PART

I

WebSphere Portal Primer

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CHAPTER

1

</div>

Introducing WebSphere Portal

What is a portal and why do I need it? What does WebSphere Portal offer that I can't do with custom code? In this chapter, we will answer these questions and introduce you to the WebSphere brand and more specifically to WebSphere Portal. We will show you how WebSphere Portal can help you rapidly develop and deploy applications that will impact your bottom line by introducing you to its features and architecture. At the end of this chapter you will understand why you need a portal and how WebSphere Portal meets your portal requirements.

What Is a Portal and Why Do We Need Them?

When the Internet was first introduced, applications were simple and text based. Graphics were soon introduced, and programmers found out that much of the development effort was shifting to look and feel rather than implementing business function. Then developers felt it would be cool to integrate various other sites into their own; however, this generated a smorgasbord look and feel. Security soon became an issue and each site then required authentication. If the developer had integrated multiple sites into his or her own site, the user would endure the frustrating experience of having to do multiple logins on a single site, each with a different name and password. By the 1990s the Internet was experiencing a massive boom when numerous software companies and IT departments were developing software; however, most of it provided the same functionality. Many groups were designing search engines and collaboration software and IT managers were questioning why they were constantly redesigning the wheel and

why productivity and quality were so low. Then, if there weren't enough headaches, Internet applications were required to be accessible on many different devices with very different attributes such as desktops, mobile phones, and palm pilots. Some devices can handle sophisticated graphics and have lots of visual room while others have limited input and output capabilities (e.g., a mobile phone).

Portals, specifically WebSphere Portal, help today's businesses address the Internet challenges. It helps programmers focus on developing the business functionality by letting the portal manage the look and feel, personalization, content management, and security. It allows users to integrate different applications from disparate locations and enables them to seamlessly exchange information. Each user can create a personalized device-independent "desktop" with a consistent look and feel by using drag and drop components. Much of the functionality that is required for Web experience does not have to be programmed but can be found in the portal library, a collection of "shrink wrap packaged" portlets or portal applications.

The WebSphere Family

WebSphere is a software platform that enables you to develop, deploy, and integrate all types of enterprise-scale e-business applications: from business to business, customer to business, employer to employee, on demand, and even legacy.

WebSphere is made up of three components (Figure 1-1): foundation and tools, reach and user experience or business portals, and business integration.
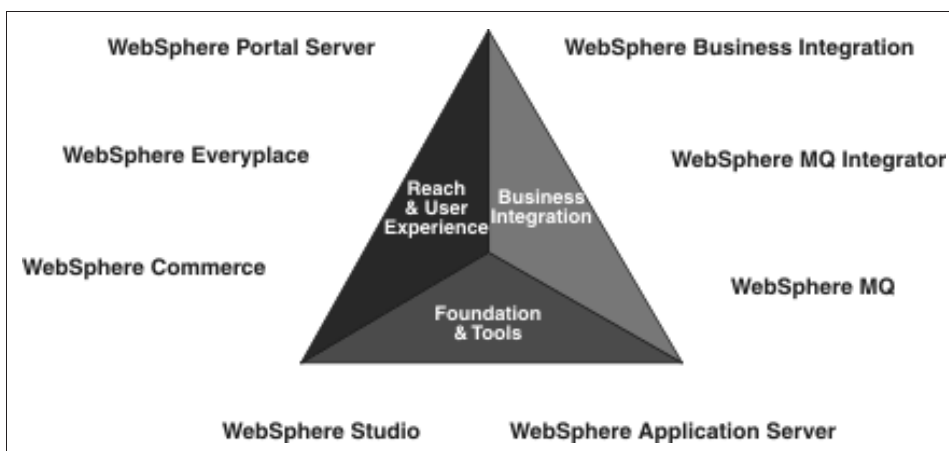

Figure 1-1   IBM WebSphere components.

Foundation and Tools

The "engine" and the "frame" of the WebSphere constitute the WebSphere Application Server (WAS). It is the environment in which you run and manage your Java applications. WAS is a complete, open standard Java 2 Platform, Enterprise Edition (J2EE) 1.4 application server that enables you to perform the following tasks:

1. Integrate easily to other e-business and legacy applications through its support of J2EE Connector Architecture. This gives a consistent way of connecting and communicating to other applications without complex programming.

2. Communicate to other distributed systems using guaranteed and reliable persistent high-performance messaging based on the Java Messaging Service (JMS) and/or Web Services.

3. Deploy and administer applications with ease on a single server. With the optional WebSphere Application Server Network Deployment, you can manage and administer a large number of servers and reduce your administration costs with its automated server management. Installation and administration capabilities are further enhanced through the support of Java Management Extensions, which enables integration with third-party system management products such as Tivoli, Candle, and CA.

4. WAS provides you with performance optimization and reliability by allowing you to control and isolate each application run-time environment. With the WebSphere Application Server Network Deployment option, you get high availability and high transaction support through clustering and caching. Using clustering, it supports load balancing and automatic failover capability. Load balancing can be done at the routers, Web servers, or the application servers. It also provides content-based routing and edge-based caching.

5. Sophisticated and complete security support through

   a. Secure system resources with the Java 2 security model

   b. Standardize authentication with Java Authentication and Authorization Services (JAAS)

   c. Secure communication channels (TLS/SSL) using Java Secure Socket Extension

   d. Security encryption and message authentication using Java Cryptographic Extension

   e. Public Key Infrastructure (PKI) integration based on Java Cryptographic Architecture. PKI manages the issuing,

distribution, and authentication of private and public digital keys. Digital keys are used to authenticate an individual or a resource.

 f. Secure interoperability between application servers

 g. Support for registries based on Lightweight Directory Access Protocol (LDAP)

 h. Single sign-on support using Trust Association Interceptor or Lightweight Third Party Authentication (LTPA)

6. Deploy applications independent of hardware and software environments. WAS can be deployed on Intel, Sun, HP, and IBM hardware platforms running AIX, Linux, zOS, OS/400, Solaris, HP-UX, and Windows 2000/2003.

To enable rapid deployment of applications on WAS, IBM provides WebSphere Studio: a suite of integrated application development tools based on the ECLIPSE open standard framework. From a single user to a large team environment, developers can rapidly develop, debug, and test their WebSphere Applications and then seamlessly deploy into a WAS environment. The WebSphere Studio integrates with the Rational product line including modeling to code generation, testing, and version control.

The foundation and tools component also includes WebSphere Host Integration family, which enables you to integrate your legacy assets with your e-business.

Business Integration

WebSphere Business Integration is a suite of 24 products that provides end-to-end integration by performing the following tasks:

1. Using modeling to design, simulate, and plan business processes

2. Providing products that facilitate linking people, processes, applications, system, and data

3. Enabling you to connect to your customers and partners

4. Allowing you to control and track business processes

5. Enabling you to review, analyze, and improve processes and performance

Items 1, 4, and 5 are supported by the WebSphere Business Integration. Item 2 is supported through message brokering and formatting using WebSphere Business Integration Message Broker. IBM WebSphere Business Integration Message Broker transforms and enhances real-time information between applications that use different message structures and formats.

Item 3 is supported by WebSphere MQ. WebSphere MQ allows you to integrate applications using messaging.

WebSphere Business Portals

WebSphere Business Portal suite focuses on the e-business user experience. It consists of WebSphere Commerce, WebSphere Everyplace, WebSphere Voice, and WebSphere Portal.

WebSphere Commerce enables a user to create selling, buying, and channel management solutions for anything from a simple on-line sales channel to a multitier integrated demand chain.

WebSphere Everyplace provides a suite of tools that facilitate the delivery of Web pages and e-business applications to a broad range of mobile devices.

WebSphere Voice supports development and deployment of conversational and voice recognition e-business solutions. It also provides translation services and unified messaging that includes voice mail, e-mail, and faxes.

The last product, but the most important from this book's perspective, is WebSphere Portal, which, according to IBM's Web site (`www.ibm.com`), provides "a single point of personalized interaction with applications, content, processes, and people." Now we explore this statement and elaborate what it means.

What Is WebSphere Portal?

Previously in this chapter, we discussed what a portal is. WebSphere Portal provides all these capabilities plus the availability and scalability required for large enterprise applications. But to really understand what WebSphere Portal is, you need to look at from the users', programmers', and administrators' perspectives.

The User Experience

WebSphere Portal allows users to create their own virtual desktops that are machine independent. Each user can create his or her own portal pages and customize the content and look and feel of these pages. They can add functionality to their pages through *portlets*, which are portal applications. Portlets are custom made by your sites' programmers, downloaded from the IBM portal catalog, or are available from software vendors. Each portlet has settings that allow users to customize the functionality for their environment. An extensive set of portlets is available from IBM and its partners
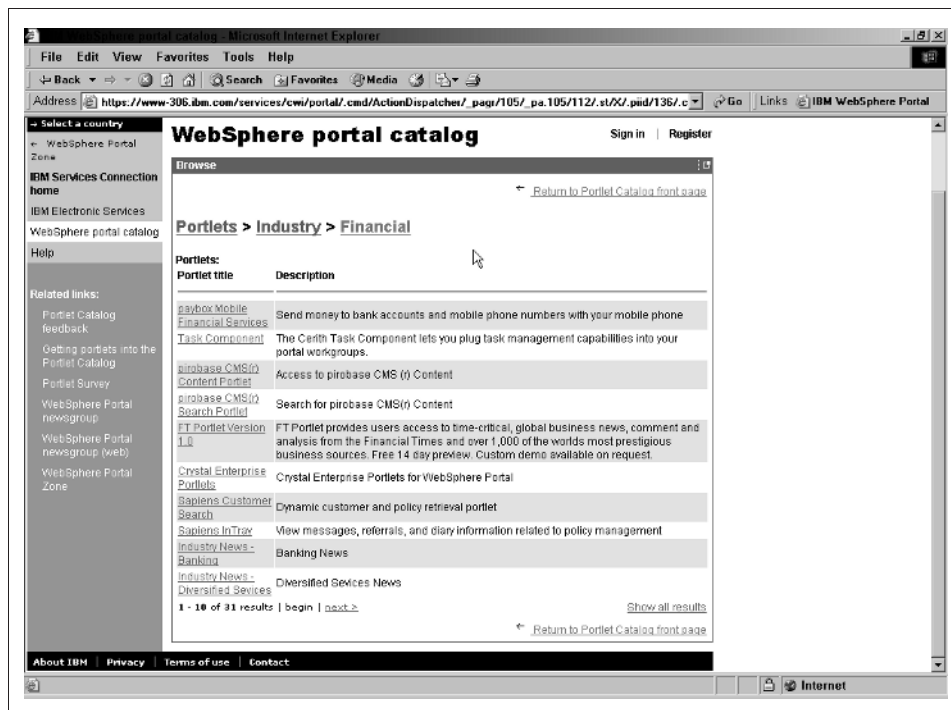
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Figure 1-2   Financial portlet section of the WebSphere Portal Catalog.

through the Portal Catalog at `www.ibm.com/software/genservers/portal/portlet/catalog`.

At last count IBM had 531 portlets in its catalog. Figure 1-2 shows some financial portlets available from the catalog. Portlets can be easily added to a page by clicking on the Edit Layout link at the top page you want to customize.

Users can have as many personalized pages as they want. They are arranged in a hierarchical manner with any level of depth starting from their home page. Based on their permissions, users can choose for each page or set of pages their own themes, skins, and layout. Themes define the fonts, colors, spacing, and other look-and-feel components of the page. They are a combination of cascading style sheets, JSP files, and images. Skins comprise title bars, borders, shadows, etc. that surround the portlets. Each page and the pages associated with its tree can have their own theme and skins, thus creating a virtual portal. Each department that enters into the portal will have its own look and feel.

WP Page Navigation supports complex navigation trees and labels that logically group a set of navigation elements.

WebSphere Portal allows users to view content on multiple devices and in multiple languages, including double byte and bidirectional. It also

generates markup that complies with the American Disability Act Section 508 Web Accessibility Standards and the guidelines of the W3C Web Accessibility Initiative. If the portal needs automatic translation, users can incorporate WebSphere Translation Server.

Content Management

WP provides the user the ability to syndicate content or to get up-to-date personalized and filtered content and services from multiple subscriber sources such as Financial Times, Hoovers, Factiva, and others. These subscribers support the Rich Site Summary (RSS) format, so their news and entertainment content can be displayed, managed, and edited with WP's built-in RSS portlet.

WebSphere Portal also enables the user to manage the creation, approval, and publishing of Web content through the support of Web Content Management products. Integration kits are provided on how to publish RSS content from Web Content Management vendors such as Documentum and Vignette. WebSphere Portal also provides its own sophisticated Web Content Management system called IBM Lotus Workplace Web Content Management (ILWWCM).

ILWWCM (formally known as Aptrix) is an enhanced Web Content Management System that replaced WebSphere Content Publishing. ILWWCM is a separately installed component that you need to get from your IBM representative. In the next version, it should be totally integrated into WebSphere Portal.

ILWWCM is designed for organizations with users that publish content to a Web site, whether it is marketing updating product information or human resources updating information on benefits. Content can be published through templates or forms and consists of images, Word documents, Excel, HTML, and so forth.

Through the ILWWCM administrator, users can contribute content, have it categorized, and deployed in a controlled manner using a workflow model. ILWWCM manages the task list of each user and through the establishment of role security enables what content can be changed, created, or deleted by a user. With the use of the workflow model, it coordinates the review and publishing process.

To address more sophisticated content manager requirements, use IBM Content Manager.

Document Management

WebSphere Portal Document Manager (PDM) provides users the ability to view, add, edit, and delete documents within a common folder hierarchy

that can be user-defined. Documents can be made available immediately or to go through an approval process using a defined workflow model. PDM uses WP's access controls, so users can define who can create, read, update, and/or delete a document based on their roles. Authorizations can be set by folder, which will be inherited to the subfolders. PDM provides a subscription capability that enables users to see in their Update folder, for a specified period, a document when it is changed.

PDM supports multiple different types of documents and provides productivity components that enable users to create and edit rich text, spreadsheets, and presentation documents within their browser.

Search

WebSphere Portal provides the user with a vast range of search capabilities. It is built on a sophisticated search engine that supports free-text queries with query assistance and query word completion. Queries can be performed in any language and can use wildcard, advance query operators, synonyms, stop word lists, and fielded search options. The results of the search can be summarized, clustered, and/or categorized using categories that are predefined (over 2,400 categories) or user-defined. WP can index and then search text and 200 other file formats using built-in document filters over the intranet or Internet. Use of the search capabilities is made through the search portlet, the WP crawler, or the document indexer. Both the crawler and the document indexer have a complete scheduler.

Enhanced search is also provided through IBM Lotus Extended Search and DB2 Information Integrator. Portlets using these technologies can integrate and combine other search engines and indexes. Lotus Extended search also allows seamless searches across a collection of Domino servers, databases, and the Internet where the user perceives that the collection of systems is a single server.

Collaboration

WebSphere Portal provides complete support for collaboration through the Notes, Domino, and Domino Web Access portlets. These portlets provide access to collaboration applications that use Lotus Notes databases on Domino servers such as Mail, Calendar, To Do, Notes View, TeamRoom, and Discussion. Additional portlets are available that integrate Domino.doc, Discovery Server, QuickPlace (Lotus Team Workplaces), and Sametime (Lotus Instant Messaging and Web Conferencing).

WP offers Collaboration Center, which is a framework that integrates People Finder, the Web Conference Center, QuickPlace, and Sametime.

QuickPlace provides workspaces for sharing and organizing ideas while Sametime provides instant messaging, shared white boards, and electronic meeting support.

WebSphere Portal enables integration of Domino, Sametime, QuickPlace, and Discovery Server into your portlet by providing Lotus Collaboration Components that are a suite of APIs and JSP tags.

Personalization

WebSphere Personalization server, which is a component of WebSphere Portal, provides the ability to display specific content to site users based on business rules. A business rule is the representation of a business requirement using a coding language based on English language syntax and semantics. The personalization server works by performing the following tasks:

1. Creating a user profile by collecting user information and classifying it into segments

2. Creating models for the content that defines it by its attributes. For instance, a content model might contain product name, price, and age segment.

3. Matching the user segment to the content on the basis of any combination of filtering, rules, or recommendation engine.

The personalization rules are referenced in the portlets. They are created using Web-based tools. You use the rules to classify site visitors into segments and then match the content to the segment.

Another method provided to match site visitors with content is through the recommendation engine. The recommendation engine uses statistical techniques to identify groups of users with similar interests.

WebSphere Portal also provides implicit profiling services that enable the dynamic creation of personalization business rules based on site visitor data.

WebSphere Portal also provides campaign management tools, which enable a business goal to be reached by defining and executing a set of business rules. For instance, you may have a campaign to increase sales of a particular product. To do this, you define business rules that identify likely customers based on the attributes of site visitors or registered users. Content can be displayed on your Web site or personalized e-mail can be sent. Campaigns have start and stop times; they can be prioritized, and can be run in parallel with other campaigns.

Performance

No matter how sophisticated your portal is, it will not be effective if it does
not meet your performance, functional, and personalization requirements.
WebSphere Portal creates logs that feed into the IBM Tivoli Web Site Ana-
lyzer. The Web Site analyzer will analyze the data and report metric in both
graphic and text formats so that you can determine the effectiveness of your
Web site and focus on areas to improve it.

The Developer Experience

WebSphere Portal allows the developer to focus on functionality devel-
opment rather than deal with look-and-feel function. Programmers cre-
ate portlets that are simple Java applications that are extensions to HTTP
servlets. Through portlets, they can access and manipulate Web-based con-
tent (such as Web pages, syndicated content feeds) and other Java appli-
cations/portlets through messaging and/or Web services and not have to
deal with issues relating to look and feel. Figure 1-3 shows the page layout
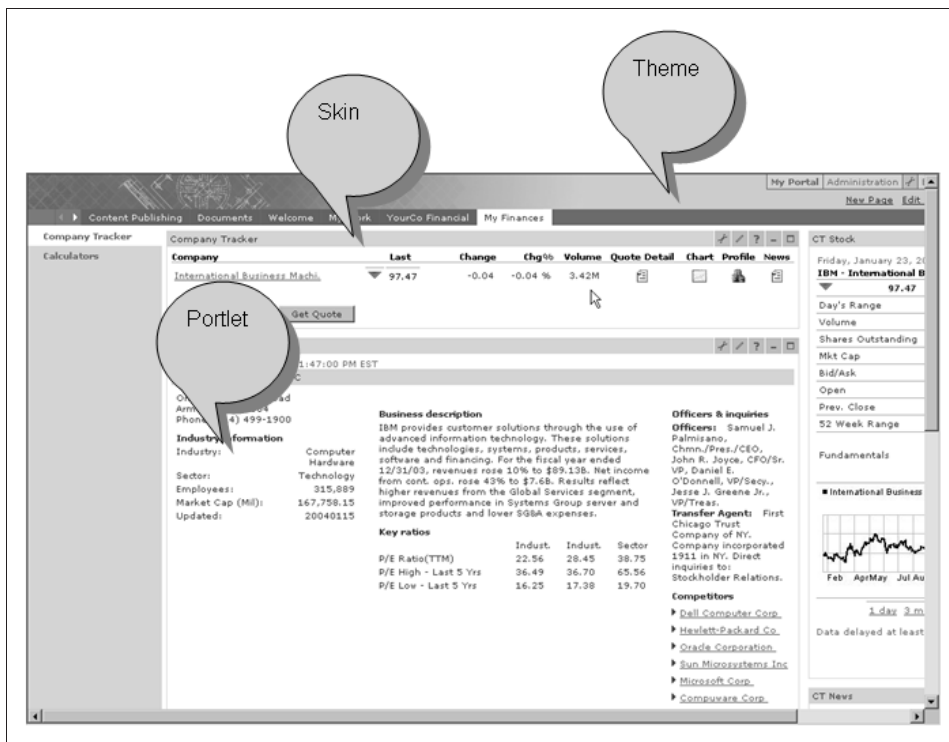and how portlets fit in.

Figure 1-3   The parts of a portal page.

WebSphere Portal also provides a mechanism for portlets to communicate with each other. The developer can send information through a portlet action and a portlet message. For instance, when a portlet displays information on a city, a second portlet can display its weather information by having the city portlet create a portlet action and encode it into the URL that is used for displaying weather. Upon clicking the URL, an action listener is called and then a portlet message is sent to the city portlet for the name of the city.

This method requires an extensive design and coding work. WP provides another method to pass messages independently called cooperative portlets. Cooperative portlets can be "Click-2-Action" or "wired." Portlets express their desire to interact with a broker who at runtime matches data types between the sources of one portlet with the action of another portlet. If a match occurs with a "Click-2-Action portlet," a pop-up menu appears on the page that will enable the user to transfer the data to the connected portlet. If the portlet is wired by an administrator, then the data will be exchanged automatically as opposed to having to wait for the user to click the pop-up menu.

WP gives developers the ability to develop portlets very easily using Web Clipping. This feature enables developers to visually or text select portions of a Web page and create a portlet that displays the information and optionally rewrite the links. Clipping portlet can support other sites' security through the use of WP Credential Vault.

Through the portlet Application Programming Interface (API), WebSphere Portal provides programmers the ability to dynamically discover available services, thus keeping service code independent of the portlet. WP provides discoverable services for managing the portal's content repository, persistent TCP/IP connections, and the Credential Vault. Other services such as mail can be implemented by the portal developer.

WebSphere Portal provides developers with a rich set of security API. Portal server supports the JAAS architecture. JAAS is a component of the standard Java security model that enables authenticating subjects and fine-grain access control. Developers can use the JAAS API to access JAAS-enabled back-end applications and can also use the credential API to authenticate without seeing the credential secret.

WP provides developers with support for Web Services for Remote Portlets (WSRP) 1.0, a new standard that allows "plug-n-play" of Web Services with Portals. WSRP enables remoting the presentation layer as opposed to regular Web services, which focus on remoting application data. WSRP transmits the actual markup rendered by the remote portlet.

WP provides basic support for JSR 168 1.0 portlets. JSR 168 is a Java Specification Request that defines a common set of portlet capabilities and API. This will allow JSR 168 compliant portlets to run in any vendor's portlet container that supports the JSR 168 standard.

If developers need to quickly access Enterprise Application Systems such as SAP, PeopleSoft, Siebel, then they can use WebSphere Portal Application Integrator. This tool allows rapid development of portlets through a GUI. The developer chooses fields and operation that he or she wants enabled in the portlet from objects found by the tool through querying the back-end system. Operations include searching, updating, deleting, and creating records. WPAI can also support integration of relational databases and Domino applications.

Developers can easily develop, test, and debug portlets using WebSphere Studio suite in conjunction with the portal toolkit. Wizards are available to you for creating portlets, building the portlet deployment descriptor, packaging it into a WAR file, and then deploying it into your production or test WP server.

The Administrator Experience

WebSphere Portal enables an administrator to have complete dynamic control over user access right for every portal resource including portlets, pages, and user groups. Control is set by using permissions. The permissions are defined by the user role. WP has defined roles (Administrator, Security Administrator, Delegator, Manager, Editor, Privileged User, and User), which the administrator or user associates with the resource. A role has a set of permissions that determine whether he/she can view, update, delete, or create the resource. If a role is assigned to a page, group, or folder, then resources below the parent inherit the permissions unless they are specifically blocked. A user can also delegate his or her role to other users. Administrators can also lock pages and/or page layout, thus restricting the impact component users can have on the company portal.

WebSphere Portal Member Services provides administration services through portlets for creating, updating, and deleting portal users and for managing their access rights. These services are provided at both the user and group levels. Users can be members of one or more groups and groups can be members of other groups. Users also have the ability to register and manage their own account information in the language of their choice (given that support has been implemented). Portal Administrators can define the information about the user that will be collected. User profile information can be supported in an LDAP and/or a database. Extended information about a user profile that is not supported by the default LDAP schema can be stored in a look-aside database.

Users can administer themselves ("self-care") or a separate administrator can perform the administration. Registration and self-care are done using forms that are easily modified.

WebSphere Portal supports form-based authentication (HTML user prompted form) through WAS or a third-party authentication server such as Tivoli Access Manager or Netegrity Siteminder. Single sign-on is also supported through WAS, and third-party authentication servers are also supported using LTPA tokens. WP also provides a Credential Vault service that allows portlets to store and access securely user IDs and passwords for applications that are accessed on remote systems.

WebSphere Portal gives the administrator the ability to control the portal globally by setting the default language, the cache timeout, handling of new user sessions, taking action when an unauthorized user accesses a portlet, and mapping of URLs.

WP also enables administrators to define new mobile devices and browsers so the portal will know what markup language to use and what the capabilities of the device/browser are.

Of course, WP also provides the standard features that allow users and administrators to easily install, activate, and configure portlets, themes, skins, and pages.

Tools are also provided to ease batch administration, migration, and configuration. Administrators can also enable and control tracing.

WebSphere Portal Architecture

So you now understand what WebSphere Portal does, but you would wonder how it works. WebSphere Portal is basically a suite of J2EE Enterprise Applications running and interacting with each other on the WAS.

In Figure 1-4, you can see the WebSphere Portal Architecture. It consists of three components: the page aggregator, the portlet container and services, and the J2EE engine. It starts with the page aggregator getting an HTTP request from WAS and then performing the following tasks:

1. Determines the device and user information based on the request

2. Collects the pages and portlets requested and then filters them based on the user entitlements

3. The portal dispatches specific Java Server Pages (JSPs), which issue includes for portlet Web modules. These portlet Web modules are invoked as servlets and are then rendered based on their service method (edit vs. view). This process results in the layout of the rows, columns, and graphics of the page.

4. Portlets that perform actions and execute messages such as Click-2-Action are processed first.
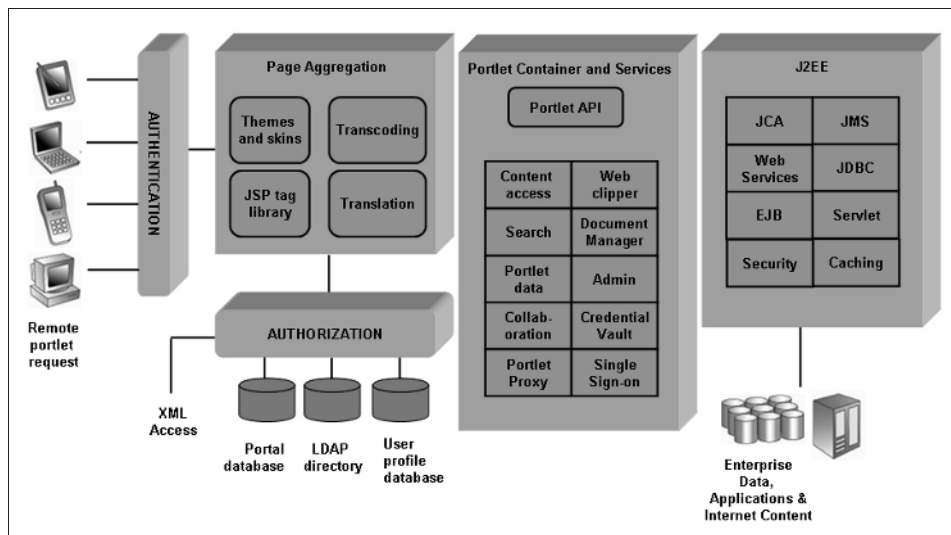
Figure 1-4   The WebSphere Portal Architecture.

5. Portlets that support the target markup are added to the rendering phase.

The second component is the Portlet Container and services. This component controls the portlets and provides services for them to interact with other applications or platforms. Portlets are simple independent HTTP servlets that are reusable and communicate with each other or other resources with well-defined interface. Services, such as Search, collaboration, and Document Manager, extend the functionality of the portlet to support an Enterprise environment.

The standard for the portlet API is JSR 168. JSR 168 is still evolving and as such is still a subset of the functionality of the WP Portlet API. As JSR 168 evolves, the respective WP Portlet API will be deprecated. Presently, both API are very different, have their own containers, and are supported independently.

The last component is the J2EE Engine under which Portal runs. J2EE or Java 2 Platform, Enterprise Edition is an open standard made of components needed to build enterprise applications. J2EE also defines the application and platform model these components run under.

The Java Application Model consists of application components: Java application clients, applets, servlets, JSPs, and Enterprise Java Pages (EJPs). J2EE also defines the Java run-time environment each component runs in. They are called containers and they run on Java 2 Platform, Standard Edition. J2EE also standardizes services which enable applications to integrate with Enterprise Applications. Services comprise JDBC for database

connectivity, JMS for messaging, JavaMail, JAAS for JavaMail, Java API for XML Processing (JAXP), Java IDL, and Java Transaction Architecture for persistent transactions. IBM WebSphere Application Server is fully J2EE certified. Certification is obtained executing successfully the compatibility test suite.

In the WebSphere Portal architecture, you can see that security through authorization and authentication is supported by both the portlet container and services component and the J2EE engine.

WebSphere Portal Packaging

IBM WebSphere Portal V5.0 has two types of packages for the enterprise and two additional packages for small business. Table 1-1 describes the packages for the enterprise. IBM WebSphere Portal Enable for Multiplatforms, version 5.0 is the basic package, while IBM WebSphere Portal Extend for Multiplatforms version 5.0 is the full package.

Table 1-1   Packaging for WebSphere Portal Enable and Extend for Multiplatforms, Version 5.0

COMPONENT	DESCRIPTION	ENABLE	EXT-END
Portal server	J2EE application running in WAS. Provides portal framework consisting of presentation, user management, security, connectivity, and other services. Also includes IBM Cloudscape, version 5.1; a Java-based database.	X	X
WebSphere Application Server Enterprise 5.0 Fix Pack 1	Provides J2EE services for WebSphere Portal. Includes IBM HTTP Server and deployment manager	X	X
IBM Directory Server version 5.1	LDAP Directory Server for storing and retrieving user data required for authentication	X	X
IBM DB2 Universal Database Enterprise Server Edition, version 8.1 with Fix Pack 1	Relational database required to store portal data	X	X

(continued)

Table 1-1   *(continued)*

COMPONENT	DESCRIPTION	ENABLE	EXT-END
Portal toolkit 5.0	WebSphere Studio plug-in that aids in the development, testing, and debugging of portlets	X	X
WebSphere Studio Site Developer version 5.0 with Fix Pack 1	Integrating development environment for building, debugging, testing, and deploying J2EE applications with HTML pages, servlets, and JSPs	X	X
Web Content Management	Provides complete Web content management system, document management, and personalization server	X	X
IBM Tivoli Web Site Analyzer, version 4.5	Provides information on site availability and performance		X
IBM WebSphere Translation server 5.0	Translates Web pages, e-mail messages, and chat conversations into multiple languages	X	X
IBM Lotus Collaborative Components	A suite of APIs and JSP tags that enables integration of Domino, Sametime, QuickPlace, and Discovery Server into your portlet	X	X
IBM Lotus Collaboration Center	Framework that integrates People Finder, the Web Conference Center, QuickPlace and Sametime		X
IBM Lotus Extended Search version 4.0	Enables searches across distributed structured and unstructured data through a single point of access		X
Sametime	Instant messaging and online awareness		X
QuickPlace	Virtual teamrooms		X

Table 1-2 describes the packages for the small business. IBM WebSphere Portal-Express for Multiplatforms, version 5.0 is the basic package while IBM WebSphere Portal-Express Plus for Multiplatforms version 5.0 has some additional features. IBM WebSphere Portal-Express packages come with a simpler installation and the option for user or processor-based licensing.

Table 1-2   Packaging for WebSphere Portal—Express and Express Plus for Multiplatforms, Version 5.0

COMPONENT	DESCRIPTION	EXPRESS	EXPRESS PLUS
Portal server	J2EE application running in WAS. Provides Portal framework consisting of presentation, user management, security, connectivity, and other services. Also includes IBM Cloudscape, version 5.1; a Java-based database	X	X
WebSphere Application Server-Express 5.0 Fix Pack 1	Provides J2EE services for WebSphere Portal. Includes IBM HTTP Server and deployment manager	X	X
IBM Directory Server Express version 5.1	LDAP Directory Server for storing and retrieving user data required for authentication	X	X
Portal toolkit 5.0	WebSphere studio plug-in that aids in the development, testing, and debugging of portlets.	X	X
WebSphere Studio Site Developer version 5.0 with Fix Pack 1	Integrating development environment for building, debugging, testing, and deploying J2EE applications with HTML pages, servlets, and JSPs	X	X
Web Content Management	Provides complete Web content management system, document management, and personalization server	X	X
IBM Lotus Collaborative Components	A suite of APIs and JSP tags that enables integration of Domino, Sametime, QuickPlace, and Discovery Server into your portlet	X	X
IBM Lotus Collaboration Center	Framework that integrates People Finder, the Web Conference Center, QuickPlace and Sametime.		X
Sametime	Instant messaging and online awareness		X
QuickPlace	Virtual teamrooms		X

WebSphere Portal Platforms

WebSphere Portal V5.0 supports the platforms shown in Table 1-3.

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Table 1-3 WebSphere Portal Platforms

PLATFORM	NAME
Hardware	■ IBM-compatible PC with Windows 2000 Server with Service Pack 2 or Service Pack 3, Windows 2000 Advanced Server with Service Pack 2 or Service Pack 3, Red Hat or SuSE operating environment
	■ IBM pSeries with AIX, version 5.1 ML3 or version 5.2 operating environment
	■ Sun processor with Solaris operating environment, version 8
	■ IBM zSeries or IBM S/390® Parallel Enterprise Server™ capable of running SuSE Linux Enterprise Server, version 7 (31-bit) operating environment
Software	■ AIX V5.1, 5.2, 5.3
	■ RedHat Enterprise Linux AS for Intel
	■ RedHat Linux for Intel (×86) 8.0 2.4
	■ RedHat Linux for zSeries 7.2 2.4
	■ Solaris 9 (Fix level: 9 12/2002)
	■ Solaris 8 (July 29, 2002 or later)
	■ SuSE Linux for Intel (×86) 7.3 2.4
	■ SuSE SLES for Intel (×86) 7 2.4
	■ SuSE SLES for Intel (×86) 8 2.4
	■ SuSE SLES for S/390 8 2.4
	■ SuSE SLES for S/390 7 2.4
	■ Windows 2003 Standard
	■ Windows 2003 Enterprise
	■ Windows 2000 Advanced Server SP2+
	■ Windows 2000 Server SP2+
Databases	■ IBM Informix, version 9.3 or version 9.4
	■ Cloudscape, version 5.1 with Fix Pack 13
	■ Microsoft SQL Server Enterprise 2000 Service Pack 3
	■ DB2 Universal Database for z/OS and OS/390, version 7.1
	■ DB2 Universal Database Enterprise Server Edition, version 8 with Fix Pack 1
	■ DB2 Universal Database, version 7.2 with Fix Pack 7 and Fix Pack 8

Table 1-3 *(continued)*

PLATFORM	NAME
	▬ Oracle 8i, version 8.1.7
	▬ Oracle 9i, version 9.2.0.1
LDAP Servers	▬ IBM Directory Server, version 4.1 and version 5.1
	▬ Lotus Domino Enterprise Server, version 5.0.12
	▬ Lous Domino, Release 6.0
	▬ Sun ONE (formerly iPlanet) Directory Server 5.0
	▬ Microsoft Active Directory (as included with Windows 2000 Server)
	▬ Novell eDirectory 8.6
Web Browsers	Windows platform:
	▬ Internet Explorer 5.5 and 6.0
	▬ Opera 6.0, 6.1, and 7.0
	Windows, Linux, AIX, Solaris operating environment:
	▬ Netscape 6.2 or 7.0
	▬ Mozilla 1.0.2, 1.2.1, and 1.3

What's New in WebSphere 5.0 (including 5.0.2)

WebSphere Portal version 5.0 offers significant improvements over Web-Sphere Portal version 4.2.1, among which are the following:

- Installation is now simpler and more reliable.
- Cloudscape, a Java database, is installed automatically. Cloudscape requires no configuration and is maintenance free.
- Configuration utility is provided to easily customize WebSphere Porter to use other databases, LDAP Servers, or Web servers.
- Improved database and LDAP server support
- Basic support for WSRP 1.0
- Basic support for JSR 168
- Web Clipping Portlet has been updated to make clipping portlets simpler to create and perform better.
- Search has been greatly enhanced that enables you to find, index, categorize, summarize, and support more than 200 documents. Search will enable you to define your our own category tree or it will automatically categorize using 2,400 predefined categories.

- Cooperative portlets that enable dynamic portlet interaction on a page
- Portal pages can be arranged in a tree hierarchy. Administration is much easier because the child pages can inherit the parent's permissions.
- Application Portlet builders enable you to rapidly create portlets to access and manipulate data from an enterprise application.
- Improved navigation through Portlet menus. Portlet menus can be created using static XML or dynamically generated.
- Ability to map user-friendly URLs to pages so you don't have to use cryptic portal URLs
- A new document repository and management system called PDM. PDM also provides the ability to author documents such as text, word, spreadsheet, and presentations in the portal.
- The administrative interface has been enhanced with new administrative portlets, improvements in the Navigation, new and improved themes and skins, and context-sensitive links.
- Lotus Collaboration Center has been enhanced with portlets for People Finder, support for QuickPlace in My Lotus Team workplaces, support for Sametime in Lotus Web Conferences, and more.
- The business portlets have been enhanced by adding an Internet Mail Box, single Notes and iNotes portlet, a Newsgroup portlet, and Mylist portlet (simple check-off list).
- XML access, which is the batch processing interface for the portal, has been enhanced in function and documentation.
- Improved handling of error messages by enabling error messages to be localized
- Transcoding can now be used at the portlet level by administrators.
- Portal Toolkit has been updated for version 5 and includes new and improved Wizards.
- Improve performance through WAS cluster support, performance instrumentation, reduced session data, unified caching architecture based on Dynacache, smarter invalidation, and faster login times

Summary

In this chapter we introduced you to portals, which is the WebSphere product family, and more importantly to WebSphere Portal. We gave you

grounding on the WP architecture, its packaging, and supported platforms. We showed some great features introduced in this version. Now that we wetted your appetite by telling you at a high level all the great things about the WebSphere Portal, let's we give you some substance. The rest of the book will show you how to install and use the product for an Enterprise environment. We will start with the first steps so you can install the product in various environments and program a simple portlet. After each chapter we will build upon the topic so that by the time you complete reading the book you will be able to deploy WebSphere Portal in an enterprise environment.

In the next chapter we will introduce step 1 to deploying WebSphere Portal: installing a simple portal.