



[2012 IBM 開發者大會]

測試環境虛擬化

降低成本 最大關鍵

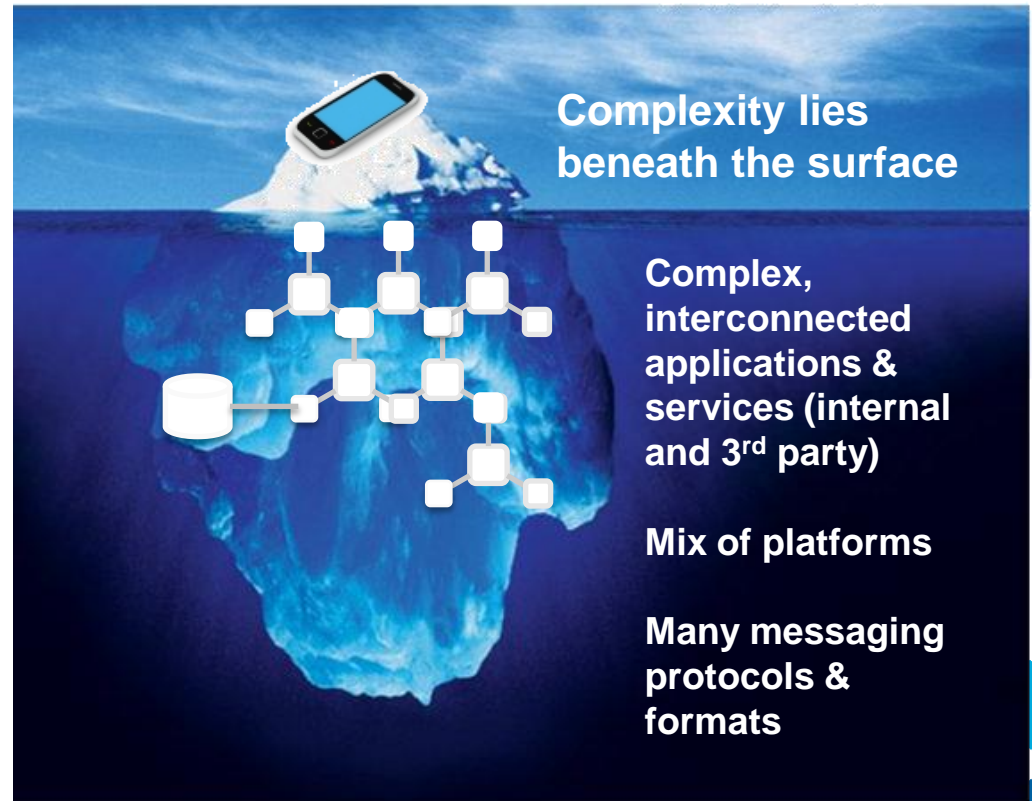
陳家豪 (Max)
IBM 軟體事業群
Rational 技術顧問

Next  NOW!



企業現今面臨的品質問題

- Ensuring the quality of highly complex, integrated, heterogeneous systems requires a completely integrated system with all dependent services, hardware, and application user interfaces to be in place.
- Essentially, a replica of the production environment is required.
- This is:
 - Costly to setup & maintain
 - Labor
 - Hardware
 - Software
 - Costs to access 3rd party services
 - Often only possible late in development which results in late stage discovery of significant integration problems
 - A barrier to adopting agile development practices



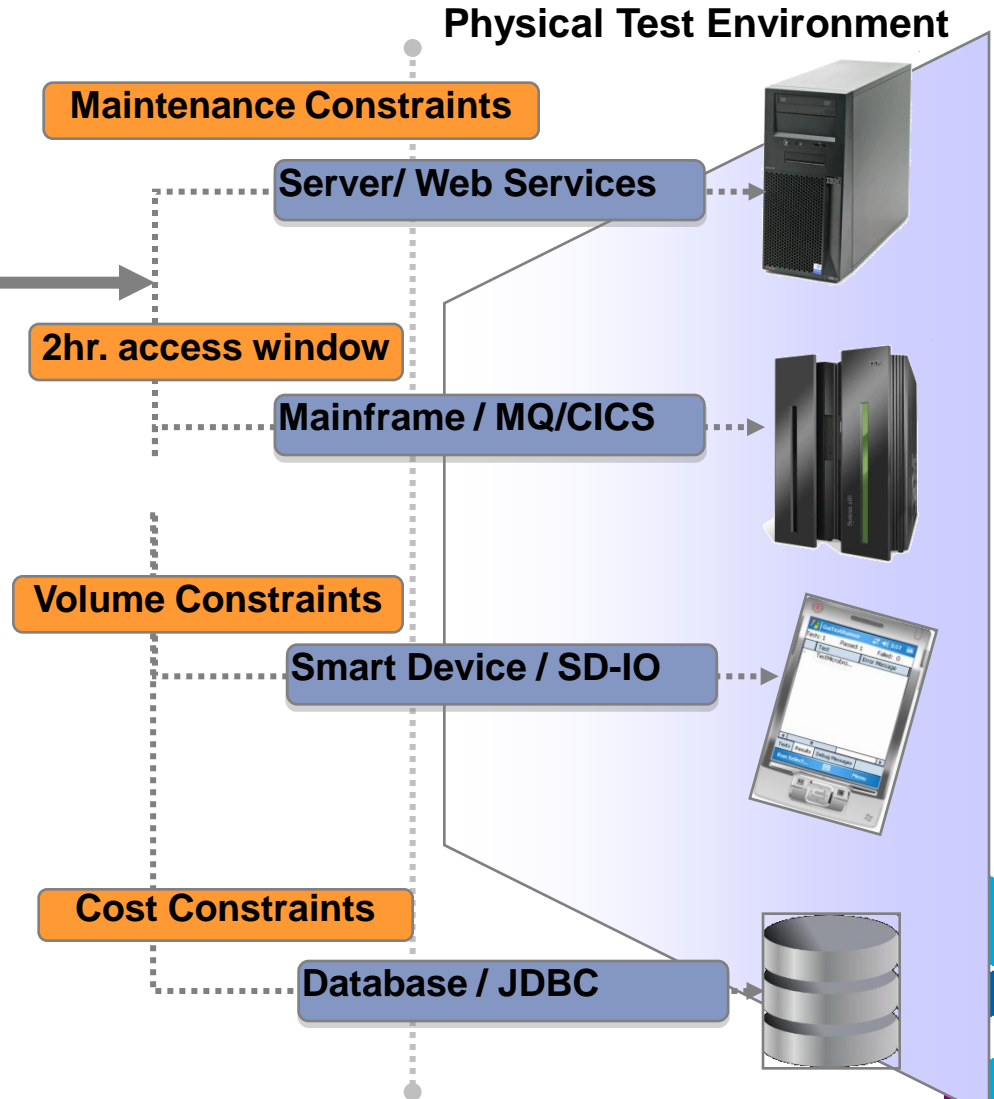
範例：開發與測試生命週期中的限制



System Under Test

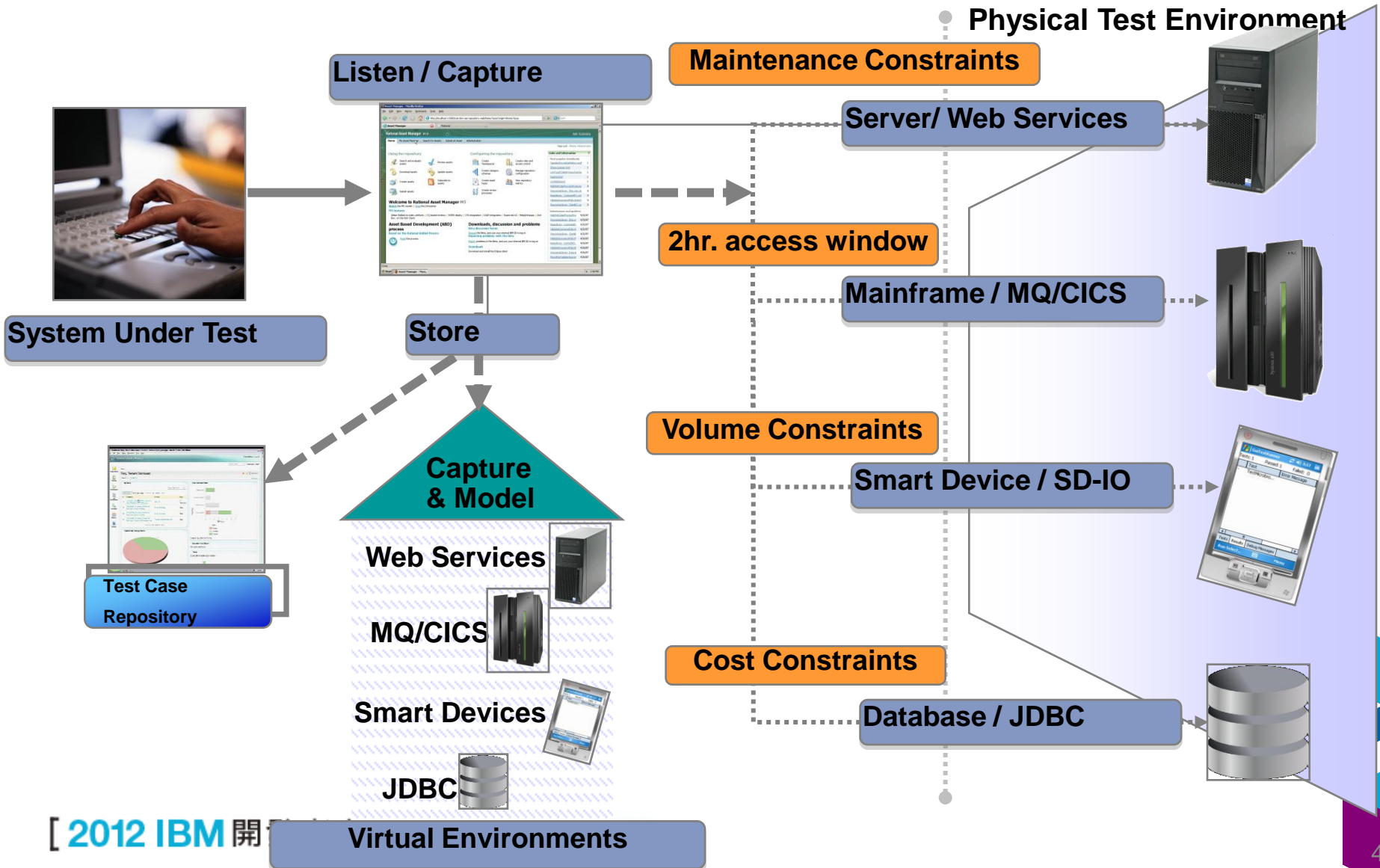
Problem:

Pervasive constraints on development and testing limit productivity

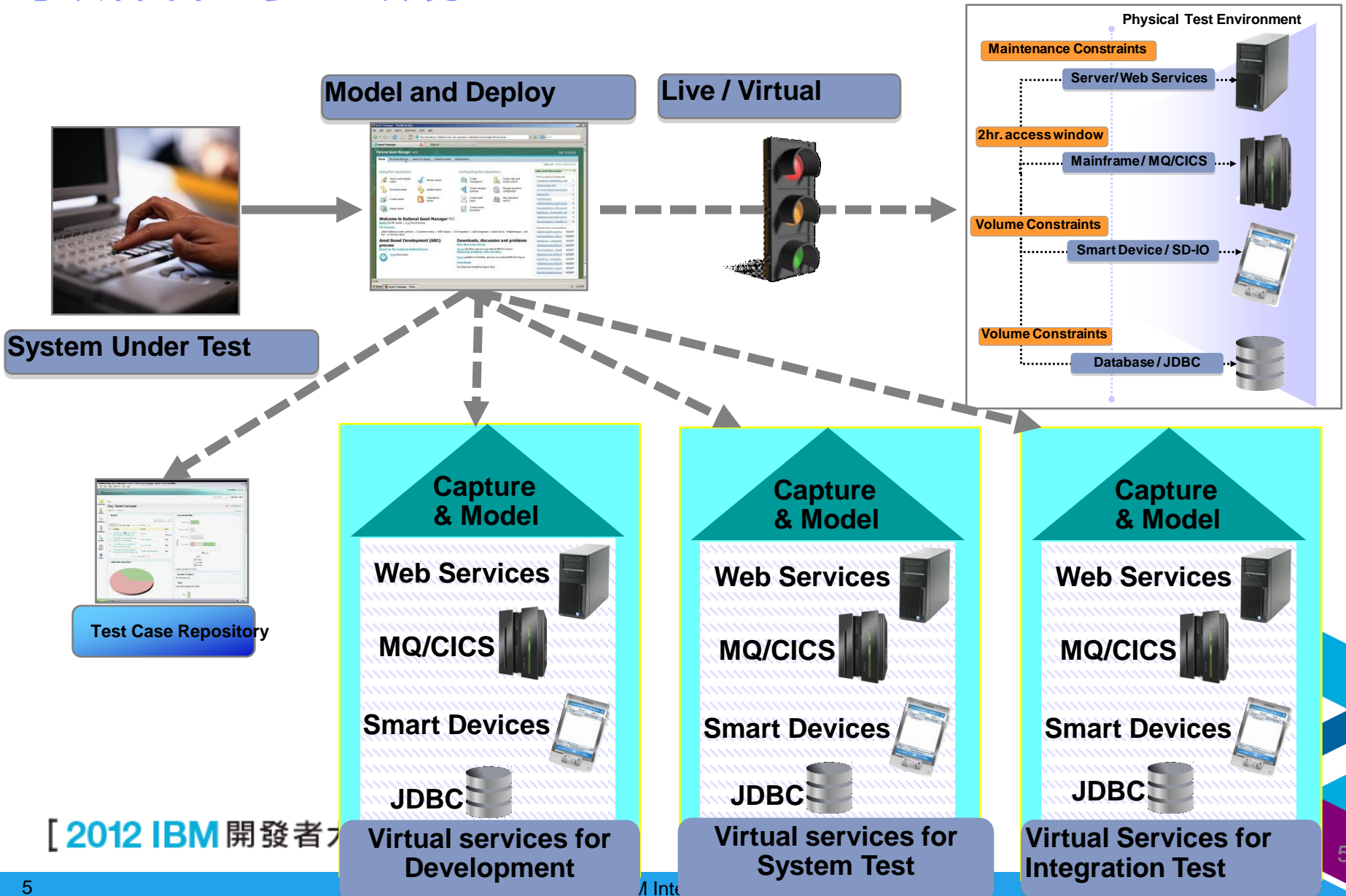


解決方案：IBM Rational 測試虛擬化

擷取後端系統中的行為和特性



IBM Rational 測試虛擬化解決方案讓虛擬化服務 可以佈署至多重環境

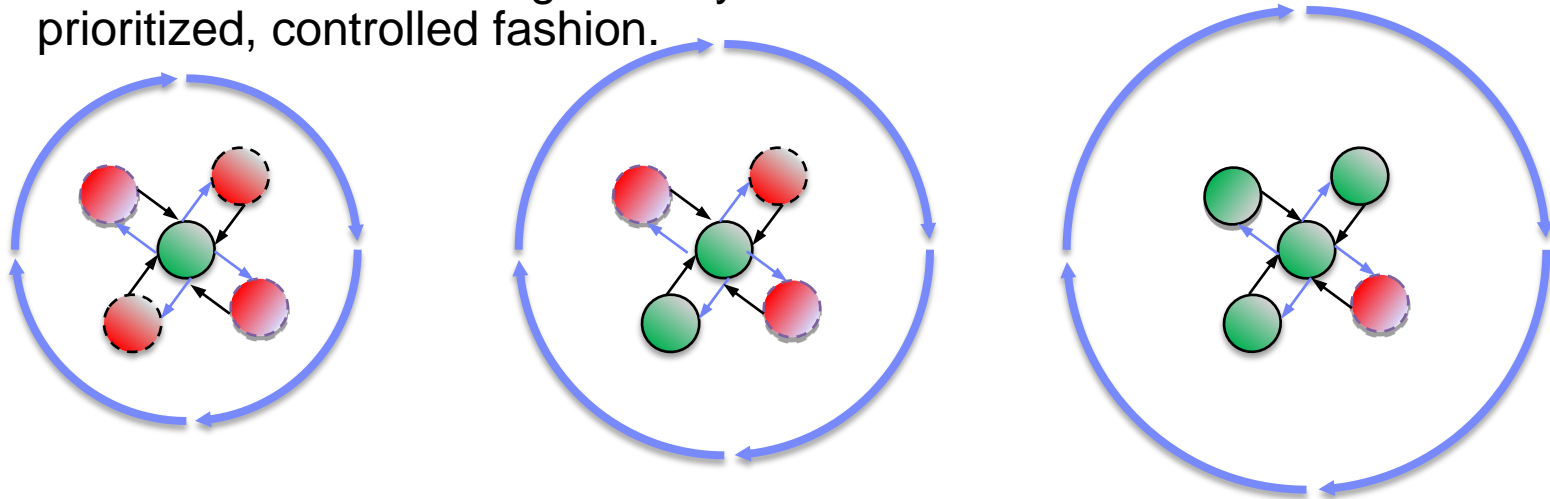


IBM Rational 測試虛擬化解決方案是持續整合測試的關鍵成功要素



- Test Virtualization is an enabler for continuous Integration Testing
- Integration testing enables testing of test messages, message data and service-to-service interactions
- Services, applications, systems are introduced into the continuous integration cycle in a prioritized, controlled fashion.

- Actual Service/App
- Virtual Service/App



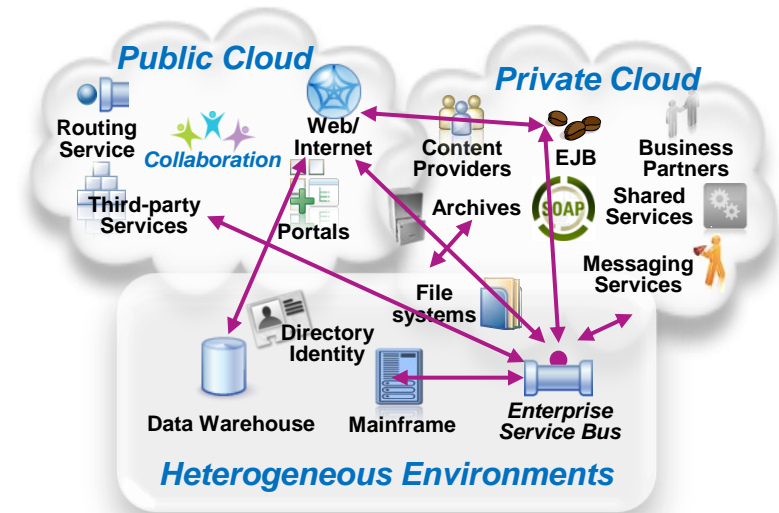
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Incremental Integration Testing

Green Hat, an IBM company

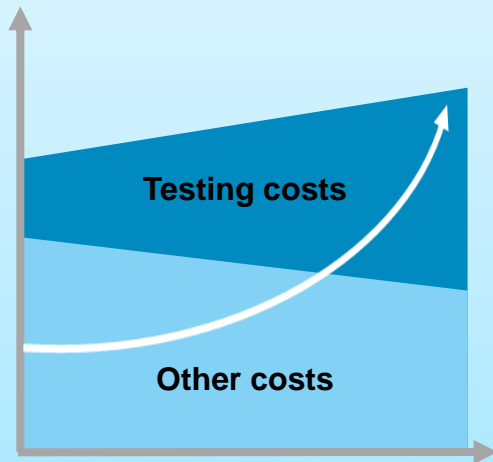
The Future of Testing = IBM Rational + Green Hat

- End-to-end testing for complex business applications using messaging and business process integration technologies
- Ensure the scalability of your messaging infrastructure and applications
- Enable continuous integration testing for agile software delivery

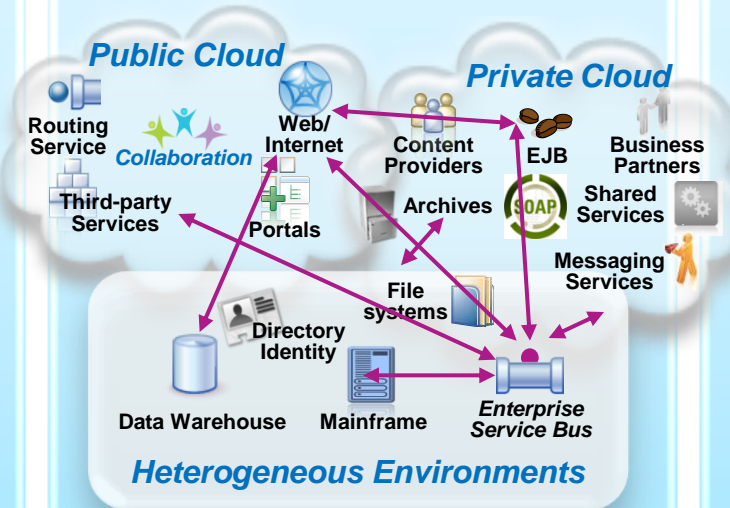


在互連世界中的應用程式測試

Increasing Cost of Quality



Increasing Development Complexity



Balancing Quality and Speed



13%

The forecasted increase in wages for India IT workforce in 2011

\$5-30 million

The typical investment to build a single test lab for a Fortune 500 company. Most have dozens ...

30-50%

The average amount of time testing teams spend on setting up test environments, instead of testing

測試虛擬化可以加速應用程式的交付

Test lab costs

- **Reduce** the cost of test lab infrastructure
- **Accelerate** the effort of setting up test environments
- **Reduce or eliminate** the cost of invoking 3rd party systems for non-production use

Cycle Time

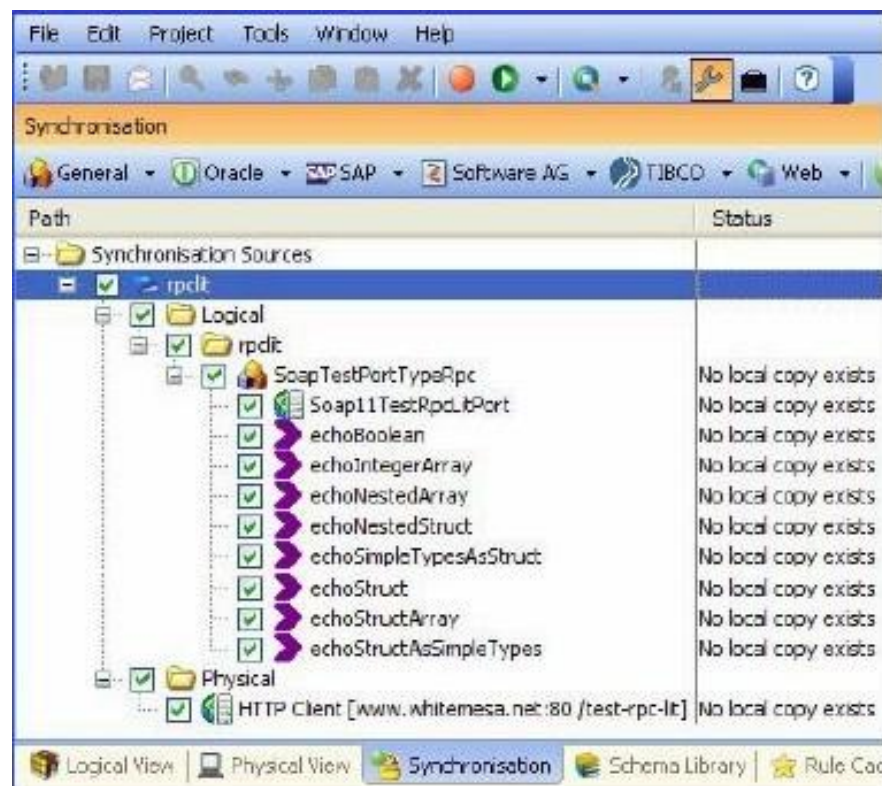
- **Focus** your energy on testing
- **Reduce** the time spent configuring test environments
- **Accelerate** regression testing that can be done earlier in development independently from the User Interface

Risk

- **Enable** continuous integration testing to reduce the risk of late discovery of integration issues
- **Visualize and manage** dependencies of application components and services

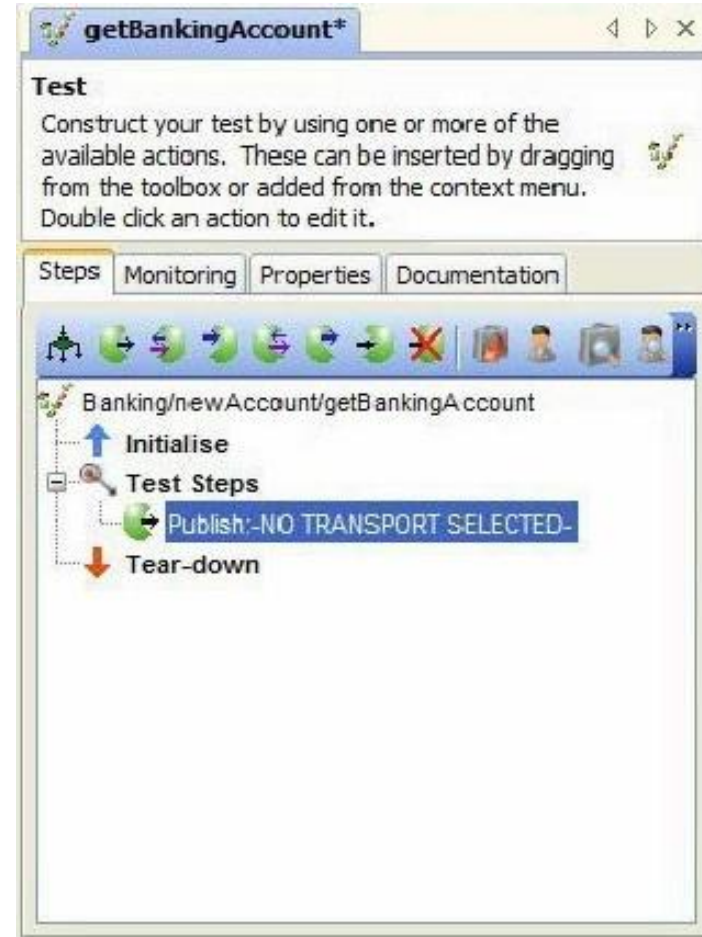
加速測試的開發

- Synchronize your test project with your application environment
- Create an architectural view of your system to accelerate the development of test assets
- Supported resources include WSDL, webMethods Integration Server, TIBCO BusinessWorks, SAP systems, and Oracle Fusion



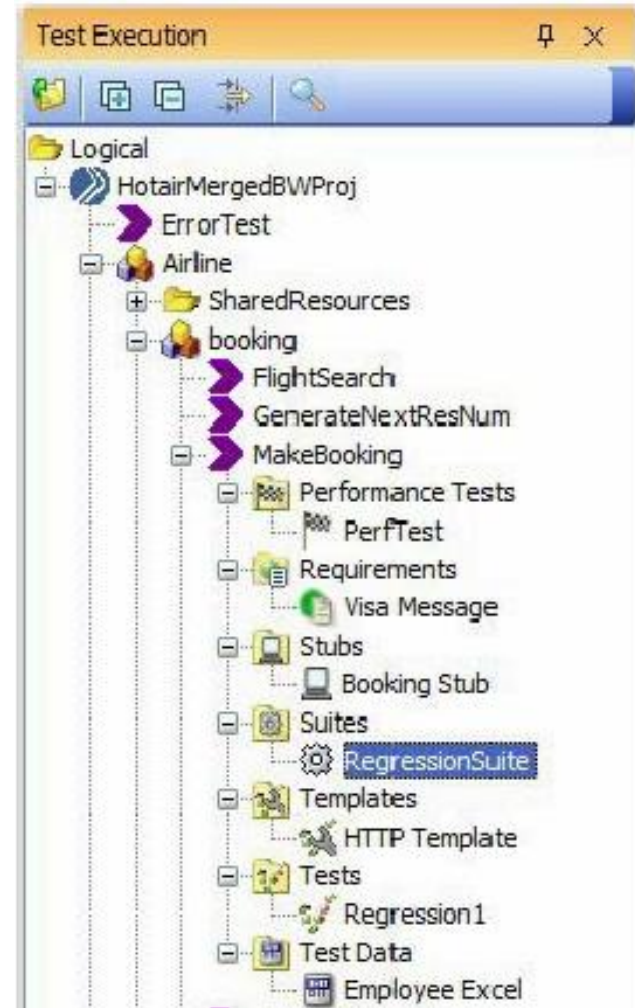
無須撰寫程式碼的測試開發

- Create tests using
 - Recorded messages from a live system
 - Message ‘requirements’ defined in the project architecture
 - Forms and wizard-driven UI
- Build your own transports and formatters to deal with your project’s custom messages
- Leverage our library of industry standards for SWIFT, IATA, EDI, HL7 and more



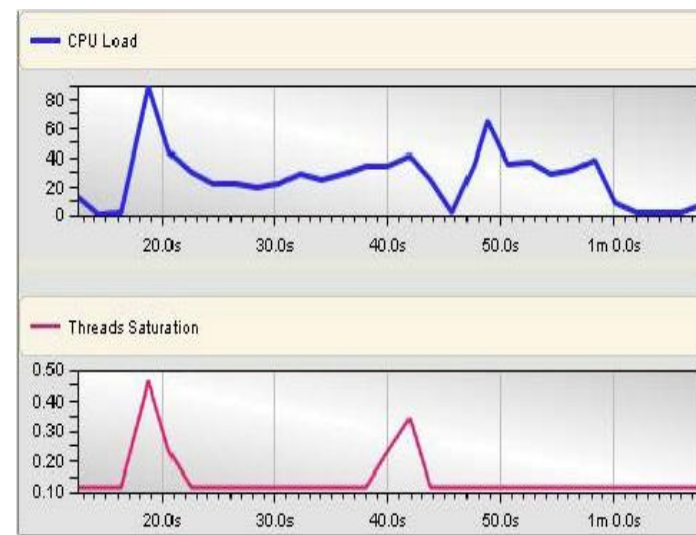
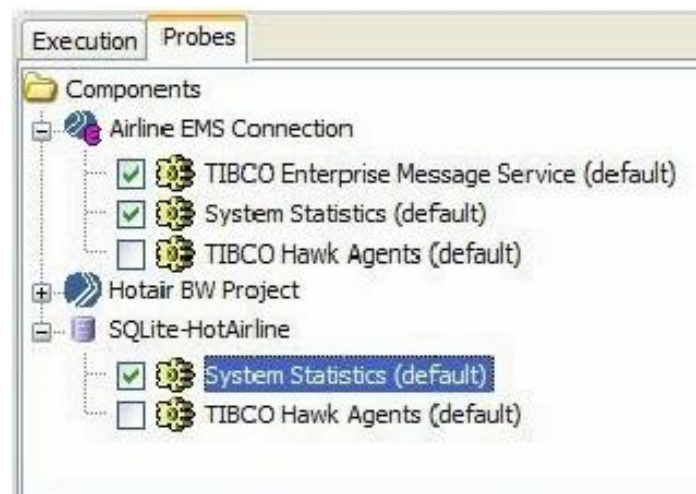
富有彈性的測試執行

- Isolate test execution focusing on specific areas of your composite application
- Monitor events and messages in real-time for troubleshooting
- Repair Wizard helps correct validation errors
- Command line execution enables integration with build environments and other systems
- Integrates with Rational Quality Manger (oh, and HP Quality Center too)



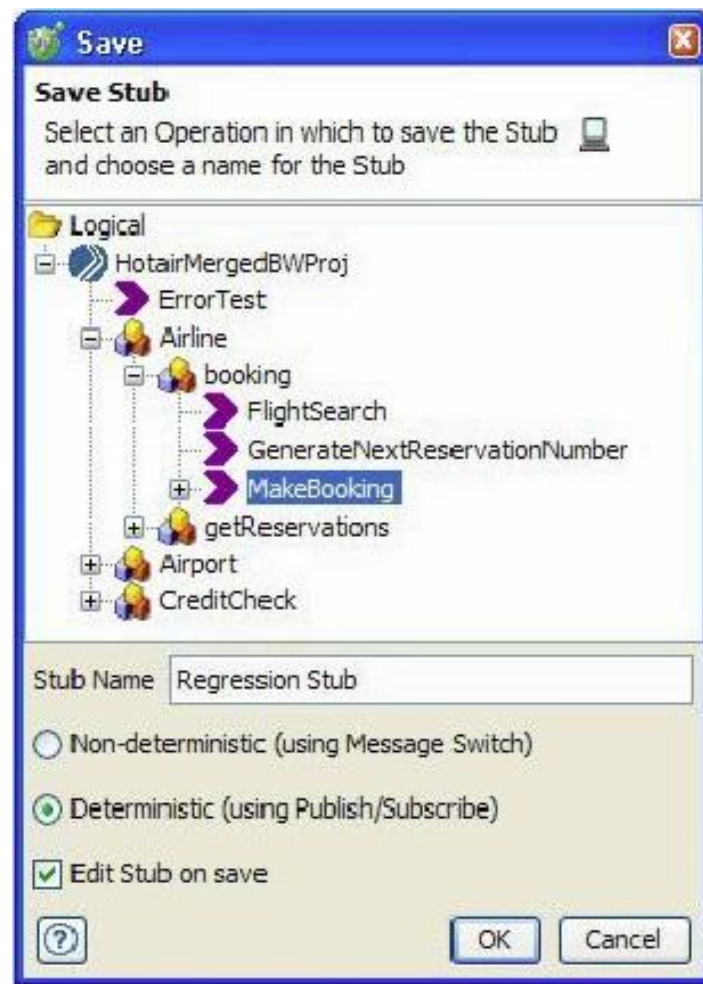
評估系統的效能

- Reuse integration tests to develop real-world load scenarios
- Examine system health through a variety of probes
- Combine performance measurements with probe data to identify performance bottlenecks



建立虛擬化的測試環境

- Code-less virtualized applications help eliminate test dependencies
- Create virtualized services from your existing test messages
- Centrally manage virtualized applications for each environment
- Make changes without having to modify the system under test
- Enable earlier testing across all phases of development



IBM Rational 測試自動化解決方案

IBM Rational Test Workbench

End-to-end functional, integration, and performance testing throughout your integration project lifecycle

IBM Rational Performance Test Server

Service and application-level performance testing for your integrated application environment

IBM Rational Test Virtualization Server

Leverage application virtualization to increase agility and deliver cost-effective 24x7 test environments



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QUESTIONS

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