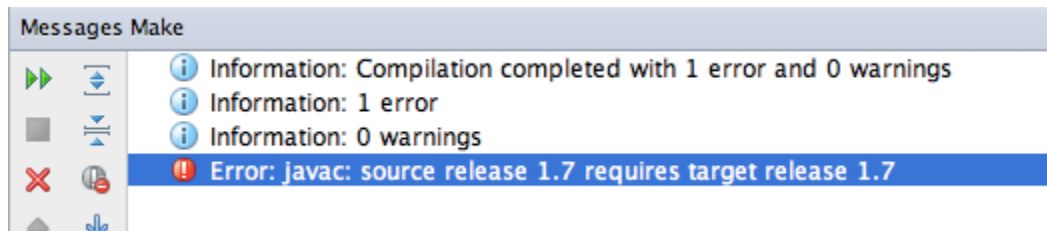
Import demo data

Follow steps on [Demo Data Import](#)

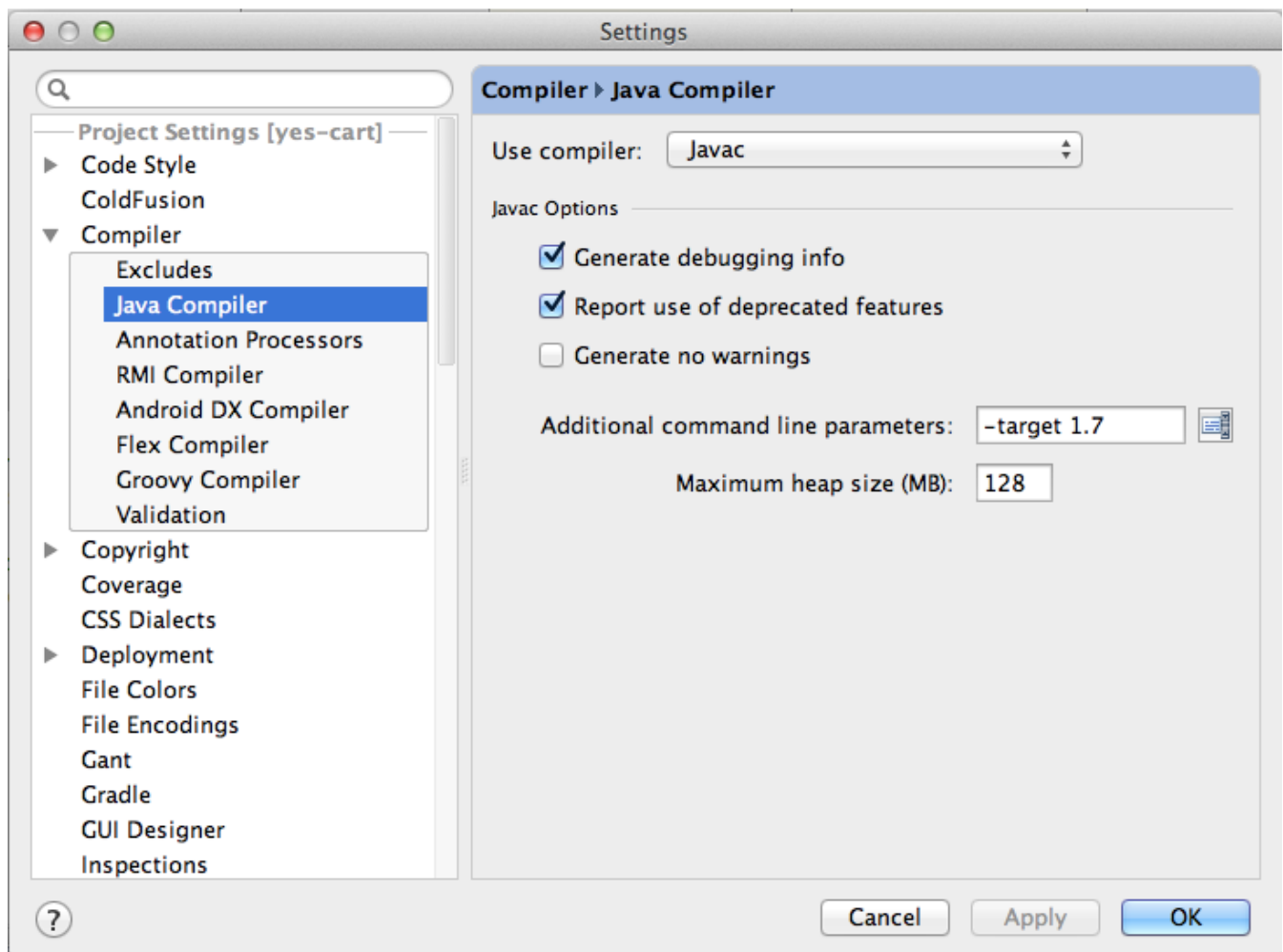
Tips and Tricks

javac source release 1.X requires target release 1.X

When IntelliJ IDEA imports maven projects it sets command line flag for the compiler to be compatible with source and target versions set in pom.xml files. Symptoms is the following message during compilation:



To fix this open Preferences > Compiler > Java Compiler and change the "Additional command line parameters" as necessary.



where are all the log files

IntelliJ IDEA generates a temporary directory for Tomcat which mimics its structure to load web applications via run/debug/application server windows.

The logs are kept there along with temporary files.

On MacOSx the directory is in:

```
/Users/[yourusername]/Library/Caches/IntelliJ IDEA 11/tomcat/[webappname]/logs
```

where [yourusername] is your login and [webappname] is auto generated name for your run configuration.

On Windows the directory is in:

```
C:\Users\User.IntelliJ IDEA 14\system\tomcat\[webappname]\logs
```

java.lang.IllegalArgumentException Could not resolve placeholder

Sometimes when you switch between branch and master in Git IntelliJ IDEA files may go out of synchronisation.

Simple fix is to:

1. Find project in Maven window in IntelliJ IDEA
2. Click skipTests button
3. Run install goal for the web apps module

If above does not work it is recommended to do a clean install from command line.

Ensure that you are using local installation of Maven3 in Preferences > Build, Execution, Deployment > Build Tools > Maven

it is not recommended to use bundled one.

Perform a clean maven build from command line:

```
mvn clean install -PdevIntelliJ IDEA, derby, ftEmbeddedLucene, paymentAll  
-DskipTests=true
```

Then synchronise files in IntelliJ IDEA: File > Synchronise

Error creating bean with name 'dataSource' defined in class path resource

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Simple fix is to:

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Perform a clean maven build from command line:

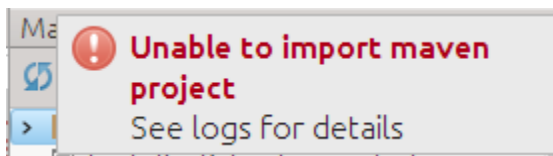
```
mvn clean install -PdevIntelliJIDEA,derby,ftEmbeddedLucene,paymentAll  
-DskipTests=true
```

Then synchronise files in IntelliJ IDEA: File > Synchronise

Unable to import maven project: See logs for details

Sometimes when you switch between branch and master in Git idea files may become corrupted, especially when modules structure is different.

This causes IDEA to fail to load maven modules properly and display the following message when trying to re-import:



If you got into this condition and did not notice then during deploying of web application you will encounter the various errors during deployment of webapps.

If you are asked to remove some modules - do so and then re-import all modules in the Maven window.

If this does not help unfortunately the only way to solve this is to delete corrupted **.idea**, ***.iml**, ***.ipr** and ***.iws** files and reimport

1. Close IntelliJ IDEA
2. Navigate to .idea directory and delete it
3. Re-open IntelliJ IDEA
4. Reconfigure workspace