

Leveraging DLM Processors

JA-SIG 2009 Conference, Dallas
Monday, March 2, 2009, 2:00PM-3:00PM

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Our JA-SIG Background

- Working with uPortal for 4+ years
- First 2 years were exploring Portals in general and completing uPortal proof-of-concept
- First Production Implementation 1+ year ago



Our JA-SIG Background

- Rolled out to Incoming Students Fall 2008
- Recently Opened Portal to All Students
 - my.illinois (Urbana-Champaign Campus)
 - my.uic (Chicago Campus)
 - my.uis (Springfield Campus – in progress)
- We are using uPortal 2.6.1 with patches
- We hope to migrate to uPortal 3.x later this year



Agenda

- Structures, themes, skins. Now processors?
- How do DLM processors change things?
- What is new?
- What remains the same?
- How are DLM processors useful?



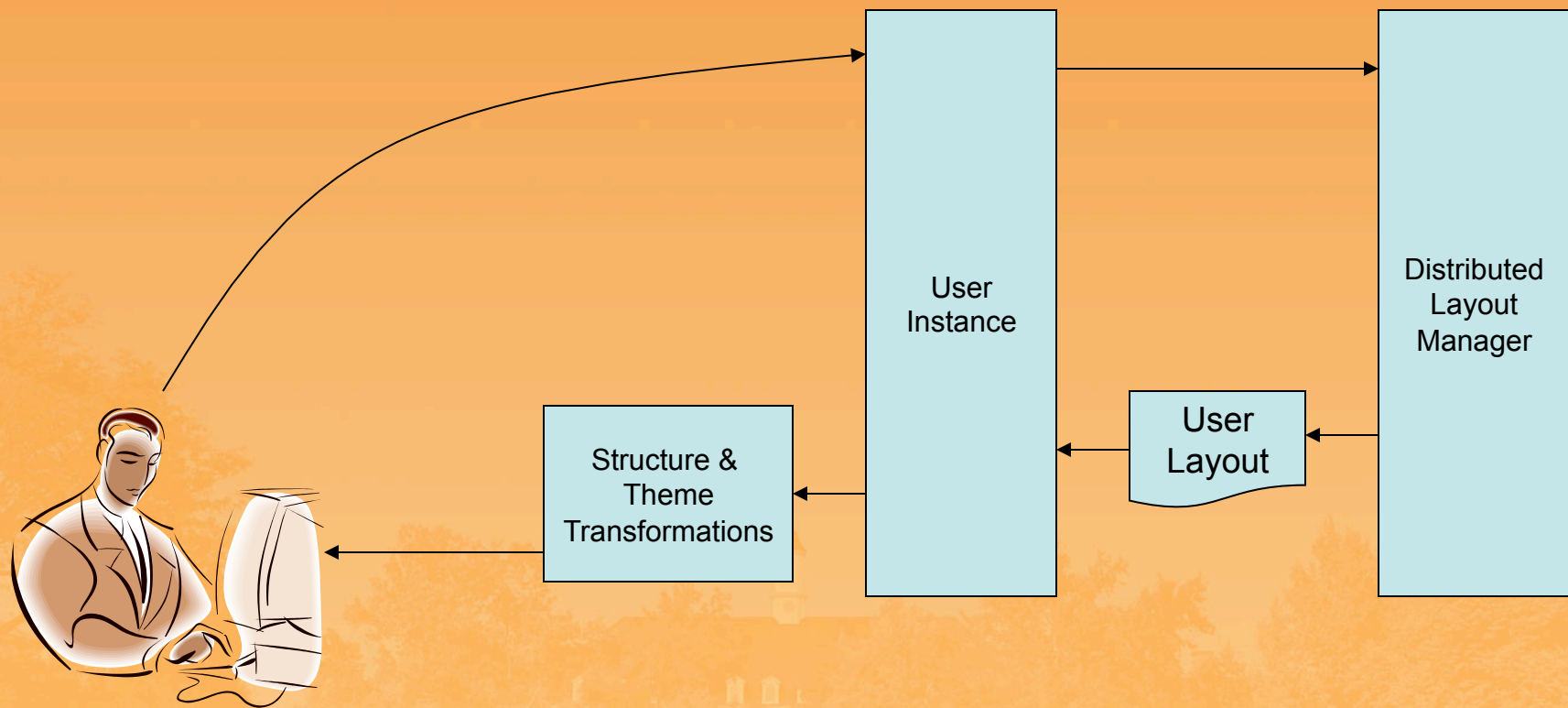
Agenda

- The rendering pipeline is very powerful and somewhat complicated. We will not cover **ALL** the pieces in this session
- However, I will highlight several pieces of the pipeline as they relate to DLM processors
- How many people are familiar with the rendering pipeline? DLM processors?



The Rendering Pipeline

(a simplified view)



You don't have to Change!

The processors simply add opportunity



uPortal layouts

- Layout pulled from database as hierarchy of folders and channels
- The structure transform filters the layout, rewriting it to be more representative of the page... Header, Navigation, Content, Footer
- The theme transform converts the filtered layout to markup like HTML or WML



Still Leverage Classic Interactions

- Communicate with layout manager to maintain state etc.
- How many people have modified the structure and/or theme XSLTs?
- How many people are familiar with these classics interactions?

```
//Set the value of structure or theme stylesheet parameter
uP_sparam={pName}&{pName}={pValue}
uP_tparam={pName}&{pName}={pValue}
//Set value(s) of structure folder or channel attribute(s)
uP_sfattr={aName}&{aName}_folderId={ID}&{aName}_value={aValue}
uP_scattr={aName}&{aName}_channelId={ID}&{aName}_value={aValue}
//Set value(s) of theme channel attribute(s)
uP_tcatr={aName}&{aName}_channelId={ID}&{aName}_value={aValue}
```



Business as Usual

- All this stuff is still good to know... it still applies
- In fact, in many cases, you still use these techniques to train the structure and theme to react to DLM processors
- If you don't use DLM processors, then it is business as usual... they are not required
- However, you should be aware of what they can do
- They may come in handy someday



They have for us!

- Accessibility very important at our university (making it usable or more usable to EVERYONE)
- Our proof-of-concept, produced an accessible theme using ALM and integrated modes
- This set an expectation with our Steering Team
- Shortly after, uPortal adopted DLM as the future direction
- This was a good (no great) decision
- But, it was a scary announcement from our standpoint



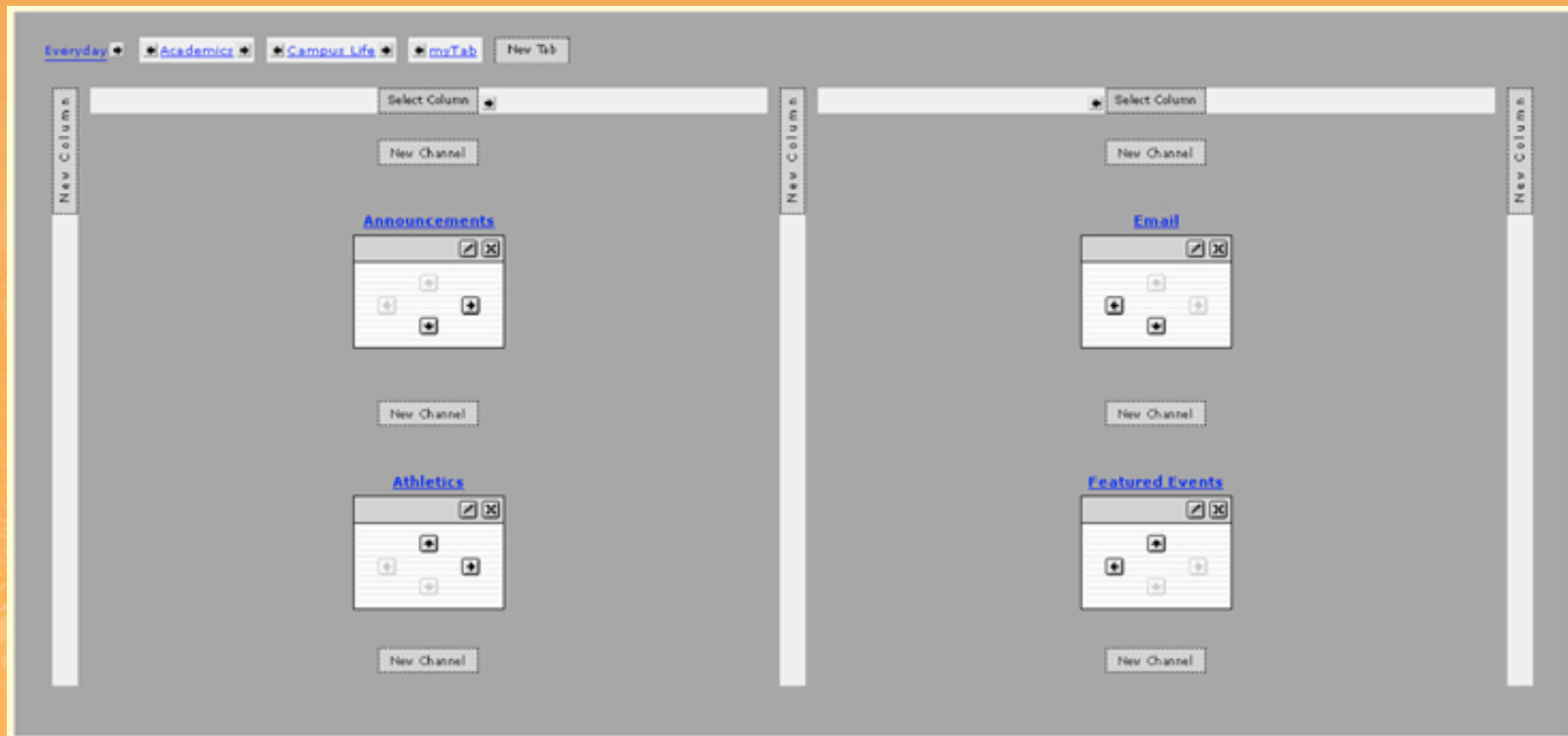
We had Work to Do

- We wanted to move to DLM to leverage the benefits
- We did not want to lose the theme development and accessibility work
- Much of which relied upon the integrated modes model, where customizations were made inline
- The user moved portlets around the screen rather than...



We had Work to Do

- The out-of-box DLM theme was not accessible and it was not at all like integrated modes



Processors to the Rescue

- DLM Processors Allowed us to accomplish this quickly
- We developed processors to support the integrated modes model
- What do I mean by Integrated Modes?



Integrated Modes Demonstration

View Mode

The screenshot shows the University of Illinois website in View Mode. The header includes the 'ILLINOIS' logo and navigation tabs: 'Welcome', 'My Home', 'I Start', 'Academics', 'Finances', and 'Campus'. Below the navigation, there are links for 'me [edit]', 'sports', and 'admin'. The main content area features a 'Illinois Campus Weather' widget for Urbana, IL, showing a current temperature of 21°F and a 3-day forecast. Below the weather widget is a 'My Email Links' section with links for Express Email, Exchange Email, Email Help, and Campus Phonebook.

Edit Mode

The screenshot shows the website in Edit Mode. A message at the top states: 'You are in edit mode. Click the "done" link next to the page name to return to view mode.' The navigation tabs are the same as in View Mode. The 'me' link is now '[done]'. The weather widget is visible but has a dashed border and a 'Add Stuff' button. Below the weather widget, there is a 'Column Width' selector with options: 30%, 40%, 50%, 60%, and 70%. The 'My Email Links' section is also visible.

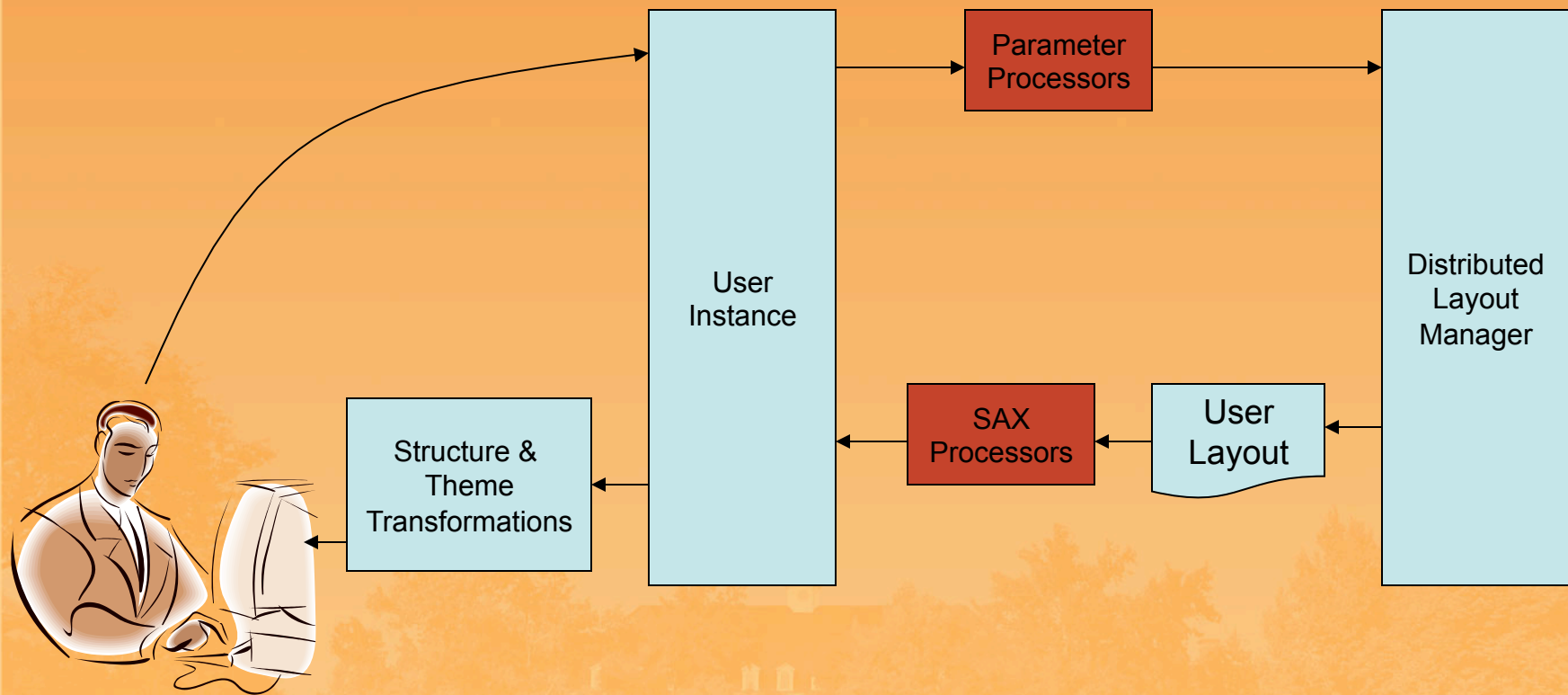
Add Mode

The screenshot shows the website in Add Mode. A message at the top states: 'You are in edit mode. Click the "done" link next to the page name to return to view mode.' The navigation tabs are the same. The 'me' link is now '[done]'. The main content area is divided into two columns. The left column has a 'Search all Categories' search box and a 'Choose a Category' list with items: 'Everything', 'Tools', 'Help', 'News', 'Campus Info', and 'Academics'. The right column has sections for 'Academic Resources', 'Administrator Impo', and 'Agricultural, Consum', each with an 'Add Now' link.



The Rendering Pipeline with Processors

(a simplified view)



So how does it work?

- **Step 1 – Implement one or more Interfaces**
 - Processors must implement `IParameterProcessor` and/or `ISAXProcessor`
 - `IParameterProcessor` is a URL handler that gives you access to current user info through the `setResources(...)` and `processParameters(...)` methods
 - `ISaxProcessor` implementations can take part in modifications to the SAX event stream to cause temporary modifications to layout using the `getCacheKey()` and `getContentHandler(...)` methods



So how does it work?

- Step 1 – Implement one or more Interfaces
 - Processors can also **ALSO** implement `IOptionalProcessor`
 - This interface must be implemented in conjunction with another DLM processor interface
 - It allows a processor to automatically remove itself from being the currently selected optional processor when it has completed its `processLayoutParameter` tasks using the `isFinished()` method
 - Otherwise, a second request has to be made to disable it



So how does it work?

- Step 2 – Reference the Implementation
 - Spring Configured in properties/dlmContext.xml
 - Fixed Processors run every time the rendering pipeline cycles (every user request to uPortal)
 - Optional Processors run only when invoked through the theme using the spring defined method key (explained on subsequent slides)

```
<!-- format -->
<beans>
  <bean id='dlmProcessingPipe'
    class="org.jasig.portal.layout.dlm.processing.ProcessingPipe
    singleton="false">
    <property name="fixedProcessors">...</property>
    <property name="optionalProcessors">...</property>
  </bean>
</beans>
```



So how does it work?

- Step 2 – Reference the Implementation
 - Configuring Fixed Processors

```
<!-- format -->  
<property name="fixedProcessors">  
  <list>  
    <bean class="fully qualified class name" singleton="false"/>  
  </list>  
</property>
```

```
<!-- sample-->  
<property name="fixedProcessors">  
  <list>  
    <bean class="edu.illinois.my.layout.dlm.processing. UserPublicationInjector"  
      singleton="false"/>  
  </list>  
</property>
```



So how does it work?

- Step 2 – Reference the Implementation
 - Configuring Optional Processors:

```
<!-- format -->  
<property name="optionalProcessors">  
  <map>  
    <entry key="some key">  
      <bean class="fully qualified class name" singleton="false"/>  
    </entry>  
  </map>  
</property>
```

```
<!-- sample-->  
<property name="optionalProcessors">  
  <map>  
    <entry key="nodeRemove">  
      <bean class="edu.illinois.my.layout.dlm.processing.NodeRemove"  
        singleton="false"/>  
    </entry>  
  </map>  
</property>
```



So how does it work?

- Step 3 – Modify the theme.xsl to call optionalProcessors

```
<!-- format -->  
<a href="uP_dlmPrc=...  
    {processorName}&uP_dlmParm_...{parmName}...=...  
    {parmValue}...>  
    clickable invokation  
</a>
```

```
<!-- sample -->  
<a class="deletePage" href="{baseActionURL}?  
    uP_dlmPrc=nodeRemove&uP_dlmParm_remove_target={@ID}"  
    title="Remove Page">  
      
</a>
```



So how does it work?

- **OR** Step 3 – Modify the structure.xsl and/or theme.xsl to react to SAX style processors that temporarily modify the layout.

```
<!-- sample -->
<xsl:template match="publications">
  <div id="publications" class="chooser-column">
    <xsl:apply-templates select="grouping/publication"/>
  </div>
</xsl:template>
```

```
<!-- sample -->
<xsl:template match="publication">
  <div class="pub-item">
    <h4><xsl:value-of select="@name"/></h4>
    <p><xsl:value-of select="@description"/></p>
  </div>
</xsl:template>
```



In Our Integrated Modes Edit Example

The screenshot shows the University of Illinois My.Illinois website interface in edit mode. At the top left is the 'ILLINOIS' logo. To the right, there are browser window controls and font size options. A blue navigation bar contains the text 'University of Illinois -- My Home -- me' and 'Hi, Timothy (Help | Logout)'. Below this is a yellow notification bar: 'You are in edit mode. Click the "done" link next to the page name to return to the regular page view.' A secondary navigation bar includes 'Welcome', 'My Home', 'I Start', 'Academics', 'Finances', 'Campus Life', and 'ITPro'. A third bar shows 'me', '[done]', 'sports', and 'admin'. The main content area is divided into two columns. The left column has a header 'Add content to this column by clicking on the "Add Stuff" link. Resize width of column by selecting a percentage size.' Below this is a 'Column Width' selector (30%, 40%, 50%, 60%, 70%) and an 'Add Stuff' link. The first widget is 'Illinois Campus Weather' for Urbana, IL, showing current conditions (17° F) and forecasts for Sun (30° | 14°), Mon (34° | 14°), and Tue (40° | 24°). The second widget is 'My Email Links' with options: Express Email, Exchange Email, Email Help, and Campus Phonebook. The right column has a similar header and 'Column Width' selector. The first widget is 'Portal Announcements' with two items: 'Send us feedback about My.Illinois!' (dated Mon, 02 Feb 2009) and 'New look, new features for My.Illinois' (dated Thu, 29 Jan 2009). The second widget is 'Campus Announcements' with the item 'New index of summer programs for youth'.



In Our Integrated Modes Edit Example

- Provided ALM style user customizations
- These are parameter style
- Require a dlmPrc request from the theme
- The processor is called before the layout is retrieved again
- Changes made are reflected when it re-renders to the user through typical cycle



In Our Add Content Example

ILLINOIS Fill Browser Window

University of Illinois -- My Home -- me HI, Timothy (Help | Logout)

You are in edit mode. Click the "done" link next to the page name to return to the regular page view.

Welcome My Home I Start Academics Finances Campus Life ITPro

me [done] sports admin

Search all Categories

🔍

Choose a Category

- Everything
- Tools
- Help
- News
- Campus Info
- Academics
- Sports

Academic Resources Links

Links and resources available to students for academic-related assistance and opportunities.

[Add Now](#)

Administrator Import Export

This applications is restricted to portal administrative staff. It allows real-time manipulation of portal configurations stored in the database.

[Add Now](#)

Agricultural, Consumer and Environmental Sciences

Headline news from the College of ACES at the University of Illinois

[Add Now](#)

AITS Job Postings

Current AITS job openings

[Add Now](#)

Alumni Association

The most up-to-date news and events from the UI Alumni Association.

[Add Now](#)

More Stuff:

[1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#) [12](#) [13](#) [14](#) [15](#) [16](#) [17](#) [18](#) [19](#) [20](#) [21](#)

myillinois2 CITES Help Desk | Feedback



In Our Add Content Example

- iGoogle like add stuff functions - publication list, category filter, and portlet search are all done with processors
- Combines SAX and Parameter style
- Publication content is injected into layout before it gets to structure transform
- Requires changes to the structure and the theme to train them how to use the new injected tags (<category>, <publication>, etc)



The Power of Open Source

- It's open source!
- You could always customize and accomplish what you needed
- Yes. But,
- Before you had to change the core of the framework
- This was a nightmare during upgrades

now it's easier...



The Power of Pluggable Open Source

- Now, you can create pluggable stand-alone extensions
- These port from one version to another in a snap
- And, like portlets we can share them



The Power of Pluggable Open Source

- NodeMoveToPreviousParent
- NodeMoveToNextParent
- NodeMoveToPreviousSibling
- NodeMoveToNextSibling
- NodeWidthSetPercent
- NodeWidthDecreasePercent
- NodeWidthEqualizePercent
- NodeWidthIncreasePercent
- UserPublicationInjector
- UserDockStateInjector
- UserDockStateFilter
- NodeEditRename
- NodeRemove
- NodeFnameZoom
- NodeAddContent
- NodeAddContainer



Important References

- The uP Architecture Overview:
<http://www.ja-sig.org/wiki/display/UPC/uPortal+Architecture+Overview>
- The DLM Administrator Guide:
<http://www.ja-sig.org/wiki/display/UPM/02+DLM+Administration+Guide>
- The uP Sandbox Integrated Modes Theme:
<http://www.ja-sig.org/issues/browse/UPT-315>
- Mark Boyd's Slides from the Denver:
<http://www.ja-sig.org/wiki/download/attachments/6063795/DlmSummer2007.ppt>



Closing

These slides will be on the conference website

Q & A

Share Experiences and Ideas

