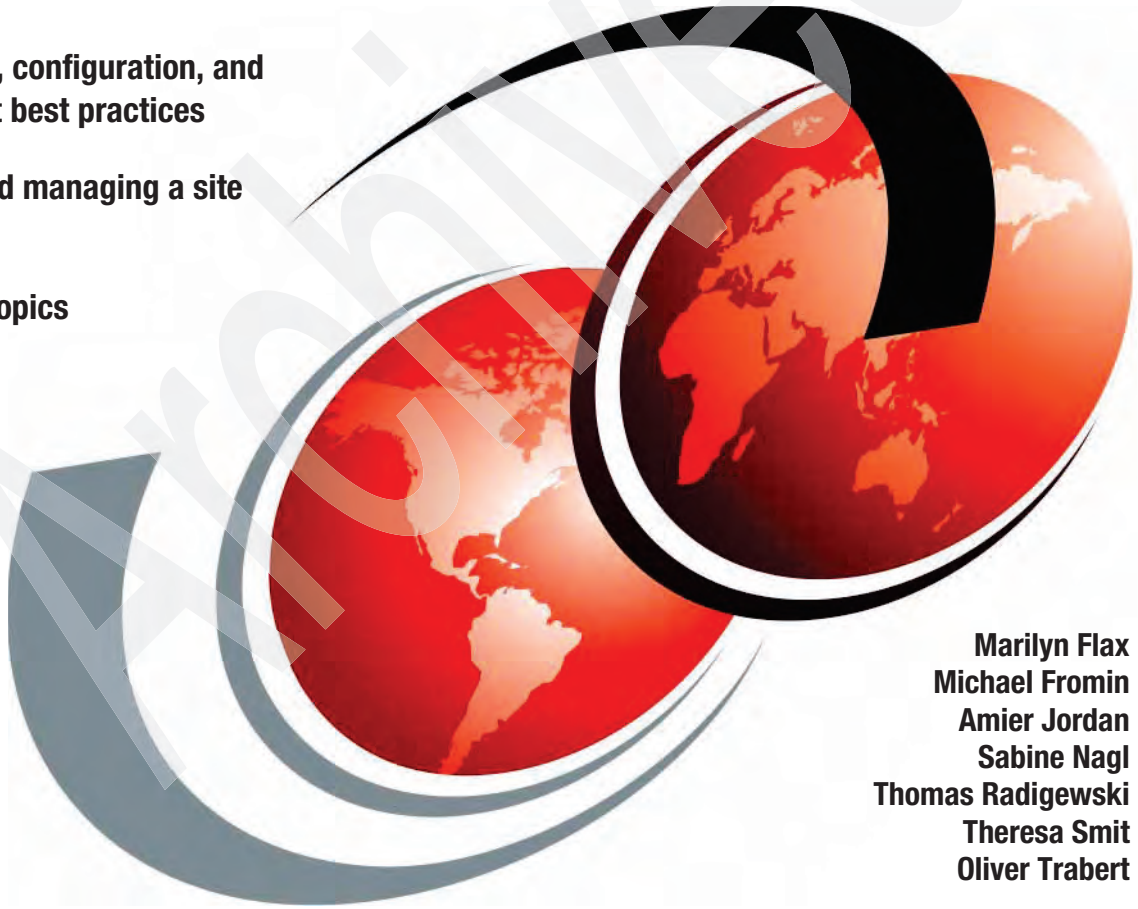
Lotus. software

IBM

IBM Workplace Web Content Management

for Portal 5.1 and IBM Workplace Web Content Management 2.5

- Installation, configuration, and deployment best practices
- Building and managing a site
- Advanced topics



Marilyn Flax
Michael Fromin
Amier Jordan
Sabine Nagl
Thomas Radigewski
Theresa Smit
Oliver Trabert

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IBM Workplace Web Content Management for Portal 5.1 and IBM Workplace Web Content Management 2.5

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(b)

Note: Before using this information and the product it supports, read the information in “Notices” on page xv.

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First Edition (January 2006)

This edition applies to IBM Workplace Web Content Management, Release 5.1 (included with WebSphere Portal 5.1) and IBM Workplace Web Content Management 2.5.

If you are a customer using IBM Workplace Collaboration Services 2.5, IBM Workplace Web Content Management 2.5 is included. For specific details about the versions and the positioning, refer to 1.3.2, “Understanding the versions and the positioning” on page 11.

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Preface

IBM® Workplace™ Web Content Management is a powerful and sophisticated Web content management product that is designed to accelerate development and delivery of critical business information. It enables end-to-end collaboration for content creation, approvals, management, retention, and publishing across Internet, intranet, extranet and portal assets. Despite its power, it is remarkably easy to use. It simply requires standard office skills to harness and optimize the flow of information rapidly.

This IBM Redbook provides a comprehensive approach to better understanding and using Workplace Web Content Management™. It addresses the specific technical aspects of IBM Workplace Web Content Management, by discussing its underlying architecture and features, by recommending deployment scenarios, and by providing detailed discussions on how to best use the product and to take advantage of built in features and its extensible API.

To address the needs of a broad range of users, from those new to the product to those with much more experience, we first provide a basic tutorial on building a site. We then build upon this foundation to explore advanced topics and opportunities for customization. In addition to discussing specific technical features, this book also discusses the key concepts and best practices for creating a accurate Information Architecture and site framework. Finally, this book addresses how to upgrade IBM Workplace Web Content Management data from earlier versions of the product, as well as how to migrate data in from external Web content management systems.

The team that wrote this redbook

This redbook was produced by a team of specialists from around the world working at the International Technical Support Organization (ITSO), Cambridge, Massachusetts Center.



John Bergland is a project leader at the International Technical Support Organization, Cambridge Center. He manages projects that produce Redbooks™ about Lotus® Software products. Before joining the ITSO in 2003, John worked as an Advisory IT Specialist with IBM Software Services for Lotus (ISSL), specializing in Notes and Domino® messaging and collaborative solutions.

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Marilyn Flax is a Learning Specialist in Sydney, Australia. She has 10 years of experience in user interface design and usability, and course development and technical writing. She has worked with IBM Workplace Web Content Management for the past six years and has worked at IBM for two years. She has written extensively on IBM Workplace Web Content Management, including user guides, instructor-led training materials, and e-learning and has used the materials to deliver face-to-face and remote Internet-based training to customers, business partners, and IBM employees.



Michael Fromin is Director of Education and Training for Web Content and WebSphere® Portal Practice Manager Ascendant® Technology (http://www.atech.com). Michael has been in technology for over 15 years, 10 of which were in IT management for two Fortune 50 companies. Michael has held lead management responsibility for Network Architecture, Help Desk Management, and Development. For the past eight years, he has focused on leveraging the IBM and Lotus software portfolio to help companies improve business systems and processes. Prior to Ascendant, Michael managed the services team for CONET USA, where he and his team focused on delivering Web content management solutions based on Lotus Domino, Java™, and the you@web product line. In addition to his real-world experience, Michael has authored numerous technical articles that focused on advanced development techniques for Lotus Domino, Java, and WebSphere Portal.



Amier Jordan is a WebSphere Portal and IBM Workplace Web Content Management expert who has worked as an IT consultant and business consultant since 1998. He has worked with over 50 different customers in various industries with accounts. His recent work was involved with the Portal project which won the Lotus Award for *Best Portal Solution 2005*. His key skills are in On Demand Workplaces, Portals, IBM Workplace Web Content Management, and other Web Content Management technologies, and finally, Enterprise application integration. Other areas of his expertise include project management and Lotus Notes® development. Amier holds a Master of Engineering degree from the Technical University of Darmstadt, Germany.



Sabine Nagl is an IT Specialist at the IBM Software Innovation Team (SWIT) for Lotus Products in Germany. She has more than 12 years of experience in the IT industry and holds a masters degree in Computer Science from the Technical University in Munich. Sabine joined Lotus in 1998 as a Presales IT Specialist working with Integrated Accounts as well as SMB customers, primarily in Germany but also in Europe. She started as technical expert for Domino and Domino Family products and soon specialized in Document Management, Knowledge Management, and Workflow Management. Sabine is frequently a technical speaker at IBM and IBM Partner events.



Thomas Radigewski is the founder of RADIGEWSKI Informatik in Germany (http://www.radi.info). Thomas holds a degree in Business Information Technology from the University of Applied Science Cologne, Gummersbach Campus. He started his professional career with CONET AG system integrators and IT consultancy. His responsibilities included software development, project management, and the overall direction of the development of CONET's own you@web software brand based on Lotus Notes and Domino. Thomas has extensive project and development expertise in content management, integration, and groupware projects.



Theresa Smit has a wide breath of application development knowledge in her more than 28 years in computing technologies. Currently, she is part of the IBM Portal development organization, working with external and internal customers to use portal technologies to manage and deliver Web content. In addition to the Portal product, she also supports the use of IBM Lotus Workplace Web Content Management, WebSphere Portal Content Publishing, and Personalization products. She has authored other internal and external articles and has presented at developerWorks®, Portal, Lotus, and IBM Content Manager technical conferences.



Oliver Trabert is an IT Architect for WP Experts in Germany. He has worked exclusively with WebSphere Portal for more than three years. His recent Portal project won the Lotus Award for *Best Portal Solution 2005*. One of his specialties is the WebSphere Content Management and Portal integration. Oliver is also co-author of multiple other IBM Redbooks on WebSphere Portal and is a frequent speaker at IBM events.

Additional contributors to this book

Thanks to the following people for their contributions to this project:

Kamie Ngam-Nield has over 12 years experience in the IT industry. She joined IBM United Kingdom in 2000. Kamie is responsible for technical leadership on a number of key Domino and Web application deployments within the financial and public sectors. A co-author of the first LWWCM Redbook, Kamie also authored a number of presentations, articles on WebSphere Content Management architecture and implementation best practices.

Nic Archer is a Product Champion for Vamosa. Nic has been involved in the technology sector since 1985. He joined Computer Associates in 1987 as a systems engineer and has worked in many areas of system automation and management, such as workload scheduling, performance monitoring, security and audit. He became a product manager for security products in 1993. In 1994, he co-founded Gamut Technologies. Nic worked as a Siebel Partner manager at Druid until their acquisition by Xansa in 2000, and he joined Vamosa in 2002. Nic is responsible for the go-to-market strategy and the product management of the Vamosa product range and also for the Vamosa brand.

Stefan Freudenberger is a Portal developer for WebSphere Portal Experts in Germany. He has worked exclusively with WebSphere Portal for more than two years. He also worked on the Portal project that won the Lotus Award for *Best Portal Solution 2005*.

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Steve Garward, IBM Software Group

Jen Wang, IBM Web Content Management Product Development and Support, IBM, Raleigh, North Carolina

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Part 1

Introducing IBM Workplace Web Content Management

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1

Introduction to IBM Workplace Web Content Management

IBM Workplace Web Content Management is a powerful and sophisticated Web content management product that is designed to accelerate development and delivery of critical business information. It enables end-to-end collaboration for content creation, approvals, management, retention, and publishing across Internet, intranet, extranet and portal assets. Despite its power, it is remarkably easy to use.

This book addresses the specific technical aspects of the IBM Workplace Web Content Management product by discussing its underlying architecture and features, by recommending deployment scenarios, and by providing detailed discussions on how to best use the product. To address the needs of a broad range of users, this book first provides a basic tutorial on building a site. It then builds upon this foundation to explore advanced topics and opportunities for customization. In addition to discussing specific technical features, this book discusses the key concepts and best practices for creating a accurate information architecture and site framework. Finally, this book addresses how to upgrade IBM Workplace Web Content Management data from earlier versions of the product, as well as migrate data from external Web content management systems.

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1.1 Importance of content management

Prior to discussing specific aspects of the importance of *Web content management,* we begin by discussing the underlying importance of content management. The ability to effectively manage content — and more importantly information and specific knowledge — directly affects your organization's ability to succeed in the marketplace. Business information is, in most cases, the most valuable asset that you offer to your customers, employees, or business partners. Accordingly, that makes information, together with the ability to manage it, integral to the success of every business.

Value is the knowledge that you add *before* you offer something. So, business value is based on the information that you share. This concept is true both for the production as well as for knowledge and service industries. Looking at where this information exists, you find that it is often divided and decentralized throughout organizations. *Information is stored frequently as content.* For example, critical information can include product descriptions, instructions, policies, key customer issues, competitive strategies, and so forth. The effectiveness of the information you offer — and in many cases the value you provide — depends directly upon the ability to distribute that information in a timely and efficient manner.

1.1.1 Information within the context of Web content

When your organization offers information via a Web browser, this material is considered *Web content*. When thinking about Web content, it is important to note that Web content consists of two parts:

- The content
- The design or presentation of that content

Going forward, we explain this concept in greater detail and discuss the advantages of handling the content and the design of the content separately.

There are two approaches to creating, managing, and publishing Web content:

- Static Web content

  Static Web content is content that is embedded directly into the design and placed statically on a Web page. This type of content is most likely the result of programming rather than content authoring. Due to its static nature and embedded design, this type of content can be difficult to reuse and change.

  Static Web content solutions often require someone within an IT department, or at least a person who possesses Web design and some Web-based IT skills, to translate content into HTML before it can be posted to a Web site or a portal. Accordingly, static Web content is more difficult to use within a dynamic Web site — a Web site that changes frequently and that requires

up-to-date information to deliver maximum value. Additionally, static Web content is often impossible to reuse due to its embedded design.

- Dynamic Web content

  Rather than embedding the information directly together with the design, *dynamic Web content* treats the content and the presentation of the content as two distinct entities. The separation of Web content from the presentation layer allows you to manage and deliver content quickly and efficiently, independent of its presentation. The ability to manage both content and its presentation layer as separate entities is enabled most frequently via Web content management systems.

IBM Workplace Web Content Management allows companies or organizations to leverage the flow of information. By getting information into the hands of the right people easily and efficiently, it is a key component in sustaining a competitive advantage. Authors do not face the technical side of Web technologies. Content that is created information can be integrated with multiple uses and processes — distributed or shared throughout and beyond an organization. For example, a single product sheet can contain complete pricing information, including internal prices which you only wish to share *within* your organization. By taking advantage of the Multi publishing feature, this allows you to publish a subset of exactly the same document for your customers, *without the need to maintain to separate documents*.

Content Management within the context of applications

Finally, it is also important to consider a different view on Content Management that is often not obvious. Applications offered through a Web browser also leverage content that is managed by a content management system. For example a product catalogue or online store contains content that is accessed through an application which (usually) provides a powerful and helpful navigation tool.

However, with ever-growing volumes of critical information distributed across Internet portals, e-business applications, intranets and extranets in various formats, deploying and maintaining effective content management methodologies can be a significant challenge.

Web content management is not just about customers. It is important to employees, business partners, suppliers, and vendors because these groups represent the backbone of an organization. Making sure that they are equipped with the right information and can do business with you more easily than they can with your competitor down the street is critical. A positive Web experience motivates the user to revisit the site like nothing else. This is a challenge that is generally underestimated by most companies.

To be able to compete in today's markets, on demand availability of information is crucial. Content management is the key. Such a powerful management tool, reaching a wide spread audience, also exposes the risks associated with providing information to a broad audience. This makes it necessary to include workflow, security and structure to reflect organization policies in a Web environment.

1.1.2 What is content?

Content can mean many different things, so we should start from a common understanding of what the scope of business content is.

Content supports the work the enterprise does and interacts in many ways with business operations. Enterprise Content Management is the discipline involved with the capture, storage, and management of this kind of content across the enterprise. It makes information easy to find, use, update, and discard when the time comes.

Content can be categorized into a number of types, such as:

- High-volume production content: document imaging and computer output, archiving, and presentation
- Rich media: audio, video, and photos
- Web content: Internet, intranet, and extranet
- Collaborative content: office documents, discussions, and e-mail

The objectives of enterprise content management are:

- To provide an efficient and secure solution for managing content within the enterprise, including enterprise-wide content storage, access, search, distribution, and retention (this is especially true with the current focus on corporate accountability and regulatory compliance).
- To build knowledge-based environments to leverage corporate know-how and expertise.

1.2 Overview of Web content management

In the past, different forms of information — such as Web content, e-mail, product information or customer data — were kept in separate, disconnected content management repositories. Today, that is not a viable solution. To thrive in an on demand environment, you need flexible, cost-effective content management solutions to manage any type of information, including structured data and unstructured content. You need content management solutions that

enable data and content to be integrated with multiple applications and processes - distributed or shared throughout and beyond your organization. Furthermore, you need it structured and organized in the way that is best suited for your business.

1.2.1 The focus for today's businesses

To manage the exponential growth of business-critical information, respond faster to the marketplace and increase employee productivity, your content management capabilities must address three key areas:

- Responsiveness

  Streamlining operations and providing an integrated view of all forms of information can improve your customer relationships and enable your employees, partners and suppliers to work together more efficiently. It can also help you reduce costs and capitalize on new opportunities.

- Productivity

  When employees spend more time looking for information they need to perform their jobs - documents, e-mail, reports, Web content and more, they spend less time working and generating business; if they are not working with the latest information they can miss opportunities and make costly mistakes. When customers cannot find what they are looking for on a Web site, they leave frustrated and dissatisfied. No matter how good the information or prices might be. That can add up to a lot of wasted hours and missed opportunities. The effort to bring visitors back again is costly. Companies that give their employees a simplified, personalized and easily accessible user interface to access and share critical information enjoy a competitive advantage.

- Compliance

  Effectively manage your content to address the increasing demands of government and industry regulations while staying focused on your business goals and using compliance as a lever for change to affect process improvement and business transformation.

Looking at existing enterprises, we find that numerous specialized applications and databases are often already established when it comes to business-critical information. IBM Workplace Web Content Management becomes increasingly important for companies and organizations to leverage the complete spectrum of data assets within their enterprise and share it electronically among suppliers, customers, partners and employees. Content that is created and managed from authors for the propose of Web publishing becomes only one component. Enterprise Content Management (General ECM) provides a basis for the next generation of data management, enabling customers to collect, manage and

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distribute all forms of business information. An employee of a human resources department updating a phone number in an internal application for example, has actually executed a step within a greater content management context, namely the changed number was simultaneously published to the Web. It is mandatory to integrate content from a broad range of existing data sources. Open standards for content exchange are the key.

1.2.2 General concepts in Web content management

This section defines some concepts that are fundamental to understanding Web content management and more importantly, understanding the benefits which can be gained.

- Separation of content and presentation

  As a foundation for understanding the benefits of IBM Workplace Web Content Management, it is first necessary to distinguish between content and the presentation of the content. When a clear separation is made between content and how it is presented, you can appreciate how a single piece of content could potentially be rendered in multiple ways. For example, a single item of content such as a news article could be presented in any of the following ways:

  - On a Web page in a variety of formats, based on user preferences and personalization
  - In a PDF file
  - Downloaded to a PDA
  - Streamed as an RSS feed

  The content is the same, but the presentation can be adapted to best meet a user's needs within the context of their specific role or preference.

  This approach also guaranties the consistent look and feel of a Web site. If the design changes, the content parts remain unaffected. Additionally, the content creators do not have to worry about the presentation of their content. This is important because content creators usually do not have significant knowledge of HTML.

  Moving forward with this idea, key concepts and functional areas that apply to IBM Workplace Web Content Management can be grouped in terms of dynamic presentation or content management.

- Content creation and authoring

  Creating the content and information that is intended to be delivered. Content creators are guided through the authoring process — using familiar applications — without having to learn new technical skills.

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- Workflow

  The accuracy, relevancy, and recency of content is assured by automating the content life cycle — from creation through approval and delivery to review and archival.

- Management

  Content becomes an asset again as control of the site is placed back in the hands of the users who understand the subject and customers best.

- Content publication

  When content has been authored and approved, this is the stage which releases the content for delivery to the live site. This can be a simple process, such as making a file available on a file system to a Web server and advertising the URL, or it can be a more complex procedure such as moving content through a complex workflow and into a production environment.

- Content aggregation

  This occurs when content from various sources is brought together. In a simple Web site this actually occurs manually during the content creation phase. However, in a more dynamic and data-driven environment the aggregation occurs at an application server level.

- Integration

  Aggregation, transactional integration and performance enhancing caching enrich the user experience.

- Content delivery

  Content needs to be delivered to the user in the appropriate (or desired) format. Most frequently, this implies delivery via HTTP using browsers and similar devices. Alternatively, content delivery could refer to other publish and subscribe methods and data feeds or Web service protocols.

1.3 Introducing IBM Workplace Web Content Management

IBM Workplace Web Content Management software comes in two varieties — one for small and medium-sized business — and the other for large and very large organizations:

- IBM Workplace Web Content Management is for enterprise-sized organizations
- IBM Workplace Web Content Management, Standard Edition is designed specially for small to medium-sized businesses

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Note: The product runs on both Lotus Domino and IBM WebSphere. In this book, we will deal with the Java Edition of the product because the Domino Version is been described in detail in *Lotus Workplace Web Content Management*, SG24-6309, which is available at:

`http://www.redbooks.ibm.com/abstracts/sg246309.html?Open`

There are subtle differences between IBM Workplace Web Content Management, Version 5.1 and IBM Workplace Web Content Management, Version 2.5 editions. In this book we focus primarily on IBM Workplace Web Content Management, Version 5.1 but also address the differences in IBM Workplace Web Content Management, Version 2.5 as applicable. (See 1.3.2, “Understanding the versions and the positioning” on page 11 for more details on the versions and the positioning of each.)

1.3.1 Introduction to IBM Workplace Web Content Management

IBM Workplace Web Content Management is a key component of the IBM Workplace software solution, enabling users at all levels to manage end-to-end Web content creation and information life cycles, personalization and publishing for dynamic intranet, extranet, Internet and portal sites. The IBM Workplace software solution strategy, an IBM strategy that integrates vital portal, collaboration, and Web content management infrastructure, enables the creation of an on demand environment for human interaction. IBM Workplace software product functionality includes team collaboration, messaging, document management, e-learning and a wide range of business process and applications.

By leveraging content in backend systems, IBM Workplace Web Content Management reduces development and implementation time and places content creation and management firmly in the hands of content experts for *author once, publish everywhere* control. The product runs on both Lotus Domino and IBM WebSphere platform and provides for the integration of IBM WebSphere Portal and IBM DB2® Content Manager - making this offering a great IBM middleware fit and an opportunity to leverage existing investments. IBM Workplace Web Content Management is now fully integrated into IBM WebSphere Portal and includes a new and simpler installation, improved integration with WebSphere Portal, enterprise user management and directory support enabling single sign-on across Workplace systems, and an enhanced, system-wide user interface (UI) rewritten as a WebSphere Portal application.

It manages the following:

- Content and design of pages in a portal or Web site.
- Framework and navigation of a portal or Web site.
- Creation, editing, approval, and publication process of a Portal or Web site's content.

The software comes in two varieties:

- IBM Workplace Web Content Management is appropriate for large and very large organizations.
- IBM Workplace Web Content Management, Standard Edition is an entry level offering for departmental or small and medium-sized organizations.

1.3.2 Understanding the versions and the positioning

Customers who are new to IBM Workplace Web Content Management might have questions about different versions or editions of the product. For example, what, if any, are the differences between the edition known as Web Content Management 5.1 and IBM Workplace Web Content Management 2.5?

IBM Workplace Web Content Management directly supports the vision of IBM Workplace — one vision — to provide the software which is based on a common set of services, based upon industry standard. Accordingly, IBM Workplace Web Content Management provides you with the same solution, if you are a Portal customer, a Workplace customer or a stand-alone customer looking for the most effective Web content management.

The three different approaches are as follows:

- If you are a *WebSphere Portal* customer, you use the embedded version of IBM Workplace Web Content Management 5.1. (WebSphere Portal includes a limited license. Refer to 1.6, “Licensing” on page 22 for further details on licensing.)
- If you are a customer of *Workplace Collaboration Services 2.5*, you get access to IBM Workplace Web Content Management 2.5 as one of services running on top of the core Workplace Collaboration Services foundation.
- Finally, if you are a stand-alone user who is interested in IBM Workspace Web Content Management (as a stand-alone Web content management tool), you have access to the stand-alone version.

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1.3.3 Benefits of using IBM Workplace Web Content Management

IBM Workplace Web Content Management speeds Web content publication by removing its most common bottleneck: the overworked IT gatekeeper. It places end-to-end Web content management in the hands of content experts. This enables information updates that happen in minutes, not days. IBM Workplace Web Content Management is for customers who need to keep internet, intranet and extranet site information up-to-date, accurate, and under control. The product delivers faster time to market, lower costs of doing business, and a competitive advantage by consistently delivering personalized Web pages to site constituents so they get the right information, in the right context, at the right time. IBM Workplace Web Content Management integrates people with the information and business processes they need in a single secure, reliable, dynamic work environment for intranet, extranet, Internet and portal sites.

Using IBM Workplace Web Content Management provides the following functionality and benefits:

- Non-technical content owners can create and manage content, with an minimum on education effort
- Streamlines the Web content management process from content authoring, workflow, management, integration and delivery
- Publishes information about demand in minutes, not days for improved responsiveness to customers, partners, suppliers and employees
- Personalized content can be delivered to each user
- Provides an on-ramp to Lotus Workplace platform architecture
- IBM Workplace Web Content Management gives you a platform for high-value e-business applications
- The solution is scalable from pilot to enterprise
- Delivers faster implementation with component architecture that reuses components
- Reduces legal risks and associated costs
- Integrates with Lotus Domino Document Manager, Lotus Workflow™, IBM DB2 Content Manager, IBM WebSphere Portal
- The application programming interface (API) externalization feature gives organizations the ability to build solutions for migrating and importing from other Web content management products, doing advanced rendering and batch processing of content.
- Supports both J2EE™ and Domino

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- Supports open standards to use and integrate smoothly your supported front-end, Web, existing, and backend systems into a unified solution, generally without re-engineering or expensive upgrades.
- TCO is reduced by enabling you to leverage existing infrastructures and skills
- Perhaps the most compelling reason to consider IBM Workplace Web Content Management is the ability to leverage the IBM portfolio. Benefits of IBM Workplace Web Content Management being positioned closely with Lotus Domino, WebSphere Portal and IBM DB2 are as follows:

  IBM is the only vendor to support WebSphere, WebSphere Portal, Lotus Domino, and DB2 Content Manager, producing the best total cost of ownership option, making this offering a great IBM middleware fit and an opportunity to leverage existing and future investments, especially for customers deploying IBM middleware.
- Workflow and versioning functionality can help you through the document review and approval process. Development features (which include templates to speed content creation) allow you to create Web pages that aggregate content from various sources and present it in a single, well-organized format. These pages can be customized for viewing on any device, including Web browsers, Pocket PC, Palm, or WAP/3G cell phones.

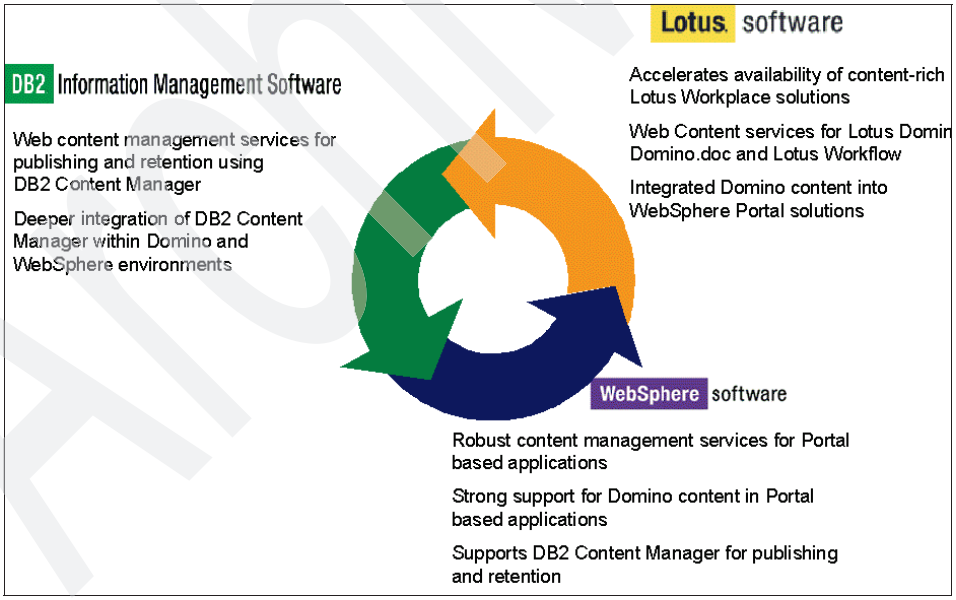


Figure 1-1 The functionality of Lotus, WebSphere, and DB2 software

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1.3.4 The importance of data modeling

We wish to highlight the importance of data modeling, both as the primary prerequisite for designing and developing a new content management system with IBM Workplace Web Content Management, and as the means to organize information in a way that is readily accessible to users.

There are a number of different layers of data models that exist within IBM Workplace Web Content Management. These data layers provide the capability to share content within a Web site and across multiple Web sites and portals.

- Separating data from presentation

  The concept of separating content from it's presentation layout has been described in the beginning of this chapter. (See 1.2.2, “General concepts in Web content management” on page 8.) This allows for rendering a single piece of content in multiple ways. The content is the same, but the presentation can be adapted to best meet a user’s needs within the context of their specific role or preference. This approach also guaranties the consistent look and feel of a Web site. If the design changes, the content parts remain unaffected. This is important because content creators usually do not have significant knowledge of HTML.

- Information architecture: Separating data from the taxonomy

  Taxonomies help categorize and organize information for both the content creator and the content consumer so that content can be easily found. The separation of taxonomy and data also helps maximize re-use of information.

- Component object model

  IBM Workplace Web Content Management contains a powerful and flexible object model for modeling content and Web sites. At the core of the model you have a component. The component can be used to make up other components. These components can be re-used repeatedly within a site and shared with other sites. This reduces the time it takes to build a site, and ensures that the site has a consistent look and feel. Componentizing the site into separate objects allows different groups to be responsible for different elements of a Web site.

1.3.5 Highlights of new features since release 2.0

This section highlights the significant changes in the product from the 2.0 versions of IBM Workplace Web Content Management. Note that these features are introduced here but are also explained in much greater detail in subsequent chapters throughout the book.

New features include the following:

- IBM Workplace Web Content Management is now fully integrated with WebSphere Portal 5.1. The installation of WebSphere Portal comes along with a complete IBM Workplace Web Content Management installation. Only configuration steps are now required to deploy IBM Workplace Web Content Management.
- Templates: IBM Workplace Web Content Management now uses a portlet based user interface (the IBM Workplace Web Content Management Authoring Portlet) inside of the Portal or Workplace. BiDi characters are now supported in the IBM Workplace Web Content Management Authoring Portlet.
- Terminology Changes: Page Designs are now named Presentation Templates. Content Templates are now named Authoring Templates
- Dynamic presentation on stand-alone Web pages and within WebSphere Portals
- There are three Portlets used in the IBM Workplace Web Content Management environment:
  - Authoring Portlet to create and manage content
  - Local Rendering Portlet to show published content on the same server the authoring takes place
  - Remote Rendering Portlet to show published content on a different server
- An expanded set of worldwide language support for international organizations (including support for bi-directional content entry for Arabic and Hebrew languages).
- Users and Groups granted access to the IBM Workplace Web Content Management Authoring Portlet, IBM Workplace Web Content Management items and rendered Sites are now managed by WebSphere Member Manager.
- A Document Manager component has been added that can be used to reference WebSphere Portal Document Manager documents and display them as IBM Workplace Web Content Management components.
- Portal Search can be used to index and search IBM Workplace Web Content Management content delivered via the Rendering Portlet.
- API samples have been added to the product to assist developers use the IBM Workplace Web Content Management API.
- Documentation Improvements.
- Terminology Changes: Page Designs are now named Presentation Templates. Content Templates are now named Authoring Templates.

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- Open standards (JSR 170 is a proposed API to standardize access to content) - to come
- Automated migration from version 2.0
- Support for HP/UX

1.4 Setting proper expectations about working with this product

This section looks at the big picture of what the IBM Workplace Web Content Management product can do for your organization. The success of an IBM Workplace Web Content Management project mainly depends on understanding the business value behind it and addressing the right resources for the key positions.

We provide some advice on how to get started, the roles of people that need to be involved and different key areas to focus on. At the end of this chapter we give you an overview what skills are needed for each of the roles involved, and which part of the book is most appropriate for these roles. You will find that this book is not only addressed to technical resources of an organization, but to many different stakeholders within a Web content management project.

IBM Workplace Web Content Management is a broad, powerful tool. Accordingly, it is important to think of it as a means for managing much more than a simple Web site, especially when you think of using it as a component within a dynamic workplace or portal.

Upon analyzing your existing business, you find many sections that are optimized to work together to fulfill the requirements. Simultaneously, you will also face business processes which lack of operational efficiency and that need improvements for more valuable information flow with customers, employees and partners. At this point you need to extract the key enterprise business objectives, barriers and communities that are involved. If you are considering using a Web content management system for only one department, you might think initially that this will not involve many communities. Analyzing this from a broader perspective however, you should consider different locations or organizational units and how these could be concerned or affected by future roll outs.

Single departments rarely remain isolated when it comes to sharing information. By eliminating those barriers and getting the right communities together, you can add significant business value and efficiency within your organization. These issues and processes are most frequently identified and refined by process

leaders working together with members of the management board. Changes in the way people share information - and ultimately how they perform tasks, often means changes in the way people work. End-to-end Web content management for Internet, intranet, extranet and portal sites can only be a success for an organization if the benefit and business value is obvious for all people involved.

Often Web content management projects are mistakenly declared as a pure IT project. This is an unfortunate and far too narrow view of this type of project. Keep in mind that a Web content management project is all about underlying information and providing a more effective way to manage and disseminate the information to customers, employees and any other consumer of this information. Accordingly, a Web content management project should be thought of in terms of an information project that consists of an information architecture as a foundation that is supported by an enterprise Web content management product. The Web content management system represents the key IT tool, because it enables the ability to manage and distribute the information. It should be clear however that business stakeholders, content owners, subject matter experts and process engineers will all need to be involved with the project.

When an appreciation and understanding has been established, that there must be numerous stakeholders involved, and that there is a clear business value associated with the proposed project, it is necessary to get proper sponsorship from the highest levels of management. Going forward, it will also be much easier get decisions from the management team, involve the subject matter authors at an early stage, motivate authors to deliver their information and announce clear requirements to the IT department to gain real business value.

1.4.1 The roles involved and their focus

Now that we understand the approach of using IBM Workplace Web Content Management to add business value, we examine the different roles in a typical IBM Workplace Web Content Management project and indicate the major functions.

Representative skills

We can define four primary groups that are needed in a typical IBM Workplace Web Content Management project. Depending on the specific role in a company it is possible that one and the same person can fill several positions at the same time.

- Business constituency

  This group consists typically of members who understand and oversee the the business vision. They know the line of business, can define the success criteria of the project and can help to define the underlying information architecture. In terms of business process, they can identify where the current

barriers exist that are to overcome with this project Typical members of this group include: members of the management board, a project sponsor, business owners, process leaders.

- Technical constituency

  This group represents the IT department or a specialized service provider. The technical business layer knows the existing technical architecture and understanding the technical requirements.

- Content constituency

  This group represents the subject matter experts, authors, content owners and the target group for whom the information is intended. Members of this group have a deep knowledge about existing application resources and content that needs to be integrated.

- Layout constituency

  This group is represented by designers and Web developers. Member of this group specialize in presenting information in an easy to consume way within a Web environment, while satisfying both the technical and corporate design requirements.

Note that while we have identified four typical groups of skill sets associated with a Web content management project, there should be frequent interaction between the groups and to some extent, there will be logical overlap between responsibilities. As shown in Figure 1-2 on page 19, the business, technical and content constituency need to interact with each other to be able to fulfill their roles and to pass on valuable information. Additionally, the design/ layout constituency needs to interact with all groups to support requirements that result from each group.

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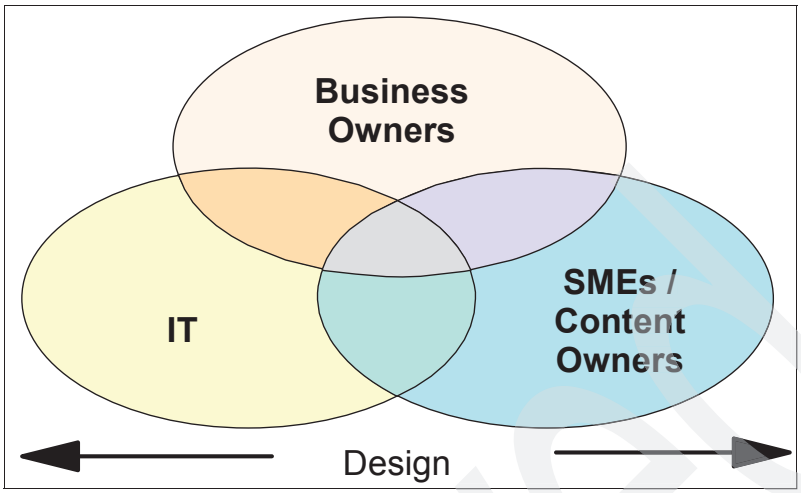


Figure 1-2 Interaction between the constituencies

Typical responsibilities within the different roles

The following section helps to identify typical tasks performed by members of different teams.

- Members of the management board and executive team perform the following tasks:
  - Announce the key business objectives
  - Set the business context
  - Define the project sponsor
  - Authorize the process leaders
  - Set the project budgets and timeline
- The project sponsor (part of the organization that is driving the project) performs the following tasks:
  - Work with business owners and content owners to define the information architecture
  - Define key concepts and terminology
  - Steer the decision process
  - Manage the project
- Process leaders perform the following tasks:
  - Manage the project management
  - Define the resources that are required

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  - Work with business owners and content owners to define taxonomies that categorize and organize information for both the content creator and the content consumer. These tasks are closely related to the underlying information architecture.
- IT staff performs the following tasks:
  - The IT skill requirements of an IBM Workplace Web Content Management project requires medium to extensive knowledge of WebSphere Portal, IBM Workplace Collaboration Services, IBM Workplace Web Content Management and relevant Java technology. It is often reasonable to consider outsourcing the required IT infrastructure requirements to a specialized service provider. Core competencies required for the IT departments include the IT project management, configuration and management of the infrastructure and technical integration within the organization's environment.
  - Plan the architecture and deployment
  - Install and configure
  - Develop
  - Customize
- The design team performs the following tasks:
  - Help to create the corporate design
  - Work with IT team to technically implement the corporate design
  - Help to create the authors template environment
- Subject matter experts (SMEs) and authors perform the following tasks:
  - Provide content
  - Define the taxonomy
  - Define the content structure
  - Provide template support
- Content owners perform the following tasks:
  - Write content
  - Provide content quality assurance
  - Provide usability feedback
- The target group (users) performs the following tasks:
  - Address business needs
  - Provide feedback

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1.5 How people use IBM Workplace Web Content Management

IBM Workplace Web Content Management rationalizes the entire process of publishing documents and content to a portal or Web site, starting at content authoring, to process through a workflow, to assure it gets published in the desired way at all target places. When a user updates a document, that update is made in all the appropriate places on the Web site, that could be an Internet, intranet and extranet. Finally, IBM Workplace Web Content Management works hand-in-hand with Portal to ensure that users see up-to-date information that is relevant to them, based on the user's role in the company and their access rights to specific information. This solution of dynamic Web content management can be used in a variety of different ways. In this following section, we highlight different solutions to increase the awareness of different possible usages.

Tool for managing large amounts of content

The most obvious way to use IBM Workplace Web Content Management is to maintain and publish content to a public Web site, such as `http://www.ibm.com`. In many cases, however, we also face areas where the content is only accessible for an authorized group of users. This content is restricted by reader rules that require authentication through a user name and password. The dynamic navigation is not visible for those who do not have rights to see the content.

Using within the context of Enterprise Content Management

Now let us get one step further and add in the described Web site enterprise content coming from existing non-Web application. This content can come from enterprise resource planning tools, document management systems such as DB2 Document Manager, databases applications such as an HR database, or finally, a procurement or groupware application. This common thread within this content is that it was never originally designed to be published within a Web environment. Furthermore, people in the enterprise or organization might not be aware that working with this content also impacts the content creation for the Web. IBM Workplace Web Content Management addresses the issue of handling content not originally designed for Web publication by enabling you to capture, manage and re-purpose all forms of content across diverse applications, business processes, and platforms to deliver integrated, consistent and on demand information to customers, partners, and employees. The combination of IBM Workplace Web Content Management and IBM DB2 Content Manager V8 leverages the possibilities of Enterprise Content Management. For example a company might wish to offer their authorized customers the opportunity to view the status of their existing orders. This information is stored in various enterprise applications. IBM Workplace Web Content Management extracts the content,

publishes it as Web content using the correct Web design, while also controlling the required security policies for such delicate content.

As part of a Web application based on WebSphere Portal

Finally we like examine IBM Workplace Web Content Management as part of a powerful Web application. As we discussed earlier, we can use it to create stand-alone Web sites and publish content into WebSphere Portal. The WebSphere Portal framework provides us a platform to create world class Web applications. A complex product catalogue could be managed by a portlet application, and as a result, surface the content for specific product information out of our IBM Workplace Web Content Management system. We will take a closer look at this in Chapter 9, “Advanced integration with WebSphere Portal” on page 403.

1.6 Licensing

There are several ways to acquire IBM Workplace Web Content Management licences:

- By purchasing a IBM Workplace Web Content Management or IBM Workplace Web Content Management Standard Edition licence
- Though the entitlement in WebSphere Portal Enable or Extend
- As a part of a IBM Workplace Collaboration Services licence
- As a part of a software bundle.

IBM Workplace Web Content Management Stand-alone License

The IBM Workplace Web Content Management Products are licensed on a per-CPU basis and are available in two licensing variants:

- IBM Workplace Web Content Management 2.5 (full version)
- IBM Workplace Web Content Management, Standard Edition 2.5 (SMB/departmental)

The full product is intended for creating stand-alone Web sites, delivering content to WebSphere Portal, or a combination of the two. Therefore you would buy a licence for this product if you need to create a Web site or to supplement your WebSphere Portal entitlement licences (see below).

IBM Workplace Web Content Management, Standard Edition is an entry-level offering for small to medium-sized businesses with the same feature set provided

in the full product, however it has important licence restrictions. It is limited to 20 publishers in total (defined as any user who creates, edits, or reviews content), 4 CPUs maximum, a single server for hosting the live site (no clustering) and cannot be mixed with other IBM Workplace Web Content Management licenses (for example, WebSphere Portal entitlement licences or Workplace Collaboration Services). You cannot use it if you own WebSphere Portal Enable or Extend.

Both the Standard Edition and full version of IBM Workplace Web Content Management are available on either Domino or Java code The Java edition includes a runtime licence for WebSphere Portal, for the sole purpose of using IBM Workplace Web Content Management (from a technical perspective the Portal code is required for the UI, user management, and so forth.). Content can be published either to WebSphere Portal (if a Portal licence is owned) or to a non-Portal site (via the publishing servlet). Similarly the Domino edition includes a runtime licence for Domino Application Server.

WebSphere Portal Entitlement

Customers with WebSphere Portal Enable or WebSphere Portal Extend for Multiplattforms receive one or more restricted license entitlements to IBM Workplace Web Content Management, depending on how many Portal CPUs they have purchased. This limited license entitles customers to the Java edition only, and limits the use of IBM Workplace Web Content Management to *only within the Portal environment* (customers cannot publish to non-portal Web sites):

Customers receive 1 limited IBM Workplace Web Content Management entitlement for every six WebSphere Portal Enable or Extend CPUs purchased (not WebSphere Portal Express). For example, customers receive the IBM Workplace Web Content Management license as follows:

- 1 IBM Workplace Web Content Management CPU entitlement for the first through the sixth CPU of Portal
- 1 IBM Workplace Web Content Management CPU entitlement for seventh through twelfth CPU of Portal
- 1 IBM Workplace Web Content Management CPU entitlement for thirteenth through the eighteenth CPU of Portal
- 1 IBM Workplace Web Content Management CPU entitlement for each further sixth CPU of Portal (nineteenth, twenty-fifth, thirty-first, and so forth.)

The intention of the bundled licences is to meet the *basic scalability* Web content management capabilities required for a production portal system. For some portal deployments, this basic scalability will be all that is needed- an internal portal where most of the content is provided by portlets linking to enterprise applications could be an example of this. Many other WebSphere Portal

deployments (for example, content-oriented intranets and Web sites) require additional IBM Workplace Web Content Management licenses.

Portal customers who require additional CPUs for their Portal deployment, who wish to publish to non-portal sites or who require the Domino edition must purchase additional full IBM Workplace Web Content Management 2.5 licences. Customers who buy additional IBM Workplace Web Content Management processors for their WebSphere Portal 5.1 environment should purchase the full IBM Workplace Web Content Management product (it's the proof of entitlement), and install using the IBM Workplace Web Content Management code on the WebSphere Portal 5.1 media.

Portal Extend and Enable customers are not eligible to purchase IBM Workplace Web Content Management Standard Edition (SMB offering).

IBM Workplace Collaboration Services

Customers with IBM Workplace Collaboration Services are entitled to deploy IBM Workplace Web Content Management on each Workplace Collaboration Services CPU (IBM Workplace Web Content Management must be installed on the same server as IBM Workplace Collaboration Services). You would typically use this licence to publish content as part of a Workplace Collaboration Services application; however you might want to mix it with less expensive stand-alone IBM Workplace Web Content Management licences (for example, for a separate Authoring server).

Software bundles

IBM Workplace Web Content Management is also available in a number of software bundles from IBM. Many of these are licensed on a per-user basis, so are only suitable for intranets where the number of users is known. Regular CPU-based licences would be required for public Web sites.

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Summary and more information

Table 1-1 Overview of licensing options

Offering	License	Trade-Ups
IBM Workplace Web Content Management (full version)	No license restrictions	Not Applicable
IBM Workplace Web Content Management, Standard Edition	► Limit to four CPUs ► Limit 20 publishers *total* (defined as anyone who touches the content: creates, edits, reviews) ► Limit *one* live server (no clustering) ► Can only be used with other Standard Edition licenses (no mixing with any other IBM Workplace Web Content Management licenses or entitlements, for example, WebSphere Portal Enable or Extend or Workplace Collaboration Services)	IBM Workplace Web Content Management, full version If a company wants to increase publishers, CPUs or live servers, they must trade-up to full IBM Workplace Web Content Management license and pay the difference
Workplace Collaboration Services	One licence of IBM Workplace Web Content Management for every Workplace Collaboration Services CPU purchased. Must be installed on the same server as Workplace Collaboration Services.	This is not a trade-up. However, if an organization needs additional IBM Workplace Web Content Management only servers and does not wish to purchase the full Workplace Collaboration Services licence (for example, for authoring, staging, and so forth.) they can purchase IBM Workplace Web Content Management, full version

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Note: All the information in this chapter is correct at time of going to press. However, information is subject to change. You can find the latest information about licensing at the following:

- Current details on licence terms and conditions for all IBM Software products at:

  http://www.ibm.com/software/sla/

- Current information about pricing of IBM software in the IBM Software Catalogue at:

  http://www.ibm.com/software/info/ecatalog/

- IBM Workplace Web Content Management at:

  http://www.ibm.com/software/workplace/webcontentmanagement

- IBM WebSphere Portal at:

  http://www.ibm.com/software/websphere/portal

1.7 Overview of chapters in this book

Now that we have reviewed the typical roles and responsibilities as they relate to a typical IBM Workplace Web Content Management project, we can more specifically address the chapters of this book to different subsets of readers. This will help readers who have different roles within an IBM Workplace Web Content Management to understand which parts are most applicable to their role. (For a review of roles, see “Typical responsibilities within the different roles” on page 19)

This redbook is divided into four parts:

Part I: Introducing IBM Workplace Web Content Management

The current chapter provides an introduction to general concepts of Web content management and provides an executive overview of the IBM Workplace Web Content Management product. Additionally, it provides an introduction of the benefits, the expectations, and the success factors when planning an IBM Workplace Web Content Management project. It provides a context to better understand how IBM Workplace Web Content Management fits into the overall IBM Workplace and Portal strategy, while also providing an overview of the typical roles and responsibilities associated with a typical IBM Workplace Web Content Management project. This chapter is intended for executives and business owners looking to better understand IBM Workplace Web Content Management, its value, positioning and overview of features.

Part 2: Deployment planning and installation

Part 2 contains the following chapters:

- Chapter 2, “Product architecture and deployment planning” on page 33, provides an overview of the architecture of IBM Workplace Web Content Management 5.1 and discusses various techniques for implementing IBM Workplace Web Content Management within your infrastructure. Key concepts covered in this chapter include:
  - IBM Workplace Web Content Management 5.1 Product Architecture
  - IBM Workplace Web Content Management 5.1 content delivery techniques
  - Recommended environments for IBM Workplace Web Content Management 5.1 installations
  - Sample Infrastructure Architectures for IBM Workplace Web Content Management 5.1

  This chapter is intended for IT members looking to install and configure IBM Workplace Web Content Management.
- Chapter 3, “Installing and configuring IBM Workplace Web Content Management” on page 69 provides an overview of the process for installation and configuration of IBM Workplace Web Content Management 5.1.

  This chapter is intended for IT members looking to install and configure IBM Workplace Web Content Management
- Chapter 4, “Overview of IBM Workplace Web Content Management 2.5” on page 125 discusses the IBM Workplace Web Content Management 2.5 edition, highlighting its positioning, its target audience, and the subtle differences in the installation process, and its functionality and features.

  This chapter is intended for IT members looking to install and configure IBM Workplace Web Content Management.

Part 3: Key concepts, information architecture, site design, and reference implementations

Part 3 consists of the following chapters:

- Chapter 5, “Key concepts and terminology” on page 141 addresses the core concepts of IBM Workplace Web Content Management. We approach this topic by reviewing the separation of presentation and content and emphasizing the importance of complementation within page design. When this foundation has been established, we describe the key items, components, recommending important considerations for reuse and extensibility.

To provide a helpful context for the terminology and concepts, we use an example from the **River Bend Coffee and** Tea Company Web site (referred to in this chapter as **River Bend** Web site). You can see the site in Figure 7-1 on page 255. All concepts and terminology are shown using elements of this Web site. This chapter is intended for IT Members, content owners, designers and business owners wishing to understand the key concepts and terminology used with IBM Workplace Web Content Management.

- Chapter 6, “Information architecture and site design” on page 199 addresses key principles of information architecture and provides some recommended best practices to follow when structuring, designing, and implementing your site. It explains why good IA accomplishes an efficient Web site and also warns of the results of poor information architecture. Next we step by step develop the key considerations and the decision process starting at the business objectives we defined as success criteria. Followed by understanding the target group you like to reach, by evaluating a user's experience when browsing our reference site. We then approach the concept of Web site design by reviewing their fundamental principles and emphasize key components and their role in site design. Finally we close this chapter with considerations for the content authoring process to create a good experience. This chapter is addressed to the business owners, content authors and subject matter experts, and finally, the members of the design and layout constituency.
- Chapter 7, “Building the River Bend Web site with IBM Workplace Web Content Management” on page 253 describes a step by step guide on how to create a Web Site using IBM Workplace Web Content Management 5.1. The site created for the River Bend Coffee and Tea Company is referred to as River Bend Web site and contains content that describes the company’s business and provides information about its products. This chapter is addressed to the people who are new to building sites with IBM Workplace Web Content Management. It is very thorough, so it might be suitable for business owners, content authors and subject matter experts, and finally, the members of the design and layout constituency.
- Chapter 8, “Caching and pre-rendering considerations” on page 347 discusses performance considerations in IBM Workplace Web Content Management through the use of pre-rendering and caching strategies within IBM Workplace Web Content Management. More specifically, it discusses the following strategies:
  - 8.1.1, “Caching options” on page 349
  - 8.1.2, “Pre-rendering options” on page 351
  - 8.10, “WebSphere Dynamic Cache Service” on page 380

  This chapter is intended for members of an IT Team, looking to better understand strategies through which to utilize the most efficient caching method.

- Chapter 9, “Advanced integration with WebSphere Portal” on page 403 builds upon the basic “How to Build it” chapter, and takes the reader to the next step. It shows you how to build more tightly integrated IBM Workplace Web Content Management and WebSphere Portal solutions. It takes a phased approach to introduce you to the concepts and implementation. Step-by-step we will extend our solution and show you how to build it. Along the way we will explain the underlying Portal concepts and discuss the pros and cons of the outlined approaches. This chapter is addressed to developers and team members who have some experience with IBM Workplace Web Content Management and IBM WebSphere Portal.
- Chapter 10, “Search functionality for IBM Workplace Web Content Management” on page 429 reviews several ways you can allow site visitors to search for content stored in your IBM Workplace Web Content Management content repository. This chapter discusses the following topics:
  - IBM Workplace Web Content Management features for searching the IBM Workplace Web Content Management content repository
  - WebSphere Portal Search Engine features for searching the IBM Workplace Web Content Management content repository and how to use a custom approach for more effectively crawling, searching and displaying the results contained within IBM Workplace Web Content Management
  - Alternate techniques and third-party solutions to consider for searching the IBM Workplace Web Content Management content repository.

  This chapter is intended for members of an IT team who are looking to better understand strategies through which to configure and utilize the most efficient searching method.
- Chapter 11, “Personalization rules for IBM Workplace Web Content Management” on page 443 discusses how rule-based content delivery is implemented through a feature known as Personalization. Personalization lets Web sites customize their content automatically for each user. Personalization can recognize a specific user based on a profile, or determine characteristics of a user based on previous purchases, products or pages viewed, and so forth. Personalization then selects content that is appropriate for that profile. If a person has a high salary range, Personalization can be configured to retrieve information about a commercial Web site's premium products. The page is assembled with the proper personalized information, and the user sees her personalized page.
- Chapter 12, “Working with the application programming interface” on page 469 provides details on the IBM Workplace Web Content Management API. The goal of the chapter is to provide you with the ability to create custom Portlets and JavaServer™ Pages™ using IBM Workplace Web Content Management functionality. This chapter is addressed to developers.

- Chapter 13, “Advanced topics and examples with the API” on page 533provides advanced examples how to use the IBM Workplace Web Content Management API to create custom portlets. The chapter includes detailed example how to install and configure the Customizable Template Portlet (CTP). This chapter is addressed to developers.
- Chapter 14, “Migrating to IBM Workplace Web Content Management 5.1” on page 565 describes migrating a Web site from a previous version of IBM Workplace Web Content Management into IBM Workplace Web Content Management 5.1. This chapter is intended for users who have used previous versions of IBM Workplace Web Content Management, considering migrating in content from the earlier version to IBM Workplace Web Content Management 5.1.
- Chapter 15, “Migrating content into IBM Workplace Web Content Management” on page 599 describes how to migrating a Web site from another Web content management tool into IBM Workplace Web Content Management 5.1. For the purposes of this chapter, we will highlight the features and functionality of Vamosa’s plug-in for IBM Workplace Web Content Management. This chapter is intended for users who have created data in other Web content management systems, and are considering migrating in content from the outside version to IBM Workplace Web Content Management 5.1 using Vamosa’s tool.

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Part 2

Deployment planning and installation

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2

Product architecture and deployment planning

This chapter provides an overview of the architecture of IBM Workplace Web Content Management 5.1 and discusses various techniques for implementing IBM Workplace Web Content Management within your infrastructure. Prior to an in depth discussion of physical implementation architectures, this chapter looks at how IBM Workplace Web Content Management fits within the WebSphere Portal framework as well as the various techniques for displaying IBM Workplace Web Content Management-based content.

This chapter includes the following sections:

- IBM Workplace Web Content Management 5.1 Component Architecture
- Rendering IBM Workplace Web Content Management Content
- IBM Workplace Web Content Management environment types
- Sample physical architectures
- Example infrastructure

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2.1 IBM Workplace Web Content Management 5.1 Component Architecture

The IBM Workplace Web Content Management 5.1 application is fully integrated with WebSphere Portal 5.1. As such, all required components of the IBM Workplace Web Content Management application are installed with WebSphere Portal 5.1. The following diagram provides a high level overview of where IBM Workplace Web Content Management fits into the WebSphere Portal infrastructure.

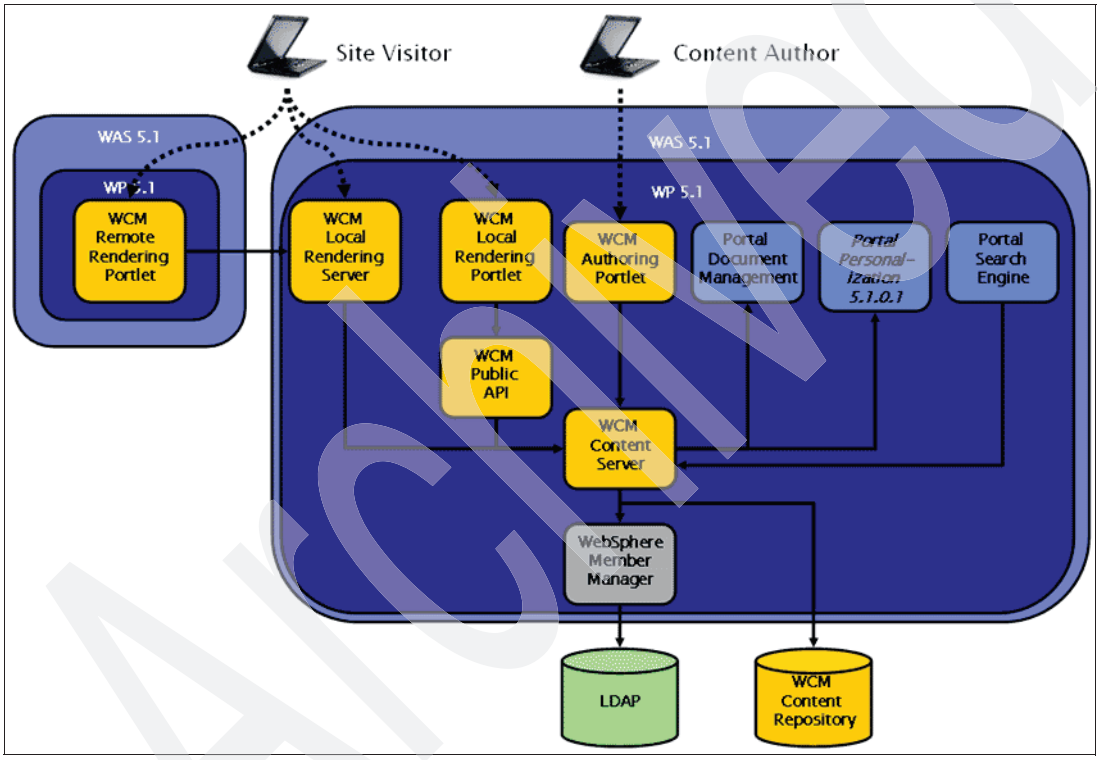


Figure 2-1 IBM Workplace Web Content Management architectural overview

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2.1.1 Key components

This section defines the key components of IBM Workplace Web Content Management 5.1.

IBM Workplace Web Content Management Content Server

The IBM Workplace Web Content Management Content Server is the *core* of the IBM Workplace Web Content Management application. All requests for content are ultimately processed by the Content Server.

Unlike earlier versions of IBM Workplace Web Content Management, the IBM Workplace Web Content Management 5,1 Content Server leverages WebSphere Member Manager as its user repository. This repository is used for both authentication as well as determining group membership for authenticated users.

IBM Workplace Web Content Management Content Repository

When you first enable IBM Workplace Web Content Management, it uses WebSphere Portal's embedded Cloudscape™ database as its content repository. This is true even if you have migrated your WebSphere Portal database to another database platform.

If desired, you can switch your IBM Workplace Web Content Management repository to any of the supported databases. IBM Workplace Web Content Management 5.1 application data and resources can be stored in the following databases:

- DB2 8.1 with FixPack 6 or 6a (Enterprise and Workgroup Editions)
- Oracle 9.2.0.4
- IBM Content Manager 8.2 FixPack 7
  (IBM Information Integrator for Content 8.2 FixPack 3 must also be installed)
- Cloudscape 5.1.60.12
- Microsoft® SQL Server 2000 SP3a
- UDB for z/OS7.1

Notice that one of your options for content storage is IBM Content Manager. If your organization is working towards an enterprise content management solution it is worth noting that IBM Workplace Web Content Management can use that same enterprise content management solution as its content repository.

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Note: For details on using IBM Content Manager as the repository, refer to *IBM Workplace Web Content Management Java Edition V2 and IBM DB2 Content Manager V8 Working Together*, SG24-6368, which is available at:

http://www.redbooks.ibm.com/abstracts/sg246368.html?Open

Tip: Even if you choose not to store your content in IBM Content Manager you can still reference items stored in IBM Content Manager from within IBM Workplace Web Content Management.

As this list of supported databases is subject to change, refer to the WebSphere Portal 5.1 Information Center for details on the latest supported versions and platforms, which is available at:

http://publib.boulder.ibm.com/pvc/wp/510/ent/en/InfoCenter/index.html

In addition, refer to each product's documentation for details on the specific hardware and software requirements for these databases.

IBM Workplace Web Content Management Authoring Portlet

Beginning with IBM Workplace Web Content Management 5.1 the user interface for working with IBM Workplace Web Content Management is provided via a Portlet running within WebSphere Portal. In prior versions of IBM Workplace Web Content Management there was a stand-alone browser environment for these activities. The new Portlet provides significantly more functionality than the old user interface.

While referred to as the Authoring Portlet, this Portlet is (more accurately) your sole graphical user interface for interacting with IBM Workplace Web Content Management. Content creators use the portlet to author content. Content approvers use this same portlet for managing content. Developers use this portlet to create technical assets (for example, Presentation Templates, Workflows, Syndication components, and so forth).

The Authoring Portlet allows for very granular user interface security controls. These controls did not exist in prior user interfaces. (See 3.2, “Installing IBM Workplace Web Content Management” on page 73 for more details on configuring and securing the Authoring Portlet.)

Restriction: The Authoring Portlet must be running on the IBM Workplace Web Content Management server itself. Unlike the Remote Rendering Portlet, there is no version of the Authoring Portlet that supports accessing IBM Workplace Web Content Management on a remote WebSphere Portal server.

IBM Workplace Web Content Management Local Rendering Server Servlet

The Local Rendering Servlet is used to deliver Web content outside of a WebSphere Portal environment. You would use this servlet when you need to deliver a traditional stand-alone Web site. Site visitors can access content by requesting the HTML directly from the IBM Workplace Web Content Management Local Rendering Servlet.

It is important to note that even if you only use IBM Workplace Web Content Management to deliver stand-alone (non-portal) Web sites, the core IBM Workplace Web Content Management application always runs on WebSphere Portal and Lotus Workplace. There is no version of IBM Workplace Web Content Management that can run without one of these.

IBM Workplace Web Content Management Rendering Portlets

Traditionally, one of the more difficult parts of integrating an IBM Workplace Web Content Management solution with WebSphere Portal was displaying the content itself within WebSphere Portal. IBM Workplace Web Content Management eliminates this hurdle by providing two Portlets that can display your IBM Workplace Web Content Management content in WebSphere Portal. These portlets require no Java coding - only simple configuration by the portal administrator.

IBM Workplace Web Content Management Local Rendering Portlet

The Local Rendering Portlet is used to display IBM Workplace Web Content Management content within a Portlet. This portlet can only be used when deployed to a WebSphere Portal Server that also has a live instance of IBM Workplace Web Content Management.

The Local Rendering Portlet relies on the IBM Workplace Web Content Management API to interact with the IBM Workplace Web Content Management Content Server.

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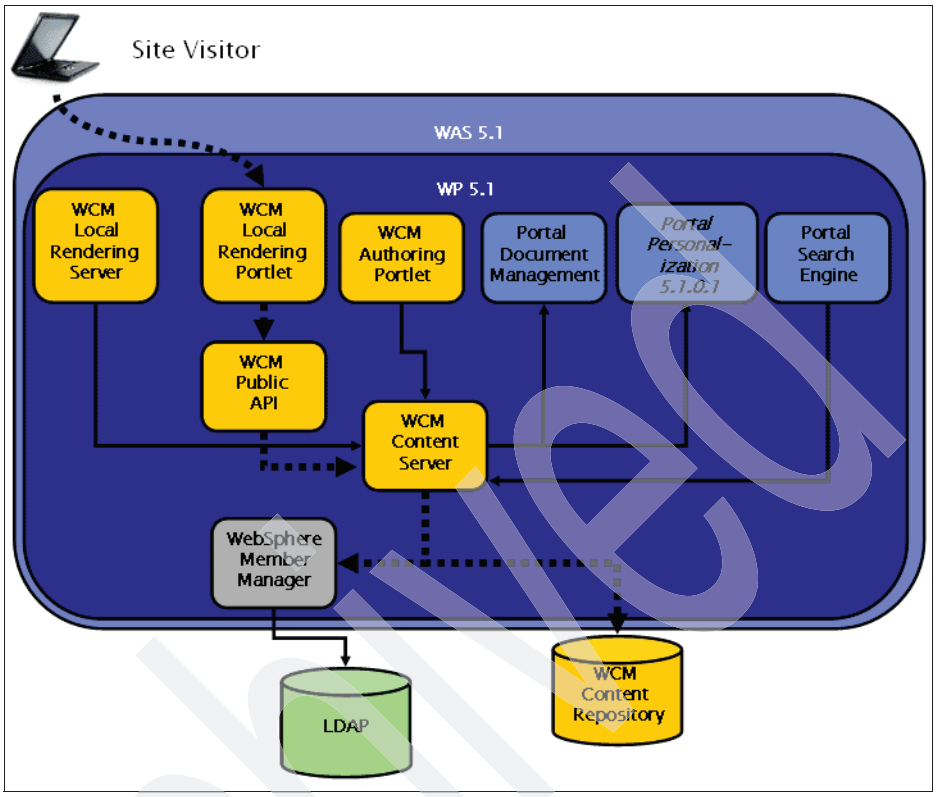


Figure 2-2 Basic flow of activity when using the Local Rendering Portlet

Workplace Web Content Management Remote Rendering Portlet

The Remote Rendering Portlet is used to display IBM Workplace Web Content Management content within a Portlet. This portlet should only be used when deployed to a WebSphere Portal Server that does not have a live instance of Web Content Management.

Unlike the Local Rendering Portlet, the Remote Rendering Portlet uses an HTTP connection to interact with a remote IBM Workplace Web Content Management Content Server at runtime. The configuration of this portlet contains some additional fields to facilitate this type of connection.

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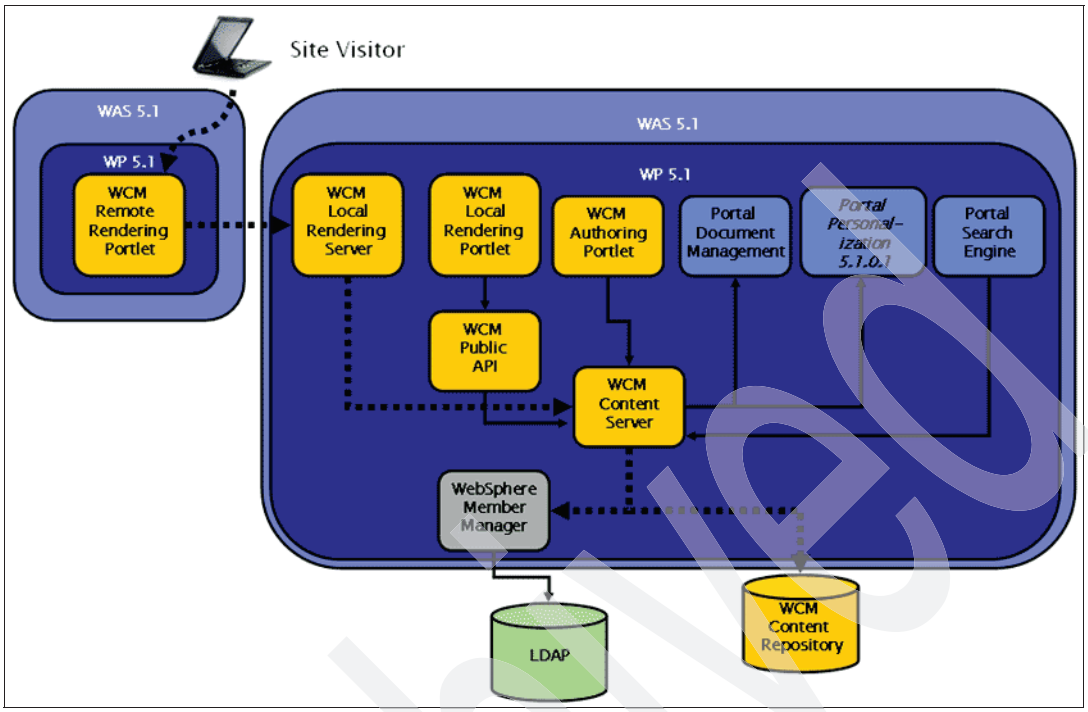


Figure 2-3 Basic flow of activity when using the Remote Rendering Portlet

Tip: Basic performance testing in IBM Workplace Web Content Management 5.1 has shown that the Remote Rendering Portlet performs marginally better than the Local Rendering Portlet. However, it is important to be aware of your infrastructure when using the Remote Rendering Portlet. firewalls, Proxies, and other network issues can have a dramatic effect on the performance of the Remote Rendering Portlet.

IBM Workplace Web Content Management Public API

While IBM Workplace Web Content Management provides a solid set of Web content management capabilities *out-of-the-box*, there are times when the standard capabilities of IBM Workplace Web Content Management do not meet your exact needs. For situations such as this IBM Workplace Web Content Management provides a Java API.

It is important to note that the IBM Workplace Web Content Management API does not expose all the capabilities of the IBM Workplace Web Content Management application. We recommended you review the Javadoc™ provided with the API to review the features and functions that are exposed. You can find the Javadoc at:

```
<WAS_Root>\installedApps\<cell_name>\wcm.ear\ilwwcm.war\webinterface\
api-javadoc
```

In this path name, *<WAS_Root>* is the root directory for WebSphere Application Server (for example, D:\WebSphere\AppServer) and *<cell_name>* is the name of the Cell on this WebSphere Application Server instance (for example, wcm01).

For example, these files were found on our wcm01.cam.itso.ibm.com server at:

```
D:\WebSphere\AppServer\installedApps\wcm01\wcm.ear\ilwwcm.war\webinterface\
api-javadoc
```

Restriction: The IBM Workplace Web Content Management API only supports Java code running in the same Java Virtual Machine as IBM Workplace Web Content Management itself. If you wish to access the IBM Workplace Web Content Management API remotely you will need to build some type of service layer on the IBM Workplace Web Content Management server to broker your requests. The most common solution to this issue is to develop a Web Service to perform this function.

For an overview of the basic capabilities provided via the IBM Workplace Web Content Management API, see Chapter 12, “Working with the application programming interface” on page 469 and Chapter 13, “Advanced topics and examples with the API” on page 533.

IBM Workplace Web Content Management JavaServer Pages Tags

In addition to the Java API, IBM Workplace Web Content Management provides a JavaServer Pages Tag Library that you can use when developing Portlets and other J2EE applications. The tags in this library make it very easy to access your IBM Workplace Web Content Management content from a JSP™ page. These tags rely on the API for their functionality so they do not provide any capabilities beyond those of the API.

Restriction: Because the JSP Tags rely on the IBM Workplace Web Content Management API for functionality they must run in the same Java Virtual Machine as the IBM Workplace Web Content Management server.

For more details on the API and JSP Tags, see the IBM Workplace Web Content Management Information Center.

2.1.2 Changes from earlier versions

This section discusses those changes made to IBM Workplace Web Content Management 1.0 and higher and 2.0 and higher.

Embedded within WebSphere Portal and IBM Workplace Collaboration Services

Prior versions of IBM Workplace Web Content Management were provided as stand-alone Web applications. IBM delivered the application as an EAR file and it was installed directly onto WebSphere Application Server.

Starting with WebSphere Portal 5.0.2.2 and 5.1 and IBM Workplace Collaboration Services 2.5, IBM Workplace Web Content Management is no longer packaged in this format. Even if you only plan on creating non-portal Web sites with IBM Workplace Web Content Management you must still install WebSphere Portal (or Workplace Collaboration Services 2.5) in order to gain access to the Authoring Portlet.

When you purchase a license for IBM Workplace Web Content Management you are given a limited use license of WebSphere Portal (or Lotus Workplace) in order to run your IBM Workplace Web Content Management environment.

Multiple Rendering Portlets

Now that IBM Workplace Web Content Management is integrated with WebSphere Portal, IBM provides a new Local Rendering Portlet for accessing IBM Workplace Web Content Management content. The single portlet provided with early versions is now referred to as the Remote Rendering Portlet.

Remote Rendering Portlet

The Remote Rendering Portlet is the latest version of the IBM Workplace Web Content Management portlet that has been available since IBM Lotus Workplace Web Content Management 1.0. The Remote Rendering Portlet is intended to be run on any WebSphere Portal instance that does not have IBM Workplace Web Content Management enabled. This portlet utilizes a browser-like URL connection to talk to the IBM Workplace Web Content Management server. It does not leverage the IBM Workplace Web Content Management API to perform any of its work.

Local Rendering Portlet

The Local Rendering Portlet is a new portlet that started shipping with IBM Workplace Web Content Management 5.1. This portlet is only for use on a WebSphere Portal server that has IBM Workplace Web Content Management enabled. Unlike the Remote Rendering Portlet, this local version utilizes the IBM

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Workplace Web Content Management API for it's interaction with IBM Workplace Web Content Management content.

User Repository

Versions 1 and later and 2.0 and later of IBM Workplace Web Content Management utilized their own proprietary user repository. While it was possible (via custom Java code) to utilize an LDAP to authenticate site visitors, the proprietary user repository was required for storing user information for anyone who needed to access the IBM Workplace Web Content Management User Interface (for example, content authors, content approvers, system administrators).

IBM Workplace Web Content Management 5.1 and 2.5 now leverage the LDAP and WebSphere Member Manager capabilities of WebSphere Portal and Lotus Workplace. This single repository is used as the authentication mechanism for all aspects of IBM Workplace Web Content Management.

Cloudscape versus File system for content repository

Earlier versions of IBM Workplace Web Content Management supported multiple types of content repositories such as DB2, Oracle, and DB2 Content Manager. These earlier versions also supported using the file system as a data store. This file system approach was convenient for prototypes or development work but were not appropriate for production environments.

Following the same approach as WebSphere Portal and IBM Workplace Collaboration Services, all portal-based versions of IBM Workplace Web Content Management (5.1 and 2.5) now use a Cloudscape database as their default content repository. File system storage is no longer supported.

If you have an older version of IBM Workplace Web Content Management that uses file system storage you will need to migrate the data as you upgrade to IBM Workplace Web Content Management 5.1 or 2.5.

Attention: The migration from a file system environment only supports migration to Cloudscape. If your ultimate content repository is another database such as DB2 or Oracle you will need to first migrate the file system content to Cloudscape and then to your final destination such as DB2 or Oracle.

2.2 Rendering IBM Workplace Web Content Management Content

One of the key benefits of IBM Workplace Web Content Management is the separation of content and structure. The raw content is not combined with any structure (for example, HTML tables) until a user requests the content. It is at this time that IBM Workplace Web Content Management renders the page by combining the content and presentation elements.

In IBM Workplace Web Content Management 5.1 there are several ways you can render content. In this section, we look at the various rendering options that are available in the current product.

2.2.1 An overview of the rendering options

At a high level, there are three basic ways that IBM Workplace Web Content Management can render content:

- Stand-alone Web site (via Local Rendering Server)
- WebSphere Portal page (via Local/Remote Rendering Portlets)
- Java API

A single installation of IBM Workplace Web Content Management can support any combination of these rendering techniques.

Rendering IBM Workplace Web Content Management content in a stand-alone environment

IBM Workplace Web Content Management provides the ability to generate non-portal Web sites via its Local Rendering Server. This scenario is commonly used in two situations:

- Your company does not currently use WebSphere Portal / Lotus Workplace as a delivery platform.
- You want to make IBM Workplace Web Content Management content available to a certain audience but do not want to add additional WebSphere Portal and Lotus Workplace servers to accommodate the incremental users.

In either of these scenarios you can use the IBM Workplace Web Content Management Rendering Server to serve content directly to a Web browser.

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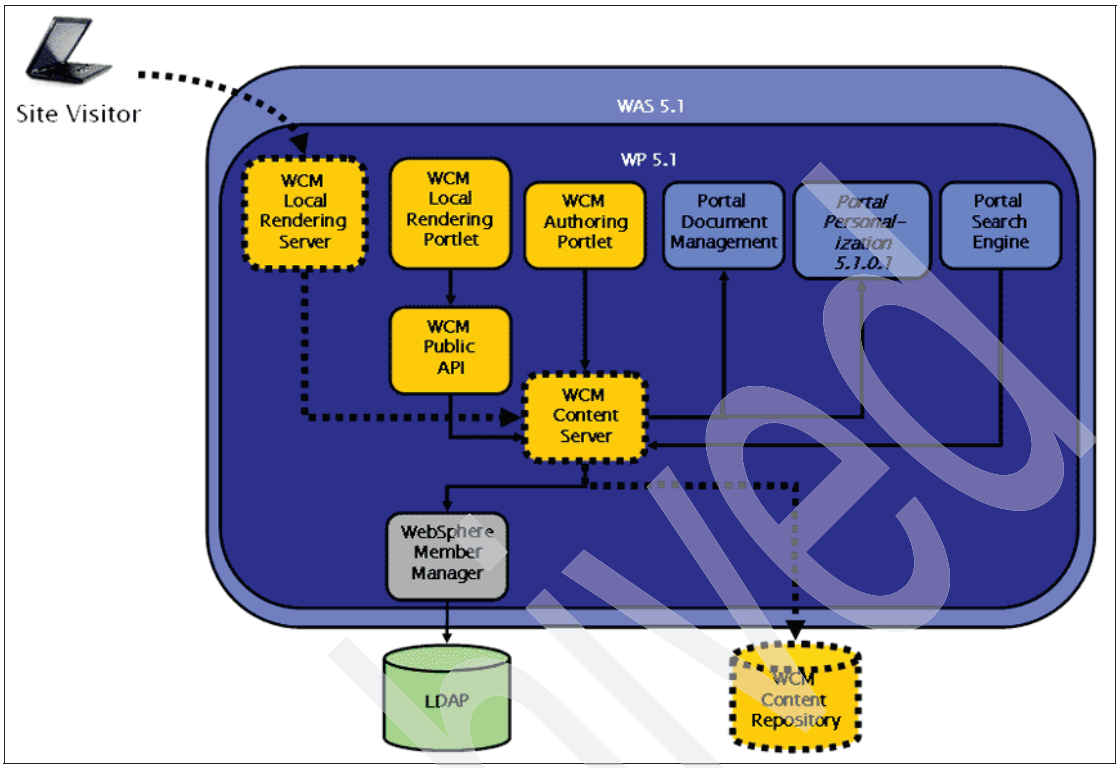


Figure 2-4 Using IBM Workplace Web Content Management to deliver non-Portal (stand-alone) content

Delivering content to a stand-alone Web site involves only a portion of the IBM Workplace Web Content Management software infrastructure. When user requests content via the IBM Workplace Web Content Management Rendering Server, that request is sent to the IBM Workplace Web Content Management Content Server for processing. The IBM Workplace Web Content Management Content Server will gather the appropriate assets from the IBM Workplace Web Content Management Content Repository and send the complete page back to the requestors browser.

If your content is secured, the IBM Workplace Web Content Management Content Server will also utilize WebSphere Member Manager to ensure that the authenticated user has been granted access to the requested content.

Static pre-rendering of content in IBM Workplace Web Content Management

The pre-rendering functionality offered in IBM Workplace Web Content Management allows a site to be pre-rendered, thus decreasing the load on the

server when delivering Web pages. This can significantly improve the performance of a site. There are two options available for pre-rendering:

1. Pre-render the site but still have IBM Workplace Web Content Management control the delivery of the Web site. (Basic Site Caching)
2. Pre-render the site and deploy the static HTML via a Web server. (Static Pre-Rendering)

We will discuss the first option when we look at the advantages of caching in Chapter 8, “Caching and pre-rendering considerations” on page 347.

The second option is used typically when the Web site is both static and anonymous. In this second scenario, you would pre-render the entire site and then move the pre-rendered files to an external HTTP server. This decreases the licensing required for your IBM Workplace Web Content Management infrastructure because IBM Workplace Web Content Management is not running on your production servers. However, it also eliminates any possibility for dynamic behavior. Think carefully before you utilize the static pre-rendering option. It can save you money in licenses, but also **significantly** reduces the IBM Workplace Web Content Management features available to your site.

Rendering IBM Workplace Web Content Management via WebSphere Portal

IBM provides a pair of portlets that can render IBM Workplace Web Content Management content within WebSphere Portal. The advantage of using these portlets is that you can render IBM Workplace Web Content Management content within WebSphere Portal without writing any Java code (a portlet). The IBM Workplace Web Content Management rendering portlets rely on the components built in IBM Workplace Web Content Management (for example, Presentation Templates, HTML components and so forth) to build the presentation. These portlets significantly decrease the time and effort needed to display IBM Workplace Web Content Management content within WebSphere Portal.

it is important to note that while the two rendering portlets work in a very similar fashion from a user interface perspective, the underlying technologies for these two portlets are very different. The Local Rendering Portlet utilizes the IBM Workplace Web Content Management API while the Remote Rendering Portlet communicates with the IBM Workplace Web Content Management Local Rendering Server (servlet) via a URL connection.

Refer to 2.2.1, “An overview of the rendering options” on page 43, for a description of the two portlets that IBM provides and where each is applicable for deployment.

IBM Workplace Web Content Management API

While IBM has certainly made accessing IBM Workplace Web Content Management simple via the rendering portlets and rendering server, there are times when neither of these processes provide you exactly what you need. In many of these cases the public API for IBM Workplace Web Content Management gives a developer the flexibility to create applications or portlets that more accurately meet with project requirements.

Restriction: The IBM Workplace Web Content Management API only supports Java code running in the same Java Virtual Machine as IBM Workplace Web Content Management itself. If you wish to access the IBM Workplace Web Content Management API remotely you will need to build some type of service layer on the IBM Workplace Web Content Management server to broker your requests. The most common solution to this issue is to develop a Web Service to perform this function.

2.2.2 Alternate Rendering Concepts

In many customer environments there are times when the standard rendering capabilities of the Local/Remote Rendering Portlets and IBM Workplace Web Content Management Rendering Server are not sufficient to meet a project's needs. In situations such as these there are certainly other options available to rendering content. In this section, we review two such techniques that are quite common.

XML and RSS

Really Simple Syndication (RSS) is a lightweight XML format designed for sharing headlines and other Web content. RSS has evolved into a popular means of sharing content between sites. RSS can also be the basis for additional content distribution services (a.k.a news feeds). There are many freely available RSS news readers that can scan and aggregate content from multiple RSS news feeds.

It is very easy to build an IBM Workplace Web Content Management Menu, Navigator, or Presentation Template that generates an RSS news feed or other XML-based output. An example of this process is outlined in *Lotus Workplace Web Content Management*, SG24-6309, which is available at:

`http://www.redbooks.ibm.com/abstracts/sg246309.html?Open`

Tip: At its core, RSS is just a specific XML format. You can extrapolate this concept into other XML-based delivery techniques.

WML and cHTML

Just with the previous RSS example, it is also possible to generate other markup languages such as WML or cHTML.

If you are delivering content via WebSphere Portal there are other ways to accommodate these types of markup languages, but if you are using the IBM Workplace Web Content Management Rendering Server to deliver content you could create unique presentations of the content for various presentation languages (for example, IBM Workplace Web Content Management, HTML, cHTML).

2.3 IBM Workplace Web Content Management environment types

In a typical IBM Workplace Web Content Management installation there are multiple physical IBM Workplace Web Content Management servers. In our experience, these servers end up performing one of the following roles within the IBM Workplace Web Content Management infrastructure:

- Development
- Authoring
- Staging
- Production (Live)

2.3.1 Development

This is where you develop and unit test the Web Content Management technical assets such as Presentation Templates, HTML Components, Menus, and Navigators. In addition, this server can be the first place you install patches and fixpacks to ensure they do not have a negative impact on your IBM Workplace Web Content Management servers.

Typically, you syndicate changes to the authoring environment, to roll out changes. These changes are, in turn, syndicated or replicated out to the staging and live environments after the appropriate testing.

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Restriction: IBM Workplace Web Content Management does not currently support the notion of selective replication. In other words, you cannot tell IBM Workplace Web Content Management to only Syndicate design changes from the Development server to other servers in your environment. This limitation means you must be very careful when Syndicating content to from a Development server.

One approach is to set the Syndicator to Syndicate only Live content and delete all content (via the API) prior to Syndication.

Another similar approach is to configure Syndication the same way but have no Live content in the Development server.

Regardless of your preferred approach, be *very careful* when syndicating from Development to other servers.

2.3.2 Authoring

This is where content authors and approvers create, edit, preview, approve, and expire content. This environment can be distributed if required. For example, if you have offices across the globe, it might make sense to have authors work on a server closer to their physical location as opposed to a centralized authoring system.

If you choose to have a distributed Authoring environment it is important to make sure people on separate servers do not attempt to work on the same content simultaneously. In situations where distributed Authoring environments make sense you should secure your IBM Workplace Web Content Management environment such that people on each Authoring server can only modify a unique set of data.

Restriction: Due to a restriction in the IBM Workplace Web Content Management software you cannot author content from a server in a cluster. Remember this restriction when designing your environment!

2.3.3 Staging

This is sometime perceived as merely nice to have, but a staging environment is highly recommended as a safety net. A staging environment provides a chance to review changes in the context of your whole site before they are syndicated into the live environment. This can include previewing the Web content as well as integration to/from other applications. A staging environment is particularly useful if you are pushing out a large number changes simultaneously.

A staging environment can also tie into your test environment, depending on the relevant testing that is part of your Content Management and WebSphere Portal Development life cycles.

From a best practices perspective, *the Staging environment should use all functional elements found in the Production (Live) environment*. For example, if your Production environment contains a cluster for IBM Workplace Web Content Management servers so should your Staging environment. Designing your staging environment in this manner provides two potential benefits:

- Testing

  If you need to test a new configuration, install a patch/fix, and so forth, you need a place to test such changes prior to implementation on the production servers. If the Staging environment mirrors your Production environment you can confirm such changes in Staging.

- Performance testing

  In an ideal environment, Staging would be an exact duplicate of the Production environment. If this were the case you could easily do performance testing in the Staging environment. If the Staging environment contains all elements of Production but on a smaller scale you can still use this environment to run performance testing, but you will have to extrapolate the results, which could lead to incorrect performance expectations.

2.3.4 Production (live)

This environment provides the live site to Site Visitors and is tuned for fast rendering of Web pages and portlets. This environment is often clustered for both failover and performance. Live environments often include other performance-enhancing software and hardware to help with caching, load balancing, and failover.

Restriction: The Authoring Portlet does not function properly on an IBM Workplace Web Content Management server that is installed into a cluster. Authoring cannot be done in a clustered environment. Furthermore, in order to make configuration changes to production servers (some of which are done via the Authoring Portlet) you will have to remove the server from the cluster prior to making such changes.

2.3.5 Workflow versus syndication

With multiple servers in a typical IBM Workplace Web Content Management environment, it is necessary to have a mechanism that can synchronize data between multiple IBM Workplace Web Content Management servers. In addition,

it is a typical requirement to have content pass through some formal approval process before it can be viewed on the Web site. IBM Workplace Web Content Management provides solutions for both of these issues with Workflow and Syndication. New users of IBM Workplace Web Content Management frequently interchange these two terms as though they are one and the same. However, these two capabilities are complementary and you must make sure you understand the role of each within IBM Workplace Web Content Management.

Workflow

Workflow controls the creation, approval, and runtime (live) access to an item. A workflow consists one or more stages. All content in IBM Workplace Web Content Management must go through a workflow process - even it that workflow is a simple one step “express” approval.

Tip: Content cannot be seen by site visitors at runtime (live) until the content is approved.

Syndication

Syndication is the method used by an IBM Workplace Web Content Management server to replicate data from one IBM Workplace Web Content Management server to another. Unlike Workflow, Syndication is not involved in the process of approving content. Syndication is only responsible for replication of IBM Workplace Web Content Management assets across multiple servers.



Figure 2-5 Item Gatherer select list when creating a Syndicator

When creating a Syndicator, IBM Workplace Web Content Management allows you two choices for the granularity of items to be syndicated:

- **All Items:** When configured with this setting, all elements of the IBM Workplace Web Content Management server are replicated to the other server - including draft and expired content. Typically Authoring / Development servers need access to all types of content for testing purposes. This setting is common when syndicating between distributed Authoring servers or between an Authoring server and Development server.
- **All Live Items:** As opposed to the `All Items` setting, this option only replicates live content. Live content is defined as content that has been approved via workflow (live) but not yet past its expiration date. Typically a production server would only receive live data - so this setting is common when syndicating from Authoring to Staging or Staging to Production.

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Tip: Syndication will always syndicate copies of your technical assets (for example, Presentation Templates, Authoring Templates, Library Components, and so forth). By default there is no setting to stop this. You can configure IBM Workplace Web Content Management to workflow these items at which point they would follow the same rules as content.

How syndication works

To participate in syndication, define two servers as a pair that will syndicate. The syndicator is the server that contains the data that needs to be copied to another server. The subscriber is the server that retrieves the copies of the data from the syndicator. The servers do not need to be physically connected; they need only be network accessible.

The syndicator contains an item gatherer, which registers all the items that change. A change might mean an item is created, edited, or deleted; for example, new content is created, or existing content is edited or deleted.

Changes usually occur during peak periods on the development server. Syndication affects performance, and should only run during off-peak periods when no changes occur. However, you cannot schedule syndication to run at a specific time.

A task that runs every 30 seconds, by default, registers whether the item gatherer contains changed items. If the item gatherer does contain changed items when the task runs, syndication does not run. Changed items in the item gatherer indicate that the server is in a peak period of use. If the item gatherer does not contain changed items when the task runs, syndication runs. No changed items in the item gatherer indicate that the server is in an off-peak period.

During syndication, the syndicator sends the URLs of the changed items to the subscriber. The subscriber retrieves the items using the URLs and copies them to its data store. If the item already exists on the subscriber, the newest item, defined by the modification date, replaces the existing item. Items cannot be appended or merged.

Different servers might store data using different data storage types. For example, the development server might store data using a Cloudscape database, while the live server might store data using a DB2 database. IBM Workplace Web Content Management can syndicate data between servers that use different data storage types.

Archive

2.3.6 Putting the environments together

Based on the need for multiple IBM Workplace Web Content Management environments you will typically end up with multiple IBM Workplace Web Content Management servers in your infrastructure. Figure 2-6 shows what a typical combination of these environments might look like:

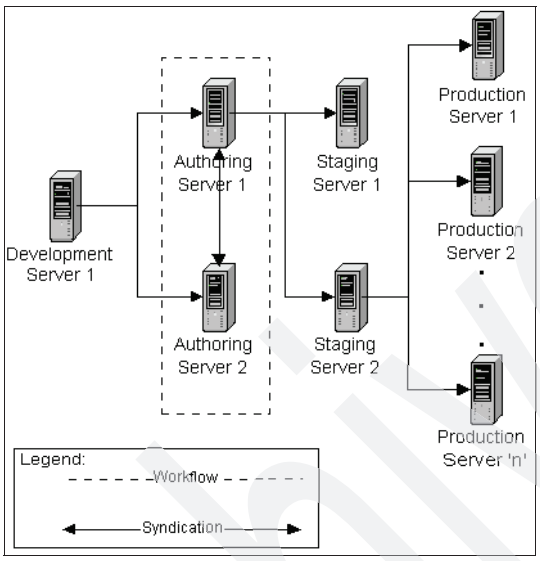


Figure 2-6 Typical configuration and content flow

A Development Server is set up to allow developers to create the technical assets (Presentation Templates, Workflows, and so forth) utilized within the IBM Workplace Web Content Management environment. These assets are **syndicated** to the Authoring Servers.

One or more Authoring Servers are utilized to create and approve content. The Authoring servers will contain content in a variety of stages. The IBM Workplace Web Content Management workflow processes take place on these servers. When content is approved, it is syndicated to the Staging Server(s).

The Staging servers should contain *only* Live (approved) content. This can be controlled via Syndication. When all content is reviewed and deemed ready for production, the content is syndicated to the Production Server(s).

The Production Server(s) are responsible for delivering content to Site Visitors at runtime.

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2.4 Sample physical architectures

In this section, we look at some physical architectures that you can use to build the IBM Workplace Web Content Management infrastructure.

Attention: You can use the architectural designs described in this section to build out any of the environments described in the previous section. In practice, you combine some number of these architectures across the various environments. At the end of this chapter, we build a sample solution that pulls together all the ideas in this chapter.

In real-world installations of IBM Workplace Web Content Management there are a variety of common infrastructure designs in place. The primary differences in these designs are due to variations in several basic assumptions:

- Site size and complexity: For a relatively small Web site, it might not be necessary to have individual servers dedicated to all four types of IBM Workplace Web Content Management environments.
- Funding: In many cases there is a limitation as to the funding provided for building out the IBM Workplace Web Content Management infrastructure. In these cases you must construct your environment as soundly as possible within the budget. However, the budget will likely force you to reduce the infrastructure.
- Corporate standards: Your company standard might not allow for the creation of certain types of servers. For instance, it is quite common for smaller companies to omit the staging environment as it requires time and resources to perform the content review in this stage.

Important: As you look at these various architectures remember that these are only representative architectures based on practical experience in deploying IBM Workplace Web Content Management. There are many other architectural combinations that can be built based on your organization's needs. Use these architectures as a baseline from which to build your environment.

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2.4.1 Basic

The Basic architecture is the smallest acceptable design for an IBM Workplace Web Content Management infrastructure.

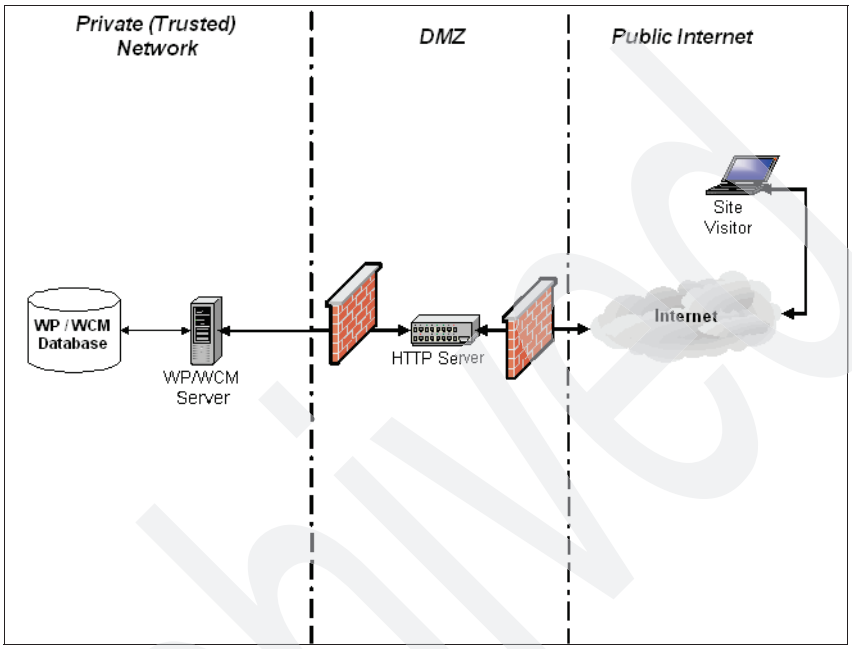


Figure 2-7 Sample architecture - Basic

In the Basic architecture, a single IBM Workplace Web Content Management server is responsible for all IBM Workplace Web Content Management activities. Site Visitors access this single server for content when they visit the Web site.

An HTTP server is placed in the DMZ to receive all requests for site content. This HTTP Server acts primarily as a proxy to shield the IBM Workplace Web Content Management server from direct access. If you use IBM HTTP Server (or Apache), the WebSphere Portal and IBM Workplace Web Content Management server can generate an HTTP Plug-in to ease configuration of the HTTP Server.

While this architecture is technically feasible, there are a variety of issues that make it sub-optimal.

Design advantages

Design advantages include simplicity. This design is very simple to implement due to the limited number of components involved.

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Design disadvantages

Design disadvantages include the following:

- Failover or redundancy: This environment has no failover or redundancy in any layer. If any one part of the system were to fail the entire site would appear to be down.
- Load balancing: This environment has no load balancing capabilities. There is only one IBM Workplace Web Content Management server and it must handle the entire workload at all times.
- Maintenance: In order to perform site maintenance the site will have to be unavailable.

2.4.2 Intermediate

The Intermediate architecture attempts to correct the primary runtime deficiencies of the Basic architecture.

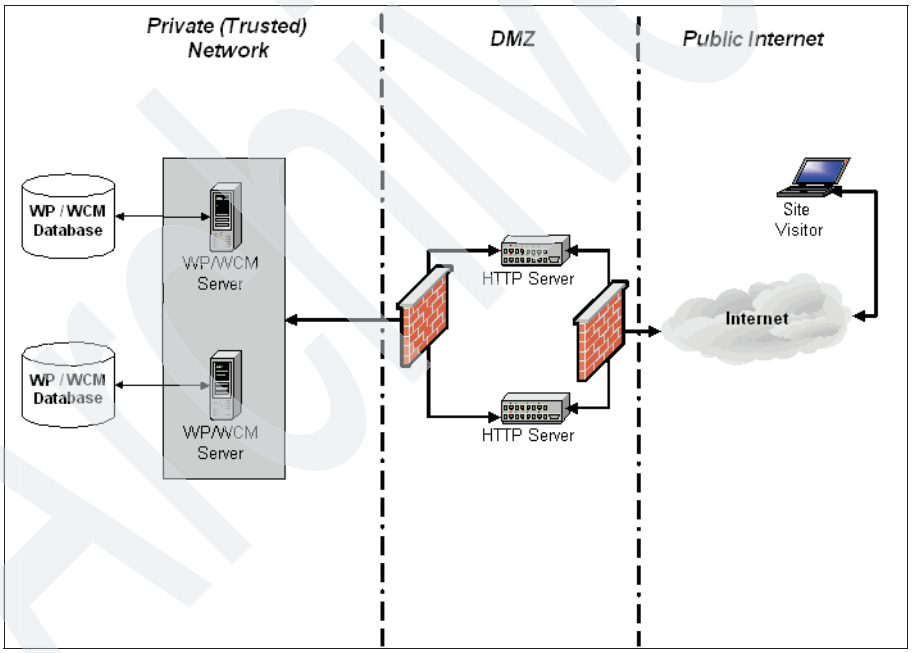


Figure 2-8 Sample architecture - Intermediate

In the Intermediate architecture, multiple IBM Workplace Web Content Management servers share the responsibility for IBM Workplace Web Content Management activities. Site Visitors access any of these servers for content when they visit the Web site.

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Multiple HTTP servers are placed in the DMZ to receive requests for site content. This HTTP Servers perform two primary functions:

- Proxy: The HTTP Servers act as a proxy to shield the IBM Workplace Web Content Management servers from direct access. If you use IBM HTTP Server (or Apache), the WebSphere Portal and IBM Workplace Web Content Management server can generate an HTTP Plug-in to ease configuration of the HTTP Server.
- Load Balancing: The HTTP Plug-in can be configured to provide load balancing based on a variety of algorithms. If your IBM Workplace Web Content Management servers are not similar in processing capabilities you can set up the plug-in to load balance traffic according to server capacity.

While this architecture improves upon the Basic architecture, there are still several issues that make it sub-optimal for larger environments.

Design advantages

Design advantages include the following:

- Simplicity: This design is very simple to implement due to the limited number of components involved.
- Load balancing and redundancy: If you are using IBM HTTP Server / Apache, this environment has basic load balancing capabilities.

  Because there are duplicates of all components a basic level of redundancy exists in this design.
- Maintenance: With multiple servers available to deliver content, site maintenance can be performed without the entire site becoming unavailable.

Design disadvantages

Design disadvantages include the following:

- Administration: As more IBM Workplace Web Content Management servers are added to the infrastructure the maintenance effort to make changes increases in a linear fashion. Changes must be manually made to each server because the servers are not clustered in this design.
- Failover: While we do have redundancy with this design, there is no automated failover in the event a specific component fails. If any one part of the system were to fail there is a likelihood that the site would appear be down to some subset of the users.

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2.4.3 Advanced architecture planning

The Intermediate architecture still contains one major deficiency - there is no failover within the environment. To resolve this issue we will look at building a slightly more complex infrastructure that includes **clustering** some of the servers.

WebSphere Portal and IBM Workplace Web Content Management integrated

In this architecture we continue to enable IBM Workplace Web Content Management on all of the WebSphere Portal servers. However, unlike the Intermediate architecture, in this environment we cluster the portal servers.

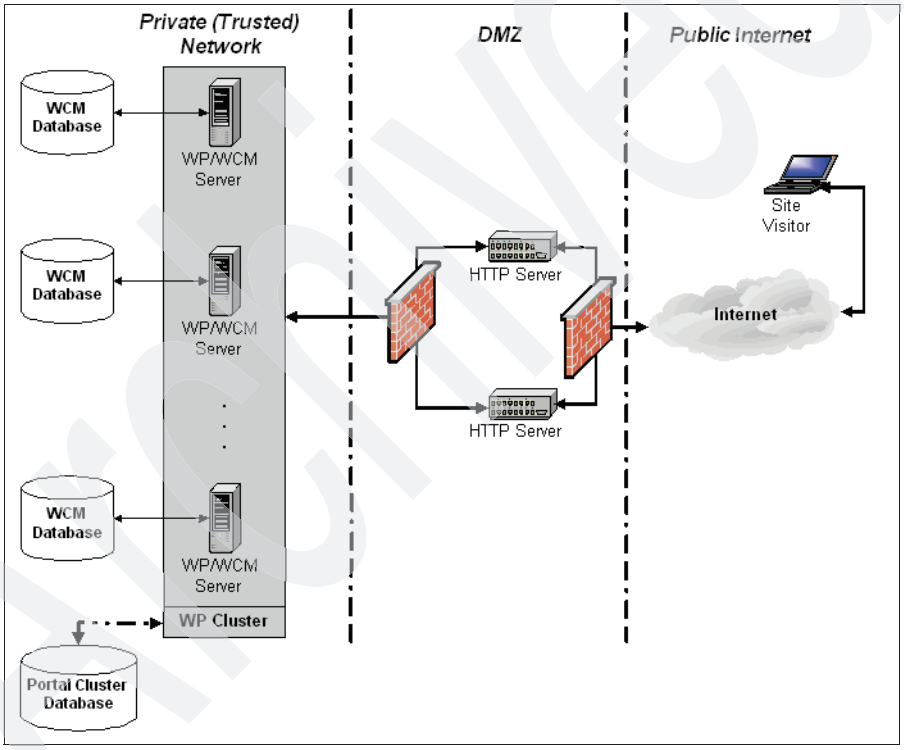


Figure 2-9 WebSphere Portal and IBM Workplace Web Content Management integrated

When you cluster WebSphere Portal servers they share identical configuration. This configuration is managed from a WebSphere Deployment Manager server (not pictured). The Deployment Manager is responsible for synchronizing the WebSphere Portal configuration across all servers in the cluster. Thus, when you deploy an updated IBM Workplace Web Content Management portlet or create a

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new portal page, the Deployment Manager synchronizes all servers in the cluster — a nice reduction in administrative time and effort.

In addition, when you cluster the WebSphere Portal servers, the Deployment Manager can create a plug-in for IBM HTTP Server and Apache that allows the HTTP Servers to gracefully failover in the event that one of the portal servers stops functioning.

While setup and maintenance of a cluster does take some time and effort, this effort is typically small compared to the ongoing benefits provided to the infrastructure.

Design advantages

Design advantages include the following:

- Load balancing and redundancy: If you are using IBM HTTP Server / Apache, this environment has basic load balancing capabilities.

  Because there are duplicates of all components a basic level of redundancy exists in this design.
- Failover: The addition of a cluster allows the HTTP Server to provide failover for the WebSphere Portal servers. If any one part of the system were to fail the entire site would not appear be down.
- Maintenance: With multiple servers available to deliver content, site maintenance can be performed without the entire site becoming unavailable.
- Local rendering portlet: If IBM Workplace Web Content Management is running on all portal servers you can use the Local Rendering Portlet. By not having to communicate with an external IBM Workplace Web Content Management server (as required with the Remote Rendering Portlet) you eliminate a potential performance bottleneck.
- Administration: As more IBM Workplace Web Content Management servers are added to the infrastructure the maintenance effort to maintain the infrastructure does not increase significantly. Changes to server configurations are performed from the central Deployment Manager console.

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Design disadvantages

Design disadvantages include the following:

- Complexity: This design is fairly complex. The learning curve for installing and administering a clustered environment servers should not be underestimated.
- Cost: Enabling IBM Workplace Web Content Management on every WebSphere Portal server will quickly increase your infrastructure cost. Because you get a limited entitlement of IBM Workplace Web Content Management for use in the WebSphere Portal environment, you will have to purchase additional IBM Workplace Web Content Management licenses for 5 of every 6 CPUs of WebSphere Portal.
- Authoring portlet: The authoring portlet does not function properly if run from a server participating in a cluster. Because this portlet is needed to set up Syndication, all IBM Workplace Web Content Management configuration changes controlled via the Authoring Portlet must be made before you add the IBM Workplace Web Content Management/WebSphere Portal server into the cluster. If such changes need to be made later you must remove the server from the cluster before making the changes and add it back to the cluster after the changes are complete.

Restriction: The current IBM Workplace Web Content Management software cannot take advantage of clustering with respect to the content repository. Each server that has IBM Workplace Web Content Management enabled will need to be configured to use a separate database. This is the exact opposite from the WebSphere Portal database which must be shared by all portal servers in a cluster.

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WebSphere Portal and IBM Workplace Web Content Management separated

In this architecture we no longer enable IBM Workplace Web Content Management on all of the WebSphere Portal servers. Instead, we will create a separate tier of servers with the sole task of serving IBM Workplace Web Content Management content.

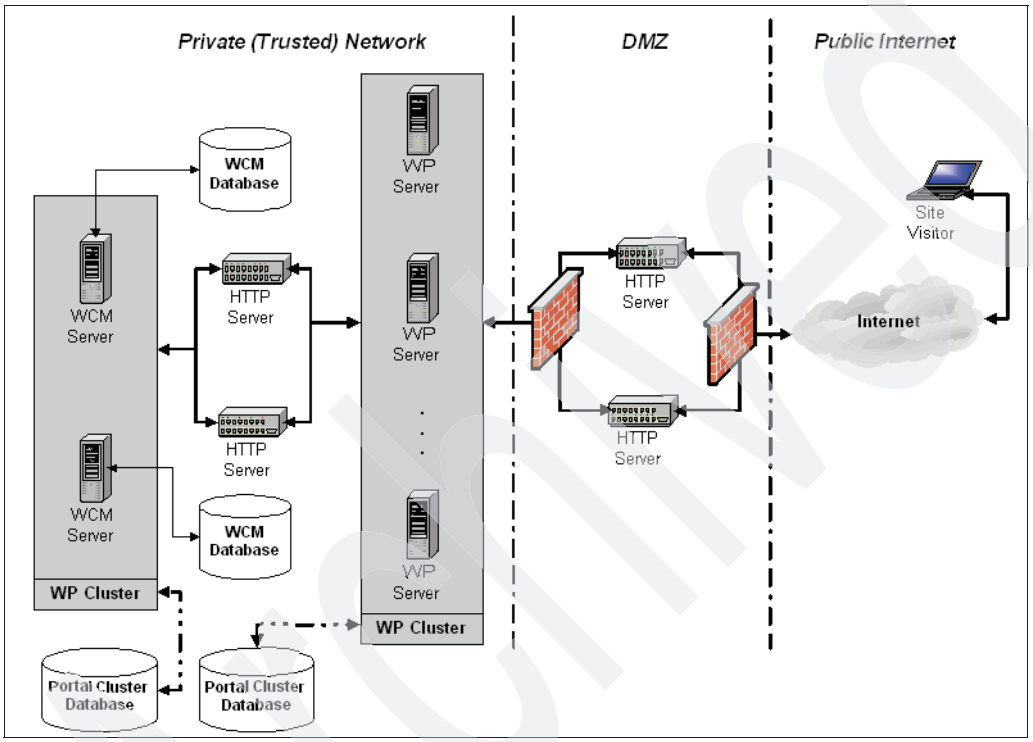


Figure 2-10 IBM Workplace Web Content Management and WebSphere Portal on separate servers

As with the other advanced architecture, this configuration clusters the portal servers. However, in this configuration we will create a separate cluster for the IBM Workplace Web Content Management servers.

Because the Authoring Portlet does not work in a clustered environment, clustering the IBM Workplace Web Content Management server presents an issue during setup and configuration. If you need to make configuration changes to a server via the Authoring Portlet you would have to remove the server from the cluster prior to making the changes - and then add the server back to the cluster. This would happen, for example, when you want to initially set up Syndication on the servers. It is recommended you complete all configuration to

all IBM Workplace Web Content Management servers before adding them to a cluster. This minimizes the issues of IBM Workplace Web Content Management and clustering.

When you cluster the WebSphere Portal or IBM Workplace Web Content Management servers they share identical configurations within their respective cluster. This configuration is managed from a WebSphere Deployment Manager server (not pictured). The Deployment Manager is responsible for synchronizing the configuration across all servers in each cluster. This means that when you deploy an updated IBM Workplace Web Content Management portlet or create a new portal page, the Deployment Manager would synchronize all servers in the appropriate cluster - a nice reduction in administrative time and effort.

In addition, when you cluster the WebSphere Portal or IBM Workplace Web Content Management servers, the Deployment Manager can create a plug-in for IBM HTTP Server or Apache that allows the HTTP Servers to gracefully failover in the event that one of the portal servers stops functioning. This is how both set of HTTP Servers can provide failover for WebSphere Portal and IBM Workplace Web Content Management requests.

Note: It is technically possible to have a single set of HTTP Servers act as the front end for all IBM Workplace Web Content Management and WebSphere Portal servers. This would require a manual modification to the plug-in that combines elements from the plug-ins created by each cluster.

While setup and maintenance of a cluster does take some time and effort, this effort is typically small compared to the ongoing benefits provided to the infrastructure.

Design advantages

Design advantages include the following:

- Cost: This design allows you to add WebSphere Portal and IBM Workplace Web Content Management processors independently - based on performance and workload requirements. As opposed to automatically adding an IBM Workplace Web Content Management processor every time you add a WebSphere Portal processor, you can add each in an independent fashion.

  Because you get a limited entitlement of IBM Workplace Web Content Management for use in the WebSphere Portal environment, this provides for better cost control as the infrastructure grows.

- Load balancing and redundancy: If you are using IBM HTTP Server or Apache, this environment has basic load balancing capabilities across each cluster.

Archive

Because there are duplicates of all components a basic level of redundancy exists in this design.

- Failover: The addition of a cluster allows the HTTP Server to provide failover for each cluster. If any one part of the system were to fail the entire site would not appear be down.
- Maintenance: With multiple servers available to deliver content, site maintenance can be performed without the entire site becoming unavailable.
- Administration: As more WebSphere Portal or IBM Workplace Web Content Management servers are added to the infrastructure the maintenance effort to maintain the infrastructure does not increase significantly. Changes to server configurations are performed from the central Deployment Manager console.

Design disadvantages

Design disadvantages include the following:

- Complexity: This design is fairly complex. The learning curve for installing and administering a clustered environment servers should not be underestimated.
- Remote Rendering Portlet: If IBM Workplace Web Content Management is running on a separate set of servers all portal servers you must use the Remote Rendering Portlet. Because this portlet communicates with an external IBM Workplace Web Content Management server there is a potential performance bottleneck if the network connection is poor.
- IBM Workplace Web Content Management Administration: The Authoring Portlet does not function properly if run from a server participating in a cluster. Because this portlet is needed to set up Syndication, all IBM Workplace Web Content Management configuration changes controlled via the Authoring Portlet must be made before you add the IBM Workplace Web Content Management server into the cluster. If such changes need to be made later you must remove the server from the cluster before making the changes and add it back to the cluster after the changes are complete.

Redbooks

Note: There is a cost-benefit analysis with regard to clustering stand-alone IBM Workplace Web Content Management servers. The Deployment Manager automatically creates the plug-in for the HTTP Server. This plug-in make for easy setup of failover within the IBM Workplace Web Content Management tier.

However, there are operational issue with IBM Workplace Web Content Management and clustering such as an inability to Author content or make configuration changes via the Authoring Portlet. If the clustering issues have you leaning towards not clustering the IBM Workplace Web Content Management servers there are other techniques that can provide failover for the IBM Workplace Web Content Management server tier. For example, several vendors make hardware that can perform this task. Of course this hardware has additional costs and configuration issues. There is no single answer that will work in all scenarios.

Restriction: The current IBM Workplace Web Content Management software cannot take advantage of clustering with respect to the content repository. Each server that has IBM Workplace Web Content Management enabled will need to be configured to use a separate database. This is the exact opposite from the WebSphere Portal database which must be shared by all portal servers in a cluster.

2.5 Example infrastructure

In this section, we combine the concepts that are described throughout this chapter and build an example infrastructure for the River Bend Coffee and Tea Company.

Note: Because River Bend is a fictitious company, all of the assumptions and requirements were created solely for the purpose of this discussion. In a real world situation there would be far more issues to take into consideration when designing an infrastructure.

2.5.1 Environments

Due to River Bend's small size and single office location, we implement the following environments:

- Authoring: River Bend has a single office location and a small number of content creators (~10). All content creation and management will be handled

by employees at this location. With these parameters in mind, a single Authoring server will be sufficient for the needs of River Bend.

Due to the small number of developers (2) at River Bend, this same server will also serve as the Development environment.

- Production: River Bend want to build a production infrastructure with redundancy across each element in an effort to avoid downtime. With this in mind, River Bend will build a clustered environment.

  Because the majority of all content on the site comes from IBM Workplace Web Content Management, River Bend will implement IBM Workplace Web Content Management and WebSphere Portal in an integrated fashion as described in Chapter 9, “Advanced integration with WebSphere Portal” on page 403.

- Staging: The Staging environment will be used by River Bend for review of content as well as performance testing of the overall infrastructure. With this in mind, the Staging environment must mirror all functional elements of the staging environment, including the cluster and failover implementations.

Archive

2.5.2 The River Bend infrastructure

This section reviews a sample physical infrastructure to meet the needs of The River Bend Coffee and Tea Company.

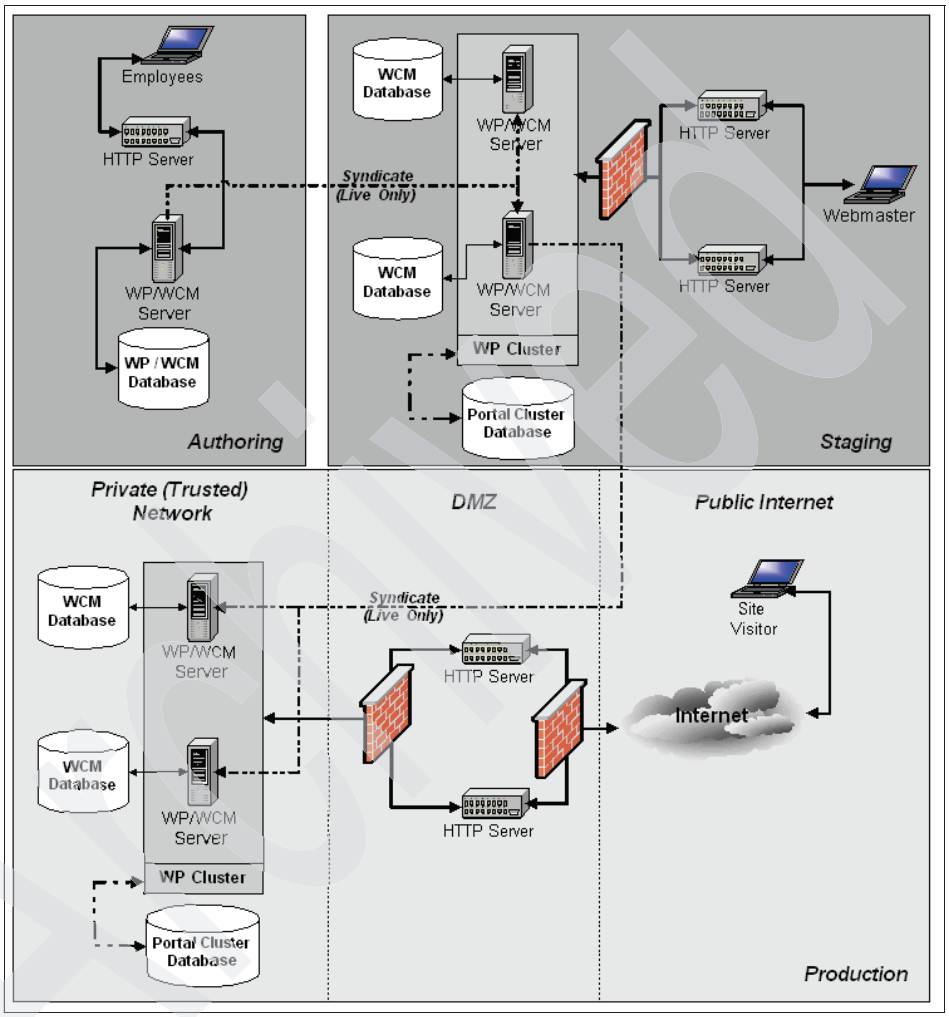


Figure 2-11 Infrastructure for River Bend Coffee and Tea Company

Authoring and development

Due to the small size of content contributors, content approvers, and developers, a single server is utilized for Authoring (and Development). An HTTP Server is placed in front of this single server.

While the HTTP Server functions could be handled by the WebSphere Portal or IBM Workplace Web Content Management server's embedded WebSphere Application Server we recommend running a separate HTTP Server.

Note: This design forces all employees through the HTTP Server as opposed to going directly to the IBM Workplace Web Content Management server. If you need to perform maintenance on the IBM Workplace Web Content Management server you want to ensure that people do not attempt to access the IBM Workplace Web Content Management server during such maintenance. The HTTP Server allows you this control. During site maintenance you can either shut down the HTTP Server (effectively making the site appear down) or place a friendly message page on the HTTP Server. In either event you will not accidentally have people accessing the IBM Workplace Web Content Management server at inappropriate times.

Production

As stated in 2.5.2, "The River Bend infrastructure" on page 65, River Bend wants to provide for a reasonable amount of failover and redundancy within their infrastructure. Furthermore, River Bend wishes to implement typical security best practices to secure their infrastructure.

Private (trusted) network

The trusted network is not directly accessible to people from outside the River Bend offices. A firewall will be used to secure the trusted network from such access.

To provide redundancy, load balancing, and failover of IBM Workplace Web Content Management content, we will implement 2 WebSphere Portal and IBM Workplace Web Content Management servers in a clustered configuration. Clustering the servers allows for the automated generation of an HTTP Plug-in file that automatically handles load balancing and failover across all WebSphere Portal and IBM Workplace Web Content Management servers in the cluster. This plug-in file is generate from the Deployment Manager server (not pictured).

Demilitarized zone (DMZ)

In order for consumers to access the River Bend Web site they will type a URL into their Web browser. From a security perspective, we do not want such traffic to directly access our trusted network. Instead, we will create a DMZ for our two HTTP Servers. The first set of firewalls will allow for direct access to the HTTP Servers from the Internet - but only on applicable ports such at 80 (HTTP) and 443 (HTTPS).

When the HTTP Servers receives a request for IBM Workplace Web Content Management content they will pass the request through the second firewall to the

IBM Workplace Web Content Management servers. The second firewall will be configured to allow traffic to the IBM Workplace Web Content Management servers only from the HTTP Servers - this will stop site visitors from directly accessing servers in the trusted network.

The HTTP Servers will have a plug-in file provided to them by the WebSphere Portal and IBM Workplace Web Content Management cluster Deployment Manager. This plug-in will automatically configure the HTTP Servers to handle requests for the WebSphere Portal and IBM Workplace Web Content Management servers. In addition, the plug-in will provide basic failover capabilities in the event one of the IBM Workplace Web Content Management servers crash.

Attention: The plug-in can be manually modified if the default settings are not appropriate, but any manual settings need to be repeated in the plug-in is later recreated.

Internet

The Internet is where site visitors will initiate requests for the River Bend site. Our DMZ must be properly configured to allow access to the HTTP servers from the Internet (and any other valid source location such as the company intranet).

Syndication

Syndication will be used to move our IBM Workplace Web Content Management content between the various environments in the infrastructure. The Syndication flow for our infrastructure is fairly straightforward.

Authoring to staging

Because we have a single Authoring server, we need to set up Syndication from this server to each Staging server. Because staging is not an appropriate location for content modification, we will only syndicate Live content to the Staging servers.

As content is approved and new technical assets are created, the Staging environment will collect syndicated changes from the Authoring environment. During normal operation, the syndication from Authoring to Staging is enabled.

Staging to production

When content is reviewed in the Staging area we need to Syndicate to our Production servers. To facilitate this we will configure one of the Staging servers to Syndicate its content out to all Production servers.

Because the Staging environment collects syndicated changes from Authoring in real time, we do not want to set up a similar Syndication pattern from Staging to Production. If we did, approved content on the Authoring server would syndicate to Staging and then to Production automatically, which defeats the purpose of having the Staging environment.

The only way to stop this from happening is to set up the Syndication from Staging to Production but then **disable** the Syndicator. When the webmaster is ready to confirm a set of changes they would perform the following process:

1. Disable Syndication from Authoring to Staging.

   When the webmaster starts review the content and design changes you do not want additional data showing up in the middle of the testing process.

2. Review content in Staging as needed.
3. Enable Syndication from Staging to Production.

   This allows the reviewed and approved changes to syndicate out to the production servers where they are viable to Site Visitors.

4. Disable Syndication from Staging to Production.

   When the content is pushed out to the Production servers you want to disable this syndication to make sure no addition content syndicates to Production accidentally.

5. Enable Syndication from Authoring to Staging.

   When the Production servers are updated we want to start aggregating the next set of changes on the Staging server.

Important: Syndication is an important process. You should plan out your Syndication strategy carefully prior to implementation.

Note: We kept the example infrastructure in this chapter moderately simple in an effort to ensure that we explained the key issues around IBM Workplace Web Content Management clearly. There are certainly far more complex infrastructures in place today for working with IBM Workplace Web Content Management. You can extrapolate the concepts that we describe in this chapter into larger designs as needed.

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3

Installing and configuring IBM Workplace Web Content Management

This chapter provides an overview of the process for installing and configuring IBM Workplace Web Content Management 5.1. It includes the following sections:

- Installation overview
- Installing IBM Workplace Web Content Management
- Configuring IBM Workplace Web Content Management with DB2 Universal Database
- Applying fixes for IBM Workplace Web Content Management 5.1
- Installing the Rendering Portlets
- Post-installation configuration
- Static pre-rendering
- Removing IBM Workplace Web Content Management

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3.1 Installation overview

In this chapter we will enable the IBM Workplace Web Content Management functionality on an existing WebSphere Portal 5.1 server. Installing WebSphere Portal 5.1 is a pre-requisite for enabling IBM Workplace Web Content Management 5.1. The WebSphere Portal 5.1 installation deploys all the code necessary to enable IBM Workplace Web Content Management.

There are several good resources that describe installing WebSphere Portal 5.1 including *IBM WebSphere Application Server V5.1 System Management and Configuration WebSphere Handbook Series*, SG24-6195, which is available at:

```
http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/
sg246195.html?Open
```

Given this information already exists we will not repeat it in this Redbook. The following assumptions were used when building the baseline for our installation instructions:

- You have already installed WebSphere Portal 5.1
- The WebSphere Portal 5.1 server is already configured to use an LDAP
- The WebSphere Portal 5.1 server is already configured to use a remote DB2 server for the WebSphere Portal databases
- The DB2 Connect Client was used (as described in the WebSphere Portal Information Center) to connect WebSphere Portal to the remote DB2 server.

Note: When we refer to a *remote* DB2 server (or instance,) we are referring to an environment where DB2 is running on a different physical server from WebSphere Portal and IBM Workplace Web Content Management. This type of configuration is very common when you have more than one WebSphere Portal server.

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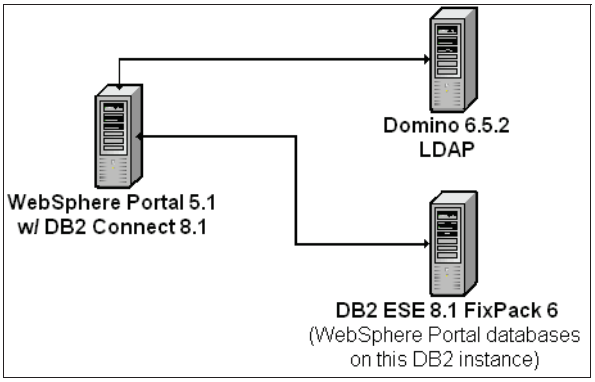


Figure 3-1 Server components used in a typical baseline installation

3.1.1 The IBM Workplace Web Content Management Server components for this book

This section provides installation instructions that are based on the following hardware and software components in the Cambridge ITSO lab:

- Operating System: All hardware uses Microsoft Windows® Advanced Server with Service Pack 4
- WebSphere Portal: The IBM Workplace Web Content Management server is a standard WebSphere Portal 5.1.0 installation. No WebSphere Portal service packs were applied.
- DB2: The remote DB2 server uses IBM DB2 Universal Database™ Enterprise Server Edition Version 8.1 with Fix Pack 6
- DB2 Connect Client: The IBM Workplace Web Content Management server uses IBM DB2 Connect Client Version 8.1

All the instructions and figures in this chapter detail the process of installing and configuring IBM Workplace Web Content Management 5.1 in a Windows 2000 Advanced Server environment. The process to perform this installation on any UNIX® variant is very similar. The steps should be the same, but some of the commands are slightly different due to operating system variances.

3.1.2 Major Installation Changes from IBM Workplace Web Content Management 1.0 and later and 2.0 and later

With the move to IBM Workplace Web Content Management 5.1, there is a significant change in how IBM Workplace Web Content Management is

distributed and installed. Before we get into the installation details lets review some of the major changes from earlier versions.

IBM Workplace Web Content Management EAR File

IBM Workplace Web Content Management 1.x and 2.0.x were stand-alone Web applications that shipped as an Enterprise Application Archive (EAR) file. In these versions there was a separate process for installing and configuring this enterprise application. The IBM Workplace Web Content Management 5.1 application code is now installed during the standard installation of WebSphere Portal 5.1. There is no separate application or installation process.

LDAP

IBM Workplace Web Content Management 1.0 and later and 2.0 and later required their own custom user repository. This repository was the sole source of authentication for people who wanted to create or manage content via the IBM Workplace Web Content Management user interface.

IBM Workplace Web Content Management 5.1 is integrated fully with WebSphere Member Manager (as is WebSphere Portal). This integration allows IBM Workplace Web Content Management to utilize your LDAP as its source for all authentication activities.

Note: IBM Workplace Web Content Management 1.x and 2.0.x could use LDAP for authenticating site visitors - but not content creators and managers. This limited LDAP integration involved writing custom Java code.

Improved configuration technique

IBM Workplace Web Content Management 1.0 and later and 2.0 and later contain the following files, which are used to control the system's configuration:

- connect.cfg
- aptrixjpe.properties
- aptrixsearch.properties

A standard configuration of these versions of IBM Workplace Web Content Management required changes to at least two of these files.

In IBM Workplace Web Content Management 5.1 the majority of all *typical* configuration changes are made in the wpconfig.properties files. The same central configuration file used for configuration of WebSphere Portal.

Behind the scenes, the same IBM Workplace Web Content Management configuration files still exist in the *<WP_Root>*/wcm/config directory, but instead of direct manipulation, you use **`WPSconfig`** (the standard portal configuration

application) to push IBM Workplace Web Content Management configuration changes to the correct file(s).

Important: There are some configuration changes that still require direct manipulation of the files in the <*WP_Root*>/wcm/config directory. It is worth your time to review these files in detail so you understand the role of each file.

3.2 Installing IBM Workplace Web Content Management

This section explains the installation steps for IBM Workplace Web Content Management.

3.2.1 Base server installation

Note: The following instructions assume that your WebSphere Portal 5.1 server is already installed and operational using an LDAP as well as a remote DB2 server for the Portal Databases. For information about installing and configuring WebSphere Portal 5.1, see *IBM WebSphere Portal for Multiplatforms V5.1 Handbook*, SG24-6689, which is available at:

`http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246689.html?Open`

While our ultimate goal is to have IBM Workplace Web Content Management use a remote DB2 database for its content. It is a good idea to first enable and configure IBM Workplace Web Content Management with its embedded Cloudscape database. This will confirm two important facts:

- The appropriate group (wcmadmins) exists in the LDAP
- The IBM Workplace Web Content Management portlets (Authoring and Local Rendering) were deployed and are operational

After these steps are completed, if you have issues migrating to DB2, the issue is isolated in the database configuration.

The wcmadmins group

Prior to enabling or configuring IBM Workplace Web Content Management, you must have one group setup in your user repository (LDAP). Just as the wpsadmins group contains administrators for the WebSphere Portal environment, the wcmadmins group is the administrative group for the IBM Workplace Web Content Management environment.

By default, the wcmadmins group does not include the users in the wpsadmins group. This separation allows for more fine grained control within your WebSphere Portal and IBM Workplace Web Content Management environment.

Prior to starting the process of enabling IBM Workplace Web Content Management make sure the wcmadmins group exists and at least one user account is included in this group.

Enabling IBM Workplace Web Content Management with Cloudscape

The default database for IBM Workplace Web Content Management is Cloudscape. When WebSphere Portal 5.1 is installed it creates the appropriate Cloudscape database files in the <*WP_Root*>/wcm/wcm/ilwwcm/db directory. Because the database is already in place, the initial task of configuring IBM Workplace Web Content Management involves nothing more than deploying the appropriate portlets to multiple WebSphere Portal pages.

To enable IBM Workplace Web Content Management with Cloudscape perform the following steps:

1. Stop WebSphere Portal.
2. Open a command window or command prompt.
3. Navigate to <*WP_Root*>/config directory.
4. Run the following script:

   wpsconfig configure-wcm-authoring
5. Start WebSphere Portal.

This script does the following:

- Creates the label Web Content Management. The label is given the unique name of ILWWCM.workspace.
- Creates an Authoring page. The page is given the unique name of ILWWCM.authoring.
- Creates a Content Preview page. The page is given the unique name of ILWWCM.preview.
- Deploys the Authoring Portlet to the Authoring page.
- Deploys the Local Rendering Portlet to the Content Preview page.
- Creates URL mappings for the Authoring (wcmAuthoring) and Content Preview (wcmPreview) pages. These mappings can be used to provide simplified URLs to access the two pages.

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Note: If you are new to WebSphere Portal, do not worry about the URL Mappings, Unique Names, and other ancillary activities performed by this script. The most important aspect of the script is that it sets up your IBM Workplace Web Content Management environment correctly, including the Authoring Portlet.

Example 3-1 shows the end of the output from running this script. The script uses XMLAccess to create and deploy the various WebSphere Portal assets.

Example 3-1 Partial output from configure-wcm-authoring script

```
[xmlaccess] <?xml version="1.0" encoding="UTF-8"?>
[xmlaccess] <!-- IBM WebSphere Portal/5.1 build wp510_083 exported on Fri May
27 14:18:53 EDT 2005 from wcm01/9.33.85.114 -->
[xmlaccess] <!-- 1/20 [web-app wcm.author.1001 uid=wcm.author.1001] -->
[xmlaccess] <!-- 2/20 [portlet-app wcm.author.1001.1] -->
[xmlaccess] <!-- 3/20 [portlet wcm.author.1001.1.Authoring_Portlet
name=Web Content Authoring] -->
[xmlaccess] <!-- 4/20 [web-app wcm.contentviewer.1001
uid=wcm.contentviewer.1001] -->
[xmlaccess] <!-- 5/20 [portlet-app wcm.contentviewer.1001.1] -->
[xmlaccess] <!-- 6/20 [portlet wcm.contentviewer.1001.1.Content_Viewer name=Web
Content Viewer] -->
[xmlaccess] <!-- 7/20 [content-node Content.Root.My_Portal uniquename=wps.My
Portal] -->
[xmlaccess] <!-- 8/20 [content-node Content.Root.ILWWCM
uniquename=ILWWCM.workspace] -->
[xmlaccess] <!-- 9/20 [content-node Content.Root.ILWWCM_Authoring
uniquename=ILWWCM.authoring] -->
[xmlaccess] <!-- 10/20 [component _7_0GOK8FA5DCO8HMHL_FO] -->
[xmlaccess] <!-- 11/20 [component _7_0GOK8FA5DCO8HMHL_FP] -->
[xmlaccess] <!-- 12/20 [component _7_0GOK8FA5DCO8HMHL_GO] -->
[xmlaccess] <!-- 13/20 [portletinstance _5_0GOK8FA5DCO8HMHL_CH] -->
[xmlaccess] <!-- 14/20 [content-node Content.Root.ILWWCM_Preview
uniquename=ILWWCM.preview] -->
[xmlaccess] <!-- 15/20 [component _7_0GOK8FA5DCO8HMHL_FU] -->
[xmlaccess] <!-- 16/20 [component _7_0GOK8FA5DCO8HMHL_FV] -->
[xmlaccess] <!-- 17/20 [component _7_0GOK8FA5DCO8HMHL_G1] -->
[xmlaccess] <!-- 18/20 [portletinstance _5_0GOK8FA5DCO8HMHL_CI] -->
[xmlaccess] <!-- 19/20 [url-mapping-context label=wcmAuthoring] -->
[xmlaccess] <!-- 20/20 [url-mapping-context label=wcmPreview] -->
[xmlaccess] <request xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
build="wp510_083" type="update" version="5.1.0.0"
xsi:noNamespaceSchemaLocation="PortalConfig_1.3.xsd">
[xmlaccess]     <status element="all" result="ok"/>
[xmlaccess] </request>

BUILD SUCCESSFUL
Total time: 3 minutes 27 seconds
```

To confirm that the script ran successfully, log in to WebSphere Portal as someone in the wcmadmins group. When you log in, you should see the Web Content Management label in the navigation. Selecting this label should bring you to the Authoring Portlet, as shown in Figure 3-2.

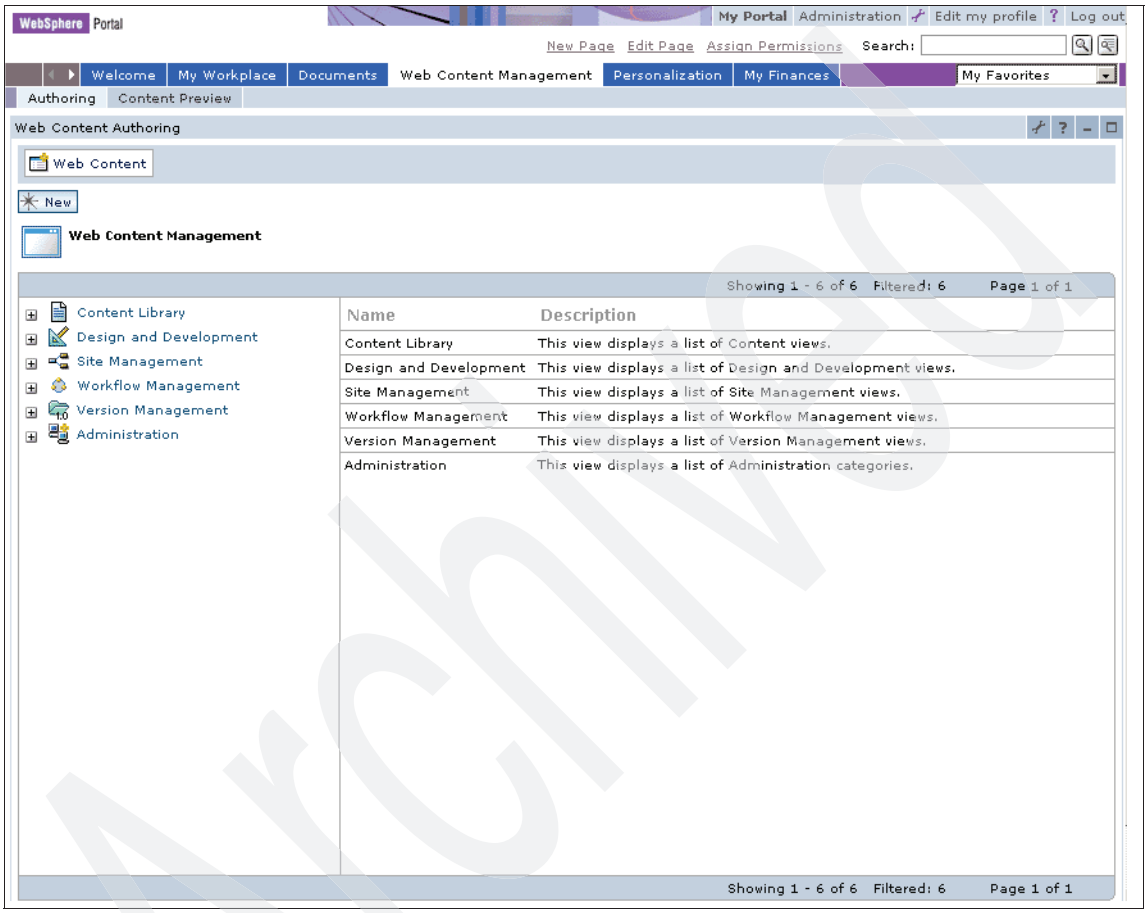


Figure 3-2 Initial access to Authoring Portlet as member of wcmadmins group

If you see a screen similar to Figure 3-2, you have successfully set up IBM Workplace Web Content Management to use the embedded Cloudscape database. At this point you are ready to move to the next step, which is - configuring IBM Workplace Web Content Management to use an external database (for example, DB2).

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Attention: In some situations, you see the Authoring Portlet on the page, but you cannot see content within the portlet. If this situation occurs, confirm that you are a member of the wcmadmins group. If you added your account to wcmadmins after logging into WebSphere Portal, you need to log out and log in again before you can access to the portlet. WebSphere Portal caches your group membership when you log in. The logout and login processes force WebSphere Portal to reevaluate your group memberships.

3.3 Configuring IBM Workplace Web Content Management with DB2 Universal Database

While IBM Workplace Web Content Management provides you the embedded Cloudscape database, there are many situations where Cloudscape is inappropriate for a production environment, such as:

- Existing database standard: Your company likely already has a database platform of choice, such as DB2, Oracle, or MS SQL Server. In this situation, it makes sense to use your existing database platform as the repository for IBM Workplace Web Content Management.
- Central database servers: You plan on installing WebSphere Portal and IBM Workplace Web Content Management on multiple servers and then centralizing the databases onto a common database server. Some companies do this to simplify backup of the IBM Workplace Web Content Management data. You can certainly configure multiple instances of IBM Workplace Web Content Management to use the same database server, as long as each uses its own individual database and tables. However, Cloudscape is not *network aware*. Thus, you cannot use Cloudscape as a remote database.
- Large Web site content: If neither of these issues fit your environment, Cloudscape is certainly capable of serving up a small to medium size Web site. However, from a performance perspective, Cloudscape is not as efficient as DB2, Oracle, and so forth. If Cloudscape does not meet your performance needs, you might consider migrating your data to another database product.

This section looks at the steps that are required to change the IBM Workplace Web Content Management repository from Cloudscape to a remote DB2 server.

Note: When we refer to a *remote* DB2 server (or instance) within this book, we are referring to an environment where DB2 is running on a different physical server from WebSphere Portal and IBM Workplace Web Content Management. This type of configuration is very common when you have more than one WebSphere Portal server.

This section assumes that the remote DB2 server is already in place and our IBM Workplace Web Content Management server is already using the remote DB2 server to store the portal databases. Our process simply adds the IBM Workplace Web Content Management tables to the database server and re-configures IBM Workplace Web Content Management to use these databases. This assumption implies that the DB2 Connect Client is already installed on the server because this client is needed to migrate the WebSphere Portal databases to a remote DB2 server.

For details on migrating the core WebSphere Portal databases to a remote DB2 server, see *IBM WebSphere Portal for Multiplatforms V5.1 Handbook*, SG24-6689, which is available at:

`http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246689.html?Open`

3.3.1 Creating an IBM Workplace Web Content Management database on DB2 server

The first step in configuring IBM Workplace Web Content Management to use a remote DB2 server is to create a single database on the DB2 server. This database holds all the tables that are needed for IBM Workplace Web Content Management. To create the database, perform the following steps *on the remote DB2 server*:

1. Open a command prompt or command window.
2. At the command prompt, type **db2cmd** (on a Windows machine this opens a new command window).
3. In the new command window, enter:

   `db2 "create database db_name using codeset UTF-8 territory US"`

   where *db_name* is any valid name for a DB2 database. In this chapter, we use the name `WCMDB02`**.** For example:

   `db2 "create database WCMDB02 using codeset UTF-8 territory US"`

   When this command completes, you should have a new database on your DB2 server. To confirm this fact, look for the database on the DB2 server

using the DB2 Control Center (**Start** → **Programs** → **IBM DB2** → **General Administration Tools** → **Control Center**).

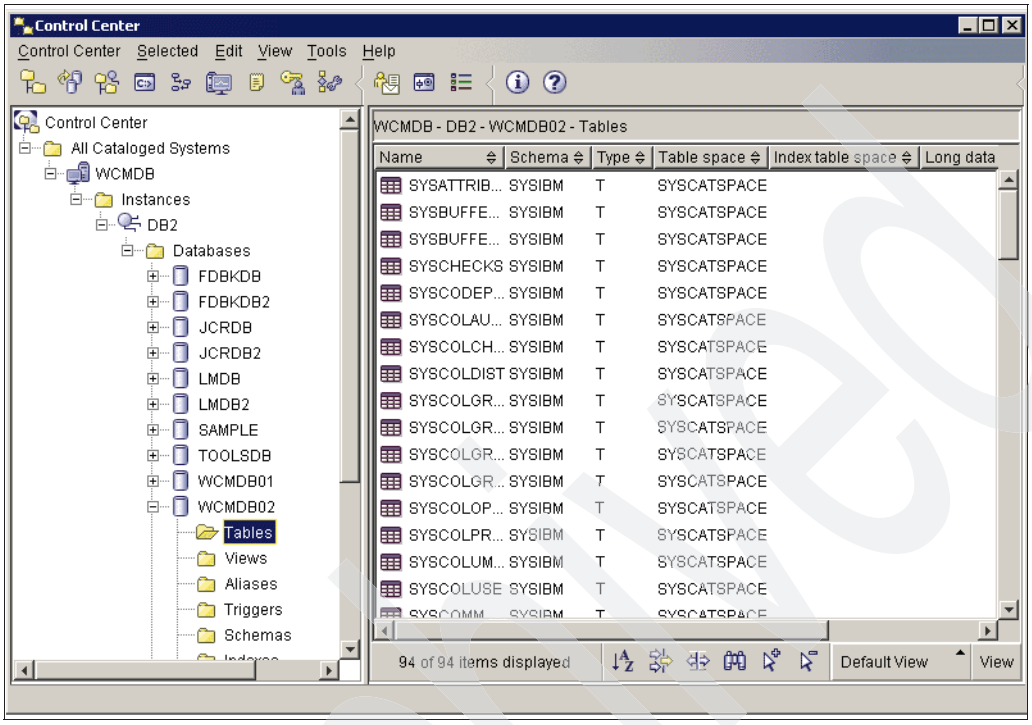


Figure 3-3 The newly created WCMDB02 database as seen in the DB2 Control Center

4. Close both command windows.

3.3.2 Configuring DB2 Connect Client on WebSphere Portal and IBM Workplace Web Content Management server

Now that we have a DB2 database in place, the next step is to make the DB2 Connect Client on the WebSphere Portal and IBM Workplace Web Content Management server aware that the database exists. This configuration is done by cataloging the database on the IBM Workplace Web Content Management server. When you catalog the database on the IBM Workplace Web Content Management server, the DB2 Connect Client creates an alias for the database. This alias is then used when connecting to the database via JDBC™. The alias makes the overall process of connecting to the database far simpler.

Creating the database alias

To create the database alias, on the WebSphere Portal and IBM Workplace Web Content Management server, follow these steps:

1. Open a command prompt or command window.
2. At the command prompt, type **db2cmd** (on a Windows machine, this command opens a new command window).
3. In the new command window, enter the following:

   ```
   db2 "catalog db db_name as db_alias at node node_name"
   ```

   where:

   – *db_name* is the name of the database that you created in the previous step (for example, WCMDB02).

   – *db_alias* is the local alias for the database. You can make the alias anything you want. For this example, we simply append an *A* to our database name (for example, WCMDB02A).

   – *node_name* is the alias of the remote database server. This value was created when you configured the WebSphere Portal server to use the remote DB2 server for its databases.

   In our example the full command is as follows:

   ```
   db2 "catalog db WCMDB02 as WCMDB02A at node WPDB"
   ```

Tip: If you do not know the *node_name*, you can get the value from the DB2 Configuration Assistant running on the IBM Workplace Web Content Management server (**Start** → **Programs** → **IBM DB2** → **Set-up Tools** → **Configuration Assistant**). When the Configuration Assistant starts, you see a list of all catalogued databases. Within the row of any of the core portal databases, the value in the Instance Node column is the value you need (Figure 3-4 on page 81).

Archived

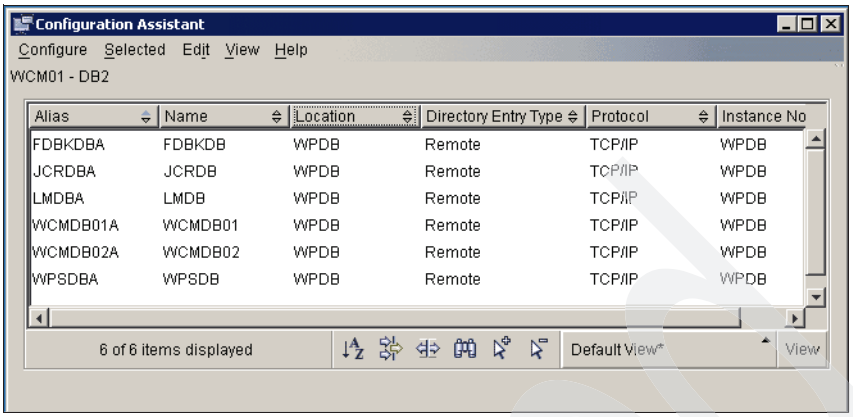


Figure 3-4 DB2 Configuration Assistant, illustrating a list of all catalogued databases

4. Close both command windows.

Testing the database catalog

After you catalog the database, you can attempt to connect to the database on the DB2 server. If you can connect to the database you have properly cataloged the database. To test the connection:

1. Open a command prompt or command window.
2. At the command prompt, type **db2cmd** (on a Windows machine this will open a new command window).
3. In the new command window, enter the following:

   `db2 "connect to db_alias user db_user_name using db_user_pwd"`

   where:

   – *db_alias* is the local alias for the database. You can make the alias anything you want. For this example, we simply append an *A* to our database name (for example, WCMDB02A).

   – *db_user_name* is a valid database user with access to the IBM Workplace Web Content Management database

   – *db_user_pwd* is the password for *db_user_name*. For our example, the command is as follows:

   `db2 "connect to WCMDB02A user db2admin using db2admin"`

Archived

If the connection is set up correctly, you see a screen similar to that shown in Figure 3-5.

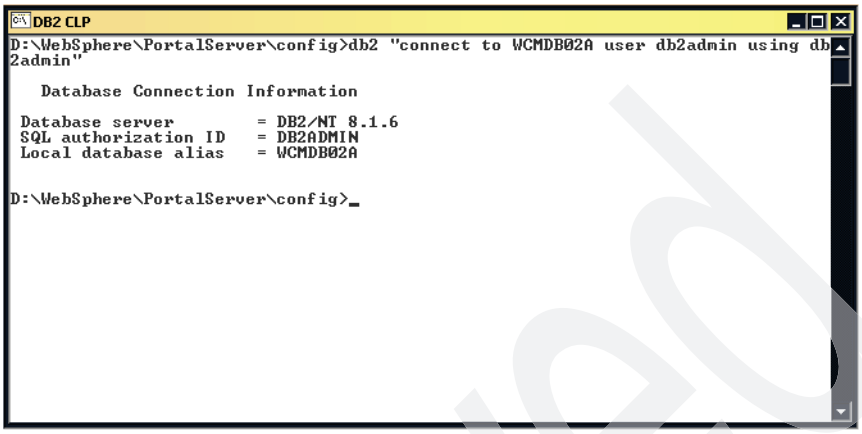


Figure 3-5 Connecting to the remote database via its alias

4. Type **db2 "quit"** to close the database connection.
5. Close both command windows.

Now that you have properly cataloged the remote database, it is time to configure IBM Workplace Web Content Management to use this new database.

3.3.3 Changing the configuration

The process of changing the IBM Workplace Web Content Management configuration to use the new DB2 database involves two steps.

- Updating the wpconfig.properties file with specific information about the DB2 environment.
- Running one **wpsconfig** task to push the values from wpconfig.properties into the IBM Workplace Web Content Management configuration files.

Note: If you are new to WebSphere Portal and IBM Workplace Web Content Management, refer to the WebSphere Portal and IBM Workplace Web Content Management Information Center for an overview of the wpconfig.properties file and the **wpsconfig** tasks that are associated with IBM Workplace Web Content Management.

Archived

Modifying wpconfig.properties

The wpconfig.properties file contains many settings for various parts of WebSphere Portal, not just IBM Workplace Web Content Management. Before you make changes to this file, make a copy! Saving a copy can save time and trouble if you make a mistake as you edit the file.

The wpconfig.properties file contains a series of settings that need to be adjusted in order to allow IBM Workplace Web Content Management to utilize any database other than the embedded Cloudscape. There is an entire section of this file dedicated to the IBM Workplace Web Content Management settings. Many of these settings never need be changed, but in order to use our remote DB2 database we will need to change seven settings. The values we used for these seven settings on our test server are as shown in Example 3-2.

Attention: To make Example 3-2 easier to read, it was heavily abbreviated for this example. We omitted those values that you do not need to change and the examples for each setting that exists in the real properties file. The real wpconfig.properties file provides examples as comments throughout the file, such as the following:

```
# WcmDbType: The type of database to be used for Workplace Web Content
Management
# DB2: { db2 }
# Oracle:                  { oracle }
# MS SQL Server:           { sqlserver }
# Cloudscape:              { cloudscape }
# DB2 for iSeries:         { db2_iseries }
# DB2 for z/OS and OS/390: { db2_zos }
WcmDbType=db2
```

Example 3-2 Required changes for remote DB2 to the wpconfig.properties file

```
######################################################################
# IBM Lotus Workplace Web Content Management (WCM) Properties - BEGIN
######################################################################
# WcmDbType: The type of database to be used for WCM
WcmDbType=db2

# WcmDbName: The name of the WCM database.
WcmDbName=WCMDB02A

# WcmDbUser: The WCM database administrator user ID
WcmDbUser=db2admin

# WcmDbPassword: The WCM database administrator password
WcmDbPassword=db2admin
```

```
# WcmDbUrl: The WCM database URL
WcmDbUrl=jdbc:db2:WCMDBO2A

# WcmDbDriver: The name of class SqlProcessor will use to import SQL files,
also known as "JDBC provider"
WcmDbDriver=COM.ibm.db2.jdbc.app.DB2Driver

# WcmDbLibrary: The directory and name of the zip file containing db.driver
class
WcmDbLibrary=D:/IBM/SQLLIB/java/db2java.zip
#####################################################################
# WCM Properties - END
#####################################################################
```

While most of these values are self evident, the following sections look at some of these values in detail.

WcmDbName

When we cataloged the remote IBM Workplace Web Content Management database with the DB2 Connect™ Client, we gave the database an alias. On the IBM Workplace Web Content Management server, this alias is how IBM Workplace Web Content Management identifies the database. This value must match the alias value that you created for the database. For our example database, the value becomes `WCMDBO2A`.

WcmDbUser and WcmDbPassword

When you created the IBM Workplace Web Content Management databases on the DB2 server, you could (optionally) create a specific user that has access to this database. These fields need a valid DB2 user name and password that has full access to the IBM Workplace Web Content Management database. In our example, we use the user name `db2admin`, which is the default administrator for the entire DB2 installation. It is not recommended that you use this default user name in a production environment.

WcmDbUrl

The wpconfig.properties file provides examples of valid URLs for various types of databases, including DB2. The sample for DB2 is:

```
# db2:          { jdbc:db2:WCMDB }
```

The reason for this very simple URL is the DB2 Connect Client. The only portion of this URL that needs to be changed is the very right-most portion (the part in all capital letters). This portion must match the alias that you created for the database. For our example database, the URL becomes:

```
jdbc:db2:WCMDBO2A
```

WcmDbLibrary

In order to use DB2 Connect and JDBC to connect to the remote database, we must make the appropriate JDBC drivers available to IBM Workplace Web Content Management. The `WcmDbLibrary` value points to the location of the db2java.zip file that was installed with DB2 Connect Client.

Important: The path value uses UNIX style slashes in the directory structure, even if you are installing on Windows.

Running wpsconfig script

After we update the wpconfig.properties file, we must apply these changes to the IBM Workplace Web Content Management application.

Note: If you are new to WebSphere Portal, note that the wpconfig.properties file is not used at runtime by WebSphere Portal or IBM Workplace Web Content Management. The values in this file are applied to the appropriate locations when you run one of many **`wpsconfig`** tasks. The WebSphere Portal Information Center covers the various tasks in detail.

We just enabled IBM Workplace Web Content Management, and there is no data in the Cloudscape database. So, the easiest way to switch to DB2 is to remove the current repository (Cloudscape) and then to configure IBM Workplace Web Content Management to use DB2 using the following steps:

1. Stop WebSphere Portal.
2. On the WebSphere Portal and IBM Workplace Web Content Management server open a command window or command prompt.
3. Change to the <*WP_Root*>/config directory (for example, D:\WebSphere\PortalServer\config).
4. Type `WPSconfig remove-wcm-repository`.

   At the conclusion of the task you should receive a `BUILD SUCCESSFUL` message.
5. Type `WPSconfig config-wcm-repository`.

   At the conclusion of the task you should receive a `BUILD SUCCESSFUL` message.
6. Change to the <*WP_Root*>/wcm/ilwwcm/system directory (for example, D:\WebSphere\PortalServer\wcm\ilwwcm\system), and delete all files or folders in the directory.
7. Restart WebSphere Portal.

After WebSphere Portal starts, your IBM Workplace Web Content Management environment should be operational and should use the remote DB2 server for content storage.

3.3.4 Confirming your new IBM Workplace Web Content Management configuration

This section explains how to confirm that the new IBM Workplace Web Content Management configuration was successful.

DB2 server

Upon a successful start with your new settings, IBM Workplace Web Content Management should create the two tables that it needs within the IBM Workplace Web Content Management database. You can confirm the existence of these tables by looking at the database with the DB2 Control Center on the remote DB2 server (**Start** → **Programs** → **IBM DB2** → **General Administration Tools** → **Control Center**). If the configuration was done correctly, when you look in the Control Center you should see tables named AJPE and AJPE_RESOURCES, as shown in Figure 3-6.

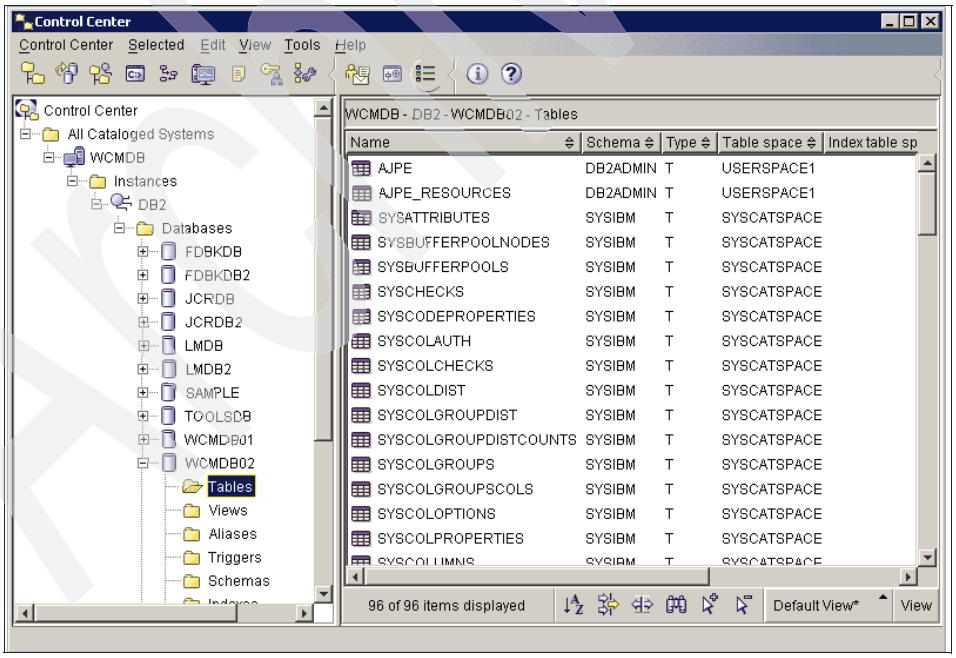


Figure 3-6 Confirming creation of IBM Workplace Web Content Management tables

Archive

WebSphere Portal logs

If the two IBM Workplace Web Content Management tables are not in the IBM Workplace Web Content Management database, you can look at the WebSphere Portal logs in <*WP_Root*>/logs. In this directory look closely at SystemOut.log, SystemErr.log, and wps_<timestamp>.log. Any of these files might contain clues as to the root of the issue.

IBM Workplace Web Content Management logs

The final place that might contain some clues regarding a failed migration to DB2 are the IBM Workplace Web Content Management logs. IBM Workplace Web Content Management maintains a set of three log files that are separate from the main WebSphere Portal logs. You can find these files — connect.log, debug.log, and error.log — in <*WP_Root*>/wcm/connect/log.

3.4 Applying fixes for IBM Workplace Web Content Management 5.1

At the time of this writing, there are several Technotes and fixes that need to be applied to every IBM Workplace Web Content Management 5.1 installation. This section discusses the installation of the necessary fixes, the manual modification that needs to be done to the IBM Workplace Web Content Management configuration file, as well as one modification to WebSphere Application Server that is required per a Technote.

3.4.1 Technote, reference #1201178

This technote only effects the IBM Workplace Web Content Management server after you enable security, which is done typically when you configure WebSphere Portal and IBM Workplace Web Content Management to use an LDAP. When this configuration change takes place, IBM Workplace Web Content Management is no longer able to search for users or groups when assigning access to content and to components. The following error message might appear in the logs:

```
"ldaphost:389/userID;accessID:
user:ldaphost:389/CN=userID,OU=Org Unit,O=Organization
is not granted any of the required roles: Everyone"
```

This error occurs if the user name under which you are trying to search does not have the correct access in WebSphere Member Manager. To correct this issue, modify the security settings for the wmmApp, one of the Enterprise Applications that is installed within WebSphere Application Server.

Archived

To update the settings, use the following steps:

1. Start server1 (the default server on every WebSphere Application Server installation).
2. Open the WebSphere Application Server Administrative console:

   `http://<servername>:9090/admin`
3. Log in to the Administrative Console.

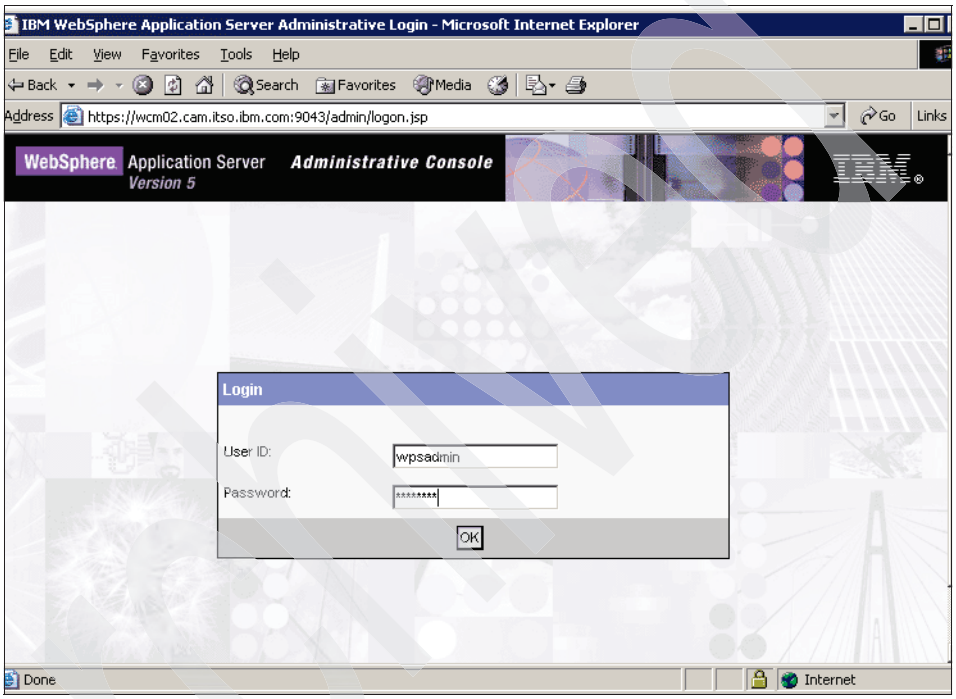


Figure 3-7 Login screen for WebSphere Application Server Console

4. Expand **Applications**, select **Enterprise Application**, and search for wmmApp. To do this quickly, use the Filter section to search for wmmApp.

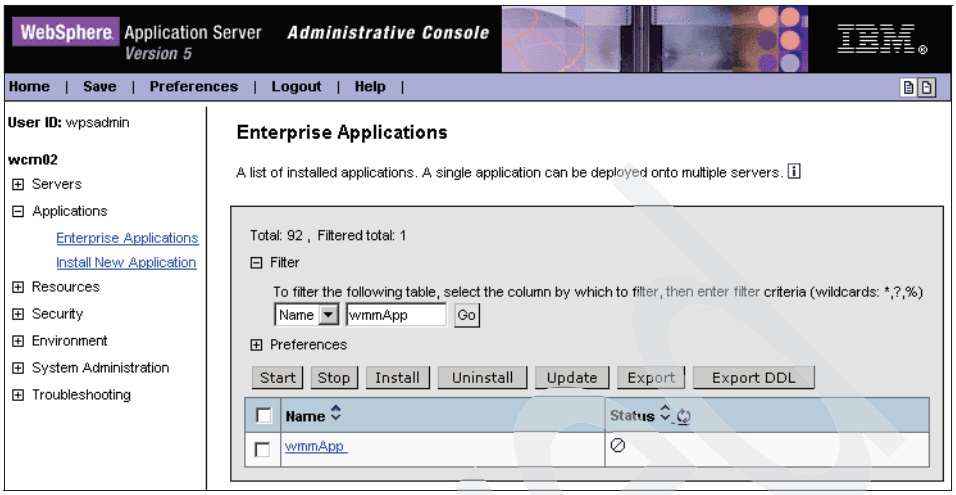


Figure 3-8 Locating the wmmApp with a filter

5. Click **wmmApp**.
6. From the Additional Properties section, click **Map Security Roles** to users or groups.

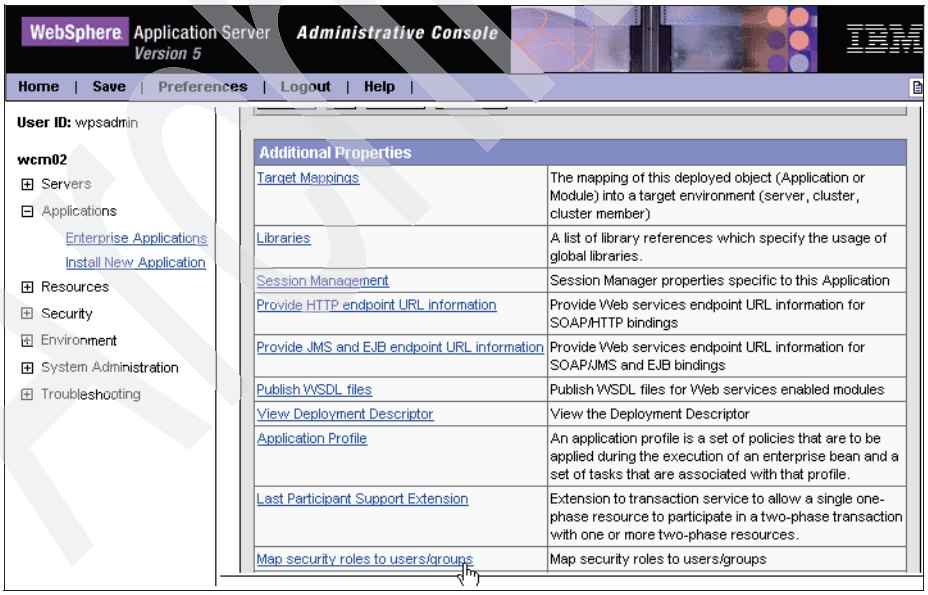


Figure 3-9 Map Security Roles option in Additional properties

7. Select the options to grant All Authenticated users access to the wmmApp Enterprise Application, as shown in Figure 3-10.

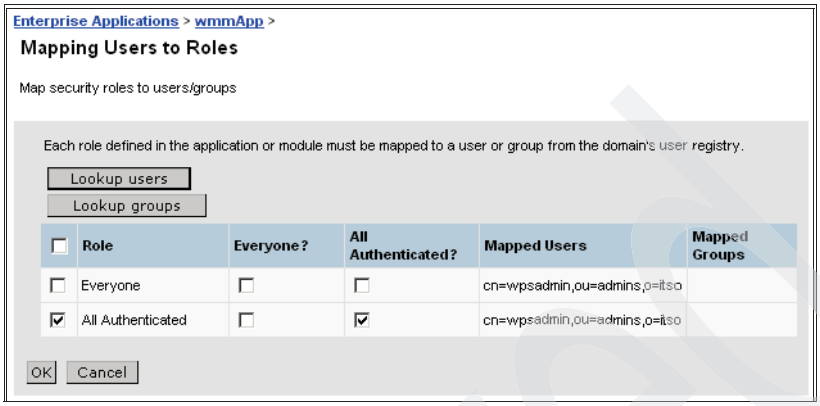


Figure 3-10 Giving All Authenticated users access to wmmApp

8. Click **OK** and then click **Save** to apply the changes to the master configuration



Figure 3-11 Save changes to Master Configuration

9. Click **Save** in the Save to Master Configuration Window.

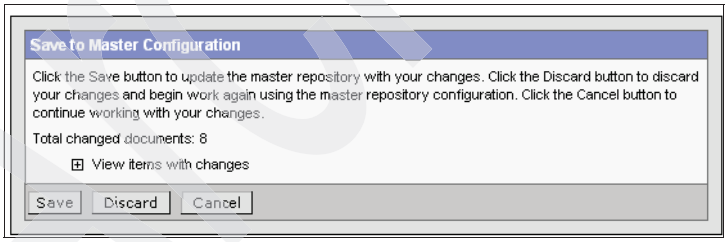


Figure 3-12 Save Master Configuration section

10. Stop and start WebSphere Portal.

You should now be able to search for users from within the Authoring Portlet.

Note: As an alternative to giving All Authenticated Users access you could create a group with all Workplace Web Content Management users and grant that group access to the wmmApp Enterprise Application.

3.4.2 IBM Workplace Web Content Management connect.cfg file

When you initially configure your WebSphere Portal and IBM Workplace Web Content Management server to use an external user repository (for example, LDAP) there is a **wpsconfig** task used to implement the security changes:

```
WPSconfig enable-security-ldap
```

This task makes numerous changes within WebSphere Portal / Workplace Web Content Management to properly configure the environment for your LDAP. Unfortunately, in WebSphere Portal 5.1 this script does not make several necessary modifications to the Workplace Web Content Management connect.cfg file. This file is located in <*WP_Root*>/wcm/config.

The missed changes occur in the <UserManagement> and <JCRConnector> portions of the file. Example 3-3 shows the fields in question and the appropriate changes for the Domino LDAP server in the ITSO lab.

Example 3-3 Adjustment for LDAP settings

```
<UserManagement>
   <AdminGroupCommonName value="wcmadmins" />
<!--
    UserPrefix: The LDAP user prefix appropriate for your LDAP server
    IBM Directory Server: { uid }
    Domino:               { cn }
    Active Directory:     { cn )
    SunOne:               { uid }
    Novell eDirectory     { uid }
-->
    <UserPrefix value="cn" />
<!--
    GroupPrefix: The LDAP group prefix appropriate for your LDAP server
    IBM Directory Server: { uid }
    Domino:               { cn }
    Active Directory:     { cn )
    SunOne:               { uid }
    Novell eDirectory     { uid }
-->
    <GroupPrefix value="cn" />
    <LoginPageLocation
value="http://wcm02.cam.itso.ibm.com:9081/wps/wcm/webinterface/login/login.jsp"
/>
    <UserCommonNameAttribute value="cn" />
</UserManagement>
.
.
.
<JCRConnector>
```

Archived

```
      <DefaultRepository value="ibmjcr/Repository"/>
      <DefaultUsername   value="cn=wpsadmin,ou=admins,o=itso"/>
      <DefaultPassword   value="passw0rd"/>
      <DefaultWorkspace  value=""/>
      <ConnectionTimeout value = 300 />
      <ConnectionManager>
         <MaxConnectionPools value=1000 />
         <MaxConnectionsPerPool value=64 />
      </ConnectionManager>
</JCRConnector>
```

After you make these changes, you must restart the portal server for the changes to take effect.

3.4.3 IBM Workplace Web Content Management fix PK02213

The other change you should make to any standard IBM Workplace Web Content Management 5.1 installation is contained in fix PK02213. According to the `ReeadMe.txt` file for the fix, the problem definition is:

> LDAP user can log into Portal but can't see any of the views in the Workplace Web Content Management authoring portlet. Workplace Web Content Management is configured to use an LDAP repository. An LDAP user logs into portal successfully but when they navigate to the Workplace Web Content Management Authoring Portlet page they cannot see the views in the portlet.“

Clearly, you need to address this issue. However, you should note that this fix has three pre-requisite fixes that you must also install, in the following order:

1. PQ98531
2. PK00404
3. LO06953
4. PK02213

Important: Before you install these fixes, make sure that you download the latest Portal Update Installer. If you have an older version of the installer, some of these fixes will not install. You can get the latest installer from:

`http://www-1.ibm.com/support/docview.wss?rs=688&context=SSHRKX&q1=portal+update+installer&uid=swg24006942&loc=en_US&cs=utf-8&lang=en`

If this does not work for you, go to the WebSphere Portal Support Page at the following Web site and search for *portal update installer*:

`http://www-306.ibm.com/software/genservers/portal/support/`

These installation steps assume that you have already downloaded the Portal Update Installer and have set it up as described in the portal_update_installer.html file that is included with the Portal Update Installer.

Very Important: There are small nuances that are associated with running the Portal Update Installer on various operating systems. Be sure that you read portal_update_installer.html prior to starting the install process!

Installing the PQ98531 IBM Workplace Web Content Management fix and its prerequisites

Each of these fixes for IBM Workplace Web Content Management follows the same format. IBM provides the fix as a zipped file. The zipped file contains the fix itself as a .jar file as well as a ReadMe.txt file that explains the purpose for the fix.

Important: Normally, you would want to install each fix individually (including performing the post-install steps that are described in the ReadMe.txt file for each fix) prior to installing the next fix. In the case of these fixes, the first fix has no post-installation tasks and the remaining three fixes have exactly the same post-installation tasks. Thus, you can install all of these fixes in the proper sequence and then do the post-installation tasks at one time.

If you are not sure that this type of situation exists with other fixes, install each one individually and perform the remaining post-installation steps before installing the next fix.

To install this group of fixes:

1. Open a command window or command prompt.
2. Change to the <*WAS_root*>/bin directory, where <*WAS_root*> is the installation directory of the WebSphere Application Server that is associated with WebSphere Portal (for example, D:\WebSphere\AppServer\bin).
3. Type `setupCmdLine`.

   This command sets up a variety of environment variables to ensure the Portal Update Installer uses the correct WebSphere and Java environment. *Make sure that you run all of the remaining commands in this section in this same command window*. These environment variables must be set correctly for the Portal Update Installer to work properly.
4. Change to the <*WP_Root*>/update directory.

5. Enter the following:

```
updatePortal -fix -installdir "D:\WebSphere\PortalServer" -fixDir
"D:\WebSphere\PortalServer\update\fixes" -install -fixes PQ98531
```

   Replace the *installdir* and *fixDir* paths with the ones that applicable for your environment.

6. Review the output to confirm that there were no errors.
7. Enter the following:

```
updatePortal -fix -installdir "D:\WebSphere\PortalServer" -fixDir
"D:\WebSphere\PortalServer\update\fixes" -install -fixes PK00404
```

   Replace the *installdir* and *fixDir* paths with the ones that are applicable for your environment.

8. Review the output to confirm that there were no errors.
9. Enter the following:

```
updatePortal -fix -installdir "D:\WebSphere\PortalServer" -fixDir
"D:\WebSphere\PortalServer\update\fixes" -install -fixes LO06953
```

   Replace the *installdir* and *fixDir* paths with the ones that are applicable for your environment.

10. Review the output to confirm that there were no errors.
11. Enter the following:

```
updatePortal -fix -installdir "D:\WebSphere\PortalServer" -fixDir
"D:\WebSphere\PortalServer\update\fixes" -install -fixes PK02213
```

   Replace the *installdir* and *fixDir* paths with the ones that are applicable for your environment.

12. Review the output to confirm that there were no errors.

Now that these fixes are installed, you need to perform the post-installation steps (which are identical for the last three fixes) as follows:

1. Delete the Workplace Web Content Management indexes by deleting all contents from the <*WP_Root*>/wcm/ilwwcm/system directory.
2. Start WebSphere Portal.
3. Change to the <*WP_Root*>/config directory.
4. Type `WPSconfig remove-wcm-authoring`.
5. Type `WPSconfig configure-wcm-authoring`.
6. (*optional*) If you have deployed other copies of the Authoring or Rendering Portlets on the IBM Workplace Web Content Management server, re-deploy them manually through the WebSphere Portal Administration interface.

Archived

As the portal server restarts, it re-creates the IBM Workplace Web Content Management indexes because they are no longer in the <*WP_Root*>/wcm/ilwwcm/system directory. If you install a fix on an IBM Workplace Web Content Management server that contains a large amount of IBM Workplace Web Content Management content, this process can take some time. During this time, the portal is not available for users to log in because the process is part of the Portal startup process. Be aware of this issue when you install IBM Workplace Web Content Management fixes, because the restart time is typically much longer than the time to install the fix itself.

3.5 Installing the Rendering Portlets

When your IBM Workplace Web Content Management server is operational, you will likely want to install at least one instance of an IBM Workplace Web Content Management Rendering Portlet so that WebSphere Portal site visitors can see content. To help ease the process of showing IBM Workplace Web Content Management content in WebSphere Portal, IBM Workplace Web Content Management ships with the following rendering portlets:

- Local Rendering Portlet: Use this portlet when IBM Workplace Web Content Management is running on the same server as the instance of WebSphere Portal that will show the content.
- Remote Rendering Portlet: Use this portlet when IBM Workplace Web Content Management is running on a different server than the instance of WebSphere Portal that will show the content.

3.5.1 Local Rendering Portlet

If you configure IBM Workplace Web Content Management on a WebSphere Portal server, the Local Rendering portlet can be found at:

```
<WP_Root>/wcm/installableApps
```

The Local Rendering Portlet is in a Web archive file named ilwwcm-localrendering-portlet.war.

Deploying the Local Rendering Portlet

Because using the Local Rendering Portlet only makes sense on a server where IBM Workplace Web Content Management is enabled, we can make one assumption for this portlet — *it is already installed on the IBM Workplace Web Content Management server*. This assumption is true because the Content Preview page that was created when we first enabled IBN Workplace Web

Content Management (WPSconfig configure-wcm-authoring) uses the Local Rendering Portlet.

Because the portlet is already installed on the server, we cannot install it again. If we try to install it, the WebSphere Portal administrative console fails with an error similar to that shown in Figure 3-13.

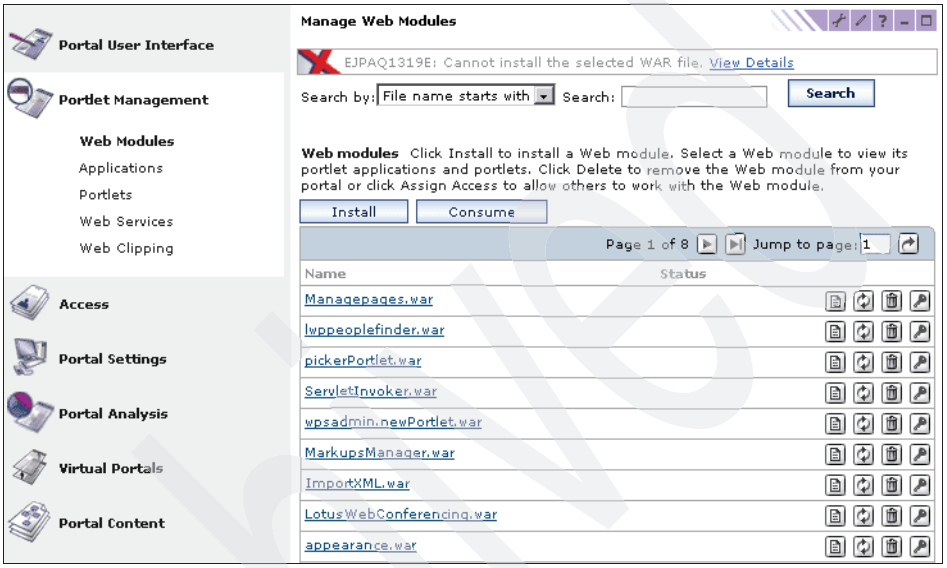


Figure 3-13 Error message when trying to install an already installed portlet

If you click **View Details**, the first part of the message detail provides information that is similar to the following message:

```
EJPAQ1319E: Cannot install the selected WAR file.

com.ibm.wps.command.applications.AppAlreadyExistsException: EJPPF0170E:
Error occurred. In the XML element portlet-app Web Content Management -
Content Viewer, the uid=wcm.contentviewer.1001 already exists for stored
abstract portlet application WCM Local Rendering Portlet.
```

Instead of trying to reinstall the portlet, all we need to do is make a copy of the portlet so we can deploy it on another page.

Copying the Local Rendering Portlet

To copy the existing Local Rendering Portlet:

1. Log in to WebSphere Portal as an Administrator (for example, a member of wpsadmins group).

2. Click the Administration link to access the Administration Console within WebSphere Portal. This link is typically found in the upper right corner of the page if you are using one of the standard WebSphere Portal themes.
3. In the left hand navigation, click **Portlet Management** → **Portlets** to access the Manage Portlets GUI, as shown in Figure 3-14.

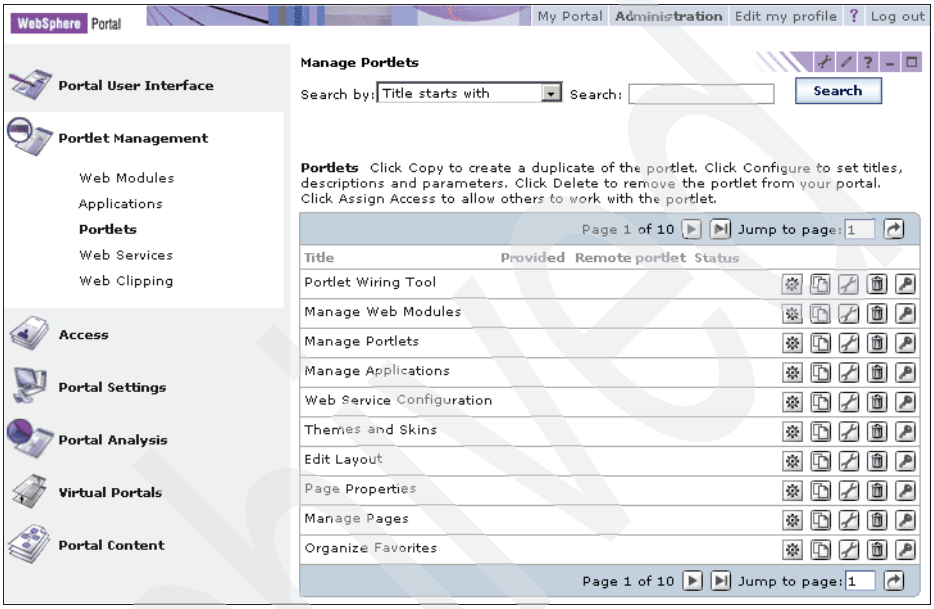


Figure 3-14 Manage Portlets GUI

4. Before you can copy the Local Rendering Portlet you must first locate the portlet. The easiest way to do that is to search for the portlet. In the Manage Portlets GUI select Title contains in the Search by select list and type `Web Content` in the Search text box. This action returns a short list including the Web Content Viewer , which is the Title of the Local Rendering Portlet, as shown in Figure 3-15 on page 98.

Archive

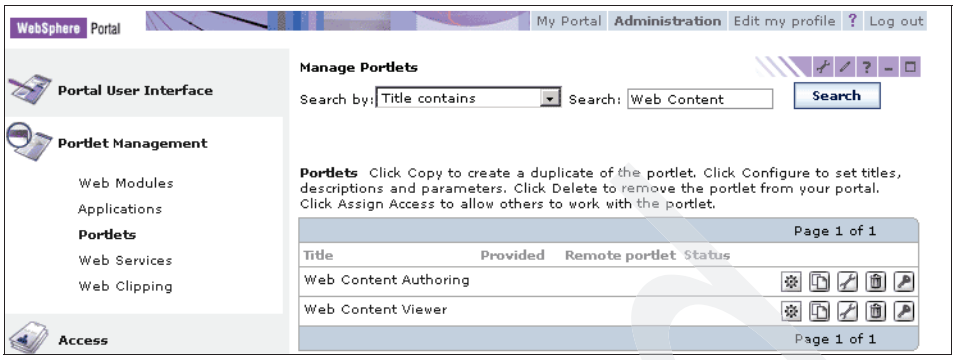


Figure 3-15 Results of searching for Web Content

5. Make a copy of the Web Content Viewer portlet by clicking the Copy icon, as shown in Figure 3-16.

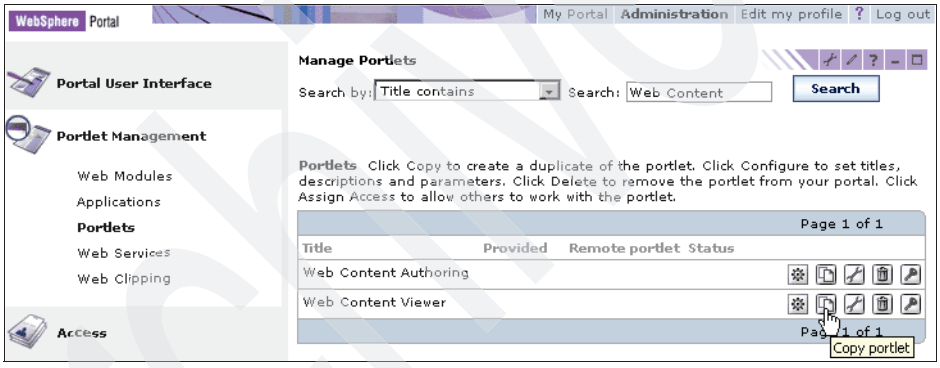


Figure 3-16 Copying the Web Content Viewer portlet

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6. You are prompted to provide a new name for the Portlet Application and Portlet that is associated with the copy you are creating (Figure 3-17). The system provides default values that are based on the values in the existing portlet. Replace these defaults with something meaningful.

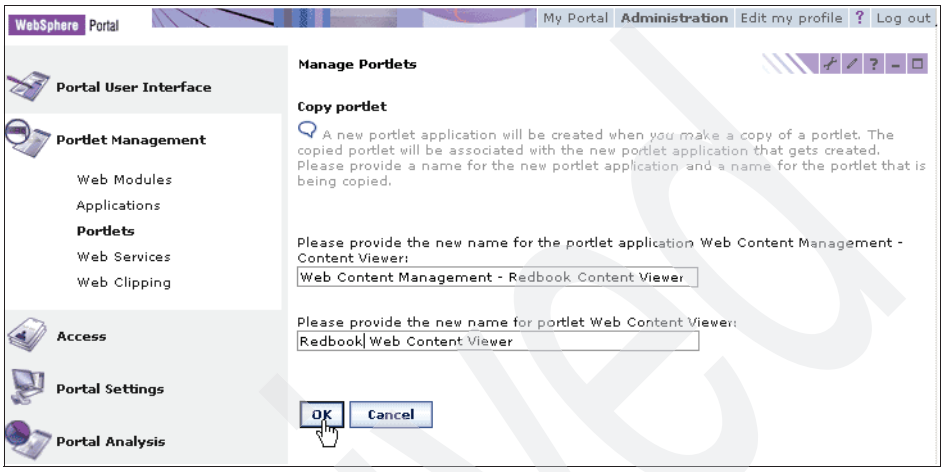


Figure 3-17 Naming the portlet application and portlet

7. Click OK to initiate the copy. When the copy is complete, you receive a confirmation message, as shown in Figure 3-18.



Figure 3-18 Copy portlet confirmation message

Placing the Local Rendering Portlet copy on a page

Now that you have a copy of the Local Rendering Portlet, you can place this copy on a page within our portal. In the following example, we have a page named IBM Redbook Local Rendering, which already exists as a child page to the Web Content Management label. If you wish to follow these instructions exactly as written, create this page prior to continuing with this section. If you already have another page that acts as the home for the portlet, simply use that page whenever we reference the IBM Redbook Local Rendering page.

Note: If you are new to WebSphere Portal and do not know how to create a page, see *IBM WebSphere Portal for Multiplatforms V5.1 Handbook*, SG24-6689, available at:

`http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246689.html?Open`

To deploy the portlet to the IBM Redbook Local Rendering page:

1. In the left hand navigation click **Portal User Interface** → **Manage Pages** to access the Manage Pages GUI.
2. Navigate to the Web Content Management label by clicking **My Portal** and **Web Content Management**. After selecting Web Content Management , you should see a list of the pages under Web Content Management. Click the **Edit Page Layout** that is associated with the IBM Redbook Local Rendering page, as shown in Figure 3-19.

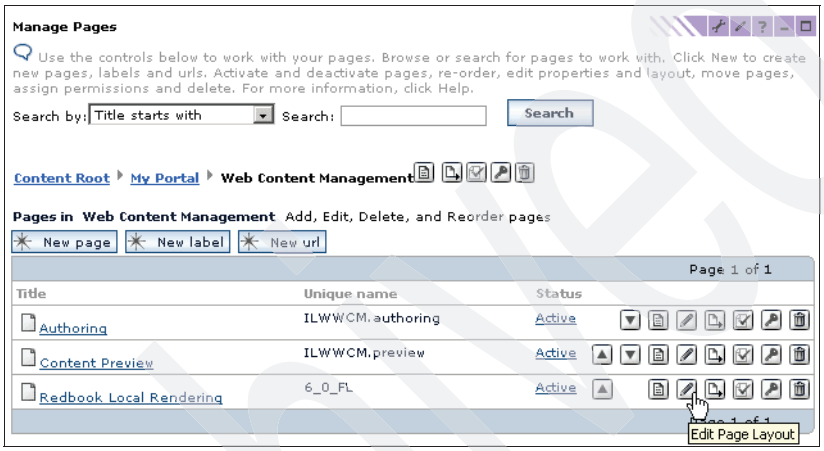


Figure 3-19 Manage Pages GUI - edit page layout

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3. In the Edit Layout screen click **Add Portlets** in the appropriate column container, as shown in Figure 3-20.

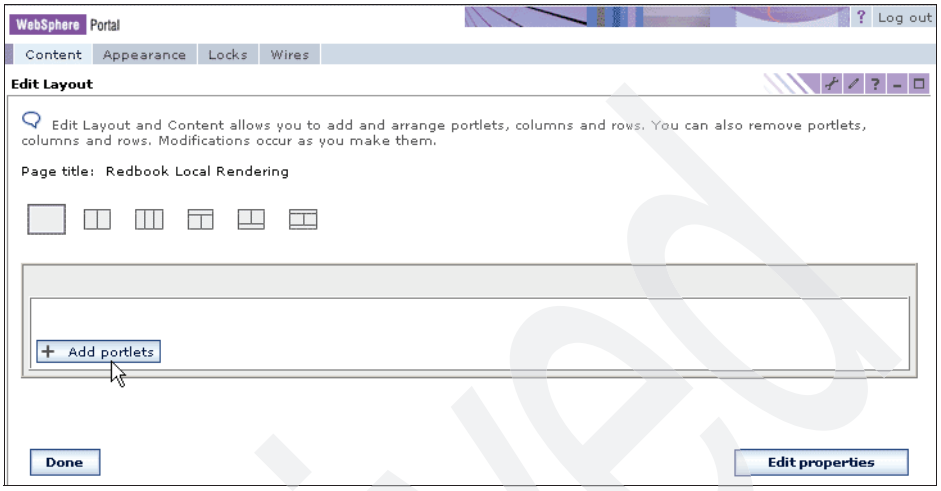


Figure 3-20 Adding a portlet to a column container

4. The next screen allows you to search for the portlet that you wish to deploy to the column container. Search for the portlet by using the parameters *title contains* and *redbook*. You should now see the portlet copy that you created earlier, as shown in Figure 3-21.

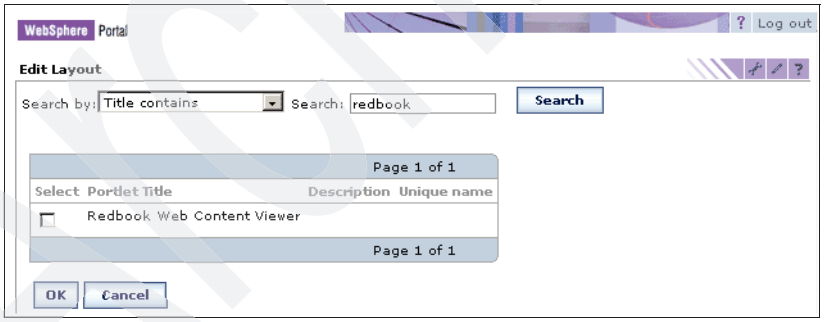


Figure 3-21 Add portlet search results

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5. Select the IBM Redbook Web Content Viewer and then click **OK**. This action returns you to the previous screen. The column container now shows the IBM Redbook Web Content Viewer, as shown in Figure 3-22.

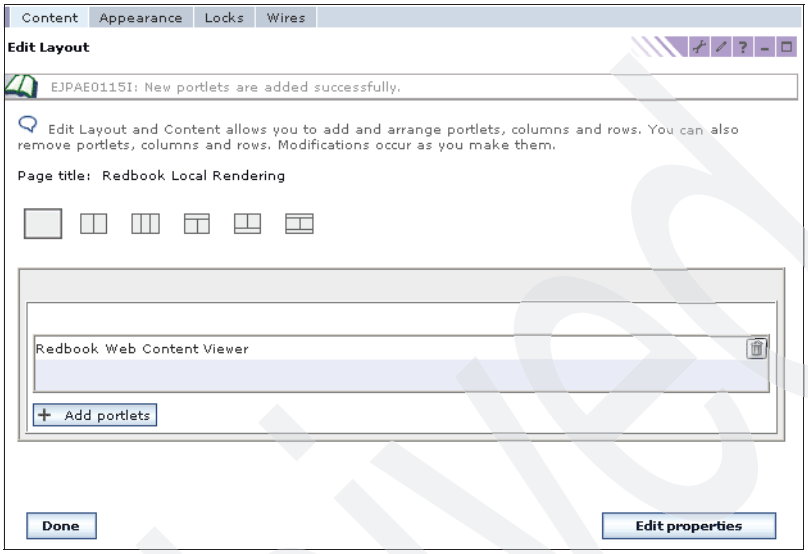


Figure 3-22 Redbook Viewer in column container

6. Click **Done** to return to the Manage Pages GUI.

The final step of deployment is to navigate to the IBM Redbook Local Rendering page and to confirm that the portlet is on the page. If you have successfully deployed the portlet, you should see something similar to that shown in Figure 3-23.

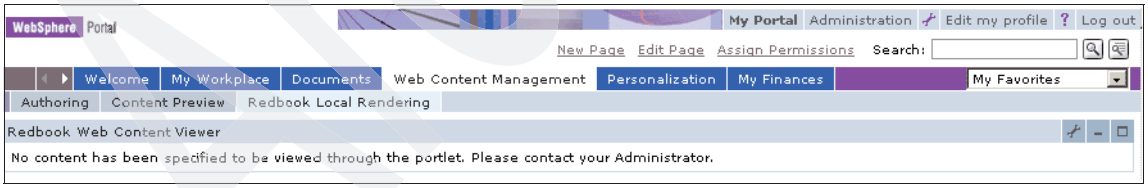


Figure 3-23 Confirming the new portlet is on the IBM Redbook Local Rendering page

As you can see from Figure 3-23, we deployed the portlet successfully to the page, but we have one more process to complete. We must now configure the portlet.

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Configuring the Local Rendering Portlet

The final step to successfully deploying the Local Rendering Portlet is to configure the portlet to show IBM Workplace Web Content Management content. In order to perform this task, you must have Administrator rights to the Local Rendering Portlet and to the page on which it is deployed.

Assuming that you have the correct access, click the Configure icon (typically a wrench) in the upper-right corner of the portlet. When you enter configure mode, you see a screen similar to that shown in Figure 3-24.

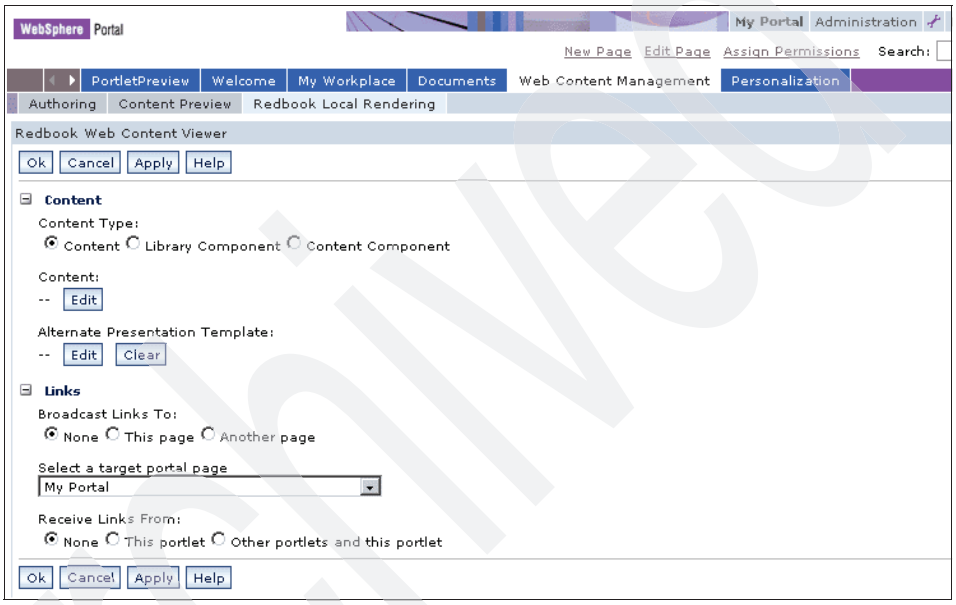


Figure 3-24 Configure mode of the Local Rendering Portlet

The configuration of the Local Rendering Portlet is broken into two sections: the Content section and the Links section.

Content section

The Content section of the Local Rendering Portlet is used to determine the default content that appears in the portlet. You can select from multiple types of IBM Workplace Web Content Management object, including Content and Library Components. When you select the Content Type, the remaining choices in the

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Content Section change based on your selection, as shown in Figure 3-25, Figure 3-26, and Figure 3-27.



Figure 3-25 Configuration options for content type of Content



Figure 3-26 Configuration options for content type of Library Component

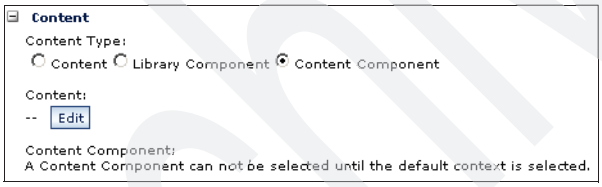


Figure 3-27 Configuration options for content type of Content Component

For details on each Content Type, see Chapter 5, “Key concepts and terminology” on page 141 and Chapter 7, “Building the River Bend Web site with IBM Workplace Web Content Management” on page 253. For this example, we

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configure the portlet to show the primary page in the News section of the River Bend Coffee and Tea Company Web site (Figure 3-28).

Note: The fictional River Bend site is used as an example site throughout this book as we demonstrate various capabilities of IBM Workplace Web Content Management. It is defined in detail in 7.1, “An overview of the scenario” on page 255.



Figure 3-28 Selecting content from the River Bend Web site

The result of this selection is the River Bend in the News page is rendered in the IBM Redbook Web Content Viewer portlet, as shown in Figure 3-29.

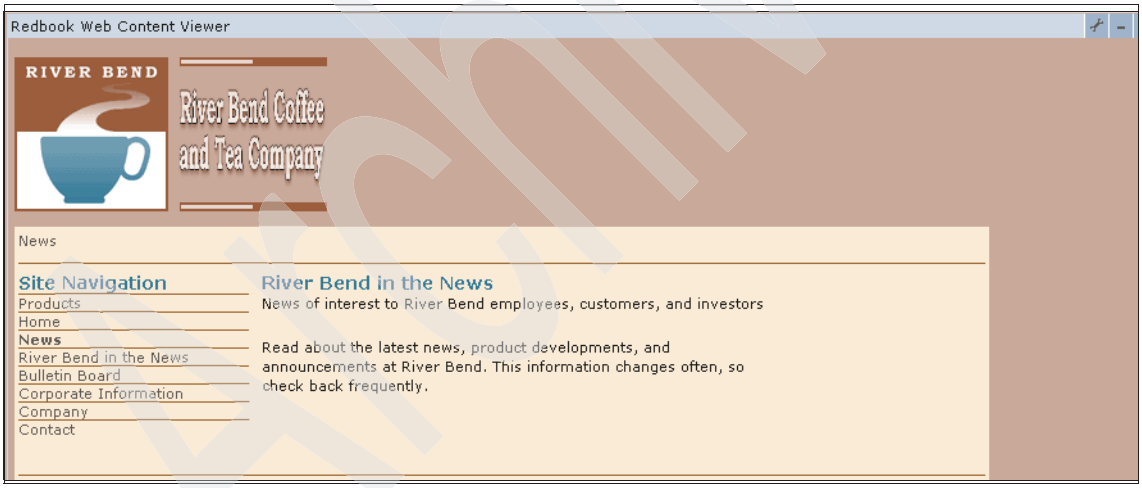


Figure 3-29 River Bend In the News page as shown in the Content Viewer

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Important: As shown in Figure 3-29, you must be careful when displaying IBM Workplace Web Content Management content within WebSphere Portal. You should only use HTML, Java Script, and stylesheet values that are complimentary to your portal themes and skins.

The Alternate Presentation Template option (as shown in Figure 3-28 on page 105) allows you to designate a separate presentation for content when displayed in the portlet. This option allows one piece of content to have multiple presentations based on where the content is displayed. This is one of the most important features of IBM Workplace Web Content Management.

Links section

Multiple rendering portlets can be added to a single WebSphere Portal Server page or a series of pages. Sometimes, it is necessary for different rendering portlets to interact with each other. In these scenarios, you need to modify the Links section of the rendering portlet, as follows:

- Broadcasting Links: The state or context of a rendering portlet is not sent directly from one Portlet to another. Rather, rendering portlets can be configured to broadcast their current state or context to other rendering portlets on the same WebSphere Portal page, or to rendering portlets on other pages. Any information broadcast by a rendering portlet will only be received by rendering portlets configured to receive this information.
- Receiving Links: A rendering portlet can receive information about the state or context of the current Web Content Management Content item or Component being displayed within it, or from Web Content Management Content items or Components displayed within other rendering portlets that are *broadcasting*.

For full details on these settings, refer to the IBM Workplace Web Content Management Information Center.

Restriction: Based on the current behavior of the rendering portlets (both Local and Remote), it is not recommend that you deploy more than three of them on a single WebSphere Portal page.

3.5.2 Remote Rendering Portlet

If you configure IBMM Workplace Web Content Management on a WebSphere Portal server, you can find the Remote Rendering Portlet at:

```
<WP_Root>/wcm/installableApps
```

The Remote Rendering Portlet is in a Web archive file named ilwwcm-remoterendering-portlet.war.

Deploying the Remote Rendering Portlet

Unlike the Local Rendering Portlet, you typically use the Remote Rendering Portlet on a WebSphere Portal server that is not running IBM Workplace Web Content Management. The process to deploy this portlet involves two major steps:

1. Installing the Remote Rendering Portlet.
2. Deploying the Remote Rendering Portlet to a WebSphere Portal Page.

Installing the Remote Rendering Portlet

Important: Before performing these steps, make sure that the ilwwcm-remoterendering-portlet.war file is in a location to which you can browse from your Web browser.

To install the Remote Rendering Portlet:

1. Log in to WebSphere Portal as an Administrator (for example, member of wpsadmins group).
2. Click the Administration link to access the Administration Console within WebSphere Portal. This is found typically in the upper-right corner of the page if you are using one of the standard WebSphere Portal themes.
3. In the left hand navigation click **Portlet Management** → **Web Modules** to access the Manage Web Modules GUI. From this screen, click **Install** to start the installation process.

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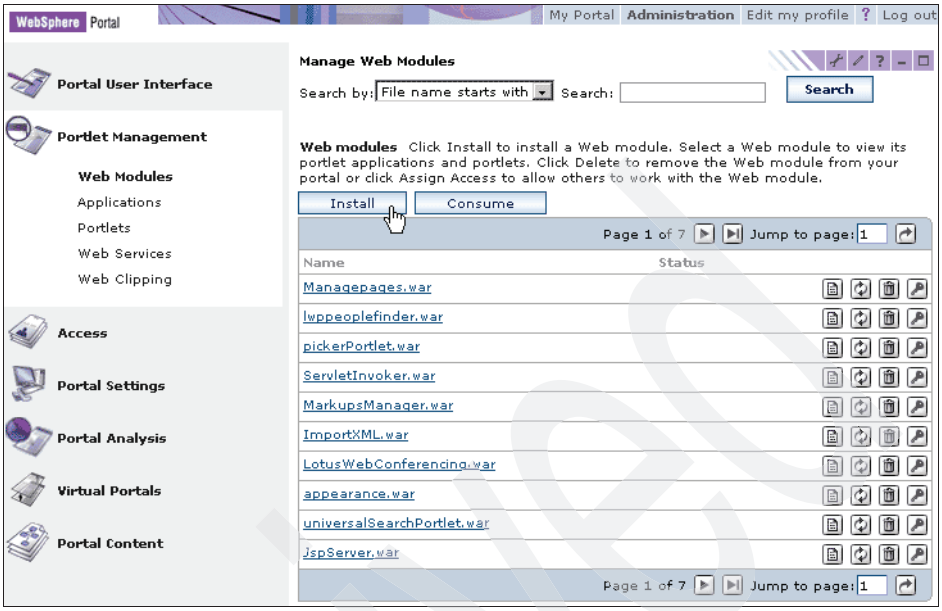


Figure 3-30 Portlet Management Web Modules GUI

4. The next screen prompts you for the location of a portlet WAR file. Browse to the location of the ilwwcm-remoterendering-portlet.war file. Select this file, and click **Next**.



Figure 3-31 Installing a Web Module - Selecting the correct WAR file

5. You see a confirmation screen that shows you the names of the Portlet Applications and Portlets that you are about to install. (Note that the name of the portlet is *Remote Web Content Viewer*. You need this name when you deploy the portlet to a page).

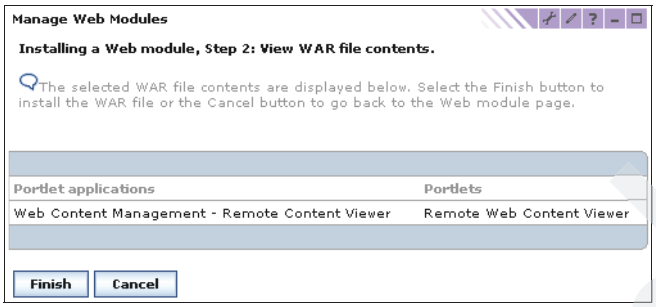


Figure 3-32 Installing a Web Module - WAR contents

When the installation completes, you return to the Manage Web Modules GUI with a small confirmation that the portlet was installed.



Figure 3-33 Installing a Web Module - Confirmation

Now that you have installed the portlet you can deploy it to a portal page.

Deploying the Remote Rendering Portlet

The process of deploying the Remote Rendering Portlet is identical to that of the Local Rendering Portlet. The only difference is that the portlet has a different name. So, you need to search for the portlet using this name. Refer to “Deploying the Local Rendering Portlet” on page 95 on deploying the local portlet for instructions.

Configuring the Remote Rendering Portlet

Configuring the Remote Rendering Portlet is very similar to configuring the Local Rendering Portlet. The only real difference is that the Remote Rendering Portlet requires some additional information. These differences are due to the fact that this portlet — unlike the Local Rendering Portlet — interacts with the IBM Workplace Web Content Management much as a Web browser would.

The Remote Rendering Portlet makes a URL connection to IBM Workplace Web Content Management to get content. In order to facilitate this interaction, there are two sections in the configure mode of the Remote Rendering Portlet that are not in the Local Rendering Portlet: credential section and settings section.

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Important: The Remote Rendering Portlet has Content and Links sections that are identical in function to those in the Local Rendering Portlet. For a review of these sections, refer to “Configuring the Local Rendering Portlet” on page 103.

Credential section

By default, the Remote Rendering Portlet uses the Portal user's logon to access content on the remote IBM Workplace Web Content Management server. Alternately, it can use a valid Credential Vault Slot name instead of the user's logon.

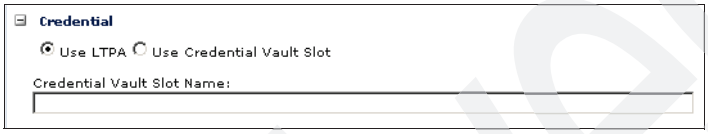


Figure 3-34 Credential section

In most cases, you only need to override a Portal user's logon if the Portal Server used different logons from IBM Workplace Web Content Management or if you wanted all users to have the same credentials for a particular Remote Rendering Portlet. You can use the following to override a Portal user’s logon:

- Use LTPA: IBM Workplace Web Content Management use the Portal user's logon to determine access rights to a Remote Rendering Portlet. It is important to note that for LTPA to work, your WebSphere Portal and remote IBM Workplace Web Content Management servers must share the same LTPA token. This seems like an obvious requirement, but we have seen many cases where the IBM Workplace Web Content Management servers are not configured to share an LTPA token with the portal servers.

  See the WebSphere Portal Information Center for further information about LTPA.

- Use Credential Vault Slot: You can use a valid Credential Vault Slot name instead of the user's logon. You need to enter a valid Credential Vault Slot in the field. The vault slot must already exist before you configure this portlet.

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Settings section

In order to make a remote connection to the IBM Workplace Web Content Management server, the Remote Rendering Portlet needs some basic information regarding the IBM Workplace Web Content Management server and its configuration. The settings section is where you set up these values, as shown in Figure 3-35 and Figure 3-36.

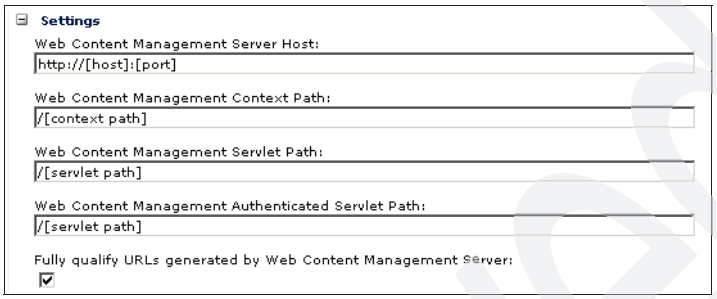


Figure 3-35 Default values for Settings section

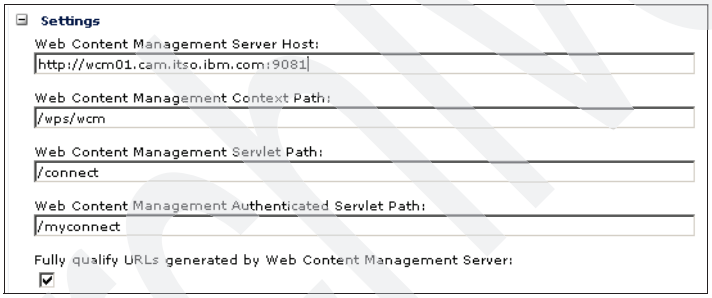


Figure 3-36 Values used in ITSO Lab for Settings section

The IBM Workplace Web Content Management Information Center provides a very good description of these values and what the typical defaults are for each value.

Tip: You should fill out the Settings and Credential sections first when configuring the Remote Rendering Portlet. After entering the appropriate values, click **Apply**. When this is completed, you should be able to fill in the other sections.

Restriction: Based on the current behavior of the rendering portlets (both Local and Remote), it is not recommend that you deploy more than three of these portlets on a single WebSphere Portal page.

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3.6 Post-installation configuration

When you complete the basic installation of IBM Workplace Web Content Management, there are some optional configuration settings you might wish to modify. This section looks at some of these options.

3.6.1 E-mail

IBM Workplace Web Content Management provides for basic SMTP mail routing. This capability is especially important if you wish to use e-mail messages as the primary method for communicating with content creators and approvers as content goes through its workflow approval cycle.

Basic mail routing configuration

This section describes how to configure this e-mail function. Within the <*WP_Root*>/wcm/config/connect.cfg set the following `<connector>` value:

```
<MailConnector>
      <DefaultSMTPServer value=mail.yourmailserver.com />
      <DefaultFromAddress value='admin@yourmailserver.com' />
      <DefaultReplyToAddress value='admin@yourmailserver.com' />
      <ConnectionManager>
         <MaxConnectionPools value=1000 />
         <MaxConnectionsPerPool value=64 />
      </ConnectionManager>
</MailConnector>
```

In this example, *mail.yourmailserver.com* is the name of your SMTP mail server. Change the `FromAddress` and `ReplyToAddress` values as appropriate.

Note: The SMTP server value does not have open and close quotation marks around it.

Configuration for fatal mail alerts

In addition to the basic mail routing configuration, you can configure fatal mail alert settings so that an e-mail is sent to an administrator when appropriate. The settings are as follows:

```
<Mail>
   <FatalMail>
      <FatalMailMgr value='Framework@yourServer.com' />
      <FatalMailFrom value='Framework@yourServer.com' />
   </FatalMail>
</Mail>
```

Within the <*WP_Root*>/wcm/config/aptrixjpe.properties file, change the following setting:

```
default.system-email=admin@yourmailserver.com
```

In this example, *admin@yourmailserver.com* is the value used by the e-mail action in workflow. This is the default e-mail address to be used as the from address when a workflow action is executed.

3.6.2 Logging levels

IBM Workplace Web Content Management logs various activities to the following log files:

- <*WP_Root*>/wcm/connect/log/connect.log
- <*WP_Root*>/wcm/connect/log/debug.log
- <*WP_Root*>/wcm/connect/log/error.log

If you experience issues with IBM Workplace Web Content Management, a good first step in debugging is to look at these log files. One nice feature of IBM Workplace Web Content Management logging is that you can change the level (verbosity) of the logging by modifying settings in the connect.cfg file, as shown in Example 3-4.

Example 3-4 Default values for the logging options in connect.cfg

```
<!-- Log manager configuration -->
<LogManager>
   <ErrorLog>
      <File LogFile="../connect/log/error.log" FlushLog=false
       Buffered=false TraceTime=true TraceDate=true
       TraceLevel=3 Rollover=Size MaxFileSize=5M />
   </ErrorLog>
   <FullLog>
      <File LogFile="../connect/log/connect.log" FlushLog=false
       Buffered=true TraceTime=true TraceLevel=1 TraceDate=true
       TraceThread=true Rollover=Size MaxFileSize=5M />
       <Screen Buffered=false TraceTime=true TraceLevel=0 TraceDate=true
TraceThread=true />
   </FullLog>
   <DebugLog>
      <File LogFile="../connect/log/debug.log" FlushLog=false
       Buffered=false TraceTime=true TraceLevel=0 Rollover=Size MaxFileSize=5M>
         <Packages>
            <!-- by default not debugging any package -->
         </Packages>
      </File>
   </DebugLog>
</LogManager>
```

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As you can see from the sample file, you have the ability to set a logging level for each of the log files. The trace levels can be from Level 0 to Level 5 and have the following meanings:

- Level 0: No output except broad details regarding critical system exceptions (errors).
- Level 1: All prior level logging plus general system events (start up, shut down, and so forth), and all other system exceptions.
- Level 2: All prior level logging plus common events such as requests from clients.
- Level 3, Level 4, and Level 5: All prior level logging plus various levels of programmer-readable debug. These types of log contents are not necessarily readily understandable by anyone outside of the IBM Workplace Web Content Management development team. These levels should not be used unless a Web Content Management solution is not functioning properly and the reasons behind this need to be determined (debugging).

Restriction: To use logging levels above Level 1, you need to install the IBM Workplace Web Content Management debug .jar files. These files are available on request from IBM Workplace Web Content Management support. They do not ship with IBM Workplace Web Content Management.

3.6.3 Caching

Caching is typically used to improve site performance. IBM Workplace Web Content Management provides multiple techniques for caching site content. While caching is a configuration process, it is *not* recommended that you enable caching until you build out your Web site and get a baseline for performance without caching.

Chapter 8, “Caching and pre-rendering considerations” on page 347 presents a detailed discussion on caching.

3.7 Static pre-rendering

In a typical configuration, the IBM Workplace Web Content Management engine is part of the production runtime environment. When people request content from IBM Workplace Web Content Management, the IBM Workplace Web Content Management Content Server serves the request in real time. However, there are some situations where a site does not require dynamic behaviors, such as Personalization or real-time access to databases. In situations such as these,

IBM Workplace Web Content Management provides the ability to pre-render an entire site to a set of static HTML files.

While you lose the IBM Workplace Web Content Management dynamic capabilities if you chose pre-rendering, you realize the following benefits:

- Cost Savings: If your site is pre-rendered you no longer need runtime IBM Workplace Web Content Management licenses. Instead, your pre-rendered site can be placed on an HTTP Server (for example, IBM HTTP Server or Apache).
- Performance Improvement: You see considerable performance improvements because rendering static HTML files on an HTTP server always perform better than assembling content dynamically at request time.

This section discusses how to configure IBM Workplace Web Content Management to pre-render a site and what the rendering engine produces as its output.

3.7.1 Enabling the correct caching subsystem

The IBM Workplace Web Content Management application contains two subsystems for static caching of content. To pre-render a site you must enable the correct subsystem.

Important: The two caching subsystems are mutually exclusive. You should not enable both of them at the same time!

A default installation of IBM Workplace Web Content Management does not enable either of the caching modules. Before you can use the static pre-rendering in IBM Workplace Web Content Management, you must turn on the cacher and enable the correct caching module.

Enabling the cacher

To enable the IBM Workplace Web Content Management Cacher, you make one change to the connect.cfg file that is located in the <*WP_Root*>/wcm/config directory.

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In the ModuleConfig section of the connect.cfg file, there is a single XML tag for the cacher. By default, this tag is commented out. Remove the comment tags from the <Cacher> tag, as shown in Example 3-5.

Example 3-5 Fragment of the connect.cfg file, enabling the <Cacher> tag

```
...
<ModuleConfig>
   <AJPE>
      <Properties value="../config/aptrixjpe.properties" />
      <AptrixHome value="../" />
      <DependentModules>
         <EnsureUserManagement />
         <Syndication />
         <AJPERES />
         <Default />

         <!-- Uncomment when cacher is enabled and not default -->
         <Cacher />
```

Enabling the correct caching module

When we know the cacher is enabled we must choose the appropriate caching module for pre-rendering, as shown in Example 3-6. The two choices for caching module appear next to each other in the connect.cfg file that is located in the <*WP_Root*>/wcm/config directory.

Example 3-6 Fragment of the connect.cfg file, enabling the correct cacher module

```
...
<!-- AJPE -->

      <!-- Renderer Module -->
     <Default class=com.aptrix.pluto.renderer.RendererModule remoteAccess=true
autoLoad=false />

      <!--
           Cacher Module (as default)
           ensure that RendererModule is commented out
      -->
      <!--
      <Default class=com.aptrix.cacher.CacherModule remoteAccess=true
autoLoad=false />
      -->

      <!-- Cacher Module (stand alone) ensure that
ModuleConfig/AJPE/DependentModules/Cacher is uncommented -->
```

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```
      <Cacher class=com.aptrix.cacher.CacherModule remoteAccess=true
autoLoad=false />

...
```

The IBM Workplace Web Content Management development team was nice enough to provide comments next to each of the cacher module tags to guide us towards the correct selection; just make sure you only have one of these two choices uncommented!

3.7.2 Configuring the <Cacher> configuration options

The <Cacher> subsection of <ModuleConfig> is where you can configure the specific settings you wish to use for the pre-rendering process. These settings are generally divided into two categories:

- **When** the Cacher runs
- **How** the Cacher runs

The settings for configuring the Cacher are located in the connect.cfg file, as shown in Figure 3-37.

```
<Cacher>
   <CacherClass value="com.aptrix.cacher.Cacher" />
   <DestDir value="D:/WEBSPH~1/PORTAL~1/wcm/ilwwcm/cacher" />
   <TempDir value="D:/WEBSPH~1/PORTAL~1/wcm/ilwwcm/cacher/temp" />
   <Delay value="1" />
   <BusyDelay value="5" />
   <BusyStart value="9:00 am" />
   <BusyEnd value="5:00 pm" />
   <OverwriteCache value="true" />
   <DefaultContentName value="index.html" />
   <!-- choices are Anonymous, Administrator or a specific user or group common name -->
   <RendererUser value="Anonymous" />
   <!-- <Password value="put_your_password_here" /> -->
   <Task>
      <CacherUrl value="http://wcm02.cam.itso.ibm.com:9081/wps/wcm/connect/" />
      <ServletPath value="/connect" />
      <Sites value="RiverBend" />
      <Interval>
         <Recurrence value="300" />
         <StartDelay value="1" />
      </Interval>
      <Scheduled>
         <Times value="3:00 am" />
      </Scheduled>
   </Task>
</Cacher>
```

Figure 3-37 Sample configuration of the <Cacher> section in connect.cfg file

The <Task> section determines when the Cacher will run and what Sites will be pre-rendered during a rendering cycle. If you elect to have pre-rendering run on a regular schedule, the <Interval> and <Scheduled> tags are used to tell the rendering engine when to run.

Similar to some of the configuration settings in the Remote Rendering Portlet, the remaining tags in the <Task> section tell the Cacher how it can "connect" to the

site. A standard IBM Workplace Web Content Management installation typically gives correct values to the <CacherUrl> and <ServletPath> tags. You always want to modify the <Sites> tag to contain applicable values for your installation. The <Sites> tag expects a comma separated list of sites that should be pre-rendered each time the rendering process runs.

While the remaining tags in the <Cacher> section are (for the most part) self explanatory. The following tags require your attention:

- RendererUser: This tag tells the pre-rendering engine what user should be used to render the content. Because the entire site is rendered to *flat* HTML files, you do not have dynamic behavior in the resultant pages. However, you can choose to render with a specific user ID, and that decision can effect what is rendered based on the security within the site content.
- Password: If you choose to use an ID other than anonymous, you must tell the rendering engine what the password is for the ID that you provide. It is important to note that, by default, the connect.cfg file does not have this tag in the <Cacher> section. This tag is added manually after installation.
- OverwriteCache: This tag effects how rendered content is created and when the last set of rendered content is overwritten. When set to true, the existing (last rendered) content is deleted from the <DestDir> before the new rendering process starts. In this scenario, the new content is rendered directly to the <DestDir>.

  When set to false, the existing (last rendered) content is deleted by the renderer only after the new rendering process is completed. The newly rendered content is stored in <TempDir> and only moved to <DestDir> when rendering is completed. In addition, if you set this to false, the render engine saves the prior version of content in a folder called <site_name>-old. This setting provides a very basic ability to roll back one version if the rendered content proves to have problems.
- DefaultContentName: When content is created, the rendering engine uses this value to determine the name of the HTML page that it creates as the default content in each Site Area. For most HTTP servers, such as IBM HTTP Server or Apache, you do not need to change the default of index.html.

If you plan on pre-rendering content, you should become very familiar with this section of the connect.cfg file and its options. For details on tags that this section did not cover, see the IBM Workplace Web Content Management Information Center.

After you make the appropriate configuration changes, restart the WebSphere Portal and IBM Workplace Web Content Management server. Upon restart, the pre-rendering engine should start to pre-render the site.

3.7.3 Manually running the pre-rendering engine

Assuming pre-rendering is properly configured, it is possible to initiate the pre-rendering engine by issuing a single URL in your Web browser:

```
http://[HOST]:[PORT]/wps/wcm/connect/?MOD=Cacher&SRV=cacheSite&Site=
[SITENAME]
```

For example:

```
http://wcm01.cam.itso.ibm.com:9081/wps/wcm/connect/?MOD=Cacher&SRV=
cacheSite&Site=RiverBend
```

When you enter this URL, you are prompted for a user name and password. The person running this task *must* be in the wmcadmins group. Note that when using this URL you can only render a single site at a time.

Note: In IBM Workplace Web Content Management 5.1 (and 2.5), there is no message sent to the browser window that tells you when rendering is complete. If you have <OverwriteCache> set to false, you can watch the <TempDir> to determine when the rendering is completed. While rendering is in process, the site content is in <TempDir>. After rendering is complete, the <TempDir> is empty.

3.7.4 Known issues with pre-rendering in IBM Workplace Web Content Management 5.1

This section discusses the two known issues with the static pre-rendering functionality in IBM Workplace Web Content Management 5.1 at the time of this writing.

Manual versus automated rendering

As discussed earlier, you have the choice of pre-rendering a site automatically or manually via a URL. You can even combine the two as needed to ensure that the site content is as current as needed. However, the URLs that are generated to access IBM Workplace Web Content Management resources (for example, File and Image Components) are different depending on how you invoke the rendering process.

Relative paths ... A moving target

In all cases, the rendering engine builds relative paths to images and other resources that are needed by each HTML page. When you schedule the rendering process, these relative paths start with /wps/wcm/connect. However, when you run the rendering servlet manually, you must first authenticate to the

WebSphere Portal environment, which causes all relative URLs to start with /wps/wcm/myconnect. These differing paths could lead to issues when you deploy the pre-rendered content to your HTTP server.

Solution to this issue

IBM HTTP Server (and Apache) can solve this problem by enabling the rewrite module and by setting up two simple rewrite rules. The rewrite module is included with the most recent version of IBM HTTP Server. So, all you need to do is enable the module and create two rules as follows:

- Enable the rewrite module: The latest release of IBM HTTP Server includes the rewrite module by default. The configuration line needed to load the module is in the <*IHS_Root*>/conf/httpd.conf file, but it is commented out. To have the rewrite module load, uncomment the following line:

  ```
  LoadModule rewrite_module modules/mod_rewrite.so
  ```

- Create rewrite rules: When the rewrite engine is running, give it some instructions as to how it should function. The process is very simple assuming that you know the basics of regular expressions. The most important of the directives is `RewriteEngine ON`. Without this directive, the engine is not running even though the module is loaded.

  After the rewrite engine is configured to run, you need to create rules that instruct the engine when to intervene. You can place any number of RewriteRule directives in the httpd.conf file to provide scenarios in which rewriting should take place.

  Each one of these rules uses Regular Expressions to determine what URL should be rewritten and how it should be modified. The rules shown in Figure 3-38 remove the strings `wps/wcm/connect` or `wps/wcm/myconnect` from any URL requested from the IBM HTTP Server.

```
# Rewrite Engine Test
RewriteEngine ON
RewriteLog "C:/Program Files/Apache Group/Apache2/htdocs/rewrite.log"
RewriteRule ^(.*)/wps/wcm/myconnect/(.*)$  $1/$2 [R,L]
RewriteRule ^(.*)/wps/wcm/connect/(.*)$  $1/$2 [R,L]
#RewriteLogLevel 3
```

Figure 3-38 Rewrite module rules to fix path issue

IBM Workplace Web Content Management and pre-rendered URLs

Now that you know how to create rewrite rules for these changing URLs, let us look at how you can use these rules when deploying a pre-rendered site to IBM HTTP Server.

Note: Resources (files and images) are a type of component within IBM Workplace Web Content Management. For a full explanation of these resources, see Chapter 5, “Key concepts and terminology” on page 141.

The default URLs that IBM Workplace Web Content Management generates for links, images, files, and other IBM Workplace Web Content Management managed resources are relative URLs. They always start with one of the two strings that you are trying to rewrite. For example, the following might be a reference to a stylesheet. :

```
href="/wps/wcm/myconnect/MySite/resources/file/eb5b194f9814416/std.css"
```

Without any rewrite rules, you have to place the IBM Workplace Web Content Management rendered files one of the following directories:

```
<IHS_Root>\htdocs\wps\wcm\connect\<Site>
<IHS_Root>\htdocs\wps\wcm\myconnect\<Site>
```

Unfortunately, the correct directory is dependent on how you render the site (manually or scheduled), which means the URLs could change any time you render if you use the opposite approach. With our rewrite rules, you can make IBM HTTP Server serve the content properly regardless of how it is rendered.

Using the rewrite rules shown earlier, any IBM Workplace Web Content Management relative URLs would be shortened and start with the site name. Thus, our example css reference is:

```
"/MySite/resources/file/eb5b194f9814416/std.css"
```

On the IBM HTTP Server, you can now install any copy of the rendered site directly into the document root directory (for example, <*IHS_Root*>\htdocs\<*Site*>) regardless of how the files were rendered.

Resources do not render

During a proper pre-rendering process, there are two phases that the pre-rendering engine performs:

- Create HTML Files: This phase creates the HTML files for all site content that is visible to the account specified in the `<RendererUser>` field within connect.cfg.
- Create a resources folder: Because the pre-rendering engine creates the HTML files, it keeps track of the resources (files and images to be specific) that are referenced by the HTML pages. After all the site content is pre-rendered, this phase creates a resources folder and places any required resources with the folder. This step is required as any given site might only need a fraction of the resources in IBM Workplace Web Content Management

so it would be inappropriate to include all resources for any one pre-rendered site.

Unfortunately, a feature in IBM Workplace Web Content Management 5.1.0 causes IBM Workplace Web Content Management to not create the resources folder.

Note: The pre-rendering process works properly in IBM Workplace Web Content Management 2.5. The resources folder is properly created.

The only workaround at this time is to place the required resources on the HTTP server manually and to use an additional rewrite module rule to create an alias to the resources. You can find all non-secured resources at:

```
<WAS_Root>/installedApps/node_name/ilwwcm.ear/ilwwcm.war/resources
```

You can copy this entire folder to the Web server and then set up a rewrite rule to map URLs that contain resources to this folder. The primary issue with this approach is that the <*WAS_Root*>/installedApps/node_name/ilwwcm.ear/ilwwcm.war/resources folder would contain all non-secured resources regardless of the sites that need them. If this is a concern, you need to determine which files were needed for the pre-rendered site manually.

3.8 Removing IBM Workplace Web Content Management

In the event that you need to remove the IBM Workplace Web Content Management application from a WebSphere Portal server, the **remove-wcm** configuration task removes the entire IBM Workplace Web Content Management application from the WebSphere Portal installation.

To run this task:

1. Stop WebSphere Portal.
2. Open a command window or command prompt.
3. Navigate to the <*WP_Root*>/config directory.
4. Run the following script:

   ```
   wpsconfig remove-wcm
   ```

5. Start WebSphere Portal.

When the task is complete, the IBM Workplace Web Content Management application is removed from your system.

Note: The IBM Workplace Web Content Management configuration files are also removed when running this configuration task. If you plan g to reinstall IBM Workplace Web Content Management, back up these files first.

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4

Overview of IBM Workplace Web Content Management 2.5

This chapter discusses IBM Workplace Web Content Management 2.5. It highlights its positioning, its target audience, the subtle differences in the installation process, and its functionality and features. It includes the following sections:

- Introduction to IBM Workplace Web Content Management 2.5
- Functional differences between IBM Workplace Web Content Management 2.5 and 5.1
- Installing IBM Workplace Web Content Management 2.5
- Configuring IBM Workplace Web Content Management 2.5

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4.1 Introduction to IBM Workplace Web Content Management 2.5

IBM Workplace Web Content Management 2.5 provides a major architectural change from earlier editions. Unlike earlier versions, IBM Workplace Web Content Management 2.5 runs entirely within WebSphere Portal or Lotus Workplace. IBM Workplace Web Content Management 2.5 comes in two versions:

- IBM Workplace Web Content Management 2.5
- IBM Workplace Web Content Management 2.5, Standard Edition

The code base for these versions is identical. However, the Standard Edition contains several significant licensing limitations, as described in 1.6, “Licensing” on page 22. Additionally, the Standard Edition is also the version that is supplied with IBM Workplace Collaboration Services 2.5.

4.2 Functional differences between IBM Workplace Web Content Management 2.5 and 5.1

While the two versions of IBM Workplace Web Content Management 2.5 are functionally identical, the same cannot be said for IBM Workplace Web Content Management 2.5 and IBM Workplace Web Content Management 5.1. IBM Workplace Web Content Management 2.5 is supported for WebSphere Portal 5.0.2.2 and later, while IBM Workplace Web Content Management 5.1 is support for WebSphere Portal 5.1.

This section describes the most notable differences between these versions. To find the most up-to-date information about what is supported in these versions of IBM Workplace Web Content Management, consult the Information Center at:

```
http://www-128.ibm.com/developerworks/workplace/documentation/
webcontentmanagement/
```

4.2.1 Supported browsers

The IBM Workplace Web Content Management Information Center provides a complete list of supported browsers. The supported browsers include various versions of Internet Explorer, Mozilla, Firefox, Netscape, and so forth. However, not all functions are supported in all browsers. We strongly recommended that you review the Information Center for your specific version of IBM Workplace Web Content Management to confirm which browsers are supported.

4.2.2 Supported Java Virtual Machines

The IBM Workplace Web Content Management Information Center also provides a complete list of supported Java Virtual Machines (JVM™). The Authoring Portlet relies on the JVM as does the Configure mode of both rendering portlets. We strongly recommended that you review the Information Center for your specific version of IBM Workplace Web Content Management to confirm which JVMs are supported.

4.2.3 Portal Document Manager integration

IBM Workplace Web Content Management 5.1 provides a level of integration with the Portal Document Manager in WebSphere Portal 5.1. Portal Document Manager was redesigned significantly in WebSphere Portal 5.1 and the underlying code for Portal Document Manager in WebSphere Portal 5.0 and late is quite different.

IBM Workplace Web Content Management 2.5 does not support integration with the Portal Document Manager.

4.2.4 ODC (Rich Text) editors

The Rich Text editor in IBM Workplace Web Content Management 2.5 does not have the same capabilities as the one that is provided in IBM Workplace Web Content Management 5.1. The OdcEditor.jsp enables only functions that are available in version 5.0.

4.2.5 Fix packs and iFixes

IBM releases fix packs and other smaller fixes (iFixes) as needed for IBM products as follows:

- Fix packs

  Because IBM Workplace Web Content Management 5.1 is integrated with WebSphere Portal 5.1, fix packs for the two products are shipped together in an integrated fashion.

  Because IBM Workplace Web Content Management 2.5, Lotus Workplace, and WebSphere Portal 5.0 and later are separate products, fix packs for each are released separately.

- iFixes

  iFixes are smaller patches that are made available to resolve specific product issues between fix pack releases.

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Important: iFixes for IBM Workplace Web Content Management 5.1 are not compatible with IBM Workplace Web Content Management 2.5 or vice versa.

4.2.6 Portal Personalization (available with 5.1.0.1 and later)

A Personalization component has now been included to enable content based on WebSphere Portal Personalization rules to be rendered as IBM Workplace Web Content Management Components.

Note: For a complete listing of functionality provided with WebSphere Portal 5.1.0.1, see:

`http://www-12.lotus.com/ldd/doc/uafiles.nsf/docs/wcm5101/$File/wcm-5-1-0-1-releasenotes.htm`

4.3 Installing IBM Workplace Web Content Management 2.5

Unlike IBM Workplace Web Content Management 5.1, IBM Workplace Web Content Management 2.5 is not included in the installation of WebSphere Portal 5.0.2.2 and 5.0.2.3 or IBM Workplace Collaboration Services 2.5. Instead, a separate installation process is required to add the IBM Workplace Web Content Management 2.5 source code to any of the supported environments.

This section provides the general steps that are required to install IBM Workplace Web Content Management 2.5.

Attention: These installation instructions assume that you have a working (and supported) WebSphere Portal or IBM Workplace server.

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4.3.1 Installing IBM Workplace Web Content Management 2.5 on Windows 2000 Advanced Server

This section discusses the installation process for adding IBM Workplace Web Content Management 2.5 to an existing WebSphere Portal 5.0.2.2 server.

Attention: Before you begin installing IBM Workplace Web Content Management, make sure your user repository (LDAP) contains a group called *wcmadmins*. This group is the administrative group for the IBM Workplace Web Content Management application.

If you use the WebSphere Portal built-in Cloudscape database as your user repository, the installation does this step for you automatically. However, we do not recommend this user repository for a production environment.

To install the IBM Workplace Web Content Management 2.5 software, complete the following steps:

1. Open a command prompt to the root directory of the IBM Workplace Web Content Management distribution and end the following command:

   ```
   install.bat
   ```

2. Select the language to use for the installation and click **OK** (Figure 4-1).



Figure 4-1 Installation language selection

   The IBM Workplace Web Content Management installation program Welcome panel displays.

3. Click **Next** to continue.

Archive

The software license agreement for IBM Workplace Web Content Management appears (Figure 4-2).

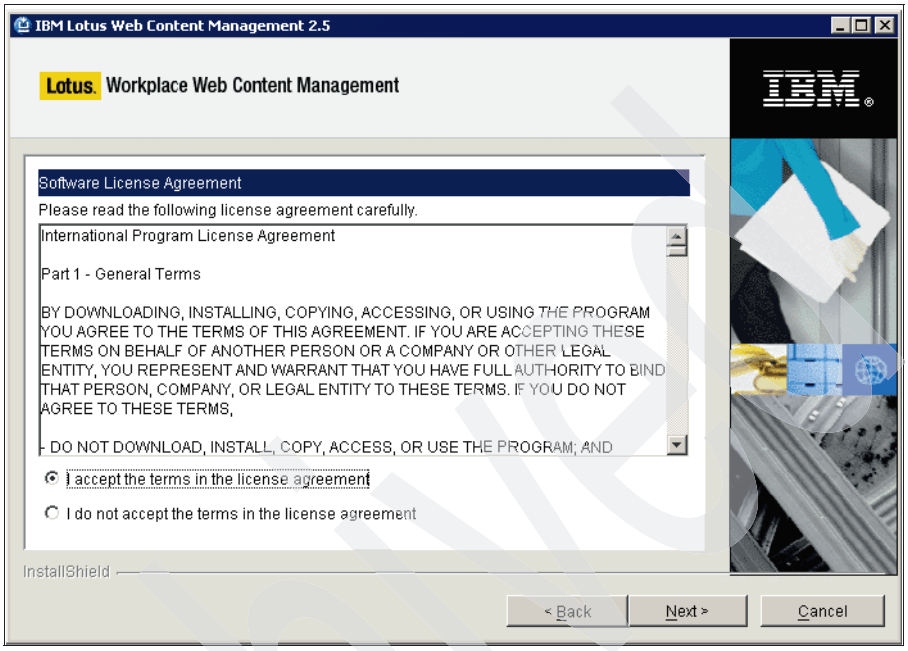


Figure 4-2 Installation license agreement

4. Agree to the license and click **Next**.

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The installation program searches for a base installation of WebSphere Portal or Lotus Workplace. The screen populate this root directory value automatically, as shown in Figure 4-3.

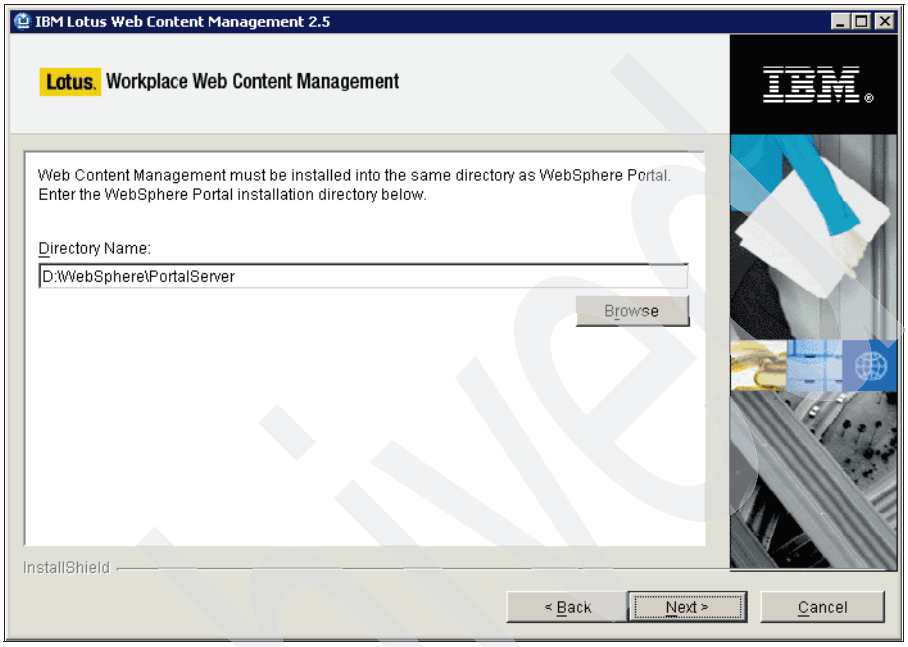


Figure 4-3 Installation install root

5. Click **Next**.

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In order to properly install IBM Workplace Web Content Management, the installation program needs to know if WebSphere Application Server security is enabled (Figure 4-4). If your installation of WebSphere Portal or Lotus Workplace is configured to use an LDAP, the answer to this question is Yes.

6. Select **Yes** and click **Next**.

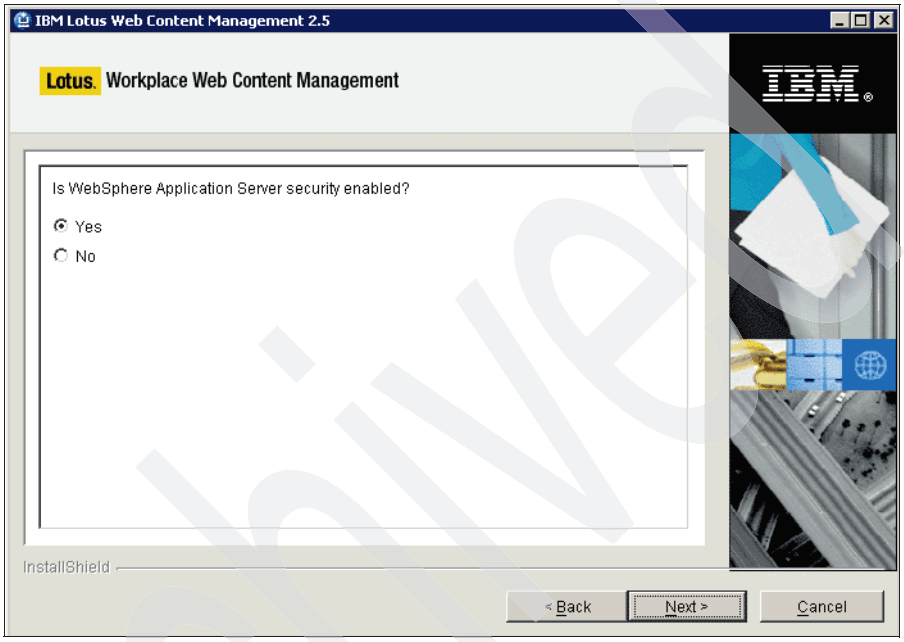


Figure 4-4 WebSphere Application Server security prompt

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Assuming that you have WebSphere Application Server security enabled, are prompted for the administrative user of the WebSphere Application Server (not the WebSphere Portal server), as shown in Figure 4-5. When entering the administrative user make sure you use a fully qualified name.

7. Enter the appropriate values for your installation and click **Next**.

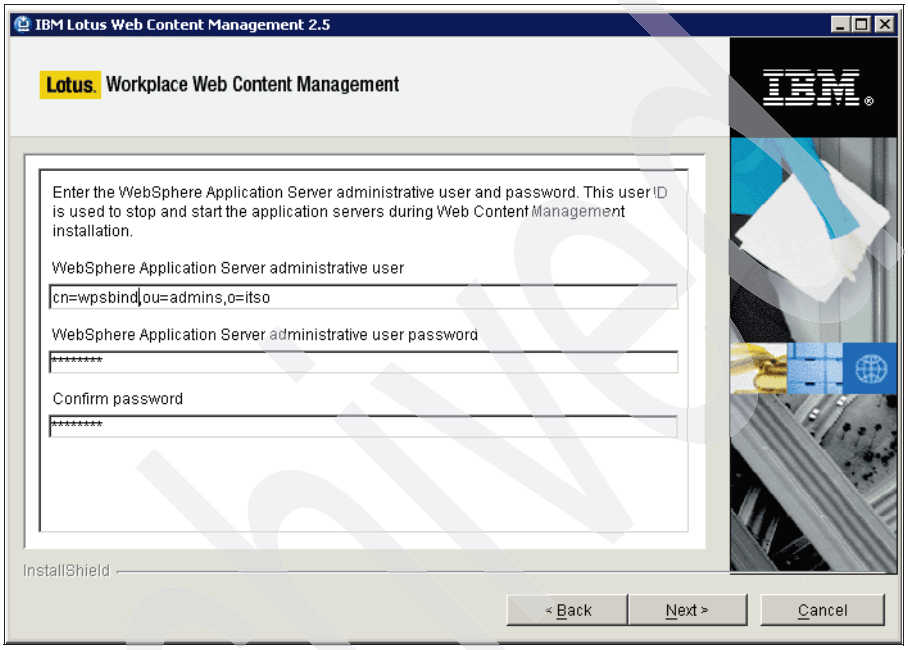


Figure 4-5 Installation WebSphere Application Server administrator details

Archive

Assuming that you have WebSphere Application Server security enabled, you are prompted for an administrative user of WebSphere Portal (not the WebSphere Application server), as shown in Figure 4-6. Unlike the administrative user of the application server, when entering the portal administrative user, you can use the common or short name (for example, `wpsadmin`).

8. Enter the appropriate values for your installation and click **Next**.

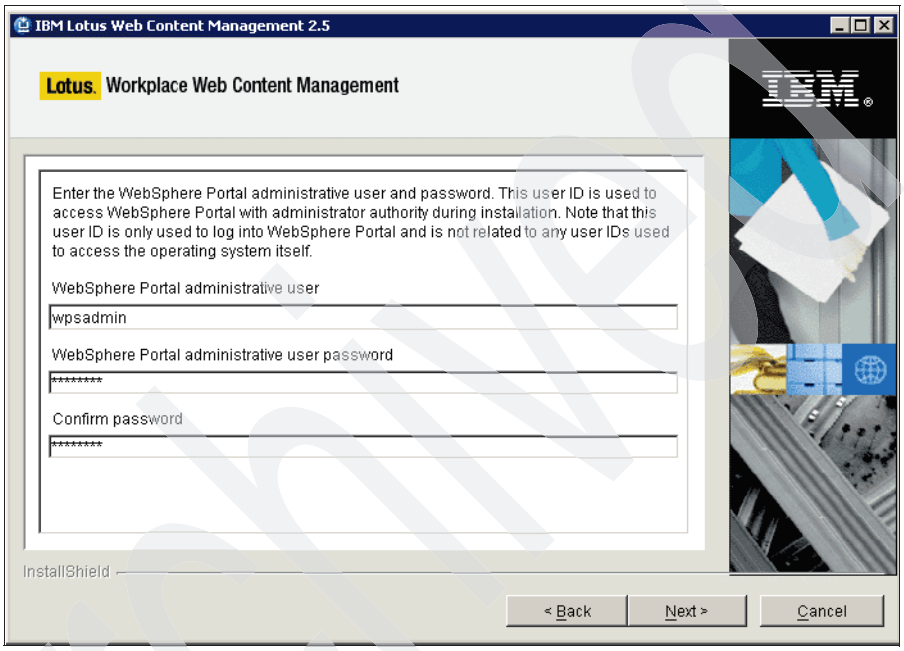


Figure 4-6 Installation WebSphere Portal administrator details

Archive

When you install IBM Workplace Web Content Management 2.5, you have the option of letting the installation process create the authoring environment for you (Figure 4-7). If you choose not to select this option you can configure the authoring environment manually.

9. Select **Yes** and click **Next**.

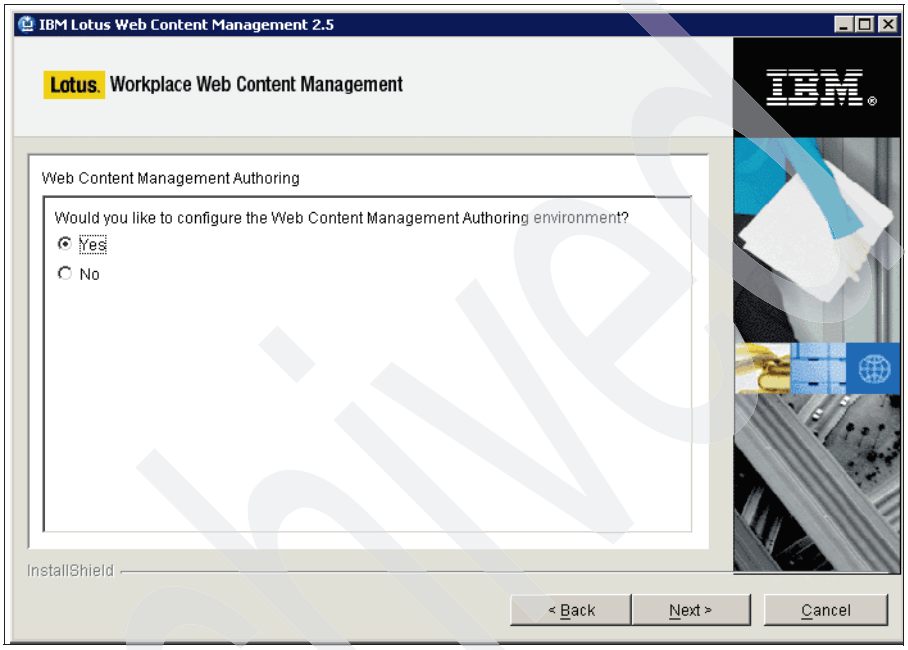


Figure 4-7 Installation authoring setup options

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The installation program provides a brief summary screen with the default installation location and the amount of disk space that is needed for the installation, as shown in Figure 4-8.

10. Click **Next** to start the installation.

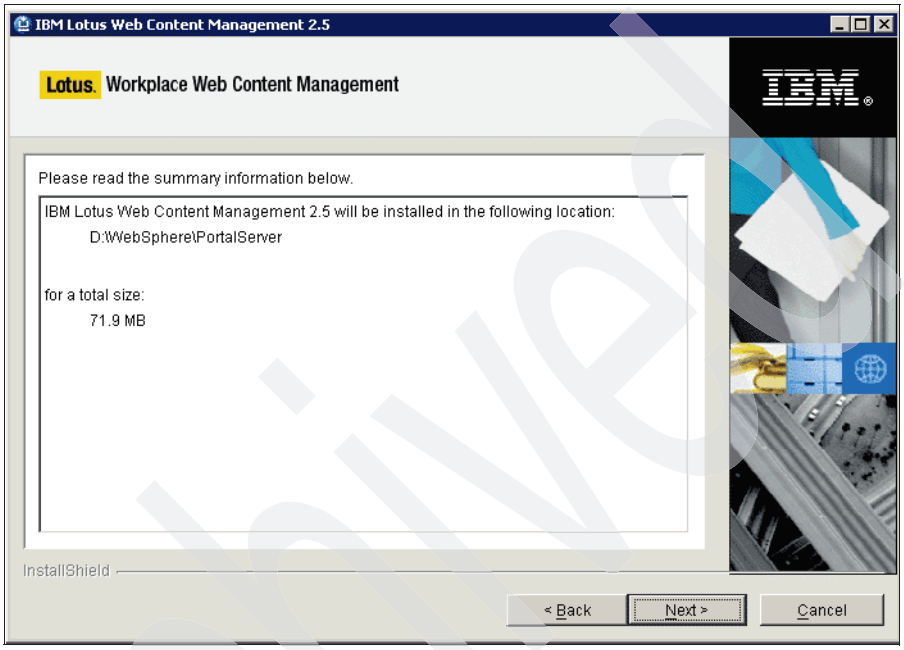


Figure 4-8 Installation summary page

When the installation completes, you see a message stating that the installation has completed successfully.

11. Click **Finish** to close the installation program.

Assuming that you let the installation program set up the authoring environment, when the installation is complete, you should be able to access your server and see a new page called *IBM Workplace Web Content Management*. To test the installation, log into your WebSphere Portal or Lotus Workplace server with a user account that is a member of the wcmadmins group. You should see a page called *IBM Workplace Web Content Management*. Clicking that link should take you to the authoring Portlet, as shown in Figure 4-9 on page 137.

Archive

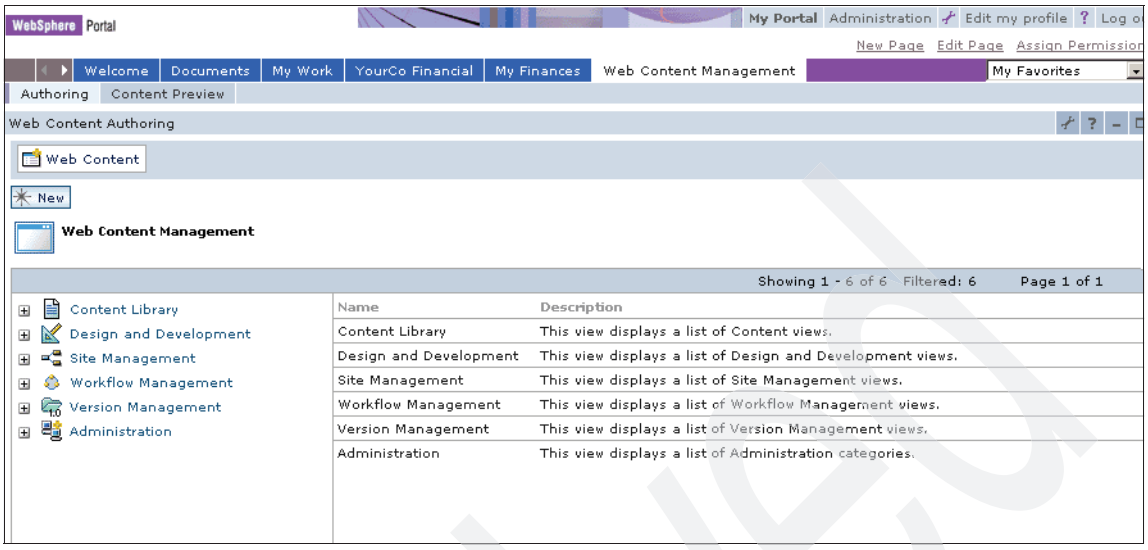


Figure 4-9 IBM Workplace Web Content Management 2.5 authoring Portlet

4.4 Configuring IBM Workplace Web Content Management 2.5

After you have installed IBM Workplace Web Content Management 2.5, you will likely want to migrate the content repository from Cloudscape to some other repository.

The process for all configuration changes in IBM Workplace Web Content Management 2.5 is identical to those for IBM Workplace Web Content Management 5.1. Refer to 3.3, “Configuring IBM Workplace Web Content Management with DB2 Universal Database” on page 77 for details about configuring IBM Workplace Web Content Management to use a DB2 server as the content repository.

For a review of all configuration options, refer to the IBM Workplace Web Content Management 2.5 Information Center at:

`http://www-128.ibm.com/developerworks/workplace/documentation/webcontentmanagement/`

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Part 3

Key concepts, information architecture, site design, and reference implementations for Web content management

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5

Key concepts and terminology

This chapter addresses the core concepts of IBM Workplace Web Content Management. We review the separation of presentation and content and emphasize the importance of componentization within page design. We also describe the key items and components and recommend important considerations for reuse and extensibility.

As an example Web site, this chapter uses the River Bend Coffee and Tea Company Web site, which we refer to as the *River Bend Web site* (see Figure 5-1 on page 142). We show all concepts and terminology that use elements of this Web site. The source for the site is Lotus Education in Australia.

This chapter includes the following sections:

- Separating content and presentation
- Componentization and the page design concept
- Key IBM Workplace Web Content Management functions, items, and definitions
- Integrating Portal Document Manager with IBM Workplace Web Content Management 5.1

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Figure 5-1 The example River Bend Coffee and Tea Company Web site

Archive

5.1 Separating content and presentation

In IBM Workplace Web Content Management, the creation of content is separated from the presentation of content. This concept is a very important concept and is implemented consistently. Thus, you can create content once and then display that content with different presentations. For example, the presentation can depend on:

- The area of the Web site through which the user is navigating
- The user's personalization settings (for example, preferred color)
- Predefined presentation settings (for example, print layout)
- The online device which accesses the content

This approach also guarantees that a Web site has a consistent look and feel. If the design changes, the content parts are *unaffected*. Additionally, content creators do not need to worry about the presentation of content, which can be beneficial when the content creators do not have specific HTML knowledge. Content can be displayed using different presentations.

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For example, the River Bend Web site contains a News section and a River Bend in the News section. All content documents in these sections are displayed as a list showing a title, a summary, and a link (see Figure 5-2).



Figure 5-2 River Bend in the News page

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The link opens the document so that the user can read the entire text. In this case, only the title body and an image are displayed, but no summary is displayed (see Figure 5-3). These are two different presentations of the same content document and illustrate the separation of content an design.



Figure 5-3 In the News document open for reading

5.1.1 Content editing considerations

Content authors frequently demand a one-click option to edit a published content page. Additionally, they request an in-place-editing and WYSIWYG editing solution. Each of these requirements are based on the same desire — the ability to edit text and content for a Web page while retaining the display format of the page as the edits are being made.

Challenge of editing separate content and presentation

Keep in mind that only some fields of a content document might be displayed on a Web site while others are not displayed. How does this impact the request for in-place WYSIWYG editing solution? Only the fields displayed on that particular Web page are available for in-place or WSIWYG editing. The other fields stay unchanged.

For example, if we apply this approach to the River Bend site, the following are true:

- A page displays the title and summary. When an author edits these fields with an in-place or WSIWYG editor, *only* these fields are available for editing.
- With the body field, no change is made unless the editor moves to a page where the contents of body field are also displayed. At this point, the editor has access to the body field. This approach requires editing the same content twice from two different access points.

You can imagine how this approach leads to inconsistency in content. Therefore, when content has to be changed, the ability to open the whole content document in an editor allows you to change fields consistently. In this way, you can achieve the separation of content and presentation.

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In-place editing with the Customizable Template Portlet

IBM Workplace Web Content Management follows strictly the concept of separation between content and presentation and provides functions to add an edit-link in a Web page to open the displayed document in the Authoring Portlet or the *Customizable Template Portlet*. (For information about the Customizable Template Portlet, see 13.2, “Using the Customizable Template Portlet” on page 535.) Figure 5-4 illustrates the edit link.



Figure 5-4 Edit link for River Bend in the News page

Clicking **Edit** opens the document in the Authoring Porlet, as shown in Figure 5-5.

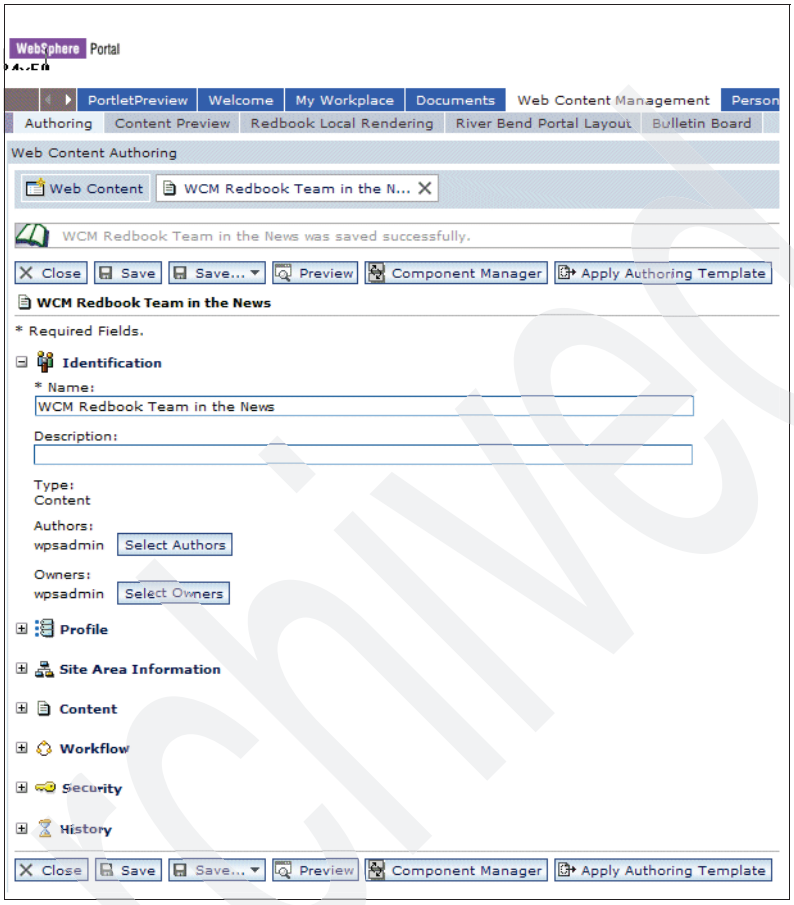


Figure 5-5 Document opened in the Authoring Portlet

Future releases of IBM Workplace Web Content Management are expected to provide enhanced editing functionality for this feature.

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5.2 Componentization and the page design concept

One of the many strengths of IBM Workplace Web Content Management is the use of *componentization*. The elements of a Web page are created as *distinct units* and then are put together in a variety of ways. This function allows you to create flexible Web pages that authors can create simply and that administrators can maintain easily. Each of the elements that are created can be reused in many other pages and in other elements. So, each element should be designed from the beginning to be reusable and modular. Figure 5-6 illustrates an example Web page in which some typical component types are highlighted.



Figure 5-6 Components on the River Bend home page

Archive

Figure 5-7 illustrates the relationship between components and shows how a Web page is a composite of design and content components. In essence, a typical Web page can be constructed from the following elements:

- **Presentational layer**:

  The look and feel that controls how the page should be presented. Determining factors include:

  - What device or type of browser is intended for displaying the information
  - Font, color and other graphical components to be displayed

- **Content layer**:

  The information about the page. Determining factors include:

  - Content input using a content template
  - Tools for accessing content, such as authentication (sign in), search, and so forth

- **Information architecture layer**:

  How the content fits into the overall site information structure. Determining factors include navigational aids, such as a navigator, menus, and breadcrumbs.

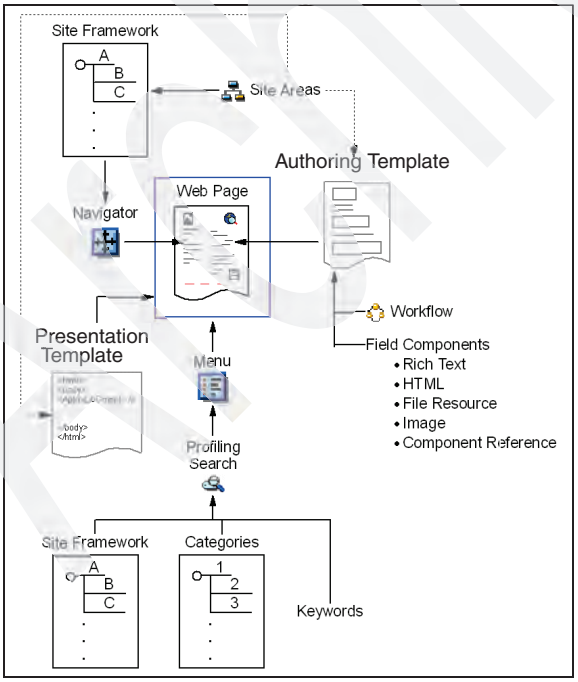


Figure 5-7 Web page component layers

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The concept of componentization remains consistent throughout the different roles that are associated with creating, maintaining, and administering a Web site, namely authoring, site design, and maintenance processes. This componentization allows for the traditional, encompassing role of a Web master to be separated into a more specific role as discussed in 1.4.1, “The roles involved and their focus” on page 17.

5.2.1 Considerations for reusability

The concept of componentization is derived from the concept that a user can create a component *once* and reuse it many times in various different contexts and design areas. This reusability can be achieved by adhering to the following guidelines:

- Use a naming convention for the objects that is descriptive to make it easier for other developers to identify objects for reuse. The River Bend Web site uses prefixes such as *NAV* for navigators and *MENU* for menus.
- Identify the different types of pages in the site and look for common elements between the pages.
- Remember that you can use additional information components to allow content creators to customize a Web page to their needs.
- A site can often be broken down into a set of page styles, such as the Home page, content pages, menu pages, and so forth. You can then deploy these pages across the site to maximize reuse.

Attention: While it is true that components can be reused many times, take care to ensure that these components are not too dissected and nested such that they became cumbersome to maintain. In addition, remember that nesting components can impact page rendering and site performance.

Tips:

- Preferably, all objects should be modular so that they do not rely on any other object to close a `<table>` tag or to put `<script>` tags around it.
- You should be able to change a component slightly without having to change any other elements that rely on that component. All functionality should remain within the component that needs it (either coded directly in the component or in the form of another complete component).

Abbrev

5.3 Key IBM Workplace Web Content Management functions, items, and definitions

This section discusses the IBM Workplace Web Content Management items that are used to build a Web site as well as the functions that secure and maintain a Web site from a IBM Workplace Web Content Management perspective. This section summarizes functions and items and then includes an in depth discussion on their functions.

Note: For a discussion that focuses on how to use these items within the context of the WebSphere Portal paradigm, namely Portal navigation, Portlet issues and so forth, see Chapter 9, “Advanced integration with WebSphere Portal” on page 403.

IBM Workplace Web Content Management defines components and items in its own technical sense. All elements in the Authoring Portlet Item Navigator which are defined within the Component Library are referred to as *components*. All other elements — from within Content Library, Presentation Templates, Authoring Templates, Site Management, and Workflow Management — are referred to as *items*.

IBM Workplace Web Content management fields

Each item is created and managed using a form with common and item specific fields. Common fields in all forms are:

- **Identification-Fields**:
  - **Name**: Required field to enter the item’s name that is used in the authoring environment.

    Attention: Content items in the River Bend example Web site use a Display Title field. This field is shown on the Web site while the Name field is not. It is not required to have identical values for Name and Display Title. However, doing so eases administrative tasks.

  - **Description**: A comprehensive description. This is an optional field.
  - **Authors**: Additional authors for item. This field is not a security feature. If you need security features, you should use security options. This field is used to reference items with ID component tags.
  - **Owners**: Additional owners for item. This field is the same as the Authors field.

- Security-Fields are described in 5.3.3, “Item and component security” on page 158.
- Workflow-Fields are described in the 5.3.6, “Workflow” on page 166.

Version management

Version management is a functionality that you can use to create labeled version of content items and components. This functionality is described in detail in 5.3.1, “Version management” on page 155.

Syndication

Syndication is an architectural functionality and concept to move each instance of a IBM Workplace Web Content Management site from one server, say an authoring server to another server, such as staging or publishing server. Each instance is installed on a separate application server, and syndication ensures that several application servers contain the same data. Through syndication, content and site components can be shared seamlessly among several Web sites. The end result is identical Web sites on different servers.

Separation of the development and live environments is usual practice so that high load in the development environment does not impact high performance and speed in the live environment. Syndication of the servers in the development and live environment keeps the live server up-to-date with changes made in the development environment

Note: Syndication is different from designing a workflow. (Refer to 2.3.5, “Workflow versus syndication” on page 49 for a more detailed discussion on the comparison of this topic.)

Item and component security

Every item and component is access protected. A five-level security model (Live, Read, Edit, Workflow, and Delete) applies.

Archive

IBM Workplace Web Content Management items

For a conceptual look towards items, a separation between *content-centric* and *architectural* items might make sense. The content-centric items are used for content creation and management. The architectural items define the hierarchical structure of the Web site and its design.

Content-centric items

Creating, managing, and using content-centric items is related to the content constituency which is performed by subject matter authors and content owners. Content-centric items include the following:

- Authoring template

  The *authoring template* is used by a content creator to create content by entering text, predefined resources (such as images, files, and so forth), and components in fields.

- Categories and taxonomies

  Categories are predefined terms that are grouped into *taxonomies* that are similar to keywords, while keywords — which are used in an authoring template field — are not predefined but are text-free.

- Workflow

  Because every content item has to pass a *workflow* in order to be published, workflows are essential elements. However, their purpose is related strictly to life cycle. By default Workflow is enabled for content items but can be configured for all items and components by inserting the appropriate values in the aptrixjpe.properties file.

- Content

  Content items are any kind of information intended to be published to a Web site and are created using authoring templates.

Architectural items and components

Creating, managing, and using architectural items is related to the technical and layout constituency and is performed by IBM Workplace Web Content Management administrators and developers. For an discussion about the process and how the item values are defined, see Chapter 6, “Information architecture and site design” on page 199. Architectural items include the following:

- Site Framework: site and site areas

  The *Site Framework* defines the hierarchical site structure which is the case for the main Web site navigation.

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- Design components

  A number of *design components* are available for a customized design of a Web site, such as the Navigator, Menu, and HTML components, Image and File resources, and so forth. These design components are stored in the Component Library under the Design and Development section in the authoring portlet.

- Presentation template

  In the *presentation templates*, everything comes together and the Web site can be viewed as a whole.

  Design components are referenced within the presentation template form the look of a Web page (such as the header or stylesheets), and content item fields are referenced to display text on the Web page.

Note: Now we start the in-depth discussion on the IBM Workplace Web Content Management functions and items. All examples are based on the River Bend Tea and Coffee Company Web site. If you want to build the Web site, see Chapter 7, “Building the River Bend Web site with IBM Workplace Web Content Management” on page 253.

5.3.1 Version management

The first intention for customers familiar with document management methodologies is likely to use version management for content and track changes during content life cycle. Although *version management* provides versioning and restore capabilities, it is not intended to replace an Enterprise Document Management system. In addition to versioning functionality for content, this function is also available for presentation and architecture layer items and components. It allows you to restore previous Web site appearances by using the aligned restore functionality.

Abbrev

Version management, by default, is a manual step. Content owners and content creators decide to create a version of a content item after significant changes have been made. The version is created by clicking **Save Version** in the item forms when an item is in Read mode. Figure 5-8 shows versioned content within the version library.

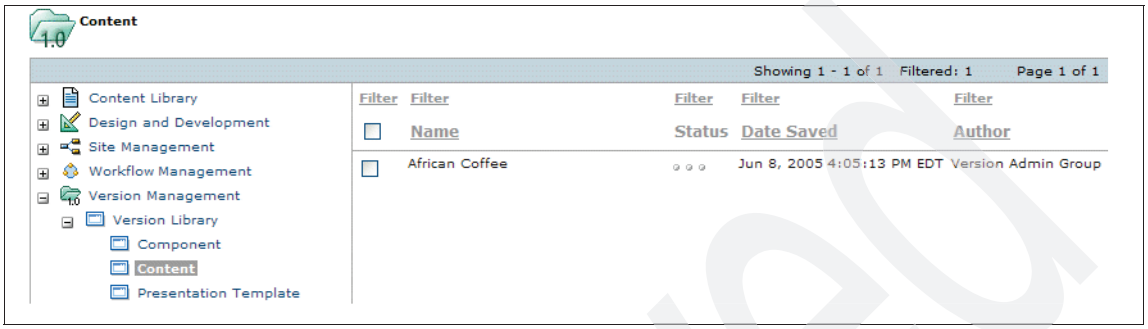


Figure 5-8 Version Library with versioned content

Attention: Version management cannot be used to create a version of an IBM Workplace Web Content Management Web site, nor does it replace the need for backups.

After installation, version management is enabled for selected items and all components defined in the component library. Versonmanagement can be enabled by the IBM Workplace Web Content Management server administrator for all items. For details on how to do this, see the IBM Workplace Web Content Management Information Center at:

`http://www-128.ibm.com/developerworks/workplace/documentation/webcontentmanagement/`

The Save Version button in an open for viewing document is available for the version enabled item. If you use the button, a label has to be specified.

Attention: The label is a descriptive element for a version. Version numbering is incremental and cannot be changed.

To view all versions of an item, click the item link. All versions are displayed, as shown in Figure 5-9 on page 157.

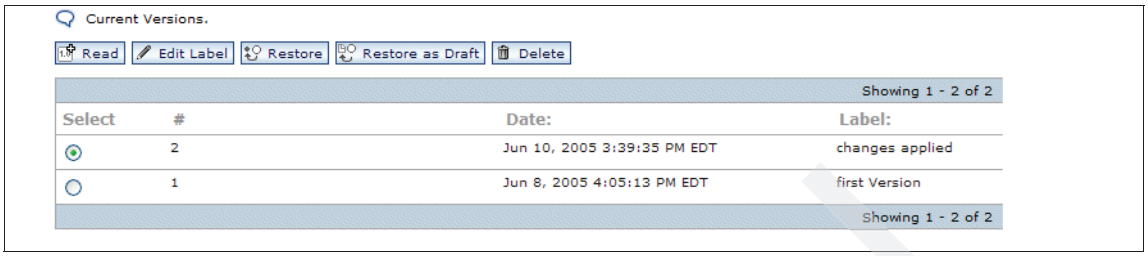


Figure 5-9 Version library shows all versions and labels of a versioned item

A version-all function is available in the version library. This function creates a new version of all version-enabled and non-workflow enabled items and components in the version library. This function provides a snapshot of all existing items but not of a Web site. The version function is not aligned with consistency checking. Missing components in references or relations on a Web page are not identified.

A workflow-enabled item is only versioned in the published status. A restored workflow-enabled item matches the status and position of the original item. When versions are created they can be restored separately or in a reverse function to the Version-all function. Therefore, a batch restore function is available in the version library. Versions to restore are identified by date or label.

To use batch restore identical labels might be a requirement. The label all function — also available in the version library — allows you to label all recent versions for easy identification for a batch restore.

5.3.2 Syndication

Syndication is the method used by an IBM Workplace Web Content Management server to replicate data from one IBM Workplace Web Content Management server to another. Unlike Workflow, Syndication is not involved in the process of approving content. Syndication is only responsible for distributing IBM Workplace Web Content Management assets across multiple servers.

Two items are required for Syndication:

- The *Syndicator* contains the data that is copied to another application.
- The *Subscriber* retrieves the data copies from the Syndicator.

Syndicators can syndicate to multiple Subscribers, and Subscribers can receive data from multiple Syndicators. When creating a Syndicator, IBM Workplace Web Content Management allows you two choices for the granularity of items to be syndicated:

- All items

  When configured with this setting, all elements of the IBM Workplace Web Content Management server are replicated to the other server, including draft and expired content. Typically, authoring and development servers need access to all types of content for testing purposes. This setting is common when syndicating between distributed authoring servers or between an authoring server and development server.

- All live items

  All live items replicates only live content. Live content is defined as content that is approved via a Workflow (live) but is not yet past its expiration date. Typically, a production server would only receive live data. So, this setting is common when syndicating from authoring to staging or staging to production.

Tip: Syndication always syndicates copies of technical assets (for example, presentation templates, authoring templates, library components, and so forth). By default there is no setting to stop this syndication. You can configure IBM Workplace Web Content Management to Workflow these items, at which point they would follow the same rules as content.

5.3.3 Item and component security

IBM Workplace Web Content Management offers comprehensive object-level security with its own security scheme. In each item or component, four security levels are available, plus a Workflow security if the item is in a Workflow. Without the appropriate security level assigned, users are not able to perform tasks or to see the content or design elements in a Web site or portlet.

Users and groups can be assigned the following access rights, listed from lowest to highest access level:

- Live

  Read-only mode for published content.

- Read

  Live access plus read-only mode to objects via the user interface.

- Edit

  Read access plus create or edit mode to objects via the user interface.

- Workflow

  Approve or edit access during a workflow approval stage. This level is only assigned to users while an item is in the approval stage of a workflow.

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- Delete

  Edit access plus delete mode to objects via the user interface.

Access rights are assigned in the item or component interface in the Workflow section, as shown in Figure 5-10.

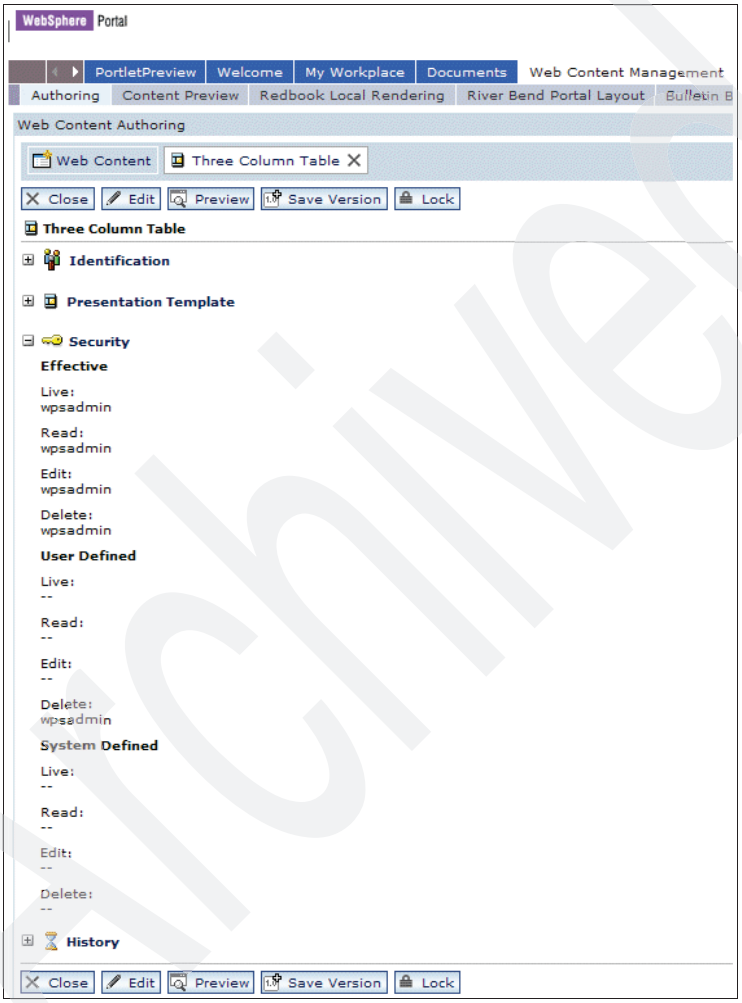


Figure 5-10 Security section in item

By default, a *system-defined* security level and a *user-defined* security level are assigned to every object. The system-defined security level can only be set by the site administrators. The user-defined security level allows a user to set access rights to an object up to and including the level at which the user has that

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right. User-defined and system-defined security settings combine to give an object its *effective security*.

Workflow security

All content must be assigned to a Workflow approval process. During a Workflow, Workflow security is applied automatically, as defined in the Workflow stages, and is given the appropriate users access to the item. In addition, a *workflow-level* security level can be applied to other objects. Content to enhance and to refine the security settings, by inserting the appropriate values in the aptrixjpe.properties file, is shown in the following:

```
# control properties
control.Style=com.aptrix.pluto.workflow.WorkflowControl
```

In Workflow stages, a Workflow security section is visible and displays security settings, as shown in Figure 5-11.



Figure 5-11 Security section showing Workflow security

For example, a draft content item might have a specific security level that is assigned by the Workflow stage and that is set such that only the authors have access to *edit* the content. When the content moves to the approval stage, only a group of approvers have edit rights to the content, while the author's access is changed to read. Then, the content moves to the next Workflow stage of *published*. The published Workflow stage changes the security level to *live* for anonymous users and to *edit* for the content author.

Workflow security replaces user-defined security for an item that participates in the workflow-level security. Both workflow or user-defined and system-defined security settings combine to give an object its *effective security*.

Interestingly, a Workflow stage is also an *item* and, therefore, is subjected to both item and Workflow security. (It is not recommended, however, to control and modify security for a Workflow stage through Workflow security). For more information, refer to the Information Center available with your product download.

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Conclusion

IBM Workplace Web Content Management security is constructed by the following layers:

- Portal security

  Provides access to the Portal server and applications. For Web site readers, access to the Portal environment — especially portlets that display content — is sufficient. In addition, for all other users, appropriate access to the other layers has to be granted. Instructions about how to grant access to the Portal are found in the Portal Information Center or in *IBM WebSphere Portal for Multiplatforms V5.1 Handbook*, SG24-6689, available at:

  `http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246689.html?Open`

- Portlet security

  In order to perform tasks in IBM Workplace Web Content Management — read, edit, approve, and manage items — access to the authoring portlet has to be granted. For instructions about how to configure the authoring portlet access, see 3.5, “Installing the Rendering Portlets” on page 95. For instructions about configuring the Customizable Template Portlet, see 13.2, “Using the Customizable Template Portlet” on page 535.

- IBM Workplace Web Content Management item and component security

  Defines final access to each individual item and component in the authoring portlet and the Web site, either stand-alone or in a portlet. If security is not set appropriately, the item cannot be viewed, edited, approved, or managed.

5.3.4 Authoring template

Authoring templates are used for content creation. They provide the editing and authoring forms for content authors. Similar to document types in document management solutions, fields for text and metadata are defined in the authoring template. In addition to the common fields that are described in “IBM Workplace Web Content management fields” on page 152, the following sections are provided:

- Profile
- Content

These sections contain fields for immediate content input or references to other components.

Profile

The Profile section contains a Categories and a Keywords field. Both fields can be regarded as metadata to characterize a content item, as shown in

Figure 5-12. Categories are selected from the elements that are defined in the Category Management (see 5.3.5, “Category Management” on page 164), meaning that they are *predefined*. The advantages of Categories is that they provide quick selection with no misspellings or duplicates but slightly different elements. The disadvantage of Categories is that only predefined Categories are available.

The Keywords field allows users to enter any text without restriction. Keyword fields are not selected from a predefined list. The advantage is that the user can enter any word or phrase. The disadvantage is that you cannot check for misspellings or duplicate entries with only slightly different meanings.

Categories and Keywords are used as content metadata for search and Menu definitions. See “Menu component” on page 182 for more details about how to use Categories and Keywords in menus.



Figure 5-12 Categories and Keywords fields in Profile section of Authoring Template

Content

The Content section lets the authoring template reflect the companies’s content types. All fields are added to the authoring template using the component manager, as shown in Figure 5-13.

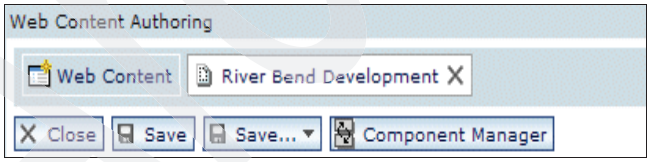


Figure 5-13 Component manager

The fields are defined by a field name and the field type (as shown in Figure 5-14). The field type is selected from a list that is either a component field, such as a text, a Rich Text field, or a reference of a component that is defined in the component library (see “Component library” on page 177). Thus, the field type reuses a predefined or predeveloped component.

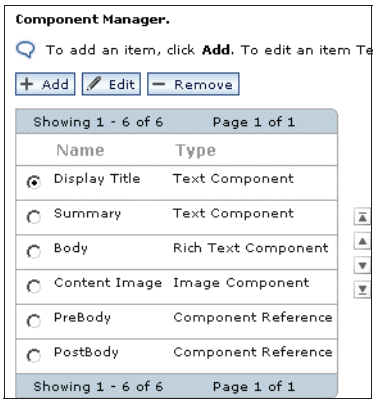


Figure 5-14 Fields in component manager

For example, the River Bend development authoring template uses the following (as shown in Figure 5-15 on page 164):

- The Text field for the display title and summary.
- The Rich Text field for the body.
- An Image Component for an image.
- The Postbody and Prebody fields for Component References where the reference to a Menu is entered.

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Figure 5-15 Riverbend Authoring Template

5.3.5 Category Management

The Category Management section of the item navigator defines taxonomies and categories. These items are an important, and often underestimated, elements for content that is metadata.

Note: Categories are metadata for content that is used in menus and search.

Taxonomy

A *taxonomy* defines the collection of terms that form the categories. For distinct term-sets, you can create independent taxonomies, although it might not be necessary because the number and depth of categories is nearly unlimited. As authors select categories, they assign them to a content item by clicking a tree of categories. A reasonable depth of the taxonomy tree helps the user in selecting categories. A maximum of five to six levels has proven to be a good depth with which to work. You can adjust taxonomies where necessary.

Category

A *category* is an informational component that is used to describe what a piece of content is about. Categories used in content transcend hierarchies of architectural elements as site or site areas. Changing the navigaitonal hierarchy is difficult, while categories should reflect business needs and are adjusted as the organization's needs change.

Do not confuse categories with a *site area*, which is created to provide a path to that piece of content. Menu design components can use a category, via search criteria, to create menus or to create lists of related documents. For example, if the coffee business faces a boost for Ginger flavored Coffee, the River Bend company can add the category *ginger* to the taxonomy. The overall hierarchy based on site and site areas stays unchanged. Immediately after adding the category *ginger* to content documents, searches for *ginger* on the River Bend Web site show results without any development work. In addition, the category *ginger* can be removed easily without any influence on the overall navigational hierarchy of the site.

Another example is that the River Bend Web site uses categories in a menu to identify content of a specific topic. A products page displays coffee from Colombia, while another page displays Espresso coffee. Now, a coffee bean from Colombia is also a good Espresso coffee bean. Adding the category *Espresso* to the Rich Colombia Coffee document makes the category appear automatically not only on the Colombia page but also on the Espresso page without any additional work (Figure 5-16 on page 166).

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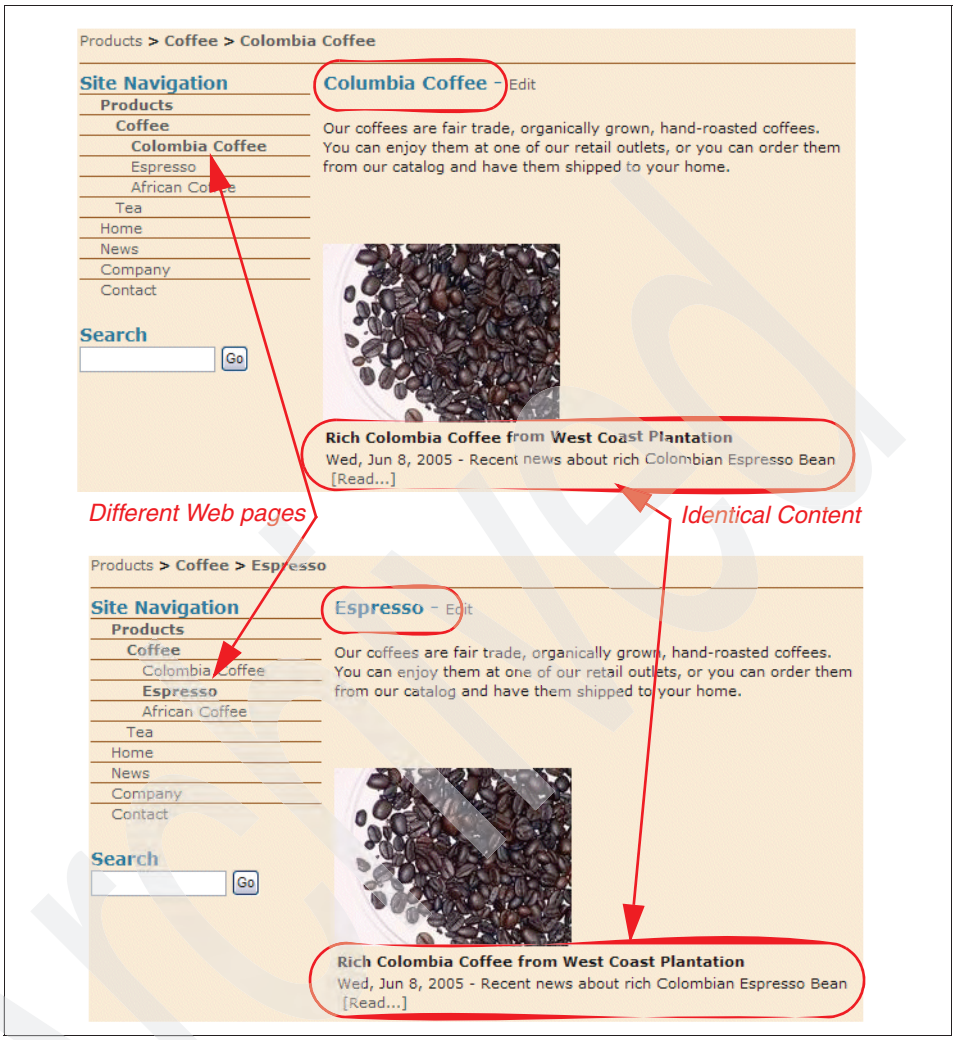


Figure 5-16 Additional category Espresso makes a document appear on two pages

5.3.6 Workflow

A *Workflow* comprises one or more stages. Because Workflows are used mainly for content, this section discusses how to use a Workflow that way. The Workflow is targeted to move content through its life cycle. Appropriate *stages* can be created to support the life cycle. The stages can or cannot contain *actions* that make the content move into the next stage or that just send e-mail messages.

Workflow stages are conducted one after the other. There is no parallel processing. However, approval from several approvers can be part of a Workflow using the joint approval option. During the approval stage, all approvers have to approve an item before it is pushed to the next step. Otherwise, the item is rejected.

Figure 5-17 illustrates the basic Workflow dialog box, indicating the document's status and the current workflow stage. In addition to the Publish and Expiry date fields, two more date fields are available for individual purposes (API interaction). Workflows do not focus on anything but life cycle management. There is no such thing as transactional workflow management, automation, or escalation management.

To achieve such challenges a dedicated Workflow product has to be used, such as IBM Process Choreographer. You must use the API to integrate.

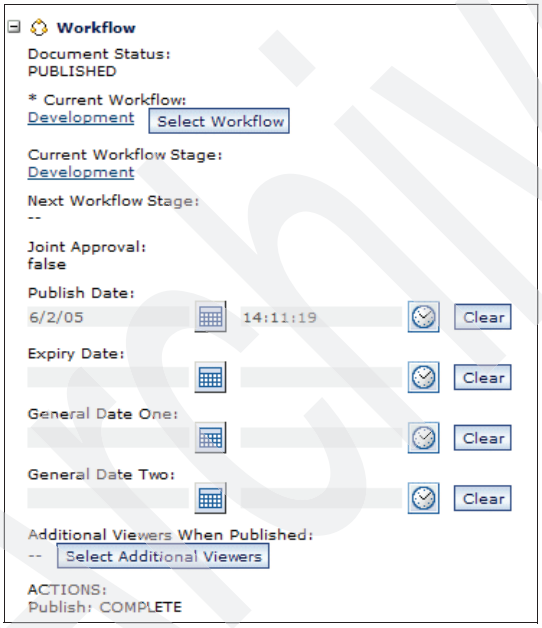


Figure 5-17 Workflow section

Workflow stages

Before a piece of content appears on a Web site, it must pass through all Workflow stages that are assigned to it. At each stage, security can change and can allow or prevent a person to create, update, reject, or publish content. A typical sequence of stages for an approval Workflow, which at the end sends the

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content to an expire stage, could contain the following stages, as shown in Figure 5-18:

- Draft
- Approval
- Reject usually sends the item back to the Draft Stage
- Publish
- Expire



Figure 5-18 Workflow Stages for an approval Workflow

If content is rejected at any stage, the content author must correct or amend the content and resubmit it for approval. A document can be sent to a specific stage following the rejection. The reject stage is set up per Workflow.

A part from the approval Workflow shown in Figure 5-18, the most basic Workflow that can be created moves a Web page directly from *draft* to the *published* stage. For example, the River Bend Web site uses a complete approval Workflow that is named *Approval Workflow*. It contains the draft, approval, reject, publish, and expire stages. (See 7.7, “Building a workflow” on page 268 for more information.)

Workflow actions

Each stage can contain *actions* that are executed when entering or leaving a stage. Available actions by default are:

- Publish
- Expire

You can create the following additional actions:

- E-mail
- Scheduled Move

Typically, the *publish action* is executed when entering the publish stage, or it is triggered by the value of the publish date field in the content’s Workflow section. Thus, approved content appears on a Web site only on the published date. The

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same is true for expiring content with an expire action that executes on the expire date that is defined in the item form.

A *scheduled move action* can move content from the publish to the expired stage and have the action disappear from the live Web site. This action keeps the live site up-to-date and reduces human interaction.

Among the actions that can be created as desired is the e-mail notification. The example in 7.7, “Building a workflow” on page 268 uses the e-mail action to inform users about the rejection of content. The e-mail action can also be used to inform approvers about content that is waiting for approval.

5.3.7 Content

Now, we have discussed all the elements that you need to create content: Authoring template, taxonomy and category, and workflow. Creating content for users who rarely use the authoring interface might be confusing. Apply security to all items to make sure that the authoring portlet shows only items that users need to see.

Optionally, the Customizable Template Portlet is a good choice because it allows you to hide fields that users do not need. The Customizable Template Portlet is very easy to use. Fields are preselected, such as the authoring template and site area. Thus, one Customizable Template Portlet is for one type of content only, unless you do more customization. (See 13.2, “Using the Customizable Template Portlet” on page 535 for more information.)

Creating content using the authoring portlet

After selecting the appropriate authoring template for the intended content, you have to select the site area to which the content is linked. The site area is the hierarchal location for the content. Navigators use this hierarchy to display the content that is linked to the different site areas. Web site visitors find the content when navigating through the Web site. After the content is saved, you can link it to other site areas to create a broader usage of the content item.

For example, the River Bend Web site offers coffee from different countries. Information about a new harvest of Colombian coffee should appear in the Columbia page. However, because Colombian coffee is sold in shops in multiple locations, the shop information pages for different locations should also contain that document. So, in addition to being linked to the Colombia site area, the content is also linked to other locations. Then, the fields are filled with the content. If authors tend to be creative with their content, you might want to give them the opportunity to express the creativity in Rich Text and image fields. On the other hand, limiting creativity by providing simple text fields might be the appropriate choice because all design elements are used in the presentation

layer to apply corporate design, including fonts and font sizes, colors, and alignment. The same principle applies to using HTML text or PHP.

Many users prefer to use pictures in their Web content. Predefined image resources provide images that fit the design in size and color, which can be used through component resource fields. However, this use can limit the creativity of content authors to a reasonable level. You should define the appropriate set of options that are available to content creators and apply those options to the authoring templates to fit corporate needs and objectives for using IBM Workplace Web Content Management.

5.3.8 Site framework

A *site framework* reflects part of the information architecture of a Web site. A lack of investment in the information architecture can result in an accepted Web site that has a poorly architected site framework. Unfortunately, this situation is often identified *after* IBM Workplace Web Content Management projects have already progressed into late stages. For a discussion how to achieve a meaningful, comprehensive and well-accepted site framework, see Chapter 6, “Information architecture and site design” on page 199.

A site framework provides a hierarchical structure for the Web site and is the base for the final Web site’s navigation. The content is linked to the site framework and is identified for display on the Web site using the content’s site framework information as search criteria for navigators and menus.

The navigator and menu design components use the site framework to create a site map (also a navigator), navigation, breadcrumbs, and menus. Because these elements are created dynamically at run time, there are no broken links when a site area is changed or moved.

Archive

Figure 5-19 shows River Bend's site framework and the resulting site map navigator.

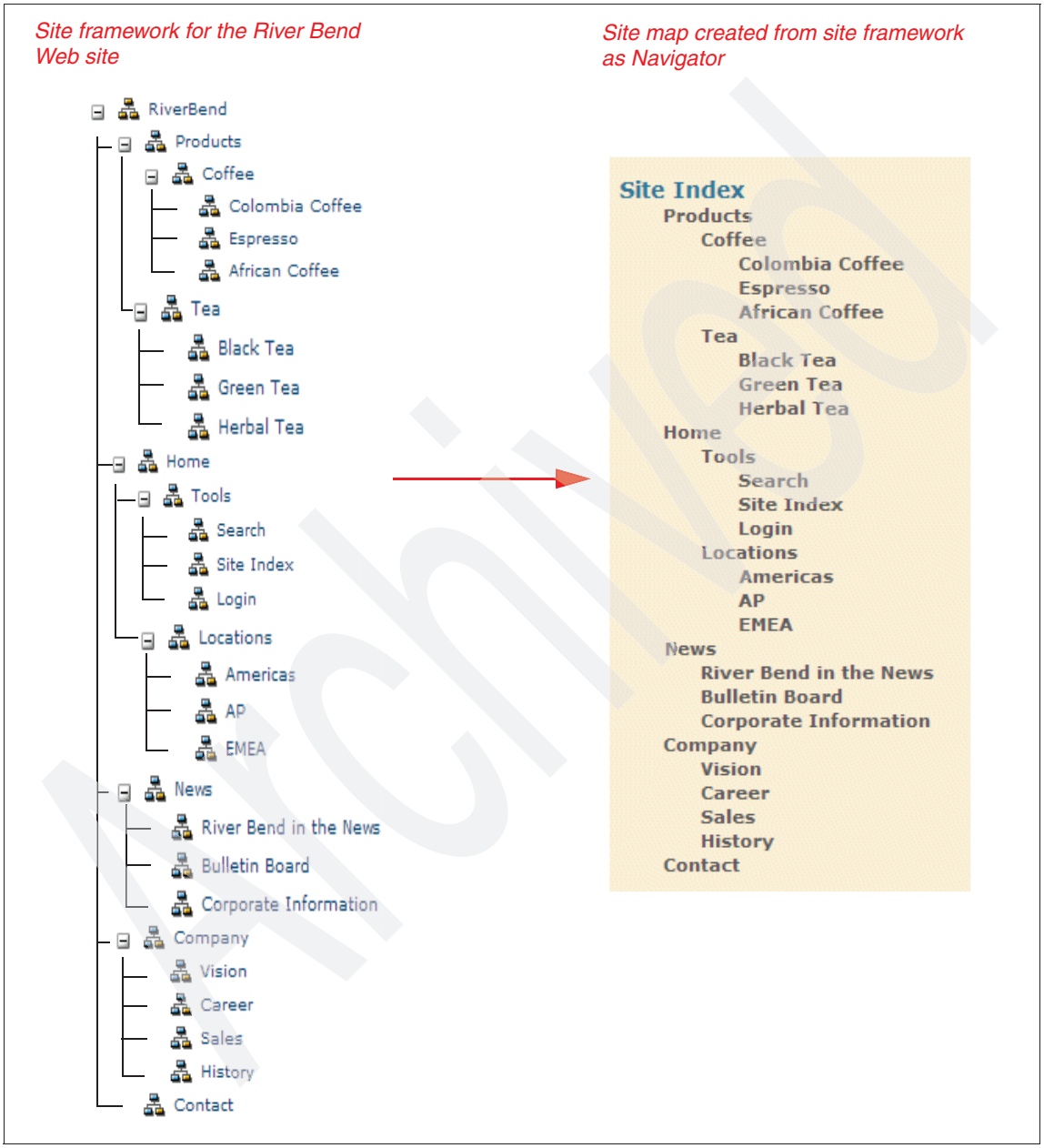


Figure 5-19 River Bend site framework and site map

Archive

Site

A *site* is the root for Web site's hierarchical structure. Although it is possible to manage several sites in the IBM Workplace Web Content Management site management interface (for example, several Web sites are hosted), one Web site is based on one site only. The site can define relationships between authoring templates and presentation templates for the whole site as shown in Figure 5-20. These settings are overruled by definitions set in site areas.

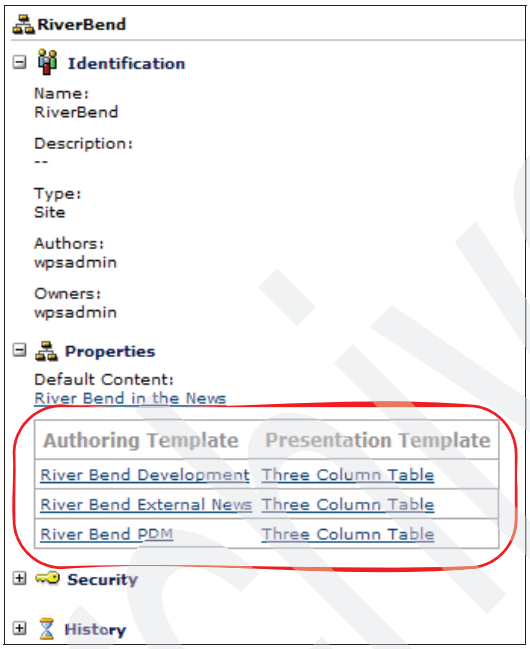


Figure 5-20 River Bend site that pairs authoring templates and presentation templates

Site area

A *site area* is a unit within a site framework where content items are grouped together. You have to define the default content for a site area. The default content displays when the page is opened. Without default content assigned, the page cannot be viewed in the browser.

Default content, of course, can contain component references that allow individual designs for different site areas and content pages. In the River Bend Web site, some content items reference a menu component. The menu displays content that is found using the menu's search criteria. (See "Menu component" on page 182 for details about menus.)

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Before the content can be viewed on a Web site, each authoring template has to be paired with a presentation template. Doing so on the site level underlying site areas can inherit the pairing. Pairings on site area level can define new pairs for the specific site area and below.

Site areas allow the use the component manager to add component fields or component reference fields to the site area document. (Identical functionality is available in content items.) Using this feature in site areas allows you to define design or content items to be displayed on selected site areas.

Creating and maintaining site areas is performed by site administrators rather than by users or content creators. Site administrators are expected to be more literate and advanced using components. Therefore, it might be easier for them to manipulate the design of site areas than placing the task into content creators' hands who need extra guidance to understand the component library philosophy.

Referencing a menu in a site area rather than in a content item (as shown in 7.19.1, "Referencing site area menu in specified content pages" on page 316) has the advantage that the menu item is predefined in the site, and an content author does not have to know how to do perform the task or which component to reference.

Site and site areas in a site framework can be classified into parents, siblings, and children (Figure 5-21), where the site is the parent for preceding site areas but has no parent or sibling itself because it is the only root for a site framework. Site areas always have a parent and often siblings and children.

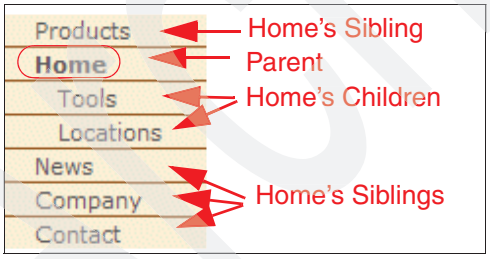


Figure 5-21 Parent, sibling, and children hierarchy

Archive

5.3.9 Design and development components

Having discussed all content related and main architectural elements, we now discuss the design and development components. Design and development components define the Web site's appearance and assure corporate identity.

Presentation templates

In the presentation template, everything that we have discussed thus far and all the components come together to form the Web pages that are viewed by site visitors. The presentation template combines all layout and design elements needed for the Web site appearance, as shown in Figure 5-22.

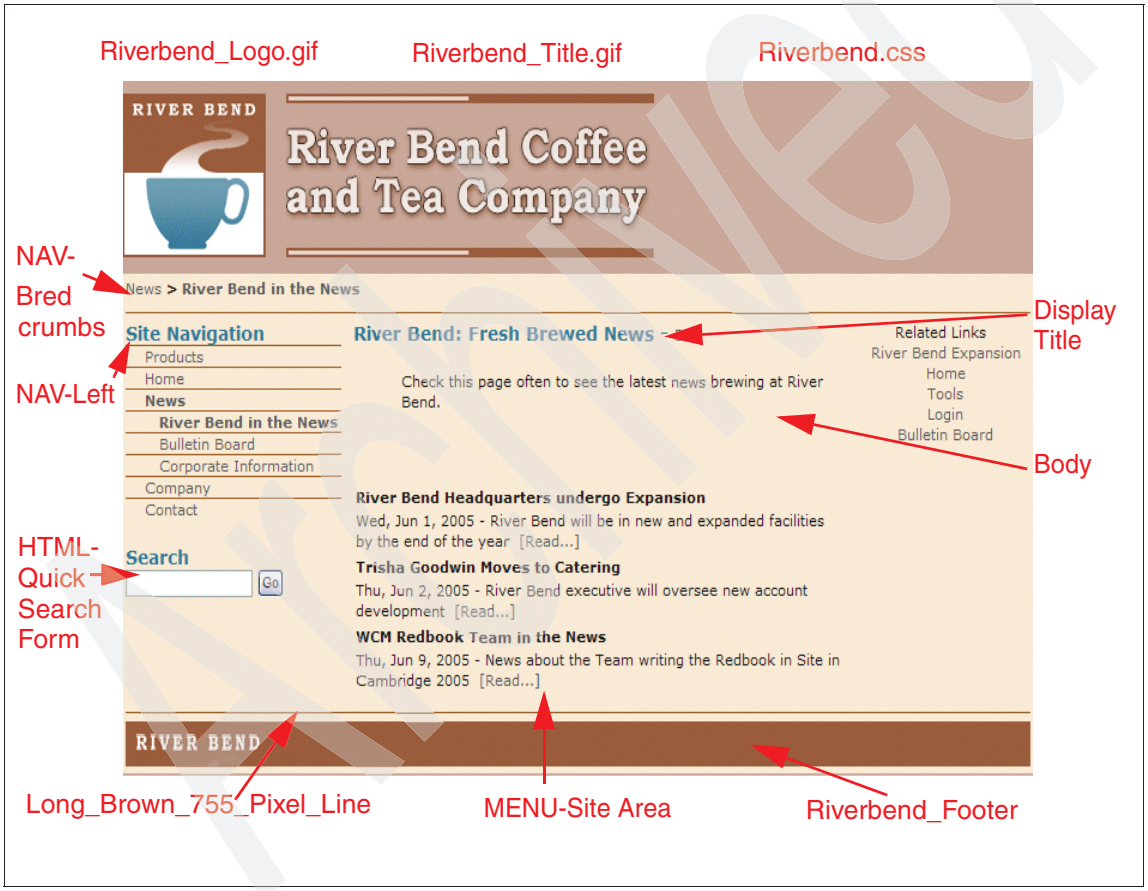


Figure 5-22 Site area for River Bend in the News and its referenced components and items

The River Bend Three Column Table presentation template displays a stylesheet and several images to create the overall layout which is consistent for all pages.

IBM Workplace Web Content Management references components in the component library by its name, as shown in the following example:

```
<link rel="stylesheet" href='<AptrixLibCmpnt name="Riverbend.css"/>'>
<AptrixLibCmpnt name="Riverbend_Logo"/>
<AptrixLibCmpnt name="Riverbend_Title"/>
<AptrixLibCmpnt name="Long_Brown_755_Pixel_Line"/>
<AptrixLibCmpnt name="Riverbend_Footer"/>
```

A site navigator is referenced at the left side of the page as well as a breadcrumbs navigator beyond the logo area (Figure 5-23).

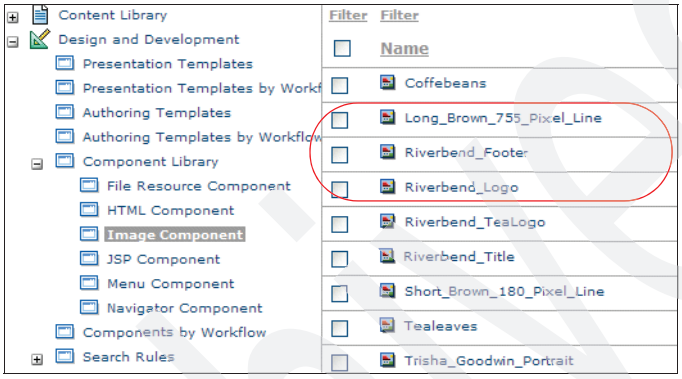


Figure 5-23 Image components

These are library components that are referenced in the same way as the image components, as shown in the following example:

```
<AptrixLibCmpnt name="NAV-Left"/>
<AptrixLibCmpnt name="NAV-Breadcrumbs"/>
```

The navigator a search area displays using an HTML component. The HTML component is also a component library component and is referenced as the other components by its name, as shown in the following example:

```
<AptrixLibCmpnt name="HTML-Quick Search Form"/>
```

The component library components state clearly that content does not play a role in the layout of a page.

The content is referenced in the presentation template. In the center area, content items fields are referenced. Content items are stored in the content library that is sorted by several different criterias. The Three Column Table presentation template references the Display Title, Prebody, Body, Content Image, and PostBody fields using the field names as identifiers or keys.

Archived

All fields are referenced in a current context. The current content is the content item to which the user has navigate using the navigator on the left side of the page. The type content states that a content item is referenced, as shown in the following example:

```
<AptrixCmpnt context="current" key="Display Title" type="content"/>
<AptrixCmpnt context="current" key="PreBody" type="content"/>
<AptrixCmpnt context="current" key="Body" type="content"/>
<AptrixCmpnt context="current" key="Content Image" type="content"/>
<AptrixCmpnt context="current" key="PostBody" type="content"/>
```

The PostBody does not display a simple text value such as the Display Title field but displays a component. For the River Bend in the News content page, the component reference MENU-Site Area is entered in the PostBody field, as shown in Figure 5-24.

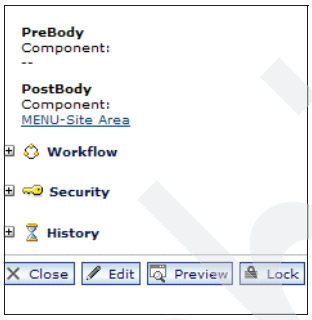


Figure 5-24 River Bend in the News PostBody Component

The menu displays all content items that are found in the site area for River Bend in the News. As shown in Figure 5-22 on page 174, there are three content items displayed in the menu.

Alternatively, a component from a site or site area could be referenced. The River Bend Web site uses this alternative for the Colombia Coffee, Espresso, and African Coffee site areas. These site areas contain a component reference which references the MENU-Site Area. To display the menu in the presentation template, the following reference with the type `sitearea` is used:

```
<AptrixCmpnt context="current" key="Menu" type="sitearea"/>
```

For the River Bend Web site, the effect on the page is identical to the use of a menu in the PostBody field. However, the reference in the site area is created by a site administrator who is familiar with the existing components and their usage, where content authors are not trained using components but are familiar with how to create content.

Archive

Thus, referencing components from within a site or site area can reduce training needs for users and can increase design flexibility.

Note: If a referenced component does not have a value to display, nothing is shown on the Web site. The PreBody and Content Image fields in the content item that are displayed in Figure 5-25 on page 178 are empty, and the references do not appear on the page.

Note: When a new presentation template is created, remember to pair it with the appropriate authoring template in the site framework.

Component library

The component library is the home of all components. Each of them can be referenced with the component library tag throughout the other items and also in the components themselves.

Navigator component

The navigator provides a mechanism that allows users to move around the site. A navigator uses the site framework to create links to different site areas or documents in the site automatically. Because it is based on the site framework, the navigator displays the hierarchy of the information architecture. Thus, when a site framework or a site area changes, the navigator is updated dynamically, eliminating the need for re-coding and preventing the possibility of broken URL links.

For example, the River Bend Web site displays a navigator on the left side, called NAV-Left, which offers the main navigation through the entire site framework, making all site areas available for browsing. This navigator displays site areas beyond the root, which is the site named River Bend. Browsing through the navigator and clicking a navigator section or site area displays one (or more) children site area levels (if children are available). The sections that a user selects or activates for browsing are highlighted in bold, indented, and separated by a small brown line. For each level (that is, each site area), the default content for the site area is shown in the middle of the page, as shown in Figure 5-25 on page 178.

Archived



Figure 5-25 NAV-Left on page

When building the navigation, you have to define the navigator start site area. For the NAV-Left, the start area is selected and the River Bend site is chosen. Thus, navigation starts from the root of the site framework. The navigator does not include the node start, because the root node for the River Bend site is not displayed in the navigator.

Because the River Bend Web site does not have ancestors, the ancestor level is none. The navigator displays one descendant level when a site area in the navigator is activated. Also, note that the preceding sibling's level and next sibling's level are not relevant because the navigator starts already at the root level without including a start node, which is a requirement for the sibling values. If we start the navigator at a lower level, we would have a reason to include siblings for navigation. In the case of the River Bend site, however, sibling values do not exist.

Archived

Figure 5-26 and Figure 5-27 explain the ancestor, sibling, and descendant level concept. In Figure 5-26, *Home* is the selected site area. A preceding sibling is *Products*, and the next siblings are *News*, *Company*, and *Contact*. No ancestor is shown. The first level descendants for *Home* are *Tools* and *Locations*.

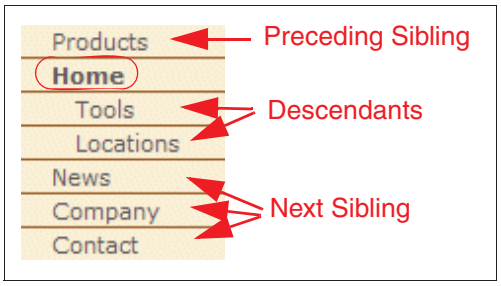


Figure 5-26 Descendants and siblings in the River Bend navigator

In Figure 5-27, *Tools* is the selected site area. *Home* is the ancestor. The descendants for *Tools* are *Search*, *Site Index*, and *Login*. The next sibling is *Locations*, and there is no preceding sibling.

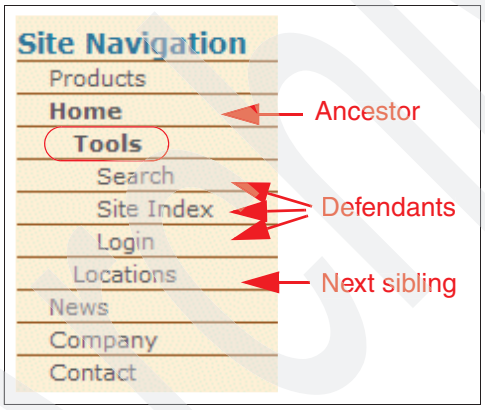


Figure 5-27 Siblings and children in the River Bend navigator

Archived

The definitions and values for NAV-Left are as follows (illustrated in Figure 5-28):

- *Show Site* displays the River Bend site in the navigator, which is not intended. Remember, *Include Start* is not selected for the selected start area, so *Show Site* reverses that choice.
- *Show Content* is not selected, so no content names are seen in the navigator.
- Selecting *Expand Current* expands the site area and shows one descendant level.
- The option to highlight navigator content using component designs is not selected. You can format for active navigator sections using code in the Header, Footer, Separator, and Component Design fields.

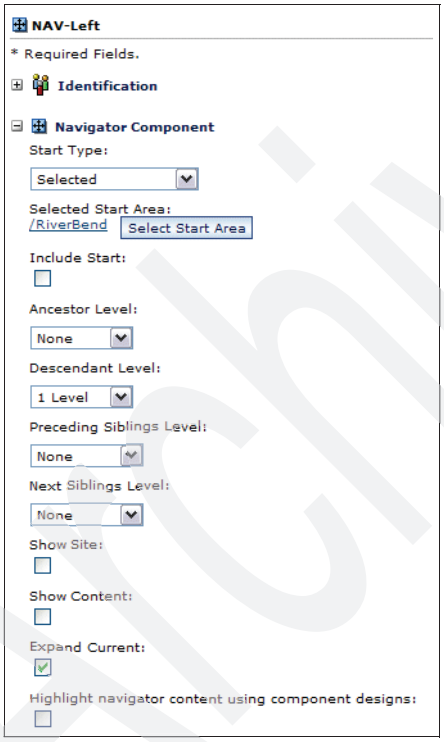


Figure 5-28 Definitions and values for NAV-Left

The Header text, *Site Navigation*, is formatted with the contrastHeading font class as shown in the following example:

```
<font class="contrastHeading">
Site Navigation
</font>
```

Archived

The footer stays empty and the Short_Brown_180_Pixel_Line image resource is referenced as a separator for navigator sections as shown in the following example:

```
<AptrixLibCmpnt name="Short_Brown_180_Pixel_Line"/><br>
```

Component Design 1 defines the indent of three spaces, and the alternate design — plain text versus bold — is defined using HTML components for the navigator sections as shown in the following example:

```
<IndentCmpnt offset="0" repeat="   "/>
<AlternateDesign highlight="HTML-Layout-Main Nav Bold"
normal="HTML-Layout-Main Nav Plain" type="Any"/>
```

This is one example of how a navigator can display site navigation. River Bend Web site uses other navigators in addition to the NAV-Left navigator.

The navigator *NAV-Site Map* displays all site areas at once (Figure 5-29). The displayed sections or site areas are reference links to the default content for the activated site area. The references for links in the NAV-Site Map uses placeholder tags as follows:

```
<a href='<Placeholder tag="href"/>'><b><Placeholder tag="name"/></b></a><
```

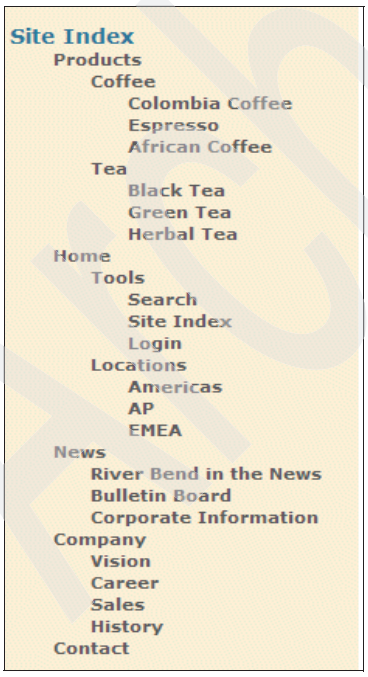


Figure 5-29 River Bend's site map

Archived

Menu component

A *menu* is ultimately a search mechanism that groups together related documents based on specific criteria such as categories, keywords, authoring templates, site areas, and so forth.

To users, menus and navigators provide similar functionality, which allows a user to navigate around the site or to locate specific content. A menu differs from a navigator in the way that t is constructed and in the way that it displays the resulting links. A menu displays content, while a navigator displays site areas for navigation. Think of a menu as a *list* of documents grouped by a number of different criteria (categories, site areas, keywords, and so forth).

When a document is created, changed, or deleted, menus are updated dynamically, and the link lists displays the recent changes, eliminating the need for re-coding and preventing the possibility of broken.

Important: Menu-landslides are updated automatically to reflect changes in the content library. Their consistency is maintained by the system.

Menus display links as images, icons with text, links with a summary, or many other combinations (see Figure 5-30 on page 183).

Archived

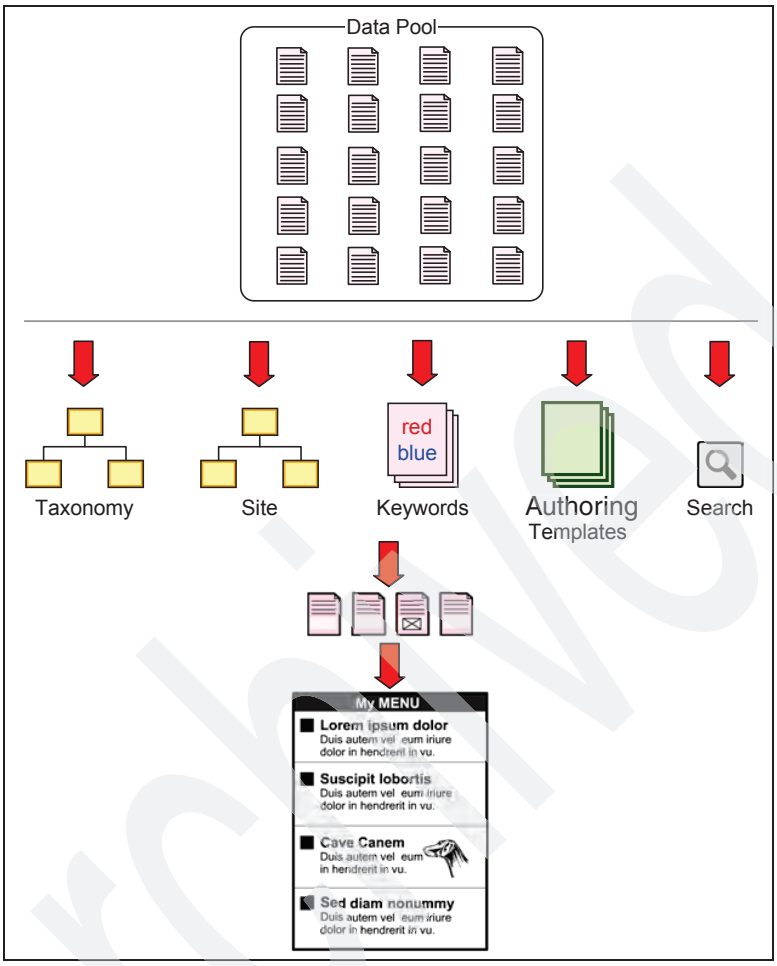


Figure 5-30 Menu construction from various selection criteria

Archived

The River Bend Web site displays content that is created for the River Bend in the News site area through the menu *MENU-Site Area* (Figure 5-31). The menu displays the display title, creation date, summary, and a link to open the document so that the user can read the entire content.

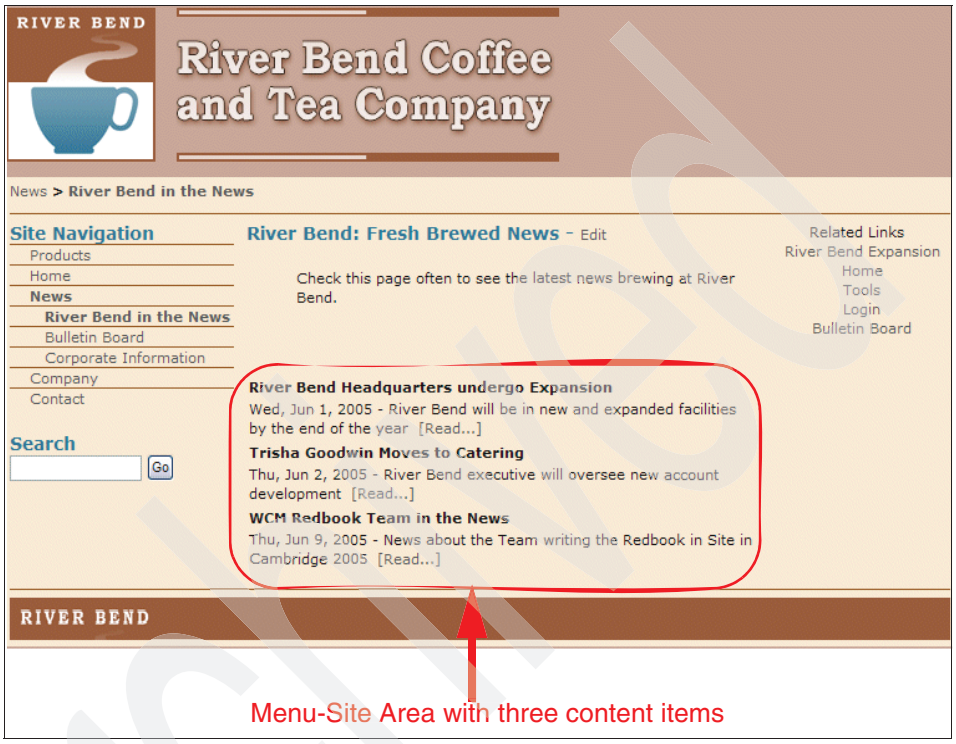


Figure 5-31 MENU-Site Area on River Bend in the News page

The following options define a menu using the menu MENU-Site Area for search criteria:

- The available selection criteria can create very granular menus. In the River Bend Web site, the *MENU-Site Area* definitions are kept very general.
- Matching content associated site areas define a menu for content that is linked to the selected site areas using the *Select Site Areas* button. This action makes the menu specific for a certain site area but not generally usable as the MENU-Site Area is intended. It has to be usable for every site area in the River Bend Web site.
- Similar to navigators, ancestors and descendants can be included in the menu selection by select the *Include all Ancestors* and *Include all Descendants* options.

Archived

- The Matching Authoring Templates option — used in the MENU-Related Links — identifies content that is created using the authoring template that is selected for this option. This option is not related to the hierarchical site framework structure but finds content beyond and independently.
- Matching content that is associated with categories takes advantage of content categorization. Again, independent from the hierarchical site framework, all content is found that contains the categories as specified in this field. Selected the results must match all categories option creates a AND link between all categories.
- Identical functionality as matching content that is associated with categories provides the *Matching Content Keywords* field. However, the keywords have to be typed rather than selecting them from a list. The related field in the authoring template — whose values are compared in this option — is also a text field where users enter the keywords. Finding content with this option can be difficult as no guidance on keyword spelling nor a list of existing keywords exists.
- Identical to these options, the *Matching Profile Search Rules* option allows the user to select search rules as identification criteria for content. (For information about search rules, see 5.3.10, “Search rules” on page 194.) By default available options are:
  - Current Content Categories:

    The menu displays content profiled with the same Categories as those used to profile the current content.
  - Current Content Keywords:

    The menu displays content profiled with the same Keywords used to profile the current content.
  - Current User Categories:

    The menu displays content profiled with the same Categories as those selected by the current user
- For the *MENU-Site Area*, all the values are empty.
- Selecting the *Only Include current Site Area* option finds all content items that are linked to the current site area which are activated by the user by clicking an element in the navigator NAV-Left.

The following options define the presentation of content using the menu MENU-Site Area:

- The current document can be included in the displayed menu by selecting the *include current document in results (if applicable)* option. The *if applicable* text reminds you that a menu can be displayed in a content context and also can be based on a site or site area.

Archive

- The ascending order for results option is selected. Alternatively, deselecting the field creates a descending order based on the sort key of Results Primary, Results Secondary, and Results Tertiary sort key fields. Available sort keys are: name, description, published date, and last modified date.
- MENU-Site Area items are sorted first by publish date and then by name and tertiary bay description. This selection shows the newest document at the end of the list.
- The results per page is set to zero (0) to allow all items to display on one page regardless of how many are found. Increasing the number changes the number of documents that display. For example, changing the results per page to 3 displays documents 1 through 3 on page 1, documents 4 through 6 on page 2, and so on.

  For a better overview, limit the number of displayed documents to no more than 10. Also, sort in reverse order so that the newest document is at the top of the list.
- The Start Page field defines on which page results display.

The following fields define the design for the menu to appear on the pages through text, tags, and components:

- Header Design can specify a header text or component to appear before the menu list. The MENU-Site Area header is empty.
- The appearance for the Menu elements are defined in the Component Design for each matching Content field. The MENU-Site Area uses a HTML Component reference:

  ```
  <AptrixLibCmpnt name="HTML-Layout-Standard Menu"/>
  ```
- The footer defines the design below the menu and separator between the menu element. However, for the MENU-Site Area, these fields are empty.

Archived

Figure 5-32 illustrates these options.

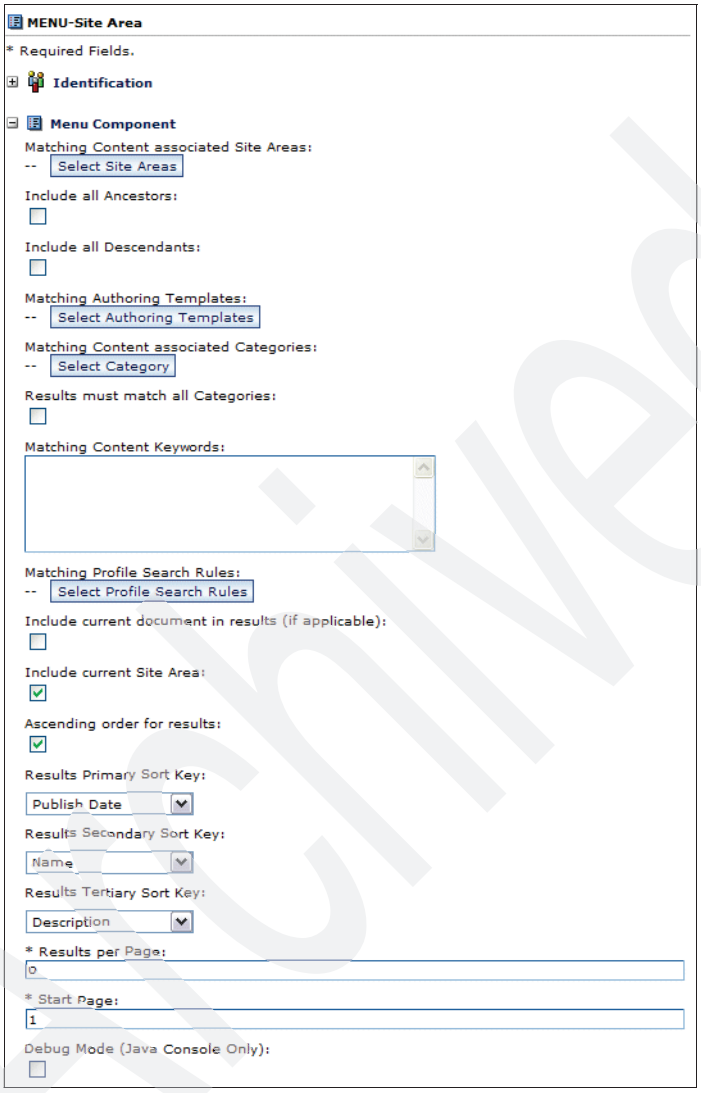


Figure 5-32 Definitions and values for MENU-Site Area

A second menu, MENU-Category, which we used in Chapter 7, “Building the River Bend Web site with IBM Workplace Web Content Management” on page 253, uses the Espresso category as search criteria. This category allows the user to find content throughout the Web site independently of a site area. (The menu concept allows the combination of categories and site areas as search criteria.)

Archived

The MENU-Category is referenced in the Espresso site area rather than in a content item. In this case, the *MENU-Category* appears on the Espresso site area page and displays content that has the category *Espresso* (title of *Rich Colombia Coffee from West coast Plantation*). At the same time, the same MENU-Category is linked to the *Colombia Coffee* site area and displays on the Colombia Coffee page as well through the Menu-Site Area. Thus, the same content displays by two different menus that use different search criteria.

Text component

You can use text components to store text or HTML as reusable text modules. For the River Bend Web site, you can create text components to describe standardized processes for coffee and tea production, such as roasting or picking. (Tea picking is different from coffee picking.) You can use the text components as standard text blocks in the Coffee and Tea product description pages.

Rich Text component

The Rich Text component is very similar to the text component. However, Rich Text components can reference one or more components using tags and also provide a Rich Text editor for formatting text and HTML. You can use a Rich Text component on the River Bend Web site on the Coffee and Tea product pages to provide a standardized purchase order form on each page. The Rich Text component reference the form and its components (design, buttons, and so forth).

File resource component

File resources are components that provide a central repository for files, images, stylesheets, and so forth. Authors and site designers can reference the file resources. The River Bend Three Column Table presentation template references the Riverbend.css stylesheet as a file resource component as shown in the following example:

```
<link rel=”stylesheet" href='<AptrixLibCmpnt name="Riverbend.css"/>'>
```

Another example of a file resource component is graphics that are used to polish the River Bend Web site. The navigators do not use any symbols (such as arrows) to indicate activated sections. You could store a graphic as a file resource to serve as indicator for an activated selection.

HTML component

You can use an HTML component for almost any purpose. An HTML component contains HTML code and often references items, content fields, and components. The River Bend Web site uses the following HTML components:

- The navigator on the left side, NAV-Left, displays its elements in alternating designs. Activated elements appear in bold layout, while other elements use the default layout.

  The bold layout uses the *HTML-Layout-Main Nav Bold* component:

  ```
  <a href='<Placeholder tag="href"/>' >
  <b><Placeholder tag="name"/></b>
  </a><br>
  ```

  The default layout uses the *HTML-Layout-Main Nav Plain* component:

  ```
  <Placeholder tag="namelink"/><br>
  ```

  Figure 5-33 shows the result of applying these layouts.

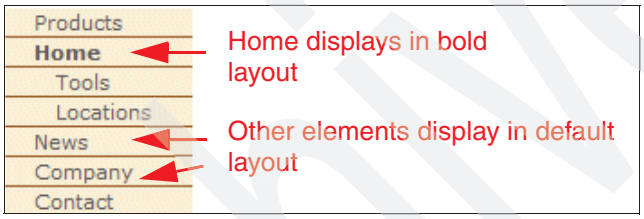


Figure 5-33 Navigator element defined in different HTML components

- The layout for the content, Menu MENU-Site Area, the *HTML-Layout Standard Menu* component to format the date, summary, and a link below the displayed title, as shown in the following example:

  ```
  <table cellpadding="0">
  <tr>
  <td>
  <b><AptrixCmpnt context="autoFill" key="Display Title" type="content"/>
  </td>
  </tr>
  <td>
  <WorkflowCmpnt context="autoFill" field="publishdate" format="EEE, MMM
  d, yyyy" type="content"/> - <AptrixCmpnt context="autoFill"
  key="Summary" type="content"/>
  <a  href='<placeholder tag="href"/>'> [Read...]</a>
  </td>
  </tr>
  </table>
  ```

Archived

Figure 5-34 shows the result of this component.

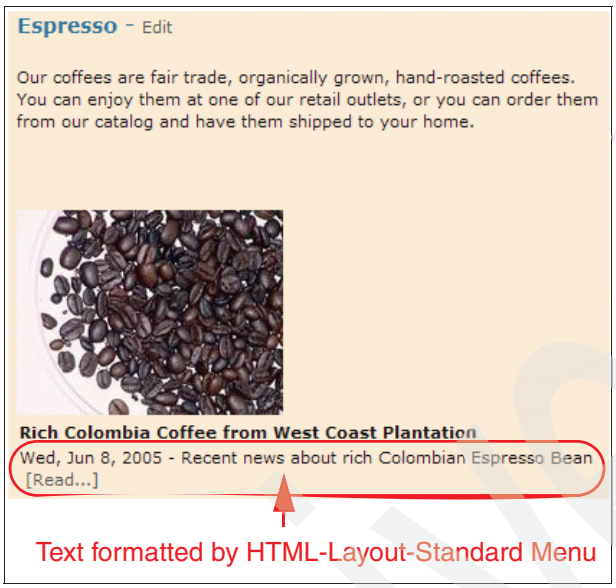


Figure 5-34 Text in Menu formatted with HTML component

Image component

You can insert images that are used throughout the Web site directly into image components fields in the authoring templates. In this case, the author has the option to define the size of the image, which might or might not fit the overall design. Defining images as *image resources* provides identical images for reusage.

Archived

The River Bend Web site uses five image components as consistent design elements in the presentation templates. These are the logo, the River Bend title, the two brown lines, and a footer, as shown in Figure 5-35.

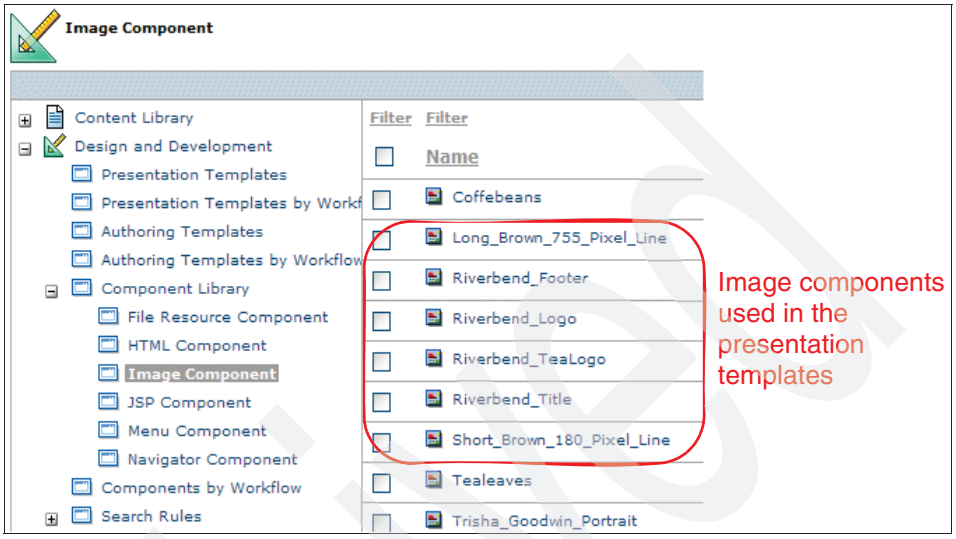


Figure 5-35 Image components in component library

The other images are used in content in the PostBody field. You can reuse the images easily as with *Coffeebeans* for all Coffee-Site Area and *Tealeaves* on all Tea-Site Area related children's pages, as shown in Figure 5-36.

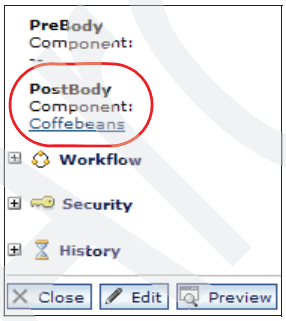


Figure 5-36 Image component used in PostBody field

Archived

JSP component

JSP components store the path to a JSP and the content of a field for an error message in case the JSP is not available. A extended discussion on JSP in combination with the API is found in Chapter 12, “Working with the application programming interface” on page 469 and Chapter 13, “Advanced topics and examples with the API” on page 533.

Document Manager component

The *Document Manager* component is only available for WebSphere Portal 5.1 and requires integration to Portal Document Manage. The Document Manager references a document (that is, a file) that is stored in a Portal Document Manager library.

Restriction: This option requires IBM Workplace Web Content Management to run on the same server as Portal Document Manager.

To create the component, the author has to have access to Portal Document Manager, the library, and the document. Select the document in the interface as shown in Figure 5-37.

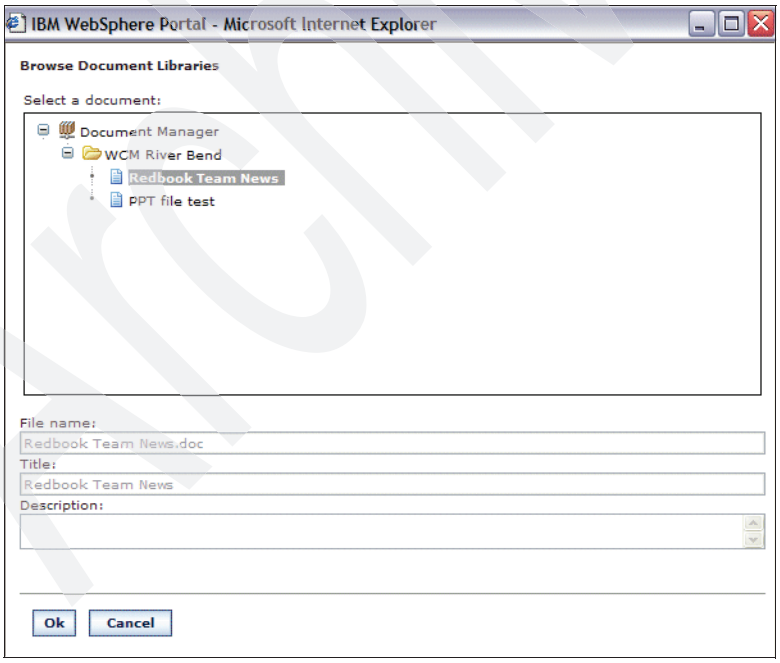


Figure 5-37 Selecting a document in Portal Document Manager

IBM Workplace Web Content Management references the path to the document in the component, as shown in Figure 5-38.

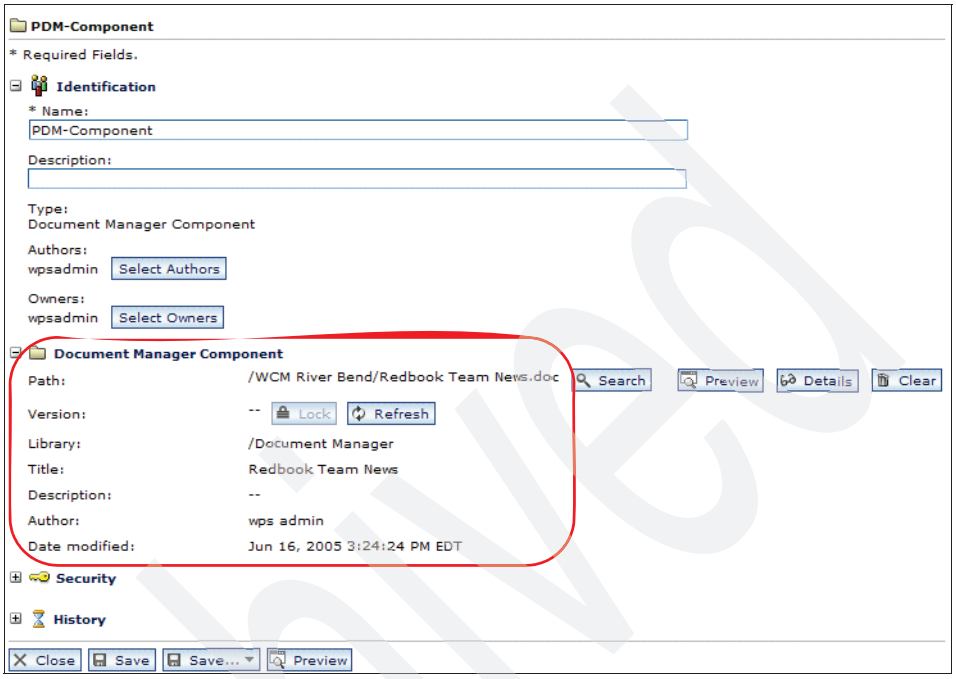


Figure 5-38 Portal Document Manager path reference

The Portal Document Manager component can be referenced in the same way that other components are referenced. You can use it to show not only content but also a URL to the Portal Document Manager file or an attribute of the file.

To reference the component, use the following code:

```
<DocumentManagerLibCmpnt convertTo="text/html" name="<component name here>"
scope="Document"/>
```

For other file formats, you need to adjust the `convertTo` attribute (for example to BMP or JPEG format).

Taxonomy component

Taxonomy components relate often to personalization where lists of categories are presented to the user to select categories of interest. Alternatively, the you can use the taxonomy component to display categories for navigation instead of site areas. However, be aware that this option works only for authenticated users.

Archived

If your site requires this option for anonymous users as well, the implementation is more complex. In this case, you need to create a JSP for an imaginary user for which the component is displayed.

The taxonomy component displays a list of categories, starting with the selected start area (in this case, a category), and displaying the depth according to the Depth field. You can define further selection criteria by using a Profile Search Rule.

You can use the remaining fields to format the displayed categories with a header and footer. The Unselected Components and Selected Component fields contain special layout for selecting categories, which could be checkboxes.

User name component

You use user name components to display components for anonymous users or authenticated users and to create different design experiences based on user names. The logic for a user name component is as follows:

If an anonymous user is using the site, then it displays the Anonymous User Design, or else the User Component Design, where *Anonymous User Design* and *User Component Design* are the fields that are available in the component form. These fields contain designs that are based on HTML code or component references.

A good example for a user name component is a welcome message on a Web site's home page for an authenticated user. The anonymous user does not see a welcome message.

5.3.10 Search rules

Search rules are used in menus as search rules for identifying content. By default, the following search rules are available:

- Current content categories:

  Finds content profiled with the same Categories as those used to profile the current content.

- Current content keywords:

  Finds content profiled with the same Keywords used to profile the current content.

- Current user categories:

  Finds content profiled with the same Categories as those selected by the current user

You can further restrict search rules by creating new search rules beyond the restrictions of the default rules. Available types of search rules are *Restricted Current Content Categories*, *Restricted Current User Categories*, and *Query String Categories*.

Restricted Current Content Categories Search Rules and Restricted Current User Categories Search Rules allow you to restrict search to a certain branch in the taxonomy tree beyond the categories that are defined in the current content or that are defined by the user who uses a taxonomy component. (See “Taxonomy component” on page 193 for more information)

The interface provides only one field to select the restriction, as shown in Figure 5-39.

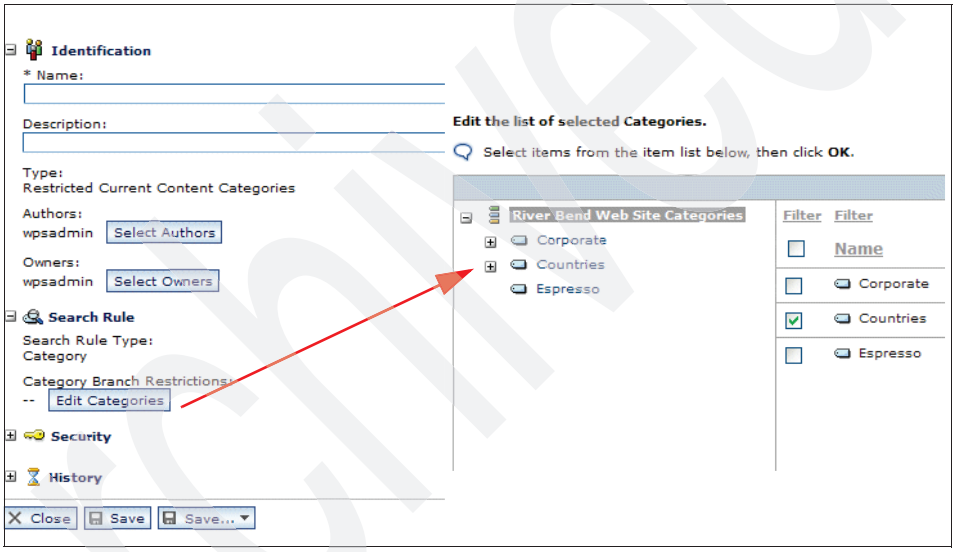


Figure 5-39 Select restriction categories for search rule

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5.4 Integrating Portal Document Manager with IBM Workplace Web Content Management 5.1

Portal Document Manager allows teams, groups, and individuals to set up libraries and folders to manage documents to a certain extent. Although Portal Document Manager does provide some document management capabilities, it is *not* a document management system or enterprise document management system such as Content Manager, DB2 Document Manager, or Lotus Domino Document Manager.

Attention: You can use Portal Document Manager files based on the implementation of the JSR 170 specification that is available with WebSphere Portal 5.1. However, functional limitations apply for IBM Workplace Web Content Management 5.1.

Portal Document Manager documents can only be referenced from the same WebSphere Portal server on which IBM Workplace Web Content Management is installed. Thus, Portal Document Manager files that are referenced from a Portal Document Manager component within IBM Workplace Web Content Management are *not* included in Syndication! If Portal Document Manager files must be available in a distributed environment, you have to develop a process to move Portal Document Manager files from one server to another. You can use the Portal Document Manager export and import functionality to achieve this development.

Because JSR170/JCR was not completed until the end of May 2005, further portal versions will continue the implementation of JCR and will enhance its functionality.

Portal Document Manager integration is available only for IBM Workplace Web Content Management 5.1. There is no installation necessary. However, to use a

Portal Document Manager document within IBM Workplace Web Content Management, you need to do the following:

- In Portal Document Manager, you need to:
  - Create a Library.
  - Create a Folder.
  - Create Documents.
- In IBM Workplace Web Content Management, you need to:
  - Create an authoring template with a Portal Document Manager component. The fields in the new authoring template will match the existing presentation template component references.
  - Create content with the new Portal Document Manager authoring template.

Attention: The Workflow features in Portal Document Manager and IBM Workplace Web Content Management 5.1 are completely independent and do not interact. You should use Portal Document Manager Workflow to approve content that is stored in Portal Document Manager, and you should use IBM Workplace Web Content Management Workflow to approve publication of documents to the Web site.

For detailed information about how to integrate Portal Document Manager with IBM Workplace Web Content Management 5.1, see 7.26, “Integrating Portal Document Manager with IBM Workplace Web Content Management 5.1” on page 341.

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6

Information architecture and site design

When designing a Web site, you should organize information in a way that is readily accessible to users. The structure in which information is organized is called the *information architecture*. This chapter provides an approach for determining the information architecture for the top levels of a Web site. You structure the information that is published on a Web site within a *site framework* that is accessed through Web site navigation. This chapter leads you through the decision-making process by discussing and defining the information architecture, key considerations and decision processes, and information design. Additionally, it discusses how to define criteria for site acceptance and to provide support for a workshop approach.

It is important to acknowledge the relationship between the information architecture and the site framework. The site framework structures the information about a published site and is closely integrated with the Web site navigation. (See 5.3.8, “Site framework” on page 170 for additional details on the importance of the site framework.) To begin, you define an initial site framework with primary and secondary site areas. The site framework is a prerequisite for the design and development of the content management system. In addition, you need to develop an initial layout of the home page based on the primary and secondary site areas. Both the framework and the home page layout require review and validation — with business stakeholders and users — from both an authoring and Web usability viewpoint.

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6.1 Defining the information architecture

Content accessibility on an intranet can have a direct impact on an organization's overall productivity. If users can find the information they are looking for before they even are aware that they are searching, then you have accomplished the goal of organizing the information correctly.

The primary reason to share information about a Web site is to make it available for users. This fact sounds incredibly obvious. However, it is often the central reason why Web sites fail for the following reasons:

- Information is often voluminous and widespread over different divisions within an organization, making it difficult to maintain a consistent oversight of the structure of information and to determine a structure that is easy to understand and to use.
- There is rarely a single person or department with a consistent oversight of all the information that an organization wants to share.
- Information is something used everyday, and as a result, it is often not obvious which information is most valuable or how it should be structured.
- Using a content management system encourages content providers to share more information while getting more experience, resulting in a strain on the primary organization of the content.

The information architecture defines how the information about a Web site should be organized and linked so that users can access content. An organization should investigate, analyze, design, and implement the information architecture for a site. Then, the challenge is presenting a image that enhances how the user experiences the information.

You might find reasons why a specific path to information supports your business needs. The experience a user gets can be the key to success and often reflects the organization’s philosophy. Frequently, an organization builds its success on a unique customer experience that cannot be ignored when architecting a Web site. In addition, the audience can vary such that it becomes necessary to separate users into categories to get a good acceptance of the way information is presented on the Web site. For example, consider the following diverse offerings:

- A food company might offer both traditional, home style food as well as more contemporary fast food.
- A vehicle manufacturing company might have diverse offerings which range from passenger cars, to industrial trucks, to motorcycles (BMW).
- A technology company might offer a range of products and services, from technical consulting services to consumer electronics (Hewlett Packard).

Because of this diverse range of products, brands often get their own Web sites with there own information architecture and Web address (URL). In this case, a master (parent) Web site which includes links to detached Web sites representing the specific branding are the best choice.

Defining the information architecture is often the most underestimated part of a content management project. Organizations frequently spend a lot of time finding the right content management system and then deciding on the best information architecture for that system.

When planning the information architecture, an organization must determine:

- The hierarchical structure of the site
- The functionality that is required on the site
- The look of individual pages
- How to classify the content
- The flexibility of the architecture to allow the business to evolve

The information architecture determines the structure of the site, how navigation is derived, and the ease of navigating the site. You develop the following information architectures when designing a content management system:

- Site framework
- Category hierarchy
- Document type hierarchy

Defining the information architecture lays much of the groundwork for how content is organized on a site. Regardless of where the content resides, you need a good understanding of the content that is to display.

Tip: A good information architecture team includes representatives of all content areas that are included on the Web site. It is also beneficial to have a single person lead the team who is willing to take a leadership role and to make the required decisions.

6.1.1 Base example of a good information architecture

The section presents some examples of a good information architecture and discusses what makes these examples special.

When considering the information to share on a Web site, it is good to have direct access to the top levels of content. These top levels are the logical entrance to information and build the foundation of the information architecture. There are no strict rules governing what these top levels should be.

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The River Bend Coffee and Tea Company Web site

The River Bend Coffee and Tea Company is a virtual company that we use for this redbook to give a simple example of a basic information architecture. This fictitious company sells coffee and tea in different locations around the world. They have a public Internet site to share information with their customers. These customers can be individuals as well as businesses.

River Bend identified the following top levels of site areas or containers for content that are directly accessible from the home page:

- Products
- Company
- Locations
- News
- Contact

From these top levels, a secondary site area allows users to specify what topic they are looking for within that area. For example, the secondary site area for *products* includes *coffee* or *tea*. This architecture provides an obvious separation that users can comprehend and that leads users to exactly what they expect to find.

The third level site area offers more content on the chosen topic. For example, under *tea* users can find *black tea*, *green tea*, and *herbal tea*.

Figure 6-1 illustrates the complete hierarchical structure of the River Bend Coffee and Tea Company Web site.

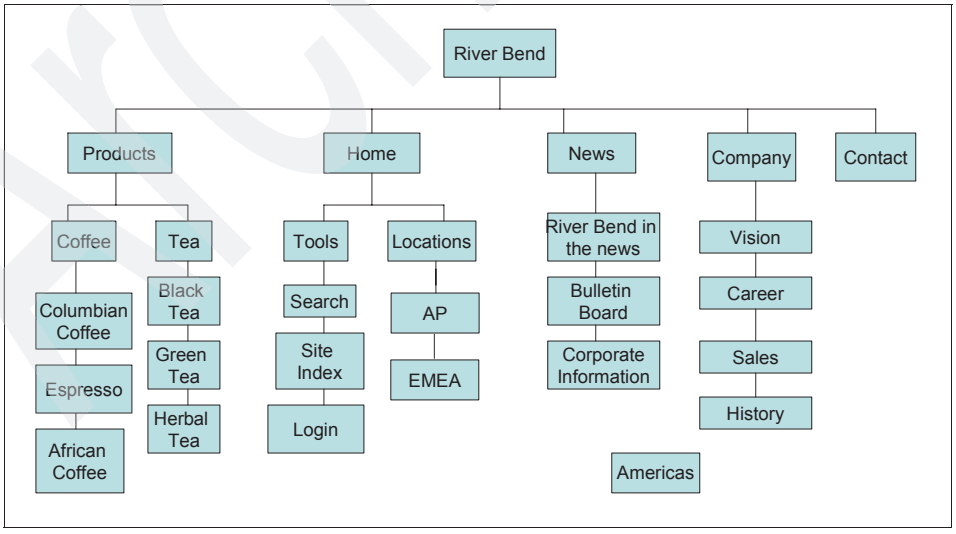


Figure 6-1 River Bend Coffee and Tea Company navigation

The IBM developerWorks Web site

IBM developerWorks is a Web site for technical-oriented users of IBM products. It is a resource for developers. IBM developerWorks offers highly technical information and additional software that is related to all IBM products. The site encompasses a broad scope of content. Visitors to the IBM developerWorks Web site typically have a specific need to find help or the latest news for a particular product. Most time, theses visitors also expect quick answers. Providing this level of support on the IBM developerWorks Web site is a challenge for the information architecture, because the site contains multiple thousands of content pages.

To provide an example, let us look at the structure for the information architecture of the IBM developerWorks Web site. IBM developerWorks is segmented into the following areas:

- Top tool bar

  The top tool bar for the IBM developerWorks Web site contains a regional selection, terms of use, a search function that is separated by area, and the main IBM navigation menus (Figure 6-2). This top tool bar is available on all IBM Web pages.



Figure 6-2 Top tool bar

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- Top-level navigation of IBM developerWorks

  From the top-level navigation, users can reach all product content. The navigator is split into the following parts: products, topics, and feedback (Figure 6-3).



Figure 6-3 Top-level navigation of IBM developerWorks

Depending on the browser technology, visitors have either a dynamic opening second level under each topic or menu options that they can reach by clicking. The secondary site areas are similar for all products. Each contains all related information for that product. Additionally, secondary site areas are structured by relevance to users, ranging from a new user to an expert user. So, the IBM developerWorks Web site uses additional features of the information architecture — *relevance* and *consistency*.

The third level navigation opens above the main content area in the center of the page.

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- Menus

  Depending on the selected navigation level, the right area of each page shows menus as shown in Figure 6-4. (These menus are discussed in detail in 6.3.3, “Using menus” on page 238.) These menus give users one-click access to related content or offer additional features.

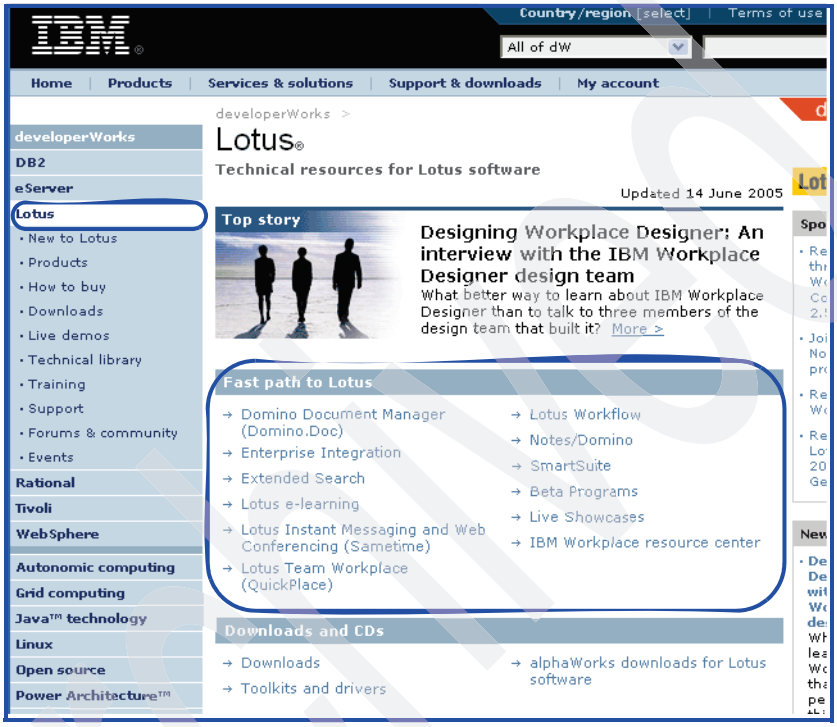


Figure 6-4 Menus

- Main content area

  The center of each page displays the content. Links to further information enrich the content displayed in the main content area.

This structure makes IBM developerWorks a very good example of an information architecture. This information architecture covers several needs, including intuitive navigation, consistent structure, and a user friendly site for both the first time visitor and the frequent user, in a way that serves the wide scope of various content.

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The AO Foundation Web site

Our last example is the Web site that won the IBM Lotus Award 2005 in the category of Best Portal Solution. That Web site is owned by the AO Foundation in Switzerland (http://www.aofoundation.org). We include this Web site as an example because it shows an outstanding information architecture in the area of musculoskeletal injuries. Even though this topic is highly specialized, the information architecture of the site helps the visitor get the information that is required. This example of a highly complex topic that is presented in an intuitive way can be transferred to many different business types.

The AO Foundation is a non-profit organization that is dedicated to improving the care of patients with musculoskeletal injuries and their sequela.[1] The goal of AO is the research, development, education, and quality assurance in the principles, practice, and result of fracture treatment. They structure themselves internally into several institutes and projects that are governed by several boards. The goal of the AO Foundation is the research, development, and approval of every aspect of osteosynthesis methods and devices and to provide the education to spread this knowledge around the globe. Every day somewhere in the world an AO Foundation education class starts. Using these methods and devices, the surgeons and personnel trained in the AO have successfully treated a vast quantity of patients with musculoskeletal injuries and their sequela over the past 40 years. However, information overload was making it increasingly difficult for surgeons to identify and access relevant knowledge quickly. To improve member service, AO Foundation wanted to make the right information easily available to surgeons.

> *Information overload is a huge problem for surgeons. Publications of all kinds help them keep up with developments, but the relevant knowledge to be applied in a clinical situation is often buried and hard to find when needed.*
>
> Michael Redies, Head of Knowledge Services, AO Foundation

Now that we understand the content and the need of the AO Foundation, let us take a closer look at how to fit this information within a successful information architecture. AO decided to develop a comprehensive Web portal that gives members easy, secure access to the organization's breadth of knowledge. Rather than simply transfer written content verbatim to the online environment, AO revamped the information, making it more applicable from a clinical perspective. For example, AO grouped together all of the films, lectures, studies, and chapters relating to various surgical procedures into their own separate, structured repositories. This way, they can quickly lead surgeons through the different steps of an operation rather than making them find and then match sense of disparate pieces of information.

[1] *Sequela* is a pathological condition resulting from a prior disease, injury, or attack (for example, a sequela of polio).

The portal also provides a powerful search engine so users can find the precise information they need from AO's extensive libraries. After initial sign-on, members can also conveniently browse through communal areas while built-in security measures safeguard the research forums from unauthorized access.

On the entrance page, the surgeon finds an overview of the currently available content, structured by a human skeleton (Figure 6-5). This choice option is the top-level navigation and is so intuitive to use that even non-medical, first-time visitors are able to take the first step. This design is a good example that a navigator does not need to be in text form.

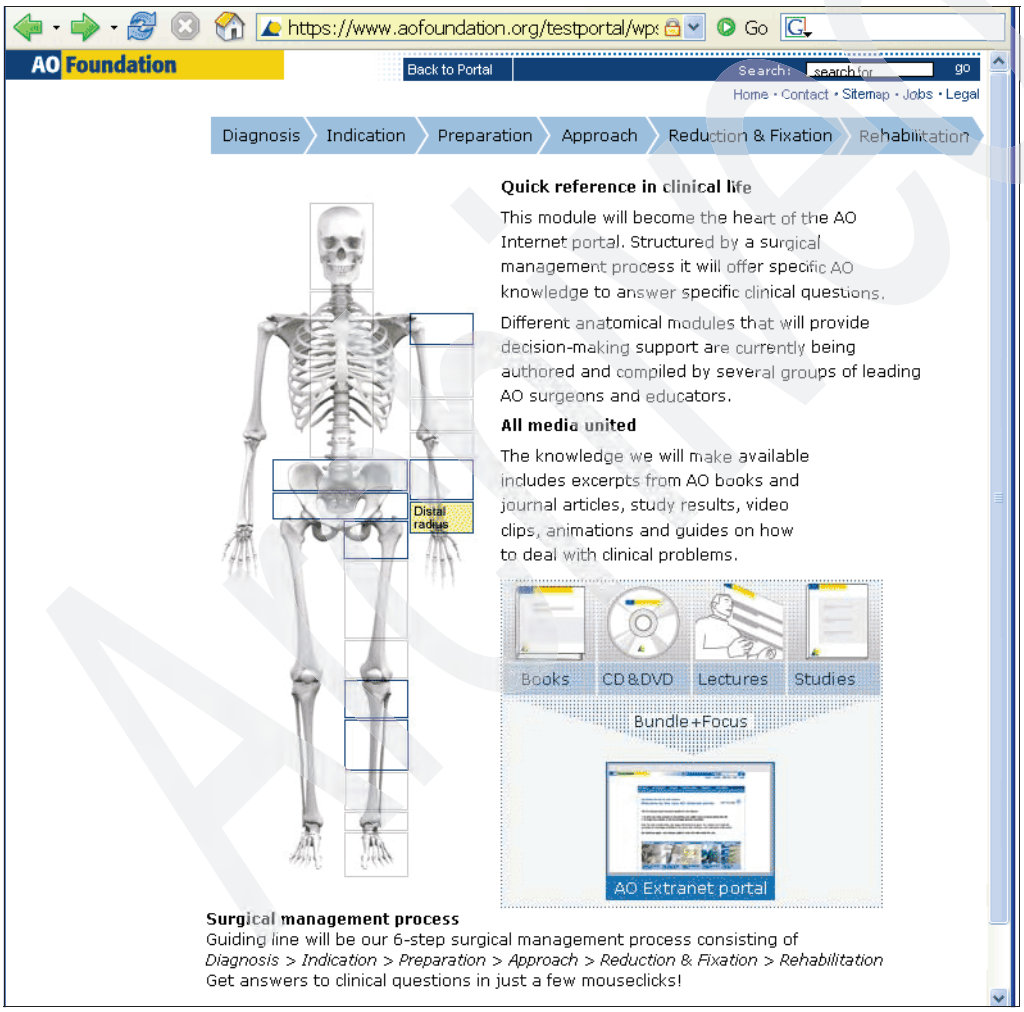


Figure 6-5 The entrance page of the AO Foundation Web site

The second level area is *Diagnosis*, which leads into the diagnosis of fractures. Because bones can break in various ways, the site includes a classification of fractures. When users select a certain bone segment (in our example, we select the wrist — the Distal radius), the page is then segmented into four areas, as shown in Figure 6-6.

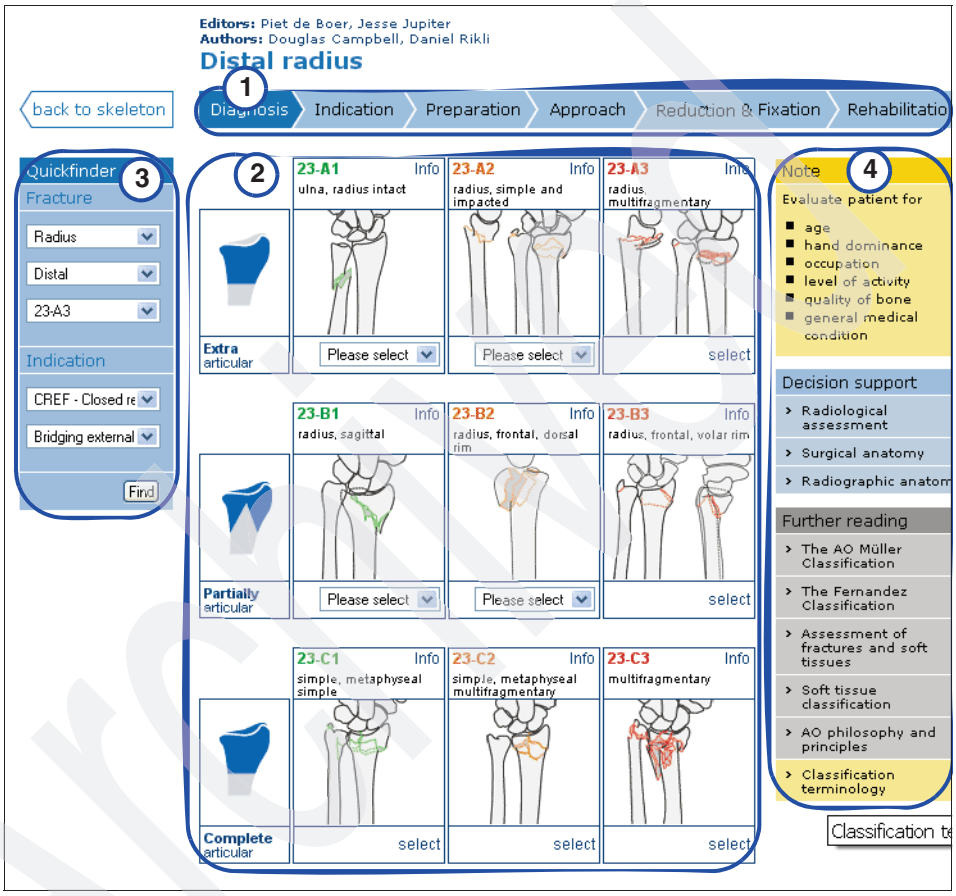


Figure 6-6 AO Foundation second-level navigation

The four areas include:

- Top-level navigation

  The navigation bar on top includes the steps that a surgeon follows when planning a bone fracture therapy.

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- Classification navigation

  The classification navigator is not obviously a navigator. It leads to additional information about a specific topic, as shown in Figure 6-7.

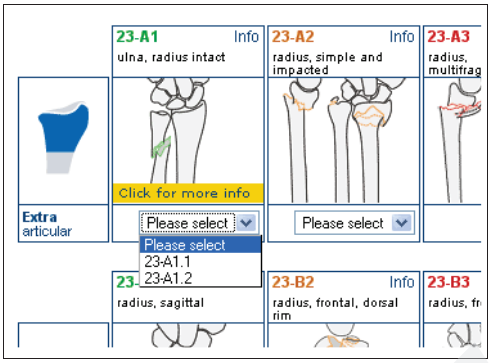


Figure 6-7 AO Foundation classification navigation — additional information

Clicking **Info** or a picture opens a window with additional information, as shown in Figure 6-8.



Figure 6-8 AO Foundation classification information window

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Clicking **Select** leads to the next content level — the *Indication*. If the indication is selected before specifying the diagnosis (that is, the type of break), an information reminds the visitor to select the diagnosis first, as shown in Figure 6-9. This methods displays the full navigation path, but the visitor can only proceed in a given decision flow, using a controlled step-by-step lead through.

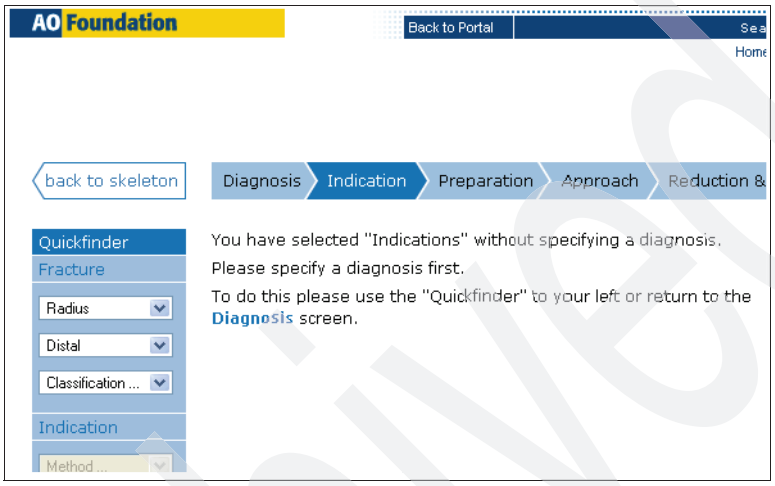


Figure 6-9 AO Foundation Diagnosis selection reminder

- Quickfinder

  The *quickfinder* enables advanced visitors to jump directly into *preparation*, *approach*, *reduction and fixation*, and *rehabilitation* instead of using the classification navigation (Figure 6-10 on page 211). This method is an excellent example of how to give advanced visitors direct access to information. The quickfinder is not a search tool. It supports and follows the controlled step-by-step lead through, but it skips assisting information.

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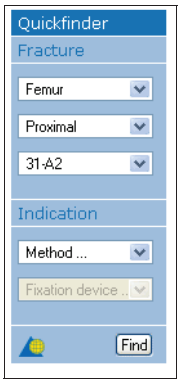


Figure 6-10 AO Foundation Quickfinder

- Note, decision support, and further reading

  This section offers additional information to the displayed content and menus, as shown in Figure 6-11.

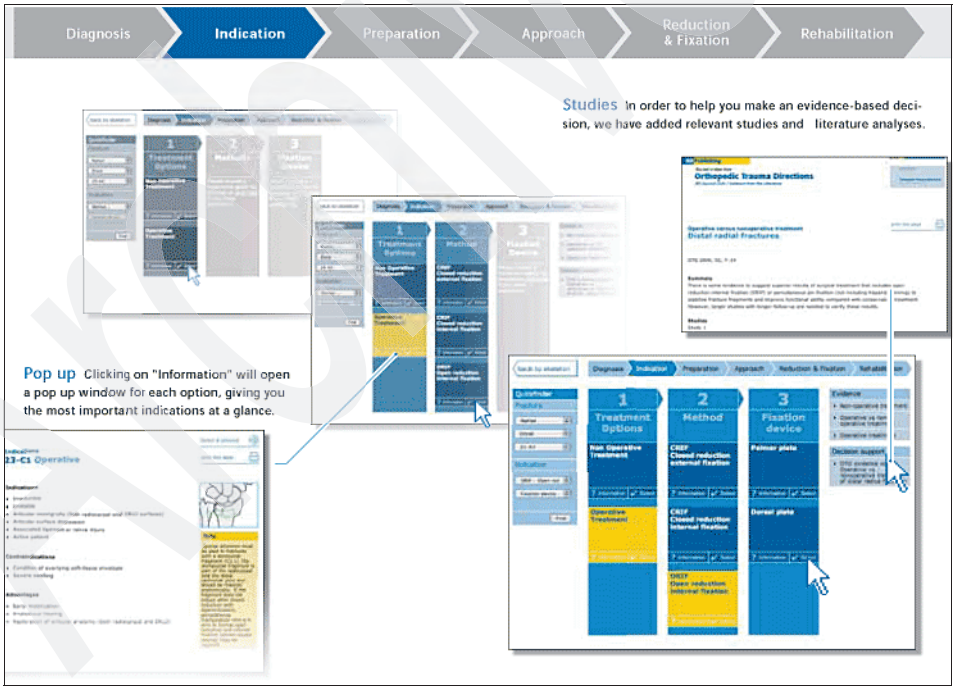


Figure 6-11 AO Foundation indication overview

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The third-level navigation — *Indication* — is where the surgeon decides for a special treatment option, its method, and if necessary, a fixation device, based on the information selected within the Quickfinder, that is 1) Treatment Options (Figure 6-12), 2) Methods (Figure 6-13 on page 213), and 3) Fixation Device (Figure 6-14 on page 213).

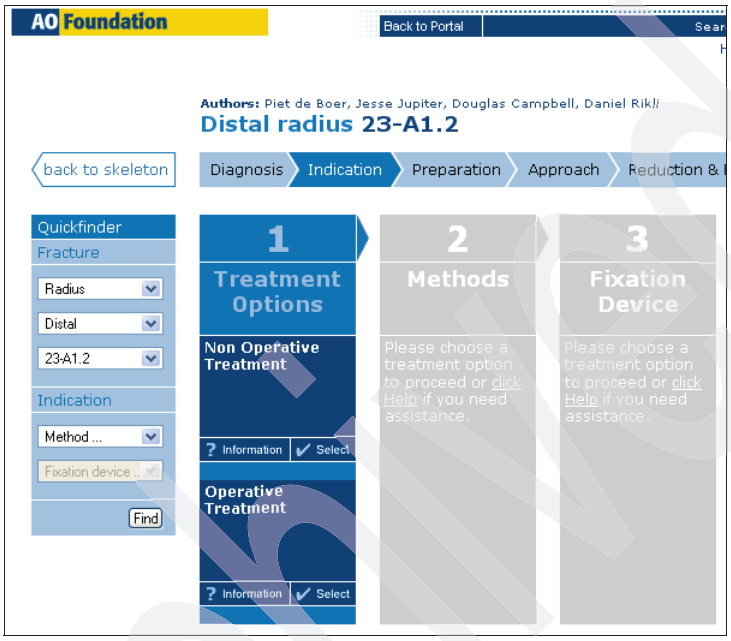


Figure 6-12 AO Foundation indication treatment options

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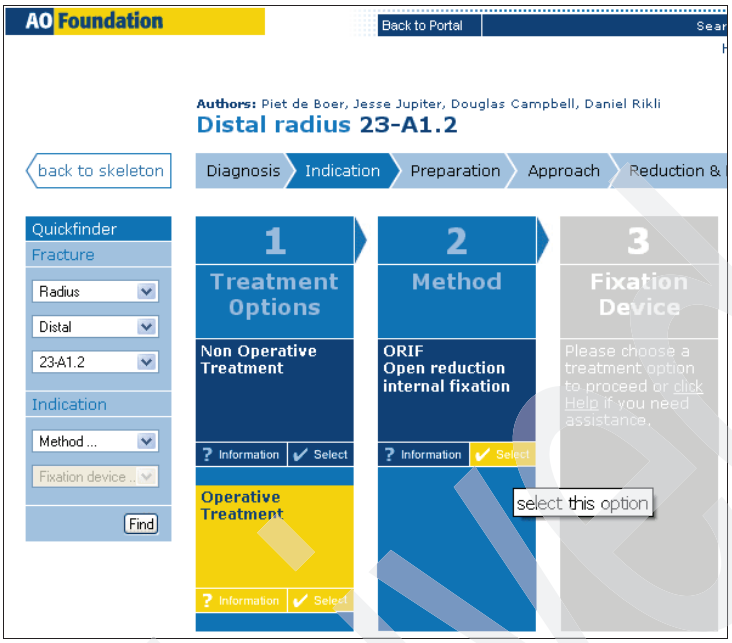


Figure 6-13 AO Foundation indication method

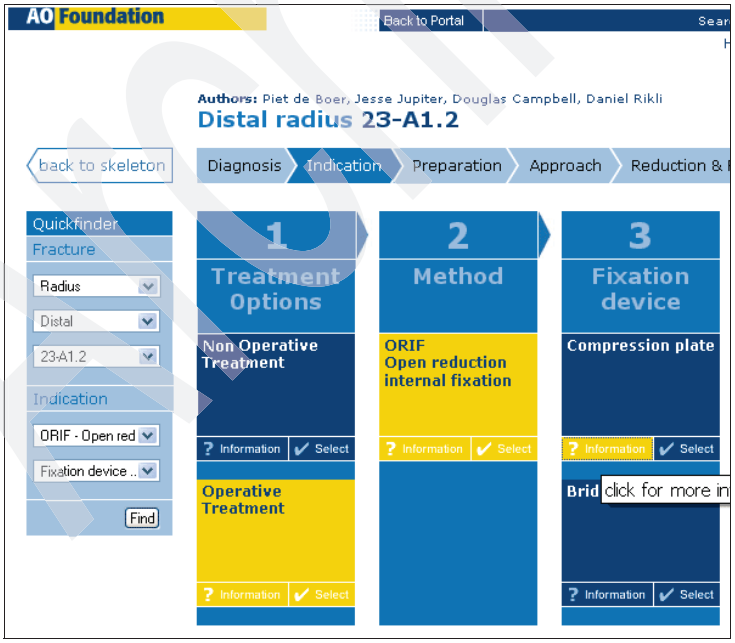


Figure 6-14 AO Foundation indication fixation device

This information architecture enables AO Foundation to include a further decision path within this level without leaving or complicating the overall navigation. Thus, the navigation stays intuitive and follows the decision path. Similar to the *Diagnosis* level, the *Indication* level offers additional information about a navigation topic by clicking that information. For the visitor, it is extremely helpful to know more if required before moving on and perhaps being mislead.

In these figures, we chose an operative treatment (ORIF, Open reduction internal fixation) and a compression plate. The indication navigation stays until we select the last step, Fixation device, Then, the navigation moves to the *preparation* level, as shown in Figure 6-15.



Figure 6-15 AO Foundation preparation

Preparation, *Approach*, *Reduction & Fixation*, and *Rehabilitation* reflect the fourth level of navigation and show content that is based on the navigation that the visitor selected previously.

The AO Foundation Surgery Module is an exceptional example of the information architecture of a highly complex navigation that supports a decision path covering thousands of content documents in an extraordinary and intuitive way. The information architecture also leaves options to expand the content on the Web site.

6.1.2 Results of an inadequate information architecture

Now that we have discussed some examples of good information architecture, this section discusses the consequences of using an inadequate information architecture.

Any Web content management project should point out the results of poor information architecture. For example, an inadequate information architecture shows up as inconsistent Web site structures and a poor user experience. Web sites that spread information over several areas do not follow a consequent architecture. In these cases, users might quickly lose the overview information and then they cannot reproduce the path from which they came. Another common issue with an inadequate architecture is the misapprehension of the user's experience. First time users have a totally different perception than the everyday content owners, where power users expect to access their information needs directly.

At times, an organization does not realize that the design of the information architecture is inadequate until the project is in progress. This can be the direct result of an ongoing analysis of an existing information architecture, or the opportunity to rethink how information is structured. In such cases, projects identify significantly more information and content than originally expected. Why and how does this happen? In many cases, this is the result of content owners rethinking which information should be surfaced. Additionally, content owners are now able to analyze information and content outside of the context of a pre-existing information architecture or navigation structure. Ultimately, this can foster new creativity and might expose the need for a new or more expandable information architecture. If the information architecture is not expandable, an inadequate information architecture is often the result. Either of these reasons can easily cause a Web content management project to be delayed significantly.

Internet or intranet Web sites are stand-alone content sources that use a structured information architecture. In this type of environment, the information architecture forms the foundation for how users consume the content — users visit the Web site to read and find information. Interaction with the user is limited to forms that the user submits. In the case of Portals, the information architecture in this environment needs to support content as well as applications in an integrated manner. In this case, an inadequate information architecture results in a break of information flow.

It is also possible that an organization can use an inadequate information architecture to force users to a certain conclusion. For example, let us say that a car manufacturer's Web site offers a good information architecture for users who are looking for the latest information about new products. However, if users want information about specific supplies (such as winter tires for the automobile), the information architecture is inadequate. The car manufacturer has fundamental

business motive behind this strategy. The car manufacturer wants users to contact a local dealer instead of using the Web to gain this type of information. In this example, an inadequate information architecture forces users to follow the preferred distribution channel and, in turn, helps the care manufacturer's business.

6.2 Key considerations and decision processes

Content accessibility on an intranet can have a direct impact on an organization's overall productivity. Organizations recognize the importance of information architecture, as both the primary prerequisite for designing and developing a new content management system and as the means to organize information in a way that is readily accessible to customer or employees.

One example is a call center that responds to customers using an intranet Portal to maintain contracts and to give information. For this call center, the range of time that is required for an agent to find the corresponding information and to fulfill the required steps ranges from under two minutes to four and a half minutes. Thus, if there are 80 attempts per day to find information and each requires two minutes more than necessary, this call center loses 160 minutes or 2.5 hours in productivity. Even without considering the costs that result from lost productivity, the customer satisfaction will decrease. When users cannot get the information that they need, the organization has a dissatisfied customer or, worse, a lost customer. Then, the effort to win back these customers is significant.

In addition to content accessibility, design flexibility becomes a key success factor for the information architecture of a Web site. One task is to conduct workshops with business stakeholders, including corporate communications and process area representatives. Given that the Web site will evolve as more business users provide input and, more importantly, contribute content, the site architecture can be expected to evolve as well. It is critical that the site framework be developed with flexibility for modification as a key goal.

Remember: In order to develop a good information architecture it is fundamental to understand what that information might be.

This section discusses topics that you should consider when planning the information architecture.

6.2.1 Understand the goals

When designing an information architecture, you first need to understand the business and user goals as well as the audience to whom the information is directed. Before you can look at structures, individual applications, or design aspects, you need to declare which are the business goals and the user goals per definition.

Web content management projects should be driven by defined business objectives, and the primary project goal needs to accomplish those requirements. When the project starts, the business objective is often exposed to discussion as more users provide input, because content providers have a better understanding of the information that the Web site provides. However, this understanding can mislead content providers into believing that they also have a better understanding of the business needs. You need a clear communication from the business constituency to monitor the motivation of the core team and the joint content provider. Unfortunately, Web content management projects often get delayed because of misconceptions between the core team, the content providers, and the users.

Before starting a Web site project, it is imperative that everyone involved understands the defined business goals and the user goals of the project. The challenge is to involve content owners in the defining process but to remain focused on the essentials. The user goals should be related to the users of your site (internal or external) and what experience you want them to achieve when visiting the site.

These two sets of objectives (business goals and user goals) need to be weighed against what is achievable in terms of budget, scope, and other limitations. When the organization understands both goals, there is a much higher chance that the content management project will be successful.

6.2.2 Understand your audience

The project effort will only show a return on investment if the audience can be reached with the business prospective. Any failure made at this point is significant for the project. First, you need to understand the demographics of the audience and why they are interested in visiting the site. What is the business prospective and does this equal the audience view of the business? Users do not have the same tolerance with Web information that they have for printed or broadcasted information. If you cannot meet your audience's needs, you will rarely get a second chance, especially when facing an external audience. In many cases, even employees will revoke an information source that is ineffective.

As stated in the beginning of this chapter, the only reason to share information about a Web site is to make it available for users. The Web site experience is the one experience that is most appreciated by the audience. The usability of the Web site is an essential subject. Usability is required to make sure that the audience can complete the tasks. Usability can only be achieved by meeting the needs and expectations of the target audience.

As a recommended best practice, it is very important to involve users during the process of designing the information architecture. Doing so helps to confirm the usability of the Web site and, in turn, to confirm an effective underlying information architecture. Unfortunately, in many projects, only content owners with a deep knowledge of the content are involved in the design process. While the content owners know the content very well, it is important to involve less experienced users to confirm that the navigation structure is intuitive.

A good approach to understanding the target audience is to gather facts about them. The more that you can gather characteristics that are based on real facts, the closer you can get to finding gaps in the understanding. At times, you might need to classify the audience into groups with individual needs in order to better understand the needs. You might also need to consider cultural, geographic, age, or technical differences. Some audiences need individualisms to have a positive Web site experience. What a specific user might consider appropriate and inviting can be very different from other users. Often, experiences from other Web sites can influence the users of your Web site. A good Web content management product offers the flexibility to set user expectations. Using traffic analysis can help to understand the interests and proceedings of users.

A Web site with a good understanding of the audience offers content in which the user is interested in a way that is intuitive and convenient.

6.2.3 Consider objectives and key success factors

For your Web content management product to be a success, you should consider and define the key success factors that will determine whether the Web site is meeting the objectives. Additionally, you also need to understand how you can measure the key success factors. Take note that higher Web site traffic is not necessarily an indication of a good Web site. For example, repeat visits can only be counted as a success indicator if the visits lead to a positive user experience or, in the case of a commercial Web site, to increase business. There are numerous mechanisms to measure the success of a Web site, including a simple feedback form, an analysis of complex statistics, or using custom-made measuring criteria.

Objectives and key success indicators might include the following:

- Avoid underestimating the role of the information architecture.
- Make a distinction between the business goals and the user goals.
- Understand the business goals and the user goals.
- Organize information in categories and levels.
- Ensure that the information architecture provides the following:
  - Intuitive navigation
  - Consistent structure
  - User friendly navigation, for both the first-time visitor and the frequent user, in a structure that serves the wide scope of various content
- Provide for flexibility in the design as the information architecture evolves. The site framework should also be flexible and easy to modify.
- Ensure clear communication to those involved with the project. Involve content owners in the defining process but remain focused on the essentials.
- Avoid using input from content owners who have an everyday comprehension of the content.
- Avoid having a single person or department to overlook all the content.
- Set one person as the decision maker.
- Ensure that the content is accessible.
- Ensure a good knowledge of the audience's Web site experience.
- Make a distinction between different types of users.
- Set a realistic time frame.

6.2.4 Find the killer app

One way to ensure use of the Web site is to identify at least one *killer app* — the one application or feature that everyone is likely to use frequently — and make that application or feature available only on the Web site. Most often an application or a particular type of information can be identified easily. Then, you can make this application easily accessible within the information architecture.

6.2.5 Consider a user-centric design

When you have determined the business goals and defined the audience for your Web site, it is time to start thinking about how visitors will use your site and how the design can ensure a high usability. *User-centric design* (UCD) ensures that the objectives of users are taken into account when designing the site. The

Archived

characteristic of a UCD approach places the user at the center of all design decisions when building a Web site. UCD also includes design in the manner of structure and information architecture.

One common complaint from users is that they cannot find what they need on the intranet. This does not mean necessarily that the site is designed poorly, but that the spectrum of users is comprised of linear and non-linear thinkers. Linear and non-linear approaches, as well as combinations of the two ends, are equally valid.

To accommodate the broadest community of users, IBM recommends that you develop three discrete design directions, focusing on page layout and navigation. Those design directions should then be presented to a focus group comprised of a cross-section of users. Feedback from those users provides very specific direction into how you should design the site and what content you should highlight. A facilitator should be engaged to conduct the session (it could be a qualified person within the content owner), and the session should be scripted with specific questions asked of the group.

A Web site with a high score in terms of usability would include the following characteristics:

- Information is easy to find.
- The site is simple to use.
- Pages open quickly.
- Creating and maintaining content is a painless process.
- The site is adaptable to changes.
- The site must be secure (where applicable), stable, and scalable for both the content and the user population.

As discussed in 6.2.2, “Understand your audience” on page 217, you might need to classify the audience into groups with individual needs. You can divide these different categories of users at least into two groups:

- First-time users
- Professional users

The AO Foundation example (discussed in 6.1.1, “Base example of a good information architecture” on page 201) shows a surgical management process that is used to offer specific AO Foundation knowledge that answers specific clinical questions. Two different UCDs help to support the users with the required information. The fist UCD provides intuitive, step-by-step decision-making support to lead surgeons (as shown in Figure 6-16 on page 221). This example can be adopted for any decision process in any organization.

Archive

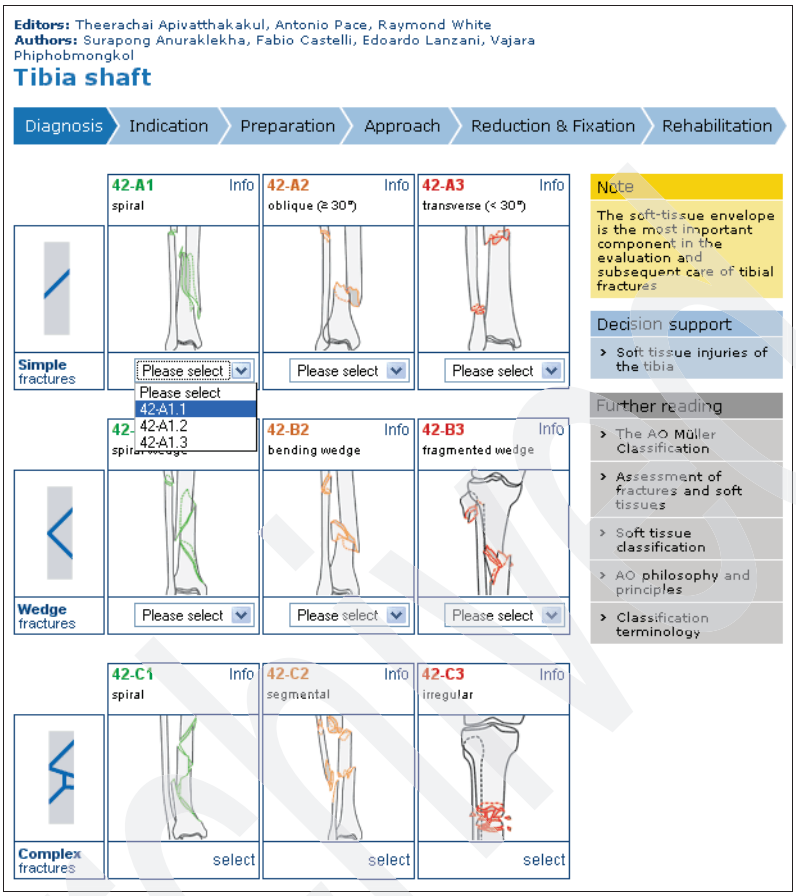


Figure 6-16 AO Foundation intuitive, step-by-step decision-making support

The second UCD is the AO Quickfinder (Figure 6-17 on page 222) for experienced surgeons who do not require the decision-making support and prefer to move directly to the specific clinical information that they need.

Archive

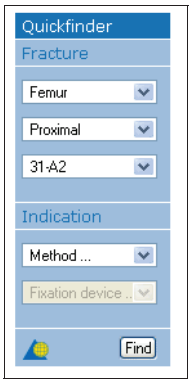


Figure 6-17 AO Quickfinder

You should also include a second involved target group when it comes to UCD. Consider persons following who will work with the Web content management system:

- Content authors (including content creators, approvers, and so forth)
- Site developers and site administrators

The success of an IBM Workplace Web Content Management project also depends on the usability for the every day editor's work. Their environment should be intuitive and consistently structured as well.

6.2.6 Define use case scenarios

We discussed the process of defining the audience's expectations at a Web site. In the next step, you define how users achieve the information. In order to get a first approach, it is good to define a number of key *use case scenarios* that represent the way that you expect users to interact with the Web site. You should define these use case scenarios from a user prospective in order to deliver an authentic scenario. They also need to include information about the involved context. The chosen use cases should include exceptional use cases in order to avoid the user getting stuck. The amount of detail that each user needs depends on the specific objectives of the Web site and the additional requirements that you have identified during the project.

The goal is to identify and build a picture of common tasks that users are willing to complete and how you anticipate the user completing these tasks. This iterative process starts with research about the audience, continues into the high-level design of the site, and is followed by a more detailed level of design that includes the structure.

6.2.7 Plan the site framework and site areas

As described earlier in this chapter, the site framework is the site map of a Web site. The site navigator (that is, a navigator component) can be generated from the site framework. The site framework is accessed through the Web site navigation. As an example of how to plan the site framework and site areas, we use the virtual River Bend Coffee and Tea Company Web site.

The information architecture analysis consists of two parts:

- A top-down approach investigates the content to be displayed on the site, plus the needs of the audience that is accessing the site. This approach helps to formulate the scope of the site and supports our understanding of how the overall site will be structured.
- A bottom-up assessment is performed. This starts from the most basic level of the Web site — the content page. This process determines what metadata, including categories and keywords, will be used to profile documents.

The goal of this analysis is to determine the structure of the site and, consequently, the navigation of the site. During this process, the following core facets of the information architecture are developed:

- Site framework
- Category hierarchy
- Document type hierarchy

Site framework

There are two ways of organizing content on a Web site: hierarchical and cross linking.

- Hierarchical organization

  Hierarchical organization of content is represented in Figure 6-18 on page 224. Each piece of content has a physical location at a level in the site. Because content is usually accessed from a single entry point (for example, the home page), hierarchical organization of content is particularly well suited to Web sites.

  Hierarchically structured content works best if you have well organized content that can be easily sorted into different levels on your site. Most visitors to a Web site understand the concept of hierarchies, such as chapters in a book. So, this is a common navigational aid. It provides at a glance an idea of the site's structure. This type of content organization is best suited to a less technical audience.

Archived

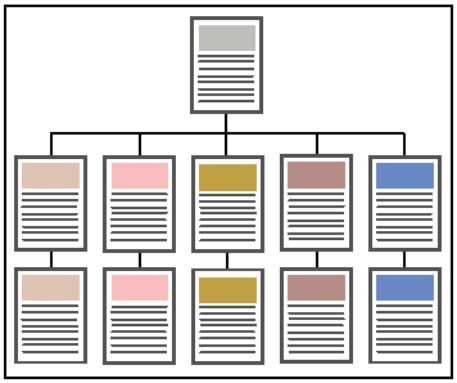


Figure 6-18 Hierarchical organization of content

- Cross linking

  Cross linking content is illustrated in Figure 6-19. With cross linking, any page can be linked to any other page on the site, regardless of its location within a hierarchy. This type of content organization works well in Web sites that enclose many hierarchal levels and allows content that is located on a deeper level within the Web site to be presented at a higher level.

  Cross linked content is well suited to a more experienced user and is intuitive to use only if the linking follows a content context that the audience easily understands. Frequently, only the back button of the browser allows the user to revisit pages.



Figure 6-19 cross linking content

In traditional Web sites, the site framework is an artificial concept based on links between pages. In IBM Workplace Web Content Management, the site

framework is defined first, and the links between the pages are generated dynamically. The different sections of a Web site are defined in site areas, and content is grouped under different site areas. Navigators are based on the site framework. By clicking a navigator, a user can access all content in a specific section. Menus display lists of content that can be located in any section. Menus usually show content that has been assigned the same category (although there are many search criteria that menus can use, including site framework and document type).

Category taxonomy

The next stage is to create a hierarchical classification system used when displaying content. *Category taxonomy* is simply the classification of content into categories. When you have created this taxonomy, you can use it to apply a set of standard categories to content. The category taxonomy defines the category attributes that can be assigned to content that is located anywhere in the site. By referencing different pages of content that have been assigned the same category, content from different locations can be grouped on one page.

A *category* refers to the subject matter of content or what your content is about (for example *news* or even the product type *black tea*).

When creating taxonomy of categories, the main goal is making it easy for the Web site users and search engines to find specific content. An added benefit is that an organization can begin to apply standard practices around the classification of content inside the organization.

How many levels to create?

If you find that you have so many documents covering various topics that when searching for a document based on a category, an exhaustive list is returned, it is time to think about creating new categories. You might want to assign a category to do the following:

- Make it easier and more effective to find the information for which you are looking.
- Enable more effective searching on content (either within the site or by search engines).

There are two main standards groups doing work in the area of categorization:

- The Dublin Core Metadata Initiative includes specifications of the terms to be used when creating metadata. You can find information at:

  `http://dublincore.org`

Archived

- The World Wide Web Consortium's Resource Description Framework (RDF) provides recommendations about the way to represent resources on the Web. You can find information at:

  http://www.w3.org

The initiatives of these two organizations provide companies with the ability to standardize the metadata tags that they used on their site. These initiatives provide standards for terminology to be used in category taxonomy. However, they provide little assistance in the creation of the taxonomy itself.

Creating a category taxonomy

Categories are grouped within *taxonomies*. Categories are also grouped into *parents* and *children* within a taxonomy. When building a hierarchy of taxonomies and categories, it is important to consider how a menu will use your categories in a search, because menus search both upwards and downwards within groups of categories, as follows:

- If you base a menu on a top-level category, all content profiled with categories belonging to that top-level category and their children appears in the menu.
- If you base a menu on a parent-level category, all content profiled with the parent-level category, its children, or its parents appear in the menu. If you base a menu on a child-level category, all content profiled with the child category or its parents is returned by the menu.

It is recommended that, in most cases, you use only child-level categories to profile content to allow more control over what displays in menus.

Taxonomies cannot be used in Web content management menu searches. If you would like to have a menu return results based on content that is profiled with any category in taxonomy, you should create a single, top-level category and base the menu on the top-level category.

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For our fictitious Web site for the River Bend Coffee and Tea Company, we organized the content by the five sections Products, Company, Locations, News and Contact (as shown in Figure 6-20). Our reference implementation site structure reflects this organization.

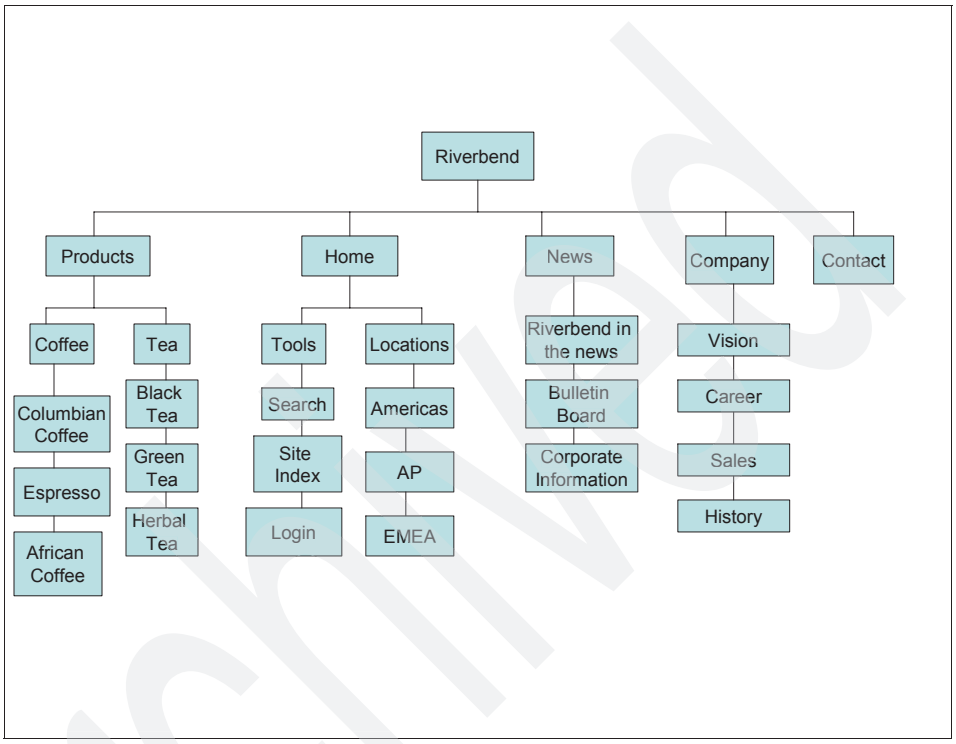


Figure 6-20 The River Bend Coffee and Tea Company navigation

The secondary site areas allow specifying what the user is looking for in this area. The secondary area for Products include *coffee* or *tea*. The separation is very obvious, and users can comprehend intuitively and exactly what they can expect to find here.

Document type hierarchy

With IBM Workplace Web Content Management, content is created using authoring templates. These templates are forms that contain content and can be grouped into different document types. When it comes to defining the required document types, it is common to hear content owners requesting a document type for every propose. For example, the sales team wants a document type for products, human resources wants document types for career information, and marketing sees a need for a document type for news and company information.

Archived

From a technical perspective, these requirements fit in fewer authoring templates because they are quite similar essentially.

Instead of creating a new template for every document type on the Web site, templates can differ by page design, such as page layout, page style, and components. Then, you can apply these templates to the many content document types that you create so that the content propose is separated from its layout, making content and presentation flexible. Proper construction of the shell site ensures maximum re-use, flexibility, and performance.

Formulating ideas about other components to be used in the Web site, such as graphics, menus, navigators, and so on, is also helpful. You can find details on designing the Web site and implementing it in Chapter 5, “Key concepts and terminology” on page 141.

6.2.8 Metadata, keywords, and categories

When content is created, it is crucial that you define descriptive information for that content so that it can be categorized and searched. descriptive information is called *metadata*, as defined by the W3C (http://www.w3.org/Metadata/) . Metadata is machine understandable information for the Web. It is required to include metadata as a part of the Web that contains *information about information*. Metadata include labeling, cataloging, and descriptive information that is structured in such a way that allows Web pages to be properly searched and processed in particular *by computers*. Metadata is most likely keywords about the content of digital material in the form of labels that are only visible in the HTML code that builds the Web page. The metadata should match with keywords that a user would associate with the content.

In our example, we can plan to generate metadata for IBM Workplace Web Content Management pages by specifying standard metadata fields. The search supports the metadata fields described in Table 6-1.

Table 6-1 Metadata fields supported

Name	The title of the content item.
Description	A description of the content item.
Author	The authors of the content item.
keywords	Keywords that are associated with the content item.
Subject	Taxonomy and category information associated with the content item.

This information must be created automatically for each Web Page.

Note: WebSphere Portal Experts GmbH have realized a solution for the usage of metadata functions using IBM Workplace Web Content Management inside a WebSphere Portal (`http://www.wpexperts.com`). WebSphere Portal Experts Portlet service allows exchanging data between a Portlet and the Portal themes state service.

Refer to the search methods detailed in Chapter 10, “Search functionality for IBM Workplace Web Content Management” on page 429.

6.2.9 Determining the components of the Web site

To give an overview of components of the Web site, we look at the River Bend Coffee and Tea Company that we use as the example site throughout this book. Figure 6-21 shows an overview of the site.

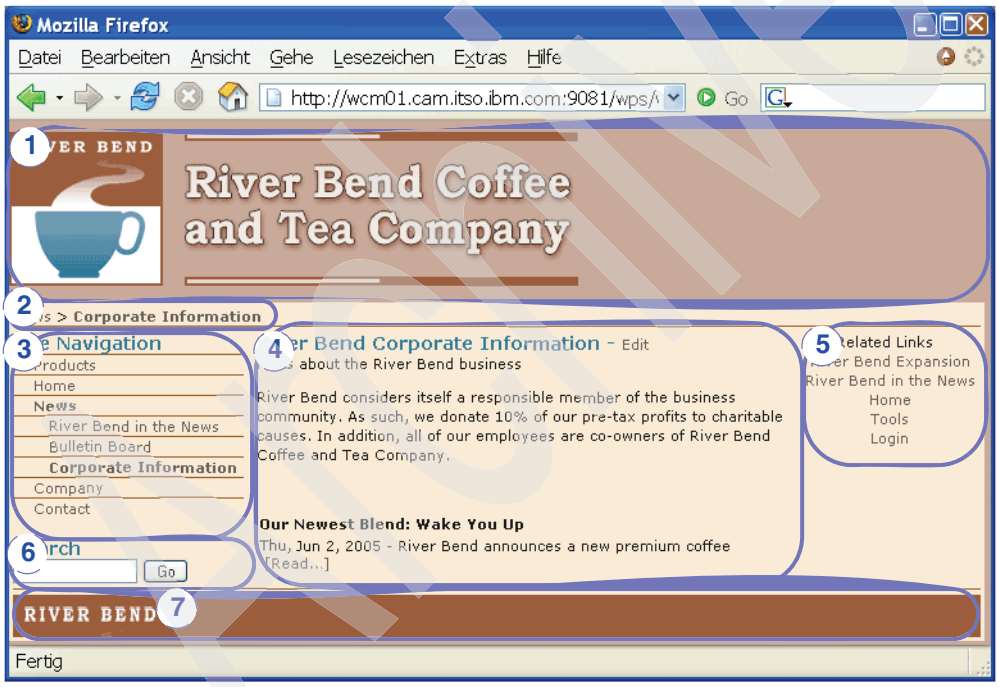


Figure 6-21 River Bend Coffee and Tea Company page overview

The River Bend Coffee and Tea Company Web site is structured in seven components as follows:

1. The Company Logo as the head banner.
2. The Breadcrumb navigation displays the current page's context within the site structure. The term *breadcrumb* refers to leaving a trail in order to find your way back to where you started. This popular approach makes it obvious to users which path they took and allows them to move between these navigation levels and to understand the information structure.
3. The Navigation covers five top levels of site areas or containers for content that are accessible directly from the home page — Products, Company, Locations, News, and Contact. Figure 6-21 on page 229 shows the expanded News level.
4. The Content Area displays the selected content.
5. The Site Menu delivers additional information about the currently selected content.
6. The Search runs over the whole Web content and delivers a result list inside Content area.
7. The Tool bar at the bottom of the Web page includes a company logo, leaving open the option to expand the functionality on the Web site.

The chosen navigation contains all level of the River Bend Coffee and Tea Company site. Thus, the audience is not required to jump to a second navigation while researching the Web site. The navigator expands downward and can be used to support further site areas.

6.2.10 Using workflow and syndication

One of the advantages of using an IBM Workplace Web Content Management system is to dispense the content creation process over different locations or within different security levels. With multiple locations (servers) in a typical IBM Workplace Web Content Management environment, it is necessary to have a mechanism that can synchronize content between the multiple locations. In addition, a typical requirement has the content pass through some formal approval process before it can be viewed on the Web site. IBM Workplace Web Content Management provides two complementary capabilities for these issues — workflow and syndication.

Creating a workflow

Workflows are required within IBM Workplace Web Content Management to approve and to authorize content that is published in the Web site. You need to create at least two stages (Draft and Published) inside a workflow. In the simplest

case, the content creator is also the person who publishes the content. This configuration supports a rapid content creation process but is contrary to the motive of workflow. However, this is the most often use of workflows inside Web content management. Organizations find it favorable to accelerate the content creation process by skipping the workflow.

Important: The process of content creation is always underestimated!

There is a high danger in underestimating the value of the workflow process. The workflow approves the content quality and assures that content is published in an organization policy manner. Without a workflow, the consequences are that content can be published in a Web site that is identical with printed statements. This is true for internal and external published content.

A recommended workflow contains the stages Draft, Approval, Published, and Archived. Every stage is logged inside a content history that makes traceability easier. IBM Workplace Web Content Management offers various options to configure more dedicated workflows to serve further needs. An additional option to define workflows not supported within IBM Workplace Web Content Management is to use its API and IBM Process Choreographer. For more information, see Chapter 12, “Working with the application programming interface” on page 469.

6.2.11 Using syndication

Syndication is the method used by an IBM Workplace Web Content Management location to exchange (replicate) data from one IBM Workplace Web Content Management location to another. Unlike workflow, syndication is not involved in the process of approving content. Syndication is only responsible for replication of IBM Workplace Web Content Management assets across multiple locations.

When creating a syndication process, IBM Workplace Web Content Management allows you two choices for the granularity of items to be syndicated:

- All Items

  When configured with this setting, all elements of the IBM Workplace Web Content Management location are replicated to the other location, including draft and expired content. Typically, authoring and development locations need access to all types of content for testing purposes. This setting is common when syndicating between distributed authoring locations or between an authoring location and a development location.

- All Live Items

  As opposed to the *All Items* setting, this option replicates only live content. Live content is defined as content that has been approved via workflow (live) but that is not yet past its expiration date. Typically, a production location only receives live data, so this setting is common when syndicating from authoring to staging or staging to production.

Tip: Syndication always syndicates copies of your technical assets (for example, presentation templates, authoring templates, library components, and so forth). By default, there is no setting to stop this syndication. You can configure IBM Workplace Web Content Management to workflow these items, at which point they would follow the same rules as content.

6.3 Information design

A critical component of information architecture is its design, which addresses content accessibility as it pertains to the site interface. Page layout, links, menus, navigators, taxonomy, site breadcrumbs, search, identity standards, graphics, and site metaphor are all components of Web information design. Different users have different preferred means for accessing information. Thus, an effective information design provides users with multiple means for accessing information. The most common means are:

- Direct feature links
- Embedded hyperlinks
- Site navigators
- Site menus
- Search

All means are valid, and we recommend that you leverage all site components from IBM Workplace Web Content Management when designing and building a site to enhance user experience. To provide a relevant context for these components and to illustrate specific examples, we draw upon examples from River Bend, IBM developerWorks, AO Foundation, WebSphere Portal Experts, and Ascendant Technology sites. We use these throughout this book, because we believe that they represent good information architecture and good site design. Other than River Bend, which is a fictional company, you can access these company Web sites as follows:

- IBM developerWorks (`http://www.ibm.com/developerworks`)
- AO Foundation (`http://www.aofoundation.org`)
- WebSphere Portal Experts GmbH (`http://www.wpexperts.com`)
- Ascendant Technology (`http://www.atech.com`)

6.3.1 Using presentation templates

One of the features of IBM Workplace Web Content Management is that you can separate the creation of content from the presentation of content using *presentation template*s. When using presentation templates, the content creator is not responsible for the page design that will ultimately display their content document. The presentation template is determined by a relationship in the site between a page design and content authoring template. It is recommended that you avoid a large number of slightly different presentation templates and instead, use one that covers all authoring template features.

It is possible to pair different page designs (presentation templates) with one authoring template in different site areas. This design means that one piece of content can be displayed in multiple ways depending on the site area that is currently displaying — called *multipublishing*. Different uses of multipublishing can be helpful. You should create one content that includes a full set of information, for example, product information. This content can contain confidential material that is published in an intranet or extranet. If the same content is taken and published in the Internet, different presentation templates allow you not only to have a different design but also to share a subset of the original content securely. You can create content with the same type of authoring template but publish it with different presentation templates, depending on the department, brand, location, or language.

To increase the reuse and to decrease the maintenance effort, you can use components. Presentation templates can contain different kinds of components that are used depending on the site area on which the content is published. Thus, when news is separated into categories, depending on the site area, a different title logo (component) is chosen instead of creating a presentation template for every news category. Components are very helpful in customizing presentation templates but should be used reasonably.

Abstract

6.3.2 Using site navigators

The information design of navigators is a profound part of the user's Web experience. Some users prefer to drill down through navigation levels with the site structure being as big a part of the user experience as the content itself. When it becomes necessary to include a high rank of navigation levels, it is crucial to choose an information design that stays straightforward and intuitive. A very powerful feature is highlighting the selected navigation path. Users easily get confused when the navigation does not follow a logical structure or changes its design.

Related to the usability considerations, you should also consider the performance of navigation. To save space or because it might seem more high tech, navigators are used that enfold all available navigation levels by clicking or mouse over. This kind of navigation is accomplish often through complex handling and cannot be easily overlooked when Web accessibility is a big issue (http://www.w3.org/WAI/). Public Web sites should support Web accessibility, which is at times required by law.

Because IBM Workplace Web Content Management is a dynamic process that lives over years, navigation should allow the site to expand dynamically as well.

Note: Navigators are not menus. *Menus* are a list of hyperlinks that take you to specific pages. *Navigators* can also be hyperlinks that can take you to specific pages, but navigators are organized differently. Navigators present the logical arrangement of a Web site, while menus are a list of related Web pages that might appear anywhere in your site and follow search criteria.

Archives

The AO Foundation navigation in the site area *Case of the month* comprises six levels in a in a very intuitive usage, as shown in Figure 6-22.

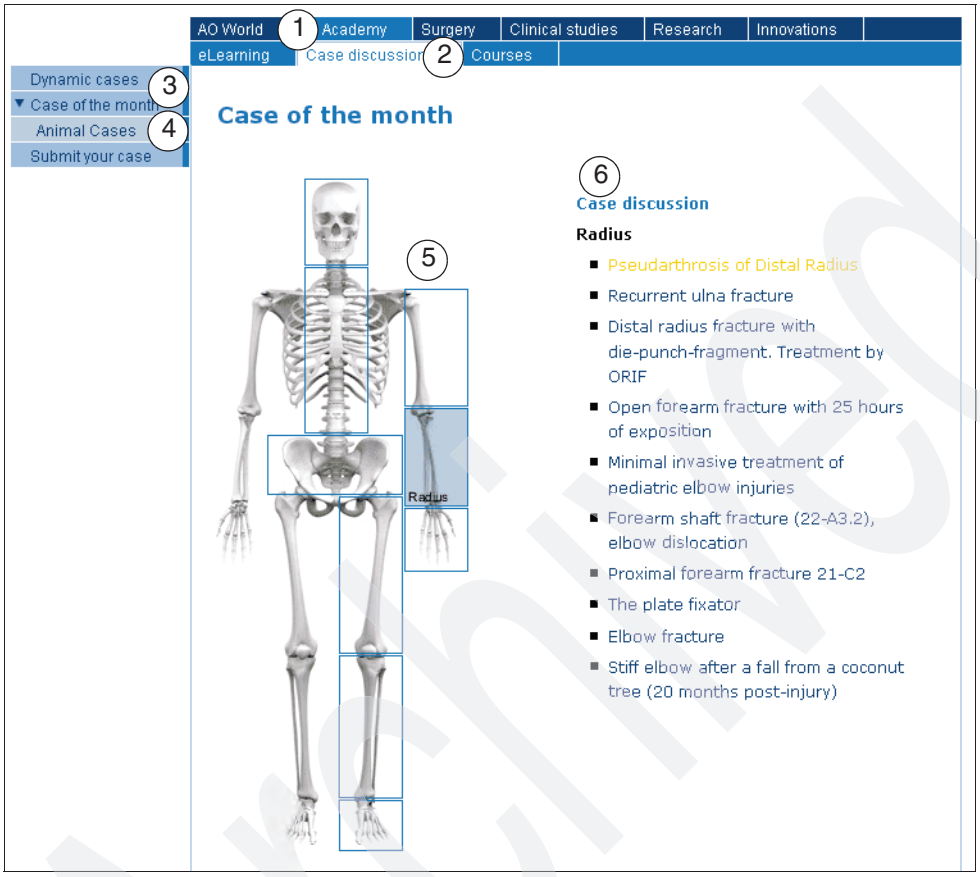


Figure 6-22 AO Foundation six-level navigation

The first and second navigation levels are located in the upper horizontal navigation where the selected topics are highlighted. Instead of overloading the overall navigation with more text in the fifth-level navigation, it is structured within a human skeleton. This kind of navigation is intuitive when the object in the graphic is familiar to the audience.

Archived

IBM developerWorks also splits their navigation into different parts. As shown in Figure 6-23, the first-level navigation is horizontal on the top of the page similar to a toolbar. The main navigation of the site area is the vertical-level navigation that expands downward. This navigation includes level two and three of the Web site area.



Figure 6-23 IBM developerWorks navigation

Archive

When the second level is selected, the user gets a content navigation that offers more detailed information about the navigation topics (Figure 6-24). This kind of information design gives the audience a more detailed navigation experience but also leads to a change in the navigation design. For IBM developerWorks, a technical audience is expected, and that audience is not confused by this design break. However, other audiences might prefer to be guided through the Web site using a single navigation.

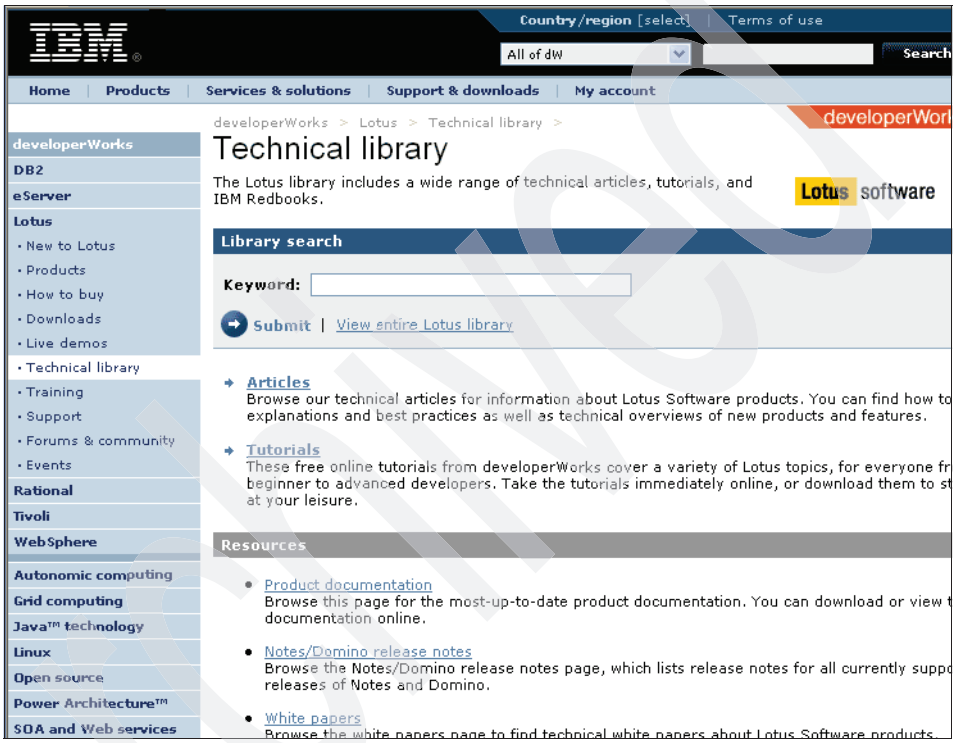


Figure 6-24 IBM developerWorks fourth-level navigation

6.3.3 Using menus

A *menu* is ultimately a search mechanism that groups together lists and related documents based on specific criteria, such as categories, site areas, or keywords for display and access to users. Figure 6-25 displays links as images, icons with text, links with a summary, or many other combinations. These menus combine elements based on documents from more than one site area, where it is not possible to use site navigators. To users, menus and navigators provide the same functionality in that they allow a user to navigate around the site or to locate particular content.

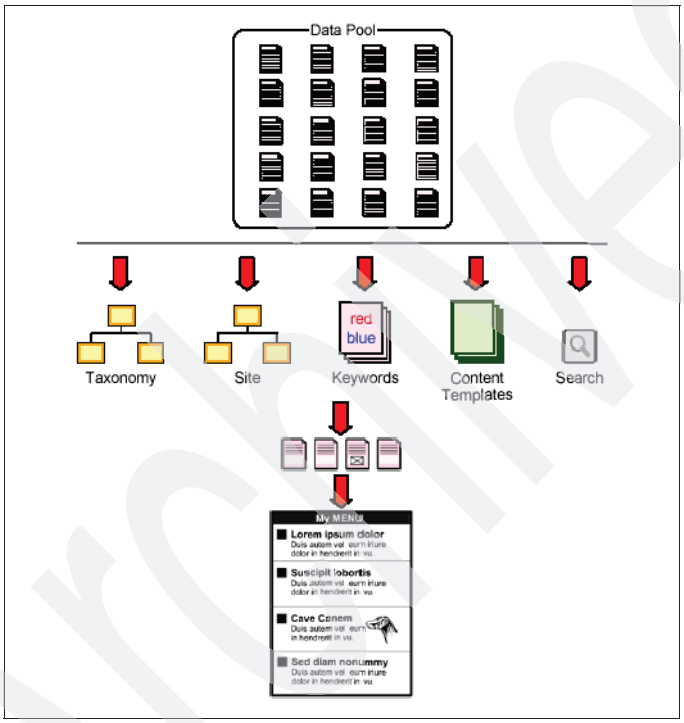


Figure 6-25 Menu construction from various selection criteria

Archived

WebSphere Portal Experts offers menus for all its content pages, as shown in Figure 6-26). Thus, menus are embedded as rich text components and are managed centrally. This solution enables WebSphere Portal Experts to re-use the same links wherever they are applicable, thus limiting the maintenance effort significantly.



Figure 6-26 WebSphere Portal Experts Menu

Archive

AO Foundation also integrates menus to assist the decision support of surgeons by offering *Further readings* (Figure 6-27). This content is stored in a separated area and can be matched with related information. Instead of pointing the audience to a book requiring additional effort, the content of those books is included where it is needed to give the best user experience.

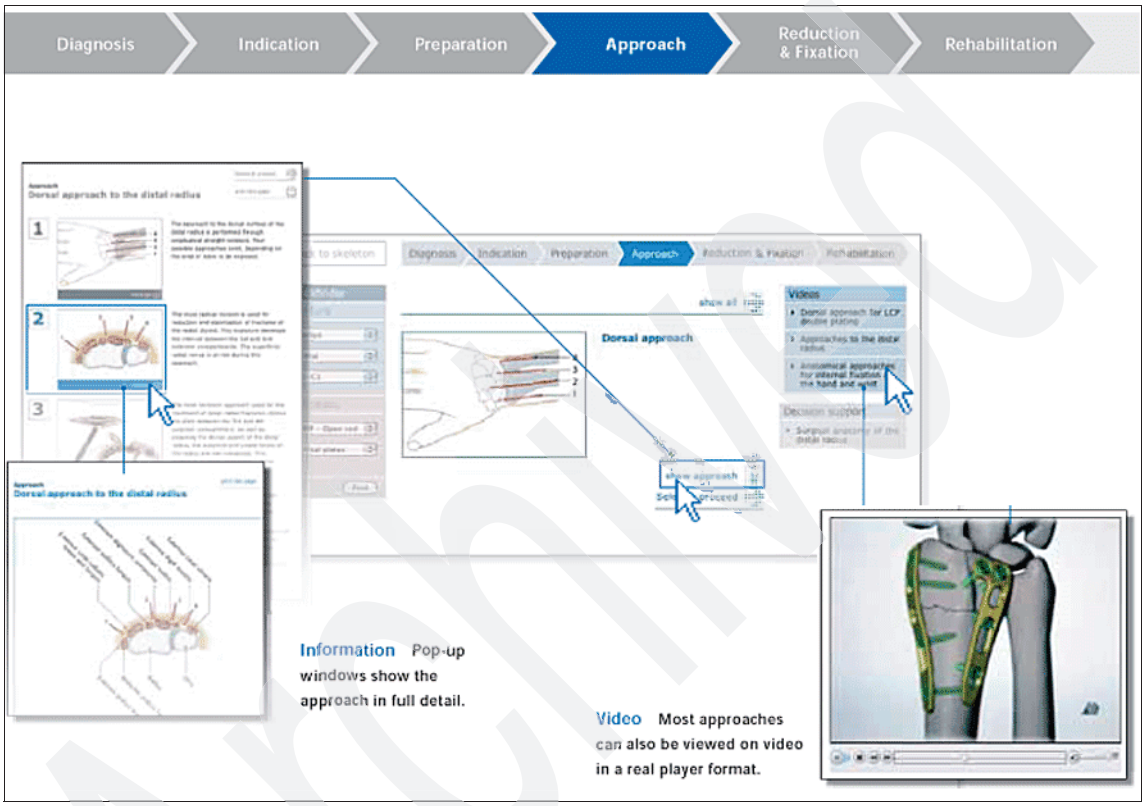


Figure 6-27 AO Foundation integrated menus

Archive

6.3.4 Using direct feature links

Of all the methods to access content, direct feature links is the most direct and provides the most premium. This method enables one-click access from a top-level site location, which is almost always the home page, to any content that is embedded a few layers down in the site structure. These types of links are reserved for the most timely and relevant news or information. However, they can also be used to provide additional information that is related to the current content.

Through the use of menus, and leveraging categories, parameters can be set to bring the timeliest content to the home page. In addition, individual pieces of content can be categorized, or a category can be associated with a specific content template so that all content created with that template has the specified category. Content can have one or more categories. These categories then can be presented dynamically by direct feature links such as News, Products, Events, or Promotions.

Ascendant Technology provides direct feature links to all their content pages, illustrated in Figure 6-28 on page 242. These direct feature links are embedded as rich text components and are central managed. This solution enables Ascendant Technology to re-use the same links wherever they are applicable.

Archived

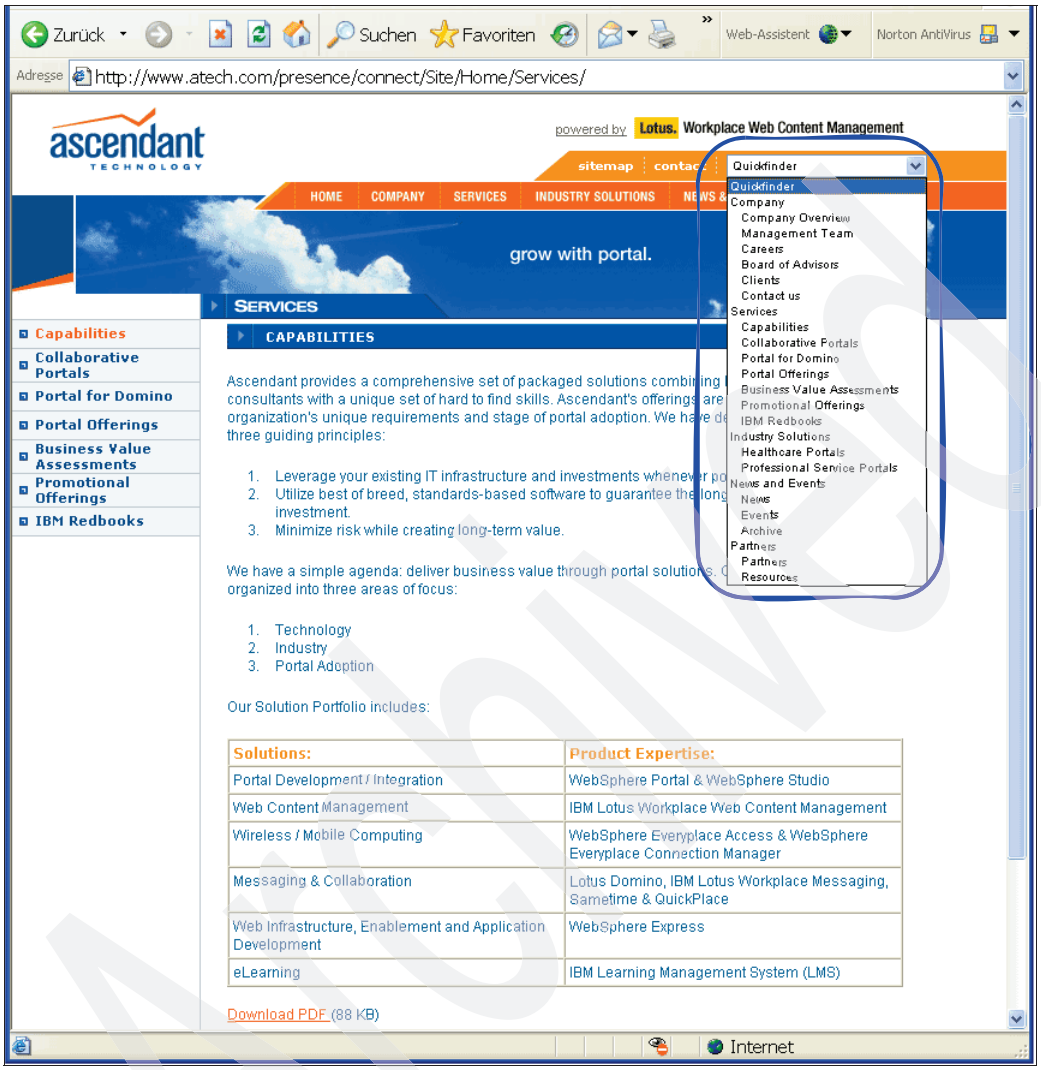


Figure 6-28 Ascendant Technology direct feature links

We recommend that every site include the Search, Contact, and About us direct feature links to provide the user with a good Web experience.

6.3.5 Using embedded hyperlinks

Embedded text hyperlinks provide users with one-click access to content that i s related to the article that they are reading but that is location perhaps in a different area of the Web site. The only way for users to return from embedded hyperlinks is to use the browser Back button. Navigators and breadcrumbs cannot do not work here. When pages include links to pages outside of the Web site, you should replace the current Web site when contacting the new link or open the new site in a separate window. Often, embedded hyperlinks are used to define a word or phrase that is mentioned (much like a cross reference in a book), as shown in Figure 6-29.



Figure 6-29 WebSphere Portal Experts embedded hyperlinks

Another usage of embedded hyperlinks is in WebSphere Portals where they can be used to reference corresponding content or applications, depending or related information. This WebSphere Portal feature is called *click-to-action*.
Click-to-action capability lets you send information from one portlet to another so that you do not have to enter cross-portlet information manually. This capability leverages the way that Web content and Web applications interact and leads to more powerful dynamic workplaces. For example, if a user clicks on a specific topic in a Topic List portlet, click-to-action allows an adjacent portlet to limit the postings shown to just those in the specified topic, based on the criteria selected in the Topics portlet.

6.3.6 Using search

The search of a Web site is one of the most used features and is particularly useful to users who are pressed for time and who do not care to invest time in learning about the site structure. Visitors expect the search to return exactly what they are looking for, especially when they know that the information is there. Because of this high expectation, search results need to be high quality. To return effective search results, it is critical that content categories and keywords are defined and applied to each page prior to publication. See Chapter 10, “Search functionality for IBM Workplace Web Content Management” on page 429 for information related to the search setup and configuration.

So, how should a search work from an information design perspective? There are two options possible. First, the search function should be a simple search that is intuitive to use (Figure 6-30). The user can enter words in an input field, and the results deliver all contents that include the searched parameters, sorted by relevance. Relevance does mean it starts with the content that includes all words searched for and continues with single words found.

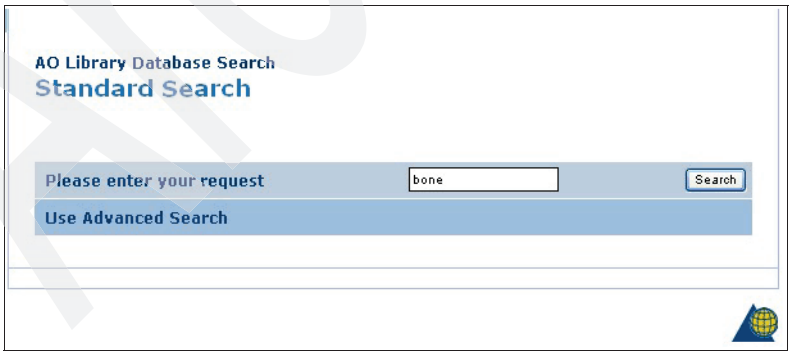


Figure 6-30 AO Foundation standard search

The second option includes a search function that offers an advanced search feature. The advanced search depends on exactly the needs of the offered content. Details could differ from a search combination linked by `AND`, `OR`, or `NOT` operations up to very specific needs of an application (Figure 6-31).

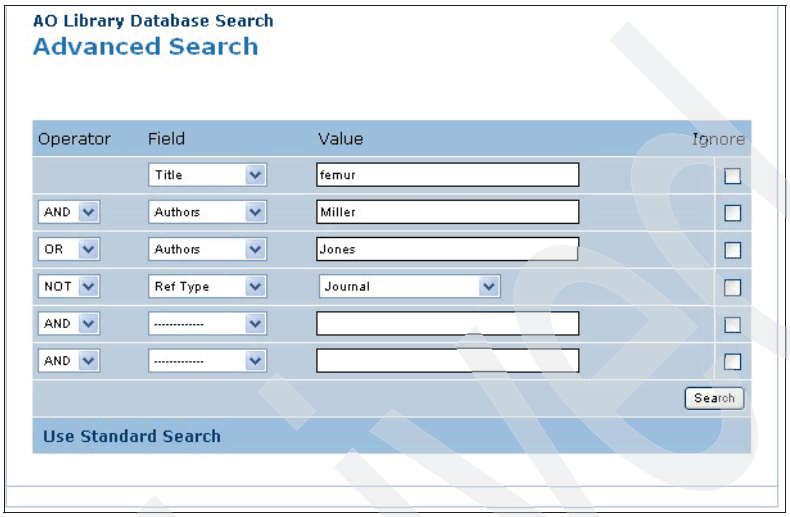


Figure 6-31 AO Foundation Advanced search

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Searches can be run over not only the content of a Web site but also included databases, such as the literature database used on the AO Foundation Web site. AO Foundation took it one step further and gave the audience an experience that is rarely reached and included when searching the AO Members information from the LDAP. So, a search for a special person not only returns all content in which that person's name is included but also any details about that person (Figure 6-32). In addition, the personal information that is shown is more detailed if the search is started within the member area.

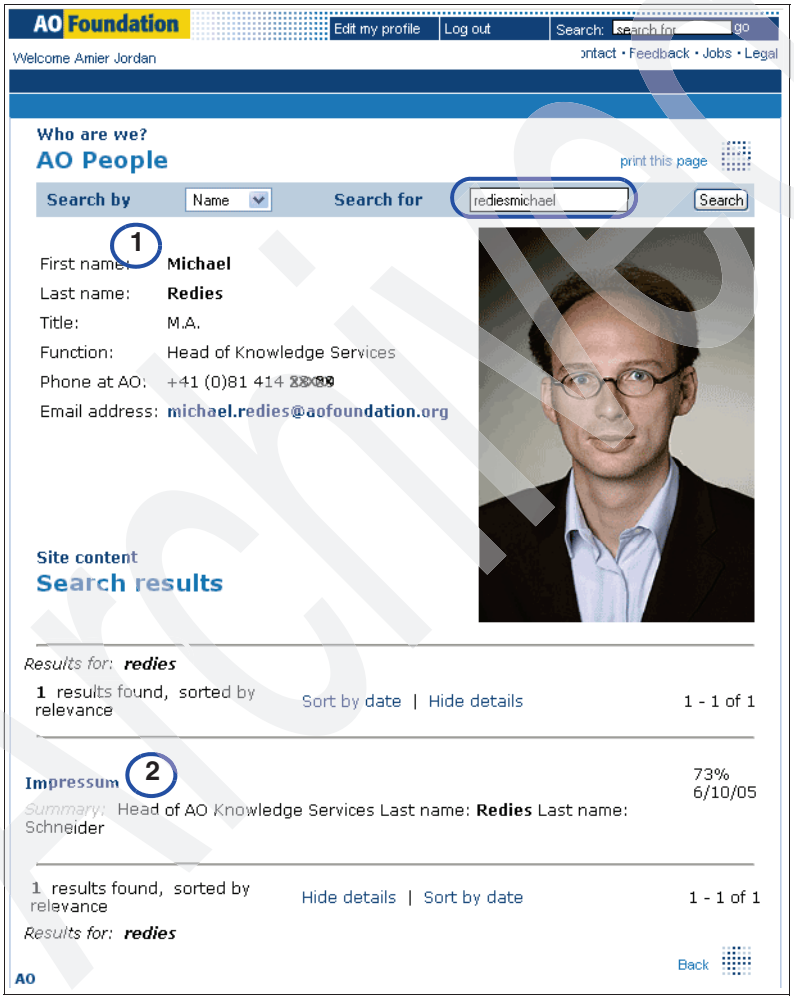


Figure 6-32 AO Foundation Search with content and LDAP results

However, what if the search returns hundreds of results? A good option is to offer users an option to search within the results of the first search. Technically, this means to use the first search and add a second search string to it (Figure 6-33).



Figure 6-33 AO Foundation search within results

An organization might also want to offer anonymous users different searches from authenticated members, where the included content or applications varies based on who is performing the search.

Search results can also have a different approach. Search results should generally offer a URL to the Web page that includes the cited content. To enhance the user's experience, a short abstract can also be part of the result. This abstract offers a specified number of words from the content or especially for the search result added content fields. In particular, when searching databases, results should use the advantage the structured content offers in an informative way. Details of the results can be saved for download or can be printed.

AO Foundation used this option to include their literature library of all existing written information, as shown in Figure 6-34.

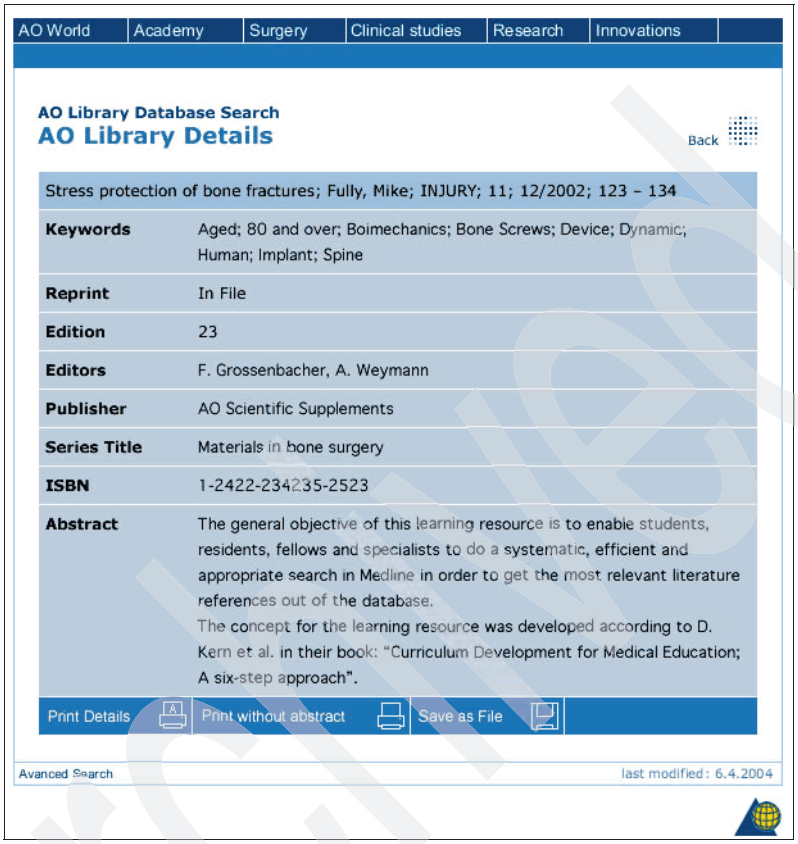


Figure 6-34 AO Foundation literature library details

There is one topic that is often forgotten when it comes to search results. If the Web site contains multilanguage content, would the visitor expect to find results in a language other then the language searched from when entering a keyword? The answer is most likely no. Language is also a search topic that should be taken into account.

6.4 Site acceptance

Note: The value of an open communication about the IBM Workplace Web Content Management projects business values and key targets is often underestimated. These communications are crucial to the success of this type of project and the site acceptance.

An IBM Workplace Web Content Management project can only be successful if the persons involved in the project are motivated to give their part. Often, these kinds of projects involve for the first time a wide range of job roles within an organization. Other then many other IT or knowledge projects, a Web site — whether internal or external — most likely involves all parts of the organization. Organizations can underestimate the political, local, and cultural problems associated with a project of this type, and this underestimation can become the biggest challenge of the project. Therefore, it is crucial to communicate the reason and business value of the project and to get a wide acceptance of the project for it to be successful.

One challenge constantly voiced by technical teams is the lack of site use by many of organization's staff and the lack of content contribution by the business stakeholders. We recommend a few basic actions to help build support for the Web site.

6.4.1 Business stakeholders

Identify a set of business stakeholders, including the target group (not necessarily the designated intranet liaisons) to not only contribute to information architecture sessions but to provide feedback on general layout, design direction, and so forth. Ask these stakeholders to communicate within their groups, identify potential power users, and commit contributions of new content to the site. Consider leveraging the power users as beta testers of the site, both as users and content authors.

6.4.2 Design and layout approach

To accommodate the broadest community of users, we recommend developing three discrete design directions, focusing on page layout and navigation. Those design directions should then be presented to a focus group comprised of a cross-section of customer users. Feedback from those users provides specific direction into how the site should be designed and what content should be highlighted. A facilitator should be engaged to conduct the session (it could be a qualified person within the organization), and the session must be scripted with specific questions asked of the group.

6.4.3 Communications and enablement

As with any deployment of a new system, the organization should develop a communications plan to introduce the new Web site. If power users are identified within the process areas, they can help provide a level of enablement and support within their groups when the new site is launched.

6.4.4 Wireframe demonstration

The communication should contain a wireframe demonstration that illustrates the site navigation. In that demonstration, very simple action settings should be enabled for demonstrating the multiple ways of providing information. Not all information access methods need to be demonstrated. Open and agreed areas should be identified and marked. In meetings with business users, demonstrations such as this require little preparation time but are effective in communicating accessibility and usability concepts.

6.5 Workshop approach

Organizations planning an IBM Workplace Web Content Management project should conduct information architecture workshops with business representatives of each of the process areas over the first period. This section outlines some recommendations for preparing and conducting workshops.

6.5.1 Workshop preparation

Information architecture workshops require preparation in order to be effective. Prior to conducting any workshops, we recommend that organizations develop a test site with IBM Workplace Web Content Management to gain hands-on experience with the product and to develop an understanding of the capabilities of the tool. This training helps the team to connect user requirements or wishes (the *what*) with the capability of the tool to support them (the *how*). With that understanding, stakeholder requests that are not technically feasible can be identified immediately, so that expectations can be set correctly. Alternatives can be discussed on the spot.

After a workshop is scheduled with the stakeholders of a process area, the organizations team should thoroughly review that area of the site. Site areas and a sampling of specific pieces of content should be identified and documented. Separate documented notes by content type or site area but make no additional marking on them prior to the workshop.

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To reach a high acceptance, we recommend a professional preparation. Because the workshop topics can get quite challenging, you do not want to spend any time discussing topics that are related to future topics. We recommend setting up the conference room for the workshop prior to its start (for example, draw a couple of page layout grids on a whiteboard and include some of the page elements that are persistent throughout the site.

6.5.2 The workshop

Unlike a workshop with the technical team, workshops with business stakeholders should avoid technical terminology or a discussion about how the IBM Workplace Web Content Management tool functions. A suggested approach includes:

- Introduce the goals and objectives of the workshop, and the overall IBM Workplace Web Content Management project.
- Identify basic terms (grid, banner, header, navigator, and menu) that will be used to produce a work product for this process area.
- Have the business stakeholders validate the site areas and content that was identified in the preparation.
- Use notes to group like content types, and place the notes on the whiteboard within the grid.
- Use a system of dots to identify site levels (one dot for the top, two for the next, and so forth).
- Capture the raw output of the workshop on digital camera.

6.5.3 Work products

The workshop outputs should include:

- A map of the process site area hierarchy, usually developed in Visio®.
- Wireframes of the page layouts, usually drilling down two to three levels and normally developed in PowerPoint®.
- A simple demonstration of page navigation with PowerPoint or simple HTML.

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7

Building the River Bend Web site with IBM Workplace Web Content Management

This chapter describes step-by-step how to create a Web site using IBM Workplace Web Content Management. In this chapter, we refer to the site that we created for the River Bend Coffee and Tea Company as the *River Bend Web site*. The Web site contains content that describes the company's business and provides information about its products.

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Note: The method that we use to build a Web site follows closely the approach that is used in the Lotus Education course *Developing Web Sites Using IBM Workplace Web Content Management 2.5*, which is offered in an eLearning format (course code LWWCM445) and in a classroom format (course code LWWCM440).

If you have already taken this course, then most likely you are familiar with the River Bend Web site and the techniques that are used to build the basic site structure. The course guides you through every step of building the Web site.

Alternatively, this chapter provides a detailed, step-by-step guide that goes beyond the scope of the Lotus Education course. It includes topics on Portal Document Manager integration and describes the basic approach for integrating a stand-alone site into a Portal.

Attention: While this chapter guides you through building a basic Web site, it assumes that you have also reviewed and understand the key concepts that are discussed in Chapter 5, “Key concepts and terminology” on page 141. We highly recommend that you are familiar with the contents of this chapter prior to building a Web site.

Tip: The resources used to build the sample Web site, including images, code samples, and stylesheets, are available for download from the following:

`ftp://www.redbooks.ibm.com/redbooks/SG246792/`

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7.1 An overview of the scenario

For the purpose of providing a realistic business context to this chapter, we use the River Bend Coffee and Tea Company as the basis for the development scenario. River Bend Coffee and Tea Company, a subsidiary of WWCorp, is a fictitious company that uses IBM Workplace software. It operates a chain of 20 retail stores in 12 cities worldwide. In addition, the company runs an Internet-based retail operation, offers small-scale catering services, and has launched a certification program for employees and customers who wish to become skilled roast masters.

Figure 7-1 provides a brief overview of the site which we build in this chapter.



Figure 7-1 The River Bend Web site that we build in this chapter

Currently, the company uses IBM Workplace to:

- Provide messaging and e-mail services to its remote employees.
- Facilitate collaboration and communication among its geographically dispersed work force.
- Communicate and coordinate relationships with its vendors and customers.
- Manage, deliver, and track training to employees and customers.
- Support enterprise-wide document management, including regulatory compliance, corporate accountability, and information flow.

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- Communicate with a sibling subsidiary, a retail organization that specializes in recorded music products.

Note: The sample screen shots and tasks that we present throughout the chapter are intended to support the development scenario. The fictitious user names, documents, titles, and store locations are used solely to simulate the IBM Workplace environment and to demonstrate functions and features. They are not intended to depict real people, content, or company policies. Any likeness to real persons, content, or companies is coincidental and unintended.

7.2 Overview of the process

Throughout this chapter, we guide you through the process of building a sample Web site using IBM Workplace Web Content Management. Figure 7-2 provides an overview of the high-level steps in this process.

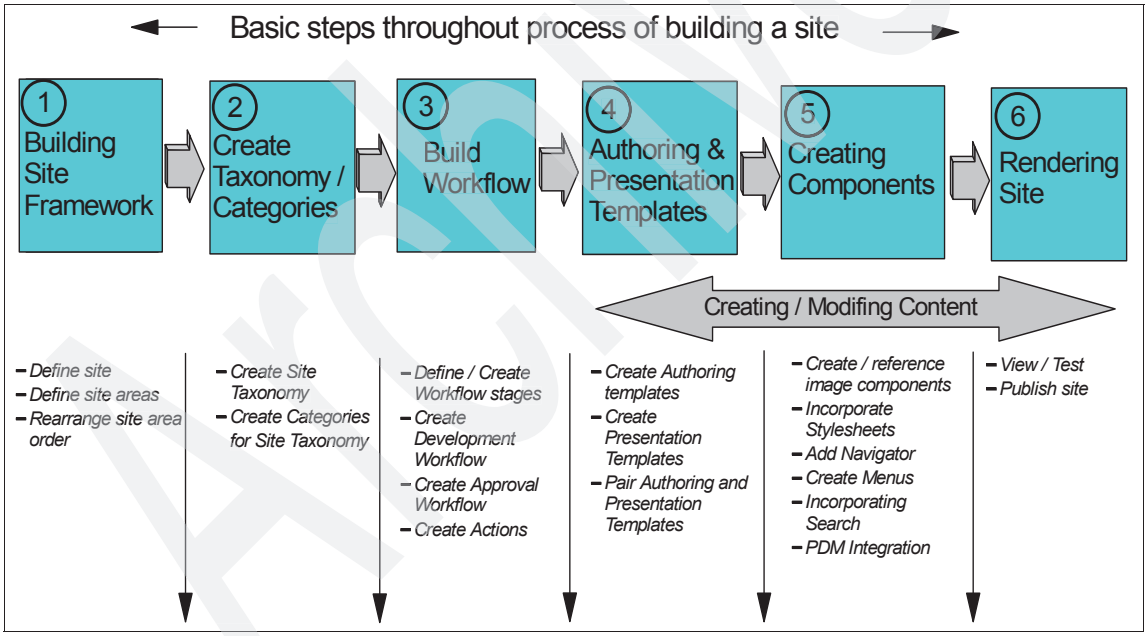


Figure 7-2 Overview of process for building a site

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7.3 Prerequisites for building the example Web site

The following prerequisites are required:

- IBM Workplace Web Content Management 2.5 or 5.1 installed and configured as documented in Chapter 3, “Installing and configuring IBM Workplace Web Content Management” on page 69 or Chapter 4, “Overview of IBM Workplace Web Content Management 2.5” on page 125.
- Security enabled is not necessary.
- The Your Workflow Approver Group (the Book uses the Group named: *WCM Approval Managers*) created in WebSphere Member Manager or LDAP.
- Use of DB2 as the content repository is not necessary for a demo and proof of the concept scenario. However, it is recommended for production. For a guide on how to set up DB2 as a repository for IBM Workplace Web Content Management, see 3.3, “Configuring IBM Workplace Web Content Management with DB2 Universal Database” on page 77.
- Sample images, files, and code that used in the exercises, which you can download according to directions listed in Appendix A, “Additional material” on page 617.

Tip: The resources that we use to build the sample site, including images, code samples, and stylesheets, are available for download from the following:

`ftp://www.redbooks.ibm.com/redbooks/SG246792/`

7.4 Accessing IBM Workplace Web Content Management

The IBM Workplace Web Content Management user interface is accessible through a a Web browser, using the proper URL to the IBM Workplace server. To access IBM Workplace Web Content Management:

1. Open an Internet Web browser application, such as Microsoft Internet Explorer.

Note: The minimum browser requirement is Microsoft Internet Explorer version 5.5 with Service Pack 2 or Internet Explorer 6.0 with Service Pack 1.

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2. In the Address line, enter the following URL:

   `http://<Hostname>:<Port>/wps/portal`

   In this URL:

   – *<Hostname>* is the fully qualified host name of your WebSphere Portal Server.

   – *<Port>* usually is 9081. For example, in our testing environment, the URL to access the server was as follows:

   `http://wcm02.cam.itso.ibm.com:9081/wps/portal`

3. Enter your user ID and password in the appropriate boxes.
4. Click **Login**.
5. Select the Web Content Management tab.

   Note: If for some reason, you do not see the Web Content Management tab when you log into WebSphere Portal, refer to Chapter 3, “Installing and configuring IBM Workplace Web Content Management” on page 69 to verify that IBM Workplace Web Content Management 5.1. is installed and access to the IBM Workplace Web Content Management authoring portlet is set correctly.

   When you click this tab, you see the Web Content Authoring screen, similar to that shown in Figure 7-3.

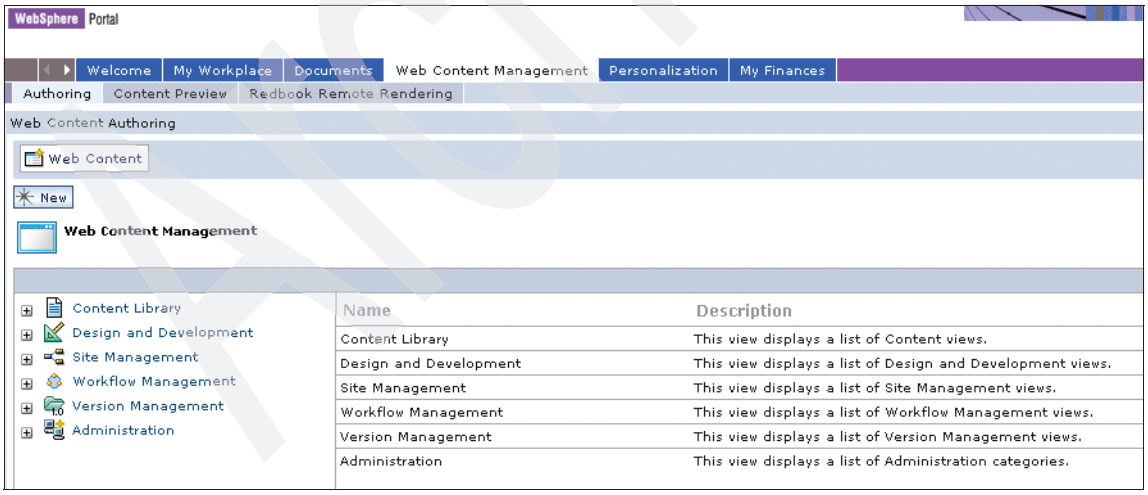


Figure 7-3 The Web Content Authoring screen

Note: On the left side of this screen, you see the items view navigator (Figure 7-4). You use this navigator to get to many of the components with which you work while building the site.

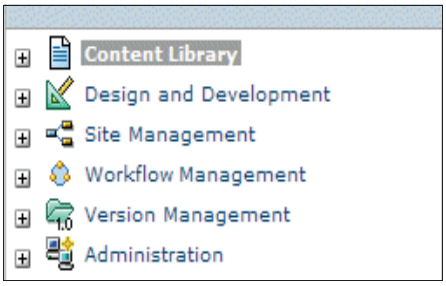


Figure 7-4 Items view navigator

7.5 Building the site framework

This section describes how to build the site framework. The following steps comprise the tasks that are required to complete this exercise.

- Creating the site
- Creating the site areas
- Rearranging the site area order

7.5.1 Creating the site

In this guided practice, you build a predefined site framework that is based on the River Bend Coffee and Tea Company example. To create the River Bend Coffee and Tea Company site, follow these steps:

1. In the item views navigator, expand Site Management.
2. Click **New**.
3. Select **Site**.
4. Click **OK**.
5. In the Name field, type `River Bend`, as shown in Figure 7-5 on page 260.

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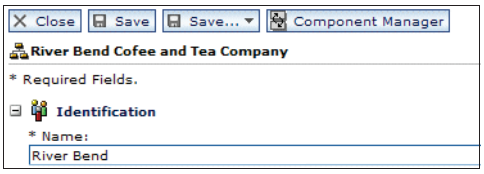


Figure 7-5 Naming the site

6. Click **Save...**, and then click **Save and Close**.
7. At this point, you see the River Bend site displayed in the index list. (Figure 7-6).

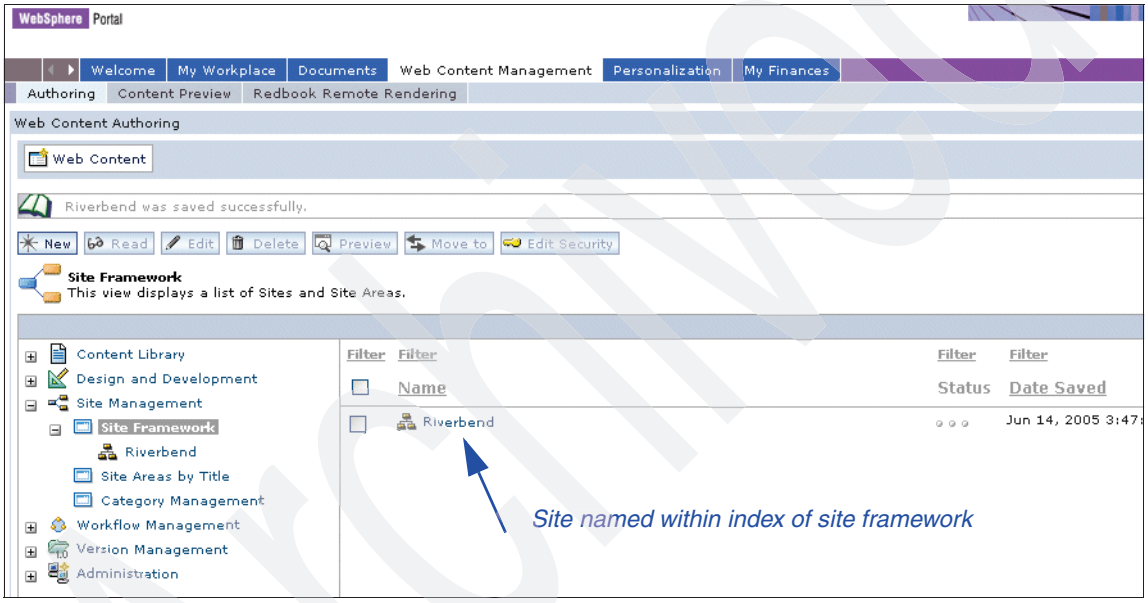


Figure 7-6 The River Bend site in the index of site framework

7.5.2 Creating the site areas

After you have created the site, you create site areas for each area within the site by following these steps:

1. Expand the site framework in the item views navigator, if it is not already expanded.
2. Click **New**.
3. Select **Site Area**.
4. Click **OK**.

5. Select **River Bend** as the parent site.

   Notice that the Start for the Link Order of the new site area is selected by default. Keep this selection.

Note: As you build your site framework, make sure that you select the correct parent site with which to associate the different site areas. Select the correct site area, as shown in Figure 7-6 on page 260. The parent list contains all previously defined sites and site areas. When you select a site or site area from this list, you define under which parent your new site area is located.

6. Click **OK**.
7. In the Name field, enter `Home`.
8. Click **Save...,** and then click **Save and Close**.

   At this point, if you expand the site framework view, you see the home site area within the navigational hierarchy, as shown in Figure 7-7.

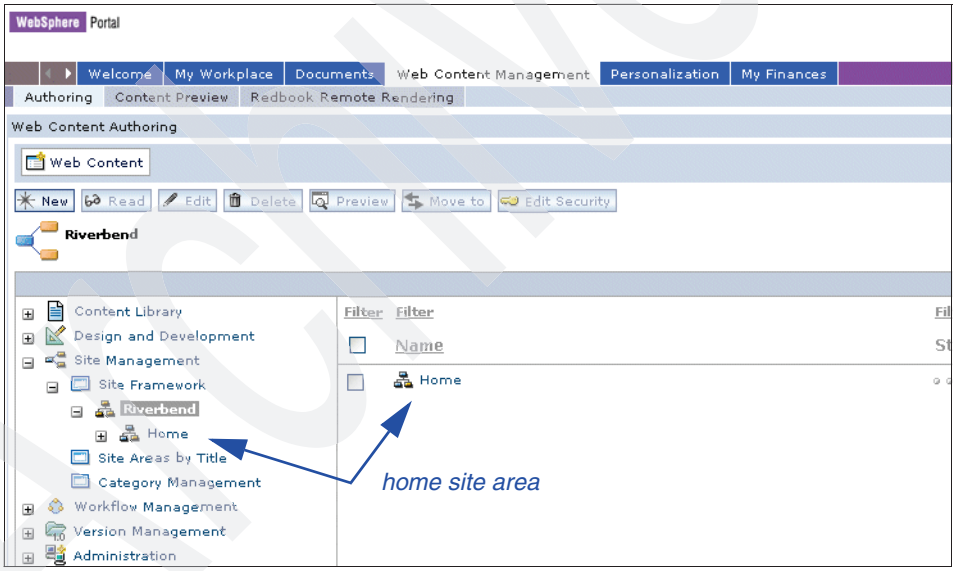


Figure 7-7 Creating the home site area

9. Click **New**.
10. Select **Site Area**, and click **OK**.
11. Expand **Riverbend** to show its dependant site areas.
12. Select **Home** as the parent site.

13. Select **End** for the link order of the new site area.

> **Note:** Selecting either Start or End for the link order determines the sequential placement of a site area within the list of multiple site areas. If the order of the site areas listed does not match the exact example that we provide, do not worry. Refer to 7.5.3, “Rearranging the site area order” on page 265 for details about how to re-order site areas.

14. Click **OK**.

15. In the Name field, enter the appropriate name of the site area. For example, for the first site area under Home, enter `Tools`, as shown in Figure 7-8.

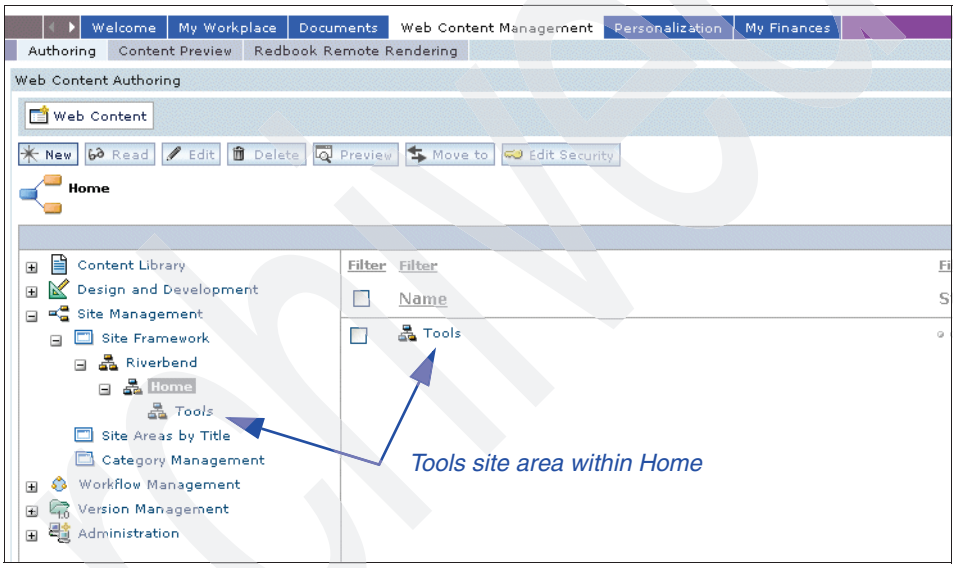


Figure 7-8 Creating the Tools site area within Home

16. Click **Save...**, and then click **Save and Close**.

At this point, you can repeat this process to create the site areas that are shown in Figure 7-9 on page 263. Repeat step 9 on page 261 through step 16 to create all the site areas for the site example.

> **Tip:** Use **Save ...** or **Save As** to create copies of an open object (that is, site area).

Attention: Make sure that you select the correct parent under which the site areas are located. In order to arrive at the same hierarchy for the site framework as that shown in Figure 7-9, you need to be sure to select the proper parent site when you create new site areas.

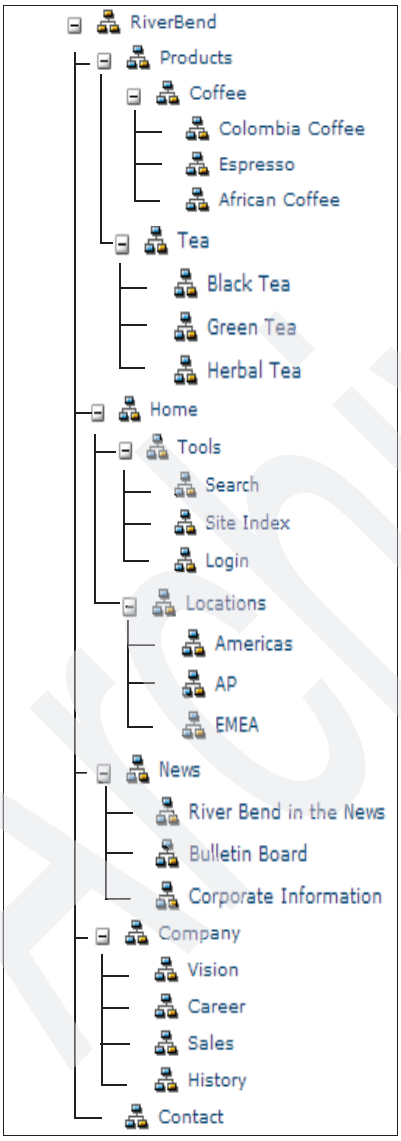


Figure 7-9 The RiverBend site framework

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Tip: When you create additional site areas, we recommend that you start with the highest level nodes of the hierarchy. For example, create the site areas for Products, News, Company, and Contact as nodes beneath the parent River Bend. When you have created these, then proceed to make lower-level site areas beneath each of these parents. For example, you can make a site area for *Coffee* and a site area for *Tea* using *Products* as the parent. Finally, create the next sub-level site areas beneath each of the Coffee or Tea product categories.

You do not need to create all the site areas to complete the exercise. For the purpose of creating the River Bend Web site, the site areas marked with an asterisk (*) are mandatory, and the rest are optional:

River Bend*

- Products*
  - Coffee*
    - Columbia Coffee*
    - Espresso*
    - African Coffee*
  - Tea *
    - Black Tea
    - Green Tea
    - Herbal Tea
- Home*
  - Tools*
    - Search*
    - Site Index*
    - Login*
  - Locations
    - Americas
    - AP
    - EMEA
- News*
  - River Bend in the News*
  - Bulletin Board*
  - Corporate Information*
- Company
  - Vision
  - Career
  - Sales
  - History
- Contact

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7.5.3 Rearranging the site area order

After you create a site area, you can change where the site area displays.

Note: Within this section, we describe specific steps for rearranging the order of two sibling and children site area nodes within the site framework. Keep in mind that you can use the Move To button to move a specific site area to a different level or location within the hierarchy.

Follow these steps to move the Login site area to the beginning and back to the end position in the Tools site area on the River Bend site:

1. In the item views navigator, expand the following:
   - The Site Management view
   - The Site Framework view
   - The River Bend site
   - The Home site area
   - The Tools site area.
2. Select the **Login** site area.
3. In the button bar, click **Move To**.
4. Expand the River Bend site.
5. Expand the Home site area.
6. Expand the Tools site area.
7. Select **Login**.
8. Click **Move to**.
9. Expand the River Bend site, the Home site area, and the Tools site area.
10. Select **Search.**
11. Click **Previous** under Move Order.
12. Click **OK**.

The Login site area is now displayed before the Search site area within the list of site areas, as shown in Figure 7-10.



Figure 7-10 Rearranging the Login site area

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13. To return the Login site area to its original position, select the **Login** site area.
14. Click **Move To**.
15. Expand the River Bend site framework.
16. Expand the Home site area.
17. Expand the Tools site area.
18. Select **Site Index**.
19. Click **Next** within the Move Order options.
20. Click **OK**.

The Login site area is now the last site area under the Tools site area.

7.6 Building the taxonomy and categories

This section explains how to build the taxonomy for the River Bend Web site. Refer to Chapter 5, “Key concepts and terminology” on page 141 for an overview of these components and a basic understanding of what you are going to build.

Note: The process of building the taxonomy and categories which you perform in this section is a key step for creating a informal structure for your metadata. Consider this a behind-the-scenes requirement for organizing your content.

7.6.1 Creating the site taxonomy

Follow these steps to create the taxonomy for the River Bend Coffee and Tea Company Web site:

1. In the item views navigator under the Site Management view, click **Category Management**.
2. Click New.
3. Select **Taxonomy** from the New list.
4. Click **OK**.
5. In the Name field, enter `River Bend Web Site Categories`.
6. Click **Save...,** and then click **Save and Close.**

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7.6.2 Creating categories for the site taxonomy

Follow these steps to create the categories:

1. In the item views navigator, click **Category Management** if it is not already selected.
2. Click **New**.
3. Select **Category** from the New list, if it does not already appear in the field.
4. Click **OK**.
5. Select **River Bend Web Site Categories** as the parent taxonomy.
6. Click **OK**.

Note: For the first category, select River Bend Web Site Categories. For the rest, select the correct parent category, as shown in the following list.

7. In the Name field, enter `Corporate`.
8. Click **Save…,** and then click **Save and Close**.
9. Repeat Steps 2 through 8 to create all the categories for the Web site, using the following list as a guide.

The index list contains all previously defined taxonomies and categories. When you select a taxonomy or category from this list, you define under which parent your current category is located. The following lists the finished category taxonomy:

- Corporate
  - Employees
  - News
    - External
    - Internal
  - Policies
- Countries
  - Ceylon
  - China
  - Colombia
  - Kenya
- Products
  - Coffee
  - Espresso
  - Tea
- Stores
  - Catering*
  - Retail*

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7.7 Building a workflow

The XYZ group in the River Bend Coffee and Tea Company needs the ability to view data. To review data each document has to go through a workflow after it is created. The workflows that you build in this exercise are used in the authoring template that you will build in the next section.

The following steps comprise the tasks that required to complete this exercise:

- Creating the intranet workflow stages
- Creating the publish stage
- Creating the Development Express Workflow
- Creating the Approval Workflow
- Creating actions

7.7.1 Creating the intranet workflow stages

Follow these steps to create the intranet workflow stages:

1. Click **Workflow Management** in the items view navigator.
2. Click **New**.
3. Select **Workflow Stage**.
4. Click **OK**.
5. In the Name field, type `Draft`.
6. Click **Save**.

   You see the following message above the button bar:

   ```
   Draft was saved successfully.
   ```

7. Click **Save...**, then click **Save and Close**.
8. Repeat Steps 1 through 7 to create the following stages:
   - Expired
   - Reject
   - Approval

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Note: If you have created the *WCM Approval Managers* group in WebSphere Member Manager or LDAP continue with this exercise. To continue with the exercises in this chapter, it is not required to have this group. However, for an implementation or proof of concept, you need to implement a granular security framework that meets the needs of your company or customer.

If you only use wpsadmin for the rest of the chapter's exercises, you can skip to the next section, because wpsadmin has sufficient rights to perform all actions including approval.

9. Click **Grant Approve Access** in the Workflow Security section.
10. Click **Add**.
11. Select **Groups** from the User Type list.
12. Click Search.
13. Select **WCM Approval Managers** approval group.

Note: Only members of the IBM Workplace Web Content Management Approval Managers group are able to access that content that is in this stage.

14. Click **OK**.
15. Click **OK**.
16. Click **Save**, and then **Close**.

7.7.2 Creating the publish stage

Follow these steps to create a stage called *Development* that changes the status of content from *Draft* to *Published*:

1. Click **Workflow Management** in the items view navigator.
2. Click **New**.
3. Select **Workflow Stage** from the New list.
4. Click **OK**.
5. In the Name field, type `Publish`.
6. In the Properties section, click **Select Actions** under Execute on Entering Stage to select an action that is performed on any content that enters this stage of the workflow.

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7. Click **Add**.

   The Execute on Entering Stage dialog box opens. It lists all the available actions. By default, the list includes Publish, Expire, and Publish and Expire

8. Select the **Publish** action.
9. Click **OK**.
10. Click **OK**.

Note: You see the word *Publish* under Execute on Entering Stage.

11. Click **Save...**, and then click **Save and Close**.

7.7.3 Creating the Development Express Workflow

The Development Express Workflow is the express workflow that publishes content immediately without approval. We use this workflow for this exercise to avoid time consuming approval activities. Make sure that you are in the Workflow Management view in the Item Views Navigator. Then, follow these steps to create the Development Workflow:

1. Click **New**.
2. Select **Workflow** from the New list.
3. Click **OK**.
4. In the Name field, type `Development Express`.
5. Click Select **Workflow Stages** in the Properties section.
6. Click **Add**.
7. Select **Draft** and **Publish** from the list of workflow stages.
8. Click **OK**.
9. Click **OK**.
10. Click **Save...**, and then click **Save and Close**.

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7.7.4 Creating the Approval Workflow

This guided practice creates a workflow that publishes content with approval, expiry, and reject stages. Make sure you are in the Workflow Management view in the Item Views Navigator. Then, follow these steps to create the Approval Workflow:

1. Click **New**.
2. Select **Workflow** from the New list.
3. Click **OK**.
4. In the Name field, type `Approval Workflow`.
5. Click **Select Workflow Stages** in the Properties section.
6. Click **Add**.
7. Select the following required stages an click **OK**:
   - Approval
   - Draft
   - Expired
   - Publish
8. Select the **Draft** stage.
9. Use the Move arrows, located to the right of the Workflow Stages list, to move the Draft stage to the top of the list.
10. Repeat steps 8 and 9 to rearrange the Workflow stages as follows:
    - Draft
    - Approval
    - Publish
    - Expired
11. Click **OK**.
12. Click **Select Reject Stage**.
13. Select the **Reject** stage.
14. Click **OK**.
15. Click **Save...**, and then click **Save and Close**.

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7.7.5 Creating actions

Now that you have created the workflow, you need to create actions for the stages that move documents through the approval workflow. To create actions, you need to do the following:

- Assign the Expire action to the Expired stage.
- Create a scheduled move action.
- Assign the Scheduled Move action to the Publish stage.
- Create the e-mail action.
- Assign the e-mail action to the Expired stage.

Assigning the Expire action to the Expired stage

Make sure you are in the Workflow Management view in the items view navigator. Then, follow these steps to assign the Expire action to the Expired stage:

1. Click **Workflow Stages**.
2. Select the **Expired** stage.
3. Click **Edit**.
4. Click **Select Actions** under Execute on Entering Stage in the Properties section.
5. Click **Add**.
6. Select **Expire** from the Available list.
7. Click **OK**.
8. Click **OK**.
9. Click **Save and Close**.

Creating a Scheduled Move Action

Make sure you are in the Workflow Management view in the items view navigator. Then, follow these steps to create a Scheduled Move Action:

1. Click **New**.
2. Select **Scheduled Move Action**.
3. Click **OK**.
4. In the Name field, type `Move on Expiry Date`.
5. Select **Expiry Date** from the Date Type list.
6. Choose an appropriate date to see this action, for example tomorrow's date.
7. Click **Save and Close**.

   You see the Move on Expiry Date action in the Workflow Actions view.

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Assigning the scheduled Move action and Publish action to the Publish stage

Make sure you are in the Workflow Management view in the items view navigator. Then, follow these steps to assign the Move on Expiry Date action that you created and the Publish action to the Published stage:

1. Click **Workflow Stages**.
2. Select the **Publish** stage.
3. Click **Edit**.
4. Click **Select Actions** under Execute on Entering Stage in the Properties section.
5. Click **Add**.
6. Select **Publish** and **Move on Expiry Date** from the list of available actions.
7. Click **OK**.
8. Click **OK**.
9. Click **Save and Close**.

Creating the e-mail action

Make sure you are in the Workflow Management view in the items view navigator. Then, follow these steps to create the e-mail action:

1. Click **New**.
2. Select **E-mail Action**.
3. Click **OK**.
4. In the Name field, enter `E-mail for Rejected Content`.
5. **Select E-mail Authors** in the E-mail Action section.

Note: E-mail Stage Approvers is selected automatically.

Type the following text in the Additional E-mail Text field:

```
Your content has been rejected. Please contact the content approver for
further details.
```

Note: This is the text the Content Author sees.

6. Click **Save** and **Close**.

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Assign the e-mail action to the Reject stage

Make sure you are in the Workflow Management view in the items view navigator. Then, follow these steps to assign the e-mail action that you created in to the Expired stage:

1. Click **Workflow Stages**.
2. Select the **Reject** stage.
3. Click **Edit**.
4. Click the **Select Actions** under Execute on Entering Stage.
5. Click **Add**.
6. Select **E-mail for Rejected Content** from the list of available actions.
7. Click **OK**.
8. Click **OK**.
9. Click **Save and Close**.

7.8 Creating an authoring template

To create an authoring template, you need to:

- Create the authoring template named *River Bend Development*.
- Copy the River Bend Development authoring template to the River Bend External News Authoring Template.

7.8.1 Creating the River Bend Development authoring template

To create the River Bend Development authoring template, follow these steps:

1. Click **Design and Development** in the items view navigator.
2. Click **New**.
3. Click **Authoring Template.**
4. Click **OK**
5. In the Name field, type `River Bend Development`.
6. Click **Select Workflow** in the Workflow section.
7. Click **Development Express**.
8. Click **OK**.

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Note: This action defines the default workflow for content that uses the River Bend Development authoring template, which is an express workflow without approval.

9. Click **Component Manager** at the top of the page.
10. Click **Add**.
11. In the Name field, enter `Display Title`.
12. Select **Text Component** from the Component Reference list.
13. Click **OK**.
14. Repeat Steps 10 through 13 to create the components that are listed in Table 7-1.

Table 7-1 Creating the component name and component type

Component name	Component type
Summary	Text Component
Body	Rich Text Component
Content Image	Image Component
PreBody	Component Reference
PostBody	Component Reference

The new component fields are added to the authoring template.

Note: Take care to avoid typographical errors, especially for blanks that separate two-word field names. Typographical errors are the main reason that content is not displayed as expected.

15. Click **OK**.
16. Click **Save...**, and then click **Save and Close**.

The River Bend Development authoring template appears in the index list.

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7.8.2 Copying the River Bend Development authoring template

Follow these steps to create a copy of the River Bend Development authoring template:

1. Click **Authoring Templates** in the items view navigator.
2. Click **River Bend Development**.
3. Click **Edit**.
4. Click **Save...; Save As**.
5. In the Name field, type `River Bend External News`.
6. Click **OK**.
7. Expand the Workflow section.
8. Click **Select Workflow**.
9. Select **Approval Workflow.**
10. Click **OK**.
11. Click **Save…**, and then click **Save and Close**.

7.9 Creating the presentation templates

In this exercise, you create the following presentation templates:

- A three-column table presentation template to display most of the content files and a related links menu, such as Login, Tools, and Site Map.
- A two-column table presentation template to format content in site areas that do not require the related links menu, such as Login, Tools, and Site Map.
- A two-column table presentation template that contains the connect tag in order to obtain search results in the Search site area.

Note: You can find the resources that we use to build the sample site, including images, code samples, and stylesheets at:

`ftp://www.redbooks.ibm.com/redbooks/SG246792/`

After creating the presentation templates, you pair them appropriately.

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7.9.1 Creating the presentation templates

Create the three-column table presentation template by following these steps:

1. In the items view navigator, expand **Design and Development**.
2. Click **New**.
3. Select **Presentation Template**.
4. Click **OK**.
5. In the Name field, enter `Three Column Table`.
6. In the Presentation Template section, replace the existing code with the code shown in Example 7-1.

Example 7-1 Three-column table presentation template code

```
<html>
<head>
<!--  insert River Bend stylesheet component reference here -->

<!-- insert search component reference here -->

</head>
<body text="black" bgcolor="white" background="" leftmargin="0" rightmargin="0"
topmargin="0" bottommargin="0">
<!-- page header table -->
<table border="0"  cellspacing="0" cellpadding="0"  width="760">
<tr>
<td  height="142">
<!-- insert River Bend logo and title image component references here -->

</td>
</tr></table>
<!--  main page table -->
<table class="middleBackground"  border="0"  width="760">
<tr>
<td colspan="3">
<!-- insert breadcrumb navigator component reference here  -->

<!-- insert long brown line image component reference here  -->

</td>
</tr>
<td valign="top" width="25%">
<!-- insert left navigator component reference here -->

<!-- insert tools navigator component reference here -->

<!-- insert quick search form html component reference here -->
```

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```
</td>
<td  valign="top">
<!-- insert component tag references here -->

<!-- insert related category menu component reference here -->

</td>
<td  valign="top" align="center" width="20%" >
<!-- insert related information menu component reference here -->

</td>
</tr>
<tr>
<td colspan="3" >
<!-- insert long brown line image component reference here  -->

<!-- insert JSP component reference for displaying site messages here -->

</td>
</tr>
<tr>
<td colspan="3">
<!-- insert River Bend footer image component reference here -->

</td>
</tr>
</table>
</body>
</html>
```

7. Find the following comment in which to insert the component tag references which reference the Authoring Template's field values:

```
<!-- insert component tag references here -->
```

8. Place the cursor beneath the comment and enter the code shown in Example 7-2.

Example 7-2 Three-column table presentation template component tag reference code

```
<font class="contrastHeading">
<AptrixCmpnt context="current" key="Display Title" type="content"/><br>
</font>
<AptrixCmpnt context="current" key="Summary" type="content"/>
<AptrixCmpnt context="current" key="PreBody" type="content"/>
<AptrixCmpnt context="current" key="Body" type="content"/>
<AptrixCmpnt context="current" key="Content Image" type="content"/>
<AptrixCmpnt context="current" key="PostBody" type="content"/>
```

Archived

9. Click **Save…**, and then click **Save and Close**.

7.9.2 Creating the two-column table presentation template

Follow these steps to create the two-column table presentation template:

1. In the item views navigator, expand **Design and Development**.
2. Click **New**.
3. Select **Presentation Template** in the New drop-down list.
4. Click **OK**.
5. In the Name field, enter `Two Column Table`.
6. In the Presentation Template section, replace the existing code with the code in Example 7-3.

Example 7-3 Two-column table presentation template code

```
<html>
<head>
<!-- insert River Bend stylesheet component reference here -->

</head>
<body text="black" bgcolor="white" background="" leftmargin="0" rightmargin="0"
topmargin="0" bottommargin="0">
<!-- page header table -->
<table border="0"  cellspacing="0" cellpadding="0"  width="760">
<tr>
<td  height="142">
<!-- insert River Bend logo and title image component references here -->

</td>
</tr></table>
<!--  main page table -->
<table class="middleBackground"  border="0"  width="760">
<tr>
<td colspan="2">
<!-- insert breadcrumb navigator component reference here  -->

<!-- insert long brown line image component reference here -->

</td>
</tr>
<td valign="top" width="25%">
<!-- insert left navigator component reference here -->

<!-- insert tools navigator component reference here -->
```

Archived

```
<!-- insert quick search form html component reference here -->

</td>
<td  valign="top">
<!-- insert component tag references here -->

</td>
</tr>
<tr>
<td colspan="2" >
<!-- insert long brown line image component reference here -->

<!-- insert JSP component reference for displaying site messages here -->

</td>
</tr>
<tr>
<td colspan="2">
<!-- insert River Bend footer image component reference here -->

</td>
</tr>
</table>
</body>
</html>
```

7. Insert the component tag references. Find the following comment:

```
<!-- insert component tag references here -->
```

8. Place the cursor beneath the comment and enter the code shown in Example 7-4.

Example 7-4 Two-column table presentation template component reference code

```
<font class="contrastHeading">
<AptrixCmpnt context="current" key="Display Title" type="content"/><br>
</font>
<AptrixCmpnt context="current" key="Summary" type="content"/>
<AptrixCmpnt context="current" key="PreBody" type="content"/>
<AptrixCmpnt context="current" key="Body" type="content"/>
<AptrixCmpnt context="current" key="PostBody" type="content"/>
```

9. Click **Save...**, and then click **Save and Close**.

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7.9.3 Creating the two-column table search presentation template

Follow these steps to create the two-column table search presentation template:

1. In the item views navigator, expand **Design and Development**.
2. Click **New**.
3. Select **Presentation Template** in the New drop-down list.
4. Click **OK**.
5. In the Name field, enter `Two Column Table Search`.
6. In the Presentation Template section, replace the existing code with the code shown in Example 7-5.

Example 7-5 Two-column table search presentation template

```
<html>
<head>
<!-- insert River Bend stylesheet component reference here -->

</head>
<body text="black" bgcolor="white" background="" leftmargin="0" rightmargin="0"
topmargin="0" bottommargin="0">
<!-- page header table -->
<table border="0"  cellspacing="0" cellpadding="0"  width="760">
<tr>
<td  height="142">
<!-- insert River Bend logo and title image component references here -->

</td>
</tr>
</table>
<!--  main page table -->
<table class="middleBackground"  border="0"  width="760">
<tr>
<td colspan="2">
<!-- insert breadcrumb navigator component reference here  -->

<!-- insert long brown line image component reference here -->

</td>
</tr>
<tr>
<td valign="top" width="25%">
<!-- insert left navigator component reference here -->

<!-- insert tools navigator component reference here -->

<!-- insert quick search form html component reference here -->
```

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```
</td>
<td  valign="top">
<!-- insert component tag references here. Note that the Search Results title
and connect tag will be inserted above the PostBody component. -->

<!-- insert Search Results title here -->

<!-- format search results according to template specified in template
attribute of connect tag below -->

</td>
</tr>
<tr>
<td colspan="2" >
<!-- insert long brown line image component here -->

<!-- insert JSP component reference for displaying site messages here -->

</td>
</tr>
<tr>
<td colspan="2">
<!-- insert River Bend footer image component reference here -->

</td>
</tr>
</table>
</body>
</html>
```

7. Insert the component tag references. Find the following comment:

```
<!-- insert component tag references here -->
```

8. Place the cursor beneath the comment and enter the code shown in Example 7-6.

Example 7-6 Two-column table search presentation template component tag

```
<font class="contrastHeading">
<AptrixCmpnt context="current" key="Display Title" type="content"/><br>
</font>
<br>
<AptrixCmpnt context="current" key="Summary" type="content"/>
<br>
<br>
<AptrixCmpnt context="current" key="PreBody" type="content"/>
<AptrixCmpnt context="current" key="PostBody" type="content"/>
```

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9. Select **Process Connect Tags**.
10. Click **Save…**, and then click **Save and Close**.

Note: In the two-column table search presentation template, in the component tag reference code, there is no Body component reference. In this case, the most logical position for the PostBody component would be after the `<connect>` tag, because the search results are a type of a Body, at least from an appearance viewpoint. Also, the PostBody component is not actually used, but it is in here to provide symmetry with the PreBody component and to maintain consistency with the other presentation templates.

7.10 Pairing the authoring template and the presentation templates

Follow these steps to pair the authoring templates and presentation templates appropriately for the River Bend site and its various site areas:

1. In the items view navigator, expand **Site Management**.
2. Expand **Site Framework**.
3. Select **River Bend**.
4. Click **Edit**.
5. In the Properties section, click **Edit Template Mapping**.
6. Click **Add**.

   A list of the available authoring templates and presentation templates displays, as shown in Figure 7-11 on page 284.

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Figure 7-11 Pairing the authoring template and the presentation template

7. In the Authoring Templates section, select **River Bend Development**.
8. In the Presentation Templates section, select **Three Column Table**.
9. Click **OK**.

   The two templates are displayed as mapped.
10. Click **Add**.
11. Click **River Bend External News**.
12. Click **Three Column Table**.
13. Click **OK**.
14. Click **OK**.
15. Click **Save...**, and then click **Save and Close**.

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16. Repeat Steps 3 through 15 to create the remainder of the template mappings for the site areas, according to Table 7-2. Be sure to select the appropriate site area for each template mapping. The site areas that are not mentioned in Table 7-2 inherit the template pairings.

Table 7-2 Site area pairing authoring template with presentation template

In this site area…	Pair this authoring template…	With this presentation template…
Tools	River Bend Development	Two Column Table
Site Index	River Bend Development	Two Column Table
Search	River Bend Development	Two Column Table Search
Login	River Bend Development	Two Column Table
River Bend in the News	River Bend External News	Three Column Table

7.11 Creating and referencing image components

To create and reference image components, you need to:

- Create several image library components.
- Reference these image components, as needed, in a presentation template and a content item. Note that one of these images is inserted when you create the left navigator later.

For this exercise, we used an image logo for the River Bend Web site.

Tip: The resources that we to build the sample site, including images, code samples, and stylesheets are available at:

`ftp://www.redbooks.ibm.com/redbooks/SG246792/`

For your implementation, you can use a stylesheet that reflects your company's corporate design.

7.11.1 Creating image library components

Follow these steps to add image library components.

1. In the items view navigator, expand **Design and Development**.
2. Click **Component Library**.
3. Click **New**.

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4. Select **Image Component**, and then click **OK**.
5. In the Name field, enter `Riverbend_Logo`.

Note: Use the same name as the image file so that you know what the library component contains.

6. In the Image Component section in the File section, click **Upload File**.
7. Click **Browse**.
8. **Browse** for the riverbend_logo.gif image in the location where you downloaded it.
9. Click **Open**, and then click **OK**.
10. Click **Save…**, and then click **Save and Close**.

    The image is saved in the library of image components.
11. Expand Image Component in the items view navigator to see the new image component that is listed in the index.
12. Repeat steps 3 through 11 to create the other image components as follows:
    - Riverbend_Title (uses riverbend_title.gif)
      - Set Width to 320
      - Set Height to 120
    - Riverbend_Footer (uses riverbend_footer.gif)
      - Set Width to 755
      - Set Height to 34
    - Short_Brown_180_Pixel_Line (uses brown_dot.gif)
      - Set Width to 180
      - Set Height to 1
    - Long_Brown_755_Pixel_Line (uses brown_dot.gif)
      - Set Width to 755
      - Set Height to 1
    - Coffeebeans (uses CoffeeSmall.jpg)
    - Tealeaves (uses TeaSilverNeedle.jpg)
    - Redbook_Team (uses RedbookTeam.jpg)
      - Set Width to 200
      - Set Height to 150

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Note: For the line images, you use a single dot and then size it accordingly. The image brown_dot.gif is used for both of the different line sizes in this activity. When you specify values in the height and width fields for an image component that uses this type of image (a 1-pixel by 1-pixel dot), the browser scales the image according to those values. You can reuse the same image file to create lines of different sizes on your Web site. For the other images, you set the height and width during the save action, according to the images' values of the file.

7.11.2 Referencing images in a presentation template

Now, you are ready to insert the following image library components in a presentation template:

- Riverbend_Logo
- Riverbend_Title
- Riverbend_Footer
- Long_Brown_755_Pixel_Line

Follow these steps to insert the image library components as references in the Three Column Table presentation template:

1. In the items view navigator, expand **Design and Development**.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. Find the following tag in the Presentation Templates section:

   ```
   <!--insert River Bend logo and title image component references here-->
   ```

   Enter the following line of code beneath the tag:

   ```
   <AptrixLibCmpnt name="Riverbend_Logo"/>
   <AptrixLibCmpnt name="Riverbend_Title"/>
   ```

6. You eventually insert a breadcrumb navigator below the title and logo. Beneath where the breadcrumb navigator will be, you need to insert the long brown line image component reference. Find the following tag in the Presentation Templates section:

   ```
   <!-- insert breadcrumb navigator component reference here -->
   ```

   Beneath that tag, find this tag:

   ```
   <!-- insert long brown line image component reference here -->
   ```

   Enter the following line of code beneath the tag:

   ```
   <AptrixLibCmpnt name="Long_Brown_755_Pixel_Line"/>
   ```

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7. Insert code for the second instance of the long brown line separator just above where the JSP component will be. In the Presentation Templates section, find the following comment:

   ```
   <!-- insert long brown line image component reference here -->
   ```

   Directly below this tag, enter the following code:

   ```
   <AptrixLibCmpnt name="Long_Brown_755_Pixel_Line"/>
   ```

8. Insert the River Bend footer. In the Presentation Templates section, find the following comment:

   ```
   <!-- insert River Bend footer image component reference here -->
   ```

   Enter the following line of code below this comment:

   ```
   <AptrixLibCmpnt name="Riverbend_Footer"/>
   ```

9. Click **Save…**, and then click **Save and Close**.

Note: For the line images, you use a single dot and then size it accordingly. The image brown_dot.gif is used for both of the different line sizes in this activity. When you specify values in the height and width fields for an image component that uses this type of image (a 1-pixel by 1-pixel dot), the browser scales the image according to those values. You can reuse the same dot image file to create lines of different sizes on your Web site.

10. Repeat steps 1 through 9 to enter these image library component references into the Two Column Table and Two Column Table Search presentation templates, as appropriate for each template. These templates contain the same comments that are in the Three Column Table presentation template.

7.12 Creating content

To create content, you need to:

- Create a content item, add it to a site area, and associate a category with the content to test that these items work properly.
- Create a content item and assign it as the default content page for a site area.
- Create additional content items for the remaining site areas in the River Bend Web site.

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7.12.1 Creating content to test that items in the site work properly

Follow these steps to create content to test your work:

1. In the item views navigator, expand Content Library.
2. Click **New**.
3. Select **Content**.
4. Click **OK**.

   The Web Content Authoring screen appears with a directive to choose your content's authoring template and site area. The River Bend Development authoring template displays in the Authoring Templates list.
5. In the Authoring Template field, select **River Bend Development**, if it is not already selected.
6. In the items view navigator in the Site Framework view, expand the River Bend site and the News site area.
7. Select **River Bend in the News**.
8. Click **OK**.

   An untitled object window opens.
9. In the Name field, enter `WCM Redbook Team in the News`. This is the name of the content file, not what is displayed in the Web browser.
10. In the Description field, enter `WCM Redbook Team in the News`.

Next, you need to associate a category with this content. Follow these steps:

1. Expand the **Profile** section.
2. Click **Select Categories**.
3. Click **Add**.
4. Expand the following:
   - River Bend Web Site Categories taxonomy
   - Corporate category
   - News category.
5. Select **Internal**.
6. Click **OK**.
7. Click **OK**.
8. In the Display Title field, enter `WCM Redbook Team in the News`.

   The Display Title is displayed in the News menu. The text in the Display Title is also displayed at the top of the content page.

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9. In the Summary field, enter the following text:

```
News about the Team writing the Redbook in Cambridge 2005
```

Note: The summary text appears directly beneath the title on the content page. So, it does not need a period at the end of the sentence.

10. In the Body field, enter the following text:

```
The team who worked for four weeks in Cambridge, MA, to write the book
are (in the picture, top row, left to right) Michael Fromin, ascendant
Technologies, Denver CO and Amir Jordan, wpexperts, Cologne, Germany.
(Second row, left to right) Sabine Nagl, IBM Germany and Thomas
Radigewski, Germany. Not pictured: John Bergland, Project and Residency
Leader, IBM, Cambridge MA.

The amount of information that went into the book was substantial in
order to meet the expectations and requirements that have come up since
the last redbook was published in 2004. To achieve this target, a large
number of experts contributed to the book. Because these contributors
are located from Australia to Europe and North America, the book is a
worldwide achievement.
```

After you enter this text, it becomes the body of content for your page.

Note: If the text that you type into the Body field is one line in length or if it is multiple lines in the same paragraph, be sure to press Enter to ensure that the paragraph tags are in place. If not, the body text is appended to the summary text with no separation.

11. Use the Rich Text editor to format text. Select **Team** and make the text bold.
12. Click **Save**.

Note: After closing the content object a green symbol in the status column on the right side of the item views navigator shows that the content was immediately published. The Development Workflow defined in the authoring template pushes the content immediately to the Publish stage. It does not use an Approval stage.

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7.12.2 Creating a content item and assigning it as the default content page for a site area

To create a content item, follow these steps:

1. Expand Content Library in the items view navigator.
2. Click **New**.
3. Select **Content**.
4. Click **OK**.

   The Web Content Authoring screen appears, with a directive to choose your content's Authoring Template and site area.
5. In the Authoring Template field, select **River Bend Development** if it is not already selected.
6. In the Site Framework view in the items view navigator, expand the River Bend site and News site area.
7. Select **River Bend in the News**.
8. Click **OK**.
9. In the Name field, enter River Bend in the News.
10. In the Description field, enter the following text:

    ```
    Default content page for River Bend in the News site area.
    ```
11. Expand the Profile section, and click **Select Categories**.
12. Click **Add**.
13. Expand the following:
    - River Bend Web Site Categories taxonomy
    - Corporate category
    - News category
14. Select **Internal** and **External**.
15. Click **OK**.
16. Click **OK**.
17. In the Display Title field, enter the following text:

    ```
    Recent news about River Bend
    ```
18. In the Summary field, enter the following text:

    ```
    Recent news about River Bend
    ```
19. In the Body field, enter the following text:

    ```
    Check this page often to see the latest news brewing at River Bend.
    ```

Archived

20. Click **Save…**, and then click **Save and Close**.

To assign this content item as the default content page for the River Bend in the News site area, follow these steps:

1. Expand Site Management in the items view navigator.
2. Expand Site Framework.
3. Expand the River Bend site and the News site area.
4. Select **River Bend in the News**.
5. Click **Edit**.
6. In the Properties section, under Default Content, click **Select Default Content**.
7. Select the River Bend in the News content page.
8. Click **OK**.
9. Click **Save**.
10. Click **Preview** to view the content.
11. Click **Save…**, and then click **Save and Close**.

Attention: At this point in the process, it is possible to view the Web site in the browser — without a portal and portlets — as a stand-alone Web site. You must add the default content to a site area before you can view the site area.

Open your browser, and use the following URL (for IBM Workplace Web Content Management 2.5 and 5.1):

```
http://<your servername>:<port>/wps/wcm/myconnect/RiverBend/News/
River+Bend+in+the+News
```

For example, we used the following URL for this book:

```
http://wcm01.cam.itso.ibm.com:9081/wps/wcm/myconnect/RiverBend/News/
River+Bend+in+the+News
```

7.12.3 Referencing an image component in a content item

Follow these steps to reference the image component of the content item named *WCM Redbook Team in the News*.

1. In the item views navigator, expand Content Library.
2. Click **Content by Title**.
3. Select the **WCM Redbook Team in the News** content item.
4. In the button bar, click **Edit**.

5. Scroll down to the PostBody section. Beneath Component, click **Select Component**.
6. In the items view navigator, click **Image Component**.
7. In the index, click **Redbook_Team**.
8. Click **OK**.
9. Click **Save**.
10. Click **Preview**.
11. Click **Refresh**.

Note: The image appears on the *WCM Redbook Team in the News* content page. The image is located in the PostBody section, beneath the paragraph that describes the members of the team.

Note: Regarding the image, Short_Brown_180_Pixel_Line, that you added to the component library but have not used yet, you will insert this image in the left navigator in the section where you create navigators later. The short brown line separates each of the site area links in the left navigator in the River Bend Web site that you are creating.

7.12.4 Creating content items for the remaining site areas in the River Bend Web site

The following tables contain information about the content for the River Bend Web site. You create content by using the information for the fields and by adding the content as default content to the site areas as indicated. For all content items, use the River Bend Development authoring template.

Important: You can only view a page or site area after assigning a default content.

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Table 7-3 Default content for site area Products

Field	Default content
Title	Products
Category	Coffee, Tea
Display title	Products
Summary text	River Bend Products
Body text	Coffee and tea from selected plantations.
Other	Default content for Products site area

Table 7-4 Default content for site area Coffee

Field	Default content
Title	Coffee
Category	Coffee
Display title	Coffee
Summary text	River Bend Coffees
Body text	Our coffees are fair trade, organically grown, hand-roasted coffees. You can enjoy them at one of our retail outlets, or you can order them from our catalog and have them shipped to your home.
Other	Image component *Coffeebeans* in Postbody field; default content for Coffee site area

Archive

Table 7-5 Default content for site area Colombia Coffee

Field	Default content
Title	Colombia Coffee
Category	Colombia, Coffee
Display title	Colombia Coffee
Summary text	River Bend Colombia Coffees
Body text	Coffee beans from selected plantations in Colombia.
Other	Image component *Coffeebeans* in Postbody field; Default content for Colombia Coffee site area

Table 7-6 Default content for site area Columbia Coffee, Espresso

Field	Default content
Title	Colombia Coffee
Category	Colombia, Espresso
Display title	Rich Colombia Coffee from West Coast plantation
Summary text	Recent news about rich colombian espresso bean
Body text	Latest harvest created a rich, dark espresso bean due to excellent weather conditions.
Other	

Archive

Table 7-7 Default content for site area Espresso

Field	Default content
Title	Espresso
Category	
Display title	Coffee, Espresso
Summary text	River Bend Espresso
Body text	Our selection of strong and aromatic espresso beans from selected plantations.
Other	Image component *Coffebeans* in Postbody field; Default content for Espresso site area

Table 7-8 Default content for site area African Coffee

Field	Default content
Title	African Coffee
Category	Kenya
Display title	African Coffee
Summary text	River Bend African Coffees
Body text	Our selection of beans from plantations in traditional coffee growing areas in Africa.
Other	Default content for African Coffee site area

Archive

Table 7-9 Default content for site area Tea

Field	Default content
Title	Tea
Category	Tea
Display title	Tea
Summary text	River Bend's finest Tea selection
Body text	Our teas are fair trade and grown organically on the hills of China and Ceylon. Herbs for our Herbal Tea is grown organically in selected areas around the world.
Other	Image component *Tealeaves* in Postbody field; Default content for Tea site area

Table 7-10 Default content for site area Black Tea

Field	Default content
Title	Black Tea
Category	Tea, China, Ceylon
Display title	Black Tea
Summary text	River Bend's finest Black Tea selection
Body text	Our teas are fair trade and grown organically in the hills of China and Ceylon.
Other	Image component *Tealeaves* in Postbody field; Default content for Black Tea site area

Archive

Table 7-11 Default content for site area Green Tea

Field	Default content
Title	Green Tea
Category	Tea, China
Display title	Green Tea
Summary text	River Bend's finest Green Tea selection
Body text	Our teas are fair trade and are grown organically in the hills of China.
Other	Image component *Tealeaves* in Postbody field; Default content for Green Tea site area

Table 7-12 Default content for site are Herbal Tea

Field	Default content
Title	Herbal Tea
Category	Tea, Ceylon, China, Kenya
Display title	Herbal Tea
Summary text	River Bend's finest Herbal Tea selection
Body text	Herbs for our Herbal Tea are grown organically in selected areas around the world.
Other	Image component *Tealeaves* in Postbody field; Default content for Herbal Tea site area

Archive

Table 7-13 Default content for site area Home

Field	Default content
Title	Home
Category	Corporate
Display title	Welcome to River Bend Coffee and Tea Company
Summary text	A quick look at River Bend
Body text	Thank yo for visiting us today at River Bend Coffee and Tea Company.
Other	Default content page for Home site area

Table 7-14 Default content for site area Tools

Field	Default content
Title	Tools
Category	
Display title	Tools
Summary text	Site navigation and search tools
Body text	You can use the tools in this section to enhance your experience using the River Bend Web site.
Other	Default content page for *Tools* site area

Archive

Table 7-15 Default content for site area Search

Field	Default content
Title	Search
Category	
Display title	Search
Summary text	Search River Bend
Body text	Use this page to find what you are looking for on the River Bend Web site.
Other	Default content page for Search site area Verify that the PreBody section contains the HTML Search Form component

Table 7-16 Default content for site are Site Index

Field	Default content
Title	Search
Category	
Display title	Site Index
Summary text	River Bend's Web site at a glance
Body text	If you do not find what you are looking for, come back soon. We add new information about our coffees and teas daily.
Other	Default content page for Site Index site area; the PostBody component contains the NAV-Site Map component

Archive

Table 7-17 Default content for site area Login

Field	Default content
Title	Login
Category	
Display title	Login
Summary text	Access to River Bend IT systems
Body text	This page is for River Bend Coffee and Tea company employees and contractors.
Other	Default content page for Login site area; PostBody component contains the HTML Login Form component

Table 7-18 Default content for site area News

Field	Default content
Title	News
Category	News
Display title	News
Summary text	News of interest to River Bend employees, customers, and investors
Body text	Read about the latest news, product developments, and announcements at River Bend. This information changes often, so check back frequently.
Other	Default content page for News site area

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Table 7-19 Default content for site area Bulletin Board

Field	Default content
Title	Bulletin Board
Category	Employees, External, Internal
Display title	Bulletin Board
Summary text	Important notices and announcements from River Bend
Body text	Visit the River Bend Bulletin Board to see interesting news for both employees and customers.
Other	Default content page for Bulletin Board site area

Table 7-20 Default content for site area Corporate Information

Field	Default content
Title	Corporate Information
Category	News
Display title	Corporate Information
Summary text	Facts about the River Bend business
Body text	River Bend considers itself a responsible member of the business community. As such, we donate 10% of our pre-tax profits to charitable causes. In addition, all of our employees are co-owners of River Bend Coffee and Tea Company.
Other	Default content page for site area Corporate Information

Important: Use the Home content item as default content for all remaining site areas.

Note: Create the content pages and assign them to the site areas as default content.

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7.12.5 Opening and viewing the River Bend Web site in a browser

After you have assigned default content to the site areas, the River Bend Web site is ready for browsing.

Note: You will add further design elements in the following sections to complete the design.

To open and view the River Bend Web site in a browser, follow these steps:

1. Open a Web Browser window.
2. Enter the following URL. You should replace <*your Servername*> with your actual values.

   ```
   http://<your Servername>:<port usually 9081>/wps/wcm/myconnect/RiverBend
   ```

   For example, the site for the example River Bend Web site is:

   ```
   http://wcm01.cam.itso.ibm.com:9081/wps/wcm/myconnect/RiverBend
   ```

Tip: If you cannot view a certain page as you navigate the site, the default content for that page might be missing. Be sure that you have defined default content for all site areas.

7.13 Using stylesheets

To use stylesheets, you need to do the following:

- Save the stylesheet as a file resource component
- Reference the stylesheet component in the presentation templates

That stylesheet that we use for the River Bend Web site is available for download (riverbend.css). For information about how to download the stylesheet, see Appendix A, “Additional material” on page 617. For your own implementation, you will use a stylesheet that reflects your company’s corporate design.

Note: The sample code that we use throughout the exercises within this chapter are available for download as described in Appendix A, “Additional material” on page 617.

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7.13.1 Saving the stylesheet as a file resource component

Follow these steps to save the riverbend.css stylesheet as a file resource component:

1. In the item views navigator, expand Design and Development.
2. Expand the Component Library section.
3. Click **New**.
4. Select **File Resource Component**.
5. Click **OK**.
6. In the Name field, enter `riverbend.css`.
7. In the File Resource Component section, click **Upload File**.
8. Click **Browse**.
9. Select the riverbend.css stylesheet.
10. Click **Open**.
11. Click **OK**.
12. Click **Save…** and then click **Save and Close** to close the file resource component.

7.13.2 Referencing the stylesheet in the presentation templates

Follow these steps to reference the stylesheet in the presentation templates:

1. In the item views navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select the **Three Column Table presentation** template.
4. Click **Edit**.
5. In the Presentation Template section, find the following comment:

   ```
   <!-- insert River Bend stylesheet component reference here -->
   ```

   Insert the following code beneath the comment:

   ```
   <link rel="stylesheet" href='<AptrixLibCmpnt name="Riverbend.css"/>'>
   ```

   Attention: Carefully note the use of single (‘) and double (“) quotation marks.

6. Click **Save…** and then click **Save and Close** to save the Three Column Table presentation template.

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Note: Continue with the remainder of the steps only if you use IBM Workplace Web Content Management 2.5. If you use If you use IBM Workplace Web Content Management 5.1, simply refresh your browser to text the template.

7. Preview a content file that uses the Three Column Table presentation template to test your work, by expanding Content Library.
8. Click **Content by Title**.
9. Select the **Bulletin Board** content item.
10. Click **Preview**.

    When the content page opens, you can see the stylesheet has been applied because the background is light brown and the font in the summary and body text has changed.

    Follow steps 2 through 6 to add the stylesheet reference to the Two Column Table and Two Column Table Search presentation templates.

7.14 Adding a left navigator component

This section explains how to add a navigator component item that displays the site areas under the site River Bend on the left-hand side of the Web site. The navigator uses alternating design for selected and non-selected elements by applying HTML layouts. To display the navigator, the component reference is added to the three presentation templates.

To add a left navigator component, you need to do the following:

- Create the left navigator component.
- Reference the left navigator component in the presentation template.
- Format the left navigator component by creating bold and normal HTML components.
- Reference the HTML formatting components in the left navigator component.

7.14.1 Creating a left navigator component

To create the navigator that appears on the left side of every Web page, do the following:

1. Expand Design and Development in the items view navigator.
2. Expand Component Library.

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3. Click **New**.
4. Select **Navigator Component**.
5. Click **OK**.
6. In the Name field, enter `NAV-Left`.

> **Tip:** It is good style and helpful to use a naming schema for components. It makes references easier to understand. For navigators, use a `NAV-` prefix. A reference then reads:
>
> ```
> <AptrixLibCmpnt name="NAV-Left"/>
> ```

7. In the Description field, enter `Left navigator for accessing site area sections`.

> **Note:** The Navigator Component section contains fields for defining the navigator's:
>
> - Search criteria (in the top half of the window)
> - Formatting (in the bottom half of the window)

8. In the Navigator Component section in the Start Type list, choose **Selected**.

   This action indicates that you define the site area from which the search begins.
9. In the Selected Start Area section, click **Select Start Area**.
10. In the index, click **River Bend**.
11. Click **OK**.
12. Deselect **Include Start** so that River Bend does not appear in the navigator.
13. From the Descendant Level list, select **1 Level**.

    This action defines that the first level of children site areas of River Bend are collected.
14. Deselect **Show Content**.

> **Note:** If this option is selected, links to content in the current site area display in the navigator.

15. Select **Expand Current**.

Note: If this option is selected, the navigator expands to display the children site areas of the current site area.

16. In the Header field, enter the following code:

```
<font class="contrastHeading">
Site Navigation
</font>
```

17. Add short brown lines to separate the site area links. In the Separator field, enter the following line of code:

```
<AptrixLibCmpnt name="Short_Brown_180_Pixel_Line"/><br>
```

18. Indent each site area level and create a placeholder for the code you will add to format the site area links. In the Component Design 1 field, enter the following code:

```
<IndentCmpnt offset="0" repeat="   "/>
<placeholder tag="namelink"/><br>
```

19. Click **Save…** and then click **Save and Close**.

7.14.2 Referencing the left navigator in the presentation templates

Follow these steps to insert a tag to reference the left navigator component in the presentation templates:

1. In the item views navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. In the Presentation Template section, add the following comment:

```
<!--insert left navigator component reference here-->
```

   Insert the following code below the comment:

```
<AptrixLibCmpnt name="NAV-Left"/>
```

6. Save the presentation template.
7. Refresh the browser to view the left navigator on the Bulletin Board content page.
8. Click each navigator link to view the default content for each site area.

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Note: You created the default content items and assigned a default content page to each site area in 7.12.4, “Creating content items for the remaining site areas in the River Bend Web site” on page 293.

9. Repeat steps 2 through 6 to reference the left navigator component in the Two Column Table and Two Column Table Search presentation templates.
10. Preview your work by clicking the Site Index (uses the Two Column Table presentation template) site area link and the Search (uses the Two Column Table Search presentation template) site area link in the left navigator.

7.15 Formatting the navigator

To format the navigator so that the current site area is formatted differently from the rest of the site areas in the navigator, you need to:

- Create HTML components to specify bold and plain formatting.
- Reference the bold and plain HTML formatting components in the left navigator component.

7.15.1 Creating HTML components to specify formatting

Follow these steps to create the bold and plain formatting components:

1. In the item views navigator, expand Design and Development.
2. Expand Component Library.
3. Click **New**.
4. Select **HTML Component**.
5. Click **OK**.
6. In the Name field, enter `HTML-Layout-Main Nav Bold`.
7. In the Description field, enter:

```
This is the bold text formatting component.
```

8. In the HTML Component section, enter the following line of code:

```
<a href='<placeholder tag="href"/>' >
<b><placeholder tag="name"/></b>
</a><br>
```

Attention: Be sure to use single (‘) and double (“) quotation marks correctly.

9. Click **Save** and then click **Save and Close**.
10. Repeat steps 3 through 9 to create a new HTML component with the following changes:
    - In the Name field, enter `HTML-Layout-Main Nav Plain`.
    - In the Description field, enter the following:

      ```
      This is the plain text formatting component.
      ```

    - In the HTML Component section, enter the following line of code:

      ```
      <placeholder tag="namelink"/><br>
      ```

7.15.2 Referencing the HTML formatting components in the left navigator component

To specify the format for bold and plain and to indent each level in the site navigation, do the following:

1. In the item views navigator, expand Component Library.
2. Expand Navigator Component.
3. Select **NAV-Left**.
4. Click **Edit**.
5. In the Navigator Component section, scroll to the Component Design 1 field.
6. Delete the existing placeholder tag in the field, and enter the following line of code:

   ```
   <IndentCmpnt offset="0"
   repeat="   "/>
   <AlternateDesign highlight="HTML-Layout-Main Nav Bold"
   normal="HTML-Layout-Main Nav Plain" type="Any"/>
   ```

7. Click **Save** and then click **Save and Close**.
8. Refresh your browser.
9. Navigate to River Bend in the News site area. Note how the current site area is formatted with bold text.

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7.16 Creating a breadcrumb navigator

To create a breadcrumb navigator, you need to:

- Create a breadcrumb navigator component.
- Reference the breadcrumb navigator component in the presentation templates.

7.16.1 Creating the breadcrumb navigator component

To create the breadcrumb navigator that appears at the top of every Web page, just beneath the River Bend logo and title, do the following:

1. In the item views navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **Navigator Component**.
5. Click **OK**.
6. In the Name field, enter `NAV-Breadcrumbs`.
7. In the Description field, enter:

   ```
   This navigator appears at the top of every Web page.
   ```

8. In the Navigator Component section, select **Current - Site Area** from the Start Type list.

   This action indicates that the navigator needs to determine the site area of the currently displayed content.

9. Be sure that Include Start is selected.

   This action indicates that the navigator must include the first item it finds (for example, the site area of the current content).

10. Select **All** from the Ancestor Level list.

    Here, you define that you want to collect all the parent site areas of the current site area, all the way to the highest level.

11. Deselect Show Content.

Note: If this check box is selected, links to content in the current site area display in the navigator.

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12. In the Component Design 1 field, enter the following code:

```
<a href='<placeholder tag="href"/>'><placeholder
tag="name"/></b></a>
```

    This field specifies the parent site area.

13. Click **Add Component Design** at the bottom.

    A new field is created, labeled Component Design 2.

14. In the Component Design 2 field, enter the following code:

```
 <b>&gt;</b> <a href='<placeholder
tag="href"/>'><b><placeholder tag="name"/></b></a>
```

    This field specifies the design of the current site area. In the breadcrumb navigator, a greater than symbol (>) precedes the current site area.

15. Click **Save…** and then click **Save and Close**.

7.16.2 Referencing the breadcrumb navigator component in the presentation templates

To reference the breadcrumb navigator component in the presentation templates, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. In the Presentation Template section, look for the following comment in the code:

```
<!-- insert breadcrumb navigator component reference here -->
```

    Enter the following line of code after the comment:

```
<AptrixLibCmpnt name="NAV-Breadcrumbs"/>
```

6. Click **Save…** and then click **Save and Close**.
7. To test your work, expand Content Library, select the River Bend in the News content item.
8. To view the result of your changes, refresh your browser.

    On the Web page, the breadcrumb navigator is visible beneath the River Bend logo and title.

9. Repeat steps 3 through 6 to reference the bread crumb navigator in the Two Column Table and Two Column Table Search presentation templates.

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Note: At this point, if you are using IBM Workplace Web Content Management 5.1, you can see the result of your work. Use the following URL to see River Bend as stand-alone Web site without portal framework:

```
http:/<hostname><port>/wps/wcm/myconnect/RiverBend
```

Port usually is 9081.

10. Test the breadcrumb navigator in the Two Column Table presentation template by previewing the Site Index content item in the browser.
11. Test the breadcrumb navigator in the Two Column Table Search presentation template by previewing the Search content item in the browser.

7.17 Creating a site map navigator

To create a site map navigator, you need to do the following:

- Create the site map navigator.
- Display the site map navigator on the Site Index content page.

7.17.1 Creating the site map navigator component

To create a site map navigator component that appears beneath the body text on the Site Index content page, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **Navigator Component**.
5. Click **OK**.
6. In the Name field, enter `NAV-Site Map`.
7. In the Description field, enter the following text:

   ```
   This navigator appears only on the Site Index content page.
   ```

8. In the Navigator Component section, select **Selected** from the Start Type list.

   This action indicates that you will define the site area from which the search begins. You need to define in which site to search.

9. In the Selected Start Area section, click **Select Start Area**.
10. Select **River Bend**.

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Note: The site map starts its search here.

11. Click **OK**.
12. Deselect **Include Start**.
13. From the Descendant Level list, select **All**.

    This selection defines that all levels below the River Bend site are collected.
14. Deselect **Show Content**.

Note: If this option is selected, links to content in all site areas display in the navigator.

15. In the Header field, add a heading for the site map navigator by entering the following code:

```
<font class="contrastHeading">
Site Index<br>
</font>
```

16. In the Component Design 1 field, indent and use bold font for the site map navigator links by entering the following code:

```
<IndentCmpnt offset="0"
repeat="      "/>
<a href='<placeholder tag="href"/>'><b><placeholder
tag="name"/></b></a><br>
```

Note: The `IndentCmpnt` tag formats the site map into an indented hierarchy.

17. Click **Save…** and then click **Save and Close**.

7.17.2 Displaying the site map navigator as component in the Site Index content item

The site map navigator does not display on every page, as do the left navigator and the breadcrumb navigator. The site map navigator displays only on the Site Index content page. Therefore, the site map navigator is added to the PostBody field of the Site Index content item.

To display the site map navigator, do the following:

1. In the items view navigator, expand Content Library.
2. Click **Content by Title**.

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3. Select the **Site Index** content item.
4. Click **Edit**.
5. In the PostBody section under Component, click **Select Component**.
6. In the items view navigator, click **Navigator Component**.
7. In the index, select **NAV-Site Map**.
8. Click **OK**.
9. Click **Save**.
10. Open the Web site and navigate to **Site Index**.

    The site map navigator is visible beneath the body text.

7.18 Creating menus

To create menus, you need to do the following:

- Create a site area menu that lists all content items that are linked to the current site are (for example, all content that is linked to the News site area).
- Reference the site area menu in the default content pages for the River Bend in the News, Bulletin Board, and Corporate Information site areas.
- Create an HTML component to format the site area menu.
- Reference the menu format in the site area's menu component design.
- Create a related information menu that lists links to related information about content pages that are created with the Three Column Table presentation template.
- Reference the related information menu in the Three Column Table presentation template.

The following sections describe these tasks in detail.

7.19 Creating a site area menu component

In this guided practice, you create the site area menu. This menu appears on the default content pages for the Colombia Coffee, African Coffee, River Bend in the News, Bulletin Board, and Corporate Information site areas.

To create a site area menu, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.

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3. Click **New**.
4. Select **Menu Component**.
5. Click **OK**.
6. In the Name field, enter `MENU-Site Area`.
7. In the Description field, enter the following text:

   ```
   This menu lists the content.
   ```

8. Deselect **Include All Ancestors**.

   If this option is selected, content with parent site areas, such as Home, are found by the menu.

9. Deselect **Include All Descendants**.

   If this option is selected, content with child site areas are found by the menu.

10. Do not select an authoring template.

Note: If you wanted to select documents created with a specific authoring template, you would click Select Authoring Templates. If you do not select any authoring template, all documents that are created from all available authoring templates is selected.

11. In the Menu Component section, select **Include current Site Area.**

    All content with the same site area as the currently displayed content (the section home page) matches this search criterion.

12. Be sure that the **Ascending order for results** option is selected (default).
13. In the Results Primary Sort Key list, select **Publish Date**.

    The content that is listed in this menu is sorted in order by the date on which it was published, with the latest content at the top of the list.

14. In the Results Secondary Sort Key list, select **Name**.

    If multiple pages of content have the same published date, then they are sorted alphabetically by name.

15. In the Results Tertiary Sort Key list, select **Description**, if it is not already selected as the default selection.
16. In the **Results Per Page** field, enter `0`, which means that the menu list is unlimited.
17. In the Start Page field, enter `1`, if it is not already entered as the default value.

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18. In the Component Design for each matching Content field, enter the following line of code:

```
<placeholder tag="namelink"/><br>
```

19. Click **Save…** and then click **Save and Close.**

7.19.1 Referencing site area menu in specified content pages

To reference the site area menu in the River Bend in the Colombia Coffee, African Coffee, News, Bulletin Board, and Corporate Information content pages, do the following:

1. In the items view navigator, expand Content Library.
2. Click **Content by Title**.
3. Select the **River Bend in the News** content item.
4. Click **Edit**.
5. In the PostBody **s**ection under Component, click **Select Component**.
6. In the items view navigator, click **Menu Component**.
7. In the index, click **MENU-Site Area**.
8. Click **OK**.
9. Click **Save**.
10. Navigate your browser to the River Bend in the News page.

Note: There is a link to the content page below the body text [Read ...]. If your menu is squeezed to the body text without separation, edit the default content for the page and press Enter to ensure that the paragraph tags are put in place.

11. Repeat steps 3 through 9 to reference the site area menu in the Colombia Coffee, African Coffee, News, Bulletin Board, and Corporate Information content pages, which are the default content pages for those site areas.

Note: Before the menu can display content, create new content for those site areas. Default content is not displayed by the menu.

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7.19.2 Creating an HTML component to format the site area menu

To create the HTML component that is used to format the site area menu, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **HTML Component**.
5. Click **OK**.
6. In the Name field, enter `HTML-Layout-Standard Menu`.
7. In the Description field, enter the following text:

   ```
   This component formats the site area menu.
   ```

8. In the HTML Component section, enter the following code in the field:

   ```
   <table cellpadding="0">
   <tr>
   <td>
   <b><AptrixCmpnt context="autoFill" key="Display Title" type="content"/>
   </td>
   </tr>
   <td>
   <WorkflowCmpnt context="autoFill" field="publishdate" format="EEE, MMM
   d, yyyy" type="content"/> - <AptrixCmpnt context="autoFill"
   key="Summary" type="content"/>
   <a  href='<placeholder tag="href"/>'> [Read...]</a>
   </td>
   </tr>
   </table>
   ```

Note: Autofill specifies that the content changes with each new item in the menu and is an essential definition when defining a menu.

9. Click **Save...** and then click **Save and Close**.

7.19.3 Referencing the menu format in the site area menu's component design

To reference the format in the menu's component design, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.

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3. Click **Menu Component**.
4. Select **MENU-Site Area**.
5. Click **Edit**.
6. In the Menu Component section, delete the existing text in the Component Design for each matching Content field.
7. Reference the HTML component HTML-Layout-Standard Menu by entering the following line of code in the Component Design for each matching Content field:

```
<AptrixLibCmpnt name="HTML-Layout-Standard Menu"/>
```

8. Click **Save…** and then click **Save and Close**.
9. To test your work, open the River Bend Web site and navigate to the Colombia Coffee page.

   The formatted site area menu is visible beneath the body text, as shown in Figure 7-12.The Menu now displays the Title in bold as well as the publish date.
10. Preview the other default content pages that display the site area menu (River Bend in the News, Bulletin Board, and Corporate Information).



Figure 7-12 Menu formatted with HTML Layout

Attention: At this point, you have created all the essential elements of the River Bend Tea and Coffee Company Web site. The remaining sections of this chapter show how to enhance the Web site.

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7.20 Creating a menu using categories

In this guided practice, you create a menu that uses categories as search criteria. It allows users to find content throughout the Web site independently of a site area. The menu concept allows the combination of categories and site areas as search criteria.

The menu that you create in this section appears on the Espresso content page. This content page displays content that has the category *Espresso* assigned to it but that is linked to the Colombia Coffee site area. Therefore, the content is displayed by two different menus using different search criteria.

To create a menu using categories as search criteria, follow these steps:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **Menu Component**.
4. In the index, click **MENU-Site Area**.
5. Click **Edit**.
6. Click **Save…** and then click **Save As**.
7. In the Name field, enter `MENU-Category`.
8. Click **OK**.
9. In the Matching Content associated Categories section, click **Select Categories**.
10. Click Add.
11. Expand River Bend Web Site Categories and then expand Products.
12. Select **Espresso**.
13. Click **OK**.
14. Click **OK** again.
15. Deselect **Include current Site Area**.
16. Click **Save...** and then click **Save and Close**.

7.20.1 Referencing the category menu in the Espresso site area

To reference the format in the menu's component design, do the following:

1. In the items view navigator, expand Site Management.
2. Expand Site Framework.
3. Expand River Bend → Products → Coffee.

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4. In the index, click **Expresso**.
5. Click **Edit**.
6. Click **Component Manager**.
7. Click **Add**.
8. In the Name field, enter `Menu`.
9. In the component reference list, select **Component Reference**.
10. Click **OK**.
11. Click **OK** again.
12. In the MENU section under Component, click **Select Component**.
13. In the items view navigator, click **Menu Component**.
14. In the index, click **MENU-Category**.
15. Click **OK**.
16. Click **Save...** and then click **Save and Close**.

7.20.2 Referencing the category menu in the Three Column Table presentation template

To reference the category menu in the Three Column Table presentation template, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select the **Three Column Table** presentation template.
4. Click **Edit**.
5. In the Presentation Template section, find the following comment in the code:

   ```
   <!-- insert related category menu component reference here -->
   ```

   Enter the following line of code beneath the comment:

   ```
   <AptrixCmpnt context="current" key="Menu" type="sitearea"/>
   ```

6. Click **Save…** and then click **Save and Close**.
7. To test your work, open the River Bend Web site in your browser and navigate to the Espresso page. The Rich Colombia Coffee from West Coast Plantation content reference displays in the menu area under the coffee bean image.

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7.21 Creating the related information menu

In this guided practice, you create a related information menu. This menu appears on the content pages that use the River Bend Development authoring template and the Three Column table presentation template.

To create a related information menu, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **Menu Component**.
5. Click **OK**.
6. In the Name field, enter `MENU-Related Information`.
7. In the Description field, enter the following text:

```
This menu appears in the third column on content pages created with the
Three Column Table presentation template.
```

Note: It does not make sense to have this menu appear in the Tools, Site Index, or Login pages, which were created with the Two Column Table presentation template. This design also applies to the Search page, which you created with the Two Column Table Search presentation template.

8. In the Menu Component section, be sure the following are selected:
   - Include all Ancestors
   - Include all Descendants
9. In the Matching Authoring Templates section, click **Select Authoring Templates**.
10. Click **Add**.
11. Select the **River Bend Development** authoring template.

    This action specifies that the menu should find content that was created using the River Bend Development authoring template.
12. Click **OK**.
13. Click **OK** again.
14. In the Matching Content associated Categories section, click **Select Category**.
15. Click **Add**.
16. Expand River Bend Web Site Categories → Corporate →News.

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17. Select **External** and **Internal**.

    All content with one of the defined categories matches this search criterion.

18. Click **OK**.

19. Click **OK** again.

20. Select **Ascending order for results**, if it is not already selected.

21. In the Results Primary Sort Key list, select **Last Modified Date**.

    The content that is listed in this menu is sorted in the order of the date on which it was last modified, with the most recently edited content at the top of the list.

22. In the Results Secondary Sort Key list, leave the default value Publish Date.

    If multiple pages of content have the same modified date, then they are sorted by the date on which they were published.

23. In the Results Tertiary Sort Key list, select **Name**.

    If multiple pages of content have the same publish date, they will be sorted alphabetically by name.

24. In the Results Per Page field, enter `5`.

25. In the Start Page field, enter `1`, if it is not already entered as the default value.

26. In the Header field enter the following line of code:

```
<font class="contrastHeading">Related Links</font><br>
```

27. In the Component Design for each matching Content field, enter the following line of code:

```
  <placeholder tag="namelink"/><br>
```

28. Click **Save...** and then click **Save and Close.**

7.21.1 Referencing the related information menu in the Three Column Table presentation template

To reference the related information menu in the Three Column Table presentation template, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select the **Three Column Table** presentation template.
4. Click **Edit**.

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5. In the Presentation Template section, find the following comment in the code:

   ```
   <!-- insert related information menu component reference here -->
   ```

   Enter the following line of code beneath the comment:

   ```
   <AptrixLibCmpnt name="MENU-Related Information"/>
   ```

6. Click **Save…** and then click **Save and Close**.
7. Open the River Bend Web site in your browser.
8. The Related Links menu appears on the right side of the page. Select a related information menu link to view its content page.

7.22 Creating an edit document navigator

Selecting the Edit link that appears at the top of every Web page just after the content title opens the content item in the authoring portlet. To create the Edit link, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **Navigator Component**.
5. Click **OK**.
6. In the Name field, enter `NAV-Edit Doc`.
7. In the Description field, enter:

   ```
   This navigator displays an Edit link for the current content object in
   the Authoring Portlet
   ```

8. In the Navigator Component section, select **Current - Content** from the Start Type list.

   This option indicates that the navigator needs to go to the content of the currently displayed Site Area.

9. Be sure that Include Start is selected.

   This option indicates that the navigator must include the first item it finds (for example, the site area of the current content).

10. Select **None** from the Ancestor Level list.

    This option defines that you want to collect none of the parent site areas of the current site.

11. Select **Show Content**.

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Note: If this option is selected, links to content in the current site area display in the navigator.

12. In the Component Design 1 field, enter the following code:

```
 - <a
href="/wps/myportal/wcmAuthoring?WCM_COMMAND=opencontent&ID=<Placeholder
tag="Idnum"/>">Edit</a>
```

    This code specifies to open the current content item in edit mode in the Authoring Portlet.

13. Click **Save…** and then click **Save and Close**.

7.22.1 Referencing the edit document navigator component in the presentation templates

To reference the breadcrumb navigator component in the presentation templates, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. In the Presentation Template section, append the following code behind the Display Title tag:

```
<AptrixCmpnt context="current" key="Display Title" type="content"/><br>
</font>
```

    Enter the following line of code after the tag:

```
<AptrixLibCmpnt name="NAV-Edit Doc"/>
```

    The result looks similar to the following:

```
<AptrixCmpnt context="current" key="Display Title"
type="content"/><AptrixLibCmpnt name="NAV-Edit Doc"/>
```

6. Click **Save…** and then click **Save and Close**.
7. Refresh your browser for the River Bend Web site to see the Edit link.
8. Repeat steps 3 through 6 to reference the edit document navigator in the Two Column Table presentation template.

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7.23 Creating a tools navigator

To create a tools navigator that appears on every Web page, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **Navigator Component**.
5. Click **OK**.
6. In the Name field, enter `NAV-Tools`.
7. In the Description field, enter the following text:

   ```
   This navigator appears on every Web page, beneath the left navigator.
   ```

8. In the Navigator Component section, click **Selected** from the Start Type list.

   This action indicates that you will define the site area from which the search begins.

9. In the Selected Start Area section, click **Select Start Area**.
10. Expand the River Bend site and the Home site area. Click **Tools**.
11. Click **OK**.
12. Deselect **Include Start**.

Note: The Tools item that appears in the navigator is not a site area. You need to enter the site area in the Header field as a non-linkable value.

13. Select **1 Level** from the Descendant Level list.
14. Deselect **Show Content**.
15. In the Header field, enter the following code for the tools navigator:

```
<form name="jump">
<font class="contrastHeading"/>
Navigation Tools
</font>
<select name="tool" size="1" style="width:140"
onchange="location.href=jump.tool.options[selectedIndex].value">
<option value="#">----- Select a tool -------</option>
```

16. In the Footer field, enter the following lines of HTML code:

```
</select></form>
```

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17. In the Component Design 1 field, enter the following code:

```
<option value=<placeholder tag="href"/>> <placeholder
tag="name"/></option>
```

18. Click **Save….** and then click **Save and Close**.

7.23.1 Referencing the tools navigator component in the presentation templates

To reference the tools navigator component in the presentation templates, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. In the Presentation Templates section, find the following comment:

   ```
   <!--insert tools navigator component reference here-->
   ```

   Enter the following line of code:

   ```
   <AptrixLibCmpnt name="NAV-Tools"/><br>
   ```

6. Click **Save….** and then click **Save and Close**.
7. Refresh your browser to view the Tools navigator on the River Bend Home content page.
8. Click each link to view the default content for each site area.
9. Repeat steps 3 through 6 to reference the tools navigator component in the Two Column Table and Two Column Table Search presentation templates.

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7.24 Enabling the Search module

To implement the IBM Workplace Web Content Management Search module, you need to do the following:

- Edit the connect.cfg file (Administrator task).
- Edit the aptrixsearch.properties file (Administrator task).
- Restart the Portal server (Administrator task).
- Update the Two Column Table Search presentation template to use the connect tag.
- Create a search results template.
- Create an HTML Search Form.
- Reference the HTML Search Form in the PreBody component section of the Search content item.
- Specify default content for the Search site area.

In addition to the search page, an HTML Quick Search form is created and made available on every page.

7.24.1 Editing the connect.cfg file

To edit the connect.cfg file, follow these steps:

1. Open the connect.cfg file in a text editor such as Notepad. You can find this file in the PortalServer/wcm/config directory.
2. Locate the <Module> section of the connect.cfg file.

Tip: You can use the text editor's search feature to locate this section quickly.

3. Locate the following tags in the <Module> section:

```
<!--
Aptrix Search Module
ensure that ModuleConfig/AJPE/DependentModules/AptrixSearch is
uncommented
-->
<!--
<AptrixSearch class=com.aptrix.search.AptrixSearchModule
remoteAccess=true autoLoad=false />
-->
```

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4. Remove the comment tags from the <AptrixSearch> tag as shown in the following:

```
<!--
Aptrix Search Module
ensure that ModuleConfig/AJPE/DependentModules/AptrixSearch is
uncommented
-->
<AptrixSearch class=com.aptrix.search.AptrixSearchModule
remoteAccess=true autoLoad=false />
```

5. Locate the <DependentModules> section.

Tip: You can use the text editor's search feature to locate this section quickly.

6. Locate the <AptrixSearch> tag in the <Dependent Modules> section:

```
<!-- Uncomment when AptrixSearch is enabled -->
<!-- <AptrixSearch /> -->
```

7. Remove the comment tags from the <AptrixSearch> tag as shown in the following:

```
<!-- Uncomment when AptrixSearch is enabled -->
<AptrixSearch />
```

8. Locate the <ProcessUnknownHosts> tag in the <Business Logic> section.

Tip: You can use the text editor's search feature to locate this section quickly.

9. Change the value of this tag from `false` to `true` as shown in the following:

```
<ProcessUnknownHosts value=true />
```

10. Save and close the connect.cfg file.

7.24.2 Editing the aptrixsearch.properties file

You need to specify the user name that the search indexing program uses. At this point in our development, only the IBM Workplace Web Content Management administrator has access to the site that is you are developing. If you do not specify this user name, the indexing program does not have sufficient authority to read any content.

To edit the aptrixsearch.properties file, do the following:

1. Open the aptrixsearch.properties file in a text editor such as Notepad. You can find this file in the PortalServer/wcm/config directory.

2. Locate the following line of code:

```
#ajpepageserver.user.name=Administrator
```

3. Remove the number sign (#) and specify the `cn` attribute of the IBM Workplace Web Content Management administrator as the property value. For example, if the `cn` of the IBM Workplace Web Content Management administrator is `wcm admin`, your code looks similar to the following:

```
ajpepageserver.user.name=wcm admin
```

4. Save and close the aptrixsearch.properties file.

Important: You need to restart the Portal Server to apply the configuration changes.

7.24.3 Modifying a presentation template for the Search page

This section explains how to create a presentation template to be used with the Search page. You can use the existing Two Column Table presentation template as a starting point for creating the new template. The search results are displayed at the location of the `<connect>` tag and are formatted according to the template file that is specified in the template attribute. The PreBody component in the template is the source of the search form when you create the Search content object.

To modify a presentation template for the Search page, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. In the index, select the **Two Column Table Search** presentation template.
4. Click **Edit**.
5. In the Presentation Template section, find the following comment:

```
<!-- insert Search Results title here -->
```

6. Insert the following code beneath the comment:

```
<font class="contrastHeading">
Search Results
</font>
```

7. Beneath the Search Results title code, find the following comment:

```
<!-- format search results according to template specified in template
attribute of connect tag below -->
```

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8. Beneath the comment, insert the following code for the connect tag used to obtain search results:

```
<connect mod="template" srv="search" template='<PathCmpnt
type="base"/><PathCmpnt type="context"/>/html/ResultsTemplate.html'>
</connect>
```

Note: Be sure that the following PostBody component tag appears beneath the closing connect tag:

```
<AptrixCmpnt context="current" key="PostBody" type="content"/>
```

9. Select **Process Connect Tags**.
10. Click **Save…** and then click **Save and Close.**

7.24.4 Creating a search results template

You need to create an HTML template that is referenced by the template attribute of the <connect> tag in the Two Column Table Search presentation template. The search results are formatted according to this template. To create a search results template, do the following:

1. Open a text editor such as Notepad.
2. Enter the following:

```
<html>
<body>
<resultset>
<empty>
<p>No results returned</p>
</empty>
<notempty>
<p>Results returned: <field name="resultsetsize"></p>
<table border="0">
<loop>
<tr>
   <td>
   <field name="Title"> <a href="<field
name=URL>"> [Read…]</a>
   </td>
</tr>
</loop>
</table>
</notempty>
</resultset>
</body>
</html>
```

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3. Click **File** → **Save**.
4. In the Save In field, navigate to the following directory:

   Appserver/installedApps/<node>/wcm.ear/ilwwcm.war/html

   If there is no html directory, create one.
5. Enter `ResultsTemplate.html` in the File name field.
6. Save and close the file.

7.24.5 Creating an HTML search form

You need to create a search form HTML component to enable the user to enter a search query. This component is included as a PreBody component in the Search content item. To create an HTML search form, do the following:

1. In the items view navigator, click Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **HTML Component**.
5. Click **OK**.
6. In the Name field, enter `HTML-Search Form`.
7. In the Description field, enter:

   ```
   Site visitors use this form to search the Web site from the Search page.
   ```
8. In the HTML Component field, enter the code shown in Example 7-7.

Example 7-7 Code to create an HTML search form

```
<font class="contrastHeading">
Advanced Search
</font>
<form method="post" name="Search" action='<PathCmpnt type="base"/><PathCmpnt
type="servlet"/>/RiverBend/Home/Tools/Search/Search'>
<table border="0">
<tr>
<td>
Search Terms:
</td>
<td>
<input type="text" style="width:300px" size="120" name="QUERY">
</td>
</tr>
<tr>
<td>
Search Type:
```

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```
</td>
<td>
<input type="radio" name="SEARCHTYPE" value="AND" checked="yes">All Terms (AND)
</td>
</tr>
<tr>
<td> </td>
<td>
<input type="radio" name="SEARCHTYPE" value="OR">Any Term (OR)
</td>
</tr>
<tr>
<td> </td>
<td>
<input type="submit" value="Search">
</td>
</tr>
</table>
</form>
```

9. Click **Save…** and then click **Save and Close.**

7.24.6 Referencing the HTML search form in the Search content item

You need to reference the search form in the Search content page. You include the search form that you created as an HTML component as a PreBody component reference in the Search content page. To reference the HTML search form, do the following:

1. In the items view navigator, click Content Library.
2. Click **Content by Title**.
3. Select **Search**.
4. Click **Edit**.
5. Click **Select Component** next to the PreBody Component section.
6. In the items view navigator, click **HTML Component.**
7. In the index, click **HTML-Search Form**.
8. Click **OK**.
9. Click **Save**.
10. Refresh the River Bend Web site in a browser.
11. In the Search Terms field, enter `IBM` and click **Search**.
12. At the end of the returned result, click the **[Read…]** link.

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The content displays as search result. Clicking the Read link opens the document to read the entire text.

Note: The fact that the IBM Workplace Web Content Management search module returns a URL in the link in addition to the page name is a good illustration of why it is important to name each of your Web pages descriptively.

7.24.7 Creating an HTML quick search form

You need to create a quick search form so that the user can enter a search query from any Web page, not just the Search page. This component is referenced in the presentation templates. To create an HTML quick search form, do the following:

1. In the items view navigator, click Design and Development.
2. Click **Component Library**.
3. Click **New**.
4. Select **HTML Component**.
5. Click **OK**.
6. In the Name field, enter `HTML-Quick Search Form`.
7. In the Description field, enter:

   ```
   Site visitors use this form to enter search queries from any content
   page.
   ```

8. In the HTML Component field, enter the following code:

   ```
   <form method="post" name="Search"
   action='<PathCmpnt type="base"/><PathCmpnt
   type="servlet"/>/RiverBend/Home/Tools/Search/Search'>
   <font class="contrastHeading">
   Search<br>
   </font>
   <input type="text" name="query" size="15">
   <input type="submit" value="Go">
   </form>
   ```

9. Click **Save…** and then click **Save and Close**.

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7.24.8 Referencing the HTML quick search form

To reference the HTML quick search form in the presentation templates, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select **Three Column Table**.
4. Click **Edit**.
5. In the Presentation Templates section, find the following comment:

   ```
   <!- - insert quick search form html component reference here -->
   ```

   Enter the following line of code:

   ```
   <AptrixLibCmpnt name="HTML-Quick Search Form"/>
   ```

6. Save and close the presentation template.
7. Refresh your browser to view the Quick Search Form on the River Bend Home content page.
8. Click each link to view the default content for each site area.
9. Repeat steps 3 through 6 to reference the HTML quick search form in the Two Column Table and Two Column Table Search presentation templates.

7.25 Viewing content in a Portlet

Thus far, you have created the River Bend Web site as a stand-alone version without a Portal layout. This section explains how to display the Web site in a Portlet. To view content in a Portlet, you need to do the following:

- Create a Portal Page Layout presentation template.
- Create the Content Viewer Portlets.
- Create a Portal Page and add the Content Viewer Portlets.
- Configure the Portlets.

7.25.1 Creating a Portal Page Layout presentation template

The Portal Page Layout does not use a stylesheet or graphics but is kept very simple. To create the Portal Page Layout presentation template, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **New**.
3. Select **Presentation Template**.

4. Click **OK**.
5. In the Name field, enter `PortaPageLayout`.
6. In the Presentation Template section, replace the existing code with the code shown in Example 7-8.

Example 7-8 Portal page layout example code

```
<!-- page body table -->
<table width=100% cellpadding=0 cellspacing=0 border=0 class="middleBackground"
>
  <tr>
    <!-- left margin column-->
    <td align=left valign=top width=20> <AptrixLibCmpnt end="' width='20'
height='1'&gt;" name="1pixel" start="&lt;img src='"/>
    </td>
    <!-- content col -->
    <td valign=top align=left width="100%" >
      <table width=100% cellpadding=0 cellspacing=0 border=0 >
        <tr>
          <td valign="top"> <AptrixLibCmpnt end="' width='100' height='25'&gt;"
name="1pixel" start="&lt;img src='"/>
          </td>
        </tR>
      </table>
      <table width=100% cellpadding=0 cellspacing=0 border=0>
        <tr>
          <td valign="top"> <AptrixLibCmpnt name="NAV-Breadcrumbs"/> </td>
        </tr>
        <tr>
          <Td> <font Class="contrastHeading"><AptrixCmpnt context="current"
key="Display Title" type="content"/><AptrixLibCmpnt name="NAV-Edit
Doc"/></font>
          </td>
        </tr>
        <Tr>
          <td>             <br>
            <AptrixCmpnt context="current" key="Body" type="content"/>
            <br>
            <AptrixCmpnt context="current" end="&lt;/li&gt;" key="content
image" type="content"/>
          <br>
          <AptrixCmpnt context="current" key="PostBody" type="content"/>
          </td>
        </tr>
        <tr>
          <Td> <AptrixLibCmpnt end="' width='375' height='1'&gt;" name="1pixel"
start="&lt;img src='"/>
          </td>
```

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```
        </tr>
      </table>
    </td>
    <!-- middle gutter -->
    <td valign=top align=left width=20> <AptrixLibCmpnt end="' width='20'
height='1'&gt;" name="1pixel" start="&lt;img src='"/>
    </td>
    <!-- aux content col -->
    <!-- right margin column -->
    <td valign=top align=left width=10 > <AptrixLibCmpnt end="' width='10'
height='1'&gt;" name="1pixel" start="&lt;img src='"/>
    </td>
  </tr>
</table>
```

7. Click **Save...** and then click **Save and Close**.

7.25.2 Creating and copying Content Viewer Portlets

The Local Rendering Portlet is installed with the Authoring user interface. You make copies of this user interface. You are specifying your own configuration for the River Bend Web site, and you do not to configure the base portlet. To create two copies of the Web Content Viewer portlet, do the following:

1. Open WebSphere Portal Administration by clicking **Administration** on the top right navigator in your browser window, as shown in Figure 7-13.

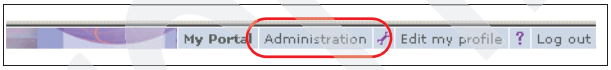


Figure 7-13 WebSphere Portal Administration

2. Click **Portlet Management**.
3. Click **Portlets**.
4. In the Search window, type `Web` and then click **Search**.
5. Find the Web Content Viewer portlet and click the **Copy Portlet** icon.
6. In both the portlet application and the portlet fields, enter the new name:

   ```
   WCM River Bend Navigator
   ```

7. Create a second portlet application and portlet by clicking the **Copy Portlet** icon again.
8. In both the portlet application and the portlet fields, enter the new name:

   ```
   WCM River Bend
   ```

9. Click **OK**.

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The new Portlets are listed in the Portlets list as shown in Figure 7-14.

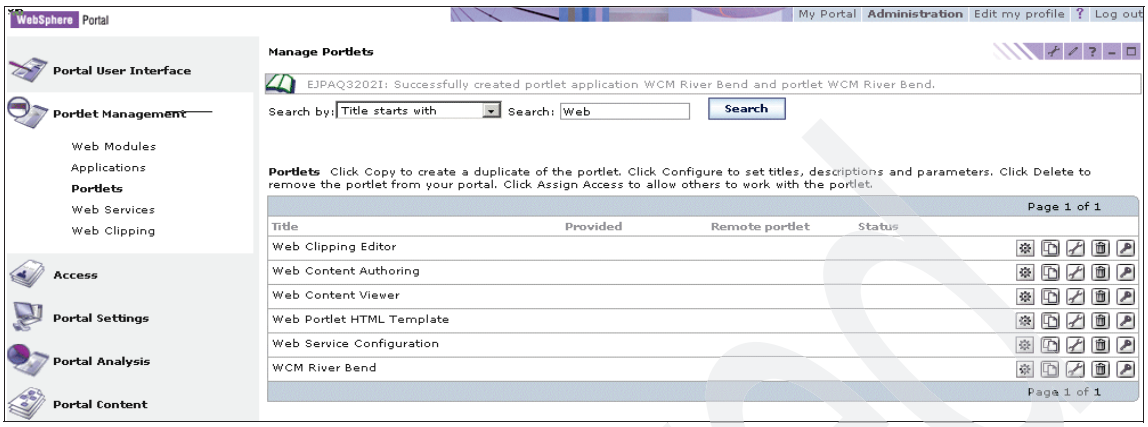


Figure 7-14 River Bend Portlets in Portlets List

7.25.3 Creating a Portal Page and adding the Content Viewer Portlets

To create a Portal Page and to add two Portlets to the page, do the following:

1. Click **Portal User Interface**.
2. Click **Manage Pages.**
3. Click the **My Portal** link in the Pages in content Root list.
4. Click New Page.
5. In the Title field, enter `River Bend Coffee and Tea`.
6. In the Type of Page section make sure in the two column property is selected (default value).
7. Click **OK**.

   The following message appears under Page Properties:

   ```
   River Bend Tea and Coffee has been created successfully.
   ```

8. Click **OK**.
9. Using the up arrow on the right of Status column in the River Bend Tea and Coffee page link row, move it up in the list until it is under IBM Workplace Web Content Management.
10. Select the **Edit Page Layout** icon.
11. In the left column of the window, click **Add Portlets**.
12. In the Search window, type `WCM` and click **Search**.
13. In the returned portlet list, select **WCM River Bend Navigator**.

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14. In the right column, click **Add Portlets**.
15. In the Search window, type `WCM` and click **Search**.
16. Select **WCM River Bend**.
17. Click **OK**.
18. Click **Done**.

The newly created Portlets are added to a new Portal Page, as shown in Figure 7-15.



Figure 7-15 River Bend Portlets on River Bend Page

7.25.4 Configuring Portlets

You need to configure the new Portlets on the River Bend Coffee and Tea Portal Page to show the NAV-Left navigator in the left Portlet and content in the right Portlet. To configure the Portlets, follow these steps:

1. Select **My Portal** from the top navigation
2. Select the new **River Bend Coffee and Tea** page.
3. In the left Portlet, click the **Configuration** icon, as shown in Figure 7-16.



Figure 7-16 Configuration icon

4. In the Content section, select **Library Component**.
5. Click **Edit** in the Library Component section.

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6. In the content item navigator, select **Navigator Component**.
7. Select **NAV-Left**.
8. Click **OK**.
9. Click the Edit icon in the Default Context section.
10. In the content item navigator, expand **River Bend**.
11. Select **Products**.
12. Click **OK**.
13. In the Links section, select **This page** under Broadcast Links To.
14. Under Receive Links From, select **Other portlets and this portlet**.
15. Click **OK**.

The Portlets are configured, as shown in Figure 7-17.

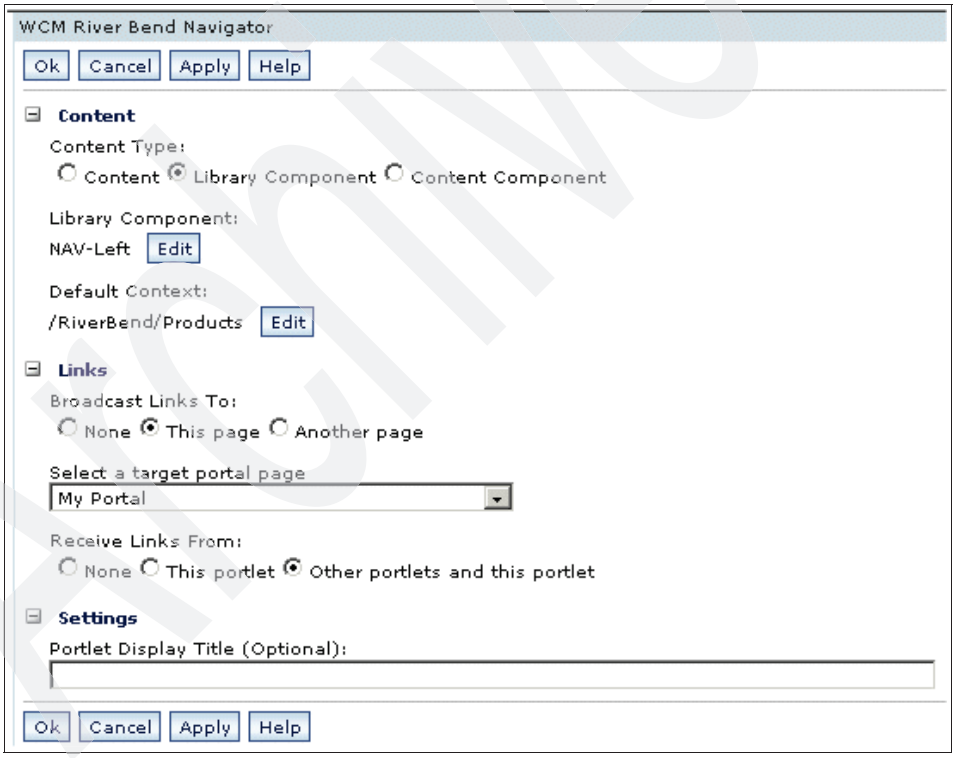


Figure 7-17 Configuration for Portlet NAV-Left

16. In the right Portlet click the **Configuration** icon.
17. In the Content section, select **Content**.

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18. Click **Edit** under Content.
19. In the content item navigator, expand **River Bend**.
20. Select **Products**.
21. Click **OK**.
22. Click **Edit** under Alternate Presentation Template.
23. Select **PortalPageLayout**.
24. Click **OK**.
25. In the Links section, select **This page** under Broadcast Links To.
26. Under Receive Links From, select **Other portlets and this portlet**
27. Click **OK**.

The left Portlet shows the navigator, and the right portlet shows the Product content page, as shown in Figure 7-18.

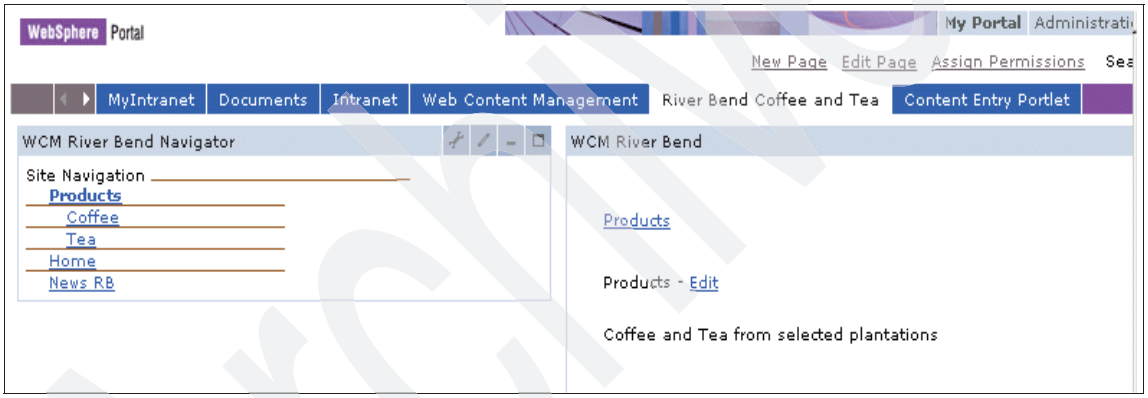


Figure 7-18 River Bend Web site displayed in a Portal page

Note: The Portal configuration is very basic and does not cover all Components that you have created in this chapter (for example, Menus or Images are not referenced in the PortalPageLayout.). This chapter is only a first step into page creation.

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7.26 Integrating Portal Document Manager with IBM Workplace Web Content Management 5.1

Portal Document Manager integration is available only for IBM Workplace Web Content Management 5.1. There is no installation necessary. However, to use a Portal Document Manager document within IBM Workplace Web Content Management, you need to do the following:

- In Portal Document Manager, you need to:
  - Create a Library.
  - Create a Folder.
  - Create Documents.
- In IBM Workplace Web Content Management, you need to:
  - Create an authoring template with a Portal Document Manager component. The fields in the new authoring template will match the existing presentation template component references.
  - Create content with the new Portal Document Manager authoring template.

This section explains how to integrate Portal Document Manager documents into BM Workplace Web Content Management 5.1.

7.26.1 Configuring and creating library, folder, and documents in Portal Document Manager

You create the library, provide access to the library, and configure a Portal page to display the library through an administrator task using the Administration interface. To create the folders and documents in the library is a user task that is performed using the MyPortal GUI.

Configuring and creating a library

To configure a library in Portal Document Manager, you use WebSphere Portal Administration. Follow these steps:

1. Open WebSphere Portal Administration by clicking **Administration**.
2. On the left side, click **Portal Content**.
3. Click **Manage Document Libraries**.

   By default, the Document Manager library is created. If you wish to create a new library, click **New Document Library** and complete the required fields.

4. Click the **Edit** Icon.
5. In the Versioning section, select **Enable document versioning**.

Note: To update your IBM Workplace Web Content Management content with new versions of the Portal Document Manager document, you need to version the Portal Document Manager documents and use this feature in the IBM Workplace Web Content Management content object.

6. Keep all other default values and click **OK**.

Creating a folder

Note: Only one library per page is displayed in WebSphere Portal Server. You must use the Administration console to change the library that is displayed for a page.

To create a folder in Portal Document Manager, follow these steps:

1. Click **My Portal**.
2. Click the **Documents Portal** page.
3. Click **New**.
4. Select **Folder**.
5. In the Folder **name** field, enter: `WCM River Bend`.
6. Click **OK**.

The IBM Workplace Web Content Management River Bend folder is displayed on the left side in the library navigation.

Creating a document

To create content for River Bend in Portal Document Manager, follow these steps:

1. Open the WCM River Bend folder.
2. Click **Import File**.
3. In the Title field, enter: `Redbook Team News`.
4. Click **Browse** and select a Microsoft Word file from your hard drive.
5. Click **Open.**
6. Click **Publish**.

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Restriction: In IBM Workplace Web Content Management 5.1, there are known issues with special characters. Special characters (such as letters that contain symbols — for example, ö or ä) are not rendered correctly when a Portal Document Manager document that contains these characters is published within IBM Workplace Web Content Management. Refer to the IBM support Web site to download the iFix PK05525 to your installation, which is available at:

`http://www-128.ibm.com/developerworks/workplace/support/downloads.html`

7.26.2 Creating an authoring template with a Portal Document Manager component

During this exercise, you create a new authoring template with a Portal Document Manager component. To match the component references in the existing presentation templates, the fields are identical — despite the Portal Document Manager component.

To create a copy of the River Bend authoring template and to add a Portal Document Manager component, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Authoring Templates**.
3. Click **River Bend Development**.
4. Click **Edit**.
5. Click **Save...** and then click **Save As**.
6. In the New Name field, type `River Bend Portal Document Manager`.
7. Click **OK**.
8. Click **Component Manager**.
9. Select the following and then click **Remove**:
   - Prebody
   - Postbody
   - Content Image
10. Click **Add**.
11. In the Name field, type `PDMFile`.
12. In the Component Reference list, select **Document Manager Component.**
13. Click **OK**.
14. Click **OK** again.

15. Click **Save…** and then click **Save and Close**.

7.26.3 Referencing the new component in the presentation template

To reference the Portal Document Manager Component in the presentation templates, do the following:

1. In the items view navigator, expand Design and Development.
2. Click **Presentation Templates**.
3. Select the **Three Column Table** presentation template.
4. Click **Edit**.
5. In the Presentation Template section, find the following:

   ```
   <AptrixCmpnt context="current" key="PostBody" type="content"/>
   ```

   Enter the following line of code:

   ```
   <DocumentManagerCmpnt context="current" convertTo="text/html"
   key="PDMFile" scope="Document" type="content"/>
   ```

6. Save and close the presentation template.
7. Repeat steps 3 through 6 to reference the Two Column Table and the PortalPageLayout presentation template.

7.26.4 Pairing the Portal Document Manager authoring template and the presentation template

To pair the authoring templates and presentation templates appropriately for the River Bend site and its various site areas do the following:

1. In the items view navigator, expand Site Management.
2. Expand Site Framework.
3. Select **River Bend**.
4. Click **Edit**.
5. In the Properties section, click **Edit Template Mapping**.
6. Click **Edit**.
7. In the Authoring Templates section, select the River Bend Portal Document Manager authoring template.
8. In the Presentation Templates section, click the Three Column Table presentation template.

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9. Click **OK**.

   The two templates are displayed as mapped.

10. Click **OK**.
11. Click **Save…** and then click **Save and Close**.

7.26.5 Creating content using the River Bend Portal Document Manager authoring template

To create a content item with the new authoring template using the Portal Document Manager integration, do the following:

1. In the items view navigator, expand Content Library.
2. Click **New**.
3. Select **Content**.
4. Click **OK**.
5. Select the River Bend Portal Document Manager authoring template.
6. In the Site Framework view in the items view navigator, expand the River Bend site and News site area.
7. Click **River Bend in the News**.
8. Click **OK**.
9. In the **Name** field, enter `WCM Redbook Team News`.
10. Expand the Profile section, and click **Select Categories**.
11. Click **Add**, and expand the following:
    - River Bend Web Site Categories taxonomy
    - Corporate category
    - News category
12. Select **Internal** and **External**.
13. Click **OK**.
14. Click **OK** again.
15. In the Display Title field, enter `WCM Redbook Team News`.
16. In the Summary field, enter `Recent news about WCM Redbook Team`.
17. Clear the Body field.
18. Scroll to the PDMFile section.
19. In the PDMFile section, click **Search**.

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20. In the new window, expand Document Manager → WCM River Bend, and click **Redbook Team News**.

    Note: The file name and title appear in the corresponding fields.

21. Click **OK**.

    Note: The path fields in the authoring template show path and file name.

22. Click **Save…** and then click **Save and Close**.
23. To assign this content item as the default content page for the River Bend in the News site area, expand Site Management in the item views navigator.
24. Expand Site Framework.
25. Expand the River Bend site and the News site area.
26. Select **River Bend in the News**.
27. Click **Edit**.
28. In the Properties section under Default Content, click **Select Default Content**.
29. Select the **River Bend in the News** content page.
30. Click **OK**.
31. Click **Save…** and then click **Save and Close**.
32. Open the River Bend Web site with your browser. Navigate to River Bend in the News and find WCM Redbook Team News which displays the Portal Document Manager document content.

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