



Exercise 3

Set up the development environment

INTRODUCTION

Before getting deeper into developing your first Backoffice cockpit, you should set up your development environment. The main purpose is to maximize your productivity while developing an application using the Backoffice framework.

The Backoffice framework provides certain features that can help you in this regard. Using these features, you'll be able to do rapid prototyping and hot deployment, which will significantly reduce your development time.

What you will learn

You will learn how to enable rapid prototyping and hot deployment in the Backoffice application.

What you will need before starting

- A Java development IDE
(Note: all of our instructions and screenshots are based on Eclipse Oxygen Java Developer Edition).
- Your IDE is configured to use Java 8.
- Your IDE's Ant home is pointing to the Ant installation bundled within the SAP Commerce Suite in use.

INSTRUCTIONS

1. Stop the SAP Commerce server if it's already running.
2. Open the preconfigured Eclipse IDE, (or your own IDE, if you've chosen to use it instead).



If you're using OS X and you see an error when you try to open the Eclipse IDE, saying that it is damaged and can't be opened, you should try either of the following workarounds:

1. Open **System Preferences** and then go to **Security & Privacy**. Under the General tab, select the Anywhere radio button below *Allow apps downloaded from*:
or

2. Open a terminal window and
 - a. Run the following command: `sudo spctl --master-disable`
 - b. Open the Eclipse IDE. It should open successfully.
 - c. Once Eclipse successfully opens for the first time, run the following command to return your system to its normal state: `sudo spctl --master-enable`

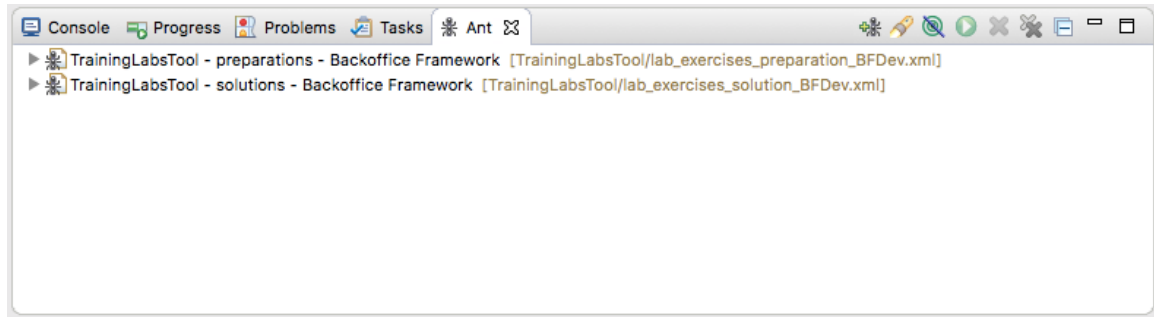
Note: After you fix the problem above, don't open Eclipse right away. Due to the way OS X security works, please close your current terminal window and open a **new** one, then...

1. Navigate to `<myCommerceInstallation>/eclipse-bundle`
2. Run the following command `sudo xattr Eclipse.app`
3. If you get `com.apple.quarantine`, please remove the attribute by running:
`sudo xattr -r -d com.apple.quarantine Eclipse.app`

If you decided to use your own IDE, you must manually specify `<myCommerceInstallation>/workspace` as the workspace folder (e.g., via pop-up window during Eclipse start-up). Then, *Import Existing Projects into Workspace* the **TrainingLabsTool** project into the workspace of the IDE (location: `<myCommerceInstallation>/workspace/TrainingLabsTool`).

3. If TrainingLabsTool is already in your (pre-configured) Eclipse workspace, your **Ant** view should contain two build-file entries: the first one containing the *preparation* build targets, and the second one the *solution* targets, however...
 - If you do **not** see an **Ant** view: in Eclipse, open one via **Window→Show View→Ant**
 - If your **Ant** view does **not** already contain node entries for your build files, add them via the view's "plus ant" icon – (during the *add* process, you can find the two .xml files directly inside the `<myCommerceInstallation>/workspace/TrainingLabsTool` project/folder).

Expand the first node (i.e., **preparations**), and notice the child nodes, one for each exercise, from Ex. 4 through Ex. 10.

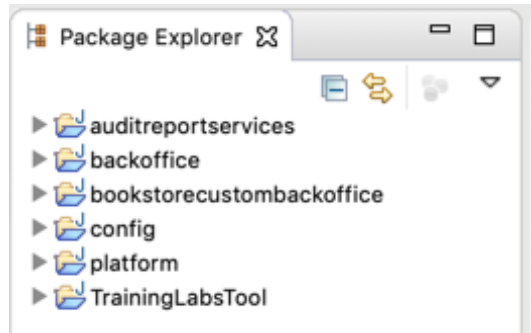


This exercise (Ex. 3) does not have an automated preparation to run – you'll do all steps manually.

Furthermore, if you're stuck, ask your instructor for help (preferably before *too* much of your lab time has been used up). If you're *really* stuck or short on time – and to prove to you that our exercises really do work ;-) – we also have provided a set of **Ant** targets under the **solutions** node. Each solution target can automate the *completion* of a particular exercise:

- Each individual preparation and solution **Ant** target is incremental by nature, where each *solution* assumes that the exercise's *preparation* has been run, and each *preparation* assumes that the previous exercise has been completed manually, or by having run the previous exercise's solution **Ant** target.
4. Import these projects to your workspace:
(In Eclipse, you would **Import Existing Projects into Workspace** and specify **workspace/hybris** as your starting source folder to import **config**, then repeat, and specify **workspace/hybris/bin** as your starting source folder to import the other extensions/projects):
- **backoffice**: the extension that includes the Backoffice *application*.
 - **auditreportservices**: a required dependency of the **backoffice** extension – to satisfy Eclipse's internal build process (under `workspace/hybris/bin/ext-platform-optional`)
 - **bookstorecustombackoffice**: the new extension that you created in the previous exercise.
 - **config**: the project that contains *localextensions.xml* and *local.properties*.
 - **platform**: the SAP Commerce Platform!

In Eclipse, after completing all of your project imports, your **Package Explorer** view should look like this:



5. Open `local.properties` of your Commerce platform, (i.e., the `./workspace/hybris/config` project/folder) and add the necessary properties/values to **disable caching** (refer back to the slide deck for the three properties/values to add).
6. Still in `local.properties` of your Commerce platform, add the properties/values that would **automatically reset** Backoffice's runtime **widgets.xml** and runtime **cockpit-config.xml** upon the occurrence of every **login**.
7. Still in `local.properties` of your Commerce platform, and add the one property/value needed to **enable hot deployment**, thus causing the **Redeploy** button to appear inside your Backoffice application.
8. Stop the server (if running) and restart the server, then login to Backoffice.

9. Logging-in to the Backoffice should trigger a reset of both `widgets.xml` and `cockpit-config.xml`. If you've configured your project properly, you should see the following logging output eventually appear in the terminal window while Backoffice is logging you in.

Terminal / DOS Window output

```
WARN [hybrisHTTP9] [ResetConfigurationAuthenticationSuccessHandler]
Automatic cockpit-config.xml reset is triggered by: login

WARN [hybrisHTTP9] [ResetConfigurationAuthenticationSuccessHandler]
Automatic widgets.xml reset is triggered by: login
```

10. You should now see a new button called “Redeploy” added to the bar on top.



Pressing this button results in reloading all the JAR files within all the Backoffice extensions, and recreates the Spring context. You can see that in the log of the running server. Press this button now -- the log output in the DOS/Terminal window should look something like this:

```
INFO [hybrisHTTP13] [BackofficeModulesManager] [auditreportservices] Registering backoffice configuration-only module
INFO [hybrisHTTP13] [BackofficeModulesManager] [customerreview] Registering backoffice configuration-only module
INFO [hybrisHTTP13] [BackofficeModulesManager] [platformbackoffice] Registering and fetching full backoffice module
INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [platformbackoffice] Copying platformbackoffice_bof.jar from extension
INFO [hybrisHTTP13] [BackofficeModulesManager] [apiregistrybackoffice] Registering and fetching full backoffice module
INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [apiregistrybackoffice] Copying apiregistrybackoffice_bof.jar from extension
INFO [hybrisHTTP13] [BackofficeModulesManager] [voucherbackoffice] Registering and fetching full backoffice module
INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [voucherbackoffice] Copying voucherbackoffice_bof.jar from extension
INFO [hybrisHTTP13] [BackofficeModulesManager] [cms2] Registering backoffice configuration-only module
INFO [hybrisHTTP13] [BackofficeModulesManager] [ruleenginebackoffice] Registering and fetching full backoffice module
INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [ruleenginebackoffice] Copying ruleenginebackoffice_bof.jar from extension
INFO [hybrisHTTP13] [BackofficeModulesManager] [basecommercebackoffice] Registering and fetching full backoffice module
INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [basecommercebackoffice] Copying basecommercebackoffice_bof.jar from extension
```

INFO [hybrisHTTP13] [BackofficeModulesManager] [promotionsbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [promotionsbackoffice] Copying promotionsbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [bookstorecustombackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [bookstorecustombackoffice] Copying bookstorecustombackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [cmsbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [cmsbackoffice] Copying cmsbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [promotionenginebackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [promotionenginebackoffice] Copying promotionenginebackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [couponbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [couponbackoffice] Copying couponbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [rulebuilderbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [rulebuilderbackoffice] Copying rulebuilderbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [acceleratorwebservicesaddon] Registering backoffice configuration-only module

INFO [hybrisHTTP13] [BackofficeModulesManager] [solrfacetsearchbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [solrfacetsearchbackoffice] Copying solrfacetsearchbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [commerceservicesbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [commerceservicesbackoffice] Copying commerceservicesbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeModulesManager] [adaptivesearchbackoffice] Registering and fetching full backoffice module

INFO [hybrisHTTP13] [BackofficeLibraryFetcher] [adaptivesearchbackoffice] Copying adaptivesearchbackoffice_bof.jar from extension

INFO [hybrisHTTP13] [BackofficeApplicationContext] Refreshing Root WebApplicationContext - /backoffice: startup date [Wed Feb 27 16:04:21 CST 2019]; parent: hybris Application context - master

INFO [hybrisHTTP13] [WebScopeTenantIgnoreDocReader] Skipped XML bean definition file due to specified profiles [backoffice_testing] not matching: ServletContext resource [/WEB-INF/backoffice-spring-testing.xml]

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-platform-backoffice/platformbackoffice/resources/platformbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/apiregistrybackoffice/resources/apiregistrybackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/voucherbackoffice/resources/voucherbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/ruleenginebackoffice/resources/ruleenginebackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/basecommercebackoffice/resources/basecommercebackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/promotionsbackoffice/resources/promotionsbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/custom/bookstorecustombackoffice/resources/bookstorecustombackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/cmsbackoffice/resources/cmsbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/promotionenginebackoffice/resources/promotionenginebackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/couponbackoffice/resources/couponbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/rulebuilderbackoffice/resources/rulebuilderbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/solrfacetsearchbackoffice/resources/solrfacetsearchbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/commerceservicesbackoffice/resources/commerceservicesbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/adaptivesearchbackoffice/resources/adaptivesearchbackoffice-backoffice-spring.xml

INFO [hybrisHTTP13] [RemoveDefaultSessionFixationStrategyBeanPostProcessor] Removed Spring default SessionFixationProtectionStrategy, since HybrisSessionFixationProtectionStrategy is already defined

INFO [hybrisHTTP13] [CockpitModuleComponentDefinitionService] Initializing loaded modules: [auditreportservices, customerreview, platformbackoffice, apiregistrybackoffice, voucherbackoffice, cms2, ruleenginebackoffice, basecommercebackoffice, promotionsbackoffice, bookstorecustombackoffice, cmsbackoffice, promotionenginebackoffice, couponbackoffice, rulebuilderbackoffice, acceleratorwebservicesaddon, solrfacetsearchbackoffice, commerceservicesbackoffice, adaptivesearchbackoffice]

INFO [hybrisHTTP13] [CockpitModuleComponentDefinitionService] Initializing loaded modules: [auditreportservices, customerreview, platformbackoffice, apiregistrybackoffice, voucherbackoffice, cms2, ruleenginebackoffice, basecommercebackoffice, promotionsbackoffice, bookstorecustombackoffice, cmsbackoffice, promotionenginebackoffice, couponbackoffice, rulebuilderbackoffice, acceleratorwebservicesaddon, solrfacetsearchbackoffice, commerceservicesbackoffice, adaptivesearchbackoffice]

INFO [hybrisHTTP13] [Reflections] Reflections took 41 ms to scan 8 urls, producing 756 keys and 2519 values

```
INFO [hybrisHTTP13] [BeansDefinitionImportParser] Importing additional bean definitions:
file:/SAPDevelop/hy465_WORKING_y1811_EclipseOxygen_UPGRADE/workspace/hybris/bin/ext-backoffice/adaptivesearchbackoffice/resources/adaptivesearchbackoffice-backoffice-
spring.xml
INFO [hybrisHTTP13] [RemoveDefaultSessionFixationStrategyBeanPostProcessor] Removed Spring default SessionFixationProtectionStrategy, since
HybrisSessionFixationProtectionStrategy is already defined
INFO [hybrisHTTP13] [CockpitModuleComponentDefinitionService] Initializing loaded modules: [auditreportservices, customerreview, platformbackoffice, apiregistrybackoffice,
voucherbackoffice, cms2, ruleenginebackoffice, basecommercebackoffice, promotionsbackoffice, bookstorecustombackoffice, cmsbackoffice, promotionenginebackoffice,
couponbackoffice, rulebuilderbackoffice, acceleratorwebservicesaddon, solrfacetsearchbackoffice, commerceservicesbackoffice, adaptivesearchbackoffice]
INFO [hybrisHTTP13] [CockpitModuleComponentDefinitionService] Initializing loaded modules: [auditreportservices, customerreview, platformbackoffice, apiregistrybackoffice,
voucherbackoffice, cms2, ruleenginebackoffice, basecommercebackoffice, promotionsbackoffice, bookstorecustombackoffice, cmsbackoffice, promotionenginebackoffice,
couponbackoffice, rulebuilderbackoffice, acceleratorwebservicesaddon, solrfacetsearchbackoffice, commerceservicesbackoffice, adaptivesearchbackoffice]
INFO [hybrisHTTP13] [Reflections] Reflections took 41 ms to scan 8 urls, producing 756 keys and 2519 values
```

Congratulations, you are now ready to work on the rest of the exercises!