

Integrating Web Dynpro and SAP NetWeaver Portal Part VI: Accessing Portal Services within a Web Dynpro Application

Applies to:

Integration of Web Dynpro for Java applications into SAP NetWeaver Portal for the SAP NetWeaver 04s SP8 release.

Summary

This article describes how to access portal services within a Web Dynpro application running in SAP NetWeaver Portal. Besides standard portal services, we also describe how to access services exposed by the portal service factory.

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Author Bio



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Introduction

Besides “standard” portal applications there is the possibility to create *portal services*, which provide typically functionally, which could be reused by different applications. These portal services are on a semantic level very similar to the standard services of the SAP J2EE Engine. From a technical point of view there are several differences (which we will not cover in detail in the following).

Nevertheless it is possible to get access to such portal services within a Web Dynpro Java application.

This document describes how to access a portal service within a Web Dynpro Java application on top of the SAP NetWeaver 04s SP8 release.

Restrictions

Theoretically every portal service could be used within a Web Dynpro application. But there are several restrictions, which we would like to mention before going into the details later one:

- A portal service could only be used if the Web Dynpro application and the SAP NetWeaver Portal run on the same SAP NetWeaver installation.
- Even if you use a “full” NetWeaver installation (i.e. the portal platform is installed) you have to keep in mind, that you always use the local portal service. If you want to use your Web Dynpro based portal content for example within the Federated Portal Network (FPN), this could make problems.

To make sure that you do not use “forbidden” portal services we would suggest to contact the responsible developer of the portal service to make sure that there are no problems with this service (for example when running in a Federated Portal Network (FPN)).

Besides standard portal services we introduced together with the Web Dynpro page builder the *portal service factory* exposing a small (but nice) set of portal services. All services available through the portal service factory are also accessible when running within the Federated Portal Network (FPN).

Before describing the portal service factory and the exposed services we will now discuss the usage of standard portal services within a Web Dynpro application.

Defining a Reference to a Portal Service

Before you can access a portal service at runtime you have to define the needed reference. As a portal service from a technical point of view is more or less the same as a portal application you have to define a sharing reference for each portal service you want to use within a Web Dynpro Java application.

To define such a sharing reference you have to open the **Properties** dialog of your Web Dynpro development component or your Web Dynpro Eclipse project.

The sharing references are a certain Web Dynpro reference. You have to define the sharing reference like `PORTAL :< Vendor name>/<Full qualified name of the portal service>`

The following screenshot demonstrates the definition of a sharing reference to a portal service.

If there are more than one Web Dynpro controller using the same portal service you should store this portal service reference in a certain context node (for example in the component controller context or any other custom controller context). All controllers, using this service, should get access to it using context mapping to the certain context node.

The Portal Service Factory

As mentioned earlier we introduce within the SAP NetWeaver 04s release a new way to access portal services – the *portal service factory*. Using services provided by the service factory make sure that these services are also available if the Web Dynpro application and the portal are running on different SAP NetWeaver installations.

Currently we provide the following services through the portal service factory:

- **Page Service**

The page service allows you to get information about the current page layout and content. Additionally you can manipulate the page content by hiding or displaying iViews.

- **Tray Service**

The tray service enables a Web Dynpro application to add Web Dynpro actions to an iView or page tray.

In the following chapters we will describe both the page and tray service in more detail.

Using the Page Service

Get List of Visible iViews

Using the page service you can access information about the current layout and content of the page running the iView, which is related to the Web Dynpro application.

If you implement a Web Dynpro application providing more than one iView it could make be useful to know inside the application which iViews are currently visible on the page. Doing this you can avoid for example not necessary backend calls (because there is no need to load data for an iView, which is currently not visible on the page).

The following example shows how to get the list of visible iViews using the page service:

```
IWDPageService pageService
    = (IWDPageService) WDPortalUtils.getService(WDPortalServiceType.PAGE_SERVICE);
String [] iViews = pageService.getVisibleIViews();
```

The returned array contains the names of the visible iViews.

Using the dynamic APIs described in the next chapter it will be also possible to manipulate the layout of a page directly within your Web Dynpro application.

Simple Changes of the Page Structure

Besides the simple functionality to get the list of visible iViews the page service offers some APIs to change the content of the page, i.e. to display or hide specific iViews.

The following example demonstrates how to display and hide several iViews (which are provided by the same Web Dynpro application):

```
IWDPageservice pageService
    = (IWDPageservice) WDPortalUtils.getService(WDPortalServiceType.PAGE_SERVICE);
pageService.showIView("Search");
pageService.hideIView("Details");
```

In this example the **Search** iView is displayed and the **Details** iView is hidden. There are several restrictions using these APIs:

- The layout changes are *not* persisted, i.e. if the user navigates to another page and in the end navigate back to the current page these changes are not visible again.
- You can not make any iView visible. Only iViews which are part of the current page layout could be showed up or could be hidden. If you need the possibility to programmatically show any iView in the current page you have to use the Dynamic iView approach as described in the following section.

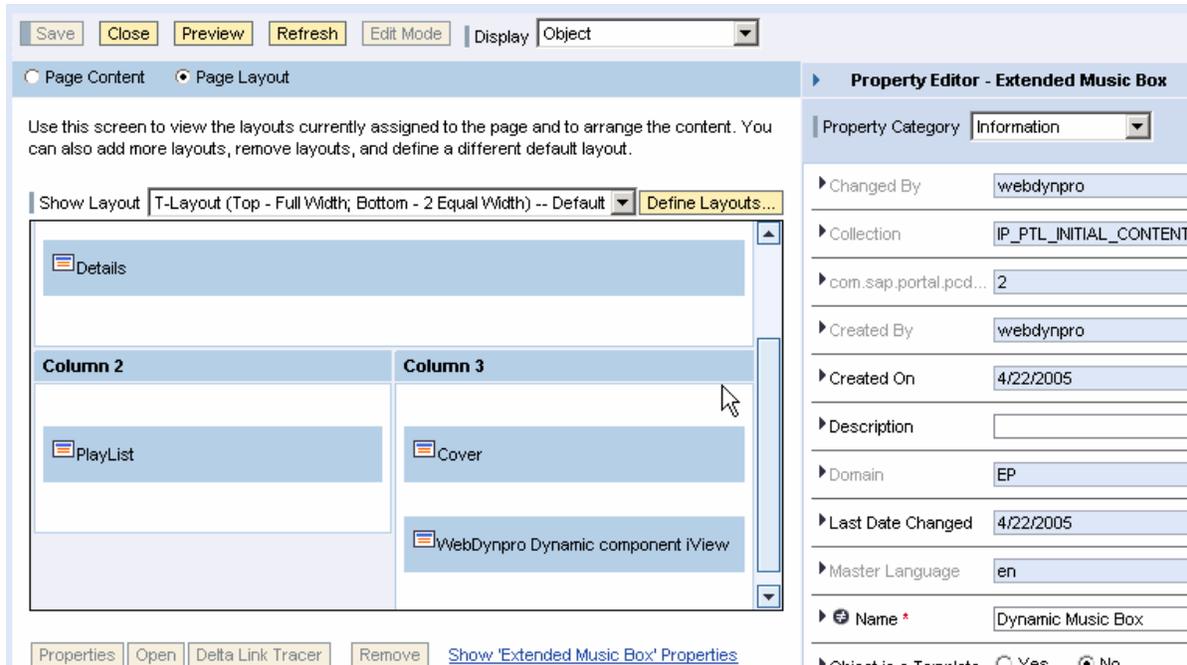
Extended Changes of the Page Structure

Using *Dynamic iViews* it is possible to define placeholders in your page layout, which could be filled later one at runtime with any other iView.

The first thing to do is to define the placeholder(s) in your page layout using the standard page editor. You have to use the **Web Dynpro Dynamic Component iView** template which is accessible under **Portal Content -> Content Provided by SAP -> Templates -> iView Templates**.

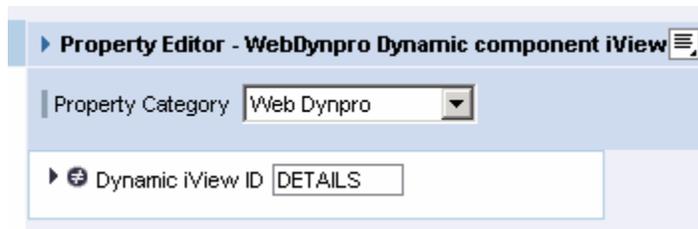
You can put this iView template as any other iView to your page. Using the page layout editor you can define the position of this placeholder iView.

The following screenshot shows a page containing such a placeholder iView:



Each of these dynamic iView placeholders defines a unique ID, which is used at runtime to identify the needed placeholder. If the page contains only one of these placeholders you do not need to change the ID. The default ID is DYNAMIC.

If you want to change the ID you have to edit the iView properties of the placeholder iView as showed in the following screenshot:



In this example the ID is changed to DETAILS. The Dynamic iView ID property is part of the Web Dynpro category as you can see.

To fill the defined placeholder or dynamic iView at runtime you have to specify the needed iView by defining the full PCD path of the iView. The following code example demonstrates this:

```
IWDPageservice pageService
= (IWDPageservice) WDPortalUtils.getService(WDPortalServiceType.PAGE_SERVICE);
```

```
pageService.setDynamicIView(  
    "DETAILS", "pcd: portal_content/mycontent/myiviews/iview1");
```

In this example the dynamic iView with the ID `DETAILS` is filled with the specified iView. You can also hide again a dynamic iView of course as shown in the next code example:

```
IWDPageService pageService  
    = (IWDPageService) WDPortalUtils.getService(WDPortalServiceType.PAGE_SERVICE);  
pageService.hideDynamicIView("DETAILS");
```

The specified iView is added to the page and depending on the iView type this is done embedded or isolated. Also all other iView settings (e.g. for the tray) are used. The dynamic iView placeholder itself does not render any UI.

Using the dynamic iView you can extend your Web Dynpro application very easily to display NON Web Dynpro content without using the `IWDIFrame` UI element inside your Web Dynpro application.

Using the Tray Service

The tray service allows you to add any Web Dynpro action to an iView tray or to the page tray. These actions are displayed as any other default tray entries of an iView or page tray. After selecting such a tray item the defined Web Dynpro action is triggered for the Web Dynpro application defining the action.

From the application point of view it is absolutely transparent whether the action is triggered by a UI element, which is part of the application UI, or by an iView or page tray. It is even possible to use the same actions for a tray entry and also for some other UI elements rendered as part of the standard application UI.

The following code example demonstrates how to add an action to the iView tray and the same action also to the page tray:

```
IWDTrayService trayService =  
    (IWDTrayService) WDPortalUtils.getService(WDPortalServiceType.TRAY_OPTION);
```

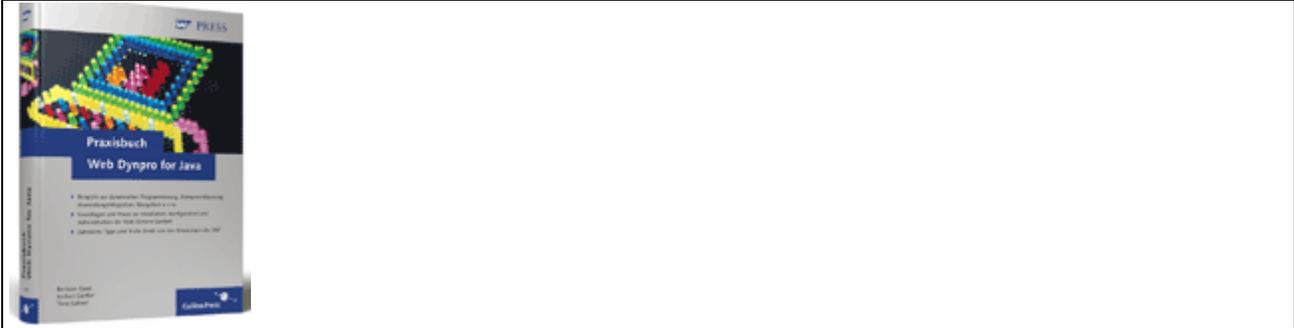
```
if (trayService != null) {
    trayService.addIViewItem(
        "addItemComment",
        "Add Comment",
        wdThis.wdGetAddItemCommentAction(), null);

    trayService.addPageItem(
        "addItemComment",
        "Add Comment",
        wdThis.wdGetAddItemCommentAction(), null);
}
```

Typically you call the tray service in the `wdDoModifyView()` method. Make sure that you call it only the first time to avoid duplicate tray entries.

Further Information

To get more information especially about extended features of the SAP Application Integrator we would like to bring to your attention to a new Web Dynpro for Java book. The German version *Praxisbuch Web Dynpro for Java* is available now – the English translation *Maximizing Web Dynpro for Java* will follow soon.



Praxisbuch Web Dynpro for Java

“Maximizing Web Dynpro for Java” is aimed at Web Dynpro developers who already have development experience but want to go to the next level. As members of the Web Dynpro development team, the authors of this book are expert at revealing tips and tricks for avoiding inefficiencies and pitfalls. They cover many areas including the SAP NetWeaver Development Infrastructure, component-oriented application design, portal integration, object-based navigation, installation tips, configuration and administration, and more. There are also complete examples on how to write web service or portal-based applications.

Note: This book is currently available in German only. The English version will be released in August/September 2006. You can order the book through SAP or Amazon.com.



Maximizing Web Dynpro for Java

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