

Composition Environment and SAP NetWeaver Portal Integration

SAP NetWeaver Solution Management Rollout
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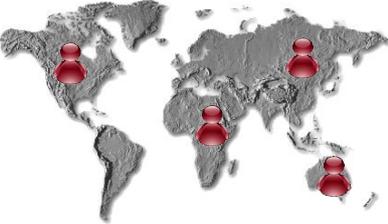
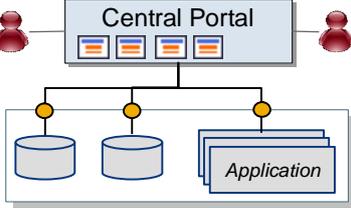
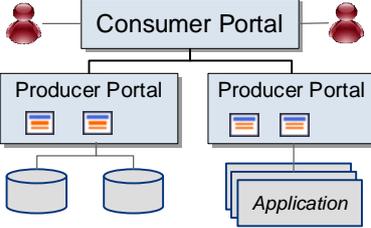
Agenda



- 1. Integration Overview - CE + SAP NetWeaver Portal**
2. Integration of Workflow Items into central Universal Worklist
3. Integration of CE Applications into central Portal
4. Related Integration Topics



The SAP NetWeaver Portal integrates ...

... Users worldwide	... Applications, information and services	... Content from different administration groups
<p>End users access personalized central portal; optimized performance for remote locations</p>  <p>→ Role-based access → Accelerated Application Delivery for SAP NetWeaver (<i>separate appliance</i>)</p>	<p>Connect to various backends and information sources → provide seamless access for end users</p>  <p>→ Application Integrator / iView templates</p>	<p>Support distributed content administration on separate portals & provide central end user access</p>  <p>→ Federated Portal Network: Remote Role Assignment, Remote Delta Links, WSRP content sharing</p>

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Within this slide the different integration capabilities of the SAP NetWeaver Portal are illustrated. The portal can integrate

- Users
- Applications, information and services
- And content from different administration groups i.e. other portals

Let's start with the left-hand side of this illustration: A portal can integrate different end users with different requirements regarding content, provided information, different look & feel etc. This happens through role based access which means the portal users see only the content that belongs to their role assignments. In case users are spread to different locations and performance over long distances becomes an issue, SAP NetWeaver provides a separate offering addressing this matter: Accelerated Application Delivery for SAP NetWeaver (short: AccAD). AccAD provides caching and compression mechanisms that optimize response times over wide area networks for web-based central applications such as an SAP NetWeaver Portal.

A portal is meant to be the entry point to various applications, information and services. You can connect various backends and information sources to the portal and provide seamless access for end users to them. This is a key capability of the product and available since the early days of the SAP NetWeaver Portal. You will most likely be familiar with this portal functionality through it's visualization within the portal content administration – there you have multiple iView templates based on which you can create iViews that integrate applications from other sources. These iView templates are based on a technological component called Application Integrator.

As a rather minor integration topic, the portal can integrate portal content such as portlets / iViews, pages, worksets or roles from other portals as well. This supports use cases where you want to create and maintain portal content on different portals e.g. due to organizational requirements and you want to provide a central access point for end users access nevertheless. For this purpose there are the tools of the federated portal network available. For SAP-SAP portal integration they are called Remote Role Assignment and Remote Delta Links, for integrating Non-SAP portlets content sharing over the standard Web Services for Remote Portlets (short: WSRP) is available.



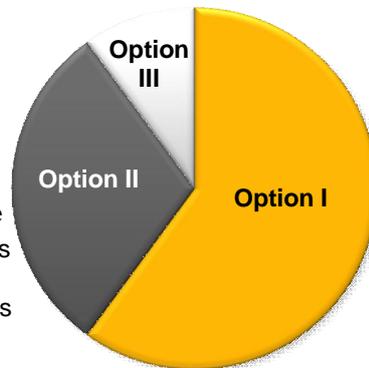
Clear recommendations by categorization of deployment options

III. Possible Exception

- Only useful for specific use cases
- Supported by SAP, but limitations might occur

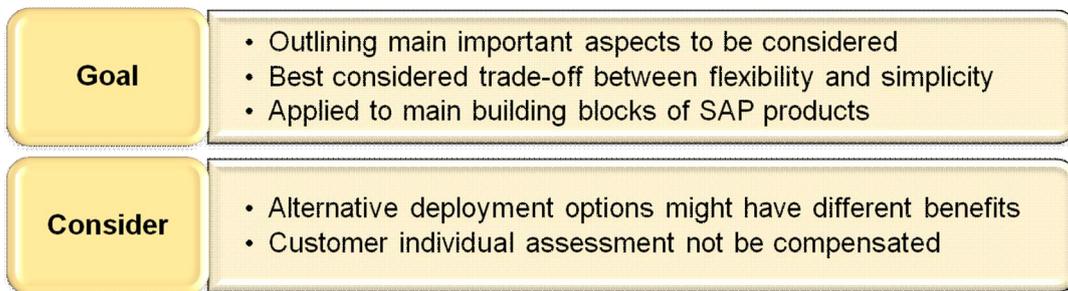
II. Reasonable Alternative

- Useful choice for certain use cases or customer scenarios
- Supported and confirmed by SAP's strategy



I. General Recommendation

- Best choice for majority of typical landscape use cases
- Recommended by SAP's strategy
- Accepted by a wide base of customers



SAP aims to provide landscape recommendations in an aligned format as you can see it here.

In most cases alternative deployment options exist which provide different benefits. Not all the benefits can be achieved with same landscape layout, i.e. very often these options turn out to be contradicting alternatives. The appropriate landscape layout is a trade-off between different aspects e.g. flexibility and simplicity. Thus the best landscape layout for you is always the one which is the most appropriate for your requirements.

The general approach for recommendations is that SAP cannot compensate customer individual assessments, but provides guidance by describing

- main general aspects to be considered and
- recommendations based on categorized deployment options

The deployment options are categorized in the following way:

- **General Recommendation:** This is the best choice for majority of typical landscape use cases. It is recommended by SAP's strategy and accepted by a wide base of customers.
- **Reasonable Alternative:** This can be a useful choice for certain use cases or customer scenarios. It is supported and confirmed by SAP's strategy.
- **Possible Exception:** This option is only useful for specific use cases. Nevertheless it is supported by SAP's strategy, but some limitations might occur.

We will use this schema in the following slides to go through some landscape considerations and recommendations in the context of integrating composite applications from SAP NetWeaver CE 7.1 into an SAP NetWeaver Portal.

High Level Landscape SAP NetWeaver 7.1 Composite Environment & SAP NetWeaver 7.0

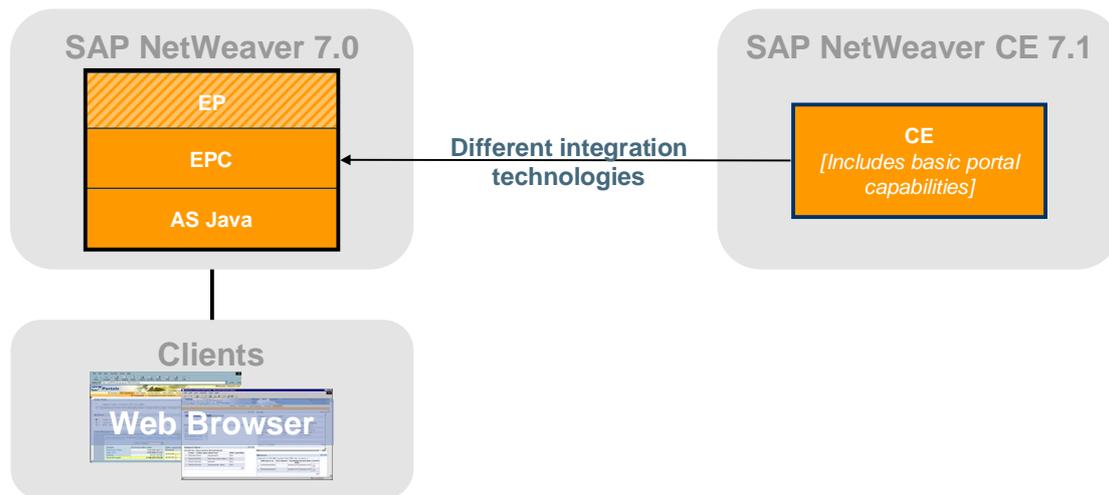


Why SAP NetWeaver 7.0 Portal?

SAP NetWeaver Portal offers a single point of access to information sources, enterprise applications, information repositories, databases, and services - all integrated in a single user experience.

Why running Composition Environment?

SAP NetWeaver CE 7.1 provides a toolset and runtime for developing, running, and efficiently managing composite applications following SOA principles.



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Using SAP NetWeaver CE is an application-driven decision – for example because you would like to use new version of Visual Composer or Business Process Management features. You would never really decide from a portal point of view to switch to CE 7.1, because for overall portal projects SAP NetWeaver 7.0 is the basis of choice.

This presentation aims to give you a short overview into how to integrate the applications from the „accelerated innovation“ side (= Composition Environment) into your stable SAP NetWeaver 7.0 environment. It will focus especially on the different integration technologies that are available to provide your CE applications within you central SAP NetWeaver 7.0 Portal.



SAP NetWeaver 7.1 CE comes with a lean portal environment that provides runtime services for your composite applications.

Use portal capabilities available in CE:

- Use „classical“ portal runtime features in your composite applications , e.g.
 - Connector framework for VC (connectivity to BW and JDBC backend systems)
 - Object-Based Navigation
 - Universal Worklist (UWL)
- Create portal navigation structure to preview and access your composite applications within your development environment

Do not use portal functionality in CE:

- Overall intranet scenarios – CE does not include Knowledge Management and Collaboration functionality
- Central corporate entry point to applications – for a seamless integration of the Business Suite, Business Packages are provided for SAP NetWeaver Portal
(current version: SAP NetWeaver 7.0)

SAP NetWeaver 7.1 CE comes with a lean portal environment that provides runtime service for your composite applications. This slide provides reasons why portal capabilities are available in Composition Environment and what you can and cannot use them for.

Deployment Recommendations for SAP Portal Offerings – Application Portal



SAP Portal Deployments	General Recommendation	Reasonable Alternative	Possible Exception
Usage as Application Portal	One central Application Portal with integrated Java-UI & application runtime	One central Application Portal with separated Java-UI & application runtime	Multiple Federated Portal (FPN)
			Integrated BW Usage

Now let's start looking at the integration aspect.

This slide here is comes from the more general slide deck on „ Deployment Recommendations for SAP NetWeaver 7.0 - End-user Services and User Productivity“. Here we can see that talking about application portals, there are different deployment options available split into General Recommendation, Reasonable Alternative and Possible Exception (see explanations in slide).

Deployment Recommendations for SAP Portal Offerings – Application Portal



SAP Portal Deployments	General Recommendation	Reasonable Alternative	Possible Exception
Usage as Application Portal	<p>Not applicable with CE 7.1</p> <p>One central Application Portal with integrated Java UI & application runtime</p>	One central Application Portal with separated Java-UI & application runtime	<p>Multiple Federated Portal (FPN)</p> <p>Integrated BW Usage</p>

Reason:
 SAP NetWeaver CE 7.1 is a different release („accelerated innovation“) → composite applications cannot be deployed on central Application Portal (SAP NetWeaver 7.0)

Consequence:
 reasonable alternative and possible exception remaining

However, for the current focus on CE within this slide deck here, the general recommendation does not apply. The reason is that composite applications run on SAP NetWeaver CE 7.1 and cannot be deployed on „older releases“ such as SAP NetWeaver 7.0, which typically is the basis for your portal implementation. Thus you encounter here the situation that the Java UI & application runtime are on a separate server with a different release behind. As a consequence, the special case of CE offers different integration means that in an overall context rather fall into the category Reasonable Alternative or Possible Exception. Those 2 integration means are the ones that are reflected more in detail in the upcoming slides.

One Portal or Multiple Portals?



I. Recommended: One Portal - Reasons

- Central administration, monitoring, access point

Not applicable with CE 7.1

II. Reasonable Alternative: Multiple Portals - Reasons

- Organizational requirements
- Security requirements
- Availability requirements
- Version requirements → Relevant for SAP NetWeaver CE 7.1
- Load requirements
- User requirements

Standard case for SAP NetWeaver CE 7.1 & SAP NetWeaver Portal 7.0

If you decide to operate multiple (productive) portals, then decide based on the requirements on the level of integration:

- Via Universal Worklist
- Application Integration
- Federated Portal Network
- None

In most portal deployments it is recommended to set up just one portal within the infrastructure in order to have just one place for central administration, monitoring and as the central access point for end users. As outlined in the previous slide, however this does not apply in the CE case.

When talking about SAP NetWeaver Composition the situation is slightly different due to the nature of this usage type: Composition Environment includes and thus reuses existing portal functionality. It is generally recommended to separate your SAP NetWeaver Composition Environment and your central SAP NetWeaver Portal due to 1 major reason:

- Version requirements: CE is on „accelerated innovation“ release - SAP NetWeaver CE 7.1

Other reasons for setting up multiple portals, but usually less relevant in the CE case, might be:

- Organizational requirements: separate authorities demand separate own servers
- Security requirements: different servers in different DMZ
- Availability requirements: different backup / downtime etc. cycles:
- User requirements: totally different user groups with no content overlaps
- Load Requirements: you separate the runtime of different applications including an underlying portal infrastructure, because different load and peak times might add up and become a single point of failure

After this decisions that you operate multiple productive portals (CE with underlying portal and SAP NetWeaver Portal on 7.0), then you can decide based on the requirements on the level of integration:

- Via Universal Worklist: you just integrate your remote composite applications via workitems in the Universal Worklist, that then upon an event links to the required applications
- Application Integration: separate applications to different servers, but no content administration
- Federated Portal Network: distribute portal content and integrate end user access
- None: keep servers, content and end user access separate

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Universal Worklist Features at a Glance



- Give users a unified and centralized access to their work and relevant information. Users do not have to search for their work.
- Aggregate task items from multiple and different systems into one list.
 - SAP Business Workflow
 - Collaboration Tasks
 - Alert Management System
 - Knowledge Management Notifications
 - Guided Procedure Actions
- Custom worklists enable specific views for specific tasks
- Users can personalize appearance to suit their individual working styles

The first and most simple integration in the CE case is to have a pure integration via the Universal Worklist. For those that are new to the topic, here's an overview on the features that the UWL offers.

First Look at the Universal Worklist



UWL is part of the standard user end role, accessed via *Home* → *Work*

Subject	From	Sent Date	Priority	Due Date	Status
Eingabe Antrag		Today	Medium		New

Eingabe Antrag
Sent Date: Today Priority: Medium
Status: New

© SAP 2008 / Page 13 Local Intranet public

Here is an example of how the Universal Worklist appears. The screenshot above provides an “out-of-the-box” look at the UWL. There is an item in the list. The items within the UWL could be from one or several backend systems.

By default the UWL is delivered via Home → Work. Normally you have the UWL in the standard user role, and all systems send their work items to the same UWL.

The UWL is part of the Portal End User Standard Role as of SAP NetWeaver 2004 SPS 04.

First Look at the Universal Worklist



The screenshot displays two overlapping browser windows. The background window shows the SAP NetWeaver Portal's Universal Worklist interface. The foreground window shows a detailed view of a purchase request titled 'Eingabe Antrag'. The purchase request details include:

- Started at:** 5/22/09 2:01:23 PM
- Due at:** (blank)
- Status:** In Progress
- Process:** [Investitionsprozess Übersicht](#)
- Owner:** Demo, Dee
- Priority:** Medium

The 'Enter Purchase Request' form contains the following fields:

- Requester:**
 - Name: Demo, Dee
 - Country: United States
- Product Search:**
 - Product ID: (input field)
 - Description: (input field)
 - Search button
- Table:**

id	descr	price	currency
- Selected Product:**
 - ProductID: (input field)
 - Description: (input field)
 - Price: (input field)

The browser address bar shows the URL: `http://wdfvm2222.wdf.sap.corp:52000/tpem/pv/index.jsp?processInstanceId=224515d546c811de8148005056820ccb`. The footer of the page includes '© SAP 2008 / Page 14' and 'public'.

When clicking on an item in the Universal Worklist, then a new separate window opens which shows the process or details of this item. This item itself usually then comes from the connected backend system itself (in case the application is not persisted locally). You can notice that the application comes from a different system (CE) because the URLs in the new window are different.

Connect UWL to Systems from your Central Portal



Define connections in configuration in your central SAP NetWeaver 7.0 Portal
System Administration → System Configuration → Universal Worklist & Workflow

Universal Worklist Configuration

Universal Worklist Systems

Here you can define connections to systems as item providers for the Universal Worklist. The 'Connector Type' indicates the type of items retrieved through the connection. The 'System Alias' is an alias for the system as defined in the system landscape. For connector types 'WebFlowConnector' or 'AlertConnector' item types have to be registered with the UWL service after defining a new system connection. If Web Dynpro applications are configured on a WAS which is different from the WAS of the system alias, then that's system alias should be specified as a Web Dynpro system.

System Alias	Connector Type	Action
AdHocWork	AdHocWork	
ActionLink	ActionLink	

Create New System Connection

System Alias: * NOTREQUIRED

Connector Type: * GuidedProceduresConnector

Web Dynpro Launch System:

User Roles:

System Configuration Groups:

Delta Pull Channel Refresh Period (in Seconds): 60

Delta Pull Channel Snapshot Refresh Period (in Minutes):

Save Cancel

Find more information on SAP Help:

http://help.sap.com/saphelp_nwce711/helpdata/en/46/b028cd74420800e1000000a114a6b/frameset.htm

At this point the system connection is configured. Now you need to add this system to specific UWL configuration.

The case that we describe here is to integrate remote work items from CE into the Universal Worklist on your central SAP NetWeaver 7.0 portal. This means of course that you have to set the connection from the central SAP NetWeaver 7.0 portal and perform the needed configuration steps for UWL here.

To do this go to System Administration → System Configuration → Universal Worklist Administration → Configuration Framework Page. Here you define to connect to which backend systems.

A more detailed description on the overall concept of Universal Worklist and how to integrate remote workitems is available in SAP Help (direct link:
http://help.sap.com/saphelp_nwce711/helpdata/en/46/b028cd74420800e1000000a114a6b/frameset.htm)

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Use Cases: Application Integration or Federated Portal Network?



Major indicator: Where should portal content be administrated?

General Recommendation
Central content + applications
↩ *not applicable*

Reasonable Alternative:
Integrate remote applications with central portal content
↳ Application Integrator

Possible Exception:
Distributed in different portals
↳ Federated Portal Network (RRA or RDL)

Use Case: Integrate Composite Applications

- CE developer manages Composite application
Portal admin manages portal content + navigation structure in central portal
↳ **Reasonable Alternative: Application Integrator**
- CE developer manages Composite application + portal content + navigation structure
Portal admin manages overall navigation + embeds CE content
↳ **Possible Exception: Federated Portal Network (RRA or RDL)**

In order to help you to decide whether you should use Application Integrator or Federated Portal Network to integrate your composite applications from SAP NetWeaver 7.1 CE into your central portal, here is some guidance. The major indicator is the answer to the question: Where should portal content be administrated (i.e. create iViews, pages, navigation ...)? The answers can be:

- Centrally in one portal ↳ use Application Integrator: create iViews based on templates in central portal
- Distributed in different portals ↳ use Federated Portal Network: create iViews etc. on separate producer portal, integrate into central portal. Here you have different modes available depending on what you would like to do - Remote Role Assignment or Remote Delta Links. A more detailed explanation on these terms will follow within a few slides.

Please note again, that the common general recommendation to deploy applications centrally on the application portal server and to create central content on top, is as outlined before not applicable in the CE case. Thus we discuss now the 2 remaining options.

The reasonable alternative that should be suitable for a large majority of customers is the central creation of portal content within one portal and thus using Application Integrator. A possible exception only for the very specific use case of distributed content sharing is FPN.

For CE integration specifically this means that you have 2 options:

- Most likely: CE developers just create composite applications. Portal administrators create in their own portal system iViews that will integrate the application similar to any other application integrated into the portal. The portal admins are responsible for the whole portal content including navigation structure, page layout and properties, user – role assignment etc. → in this case the Application Integrator is the integration technology of choice.
- For a minority of customers another scenario might be interesting: CE developers not only create the applications themselves, but the iViews and related page and navigation structure as well in their own environment. The portal administrators are just supposed to reuse this content as-is and embed this into their navigation structure → here the Federated Portal Network with different content sharing methods is a suitable integration option.

Reasonable Alternative Application Integration



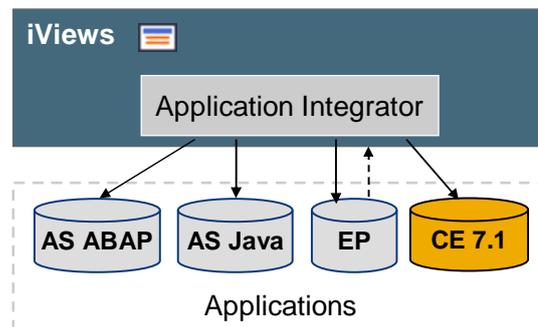
Use iView Templates to integrate applications into portal iViews

- Application Integration for remote **Web Dynpro Java application**

Be aware of the following restrictions – not supported are those WD features:

- *Implicit personalization*
- *Split application*
- *Calling services exposed by portal service factory*

- Application Integration for remote **Web Dynpro Java page** (planned to be available as of Enhancement Package 1 for SAP NetWeaver 7.0, SPS 06) → *until then, midterm workaround via FPN*



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As said in the first introductory slides, the Application Integrator will most likely be familiar to you through the various iView templates that are available within the SAP NetWeaver Portal.

At the moment, there are slightly different flavours available for application integration options:

Application Integration for simple Web Dynpro Java applications: redirect to application, simple URL generation (no communication between the servers). This component Application Integrator is the central integration technology for all web applications. In general the Application Integrator can integrate Web Dynpro Java applications as well, if you created a standalone application that is not deeply integrated with the portal (and you just use portal features like navigation, themes, work-protect mode etc.). There are a few restrictions for advanced Web Dynpro features as listed on this slide.

- The major limitation is that you cannot use “implicit personalization” (more information on SAP Help http://help.sap.com/saphelp_nwce711/helpdata/EN/45/15b0a416f85d78e10000000a11466f/frameset.htm)
- Other minor limitations that usually are only seldom used in customer-specific developments are:
 - split application, i.e. multiple iViews created based on Web Dynpro application (more details in SAP Help: http://help.sap.com/saphelp_nwce711/helpdata/EN/44/a765695df67037e10000000a422035/frameset.htm)
 - Web Dynpro applications calling portal services exposed by portal service factory: PageService, TrayService, HelpService, NavigationHelperService (more information on SAP Help: http://help.sap.com/saphelp_nwce711/helpdata/EN/d2/0357425e060d53e10000000a155106/frameset.htm)

Application Integration for overall Web Dynpro Java page: This is planned to solve the limitations named above by integrating the overall remote page and thus making the features available in the central portal. This is planned to be available as of Enhancement Package 1 for SAP NetWeaver 7.0, SPS 06 – which is planned to be available around Q1 / 2010. Until then, the midterm workaround for being able to use those feature is using the Federated Portal Network tools (see next slides). Overall, it is planned to provide in this Support Package an aligned entry point for creating iViews based on Web Dynpro Java applications.

Possible Exception Federated Portal Network

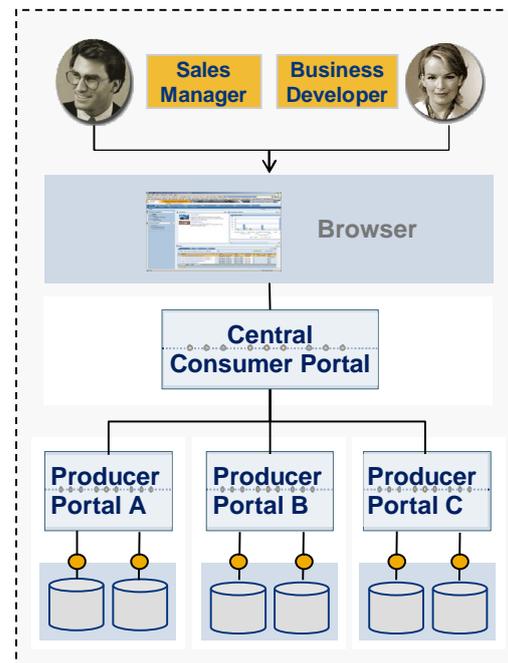


Seamless access for end users to content located on different portals (SAP and non-SAP)

Benefits of FPN as portal content sharing option

- Content persisted once - accessed from other locations
- Different content sharing modes suitable for different administrative setups
- For connected portals FPN handles centrally
 - Session Management
 - Eventing
 - Themes
 - Languages ...

[also supported by Application Integrator approach]



With the tools of the federated portal network, you can configure a portal to be a consumer portal, which links to portal content residing on other producer portals. Producer portals run applications and contain portal content, that can be reused by linking to it. Quite simply spoken, you can compare the functionality provided by FPN with an enhanced way of URL linking between different portals.

You can now provide one central access point for end users which seamlessly accesses portal content – e.g. portlets / iViews, pages, worksets, roles - residing on multiple portals (SAP as well as Non-SAP portals).

FPN provides the benefit that you can persist and maintain the content in one portal, but access it through other portals as well. Moreover, you can decide depending on your use case and scenario, which content sharing mode is most suitable for integrating content from remote into your local content offering. FPN handles some essential services centrally:

- Session Management – of course, when you log off from your central consumer portal, all connected sessions for producer portals should be closed as well.
- Eventing – iViews residing on remote portals might have some interaction defined with other iViews. If you integrate content via FPN, these functionalities will still be able to run as desired.
- Themes & Languages – when displaying content from remote, all content should be rendered seamlessly for the end user into one common user experience. Thus the theme and the language setting of the consumer portal should be applied to content coming from remote portals as well (however, the theme has to be available too in the producer portal to render the content correctly)

By the way: of course those considerations like session management, proper eventing, apply themes and languages and so on are available when integrating applications through the Application Integrator as well.

Possible Exception FPN – Content Sharing Modes



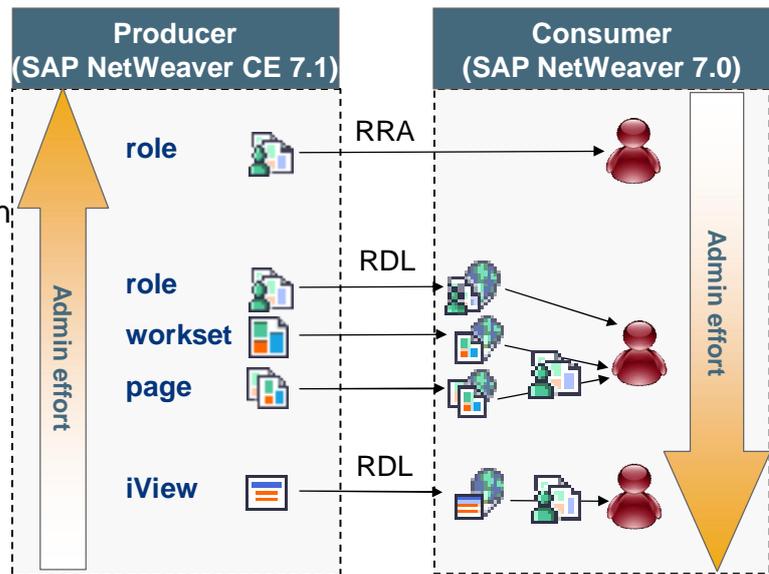
Focus on Portal Content Integration

Distributed content administration with Federated Portal Network, visual integration for end users

- Remote Role Assignment (RRA)
- Remote Delta Links (RDL)

For Integration of Non-SAP portals:

- WSRP content sharing



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Without going into the specific details of the Federated Portal Network, let me shortly highlight here which means you have in order to integrate remote portal content into a central SAP NetWeaver Portal. As said before, FPN really purely focuses on use cases where you want to have a distributed portal content administration on different portals and provide a central entry point for the end users.

In case both portals are from SAP NetWeaver, there are 2 flavours for sharing the content:

- Remote Role Assignment: here you can create and maintain all portal content on the producer portal, and on the central consumer portal the administrator just has to assign this remote role to users. There are no other content administration activities required on the consumer side.
- Remote Delta Links: with this option you rather have a mixed content administration, meaning that certain portal content, e.g. iViews, pages and worksets are defined on the producer portal. However, other parts of the content, e.g. the full navigation structure and role is created on the consumer portal and thus deeply integrated into the local offering.

In case you would like to integrate portlets from Non-SAP Portals, SAP NetWeaver supports the standard web services for remote portlets, with which you can reuse those remote portlets in your central SAP NetWeaver Portal. Then you can create your whole portal content structure on top of this remote content.

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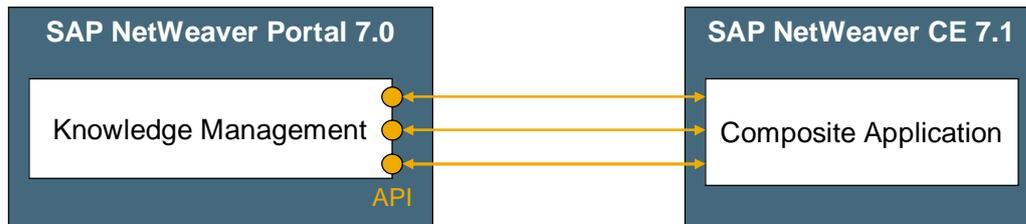
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Using Remote KM in SAP NetWeaver CE 7.1



SAP NetWeaver CE 7.1 does not include Knowledge Management

On SAP NetWeaver 7.0, KM provides Web-service access layer that allows access to the repository framework and KM services



Find more information on SAP Help

http://help.sap.com/saphelp_nw70ehp1/helpdata/en/46/9d31453a7d371ae10000000a11466f/frameset.htm

One side consideration that might come up in your development project is listed here: you would like to use documents or functionality offered by Knowledge Management. Your SAP NetWeaver CE 7.1 does not include KM capabilities and most likely you would like to use the central KM implementation anyway. In order to do so, the recommended approach is using the Web-service access layer from KM to access the repository framework and KM services. Again, for this topic you can find more detailed information on SAP Help (http://help.sap.com/saphelp_nw70ehp1/helpdata/en/46/9d31453a7d371ae10000000a11466f/frameset.htm).

Thank you!





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