



Rational Performance Tester Tips & Tricks

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AGENDA

- **Getting Started**
- Recording & Test Generation
- Executing Tests
- Reports
- Troubleshooting

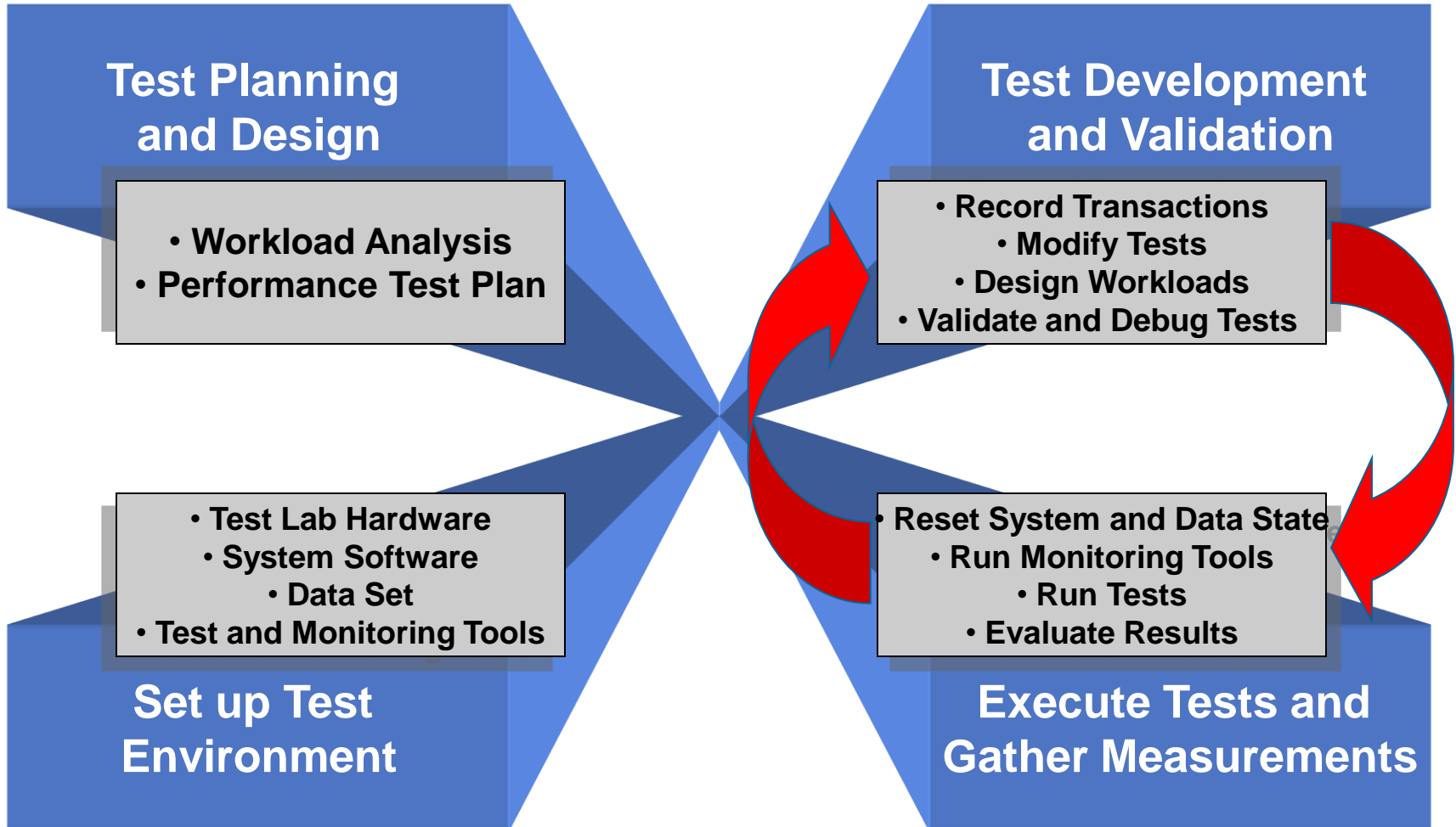
What is performance testing?

- The process of exercising a system by emulating activity for the purpose of:
 - ▶ Observing system behavior
 - ▶ Gathering data and metrics

- Typical activities to emulate
 - ▶ User transactions and scenarios
 - ▶ Peak activity periods
 - ▶ Batch jobs and other internal system processes
 - ▶ Administrator tasks (for example, system backups)

Tip – Performance Test Driven Development

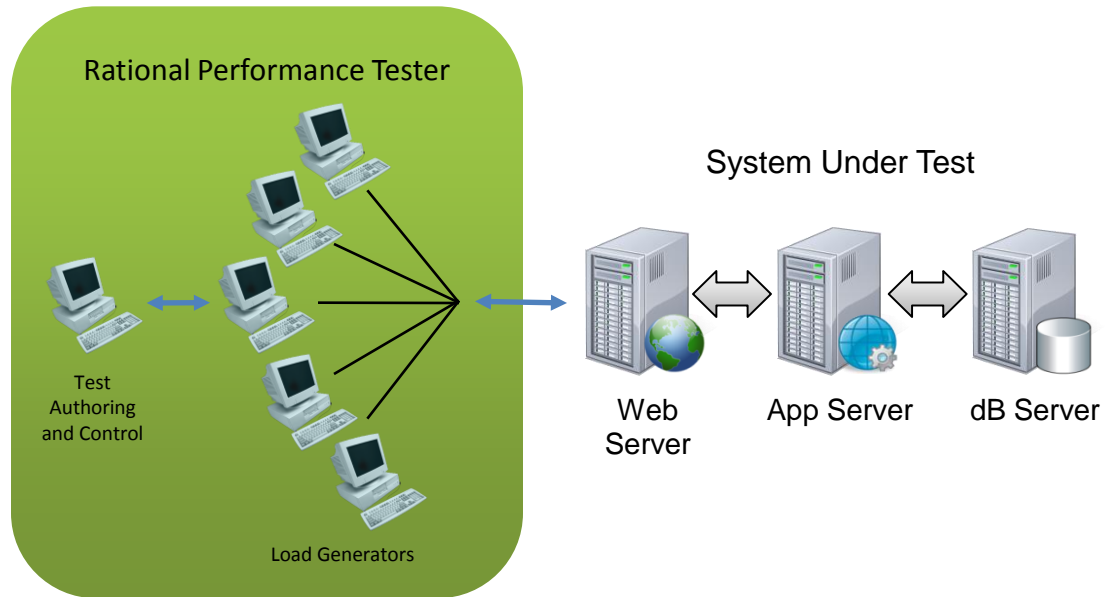
- Performance Test Early & Often
 - Easier to address issues if found right after delivery
 - Less costly to fix than when found late in development



Rational Performance Tester

Comprehensive test planning, authoring, and analysis to identify and manage the risk of application performance failures

1. Capture and track Business SLAs in your test plans
2. Create realistic user workloads that exercise the key business transactions
3. Automatically deploy the environment and schedule execution of your workload
4. Identify the root cause of performance problems
5. Communicate results and areas of non-compliance to the stakeholders



AGENDA

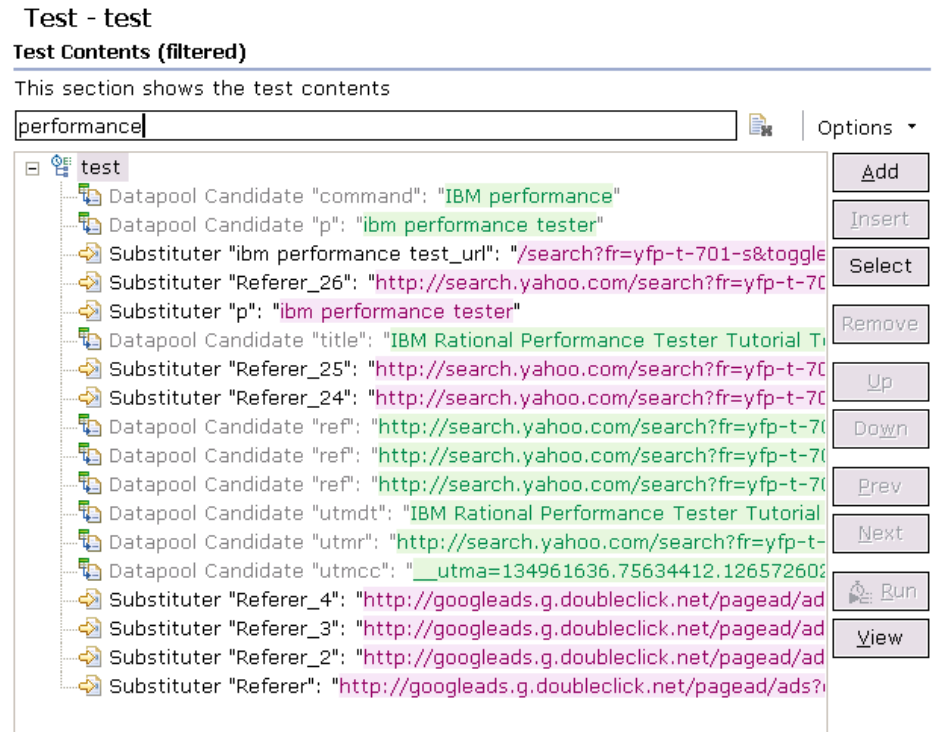
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RPT Recording and Test Generation Tips

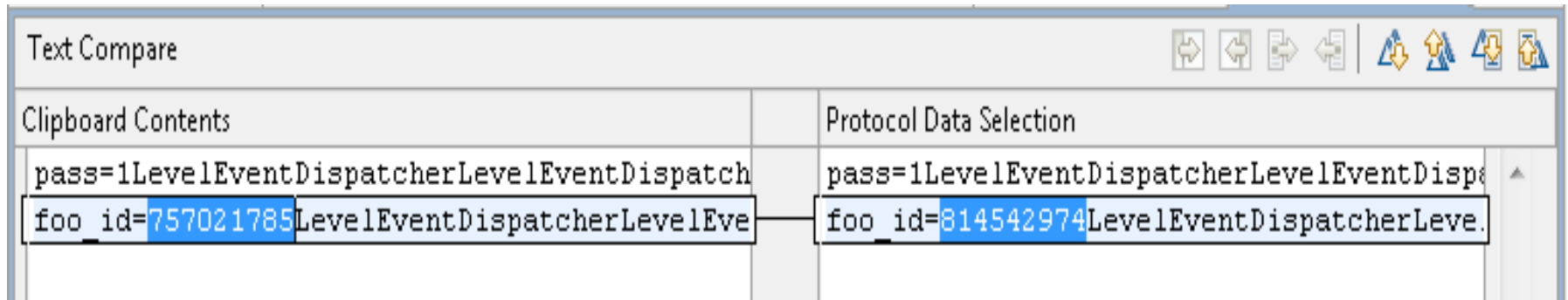
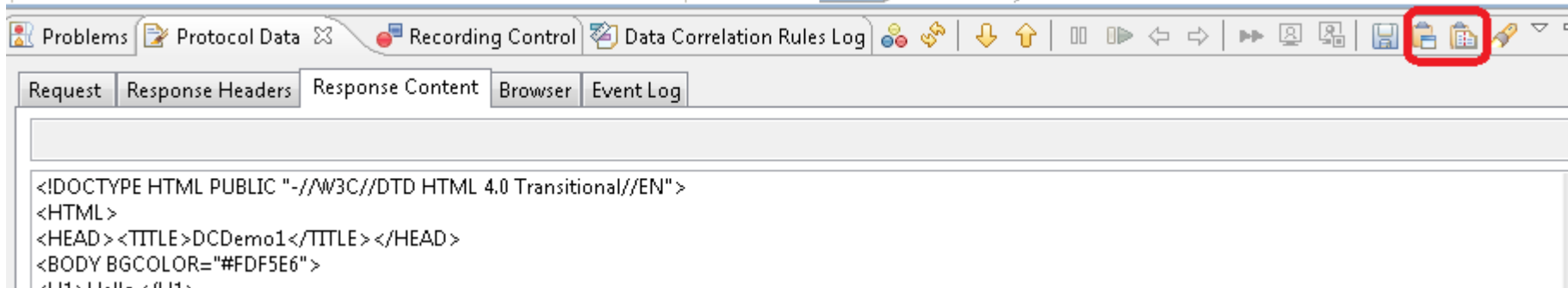
Performance Test Steps	RPT Tips
Before Test Creation	Browser Cache, Page load, Mouse Hover
Http Test Recording	Proxy & Socket recorder
During Test Recording	Create Comments, Transactions, Splits
Test Explorer	RPT Logical Test Navigator
Sharing Test Assets	Export and Version Control

Data-Correlation View Mode

- Editor tree shows only substitutions and datapool candidates
- Use with Quick Filter to easily locate interesting data
- Substitute and remove/modify substitution on one or more locations
- Find where a data-source is used
- Switch to Data-Correlation Mode and back to Full Test Contents Mode:
 - Context menu
 - “View” button



Tip – Compare Test Data with Playback Data



Data Correlation Rules

- Organise related test changes
- Respond more rapidly to frequently changing applications
- Reduce test editing

Data Correlation Rules: myrules10_2

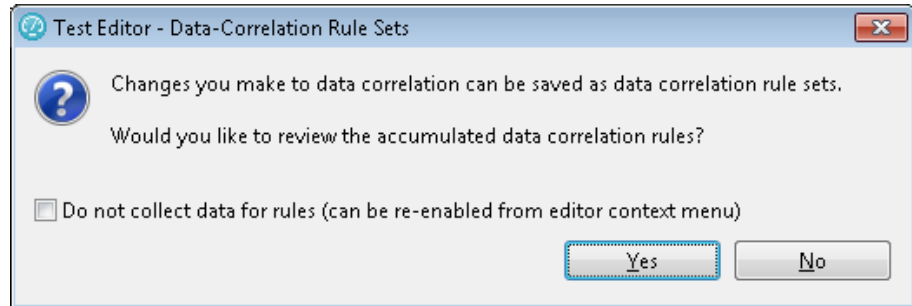
Rule Set
This section shows the data correlation rules that this file defines

Enter filter text | Append | Insert | [Refresh] | [Close]

- Rule Arguments
 - Rule Pass
 - Create a reference - **ref1** - src='1BLAHBLAHid1=(.*)B'
 - Link with substitutions
 - Create a substitution - **subst1** - src='&uniqueId=(.*)\$'

Tip – Auto Generated Rules

- Performance Tester monitors your manual test edits
- Rules can be viewed when you save your test
- Great way to begin with rules if you don't know how to get started



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Execution – Workbench and Agent Setup with a Firewall

- Firewalls on the workbench and agents must be configured to:
 - Allow ephemeral ports on the workbench to connect to ports 10002 and 10005 on the agent
 - Allow ephemeral ports on the agent to connect to a range on the workbench
 - Windows > Preferences > Agent Controller > Firewall Settings
 - Specify a starting point for the range of ephemeral ports
 - Allow the agent to reach the server you are testing (ports 80 or 443 typically)

RPT Executing Tests Tips

Performance Test Steps	RPT Tips
Test Log Settings	For Debug and Load Generation
Creating Loops	Different in Test and Schedule
Varying User Load during execution	SmartLoad using stages
Insufficient Ports during run	Increase > 5000
Use Box with lot of memory	Multiple Engines on one Box
Monitor Test Run	Engine Room
Custom Code – Executing your code	Managing loops, modify response, etc

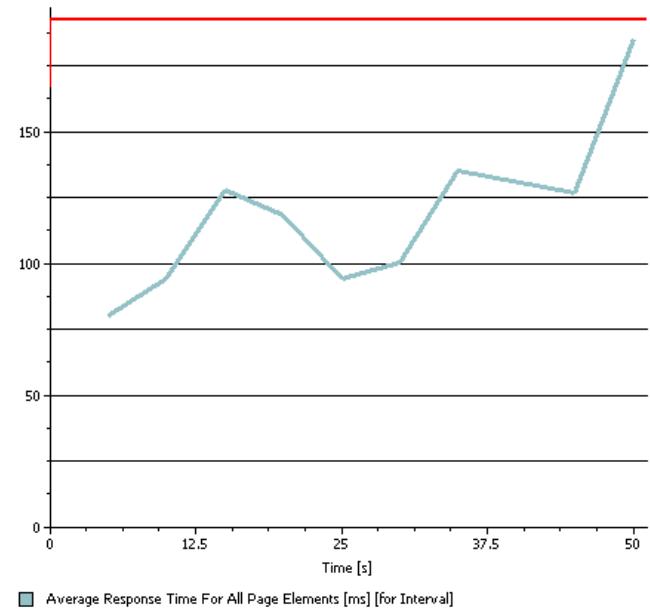
Tip – Start With Less Users

- Running too many users too soon can mask lots of problems
 - Login failures
 - Server failures
 - Dynamic data failures
 - Duplicate keys
- The Solution
 - 1 User – is dynamic data handled correctly?
 - 2 Users – data that has to be unique using a datapool?
 - 10 Users – does login need to be staggered?
 - 50 Users – effect on agent & server cpu/memory as you increase users?
 - 100 Users – is your agent sized correctly for target load?

Tips for Top Performance

- Never drive load from the RPT User Interface workbench machine
- Stay below 1200m workbench heap
 - Default is half physical memory up to 1024m
 - Set in eclipse.ini with maximum 1200m
 - Exceeding can ironically introduce out of memory error
- Agent computer maximum heap
 - Up to 1500m Windows
 - Up to 3000m Linux
 - Set using RPT_VMARGS general property in the location editor
- Increase Linux per process file limit
 - Default is 1024. Increase to 10,000 – 30,000.

Page Element Response vs. Time



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RPT Reports Tips

- Page Response Time
- Executive View
- Customizing Reports
- Creating reports

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Troubleshooting

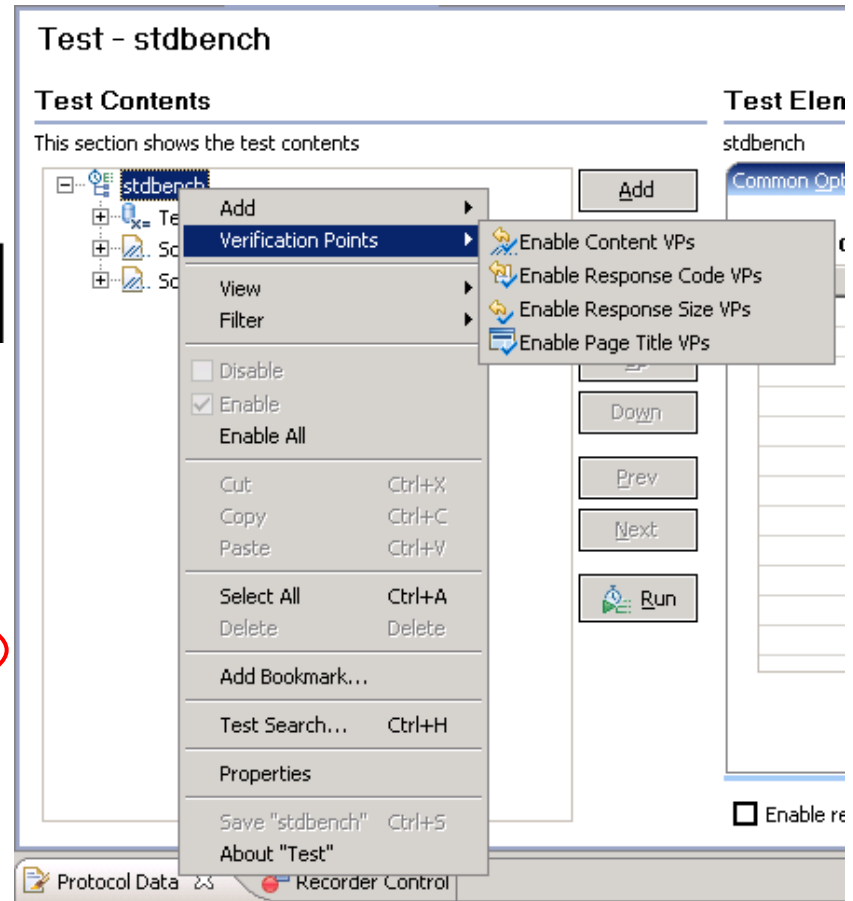
- Attempts versus Hits
- Enable Verification Points
 - Look for 100% pass rate

Page Summary

Total Page Attempts [for Run]	1,190
Total Page Hits [for Run]	1,190

Page Element Summary

Total Page Element VPs Passed [for Run]	35
Percent Page Element VPs Passed [for Run]	100



Out of Memory – Workbench Tips

- Default schedule setting
- Max heap – Windows
 - More is not necessarily better
 - Default recommended is 1200m
 - Limit could be lower (eg 1024m)
- Max heap – Trick for Windows 64-bit
 - For max heap up to 1900m change in eclipse.ini
 - vm
D:\Program Files\IBM\SDP821\jdk\jre\bin\j9vm\jvm.dll
 - to
 - vm
D:\Program Files\IBM\SDP83\jdk\jre\bin\javaw.exe
- Longer statistics interval

Out of Memory – Agent

- See javacore file for hints
- Measure to determine memory requirement
 - 10, 100, 500, 1000, ... users
- Multiple engine on one agent trick

Recovery From Catastrophic Failure Without Reboot

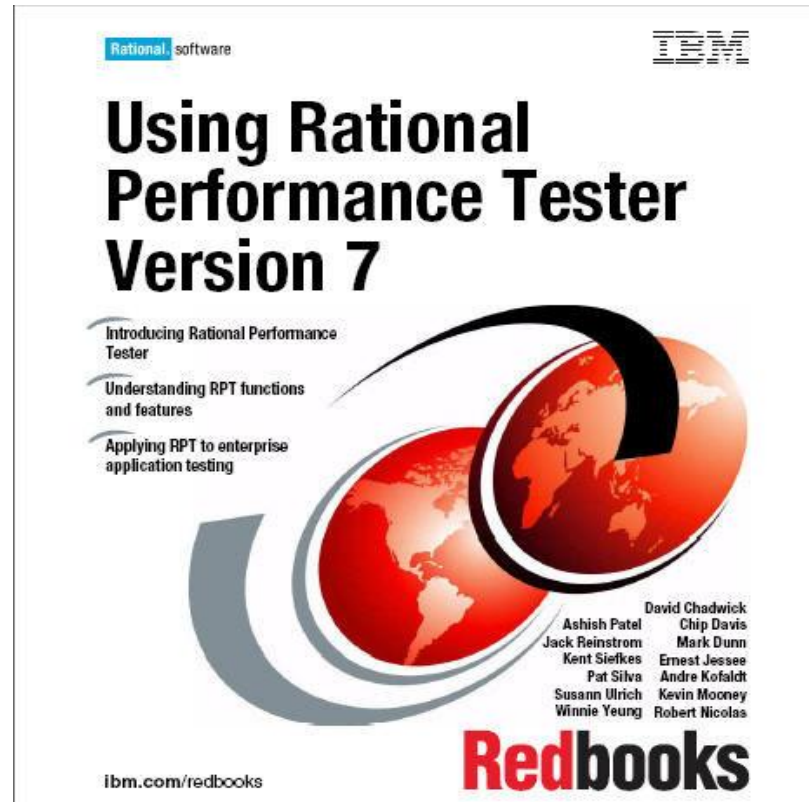
- Workbench
 - Stop and restart RPT
 - End stray processes: java, ACServer
 - Use Process Explorer and look at command line to identify process so you stop RPT related processes:
 - <http://technet.microsoft.com/en-us/sysinternals/bb896653.aspx>
- Agent
 - End stray processes: java, vmstat
 - Stop and restart all Agent Controllers
 - Linux uses RAStop.sh and RASstart.sh
 - Control Panel on Windows
 - Windows command line:
 - Windows stop command is **net stop "ibm rational agent controller"**
 - Windows start command is **net start "ibm rational agent controller"**

Forum

- <http://www.ibm.com/developerworks/forums/forum.jspa?forumID=326>

The screenshot shows a Mozilla Firefox browser window displaying the IBM developerWorks forum for Rational Performance Testing. The browser's address bar shows the URL <http://www.ibm.com/developerworks/forums/forum.jspa?forumID=326>. The forum page features the IBM logo at the top, a navigation menu with options like Home, Solutions, Services, Products, Support & downloads, and My IBM. Below the navigation, the forum title "Rational Performance Testing" is displayed with an RSS icon and a link to "Update My dW interests". A search bar is present with the text "Search for" and "within Rational Performance". The forum description states: "Share your questions and knowledge about IBM's performance testing products, including IBM Rational Performance testing and load testing topics are also discussed in this forum." It also includes a link to the "forum etiquette" and "Terms of Use". At the bottom, there are links for "Post New Thread", "Watch Forum", "Watch list", "Forum settings", and "Help". The forum statistics show "Messages: 6,179 - Threads: 2,051 - Filter: All Threads - Pages: 137 - [1 2 3 4 5 | Next]". A table of threads is visible, with the first thread titled "Looking for the IBM Performance Optimization Toolkit v7.0?".

Valuable Resource



<http://www.redbooks.ibm.com/abstracts/sg247391.html>

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