IBM Inter-University Programming Contest 2012 Training

Chapter : 5 IBM WebSphere Portal

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Agenda

- Value Proposition of a Portal
- What is a Portal?
- WebSphere Portal V7.0 Architecture
- Methods to quickly populate your Portal with existing content and applications
  - Feeds
  - Static HTML
  - Dynamic web applications
- WebSphere Portal delivers Exceptional Mobile Experience

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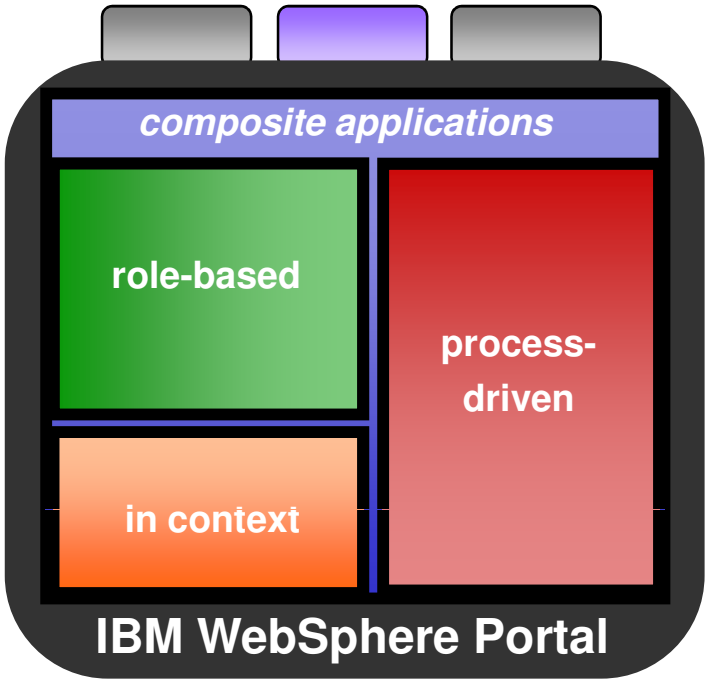
WebSphere Portal – What it Does

WebSphere Portal:

- provides a **framework**,
- for delivering **role based**, **contextual** & **process driven composite applications**,
- that make **more people**, **more productive**,
- in the **context** of what they do everyday.



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WebSphere Portal Strategy

Delivering Exceptional User Experiences:

- Deliver the **user experiences they choose** to their partners, employees, customers, or citizens, with **flexibility** for change and based on **open standards**.
- **Quickly leverage existing investments**, through market-leading composite application tooling and robust framework
- **Create highly personalized applications** that adapt to users' context, community, role, actions, location, and preferences
- **Interact with information** from the user's device of choice
- **Deliver a front-end to SOA**, enabling business flexibility and agility
- **Speed time to value** with Prebuilt Portal snap-ons for specific business problems

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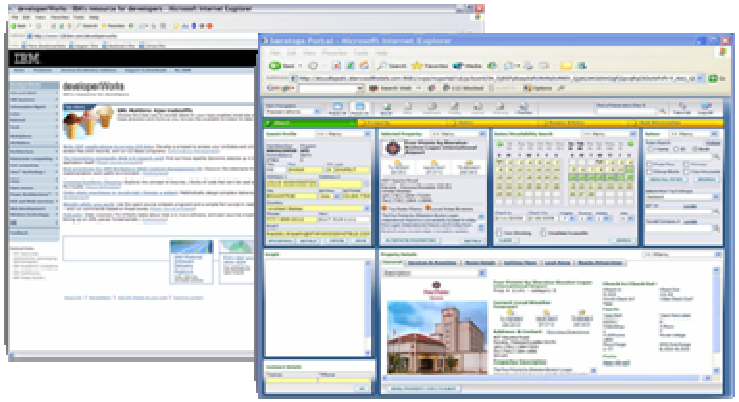
WebSphere Portal

Exceptional User Experience

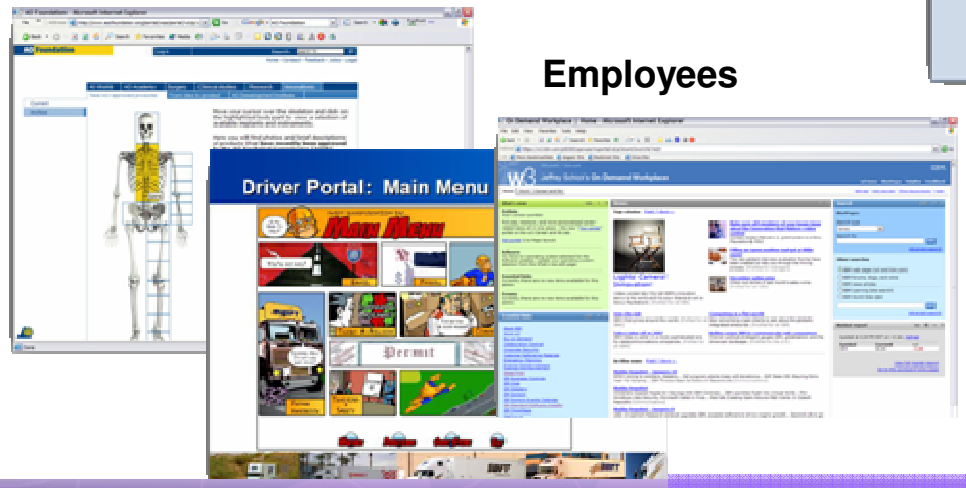
IBM enables organizations to quickly deliver rich, personalized web sites that optimize business goals and generate loyalty.

Partners



Customers

Employees



One Platform -- Many Different Business Needs

Exceptional “User Experience” Drives Productivity

- Contemporary, Fresh Look and Feel
- Fly Out Menus and Page navigation
- Drag & drop support
- Portlet Palette
- Search
- Menus delivered “in context”
  - Appropriate actions based on the portal object
  - Only shows the “actions” allowed by the “User Role” (Security)
- Super-responsive, rich and interactive portlets, content and applications

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On Demand Workplace: Manager Portal

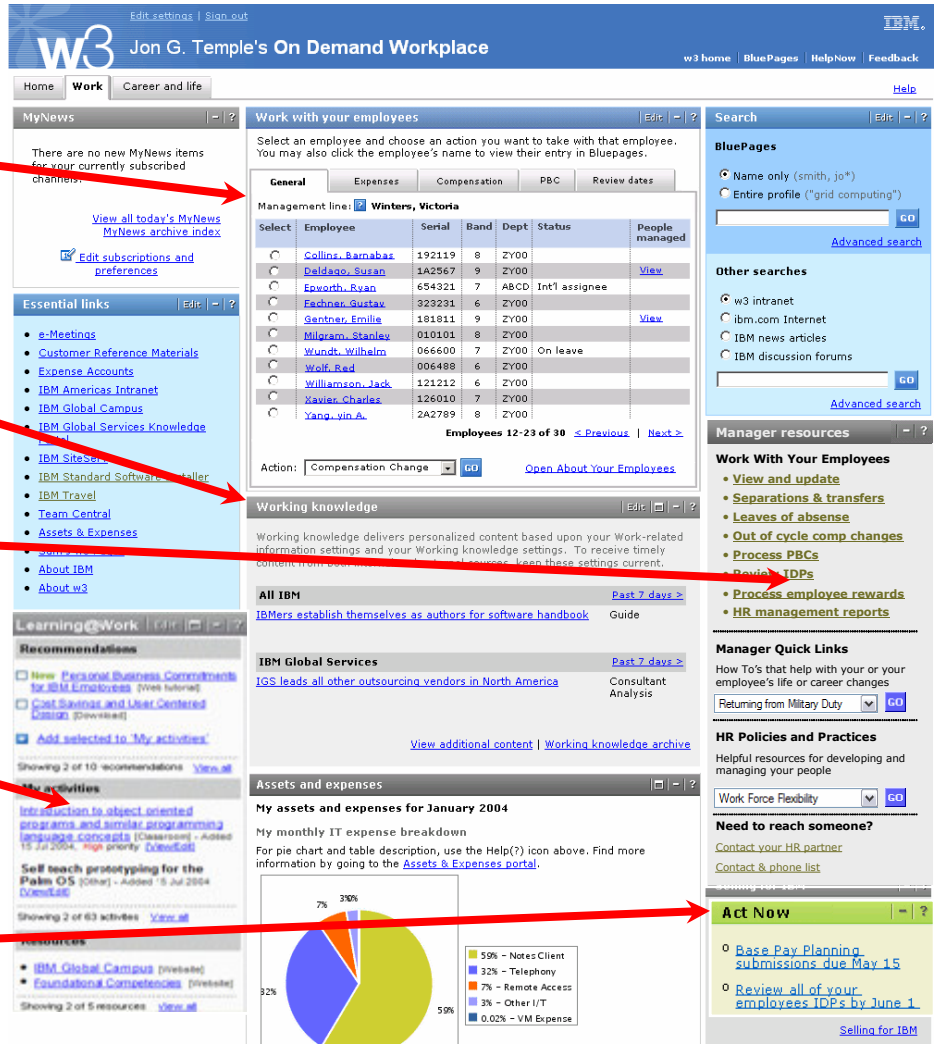
Seamless “Work With Your Employee” Tools

Personalized Manager Content

Manager Resources Portlet

Work-embedded Learning

Act Now Calendering Functions



Projected Impact *
(2006 – 2008)

- 12 hours annual time saving per manager
- $571 annual savings per manager
- $16M total savings for all Mgrs
- $1.3M hard savings from website reductions

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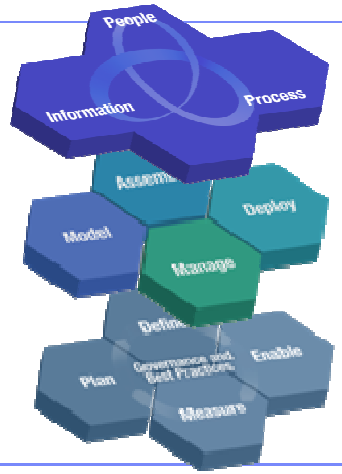
Service Oriented Architecture: The Blueprint for Change

An on demand business is an enterprise whose business processes—integrated end-to-end across the company and with key partners, suppliers and customers—can respond with speed to any customer demand, market opportunity or external threat.

Why SOA?

- Flexibility
- Facilitates re-use of existing applications
- Supports effective business process implementations
- Designed for change



Portal is the front end of SOA

Aligns Business and IT goals to grow revenue and contain costs

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Portal Principle

- Combines portlets together into one unified presentation
- Delivers a highly personalized experience, considering role, personal settings, and device settings
- Separates
  - site design
  - site/page assembly
  - administration
  - application design
- Provides application integration, collaboration, single sign-on services and much more

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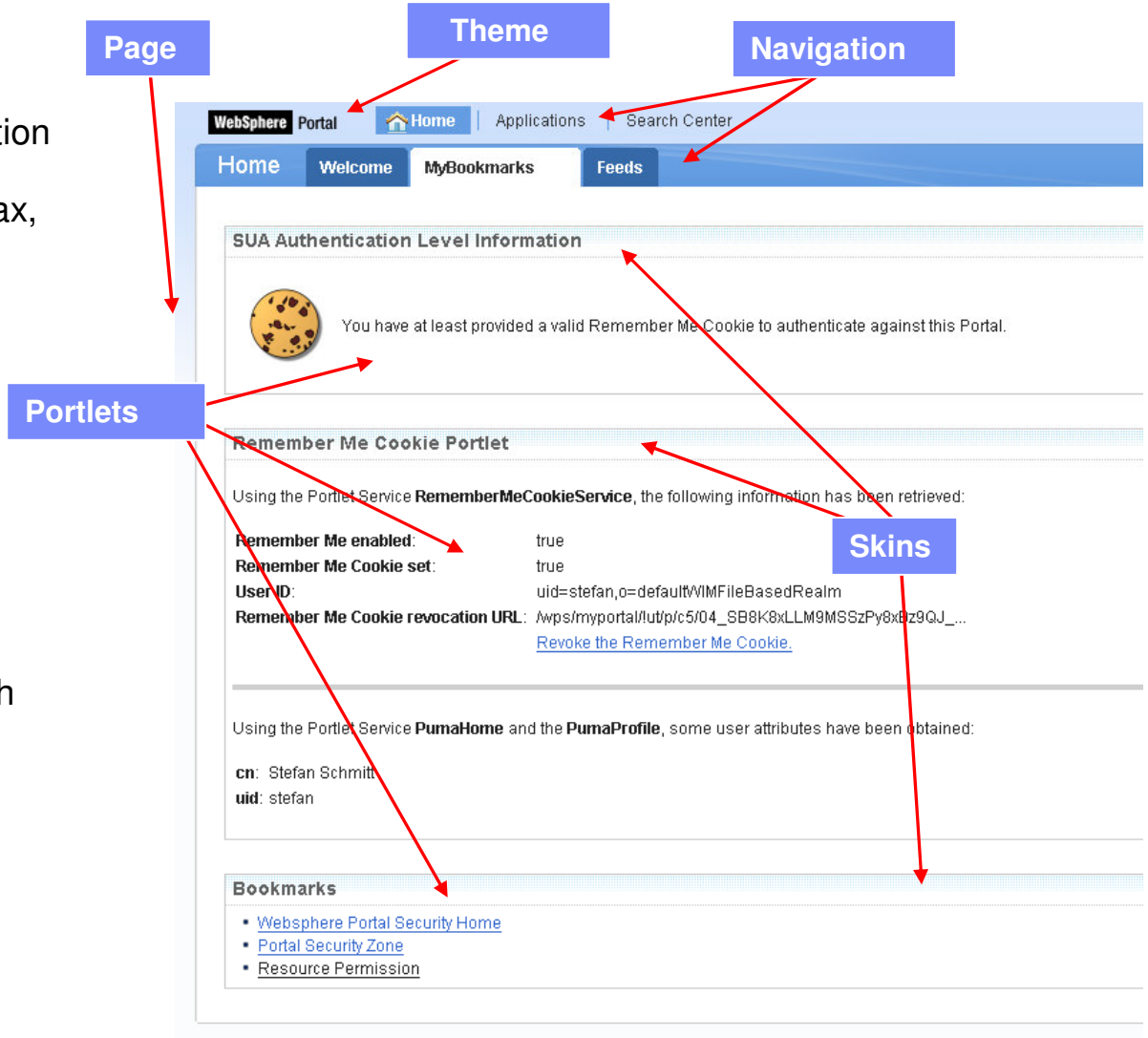
Pages and Portlets

- A portlet is a “window” on a page
  - Each portlet is a separate application
  - Can be placed anywhere on page
  - Each portlet has it’s own state (max, min, edit, etc)
  - Dynamic deployment and configuration
  - Supports multiple markups
  - Business logic can be shared between portlets
  - Can be rendered independently
- A theme is the overall design and navigation for a page
  - Includes “Web 2.0” capabilities
  - Enforces branding, style
  - Can Include functions, e.g., search bar
- A skin is the border of a portlet
  - Can be invisible to user
  - Presents customization options to user
  - Also enforces branding, style



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IBM Incorporates Open Standards

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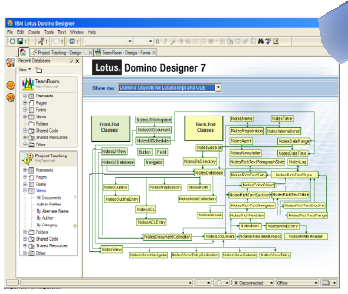
Leverage Your Investments to Populate Portal

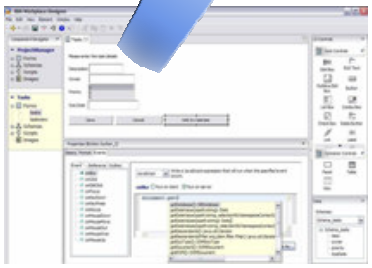
Tremendous Flexibility and choice

Dashboard built with Dashboard Framework

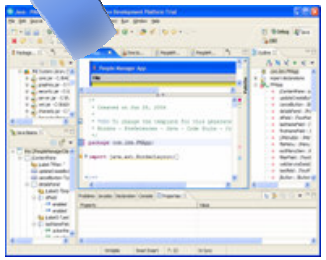
Component built with Portlet Factory



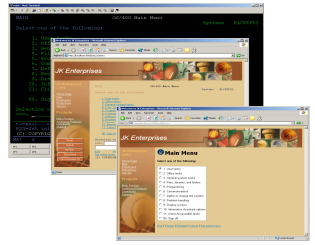
Notes® applications built with Domino® Designer



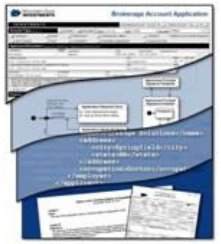
Visual Studio® Developed Apps with Mainsoft (IBM Partner)



Portlet component built with Rational RAD



3270 and iSeries® screens via HATS



E-form built with Forms Designer

Web Services for Remote Portlets (WSRP) Producer

Feeds

Portlet Catalog

Gadgets and iWidgets

JSR 286 WSRP v2.0

JSR 168 WSRP v1.0

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Putting Pages, Applications & Other Content into Portal

1. **Display Existing HTML/Web Apps**
   Web Clipping, Web Application Integrator

2. **Install Existing Portlets Out-of-the-Box or from the Portlet Catalog**
   Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), eMail, Green Screen, Dashboard, etc. (drag and drop on to pages)

3. **Use HTML tools ("Static Pages")**
   Build HTML/CSS with HTML editor. Add portlets, live text, instant messaging, etc.

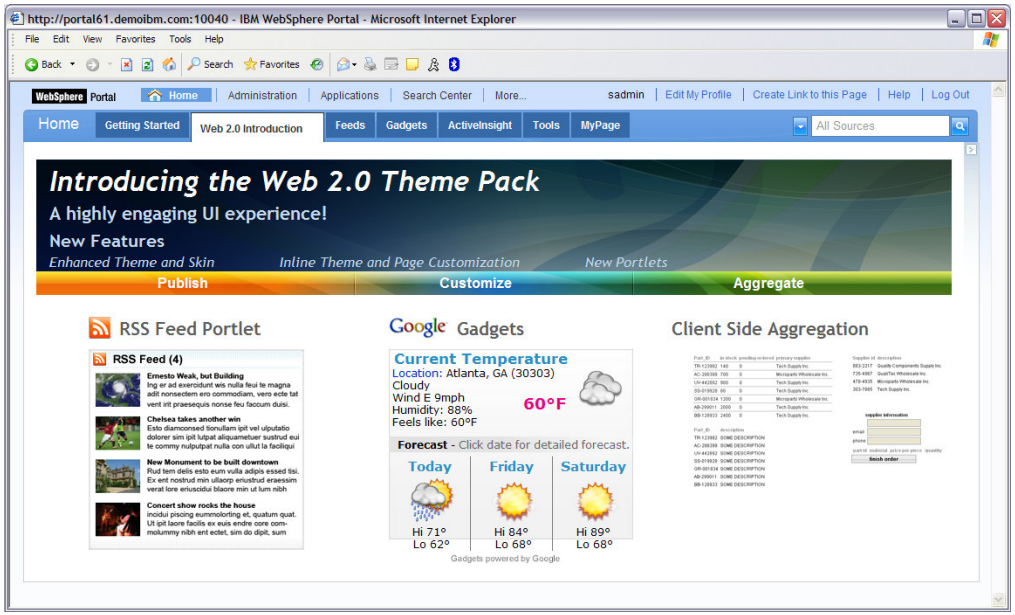
4. **Lotus Web Content Management**
   HTML/JS content, Personalization, Web Content Integrator, Doc Libraries*

5. **Use Built-in Web 2.0 Services**
   Semantic Tagging (Live Text), Client-Side aggregation, AJAX, REST

6. **Incorporate Collaboration**
   Awareness, Instant Msg, Team spaces, etc.

7. **Consume a Web Service or WSRP**
   Standards based integration, WSRP 2.0

8. **Build Composite Applications, eForms & Business Processes**
   C2A*, Cooperative portlets, HATS, App templates, Process Portal, Lotus Forms



9. **Develop Custom Portlets**
   Portlet Factory, RAD, (Java™, JSPs, Web Services, REST*, AJAX*, Java Specification Request (JSR 286*)
   Run .net apps as Java apps (Mainsoft®)

10. **Extend the Browser**
    Utilize rich/remote/mobile clients, e.g. Expeditor, Citrix® portlets, Mobile Portal

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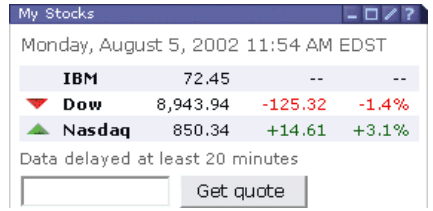
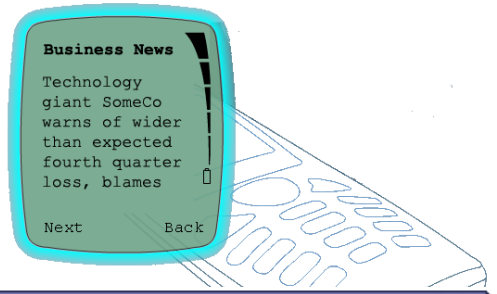
Portlets

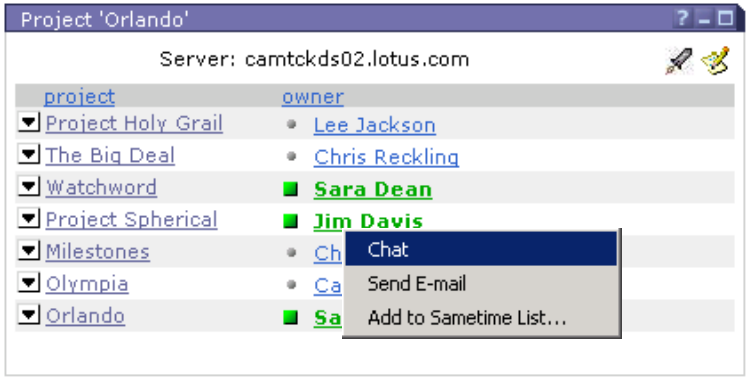
Provided with WebSphere Portal 7

Title	API Type	Unique name
Login	JSR 168	wps.p.Login
Profile Management	JSR 168	wps.p.Selfcare
WSRP Proxy Portlet	JSR 286	wps.p.wsrp.proxyportlet
About WebSphere Portal	IBM API	wps.p.Welcome
Search Sitemap	JSR 168	wps.p.Sitemap

- Mail / PIM Solutions - Lotus Notes®, Exchange, IMAP/POP3
- Web Apps Integration: Bookmarks, Banner, Quicklinks, Webpage, Web Clipper, Really Simple Syndication (RSS), File Server, Java Server Page (JSP) Server, Servlet Invoker, Web Services (producer and consumer)
- Personal Organization: Reminder, PDF Document Viewer, World Clock, My SQL Query Reports, Retirement Planner, Currency Calculator, My ToDo's, Comma Separated Values (CSV) file viewer
- News and Information: Events, News, Links, My Weather, My Vertical News, My Stock, Company Tracker.
- Administration Portlets – Site Management, Manage Pages, Manage Portlets, Themes and Skins, Web Services, Manage Search, Web Content Libraries, Syndication, Virtual Portal manager, etc.
- Collaboration: Lotus Instant Messaging Contact List, Who Is Here, People Finder, My Team Workplaces, Web Conferencing, Domino Web Access, Domino Document Manager, NotesView, Notes Mail, Calendar, Tasks, ToDo, Discussion, Teamroom
- Utility Portlets: Login, Profile Management, About WebSphere Portal, Directory Search, Search Center, Instant Messaging connect
- Search: Document Search, Search Center, Suggested Links
- Content Integration: Web Content Management, Productivity Components, converters and viewers
- Business Process Integration: My Tasks and process portlets
- Sample Portlet Applications: Basic, Struts framework, cooperative portlets







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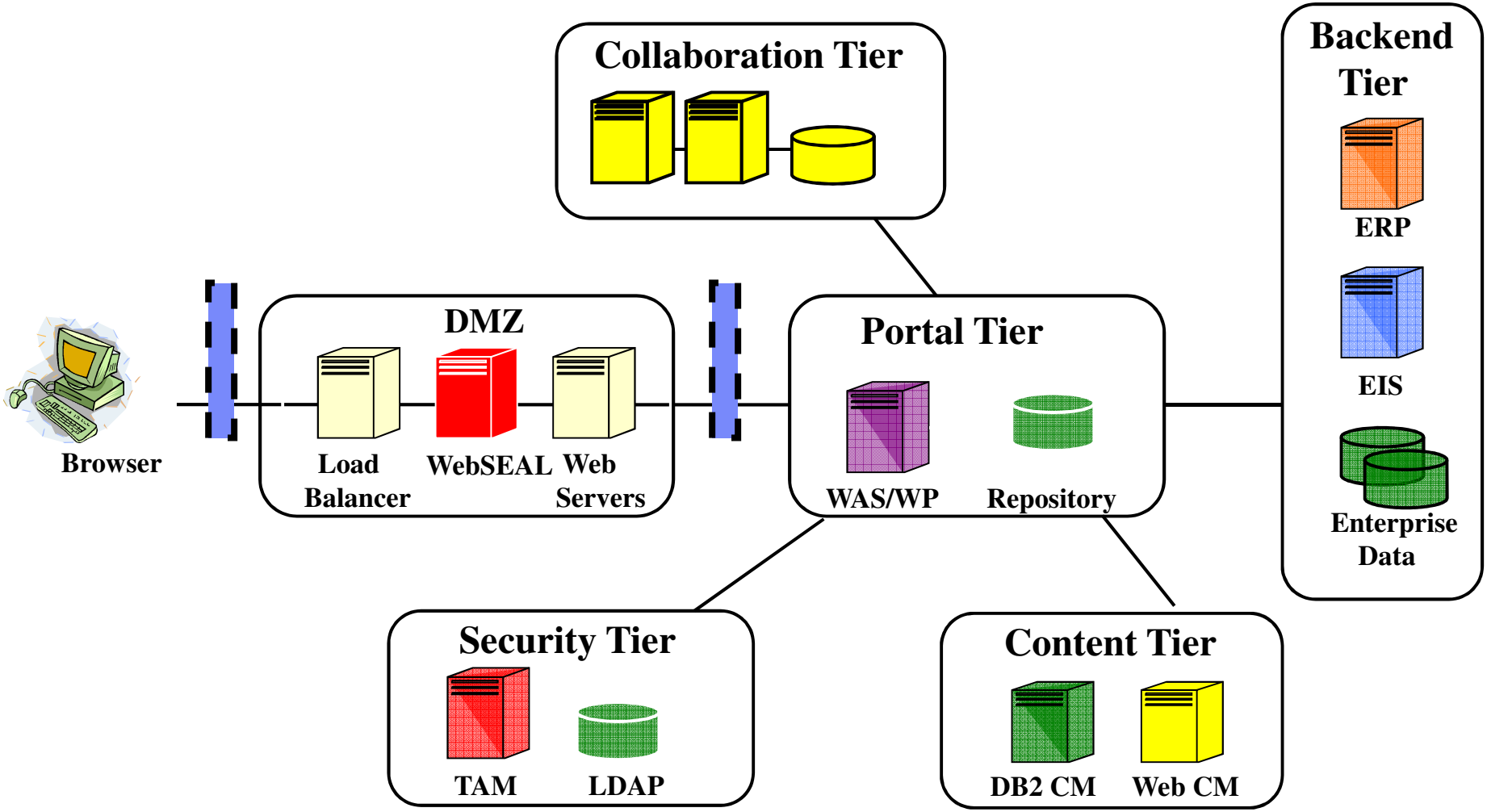
WebSphere Portal Production Architecture



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Works with your Environment

- Platforms
  - AIX®, i5/OS®, RHEL and SLES Linux® (Intel®, pSeries®, zSeries®), HP-UX, zOS® (native), Solaris™ and Windows®
- Databases
  - IBM DB2®, Oracle®, SQL Server®, Derby (Cloudscape®)
- Directories
  - Microsoft® Active Directory, Novell® eDirectory, Sun™, Domino®, IBM Directory Server, Custom User Registry
- External Security Manger
  - Tivoli® Access Manager, SiteMinder
- HTTP Web Servers
  - IBM, Apache, Microsoft, Sun
- Browsers
  - Microsoft Internet Explorer, Firefox®

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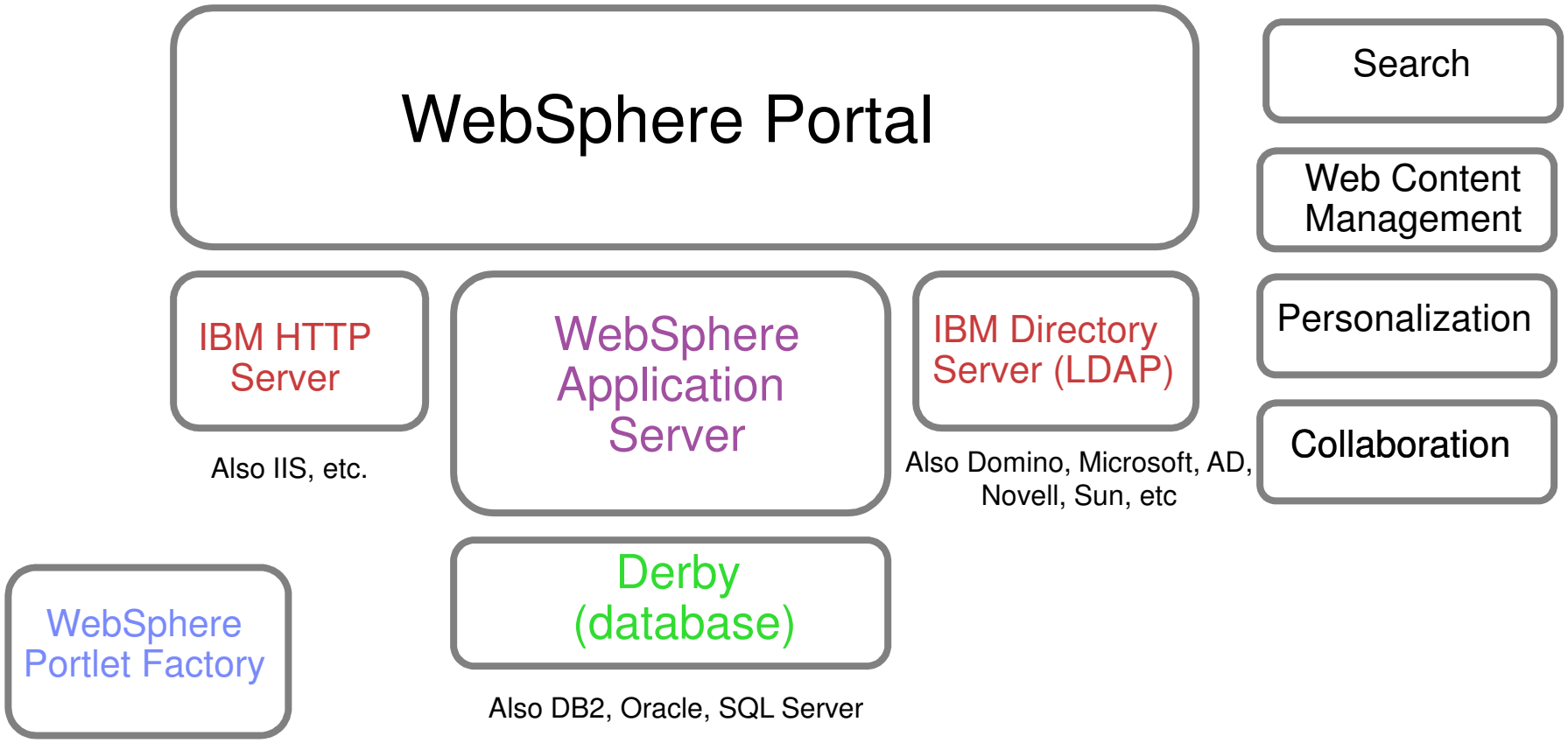
WebSphere Portal Main Components



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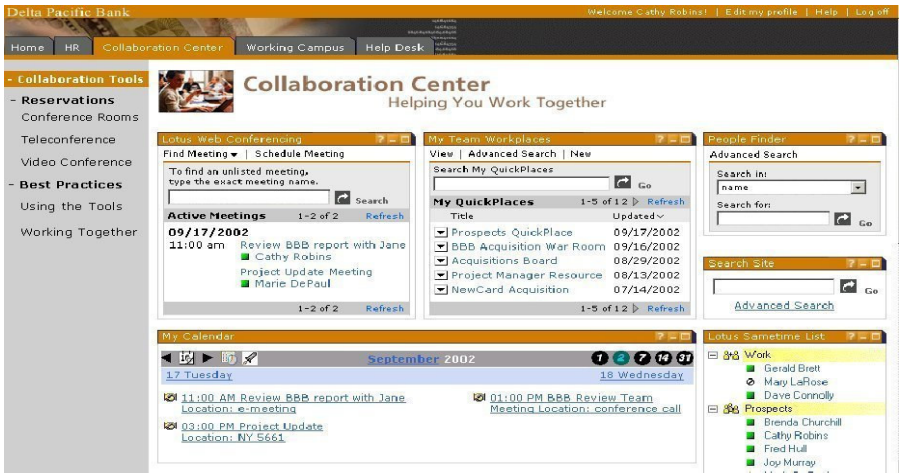
Portlet Perspective

- To an End User: a portlet is a window to display their preferred content
- To a Content Provider: a means for targeting content to the end user.
- Portal Administrator: a WAR file
- Portal Server: a component rendered and aggregated into one of its pages
- Developer: a java application whose lifecycle is managed by the container



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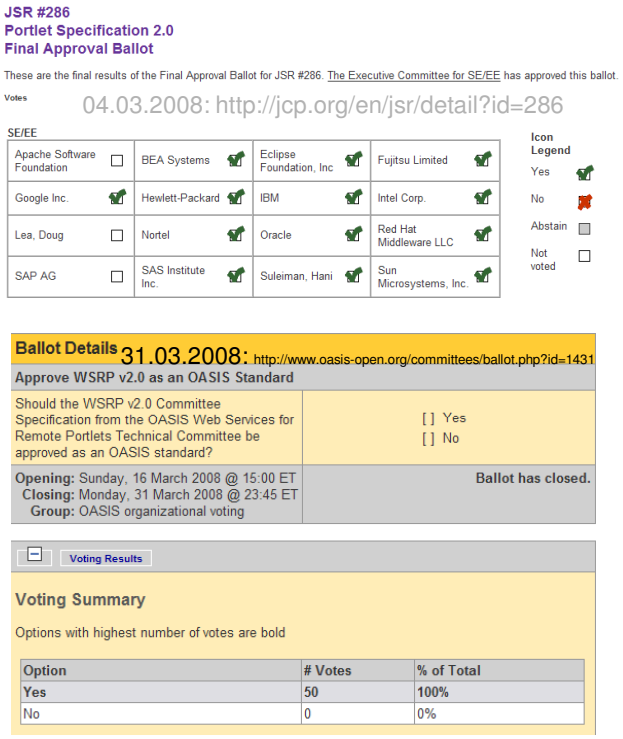
Portlet Standards

- Java™ Specification Request (JSR) 286 – Java Portlet Specification V2.0
  - IBM is leading this JSR, all major Java technology portal (commercial and open source) vendors represented
  - Approved: March 04th 2008 (WebSite complete April 9th)
- Web Services for Remote Portlets (WSRP) V2.0
  - Standard protocol for accessing portlets as web service
  - Defined at OASIS, chaired by IBM, Approved: March 31st 2008
- Common goals
  - Enable coordination between portlets and allow building composite applications based on portlet components (events and render context (e.g. public render parameters))
- WebSphere Portal seamlessly integrates JSR168, JSR286 and WSRP 2.0 Portlets.
  - Also integrates IBM Portlet API and WSRP 1.0



JSR #286
Portlet Specification 2.0
Final Approval Ballot

These are the final results of the Final Approval Ballot for JSR #286. The Executive Committee for SE/EE has approved this ballot.

Votes — 04.03.2008: http://jcp.org/en/jsr/detail?id=286

SE/EE

Apache Software Foundation ☐	BEA Systems ✓	Eclipse Foundation, Inc ✓	Fujitsu Limited ✓
Google Inc. ✓	Hewlett-Packard ✓	IBM ✓	Intel Corp. ✓
Lea, Doug ☐	Nortel ✓	Oracle ✓	Red Hat Middleware LLC ✓
SAP AG ☐	SAS Institute Inc. ✓	Suleiman, Hani ✓	Sun Microsystems, Inc. ✓

Icon Legend: Yes ✓ | No ✗ | Abstain ■ | Not voted ☐

Ballot Details 31.03.2008: http://www.oasis-open.org/committees/ballot.php?id=1431

Approve WSRP v2.0 as an OASIS Standard

Should the WSRP v2.0 Committee Specification from the OASIS Web Services for Remote Portlets Technical Committee be approved as an OASIS standard?	[ ] Yes [ ] No
Opening: Sunday, 16 March 2008 @ 15:00 ET **Closing:** Monday, 31 March 2008 @ 23:45 ET **Group:** OASIS organizational voting	**Ballot has closed.**

Voting Results

Voting Summary

Options with highest number of votes are bold

Option	# Votes	% of Total
Yes	**50**	**100%**
No	0	0%

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Various Methods to Display Portal Content

- Provide links to existing content*
- Display existing static pages*
- Include dynamic web applications*
- Leverage feed sources*
- Build custom portlets
- Supplied email and Lotus portlets
- Download vendor portlets from IBM® Portlal Catalog
- Render Web Services for Remote Portlets (WSRP)
- Web Content Manager
- Others?

* We will cover these during this presentation

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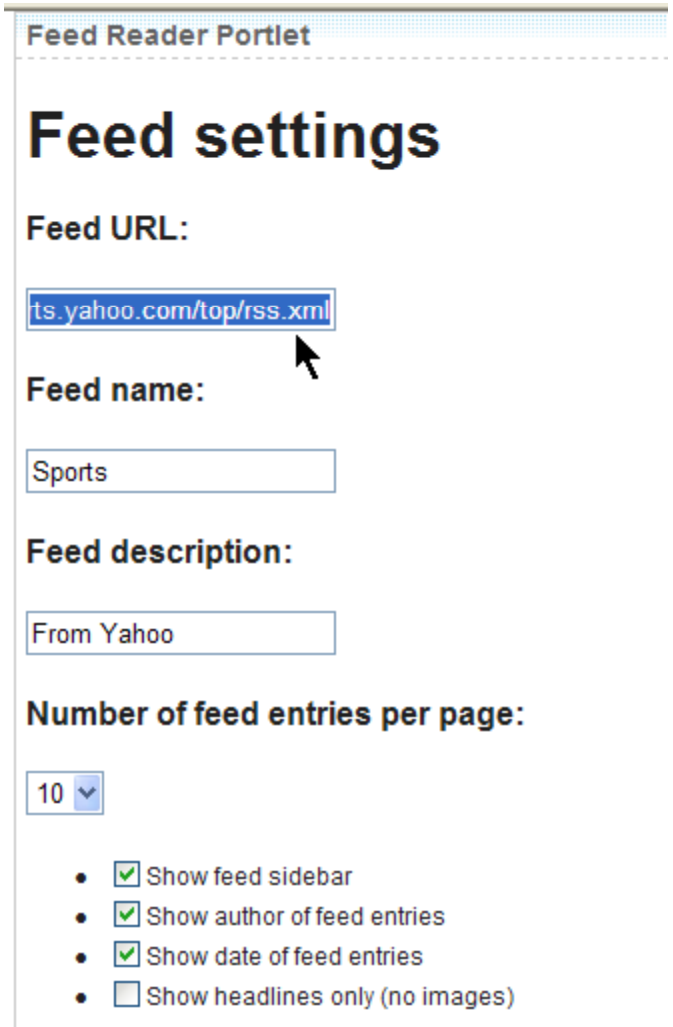
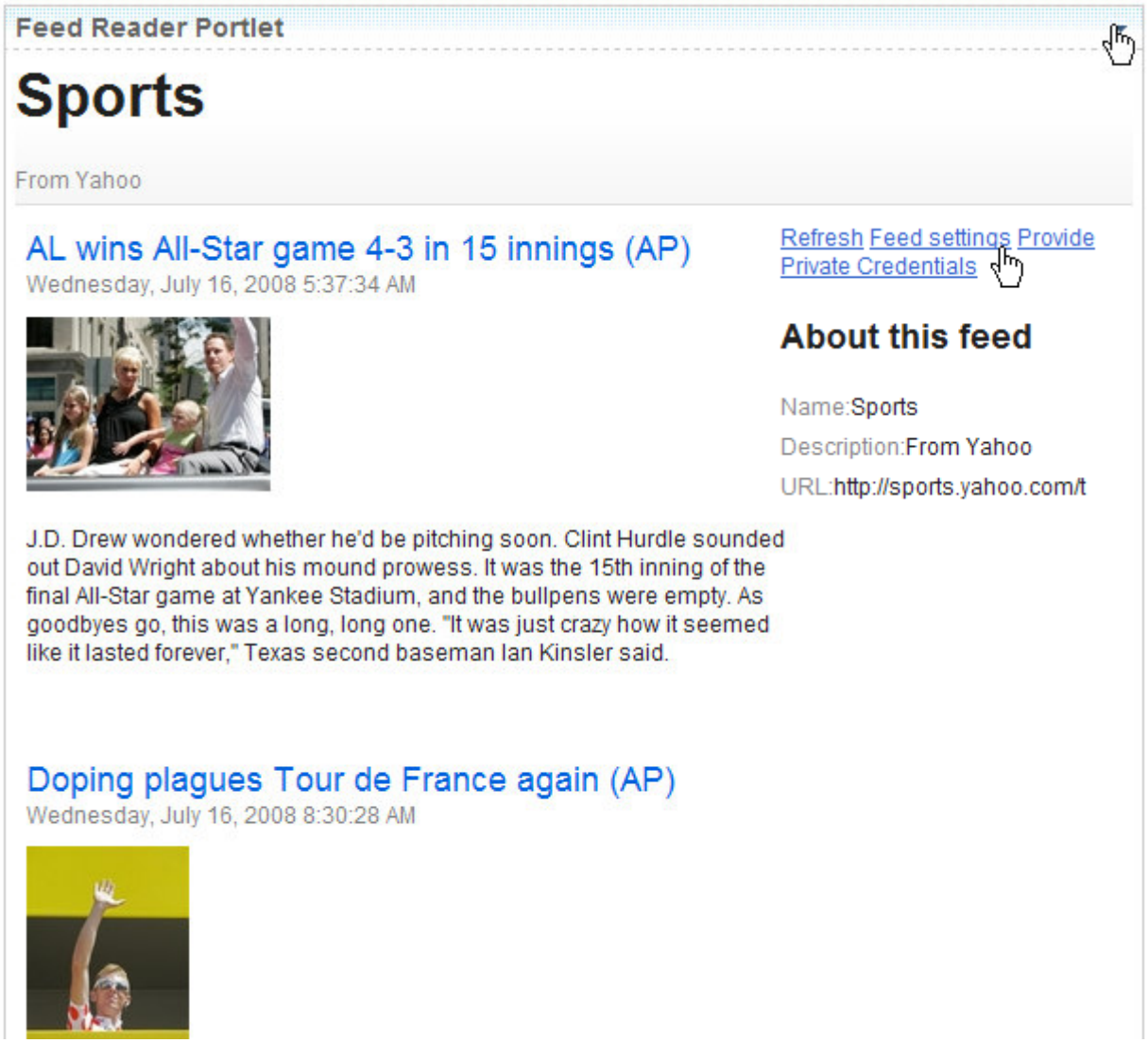
Feed Reader Portlet

- Supplied out-of-the-box
- Supports ATOM and RSS





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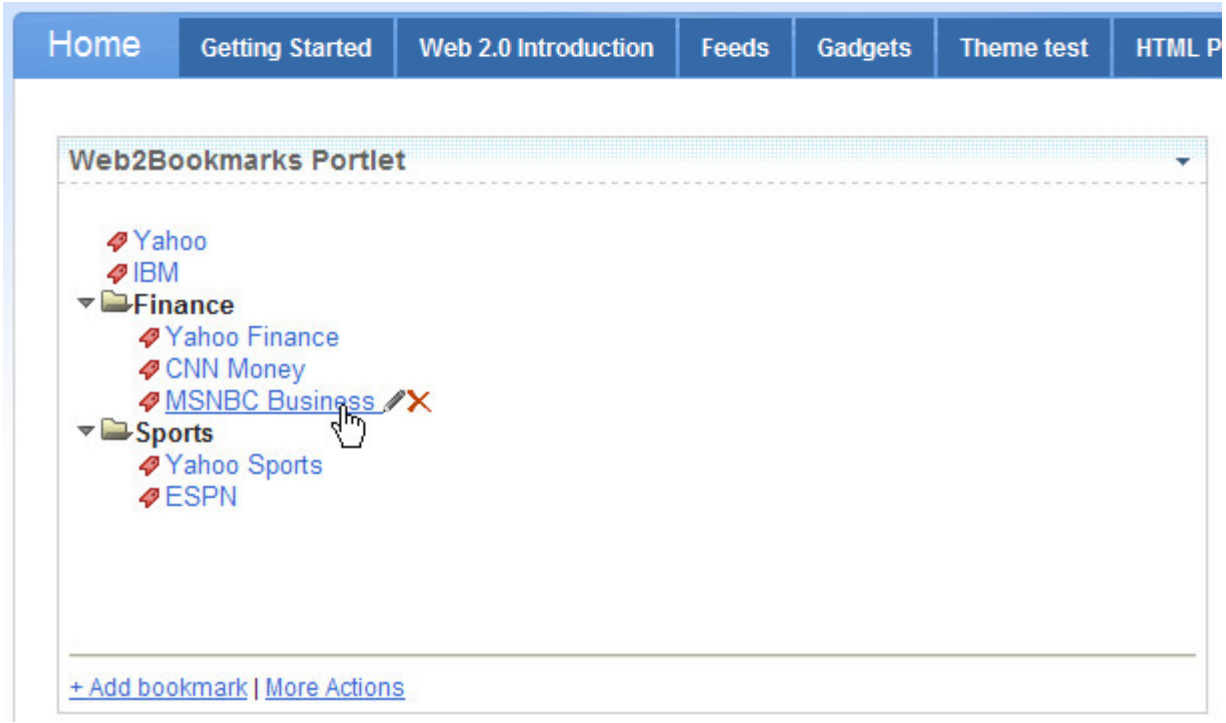
Links and Bookmarks

- New Web 2.0 Bookmarks Portlet
- Supplied out-of-the-box
- Web 2.0 user interface makes it fast and easy to use!
- Can bookmark external URLs and internal Portal pages



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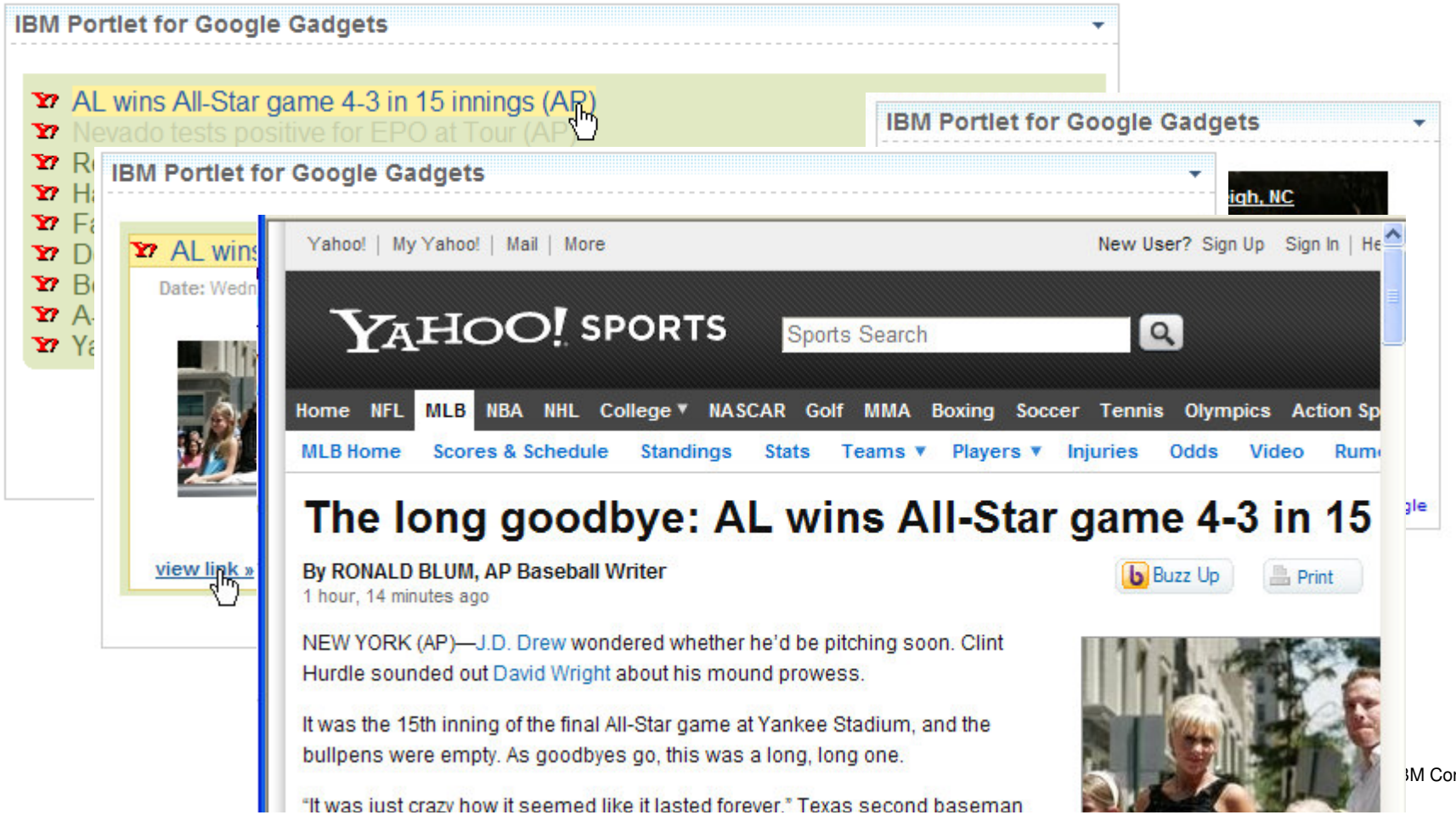
Google Gadgets

- Place any Google gadget on a page
- Download the IBM Portlet for Google Gadgets™ from the Portal catalog
- Seamless integration with thousands of web-based solutions



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Web Application Integrator

- Centralizes access to external web applications within the enterprise
- Integration of web applications occurs by injecting Portal navigation into external web applications themselves
- No portlet development required
- Does NOT use an iFrame element
- Portal markup is “injected” into an external web application by adding an HTML <script> tag to the web app
- User believes he/she is still within the Portal environment
  - In reality, they are natively browsing the external web application
- The integrated web application can use any technology (e.g. .NET, Ruby on Rails™, PHP, PEARL, Domino®, J2EE, etc.)
- Download this portlet from IBM Portal catalog

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Web Application Integrator

Three easy steps:

1) Create a standard Portal URL page, specifying the URL to the external web application
2) Use the new *WebAppIntegrator* portlet to generate an HTML <script> tag for your web application
3) Add the script tag to the header component of the web application. For some themes, the script tag must also be added to the footer component.

```
<!-- BEGIN PORTAL NAVIGATION INTEGRATION -->

<script type="text/javascript"
src="http://192.168.123.107:10040/wps/myportal/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBx9v_LU
JMeCAs-
8ktT0osSS_CJVA3QR_YJ0RUUA0glfLw!!/?Portal_Page_ID=6_CGAH47L00O73F02R4B955S10O7">

</script>

<!-- END PORTAL NAVIGATION INTEGRATION -->
```

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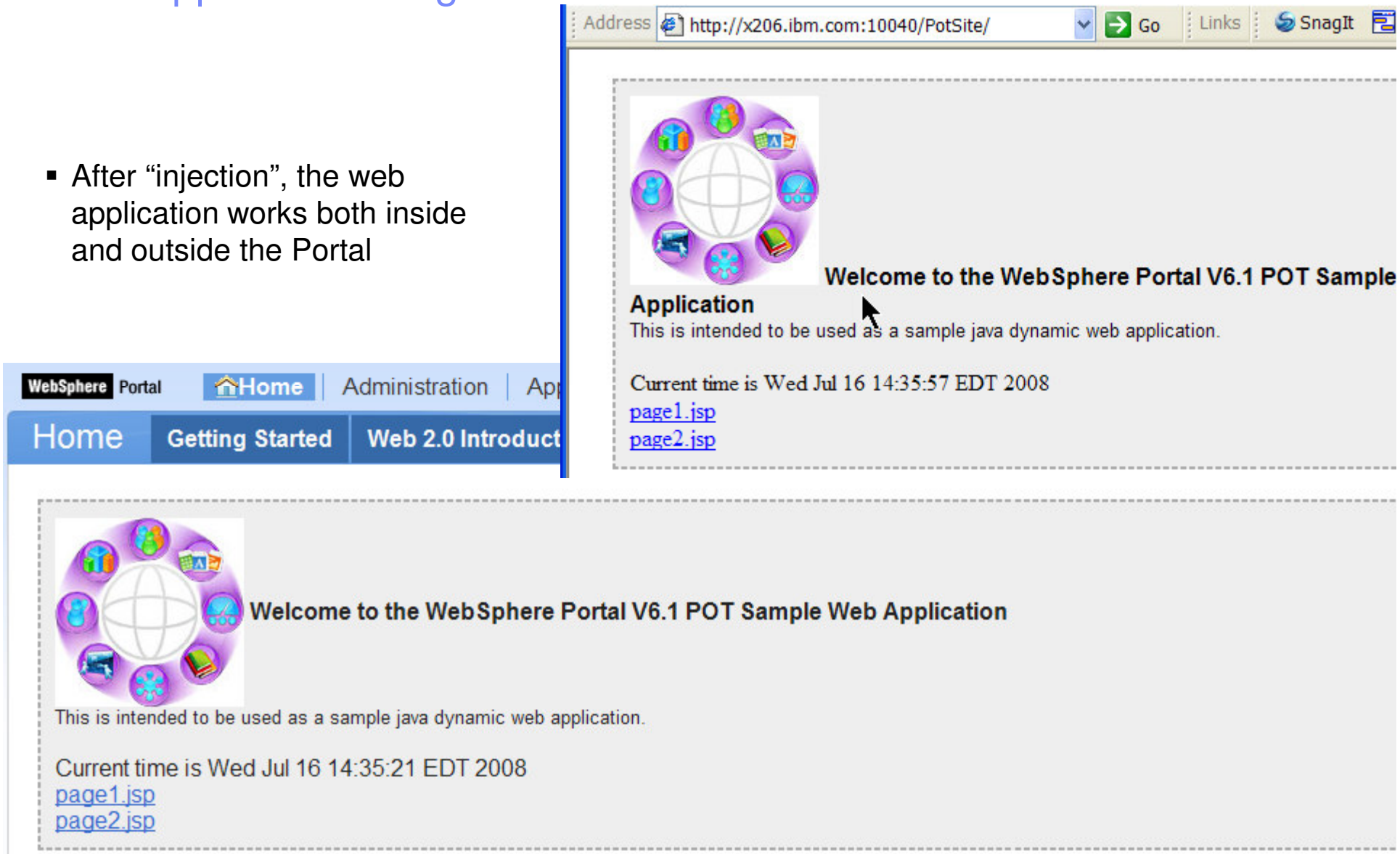
Web Application Integrator

- After “injection”, the web application works both inside and outside the Portal



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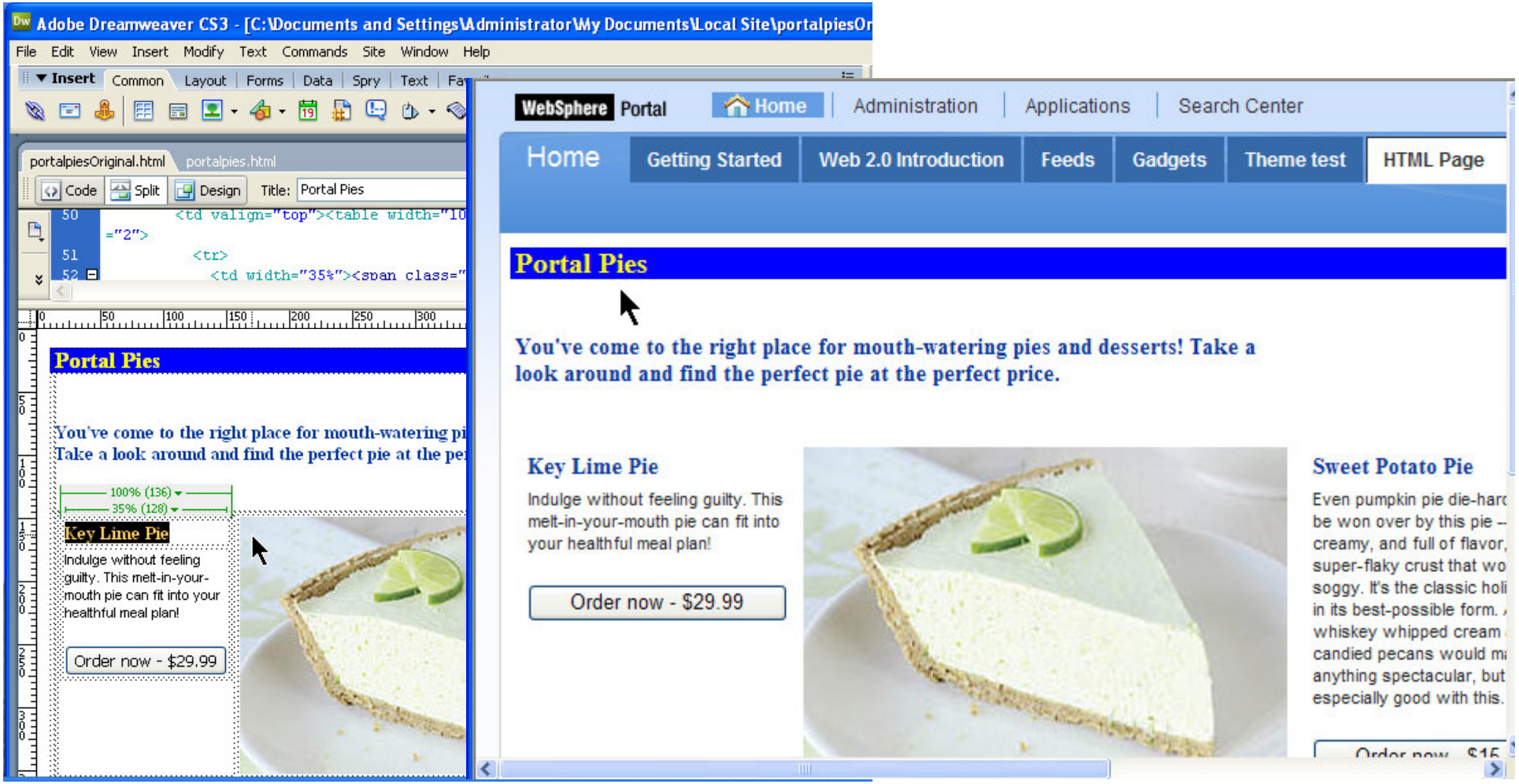
Static Web Page Integration

- Create in Adobe® Dreamweaver®
- View inside WebSphere Portal



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Why Leverage a Portal Framework for Mobile Solution Delivery?

To create mobile applications that:

1. **Integrate** with your back-end systems, including web content management
2. Are **personalized** to a user's role, preferences, and behavior
3. Support **end-user customization**
4. Are **secure**
5. Can be measured and optimized using **analytics**
6. **Can adapt** their presentation and functionality according to the device

One common framework for mobile & web applications

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Websphere Portal Themes for Smartphones

Extend Portal web experience to mobile devices though the use of Portal themes for smartphones

- Optimizes look & feel for smaller screens (site branding, navigation, page layout)
- Optimizes page download size for mobile connections

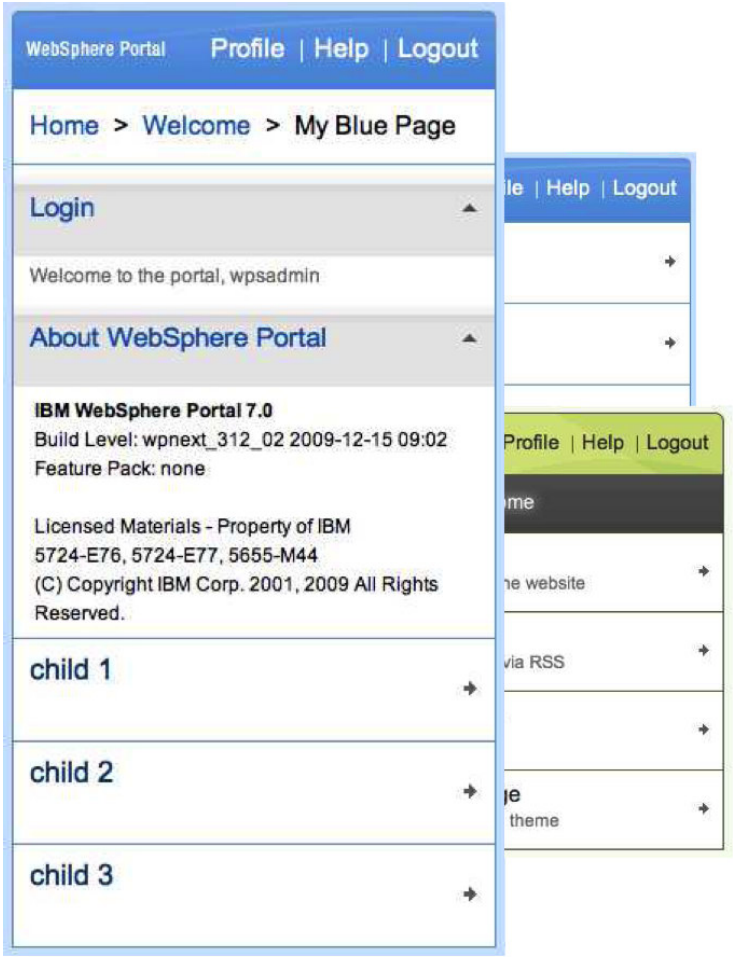
Create native-looking smartphone Portal themes using familiar technologies and skillsets (HTML, CSS, Javascript)

Two mobile theme options provided:

- Dedicated mobile themes can serve dedicated mobile pages and content
- Single theme can detect the device and serve mobile presentation or full site and content.

Sample themes can be downloaded on Portal Solutions catalog

https://greenhouse.lotus.com/plugins/plugincatalog.nsf/assetDetails.xsp?action=editDocument&documentId=3148931F1C482700852576AC0050BD8C&Login



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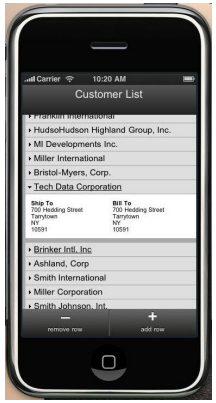
Mobile Portal Accelerator

WebSphere Portal extension that delivers online content and applications to virtually all mobile devices.

Adapt your content to over 7,200 mobile devices. MPA provides intelligent Multi-Channel Server capabilities that dynamically renders content to specific device characteristics and capabilities.

Speed your development with Mobile Portal Toolkit which enables both the development and testing of XDIME (XHTML with Device Independent Markup Extensions) portlets in IBM Rational Application Developer.

Keep pace with the latest mobile devices with IBM Mobile Portal Accelerator Device Update. Provides regular updates to mobile device definitions as they become available from device manufacturers.



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Mobile Portal Accelerator - Mobile Multi-Channel Capabilities

WebSphere Portal

Role Based
Personalization
Contextual
Web Experience

Mobile Portal Accelerator

PCs and Full Browsers

Mobile Devices

Multi Channel Server

Dynamically Adapted & Rendered to 7,200 Devices

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Reference materials

- **WebSphere Portal Wiki**
  - http://www-10.lotus.com/ldd/portalwiki.nsf
- **Portal Zone on developerWorks**
  - http://www-128.ibm.com/developerworks/websphere/zones/portal/
- **Portal Business Solutions Catalog**
  - http://catalog.lotus.com/wps/portal/portal
- **WebSphere Portal Product Information**
  - http://www-306.ibm.com/software/websphere/portal/
- **WebSphere Portal Information Center**
  - http://www.ibm.com/developerworks/websphere/zones/portal/proddoc.html
- **Self-Help Central for Portal**
  - http://www.ibm.com/support/docview.wss?rs=688&uid=swg21283691
- **Migration Central for Portal and Web Content Management**
  - http://www-1.ibm.com/support/docview.wss?rs=688&uid=swg21296071
- **IBM Software Events**
  - http://www.ibm.com/software/sw-events/

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Questions
&
Answers