



PORTAL POWER

New portal suites offer an array of linking technologies that need almost no development. At the top, Oracle's code-free environment boasts a nice price and an impressive feature set

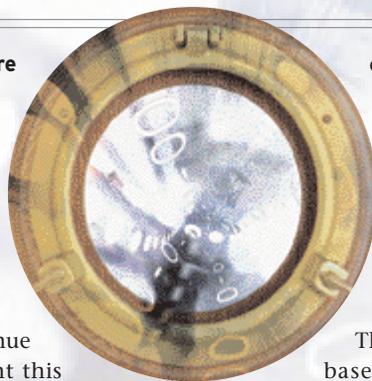
By Lori MacVittie

» **Enterprise portals must offer more** than static postings of company announcements. IT departments need portals that can work with their existing application infrastructure and let them develop custom portlets. Business users want portals that provide a collaborative workspace and personalized views of a company's intranet.

It's a hot market. Portal vendor revenue will increase by more than 150 percent this year, according to Meta Group, which says 85 percent of Global 2000 organizations will have selected an enterprise framework for portals by year's end.

We asked 11 vendors to send us their products so we could build an enterprise portal for NWC Inc. in Green Bay, Wis. (NWC Inc. is a 24/7 production environment and applications testing lab. For more information, see inc.networkcomputing.com.) Fujitsu and Ascential Software declined, saying their products were not a good fit for our tests. BEA Systems, IBM, Microsoft, Oracle, Plumtree Software, Sun Microsystems, Sybase, Tibco and Vignette all agreed to brave our subzero temperatures.

We evaluated each portal on its overall architecture and implementation, ability to integrate with stan-



dards-based applications and services, security features, price and development capabilities.

Participants fell into two categories. Plumtree and Vignette offer conventional enterprise portals—standalone products that provide little more than document management and collaborative computing. The rest offer portals that are part of, or based on, an integration or application-server platform suite.

Not surprising, the conventional products were exceptionally good at collaboration, document management and searches. But they couldn't match the platform products in terms of custom application development, ease of use and integration with our application infrastructure.

If the Standard Fits ...

Standards-based portals are a must. If the product complies with portal standards, such as WSRP (Web Services for Remote Portlets) and JSR (Java Specification Request)-168, and Web services standards (SOAP, WSDL), you're assured that third-party products will work with it and the applications you

develop will work with your existing infrastructure.

Custom applications are the most difficult to include in a portal, but the most sought-after. In the past, developers had to learn platform-specific portal APIs. The massive push toward an SOA (service-oriented architecture) has let portal vendors embrace both



Web services standards and portal-specific ones. With these standards, the vendors can offer technology that lets even nontechnical users build custom applications.

Indeed, the goal for many companies is to create complex portals that include composite applications without writing a line of code. Application developers can concentrate on business logic and functionality rather than learning platform-specific APIs or even coding new interfaces to existing applications.

The Best-Kept Secret

We were excited about building composite Web services applications within our portal until we started using the products. Web services are coming along nicely, but only the platform vendors excelled at painlessly integrating such services into these portals.

Therefore, we changed plans and decided to build our own composite application that would combine database access and XML. But again, we found that only the platform products could help us accomplish this task without a great deal of work. One of the requirements in building this application was interportlet communication—where one portlet would trigger an event and update another portlet on the same page—and we wanted to achieve this without writing code.

OracleAS 10g Portal, Sybase Enterprise Portal 6.0 and Tibco Portal Builder 5.0 came through. We proved that a business user could build custom applications without writing code. The other products offered some code-free capabilities but we had to write some code or use separate tools to accomplish what we did with the Oracle, Sybase and Tibco products within a Web environment.

Some of our goals were less aggressive. Branding a portal with our own logo, for example, was impossible within BEA Systems' WebLogic Portal without firing up its Workshop tool. And after hours of searching, we still couldn't figure out how to do this using Plumtree's Enterprise Web Suite without writing a portlet. But all the other products made this task as simple as we had expected it to be.

We also had a good time (*not!*) integrating each of the products with NWC Inc.'s Active Directory 2000 for authentication. As anticipated, Microsoft's portal was the easiest to integrate with other Microsoft products; Plumtree Enterprise Web Suite and Tibco Portal Builder came in right behind. The products from Oracle, Sun and IBM require their own directory implementations and provide synchronization or replication from AD to their own directories. We prefer a simpler method of accomplishing these tasks—ideally one that doesn't require spe-

cific knowledge of AD, LDAP and each directory.

After testing all nine products, it came as no surprise that two of the top three portals are platform-based. We didn't expect to find Oracle at the top, however. Oracle doesn't push its portal product, and we hadn't come across any case studies focused on use of the product in the real world, so we hadn't set any expectations for it before we got it into the lab.

With a virtually codeless implementation of applications and interportlet communication and a lengthy list of portlets available out of the box that made integration with other enterprise systems a snap for business users and IT alike, OracleAS 10g Portal slid past the products from Plumtree and Sybase to take top honors. Plus, with pricing that would surely please existing Oracle customers (free as in beer) and everyone else (\$20,000 per CPU), OracleAS did everything we asked it to without making us break out a compiler.

OracleAS 10g Portal The winner of our Editor's Choice award, OracleAS Portal, really impressed us.



With its entirely Web-based visual environment for development and a wide variety of preintegrated portlets, we were able to devel-

Executive Summary

ENTERPRISE PORTALS

Enterprise portals are extending beyond the human resources department—where they typically use static links to point users to online applications and out-of-date documents—to become full-grown corporate desktops. With collaborative applications, intelligent search engines, document management and composite application-development features, the enterprise portal may be the long-awaited thin client.

We tested nine enterprise-class portals from conventional portal vendors Plumtree Software and Vignette, database vendors Oracle and Sybase, and platform vendors IBM, BEA Systems, Microsoft, Sun Microsystems and Tibco within our NWC Inc. infrastructure. We integrated the products to authenticate from Active Directory; included collaboration technology, such as forums and surveys; and built applications to access our corporate Oracle9i database via XML and HTML feeds.

With varying degrees of effort and success, we built a corporate portal within each environment. When we were finished, we were a bit surprised that Oracle turned up at the top of the charts, given that Oracle doesn't market its portal as a separate solution. We'd heard nary a whisper about the general excellence of OracleAS Portal. Its price is nice too.

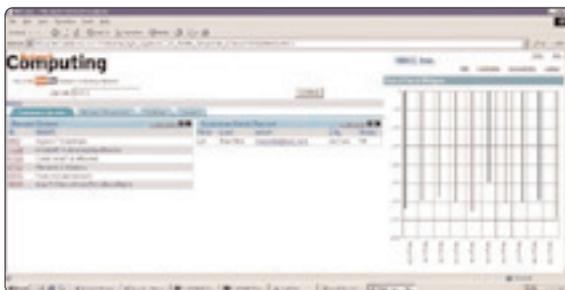
op our portal without the frustration we encountered with some of the other products.

The OmniPortlet, a prebuilt portlet, is a definite winner for Oracle. It offers the easiest method of creating portlets to access a number of data sources, including XML, Web services and databases. Although some of the other products we tested offer similar functionality out of the box, only Oracle has one easy-to-configure portlet.

We also were impressed with OracleAS' visual layout tool. BEA's WebLogic Portal offers the same flexibility in defining page layouts, but you must create the templates outside of the portal environment. OracleAS let us manipulate the page layout without going outside. All

the products we tested use a familiar table-based model for their templates, but OracleAS was the most flexible. It let us add, remove and nest panels (cells within a table). In contrast, Vignette's options for manipulating columns and rows were oddly restrictive. We were given only a few layout options and could not add columns or rows.

With OracleAS, we easily integrated both XML and Web services into our portal and were disappointed only in that we had to write the XSL (Extensible Stylesheet Language) required for displaying the results in readable fashion. With Tibco Portal Builder, we could create the XSL necessary to display XML properly from user-specified parameters requiring only some knowledge of XPath.



With OracleAS you can turn database queries into charts without writing any code. This functionality places Oracle at the top.

The biggest drawback to Oracle's portal was the lack of IM and forum portlets out of the box. Although forum portlets are offered as free downloads from Oracle's site, most of Oracle's portlets are PL/SQL-based. We'd like to see both included with the distribution—collaboration is an integral part of this generation of portals. You can integrate HTML-based IM functionality easily using Web clipping or by integrating a Java-based IM client, such as Jabber, via Oracle's Portal Development Kit. Or you can use preintegrated solutions from Droplets or FaceTime, Oracle partners. There is excellent third-party support for Oracle's product; hundreds of portlets from a wide variety of vendors are available from its Web site.

OracleAS outshone every other product but Sybase's in its ability to create composite applications and handle interportlet communication without

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Enterprise Portals

	Oracle AS 10g Portal	Sybase Enterprise Portal 6.0	Plumtree Enterprise Web Suite	Sun Java System Portal Server 6.2	Tibco ActivePortal
CUSTOMIZATION					
Development framework (20%)	5	5	4	3	4
User personalization (15%)	4	4	4	5	4
INTEGRATION					
Collaboration/productivity (10%)	4	4	4	3	3
Prebuilt integration (10%)	4	4	4	3	4
Identity management (5%)	4	4	4	4	4
Search/document management (5%)	4	4	4	4	4
ARCHITECTURE					
Framework (5%)	4	4	4	4	3
Implementation (5%)	4	4	4	3	4
Manageability (5%)	4	4	4	4	4
Standards (5%)	4	4	4	4	2
SECURITY FEATURES (10%)	4	4	4	4	3
PRICE (5%)	5	4	3	5	3
TOTAL SCORE (100%)	4.25	4.20	3.95	3.75	3.60

A≥4.3, B≥3.5, C≥2.5, D≥1.5, F<1.5 A-C GRADES INCLUDE + OR - IN THEIR RANGES. TOTAL SCORES AND WEIGHTED SCORES ARE BASED ON A SCALE OF 0-5.

B+

B+

B

B

B-

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code. This is excellent: It means you can easily train business users to build their own applications by combining portlets. OracleAS uses an event system similar to that of Plumtree's. However, Plumtree's architecture requires that at least three lines of JSP code be written to generate and process such events, whereas the portals from Oracle, Sybase and Tibco require no code whatsoever.

Oracle's pricing is also a sweet spot. Its Enterprise Edition is \$20,000 per CPU; only Sybase and Sun came close to offering such a feature-rich product without giving purchasers sticker shock.

OracleAS 10g Portal, Oracle Corp., (888) 672-2534, (650) 506-7000. www.oracle.com

Sybase Enterprise Portal 6.0 Sybase Enterprise Portal (EP) 6.0 proves you can build extensive functionality

B+ and composite applications in your portal without writing a line of code. Only Sybase's higher price kept it from overtaking Oracle.

Sybase's J2EE architecture lets you deploy its portal in any number of J2EE application servers. With the exception of the portals from Microsoft and IBM, all the products we tested are J2EE-based and offer at least some flexibility in terms of application-server deployment, with IBM WebSphere, BEA WebLogic and Tomcat being the most frequent vendor-certified options. Similar to the setups from IBM, Oracle and Sun, Sybase's gives you the option to install the portal on its own, included application server.

Sybase's platform offers wide latitude for laying out pages. We were able to choose from a range of options in terms of the number and width of columns. This was a refreshing change from the layout systems of BEA, IBM and Vignette, which were extremely limited. Placing portlets on a page was also a breeze—the product offers both a drag-and-drop interface and a manual method of manipulation.

Building applications for use within a portal is a must for most enterprises, and though all the products we evaluated support the concept of interportlet communication, the methods of achieving this lofty goal fall into two camps: one requiring coding and one that does not. EP, OracleAS and Tibco Portal Builder fall into the latter. We were able to include an XML portlet listing recent customers who have ordered widgets from NWC Inc. and use that data to update another portlet that pulled customer-specific information from a database and displayed it in the portal. The products from IBM, Microsoft and Vignette let us do something similar, but we had to use external tools. To do the same with BEA's, Plumtree's and Sun's products, we needed to code in JSP or Java.

Sybase Enterprise Portal 6.0, Sybase, (800-879-2273), (925) 236-5000. www.sybase.com

Plumtree Software Enterprise Web Suite Plumtree has embraced an SOA and uses the model

B to create a highly distributable and ostensibly scalable system. This architecture also lets Plumtree be language-agnostic in its requirements for developing portlets. The only must is that the portlet output HTML or XML over HTTP. This was a marked difference from IBM's and BEA's platforms, which support only portlets developed within the J2EE architecture and require Java or JSP. Plumtree finished third because of its high price and the fact that it requires code to provide portlet-to-portal communication.

We liked the extensibility of Plumtree's architecture because it lets you deploy portlets without regard for platform or operating system. The products from BEA, IBM and Tibco require that portlets be deployed on the portal server, which means the portlets are tied to the same deployment environment as the portal. Plumtree's remote-provider architecture, also used by Oracle, reduces the load on the portal server by distributing processing across remote servers.

We were impressed with the suite's search functionality, which lets users perform federated searches and aggregates search results from within the portal, from a content-management system and from external sources, such as Google and Inktomi sites. We were also pleased that we could specifically include or exclude portlet content from indexing. The platforms from IBM and Sun don't provide any portlet searches, and most of the other products we tested include or exclude content based solely on a user's permissions

	Vignette Application Portal 4.5 and Application Builder 4.5	IBM WebSphere Portal 5.0	Microsoft Office Share Point Portal Server 2003	BEA WebLogic Portal 8.1
	3	3	3	3
	4	4	4	2
	4	4	5	3
	3	3	3	2
	3	3	2	3
	5	4	3	3
	4	4	4	3
	4	4	2	3
	3	3	4	3
	3	4	2	3
	4	3	3	2
	3	3	5	4
	3.55	3.45	3.40	2.70
	B-	C+	C+	C

for accessing content. In contrast, the products from Plumtree, Oracle and Sybase let you designate portlet content as searchable or nonsearchable when you're building them.

We were pleased with Plumtree's project-management portlets, which are ready to use out of the box. Only Microsoft and Plumtree offer such functionality without custom coding or additional collaborative servers. We were able to include project management for each community we created (human resources, customer service and so on) by simply configuring and including an instance of the portlet for each one.

Plumtree's pricing, \$125,000 for 250 users, was steep when compared to the per-CPU pricing of Oracle, Sybase and BEA. At \$625 per user for our scenario, Plumtree's solution was priced well above most of the competition.

Plumtree Enterprise Web Suite: Plumtree Corporate Portal 5.0; Content Server 5.0; Collaboration Server 3.0; Studio Server 2.0; Integration Services. Plumtree Software, (800) 810-PLUM, (415) 399-7050. www.plumtree.com

Sun Microsystems Java Enterprise Solution

Sun's portal solution is a part of its JES (Java Enterprise System).

B The portal requires the use of its Sun ODS (ONE Directory Server), and almost all administration is accomplished via the Web-based directory-administration console. The tight integration with ODS was similar to that of Oracle and its requirement for OID (Oracle Internet Directory). Both can be configured to replicate user and group information from other identity-management sources, such as Active Directory and other directories. Sun finished fourth primarily because of its administrative methods and the amount of development required for building new portlets and managing interportlet communication.

Sun's was the only product that didn't provide

some mechanism for visually manipulating page layouts. The entire portal is built using the Web interface for ODS, and this was an easy process. We were especially happy with the level of personalization available. Although personalization is offered by all the products, Sun's took personalization to the next level by allowing customized settings not only on a per-user basis, but also on a per-client basis. We were able to personalize portlets based on whether we accessed the portal using a standard browser or by mobile client, such as a PDA or cell phone. This feature could be handy for a mobile employee fetching e-mail via the portal—he or she can control the amount of data being transferred based on the available bandwidth.

We also found the layout paradigm very intuitive. Sun's design methodology is based on the near-infinite nesting of containers. This mechanism was much more intuitive than Tibco's community model and Sybase's page-grouping mechanisms.

Sun's method of creating portlets lets you build and deploy custom portlets (Java and JSP) through the J2EE architecture as well as by using a template approach employed by all vendors in our review. The template approach is useful for portlets that require only customization of specific parameters, such as XML feeds and interaction with Web services. The end result is a new portlet configured for specific use.

It was a breeze to add Web service interaction within Sun's portal, and we were pleased by the inclusion of a default user interface to interact with the service. With the other products we tested, we had to build a custom interface using JSP or Java or one of the .Net-supported languages. Surprisingly, several J2EE solutions—those from Plumtree, Tibco and Vignette—and Microsoft's product support .Net portlets for deployment within the portal. Usually, you can't run .Net within a J2EE architecture because

HOW WE TESTED ENTERPRISE PORTALS

We deployed most of the enterprise portals in our NWC Inc. business applications lab in Green Bay, Wis., on a Dell 2650 (dual 2.2-GHz, 1 GB of RAM, Gigabit Ethernet) running the OS of the participant's choice. We installed Sun Microsystems' product on a SPARCstation running Solaris, because it ran only on Solaris at the time of our tests. Each portal was required to use our Active Directory 2000 installation for user authentication.

Our goal was to build a portal that included an XML feed (à la RSS); general XML; discussion

forums; integration with Exchange 2000 for mail; custom applications for specific groups—finance and customer service (both required Web services, interportlet communication and database-query capabilities); HTML clipping; and a survey.

Throughout the development of pages including these portlets, we examined the ability of each product to customize and manage the flow of data, including features such as caching. We also tested security, determining whether users could add/remove/customize the portlets on a page.

We evaluated the methods for developing portlets and cloning existing ones, and determined what skills are necessary for each portal. We considered portals that provide codeless interportlet communication and support portlet standards (WSRP and JSR 168) prime examples of the latest generation of portal platforms. We also looked for integration portlets—those that offer access to enterprise applications, relational databases, Web services and XML—and considered the breadth of support for collaborative tools (file sharing, forums and IM).

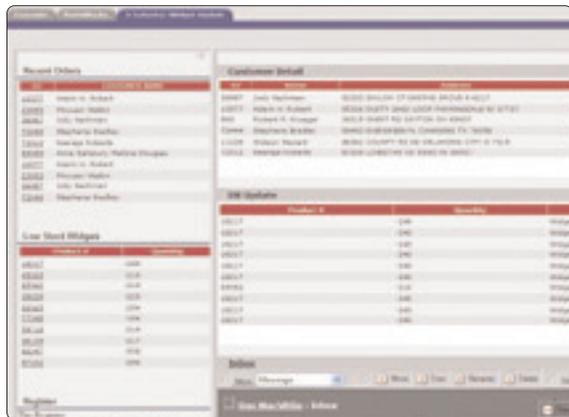
they're different languages—it's usually all .Net or all J2EE. So support for both is very cool.

Sun Java System Portal Server 6.2; Sun Java System Portal Server, Mobile Access 6.2; Sun Java System Portal Server, Secure Remote Access 6.2; Sun Microsystems, (800) 555-9SUN, (650) 960-1300. www.sun.com

Tibco Portal Builder 4.5 Tibco's product fell solidly between the standalone portals and platform products.

B We were most delighted with its ability to easily integrate XML and Web services without requiring coding or extensive XSL knowledge. This was a refreshing change.

Tibco's product also has a unique way of dealing with unavailable content—when a portlet can't retrieve content from a remote server, for example. All the products we tested let you define how to handle this situation, including letting you customize error messages for display. Tibco takes this one step further and lets you disable portlets based on configurable thresholds. After our XML portlet failed to load its content three times, the portlet was disabled and the server no longer attempted to load the data. This reduced the load time for pages, including the portlet, because the server was no longer required to wait for the portlet to time out.



Tibco Portal Builder not only offered XML and database integration, it made the resulting package look nice too.

Alerts and notifications are an integral part of application integration, and Tibco, whose core competencies lie in the EAI (enterprise application integration) space, offers extensive support for both. In addition to providing subscription-based notification of changed content, such as documents and forum discussions, the products from Tibco, Microsoft, Oracle, Plumtree, Sun and Sybase all offered notifications based on content changes within portlets. This was a competitive differentiator: Not all content will be served from a conventional content-management system. We were surprised to discover that BEA and IBM don't offer any subscription capabilities.

While Tibco's suite surpassed all other products in

dealing with XML and Web services formatting by offering a mechanism to define the XSL required, portlet-to-portlet communication was more difficult to configure with Portal Builder than it was with the models offered by Oracle and Sybase.

Tibco ActivePortal: Tibco PortalBuilder; Tibco PortalBuilder Enterprise Services Edition, Tibco Software, (877) 958-4226, (650) 846-1000. www.tibco.com

Vignette Application Portal 4.5, Vignette Application Builder 4.5 Vignette Application Portal includes an impressive set of preintegrated portlets. The

B company's experience as a standalone portal vendor and as a document-management vendor has helped it create a product that lets you deploy and create a functional portal with full collaboration, productivity and content-management features in a matter of hours. Now if only the price tag weren't as impressive. VAP starts at \$75,000, and you can't forget to include VAB (Vignette Application Builder), which is \$50,000 per CPU. Although you could buy just VAP and use a J2EE environment for building new portlets, you also need VAB to get the same level of development ease offered by Oracle and Sybase.

Vignette's products support deployment in several application servers, but because most of them were also from vendors participating in this review, we chose to deploy VAP-VAB within a Tomcat 4.06 application server. We were pleased with VAP-VAB's wide variety of support for metadata repositories, including IBM DB2, Microsoft SQL Server, Oracle and Sybase. Being able to use existing infrastructure is always a plus, and this extensive support sets Vignette's products apart from those from Oracle and Microsoft. The latter support only their own databases as repositories. (Oracle has an advantage over Microsoft here because it includes the database rather than requiring a separate installation and configuration.)

Vignette offers extensive Web services support, including the unique ability to integrate .Net applications as portlets. The .Net Integration Portlet included with VAP took advantage of the .Net Web Service and fully integrated the user interface. As more enterprise applications present their interfaces as .Net applications, the move to a portal-based corporate desktop will be much easier.

Although content-subscription capabilities are available for VAP through its collaboration server, the lack of support within the portal, its requirement for external tools to enable interportlet communication (and the eye-popping price tag that comes with that feature) and its generally hefty price tag kept Vignette's products from scoring higher in this review. Manageability was also an issue: The process of creating a portlet and including it in a page was tedious and required more configuration than either Oracle or Sybase.

Vignette Application Portal 4.5; Vignette Application Builder 4.5, Vignette Corp., (888) 608-9900, (512) 741-4300. www.vignette.com

IBM WebSphere Portal 5.0 WebSphere Portal is an intuitive environment, and though its layout options are limited, using it to get a basic portal up and running in a few hours was a simple process.



IBM uses RBAC (role-based access control) for security within WebSphere Portal. Most of the products we tested rely on RBAC to provide consistent permissions and access, but also let us fine-tune security features

down to the individual user. (BEA's access controls are more limited, allowing control only over viewing/minimizing/maximizing and editing of portlet parameters.) IBM's RBAC mechanism lets you delegate control over portlets easily without requiring specific permissions for each portlet. This was a refreshing change: With the products from BEA, Plumtree and Vignette, you must specify the permissions on every portlet.

WebSphere Portal, not surprisingly, requires Web-

Enterprise Portal Features

	BEA WebLogic Portal 8.1	IBM WebSphere Portal 5.0	Microsoft Office SharePoint Portal Server 2003	Oracle AS 10g Portal
Application creation				
Portlet-to-portlet communication	Y	Y	Y	Y
Languages	HTML, JSP, XML, XSL, Pageflow (proprietary)	Java, JSP	Visual Basic.Net, Visual C++.Net, Visual C#.Net, Visual J#.Net	Agnostic
Portlet builders/wizards	Y	Y	Y	Y
Out-of-the-box data sources	File, HTML, XML		File, HTML, SQL/DB, Web services, XML	File, HTML, SQL/DB, Web services, XML
Integrated collaboration portlets				
Instant messaging	Yahoo	Lotus Sametime, MSN	Presence only	None
Forums/surveys/projects	Y/N/N	Y/N/N	Y/Y/Y	N/Y/N
E-mail	IMAP, Lotus Domino, Microsoft Exchange	Lotus Notes, Microsoft Exchange, POP3/IMAP	Microsoft Exchange 2003	Lotus Domino, Microsoft Exchange
Content subscription	N	N	Y	Y
Standards	JSR-168, WSRP	JSR-168, WSRP	WebDAV	JSR-168, WebDAV, WSRP
Architecture				
Metadata repository	Any RDBMS supported by WebLogic	Cloudscape, IBM DB2, Informix, Microsoft SQL Server, Oracle	Microsoft SQL Server	Oracle
Application server	WebLogic Server 8.1	WebSphere	Windows 2003 Server	OracleAS
Authentication sources	Active Directory, LDAP	Active Directory, IBM Directory Server, iPlanet, SunONE	Active Directory	Active Directory, LDAP
Document management	Y	Y	Y	Partner provided
Work flow	Y	Y	Y	Y
Search capabilities	Documents, file-system content, portlets, Web content	Documents, Web content	Documents, exclude/include configuration, file-system content, portlets, Web content	Documents, exclude/include configuration, file-system content, portlets, Web content
Security features				
Internal SSO/external SSO	Y/N	Y/Y	Y/Y	Y/Y
Identity-management integration	Netegrity, Oblix	Netegrity, Tivoli Access Manager	None	Active Directory; Blockade; Courion; Em-Tech; Entrust; Netegrity; Oblix; Oracle, Oracle Human Resources; RSA Security; Sun, SunONE; Thor Technologies
Price	\$57,000 per CPU	Express edition: \$68 per user or \$26,400 per CPU; Enable edition: \$71,000 per CPU; Extend edition: \$115,000 per CPU	SPS 2003 Server license including 5 CALs: \$5,619	Standard edition: \$10,000 per processor or \$200 per named user; Enterprise edition: \$20,000 per processor or \$400 per named user

Y=Yes, N=No

Sphere application server as its deployment environment, making much of portal administration and development/deployment dependent on the app server rather than the portal. (Similarly, BEA's WebLogic Portal is tied to WebLogic.) We prefer a model that separates the portal from the application server and gives the portal admin console complete administrative control over the portal.

WebSphere Portal offers a limited number of preintegrated portlets, mostly pertaining to collaboration and

content management, generic portlets and many that are tied to Domino/Notes. Plus, WebSphere Portal provides generic content management through its own document-management system. The software also has a number of Microsoft-specific portlets for office documents that can be used with the document-management system. All the other products we tested provide more extensive support for vertical and horizontal applications via independent software vendors and direct partnerships.

	Plumtree Enterprise Web Suite	Sun Java System Portal Server 6.2	Sybase Enterprise Portal 6.0	Tibco ActivePortal	Vignette Application Portal 4.5 and Application Builder 4.5
	Y	Y	Y	Y	Y
	Agnostic	Java, JSP	Agnostic	Java, JavaScript, JSP, .Net	Java or .Net supporting proprietary Vignette PortalBean API or the JSR 168 Portlet Standard
	Y	Y	Y	Y	Y
	File, HTML, SQL/DB, Web services, XML	File, HTML, SQL/DB, Web services, XML	File, HTML, SQL/DB, Web services, XML	File, HTML, SQL/DB, Web services, XML	File, HTML, SQL/DB, Web services, XML
	Lotus, Yahoo	Sun IM, Lotus Sametime	Y	Yahoo	None
	Y/Y/Y	Y/Y/N	Y/N/N	Y/Y/Y	Y/Y/N
	IMAP, Lotus Domino, Microsoft Exchange	IMAP, Lotus Notes, Microsoft Exchange	Various	Lotus Domino, Microsoft Exchange	Lotus Domino, Microsoft Outlook, POP/IMAP
	Y	Y	Y	Y	N
	JSR-168, WebDAV, WSRP	JSR-168, WebDAV, WSRP	JSR-168, WebDAV, WSRP	None	JSR-168, WSRP
	Microsoft SQL Server 2000 SP2, Oracle9i	LDAP	LDAP, Oracle, Sybase ASE, Sybase SQL Anywhere	iPlanet/SunONE, Novell	IBM DB2, Microsoft SQL Server, Oracle, Sybase
	.Net framework, Tomcat 4.1.18LE, WebLogic Server 4.5 SP1, WebSphere 4.0 Fixpack 4	IBM WebSphere, BEA WebLogic, SunONE AS	Any J2EE Web container	Apache/Tomcat, iPlanet/SunONE, Jrun, WebLogic, WebSphere	IBM WebSphere; BEA WebLogic; Apache Jakarta Tomcat; Sun ONE
	Active Directory, LDAP	LDAP, RADIUS, Safeword, SAML/Liberty, Unix	Active Directory, J2EE container-based authentication, LDAP	Active Directory, iPlanet/Sun and Novell	Active Directory, LDAP
	Y	With FatWire SPARC	Y	Y	Y
	Y	With FatWire SPARC	Y	N	N
	Documents, exclude/include configuration, file-system content, portlets, Web content	Documents, file-system content, Web content	Documents, file-system content, portlets, Web content	Documents, file-system content, portlets	Documents, file-system content, portlets, Web content
	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y
	Extensible, requires integration work	Netegrity; Oblix; Sun	LDAP; Netegrity; Sybase	Entrust; Netegrity; Oblix; RSA Security	IBM Tivoli Access Manager; Netegrity SiteMinder; Oblix NetPoint; RSA Security ClearTrust
	\$125,000 for 250 users	\$100 per employee	Information edition: \$4,000 per CPU; Enterprise edition: \$40,000 per CPU	\$250,000 for 2,000 users or \$125,000 per server	Vignette Application Portal: starts at \$75,000 per CPU; Vignette Application Builder: starts at \$50,000 per CPU

IBM includes BowStreet Portal Factory for WebSphere as one option for developing new portlets. From within BowStreet, you can develop Web services, XML and data-driven applications in a nearly codeless environment. However, we much prefer creating these types of portlets directly from within the products, as we did with those from Oracle, Sybase, Tibco and Vignette.

IBM WebSphere Portal 5.0. IBM, (800) 426-4968.
www.ibm.com/websphere/portal

Microsoft Office SharePoint Portal Server 2003

The extensive integration of SPS 2003, Office 2003, Exchange 2003 and Outlook 2003 makes it dif-

C+ **icult to know where one product starts and the other stops.** IM, individual and group calendaring, project management, task management, e-mail and discussion forums are all seamlessly joined in one of the most impressive displays of eye candy we've seen of late. The only drawback to this togetherness is that all the products come from Microsoft. When we attempted to introduce other products to this family, our success was far less impressive.

Further, this eye candy is pretty but standoffish. SPS 2003 requires Microsoft Internet Information Server (IIS) and a lengthy list of prerequisites that must be dealt with before deployment. Heed this list or proceed at your own peril.

Integration with AD 2000 was, as expected, a breeze. SPS 2003 supports both NT and AD domains. Integration with Exchange 2000 was not an option. Although SPS 2003 will work with versions of Office earlier than 2003, with Exchange, it's 2003 or nothing. In contrast, the offerings from IBM, Plumtree, Sybase and Tibco all support Exchange 2000 but not 2003. The other vendors use standards—iCAL, IMAP, POP3—to support a wide variety of groupware servers.

Like most of the products in this review, SPS 2003 lets you use XML data as a portlet. And like most products, it requires custom XSL to display correctly. Web services support is available through development of portlets—excuse me, *Web parts* in Microsoft lingo—via Visual Studio.Net. FrontPage 2003 can help you with most database access, general branding and modifying the look and feel of your site.

SPS 2003 scales by acting as an aggregator of sites, which can easily correspond to departments, lines of business or specific groups within your organization. All sites can be located on the same machine, but we recommend distributing them. The other products we tested take advantage of load-balancing options within the application server, making site integration easier.

Nearly all the products we tested (the exception was Sun's) offer drag-and-drop layouts, but the degree to which such functionality could be used was a differentiator. Not even Sybase came close to matching Microsoft's ability to manipulate page elements using such techniques.

SPS 2003 is a fine choice for all-Microsoft sites. It

provides a true 360-degree collaborative environment for users. However, it lacks support for existing and emerging portlet standards. Integrating a database and/or Web services/XML as a portlet takes a lot of work with this family, and building composite applications and using interportlet communication is a pain in the neck.

Microsoft Office SharePoint Portal Server 2003.
Microsoft Corp., (800) 426-9400, (425) 882-8080.
www.microsoft.com

BEA Systems WebLogic Portal 8.1

There's no nice way to say this: Our testing experience with WebLogic

C **was extremely frustrating.** Its list of included portlets was minimal compared with those of the other products we tested, and its content-management facilities gave us fits. We tried to work it out, but we just ran out of time. Although the product's Workshop is a powerful development tool, we weren't pleased that we had to fire it up and use it to build portlets for simple tasks like including an XML document on a page. This was especially maddening because most of the other products have an elegant solution within their Web admin consoles.

We also were dismayed to discover that once you deploy a portal built within Workshop, you can't change it from the admin console. We were able to create a portal from the console and even add pages and content, but when we tried to create portlets in Workshop, all hell broke loose. We couldn't create even a simple header with our own logo to include in our new portal. Plus, we couldn't successfully import and include existing portlets in our new WebLogic portal project, making us wonder about the reusability of portlets across the system.

Also, once we used WebLogic to add a discussion forums to our new portal, no user—administrative or otherwise—could post a message to the forum. It was like an employee suggestion box without an opening.

BEA does offer some advantages through its partnerships. From within Workshop, you can integrate functionality from Confluent (recently acquired by Oblix) and BlueTitan for Web services management and applications monitoring; and from Documentum, LiquidData and Tuxedo for document management, messaging and data integration.

BEA WebLogic Portal 8.1. BEA Systems, (800) 817-4BEA, (408) 570-8000. www.bea.com **NWC**



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