
Use SAP NetWeaver Portal's powerful collaboration capabilities to enhance communication between local and remote users

by Patrick Dixon



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I always liked the fact that I could work on my own. But when I went to university to study engineering, the students were assembled into small teams. Our team was like many others: There was one person who was very bright, but also very lazy. There was another person who was not so talented, but was a hard worker. I plodded along somewhere in the middle. We found that we worked well together: The bright fellow could solve even the most difficult problems, and the hard worker dedicated himself to getting the job done. I began to serve as the coordinator who kept the team on track and working together. As a team, we were able to accomplish so much more than we would have as individuals.

Most IT projects would not succeed if we worked as individuals. Not only do you need many hands to share the load, but also the intellectual challenges of an IT project require many different skill sets and experiences. That's why collaboration is so important.

Collaboration involves pooling and sharing resources to achieve that common objective. At the heart of collaboration is communication — verbal, written, and electronic — either real-time or just well-ordered and well-managed. Without it, projects have a much higher risk of failure. When you collaborate in SAP you reap many benefits. Here are some advantages that I've heard about from my clients:

- Productivity enhanced due to a unified work environment for coworkers
- Fast and easy retrieval of needed information
- Knowledge transfer enhanced
- Organizational cost-cutting due to a reduction of travel
- Teamwork made easier among globally scattered teams
- Work processes enhanced by integrated collaboration services

SAP NetWeaver Portal's functionality enables you to take advantage of the many benefits of collaboration. Within the portal, Knowledge Management (KM) provides a collaboration framework via its Content Management (CM) component, the SAP system's search and classification mechanism (TREX), and various SAP collaboration tools.

The purpose of this article is to give you an overview of SAP collaboration, so you can enhance communication among your portal users. We'll explore how KM, CM, and TREX and their underlying architecture support collaboration for portal users. Then, we'll look at three SAP collaboration tools that foster communication between local and remote users: Collaboration Rooms, the Universal Worklist (UWL), and Instant Messaging (IM). Many of my clients have overlooked these tools, assuming that they are too basic. They are really helpful, useful tools; you'll be pleasantly surprised when you try them.

Collaboration within SAP NetWeaver Portal

KM, CM, TREX, and the collaboration framework are functions of SAP NetWeaver Portal, as illustrated in **Figure 1**. The installation of KM includes CM, which contains the collaboration functionality. TREX, on the other hand, is a standalone product that sits on its own server. You will need SAP NetWeaver Portal, however, to configure TREX searches.

Knowledge Management (KM)

KM is a subset of the SAP NetWeaver Portal functionality. As shown in **Figure 2**, SAP NetWeaver Portal exists on functionality layers that are integrated to provide content, services, and runtime environments. KM, on the repository layer (the central source for information from which the other layers function), gives you a central location from which to manage and control

Note!

When you implement or upgrade SAP NetWeaver Portal, you can install KM capabilities. SAP recommends that you implement them even if you don't plan to use them immediately. You may decide to take advantage of them in the future, particularly because they are important for other SAP functionalities. If you install these capabilities now, any future patches to them will be applied in the proper order. If you attempt to set up these capabilities later, you may find, for example, that subsequent portal patches interfere with KM patches and that you must start over (that is, reinstall the portal software) and rebuild your SAP NetWeaver Portal system from scratch to apply the patches in the proper order. It's easier to just install them at upgrade time.

the distribution of that information. KM offers services for handling content and resources and a flexible user interface (UI) framework for making those services available to users.

Content Management (CM)

CM a critical part of KM, is important to collaboration. CM manages unstructured data. This data can be in many forms, such as Web site links or Microsoft (MS) Office documents. CM provides a number of services that you can use to manage the unstructured data and services that form the basis for collaboration.

CM sits on the same server as the portal and uses the portal interface. As with most SAP applications, the user role (associated with the user ID) is the basis of security. Depending on how your role is set up, you can create document folders, establish taxonomies (i.e., indexes of hierarchal terms) for TREX, and more.

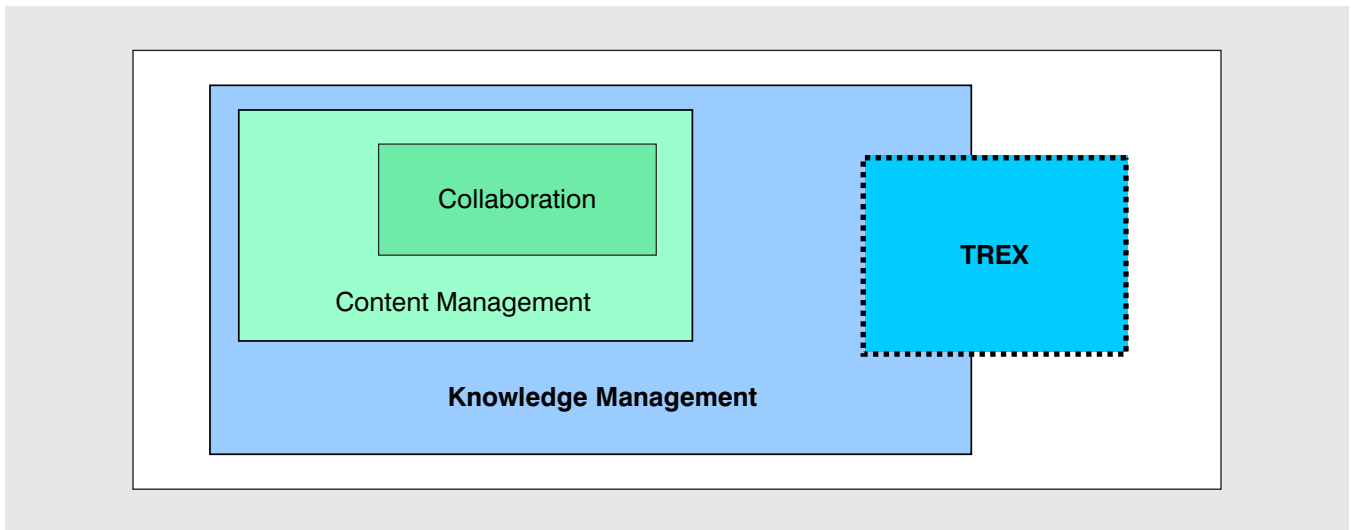


Figure 1 The functionalities of SAP NetWeaver Portal that support collaboration

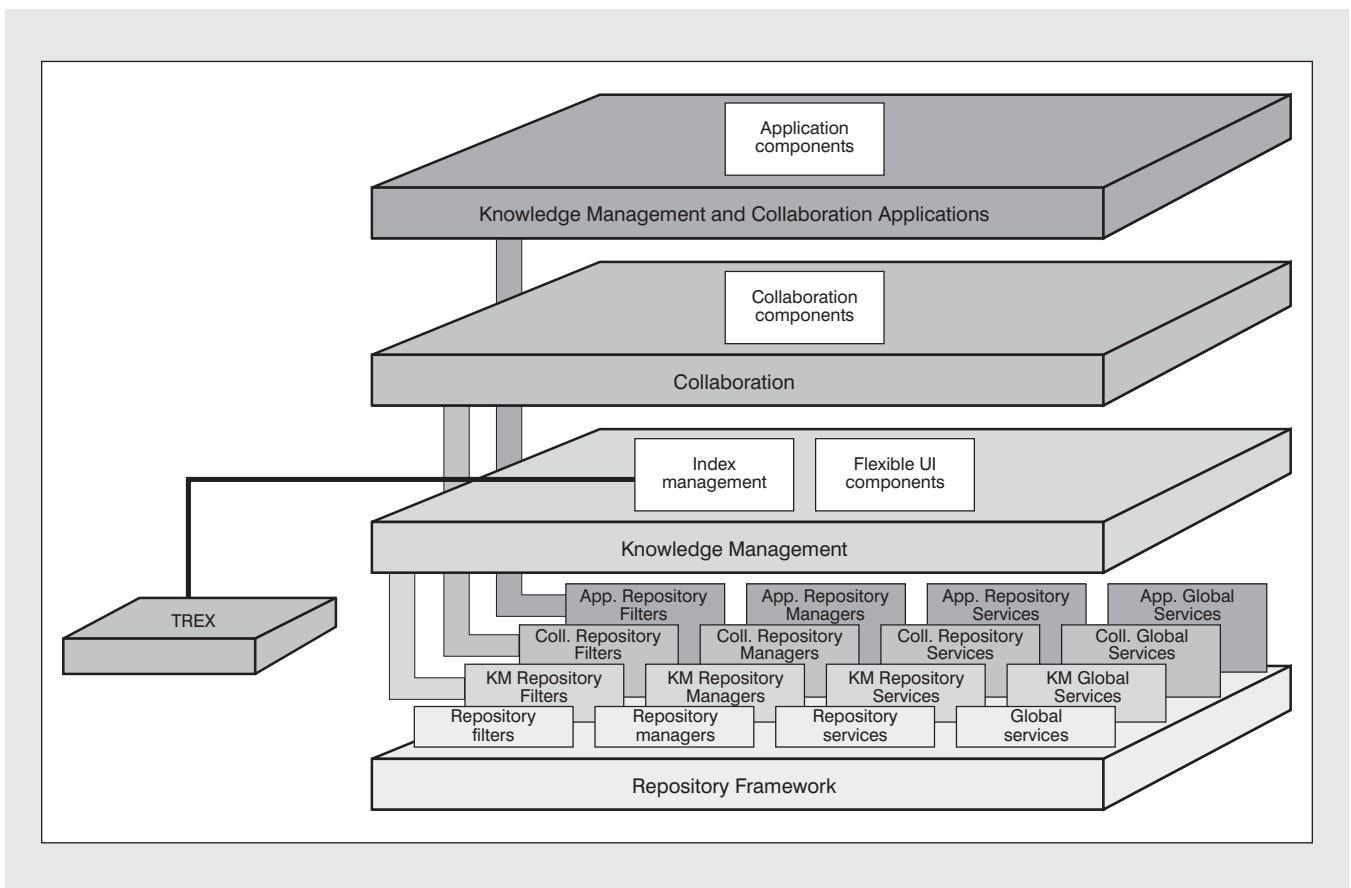


Figure 2 The functionality layers of SAP NetWeaver Portal

Note!

A portal can have a lot of roles. SAP provides some of them, such as the Administrator role, and you build some yourself, such as the Sales Manager role. You can also create roles that are composites of multiple roles; for example, you might build a Sales Manager role that incorporates a traditional Sales Manager role with a Sales Operative role. For CM, the Content Manager role provides iViews from which to manage the content. Also, the Content Admin role provides corresponding Web pages and iViews for content administration. Similarly, both the Collaboration role and the CollaborationRoomCreation role provide extra collaboration features.

Note!

CM provides a variety of tools including Document Management (DM), which enables you to create documents, retrieve them, and then publish them. DM Services also help you organize electronic documents into pertinent taxonomies and maintain version control of the documents.

With CM, you can integrate different repositories, file systems, and email systems to create a content repository. You can think of the content repository as a database that contains the objects (e.g., documents, PDFs, spreadsheets) that the CM system has within KM. CM enables you to navigate through the content using a folder-like structure similar to MS Windows Explorer, the tool that enables you to find files on your PC. You can use these repositories as a source for TREX searches;

in other words, TREX can categorize documents in a wide range of repositories.

Tip!

One way to create and publish Web pages to the portal is to use SAP Web Page Composer (SAP WPC). It combines rich portal and KM features in one application. SAP WPC is essentially a Web CM system that you can access through the portal; it is built on KM technology.

Search and classification (TREX)

TREX is SAP's customizable, very powerful search engine. It allows you to search not only Web sites, but also any repository within the domain. You can configure TREX using taxonomies (hierarchical indexes of terms used to classify data or data objects) to filter results. An example of a taxonomy from top to bottom would be:

Mammals → Carnivores → Canines → German Shepherd

Mammals → Herbivores → Equines → Shetland Pony

This example shows that "German Shepherd" belongs in one location in the Mammals taxonomy and "Shetland Pony" goes in another branch of the same taxonomy.

Within CM, the TREX administrative function lets you add metadata to objects so you can programmatically tag content based on business rules, thereby improving your search results. For example, you can configure TREX to tag news feeds so it filters out any news that isn't relevant to your business needs.

TREX enables you to build a taxonomy that is applicable to your content. When a user runs a query in TREX, the system returns indexes to documents and

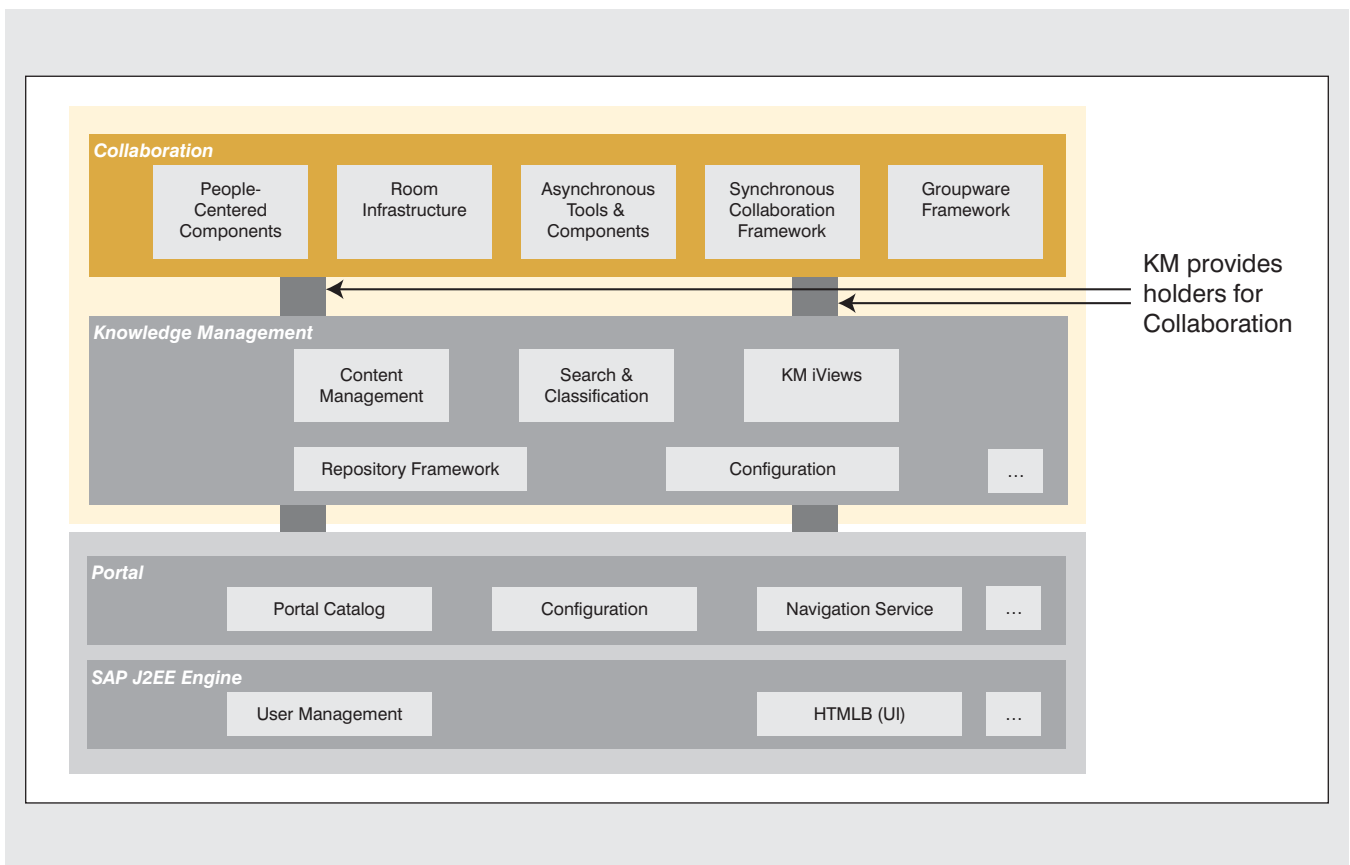


Figure 3 The underlying architecture of collaboration

Note!

Moving documents from a development system into a production system is different from moving other portal content; for example, an iView typically uses a ZIP file. To transfer KM documents and images through the portal for collaboration purposes (e.g., from development to quality assurance), you use the content exchange service, which transfers data using the Information and Content Exchange (ICE) protocol. With ICE, you can either move content manually (via import or export) or use a scheduled service to do it.

then filters the indexes depending on the taxonomy structure. If the document doesn't match the taxonomy, the user won't receive a link to the document.¹

Underlying architecture

To understand how collaboration fits into the portal and its related functionalities (i.e., KM, CM, and TREX), let's look at the underlying architecture of collaboration, which is the portal framework (see **Figure 3**).

¹ To help you find and retrieve documents through the KM functionality, SAP provides a wide variety of tools and functionalities. One iView, called the Document Explorer, allows you to manage and structure content and make it visible to portal users.

As you can see, SAP J2EE Engine controls user management and the Web UI associated with the portal. The portal provides the roles and navigation for the KM-associated iViews (e.g., portal catalog, configuration, navigation service). KM provides many facilities for CM and TREX functionalities, such as the building of taxonomies. The layers work together to enable the portal's collaboration features: Collaboration Rooms (e.g., room infrastructure) and IM (e.g., the synchronous collaboration framework). The placeholders are portal functions on which you can build more complex applications.

Collaboration tools within SAP NetWeaver Portal

SAP provides many collaboration tools² within SAP NetWeaver Portal. You can subdivide these tools into two areas: those that use synchronous communications and those that use asynchronous communications. *Asynchronous* communications are not real time and often include, for example, forums and discussion lists. *Synchronous* communications are real-time tools and include, for example, IM and Cisco Systems' WebEx (a service for video conferencing and viewing and sharing remote desktops). Let's examine three SAP tools related to collaboration: Collaboration Rooms, which are asynchronous; the UWL, which enables task functions that you can use either internally in a Collaboration Room or externally as a standalone workflow tool; and IM, which is synchronous.

Collaboration Rooms

A *Collaboration Room* (sometimes called a *community*) is a virtual space in which members of a project team can work with various project groups

no matter where they are — across time zones or geographic divisions. Within a Collaboration Room, each team member has access to common, context-specific applications and information. Before the advent of electronic Collaboration Rooms, team members working on a project might have had a physical room dedicated to them in which they held meetings, discussed the project, filed physical documents in filing cabinets, and so on. Today, you can do all that electronically with Collaboration Rooms. In addition, each Collaboration Room can be customized to include any iView. You can integrate, for example, iViews containing documents and workflows and TREX search results.

There are tools that enable asynchronous and synchronous collaboration in an SAP NetWeaver Portal. Unlike many third-party collaboration products (e.g., Documentum's Document Content Service), SAP collaboration maintains SAP's security standards: for example, you don't have to build your own security model — the portal provides logon functionality, folder directory security, restriction by user group and individual, single sign-on (SSO), etc. For KM, you configure security at different levels, from who can view the application (using roles), to who can edit document permissions (controlling access).

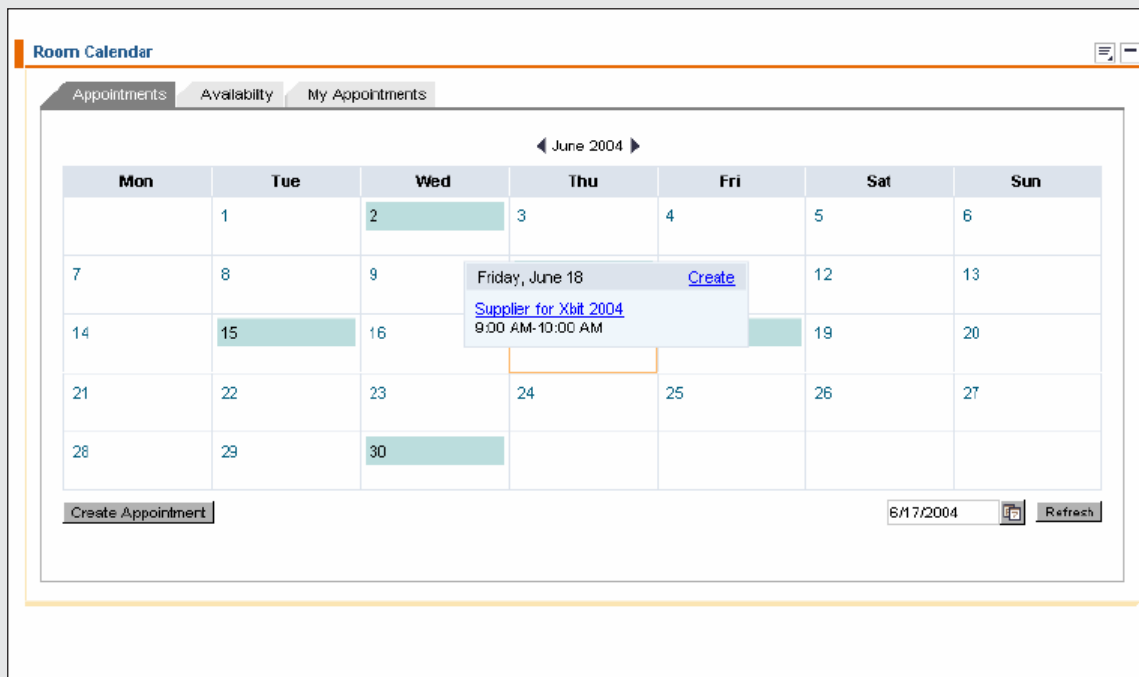
Collaboration Rooms provide the opportunity to integrate groupware (see the sidebar on the next page), such as MS Exchange Server and IBM Lotus Domino for email, calendaring, and IM, into your portal. For example, if your team is working on a proposal where each team member adds to or revises a particular document, you can put the document into a Collaboration Room that has been configured with integrated groupware applications, such as MS Office, so that you can receive email notification when the document changes.

You can navigate the collaboration functionality in several ways: Users can drill-down through menus, have a specific portal navigation tab (e.g., the horizontal blocks at the top of the portal page), or use the Collaboration Launch Pad (CLP). Generally, users prefer to use the CLP because it

² This article focuses on the three main collaboration tools. There are other tools that provide additional services, such as sending and receiving email or linking into other collaboration applications, such as WebEx, but discussion of these goes beyond the scope of this article.

Groupware integration

Groupware is another word for *collaboration*, but it also denotes a product category, which includes MS Exchange and Lotus Domino. The SAP NetWeaver Portal platform provides a groupware framework for connectivity with Exchange and Domino. These connections allow you to integrate with native Web clients, such as MS Outlook Web Access (OWA) for Exchange or iNotes for Domino for day-to-day access to email, calendaring, and tasks. Collaboration with SAP NetWeaver Portal supplies iViews with enhanced features that go beyond Web client functionality (e.g., team calendars, as shown below).



Note!

Corporate email servers are well protected from unauthorized access, and their system security is set up to prevent people from linking to them from external applications. Therefore, although integrating groupware — typically email — is theoretically simple, in practice it is difficult because security administrators resist any changes that may impact security. These changes include installing third-party programs (i.e., programs that the email provider doesn't offer) or opening specific ports to allow integration with another application. For example, to set up calendaring, you may have to use DLLs, which are executable Windows program modules that perform one or more functions at runtime on a non-SAP email server. Although these DLLs are safe, corporate security rules often don't allow them to execute.

provides a quick and intuitive navigation path to collaboration functionality.

Collaboration Launch Pad

Assuming you have activated the CLP within your portal, you will see the Collaboration link in the upper left-hand corner of your screen. (If the link doesn't appear, see the sidebar on page 83.) The CLP provides a shortcut to collaboration functionality after you sign on to the portal. Clicking on this Collaboration link opens the CLP window shown in **Figure 4**.

From the CLP, you can manage contacts, launch services and functions for collaboration, create member lists for Collaboration Rooms, and launch collaboration services that integrate with other applications, such as WebEx. If you configure the CLP appropriately, you can send email, create appointments, show availability, and send IM using the services that SAP's collaboration tools provide.³ You can also create new Collaboration Rooms and add new room members, task lists (activities to be performed), feedback requests (from reviewed documents), and nomination requests.⁴ In addition, you can assign a group of people to a particular user group. The CLP is the jumping-off point for collaboration.

The SAP Collaboration Room is one of the most useful aspects of collaboration. This is a virtual environment available through the portal that allows users to interact and to collaborate. As users work through the portal, the Collaboration Room is available across time zones and geographical regions. You can also restrict it to a particular group within an organization (e.g., software engineers). You can think of the Collaboration Room as a virtual representation of a project room, with

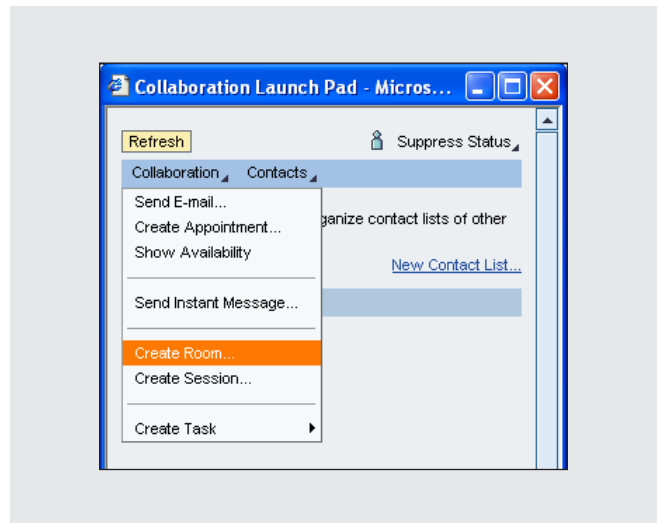


Figure 4 Collaboration Launch Pad (CLP) window

online documents and task lists replacing whiteboards and filing cabinets (see the UWL section).

Setting up a Collaboration Room

CLP provides a Room Creation Wizard that walks you through a four-step process to create a Collaboration Room. To launch the Room Creation Wizard, click on the Room Creation option in the Detailed Navigation section.

Figure 5 shows you Step 1 of the wizard. Here, you enter the name and description of the room, identify the owner (i.e., the creator or person who will manage the room), and assign a category from the list of available categories that SAP supplies. You also select a template that will format the appearance of the Collaboration Room. You can enter a description of the template if you think users need to understand the layout. The template is the key component of a Collaboration Room because the template determines which iViews to use in the Collaboration Room. You can also create new templates (a discussion for another time).

If the template requires additional external parameters (e.g., folder names for documents), you can specify those values in Step 2 of the Room Creation Wizard.

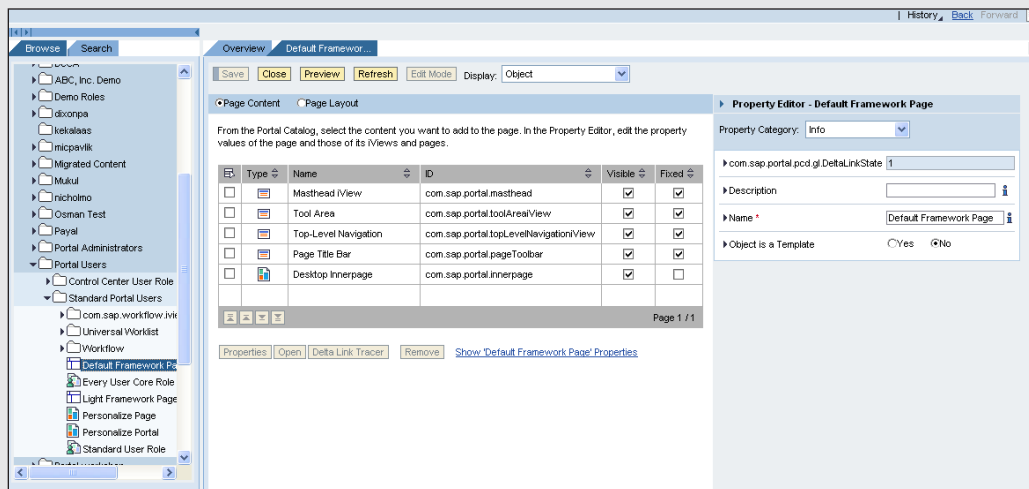
³ For more information on available services, go to the SAP Help Portal at <http://help.sap.com> and search for "Configuring collaboration services."

⁴ If a user wants to create a task force consisting of representatives from different organizations, each organization can nominate one person. A new distribution list is created with all nominated persons added.

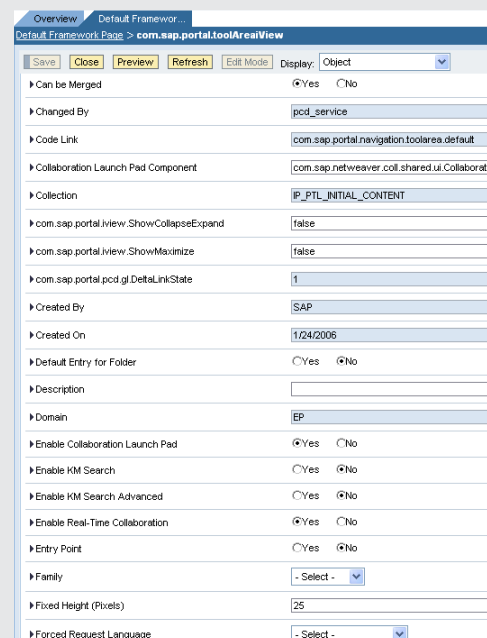
Activating the CLP

If the Collaboration link doesn't appear on your screen, you can activate the portal's collaboration feature (i.e., the CLP) by completing the following steps:

1. To activate the CLP, edit the Default Framework Page by following the menu path on the Content Administration tab: Portal Content → Portal Users → Standard Portal Users → Default Framework Page (see the screenshot below).



2. Set the Enable Collaboration Launch Pad property to "Yes" (see the screenshot to the right)
3. Select the Tool Area iView (see the screenshot above), and then choose Open. The property editor for the tool area appears (similar to the screen shown here on the right).
4. Select the Display All property category, and set the following properties:
 - Change the Activating the Collaboration Launch Pad option to "Yes."
 - Modify the Cache Validity Period option to 10 seconds (in accordance with the default setting for this property, the activation of the CLP takes effect only after one hour).
 - To bypass the waiting time, reduce the Cache Validity Period option (e.g., to 10 seconds).



These are the main properties of the CLP. For more details, go to the SAP Help Portal at <http://help.sap.com>, and search for "Activating the link for launching the Collaboration Launch Pad."

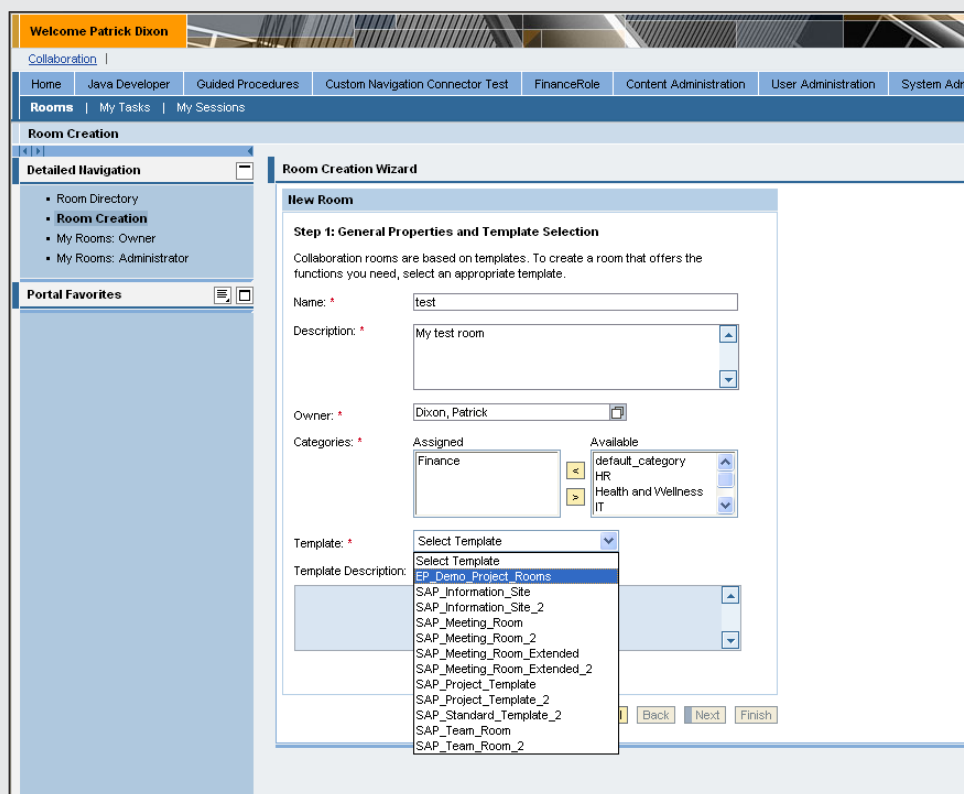


Figure 5 Creating a Collaboration Room with the Room Creation Wizard

In Step 3, specify the type of the Collaboration Room: public, restricted, or private. A *public* Collaboration Room is one in which anyone with intranet access can use the room; this type of room is used by communities. A *restricted* Collaboration Room is one in which access is limited; the room is visible in the room directory to all users but room registration is required. A *private* Collaboration Room is not visible to users unless they are registered as room members; it's used for confidential collaboration.

One function of the initial room setup is to identify the members⁵ (i.e., the users who will have access to the room) and the administrator. You can add or remove members as needed after you have created the Collaboration Room.

⁵ Non-members can visit only the public pages of a collaboration room.

The Collaboration Room shown in **Figure 6** is based on the SAP project room template, which includes a bulletin-board iView and a task list (from the UWL). The UWL contains both created and assigned tasks, so members can see what needs to be done and who is responsible for doing it. On this list, you can find out whether tasks have been completed or progress has been made. You can also provide documents, links, calendars, discussion groups, and so on for members. You can set up a Collaboration Room so that interested portal members can request membership to it.

Step 4 of the wizard, as shown in **Figure 7**, displays the information and options you want as part of the Collaboration Room. You might add several public pages that anyone can visit, as well as adding content in the form of documents, task lists, and so on; also, you can restrict access to

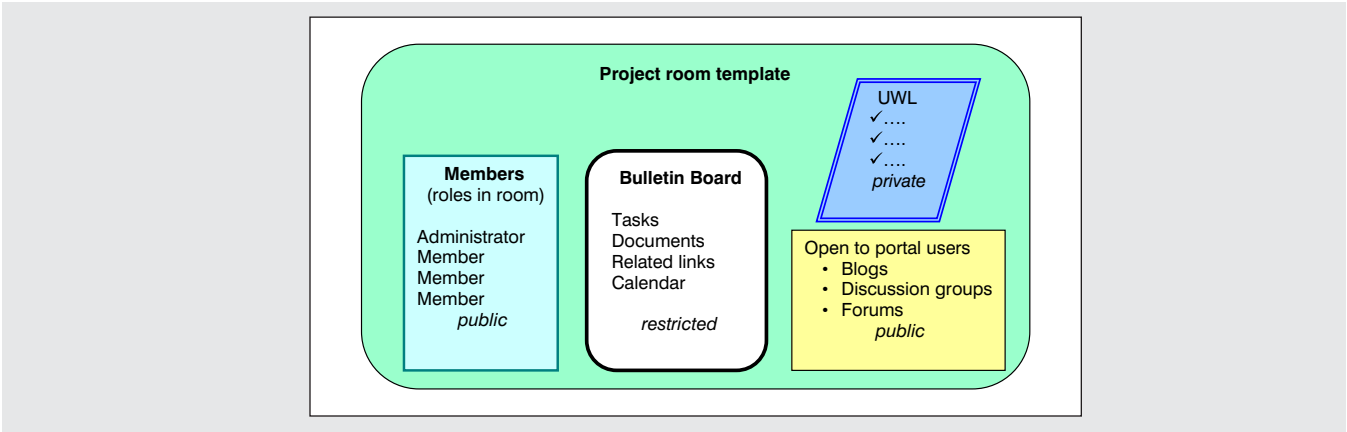


Figure 6 Collaboration room areas with restricted access and others with public access

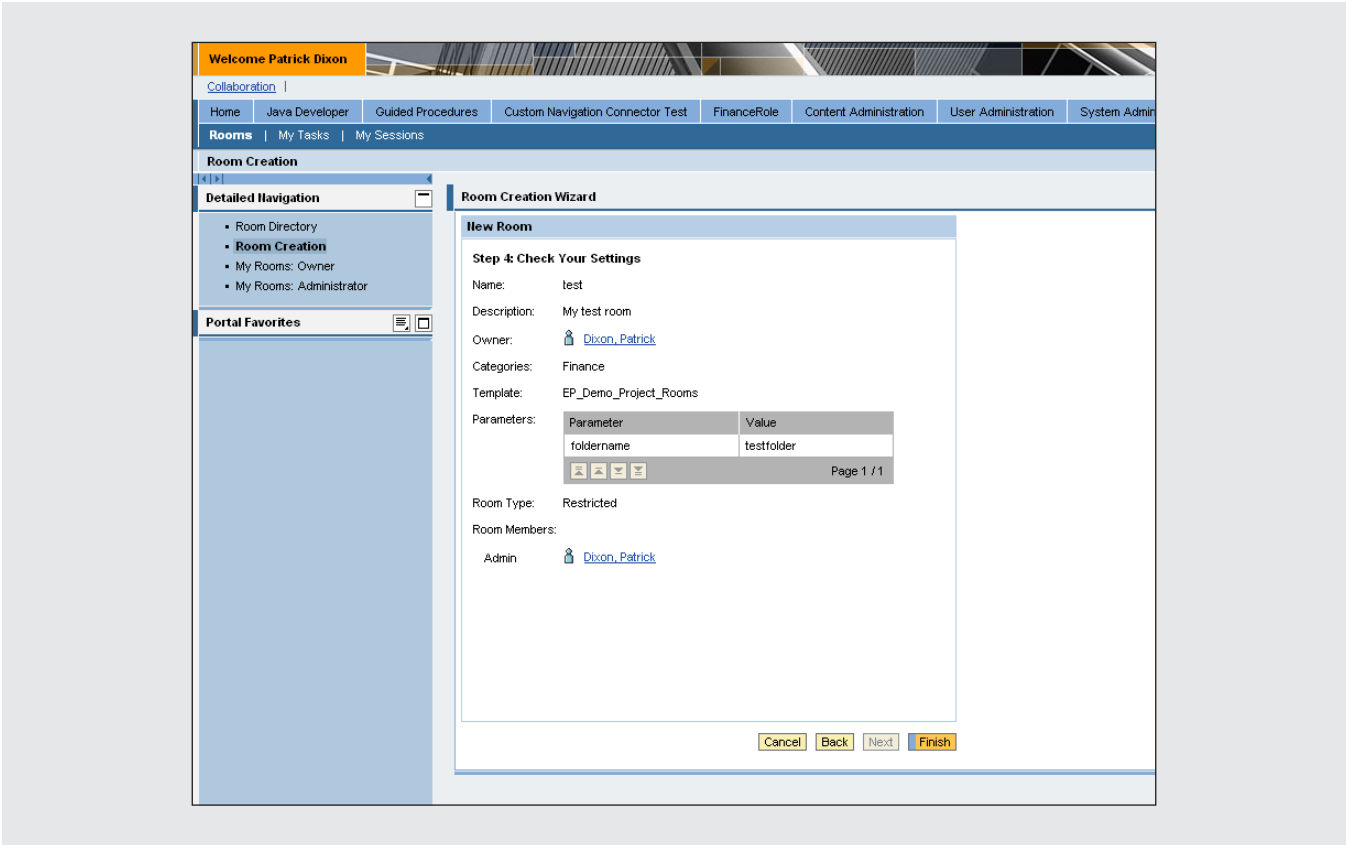


Figure 7 Finalizing a newly created Collaboration Room

certain members so the Collaboration Room has both restricted and public areas.

Once you have created a Collaboration Room, it is listed in the Detailed Navigation panel under “My

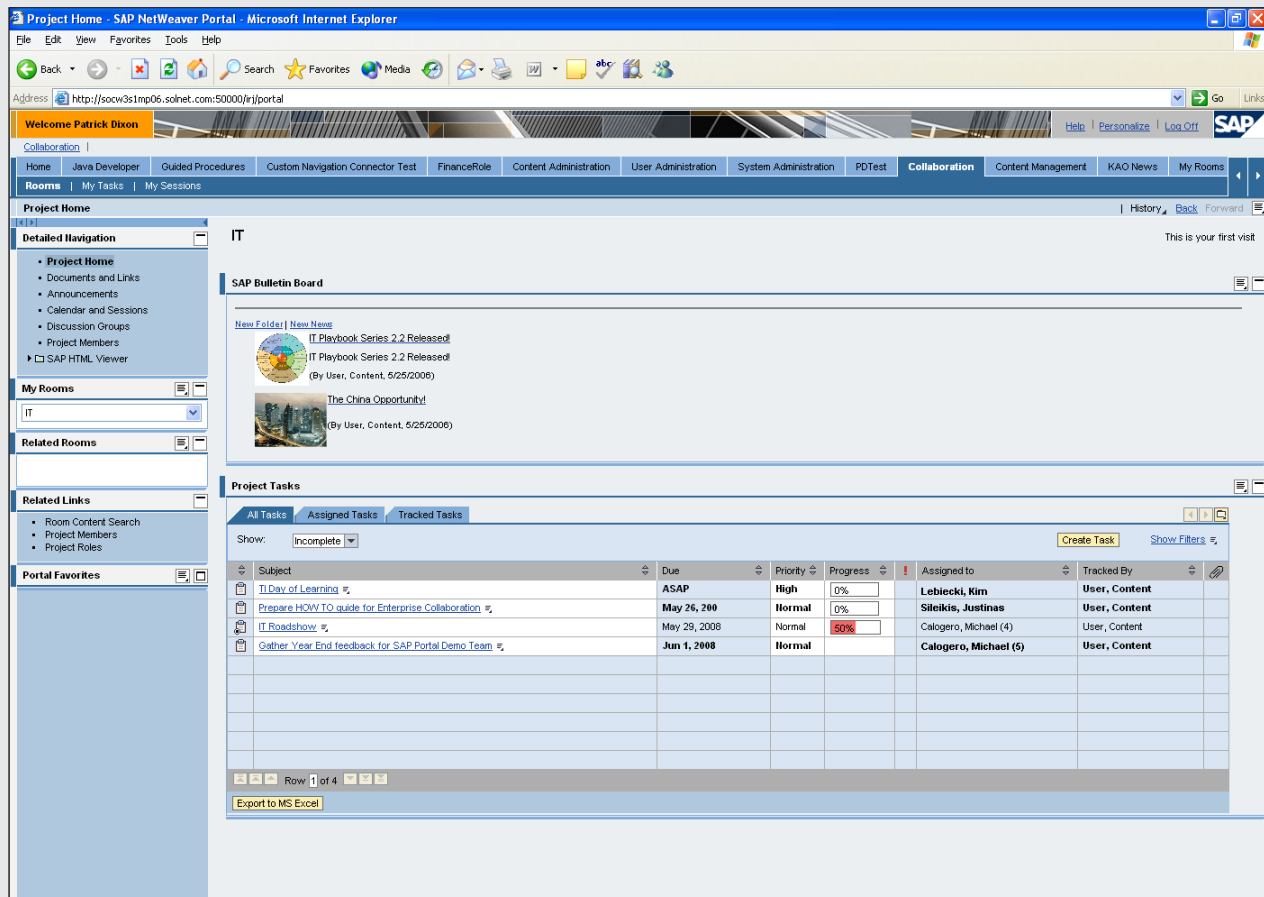


Figure 8 A member's view of a Collaboration Room

Rooms: Owner” or “My Rooms: Administrator.” Remember to test the Collaboration Room before making it available to members. (For more information on the capabilities of an administrator, see the sidebar on the next page.)

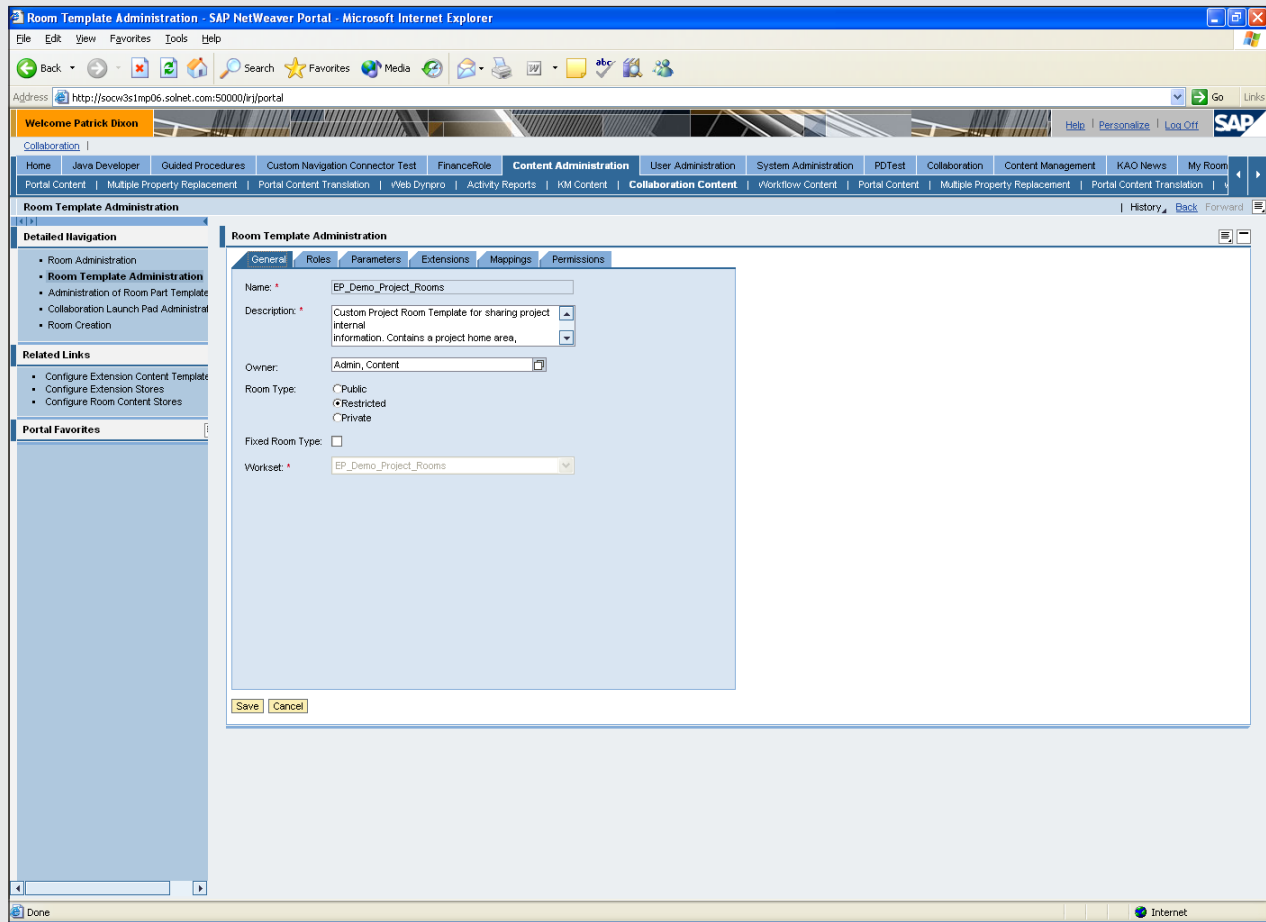
Figure 8 shows a member's view of a Collaboration Room. Checking into a room is easy: Log in to your portal, and then, in the Detailed Navigation panel, click on the Room Directory if you don't know which room you want, or click on “My Rooms: Owner” or “My Rooms: Administrator” to find the Collaboration Room you want.

Finally, if you want to extend the functionality of a Collaboration Room (by adding iViews that are not included in the Collaboration Room template you selected, for example), then you can choose the Room Part (supplied by SAP). Room Parts are really extensions (i.e., they contain additional iViews) that you can include in a room.

To add a Room Part, switch to the Room Parts tab, as shown in **Figure 9** on page 88. For example, one Room Part you might want to add would be an iView that enables users to display sales orders. SAP provides a wide range of standard Room Parts, such as discussions, frequently asked questions, and calendars.

Administering a room

As an administrator, you or some other user can make changes to an existing Collaboration Room. The screenshot below shows you the administrative options available, including tabs for roles, parameters, extensions, mappings, and permissions.



For more information on the administration of a Collaboration Room, go to the SAP Help Portal at <http://help.sap.com> and search for “working with virtual rooms.”

One key feature of Collaboration Rooms is the ability to integrate work tasks into the room to allow teams to see the tasks associated with a room member. Tasks based on workflow are

integrated into the Collaboration Room using the UWL. You can also use the UWL to integrate tasks into the portal independent of Collaboration Rooms.

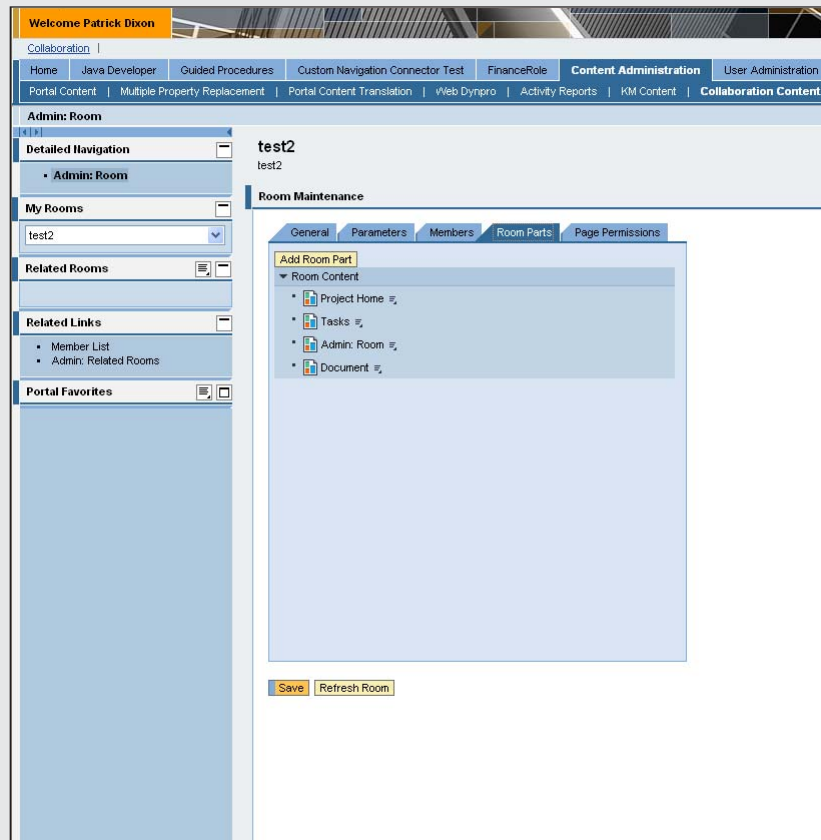


Figure 9 Room Parts extend Collaboration Room functionality

The Universal Worklist

Another aspect of collaboration is workflow, which is the management of tasks between different groups or users. For example, a vacation-request task flows from the user who submits the request to the manager who approves it. As soon as the user submits a vacation request, the workflow notifies the manager that it requires approval.

The UWL is a central access point for workflow tasks, alerts, and notifications. The UWL extends the capabilities of portal users by unifying and centralizing access to their work and the relevant information in the portal. By collecting tasks, alerts, and notifications from multiple systems (e.g., SAP Business Workflow,

collaboration tasks, the alert framework, and KM recent notifications), the UWL enables users to:

- Perform tasks that have been assigned
- Create tasks and assign them to other users
- Send task-related information to other users
- Request information from other users
- Track the status of task requests

Administration of the UWL is controlled from within the portal. One of the first steps is to determine which workflow system to use. This determines how users will create workflow tasks (such as by using SAP Guided Procedures, SAP Business Workflow, or a third-party system; this discussion is beyond the scope of this article).

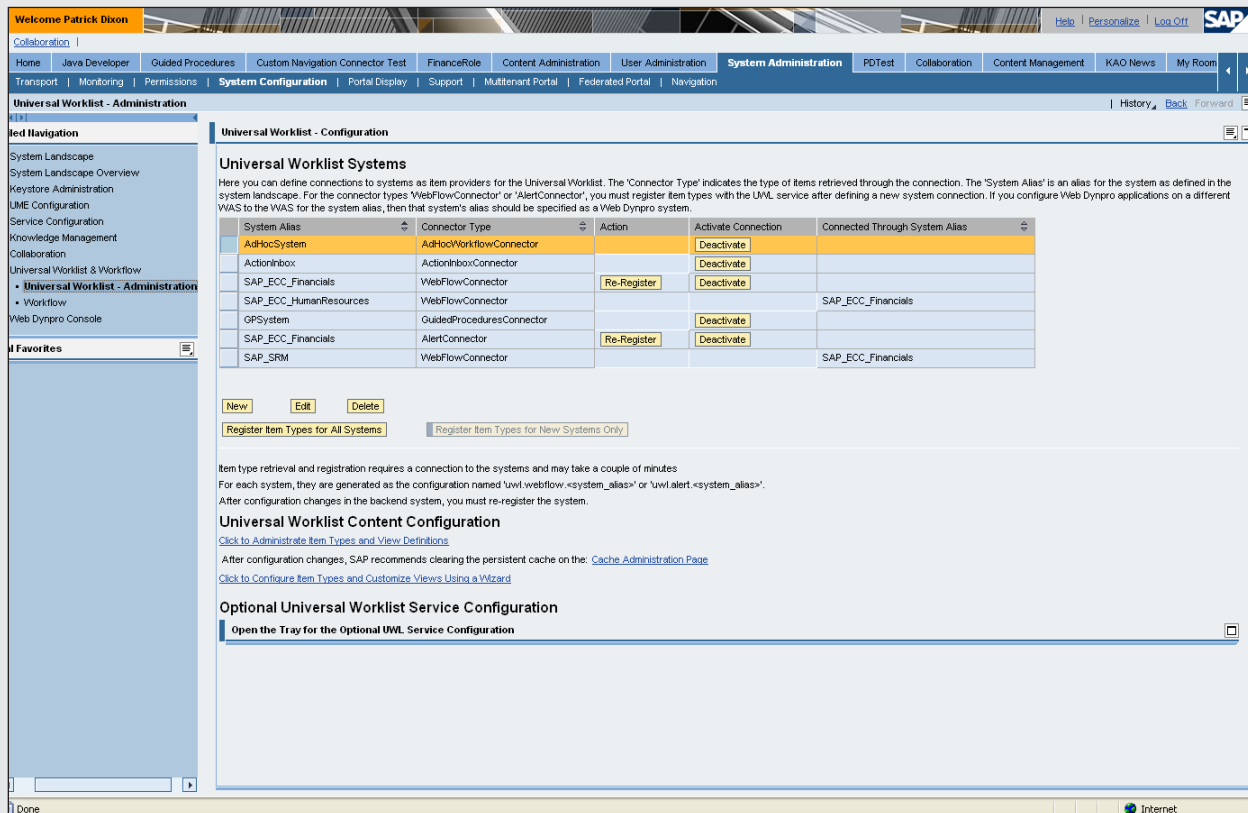


Figure 10 The Universal Worklist — Administration console

Note!

The administration of the UWL is contained in the KM suite of iViews. For the user, the UWL can be included in any menu path.

Managing the UWL

To specify which workflow system to employ in the UWL, you use the UWL console. To open it, click on the Collaboration link in your portal, and then switch to the System Administration tab. In the Detailed

Navigation panel on the left of the screen, click on the Universal Worklist & Workflow link, and then click on Universal Worklist – Administration. As shown in **Figure 10**, the UWL console provides information about the sources or resources underlying the task lists generated.

To modify a specific workflow system, click on the system and its associated parameters, which appear in the lower portion of the window (as shown in **Figure 11** on the next page).

The parameters associated with the Guided Procedure System (GPSSystem) link the UWL to the workflow system. Once the connection is made, users can employ the UWL to access workflow tasks in the system.

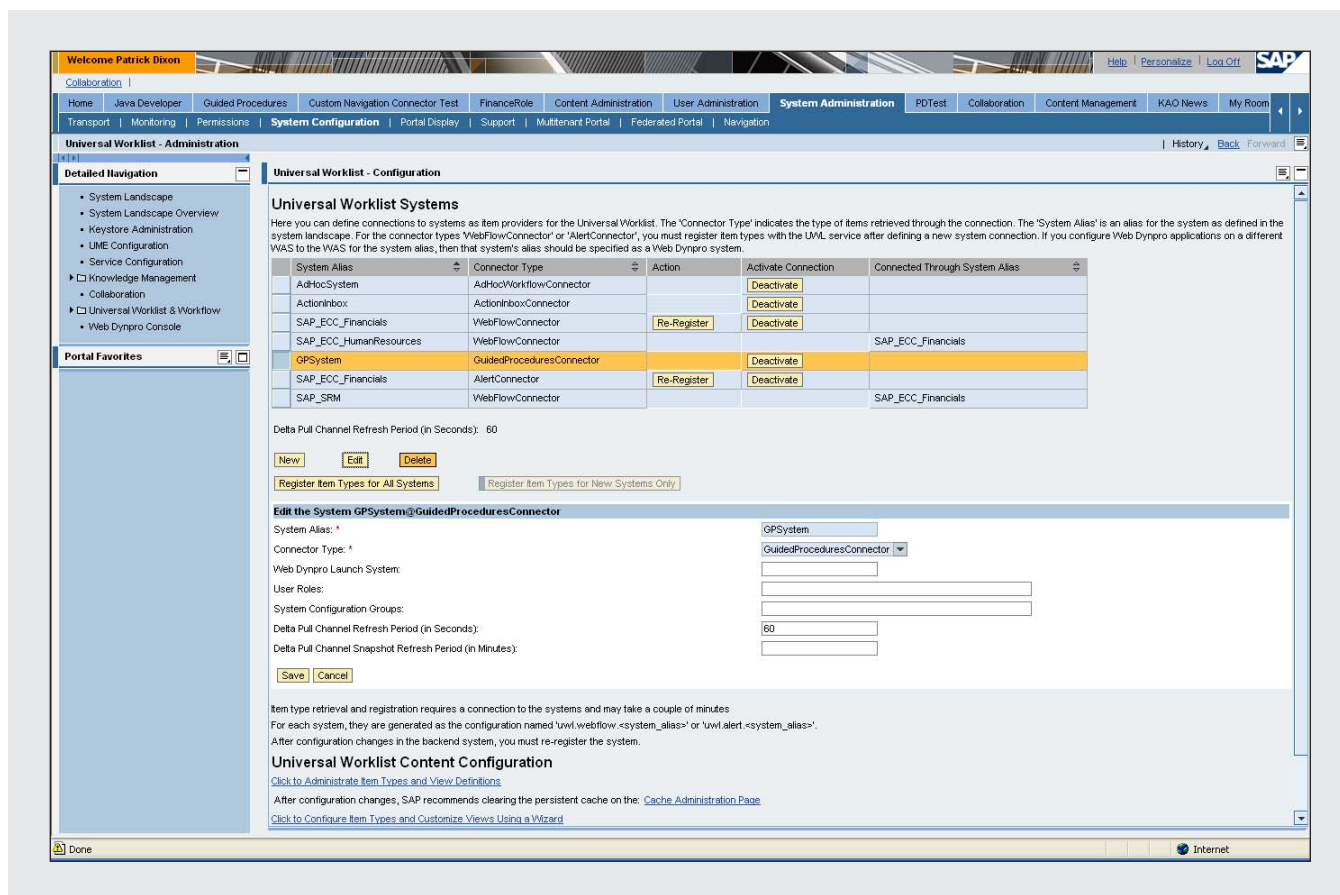


Figure 11 Setting the parameters to configure a workflow system

Note!

In my experience, the UWL is pretty easy to configure. You can do it without going into the code. The document “How to Configure the Universal Worklist (NW2004),” which you should find very helpful, is always available from SDN at <http://sdn.sap.com>. For more information on the UWL and how to configure it, you can also go to the SAP Help Portal at <http://help.sap.com>.

In addition to managing the workflow systems, you can also change the look of the UWL UI using

the UWL Configuration Wizard. The changes you make to the UWL stem from the purpose of the collaboration, which is reflected in the room template you select. It will impact how members collaborate. For example, if you select a meeting room template, you might want the members to prioritize tasks, so you give them the ability to identify criteria by which they can sort tasks or agenda items. You decide on the attributes and other UI elements you want in each UWL iView. You can even decide what content to make available in a drop-down list.

To start the UWL Configuration Wizard, click on the Click to Configure Item Types and Customize Views Using a Wizard link. The welcome page of the wizard appears (see **Figure 12**).

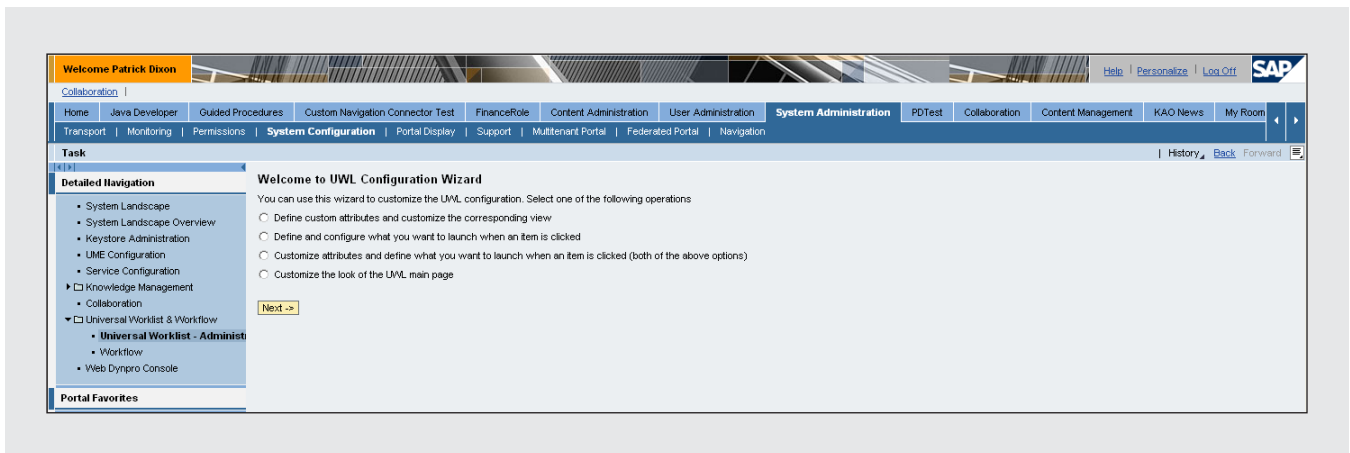


Figure 12 The UWL Configuration Wizard

The UWL is one of several major facilities that KM and collaboration provide to enable users to collaborate with each other. Up to now, however, we have been talking about non-real-time or asynchronous collaboration. Let's turn our attention to SAP NetWeaver Portal's IM feature, which provides synchronous collaboration, out-of-the-box.

Instant Messaging

The portal has two ways of performing synchronous communications: by using the portal's built-in IM feature, and by integrating a third-party synchronous communications application, such as WebEx, with an iView. IM allows you to communicate with other users in real time through text-based messages. SAP's collaboration toolset enables you to launch an IM session from the CLP (**Figure 4**).

SAP's IM works only through SAP NetWeaver Portal; it is not structured for use outside the portal environment. This is considered a great advantage — especially from an organizational point of view — over many third-party or free IM products available on the Internet. The corporate world strongly resists providing IM capability in the workplace due to security and worker-productivity concerns (i.e., employees using IM for personal instead of business use). However, because SAP's IM is based on a business application — SAP NetWeaver Portal —

you can only use this capability for business purposes.⁶

Another advantage of SAP's IM is that you don't have to install a client; IM sits on the server. You can set it up in an hour, and you don't have to write any code, just do a little configuration:

1. Configure the polling mechanism, which enables clients to interact with one another.
2. Configure the maximum number of IM sessions allowed.
3. Configure the maximum number of users allowed.⁷

In the portal, navigate to Content Administration → Collaboration Content → Collaboration Launch Pad – Administration. Then, under Related Links, select Configure Real-Time Collaboration → RTC Engine → RTCEngine. See **Figure 13** on the next page.

Once you have configured IM on the server, users will see an IM window when they log in to the

⁶ IM will have a performance impact on the portal, depending on the size and configuration of the servers. Some organizations may want to limit IM sessions to 10% of total portal users (at any one time). Finding the best balance between IM response and portal performance for a specific portal and user community is mostly a process of trial and error.

⁷ For more details on configuring IM, go to the SAP Help Portal at <http://help.sap.com>.

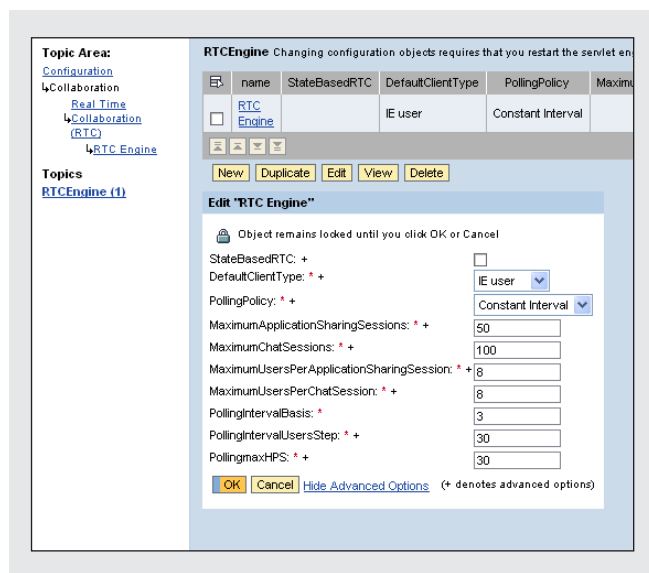


Figure 13 Configuring IM on the server

portal. To initiate an IM session, click on the Collaboration link, and then select Send Instant Message (**Figure 4**).

SAP's IM is similar to other IM products on the market. Like them, it uses the HTTP protocol, which is secured using a Secure Sockets Layer (SSL) certificate, and can be made as secure as you wish. When configuring the IM service, I recommend you apply encryption.

Note!

The current version of IM in SAP NetWeaver Portal does not contain the ability to save conversations. Check with your compliance overseers to see if that has any ramifications due to compliance and governance regulations.

Conclusion

SAP NetWeaver Portal provides the ideal environment for both synchronous (real-time) collaboration and asynchronous (non-real-time) collaboration. Using IM, users can communicate in real time, while Collaboration Rooms can bring teams together in a virtual environment where they can share documents and work on tasks together. Using the UWL, you can construct simple workflows using an ad hoc workflow, SAP Guided Procedures, or an external workflow system; all of these workflow systems can be integrated into Collaboration Rooms using the UWL iView.