

Upgrading uPortal: myJohnsHopkins

Chris Doyle & Drew Wills

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Presenters

- Chris Doyle
 - Sr. System Software Engineer, Johns Hopkins University
 - Began working with uPortal in 2005 at The University of Maryland
- Drew Wills
 - Unicon Consultant and uPortal Committer
 - California Polytechnic State University "Cal Poly"
 - California State University, Chico
 - University of Colorado System
 - Yale University
 - Johns Hopkins University
 - Developed Import/Export features for uPortal based on Cernunnos

Agenda

1. myJohnsHopkins
2. Import/Export for uPortal
3. From 2.5.2 to 2.6.1+

Epilogue: SmartLdapGroupStore

myJohnsHopkins

Guest Layouts

The screenshot shows a web browser window titled "Johns Hopkins Institutions - myJohns Hopkins v.2.5.2.34.5 - Home - Mozilla Firefox". The address bar displays "https://my.johnshopkins.edu/uPortal/render.userLayoutRootNode.uP". The browser's bookmark bar includes "grammardoc", "mycu", "mycu-backdoor", "uPortal", "webtest-wills", "webtest-wills/backdoor...", and "YaleInfo".

The website header features the "my JOHNS HOPKINS" logo and a navigation bar with "Home", "First Time Log In", and "Help" buttons. A search bar is located on the right, with options for "JH Topic" and "Person", and a "Go" button. Below the search bar is a link for "Advanced Person Search".

The main content area is divided into several sections:

- Today's Announcements JHU:** A list of events for 04/25/2008 and 04/24/2008, including "Hawaiian Night at Fresh Food Cafe", "Egyptian Sun Raqs the Casbah", "Vocal Chords Present A Cappella Concert", "Buy Books By the Pound at the JHU Press' Annual Sale", "JHU Concert Band presents 'Wicked' Concert", and "Barnes and Noble Johns Hopkins To Close Early 4/29".
- Today's Events:** A list of events for 04/26/2008, including "All Day Event", "Harmony to the Eyes: Charting Palladio's Architecture from Rome to Baltimore", "SOURCE Tri-School Day of Service", "5th ANNUAL PHYSICS FAIR AT JOHNS HOPKINS UNIVERSITY", "Bus Stop, Johns Hopkins University Theatre", and "Peabody 150th Anniversary Gala".
- Weather Channel - Baltimore:** A weather forecast for Baltimore, MD (21218) on 4/26/08 at 10:45 PM EDT. The forecast shows a high of 64 and a low of 56 for Saturday, a high of 67 and a low of 50 for Sunday, and a high of 63 and a low of 46 for Monday. A "Go" button is provided for a complete forecast.

The footer contains a navigation bar with "Acceptable Use of JHED", "Contact", "JHED ENABLED", and "Powered by uPortal 2.6.1". The browser's status bar at the bottom shows "Done" and "my.johnshopkins.edu".

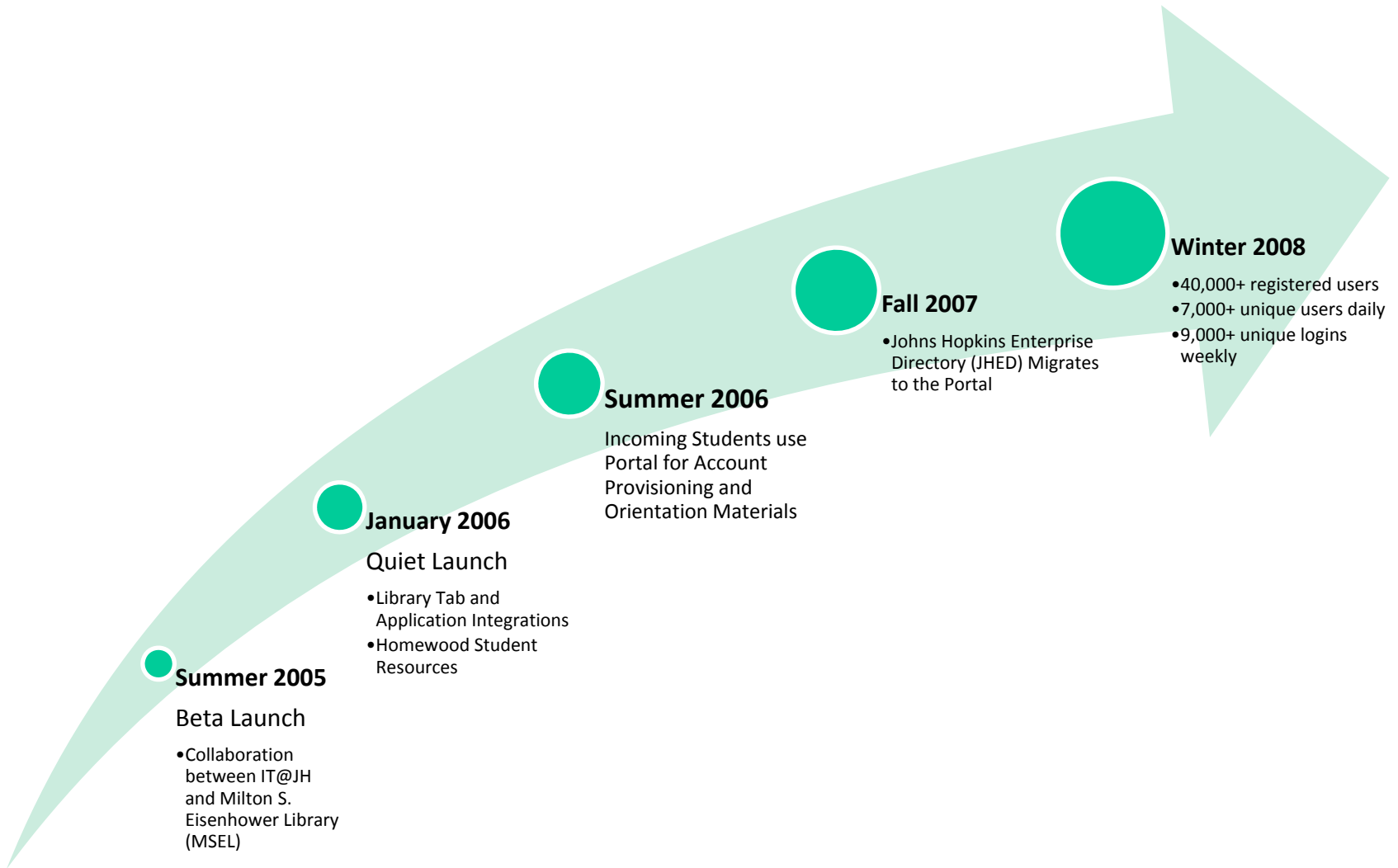
We actually have 3 public facing entry points to our portal (URL-based Personalization):

<http://my.johnshopkins.edu/>

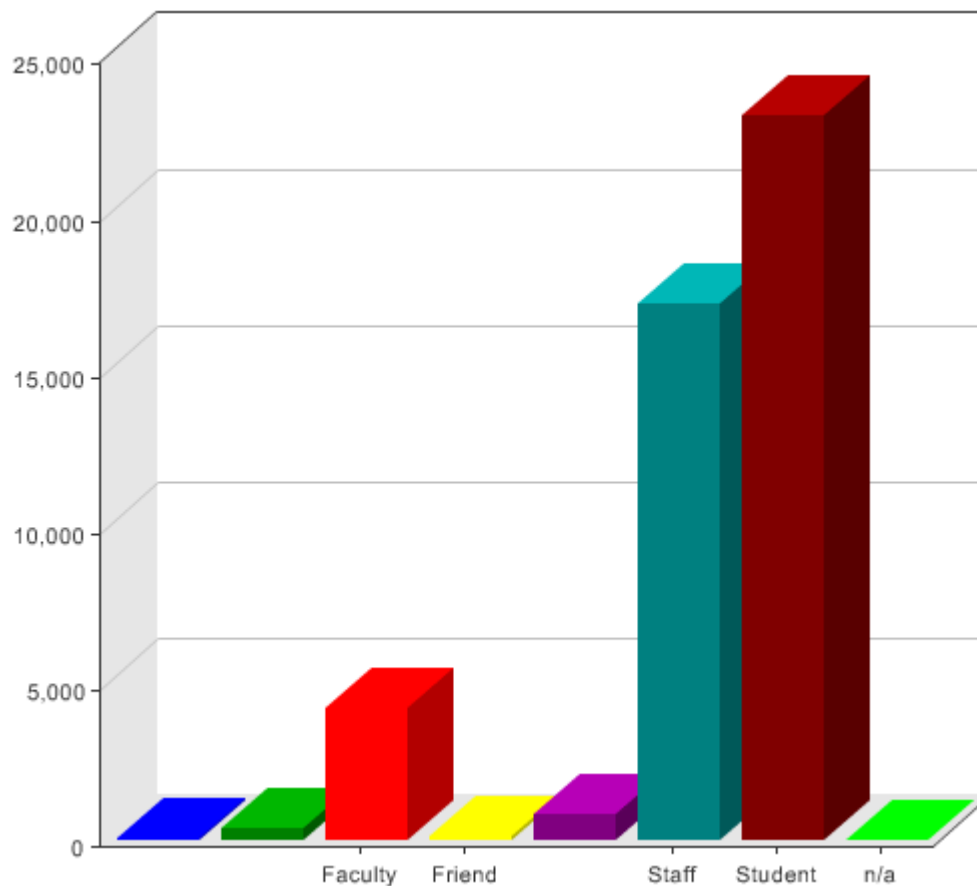
<http://my.jhmi.edu/>

<http://my.jhu.edu/>

Timeline

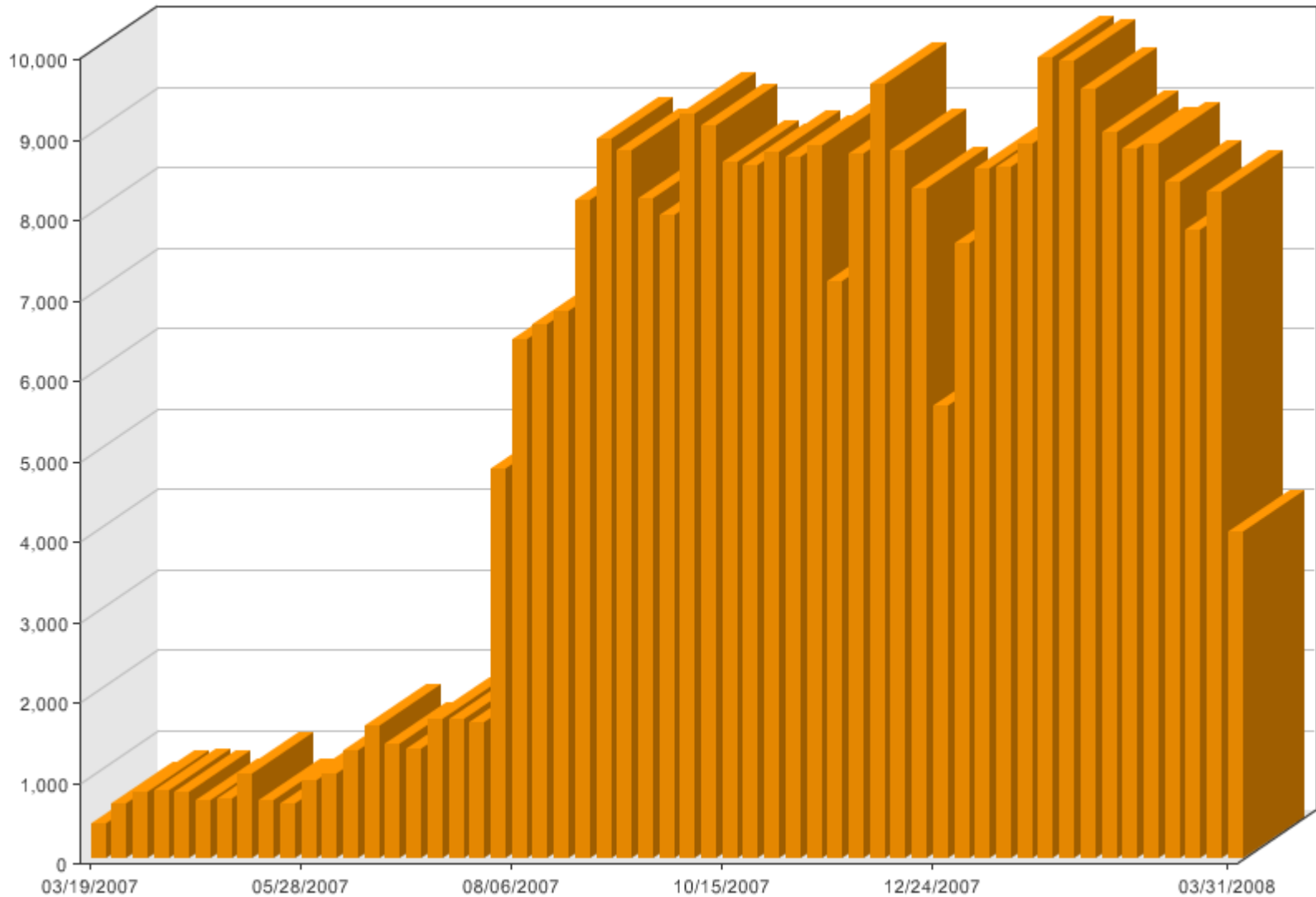


Statistics – Users by Affiliation



- ~ 46,000 total registered users
- ~ 22,000+ students
- ~ 16,000+ staff

Statistics – Individual Logins



Recent and Upcoming Activities

Winter 2008

- Search Enhancements
- Upgrade Portal Core to uPortal 2.6.1+
- Divisional Sites
 - Carey Business School
 - School of Education
- Personalization Enhancements

Summer 2008

- Delegated Administration
- Complete Facelift (Updated Themes and Skins)
- Divisional Site Integrations
- SharePoint Integration
- Mobile Device Portal

Spring 2008

- Active Directory Integration
- Skinning and Design Updates
- Divisional Site Integrations
- SSL VPN Launch
- Microsoft Exchange Integration

Fall 2008

- Homewood Portal Promotion
- Additional Content Integrations
- Additional application integration



Implementation Strategy

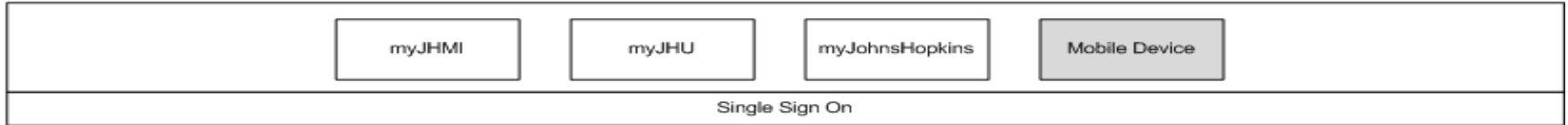
- IT@JH owns and maintains
 - Core portal services
 - Enterprise application integration and syndication
- IT@JH delegates
 - Divisional/Departmental content and applications
 - Management of targeted portal areas

Divisional Collaborations

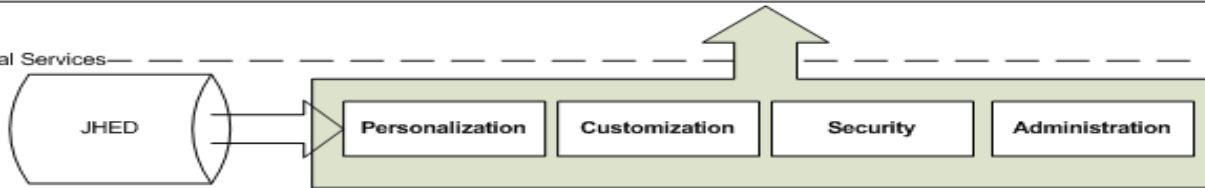
- Johns Hopkins Medical Institution
 - Clinical applications
 - Clinical System Education
 - Marketing and Communications
 - Welch Medical Library
- Johns Hopkins University
 - Carey Business School
 - School of Education
 - School of Advanced International Studies (SAIS)
 - Graduate Representative Organization (GRO)
 - Homewood Students' Association (HAS)
 - School of Medicine
 - Milton S. Eisenhower Library (MSEL)
 - Government, Communications, and Public Affairs

Integration Summary

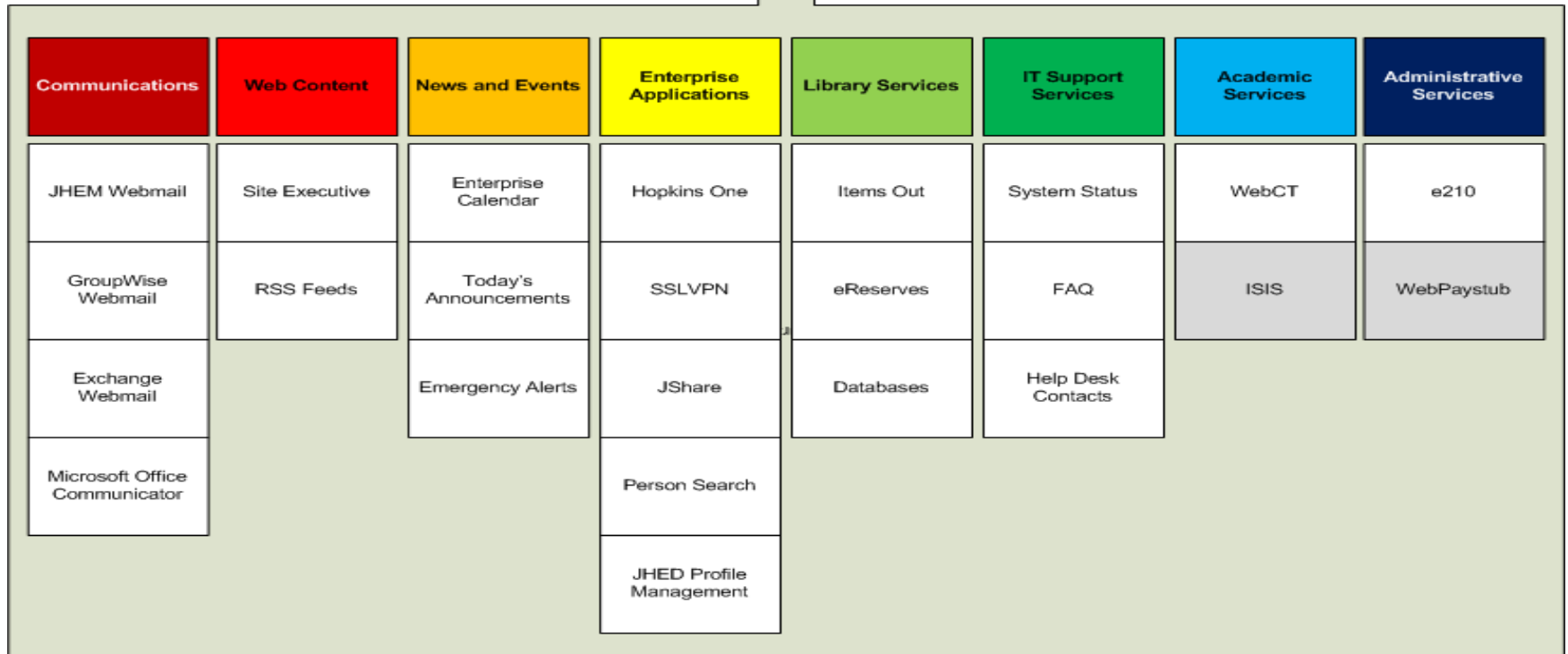
Portal Access Methods



Core Portal Services



Integration Points



Production Environment

JVM	Java 1.6.0_03 (32-bit)
Container	Tomcat 5.5.25
Hosts	6 servers total, redundant across 2 data centers (3 + 3) Intel Xeon CPU 3.00GHz 3.50 GB of RAM Windows Server 2003 Enterprise Edition, Service Pack 2 (Yes, Microsoft...)
Web Server	Microsoft Internet Information Server 6.0
Database	Microsoft SQL Server 2005
Single Sign-On	Netegrity SiteMinder
uPortal Configuration	<ul style="list-style-type: none">•DLM•PAGS•SmartLdapGroupStore•personDirectory (Microsoft Active Directory, Sun LDAP, other custom DAOs)

Current Environment Map

Environment	Description
Local	Developer-specific branch, typically deployed on a separate locally maintained server instance.
Development	Shared environment for final Developer testing and sign-off. Sign-off signifies code promotion to TEST.
Staging	"PROD-ready" code for testing Production deployments. Pre-production, but treated exactly like a real production environment. Full regression testing indicates promotion to PROD.
Production	Live, from New York...

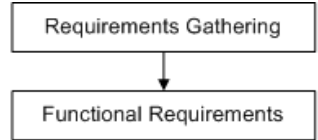
Other Environments to Consider...

Environment	Description
Testing	Environment for Functional and Technical sign-off from Project Managers and End Users on specific issues. Sign-off signifies code promotion to STAGE.
Demonstration	The Demo environment demonstrates the environment for end-users. This environment is refreshed by Production with each version release.
Pre-Production	An "offline" Production environment used to individually isolate, test, and verify a Production Move.
Sandbox	The Sandbox system, refreshed from the Development System weekly, is used exclusively for developers to test new code without affecting the Development environment.

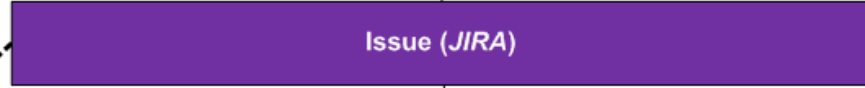
Portal SDLC and Environment Map

**Integration Services
Development Lifecycle and Code Promotion
Process Flow Diagram**

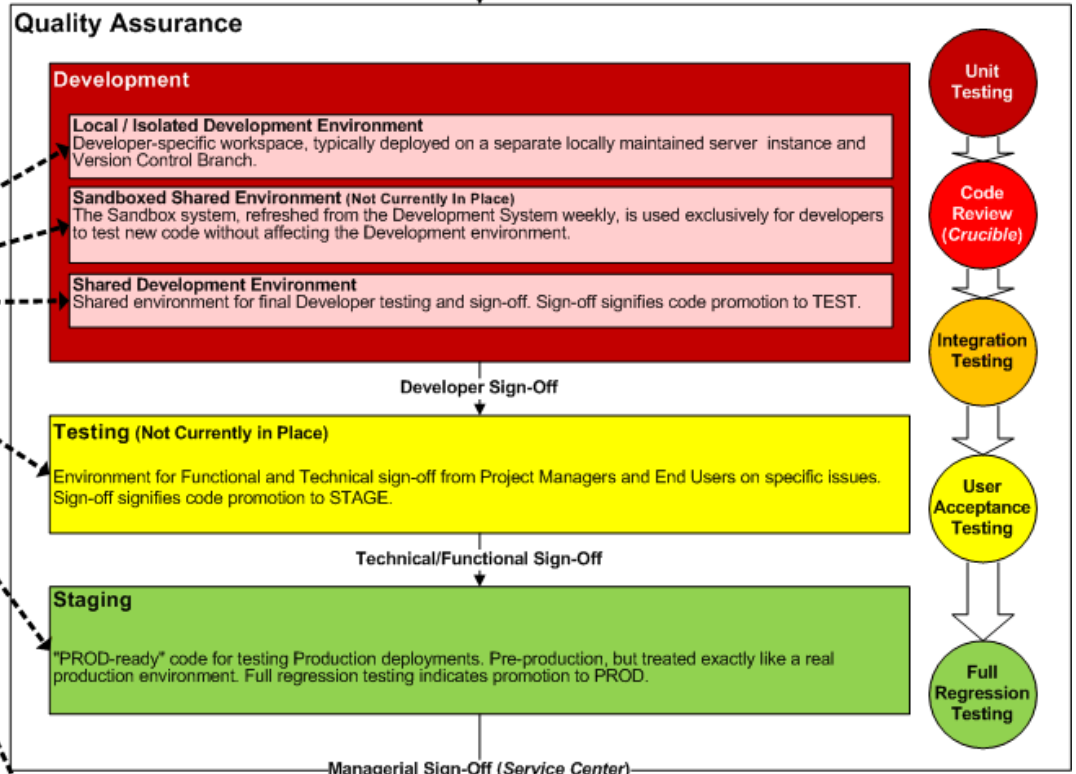
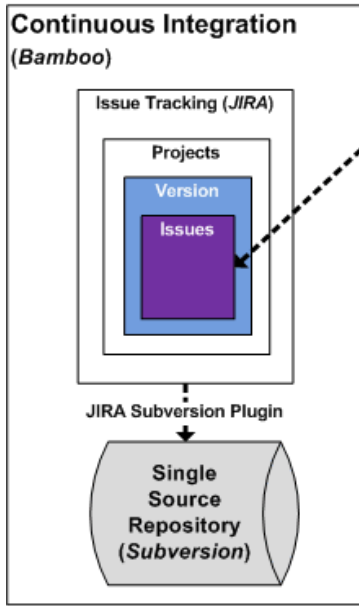
2008.03.07



Create Issue



Assign Issue



Branch
Branch
DEV Branch
TEST Branch
Trunk
Tagged Version Release

Developer Sign-Off

Technical/Functional Sign-Off

Managerial Sign-Off (Service Center)



Import/Export for uPortal

Import/Export Overview

- The Import/Export “Stack”
 - XML
 - Portal entities are represented in domain-specific schema
 - Apache Ant
 - Portal administrators leverage Import/Export through a target-based interface
 - Cernunnos
 - Diverse subsystems & technology components are synthesized with Cernunnos
 - uPortal
 - Import/Export leverages uPortal’s own Java technology wherever possible

The Cernunnos Project

- Cernunnos enhances software projects (and professionals) by reducing the burden that code components place on one another
- Project Home Page:
<http://cernunnos.googlecode.com>
- *"Managing Diverse & Complex uPortal Deployments with Cernunnos"*
 - Drew Wills & Andy Gherna
 - Monday, April 28, 2008 4:45PM-5:45PM



Import/Export Features

- Offers Ant-based create/update/delete operations on most portal objects
- Supports the following object types:
 - Entity Types
 - Structures
 - Themes
 - Users
 - Groups
 - Channel Types
 - Channels
 - Memberships
 - Permissions
 - Layouts
 - Batches (combinations)
- Does *not* support:
 - ALM
 - Multiple user profiles
 - Duplicate Group Names

How to Get Import/Export

- Available in these uPortal versions:
 - 2.5.4 (not released)
 - 2.6.2 (not released)
 - 3.0.0
- Using Import/Export with previous versions:
 - **Option 1:** Patch Import/Export into your existing portal codebase
 - **Option 2:** Use Import/Export with a fresh checkout

Using a Fresh Checkout

- This approach makes sense if you're upgrading to a newer uPortal release
- Configuration Instructions:
 - configure files in properties/
 - personDirectory.xml
 - rdbm.properties
 - configure files in properties/groups/
 - compositeGroupServices.xml
 - PAGSGroupStoreConfig.xml (if applicable)
 - Add you jdbc driver to lib/ (2.5.x) or lib/container-common/ (2.6.x)

From 2.5.2 to 2.6.1 *plus*

Sizing Up the Task

- 2.5.2 to 2.6.1+ (*i.e.* 2.6.1 with Import/Export & JHU contributions)
- Same Layout Manager: **DLM**
- Same Structure/Theme/Skin
- Same Database

First Step: Catalog Local Modifications

- `>svn export my.johnshopkins.edu`
- `>svn export https://www.ja-sig.org/svn/uPortal/tags/rel-2-5-2/`
- Use Beyond Compare to uncover changes
- Make a list (spreadsheet) of everything *substantive*
 - Yes...
 - Behavioral enhancements in Java
 - Channel XSL
 - But not...
 - Configuration
 - Whitespace

Beyond Compare

Session: <untitled> Filters: *.*

C:\OLD_HOME\clients\JHU\old-portal_rel-2-5-2\source\org\ C:\OLD_HOME\clients\JHU\old-portal_jhu-prod\source\org\j

Name	Size	Modified	Name	Size	Modified
lib	20.6 MB	4/21/2008 1:04:42 pm	lib	28.1 MB	4/21/2008 1:06:04 pm
properties	1.21 MB	4/21/2008 1:04:38 pm	properties	1.37 MB	4/21/2008 1:05:57 pm
source	5.29 MB	4/21/2008 1:04:17 pm	source	5.35 MB	4/21/2008 1:05:53 pm
org	5.29 MB	4/21/2008 1:04:17 pm	edu	12,855	4/21/2008 1:05:53 pm
jasig	5.29 MB	4/21/2008 1:04:17 pm	org	5.34 MB	4/21/2008 1:05:32 pm
portal	5.29 MB	4/21/2008 1:04:36 pm	portal	5.34 MB	4/21/2008 1:05:53 pm
car	108 KB	4/21/2008 1:04:36 pm	car	106 KB	4/21/2008 1:05:53 pm
channels	940 KB	4/21/2008 1:04:36 pm	channels	932 KB	4/21/2008 1:05:53 pm
concurrency	121 KB	4/21/2008 1:04:32 pm	concurrency	117 KB	4/21/2008 1:05:50 pm
container	283 KB	4/21/2008 1:04:32 pm	container	279 KB	4/21/2008 1:05:49 pm
core	7,769	4/21/2008 1:04:31 pm	core	7,524	4/21/2008 1:05:47 pm
groups	342 KB	4/21/2008 1:04:31 pm	groups	342 KB	4/21/2008 1:05:47 pm
filesystem	33,508	4/21/2008 1:04:31 pm	filesystem	32,454	4/21/2008 1:05:47 pm
ldap	28,508	4/21/2008 1:04:31 pm	ldap	27,664	4/21/2008 1:05:47 pm
local	9,819	4/21/2008 1:04:30 pm	local	9,555	4/21/2008 1:05:47 pm
pags	37,756	4/21/2008 1:04:30 pm	pags	41,391	4/21/2008 1:05:47 pm
ComponentGroupServiceDes...	2,797	10/17/2004 12:01:46 pm	ComponentGroupServiceDes...	2,696	7/6/2005 12:17:52 pm
CompositeEntityIdentifier.java	4,364	3/7/2005 1:09:07 pm	CompositeEntityIdentifier.java	10,470	7/19/2006 9:55:27 pm
CompositeServiceIdentifier.ja...	1,406	10/17/2004 12:01:46 pm	CompositeServiceIdentifier.ja...	1,352	7/6/2005 12:17:52 pm
EntityGroupImpl.java	20,914	3/7/2005 1:09:07 pm	EntityGroupImpl.java	20,206	7/6/2005 12:17:52 pm
EntityGroupNameFinder.java	2,048	10/19/2004 8:49:56 am	EntityGroupNameFinder.java	1,974	7/6/2005 12:17:52 pm
EntityGroupNameFinderFact...	956	3/7/2005 1:09:07 pm	EntityGroupNameFinderFact...	920	7/6/2005 12:17:52 pm
EntityImpl.java	2,644	10/17/2004 12:01:46 pm	EntityImpl.java	2,537	7/6/2005 12:17:52 pm

4/24/2008 7:11:01 PM Load Comparison: C:\OLD_HOME\clients\JHU\old-portal_rel-2-5-2 <-> C:\OLD_HOME\clients\JHU\old-portal_jhu-prod
 4/24/2008 7:12:08 PM Rules-Based Comparison of 907 Files
 4/24/2008 7:12:39 PM Rules-Based Comparison of 907 Files

186 file(s), 1.11 MB (76 GB free on C:) 189 file(s), 1.12 MB (76 GB free on C:)

Customizations Spreadsheet

modifications.xls [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Acrobat

Normal Page Layout Page Break Custom Full Workbook Views

Formulas: Ruler, Gridlines, Message Bar, Formula Bar, Headings

Data: Zoom 100%, Zoom to Selection

Review: Split, View Side by Side, Synchronous Scrolling, Hide, Unhide, Reset Window Position

View: New Window, Arrange All, Freeze Panes

Macros: Save Workspace, Switch Windows

File Name: security\provider\RemoteUserSecurityContext.java

File	Description	IGNORE	RETAIN	DONATE	GCCC	UP-JIRA	ESM	CMD	What Happened?
source\org\jasig\portal\channels\codemol\Viewer.java	Support for Opera user-agent strings			X			X		committed 2-6-patches & trunk/
source\org\jasig\portal\channels\portlet\CPortletAdapter.java	Loading PortletDefinition preferences	X				UP-1040			
source\org\jasig\portal\channels\webproxy\CWebProxy.java	Caching enhancements			X	X				
source\org\jasig\portal\channels\CGeneric\SLT.java	Caching enhancements			X	X				
source\org\jasig\portal\channels\CHeader.java	Enhancements to CHeader for PortalAdmins & SSLVPN		X						port
source\org\jasig\portal\channels\CInlineFrame.java	Enhanced to choose stylesheet title by user agent string	X							AV (2007/12/20) Moved to red b/c I got this one backwards -- 2.8.2 had more features than JHU prod.
source\org\jasig\portal\content\ainer\binding\PortletApplicationUnmarshaler.java	Some commons-logging and safer call to PortletDefinition.setExpirationCache()			X		UP-1173	X		committed 2-6-patches & trunk/
source\org\jasig\portal\content\ainer\om\entity\PortletEntityImpl.java	Changes to the way portlet preferences are managed	X				UP-1040			
source\org\jasig\portal\content\ainer\om\portlet\PortletDefinitionImpl.java	Changes to the way portlet preferences are managed	X				UP-1040			
source\org\jasig\portal\content\ainer\ervlet\ServletRequestImpl.java	Logging enhancements	X							
source\org\jasig\portal\groups\CompositeEntityIdentifier.java	Added utility methods for compound keys	X							
source\org\jasig\portal\layout\dm\ILFBuilder.java	Loop detection and logging	X							
source\org\jasig\portal\layout\dm\ROBMDistributedLayoutStore.java	jhuDlm\workaround -- this class changed a lot, let's be sure the problem still occurs		?						
source\org\jasig\portal\ldap\LdapServerImpl.java	Added connection pool features		X				X		AV (2007/12/14) -- Moving these 2 to the blue column for 2 reasons: (1) I have a feeling I'll be starting too many initiatives on uPortal-dev; and (2) 3.0 is replacing custom LDAP code w/ spring LDAP code. Ported.
source\org\jasig\portal\ldap\LdapServices.java	Added connection pool features		X				X		
source\org\jasig\portal\security\provider\PersonImpl.java	Changed the way guest user(s) are identified. Do what Yale did			X					Get info from andrew.p. and susan
source\org\jasig\portal\security\provider\RemoteUserPersonManager.java	Changed the way guest user(s) are identified. Do what Yale did			X					
security\provider\RemoteUserSecurityContext.java	Special treatment for PortalAdmins. Do what Yale did			X					
source\org\jasig\portal\serialize\BaseMarkupSerializer.java	Performance optimization			X	X				committed 2-6-patches & trunk/
source\org\jasig\portal\serialize\HTML.d\d.java	Performance optimization			X	X				committed 2-6-patches & trunk/
source\org\jasig\portal\serialize\HTML.Serializer.java	state.unescaped = true; (???)	X							
source\org\jasig\portal\serialize\Printer.java	Enhancements to printText() method			X	X				committed 2-6-patches & trunk/
source\org\jasig\portal\serialize\HTML.Serializer.java	Performance optimization			X	X				committed 2-6-patches & trunk/
source\org\jasig\portal\services\person\dir\support\legacy\PersonDirInfoAdaptor.java	Logged a warning when an LDAP connection can't be obtained from the pool	X							
source\org\jasig\portal\services\person\dir\support\mergen\MultiValuedAttributeMerger.java	Added a lot of debug messages	X							
	Added user info caching -- retain JHU-specific code until a better caching strategy is implemented -- use	X							

Sheet1 Sheet2 Sheet3

Ready 75%

Step Two: Make Some Decisions

- Decide what to do with each item on the list
 - Drop: 56 items
 - Contribute: 19 items
 - Retain (Port): 20 items

Step Three: Make Contributions

- JIRA tickets resolved by JHU in the course of this upgrade:
 - **UP-1893:** Some .user docs in properties/db/entities/ incorrectly reference the ALM structure
 - **UP-1892:** Enhance CacheFactoryLocator so it won't swallow the stack trace if it can't get the cache from the app context
 - **UP-1888:** Commit Global Channel Content Caching (GCCC) patch developed by rutgers

- JIRA tickets (Cont.)

- **UP-1889:** Add support for `java.sql.Types.CLOB` to `DbUnload`
- **UP-1173:** `CPortletAdapter` doesn't check for empty string ("") `EXPIRATION_CACHE`
- **UP-1887:** Add Opera/7 and Opera/8 to whitelist of 'IFrameSupport' in iccdemo channel

Step Four: New Project

- `>svn export https://www.ja-sig.org/svn/uPortal/branches/rel-2-6-patches/` (Note Revision!)
- `>svn import myJohnsHopkins/sandbox`
- Drop in JHU properties/
- Drop in JHU structure, theme, and skin resources
- Apply retained modifications (20 files)

Step Five: Data

- Even though we were keeping the same database, we elected to replace uPortal default data with JHU data
- This approach allows us to deploy new environments like DEV, TEST, or local portal instances quickly
- This approach also makes integrating new data elements painless

Export and Organize Records

- `>ant -f import-export.xml make-data-xml`
- replace data.xml in properties/db/ with the version in the root directory
- `>ant -f import-export.xml export -Ddir=export -Dtype=[...]`
 - all-channels
 - all-groups
 - all-permissions
 - all-memberships

Export and Organize (Cont.)

- `>ant -f import-export.xml export -Ddir=export -Dtype=user -Dsysid=[...]`
 - admin, guest, staff, student, *etc.*
 - all DLM fragment owners
- `>ant -f import-export.xml export -Ddir=export -Dtype=layout -Dsysid=[...]`
 - same as above
- prune .permission files for excluded users
- prune .membership files for excluded users
- replace the contents of properties/db/entities/ with export/

Step Six: Chase Bugs

- There will be issues that you simply have to find by looking
- Some of these are related to portlet/channel resources: DB tables, XML/XSL files, *etc.*
- Some of these are related to new/changed features in uPortal (*e.g.* `admin.navigation.links`)



Epilogue: SmartLdapGroupStore

Overview

- Discovers groups maintained in an LDAP directory and makes them available for use in the portal
- Blog Post:
<http://www.unicon.net/node/994>
- uPortal Wiki:
<http://www.ja-sig.org/wiki/x/3QPI>
- Source code attached in confluence

SmartLdapGroupStore Setup

- Add Java implementation to classpath
- Add SmartLdapGroupStore to Composite Group Services
- Configure SmartLdapGroupStoreConfig.xml
 - directory connection information
 - Base DN for group records
 - Filter expression that returns the group records you want
 - Person Attribute that contains the distinguishedName of each group he/she belongs to (e.g. 'memberOf')
 - LDAP attribute on each group that contains its distinguishedName (e.g. 'distinguishedName')
 - LDAP attribute on each group that contains its human-readable name (e.g. 'cn')
 - LDAP attribute on each group that contains the distinguishedName of each of its members (e.g. 'member')
- Configure personDirectory.xml (distinguishedName of each group)

Questions?



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<https://my.johnshopkins.edu/>

Drew Wills

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<http://www.unicon.net/blog/19/>