A technical discussion of the new Collaboration Center capabilities available for IBM WebSphere Portal

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IBM WebSphere Portal and the new Collaboration Center capabilities

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1. Introduction

IBM WebSphere Portal now includes the Collaboration Center, a set of features integrated into WebSphere Portal software which enable users to more easily find, communicate with, and work with colleagues. The Collaboration Center features deliver advanced collaboration capabilities through new portlets for an online company directory, Web conferencing, and team workplaces, all of which have built-in people awareness and instant messaging. They allow users to interact with multiple collaboration applications – corporate white pages, organizational charts, instant messages, team workplaces and virtual meetings – quickly and efficiently to increase individual and organizational productivity.

1.1. Objectives of whitepaper

The objectives of this whitepaper are to discuss the collaborative aspects of WebSphere Portal and to provide an overview of the new Collaboration Center portlets in detail. The discussion of each portlet focuses on its functionality, the architecture of how it interacts with the Lotus collaborative software (IBM Lotus Team Workplace, IBM Lotus Web Conferencing, and the LDAP directory), and finally, highlights special installation and configuration considerations for deploying the portlets.

1.2. Scope

This paper is primarily focused on illustrating the functionality and underlying architecture of the new collaborative capabilities provided by the Collaboration Center portlets. A brief business case highlighting the importance of collaboration is included as a foundation for understanding the potential business benefit of collaboration. An overview of existing collaborative functionality currently included in WebSphere Portal Extend is also provided for background knowledge. Finally, the sections focusing on installation and configuration of the Collaboration Center portlets serve as a high-level overview of the installation process, highlighting important considerations. Specific installation documentation provided with the Collaboration Center portlets should be followed to perform an actual installation.

1.3. Target audience

This paper is intended for the reader who has a basic understanding of WebSphere Portal and is interested in learning more about the enhanced collaborative functionality provided through the Collaboration Center.

1.4. Introduction of WebSphere Portal featuring the Collaboration Center

The ultimate goal of any portal implementation is to provide users with a single point of access to the applications, information, and people they need to do their jobs more productively. The value derived from a portal comes not only by providing this single point of access, but by providing a framework for collaboration. More specifically, it is this framework which gives context to the information presented and enables users to immediately *act* upon this content. Users within a portal may wish to collaborate with others to share information and generate new ideas, locate other people within the organization, or set up a new virtual workplace for future teamwork. Ultimately, it is the degree of collaborative functionality built into a portal which provides the greatest benefit toward increasing individual and organizational productivity.

WebSphere Portal has significantly strengthened its existing collaborative functionality through the introduction of the Collaboration Center, a set of three new preconfigured portlets which are fully integrated into WebSphere Portal Extend, WebSphere Portal - Express Plus, and WebSphere Portal Experience, designed to leverage Lotus Software collaborative capabilities.

The Collaboration Center capabilities include the following new portlets:

- **People Finder** - an online corporate white pages and organizational navigation tool that enables users to view fellow employees' contact information and titles within the context of an organization's structure.
- **My Lotus Team Workplaces** (QuickPlace) – enables a user to create, search, and manage multiple Team Workplaces that the user belongs to in a single view.

- **Lotus Web Conferencing** (Sametime) - allows users to create, view, and participate in online meetings with which they are associated.

The following image illustrates the three collaborative portlets and provides an example of how they can be grouped together on a page within a portal to serve as an integration point for all collaborative applications.

Sample of the Collaboration Center Portlets

The Collaboration Center for WebSphere Portal takes collaboration within a Portal to the next level. By providing a set of three preconfigured collaboration-specific portlets designed for tighter integration with WebSphere Portal, the Collaboration Center enables out of the box collaborative functionality.

2. Why collaboration in a portal?

Prior to addressing the technical features and implementation considerations of WebSphere Portal's collaborative capabilities, it is beneficial to understand the underlying business case for Web-based collaboration.

2.1. Overall importance of collaboration

Collaboration represents the simple act of working together to accomplish a common goal.

Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. Information is shared more effectively, communication is more efficient, and companies can make quicker, more informed decisions. More specifically, companies can shorten sales cycles, accelerate product development, generate more transactions, increase partner/customer retention, and expedite problem resolution. Ultimately, these collaborative capabilities provide competitive advantage in the marketplace and impact the bottom line.

In addition to improving the bottom line, collaborative capabilities within a portal contribute in the following ways to improved business efficiency:

- **Conquer the barriers of time and space** – Businesses today are more global and employees are more geographically dispersed. Web-based collaboration capabilities allow members of a department, agency, or organization to maintain connectivity across time and space, overcoming logistical barriers such as multiple time zones and different software or hardware.
- **Avoid breakdowns in communication** – By facilitating the free flow of information between different groups of people involved in a project, errors and misunderstandings can be avoided. The ability to communicate immediately and keep all members informed of a change in scheduling, specifications, or requirements is critical to completing a project on time and within budget.
- **Cross–fertilization of ideas** – Collaboration within a portal enables exposure between people who otherwise might not work together. Members from various disciplines and areas of expertise can become aware of each others' projects by observing and participating in online discussions or forums.
- **Knowledge retention** – Work performed within an online collaborative portal environment can be securely and centrally stored and managed. Ultimately, all transactions and communications can be stored in an organized archive – creating an "organizational" memory. When appropriate, this information can be disseminated to a wider collaborative audience.

2.2. Business benefits for WebSphere Portal Collaboration Center

Now that a foundation has been established to illustrate overall benefits of collaboration in a business environment, it is important to examine more specifically how WebSphere Portal featuring the Collaboration Center can help companies to realize these benefits. This section discusses key features and design objectives within Collaboration Center for helping businesses to be more productive.

Tighter integration and out of the box functionality

Within the business market today, customers are not necessarily suffering from a lack of tools, capabilities, or features and functions. Instead, the more difficult challenge is trying to make all of the different tools and systems work well together. From an employee's perspective, the need to access many different applications and systems, as well as the challenge of finding the proper information or people within the organization can be daunting.

WebSphere Portal answers this need by providing a single point of integration between disparate systems, information, and people.

The functionality provided by Collaboration Center produces the following business benefits:

- **Solution focused** – Collaboration Center is packaged as a complimentary set of collaboration-specific portlets to make up a fully integrated collaboration solution. While it had previously been possible to access the functionality of Sametime and Quickplace using the Lotus Collaborative Components APIs within WebSphere Portal, the introduction of Collaboration Center extends the capabilities beyond just integration and access. By providing an online directory with people awareness, integrated tools for managing online meetings, and integrated tools for managing "My Team Workplaces," the Collaboration Center provides the most complete solution available.
- **Focus on the business issues–not the integration** – Due to the high degree of built-in integration, both among the Collaboration Center portlets and between the portlets and the Lotus collaborative software servers (Web Conferencing (Sametime), Team Workplace (QuickPlace)), customers can focus primarily on addressing business issues, rather than resolving integration issues. For the end users, the complexity of the supporting infrastructure is hidden. Users can be more productive, without being burdened by a complex system.
- **Common UI** – The Collaboration Center portlets provide a common user interface to Lotus collaborative products. This allows end users to leverage the functionality of Lotus Web Conferencing and Lotus Team Workplace, while working directly from within the native portal interface. Providing this collaborative functionality within a consistent interface significantly reduces the need for user training and increases the rate of user adoption.

- **Leverage single sign-on** – The Collaboration Center portlets leverage WebSphere Portal's single sign-on capability for access to the portal, as well as for access to the supporting Lotus Software collaborative products. Users must only sign in once, resulting in fewer passwords to administer and a better user experience.
- **Online presence** - A portal user can see if other users are online directly from the portlet, and then select from a menu of options to interact with those users.
- **Contextual menus** - Within each of the Collaboration Center portlets, contextual menus are enabled to let users take specific action directly from within the portlet. With a single click from inside the portal, users can locate and work with the information they need. For example, from within the My Team Workplaces portlet, a user can click on a workplace title and choose to search the workplace or just view "my tasks" or "my pages" in the workplace. This functionality increases productivity by allowing users to efficiently navigate to the information they need, without first opening up each Team Workplace in a separate window.

The built-in integration and features of Collaboration Center portlets serve to provide the most complete collaborative portal solution available. Now that a business case has been made illustrating how the Collaboration Center for WebSphere Portal can help achieve greater productivity and efficiency through collaboration, the focus of this paper will shift to more technical considerations. The remaining sections review specific features of WebSphere Portal and the Collaboration Center in detail, while also discussing the underlying architecture and implementation considerations for deploying the Collaboration Center.

3. Overview of existing WebSphere Portal collaboration capabilities

The Collaboration Center Portlets build upon existing collaborative functions within WebSphere Portal. Accordingly, it is important to review some of the key concepts and capabilities within WebSphere Portal to better understand the foundation upon which the Collaboration Center is built. The key concepts include Places, Portlets, Collaborative Portlets, and Collaborative Components.

3.1. Places

Portal content is organized in pages that can be grouped. A page group becomes a *virtual place* when a user organizes content selectively and grants permission for other portal users to use the place. Within portal places, people can find other people and the right information quickly – building better teams and stronger ties to each other. People and portlets are the key elements of portal places.

The Collaboration Center further strengthens the concept of a place within a portal. Since collaboration can be performed directly *within* the portal, users can stay in the same virtual place to interact and communicate, without going outside of the portal environment. The People Finder portlet facilitates people finding each other, while the Web Conferencing and My Team Workplaces portlets provide integrated capabilities for establishing and accessing virtual places.

3.2. Portlets

3.2.1. Overview of portlet concept

Portlets are the heart of a portal. The term "portlet" refers to a small portal application, usually depicted as a small box in the Web page. Portlets are reusable components that provide access to applications, Web-based content, and other resources. Web pages, Web services, applications, and syndicated content feeds can be accessed through portlets. Companies can create their own portlets or select from a catalog of portlets created by IBM and by IBM business partners.

WebSphere Portal already includes a rich set of standard portlets for displaying syndicated content, performing XML transformation, and accessing existing Web pages, as well as Lotus Notes and Microsoft Exchange productivity applications. The introduction of the Collaboration Center portlets represents the latest capabilities for integration with IBM Lotus Instant Messaging and Web Conferencing (Sametime) and IBM Lotus Team Workplaces (QuickPlace).

Portlets can be grouped together in a portlet application. Portlet applications are distributed and deployed using Web archive files (WAR). There are portlet-specific extensions to the standard Web application deployment descriptor.

While it has been possible to *access* Lotus collaborative applications prior to the introduction of the Collaboration Center portlets, any user interaction with this data could only take place *outside* of the context of the portal (that is, it would be required to launch a new browser window). Furthermore, interaction between the collaborative portlets required a certain degree of custom programming and configuration within WebSphere Portal. The Collaboration Center portlets have been designed to work together out of the box, providing a complete collaborative solution. They represent a significant step forward toward seamless integration.

3.2.2. Collaborative portlets provided with WebSphere Portal

WebSphere Portal, in the Extend, Experience, and Express Plus versions, includes a base set of collaborative portlets designed to work with Lotus Software companion products for advanced collaboration. A brief description of the originally included collaborative portlets is provided in the table that follows.

Collaborative portlets allow portal users to take actions on documents or user names that appear in a portlet. A portal user can see if other users are online directly from the portlet, and then select from a menu of options to interact with those users.

The “interaction” can be as simple as e-mailing the user, or a more advanced activity, such as starting an instant chat or viewing a user’s Lotus Discovery Server “expertise” profile to find out what else the person knows. The available contact or interaction options that appear in the menu vary based on the capabilities for which you have enabled your collaborative portal.

Lotus Software portlets for advanced collaboration are available in the Web archive files (.war) provided with Portal.

The following table summarizes the collaboration portlets included with WebSphere Portal Extend and Experience.

Collaborative Portlets	
My iNotes	Provides access to a Lotus iNotes server Welcome, Mail, Calendar, To Do List, Contacts, and Notebook functions.
My Notes Calendar, Mail, and To-do List	These portlets display the user's calendar, inbox, or to-do list from their mail database.
Notes Discussion	Views Notes databases built with the Discussion Database Template.
Notes View	Views can be configured to view any Notes database.
Lotus QuickPlace	Displays a Lotus Team Workplaces (QuickPlace) view inside the portlet.
Sametime Launch	Launches the Lotus Instant Messaging (Sametime) Java Connect Client.
Notes Team room	Views Notes databases built with the Team Room Database Template.
Web Page	The Web Page portlet show the contents of an Internet or intranet Web page in a scrollable portlet.

Discovery Server	Searches a knowledge map and displays people and documents related to the search terms .

Additional productivity portlets from Lotus Software, such as Sametime Contact List and Lotus Extended Search portlets, can also be downloaded from the WebSphere Portal Portlet Catalog. This can be found within the WebSphere Portal Zone of the WebSphere Developer Domain at:

`http://www7b.software.ibm.com/wsdd/zones/portal/catalog/portletcatalog.html`

3.3. Collaborative components

Collaboration Center functions by leveraging the Lotus Collaborative Component (LCC) capabilities in WebSphere Portal. Accordingly, it is helpful to provide a brief explanation of collaborative components, and the services they provide within the portal.

The Lotus Collaborative Components are a set of Java APIs and tag libraries that provide the building blocks for integrating the functionality of Lotus Domino, Lotus Instant Messaging and Web Conferencing (Sametime), Lotus Team Workplaces (QuickPlace), and Lotus Discovery Server into portals and portlets. These components are not a replacement for the actual product APIs, but serve as a complementary conceptual layer, exposing the most commonly used aspects of Lotus collaborative technologies. Ultimately, they allow for consistent access to the core product APIs.

Developers may choose to use the collaborative components when they need quick and easy access to Lotus technologies, and may also use the core product APIs in other portions of their applications when more advanced integration with the Lotus collaborative technologies is required.

3.3.1. Types of collaborative components

The collaborative components can be divided into two main categories:

- Java Classes and Methods (cs.jar)
  This package contains all the Java implementations of the collaborative components. There are classes and methods for leveraging Domino, QuickPlace, Sametime, and Discovery Server.
- JavaScript tag libraries (people.tld and menu.tld)
  These tag libraries provide Sametime awareness and contextual menus to JSPs.

3.3.2. Collaborative component updates for Collaboration Center

Several aspects of Lotus Collaborative Components are updated during the installation of the Collaboration Center in a WebSphere Portal 4.2 environment. In future releases of WebSphere Portal (4.2.1+), these updates will be included within the default portal install for Extend and Express Plus installations - and no updates will be needed for Collaboration Center.

The three specific LCC updates for the Collaboration Center are:

- The Collaborative Services module, cs.jar
  The Lotus Collaborative Services Java archive file contains new Java service objects and methods that support the My Lotus Team Workplaces (QuickPlace) portlet in Collaboration Center. You will update this file with the new version from Collaboration Center on both the Application Server and the QuickPlace server that work with WebSphere Portal.
- The People Awareness Sametime Links JavaScript file, pa_stlinks.js
  Sametime Links JavaScript provides new functionality for the People Awareness component that is the foundation of people links in Collaboration Center.

- The People tag language definition file, people.tld
  The People tag language descriptor provides new tags for extending people link menus in Collaboration Center.

3.3.3. For more information

This section has provided only a high-level overview of Lotus Collaborative Components in order to provide a basic understanding of the foundation upon which the Collaboration Center Portlets are built.

A much more detailed explanation of Lotus Collaborative Components is available in the IBM Redpaper "WebSphere Portal 4.12 Collaboration Services," REDP0319. This Redpaper can be found at the following URL:

`http://www.redbooks.ibm.com/redpieces/abstracts/redp0319.html`

4. The Collaboration Center portlets introduced

The following section discusses the functionality, features, and underlying architecture for each of the three portlets that comprise the Collaboration Center: My Team Workplaces, Lotus Web Conferencing, and People Finder.

4.1. The My Lotus Team Workplaces portlet

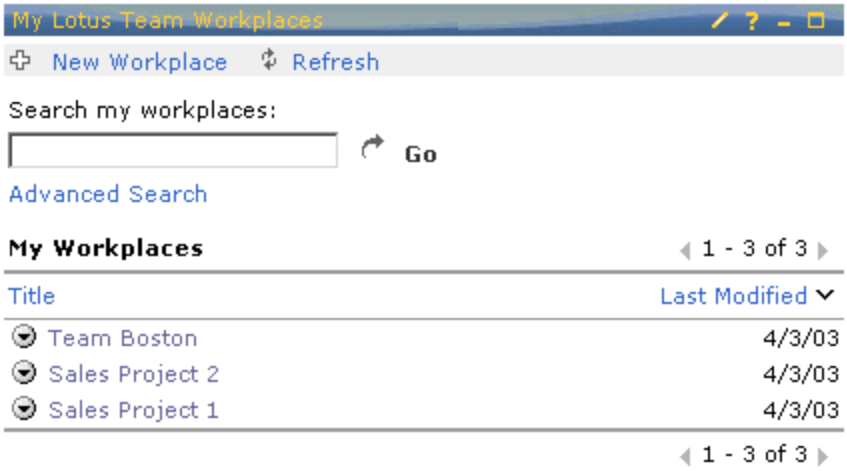
The IBM My Lotus Team Workplaces portlet provides access to Lotus QuickPlace-based workplaces, within the context of the portal. It leverages the IBM Lotus QuickPlace 3 server that you set up to work with WebSphere Portal.

The ability to now access Lotus QuickPlace-based workplace *directly from within the context of the portal* represents a significant improvement toward seamless integration of collaborative capabilities into WebSphere Portal. Prior to the introduction of this portlet, portal users would have to leave the context of the portal completely, and enter the separate QuickPlace user interface for virtually all interactions with their team workplaces.

4.1.1. User features

The My Lotus Team Workplaces portlet initially provides a listing of all the Team Workplaces (QuickPlaces) for which the logged-in Portal user is a member. The following figure shows an example listing of multiple QuickPlaces, making it possible for the user to easily access information within any of these "virtual team rooms."

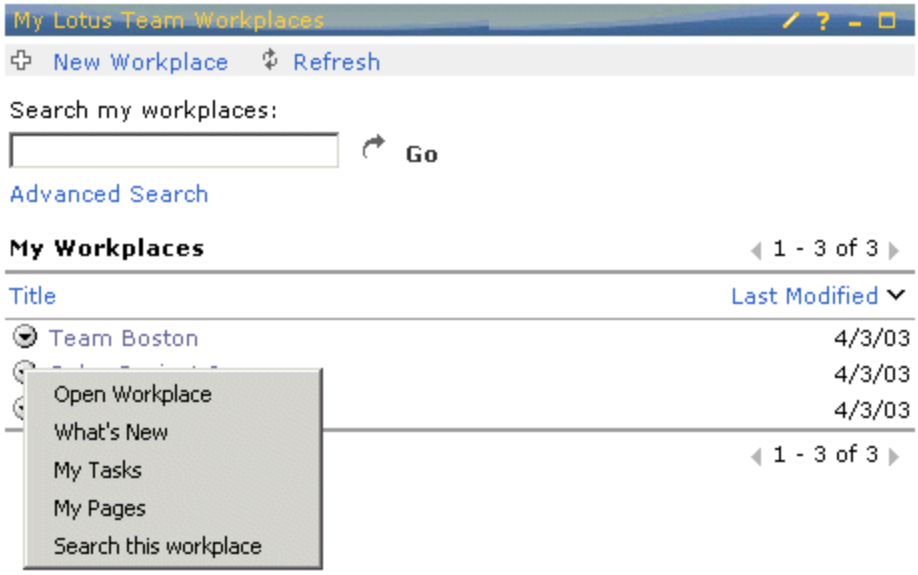
Note: Workplaces which allow anonymous access, for which a user is not a directly listed member, will not be shown. Only places in which a given user is directly listed as a place member will show in this list.



Sample listing of multiple Team Workplaces

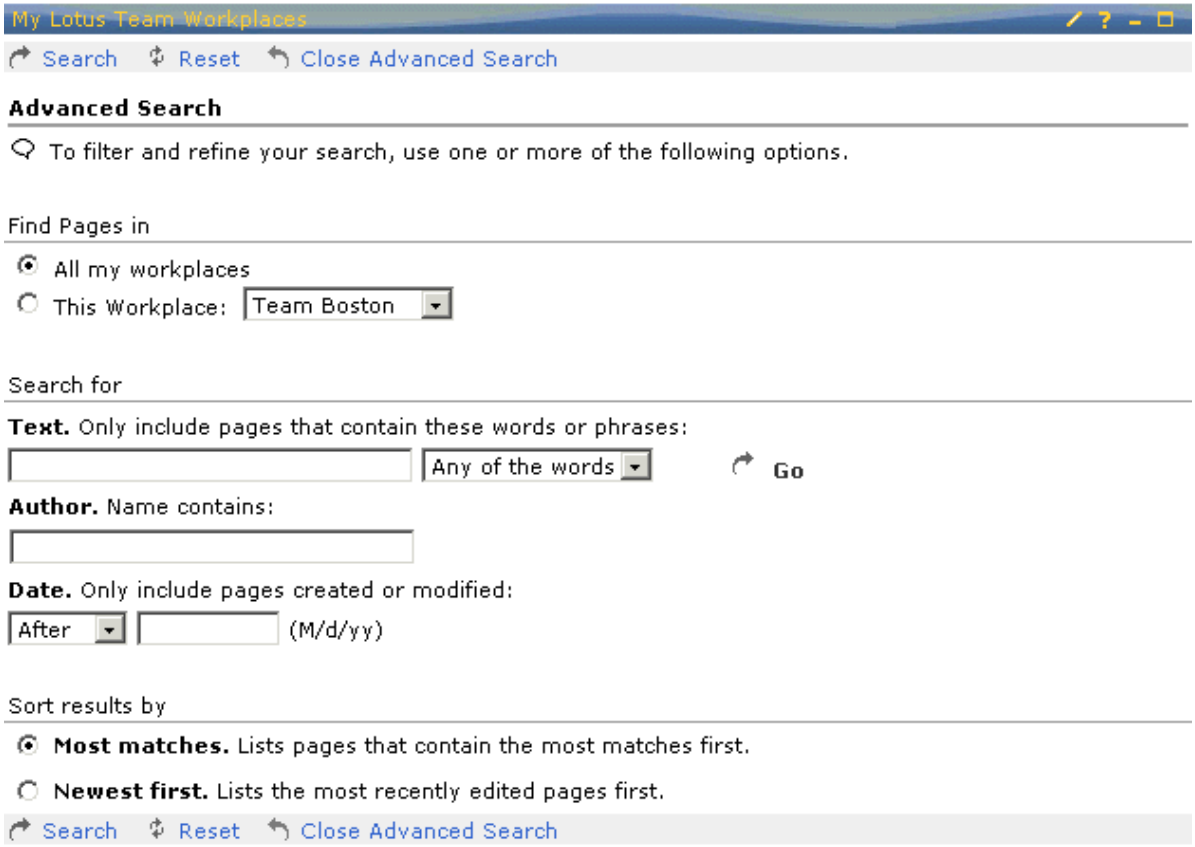
From within this initial view, a user can click on the title of the Team Workplace, and is presented with a contextual menu of choices for accessing specific information in the Workplace. The next screenshot illustrates how a user can choose from a range of options – from simply opening the selected Team workplace, to accessing the documents and tasks which have been assigned to them.

As with all Lotus collaborative portlets available for WebSphere Portal, all "names" that are shown in the portlet are enabled for online "presence awareness" so that immediate online collaboration can take place with the given user as needed.



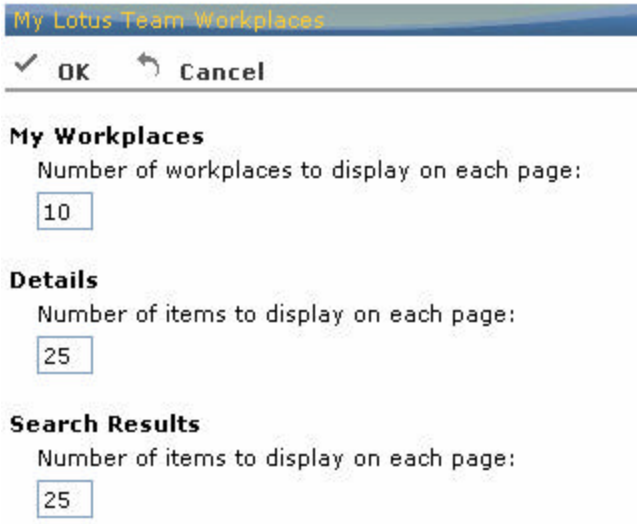
Contextual menus: acting upon the information directly from within the context of the portal

The user also has multiple search options for finding information. The user can perform a basic search across all their workplaces from the initial screen, search a specific workplace from the contextual menu, or choose to perform an advanced search, as depicted in the next figure.



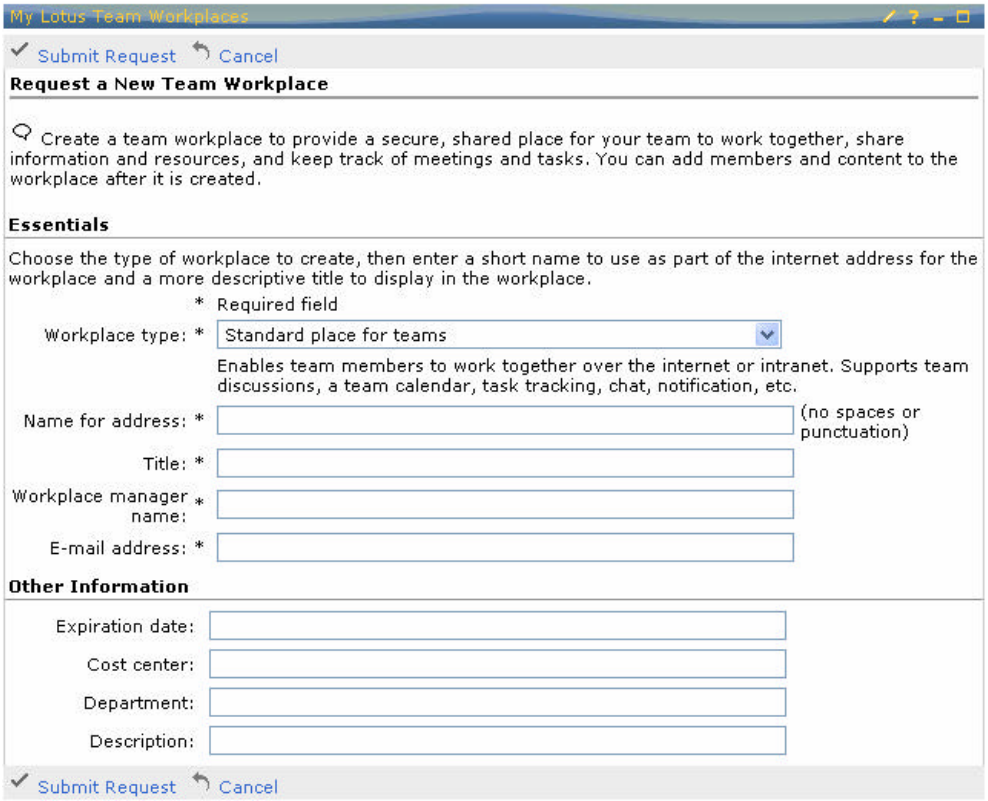
Search across all workplaces of which you are a member

Users with Edit permission to this portlet can edit the display properties to set their preferences for the number of lines of information to show in the portlet.



Set options for the amount of information to show in the portlet.

Finally, users can also choose to submit an e-mail requesting that a new QuickPlace be created. The handling of this e-mail request is defined by the administrative settings in the portlet.



Submit a request for a new Team Workplace.

4.1.2. Administrative/setup options

The main administrative settings for the portlet are all made within the configuration parameters. The configuration parameters can be accessed within the “Portal Administration” place of the portal, on the “Manage Portlets” page, by selecting the My Lotus Team Workplaces portlet and clicking the “Modify Parameters” button.

There are many parameters available within this interface, but only a few parameters that will probably be modified in most deployments. These key parameters are shown in the next figure and described in the text that follows.

QuickPlacePort	80
TimeFormat	12:00 PM
QuickPlaceProtocol	http
QuickPlaceHostName	itsotest-qp.cam.itso.ibm.com
NewQuickPlaceRequest	yes
CreateQPViaEmail_toEmail	qpadmin@qp.cam.itso.ibm.com
TimeZoneOffset	-5
CreateQPViaEmail_smtpServer	itsotest-qp.cam.itso.ibm.com
DateFormat	mm/dd/yyyy

Important configuration parameters

QuickPlaceHostName
This parameter is used to define the fully-qualified hostname for the QuickPlace server that will be accessed by the portlet.

QuickPlacePort
QuickPlaceProtocol
These parameters are used to define the HTTP port and protocol used by the QuickPlace server defined. Any port number is acceptable; however, the acceptable protocol entries are “http” and “https”.

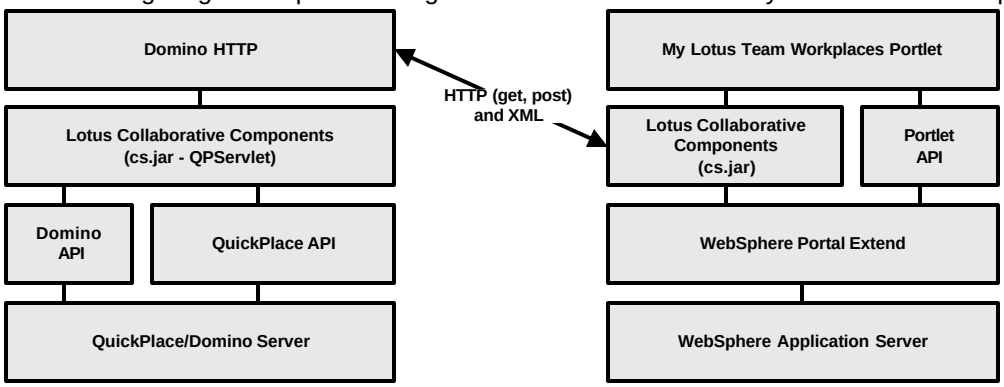
NewQuickPlaceRequest
CreateQpViaEmail_toEmail
CreateQpViaEmail_smtpServer
The NewQuickPlaceRequest parameter indicates whether a user can submit a request for a new team workplace from within the portlet. A value of “Yes” causes the New Workplace command to appear in the portlet; a “No” value means that the New Workplace command does not appear in the portlet.

If new requests are enabled, then the “..toEmail” and “..smtpServer” parameters define the e-mail address to send requests to, and the SMTP server to send the e-mail through. A process, manual or automated, must then be implemented to handle these “new place” requests.

All other parameters shown in this interface are described in detail in the InfoCenter documentation for Collaboration Center.

4.1.3. Architecture

The following diagram depicts the high-level architecture of the My Lotus Team Workplaces portlet.



In general, the My Lotus Team Workplaces portlet leverages the Lotus Collaborative Components for all of its communication with QuickPlace. As depicted, the LCC capabilities (*i.e.* cs.jar) must be installed on both the WebSphere Portal and QuickPlace servers since a servlet (QPServlet) is used by the LCC to interact with QuickPlace – and this servlet requires local unrestricted access to QuickPlace.

Depending on the types of information being gathered by the portlet from QuickPlace, it communicates via either HTTP requests to the QPServlet (for LCC QuickPlaceService calls), or via XML (over HTTP) to gather data from Domino views.

Additionally, depending on how the portlet is configured by the administrator, an SMTP-based e-mail (not depicted) is also sent by the My Lotus Team Workplaces portlet at the completion of a "Create New Team Workplace."

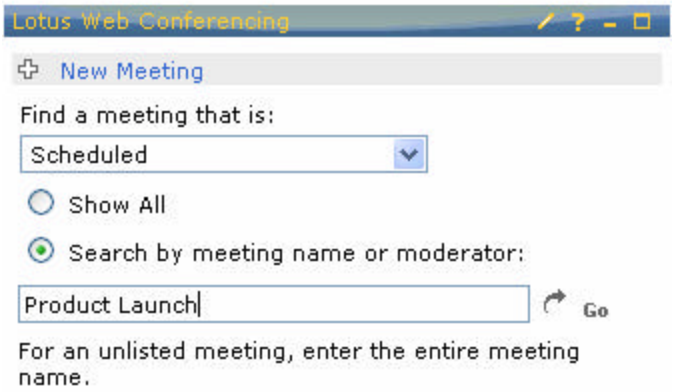
4.2. The Lotus Web Conferencing portlet

The IBM Lotus Web Conferencing portlet application provides access to Web conferences (commonly referred to as e-meetings), again within the context of the portal. It leverages the IBM Lotus Sametime 3.0 server that you set up to work with WebSphere Portal.

Similar to the My Lotus Team Workplaces portlet, this provides users the capability for true "contextual collaboration." Users have the ability to search for and attend meetings, manage meeting details, or create new meetings – *all from directly within the native portal environment.* This saves time for users, since they do not need to launch a separate window or application to work with e-meetings.

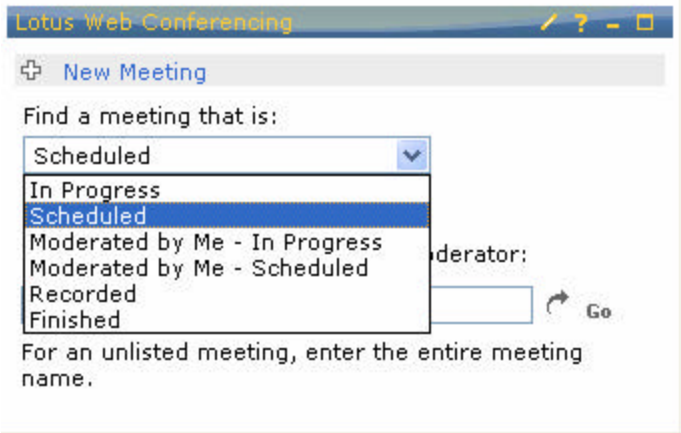
4.2.1. User features

The Lotus Web Conferencing portlet allows the user to locate needed Web Conferences (e-meetings) from directly within the portal, and then read details of the meeting prior to deciding whether or not to attend. The user can choose to view all meetings, or limit their search by searching on a meeting title or moderator's name.



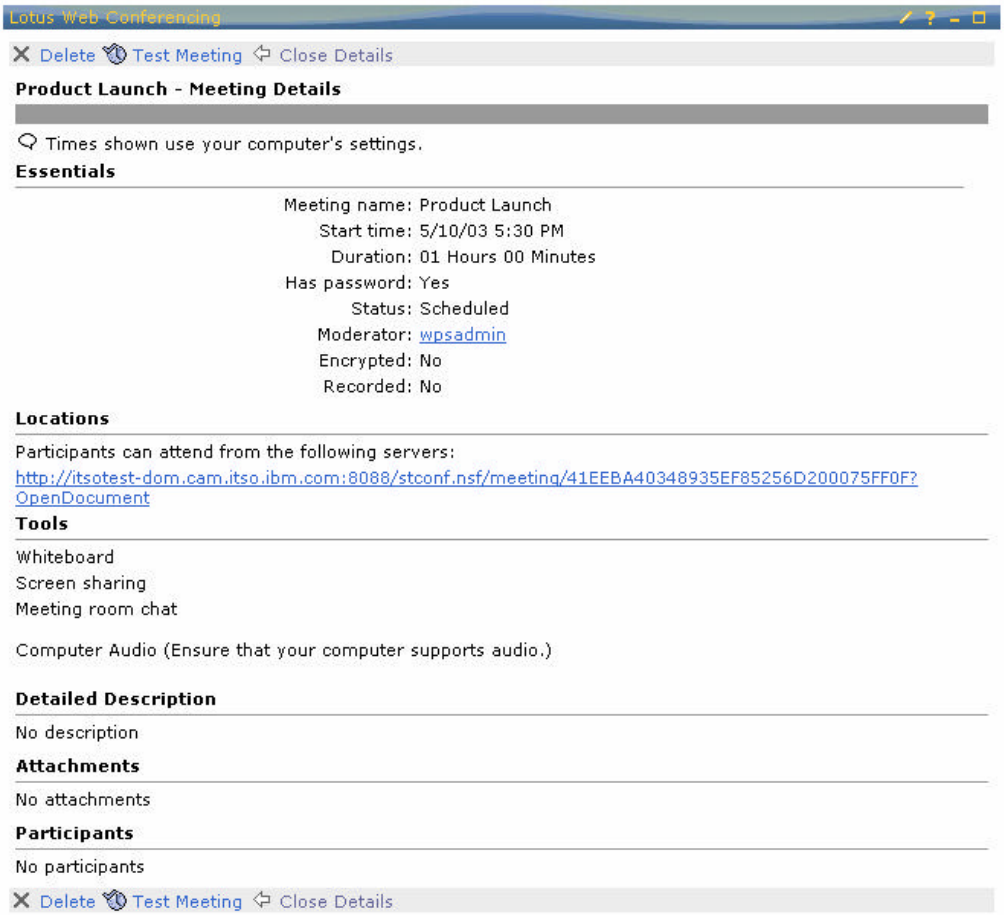
Searching for meetings by meeting name

To further refine a search, a user may select to search on a specific type of e-meeting. The next figure illustrates the options for refining searches, ranging from scheduled meetings, to meetings which have already finished, to only those meetings for which the user is a moderator.



Refining the search by e-meeting types

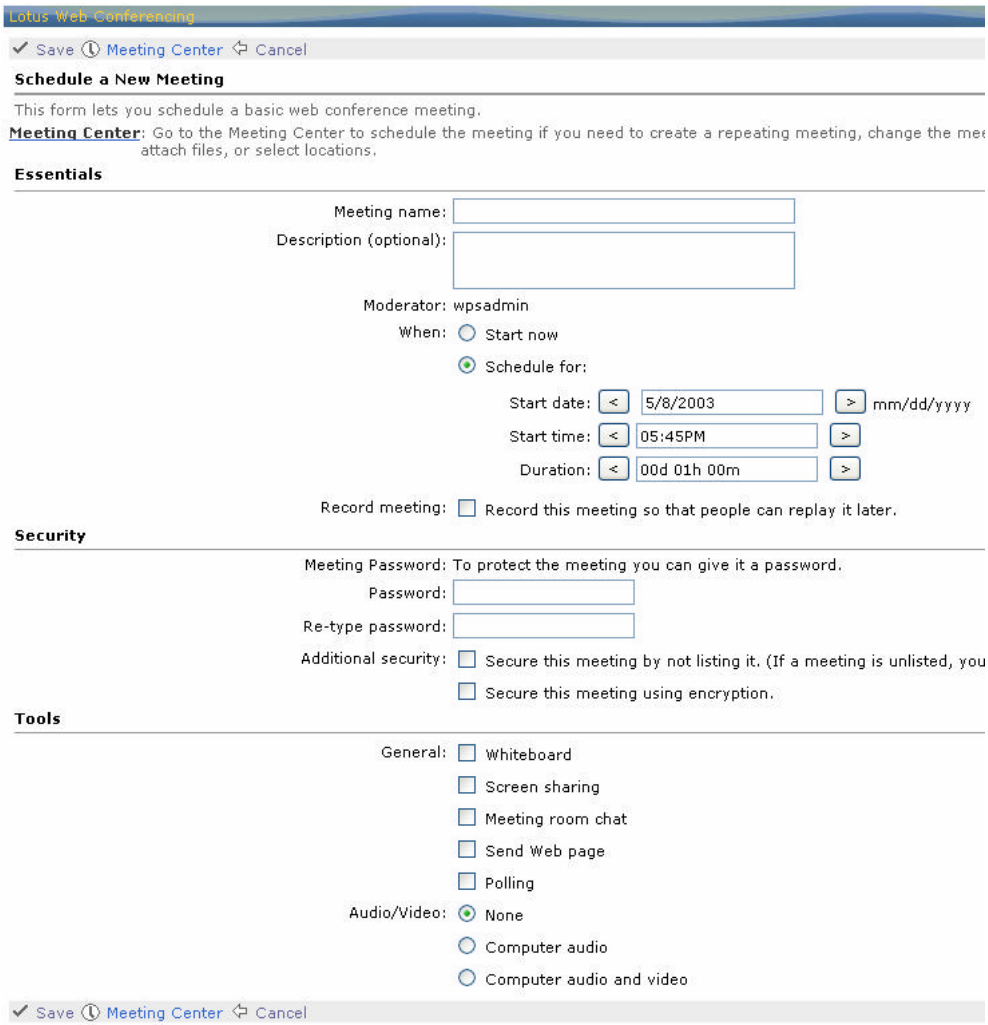
Once a meeting of interest has been located, details of the meeting can be viewed prior to deciding to attend the meeting.



Viewing meeting details within the portlet

Users can also choose to create a new meeting directly from within the portal. Once submitted, the meeting is immediately created on the Sametime server. Multiple options are available for customizing the meetings that are created.

Note: Due to limitations of the Sametime API, once meetings are created they cannot be edited from within the portlet.



Creating a new meeting from within the portlet

4.2.2. Administrative/setup options

The main administrative settings for the portlet are all made within the configuration parameters. The configuration parameters can be accessed within the “Portal Administration” place of the portal, on the “Manage Portlets” page, by selecting the “Lotus Web Conferencing” portlet and clicking the “Modify Parameters” button.

There are many parameters available within this interface, but generally only a few will be modified in most deployments. These key parameters are shown in the next figure and described in the text that follows.

SametimePort1	80
SametimePassword1	wpsadmin
SametimeServer1	itsotest-dom.cam.itso.ibm.com
SametimeUserName1	wpsadmin
SametimeUseSSL1	no

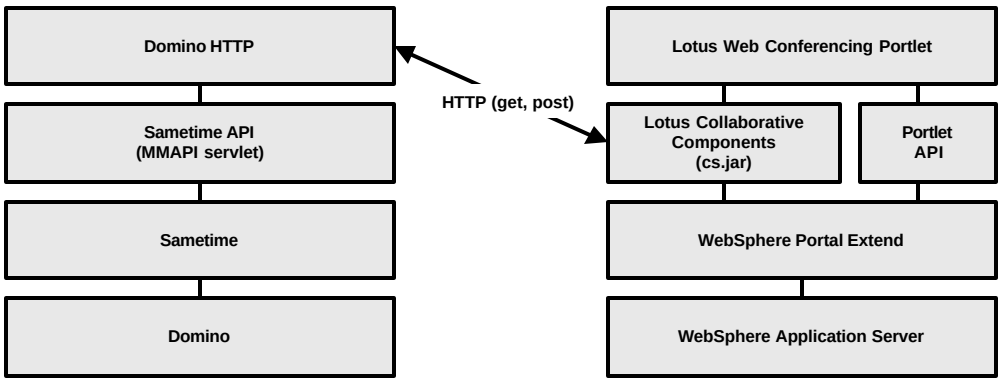
SametimeServer1
This parameter is used to define the fully-qualified hostname for the Sametime server that will be accessed by the portlet.

Multiple servers can be included, with basic load balancing across the multiple Sametime servers. For details about supporting multiple servers, refer to the detailed setup instructions included with Collaboration Center.

SametimePort1
SametimeUseSSL1
These parameters are used to define the HTTP port and protocol used by the Sametime server defined. Any valid port number is acceptable, while the SSL parameter should be set to “Yes” “or “No.”

4.2.3. Architecture

The following diagram depicts the high-level architecture of the Lotus Web Conferencing portlet.



In general, the Web Conferencing portlet leverages the Lotus Collaborative Components for all of its communication with Sametime. However, unlike the My Team Workplaces portlet, the Collaborative Components are only installed on the portal server. Communication with Sametime takes places via HTTP requests to the MMAPI servlet (Meeting Management API) that is part of the Sametime API on the Sametime server.

4.3. The People Finder portlet

The People Finder portlet is an application of Collaboration Center which integrates an online directory with the people awareness, instant messaging, e-meetings, and team workplace capabilities of the Collaboration Center. Since collaboration is all about people working together, this is the “killer app” in that it facilitates people finding people and then collaborating together, all within the context of the enterprise portal.

The People Finder portlet is also enabled with a WebSphere Portal "Click-to-Action" service. Click-to-Action provides a framework for communication that simplifies a user's interactions with portlets on a portal page. With a simple click, the user can transfer data from a source portlet to one or more target portlets, causing the target to react to the action and display a new view with the results. Portlets that are developed to pass the person name or e-mail address to the People Finder via "Click-to-Action" will also support an additional menu item of "Find Person." Clicking "Find Person" on the menu item causes the People Finder to execute a quick search. Developers for these external portlets will need to know the "type" of parameter being exposed, please refer to the InfoCenter for further details.

4.3.1. User features

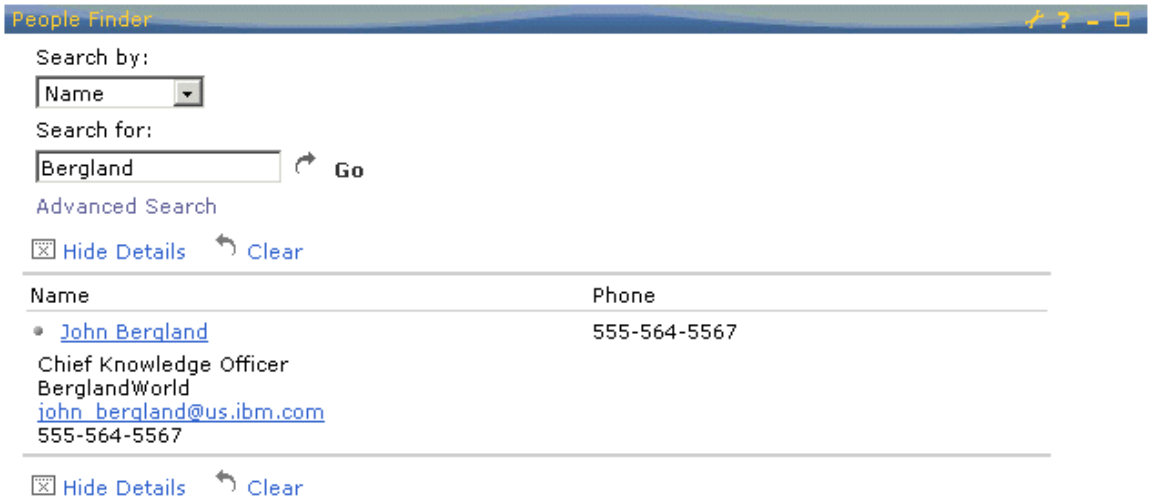
With this portlet, people in an organization can find and interact with each other quickly. Employees can use either a Quick Search or an Advanced Search to find a colleague and related information about that colleague. The following sections discuss each of these features in greater detail.

4.3.1.1. Quick Search

The initial screen for this portlet is a basic search interface for a "Quick Search" within the online directory utilized by the People Finder portlet. Users can select from an extensive list of attributes as the primary search criteria, such as Name, Last Name, First Name, Location, Job Title, and so forth. The list of search criteria is customizable by an administrator and ultimately defined by the LDAP schema for the organization.

Quick Search interface for the People Finder portlet

Details of the Quick Search results can be seen in the following screenshot.



Quick Search Results for the People Finder portlet

Once a person has been located in the search results, the person is immediately visible to the other portal user as a person link that indicates their online presence. Clicking the person link displays a menu of instant messaging and other options for collaborating and learning more about this person:

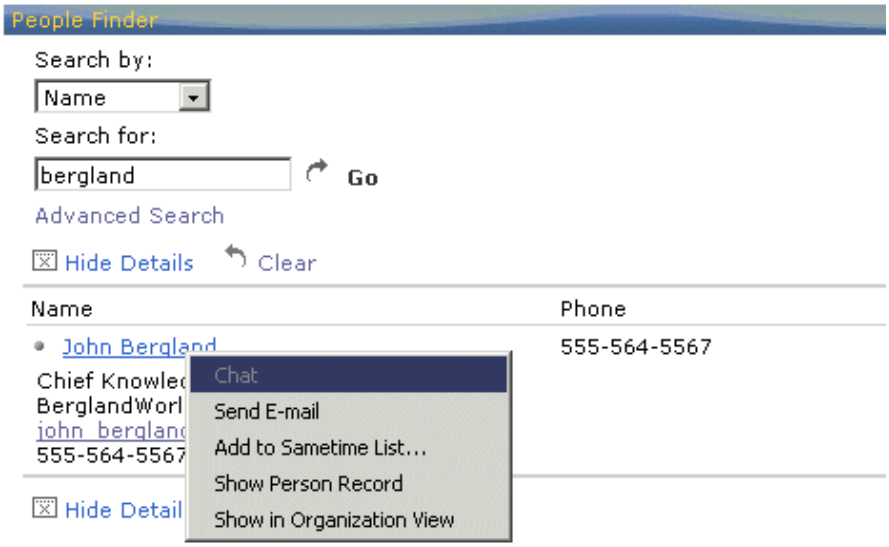
- Chat
- Send E-mail
- Show Profile (if IBM Lotus Discovery Server is enabled)
- Find Documents Authored By (if IBM Lotus Discovery Server is enabled)
- Add to Sametime List
- Show Person Record
- Show in Organization View

Note - When Lotus Discovery Server is installed and the person menu detects the installation, two additional options are visible.

- Find Pages Authored By
- Show All Pages Authored by This Person

Please refer to Collaboration Center person menu documentation for further details.

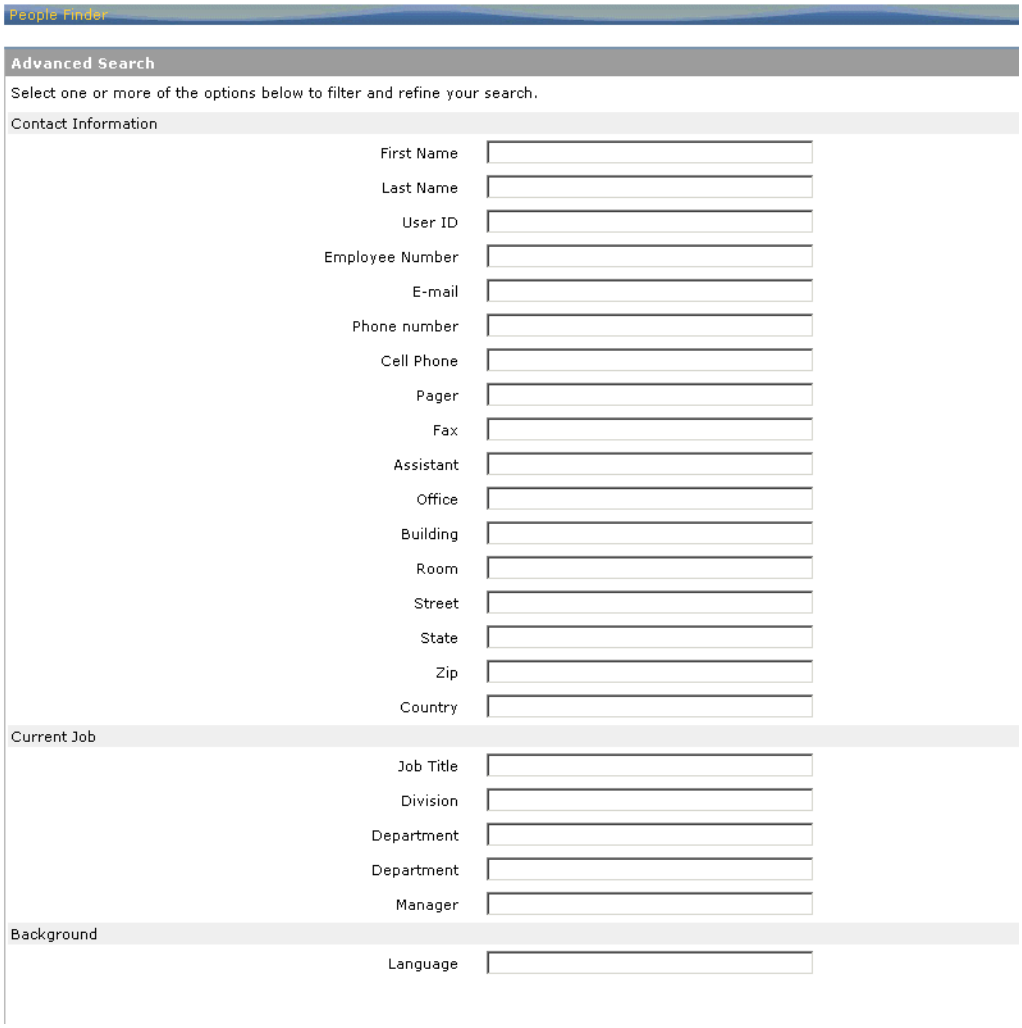
The screenshot below illustrates the contextual menus which appear when clicking on the person link.



Menu options for acting upon search results

4.3.1.2. Advanced Search

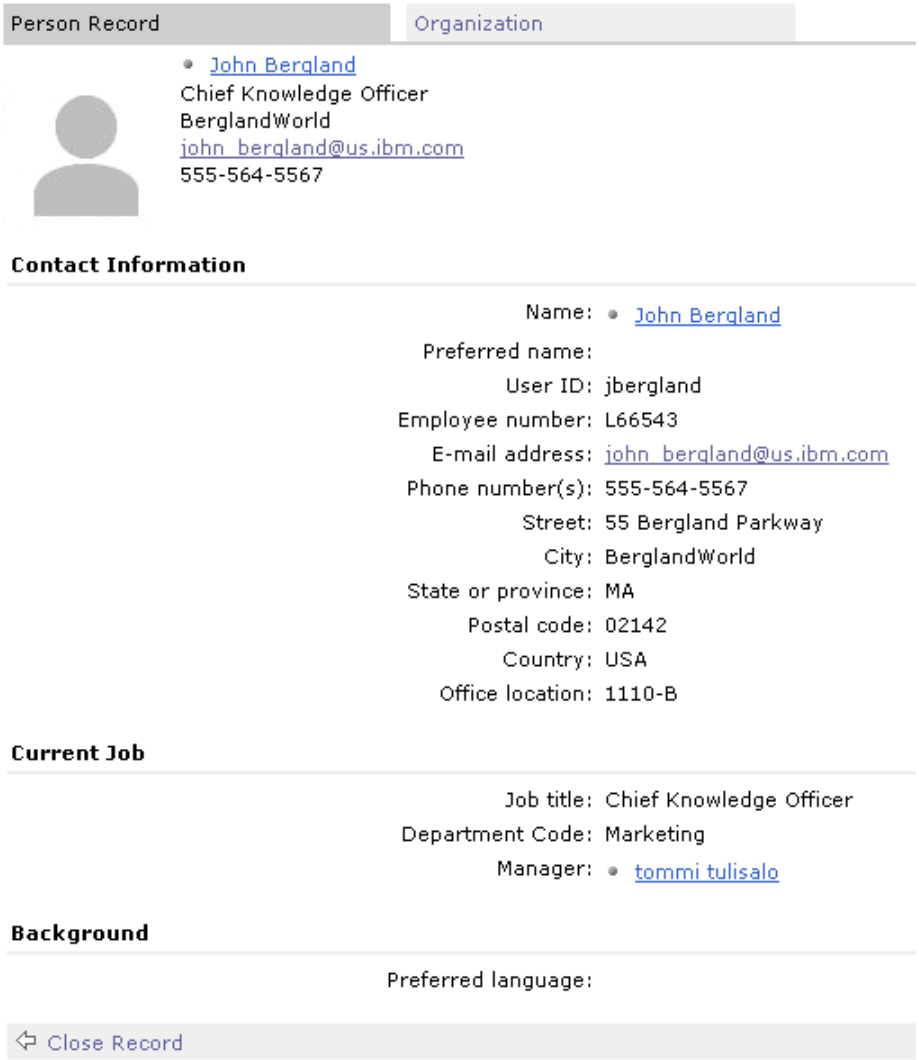
The People Finder portlet also provides an advanced set of parameters for filtering and further refining searches. The next figure illustrates a list of possible attributes to be used within the advanced search criteria. The list of attributes here is customizable and ultimately based on the organizational LDAP schema.



Example of parameters which can be used for an advanced search

4.3.1.3. Show Person Record

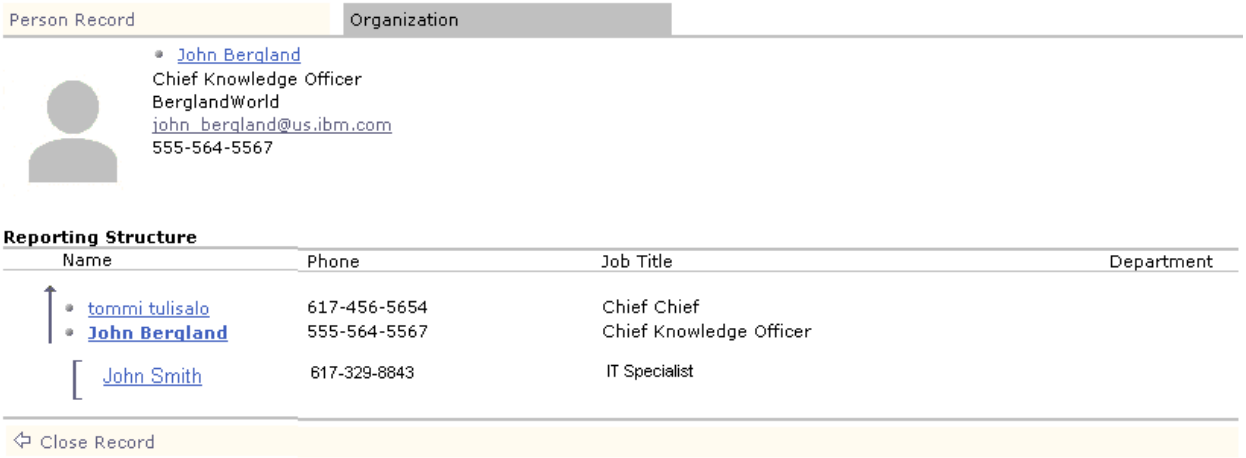
Once a person has been located, the user can find out much greater detail about the person and their role within the organization. Clicking the “Show Person Record” option from the contextual menu will display the person’s complete person document, displaying all information which is in the directory and has been configured by an administrator for publishing. In the example provided below, the person's business card information is displayed, followed by other information mapped from the directory source, such as Contact Information, Current Job, and Background.



Example of a person record

4.3.1.4. Show in Organization View

The Organization View shows the person's place in the organizational context. By selecting to display the Organization View for a person, users can see the person's relationship to others in the organizational hierarchy, namely, the person's direct reports and managers. An example of the Organization View is illustrated in screenshot below. All of these People Finder features can be customized.



Organizational View illustrating reporting structure

4.3.2. Administrative/setup options

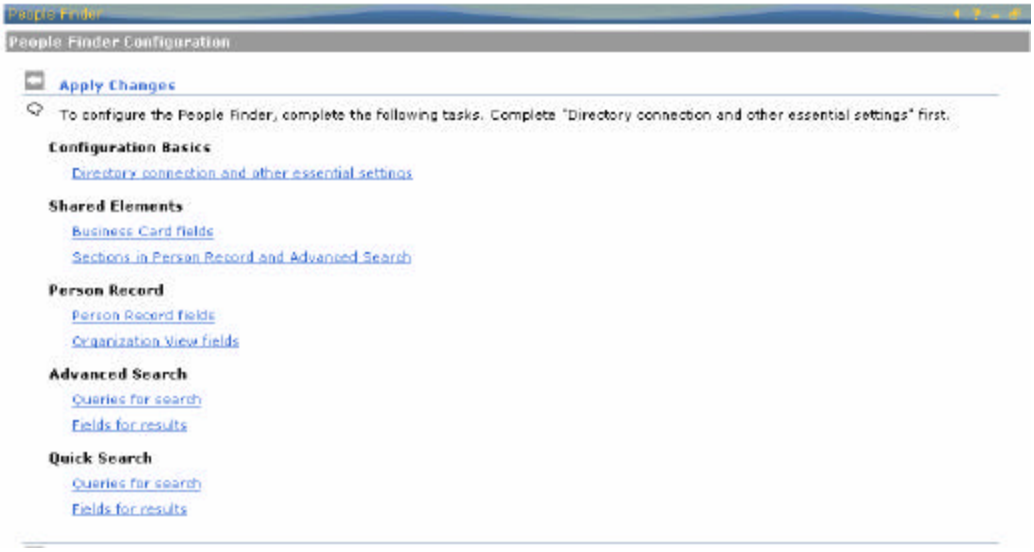
Unlike the other portlets in the Collaboration Center, the configuration/setup functions should not be performed by modifying the portlet parameters within the Portal Administration place. Rather, all configuration is performed within the edit/configuration mode of the People Finder portlet itself. This design allows portal administrators to delegate the setup of this portlet to someone familiar with the organization's directory strategy, without having to give full administration rights to the portal to that person. ** Note – in order for a user or administrator to make configuration changes to the People Finder, they will need to have *Manager Access* to the *portlet.*

Within this configuration mode one can define:

- The active directory connection that is utilized by this portlet. Available connections are defined within the separate LDAP connector utility (described in the install section of this paper).
- The fields from the LDAP directory that are exposed for use in the portlet.
- The exposed fields that are made available within the quick and advanced search interfaces for filtering searches.
- The exposed fields that are shown within the various search results, person record, and organizational views.

The following screenshots illustrate greater detail of the configuration parameters available within the People Finder portlet. Once the administrator has opened the portlet in configuration mode, parameters are defined for the following areas:

- Configuration Basics
- Shared Elements
- Person Record
- Advanced Search
- Quick Search

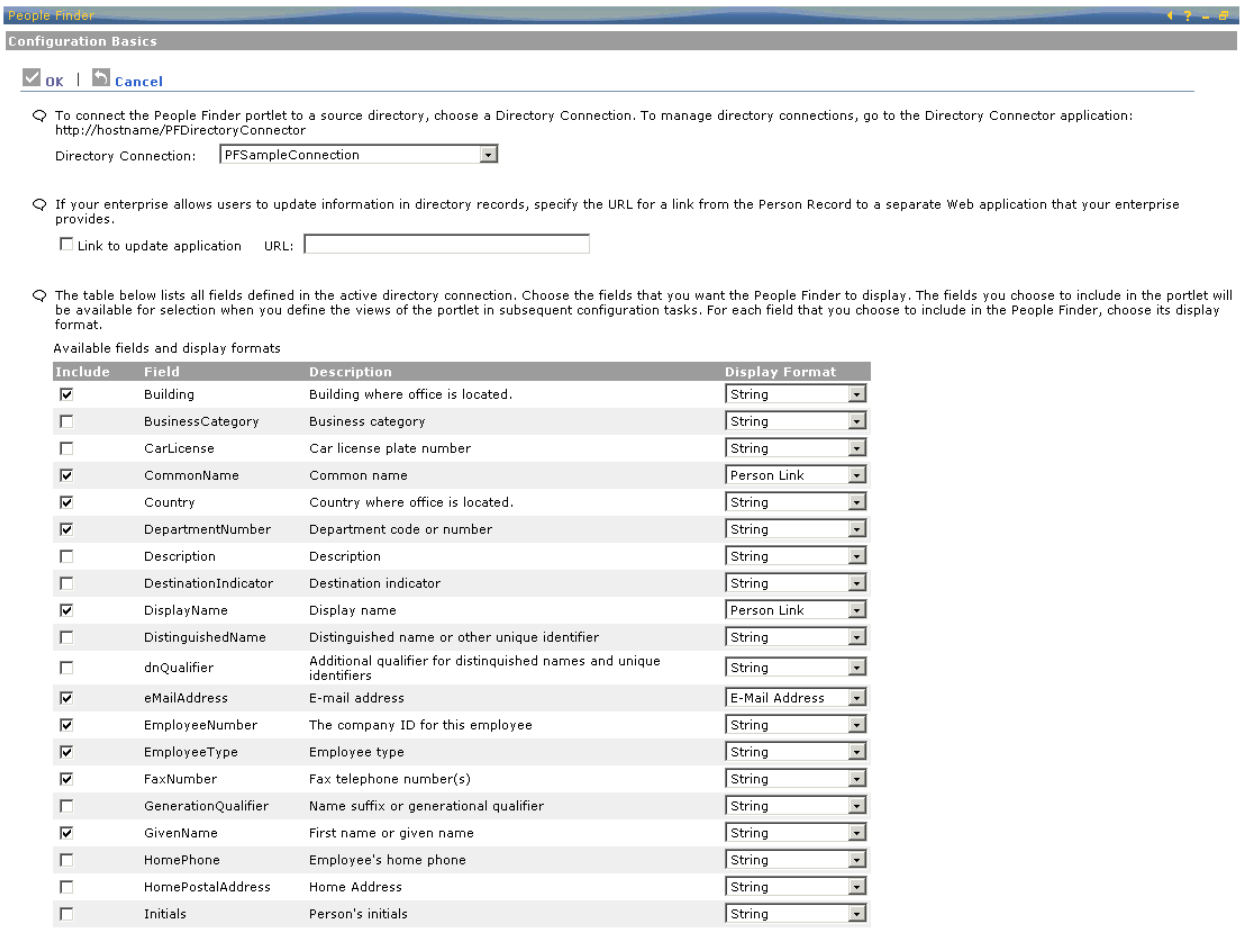


People Finder portlet configuration mode

Configuration Basics - This task must be performed first because this is where the administrator defines the fields of the portlet. The fields that are selected for display in the portlet are the basis for the remaining configuration tasks, in which the views of the portlet are defined.

The fields that are selected for the People Finder portlet come from the directory model specified in the configuration XML of the active directory connection. For this reason, an administrator must select an active directory connection to the People Finder source first, before the fields for the portlet are selected. This task also allows an administrator to specify the intranet site where users can update certain fields of their Person Records, if you choose to provide this option.

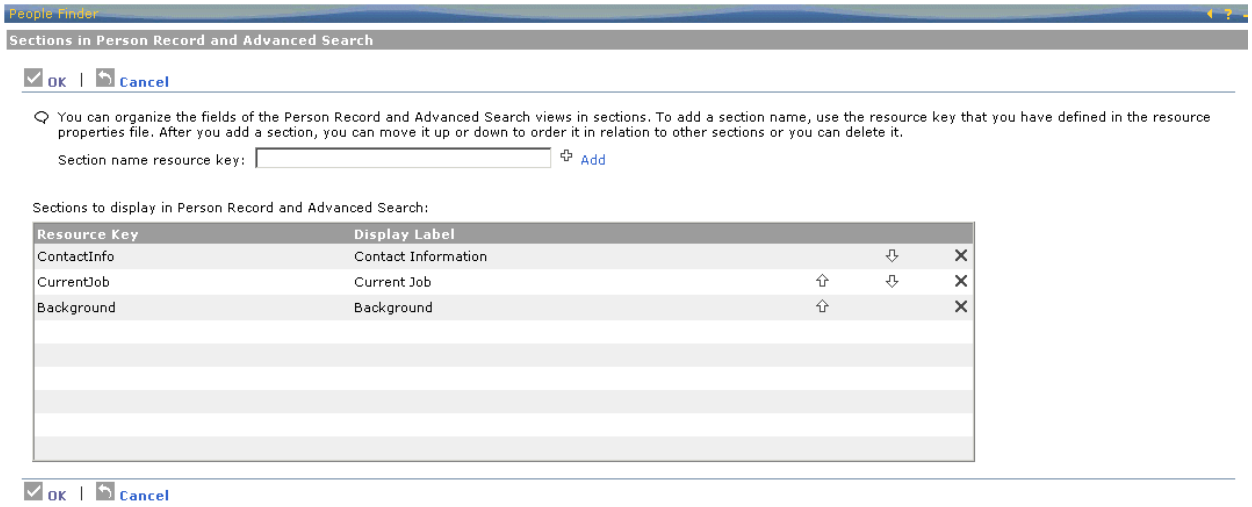
The screenshot below illustrates an example of the Directory Configuration options.



Directory Connection configuration options

Shared Elements – Within the Shared Elements task, an administrator can define common elements shared by more than one portlet view. More specifically, shared elements can be defined between Business Cards, as well as sections in Person Records and the Advanced Search. The Business Card is a shared element because it appears in the Person Record, the Organization View, and in Quick Search Results. The Person Record and Advanced Search views share the same sections for organizing fields.

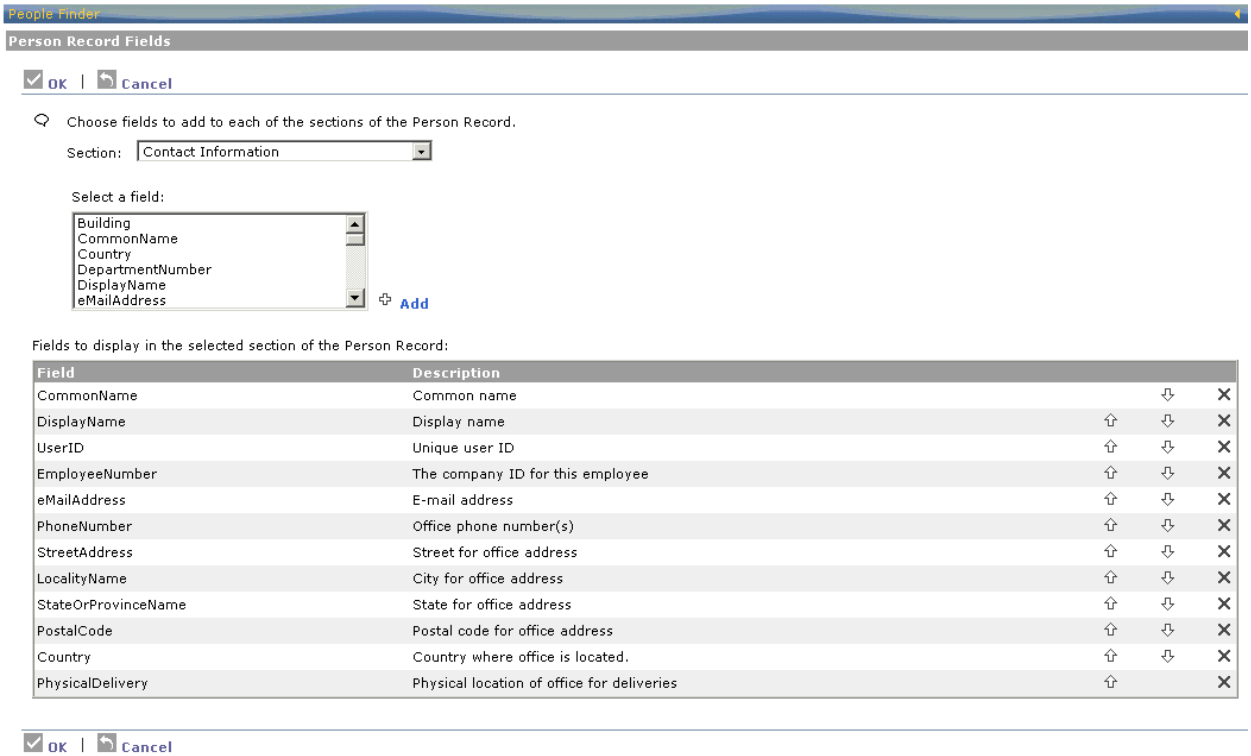
The screenshot below illustrates an example of the configuration options for shared elements between the Person Record and Advanced Search.



Configuring Shared Elements sections in the Person Record and Advanced Search

Person Record and Organization View – Configuring these parameters allows an administrator to define the fields of the Person Record and the optional Organization View. Once the Person Record sections have been defined within the Shared Elements configuration step, an administrator can select the fields of the portlet to display in each section of the Person Record. After selecting the fields, it is possible to order them and, if necessary, delete one or more fields. Additonally, an administrator can choose to display the Organization View for a found person if the active directory connection includes the Manager attribute mapped as a field for the People Finder.

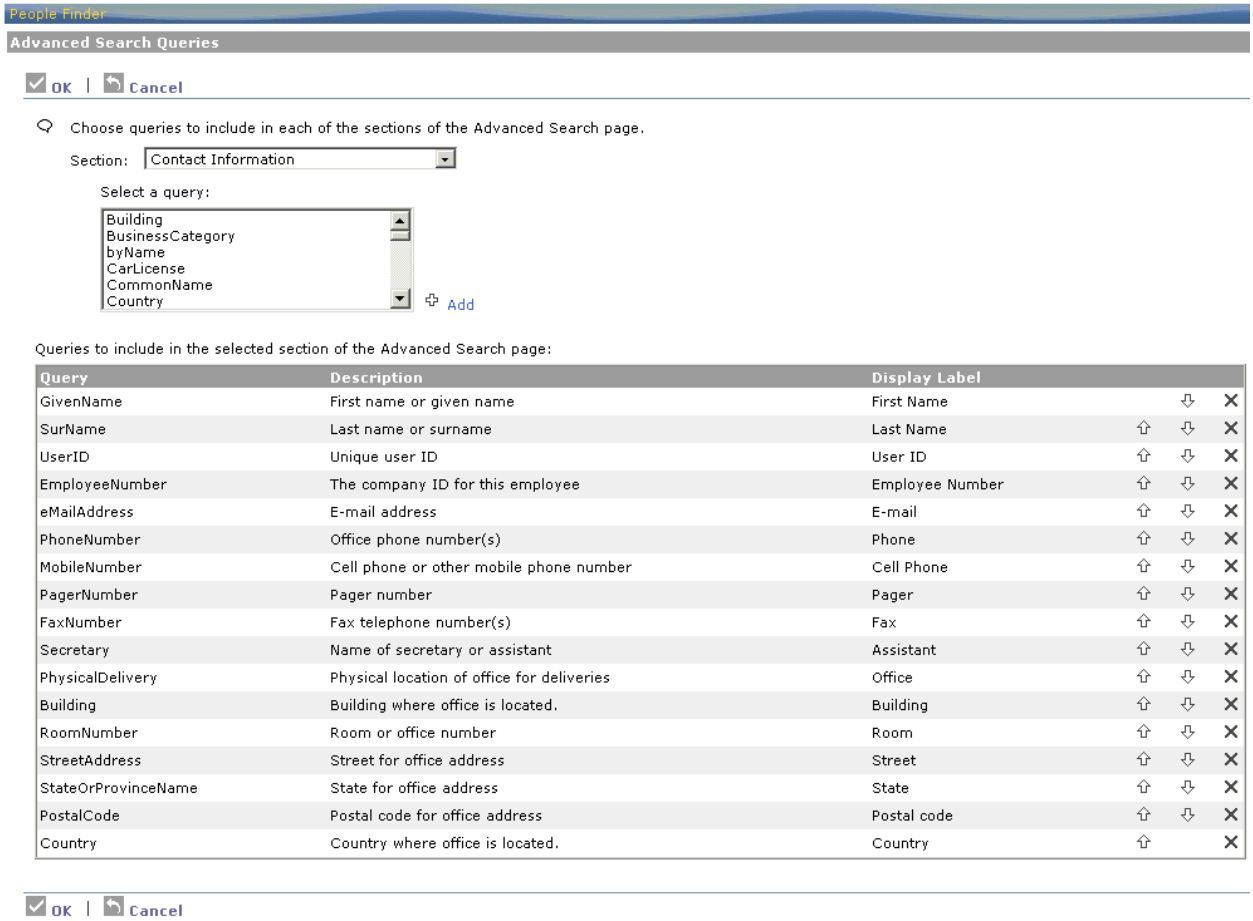
The screenshot below illustrates an example of the configuration options fields in a Person Record.



Configuring fields within the Person Record

Advanced Search and Quick Search - In these tasks, an administrator defines the queries that will be available in the Advanced Search and Quick Search views, and defines how search results will be displayed. The screenshot below provides an illustration of configuring the Advanced Search query parameters.

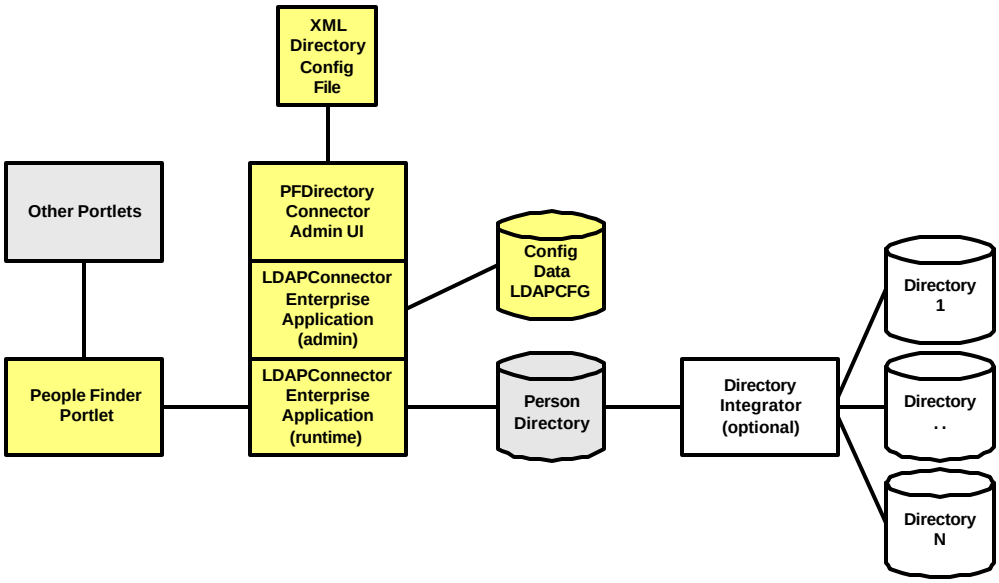
The screenshot below illustrates an example of the configuration options Advanced Search queries.



Configuring the Advanced Search Query Options

4.3.3. Architecture

The People Finder portlet has the most complex and involved architecture of the three portlets that comprise the Collaboration Center. The following diagram depicts the high-level architecture of this portlet.



There are two main components that make up the complete People Finder capabilities.

- The first is the People Finder portlet itself. This portlet is coded to the standard Portal API, and utilizes the Click-to-action capabilities of the portal to allow interaction with other portlets. This portlet also includes the configuration node.
- The second key component is the LDAP Connector Enterprise Application. The LDAPConnector is itself comprised of several main subcomponents:
  - An XML Directory Configuration file must be created by the administrator. A sample file, PFSampleConnection.XML, is supplied with the installation. In this file an LDAP administrator sets up the mapping of LDAP attributes, and specifies the connection details for access to the LDAP directory.
  - The PFDirectoryConnector Administration interface is accessed via a Web browser. This interface is what supports the loading and validation of the XML configuration file.
  - Once this file is verified, the data is loaded into a database table, LDAPCFG, by the “admin” sub-component. This component maintains the persistence of the information by updating the LDAPCFG table in the relational database.
  - Finally, the runtime component handles the translation of generic/abstract queries from the PeopleFinder portlet into the specific/specialized queries that are made against the Person Directory. This query translation is performed by utilizing the directory configuration information, such as field mapping, that was originally provided by the administrator in the XML configuration file.

An optional component of the overall People Finder architecture is a Directory Integration component. This component, usually a product such as the IBM Directory Integrator, is used to combine multiple LDAP directories that may exist in a given enterprise into one directory that is usable by the People Finder. More details on these “directory” considerations are in the planning and installation section of this paper.

5. Collaboration Center planning and Installation

This section is intended to provide a high-level overview of the installation process, as well as the key planning and preparation steps that should be considered. It is intended to give the reader a better understanding of the steps and processes involved in the installation; it is not intended as a substitute for the actual installation instructions provided with the Collaboration Center portlets themselves. These actual installation instructions can be found in the WebSphere Developer Domain Portal Zone Documentation Library, at:

http://www7b.software.ibm.com/wsdd/zones/portal/proddoc.html

From within the Portal Zone, follow the links to the Info Center documentation for Websphere Portal.

At the time of this document publishing, the direct URL to the installation instructions is:

http://publib.boulder.ibm.com/pvc/wp/42/ext/en/InfoCenter/index.html

5.1. Preparing for a Collaboration Center installation (prerequisites and planning)

A basic collaborative portal must be in place prior to installation of the Collaboration Center. This section details the key prerequisites that you should verify, and the key deployment planning decisions that should be considered, prior to attempting an installation.

Required supporting software

One or more of the following products should exist in the basic collaborative portal. The specific products required depend on which companion products you have chosen to enable in your collaborative portal, and which Collaboration Center portlets you will utilize in your environment.

- WebSphere Portal 4.2 (and supporting infrastructure)
  The base requirement is for a fully installed, configured, and running WebSphere Portal Extend, Experience, or Express environment. This base environment will include a DB2 or Oracle database, and an LDAP authentication directory, for use by WebSphere Portal.
- IBM Lotus Instant Messaging (Sametime) 3.0
  The Lotus Sametime product is required for all portlets in the Collaboration Center. These capabilities provide the people presence and instant messaging capabilities seen in people links throughout the portal.

  Lotus Sametime must be properly set up and configured to work with WebSphere Portal, for Collaboration Center to function. Details on setting up Sametime for WebSphere Portal can be found in the WebSphere Portal Extend InfoCenter:

  http://publib.boulder.ibm.com/pvc/wp/42/ext/en/InfoCenter/collab/ksa_cfg_st.html
- IBM Lotus Team Workplace (QuickPlace) 3.0
  This product provides the capability to manage and use team workplaces from within the portal. It is required for the My Lotus Team Workplaces portlet.

  Lotus QuickPlace must be properly set up and configured to work with WebSphere Portal, for Collaboration Center to function. Details on setting up QuickPlace for WebSphere Portal can be found in the WebSphere Portal Extend InfoCenter:

  http://publib.boulder.ibm.com/pvc/wp/42/ext/en/InfoCenter/collab/ksa_cfg_qp.html
- IBM Lotus Web Conferencing (Sametime) 3.0
  The e-meetings/Web conferencing capabilities of Lotus Sametime are only required for the Lotus Web Conferencing portlet.

*** Note – An administrator may choose not to install Lotus Sametime, but this will disable the awareness and e-meeting capabilities within the Collaboration Center portlets.

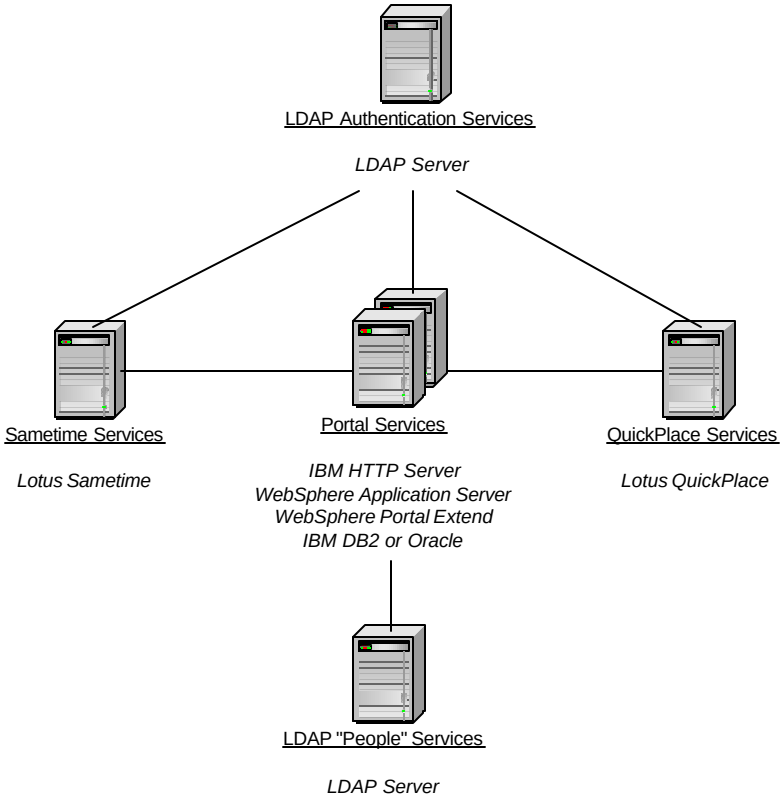
o LDAP
The People Finder portlet requires an existing LDAP environment that is populated with person details for all individuals in your organization. All person detail attributes upon which users will want to search will need to be populated.

Supported LDAP servers for this "people directory" capability are:

- IBM Lotus Domino 5.0.10 and later releases, including Domino 6.0.x
- IBM Directory Server 4.1
- Microsoft Windows 2000 Active Directory 2000
- Sun ONE (formerly iPlanet) Directory Server 5.0

A typical collaborative portal infrastructure

The following diagram depicts a common WebSphere Portal environment that has been enabled for collaboration, as it exists prior to a Collaboration Center installation. This diagram is not intended to define a required number of servers, but rather to demonstrate visually the various technologies that must be pre-existing in your infrastructure.



A typical collaborative portal environment prior to Collaboration Center installation

You will note, when examining this typical environment, that the supporting components/products (including IBM HTTP, WebSphere Application Server, WebSphere Portal, and DB2/Oracle) may be spread across multiple servers, or they may all be installed on one server. For example, a typical large enterprise will often have the IBM HTTP, WebSphere Application Server, and relational database system (DB2) deployed on separate physical machines.

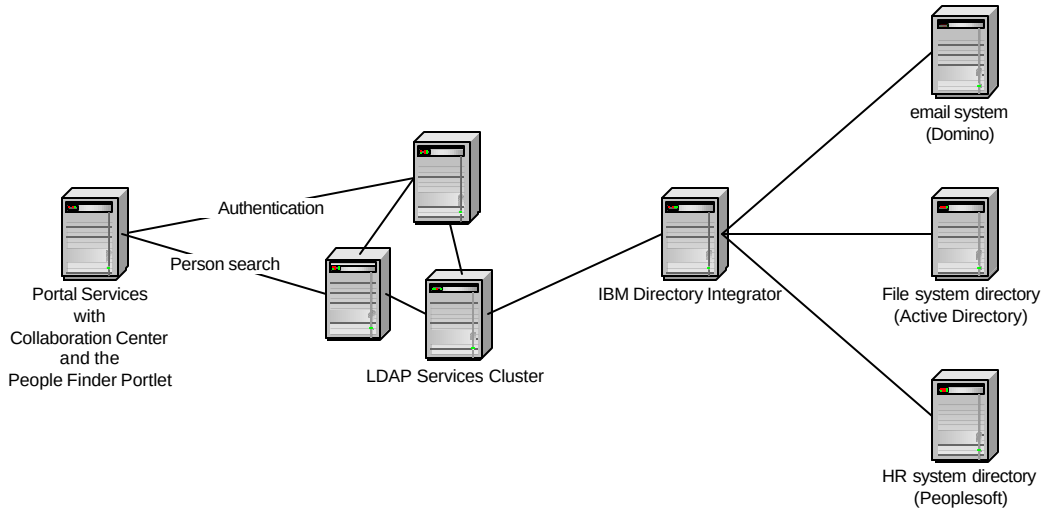
Verifying your directory strategy

Prior to deploying the Collaboration Center capabilities, it is important to consider your organization's directory/LDAP strategy.

As stated earlier in this document, the People Finder capabilities of the Collaboration Center require a single LDAP infrastructure which contains all the people in your organization. It is not possible to point a single instance of People Finder at more than one directory for person searches. Many larger organizations may not have a single enterprise directory that contains all users in the enterprise, along with key organization information about those people, such as their reports to manager. While it is possible to point two separate instances of the People Finder portlet at two different LDAP servers, this may not represent a desired unified solution. Thus, a solution to synchronize multiple separate directories into a single LDAP directory for use by the People Finder, such as the IBM Directory Integrator, may be required.

Additionally, the LDAP server utilized by People Finder may even be a separate LDAP infrastructure from the LDAP environment utilized by WebSphere Portal itself for authentication purposes. This ensures that the load created for "person queries" by users utilizing the People Finder portlet will not overload your LDAP environment that is used for other purposes, such as authentication.

The following diagram identifies one option for an "enterprise" directory strategy to support the People Finder. A directory solution of this magnitude is by no means required for the Collaboration Center, but again is an example of what may be required in some environments depending on the existing directory strategy prior to the installation of Collaboration Center.



An enterprise directory environment, in support of the Collaboration Center

For more details on the IBM Directory Integrator, see:

`http://www-3.ibm.com/software/tivoli/products/directory-integrator/`

Verifying Single Sign-On

Another key infrastructure support consideration for the proper function of Collaboration Center is Single Sign-On support. For the Collaboration Center to work seamlessly, Single Sign-On (SSO) using the IBM

Lightweight Third Party Authentication routine (LTPA) must be enabled between WebSphere Portal and the servers hosting the Lotus Web Conferencing (Sametime) and My Lotus Team Workplaces (QuickPlace) portlets.

5.2. Key files utilized by the installation process

The installation of the Collaboration Center basically consists of installing the portlet applications, enterprise application, and database files for an integrated e-workplace solution. This installation involves adding new files which provide new collaborative functionality, as well as updating the Lotus Collaborative Components files that already existed as part of a base WebSphere Portal Extend environment (in WebSphere Portal 4.2 environments).

The following tables provide details on the specific files included in the installation.

The new files added as part of the installation process are as follows:

File Name	Description and Functionality
LdapConnector.ear	The enterprise application that contains the Enterprise JavaBean (EJB) module and the Web module for the Directory Connector application. ? The EJB module, LdapConnectorEJB.jar, contains the following beans: o LdapConnector.ejb, the runtime bean o LdapConnectorAdministration.ejb, the administration bean o LdapDirectoryConfigurationInstance.ejb, the entity bean ? The Web module, LdapConnectorWeb.war, contains the Directory Connector administration client application.
LotusMyTeamWorkplaces.war	My Lotus Team Workplaces (QuickPlace) portlet
LotusPeopleDirectory.war	People Finder portlet
LotusWebConferencing.war	Lotus Web Conferencing (Sametime) portlet
PFSampleConnection.xml	The sample directory configuration is based on inetOrgPerson and serves as a master template. It provides the preconfigured directory model and directory connection settings. LDAP experts will modify and import this file as a prerequisite to configuring the People Finder portlet.

The updates to the Lotus Collaborative Components files that Collaboration Center requires are identified in the next table.

** Note – The updates to the files are based specifically on WebSphere Portal Extend, v 4.2. For future releases of WebSphere Portal, 4.2.1+, these updated Collaborative Components files are included directly with the software release.

File Name	Description and Functionality
cs.jar	The collaborative services module
pa_stlinks.js	The People Awareness Sametime Links JavaScript file
People.tld	The People tag language definition file

The files for creating and maintaining the database that stores People Finder directory configuration information are in the next table. The install program runs these scripts automatically, as needed.

File Name	Description and Functionality
The configuration database for the People Finder Directory Connector	Configuration information for the People Finder directory is maintained in a DB2 database.
Pdirtbls.sql pdircreatedb.sql pdirdropdb.sql Pdircrdb.bat	Files used for creating and maintaining the DB2 Database.

5.3. Overview of the automated installation process

This section provides a high-level overview of the functionality and steps required to run the automated installation script. For an actual installation, refer to the more detailed instructions provided with the Collaboration Center code.

The automated installation script serves to install and configure all of the components and portlets required to run the Collaboration Center. However, after the automated installation has finished, a few remaining "post-installation" setup steps must be completed. These post-installation steps are described later in this document.

The automated installation script provided with the Collaboration Center consists of 3 files:

1. CollabCtr.jar – the jar file for all platforms
2. installCollabCtr.bat – the installation batch file for Windows platforms
3. installCollabCtr.sh – the shell script for UNIX platforms

To start the installation script, run the installCollabCtr.bat file, or installCollabCtr.sh on UNIX, and pass it one parameter: the WAS_HOME location.

```
install CollabCtr C:\WebSphere\AppServer
```

Throughout the installation process, the user will be prompted for certain configuration details. A high-level overview of the automated installation steps is as follows:

1. **License Agreement**

   You will be prompted to accept the License Agreement.

2. **WebSphere/WebSphere Portal locations**

   You will be prompted to supply the file path to both the core WebSphere, and WebSphere Portal, files. For example, c:\websphere\appserver and c:\websphere\portalserver.

3. **Creating the configuration database**

   You will prompted to select DB2 or Oracle (both relational databases are supported), and to enter a valid database user ID. The user must have administrator authority to the database system.

   Note: In the current release the database name is set to **LDAPCFG** and cannot be changed.

4. **Setting up the JDBC connection and creating a data source**

   You will be prompted to provide a JDBC provider, database driver, URL prefix, and driver library. Typically, you will accept the defaults to use wps40JDBC that is installed as part of WebSphere Portal 4.2.

   However, when accepting the defaults, the database home location for the JDBC driver library files must still be verified/updated (that is, SQLHOME for DB2 is c:\program files\SQLLIB).

5. **Defining the application server for LDAPConnector**

You will be prompted to enter the name of the WebSphere "application server" upon which the LDAPConnector.ear will be deployed. This is not the hostname of the WebSphere server itself, but rather the name of a specific Java "application server" that is up and running within the WebSphere Java environment. (e.g. This will a WAS "application" instance on the same physical machine as the Portal server.) Customers should use the WAS Admin console to see that there are already two application server instances after installing WPS. One is the Portal server, the other is called "Default Server". In demo/proof-of-concept environments the "default server" that is normally available in WebSphere should be sufficient. However, for a production/enterprise install, you may want to create a separate "server" to run this LDAPConnector process.

Note - Customers must not install the LDAPConnector enterprise application (i.e. EAR) to the Portal Server application server instance in WebSphere. This specific server instance uses different classloader settings than required by the LDAPConnector.

6. **Perform the install**

At this point the automated installer begins the actual installation process, based on the information you have provided:

- First it checks WebSphere to make sure it is up and running, and that both the Portal server and the application server you defined for deployment of the LDAPConnector are up and running.
- Next it installs the collaboration center files, and creates and populates the LDAPCFG database. You will be prompted to click Next after the database is created.
- Finally, it deploys the Collaboration Center portlets themselves.

After the installation is completed, you can check several log files for potential error messages, specifically: CollabCenter.log, DeployCollabCtr.log, DeployCollabCtrEar.log, and CreateCollabCtrDS.log.

All log files can be found in the <WAS_HOM>\PortalServer directory on your WebSphere server.

There is also a DbCreate.log file in the \PortalServer\install directory, with details about the database creation portions of the install.

5.4. Post-installation setup steps

After the automated install has completed successfully, there are still several manual configuration steps that must be taken to get the full Collaboration Center up and running. Some of these steps may best be performed by the LDAP/directory expert in your organization.

Specify a user for the LDAPConnector

To configure the connection to your LDAP directory for use by the People Finder portlet, a Web interface for the LDAPConnector is automatically installed. However, you must first define the users that will have rights to access this LDAPConnector setup interface in their browser.

This User/Role mapping is performed within the WebSphere Administration Console, as described in the detailed installation documentation.

Note: After you have made this User Role change, you may have to "regenerate" the HTTP server plugin to allow your changes to take affect. The plugin is regenerated in the WebSphere Administrative Console by right-clicking on the "server."

Define your “person” directory connection details

Directory configurations for the People Finder portlet are defined in XML files that specify the directory data model and the connections to the LDAP server that hosts the People Finder directory. A sample configuration file based on the standard LDAP inetOrgPerson object class is provided with the Collaboration Center. This file, PFSampleConnection.xml is installed in the <WAS_ROOT>/WebSphere/PortalServer/CollabCenter directory.

This sample file has multiple directory connection settings, as shown in the following:

```
<connectionSettings>
   <jndiFactory>com.sun.jndi.ldap.LdapCtxFactory</jndiFactory>
   <hostURI>ldap://yourserver.yourdomain.com:389</hostURI>
   <ldapVersion>3</ldapVersion>
   <baseDN></baseDN>
   <securityProtocol>none</securityProtocol>
   <bindDN></bindDN>
   <privateCredentials></privateCredentials>
   <globalFilter><![CDATA[(&{}(objectclass=person))]]></globalFilter>
   <searchResultsMaxLimit>40</searchResultsMaxLimit>
</connectionSettings>
```

However, only two parameters are really required to establish a first-time connection to a directory: hostURI and baseDN. The hostURI should contain the fully qualified hostname to your LDAP server, while the baseDN should include the top-level organization or organizational unit where searches in the directory should begin.

Additionally, BindDN and privatecredentials may also be needed, should your LDAP environment not allow anonymous binding. These settings are used to define a username and password with bind rights to the LDAP server.

Define your person directory field mappings

The sample directory configuration file, PFSampleConnection.xml, is already mapped to the standard inetOrgPerson attributes, which work with most LDAP servers. However, depending on your own LDAP installation, you may want to make some modifications.

For example, a Lotus Domino LDAP server exposes the Domino “department” field as “department.” However, the sample XML file only includes the attribute “departmentNumber” as an attribute to be exposed. One would add an entry under “exposedAttributes” section of the XML file as follows:

```
<exposedAttribute label="DepartmentNumber">
    <description></description>
    <mappedAttribute>department</mappedAttribute>
    <type>String</type>
</exposedAttribute>
```

This entry would then expose the “department” field from your LDAP directory as available to the People Finder portlet.

Additionally, you should verify that the “manager” attribute is properly identified and enabled for “recursive” queries since this attribute is used to walk (in other words, recurse) the LDAP tree to identify the organizational structure for presentation of the organization view. You should verify that “manager” is the LDAP attribute exposed by your LDAP server that contains the LDAP distinguished name of each person’s manager in the organization, or rename this recursive attribute as appropriate. . (***Note –*** it is required for the selected recursion attribute contains LDAP DN’s for this feature to work.) Additionally, you may want to consider increasing the recursionMaximum to 20 to guarantee that enough of your organizational hierarchy is retrieved for display in a person's reporting structure.

```
<exposedRecursiveQueries>

        <recursiveQuery label="ReportsTo">

            <description>Recursive query</description>

            <recursionAttribute>Manager</recursionAttribute>

            <recursionMaximum>10</recursionMaximum>

        </recursiveQuery>

    </exposedRecursiveQueries>
```

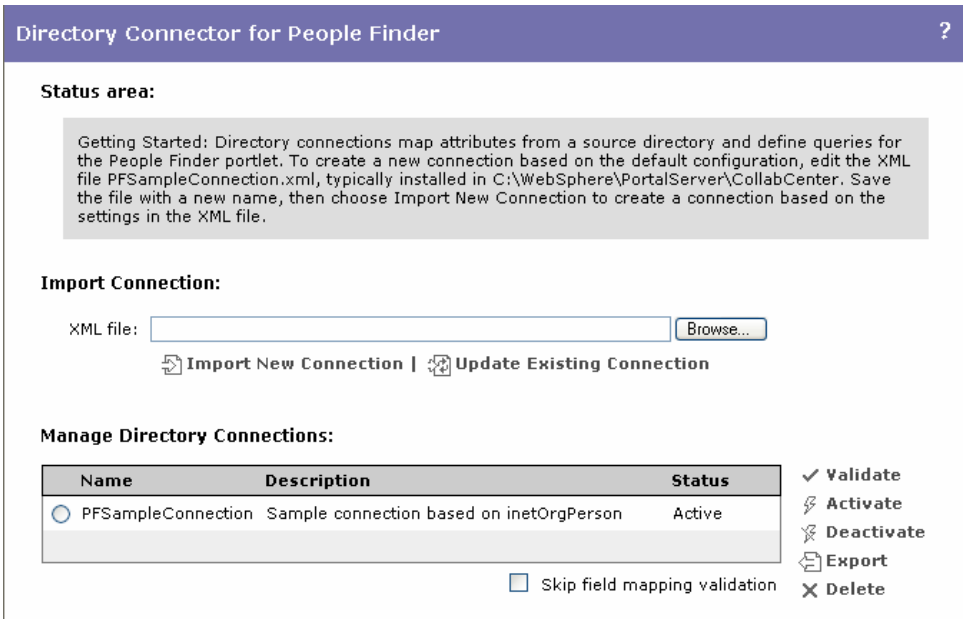
More details on modifying/creating an XML directory configuration file can be found within the WebSphere Portal InfoCenter.

`http://publib.boulder.ibm.com/pvc/wp/42/ext/en/InfoCenter/collab/ap_cfgxml.html`

Set up the directory connection (via the LDAPConnector)

The final step in configuring the LDAPConnector capabilities for use by the People Finder portlet is to import and activate the LDAP XML configuration file that you have set up for your environment. This is performed by utilizing the LDAP Connectors Web interface, via the URL:

`http://portal_server_hostname/PFDirectoryConnector`



In this interface you first must browse to the location of your XML file and “Import” it as a new connection. You can then choose to “validate” the XML against the LDAP directory to ensure that all attributes defined are valid, and so forth. If no errors occur, the connection should then be “activated.”

Note: For Domino LDAP directories, “skip field mapping validation” should be checked so that only connections settings are validated, not individual fields. Domino LDAP does not support field-level validation. Customers should also manually check if the configured attributes are valid and exist in their LDAP directory.

Because these XML files will hold configuration information for directory models and server connections (possibly including security and credential information), you should delete them once you import them for use in the Directory Connector application. You can recapture a directory configuration XML at any time by exporting the connection from the Directory Connector application.

Configuring the portlets

At this point your installation is complete and you should be able to perform the final configuration steps. This involves adding the 3 portlets to a portal page, and then modifying the few remaining “administration” settings for each portlet as defined earlier in this document. Note that before deploying the Collaboration Center to end uses, it will be necessary to review and set the proper ACL rights on the portlets.

5.5. Hints and tips for a successful installation

The installation of the Collaboration Center capabilities is relatively straightforward. However, with the multiple technologies and products involved, there are bound to be a few issues that may require troubleshooting. Luckily, there are many troubleshooting options and steps available for finding the root cause of any challenges you may encounter.

For example, there are multiple log files to investigate for error messages, and various browser tests that can be performed to verify functionality of key components of the overall Collaboration.

The latest troubleshooting steps can always be found in the Collaboration Center portion of the WebSphere Portal InfoCenter:

http://publib.boulder.ibm.com/pvc/wp/42/ext/en/InfoCenter/collab/ap_trubs.html

Within the Info Center documentation for Collaboration Center, specific installation verification points and troubleshooting techniques are provided for each of the Collaboration Center portlets.

6. Conclusion

The benefits of collaboration within a portal are clear. Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. Information is shared more effectively, communication is more efficient, and companies can make quicker, more informed decisions. Ultimately, collaborative capabilities provide competitive advantage in the marketplace and impact the bottom line.

WebSphere Portal featuring the Collaboration Center provides the most complete, integrated, out of the box solution for collaboration. The three new portlets, including an on-line company directory, Web conferencing and team workplaces, all of which have built-in people awareness and instant messaging capabilities, enable users to more easily find, communicate with, and work with colleagues.

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