

IBM Software

# UK Innovate 2010

The Rational Software Conference



Smarter software for a smarter planet.



IBM Software

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The Rational Software Conference

## Rational In Production

Daniel Would & Nigel Hopper

Smarter software for a smarter planet.





Olof s - <http://www.flickr.com/photos/venteco/2851026377/>

## “Greenfields” project

Approx 60 people

- 25 Hursley
- 25 ISL
- 4 Raliegth
- 6 Toronto







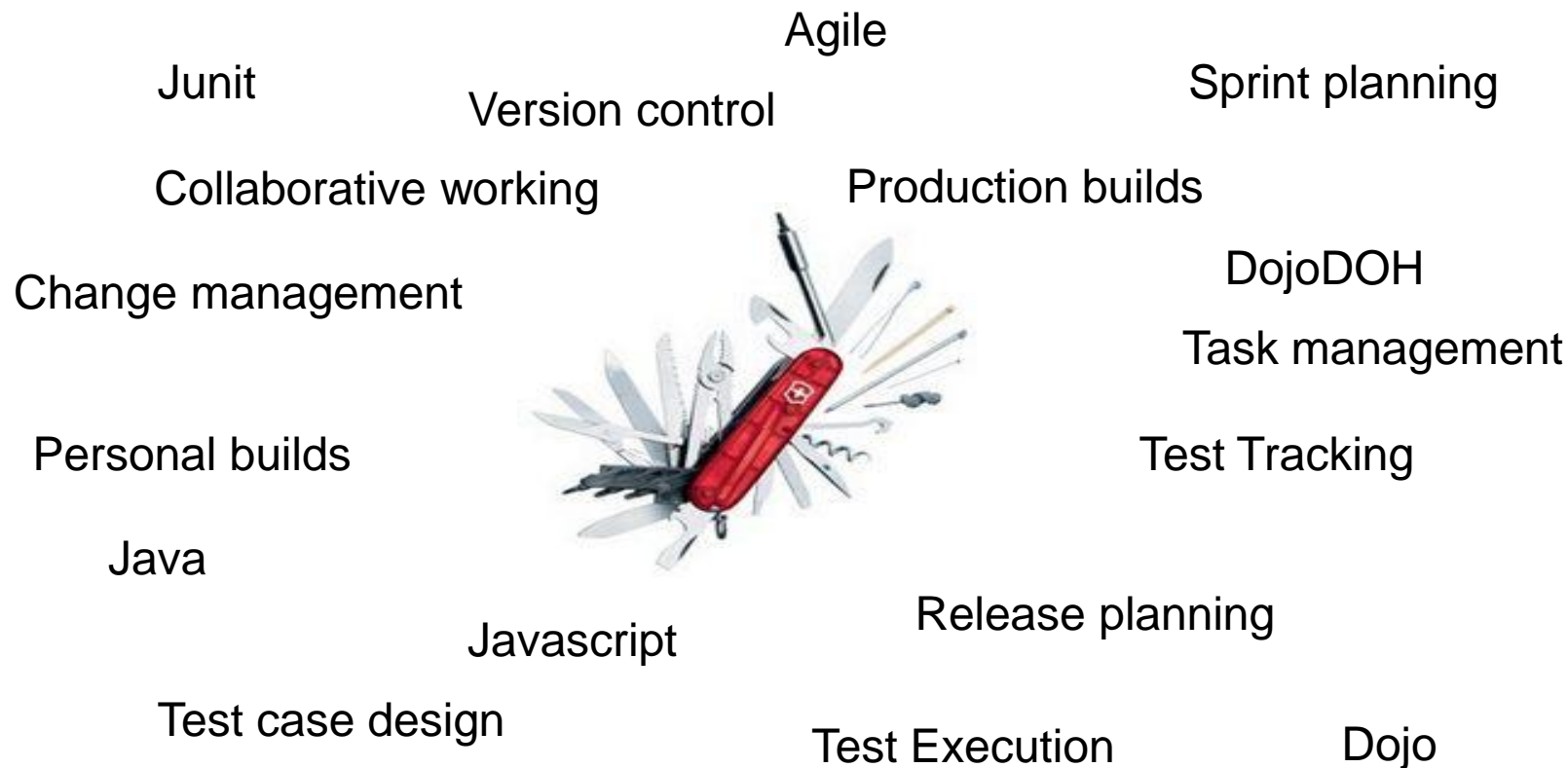
Soroll - <http://www.flickr.com/photos/soroll/3026001370/>

Team is gathered

No project  
infrastructure

Require rapid start





Picture by Jon\_Aquino - <http://www.flickr.com/photos/jonathanaquino/26253284/>



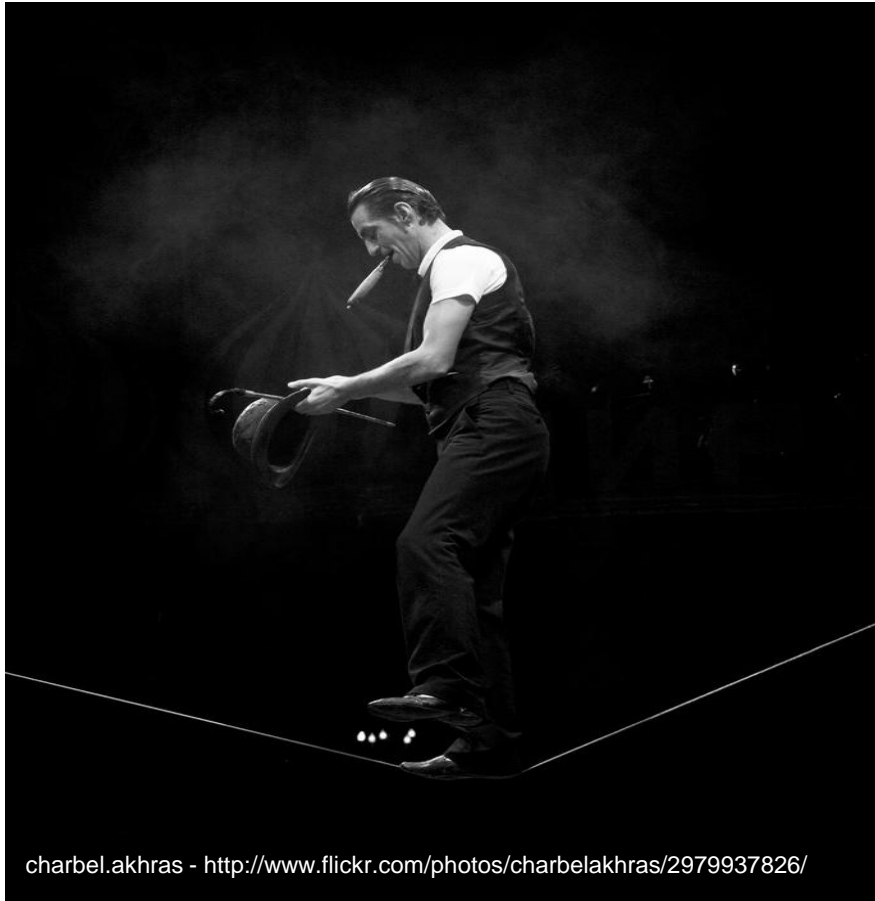


Rational Team Concert

Rational Functional Tester

Rational Quality Manager





Live demo – without a safety net!

charbel.akhras - <http://www.flickr.com/photos/charbelakhras/2979937826/>





The screenshot displays the IBM Rational software interface, specifically the 'SilverLining Project' workspace. The interface is organized into several panes:

- Left Pane (My Filter):** Shows a tree view of repository connections and project areas. The 'SilverLining Project [jazz208.hursley.ibm.com]' is selected, with sub-items like Builds, Plans, Reports, Source Control, and Work Items.
- Top Pane (Project Area):** Displays the 'SilverLining Project' details. It includes a 'Summary' section with the text 'Silverlining Project' and 'Description: This project is producing an on-premise to off-premise adapter appliance.' It also features a 'Process Description' section with a 'Scrum' template description and a 'Timelines' section explaining project start/end dates and iteration breakdowns.
- Right Pane (Outline):** Shows a message: 'An outline is not available.'
- Bottom Pane:** Lists project components such as 'MQTestEclipseUtilities', 'SL Main Stream Workspace - Daniel Would <=> SL Main Stream', and various integration and build tasks.

The interface includes a standard menu bar (File, Edit, Navigate, Search, Project, Run, WebSphere sMash, Window, Help) and a toolbar with various icons for navigation and actions. The status bar at the bottom indicates '0 items selected'.





File Edit Navigate Search Project Run WebSphere sMash Window Help

Pa Hi My Te Ju J Te Te

SilverLining Project build.xml

```

<project name="silverlining" default="all">
  <description>
    Build all components and bundle up as a tar file.
    The tar file is then used as an input into the firmware
    build process.
  </description>
  <property name="builddir" value="/opt/build"/>

  <import file="buildsetup.xml" />
  <import file="ant/std_props.xml"/>
  <import file="ant/buildtasks.xml" />
  <import file="ant/jazz_tasks.xml" />

  <target name="all" depends="setup,buildtasks,init_jazz_tasks" >

    <echoproperties />

  <!--
    Change the build ID. This is to prevent output collisions.
    This is a work around for jazz.net defect 103376.
  -->

```

Outline

- silverlining
  - <> description
  - <> builddir
  - import buildsetup.xml
  - import ant/std\_props.xml
  - import ant/buildtasks.xml
  - import ant/jazz\_tasks.xml
  - + all [default]
  - + setup\_prod
  - + setup\_dev
  - + copyScript2
  - + packageOutput
  - + packageOutputWith
  - + markBuildGood
  - + setup [from import l

207 unresolved local, 70 incoming baselines

- Appliance Runtime <-> SL Main Stream
- BCompass Integration <-> SL Main Stream
- Build <-> SL Main Stream
- Common <-> SL Main Stream
- Controller <-> SL Main Stream
- drouter SCMP <-> SL Main Stream

207 unresolved local, 70 incoming baselines

Cast Iron Writable Insert 1 : 1



The screenshot shows the IBM Rational software IDE. The main editor displays the contents of a `build.xml` file for a project named "silverlining". The XML content is as follows:

```
<project name="silverlining" default="all">
  <description>
    Build all components and bundle up as a tar file.
    The tar file is then used as an input into the firmware
    build process.
  </description>
  <property name="builddir" value="/opt/build"/>
  <import file="buildsetup.xml" />
  <import file="ant/std_props.xml"/>
  <import file="ant/buildtasks.xml" />
  <import file="ant/jazz_tasks.xml" />
  <target name="all" depends="setup,buildtasks,init_jazz_tasks" >
    <echoproperties />
  </target>
</project>
```

A context menu is open over the `<target name="all" depends="setup,buildtasks,init_jazz_tasks" >` line. The menu items include: Show Pending Changes, Show History (Shift+Ctrl+F10), Annotate, Apply Patch..., Accept..., Deliver..., Check-in, Change File Properties..., Add to Ignore List..., Lock..., and Unlock... The background shows a project explorer on the left with a tree view of files like `build.xml`, `buildsetup.xml`, and `flashfin`. On the right, an Outline view shows a hierarchy of tasks including `description`, `builddir`, and various `import` tasks.



The screenshot displays the IBM Rational software interface. The main editor shows the contents of a `build.xml` file, which includes XML tags for `description`, `property`, and `import`. A tooltip is visible over the file, providing details about a merge:

```
body { overflow: auto; font-family: Sans; font-size: 10pt; font-weight: normal; } a:link { color: #0000FF; text-decoration: none; } a:visited { color: #0000FF; text-decoration: none; }
Date: 30-Apr-2010 15:48
Comment: No Comment
Reasons: 6395: folder clash for build output when multiple builds are kicked off within the same minute
```

Below the editor, a merge log table is shown, detailing the history of changes to the `build.xml` file:

Merges	Comment
5100	Rewrite auto flash script to use the WUI handler - Merges
5100	Rewrite auto flash script to use the WUI handler - flash build to boxes by injecting the WUI.
6575	Create an Example Component - Include in the build
6395	folder clash for build output when multiple builds are kicked off within the same minute
6330	Fix bug from making image available ASAP in build process
5232	Make build clean up script so smart we never run out of disc space - new cleanup script.
6264	Make inclusion of source in silverlining.tar optional
6086	Reorder the personal firmware build process?

The interface also shows a project explorer on the left with various files and folders, and a toolbar at the bottom with options like 'Cast Iron', 'Writable', 'Insert', and a timer showing '15 : 68'.

File Edit Navigate Search Project Run WebSphere sMash Window Help

Java

SilverLining Project \*build.xml 6575: Create an Example Component

**Task 6575** Save

Summary: \* Create an Example Component ✓ Closed Fixed

**Details**

Type: Task

Severity: 3

Found In: Unassigned

Creation Date: 17 May 2010 15:34

Created By: Paice, Susan P (Susan)

Team Area: SilverLining Team / Silv...ject

Filed Against: \* Common Code

Tags:

Owned By: Paice, Susan P (Susan)

Priority: Should

**Description**

Create an Example component (silverlining.example) to show the Coding Guidelines in practice.

The component will be built as part of the build process, but not shipped. The nlsprops file is marked as not to be shipped.

**Discussion** (2 comments; 2 new) Add Comment

1. Paice, Susan P (Susan), 20-May-2010, 11:00  
Personal Project Build [SilverLining Project without firmware 20100520-1135-blade710](#)
2. Hardman, N R (Neil), 21-May-2010, 09:51  
Comments in FancierArtifact and SimpleArtifact refer to RRDC... should be FFDC  
FancierArtifact also needs a full prolog comment

Overview Links Approvals History

Proble @ Javad Declar Work It Pendin Builds Consol Reposi Histor Team Search Chang Progre Cover

build.xml in Workspace SL Main Stream Workspace - Daniel Would - Build

Merges	Comment	Creator
✓ 5100	Rewrite auto nash script to use the wor handler - nash build to boxes by injecting the wor.	Hutter, Alexander
✓ 6575	Create an Example Component - Include in the build	Paice, Susan P (Sus
▲ 6395	folder dash for build output when multiple builds are kicked off within the same minute	Hutter, Alexander

Cast Iron





File Edit Navigate Search Project Run WebSphere sMash Window Help

Java

SilverLining Project \*build.xml 6575: Create an Example Component

**Task 6575** Save

Summary: \* Create an Example Component ✓ Closed ▼ Fixed ▼

**Attachments**

Id	Name	Created	Created by	Size	Type

Add File...  
Add Screenshot...  
Remove  
Rename  
Save As...

**Subscribers**

- Hardman, N R (Neil) Add...
- Paice, Susan P (Susan) Remove

**Links**

- Change Sets**
  - Common - Paice, Susan P (Susan) - Share projects 20-May-2010 10:26
  - Common - Paice, Susan P (Susan) - Add build.xml 20-May-2010 11:01
  - Build - Paice, Susan P (Susan) - Include in the build 20-May-2010 11:01
  - Common - Paice, Susan P (Susan) - Fix up comments 21-May-2010 09:56
- Included in builds**
  - SilverLining Project build (development) 20100521-1053

Overview Links Approvals History

Proble @ Javad Declar Work It Pendin Builds Consol Reposi Histor Team Search Chang Progre Cover

Cast Iron



File Edit Navigate Search Project Run WebSphere sMash Window Help

SilverLining Project \*build.xml 6575: Create an Example Component 20100526-1428-blade863

### Build SilverLining Project build (production) 20100526-1428-blade863

**Completed**

Duration: 1 hour, 28 minutes, 27 seconds  
 Start Time: 26 May 2010 14:31:16  
 Completed: 26 May 2010 15:59:44

Status Trend:

**Reported Work Items**

- [1 reported against this build](#)
- [Create a new work item](#)
- [Associate an existing work item](#)

**Contribution Summary**

Changes: [Show changes](#)  
 Logs: [27 logs](#)  
 Repository Workspace: [SilverLining Project build \(production\)](#)  
 Snapshot: [SilverLining Project build \(production\)\\_20100526-1428](#)  
 JUnit: [1451 tests, 0 failures, 8 errors](#)  
 Work items: [94 included in build](#)

**General Information**

Requested by: Vaughton, Matthew K (Matthew)  
 Build Definition: [SilverLining Project build \(production\)](#)  
 Build Engine: [SL\\_BuildEngine](#)  
 Build History: [45 builds](#)  
 Tags:   
 Deletion allowed

**Associated Release**

Released builds are available as choices in the work item "Found In" field.

[Create a release to associate with this build](#)

Overview Activities **JUnit** Logs Properties

Proble @ Javad Declar Work It Pendin Builds Consol Reposi Histor Team Search Chang Progre Cover

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File Edit Source Refactor Navigate Search Project Run WebSphere sMash Window Help

SilverLining Project 6907: Failing Test Case "UI\_FV\_AddTimeDate\_P\_01" when executing Test Execution Record "UI\_FV\_AddTimeDate\_P\_01\_Rational Funct

**Defect 6907**

Summary: Failing Test Case "UI\_FV\_AddTimeDate\_P\_01" when executing Test Execution Record "UI" → New

**Details**

Type: Defect  
 Severity: 3  
 Found In: Unassigned  
 Creation Date: 14 Jun 2010 15:18  
 Created By: [Would, D \(Daniel\)](#)  
 Team Area: [SilverLining Team / Silv...ject](#)  
 Filed Against: Unassigned  
 Tags:   
 Owned By: Unassigned  
 Priority: Should  
 Planned For: Unassigned

**Description**

defect created mainly to demonstrate the linkage between RQM/RTC in a presentation on 15/06/10 can be deleted after that.  
 Test Script: UI\_FV\_AddTimeDate\_P\_01\_FF  
 Test Plan: SilverLining FV

Test Environment:  
 Internet Explorer 7,Rational Functional Tester,Windows XP

Overview | Links | Approvals | History

Proble @ Javado Declara Work It Pendin Builds Consol Reposit History Team A Search Change Progres Covera

Retrieved 31 of 31 work items - (Type is Defect & Affects Test Execution exist)

ID	Status	P	S	Summary	Owned By	Created By
[Empty table body]						

Cast Iron build.xml - silverlining.build



File Edit Navigate Search Project Run WebSphere sMash Window Help

Java

SilverLining Project 6907: Failing Test Case "UI\_FV\_AddTimeDate\_P\_01" when executing Test Execution Record "UI\_FV\_AddTimeDate\_P\_01\_Rational Funct

**Defect 6907** Save

Summary: Failing Test Case "UI\_FV\_AddTimeDate\_P\_01" when executing Test Execution Record "UI\_FV\_AddTimeDate\_P\_01\_Rational Funct" New

**Attachments**

Id	Name	Created	Created by	Size	Type

Add File...  
Add Screenshot...  
Remove  
Rename  
Save As...

**Subscribers**

Would, D (Daniel) Add...  
Remove

**Links**

**Affects Test Execution** Add  
Related Execution Results: UI\_FV\_AddTimeDate\_P\_01\_Rational Functional Tester\_Internet Explorer 7\_Windows XP Open  
Remove

Overview Links Approvals History

Proble @ Javado Declara Work It Pendin Builds Consol Reposit History Team A Search Change Progres Covera

Retrieved 31 of 31 work items - (Type is Defect & Affects Test Execution exist)

Id	Status	P	S	Summary	Owned By	Created By

Cast Iron





File Edit View History Bookmarks Tools Help

ibm.com/ole/SilverLining#action=com.ibm.rqm.planning.home.actionDispatcher&subAction=viewResult&& 8am pst

TinyURL! Add to TheThingsIW... Most Visited Smart Bookmarks Latest BBC Headl... innovationCentra... innovationCentra... Query Feed: All o...

Login - J... Dashbo... Dashbo... Dashbo... Login - J... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Rati...

Admin Preferences SilverLining

**Dashboards** Execution Result

**Execution Result**  
Functional Tester Result

Discard Changes Save

ID: 10267

Actual Result: **Failed**

Host Name: blade404

Owner: ADMIN

Test Plan: SilverLining FV

Test Milestone: rel1

Test Case: UI\_FV\_AddTimeDate\_P\_01

Test Script: UI\_FV\_AddTimeDate\_P\_01\_IE

Test Data: Unassigned

Build: Unassigned

Weight: 100

Start Time: 10 Jun 2010 12:26:07

End Time: 10 Jun 2010 12:27:38

Total Run Time: 1 min 32 sec

**Weight Distribution**

Pass	0
Fail	100
Inconclusive	0
Blocked	0
Attempted	100

Done

File Edit View History Bookmarks Tools Help

ibm.com | ole/SilverLining#action=com.ibm.rqm.planning.home.actionDispatcher&subAction=viewResult&& 8am pst

TinyURL! Add to TheThingsIW... Most Visited Smart Bookmarks Latest BBC Headl... innovationCentra... innovationCentra... Query Feed: All o...

Login - J... Dashbo... Dashbo... Dashbo... Login - J... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Rati... x

Type Filter Text

Items per page Previous | 1 - 1 of 1 | Next

<input type="checkbox"/>	Blocking Status	Summary
<input type="checkbox"/>		6907: Failing Test Case "UI_FV_AddTimeDate_P_01" when executing Test Execution Record "UI_FV_AddTimeDate_P_01_Rational Functiona...

Previous | 1 - 1 of 1 | Next

Notes ? Edit

Add Content

Result Details ? View Result History

Rational Functional Tester Simple Log

Rational Functional Tester Detailed Log (Needs Rational Functional Tester)

IBM Done



File Edit View History Bookmarks Tools Help

https://jazz007.hursley.ibm.com:9443/jazz/web/console/SilverLining#action=com.ibm.rqm.plannin

8am pst

TinyURL! Add to TheThingsIW... Most Visited Smart Bookmarks Latest BBC Headl... innovationCentra... innovationCentra... Query Feed: All o...

Login - J... Dashbo... Dashbo... Dashbo... Login - J... Dashbo... Story 19... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Dashbo... Test... x

**Rational Quality Manager** Would, D (Daniel) | Log Out | Type to Search

Admin Preferences SilverLining

Requirements  
Planning  
Construction  
Lab Management  
Builds  
Execution  
Reports  
Defects

Dashboards Execution Result **UI\_FV\_AddTimeDate\_P\_...**

**Management Sections**

**Table Of Contents**

- Summary
- Test Case Design
- Plan Items
- Formal Review
- Test Scripts
- Test Execution Records

Show All Sections

**UI\_FV\_AddTimeDate\_P\_01** ?  
Test Case Overview | View Snapshots

Originator: Nogriya, Archana Action: Select Action State: Draft

Description: < Click here to enter a description >

**Plan Items** ?  
Change management items that are aligned with the testing

Type Filter Text

Items per page Previous | 1 - 1 of 1 | Next

Summary
4700: Igor sets the time and time zone of the appliance

Previous | 1 - 1 of 1 | Next

Discard Changes Save

Done

File Edit View History Bookmarks Tools Help

https://jazz007.hursley.ibm.com:9443/jazz/web/console/SilverLining#action=com.ibm.rqm.plannin

8am pst

4700: Igor sets the time and time zone of the appliance

Status	Resolution	Summary
✓ Done	✓ Done	Igor sets the time and time zone of the appliance

**Details**

Type:	Story	Tags:	
Story Points:	8 pts	Owned By:	Draper, D (Dave)
Completed Story Points:	0	Priority:	Should
Progress:		Implementation Order:	4
Creation Date:	16 February 2010 13:59	Planned For:	Sprint 13
Created By:	Draper, D (Dave)	Resolution Date:	12 April 2010 08:10
Team Area:	UI Team / SilverLining Project	Resolved By:	Draper, D (Dave)
Filed Against:	UI		

**Quick Information**

- Subscribers (1): DD(
- Children (7): 4764, 5193, 5196, 5215, 5242, ...
- Parent: 4696

Open Item

Execution

Reports

Defects

Would, D (Daniel) | Log Out | Type to Search

Admin | Preferences | SilverLining

Discard Changes | Save

State: Draft

Type Filter Text

Previous | 1 - 1 of 1 | Next

Summary

Igor sets the time and time zone of the appliance

Previous | 1 - 1 of 1 | 4700: Igor sets the time and time zone of the appliance

Discard Changes | Save

https://jazz208.hursley.ibm.com:9443/jazz/resource/itemName/com.ibm.team.workitem.Workitem/4700



File Edit View History Bookmarks Tools Help

ibm.com https://jazz208.hursley.ibm.com:9443/jazz/web/projects/SilverLining Project#action=com.ibm.team

8am pst

TinyURL! Add to TheThingsIW... Most Visited Smart Bookmarks Latest BBC Head... innovationCentra... innovationCentra... Query Feed: All o...

oslc\_cm... Dashbo... Dashbo... Login - J... Dashbo... Story 19... Dashbo... Dashbo... Dashbo... Dashbo... Test Cas... Stor...

**Rational Team Concert** Would, D (Daniel) | Log Out | ?

Dashboards Project Areas **Work Items** Plans Source Control Builds Reports Admin | SilverLining Project

Search

**Create Work Item**

**Create Query**

**Recently Viewed**

- Story 4700

**My Queries**

- All Open Defects
- All Open tasks
- approvals waiting for me
- defects affecting tests
- Defects blocking tests
- fv tasks in current sprint
- My Open defects

Show All

**Shared Queries**

- Predefined
  - Adapter Stories without points (current sprint)
  - Adapters Stories (current sprint)

**Story 4700** Done

Summary: Igor sets the time and time zone of the appliance

Loaded: 23 Sep 2010 14:08:07

Overview Links Approvals Acceptance Test History

**Details**

Type:	Story	Tags:	
Story Points:	8 pts	Owned By:	Draper, D (Dave)
Completed Story Points:	0	Priority:	Should
Progress:	Progress: 44 / 44 h Estimated: -	Implementation Order:	4
Creation Date:	16 Feb 2010 13:59:57	Planned For:	Sprint 13
Created By:	Draper, D (Dave)	Resolution Date:	12 Apr 2010 08:10:25
Project Area:	SilverLining Project	Resolved By:	Draper, D (Dave)
Team Area:	UI Team		
Filed Against:	UI		

**Quick Information**

Subscribers (1): DD(  
Parent (1): 4696  
Children (7): 4764, 5193,  
5196, 5215, 5242, 5383,  
5505

**Description** Edit

This story is currently a placeholder and will require fleshing out based on the UX documented here: <https://w3.tap.ibm.com/w3ki08/display/SILVERA/Administration+Mockups>

**Discussion** Add Comment

No Comments. Add Comment

Done

## Integrated & Flexible to change



IBM Software

# UK Innovate 2010

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## CICS – Agile and RTC

Nigel Hopper

Smarter software for a smarter planet.



## Agenda

- Whistle stop tour
- Brief CICS intro
- Why Agile?
- Why RTC?
- Getting there...
- Where are we?
- What next?
- The benefits
- Q & A



## CICS – Brief History

- CICS – Customer Information and Control System
- Transaction manager
  - Rapid, high volume transaction process
  - For example, simply requesting an inventory or crediting/debiting an account
- Generally banks and Insurance companies
  - Approx. 90% of Fortune 500 reported to use CICS on z/OS



## CICS – Brief History (cont.)

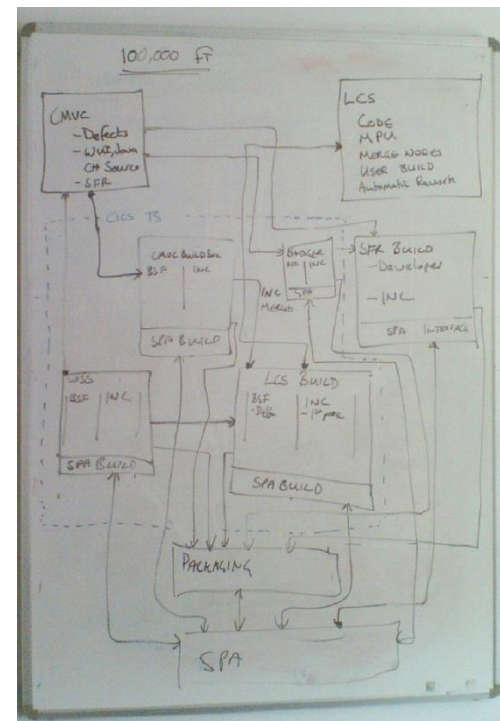
- Been around for approximately 40 years
- Release cycle approximately every 2 years
- Combined code base of approximately 6mloc
  - Much still in assembler!
- Many add-ons/tools e.g. CICS Explorer
- Historically developed in a very waterfall manner
  - Upfront commitment to IBM management





## Issues

- Using a wide variety of tools to manage project, for example:
  - Database for customer requirements
  - Lotus Notes databases/documents for:
    - Requirements
    - Actions
    - Risks
  - 2 source code management systems
  - Highly integrated build into SCM
  - Skills shortage
  - High learning curve for new starters



## Why Agile?

- Clearly a lot of industry buy in
- Clear strategic IBM corporate direction for developing all products using the Agile approach
- “If CICS can do it anyone can”



## So why RTC?

- Vision: Single non-proprietary environment for the delivery and service of future releases of CICS Transaction Server for zOS
- In 2008 couple of CICS System Testers trialled it
- Hugely impressed and put the RTC v1 beta(!) in production
- Demonstrated it to a number of CICS Team
- Further investigation and trials proved RTC seemed to have the capability
- June 2009 RTC migration began



## Agile – getting there...

- CICS 4.1 started in 2007
  - 2 year release cycle
  - 4 month iterations
  - Beta at the end of each iteration
- Still committing up front to 2 years of development
- Effectively a mini-waterfall approach
- Changing people's perceptions of what is possible
- 2009 Senior developers/testers given basic Agile education
- 2009 Continued self education on Agile
- General belief that this might work



## RTC – getting there...

- Current release started mid-2009
- Continued with iterative approach
  - 4 month phases, 2 month iterations
  - Teams can use shorter iterations
- Key goal – use RTC “out of the box”
- Key goal – use industry standard “Agile” methods/terms
- Key goal – minimum number of roles
- Basic RTC project put in place to gather product requirements
- Initial focus on work items
- Source control and build long term goals
- Used an RTC project to implement RTC



## RTC – getting there... (cont.)

- Issues:
  - Attitudes
    - Seen it all before
    - Don't want to change/try something new/see benefits
    - Not another tool – Rational not seen in a good light
    - How long will this one last?
    - Why fix something if it isn't broken?
  - The CICS process, not truly Agile
    - Becomes obvious when trying to map in RTC
    - Getting agreement to change
  - Senior management – Still want up front commitment
  - Code base not conducive to Agile development





## Where are we...

- Changing CICS direction a little like an oil tanker
- It takes time!
  - 3 years so far
    - 2 year adoption of iterative development
    - 1 year migration to RTC
  - At least 1 more to go



## Where are we... (cont.)

- All planning activity in RTC
- All approvals activity in RTC
- All work items in RTC
  - Epics, Stories, Tasks, Defects, Actions, Risks, etc.
- All team tracking and status in RTC
- All quality checking is done in RTC
- All RTC coordination and change requests in RTC
- All CMVC code (~30%) in RTC



## What next?

### 2010

- Completion of new build process
  - Starting to use it in testing
- Continued driving down Epic/Story sizes
- All new projects Agile/RTC based
- Greater adoption of scrum approach

### 2011

- Migration of remaining code
- Servicing code through RTC
- Shorter iterations
- Continued Agile adoption



## The benefits...

- Value for 2nd Line, 1st Line & PM
  - Transparency of team dependencies
  - Integrated work item and reporting tools
    - Instant status reports
    - Transparency of work items and status
  - Responsiveness to business needs
    - Beta deliveries – continued development & fixed cycles
    - Flexible resource pool
  - Mitigate against future risks
    - Loss of specialized skills (particularly LCS)



## The benefits... (cont.)

- Value for the engineer
  - Skills in a 'industry leading' environment
    - Much reduced learning curve
  - Removal of the burden status reporting
    - Less preparation of status & less duplication
  - Productivity improvements
    - Single skill set for development and service
    - Far greater collaboration and notification



## The benefits... (cont.)

- General benefits
  - Quality has improved
    - 2007-2009 defects focused on much earlier
    - Defects in RTC – defects part of the backlog
  - New ways of working – e.g. Dashboards
  - Individuals can create their own views
  - You can trust people
  - The more you use RTC, the more ways you find of using it





## Final point

- I was asked “If you had to pay for it, would you do so?”
- My answer “I'd be on the team seeking funding!”



# Questions?

?

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