Crucible

Code Freeze 2012
Jan 12, 2012
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Agenda

● Why a Code Review Tool?
● Introduction to FishEye
● Introduction to Crucible
  • What it is / How it works (screenshots)
  • Integration with JIRA
● Effective Code Reviews
● What do you mean by “code”?
● Open Source Alternatives to Crucible
Why a Code Review Tool?

- We have all kinds of tools for this (static analysis)
  - Lots that can't be tested (clean code)
  - Doesn't mentor / increase domain knowledge
  - Doesn't find opportunities for reuse

- Formal Reviews
  - Printed source / shared machine
  - Co-located / transient discussion
  - Slow

- Pair Programming
  - Co-located / Transient Discussion
  - 1 person with 1 person
Introduction to FishEye

- Web-based view of your VCS (++)
- Atlassian product...not open source
- FishEye makes Crucible easier to use, technically not required
  - Single Repository / ChangeSet model
- FishEye offers...
  - Scans / monitors repositories
  - ChangeSets / Diffs / Lines of Code and entities/links
  - Activity Stream / Watches
  - Search, Charts, REST API
- Integrations
  - FishEye ChangeSets tied to JIRA issue (source tab)
  - Code Review activity included in FishEye activity
Introduction to Crucible

• Web–based Code Review Tool
• Atlassian product...not open source
• Roles in a review
  • (the) Author, (a) Reviewer, (the) Moderator
  • Reviewers and Moderator are optional
• Workflows for reviews
  • Self–Review (w/o Reviewers or Moderator)
  • One–to–One / One–to–Many (w/o Moderator)
  • Moderated
    • Author creates, Moderator closes
Code Reviews

- Create a Review
  - Add content to the Review
    - What to review
      - Patch file, ChangeSets, Files in repositories, Attachment, Snippet
      - Defaults to your own ChangeSets in reverse order
    - How much to review
      - Whole file, Diffs, Diffs since last review, Diffs since a revision
  - Invite Reviewers
    - Crucible offers suggestions
    - Can include external folks (given setup)
- Start the Review
  - Emails all Reviewers
  - Adds activity to the FishEye Activity Stream
Code Reviews

Edit Review Details TEST-54

Project: Testing Project
Title: Quick Review for Compliance

Author: Edwin Dawson
Moderator: Edwin Dawson

Reviewers: Enter user name
Suggest Reviewers... □ Allow anyone to join

Geoff Crain

Objectives:
A spot check for compliance purposes.
Please ensure you add an acceptance test to your review comments.

Due Date:
Linked Review: □ Link
Linked Issue: □ Link

Add Content □ Abandon Review □ Start Review □ Done
Code Reviews

Add Content to Review TEST-53

- **Browse Changesets**
  - Browse recent changes for revisions to add to this review

- **Explore Repositories**
  - Use a directory tree to find files

- **Search for Files**
  - Use Crucible's search to find revisions to add to this review

- **Suggest files**
  - Get Crucible to suggest changes that can be added to this review

- **Pre-commit**
  - Upload a patch file to be reviewed - diffs of files will be extracted

- **Attachments**
  - Upload a file to be reviewed
Code Reviews

- Perform the Review
  - Dashboard to show your reviews
  - Add comments to
    - Whole review
    - A ChangeSet
    - A particular revision
    - Source (Lines of code)
  - Any one can reply / Threaded discussion
  - Can save Draft comments (must deal with at close)
  - Top-level comments can be flagged as defects
    - Defects get suggested action / categorization
  - Tracks progress – based on # of items / time
    - Can mark items as done
Code Reviews

Dashboard

My Reviews

Inbox (12)
- To Review (4)
- To Summarize (1)
- In Draft (7)
- Require My Approval (0)

Outbox (0)
- Out For Review (0)
- Completed (0)

Archive (5)
- Closed (5)
- Abandoned (0)

My Snippets

My Open Snippets (1)
My Snippets (1)

Committer Mappings
0 committer mappings

Today

Joe
- Re: CR-FE-5416 replied to Adam Ahmed
  hmmm - good question.

Seb Ruiz
- Re: CR-FE-5385 replied to Seb Ruiz
  I fixed the one actual breakage

Adam Ahmed
- Re: CR-FE-5416 commented on review
  The bug was that edges would trace back to the focused changset, but would continue the current path, even if we already found a known unrelated changset.

Also, my path wasn't storing the traversed path correctly, so sometimes the wrong edge would be marked as related/unrelated, and duplicate changsets would show up in the path.

- Re: CR-FE-5416 replied to Joe
  Yeah I could do that. How does that work if this is going into a plugin?
Code Reviews

[Image of a code review interface]
Code Reviews
Code Reviews

- Complete the Review (Reviewers)
  - Warnings about unread items
  - Draft comments – publish or discard
  - Summary notes
  - Emails / Activity
  - Can still go back in until Review is closed

- Summarize/Close the Review
  - This is either Author or Moderator
  - Summary notes
  - Emails / Activity
  - Can still go back in until Review is closed
Snippets and Reports

- **Snippets**
  - Simple “paste–bin” functionality
  - Any one can comment, reply, raise defect
  - All participants notified
  - Appears in Activity stream
  - Does not need to be code – Ideas? Designs?

- **Reports**
  - Review Blockers Report
  - Review Coverage Report
Integration with JIRA

• From JIRA
  • Can link/create a review from JIRA
  • Automatically picks up ChangeSets (FishEye)
  • Configures review dates based on JIRA/GH
  • Issue is not resolved until review is done

• From Crucible
  • Comments flagged as defects become subtasks of parent issue
  • Can manage (resolve) the subtask
  • Report – JIRA Blockers

• Crucible also integrates with other APM
Effective Code Reviews

- From Brendan Humphreys
  - Team Lead for FishEye and Crucible
  - #1 – Ego-Free Reviews
    - It's about the code, not the people
  - #2 – Don't be a Pedant
    - Use tools for style, common errors
  - #3 – Find Problems / Questions / Scenarios
    - Don't find solutions
  - #4 – Embrace Feedback
    - Everything is a contribution
- Limit number of Reviewers
- Encouraging feedback means faster reviews
What do you mean by “code”?  

- If you are doing ATDD/BDD  
  - Imagine comments/review of stories!  
  - With actual customers!!  
  - That might be remote even?!  
- If you are doing system cm (Chef/CFEngine)  
  - Imagine comments/review of files!  
  - Before you push it out to run!!  
  - Or maybe test it even?!  
- Having code review tools in place makes this easier for these new teams/practices
Alternatives to Crucible

- Mondrian/Rietveld/Gerrit/Malvich
  - Forks from one another for VCS support
  - Patch reviews only(?) – Google
  - Mondrian (Perforce) – used by Google
  - Rietveld (svn, hg?, git?) – FOSS / runs on GAE
  - Gerrit (git) – fork from Rietveld
  - Malvich (TFS) – fork from Rietveld
- ReviewBoard – django-based
- CodeStriker – perl-based
- Jupiter – more code comprehension(?)
Q/A – Thank You!