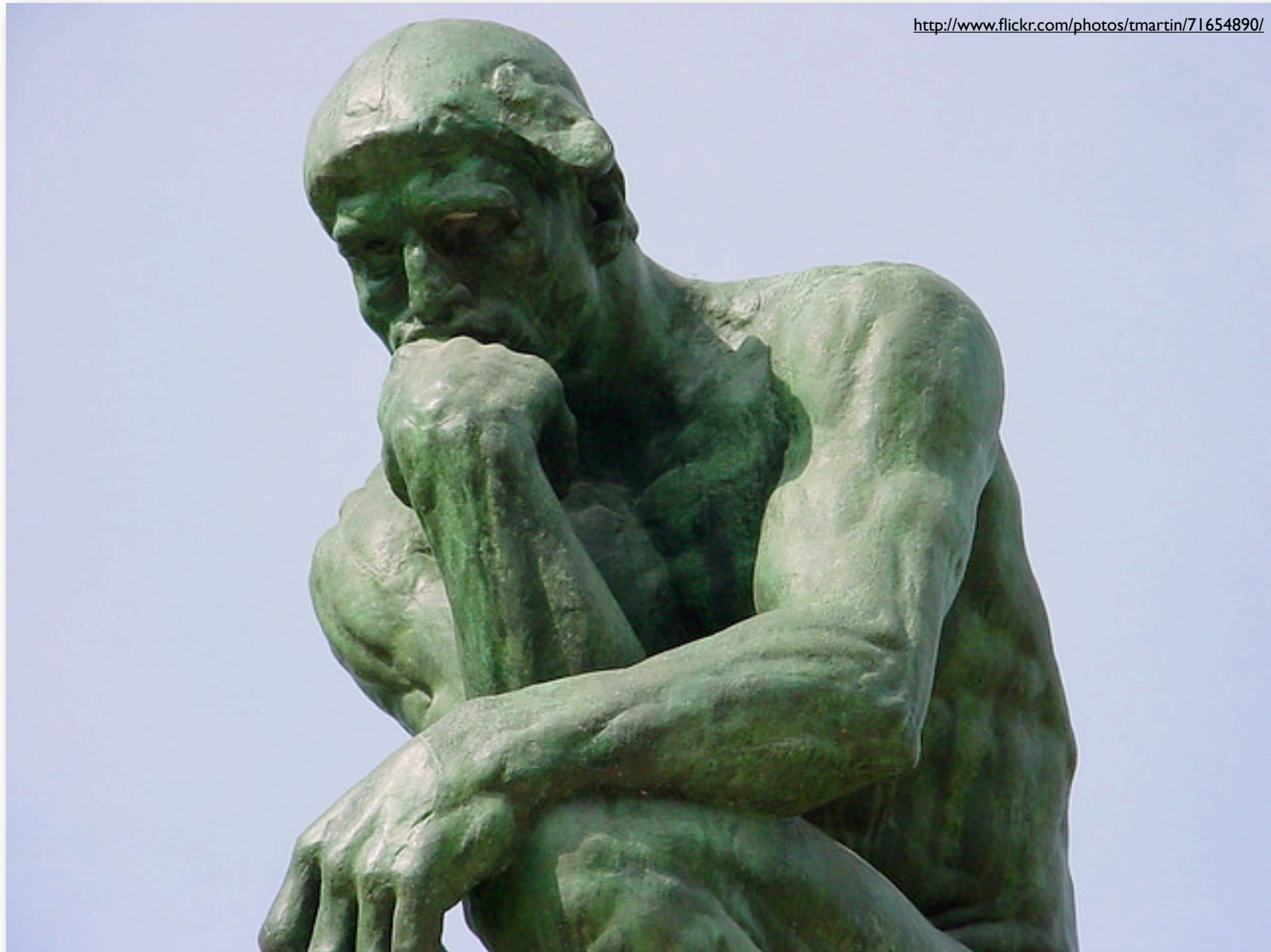


*uPortal*SM

Getting Started





The uPortal Philosophy

Don't Replicate Data

- Provision Users on First Login
- Aggregate user attributes at run time
 - Use caching and aggregation techniques to reduce overhead
- Rely on external data sources as much as possible

Target Content

- Groups and Roles
 - Person Attribute Group Store (PAGS) is the workhorse
 - Define groups based on user attributes
 - Complex logical expressions are feasible
 - SmartLDAP Group Store
 - Dynamically populates LDAP groups
 - Scales to large numbers of users and groups

Target Content

- Distributed Layout Manager (DLM)
 - Target content based on groups
 - Fine grained control over user customization
 - Admins can always override user customizations
- Portlet Permissions
 - Target based on groups
 - Smart filtering, unauthorized portlets just disappear



<http://www.flickr.com/photos/danielmorris/298268975/>

Build and Deploy

Tools

- JDK 1.6
- Maven 3.x
 - 2.2 will work as well, not very version sensitive
- Ant 1.7.1
 - Ant 1.8 will not work
- Tomcat 6.0
 - Always try to stay on the latest patch release

Common Commands

- `ant deploy-war`
 - Useful for building and deploying the uPortal webapp, used when making config changes
- `ant deploy-ear`
 - Does `deploy-war` plus deploys all of the dependencies needed for uPortal to work and the bundled portlets
- `ant initdb`
 - Initialize the database, will delete any existing data so use with care!

Common Commands

- `ant initportal`
 - Takes care of `deploy-ear` and `initdb` in a single shot
- `ant clean`
 - Build not quite working as expected? Give this a try to clean things out.

Deployment Configuration

- /build.properties
 - Define Tomcat location

```
##### Replace server.home with the location of Tomcat 6 on your machine #####  
# path to tomcat binaries  
server.home=@server.home@
```

- /pom.xml
 - Define JDBC Driver as a Maven dependency
 - May have to deploy Oracle/Microsoft artifacts locally

```
<!-- The JDBC Driver used by uPortal -->  
<jdbc.groupId>hsqldb</jdbc.groupId>  
<jdbc.artifactId>hsqldb</jdbc.artifactId>  
<jdbc.version>${hsqldb.version}</jdbc.version>
```

Deployment Configuration

- `/uportal-impl/src/main/resources/properties/rdbm.properties`
 - Define Database Connection
 - Includes examples for all major DBs
- `/uportal-impl/src/main/resources/properties/context/ldapContext.xml`
 - Define LDAP Connection



Authentication

Auth Options

- Local
 - Username & Password is mastered in uPortal
- LDAP
 - Binds against an LDAP server for authentication
- CAS
 - Uses embedded CAS client for integration
- Remote User
 - Used for external SSO solutions, such as Shibboleth

security.properties

- Defines the authentication and user factories
- Multiple authentication options can be used
- Examples for common uses are included
- Remote User Example

```
## This is the factory that supplies the concrete authentication class  
root=org.jasig.portal.security.provider.RemoteUserSecurityContextFactory
```

```
## Answers what tokens are examined in the request for each context during authentication.  
principalToken.root=remote_user  
credentialToken.root=password
```

```
## This is the factory that supplies the concrete authorization class  
authorizationProvider=org.jasig.portal.security.provider.AuthorizationServiceFactoryImpl
```

```
logoutRedirect.root=/LOGOUT
```


LDAP Only Authentication

/uportal-impl/src/main/resources/properties/security.properties

```
## This is the factory that supplies the concrete authentication class
root=org.jasig.portal.security.provider.SimpleLdapSecurityContextFactory

## The following tells the SimpleLdapSecurityContextFactory with the similarly named
## property which named LDAP connection to use. Named LDAP connections are defined in
## properties/contexts/ldapContext.xml
securityContextProperty.root.connection=defaultLdapServer

## Answers what tokens are examined in the request for each context during authentication.
principalToken.root=username
credentialToken.root=password

## This is the factory that supplies the concrete authorization class
authorizationProvider=org.jasig.portal.security.provider.AuthorizationServiceFactoryImpl
```

LDAP + Local AuthN

/uportal-impl/src/main/resources/properties/security.properties

```
## This is the factory that supplies the concrete authentication class
root=org.jasig.portal.security.provider.UnionSecurityContextFactory
root.simple=org.jasig.portal.security.provider.SimpleSecurityContextFactory
root.ldap=org.jasig.portal.security.provider.SimpleLdapSecurityContextFactory

## The following tells the SimpleLdapSecurityContextFactory with the similarly named
## property which named LDAP connection to use. Named LDAP connections are defined in
## properties/contexts/ldapContext.xml
securityContextProperty.root.ldap.connection=defaultLdapServer

## Answers what tokens are examined in the request for each context during authentication.
principalToken.root=username
credentialToken.root=password

## This is the factory that supplies the concrete authorization class
authorizationProvider=org.jasig.portal.security.provider.AuthorizationServiceFactoryImpl
```

LDAP Configuration

/uportal-impl/src/main/resources/properties/contexts/ldapContext.xml

```
<!--  
| Legacy LDAP configuration, needed for use by deprecated LDAPServices code.  
| Required for:  
| - SimpleLdapSecurityContext  
+-->  
<bean id="defaultLdapServer" class="org.jasig.portal.ldap.ContextSourceLdapServerImpl">  
  <property name="contextSource">  
    <bean id="legacyLdapContext" class="org.springframework.ldap.core.support.LdapContextSource">  
      <property name="url" value="ldap://ldap.myuniv.edu:389"/>  
      <property name="userName" value="cn=AuthUser, ou=People, dc=myuniv, dc=edu"/>  
      <property name="password" value="foobar"/>  
      <property name="pooled" value="false"/>  
    </bean>  
  </property>  
  <property name="uidAttribute" value="uid"/>  
  <property name="baseDN" value="ou=People, dc=myuniv, dc=edu"/>  
</bean>
```


Person Directory

- Component based attribute aggregation service
- Can get attributes from any number of sources
- Multiple options for merging and caching data
- Conditional fetching based on other attributes
- User attributes are a Map of String keys to a List of value Objects

`/uportal-impl/src/main/resources/properties/contexts/personDirectoryContext.xml`

DB Attribute Source

```
<bean id="uPortalJdbcAttributeSource" class="org.jasig.services.persondir.support.jdbc.SingleRowJdbcPersonAttributeDao">
  <constructor-arg index="0" ref="PersonDB" />
  <constructor-arg>
    <value>
      SELECT FIRST_NAME, LAST_NAME, EMAIL, USER_NAME
      FROM UP_PERSON_DIR
      WHERE {0}
    </value>
  </constructor-arg>
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="queryAttributeMapping">
    <map>
      <entry key="username" value="USER_NAME" />
      <entry key="givenName" value="FIRST_NAME" />
      <entry key="sn" value="LAST_NAME" />
      <entry key="mail" value="EMAIL" />
    </map>
  </property>
  <property name="resultAttributeMapping">
    <map>
      <entry key="FIRST_LAST" value="displayName" />
      <entry key="FIRST_NAME" value="givenName" />
      <entry key="LAST_NAME" value="sn" />
      <entry key="EMAIL" value="mail" />
      <entry key="USER_NAME">
        <set>
          <value>uid</value>
          <value>username</value>
          <value>user.login.id</value>
        </set>
      </entry>
    </map>
  </property>
</bean>
```


LDAP Attribute Source

```
<bean id="ldapAttributeSource" class="org.jasig.services.persondir.support.ldap.LdapPersonAttributeDao">
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="contextSource" ref="defaultLdapContext" />
  <property name="baseDN" value="ou=people,o=example.edu,o=isp" />
  <property name="queryTemplate" value="(&{0}(uid=*))"/>
  <property name="searchControls">
    <bean class="javax.naming.directory.SearchControls">
      <property name="countLimit" value="100" />
      <property name="searchScope">
        <util:constant static-field="javax.naming.directory.SearchControls.ONELEVEL_SCOPE" />
      </property>
      <property name="timeLimit" value="5000" />
      <property name="returningObjFlag" value="false" />
    </bean>
  </property>
  <property name="queryAttributeMapping">
    <map>
      <entry key="givenName" value="givenName" />
      <entry key="mail" value="mail" />
      <entry key="sn" value="sn" />
      <entry key="username" value="uid" />
    </map>
  </property>
  <property name="resultAttributeMapping">
    <map>
      <entry key="displayName" value="displayName" />
      <entry key="givenName" value="givenName" />
      <entry key="mail" value="mail" />
      <entry key="sn" value="sn" />
      <entry key="uid">
        <set>
          <value>uid</value>
          <value>username</value>
          <value>user.login.id</value>
        </set>
      </entry>
      <entry key="isGraduatingGrad" value="isGraduatingGrad" />
      <entry key="isGraduatingUGrad" value="isGraduatingUGrad" />
    </map>
  </property>
</bean>
```

Caching Attributes

```
<bean id="cachingLdapAttributeSource" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="cacheNullResults" value="true" />
  <property name="userInfoCache">
    <bean class="org.jasig.portal.utils.cache.MapCacheFactoryBean">
      <property name="cacheFactory" ref="cacheFactory" />
      <property name="cacheName" value="org.jasig.services.persondir.USER_INFO.ldap" />
    </bean>
  </property>
  <property name="cacheKeyGenerator" ref="userAttributeCacheKeyGenerator" />
  <property name="cachedPersonAttributesDao" ref="ldapAttributeSource" />
</bean>
```

Merging Attributes

```
<bean id="localLdapMergingPersonAttributeDao" class="org.jasig.services.persondir.support.MergingPersonAttributeDaoImpl">
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="merger">
    <bean class="org.jasig.services.persondir.support.merger.ReplacingAttributeAdder" />
  </property>
  <property name="personAttributeDaos">
    <list>
      <ref bean="cachingLdapAttributeSource"/>
      <ref bean="cachinguPortalJdbcAttributeSource"/>
    </list>
  </property>
</bean>
```


Conditional Attributes

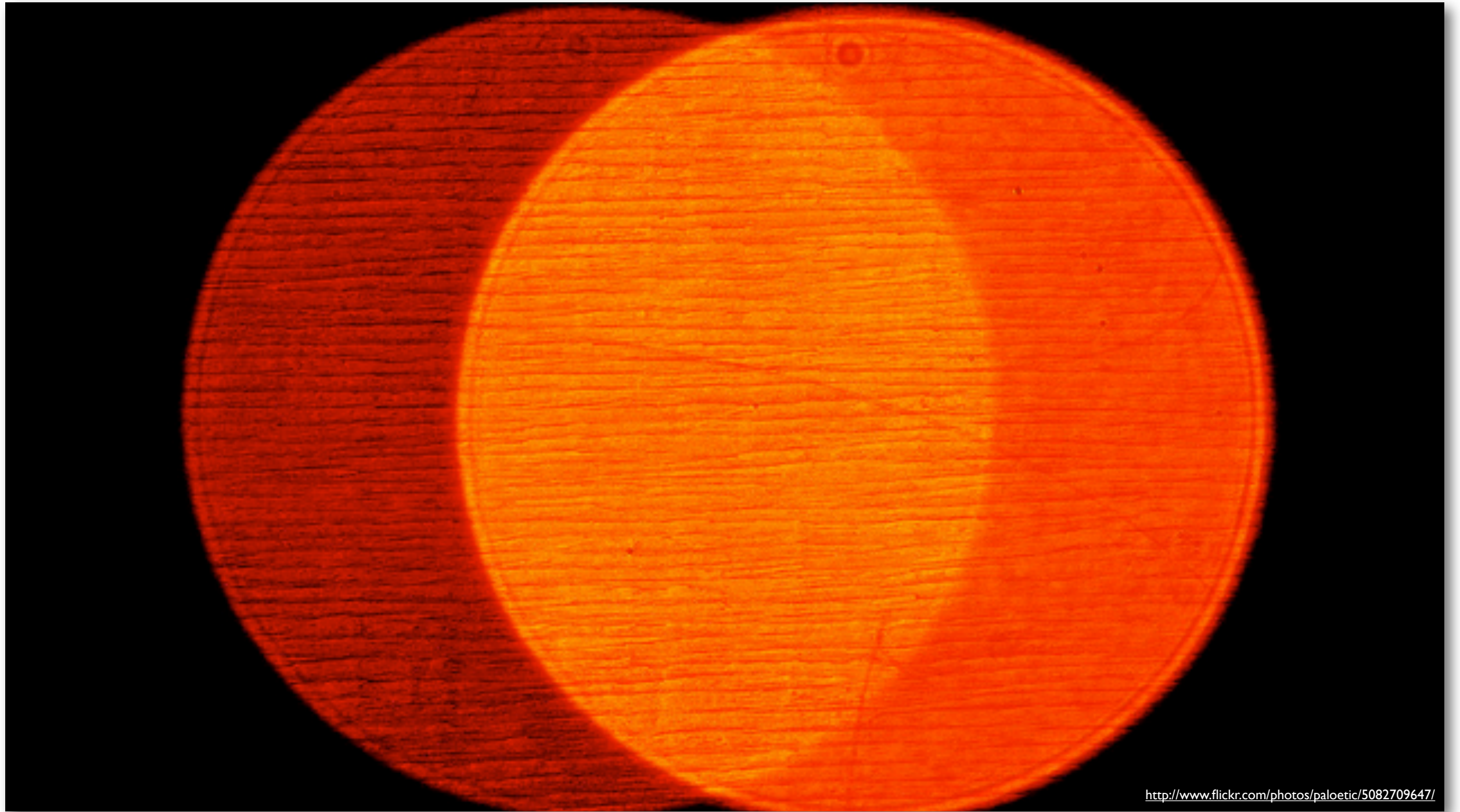
```
<bean id="regexSurveyGatewayPersonAttributeDao" class="org.jasig.services.persondir.support.RegexGatewayPersonAttributeDao">
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="patterns">
    <map>
      <entry key="isGraduatingGrad" value="true" />
      <entry key="isGraduatingUGrad" value="true" />
    </map>
  </property>
  <property name="targetPersonAttributeDao" ref="cachingSurveyPersonAttributeDao" />
</bean>
<bean id="cachingSurveyPersonAttributeDao" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
  ****
</bean>
<bean id="surveyPersonAttributeDao" class="org.jasig.services.persondir.support.jdbc.SingleRowJdbcPersonAttributeDao">
  <constructor-arg index="0" ref="WebHosting" />
  <constructor-arg>
    <value>
      SELECT 'true' as isSurveyComplete
      FROM futureexit.postgrad_survey
      where {0} and survey_complete = 'Y' and c_date >= sysdate - 60
    </value>
  </constructor-arg>
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="queryAttributeMapping">
    <map>
      <entry key="emplid" value="surveyId" />
    </map>
  </property>
  <property name="resultAttributeMapping">
    <map>
      <entry key="isSurveyComplete" value="isSurveyComplete" />
    </map>
  </property>
</bean>
```

Cascading Attributes

```
<bean id="localLdapMergingPersonAttributeDao" class="org.jasig.services.persondir.support.MergingPersonAttributeDaoImpl">
  <property name="usernameAttributeProvider" ref="usernameAttributeProvider" />
  <property name="merger">
    <bean class="org.jasig.services.persondir.support.merger.ReplacingAttributeAdder" />
  </property>
  <property name="personAttributeDaos">
    <list>
      <ref bean="cachingLdapAttributeSource"/>
      <ref bean="cachinguPortalJdbcAttributeSource"/>
    </list>
  </property>
</bean>
```

Attributes Summary

```
<bean id="personAttributeDao" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
  <bean id="cascadingPersonAttributeDao" class="org.jasig.services.persondir.support.CascadingPersonAttributeDao">
    <bean id="localLdapMergingPersonAttributeDao" class="org.jasig.services.persondir.support.MergingPersonAttributeDaoImpl">
      <bean id="cachingLdapAttributeSource" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
        <bean id="ldapAttributeSource" class="org.jasig.services.persondir.support.ldap.LdapPersonAttributeDao">
          ...
        </bean>
      </bean>
    <bean id="cachinguPortalJdbcAttributeSource" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
      <bean id="uPortalJdbcAttributeSource" class="org.jasig.services.persondir.support.jdbc.SingleRowJdbcPersonAttributeDao">
        ...
      </bean>
    </bean>
  </bean>
  <bean id="regexSurveyGatewayPersonAttributeDao" class="org.jasig.services.persondir.support.RegexGatewayPersonAttributeDao">
    <bean id="cachingSurveyPersonAttributeDao" class="org.jasig.services.persondir.support.CachingPersonAttributeDaoImpl">
      <bean id="surveyPersonAttributeDao" class="org.jasig.services.persondir.support.jdbc.SingleRowJdbcPersonAttributeDao">
        ...
      </bean>
    </bean>
  </bean>
</bean>
</bean>
```

Roles and Groups

Person Attribute Group Store

- Just-In-Time Groups
- Define the attributes that place a user in a group
- Very fast for answering membership queries
 - “Is John in the Engineering group?”
- Cannot answer generic membership queries
 - ~~“Who are all the Engineers?”~~

`/uportal-impl/src/main/resources/properties/groups/PAGSGroupStoreConfig.xml`

Person Attribute Group Store

- Can build basic logical and/or structures
- Exists, Equals, Regex testers
- Scales to thousands of groups and millions of users

Person Attribute Group Store

```
<group>
  <group-key>student</group-key>
  <group-name>Student</group-name>
  <group-description>Users that are students</group-description>
  <selection-test>
    <test-group>
      <test>
        <attribute-name>studentviewinportal</attribute-name>
        <tester-class>org.jasig.portal.groups.pags.testers.StringEqualsIgnoreCaseTester</tester-class>
        <test-value>Y</test-value>
      </test>
    </test-group>
  </selection-test>
</group>
```

Person Attribute Group Store

```
<group>
  <group-key>uw-madison</group-key>
  <group-name>UW-Madison</group-name>
  <group-description>User's from the UW-Madison campus</group-description>
  <selection-test>
    <test-group>
      <test>
        <attribute-name>username</attribute-name>
        <tester-class>org.jasig.portal.groups.pags.testers.RegexTester</tester-class>
        <test-value>^[^@]*$</test-value>
      </test>
    </test-group>
  </selection-test>
  <members>
    <member-key>portal-ineligible</member-key>
    <member-key>not-portal-activated</member-key>
    <member-key>portal-activated</member-key>
  </members>
</group>
```


Person Attribute Group Store

```
<group>
  <group-key>not-portal-activated</group-key>
  <group-name>Not Portal Activated</group-name>
  <group-description>UW-Madison Users that are NOT portal activated, have a layout with only the desired error message</group-description>
  <selection-test>
    <test-group>
      <test>
        <attribute-name>wisceduportalactivated</attribute-name>
        <tester-class>edu.wisc.my.groups.pags.testers.NegatedStringTester</tester-class>
        <test-value>Y</test-value>
      </test>
      <test>
        <attribute-name>username</attribute-name>
        <tester-class>edu.wisc.my.groups.pags.testers.NegatedStringTester</tester-class>
        <test-value>guest</test-value>
      </test>
      <test>
        <attribute-name>username</attribute-name>
        <tester-class>org.jasig.portal.groups.pags.testers.NegatedRegexTester</tester-class>
        <test-value>^mum-lo-.*$</test-value>
      </test>
    </test-group>
  </selection-test>
</group>
```


Person Attribute Group Store

- <test>s are AND'd together
- <test-group>s are OR'd together
- Users must be a member of ALL parent groups



Targeting Content

Distributed Layout Manager

- Operates on Layout Fragments
 - Tab or multiple Tabs with content
- Targets Layout Fragments to Groups and Users
- Fine grained controls over customization
- Users can customize only what you allow
 - Customizations are merged at login time
 - Administrators can always override customizations

Distributed Layout Manager

- Define fragments and targets in dlm.xml
 - `/uportal-impl/src/main/resources/properties/dlm.xml`
- Define content in the UI OR data files
 - UI Easier for quick prototyping
 - Data files easier for repeatability and migration

dml.xml

```
<dml:fragment name='Academics' ownerID='mum-lo-academics' precedence='90'>
  <dml:audience evaluatorFactory='org.jasig.portal.layout.dml.providers.GroupMembershipEvaluatorFactory'>
    <paren mode="OR">
      <paren mode="AND">
        <paren mode="OR">
          <attribute mode='memberOf' name='Facstaff' />
          <attribute mode='memberOf' name='Facstaff - New Hire' />
          <attribute mode='memberOf' name='Facstaff - Former Appointment' />
        </paren>
        <paren mode="NOT">
          <paren mode="OR">
            <attribute mode='memberOf' name='Users - Instructors' />
            <attribute mode='memberOf' name='Users - Advisors' />
            <attribute mode='memberOf' name='Student' />
            <attribute mode='memberOf' name='Applicant - Undergraduate' />
            <attribute mode='memberOf' name='Applicant - Graduate' />
          </paren>
        </paren>
      </paren>
      <attribute mode='memberOf' name='AT Support - East' />
    </paren>
  </dml:audience>
</dml:fragment>
```

Content Permissions - UI

User Preferences

Layout Template:Academics

Options for modifying this channel:

Move this channel to a different location

Adjust Actions Allowed by Users:



Move Channel



Delete Channel

Set Actions

Delete this channel

Cancel and return

Academics Add New Tab

Add Column Add Column

Select Column →

Add Channel

Academics Tab Messages

Add Channel

Content Permissions - Data

```
<layout username="mum-lo-academics"
  xmlns:d1m="http://www.uportal.org/layout/d1m"
  script="classpath://org/jasig/portal/io/import-layout_v3-2.crn">
  <folder ID="s1" hidden="false" immutable="false" name="Root folder" type="root" unremovable="true">
    <folder ID="s2" hidden="false" immutable="true" name="Header folder" type="header" unremovable="true">
      <channel fname="fragment-admin-exit" unremovable="false" hidden="false" immutable="false" ID="n12"/>
    </folder>
    <folder ID="s3" hidden="false" immutable="true" name="Footer folder" type="footer" unremovable="true">
    </folder>
    <folder ID="s4" name="Academics" type="regular" unremovable="false"
      d1m:deleteAllowed="false" d1m:editAllowed="false" hidden="false" immutable="false" >
      <folder ID="s5" hidden="false" immutable="false" name="Column" type="regular" unremovable="false"
        d1m:deleteAllowed="false">
        <structure-attribute>
          <name>width</name>
          <value>60%</value>
        </structure-attribute>
      </folder>
      <folder ID="s6" hidden="false" immutable="false" name="Column" type="regular" unremovable="false">
        <structure-attribute>
          <name>width</name>
          <value>40%</value>
        </structure-attribute>
      </folder>
    </folder>
  </folder>
</layout>
```

Portlet Permissions

- Portlets can be targeted to groups
- Unauthorized content is silently removed

Portlet Administration Portlet [Add to my layout](#) [Return to dashboard](#)

Select People and Groups

Who can add Academic Resources to their layout

Your Selections

- ✓ Facstaff
- ✓ Layout Owners
- ✓ Facstaff - Former Appointment
- ✓ Student
- ✓ Users - Advisors
- ✓ AT Support - East
- ✓ Applicant - Graduate
- ✓ Applicant - Undergraduate
- ✓ AT Support - Portal

Review **Cancel**

Search

Enter a name

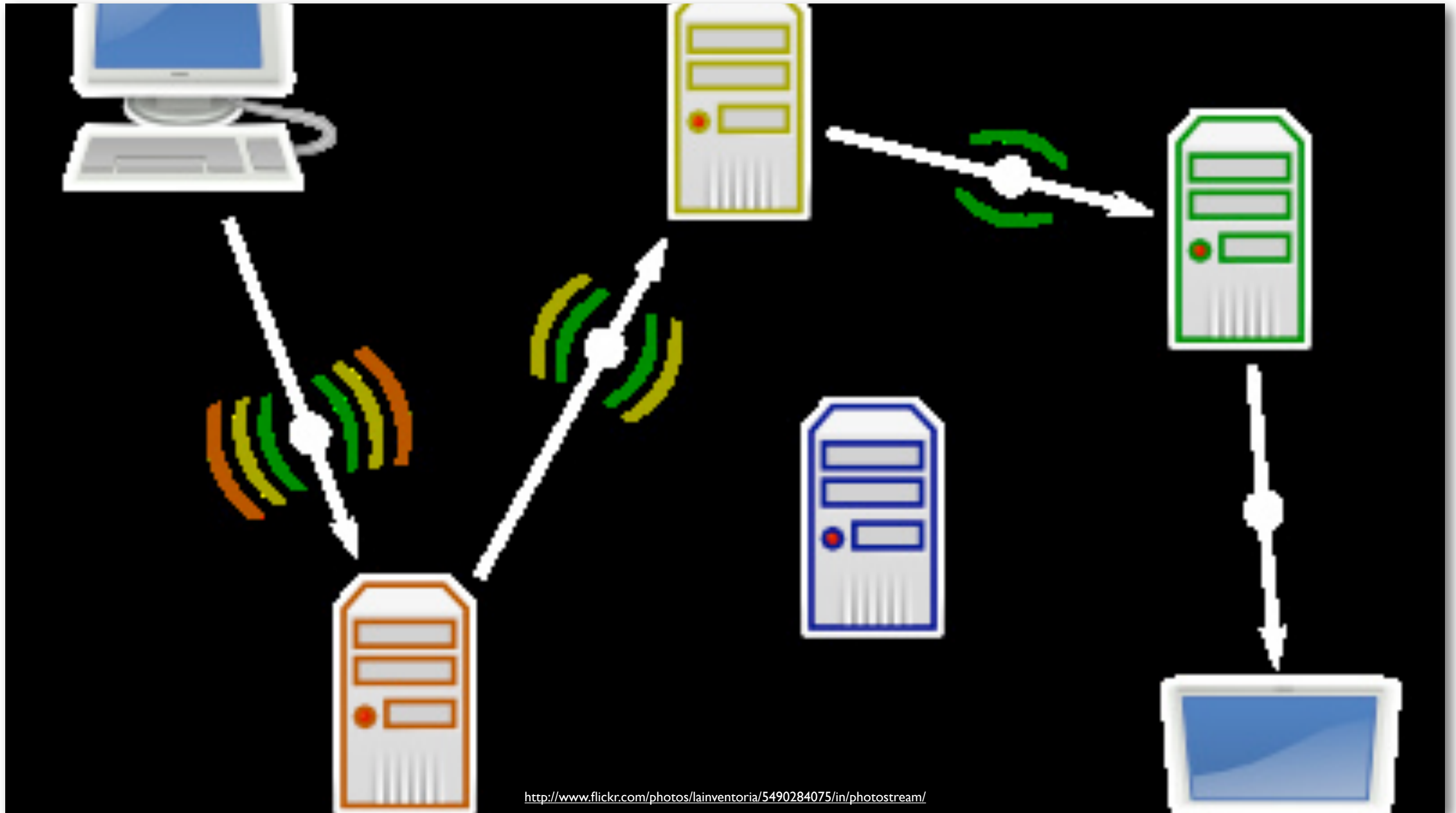
Browse

Everyone

Everyone includes:

Groups

- BusinessSchool:DigitalMeasures
- Portal System
- JoinIn Groups
- e-Reimbursement Pilot
- PAGES Root
- Guests



External Content

Remote Content Options

- IFrames
 - Very basic integration, terrible navigational behavior
- RSS/XSLT Feeds
 - Useful for generic news and data feeds
- Web Proxy Portlet
 - Advanced state-full content retrieval
 - Looks and feels like a native portlet

Web Proxy Portlet

- Pass user attributes to the targeted site
- Can do automated authentication
- Tracks navigation state and cookies for each user
- Specify which URLs to and not to proxy

Web Proxy Portlet

Edit Portlet Configuration

General Configuration	Cache Configuration	HTTP Header Configuration	Static HTML Configuration	Http Configuration
------------------------------	---------------------	---------------------------	---------------------------	--------------------

Base Url (including protocol):

Edit Url (including protocol):

Portlet URL Rewrite Masks:

Portlet URL (including protocol)	WindowState (optional)
<input type="text" value="visc.edu/req/index.asp"/>	Maximized
<input type="text" value="http://reqgenerator.wi"/>	Exclusive
<input type="text" value="http://reqgenerator.wi"/>	Exclusive
<input type="text" value="http://reqgenerator.wi"/>	Exclusive

Web Proxy Portlet

Edit Portlet Configuration

General Configuration	Cache Configuration	HTTP Header Configuration	Static HTML Configuration	Http Configuration
-----------------------	---------------------	----------------------------------	---------------------------	--------------------

HTTP Headers

Name	Value
wiscEduPVI	\${wiscdupvi}

[Back](#)

[Next](#)

[Complete](#)

[Cancel](#)

Do not use the buttons below until you have used the '<< Previous' 'Apply' or 'Next >>' button entered data.



Branding and Styling

Structure, Theme, & Skin

- Three pieces go into a finished portal UI
- Structure transforms a raw layout
 - Generic Tree -> Tabs & Columns
- Theme converts the structured data into markup
 - Tabs & Columns -> XHTML
- Skin gives it the look
 - CSS, JS, Images

Structure & Theme

- Structure & Theme are XSL Stylesheets
- Very few deployers touch the Structure transform
- Most to very minor tweaks to Theme transform

- Both are documented but large XSL documents
- Don't worry about them initially

Skinning

- Complete control over styles and images
- Skins are self-contained in a single directory
- Instructions for creating a new skin in manual
 - <https://wiki.jasig.org/display/UPM32/Create+a+New+Skin>
- Seminar on Skinning
 - Wednesday 1pm - 5pm



<http://www.flickr.com/photos/lanier67/121876068/>

Discussion

Discussion

- Timelines
 - Setup, Development, Testing, and Launch
 - Integration Points
 - Defining Audiences
 - Quantity of Content
- Hosting - Remote / Virtual
- Demo Portals

Discussion

- StudentView & CollegiateLink
- BEIS for Authentication