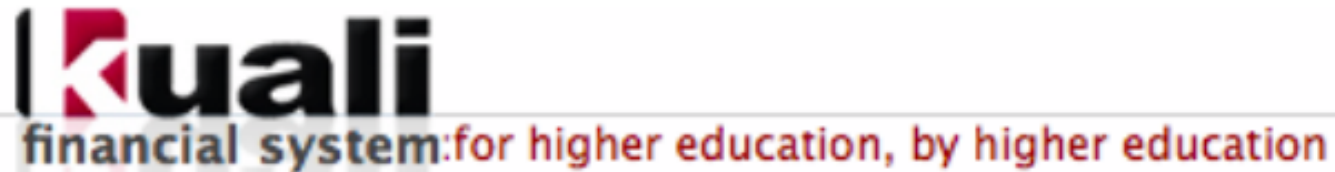


Continuous Integration

(Testing, Packaging, Deployment, EC2, Twitter, Jira, and SVN BFFs)



Kuali Financial

Overview

- Problems during Implementation Development
- Introduction to Continuous Integration (CI)
- University of Arizona CI Process
- Notification
- Testing
- Virtualized Infrastructure (Amazon EC2)
- Kuali in the Cloud
- Questions and Comments

Problems with Implementation Development

- Problems can be introduced from many source (Kuali, UA, rSmart, etc...)
- Problems can be in any part of the development process (ie., Packaging)
- Become aware of problems too late in the process

Continuous Process

Continuous Integration : Introduction

- Build system automation
 - Tests
 - Packaging
 - Building
 - Deploying
 - Notifications
 - Versioning
- A practice of the agile development methodology
 - Agile: the ability to change direction
 - Early warning system
- The main users are developers

UA CI Process

- Inception: Kuali KFS and UA KFS source code merge
- Build/Test
- Packaging
- Deployment: UA performs this manually
- Conversion: Extract Transform Load of data from UA Legacy FRS

CI: Notification

- Twitter
 - Test results
 - Deployment updates
 - Source code inception
- Email
 - SVN Changes
 - DB Diff Reports
 - Test Failures
- Jira
 - Add comment to Jira task for successful build
- IM
- RSS
- CI Web Interface

Testing

- Integrated Testing Tools
 - JUnit / HtmlUnit
 - Surefire Reports
 - Code Coverage
 - Selenium
- Performance Testing
- Testing Environment Management
 - Needs to be sanitized
 - Scalable, flexible, and low-maintenance

Virtualized Infrastructure

Visualized Infrastructure

- Amazon Web Services (AWS)
 - S3 : Simple Storage Service
 - EC2 : Elastic Compute Cloud
 - AMI : Amazon Machine Images
 - EBS : Elastic Block Storage
 - Snapshot very easily
- Perfect fit for test environments
 - Flexible
 - API : Script creation and destruction of VMs
 - Root access to VMs, Security interface
 - High Availability
 - Scalable
 - Illusion of unlimited resources
 - Cost Benefit

Kuali's future in the Cloud

- Hudson and Continuum in the Cloud
 - Add CI Executor nodes when needed.
 - Selenium
- Test Environments
 - Create environments as needed.
 - Isolate each environment
- Clustered Testing infrastructure

Questions and Comments

- Rich Wolski - Professor in the Computer Science at the University of California, Santa Barbara
Intorodution to Cloud Computing and Eucalyptus .
<http://video-jsoe.ucsd.edu/asx/Wolski.asx>