IBM Software Group

Ensure Quality with IBM Rational

Quality Driven Software Delivery for SAP

Rational. software

Go to IBM

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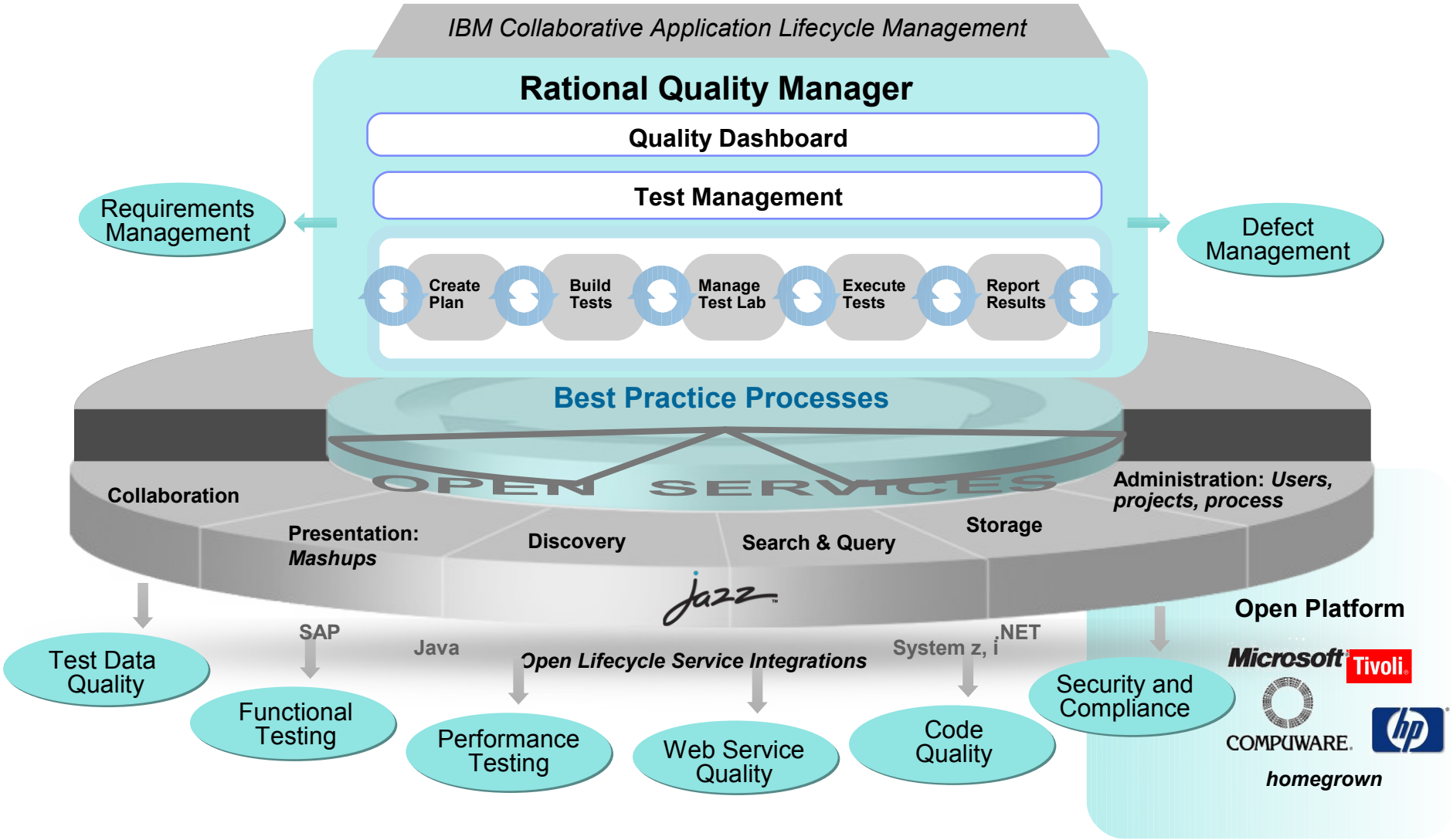
IBM Rational Quality Management

Quality Driven Software Delivery for SAP

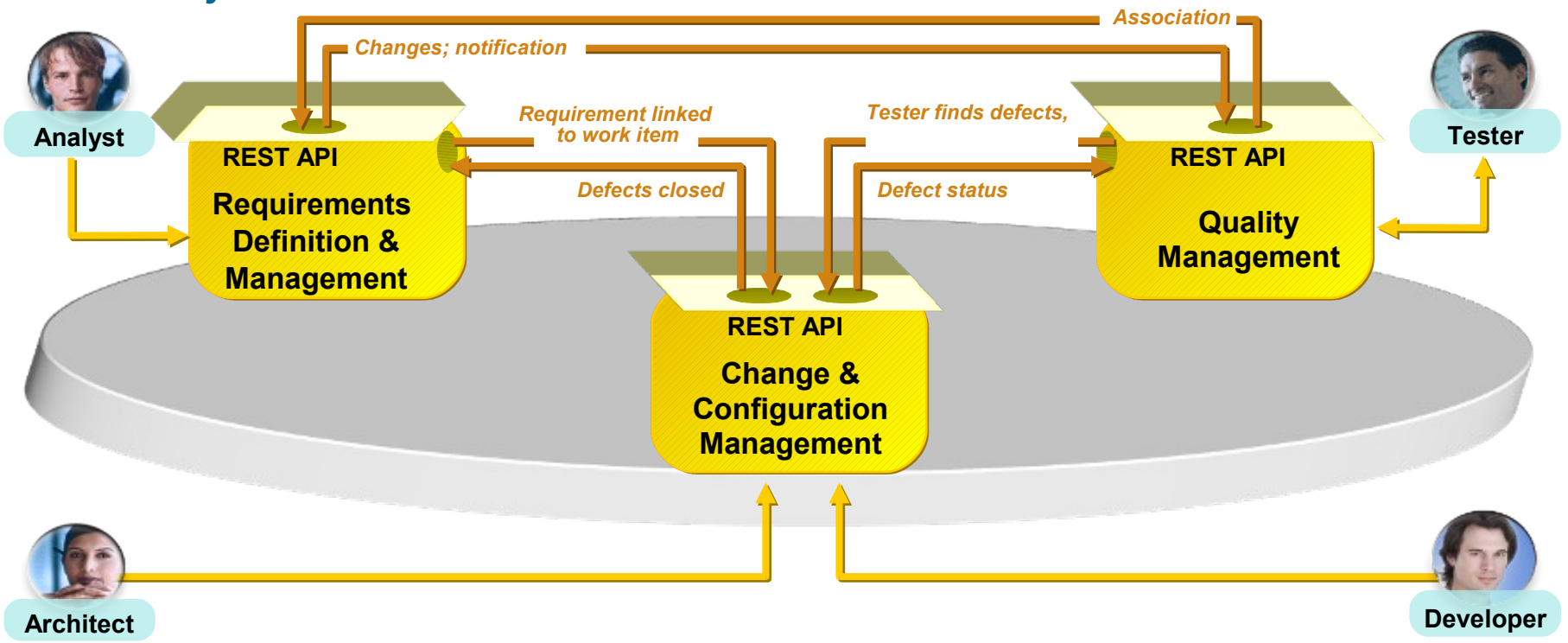
- IBM Rational Quality Management
- Rational Functional Testing
- Rational Performance Tester

Collaborative Application Lifecycle Management



Lower the cost of delivering quality solutions

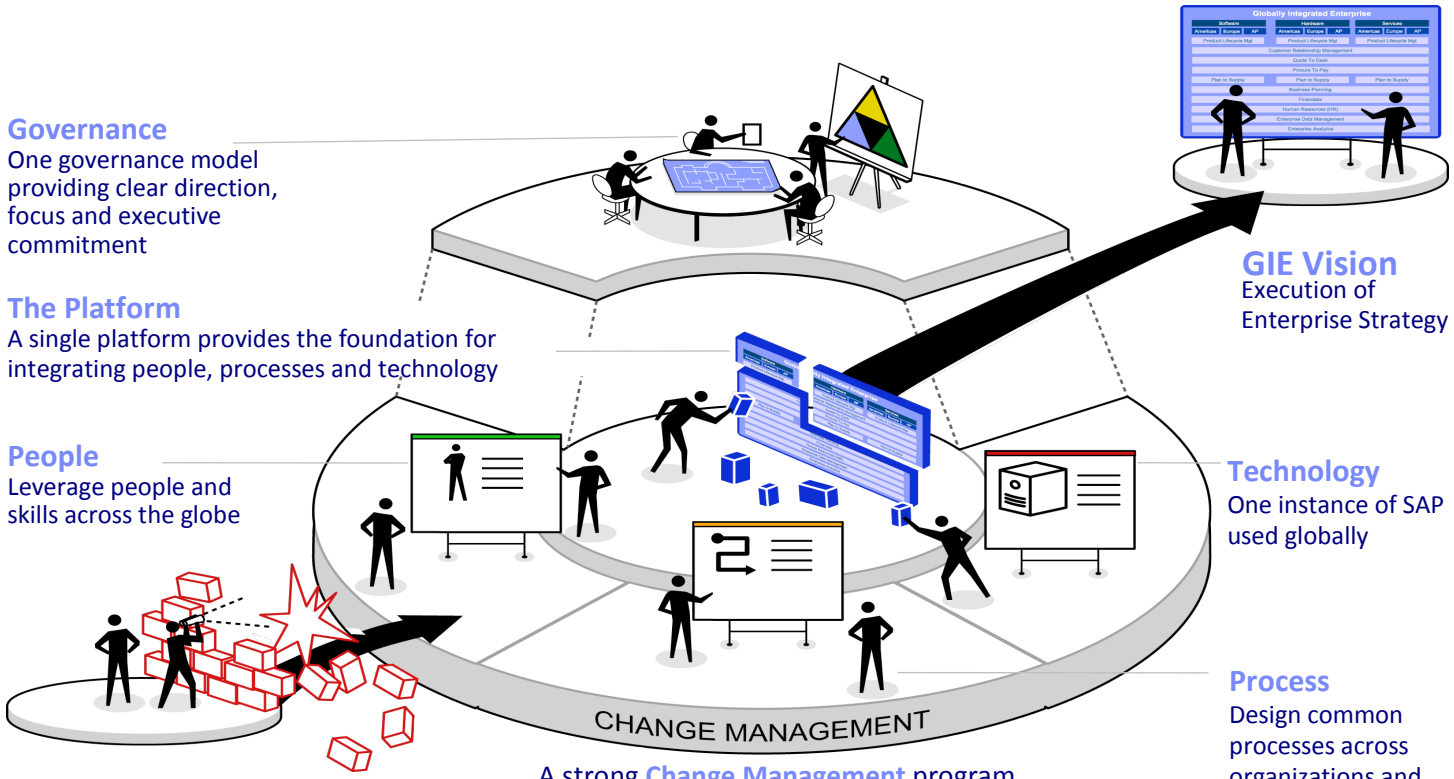
Orchestrate across teams with ALM integration for maximum transparency and traceability of assets



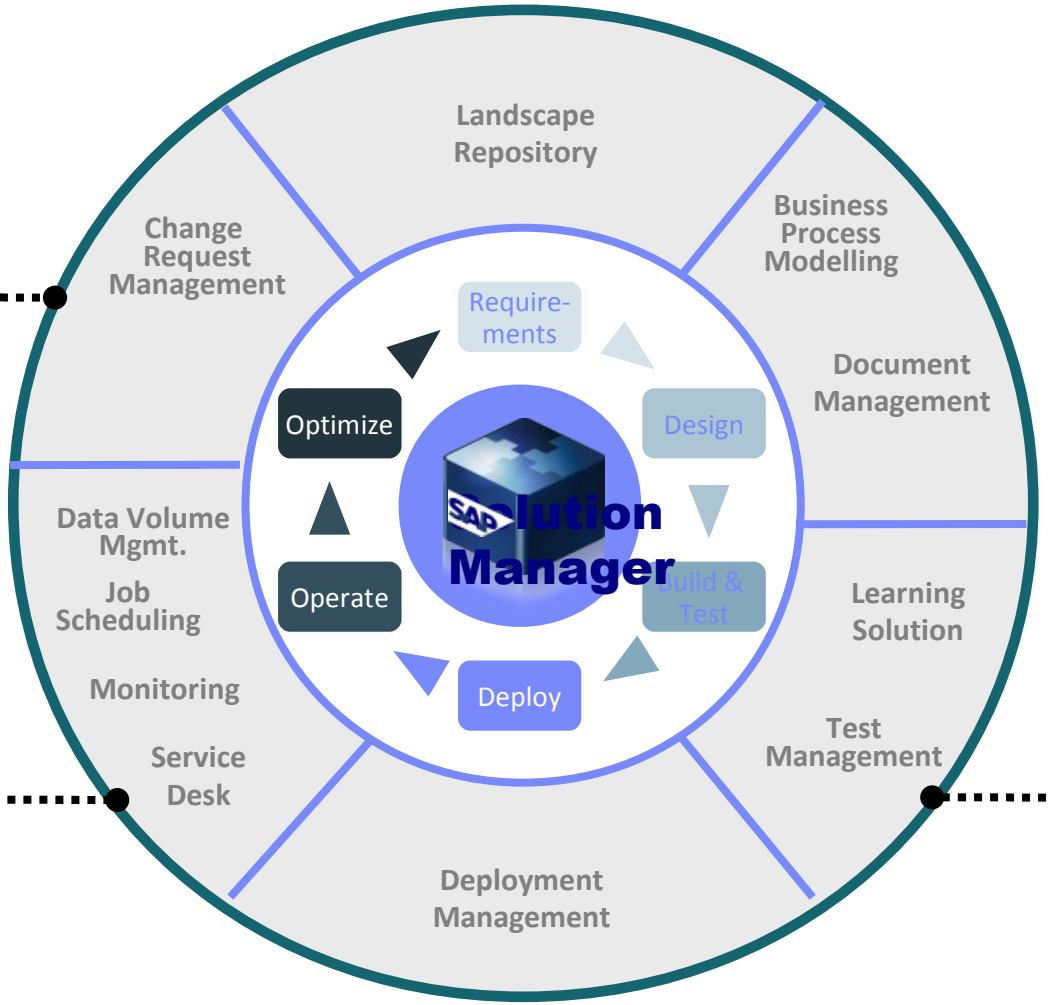
- **Coordinate analysts, developers and testers**
  - Collaborate in context and track status
- **Align teams on project plans**
  - Which requirements are in the development plan?
- **Track builds and the impact of defects**
  - What build is ready for test?
  - What defects are blocking test from proceeding?
- **Track status with C/ALM dashboard mashups**
  - Transparency across teams and artifacts

Blue Harmony -- a radical transformation making it easier for clients and partners to do business with IBM

Flexible Global Template using a single platform supporting multiple enterprise processes to reach our goal of an efficient Globally Integrated Enterprise (GIE)



Solution Manager – IBM Rational Integrations
for Globally Integrated Enterprise



Rational. software
QualityManager
ClearQuest

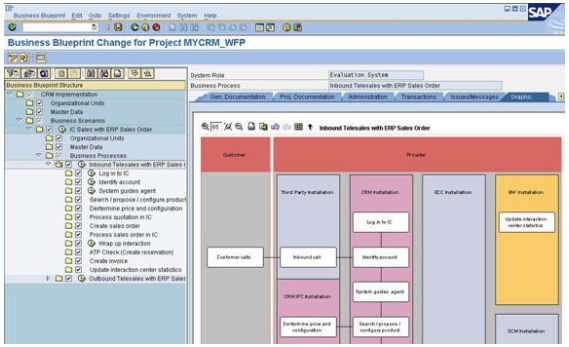
Rational. software
ClearQuest

Rational. software
QualityManager
Functional Tester
Performance Tester
AppScan
Policy Tester

Rational Software and SAP Solution Manager for Testing

Rational software and SAP Solution Manager for testing integrates application lifecycle management capabilities of SAP Solution Manager with test planning and test execution capabilities of Rational software

SAP Solution Manager



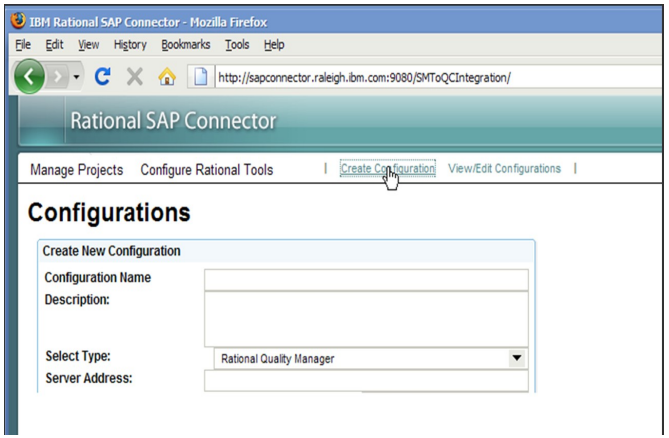
Rational software

Outbound

- Business Blueprint
- Bus. Requirements
- Test Objects
- Documents
- Incidents

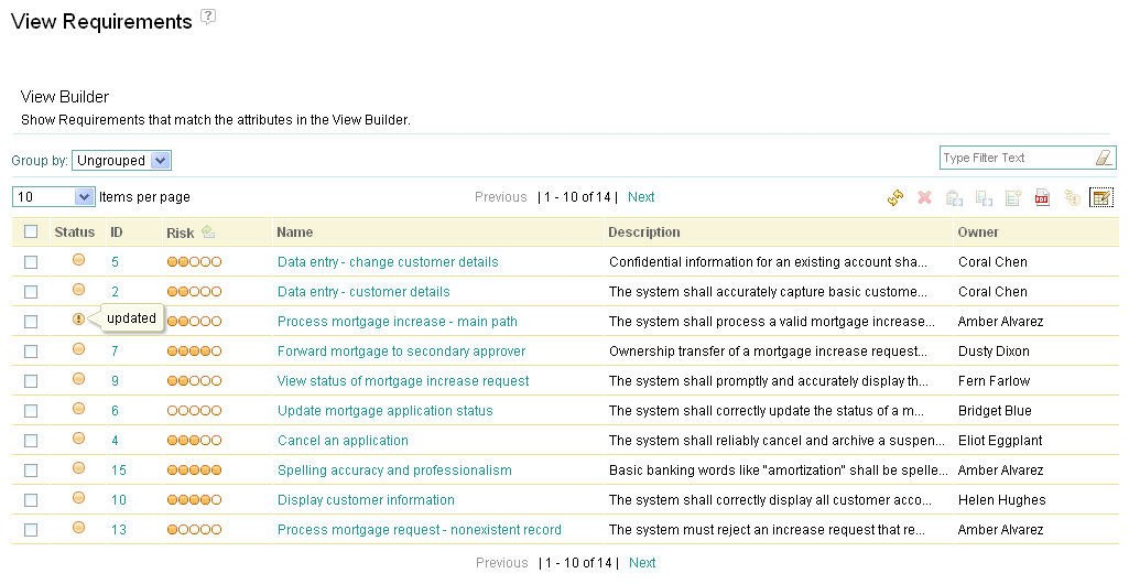
Inbound

- Test Results
- Incidents



Requirements driven testing

Knowing what to test

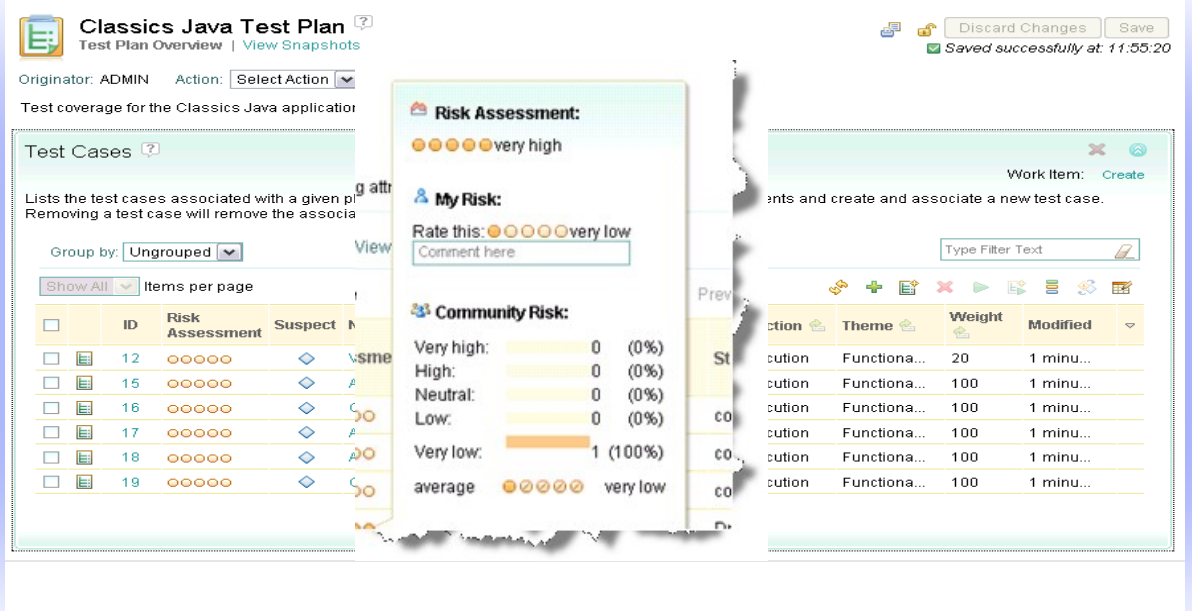


- **Requirements tracking built into the test management tooling**
- **Customizable attributes enable you to track what is important to your team**
- **Real-time impact analysis of requirements changes**
- **Traceability of test results to user needs**

Know you are testing the right things

Collaborative risk based testing

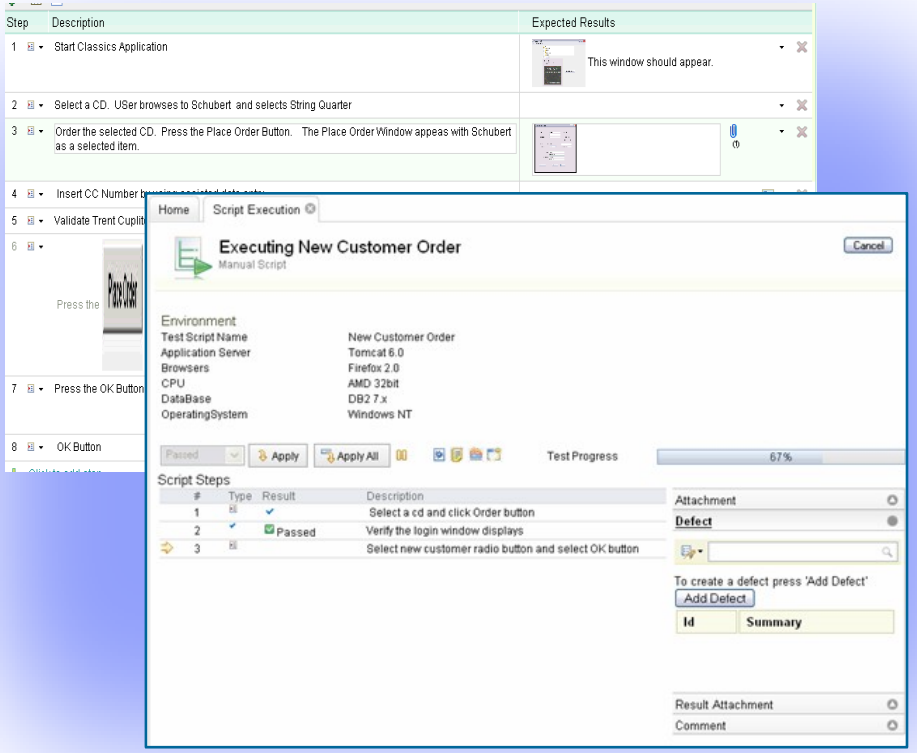
Risk management and prioritization



- **Risk assessments captured in Test Plan and Test Cases**
- **Collaboration planning of risk mitigation strategy**
- **Test Case will contain a risk failure score and a risk priority score**
- **Documented risk related decisions**

Base project decisions on qualitative risk analysis

Integrated Manual test authoring and execution

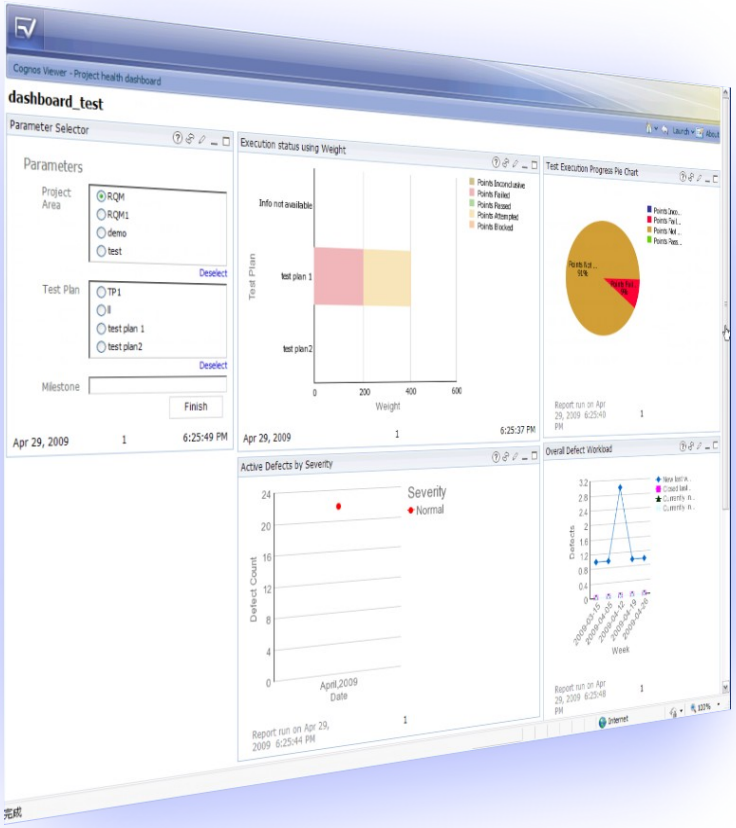


- Manual test author and execute
  - Step by step capture and execution of manual tests
  - Assisted data entry
  - Keyword support for integrated manual and automated testing
  - Rich defect capture during execution, including screenshot and attachments
  - Simple intuitive interface for quick test execution

Maximizing efficiency of manual testing

Make confident decisions with effortless reporting

Closed Loop Analysis & Reporting



- Customizable reports and dashboards
  - Reduce escalating cost of information gathering
  - Reduce risk by identifying trends before they become issues
  - Raise enterprise visibility and transparency to reduce costs and risk
  - Measures the effectiveness of processes and practices to improve organizational and business outcomes

Make the right decisions at the right time

Rational Quality Manager Open Ecosystem Today

Rational. 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

IBM

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

Requirements
- Rational Requirements Composer
- Rational ReqPro
- Rational DOORS

Reporting
- Rational Insight

Tivoli. software

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

finaris
RapidRep

WORKSOFT
Certify

cm-logic
empowering change
Supporting bidirectional integration with the Jira change management system

hp
Quick Test Professional
LoadRunner

SOGETI
TMAP Process

DeviceAnywhere by Mobile Complete
Managing mobile applications testing across a global handset test environment

VMLogix
VIRTUAL LABS SURGIENT
Accelerating test cycles with virtual machine management and execution

WebLayers
Enabling greater quality and productivity with automated SOA governance support

IBM Rational Quality Management

Quality Driven Software Delivery for SAP

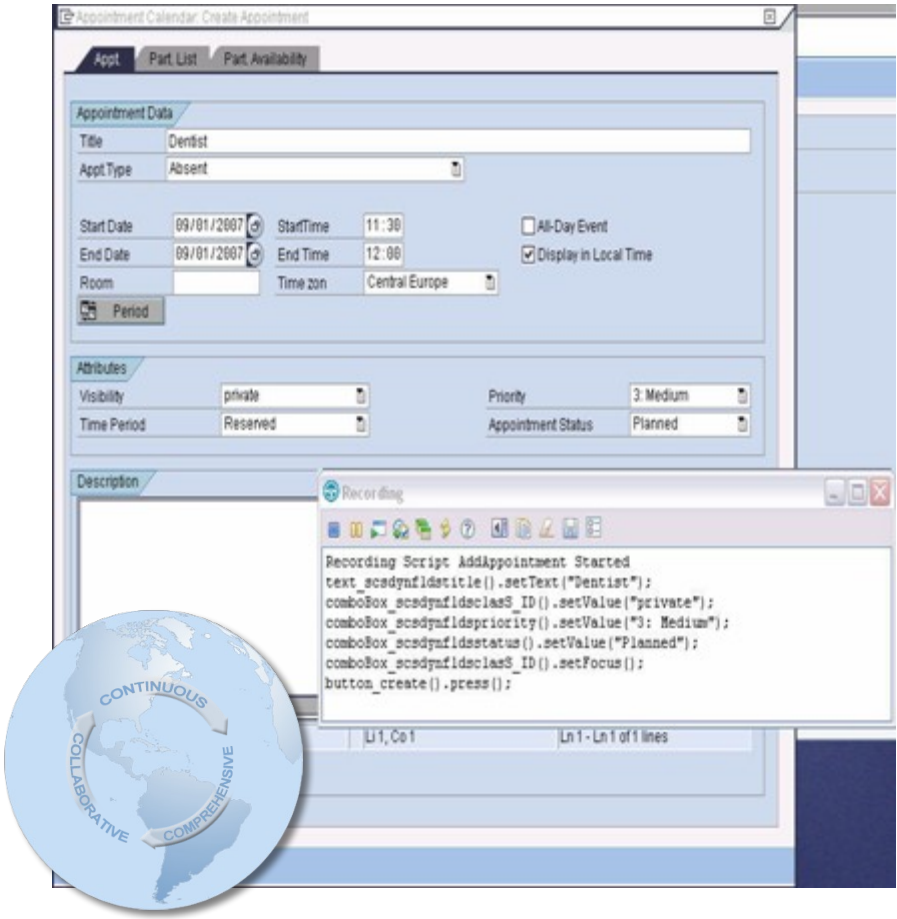
- IBM Rational Quality Management
- Rational Functional Testing
- Rational Performance Tester

IBM Rational Functional Testing in SAP® deployments

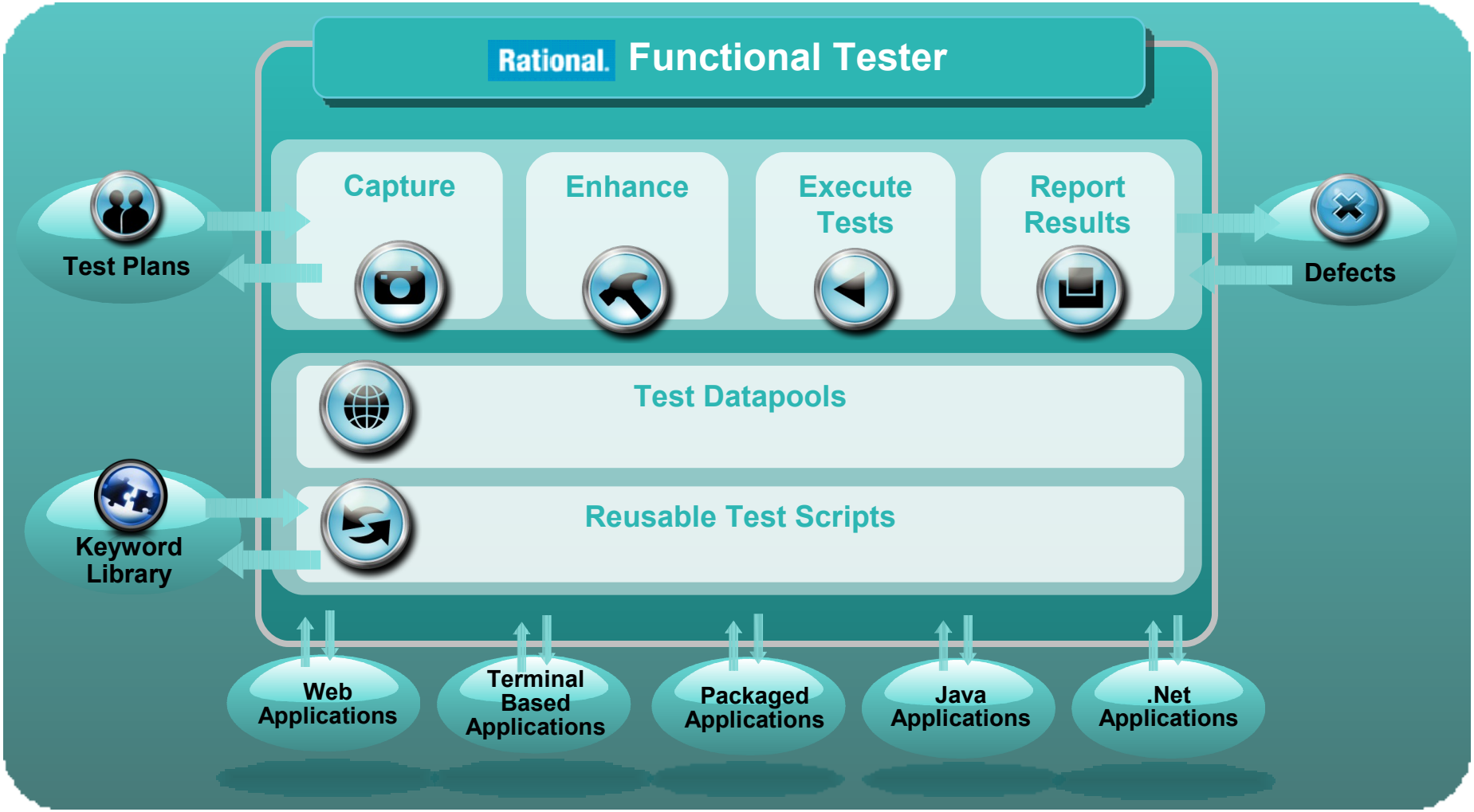
Test SAP® customizations before they go live

- SAP® certified solution for SAP R/3 and SAP NetWeaver applications (BC-TEST-GUI 6.40)
- Integrates with the SAP® NetWeaver platform to exchange critical data with instances of the SAP Business Suite family of applications.
- Minimize test maintenance with scripts resilient to application changes
- Wizard enhanced automation to speed test creation for the new user
- Powerful scripting language and IDE integration for the professional tester provides a consistent, integrated environment for functional and performance testing
- Supports team oriented parallel development

SAP Certified Integration



Rational Functional Tester 8.1



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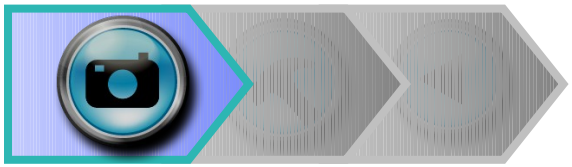
Effective Test Automation

Recording an automated script

- Automated script capture
  - Test scripts are recorded on the fly, as user navigates application
  - Verification points are inserted to validate system response
  - Test data can be specified and parameters created while recording



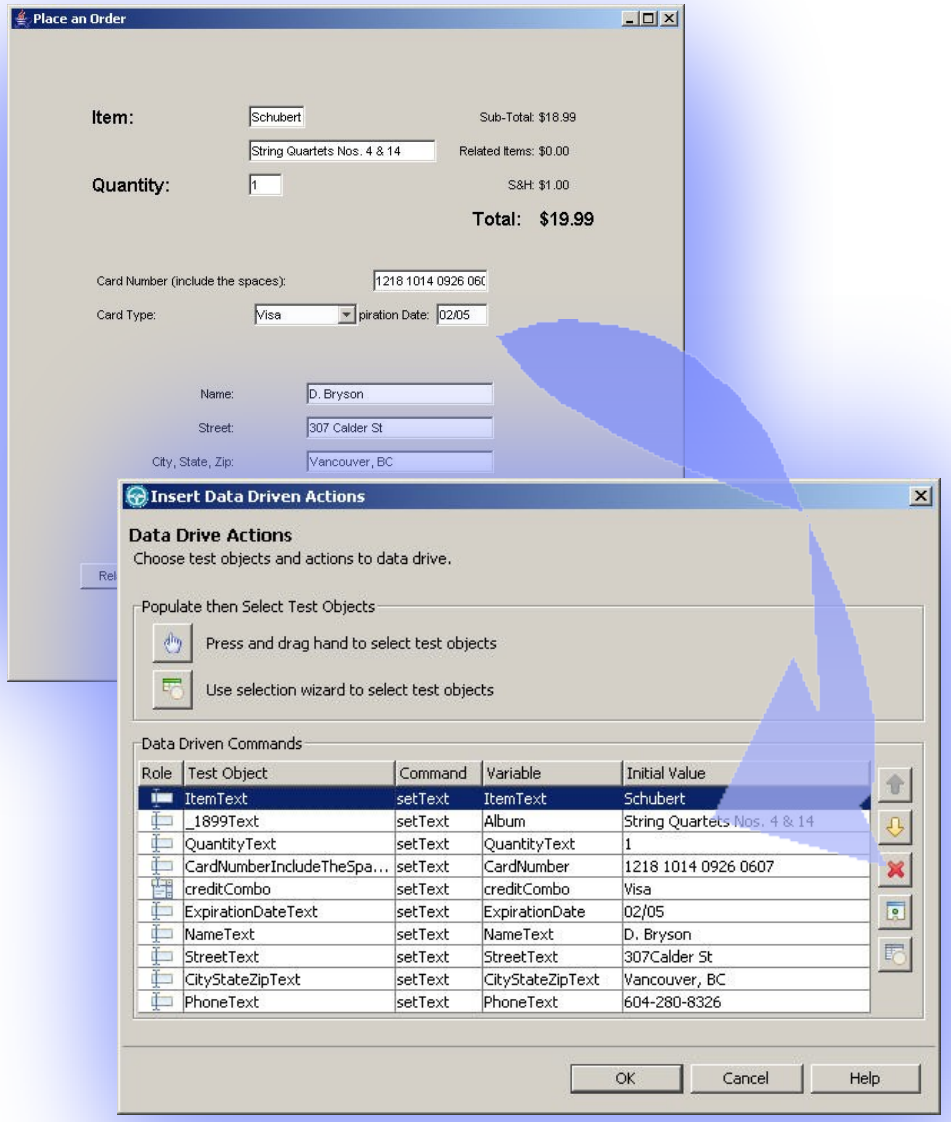
Functional Tester Highlights

- Tool mentors and process advisors accelerate training
- Broad environment support
- Create data driven tests without coding
- Static data and properties verification
- Dynamic data validation without coding

Recording Scripts

Data Driven Testing

- **Data Driven Testing**
  - Separates test data from test script
  - Enables a single script to run multiple tests by using multiple data sets
- **Wizard driven process**
  - No programming involved
  - Import data from external sources



Recording Scripts

Verification Points

Software
Trials and betas
Support
Training and certification
Library
Events
News

Functional Tester Sees Data

You See…

Property	Value
.bounds	Rect[84,100,787,809]
.class	Html.HtmlDocument
.cookie	IBMSurveyTest=isEnabled
.offsetHeight	809
.offsetWidth	787
.text	IBM Rational Software Home
.title	IBM Rational Software
.url	HRef(http://www.ibm.com/software/rational/)

Functional Tester Sees Properties

- **Automated Validation**
  - Functional Tester captures data and properties that can be invisible to users
  - During script execution, current results are compared to stored baselines
  - Discrepancies are flagged and reported to user in an HTML based test log

Recording Scripts

Validating Dynamic Data

- Use pattern matching technique to verify dynamic data and create robust tests
- E.g. Instead of validating “Order ID 230”, validate “Order ID ###”
  or Order ID 2##, etc.
- This allows for a wide variety of acceptable responses as well as restrictions on acceptable responses when validating the application’s behavior

Effective Test Automation

Enhancing Scripts

- Enhancing Scripts with basic coding extends their value and reach
  - VB.net or Java code is added to perform a variety of functions
  - Typical Modifications: Conditional branching, datapooling, refactoring, adding additional dynamic data patterns

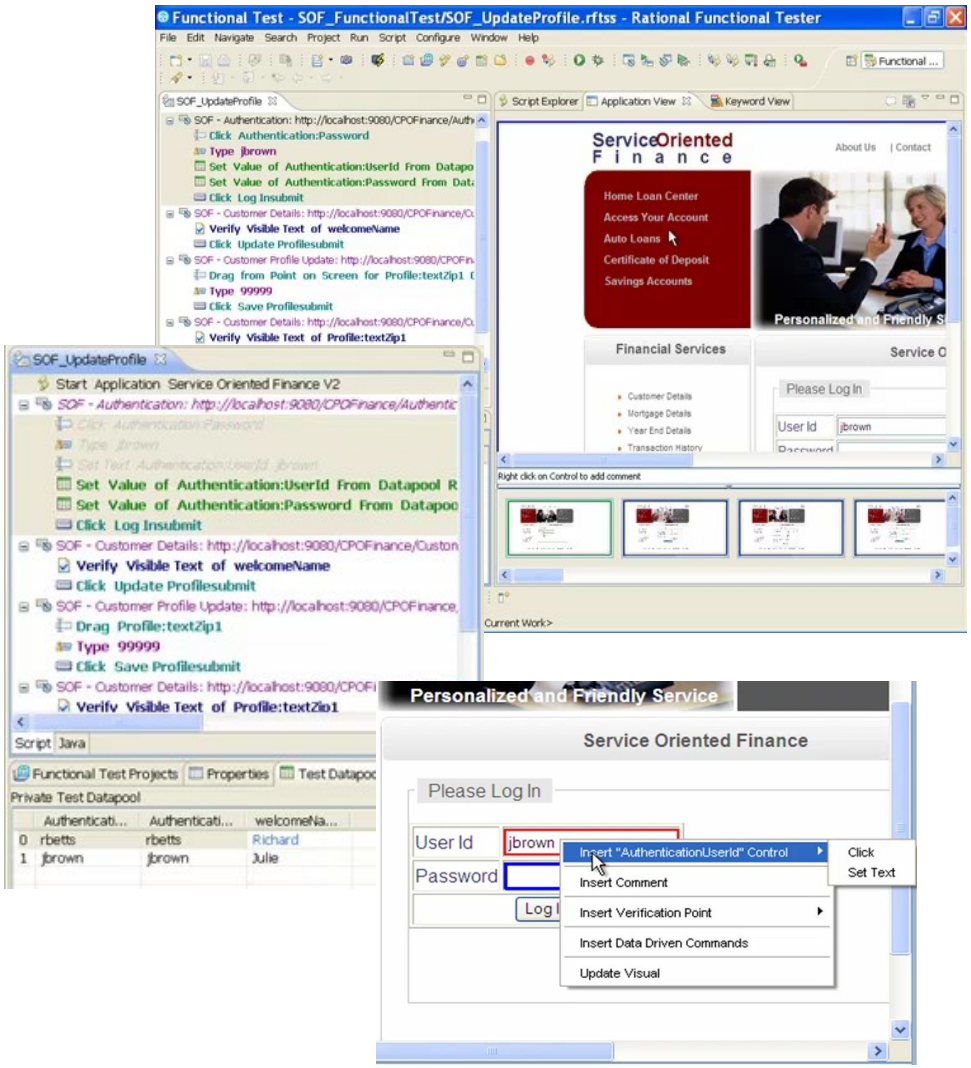
Functional Tester Highlights

- Pure Java and VB.Net provides flexibility
- Professional debugger
- Central object map to minimize rework
- ClearCase-ready for version control
- Dynamic data validations without coding

Enhancing Scripts

Storyboard testing simplification

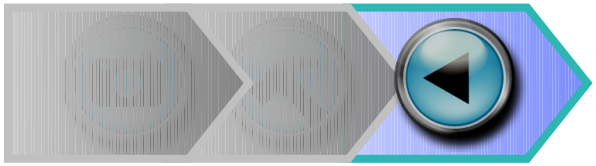
- Enable novice and professional testers alike to easily understand and communicate test flows
- Natural language script view
- Storyboard test visualization
  - Application snapshots are captured and displayed as thumbnails
  - Insert verification points
  - Maintain test datapools



Effective Test Automation

Executing Tests

- Scripts are executed, discrepancies are noted
  - Scripts are executed and test logs created
  - Test logs are highlight differences between actual and expected results
- Key considerations when executing scripts
  - Reliable playback with ScriptAssure
  - Remote and local playback on various platforms



Functional Tester Highlights

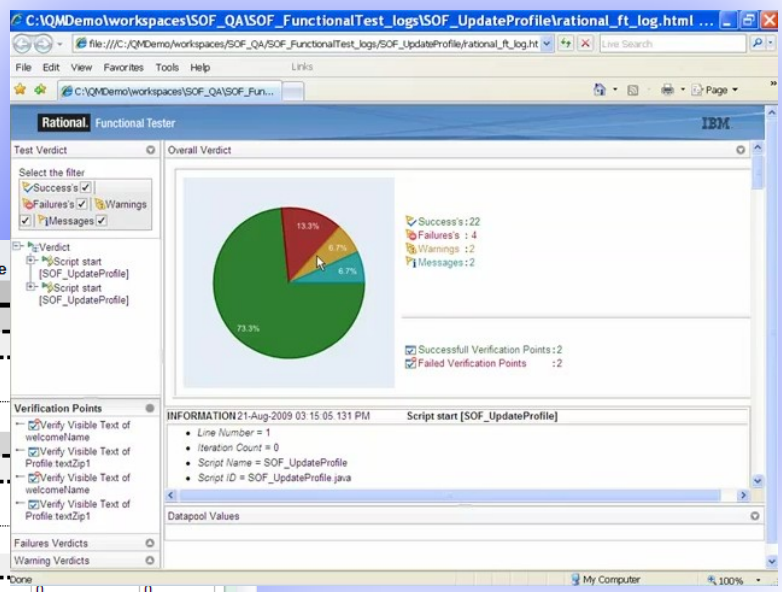
- Central object map with ScriptAssure object weighting
- Flexible results reporting
- Dynamic data validations without coding

Executing Scripts

Reporting fits your organization's needs

- Following execution results can be viewed and stored in many ways:
  - Viewed and stored in an XML or HTML format
  - Centralized in Rational Quality Manager
  - Adobe® PDF 7 and 8 documents

Functional Tester XML



Rational Quality Manager

Test Iteration	Tester	Configuration	Test case	EWI ID	Weight	Points Passed	Points Failed	Points Blocked	Points Inconclusive		
M0					320	160	0	0	0		
	ADMIN				95	95	0	0	0		
		SAMPLE_AMDx86_WinXP_IE			95	95	0	0	0		
			Accessibility Web UI Test 3		95	95	0	0	0		
				3	95	95	0	0	0		
	donald				65	0	0	0	0		
		SAMPLE_Intelx86_WinXP_Firefox			45	0	0	0	0		
			Performance Web Services Test 2		45	0	0	0	0		
				2	45	0	0	0	0		
		SAMPLE_x86_Linux_Firefox			20	0	0	0	0		
			Accessibility Web UI Test 4		20	0	0	0	0	0	0
				4	20	0	0	0	0	0	0
	larry				65	65	0	0	0	0	5
		SAMPLE_Intelx86_WinXP_Firefox			65	65	0	0	0	0	5
			Functionality Security Test 8		65	65	0	0	0	0	5
				8	65	65	0	0	0	0	5

Maximize your investment in test automation

With IBM Rational Functional Tester

- Achieve success quickly and minimize maintenance
  - Simplified natural language scripting with Storyboard testing
  - Eclipse based or Visual Studio .net
  - Easy to learn
  - Maximize reuse
- Complete test coverage
  - Supports testing for Java, Web, Visual Basic .Net, SAP, Siebel, Web 2.0, Power Builder and Terminal Based applications
  - Ability to support custom controls

System z

System i

IBM Rational Quality Management

Quality Driven Software Delivery for SAP

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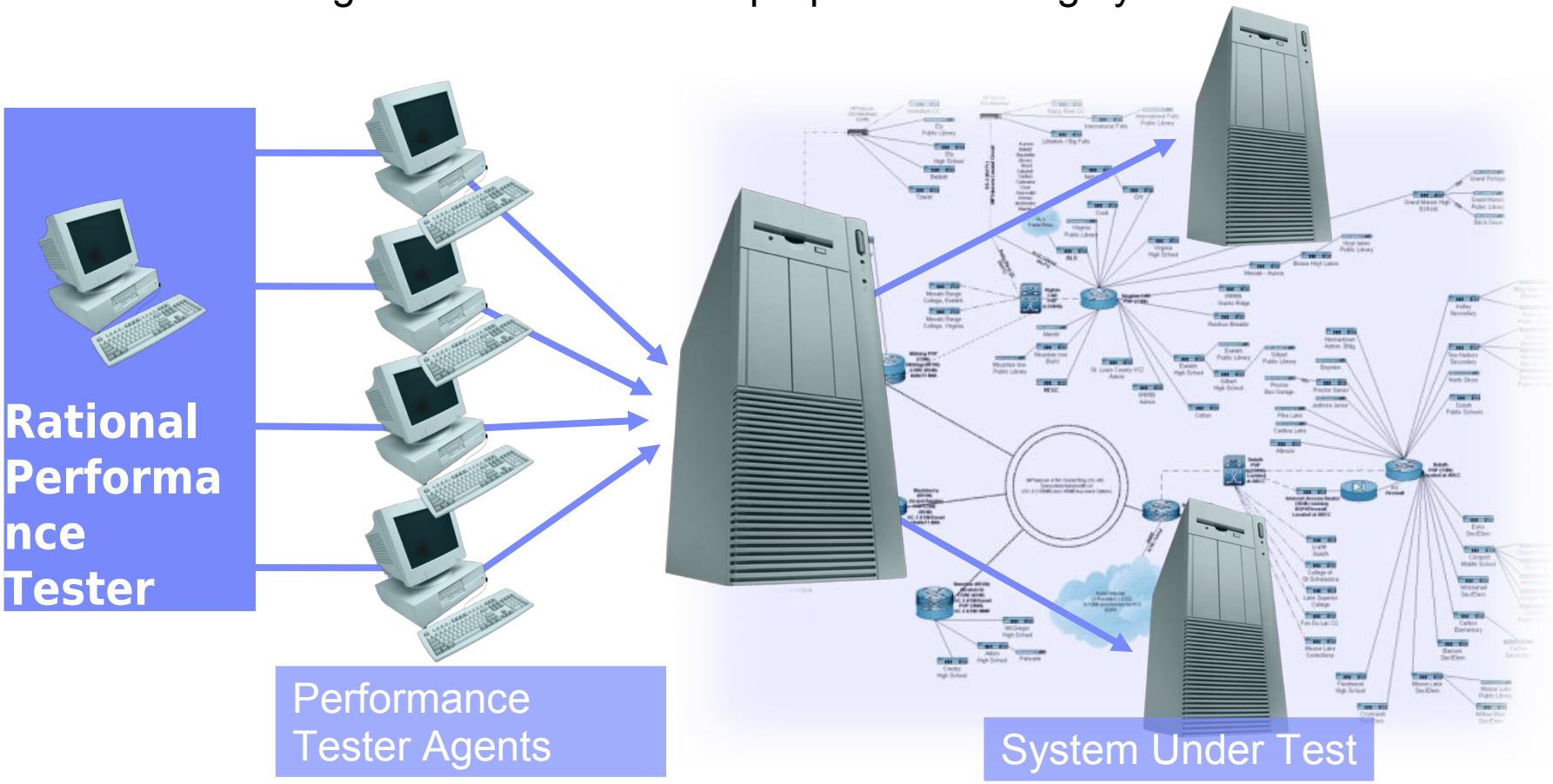
- Rational Functional Testing
- Rational Performance Tester

What Is Performance Testing?

- The process of exercising an application by emulating actual users with a load generation tool for the purpose of finding system bottlenecks



Performance Testing with IBM Rational Performance Tester

Test automation for the novice and the professional

- **IBM Rational Performance Tester**
  - Performance problem identification and diagnosis for Web, SAP, Siebel, Oracle and Citrix based applications
- **Performance test automation**
  - **Built for Day 1 Productivity**
    - Mask complexity to get the job done
  - **Advanced Data Access & Manipulation**
    - Automated data variation and synchronization
  - **Root Cause Analysis**
    - Identifies location and **root cause** of performance problem in hardware and software

IBM Rational Performance Testing for SAP®

Maximize the performance and scalability of business-critical applications

SAP® Recorder

Enables users to easily capture all SAP transactions using SAPGUI

Provides full visibility into all SAP activities

SAP® Protocol Browser

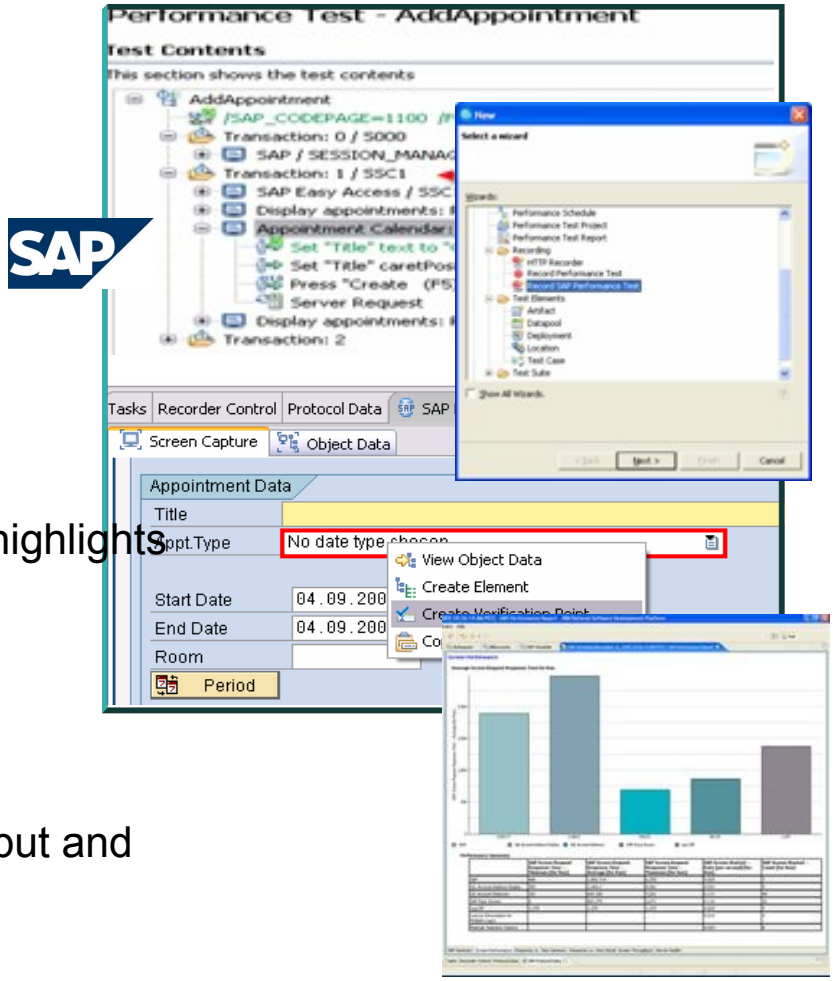
Enables users to easily read and edit tests

Shows a screenshot of SAP screen being tested and highlights the individual objects that are acted upon

SAP® Performance Reports

Enables users to quickly pinpoint bottlenecks

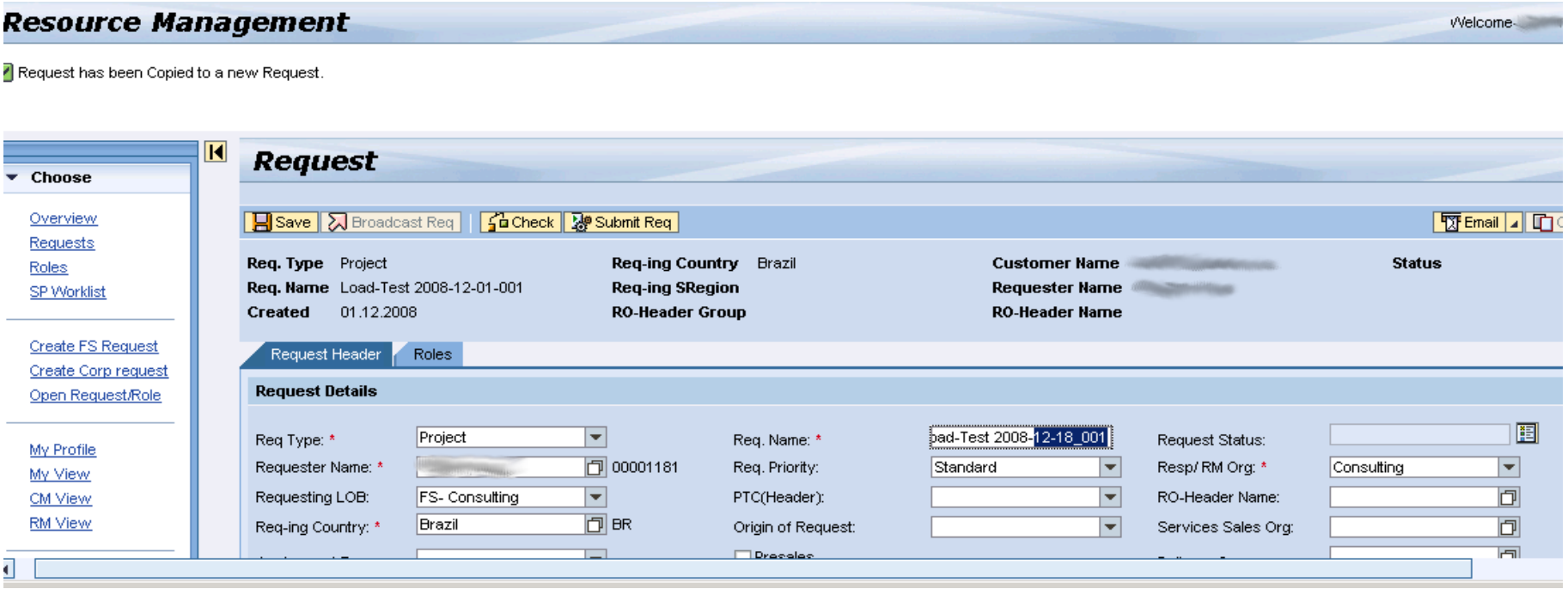
Reports on slow pages, server health, screen throughput and response times for all pages throughout the entire test



IBM Rational Performance Testing for SAP® Portal

Maximize the performance and scalability of business-critical applications

New and Enhanced!



- Improved Support for SAP Netweaver Portal applications
- Supports full automatic data correlation for Java and ABAP Webdynpro
- Reduces test development time

Creating a Performance Test

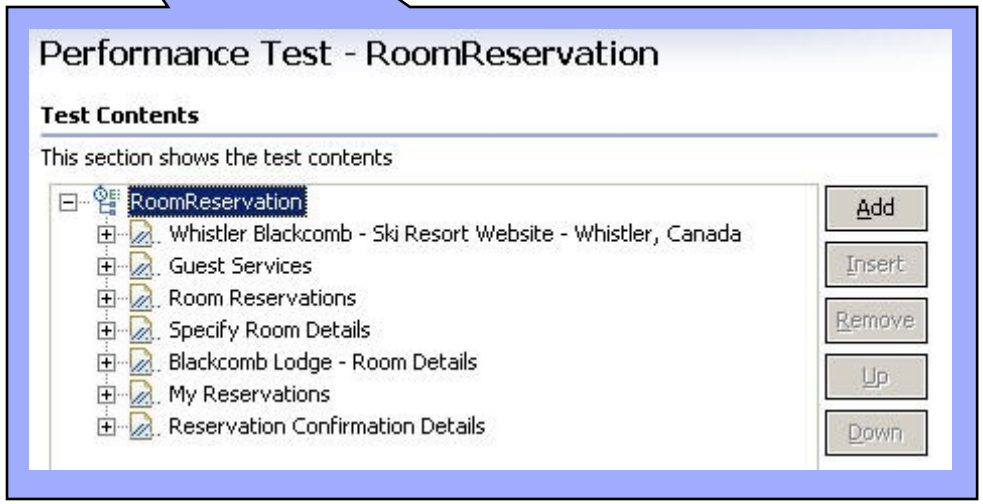
Creating a performance test is a three step process

Build Scripts **Schedule Workload** **Execute & Analyze**

- **Script Creation Considerations**
  - Visual test editor, varying input data & correlating server responses
- **Scheduling Considerations**
  - Accurately representing a true user workload
- **Execute and Analyze Considerations**
  - Validating responses & finding the bottleneck

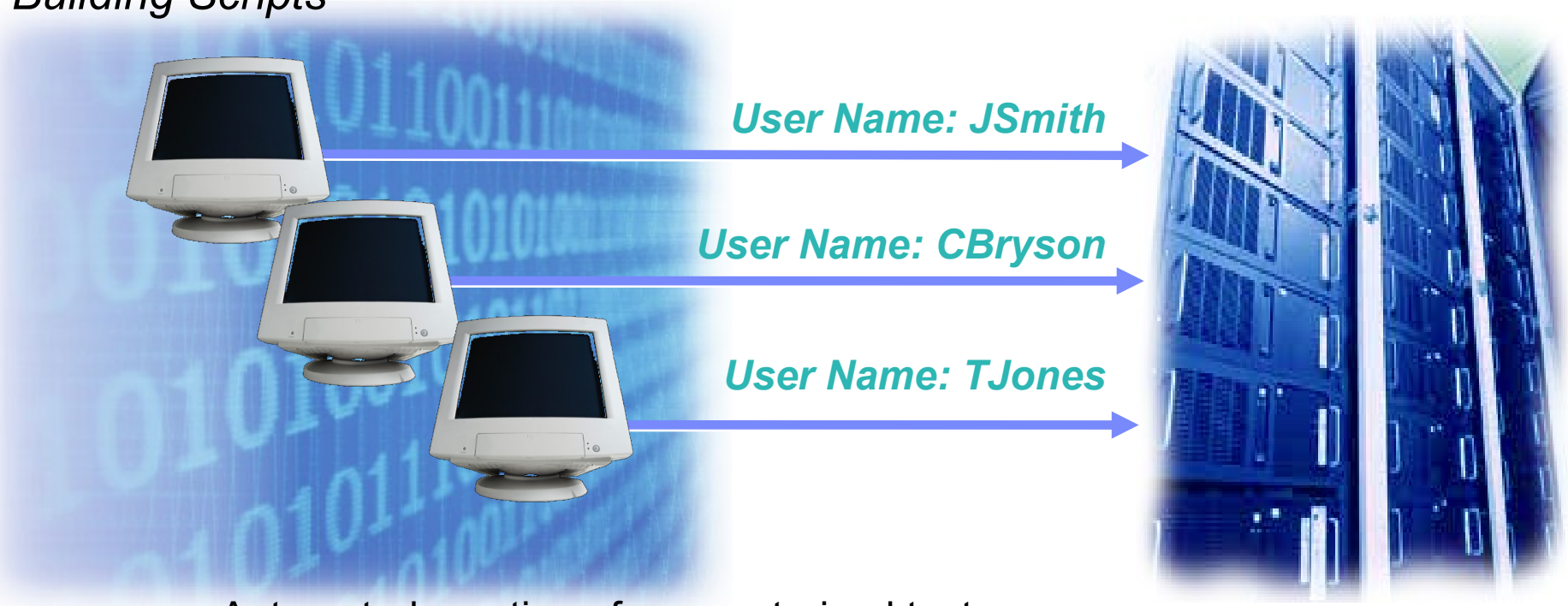
No-Code Tests

- Tests are represented in a tree view as a list of web pages and their elements, such as images.
- No programming necessary to create a test
- Underlying detail is accessible but hidden to simplify test creation and maintenance



Creating a Performance Test

Building Scripts



- Automated creation of parameterized tests
  - Literal values used during recording are replaced with variables
  - At playback time, variables are populated with data from a datapool
  - Data for playback can be imported from external data sources
  - No user coding involved

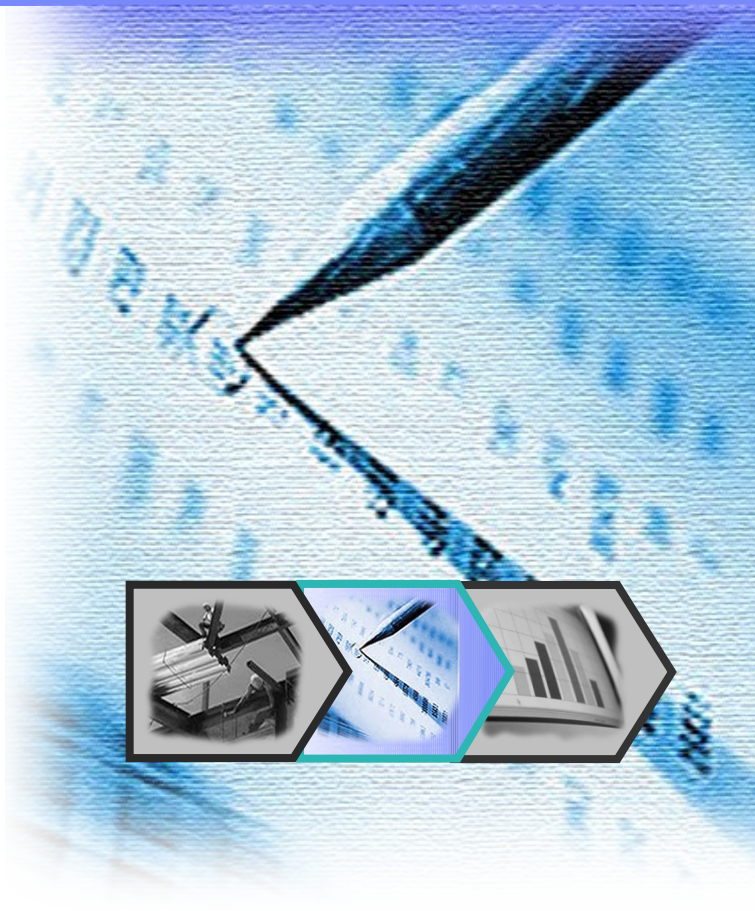
Creating a Performance Test

Building Scripts

- Automated correlation of server response values
  - Server responses captured during recording are replaced with variables
  - At playback time, variables are populated with data received from server
  - Each user receives unique data based on their activity
  - No user coding involved

Creating a Performance Test

Schedule Workload



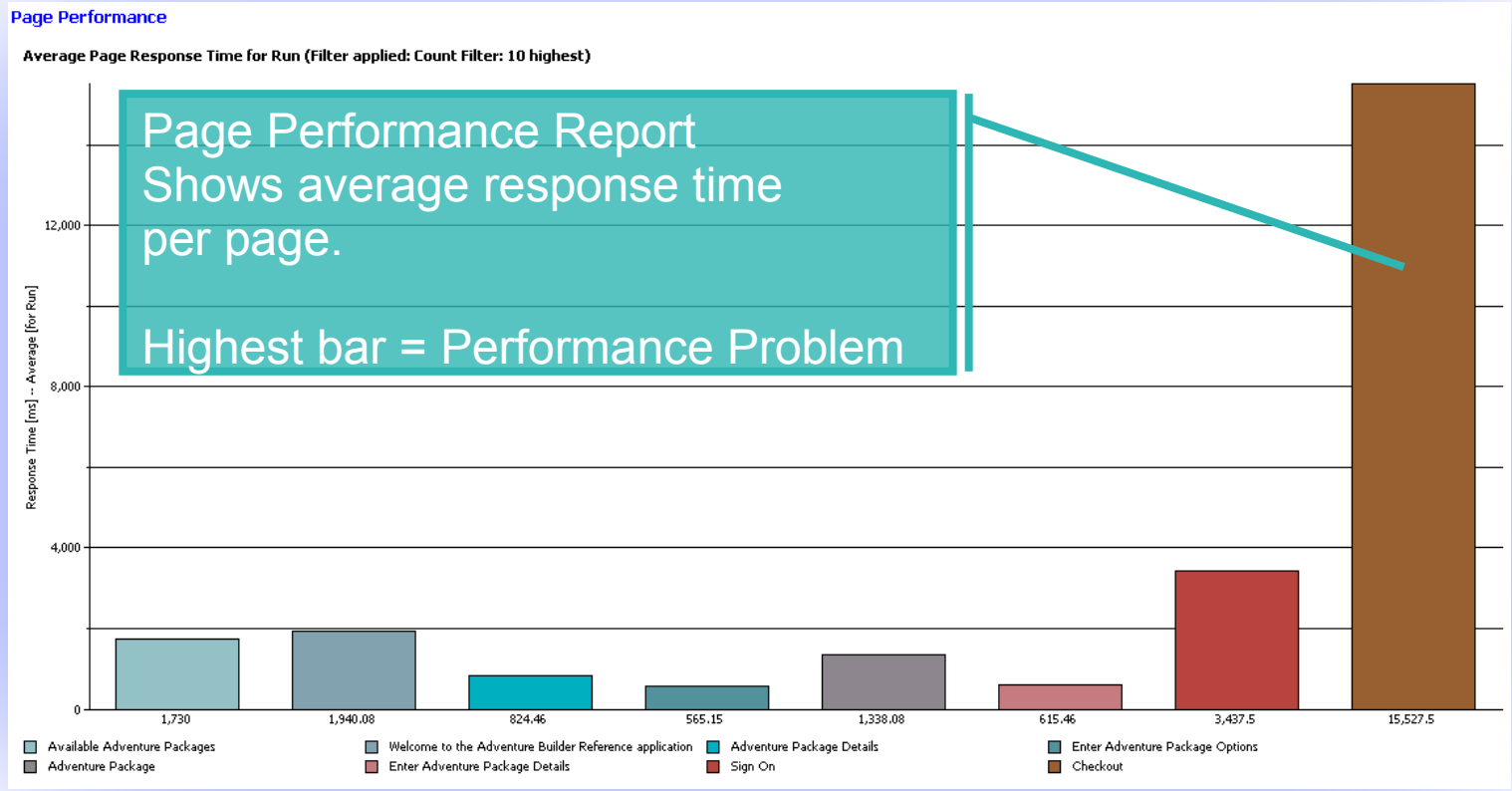
- Tests are assembled for execution
  - Schedule defines order and sequencing of script execution
  - Schedule defines physical agents to be used to generate load
    - Linux and Windows agents available
- Key considerations when creating schedules
  - Flexibility to accurately model complex workloads
  - Dynamically add load during the run to find breakpoints

Creating a Performance Test

Execute and Analyze

- Distributed Test execution from central command
  - All activity coordinated and monitored from master console
  - Windows and Linux agents are used to create the load
- Key considerations for analysis
  - Locate the problem
  - Diagnose the cause

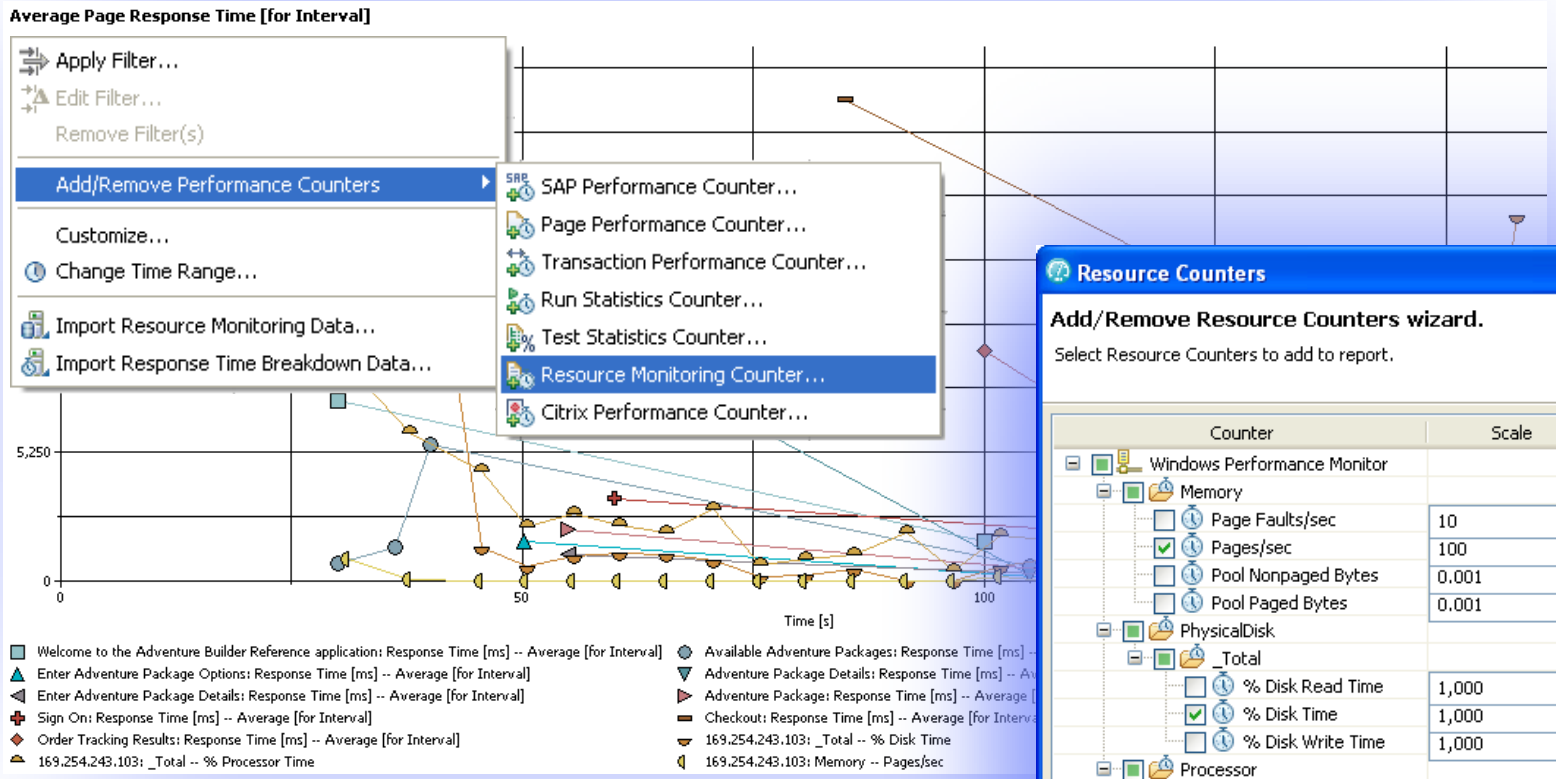
Performance Problem Identification During Test

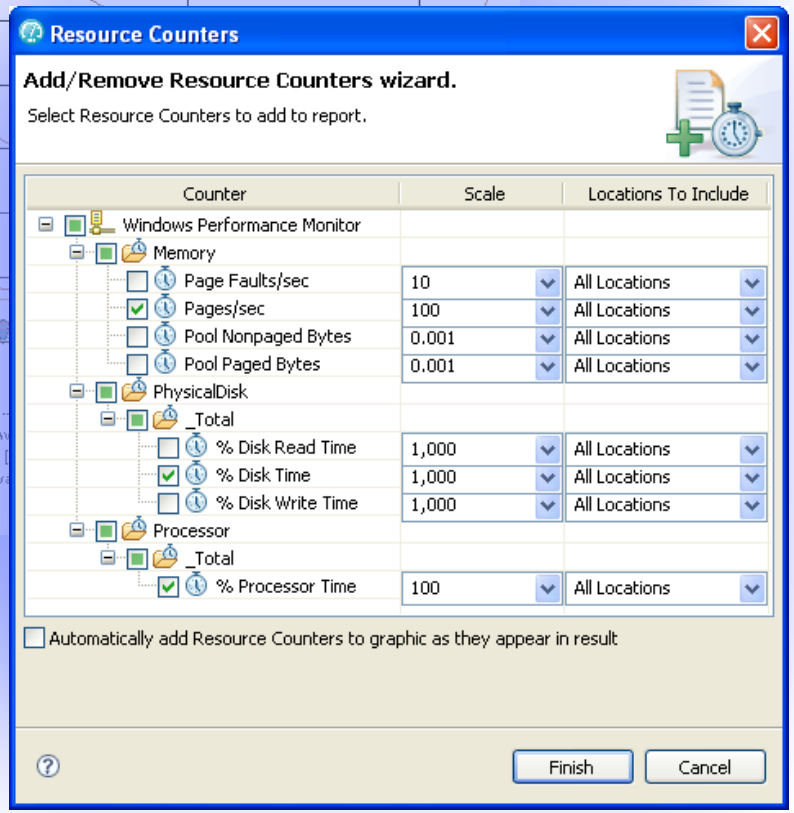


- Performance Testing finds bottlenecks
  - Next logical question is Why?
  - Root Cause Analysis provides to tools to answer this question

Performance & Resource Statistic Report Overlay

Identifying hardware related performance problems



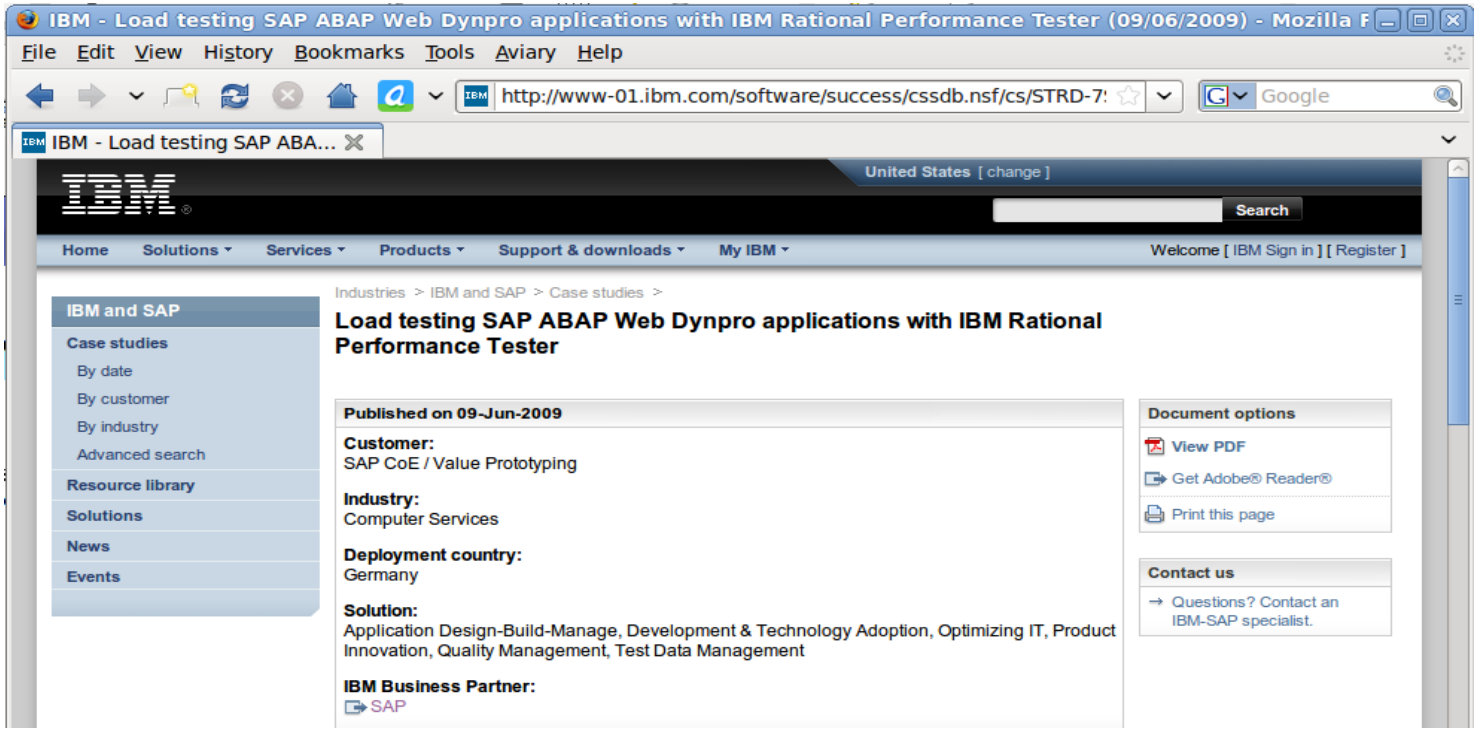


- Data from resource monitoring can be displayed on same graph as response time data
- Single view to visually correlate system resource and system response data for faster problem solving

New Case Study Available

Load testing SAP ABAP Web Dynpro applications with IBM Rational Performance Tester

http://www-01.ibm.com/software/success/cssdb.nsf/cs/STRD-7SUK7U



What type of environments are supported?

- **Web-based applications**
  - HTTP/HTTPS with client-side digital certificates
  - Ajax
  - WebSphere Portal
  - Web security
    - NTLM
    - Entrust TruePass
    - WebSeal
    - Kerberos
- **SOA**
  - SOAP over HTTP/HHTPS
  - SOAP over MQ
  - SOAP over JMS
- **TCP Sockets**
- **ERP environments**
  - mySAP, SAP GUI and SAP-JCO
  - Siebel-web (7.7 and 8.0)
  - Lawson System Foundations
- **Session Initiation Protocol (SIP)**
- **Citrix Presentation Server (Citrix ICA)**
- **Application Performance Analysis for J2EE**
  - **WAS 5.x, 6.x, Weblogic 8.x**
- **Partner Integrations**
  - BSD Oracle eBusiness Suite

Innovate2010 in Leipzig

Anmeldung & Info unter:

http://www-05.ibm.com/de/events/innovate/index.html

Thank
You