Effective Test Planning and Execution Tracking Using IBM® Rational® Quality Manager

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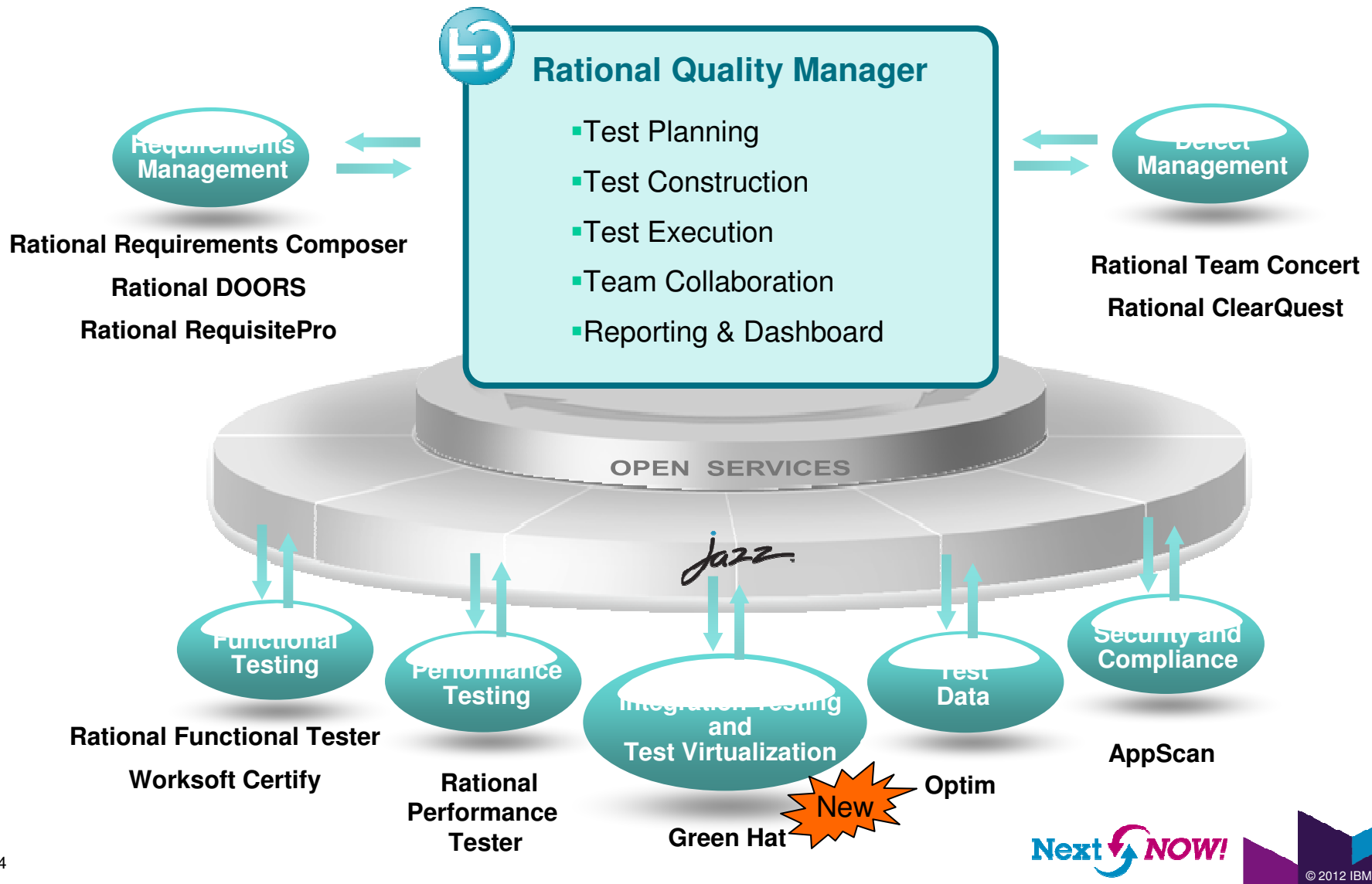
Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

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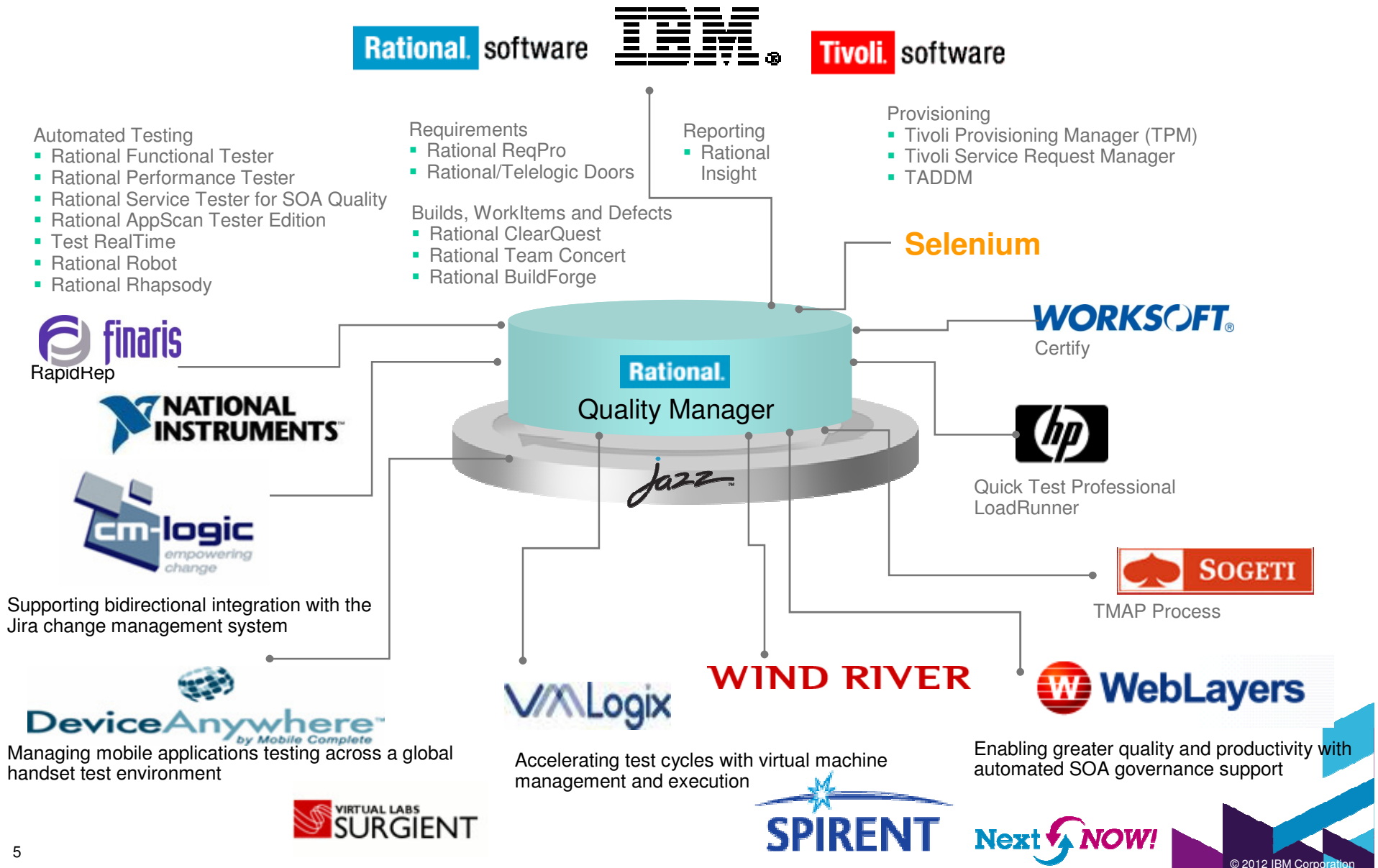# Effective Test Planning and Execution Tracking Using IBM® Rational® Quality Manager

Agenda

- Introduction

- Estimating the Test Effort

- Prioritizing the Test Effort

- Tracking Progress

- Questions

Rational Quality Manager: Central Hub for Quality Management

Rational Quality Manager

- Test Planning
- Test Construction
- Test Execution
- Team Collaboration
- Reporting & Dashboard

Requirements Management

Rational Requirements Composer

Rational DOORS

Rational RequisitePro

Defect Management

Rational Team Concert

Rational ClearQuest

OPEN SERVICES

Jazz

Functional Testing

Rational Functional Tester

Worksoft Certify

Performance Testing

Rational Performance Tester

Integration Testing and Test Virtualization

New

Green Hat

Test Data

Optim

Security and Compliance

AppScan

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Rational Quality Manager Open Ecosystem

Rational. software **IBM.** **Tivoli.** software

Automated Testing
- Rational Functional Tester
- Rational Performance Tester
- Rational Service Tester for SOA Quality
- Rational AppScan Tester Edition
- Test RealTime
- Rational Robot
- Rational Rhapsody

Requirements
- Rational ReqPro
- Rational/Telelogic Doors

Reporting
- Rational Insight

Provisioning
- Tivoli Provisioning Manager (TPM)
- Tivoli Service Request Manager
- TADDM

Builds, WorkItems and Defects
- Rational ClearQuest
- Rational Team Concert
- Rational BuildForge

Selenium

finaris
RapidRep

Rational. Quality Manager

jazz

WORKSOFT.
Certify

NATIONAL INSTRUMENTS

hp
Quick Test Professional
LoadRunner

cm-logic
empowering change

Supporting bidirectional integration with the Jira change management system

SOGETI
TMAP Process

DeviceAnywhere by Mobile Complete

Managing mobile applications testing across a global handset test environment

VMLogix

Accelerating test cycles with virtual machine management and execution

WIND RIVER

W WebLayers

Enabling greater quality and productivity with automated SOA governance support

VIRTUAL LABS SURGIENT

SPIRENT

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Rational Quality Manager: A Closer Look

Test Planning

- Comprehensive test plan
- Shared objectives
- Scope, Timeline, Resources
- Risk assessment

Test Construction

- Requirements driven testing
- Test environments coverage
- Manual test authoring
- Test lab management

Test Execution

- Manual test execution
- Use test automation tools
- Record test results
- Submit & track defects

Team Collaboration

- Process enactment and enforcement
- Review and approval
- Task management
- Rapid team member on-boarding

Reporting & Dashboard

- Status and progress tracking
- Customizable live dashboard
- Real-time metrics and reports
- Compliance and quality audit

Jazz

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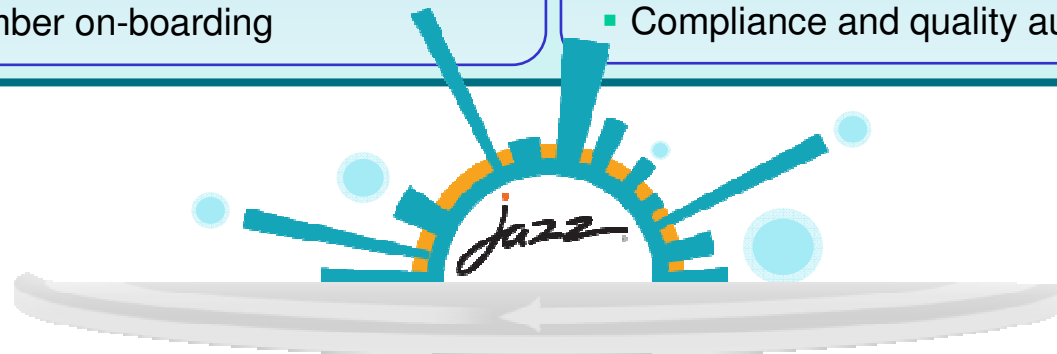
Introduction

New artifact fields in RQM

- Priority

- Estimate

- Time Spent

Test Case Execution Records >

* (QM Tutorial) Allocate Dividends to Multiple Causes

Originator:	QM User	Owner:	QM User
Team Area:	Unassigned		
Priority:	High		
Blocking Status:	Blocked	Run On:	May 27, 201
Last Result:	Passed		
Description:	< Click here to enter a description >		

Overview ?

Test Plan:	Unassigned
Test Case: *	(QM Tutorial) Allocate Dividends to Multiple Causes
Default Test Script:	Allocate Dividends to Multiple
Iteration:	
Available Test Environments:	Unassigned
Weight: *	125
Estimate:	4 hours
Time Spent:	2 hours

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Introduction
New artifact fields in RQM: Priority

Field	Artifact Types	Usage
Priority	• Test Plan • Test Case • Test Suite • TER	• An enumeration of values describing relative priority of one test vs. another • Out of the box values: High, Medium, and Low • Viewable/Filterable/Sortable within Table Views • Used to make intelligent decisions of what test to focus on first and what to defer if needed • Yes, we know some of you use "weight" for this already

Introduction
New artifact fields in RQM: Estimate

Field	Artifact Types	Usage
Estimate	• Test Case • Test Suite • TER	• A time measure of how long it will take to execute a test • For TERs: used with "Time Spent" to provide live execution progress data: Test Plan progress and progress by Owner • Viewable/Filterable/Sortable within Table Views • Yes, we know some of you used "weight" for this already

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Introduction
New artifact fields in RQM: Time Spent

Field	Artifact Types	Usage
Time Spent	• TER	• The actual time it took to run a test • Used with "Estimate" to provide live execution progress data: Test Plan progress and progress by Owner • Viewable/Filterable/Sortable within Table Views • Used to correct Estimates based on historical data to help with more accurate future planning

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Estimating the Test Effort

How can I plan my testing in a way that allows me to evenly distribute work across the team and make intelligent decisions about load balancing?

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Estimating the Test Effort
Setting estimate on test cases

When you set an estimate and/or priority on a test case, all TERs generated from that test case will inherit the estimate and priority values

Test Cases >

E. * 12: Organization must provide justification for why funds are needed

Cancel   Save

| Test Case Overview | Snapshots | History |

State: Under Review Action: Change State

Originator: Tanuj   Owner: Tanuj

Priority: High

Description: < Click here to enter a description >

Test Case Execution Records

Allows you to associate, create and generate execution records for an individual test case. Exec records contain detailed configuration information for the test case and the high level results fro case execution. Detailed results are in the log files.

Group By: Ungrouped

Type Filter Text

Show All   Items per page   Previous | 0 - 0 of 0 | Next

| | ID | Priori | Name | Test Environmen | Ite | ne | Test Script |

Generate Test Case Execution Records

Step1 >Step2 >Step3

Generated Test Case Execution Records Organization must provide justifica needed

Group By: Ungrouped

10   Items per page   Previous | 1 - 10 of 21 | Next

		Priority	Name	Test Case	Test Environment	Iterati
			Organization must ...	Organization must pr...	Chrome	S1
			Organization must ...	Organization must pr...	Chrome 10	S1
			Organization must ...	Organization must pr...	Chrome 11	S1
			Organization must ...	Organization must pr...	Chrome 12	S1

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Estimating the Test Effort
Using historical time spent

You can use "time spent" from prior iterations to make intelligent decisions about correcting estimates

Test Case Execution Records ?
This section lists the related test case execution records for the test plan.

View As: General ▼   Group By: Iteration ▼

Show All ▼ Items per page   ◄ Previous | **1** | Next ►

☐ ▦	ID	Iteration	Priority	Name	Owner	Estimate	Time Spent
☐ ▼ **S1** *(1 - 8 of 8)*							
☐	1	S1		Allocate_Dividends_to_a_Single_Cause_...	Tanuj	5 h	7 h
☐	2	S1		Allocate_Dividends_to_a_Single_Cause_...	Tanuj	5 h	6 h
☐	3	S1		Allocate_Dividends_to_a_Single_Cause_I...	Tanuj	5 h	3 h
☐	4	S1		Pay_Bills_Online_InternetExplorer_DB2_...	Tanuj	1 d 2 h	1 d
☐	5	S1		Request_Credit_Increase_InternetExplore...	Tanuj	5 h	2 h
☐	6	S1		Dividend_Allocation_by_Percentage_Firef...	Marco	1 d 2 h	1 d 7 h
☐	7	S1		Dividend_Allocation_by_Percentage_Firef...	Marco	1 d 2 h	1 d 5 h
☐	8	S1		Dividend_Allocation_by_Percentage_Inter...	Marco	1 d 2 h	7 h
☐ ▼ **S2** *(1 - 6 of 6)*							
☐	9	S2		Allocate_Dividends_to_a_Single_Cause_...	Marco	0 s	0 s
☐	10	S2		Allocate_Dividends_to_a_Single_Cause_...	Marco	5 h	6 h

Prioritizing the Test Effort

How can I plan my testing in a way that ensures that my team executes the most important tests first and defers the least important?

Prioritizing the Test Effort
Creating custom priorities for your organization

The Project Area Administration page has a "Priority" entry in the newest version of RQM that allows you to rename, remove, and create custom priority values.

You can set the default priority value used for new test artifacts.

You can insert new priority values within the existing hierarchy indicating relative priority.

This project area is part of a Lifecycle Project: Money that Matters Sample

Active Project Areas >

JKE Banking (Quality Management)

Overview	**Test Artifacts - Priority**
Timelines	Define the priorities for test artifacts.
Roles	☐ Final (ignore customization of this data in child areas)
Permissions	
Iteration Types	**Properties**
Access Control	
RequisitePro Projects	Default Literal: * Medium ▼
Process Description	**Literals**
Releases	To create a new priority literal, 1st select an existing literal. Click o
Categories	literal.
Mail Templates	
Work Items	
▼ Test Artifacts	
Workflows	
Priority	

Icon	Name
☐	Unassigned
▭	Low
▭	Medium
⚑	High
①	Must

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Prioritizing the Test Effort
Deriving test case priority – requirements and workitems

Use Requirement "Business Priority" and Workitem "Priority" and "Story Points" to determine Test Case priority.

The new "Traceability" view for Test Cases is great for this. You can add those columns to all Test Case views. BTW – the icon "decorations" are live and indicate related asset status. Cool!

Prioritizing the Test Effort
Deriving test case priority – defects and prior runs

Use defects found and results of prior runs to determine "sensitive" areas that require more focus.

Use a filtered TER view and leverage the new "Defects" column to make intelligent decisions here.

Prioritizing the Test Effort
Deriving test plan priority

Do you classify test plans with categories to indicate type of testing? Using categories (like Test Phase) to separate plans by regression, translation, new feature, etc. is useful to define relative priority.

Additionally, Test Plans have traceability views to Requirement Collections and Development Plans that can also drive decisions on priority.

Test Plans [?]

View As: [Traceability ▼] Group By: [Ungrouped ▼]

[Show All ▼] Items per page |◀ Previous | **1** | Next ▶|

		ID	Name	Validates Requirement Collection	Tests Development Plan	Priority	Test Phase
☐		1	Development Test	✓ 157: Release 1 Planning	BRM Sprint 2 (1.0) Plan		Developer Test
☐		2	System Verification	✓ 157: Release 1 Planning	BRM Sprint 2 (1.0) Plan		Integration Test

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Tracking Progress

How can I track execution progress and make adjustments real-time to react to business reality?

Tracking Progress
Test plans – live view

Use the new test plan "Live View" for real-time, at a glance, info on how your testing is progressing.

Test Plans >

E *2: System Verification ?

Cancel   Save

| Test Plan Overview | Snapshots | History |

State: ⇒ Draft   Action: Change State ▼

Originator: Tammy   Owner: Tammy ▼

Priority: ▮ High ▼

Execution Progress

Test Case:

Estimated: 100%   Progress:1155   Total:1580
Total: 104/105 h

Test Suite:

Total: 0/0 h   Estimated: 0%   Progress:0   Total:0

Description: Formal test plan for system verification.

Tracking Progress
Test plans – Execution view

The test plan list view has a "view as Execution" option. You can see execution progress against estimates, points, and overall test case coverage.

Tip: expand the test plan to see progress against iterations.

Test Plans ?

View As: Execution ▼

Show All ▼ Items per page   ◄ Previous | **1** | Next ►

		ID	Name	Iteration	Test Case Estimates		Test Case Points		Test Case Attempts
☐	▶	1	Development Test	TestPlan 1	Total: 107/115 h	Estimated: 100%	Progress:1320	Total:1520	Progress:14
☐	▼	2	System Verification	TestPlan 2	Total: 97/100 h	Estimated: 100%	Progress:1155	Total:1580	Progress:10
				S1	Total: 61/60 h	Estimated: 100%	Progress:805	Total:905	Progress:7
				S2	Total: 36/40 h	Estimated: 100%	Progress:350	Total:675	Progress:3

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Tracking Progress
Test plans – TER view

There's a new section for test plans to list all TERs associated with the plan.
"Group By Owner" shows you individual progress.

Tracking Progress
TER view

Use the TER view grouped by owner to reassign test ownership. Transfer TERs from overbooked testers to under-booked testers.

The TER view in a plan is great, but the general TER view can also be grouped by Owner for a more holistic view.
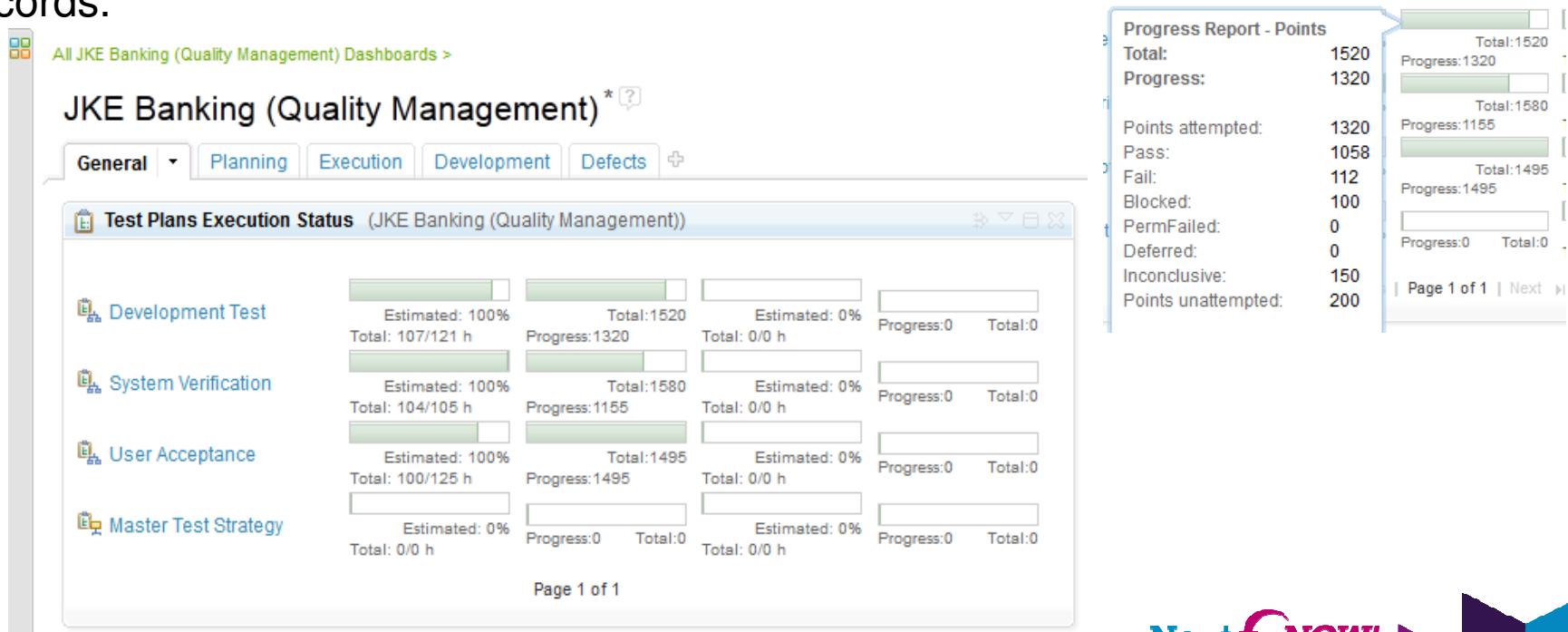
Tracking Progress
Dashboard viewlet – Test Plans Execution Status

Test plan execution status can be tracked via a viewlet on personal, team, and project dashboards.

Hover over progress bars for breakdowns of details.

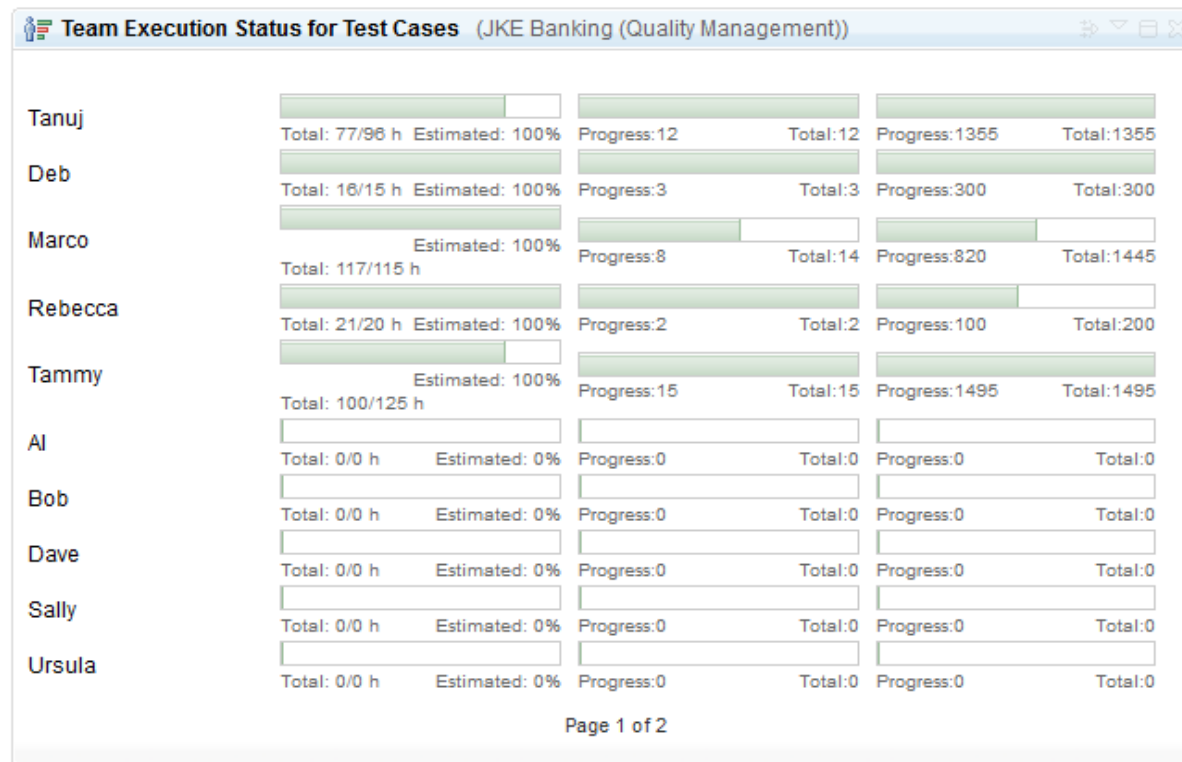Click on progress bars to open the relevant table of test case or test suite execution records.

Tracking Progress
Dashboard viewlet – Team Execution Status for Test Cases

A great team dashboard viewlet (also available on personal and project dashboards) that is a breakdown of your team's progress.

Hover over progress bars for breakdowns of details.

Tracking Progress
Reviewing what has not been executed: TER view

The TER view in a test plan filtered with "Last Result = Not Run and Failed" (e.g.) is a quick and easy way to see your exposure.

Leverage the priority you've assigned to TERs to assess risk and exposure, drilling into the associated test case's related requirements and workitems for a complete picture. Use the progress view to reassign those critical TERs!

		ID	Priority	Name	Test Case	Iteration	Owner	Last Result
☐			Any			Any	Any	Not Run

Marco (1 - 5 of 5)

Total: 31/45 h   Estimated: 100%

	ID	Priority	Name	Test Case	Iteration	Owner	
☐	13	⊘	Dividend_Allocation_by_Percentage_Fir...	Dividend Allocation by Perce...	S2	Marco	○
☐	8		Dividend_Allocation_by_Percentage_Int...	Dividend Allocation by Perce...	S1	Marco	○
☐	14		Dividend_Allocation_by_Percentage_Int...	Dividend Allocation by Perce...	S2	Marco	○
☐	11		Allocate_Dividends_to_a_Single_Caus...	Allocate Dividends to a Singl...	S2	Marco	○
☐	16		Dividend_Allocation_by_Percentage_Ch...	Dividend Allocation by Perce...	Unassigned	Marco	○

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Tracking Progress
Reviewing what has not been executed:
Execution Records viewlet

You can save your TER query in the prior slide and use that to drive the Execution Records viewlet on your project, team, or personal dashboard.

Decorations in the viewlet include execution status and priority.

System Verification failed and not run by priority : Test Case Execution Records (9)

Allocate_Dividends_to_a_Single_Cause_InternetExplorer_DB2_WAS_Windows_S2

Dividend_Allocation_by_Percentage_InternetExplorer_DB2_WAS_Windows_S2

Dividend_Allocation_by_Percentage_Firefox_DB2_WAS_Linux_S2

Dividend_Allocation_by_Percentage_InternetExplorer_DB2_WAS_Windows_S1

Pay_Bills_Online_InternetExplorer_DB2_WAS_Windows_S1

Request_Credit_Increase_InternetExplorer_DB2_WAS_Windows_S1

Process_email_requests_Firefox_DB2_Tomcat_Windows_S1

Allocate_Dividends_by_Percentage_Firefox_DB2_Tomcat_Windows_S1

Dividend_Allocation_by_Percentage_Chrome_DB2_Tomcat_Linux

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Tracking Progress
Reviewing requirement exposure in a report

Use the "Plan Requirement Defect Impact" report to view exposure for a test plan, iteration, requirement(s), owner, or TER state.

Plan Requirements Defect Impact*

▸ Parameters

Requirements impacted by defects

Requirement name	Test case	Defect ID	Defect name	Defect state
Allocate dividends by Percentage	Allocate Dividends to a Single Cause	38	Organization selection list is empty	New
Allocate dividends by amount and frequency	Allocate Dividends to a Single Cause	38	Organization selection list is empty	New
Dividend allocation by percentage	Allocate Dividends to a Single Cause	38	Organization selection list is empty	New
Donor Chooses an Organization	Allocate Dividends to a Single Cause	38	Organization selection list is empty	New
Donors can choose to support an organization	Allocate Dividends to a Single Cause	38	Organization selection list is empty	New

Test cases impacted by blocked requirements

Test case	Requirement name
Allocate Dividends to a Single Cause	Allocate dividends by Percentage
	Allocate dividends by amount and frequency

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Tracking Progress
Reviewing what has not been executed: exporting to CSV

You may need to report status to others in your organization who may not want to or be licensed to use CLM reporting, let alone QM itself. CSV Export is a new 2012 feature that allows you to export exactly what you're seeing in any table view to a spreadsheet. Start your pivot table engines!

Show All ▼ Items per page				◄ Previous | **1** | Next ►					
	ID	Priority	Name	Test Case	Iteration	Owner	Last Result	Time Spent	Estimate
▼ **Marco** (1 - 5 of 5)						Total: 31/45 h	Estimated: 100%	Progress:0	Total:525
	13	ⓘ	Dividend_Allocation_by_Percentage_Firef...	Dividend Allocation by Percen...	S2	Marco	○	7 h	1 d 2 h
	8		Dividend_Allocation_by_Percentage_Inter...	Dividend Allocation by Percen...	S1	Marco	○	7 h	1 d 2 h
	14		Dividend_Allocation_by_Percentage_Inter...	Dividend Allocation...	S2	Marco	○	6 h	1 d 2 h

Priority	Name	Test Case ID	Test Case	Iteration	Owner
Must	Dividend_Allocation_by_Percentage_Firefox_DB2_WAS_Linux_S2	18	Dividend Allocation by Percentage	S2	Marco
Low	Dividend_Allocation_by_Percentage_InternetExplorer_DB2_WAS_Windows_S1	18	Dividend Allocation by Percentage	S1	Marco
Low	Dividend_Allocation_by_Percentage_InternetExplorer_DB2_WAS_Windows_S2	18	Dividend Allocation by Percentage	S2	Marco
Medium	Allocate_Dividends_to_a_Single_Cause_InternetExplorer_DB2_WAS_Windows_S2	19	Allocate Dividends to a Single Cause	S2	Marco
Medium	Dividend_Allocation_by_Percentage_Chrome_DB2_Tomcat_Linux	18	Dividend Allocation by Percentage		Marco
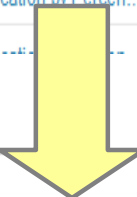
Summary

- Use priority to focus your test efforts and make intelligent decisions on what can be deferred.

- Estimate and time spent drive our live status views and allow you to better track your execution progress from a resource perspective.

- Traceability views provide easy access to linked data to make planning decisions.

- Live views in the test plan offer "at a glance" status without running a report.

- The TER section in a test plan is a powerful way to easily and conveniently track testing progress.

- New viewlets make tracking progress in a dashboard easier

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