Automating (almost) everything using Git, Gerrit, Hudson and Mylyn

Ryan Slobojan

Tasktop

Audience Participation Time!

Who has used:

- Git
- Gerrit
- Hudson (not Jenkins)
- Jenkins
- Eclipse
- Mylyn

Ingredients

- Git
- Gerrit
- Hudson (or Jenkins)
- Mylyn
- EGit
- Mylyn Builds connector (Hudson)
- Mylyn Reviews connector (Gerrit)

Why Git?

- Distributed Version Control System (DVCS)
- Open Source
- Airplane-friendly
- Push and pull
- Branching and merging

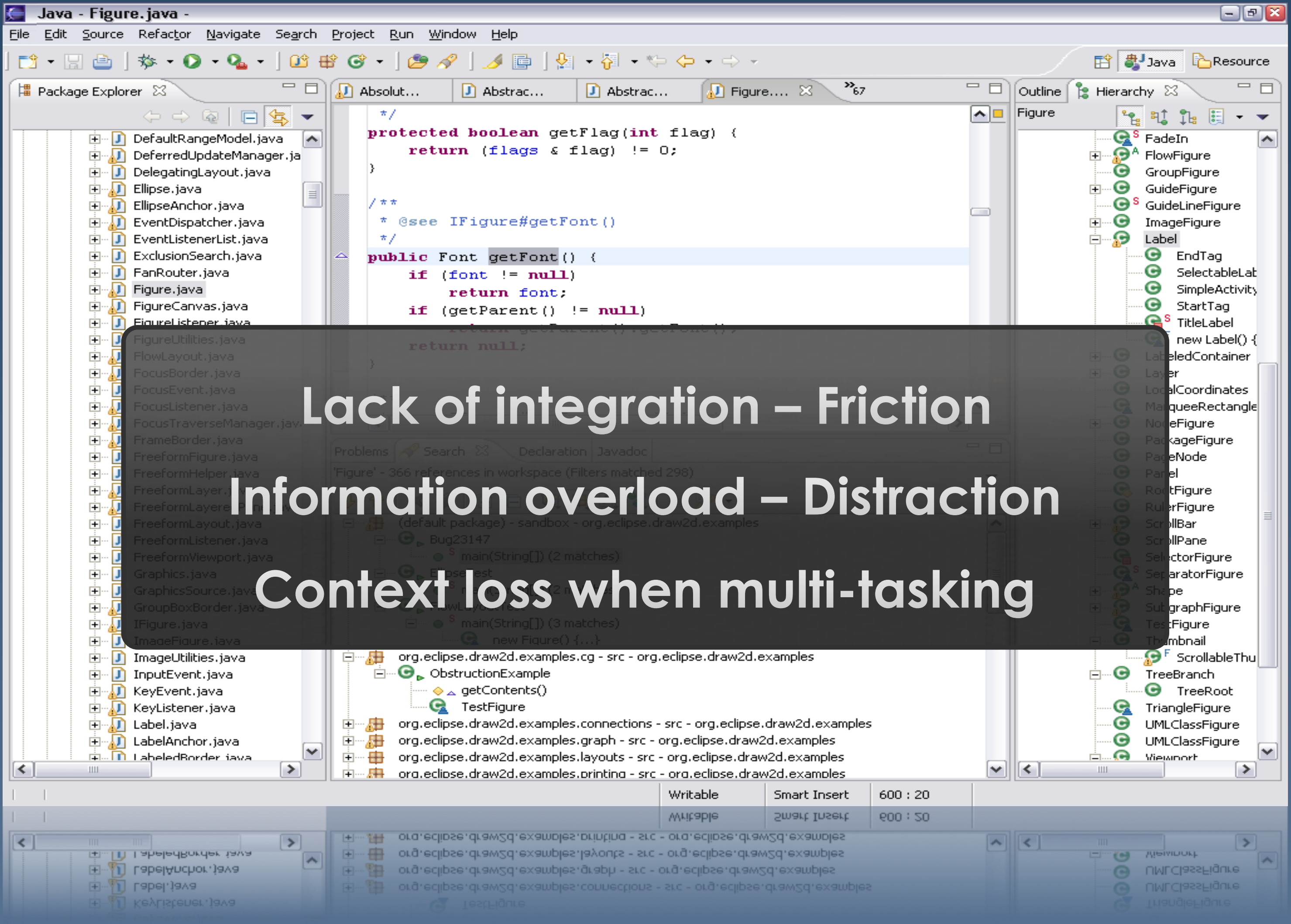
Why Hudkins?

- Continuous Integration
- Open Source
- Large community
- Lots of plugins

Why Gerrit?

- Code reviews for Git
- Open Source
- Workflow
- Access control

[illegible]



Java - Figure.java -

```
    */
protected boolean getFlag(int flag) {
    return (flags & flag) != 0;
}

/**
 * @see IFigure#getFont()
 */
public Font getFont() {
    if (font != null)
        return font;
    if (getParent() != null)
        return getParent().getFont();
    return null;
}
```

Package Explorer: DefaultRangeModel.java, DeferredUpdateManager.ja, DelegatingLayout.java, Ellipse.java, EllipseAnchor.java, EventDispatcher.java, EventListenerList.java, ExclusionSearch.java, FanRouter.java, Figure.java, FigureCanvas.java, FigureListener.java, FigureUtilities.java, FlowLayout.java, FocusBorder.java, FocusEvent.java, FocusListener.java, FocusTraverseManager.java, FrameBorder.java, FreeformFigure.java, FreeformHelper.java, FreeformLayer.java, FreeformLayeredPane.java, FreeformLayout.java, FreeformListener.java, FreeformViewport.java, Graphics.java, GraphicsSource.java, GroupBoxBorder.java, IFigure.java, ImageFigure.java, ImageUtilities.java, InputEvent.java, KeyEvent.java, KeyListener.java, Label.java, LabelAnchor.java, LabeledBorder.java

'Figure' - 366 references in workspace (Filters matched 298)

```
(default package) - sandbox - org.eclipse.draw2d.examples
    Bug23147
        main(String[]) (2 matches)
    ...
        main(String[]) (3 matches)
            new Figure() {...}
org.eclipse.draw2d.examples.cg - src - org.eclipse.draw2d.examples
    ObstructionExample
        getContents()
    TestFigure
org.eclipse.draw2d.examples.connections - src - org.eclipse.draw2d.examples
org.eclipse.draw2d.examples.graph - src - org.eclipse.draw2d.examples
org.eclipse.draw2d.examples.layouts - src - org.eclipse.draw2d.examples
org.eclipse.draw2d.examples.printing - src - org.eclipse.draw2d.examples
```

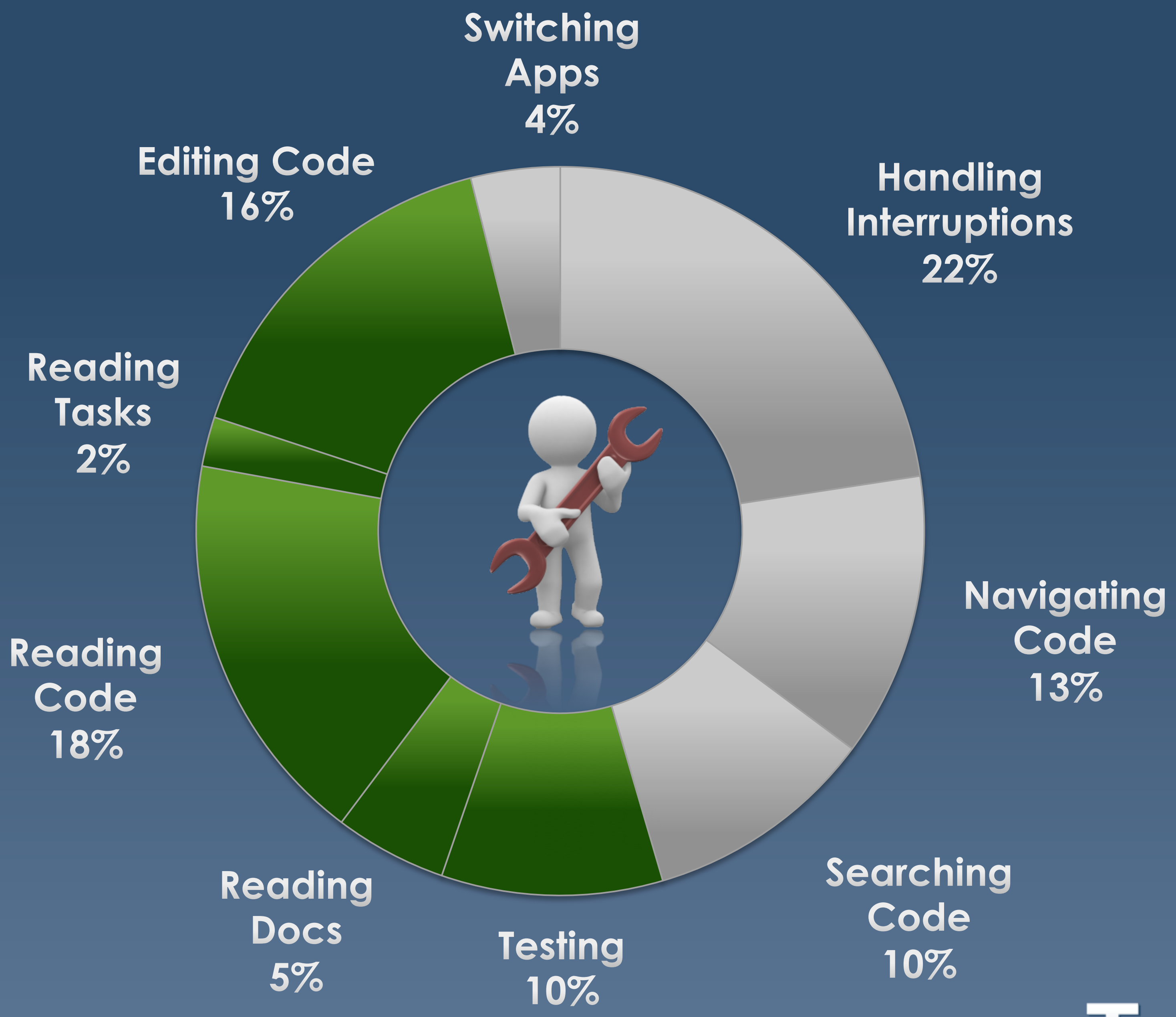
Hierarchy: Figure — FadeIn, FlowFigure, GroupFigure, GuideFigure, GuideLineFigure, ImageFigure, Label (EndTag, SelectableLabel, SimpleActivity, StartTag, TitleLabel, new Label() {), LabeledContainer, Layer, LocalCoordinates, MarqueeRectangle, NodeFigure, PackageFigure, PageNode, Panel, RootFigure, RulerFigure, ScrollBar, ScrollPane, SelectorFigure, SeparatorFigure, Shape, SubgraphFigure, TestFigure, Thumbnail (ScrollableThu), TreeBranch (TreeRoot), TriangleFigure, UMLClassFigure, UMLClassFigure, Viewport

Writable | Smart Insert | 600 : 20

Lack of integration – Friction

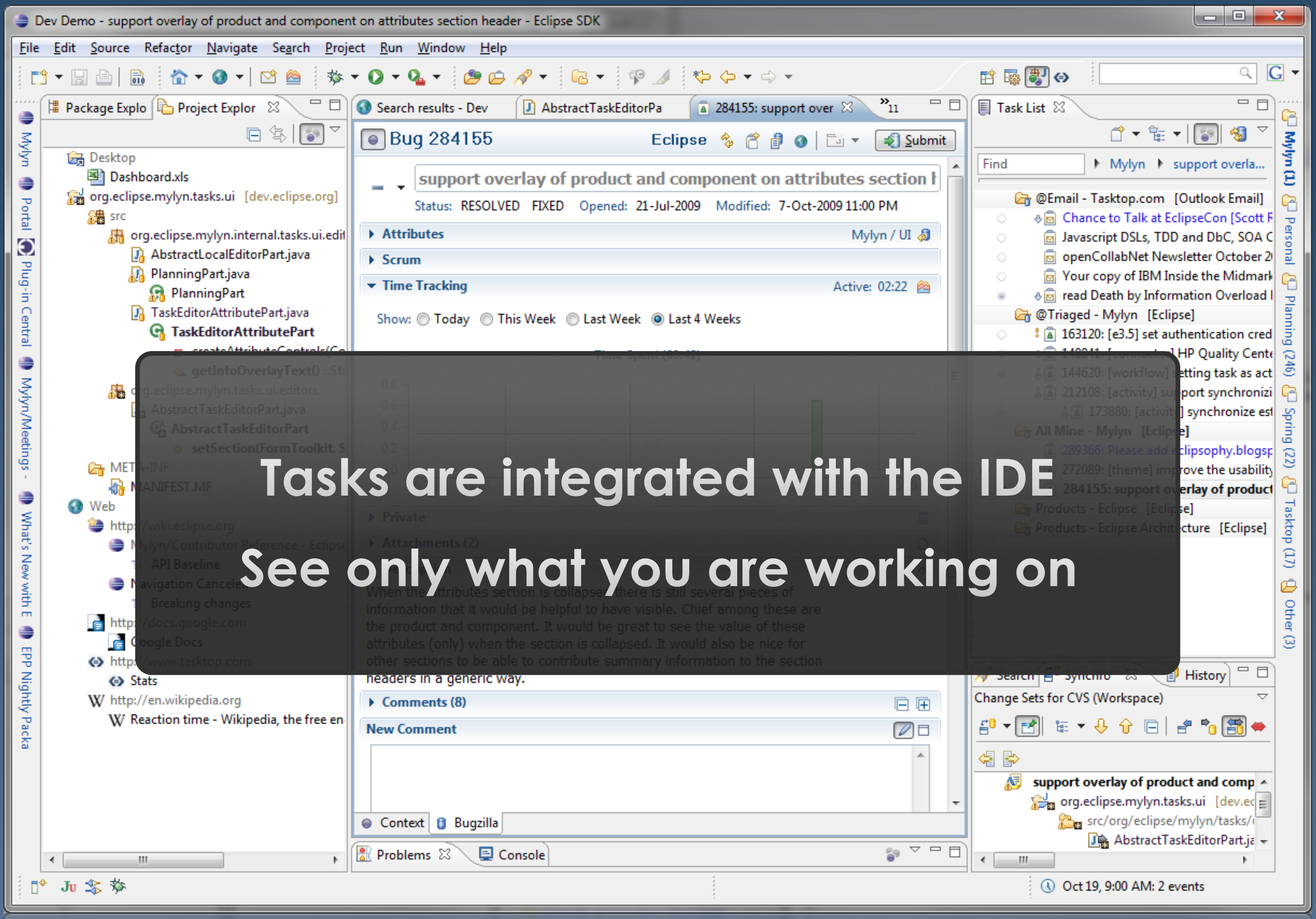
Information overload – Distraction

Context loss when multi-tasking



Source: Ko, A. et al. IEEE TSE, 2006

Task-Focused Interface


Dev Demo - support overlay of product and component on attributes section header - Eclipse SDK
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explo
Project Explor
Desktop
Dashboard.xls
org.eclipse.mylyn.tasks.ui [dev.eclipse.org]
src
org.eclipse.mylyn.internal.tasks.ui.edit
AbstractLocalEditorPart.java
PlanningPart.java
PlanningPart
TaskEditorAttributePart.java
TaskEditorAttributePart
Web
Stats
http://en.wikipedia.org
Reaction time - Wikipedia, the free en
Search results - Dev
AbstractTaskEditorPa
284155: support over
Bug 284155
Eclipse
Submit
support overlay of product and component on attributes section
Status: RESOLVED FIXED Opened: 21-Jul-2009 Modified: 7-Oct-2009 11:00 PM
Attributes
Mylyn / UI
Scrum
Time Tracking
Active: 02:22
Show: Today This Week Last Week Last 4 Weeks
Comments (8)
New Comment
Context
Bugzilla
Problems
Console
Task List
Find
Mylyn
support overla...
@Email - Tasktop.com [Outlook Email]
Chance to Talk at EclipseCon [Scott F
Javascript DSLs, TDD and DbC, SOA C
openCollabNet Newsletter October 2
Your copy of IBM Inside the Midmark
read Death by Information Overload I
@Triaged - Mylyn [Eclipse]
163120: [e3.5] set authentication cred
History
Change Sets for CVS (Workspace)
support overlay of product and comp
org.eclipse.mylyn.tasks.ui [dev.ec
src/org/eclipse/mylyn/tasks/
AbstractTaskEditorPart.ja
Oct 19, 9:00 AM: 2 events
Mylyn (1)
Personal
Planning (246)
Spring (22)
Tasktop (17)
Other (3)

When the attributes section is collapsed there is still several pieces of information that it would be helpful to have visible. Chief among these are the product and component. It would be great to see the value of these attributes (only) when the section is collapsed. It would also be nice for other sections to be able to contribute summary information to the section headers in a generic way.

Tasks are integrated with the IDE

See only what you are working on

Over 60 ALM Tools Supported

ALM

- HP ALM / QC
- IBM RTC
- ClearQuest
- Microsoft TFS
- Rally
- ThoughtWorks
- Accept
- CollabNet
- VersionOne
- Atlassian
- Polarion
- Bugzilla
- Trac
- Mantis
- Smart Bear
- …

SCM

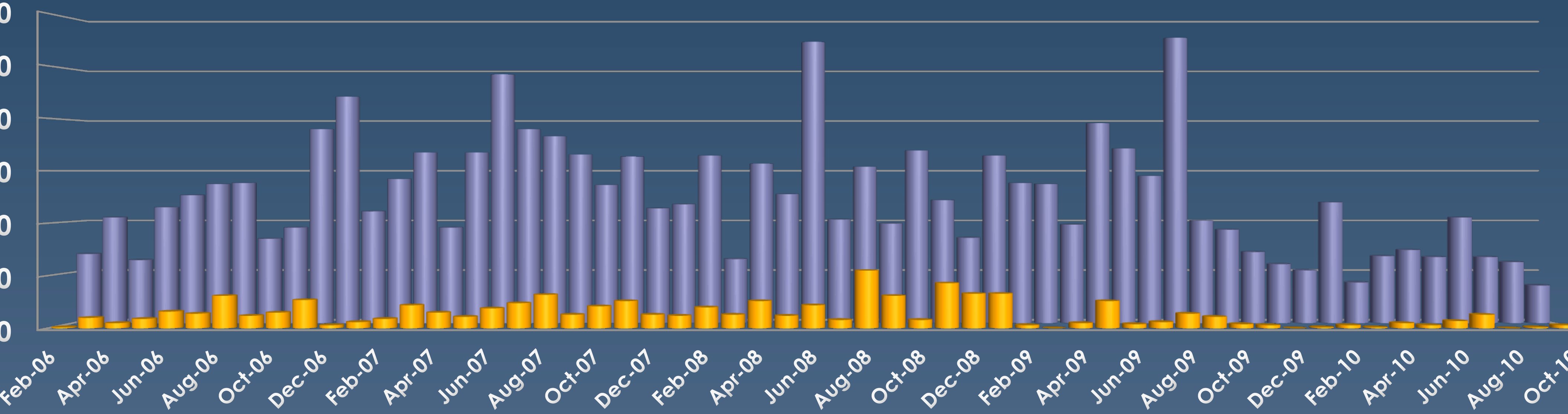
- CVS
- Subversion
- Git
- ClearCase
- Perforce
- …

Build

- Go
- Bamboo
- Hudson/Jenkins

Tasktop® CERTIFIED

Why integrate these tools?

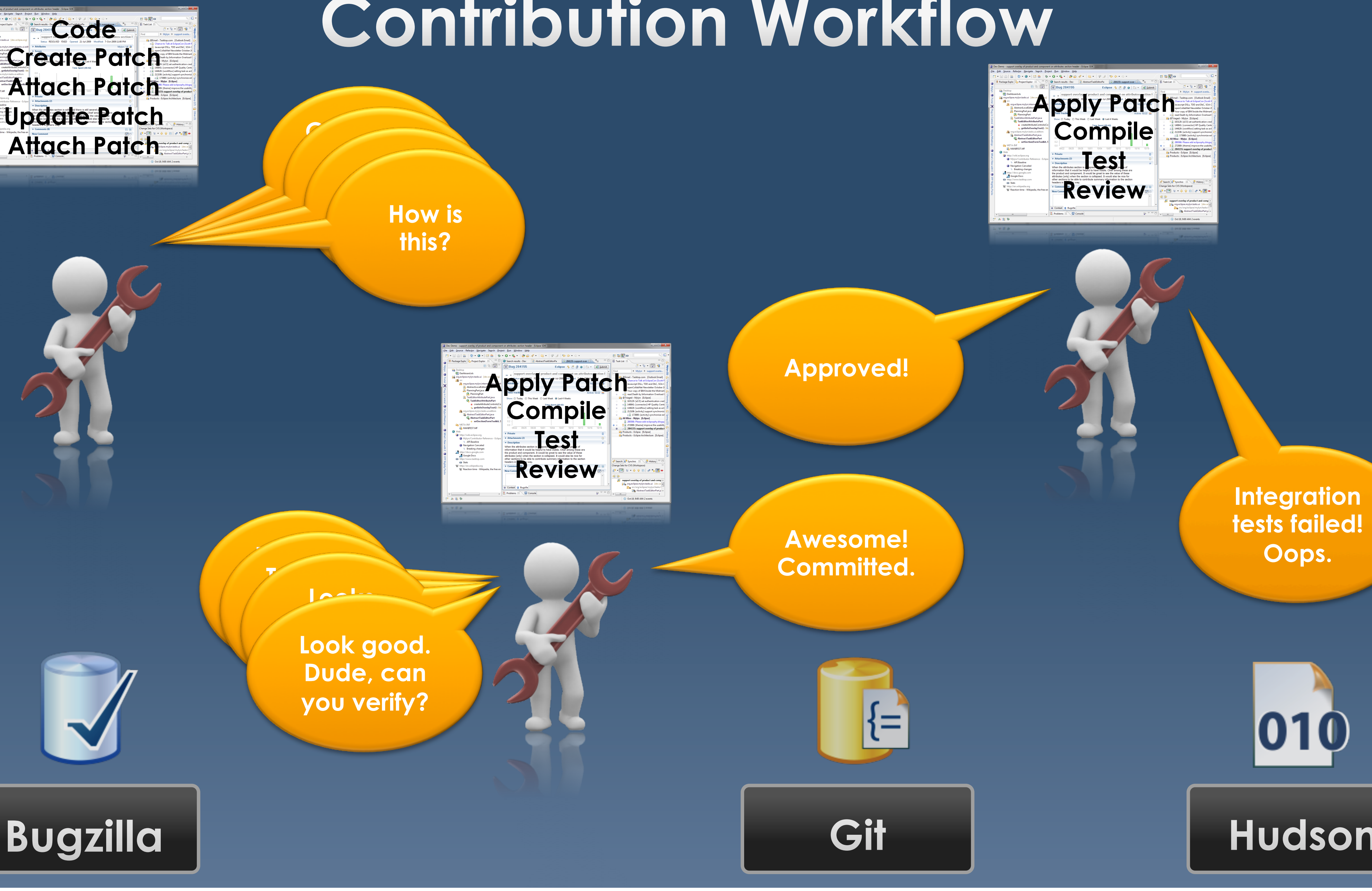


Mylyn Bugzilla

🟧 # Patches Applied   🟪 Resolved

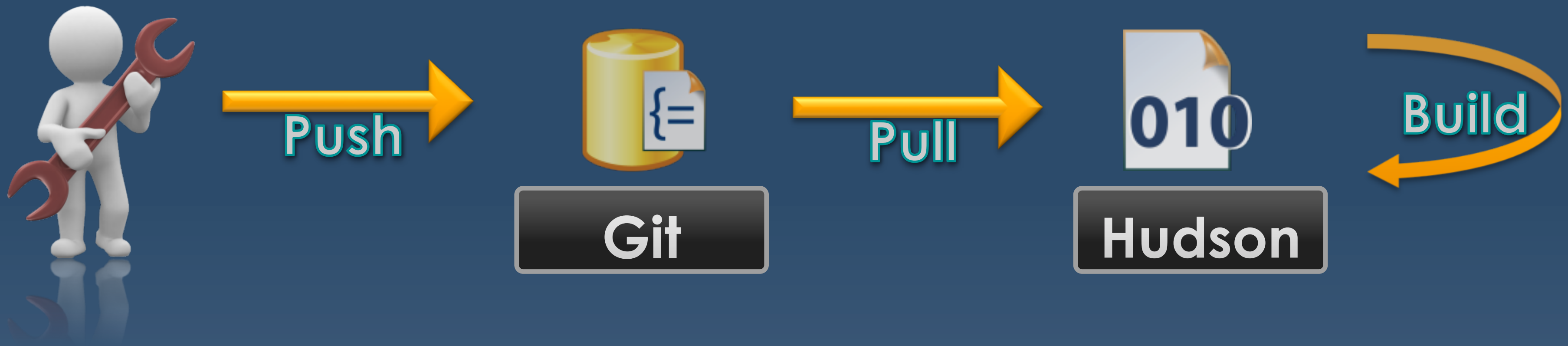
Source: Eclipse.org

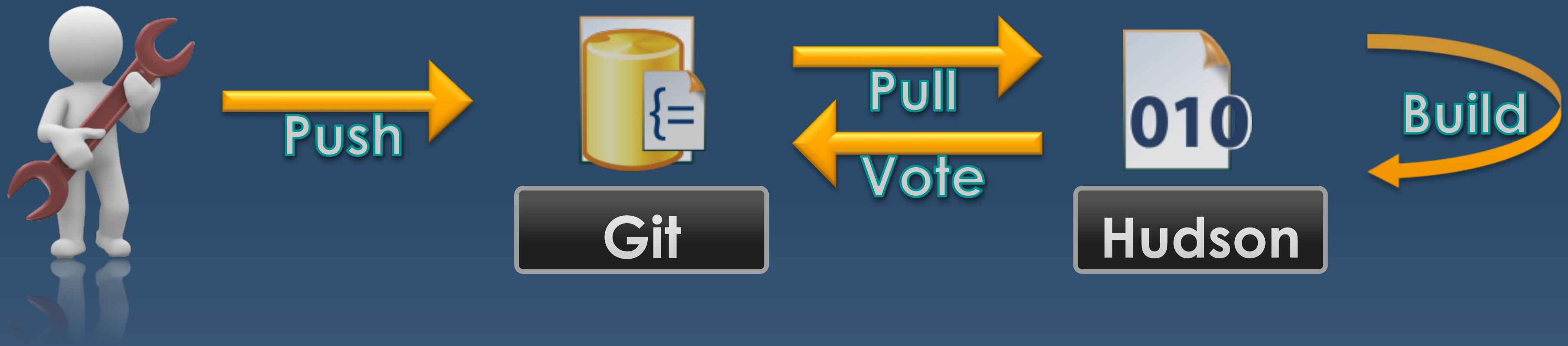
Contribution Workflow



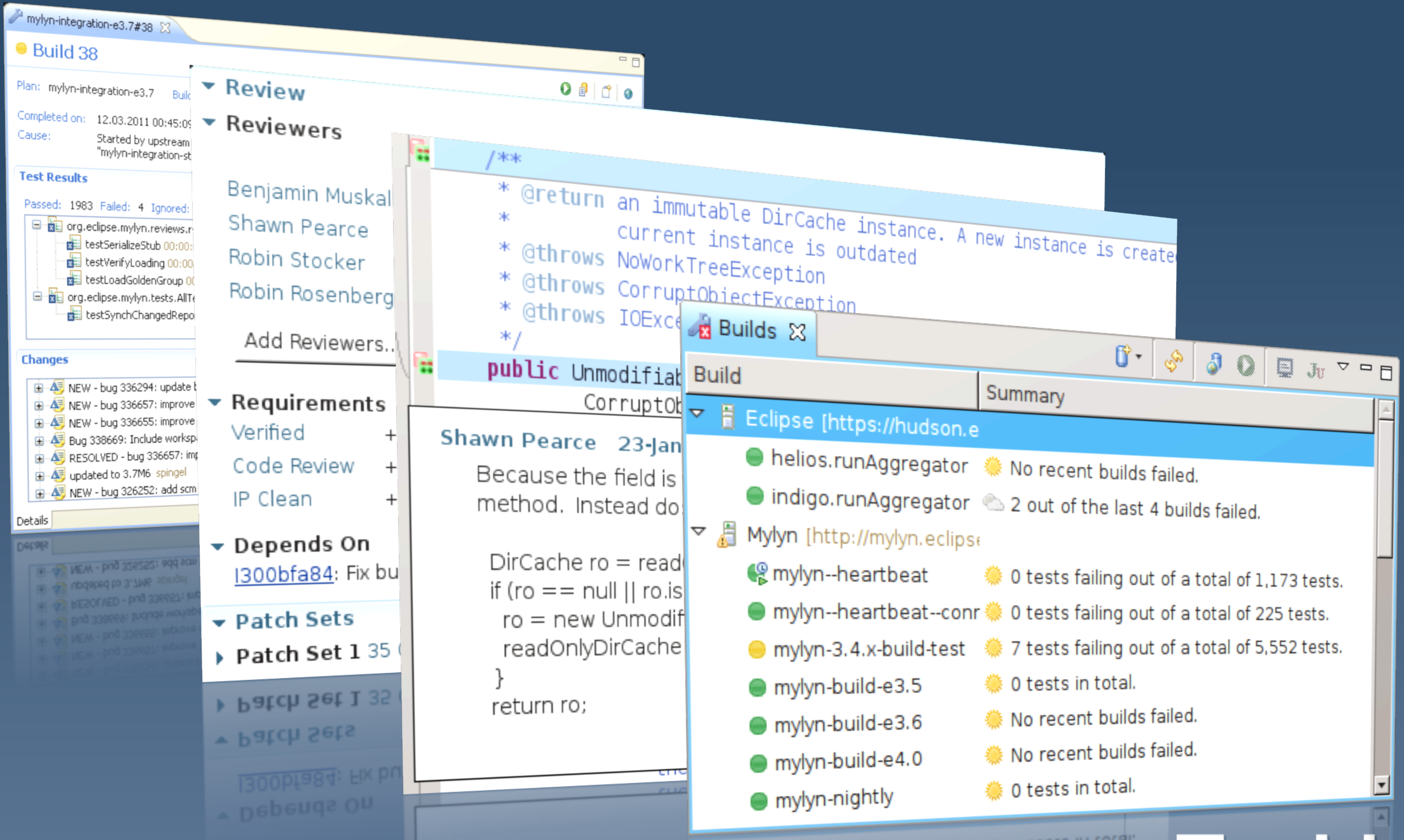
Patch based Code Reviews

- Limited automation
- Difficult to trace changes
- Cumbersome process
- Late feedback


Push
Git
Pull
010
Hudson
Build


Push
Git
Pull
Vote
010
Hudson
Build

Demo: Collaboration



mylyn-integration-e3.7#38

Build 38

Plan: mylyn-integration-e3.7 Buil

Completed on: 12.03.2011 00:45:0
Cause: Started by upstream "mylyn-integration-st

Test Results

Passed: 1983 Failed: 4 Ignored:

- org.eclipse.mylyn.reviews.r
  - testSerializeStub 00:00:
  - testVerifyLoading 00:00
  - testLoadGoldenGroup 00
- org.eclipse.mylyn.tests.AllT
  - testSynchChangedRepo

Changes

- NEW - bug 336294: update b
- NEW - bug 336657: improve
- NEW - bug 336655: improve
- Bug 338669: Include worksp
- RESOLVED - bug 336657: imp
- updated to 3.7M6 spingel
- NEW - bug 326252: add scm

Details

Review

Reviewers

Benjamin Muskal
Shawn Pearce
Robin Stocker
Robin Rosenberg

Add Reviewers...

Requirements

Verified	+
Code Review	+
IP Clean	+

Depends On

I300bfa84: Fix bu

Patch Sets

Patch Set 1 35

```
/**
 * @return an immutable DirCache instance. A new instance is create
 *         current instance is outdated
 * @throws NoWorkTreeException
 * @throws CorruptObjectException
 * @throws IOExce
 */
public Unmodifiab
                Corrupt0b
```

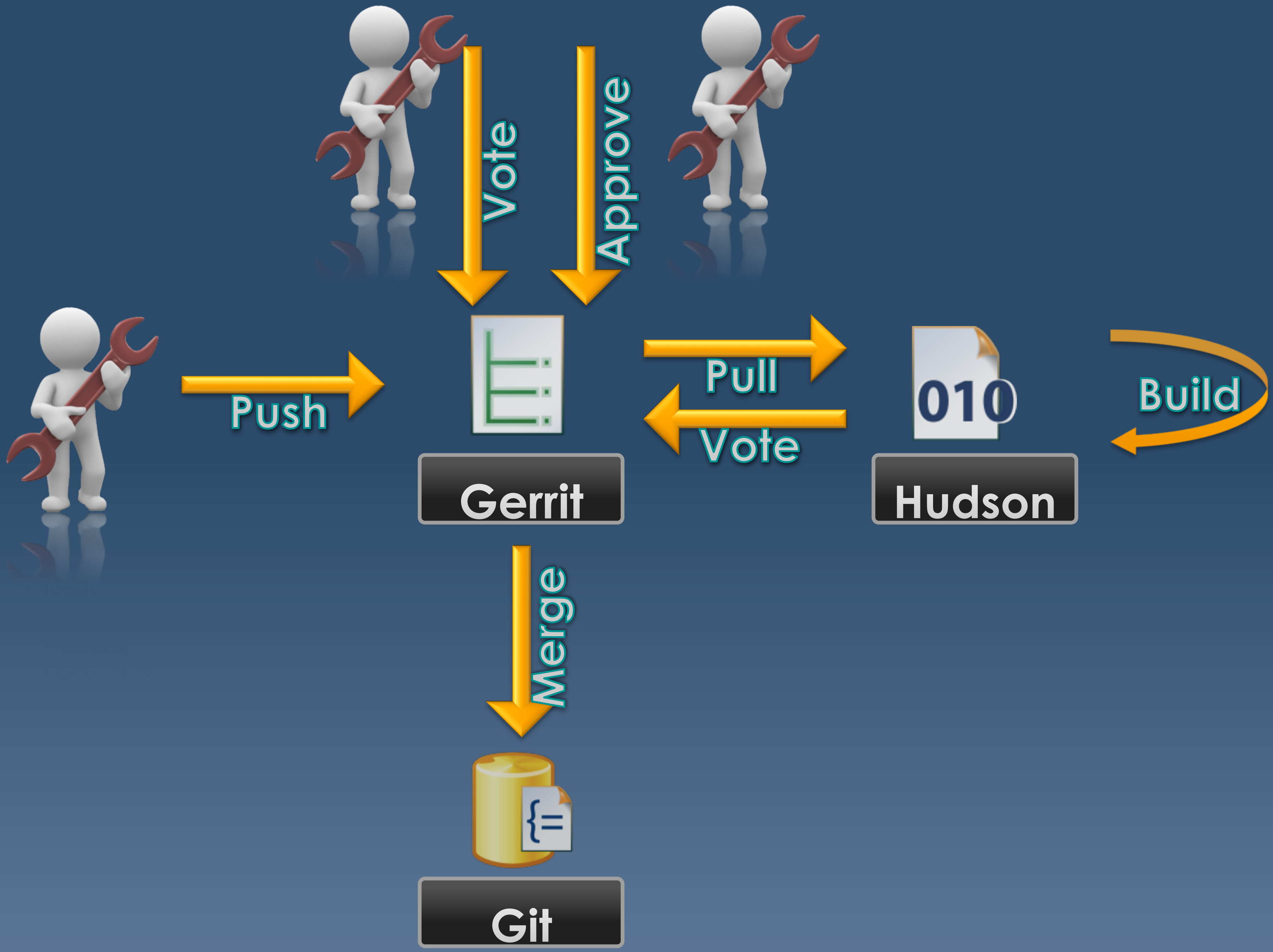
Shawn Pearce 23-Jan

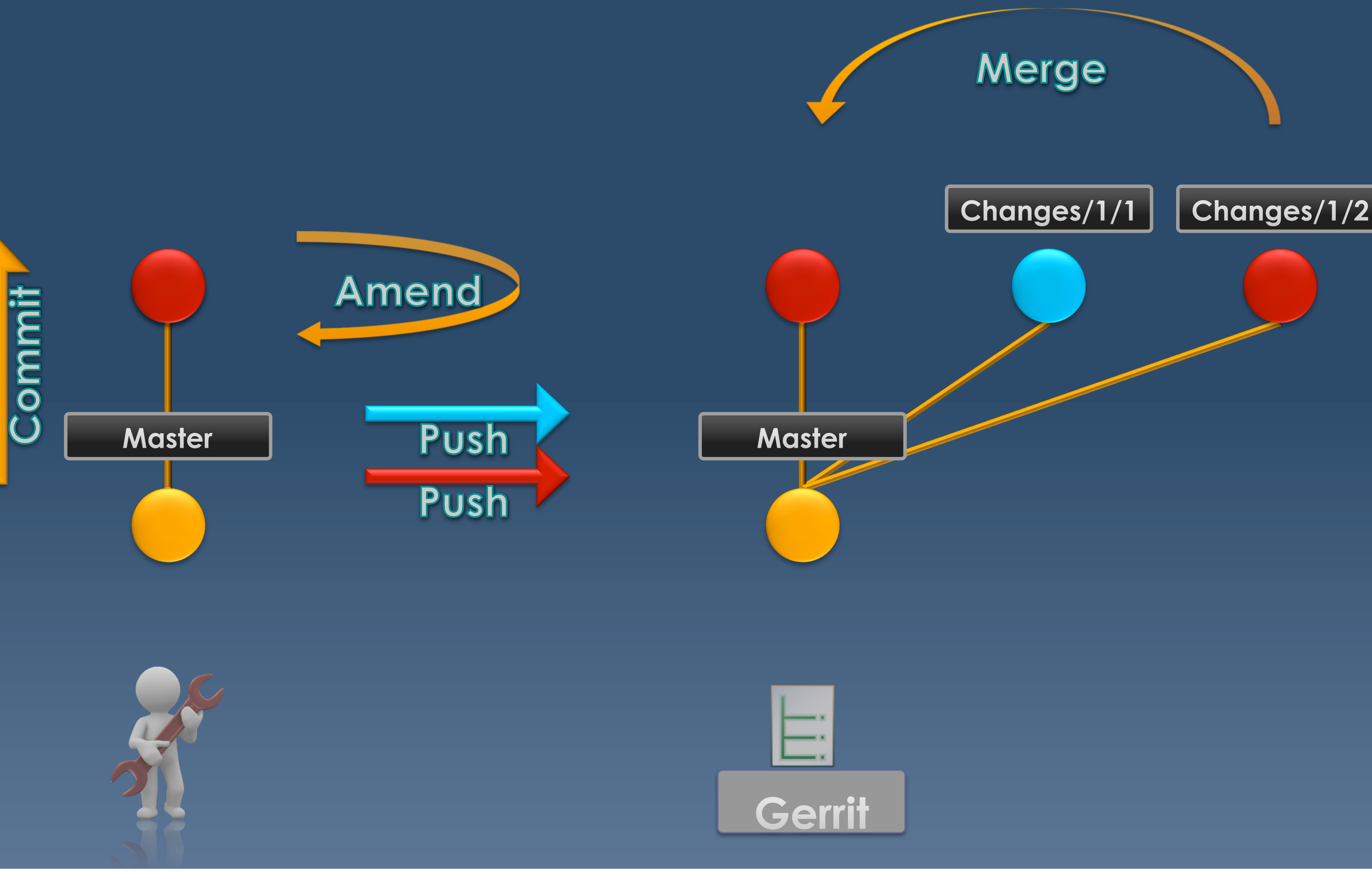
Because the field is
method. Instead do

```
DirCache ro = read
if (ro == null || ro.is
  ro = new Unmodif
  readOnlyDirCache
}
return ro;
```

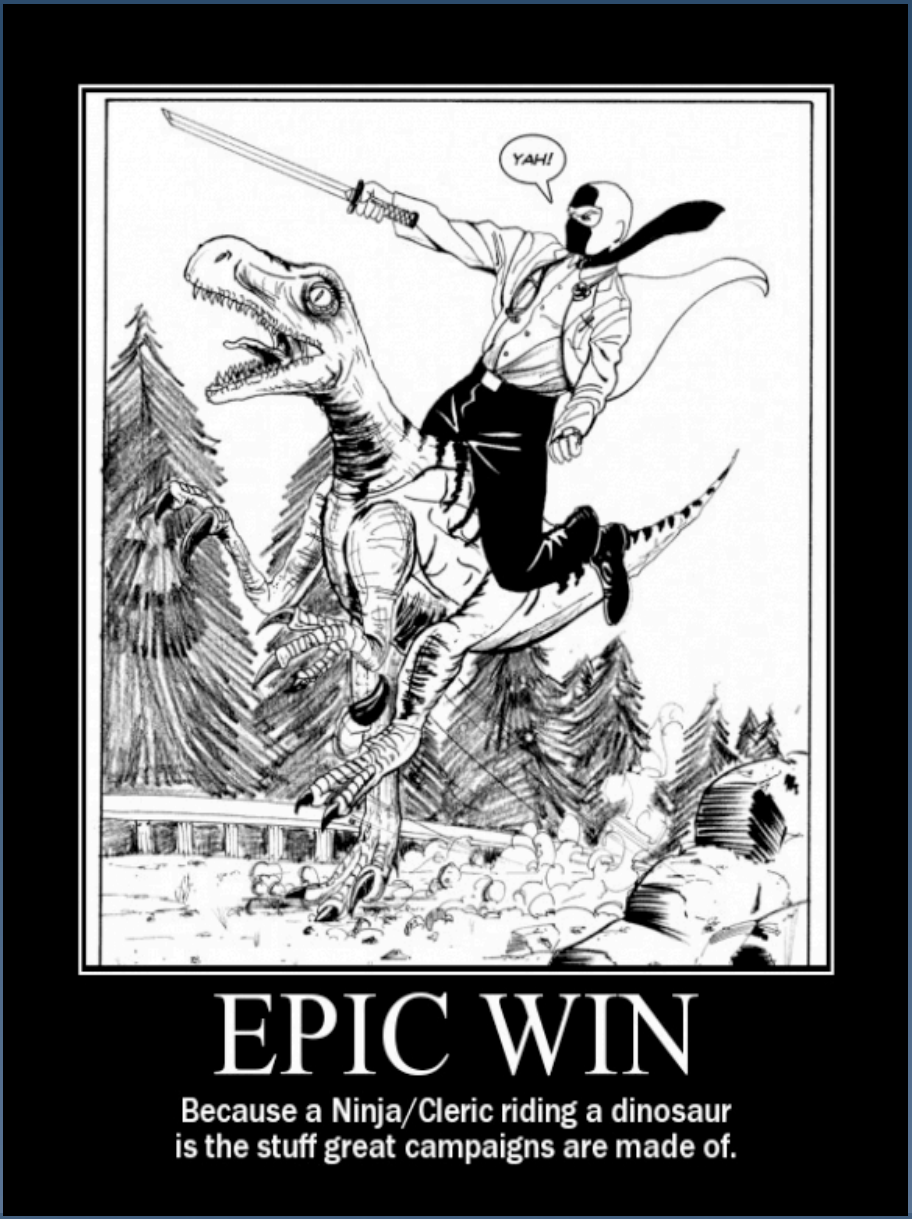
Builds

Build	Summary
Eclipse [https://hudson.e	
helios.runAggregator	No recent builds failed.
indigo.runAggregator	2 out of the last 4 builds failed.
Mylyn [http://mylyn.eclipse	
mylyn--heartbeat	0 tests failing out of a total of 1,173 tests.
mylyn--heartbeat--conr	0 tests failing out of a total of 225 tests.
mylyn-3.4.x-build-test	7 tests failing out of a total of 5,552 tests.
mylyn-build-e3.5	0 tests in total.
mylyn-build-e3.6	No recent builds failed.
mylyn-build-e4.0	No recent builds failed.
mylyn-nightly	0 tests in total.


Vote
Approve
Push
Pull
Vote
Build
Gerrit
Hudson
010
Merge
Git


Merge
Changes/1/1
Changes/1/2
Commit
Amend
Master
Push
Push
Master
Gerrit

That was awesome! How do I do it at home?


YAH!
EPIC WIN
Because a Ninja/Cleric riding a dinosaur
is the stuff great campaigns are made of.

Setting up the server

- Clone Git repository
- Initialize Gerrit
- Register and configure a Gerrit human user
- Register and configure Gerrit build user
- Install Hudkins Git and Gerrit plugins
- Configure standard Hudkins build
- Configure Hudkins Gerrit build

Setting up the client (contributor)

- Install EGit, Mylyn Builds (Hudson), and Mylyn Reviews (Gerrit)
- Clone Git repository
- Configure Gerrit as remote master
- There is no step 4

Setting up the client (committer)

- Configure a Mylyn Builds Hudson repository
- Configure a Mylyn Review Gerrit repository
- Create a Task Query for Gerrit
- I really hate step 4

Questions?

References

- http://www.infoq.com/articles/Gerrit-jenkins-hudson
- http://tasktop.com/blog/mylyn/contributing-to-mylyn-through-gerrit-code-reviews
- http://tasktop.com/blog/eclipse/stage-build-review-with-git-gerrit-hudson-and-mylyn