

# Rice 2.3 KRAD Performance Work Planning

## Goals

For 2.3, a focused effort on KRAD will be undertaken to accomplish the following goals:

1. Achieve exceptional performance for all views, based on benchmarks set by current KRAD applications
2. Obtain performance from our test servers that is reflective of the application
3. Establish QA processes for insuring performance stays within benchmarks as new development occurs

**Once performance metrics and benchmarks are collected they will be documented and used to gauge progress. After each phase of work a new set of performance metrics will be collected.**

## Top Bottlenecks

Tuning needs to occur both with server side and client side code. A good amount of previous profiling has already been done to identify the bottlenecks server side:

### Server Side

- Spring bean creation (View)
- Expression Evaluation
- Cloning
- Template Invocation



The majority of tasks will focus on lowering the costs of these functions. Also, the performance in these areas degrades quickly when using collections. Therefore initial efforts will focus on views with collections (although improvements here should bring improvements for non-collection views).

The major bottlenecks with client side code have not been identified yet. Therefore the first priority here will be to identify those and then explore potential fixes.

## Work Breakdown

Performance Data Collection
The QA team will collect benchmark data from KRAD applications that will be used to guide the performance effort. In addition, the KRAD team will work with other applications to determine where the bottlenecks are and verify they are accounted for in the work plan.
<b>Complete?</b>

## Server Tuning Phase 1

Jira	Description	Completed?
KULRICE-8431 - Data cannot be retrieved due to an unexpected error	Perform expression function setup once per lifecycle	
be retrieved due to an unexpected error	Optimize template invocation	In Progress
be retrieved due to an unexpected error	Research string template method for global use	In Progress
be retrieved due to an unexpected error	Thin out view component graph	
be retrieved due to an unexpected error	Reduce object creation in collections	Research Done, Holding on Impl
be retrieved due to an unexpected error	Server paging of collections	In Progress, for RC1
be retrieved due to an unexpected error	Improve Cloning Performance, Reduce Cloning	In Progress, for RC1
be retrieved due to an unexpected error	Remove view pooling and optimize Spring bean creation	Work complete, needs patch applied, for RC1

## Client Tuning Phase 1

Jira	Description	Completed?
be retrieved due to an unexpected error	Profile script execution to identify top bottlenecks	✓
be retrieved due to an unexpected error	Global handler for disclosure content	✓
be retrieved due to an unexpected error	Dirty field rewrite	✓
be retrieved due to an unexpected error	Investigate the feasibility and implement aaData for other richTable based tables other than LightTable	✓
be retrieved due to an unexpected error	Avoid running scripts on non-visible content	✓
be retrieved due to an unexpected error	Script logic performance pass	
be retrieved due to an unexpected error	Validation framework improvement to cut data that is determined to be default	✓
be retrieved due to an unexpected error	Validation framework improvement for handling collections differently	✓
be retrieved due to an unexpected error	Cut marker spans when not used	

## Performance Monitoring

Jira	Description	Completed?
	Create automated tests against slow views	In Progress
	Setup monitoring and alerts in AppDynamics	In Progress
be retrieved due to an unexpected error	Document performance best practices for applications to follow	

## Test Environments

Jira	Description	Completed?
be retrieved due to an unexpected error	Profile Kitchen Sink pages using App Dynamics	In Progress

## Consulting

Work with consultants to fine tune and determine optimal deployment configuration.

Complete? 

## Server Tuning Phase 2

Jira	Description	Completed?
be retrieved due to an unexpected error	Research multi-threading in lifecycle	
b ...ted error ...ta ... due to an... unexpected error	Apply contributed performance patches	
b ...ted error ...ta ... due to an... unexpected error		
b ...ted error ...ta ... due to an... unexpected error		
be retrieved due to an unexpected error		
be retrieved due to an unexpected error	Add caching to KRAD services where possible	
be retrieved due to an unexpected error	Remove initial build of table details	
be retrieved due to an unexpected error	Add options to disable lifecycle features	
be retrieved due to an unexpected error	View lifecycle code optimization	
be retrieved due to an unexpected error	Reduce size of response (optimize markup)	
be retrieved due to an unexpected error	JVM Tuning	
be retrieved due to an unexpected error	Documentation	

## Scheduling

