

uPortal Migration: Juggling Environments & Software Upgrades

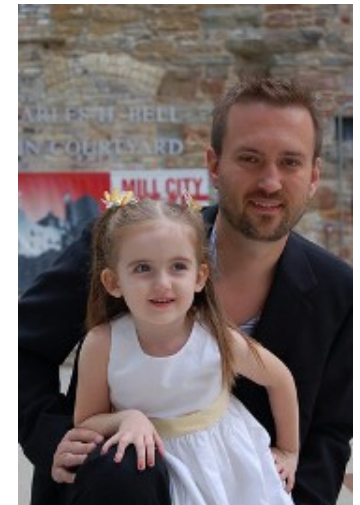
Drew Wills & Eric Dalquist

JA-SIG Spring Conference, April 27, 2008

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Presenter: Drew Wills

- Member of Unicon since 2000
- uPortal Committer since 2004
- Contributed to several uPortal implementations:
 - California Polytechnic State University "Cal Poly"
 - California State University, Chico
 - University of Colorado System
 - Yale University
 - Johns Hopkins University
- Launched Cernunnos February 2007



Presenter: Eric Dalquist

- University of Wisconsin, Madison
- Former member of Unicon
- uPortal Committer since 2004
- Apache Portal's Committer since 2008
- uPortal Steering Committee Member
- uP3 Release Engineer



Participants

- Please share a bit about yourself:
 - Name
 - Institution
 - Experience with uPortal
 - Version of uPortal in production (if applicable)
 - Plans for upgrading



The CD

- Contents:
 - These slides (.pdf)
 - The "bonus" data migration tools covered herein
 - `copy_non-user_entities.crn`
 - `copy_user_entities.crn`
 - Cernunnos 1.0.0-M8 binaries
 - `cernunnos-cmd-tool-1.0.0-M8-bin.tar.gz`
 - `cernunnos-cmd-tool-1.0.0-M8-bin.zip`
- I think I have a few extras

Agenda

1. Import/Export Migration Tools for uPortal
2. Migration Cookbook
3. Step-By-Step Checklist for Upgrades
4. Upgrading to uPortal 3

Import/Export Migration Tools for uPortal

Data Agility

Origins of Import/Export

- *“I do a lot of upgrades”* – Drew Wills
 - California Polytechnic State University "Cal Poly" (2.1 to 2.5)
 - University of Colorado System (2.4 to 2.5)
 - California State University, Chico (2.4 to 2.6)
 - Johns Hopkins University (2.5.2 to 2.6.1+)
- Database record synthesis was a big challenge common to all upgrades

Origins (Cont.)

- The earliest Import/Export was created to make these assignments easier for myself
- uPortal Developers' Meeting at Johns Hopkins, April 2007:
<http://www.ja-sig.org/wiki/x/KQIs>
- Yale University Sponsorship

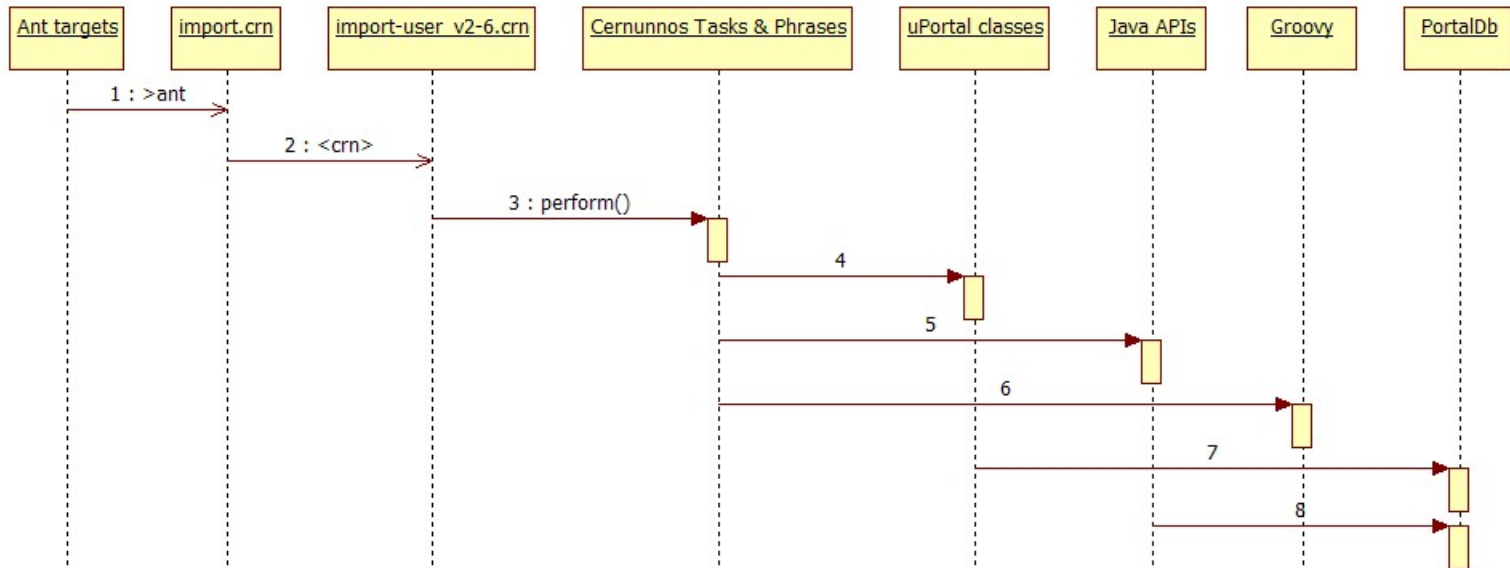


Overview

- The Import/Export “Stack”
 - XML: domain-specific schemae
 - Apache Ant: target-based interface
 - Cernunnos: component integration
 - uPortal: custom Java technology

Overview (Cont.)

uPortal Import/Export Sequence Diagram



The Cernunnos Project

- Cernunnos empowers software projects (and professionals) by reducing the burden code components place on one another:
 - You will do more in less time
 - You will produce higher quality deliverables
 - Your deliverables will get better with age (like wine)
 - You will learn a lot of cool things
 - You will teach others the cool things you know
 - You can turn in the same work again and again
 - You can turn in other people's work too
 - You can take it all with you to your next assignment

The Cernunnos Project (Cont.)

- Industry-normal development practices lead to software systems with lots of "Implied Codemass" (*i.e.* extra bulk)
- Cernunnos achieves its goals by focusing on this extra bulk
- 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

Features (Cont.)

- Import/Export does *not* support:
 - ALM
 - Though there is a utility for converting from fragments.xml
 - Multiple user profiles
 - `PROFILE_ID` is assumed to be 1 in several places
 - Duplicate group names
 - Object types that do not have non-sequential unique identifiers (*i.e.* username, fname) must have unique names

File Types

- Import/Export uses the following file extensions:
 - .entity-type
 - .structure
 - .theme
 - .template-user
 - .user
 - .group
 - .channel-type
 - .channel
 - .membership
 - .permission
 - .fragment-layout
 - .layout
 - .batch
- Import/Export uses this order on import to deal with dependencies
- Import/Export creates each of these types, except .batch, where appropriate

Example: uP3 guest Layout

```
<layout script="classpath://org/jasig/portal/io/import-layout_v3-0.crn" username="guest">
  <root unremovable="Y" immutable="N" hidden="N" name="Root folder">
    <header unremovable="Y" immutable="Y" hidden="N" name="Header folder">
      <channel fname="header"/>
      <channel fname="portal/login/general"/>
      <channel fname="session-locales-selector"/>
    </header>
    <tab unremovable="N" immutable="N" hidden="N" name="uPortal News">
      <column unremovable="N" immutable="N" hidden="N" name="Column 1">
        <structure-attribute type="folder">
          <name>width</name>
          <value>40%</value>
        </structure-attribute>
        <channel fname="uportal-news"/>
      </column>
      <column unremovable="N" immutable="N" hidden="N" name="Column 2">
        <structure-attribute type="folder">
          <name>width</name>
          <value>60%</value>
        </structure-attribute>
        <channel fname="jasig-news"/>
        <channel fname="unicon-news"/>
      </column>
    </tab>
    <footer unremovable="Y" immutable="Y" hidden="N" name="Footer folder">
      <channel fname="footer"/>
    </footer>
  </root>
  <profile name="Guest Web Browser Profile">
    <description>A sample profile for web browsers</description>
    <structure name="DLM Tabs and columns"/>
    <theme name="DLM XHTML"/>
  </profile>
</layout>
```

Using Import/Export

- Available Ant tasks:
 - **export**: Creates XML representations of the specified object(s)
 - **import**: Modifies the database to match the specified XML document(s)
 - **delete**: Removes the specified object(s) from the database
 - **make-data-xml**: Synthesizes information in your database and some default data to create a slim data.xml file

- *e.g.*

```
>ant -f import-export.xml export -Ddir=layouts -Dtype=all-layouts
```

Full Ant Command Reference

```
>ant -f import-export.xml [export | delete] -Dtype=type  
  [-Ddir=dir] [-Dsysid=sysid]
```

```
>ant -f import-export.xml import [-Ddir=dir] [-  
  Dpattern=regex]
```

type = all | layout | all-layouts | all-permissions† |
all-memberships† | channel | all-channels | channel-
type | all-channel-types | group | all-groups | user
| all-users | theme | all-themes | structure | all-
structures | entity-type | all-entity-types

dir = file system directory (relative or absolute)

sysid = username††, fname, channel type name, group
name, theme name, structure name, or entity type name

regex = A regular expression used to match files in *dir*
(e.g. `.*layout`)

Ant Command Notes

- † *permissions and memberships records cannot be deleted directly. They will be removed, where appropriate, whenever an entity that they reference is deleted*
- †† *specify username for **sysid** when referring to both users and layouts*

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

Option 1: Patch Your Existing Portal

- Use this approach if you plan to stay on your current uPortal release
- Add the following files from the rel-2-6-patches/ branch:
 - import-export.xml (contains Ant tasks)
 - package org.jasig.portal.io
 - (all files)
 - package org.jasig.portal.tools.chanpub
 - UrlChannelPublisher.java

Option 1: Patch (Cont.)

- Add the following files (Cont.):
 - package org.jasig.portal.tools.dataloader
 - dbunload.crn
 - StringListPhrase.java
 - UP_GROUP.default-data.xml
 - UP_USER_PROFILE.default-data.xml
 - UP_SEQUENCE.default-data.xml
 - UP_USER.default-data.xml

Option 1: Patch (Cont.)

- Add the following files (Cont.):
 - JAR files in lib/compile/ (assumes 2.6.x):
 - cernunnos-1.0.0-M6.jar
 - commons-jexl-1.1.jar
 - commons-lang-2.3.jar
 - groovy-all-1.0.jar
 - groovy-engine-1.0-jdk14.jar
 - retrotranslator-runtime-1.2.1.jar
 - script-api-1.0-jdk14.jar

Option 2: Use a Fresh Checkout

- Use this approach if you plan to migrate 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)

Migration Cookbook

Suggestions that may make you and
your team more productive

Recipe #1: entities.location

- Advantages:
 - You can replace your whole universe with one property change +
`>ant initportal`
 - You can even do...
`>ant initportal -Dentities.location=myDir`
 - You can maintain both your data and uPortal sample data in your SCC

Recipe #1 (Cont.)

- Directions (Cont.):
 - Add the property 'entities.location' to build.properties

```
entities.location=db/entities
```

Recipe #1 (Cont.)

- Directions (Cont.):
 - Enhance build.xml to use this property for the location of entity documents

```
[~line #121]
<property name="entities.location" value="properties/db/entities"/>
...
[~line #592]
<!-- AW (2007/12/12): Added Import/Export tech... -->
<ant antfile="import-export.xml" target="import">
  <property name="dir" value="${entities.location}"/>
</ant>
```

Recipe #2: env/ Directories

- Advantages:
 - You can keep data for what you're working on separate from existing data
 - You can easily work on multiple data sets independently
 - You can "promote" new data from dev -> test or from test -> prod using automated tools
 - You can evolve your data in SCC (just like source files)

Recipe #2 (Cont.)

- Directions:
 - Create env/ (or properties/env/)
 - Within env/, create subdirectories for each environment you support and place an entities/ directory within each, *e.g.*
 - env/local/entities/
 - env/dev/entities/
 - env/test/entities/
 - env/prod/entities/

Recipe #2 (Cont.)

- Directions (Cont.):
 - Enhance build.xml to support environment-specific entities

```
[~line #592]
<!-- AW (2007/12/12): Added Import/Export tech... -->
<ant antfile="import-export.xml" target="import">
  <property name="dir" value="properties/db/entities"/>
</ant>

<!-- Environment-specific entities... -->
<fail unless="env" message="You must set the 'env' property with a -D
parameter."/>
<ant antfile="import-export.xml" target="import">
  <property name="dir" value="env/${env}/entities"/>
</ant>
```

```
>ant initportal -Denv=local
```


Recipe #3: Environmental Token Replacement

- Advantages:
 - You can run some administrative Ant tasks for any environment from any machine
 - You can maintain configuration for every environment in SCC
- Directions:
 - Place a token-values.properties file in each of the env/ directories from Recipe #2
 - env/local/token-values.properties
 - env/dev/token-values.properties
 - env/test/token-values.properties
 - env/prod/token-values.properties

Recipe #3 (Cont.)

- Directions (Cont.):
 - Enhance build.xml to use these tokens when "compiling" configuration files

```
[~line #314]
<!-- Copy associated resource files -->
<fail unless="env" message="You must set the 'env' property with a -D
parameter." />
<copy todir="${build.home}/WEB-INF/classes/properties">
  <fileset dir="properties" includes="**/*"/>
  <filterset>
    <filtersfile file="env/${env}/token-values.properties" />
  </filterset>
</copy>
```

Recipe #3 (Cont.)

- Directions (Cont.):
 - Adjust configuration files to use tokens where appropriate

```
# rdbm.properties

##### Connection Pooling Configuration
##### Set jdbcUsePool to true to use the pool configuration specified
by
##### org.jasig.portal.PooledDataSourceConnectionFactory.implementation
in
##### portal.properties
jdbcUsePool=true
poolPreparedStatements=true

[...]

##### Oracle - example
jdbcDriver=@JDBC_DRIVER@
jdbcUrl=@JDBC_URL@
jdbcUser=@JDBC_USERNAME@
jdbcPassword=@JDBC_PASSWORD@
```

Step-By-Step Checklist for Upgrades

Phase One: Local Customizations

- Follow these steps:
 - `>svn export` the current portal codebase
 - `>svn export` the tag corresponding to release on which the current portal based
 - e.g. <https://www.ja-sig.org/svn/uPortal/tags/rel-2-5-2/>
 - Use Beyond Compare (or similar tool) to identify customizations

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:)

Discrepancy Categories

- present in portal, not in tag
 - these are easy, copy everything that's still in use
- present in tag, not in portal
 - these are unusual, consider them individually
- different in portal vs. Tag
 - *hope* for few of these, handling these is the bulk of the effort in an upgrade
 - Make a list (spreadsheet) of all substantive changes

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 Views Screen Views

Formulas: Ruler, Gridlines, Message Bar, Formula Bar, Headings, Show/Hide

Data: Zoom 100%, Zoom to Selection

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

Acrobat: New Window, Arrange All, Freeze Panes

Save, Switch Workspace, Windows, Macros

C29 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\WebProxy.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\omment\PortletEntityImpl.java	Changes to the way portlet preferences are managed	X				UP-1040			
source\org\jasig\portal\content\ainer\omment\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.dtd.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%

Customizations by Codebase Region

- properties/ (Configuration)
 - These will always be customized
 - Watch for new configuration points since the last release
 - **Good Idea:** compare properties/ directories of old and new releases
- lib/ (.jar files)
 - Usually some added jars for use by added code
 - Where library versions are different, normally keep the most recent

Codebase Region (Cont.)

- webpages/ (mostly UI resources)
 - Structure/Theme files
 - Default location: stylesheets/org/jasig/portal/layout/
 - **Recommendation:** don't modify, add
 - use Import/Export to "install" a new Structure/Theme
 - `>ant -f import-export.xml import -Dpattern=path`
 - adjust .user files to refer to the new Structure/Theme

Codebase Region (Cont.)

- webpages/ (Cont.)
 - Options for channel UI files
 - **Drop** (easiest)
 - **Contribute** (good for the community)
 - **Port Forward** (maybe, for very small changes)
 - **Fork** (better for substantial changes)

Codebase Region (Cont.)

- source/ (Java files, mostly):
 - This region is the heart of this analysis
 - Changes that break APIs are challenging
 - Changes that address bugs logging, error handling, performance, *etc.* are manageable
 - You have the same options as before:
 - **Drop** (easiest)
 - **Contribute** (good for the community)
 - **Port Forward** (better to avoid)
 - **Fork** (possible where interfaces prevail)

Contributing Enhancements

- An upgrade is a great time to "clean house" and improve uPortal for everyone

- uportal-dev email list

<http://www.ja-sig.org/wiki/display/JSG/uportal-dev>

- uPortal Issue Tracker (JIRA)

<http://www.ja-sig.org/issues/browse/UP>

- uPortal Wiki

<http://www.ja-sig.org/wiki/display/UPC/Home>

Phase 2: Create a New Project

- `>tar -xzf uPortal-3.0.0.tar.gz`
- `>svn export https://www.jasig.org/svn/uPortal/branches/rel-2-6-patches/` (Note Revision!)
- `>svn import My.School.edu/sandbox`
- Drop in your properties/
- Drop in your structure, theme, and skin resources
- Apply any retained modifications

Phase 3: Data Migration

- Make a decision: *existing database or new?*
 - Choose **new** if you're undertaking a *paradigm shift*
 - such as ALM -> DLM -- or comprehensive reorganization of content, groups, permissions, and/or layouts
 - Choose **new** if you're upgrading to uPortal 3
 - Choose **existing** in every other case

Simple Setup Method

- Gathers *all* portal data
- Suitable for migrating to a new prod DB
- Directions:
 - `>ant -f import-export.xml make-data-xml`
 - (Optionally) replace data.xml in properties/db/ with the version in the root directory
 - `>ant -f import-export.xml export -Ddir=myData -Dtype=all`
 - (Optionally) replace the contents of properties/db/entities/ with myData/

Advanced Setup Method

- Ignores "regular" users
- Suitable for quickly deploying new portal environments
 - Functional testing
 - Scalability testing
 - Development
 - Local
- All materials included on CD

Advanced Directions

- `>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=myData -Dtype=all`
- Install Cernunnos

<http://code.google.com/p/cernunnos/wiki/Installation>

Advanced Directions (Cont.)

- Use the provided script to copy non-user entities

```
>crn copy_non-user_entities.crn
```

```
<with>
  <attribute key="SRC_DIR">myData</attribute>
  <attribute key="DST_DIR">prunedData</attribute>
  <subtasks>

    <!-- Copy everything except memberships, permissions, users, and layouts -->
    <for-each items="\${groovy(['channel', 'channel-type', 'entity-type', 'fragment-
layout', 'group', 'structure', 'template-user', 'theme'])}">
      <file-iterator dir="\${SRC_DIR}" includes="**/*.${Attributes.OBJECT}">
        <copy-file to-dir="\${DST_DIR}"/>
      </file-iterator>
    </for-each>

    [...]
  </subtasks>
</with>
```

Advanced Directions (Cont.)

```
[...]

<!-- Copy memberships that target groups -->
<file-iterator dir="${SRC_DIR}" includes="**/*.membership">
  <with-attribute key="DOCUMENT"
value="${doc("${SRC_DIR}/${Attributes.LOCATION}}")">
    <if test="${groovy(DOCUMENT.selectSingleNode('child/literal') == null)}">
      <copy-file to-dir="${DST_DIR}"/>
    </if>
  </with-attribute>
</file-iterator>

<!-- Copy permissions that target groups -->
<file-iterator dir="${SRC_DIR}" includes="**/*.permission">
  <with-attribute key="DOCUMENT"
value="${doc("${SRC_DIR}/${Attributes.LOCATION}}")">
    <if test="${groovy(DOCUMENT.selectSingleNode('principal/literal') ==
null)}">
      <copy-file to-dir="${DST_DIR}"/>
    </if>
  </with-attribute>
</file-iterator>

</subtasks>
</with>
```

Advanced Directions (Cont.)

- Use the provided script to copy entities for administrative users

```
>crn copy_user_entities.crn admin demo ent-lo
faculty fragmentTemplate guest guest-lo news-lo
portlets-lo staff student system
```

```
<with>
  <attribute key="SRC_DIR">myData</attribute>
  <attribute key="DST_DIR">prunedData</attribute>
  <subtasks>
    <argument-iterator>

      <!-- Copy user and layout files -->
      <for-each items="${groovy(['user', 'layout'])}">
        <file-iterator dir="${SRC_DIR}" includes="**/*.${Attributes.OBJECT}">
          <with-attribute key="DOCUMENT"
value="${doc("${SRC_DIR}/${Attributes.LOCATION})}">
            <if
test="${groovy(DOCUMENT.valueOf('@username').equals('${Attributes.STRING}'))}">
              <copy-file to-dir="${DST_DIR}"/>
            </if>
          </with-attribute>
        </file-iterator>
      </for-each>

      [...]
    </argument-iterator>
  </subtasks>
</with>
```

Advanced Directions (Cont.)

```
[...]

    <!-- Copy memberships that target the specified user -->
    <file-iterator dir="${SRC_DIR}" includes="**/*.membership">
        <with-attribute key="DOCUMENT"
value="${doc(${SRC_DIR}/${Attributes.LOCATION})}">
            <if
test="${groovy(DOCUMENT.valueOf('child/literal').equals('${Attributes.STRING}'))}">
                <copy-file to-dir="${DST_DIR}"/>
            </if>
        </with-attribute>
    </file-iterator>

    <!-- Copy permissions that target the specified user -->
    <file-iterator dir="${SRC_DIR}" includes="**/*.permission">
        <with-attribute key="DOCUMENT"
value="${doc(${SRC_DIR}/${Attributes.LOCATION})}">
            <if
test="${groovy(DOCUMENT.valueOf('principal/literal').equals('${Attributes.STRING}'))}">
                <copy-file to-dir="${DST_DIR}"/>
            </if>
        </with-attribute>
    </file-iterator>

</argument-iterator>
</subtasks>
</with>
```

Upgrading to uPortal 3

Special considerations for the newest uPortal

uP3 – General Approach

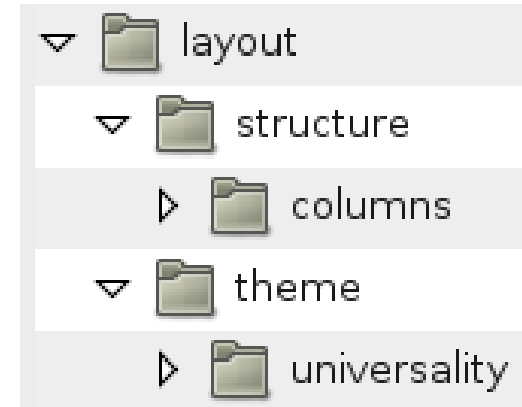
- Tackling the vendor branch
 - Where did everything go?
 - Create a new branch for 3.0
 - Compare and catalog local code to its base version
 - Re-evaluate changes then merge the need modifications
- Import/Export scripts are included in build
 - No need to specify a separate ant file

uP3 - Configuration

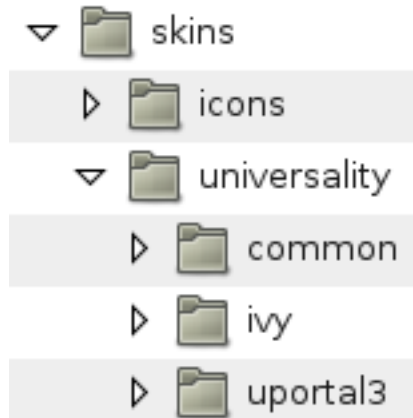
- Spring code wiring instead of Factories
- Most configuration is still in portal.properties
- <http://www.ja-sig.org/wiki/x/4gLI>
 - Details Person Directory and LDAP transition
 - Other configuration files will be added soon
- <http://www.ja-sig.org/wiki/x/QgKF>
 - Details property level changes for configuration

New Theme & Skin

- Simple Directory Structure
 - Separate Structure & Theme
 - Meaningful Directory Names



- Flexible Skin Directories
 - Allows for shared files
 - Skins are assumed to be theme specific



New Theme & Skin

Theme File Summary

universality.xsl	- Core file, has instructions and configuration
page.xsl	- Contains base portal page layout templates
navigation.xsl	- Contains portal navigation templates
columns.xsl	- Per-column layout and formatting templates
content.xsl	- Portlet/Channel container templates
preferences.xsl	- User Preferences UI templates
components.xsl	- Common utility templates
messages.xml	- I18n capable messages file, contains all text

uP3 – Theme & Structure

- Custom themes are common modifications
 - Review and catalog actual UI changes
 - Review structure and theme XSL for any functional changes
- Apply the necessary changes to the new files
 - The structure XSL is very similar to 2.6
 - The theme is much different but easier to modify
- Should result in fewer local modifications

uP3 – Code Modification

- Same approach as theme, apply changes new
- Avoid modifying uPortal code!
- The pattern should be **extension**
 - **If extension isn't possible approach the developers**
 - This avoids future upgrade difficulties
 - Makes uPortal better for everyone

Questions?



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