Notes from the Performance Tuning Work Session, May 13-15, 2013, Washington DC

Jerry Neal, Indiana University, assigned to the Kuali Rice KRAD project
and Tim Bornholtz, Sigma Systems Inc.'s Kuali Student Accounts project.

Kuali Rice 2.2.4

On 5/15/13 Michael [Ivanov] updated KSA's [Kuali Student Accounts] version of Kuali Rice to 2.2.4, which is the current release. This resolved some known issues in the KSA codebase such as page sections collapsed by default and column totals are now appearing as expected.

Retrieve subcollections via AJAX

Jerry showed me how to work with the layoutManager.ajaxDetailsRetrieval to load detail rows via ajax. On Rice 2.2.4 there was a pretty serious issue where the detail row would expand correctly once and then not render correctly on subsequent displays. We debugged the code enough to see that the problem was having collections within a lighbox within a detail row.

Update codebase to Rice 2.3.0-M3

Because of the ajax detail row bug, we decided to update the KSA codebase to the current development version of 2.3.0-M3. One side benefit of this update was that Jerry showed me how to use a war [Web application ARchive] overlay so we don't need to keep the thousands of rice/krad specific files as a part of the KSA project. This should make updating to newer versions of Kuali Rice much simpler. With Michael's recommendation, we backed off to Rice 2.3.0-M2 which is more stable than the nightly build of M3.

There are still a number of issues with the rRce 2.3.0 codebase and we will need to work with the Rice team to accurately document them in their Jira so they can be resolved quickly. The previously mentioned ajax detail row bug is still present and Jerry was in communication with the developer that wrote the code to hopefully have a fix with the release of 2.3.0-M3. A few other issues were encountered and Jerry is working to get them resolved.

- The transaction details lightbox is not rendering the Uif-GridSection correctly as it was in Rice 2.2. This affects our transaction detail lightbox.
- Rice 2.3.0 adds logic to try to fix the issues when a user hits the back button in the browser. This has been an issue for quite some time and affects most all web applications in some way. The changes to rice ensure that the page is properly refreshed when the back button is pressed. One minor defect is that the page caching isn't functioning correctly and under certain circumstances all of the page artifacts are re-retrieved from the server (images, javascript, css). This is not noticeable to the user, but should be addressed by Kuali Rice.
- There is still no way within KRAD to open a lightbox via Ajax. Jerry said this should be a relatively small change to the code to implement.

A major portion of the rice 2.3.0 work is addressing the performance concerns KSA and other projects have raised. In order to benefit from these improvements we'll need to be on rice 2.3.0.

The Rice wiki page on their performance tuning page:
https://wiki.kuali.org/display/KULRICE/Rice+2.3+KRAD+Performance+Work+Planning

Breadcrumbs

With rice 2.3.0, the breadcrumbs have been completely rewritten. Many improvements are now in there that users will find beneficial.

Page and field level security

Jerry showed me how to integrate page level and field level security with KIM. All of the functionality that we may need is present in KRAD today. Adding view or edit authorization check to a page or field is similar to this:

<property name="componentSecurity.viewAuthz" value="true"/>

Rules that specify what users and groups are allowed to view this component are set up within KIM.

More examples of how to use this are in the file UifComponentsViewP9.xml within the KRAD sample app. That file contains examples for securing a whole page, a field, a collection, or specific rows and columns within a collection.

Wizard style interface

Jerry walked me through mocking up a page that moves through fields in a "wizard" style interface that we've been asking for. It is possible to open lightboxes from within lightboxes and we put together a small example of this as a proof of concept. It is also possible to use breadcrumbs within a lightbox to give more of a wizard feel, if this is something we wish to pursue then I'll follow up more with Jerry.

Rice follow up actions

The list of identified Rice action items:

- Fix for multiple ajax details request
- Fix for grid table in lightbox not appearing
- Make property for ajax retrieval of general lightbox groups (not just dialog group)
- Fix issue with retrieval of components with collection nested in a group not getting binding adjusted on component refresh

Further work on Transactions view:

- Server paging of collections
- Light table with master/detail
- Thin our view component tree
- Page load reduction

Profile KSA memory usage (likely view pooling which will be eliminated in 2.3)

Comment:

In his May 21 13:13 EDT email, Jerry Neal added the following:

Hi Tim,

  One quick thing I wanted to add in terms of performance. We talked about the page load size (minification, removing files, etc.). I wanted to see if you guys have considered adding tomcat compression for your test servers? With compression, a page of size 2.7mb goes down to 191kb for example. You can do the same with the minified JS which takes it down to about 274kb (and this is including every plugin KRAD has to offer).

Thanks,

Jerry