

Quality in Action: Test Lab Management

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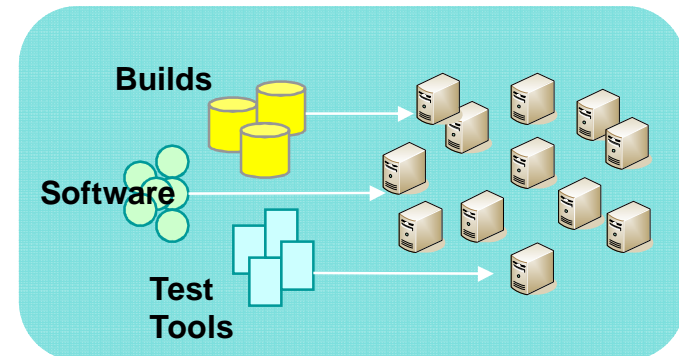
IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**



Problem Background

- Rapid development cycles puts pressure on test lab readiness
 - Tracking continuously changing configurations
 - Inefficient use of hardware and software assets
 - Increased cost and system sprawl
- Lack of insight impacts tester productivity
 - Difficult to determine availability and readiness
 - Greater burden validating environments
 - Difficult to coordinate activities with other test efforts
- Administrators must cope with a variety of solutions
 - Difficult to scale down enterprise offerings to enable testers
 - Difficult to integrate home grown and 3rd party tools

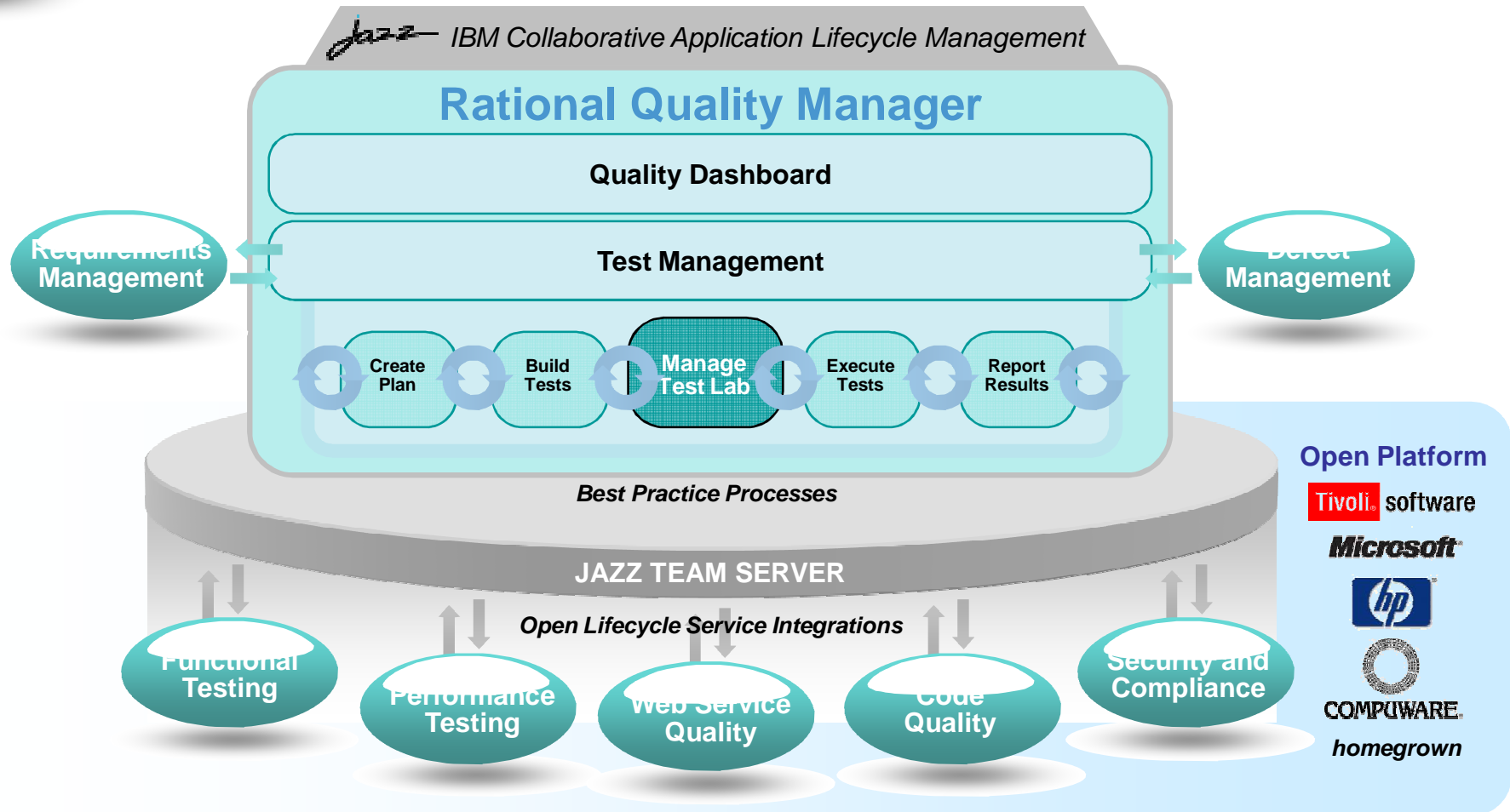


QA Teams spend more than 36% of their time configuring machines to make them ready for testing – IBM Survey

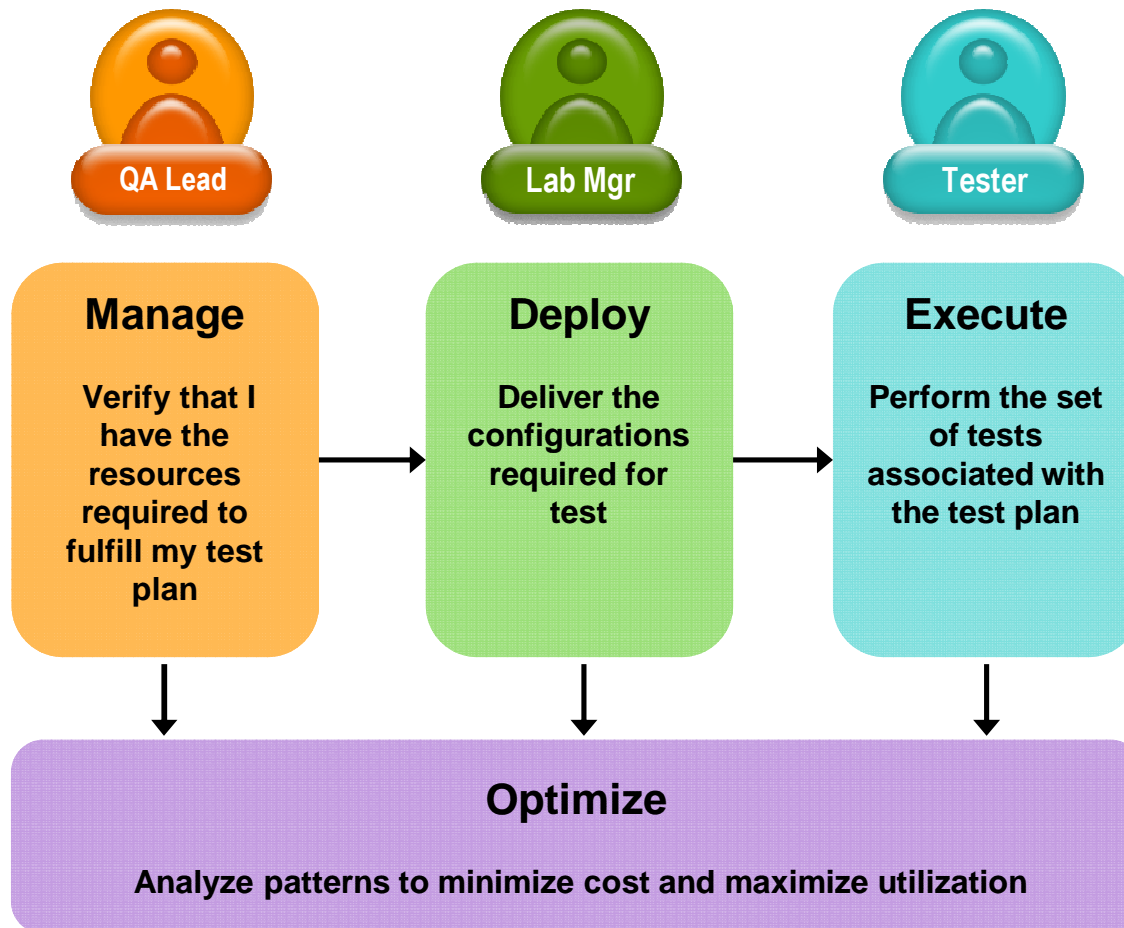


Introducing the Quality Management offering portfolio

A centralized test management offering on the Jazz platform

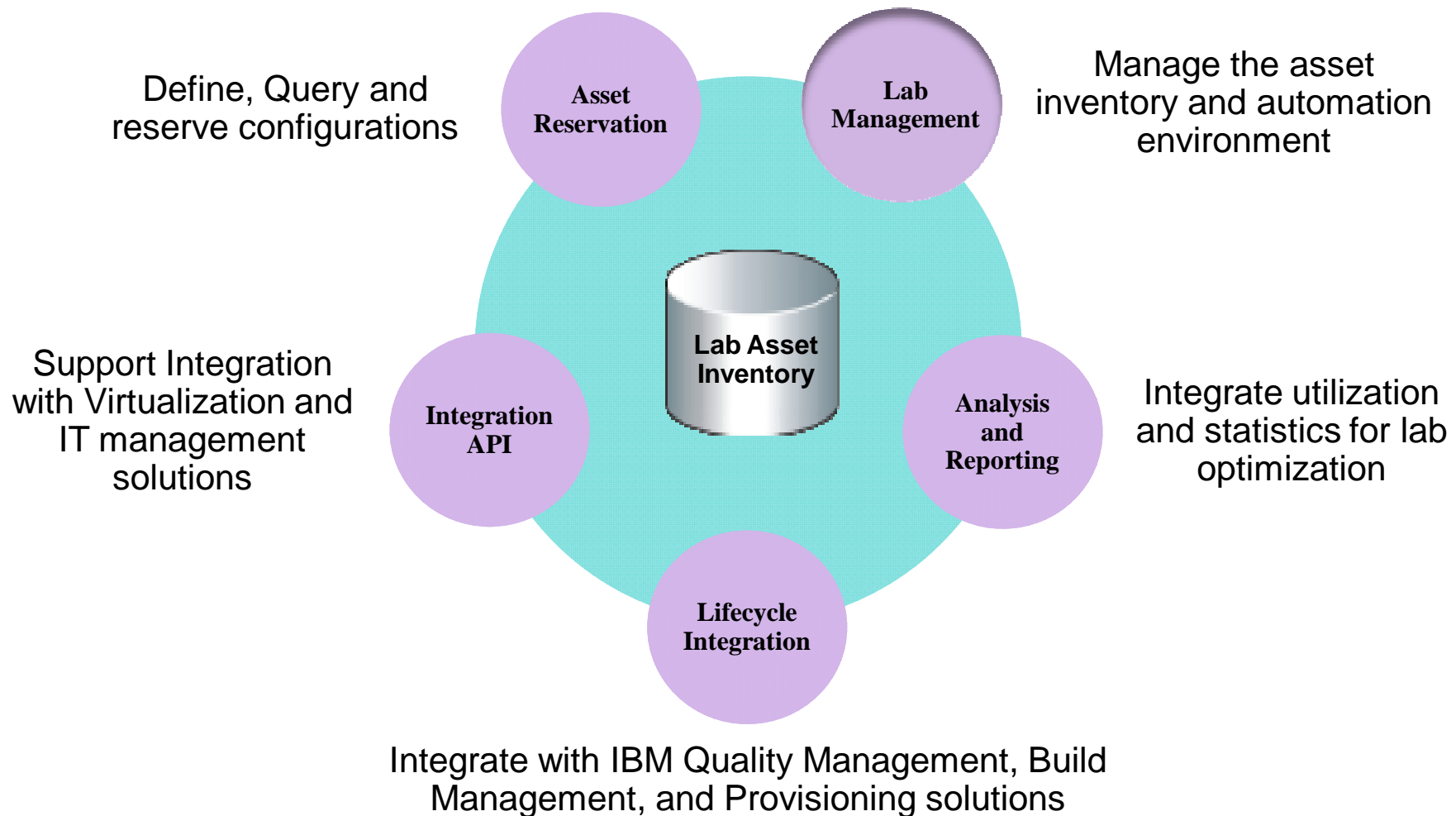


IBM Rational Test Lab Manager

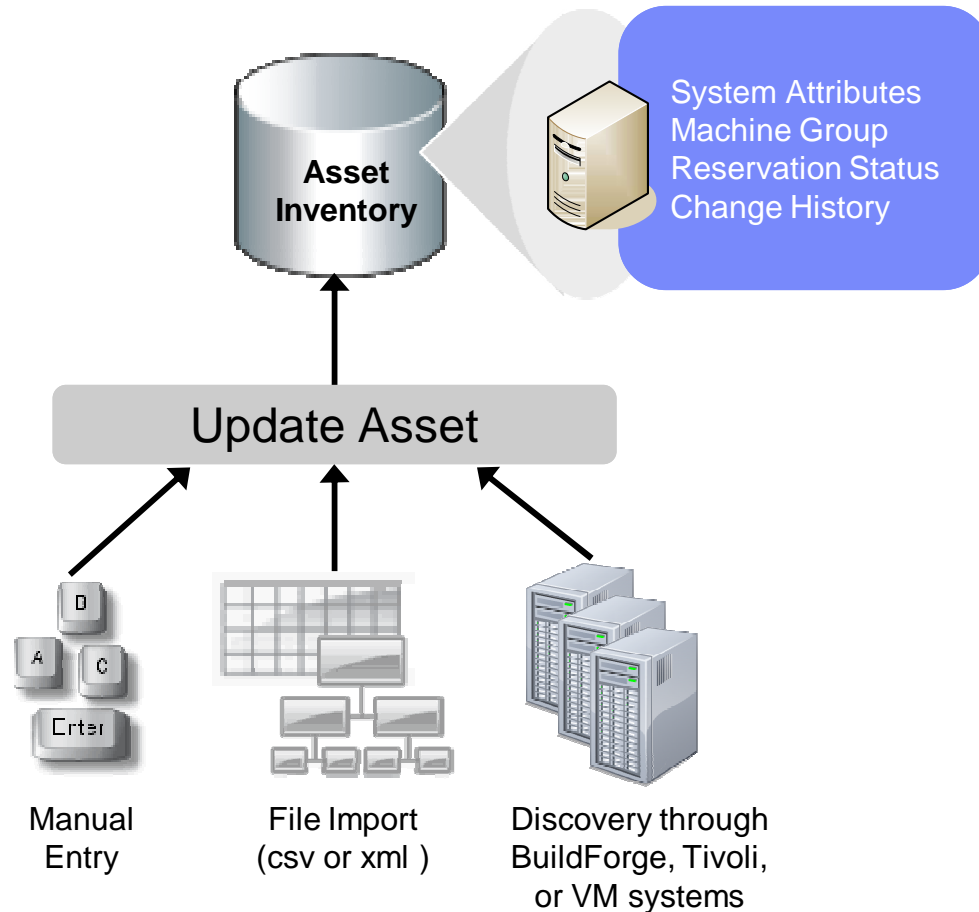


- A centralized asset inventory tracks machine status and configuration
- Automation tasks accelerate the delivery of test configurations
- An asset reservation system allows testers to coordinate activities
- Utilization metrics help optimize lab resources and identify candidates for virtualization
- Integration of physical and virtual systems maximizes flexibility

Core features of Rational Test Lab Manager

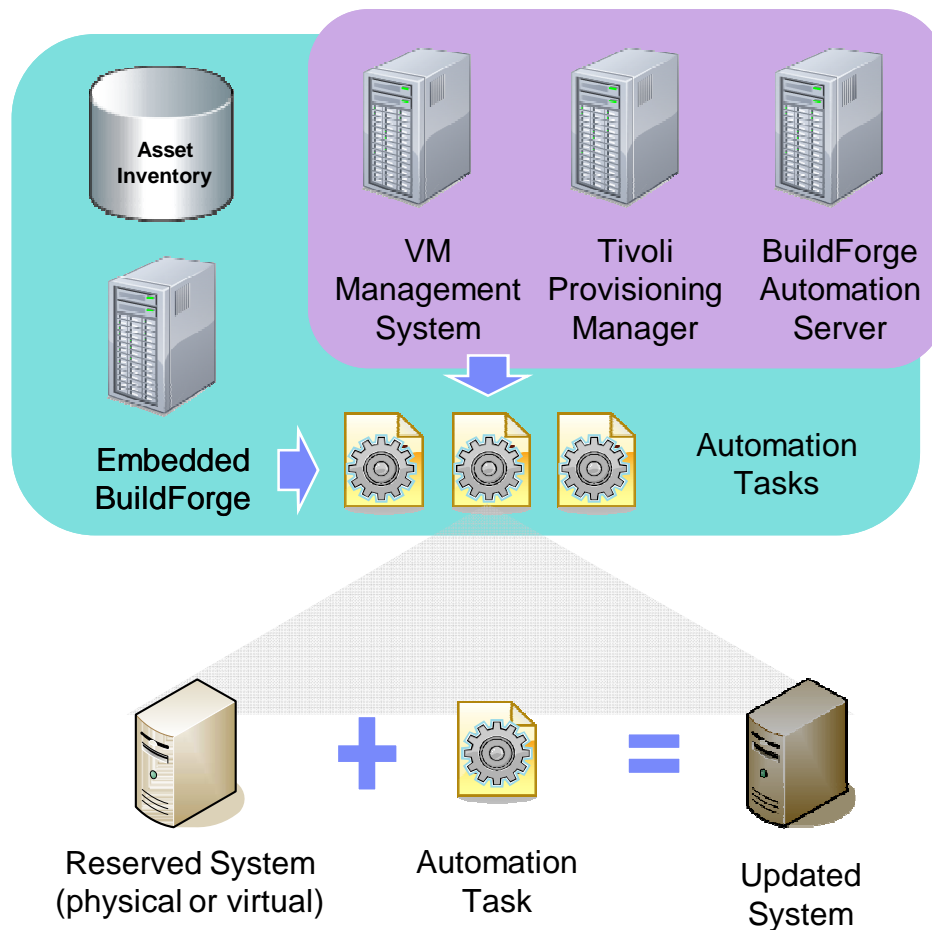


Centralized Asset Inventory



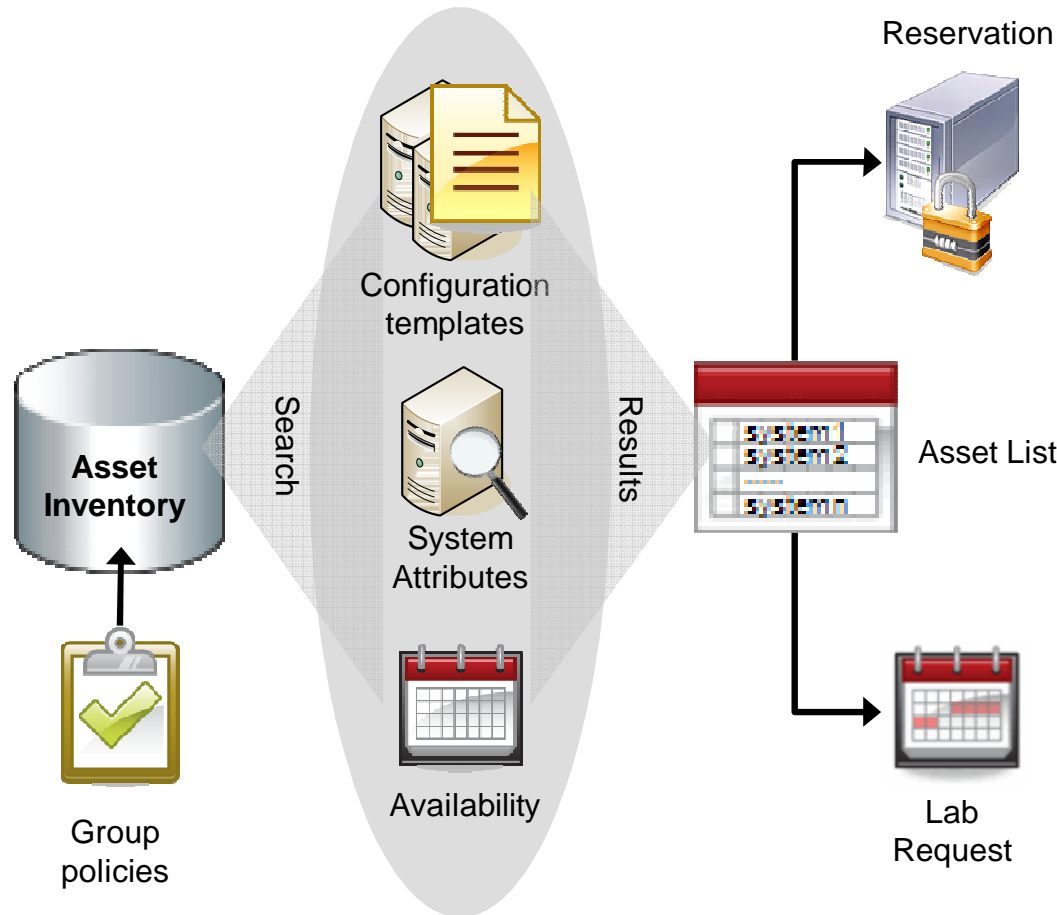
- Change history tracked for all assets
- Machine and Configuration discovery by integration with existing BuildForge and Tivoli systems
- Virtual Machines can be added to the inventory manually or by integration with a VM System
- Resources can be pooled in machine groups to align with individual project needs

Deployment Automation Tasks



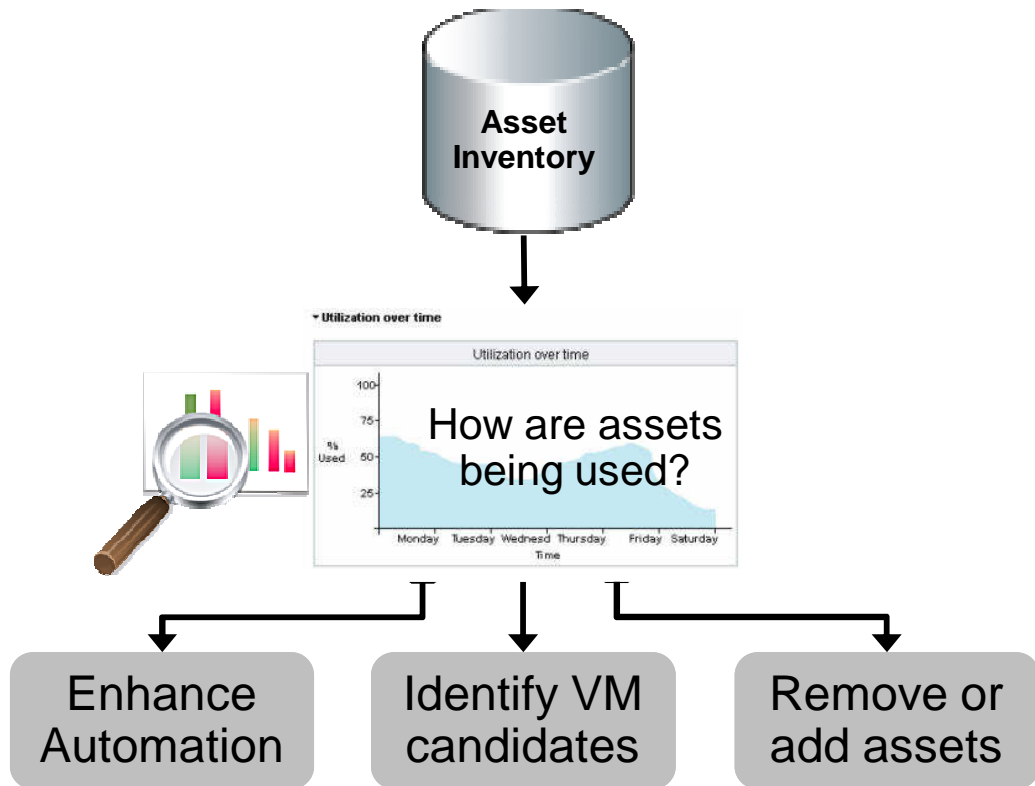
- Create and execute deployment tasks with embedded BuildForge
- Leverage existing automation in your IT or lab environment
- Update a physical or virtual system to meet the required test configuration
- Deploy a build to the system under test
- Deploy a test automation environment to the test system

Asset Reservation System



- Perform searches for early test planning or submit a request to fulfill a test work item
- Configuration templates simplify searches and requests
- Reserve single- or multi-system configurations
- Machine groups manage access to critical assets
- Reserve immediately or submit a lab request for future deployment

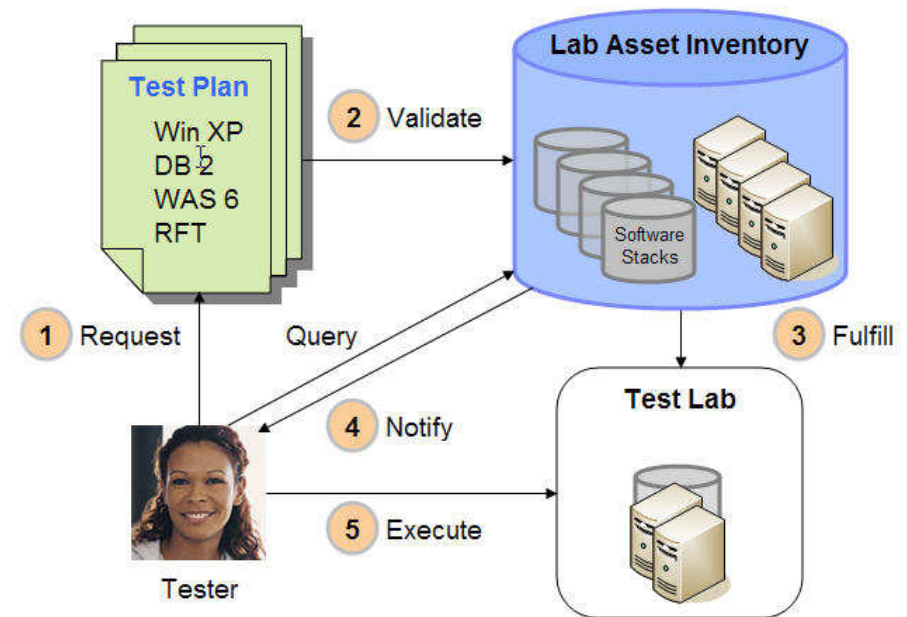
Utilization Metrics



- Track metrics for systems, automations, and reservations
- Leverage configuration history to drive virtualization strategies
- Identify underutilized and high demand assets
- Analyze effectiveness of automation
- Track average reservation length (test cycle)

Accelerate your readiness for test

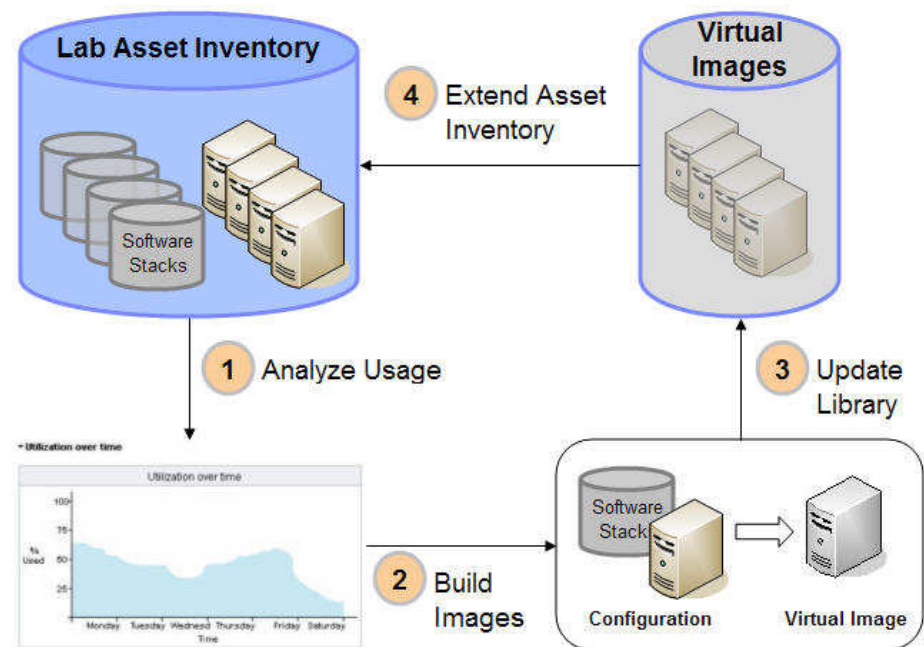
- Reduce lab configuration time
 - Track the state of the lab inventory
 - Automate configuration tasks
 - Manage multiple test projects
- Optimize your limited test budget
 - Refurbish assets based on utilization
 - Improve resource sharing
 - Identify opportunities for virtualization



Rational Lab Manager and Virtualization Technology

Extend lab management capabilities through partnership with Virtualization vendors

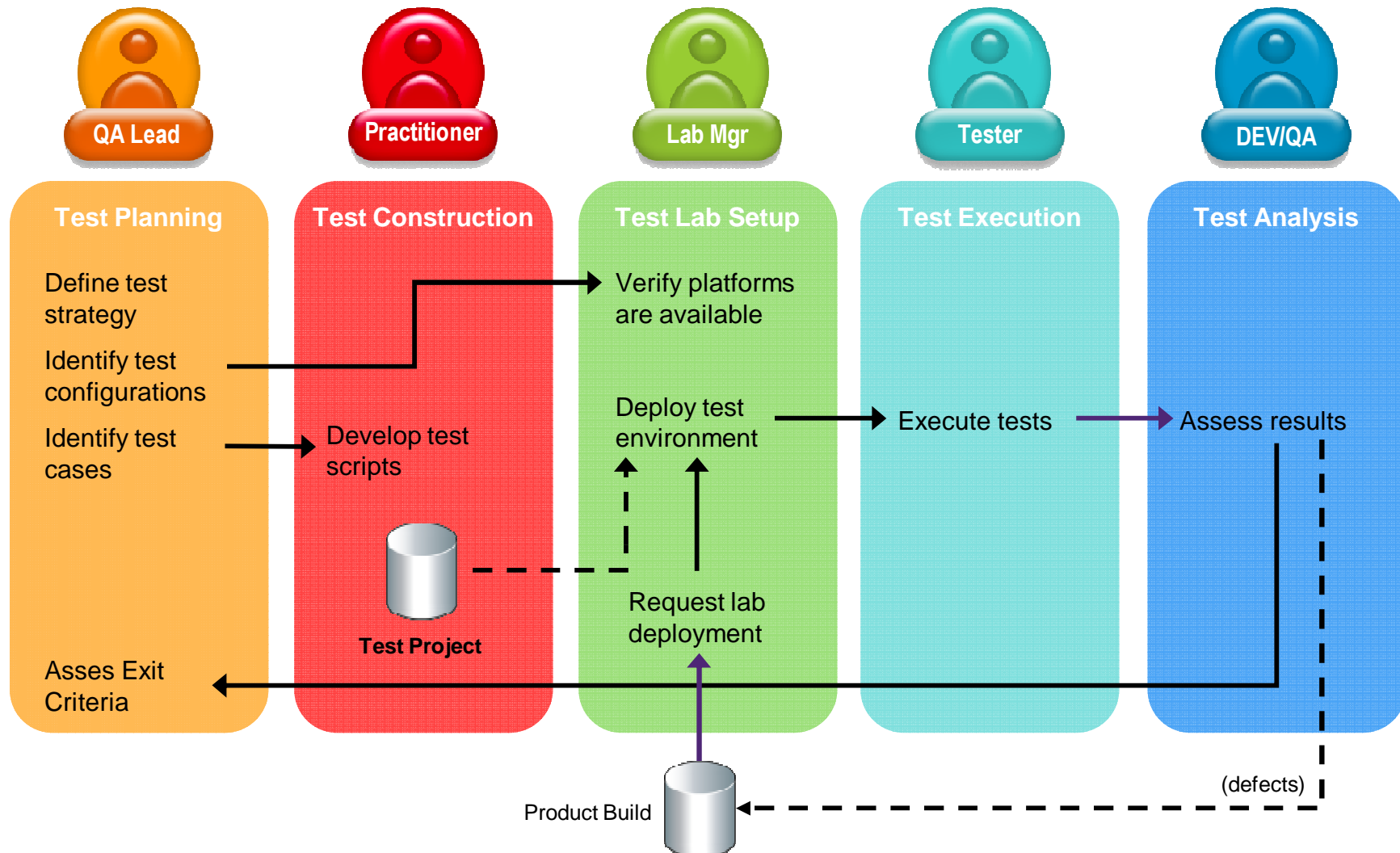
- Track utilization in Lab Manager to support virtualization strategies
- Integrate Virtualization to optimize lab availability
 - Include virtual images as part of your lab inventory
 - Integrate with virtual environment to fulfill lab requests





Walkthrough

Lab Management in the QA Workflow



Plan the Test Effort

The screenshot shows the Rational Quality Manager interface. At the top, there's a search bar and navigation tabs for 'Home', 'All Test Plans', and 'Classics Admin'. A 'QA Lead' badge is overlaid on the right. The main content area displays the 'Classics Admin' test plan details, including its originator (Mary (Manager)), state (Draft), and a description: 'this test plan covers the scope and approach for testing the administrative functions of Classics CD'. Below this is an 'Environments' section with a table listing supported environments.

Type	Attributes
Application Server	Tomcat 6.0, WAS 6.1, WAS 7.0,
Browsers	Firefox 2.0, Internet Explorer 6, Internet Explorer 7,
CPU	AMD 32bit, System i, System z,
DataBase	DB2, DB2 7.x, DB2 8.x,
OperatingSystem	Vista, Windows NT, Windows Server 2003,

- The test plan specifies the target environments needed to determine the test configurations
- Configurations are used to search for machines that are available for testing
- The QA Lead can submit a purchase request if the lab can not support the test plan

Assign Test Work Items

The screenshot shows the Rational Quality Manager interface with a table of test work items. The table has columns for Test Case, Configuration, Test Plan, Iteration, Owner, Script, Status, and Last Modified. There are four rows of data, all with a status of 'New' and a last modified date of 'May 30, 2008'. The configurations include Tomcat 6.0DB2, WAS 6.1DB2, and WAS 6.1DB2 on various operating systems and browsers.

Test Case	Configuration	Test Plan	Iteration	Owner	Script	Status	Last Modified
<input type="checkbox"/> Administration	Tomcat 6.0DB2 7.xAMD 32bit/Windows NTFirefox 2.0	Classics Admin		amy	None a	New	May 30, 2008
<input type="checkbox"/> Administration	Tomcat 6.0DB2 8.xAMD 32bit/Windows Server 2003Firefox 2.0	Classics Admin		amy	None a	New	May 30, 2008
<input type="checkbox"/> Administration	WAS 6.1DB2System iVistaInternet Explorer 6	Classics Admin		amy	None a	New	May 30, 2008
<input type="checkbox"/> Administration	WAS 6.1DB2 8.xSystem iWindows Server 2003Internet Explorer 6	Classics Admin		amy	None a	New	May 30, 2008

- The availability of a build leads to test work items for the QA teams
- The configuration noted in the test plan is referenced for each derived test case
- The tester can make a reservation for a machine that matches the configuration
- The tester can also submit a lab request to have a system configured and deployed

Submit a Lab Request

Rational Quality Manager

Home All Test Plans **New Request!**

Request <11:21:07>

Refresh

Summary: * Administration Scenario Test Request

Details

Reservation

Created: Reserve From: 6/9/08 8:00 AM

Assigned: Reserve To: 6/13/08 3:00 PM

Priority:

Respond By: [Add Lab Resource Description](#) | [Add from configuration...](#)

Configuration

Enter a label for the Lab Resource Description [Less...](#)

Description

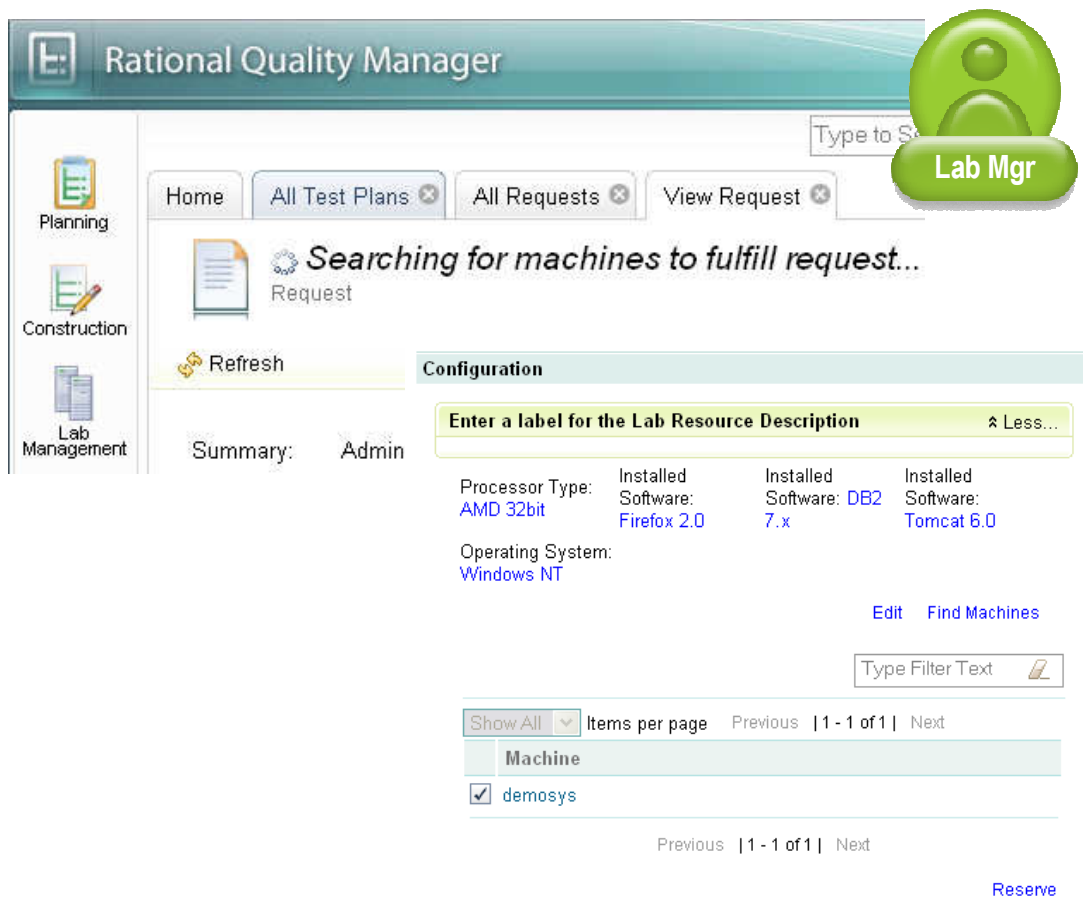
Configuration for C

Processor Type:	Installed Software:	Installed Software:	Installed Software:
AMD 32bit	Firefox 2.0	DB2 7.x	Tomcat 6.0
Operating System:			
Windows NT			



- The Lab Request contains the information needed by the lab manager to deliver a test system
- There are two main parts to the request: the time frame when the system is needed, and the required configuration
- The tester can seed a request with a predefined configuration or enter system requirements directly in the request

Locate Available Test Assets



- The Lab Manager select the next request from his work items
- From the request the lab manager can locate machines the match the configuration
- A machine is selected and reserved so the system configuration tasks can be performed

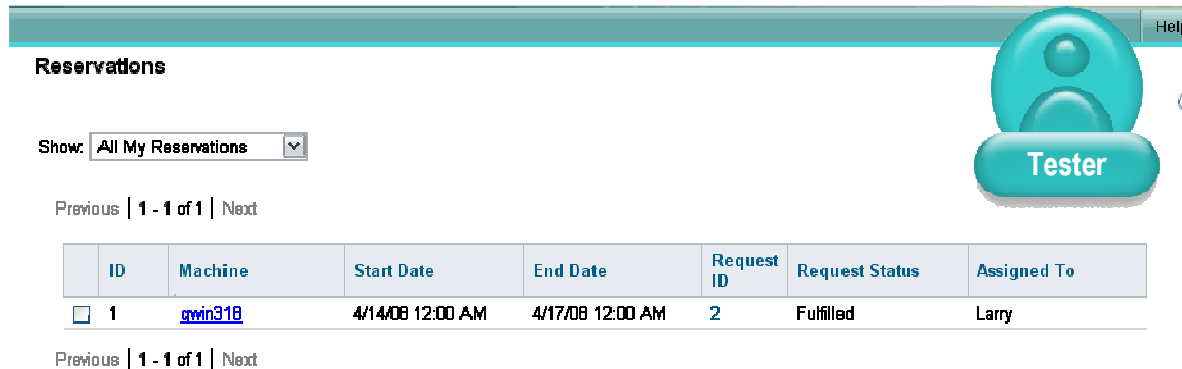
Apply deployment automation tasks

The screenshot shows the Lab Manager interface with a green 'Lab Mgr' button. It is divided into three main sections:

- Automations:** Contains two sub-sections:
 - Available Jobs to Run:** A table with columns 'Name' and 'Provider'. It lists 'Check Dir', 'Test Project' (checked), and 'RTLMTTestProject', all provided by 'BuildForge RTLM Integration Adaptor'.
 - Available Machines for Automations:** A table with a 'Name' column. It lists 'RTLMT IBM-C7E4BDD3EB7', 'gwin318' (checked), 'gymw166', 'gymw150', and 'RTLMT TrainWreck'.
- Running Automations:** A table with columns 'Job Name', 'Start Time', and 'End Time'. It shows 'Test Project' running from 12/31/09 7:00 PM to 4/7/08 6:28 PM, and 'RTLMTTestProject' running from 4/7/08 4:53 PM to 4/7/08 4:53 PM.

- The system provides a view of the automation tasks that are available for the target system
- The Lab Manager selects the desired task and the system where it will be applied
- The system also provides a view of the automation tasks that are currently running

Notify the requestor



The screenshot shows a web application interface for managing reservations. At the top right, there is a 'Help' button. Below it, a user profile for 'Tester' is displayed with a blue circular icon. The main content area is titled 'Reservations' and includes a dropdown menu set to 'All My Reservations'. Below the dropdown, there are navigation links: 'Previous | 1 - 1 of 1 | Next'. A table with the following data is shown:

ID	Machine	Start Date	End Date	Request ID	Request Status	Assigned To
<input type="checkbox"/> 1	cwin316	4/14/08 12:00 AM	4/17/08 12:00 AM	2	Fulfilled	Larry

Below the table, there are more navigation links: 'Previous | 1 - 1 of 1 | Next'.

- Once the system is setup, the lab manager returns the request to the tester as fulfilled
- The request includes a link to the system that was deployed for his request
- The tester is now ready to begin his test activities

Execute your tests

The screenshot displays the 'Script Execution' window in IBM Rational Quality Manager. The window title is 'Executing New Customer Order' and it shows a 'Manual Script' being executed. The environment details are as follows:

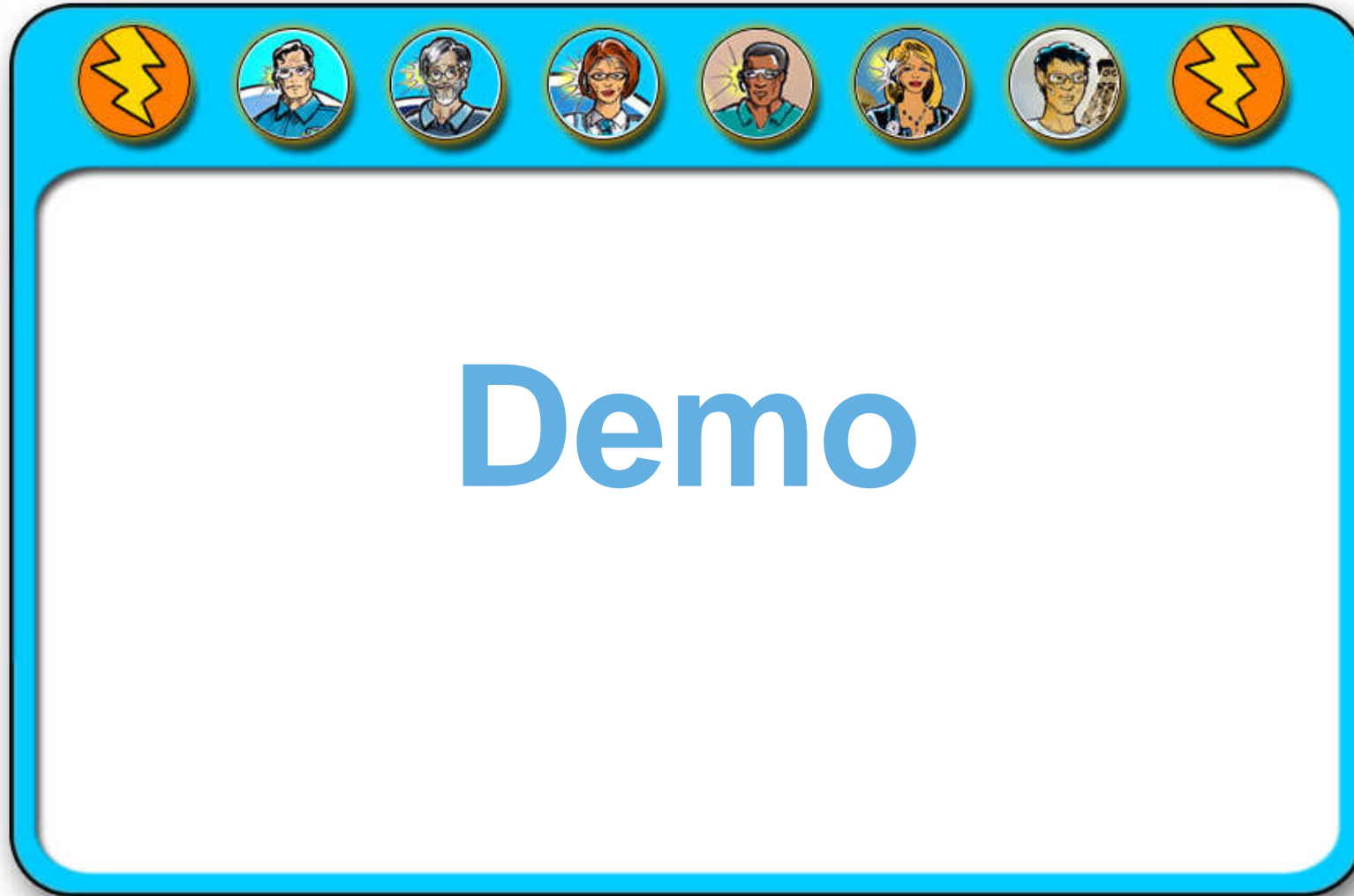
Environment	Value
Test Script Name	New Customer Order
Application Server	Tomcat 6.0
Browsers	Firefox 2.0
CPU	AMD 32bit
DataBase	DB2 7.x
OperatingSystem	Windows NT

The 'Script Steps' table shows the following progress:

#	Type	Result	Description
1		✓	Select a cd and click Order button
2		✓ Passed	Verify the login window displays
3			Select new customer radio button and select OK button

The 'Test Progress' bar indicates 67% completion. A 'Tester' icon is shown at the bottom of the screenshot.

- The tester now completes his work execution items by performing the assigned tests
- The original work item contained the specific test cases and automation scripts to be run
- This examples show the progression of a Manual test in Quality Manager



IBM Rational Quality Manager

Central hub for business-driven software quality

Collaborate throughout the lifecycle

- ✓ Defined, customized roles and processes guide activities
- ✓ Dynamic, living test plan evolves with the project
- ✓ Web 2.0 style interface designed for globally distributed teams
- ✓ Early, ongoing team interaction on progress

Automate test creation & execution tasks

- ✓ Automated test case generation and prioritization
- ✓ Manage and execute virtual and physical test lab assets

Govern with immediate access to quality metrics

- ✓ Data and pattern analysis informs and optimizes future activities
- ✓ Prioritize assignments to complete most vital quality issues first
- ✓ Versioning and traceability of test case assets maintained

Protect investments with an open, extensible platform

- ✓ Use test tools of your choice
- ✓ Tagging enables ready reuse of your test assets





Get Started Today
with
Rational Quality Manager
Open Beta

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