



IBM Rational Software Conference 2009  
As Real as It Gets!



# Ensure System Performance

*Tivoli-Rational integrations to detect and resolve problems earlier in the development lifecycle*

**Oreste EGIDIO**  
**oreste\_egidio@it.ibm.com**

**Rational.** software

# Agenda ed Obiettivi

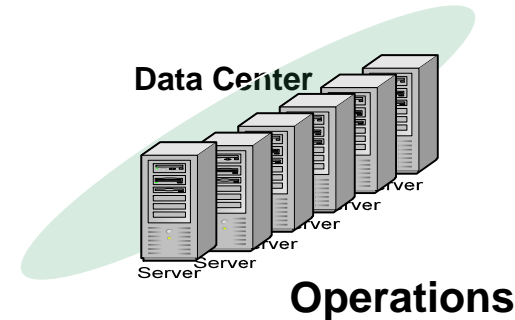


## ■ Agenda

- ▶ Test Performance & monitoring
- ▶ Definite Software Library
- ▶ Simplify, Automate, and Tame Your WebSphere Environments (RAFW)

# Detect and resolve problems earlier in the lifecycle

- Use real monitoring data from operations in application performance assessment, to understand resource capacity and optimize productivity
  - Re-using test scripts and monitoring data to validate applications for production
  - Minimizing risk by understanding performance characteristics prior to deployment



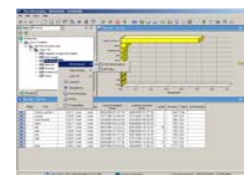
## Development



Rational Quality Manager



Rational Performance Tester and Rational Service Tester for SOA Quality



IBM Tivoli Monitoring (ITM)

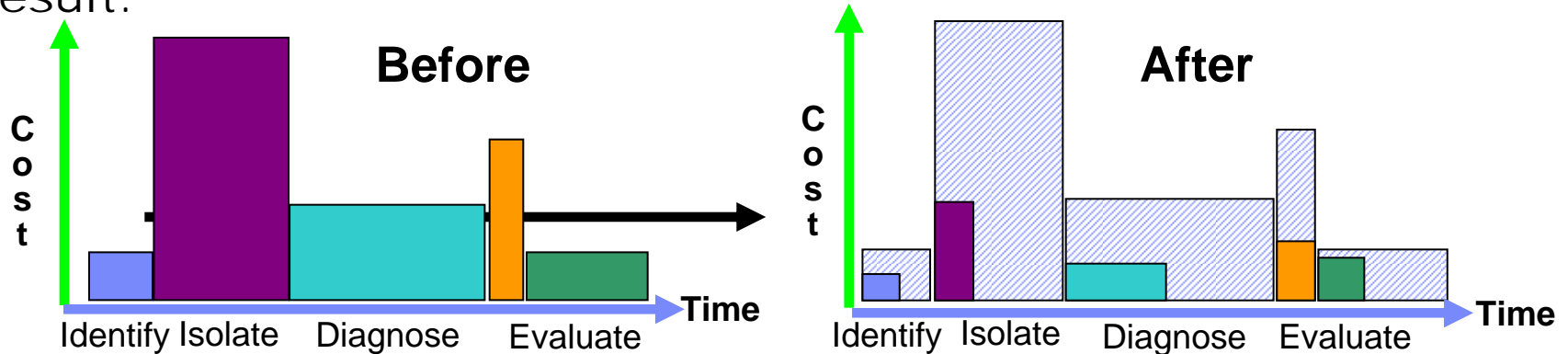
IBM Tivoli Composite Application Manager (ITCAM)

# Enable Faster Fixes and Reduce risk of additional problems

<u>Web Application Slowdown Identification to Resolution Time</u>		<u>Resolution Time With IBM's Problem Determination Solution</u>	
Identification	½ day	Identification	½ hour
Isolation	3 days	Isolation	0 days
Diagnosis	1 day	Diagnosis	30 minutes
Resolution	1 day	Resolution	4 hours
<b>Total</b>	<b>5½ days</b>	<b>Total</b>	<b>½ day</b>

At cost of \$1000/minute (repair & rev losses) = \$7.2M savings

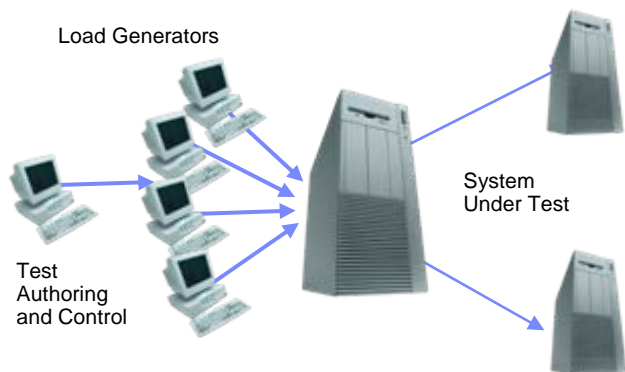
Result:



# Validate Performance with Rational Performance Tester

Is your application ready for production deployment?

1. Create realistic user scenarios that exercise key business transactions



2. Identify the root cause of problems

**Powerful workload scheduler simplifies the creation of realistic user workloads**

**Advanced Data Correlation features significantly reduce test development effort**

**Easily identify parameters and enable scenarios for data-driven testing**

The screenshot shows the 'Schedule Contents' window with a list of test scenarios: 'Browsing\_and\_Bidding\_save', 'Browse\_items', and 'Browse\_items'. Below it is the 'Test Data' window with a table of test data:

Name	Value	Substituted with
searchview:catid	1	{0} = "1" - Content
loginform:bid...	16	
loginform:bid...	18	
loginform:us...	jack	"password" variable, of Item...
loginform:us...	jack@acme.com	"login" variable, of Item_Bid...
loginform:	loginform	"loginform" - Content
searchview:c...	searchview:catid...	"searchview:catidform" - C...
__LINK_TAR...	searchview:catid...	"searchview:catidform:dat...

Other visible windows include 'Verification Points' with 'Automatically Correlate HTTP Data' checked, and 'Data Correlation' settings for 'Accuracy' and 'Automatic'.

**Quickly identify poor-performing transactions**

**Breakdown response times across application tiers and drill down to source**

**Correlate response times with system resource measurements**

The top part of the screenshot shows a bar chart with a red bar indicating a 'poor-performing transaction'. The bottom part shows a detailed table titled 'Response Time Breakdown Statistics' for a component named 'CAPSIAI'.

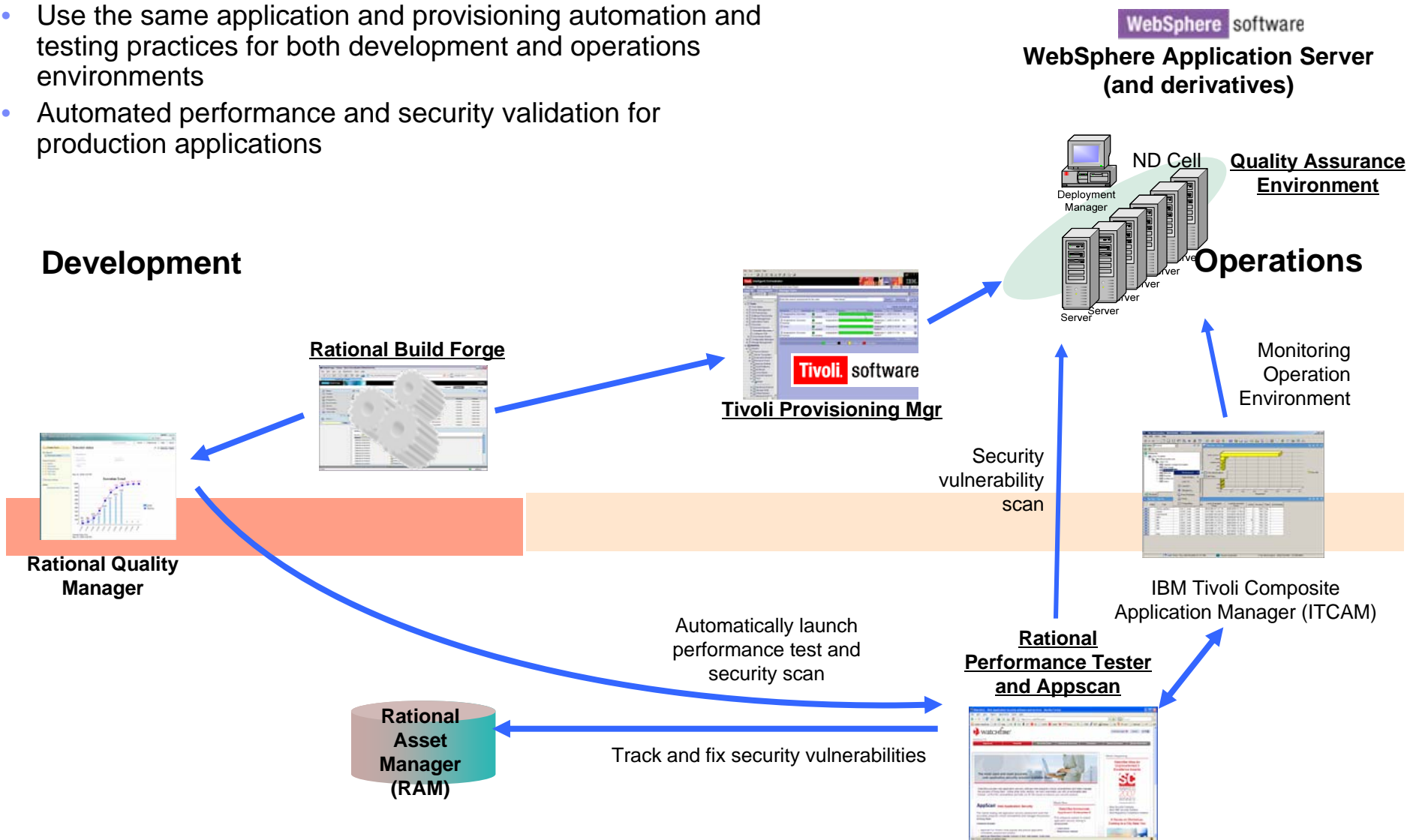
Component	Base Time (seconds)	Actual Time (seconds)	Cumulative Time (seconds)	Call
[[ CAPSIAI	313.512	77.878	476.958	12
[[ [[ Rational Performance Test	313.512	77.878	476.958	12
[[ [[ Delivery Time	26.509	4.625	26.509	4
[[ [[ Response Time	286.746	62.187	286.746	4
[[ [[ http://localhost:8080/CO-0051	76.284	19.066	19.066	4
[[ [[ deny	2,039.879	179.442	3,488.143	186
[[ [[ http://localhost:8080/CO-0051	2,039.879	179.442	3,488.143	186
[[ [[ Filter	39.632	9.909	570.228	4
[[ [[ JDBC	1,473.199	76.962	1,763.058	126
[[ [[ DB	30.932	6.383	370.376	26
[[ [[ HTTP-DBP	5.289	0.649	5.289	9
[[ [[ Servlet	26.117	6.529	261.288	9
[[ [[ Session EJB	165.628	40.157	161.289	4
[[ [[ Web Services Provider	2.863	0.733	184.123	4
[[ [[ Web Services Registrar	168.618	42.154	168.618	4



# Automate lifecycle process and testing

- Use the same application and provisioning automation and testing practices for both development and operations environments
- Automated performance and security validation for production applications

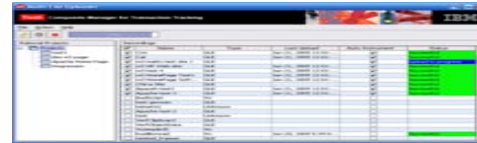
## Development





# Rational Performance Tester integration with ITM and ITCAM for enhanced application quality

- *Bridge application development and operations*
- *Enhance governance and lifecycle integration*
- *Ensure critical applications are performing*
- *Improve team productivity through collaboration*
- *Increase efficiency with reuse of assets*
- *Faster deployment through effective problem diagnosis*



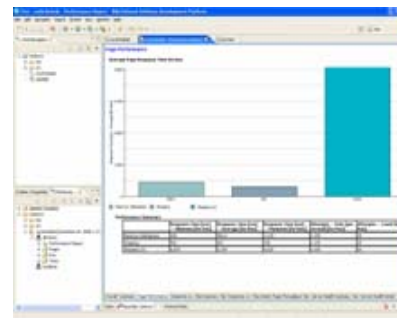
**Tivoli**



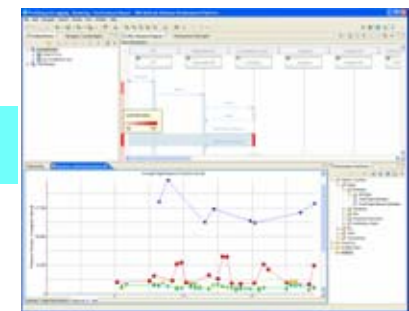
IBM Tivoli Monitoring (ITM)  
IBM Tivoli Composite Application Manager (ITCAM)

**Re-use test scripts and monitoring data to validate applications for production**

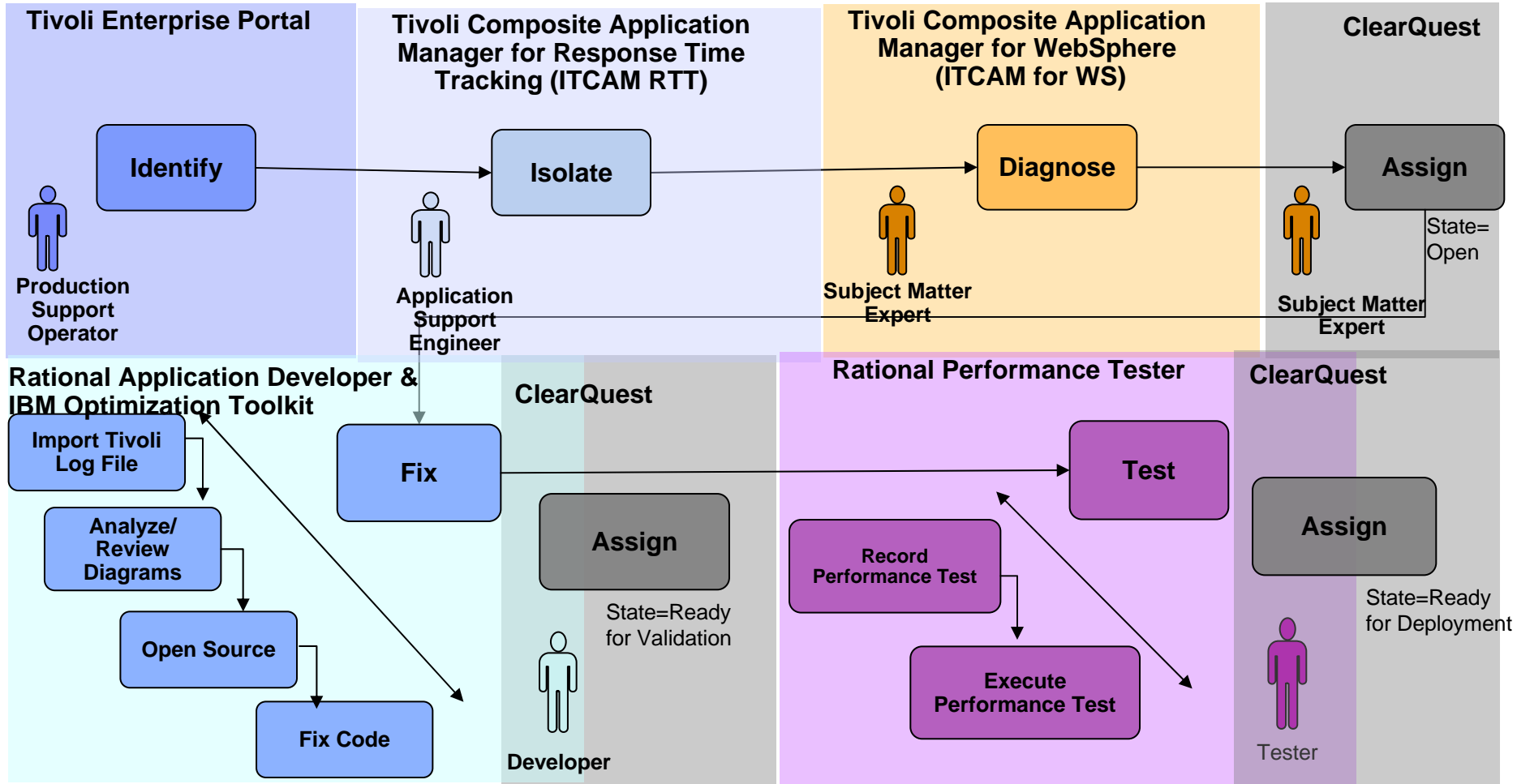
Rational Performance Tester (RPT)



**Rational**



# Problem Identification and Resolution





# ITM and ITCAM for RTT Identifies the Problems

The screenshot shows the ITM dashboard with a table of events and a detailed performance graph for Texas. The table lists the following data:

Policy Group	Status	Violating/Total Policies	Agent Availability	Performance Violation Events	Availability Violation Events	Response Time Violation Events	Total Transactions	Number of Performance Violations	Number of Availability Violations
Texas	Warning	2/2	100%	0	0	0	0	0	0
Arizona	Normal	0/1	100%	0	0	0	0	0	0
Am	Normal	0/3	100%	0	0	0	0	0	0

The detailed graph for Texas shows a bar chart of performance metrics over time, with a legend indicating 'No violations', 'Availability violation', and 'Threshold violation'. The graph shows a significant spike in availability violations (red bars) around 14:00.

*Dashboard shows transactions with an availability or response time problem*

- Identify
- Isolate
- Diagnose
- Assign
- Fix
- Test

## ITCAM for RTT Isolates the Problem

Identify

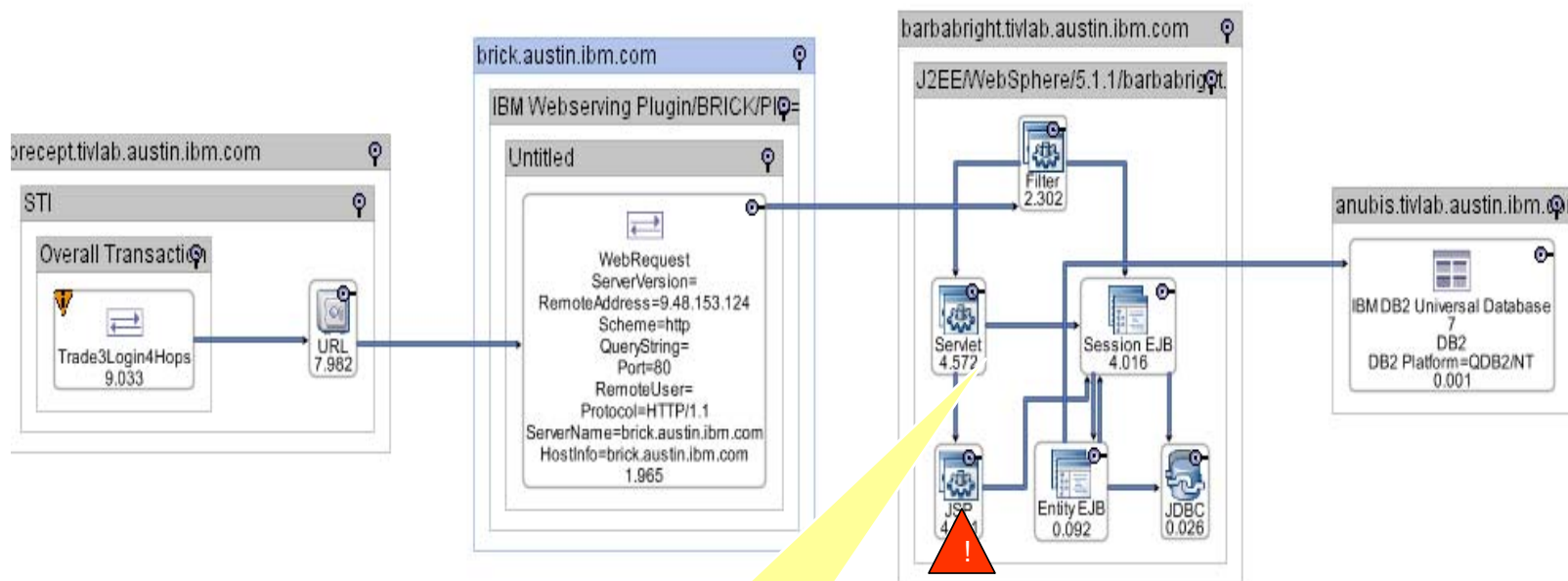
**Isolate**

Diagnose

Assign

Fix

Test



*Topology shows  
problem system so  
that it is assigned to  
correct SME*

# ITCAM for WebSphere Diagnoses Problems

Identify

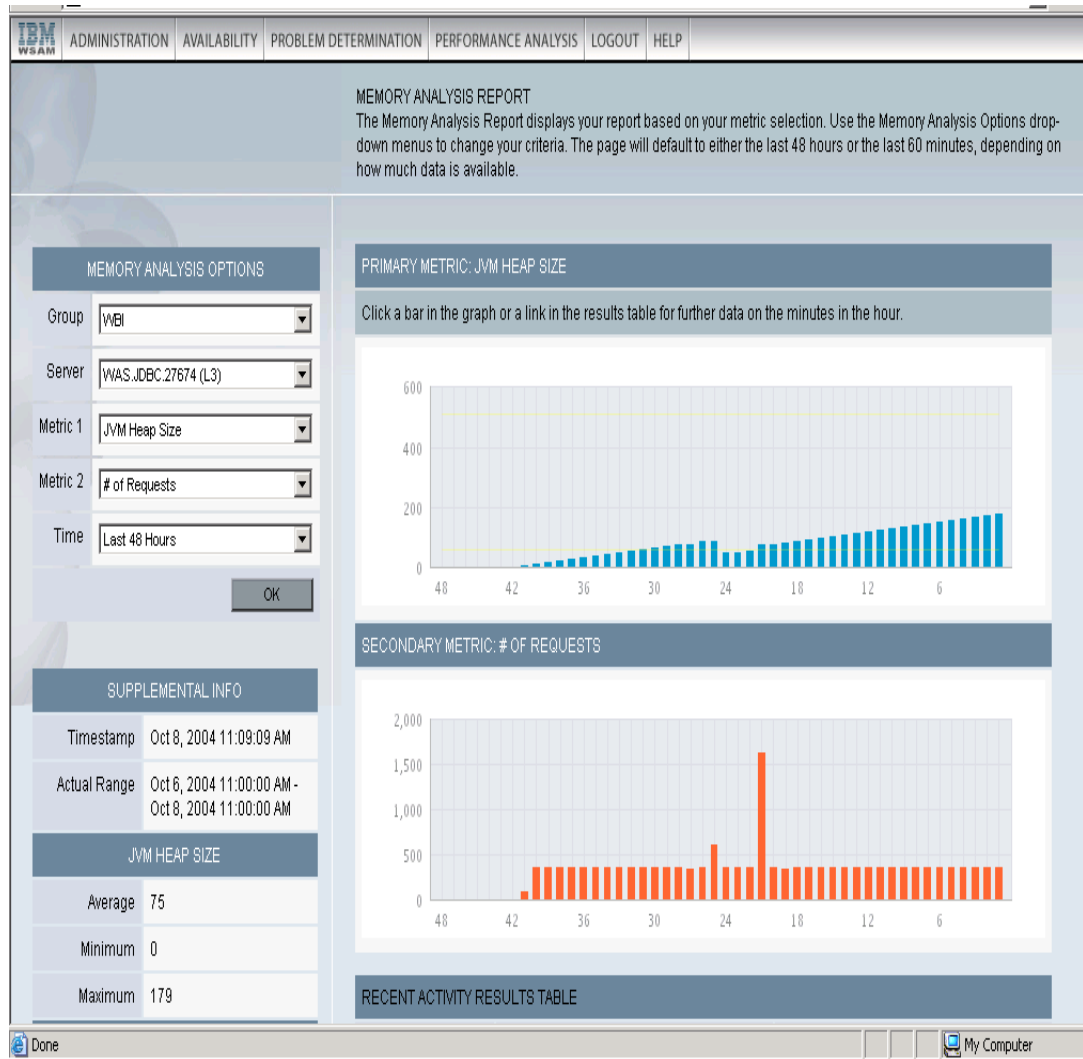
Isolate

**Diagnose**

Assign

Fix

Test



- Are memory heap sizes indicating a leak?
- Is performance trending towards a failure?
- Can I easily identify if the problem is with WAS or elsewhere?

# Rational Application Developer Fixes the Problem

1. The transaction which has violated the policy is imported from the ITCAM WS server,

2. ...then visualized as a UML Transaction...

3. ...or as a call graph (well understood by the Developer)...

4. ...Where from the Developer can jump to the code that triggered the issue!

Identify

Isolate

Diagnose

Assign

Fix

Test

# Rational Performance Tester – Tests the Fix

## Key Benefits

Identify

- ▶ Built for Day 1 Productivity

- Mask complexity to get the job done

Isolate

- ▶ Advanced Data Access & Manipulation

Diagnose

- Automated data variation and synchronization

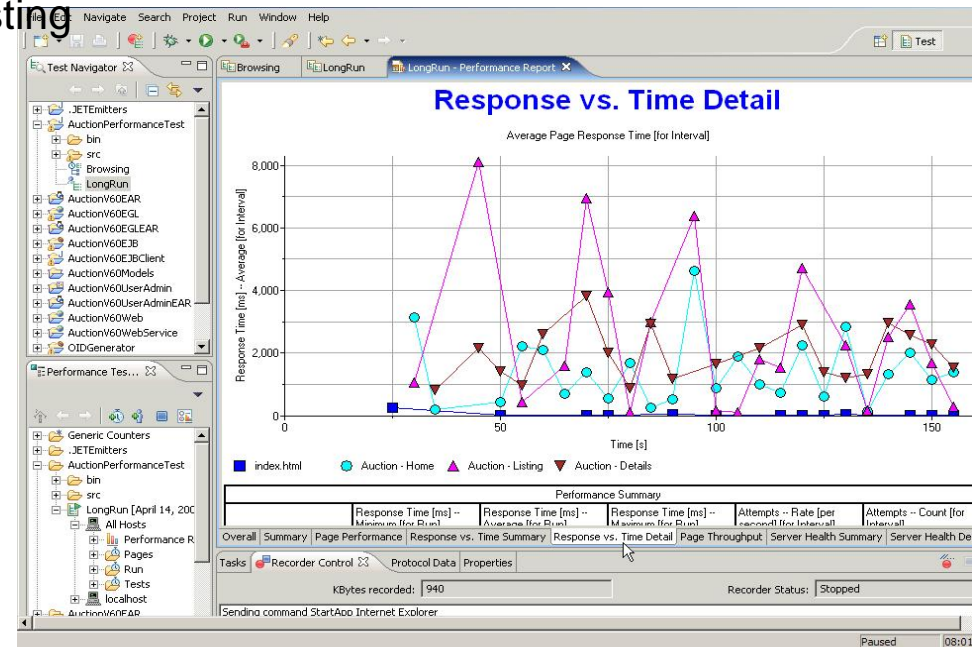
Assign

- ▶ Lower Cost of Performance Testing

- Low resource requirements
  - Desktop IDE integration

Fix

Test



# Trademarks and disclaimers

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries./ Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both. Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both. IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce. ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office. UNIX is a registered trademark of The Open Group in the United States and other countries. Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both. Other company, product, or service names may be trademarks or service marks of others. Information is provided "AS IS" without warranty of any kind.

The customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

Information concerning non-IBM products was obtained from a supplier of these products, published announcement material, or other publicly available sources and does not constitute an endorsement of such products by IBM. Sources for non-IBM list prices and performance numbers are taken from publicly available information, including vendor announcements and vendor worldwide homepages. IBM has not tested these products and cannot confirm the accuracy of performance, capability, or any other claims related to non-IBM products. Questions on the capability of non-IBM products should be addressed to the supplier of those products.

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Some information addresses anticipated future capabilities. Such information is not intended as a definitive statement of a commitment to specific levels of performance, function or delivery schedules with respect to any future products. Such commitments are only made in IBM product announcements. The information is presented here to communicate IBM's current investment and development activities as a good faith effort to help with our customers' future planning.

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 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 throughput or performance improvements equivalent to the ratios stated here.

Prices are suggested U.S. list prices and are subject to change without notice. Starting price may not include a hard drive, operating system or other features. Contact your IBM representative or Business Partner for the most current pricing in your geography.

Photographs shown may be engineering prototypes. Changes may be incorporated in production models.

© IBM Corporation 1994-2009. All rights reserved.

References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

Trademarks of International Business Machines Corporation in the United States, other countries, or both can be found on the World Wide Web at <http://www.ibm.com/legal/copytrade.shtml>.





# Questions



© Copyright IBM Corporation 2009. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. IBM, the IBM logo, Rational, the Rational logo, Telelogic, the Telelogic logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.