How the IBM® Rational® Team Concert Test Team implemented IBM® Rational® Quality Manager

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Agenda

- Why ?

- Team distribution

- Deployment topology

- Planning our test

- Building our test cases

- Test execution

- Tracking progress and analysis

- Benefits

- The road ahead

Why?

- No central repository of Test assets
- Manual updates needed for Test status
- Test management done in silo. No linkage to development
- No two test cases were similar, structure of tests was different based on who created it.
- Tracking platform coverage was difficult - multiple platform, multiple hardware
- At a given point, it was hard to find how much testing is completed
- Consolidating test results was painful

Why continued..

- Since test cases were not linked to defects, test steps were duplicated to be available to the developers

- No traceability of test cases

- No reusable 'Keywords'

- Organization of tests was flat, so search was difficult

- To record test results and to be able to report statistics on status

- Testers 'knew' what to do

- To be able to help test Rational Quality manager product (we run with current development milestones)
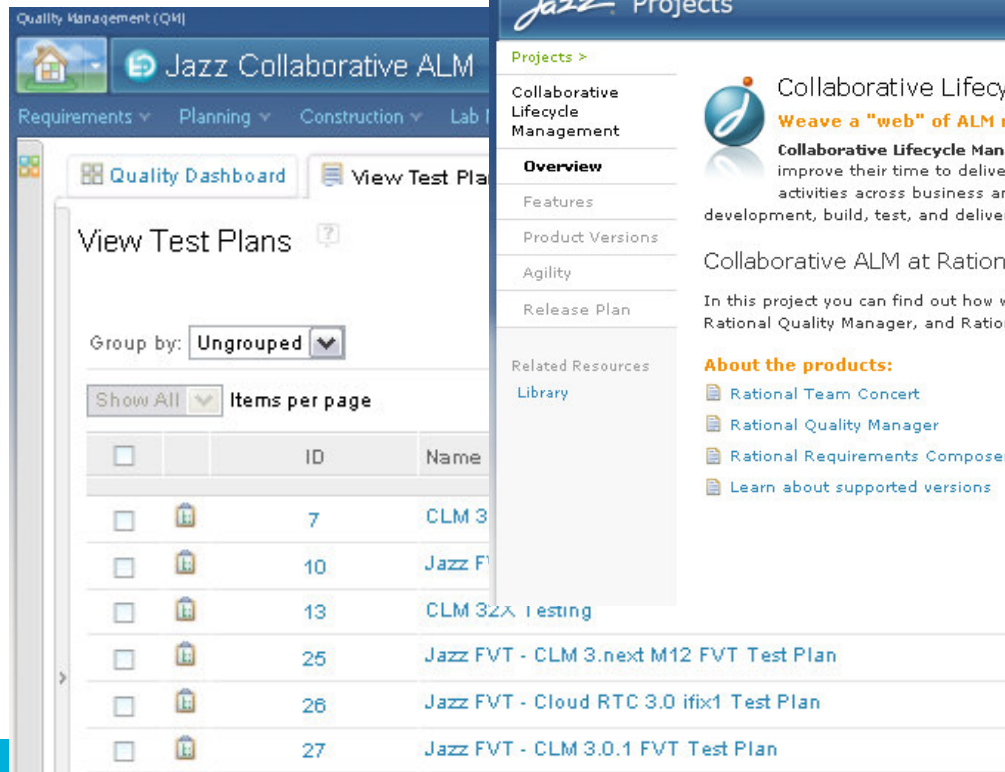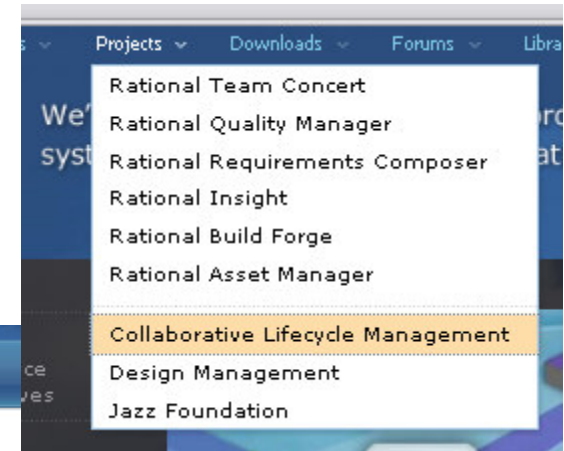
Team distribution

Canada

Beaverton

Raleigh

Littleton

Brazil

France

Switzerland

India

China

Japan

How to reach to our test plans?

Start at https://jazz.net

Navigate to the **Collaborative Lifecycle Management** Project

Find **See Test plans** on the page.

Deployment topology

Firewall

Internet

Hosting RQM and RTC

IBM WebSphere
version 7.0.0.15
16 CPU
64 GB Memory
RHEL 5, 64-bit IS
Remote SAN
Connected disk storage

Testers

Using
Web
browsers

Developers

1200+
developers
and testers

Or native
clients

PMC

Combination
of floating
and token
licenses
assigned to
users

IBM
Tivoli
LDAP
Server

IBM DB2 Database
version 9.7 FP4
16 CPU
64 GB Memory
RHEL 5, 64-bit IS
Remote SAN
Connected disk storage

HTTP Front end
server(2)

IE 7, IE 8
FF 3.0,
FF 3.6

60, 000
Jazz users

Community

Licenses and data *

- RQM 3.0.1 RC2 is running

- Every Jazz.net user has Read access to this project

- Restricted permissions for creation of assets

- Test team members have Quality Professional License

- For Jazz Collaborative ALM
  Team has *
  ~10 Test plans,
  ~350 Test cases
  ~150 Test scripts,
  ~500 Test execution records,
  ~10 Test suites
  ~600 Test results
  ~100 Tests running at a point

Version: 3.0.1

Build Information	Version	Build ID
Quality Management - Core Libraries	3.0.1 RC2	I20110429_1349
Jazz Foundation - Core Libraries	3.0.1 RC2	RJF-I20110428-1816

About the Rational Jazz Team Server

Version: 3.0.1 RC2

Build Information	Version	Build ID
Jazz Foundation - Core Libraries	3.0.1 RC2	RJF-I20110428-1816

Client Access Licenses

LPA Application-Internal
0 available - Internal

Rational Quality Manager - Quality Professional
99400 available - Unlocked

Rational Quality Manager - Quality Professional-Floating
Unlocked

Rational Requirements Composer - Analyst-Floating
Unlocked

Rational Requirements Composer - Contributor-Floating
Unlocked

Rational Team Concert - Build System
40 available - Included-50

Rational Team Concert - ClearCase Synchronizer
Included

Rational Team Concert - ClearQuest Synchronizer
0 available - 1 Included

Rational Team Concert - Contributor
79858 available - Unlocked

Rational Team Concert - Contributor-Floating
Unlocked

Rational Team Concert - Contributor-Token
Token Server Managed

Rational Team Concert - Developer
99995 available - Unlocked

Rational Team Concert - Developer for IBM Enterprise Platforms
99986 available - Unlocked

Rational Team Concert - Developer-Floating
Unlocked

Rational Team Concert - Developer-Token
Token Server Managed

Rational Team Concert - Stakeholder-Floating
Unlocked

Rational Team Concert - Stakeholder-Token
Token Server Managed

RM Application-Internal
1 available - Internal

RM Application-Internal
0 available - Internal

ⓘ Learn more about licenses >

Migration of data

- Mostly new test cases

- Some test cases referred from Wiki

- Some test cases were present in Rational Team Concert as work items

- Majorly manual test steps

- Steps mentioned in the test case design converted automatically into scripts

Use of templates

- **Customized template suiting our need**

- **Use of Manage Section to add customized sections**

- **We started small, only the sections we thought are a must to have**

Default Plan Template

Overview	📌
Summary	
Business Objectives	
Test Objectives	
Formal Review	
Requirements	
Requirement Collection Links	
Development Plan Links	
Risk Assessment	
Test Schedules	
Test Estimation	
Test Environments	
Test Team	
Quality Objectives	
Entry Criteria	
Exit Criteria	
Test Suites	
Test Cases	
Resources	
Attachments	

☐ Show All Sections

Our Plan Template

Overview	📌
Summary	
Test Schedules	
Test Strategy	
Development Plan Links	
Test Cases	
Test Environments	

☐ Show All Sections

Our Case Template

Overview	📌
Summary	
Test Case Design	
Test Scripts	
Development Items	
Test Case Execution Records	

☐ Show All Sections

Our Suite Template

Overview	📌
Summary	
Test Suite Design	
Test Cases	
Test Suite Execution Records	
Attachments	

☐ Show All Sections
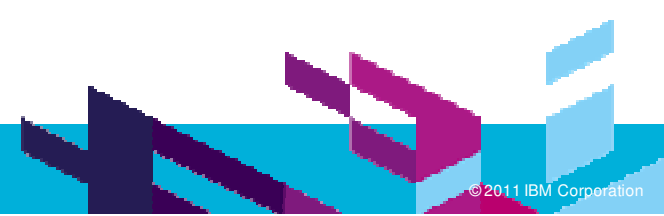
Planning our tests

- **Categories are created for asset organization and ease of search, helps in reporting on common areas**

- **Test cases are linked to the plan**

- **Schedules are defined for testing**

10 : Jazz FVT - CLM 3.0 FVT Test Plan
Test Plan Overview | Snapshots | History

Discard Changes Save

Originator: Jim Mickelson   Owner: Jim Mickelson   State: Draft

Description: CLM Function Verification Test (FVT) Test Plan

Summary

Overview of the test plan.

Categories

Product: CLM
Release: 3.0

Work Item: No Work Item

Test Schedules

Define the test milestones for this Test Plan.

Work Item: No Work Item

Test Schedule Table:

Type Filter Text

Show All Items per page   Previous | 1 - 3 of 3 | Next

Name *	Description	Planned Start Date ▲	Planned End Date	Planned Duration	Points	Planned Defects	Actual Start Date	Actual End Date	Actual Duration
RC0	Release ...	2010-08-16	2010-09-17	33 d	0	0			0 d
RC1	Release ...	2010-09-20	2010-10-15	26 d	0	0			0 d
RC2	Release ...	2010-10-18	2010-10-29	12 d	0	0			0 d

Previous | 1 - 3 of 3 | Next

Planning our tests

- **Test plans are linked with Development plan**

- **Test environments are defined for platform coverage**

Building our test cases

- Every test case has functional categorization

- Weights describes the estimated time, including overhead

- Test cases are linked with test plans

- Manual test steps either in test case design or manual scripts are created

Building our test cases

- **Test cases have linkage to Development plan items**

- **Test case execution records have environment, test plan and milestones linked**

Using test suites for grouping

- **Categorize on function and phase when to run the suite**

- **Some suites run in parallel and some in sequential based on the scenario**

Searching assets

- New Hierarchical category explorer helps in finding assets quickly

- We use Grouping, Filtering to narrow down search

- Create Queries and save them, reuse every time

- Quick Search helps us find any artifact by name

History of the changes

- **For each test plan, test case, test suite, test script the history can be seen in the user interface**

- **Print option available to print the History or artifact details**

Test execution records

- Testers start testing from here
- Group by Owner and then find their tests

Executing a test

- Testers run manual tests following the scenario

- Some testers run tests and then later update the results

- They capture runtime results and file defects corresponding to steps which failed.

- Execution console helps us find which tests are being run right now

Test history and Defect linkage

Individual Tests execution history helps identifying what went wrong and when

Test history and Defect linkage

Testers don't have to leave their test environments to see defect progress, just hover ☺

Developers don't have to leave development environment to see test case details, just hover ☺

Execution result at a glance

- Results show linkages to test plan and test case helps in tracking

- Linkage to test milestone and test plan helps in reporting

- Results are linked to build to track on which build the test was run.

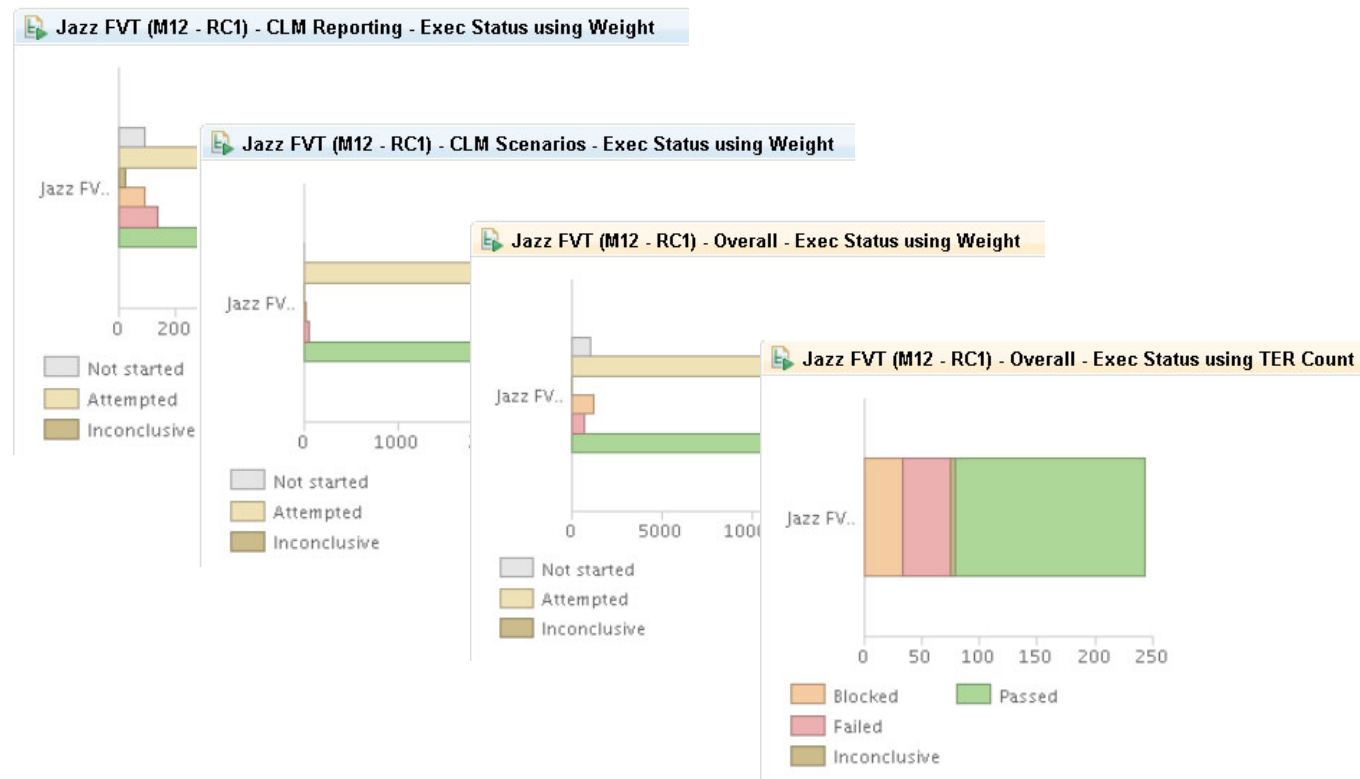- Any defect found during this test is linked to show complete trace
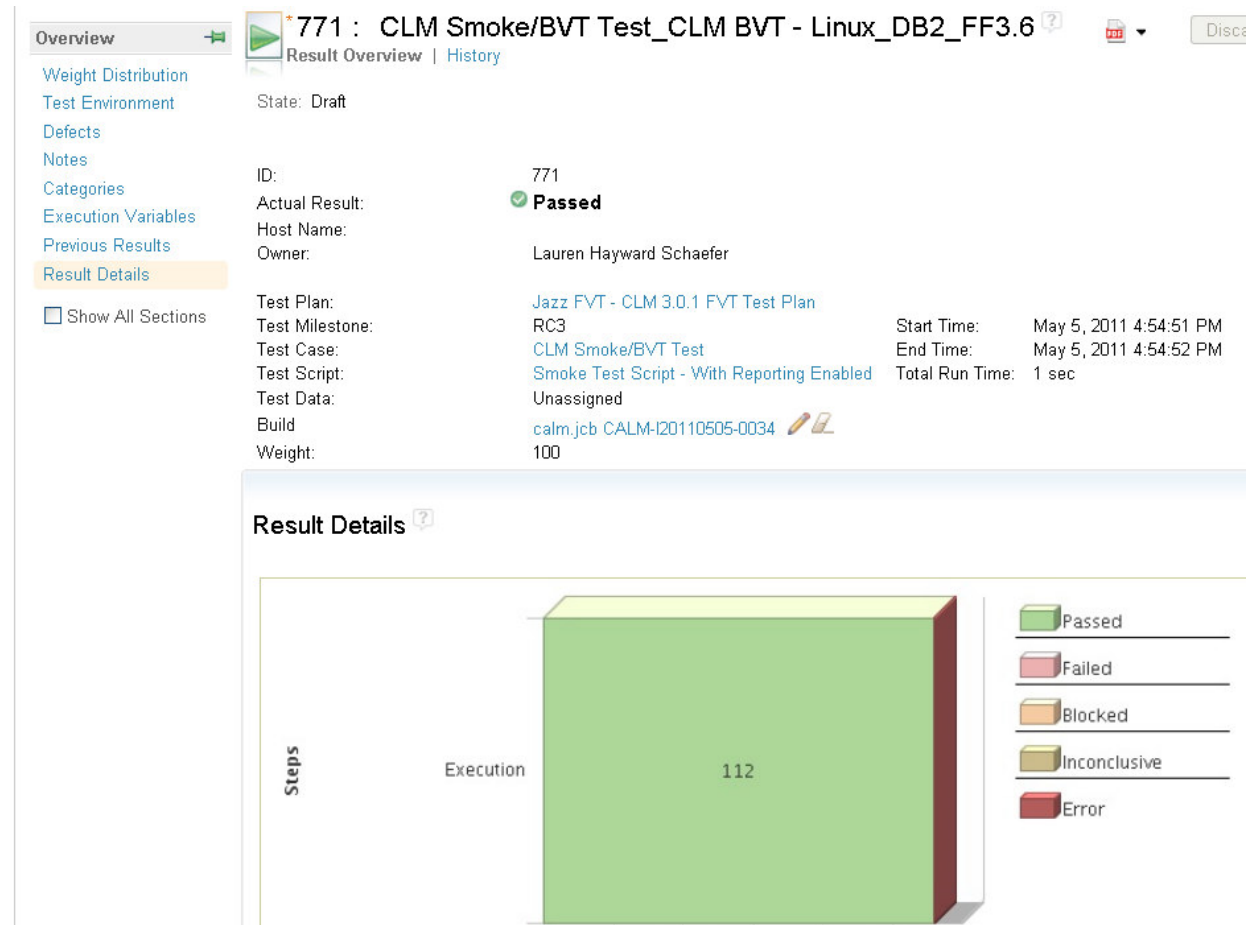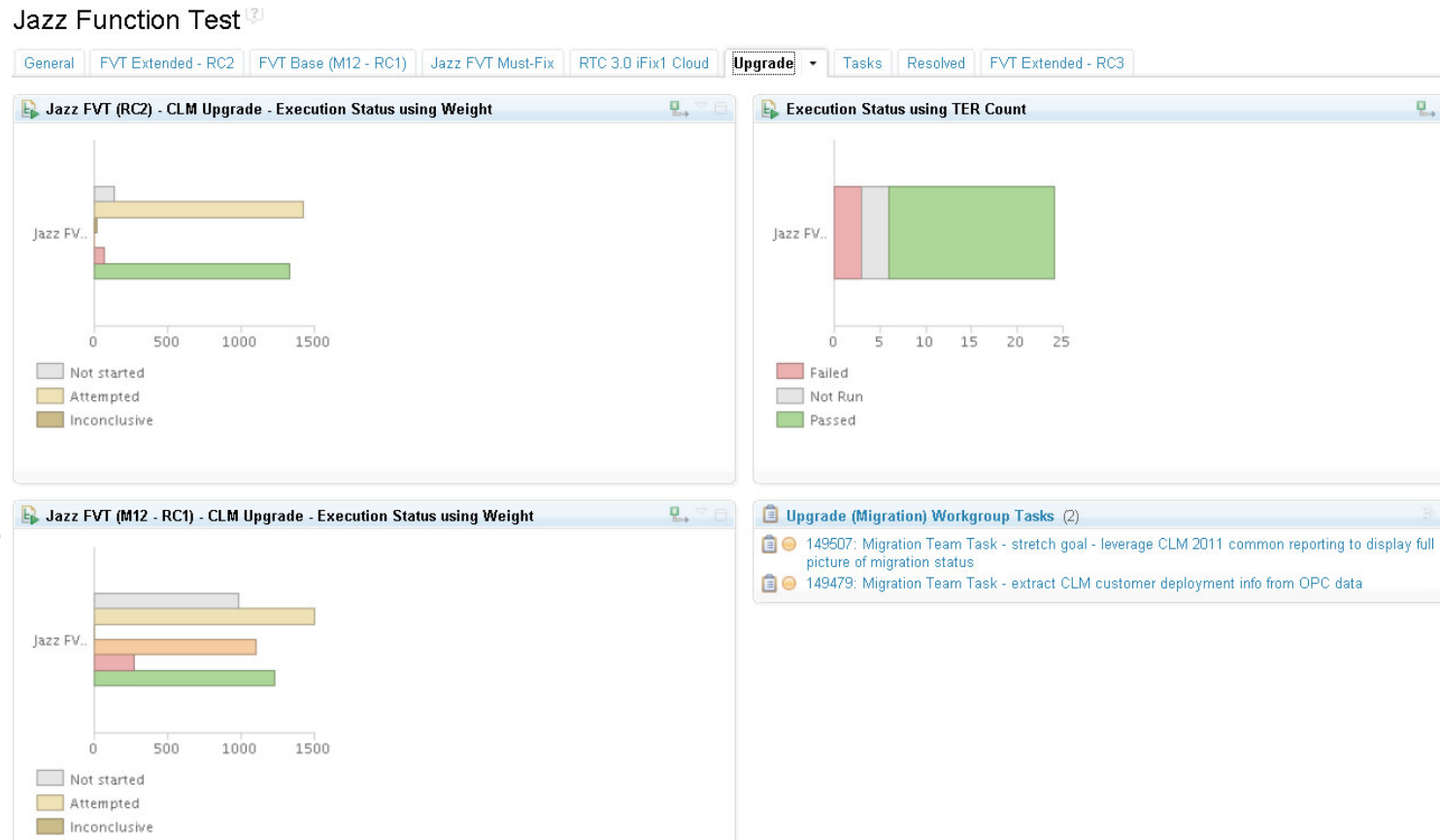
Tracking progress and analysis

- **Various Reports on the dashboard help in tracking the progress**

- **Information is segregated based on milestones or specifics**

Tracking progress and analysis

- **Track the progress for current milestone**

- **See the history of Tests in upgrade area**

- **Track the Execution status by TER count**

- **Any Pending Tasks for the functionality to be complete**

Tracking progress and analysis

Jazz Function Test

General | FVT Extended - RC2 | FVT Base (M12 - RC1) | **Jazz FVT Must-Fix** ▾ | RTC 3.0 iFix1 Cloud | Upgrade | Tasks | Resolv

Critical Defects

The critical defects affecting Jazz FVT.

📄 **Jazz FVT - Open high sev / must fix defects (CLM)** (0)

No work items found.

📄 **Jazz FVT - Open high sev / must fix defects (JF)** (1)

165014: CRJCA0003I Unexpected response code from request during LPA

📄 **Jazz FVT - Open high sev / must fix defects (CCM)** (1)

165442: Defects blocking Tests widget not returning results

📄 **Jazz FVT - Open high sev / must fix defects (QM)** (6)

50703: RRDI Report "Traceability in CALM" never finishes on jazzdev
50560: JAZZ 164881: QM widget configuration dialogs not appearing proper
50712: RRDI Report "Test Cases Impacted by Defects" does not show reco

Jazz Function Test

General | FVT Extended - RC2 | FVT Base (M12 - RC1) | Jazz FVT Must-Fix | RTC 3.0 iFix1 Cloud | Upgrade | Tasks | **Resolved** ▾ | FVT Extended - RC3

Resolved Critical Defects

The resolved critical defects affecting Jazz FVT.

📄 **Jazz FVT - Resolved high sev / must fix defects (CLM)** (10)

158903: Error creating MTM sample - java.net.SocketTimeoutException
128214: CLM Setup failed in Requirements server setup at "Configure" can't repeat the setup manually
154036: Reporting QM Data Collection job fails
133039: Error Instantiating Template
152077: No records returned for report - CLM BVT

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📄 **Jazz FVT - Resolved high sev / must fix defects (JF)** (68)

164976: MTM Sample create button is disabled in IE8 (workaround exists)
163761: LPA Finalize Setup Step: NPE and !Missing bundle com.ibm.team.lpa.common.internal.nls.messages!
164429: ETL Jobs: Error fetching job history, ensure the data warehouse is properly configured
164393: Configure data warehouse using shared Derby is broken in jts/setup (workaround exists)
163803: Members page hangs when you switch projects too quickly

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📄 **Jazz FVT - Resolved high sev / must fix defects (CCM)** (27)

164426: Open vs Closed Work Items Widget hangs when configuring query
153396: When clicking on "Author a custom report" in CCM, it leads to an error trying to find project ********/servlet/dispatch
154372: In CCM, RRDI reports should be displayed right away and not go to the cognos portal
159052: On Bluesdev, 'Deploy Report Template' failed. Permission Denied when I try to save a Custom report (RRDI) Template
163441: CCM ETL Work Item job fails

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📄 **Jazz FVT - Resolved high sev / must fix defects (QM)** (64)

50706: RRDI Report Defect List by Test case and Milestones gives a Parsing Error
49671: QM BIRT report "Defects Arrival and Resolution" only shows data in the last 2 weeks
50708: RRDI Report " Milestone Comparisons " gives Zero count for all test cases
50296: RRDI Business Analysis Execution Status Report Gives Logon Failure (Other reports work)
50713: RRDI Report "Discovered Defects by Severity" gives bad data

- Critical open defects show the pressing issues

- Resolved defects show the areas which our team can test to close the defects
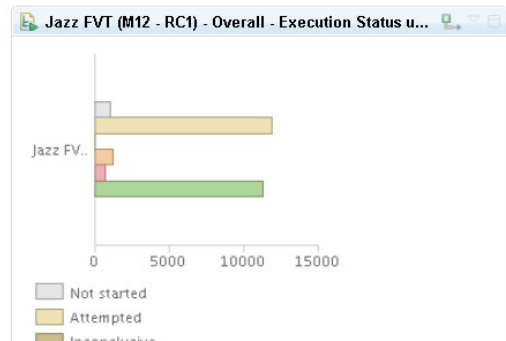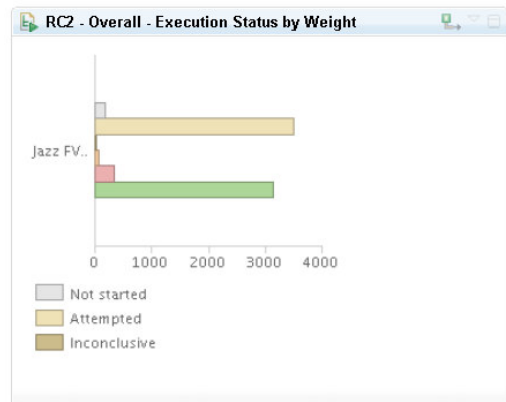
Tracking progress and analysis

- Development team's Dashboard
- Test team's Dashboard

Tracking progress and analysis

- **Get an answer to 'When to start testing ?'**

Benefits

- Connected the developers and testers

- Tracking of tests and progress

- Tracking results of the testing efforts

- Easily repro the tests

- Testers could see the defect resolution

- Testers get answer to 'When to start testing'

- History of work items and test cases useful

- Tracking same test on multiple environments was easy

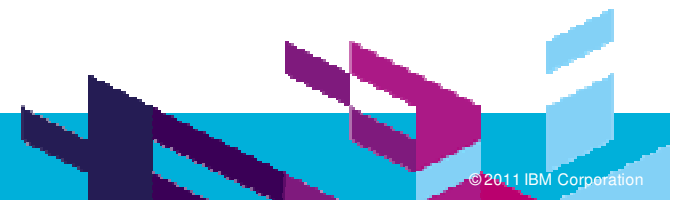- Traceability between Requirements and Plan Items (long term)

The road ahead…

- **Adding Automated Tests**
  - ▶ Functional
  - ▶ Performance
  - ▶ …
- **Incorporate more sections in the templates based on the need**
- **Improve linkages between test cases and development plans**
- **Managing automation within Quality Manager**
- **Schedule Tests to be run automatically**
- **RRDI server integration for enhanced reporting**

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THANK YOU

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