Exercise 10

Enhance your cockpit

INTRODUCTION

The preceding exercises have guided you through the principal features provided by the Backoffice Framework for building a custom cockpit. Going further, there is a rich library of OOTB widgets the interface developer can draw on to provide the more sophisticated features that can make the difference between a basic and a more polished user experienced.
In this exercise, we shall look at three such enhancements to our existing cockpit.

What you will learn

1. How to configure Backoffice to use Solr for facet searches
2. How to add the *Saved Queries* feature to your cockpit
3. How to add a HOME node with a dashboard to your cockpit to display system-data charts

What you will need before starting

- Some familiarity with Solr facets as used in the Accelerator storefronts
- Knowledge of the Product catalog structure
- Having executed the (Ant) preparation script for this exercise

INSTRUCTIONS

Part 1 – Configure Backoffice to Use Solr

1. Stop the SAP Commerce server if it's already running.

2. Run the `Exercise10_Enhancing_your_Cockpit-prepare` Ant target in your IDE.

3. We want to make sure the four extensions required for this feature are loaded. Open `localextensions.xml` and make sure it includes the following extensions, either listed explicitly *somewhere* in `localextensions.xml` or included implicitly as a dependency of some other included extension:

    - **backofficesolrsearch**
    - **solrfacetsearchbackoffice**
    - **solrfacetsearch**
    - **solrserver**

    HINTS:

    - VERIFY: your `localextensions.xml` should already contain explicit entries for ***solrfacetsearchbackoffice*** and ***solrserver*** (*solrserver* would have been included as a dependency of *solrfacetsearchbackoffice*, anyway).
    - VERIFY: (via `extensioninfo.xml`), that ***solrfacetsearch*** is a dependency of ***solrfacetsearchbackoffice***, so it will get included implicitly
    - SO… you should only need to add ***backofficesolrsearch*** to your `localextensions.xml`.

4. If the Commerce Suite is running, stop it now. In your terminal/console, from the platform directory, run `ant all`.

5. Start your SAP Commerce server – toward the end of startup, you will likely see errors in the console pertaining to a missing or invalid type code ***BackofficeIndexedTypeToSolrFacetSearchConfig***. Don't worry – this is because this new commerce type is defined in the `*-items.xml` of the extension **backofficesolrsearch** (which you added and built moments ago) – but the new item-type definitions are not yet visible to the Commerce Suite because they have yet to be "pushed" to the runtime type system via an "update running system", which we will do next.

6. Go to the Administration cockpit's update page at https://bookstore:9002/hac/platform/update

> ⛔
>
> Please note that the URL for accessing the admin console (hAC) is https://bookstore:9002/hac/

7. To avoid any unnecessary updates to data, and only perform the update we need, proceed as follows:

    - **UN**check the option, ***Create essential data***.
    - In the list under ***Project data settings***, check the boxes next to the extensions that you actually added in step 3. **If you had to add only ONE of those four extensions (i.e., *backofficesolrsearch*), then check only that box to load that extension's *project data*!**
    - Click the **Update** button

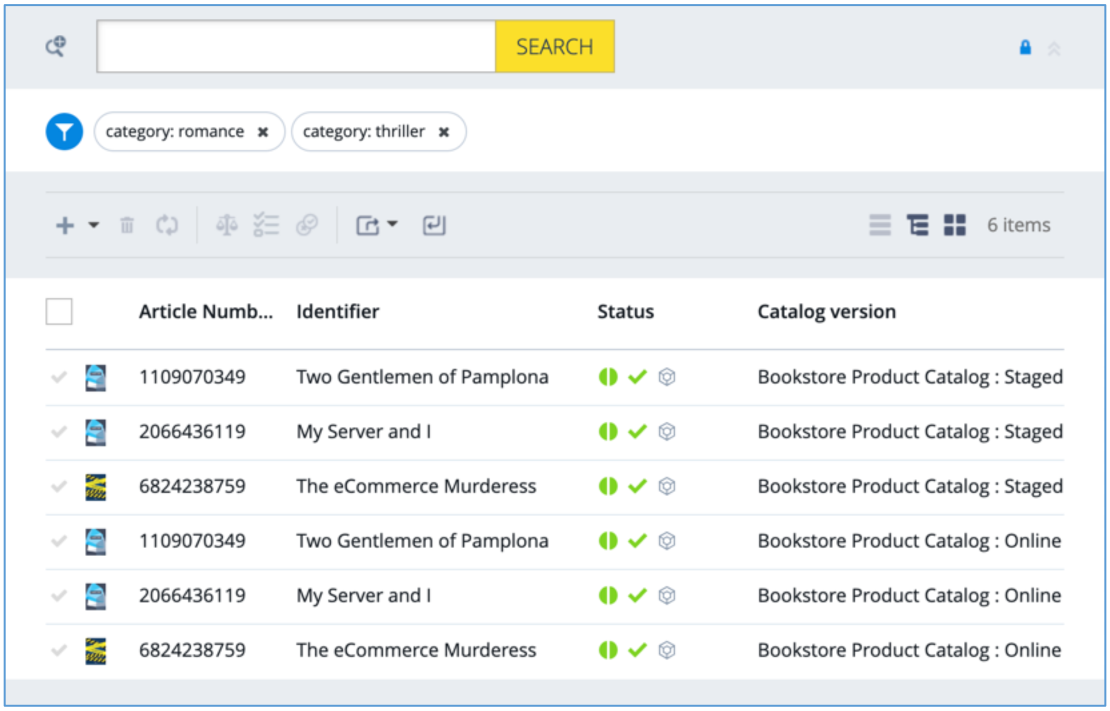
8. Now log into the Backoffice application. In the Administration cockpit, go to the Explorer and navigate to **System → Search and Navigation → Facet Search Configurations**.

   You should now see an entry with the name ***Solr Config for Backoffice*** in the result list. Select it for edit. In the editor area, click on the ***Index*** button (at the top left of the editor-area pane). In the resulting pop-up dialog box, select ***full*** from the pulldown and hit **START** to perform a full indexing of commerce data.

   You should shortly receive the confirmation “Indexing finished successfully”, so click on **DONE**.

9. Now navigate to **Catalog → Products**. You should see a *funnel* icon (for *narrowing* your search result – *get it?*) directly below the Search Box. Click on it, select the category facets ***Romance***, ***Thriller***, and ***Philosophy***, then **CLOSE** the dialog and view your results. Finally, delete the ***Philosophy*** facet from the list of facets (above, to the right of the icon).

   You should then see a listing as in the screenshot below:



	Article Numb...	Identifier	Status	Catalog version
	1109070349	Two Gentlemen of Pamplona		Bookstore Product Catalog : Staged
	2066436119	My Server and I		Bookstore Product Catalog : Staged
	6824238759	The eCommerce Murderess		Bookstore Product Catalog : Staged
	1109070349	Two Gentlemen of Pamplona		Bookstore Product Catalog : Online
	2066436119	My Server and I		Bookstore Product Catalog : Online
	6824238759	The eCommerce Murderess		Bookstore Product Catalog : Online

Figure 1 - Searching with Facets in the Backoffice

Part 2 – Enable Saved Queries

Go to Backoffice and enter your *Book Management* cockpit (note: your cockpit’s layout is composed differently from that of the *Administration Cockpit* even though it looks very similar).

Up until you ran the preparation script for this exercise, your *Book Management* cockpit had an *Explorer Tree* widget in the main *Border Layout* widget’s ***leftSlot***.

For *this* exercise, the preparation script has, instead, placed a *Collapsible Container* widget into that slot and moved the *Explorer Tree* widget into the *Collapsible Container’s* ***center*** slot. This will enable us (soon) to place *multiple* things into the main *Border Layout* widget’s ***leftSlot***. The preparation script has also assigned the value of “SEARCH HISTORY” to the ***bottomCaption*** setting of the new *Collapsible Container* widget.

Your job is to add a new instance of the *Saved Queries List* widget to this *Collapsible Container*’s ***bottom*** slot.

10. Look at the newly modified structure via the *Application Orchestrator*, and at the top of `bookstorecustombackoffice-backoffice-widgets.xml` to familiarize yourself with the way layout widgets can be nested to enhance the page structure.

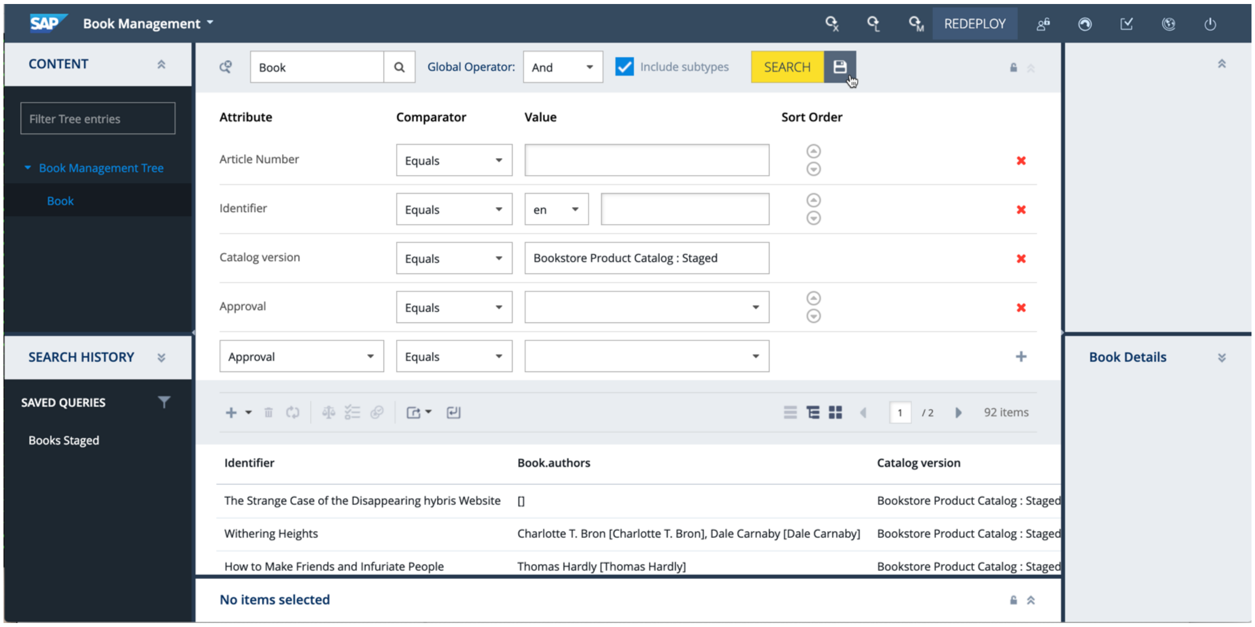
11. Add a new *Saved Queries List* widget (yes, by direct modification of the .xml file) at the location indicated by this step's TODO comment in `bookstorecustombackoffice-backoffice-widgets.xml`.

    Give it the ID, ***bookstorecustombackoffice-savedQueries***. The **widgetDefinitionId** will be ***`de.hybris.platform.platformbackoffice.widgets.savedQueriesWidget`***. Don't forget to specify the slot (**bottom**) in the *Collapsible Container* widget where it is to be placed and save your work.

12. Logout and log back into Backoffice to trigger a configuration reset. Navigate the explorer tree to list all books. Click the magnifying glass icon to the left of the Search Widget to open *Advanced Search* mode.

    Note the number of books in the listing. Now set *Catalog Version* to **Bookstore Product Catalog: Staged** and initiate another search. Your result list should now contain half as many books. Now hit the "disk" icon to save (just right of the **SEARCH** button of the *Advanced Search* widget). A dialog will appear. Give your query a name (e.g., ***Books Staged***) – make sure it's assigned to the localized field for isocode **en** (i.e., English), leave the other attribute empty, and **SAVE**…

    - If you *WERE* able to save, you should see the screenshot below:
    - If a **SAVE** button did NOT appear, perform a *system initialize* via the HAC – we've been making a LOT of changes during this course, and there's no telling *what* is amiss. Reset All and refresh your Backoffice configuration and try again. If you *still* have no luck, have the instructor take a look.



Book | Global Operator: And | ☑ Include subtypes

Attribute	Comparator	Value	Sort Order
Article Number	Equals		
Identifier	Equals	en	
Catalog version	Equals	Bookstore Product Catalog : Staged	
Approval	Equals		
Approval	Equals		

1 / 2 92 items

Identifier	Book.authors	Catalog version
The Strange Case of the Disappearing hybris Website	[]	Bookstore Product Catalog : Staged
Withering Heights	Charlotte T. Bron [Charlotte T. Bron], Dale Carnaby [Dale Carnaby]	Bookstore Product Catalog : Staged
How to Make Friends and Infuriate People	Thomas Hardly [Thomas Hardly]	Bookstore Product Catalog : Staged

Figure 2 - Saving an advanced query

13. So far, so good. Now clear-out all query values from the *Advanced Search* window and click on the query you persisted under Saved Queries.
    What? Nothing happened? Oops… it seems we have some more work to do!

    Although the `SaveAdvancedSearchQueryAction` *actionPerformed* event that was published when you hit the *save* icon gets picked up by the *Saved Query List* widget (via the default settings), we need to specify an explicit widget connection from the *Saved Query List* widget to the *Advanced Query* widget to allow it to invoke a new saved-query search.

Scroll down to the bottom of the `bookstorecustombackoffice-backoffice-widgets.xml` file, locate the TODO comment for this step, and add a new widget connection. You need to set the **`advancedSearchInitContext`** output socket of your *Saved Queries List* widget (id: **bookstorecustombackoffice-savedQueries**) to the **`initContext`** input socket of the *Advanced Search* widget (id: **bookstorecustombackoffice-advancedSearch**).

Again, save your changes, logout and log back in to Backoffice to reset the configuration, and verify that your Saved Query List widget can now execute a persisted query.

Part 3 – Add a Dashboard

14. Take a look at the Administration cockpit. When you first enter this view (or if you later return to the ***Home*** node), you will see a Dashboard widget displayed which contains a collection of chart widgets. We now want to add a similar dashboard to the *Bookstore Management* cockpit.

15. We currently don't have a ***HOME*** node in the Explorer Tree, so we'll need to create one. Open `bookstorecustombackoffice-backoffice-config.xml`, locate the context entry with ***component*** id of **bb-explorer-tree** (locate the TODO comment for this step), and add a new top-level navigation node in initial position with just the ***id*** of **HOME**. Save your work.

16. Now open `bookstorecustombackoffice-backoffice-widgets.xml` and locate the TODO comment for steps **10.16a** and **10.16b** (don't do anything just yet). We've added some preparatory configuration for you, as your new dashboard is soon going to need a *Condition Evaluator* widget and a *Property Extractor* widget (as shown in the slides for this chapter, explaining how to *switch perspectives*). Our preparation script has provided these widgets for you, but you will soon enable all their connections.

    Locate the 10.16a TODO comment, uncomment the widget *start tag* and add the following attributes:

    - `id="HOME"`
    - `widgetDefinitionId="com.hybris.cockpitng.dashboard"`
    - `slotId="perspectives"`
    - `template="false"`

    Locate the **10.16b** TODO comment and uncomment the rest of the widget entry. Save and Reset All of Backoffice's configuration. Your Bookstore Management cockpit should now look like this:

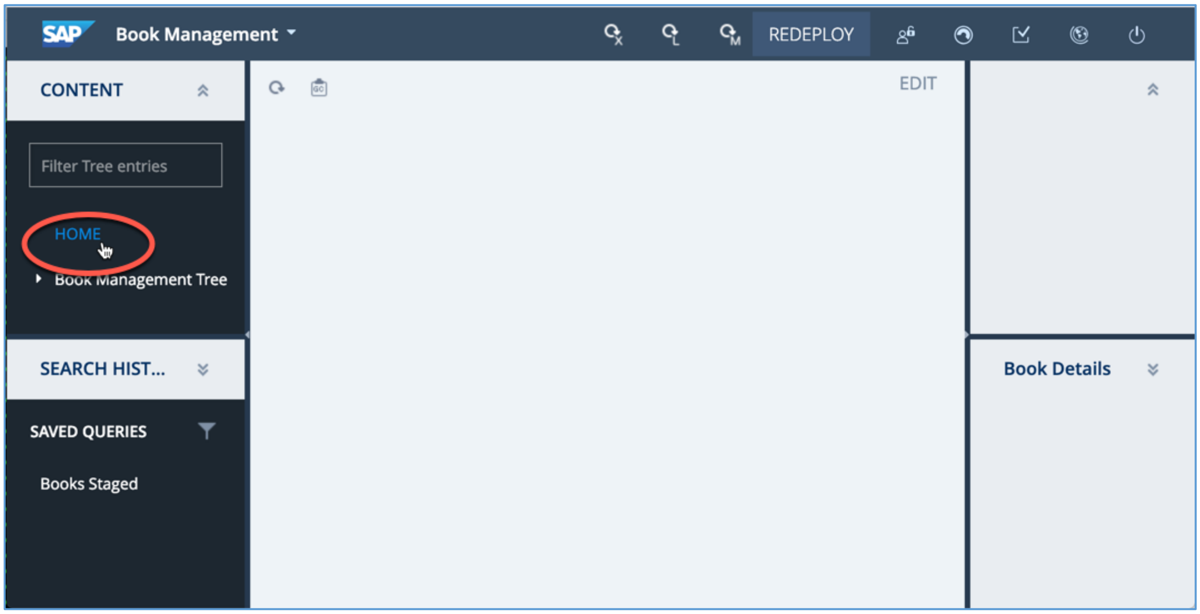


Figure 3 - A dashboard with very little dash

Now, when entering your cockpit, it defaults to displaying the first node in the tree, i.e., the new **HOME** node, which currently displays nothing. Navigate to the **Book Management Tree→Book** node, which now doesn't seem to do anything when it is clicked. Now click again on **HOME** – same thing. It seems, no matter what you do in your *Book Management* cockpit, your center viewing pane remains empty. (Actually, the only problem is that the center panel is not yet capable of switching out from the initial **HOME** view which is still empty). Our dashboard, it seems, has very little dash.

17. A lack of responsiveness in the Backoffice is often an indication that some required socket connections are missing, which would allow the widgets to trigger each other to render data. Scroll down to the bottom of the `bookstorecustombackoffice-backoffice-widgets.xml`, find the TODO comment for this step, and uncomment the four widget-connection entries that are necessary to make the view-switching mechanism work. (These are the connections to/from the aforementioned *Condition Evaluator* widget and *Property Extractor* widget)

    Save your changes, then reset the application configuration by logging out and in again, and you should now be able to switch freely between the **Book Management Tree→Book** node and the **HOME** node, (which *still* displays nothing).

18. All the dashboard is lacking now is a widget to render some content. Go back to `bookstorecustombackoffice-backoffice-widgets.xml`, locate the TODO comments for this step and remove both ends of the ***<?ignore*** … ***?>*** *XML processing instruction* surrounding the widget element (an XML block) with ID `bookstorecustombackoffice-defaulMemoryChart`. Save your changes, then reset the application configuration by logging out and in again. *Now* your cockpit's HOME node is no longer empty; it displays a white rectangular background with the text, "No data to display". So, your *Dashboard Widget* now successfully displays a *Memory Chart* widget, but chart itself has not been assigned any data to render.

19. That can be rectified by adding the following settings to the widget (add these below the TODO comment for this step):

    bookstorecustombackoffice-backoffice-widgets.xml

    ```
    <setting key="chartType" type="String" value="memoryChart" />
    <setting key="series" type="String" value="maxMemory,committedMemory,usedMemory" />
    ```

    Now save and *Reset Everything* again. You should see a chart populated with data for the three memory-usage metrics.

    NOTE: misspelled values in these settings, will likely be ignored, causing your chart to be missing elements.

    ALSO: errors in XML syntax will make your `bookstorecustombackoffice-backoffice-widgets.xml` file unable to be parsed (thus rejected, likely without any sign of error). This could cause your *Book Management* cockpit to simply disappear from Backoffice – don't panic if this happens, just check your XML entries closely.

20. The only thing that's now missing is some labels to make the data intelligible. We can fix this by adding three more settings to provide the chart with a title, and labels for its X and Y axes:

    bookstorecustombackoffice-backoffice-widgets.xml

    ```
    <setting key="chartTitle" type="String" value="generic.chart.memory.chart.title" />
    <setting key="yAxisLabel" type="String" value="generic.chart.memory.chart.y" />
    <setting key="xAxisLabel" type="String" value="generic.chart.x.timestamp" />
    ```

    Now save and *Reset Everything* again, go to your *Book Management* cockpit, and you should see a fully configured chart as in the following screenshot (your chart colors may vary):

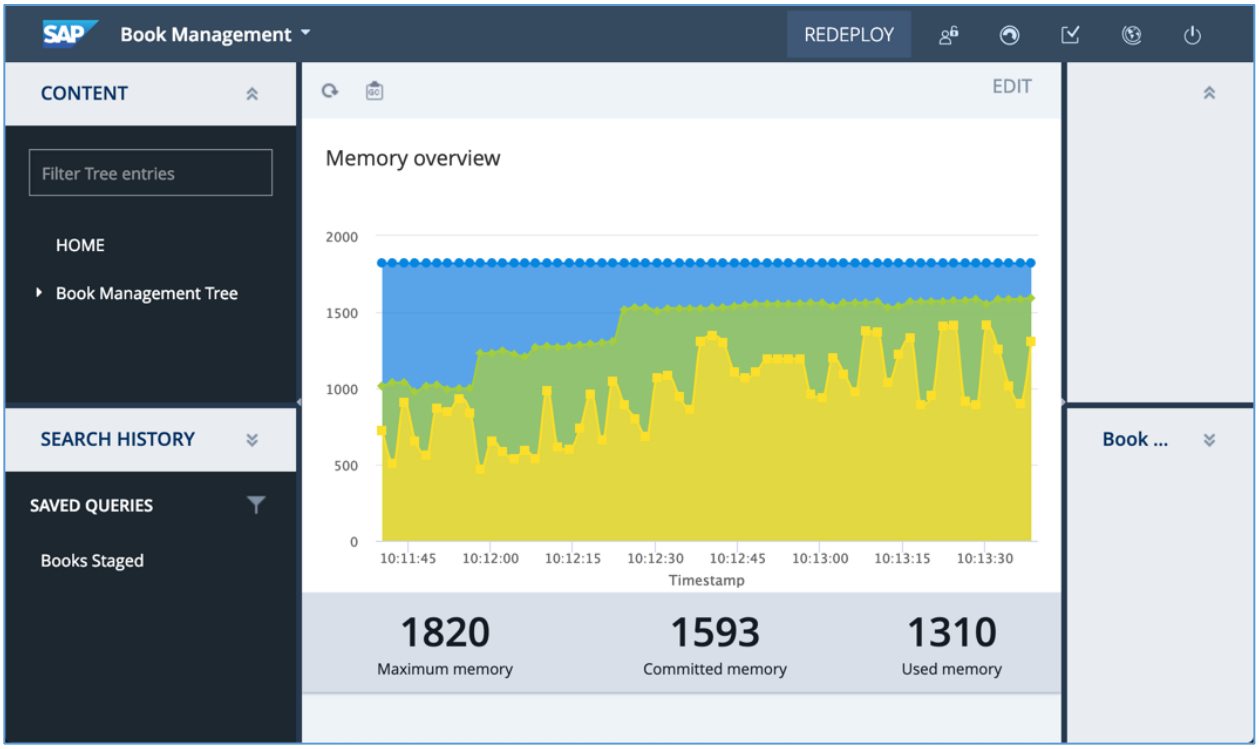


Figure 4 - Dashboard containing a single Chart Widget displaying three memory usage metrics and with appropriate labels

Congratulations, now sit back and admire your masterpiece – you have completed the exercise!