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Rational. software
【2009 IBM開發者大會】
開發，不只玩真的！
Real Teams. Real Insights.
Real Results.
REC

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Real Teams. Real Insights.
Real Results.
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開發無國界 管理全自動

-- 輕鬆進入階協同開發時代

Real Teams. Real Insights. Real Results.

REC

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Agenda

- What's the Challenge of Software Development Today?
- Jazz & Rational Team Concert Overview
- How we use Rational Team Concert in IBM
- Development & Test on IBM Cloud

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What's the challenge of Software Development Today?

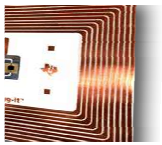
改變，是當今的行爲準則

現在全世界有 10億台 可照像的手機

IBM Roadrunner 超級電腦…
如果把全世界60億人集合起來,每個人每秒做一道計算，需要46年才能完成 Roadrunner一天能做的運算量。

"80% CEOs 預見未來世界將有重大改變" - 2008
IBM CEO Survey

使用 internet 的人口 已超過10 億。
Internet 上記錄的事情 已超過1 兆件.



到了 2010, 將會有300億個 RFID tags 在電路當中

很會的上網人口將會超過20 億。

中國每週送出的簡訊, 超過美 國一年的量。

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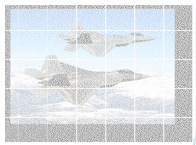
”改變” 可能造成混亂的機會

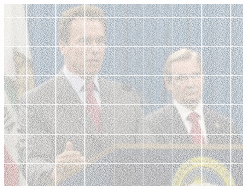
IT 人才短缺，
達到近10 年的最高峰

F-22 飛越國際換日線時– 軟體
系統Crash 的原因是
bug 造成的



50% 的外包專案
執行結果都不如原先預期

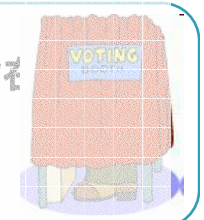
“預期的改變及駕馭改變能力間的落差自2006 年來增加了三倍”
– 2008 IBM CEO study



COBOL 阻礙了
加州政府推動工
作

北卡羅蘭納州失業者宣稱
將 癱瘓 州政府網站 Web

Ohio俄亥俄州選舉網站
駭客攻擊之後關閉



馬爾他正在建立智
慧型的電力網路及
供水系統

行動電話提供 三款新手機能
夠免費撥打 Skype

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面對多變的環境 軟體開發者所面臨的挑戰

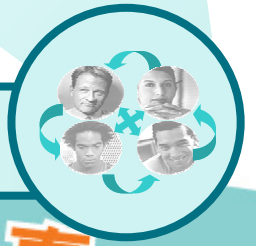
在快速多變的業務目標之下，如何讓IT的錢投資在最需要的項目

如何提升專案管理積效，讓資源運用在需要的地方、並降低風險

如何降低作業成本及提升全球化作業的效率

在全球化環境下如何確保資訊安全與資訊規範

整合組織中的 IT價值鏈，快速反應多變的業務環境



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您對軟體開發的速度及品質滿意嗎?

成員間的溝通是協同開發最困難之處

只有 37% 的業主滿意公司內部軟體開發速度...

只有的業主42% 滿意開發的品質.

50% 的外包專案 品質不符要求.

團隊成員,作業流程和專案管理的隔閡

阻礙了協同開發

地理上的限制

- 不良的溝通
- 語言文化時區的差異
- 新成員上手時間長
- 切割過細的組織

組織上的限制

- 缺乏有意義的業主意見參與
- 作業流程的間隙造成錯誤與重工
- 高階主管無法見到整體狀況
- 不佳的專案治理

IT 基礎設施的限制

- 不相容的工具及資料儲存方式
- 無法正可靠取得一般的專案產出
- 淺薄且脆弱的工具整合

開發，不只玩[illegible]的!

*Forrester, Gartner

開發團隊的心聲:

Rational. software

如果開發工具能夠**即時**提供這些我想要的資訊.....

並且讓一些繁瑣工作**自動化**

CIO

Project status and cost analysis anytime for all business sponsors

專案進度/成本分析報告

Project Manager

Top down and the low level views linking configuration, bug and cost tracking

工作追蹤分析報告

Developer

Easily extend and automate short iteration cycles to meet hot business needs

敏捷式開發方法

Agile work flows automating and smoothing execution

Empower team members to collaborate using up to date information "in context" of the work they are doing

Automated synchronization of project artifacts

QA Manager

Onboard team members across the world across projects in a day not months

快速佈建測試環境

Legal Counsel

Easy triggers to catch licensing issues early

軟體授權檢測報告

Compliance Officer

Seamless access to highest risks and security vulnerabilities

風險及弱點分析報告

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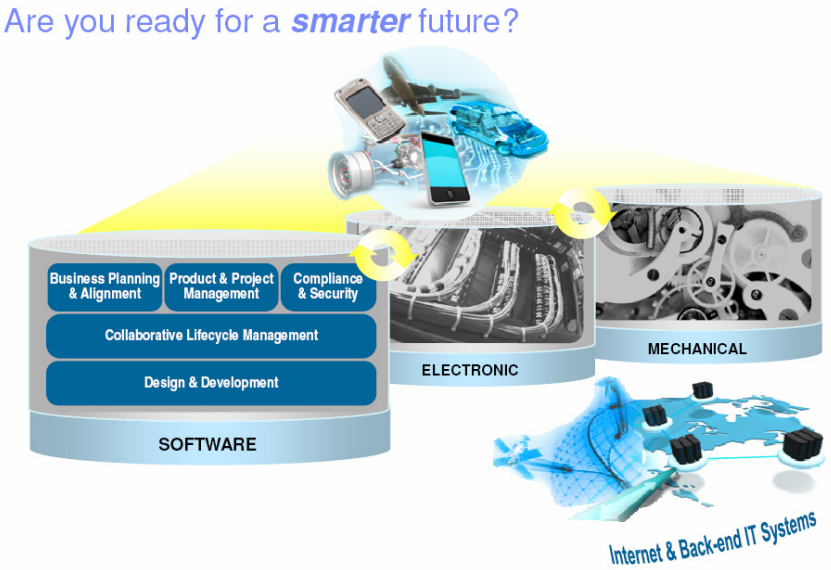
而且.....

資訊必須是.... real

自動化必須是....smart



理想的協同開發平台應具備....

Envisioning a platform that could transform software delivery

An open technology initiative to *transform how people work together* to deliver greater value and performance from their software investments

- Robust, extensible and scaleable
- Globally distributed, fluid and dynamic
- Community-based and open at Jazz.net

掌握工作的來龍去脈

- Enable team transparency – a common understanding of "who, what, when, why"
- Build team cohesion – chats, wikis, information in context
- Automate hand-offs – so nothing falls through the cracks

恰如其分的管理機制

- "Just enough" process that can be modified over time
- Automate data collection – no administrative overhead
- Real time reporting and alerts – customized to individual needs

立竿見影的導入成效

- Dynamic provisioning of projects and teams
- Dynamic iteration planning and workload balancing
- Unify teams using a variety of clients

開放、可延伸的架構

運用 IBM, partner and open source 的技術

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Jazz & Rational Team Concert Overview

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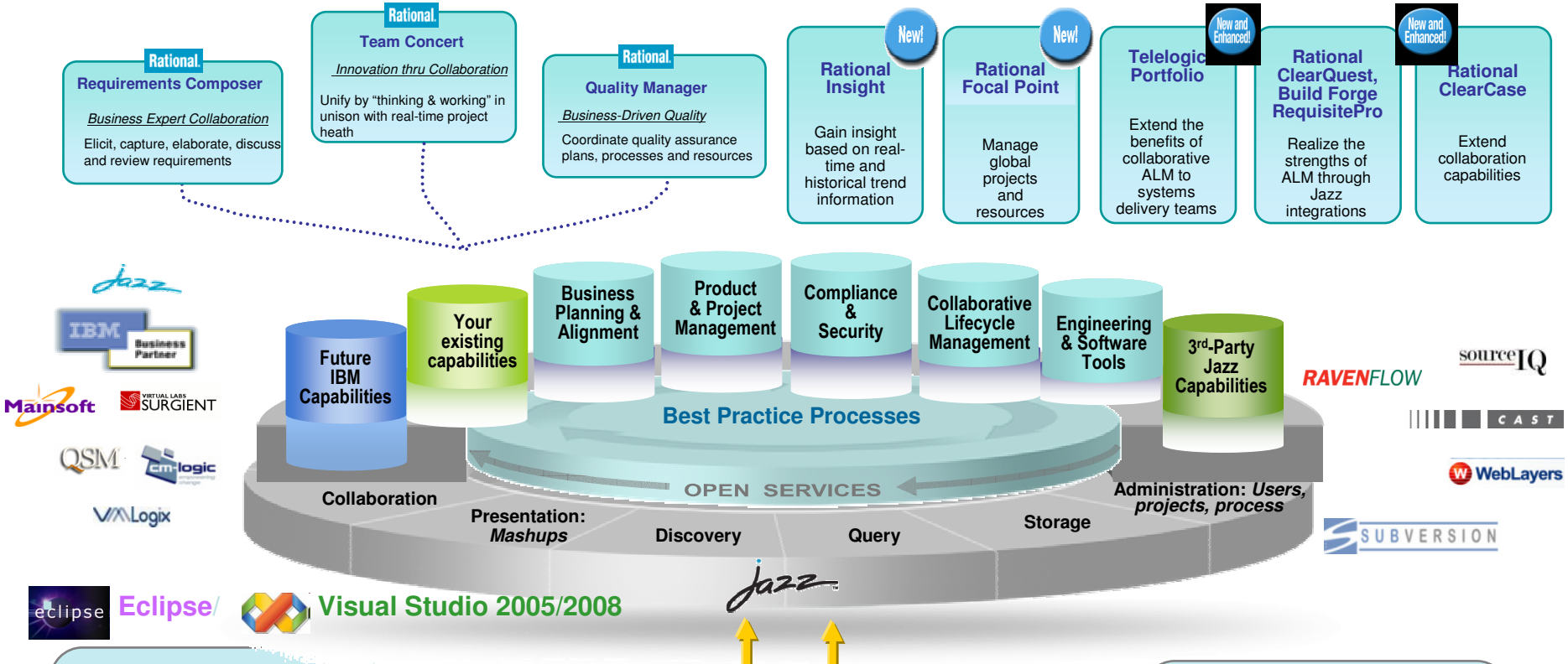
Products on Jazz

Jazz offerings in 2009 and beyond



Rational Software Architect / **Rational** Application Developer
Rational Developer for z /**Rational** Developer for i
Lotus Quickr / Microsoft SharePoint

- Existing Rational offerings
- Business partner offerings
- Open source offerings
- *Others to come...*

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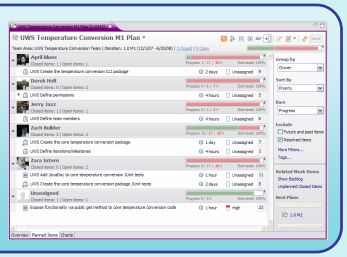
Rational Team Concert (協同開發平台)

專案計劃

- 整合專案疊代計劃及執行管理
- 連結工時估算及專案哩程碑
- 內建敏捷開發流程模版

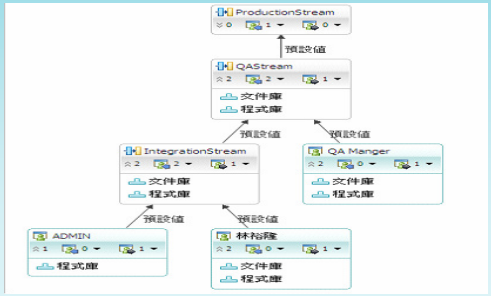


專案監控

- 可客製化的儀表板
- 即時的工作追遡資訊及報告
- 專案里程碑及工作狀態追蹤

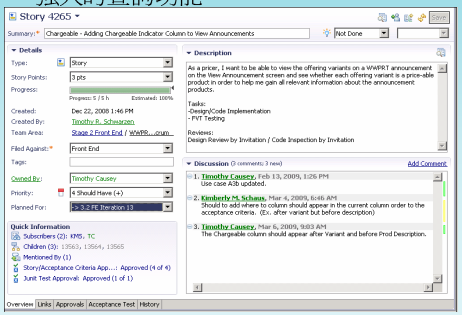
版本管控

- 整合的stream, Component, baselines 功能，提供完整的版本(version) 追遡資訊
- 支援Server-based sandboxes



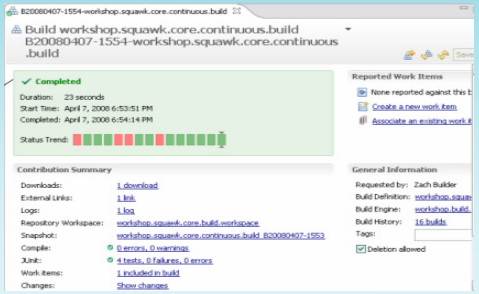
工作項目管理

- 內建 缺陷單、新需求功能單, 工作單及客製表單，及連結，簽核 ，稽核記錄
- 強大的查詢功能



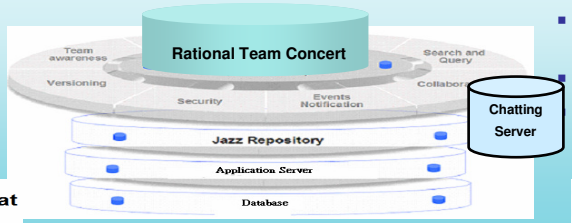
建置管理

- 遍版記錄可與工作表單、變更記錄追遡
- 支援本端及遠端編譯



Jazz 團隊伺服器

- 單一基礎平台支援全生命週期開發
- 世界級的專案開發組織架構，成員快速上手
- 依角色身分的權責管理，依專案規模、性質選擇專案流程模板



- Team advisor 功能，可定義專案流程規則，持續改善專案交付品質
- 可定義專案流程並強制流程落實

以工作產出爲基礎的協同合作，即時顯示成員的狀況及進行中的工作

範例: 團隊成員如何協作?

開發情境範例 - 業務部經理送給IT 部門一個請求, 經系統分析人員分析 之後，告知開發經理實作此功能需同時修改 RPG/COBOL業務邏輯 及 Web前端 Java/EGL 元件

業務經理

開發/專案經理

RPG /COBOL開發人員- Mary

Java/EGL 開發人員 - Joe

系統分析人員

使用者

系統管理員/建構人員 - Robin

提出 新功能請求

story

成本合理 同意修改

Dashboard

檢視開發狀態及進度

核準上線

開立變更單

Enhancement Request

開立工作子單, 排定完成日期, 指定開發人員

同意設計變更內容

檢視開發進度

核準過版到 Production 環境

RFS

閱讀 需求提出 變更設計內容

Task

請求Review 設計

交付程式變更

功能測試

閱讀需求提出變更設計內容

Task

請求Review 設計

交付程式變更

功能測試

分析對系統的影響及成本

同意 設計變更內容

查詢開發進度

同意 設計變更內容

整合測試

部署到 整合測試環境

Build Record

通知測試

Task

排定上版時程及過版

Enterprise Scalability for Team Concert 2.0

	Express-C	Express	Standard	Enterprise
	Small Teams • Quick Start • Collaborative ALM • Open source servers	**Mid Sized Teams** • Project Dashboards • Collaborative ALM • Commercial Middleware	**Corporate Teams** • Customizable workflow • Advanced Reporting • Departmental Scaling	**Enterprise Teams** • Customizable Workflow • Advanced Reporting • High Availability • Unrestricted scaling based on hardware
Maximum developers/contributors	10 / unrestricted	50 / unrestricted	250 / unrestricted	**Unrestricted / unrestricted**
Database and Application Server	Derby, Tomcat	DB2, Tomcat (SQLServer, Oracle, WebSphere)	DB2, Tomcat (SQLServer, Oracle, WebSphere)	DB2, Tomcat (SQLServer, Oracle, WebSphere)
• Agile planning: daily, iteration, release • SCM -Stream and component based • Builds – w/ Continuous Integration • Work items w/custom attributes, presentation, discussion, approvals • Customizable Process Templates • Project Milestone Tracking & Status • Subversion Integration Bridge • Role-based process permissions • Project level permissions • Cross repository dashboards	✓	✓	✓	✓
Customizable Dashboard Mashups	1 per project	1 per project	unlimited project, team, and personal dashboards	unlimited project, team, and personal dashboards
Advanced Reports and Customization			✓	✓
Customizable work item workflow			✓	✓
Plan risk assessment			✓	✓
CC/CQ Connectors and Bridges			✓	✓
Floating Licenses Available			✓	✓
LDAP import / synchronize			✓	✓
HTTP proxy support			✓	✓
High Availability				✓*

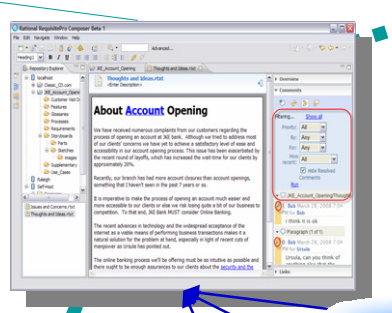
- 藍色字爲 RTC 2.0 新增功能

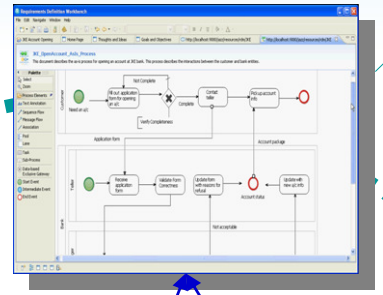
* 需要Websphere Application Server

Rational Requirements Composer(需求發展協作平台):

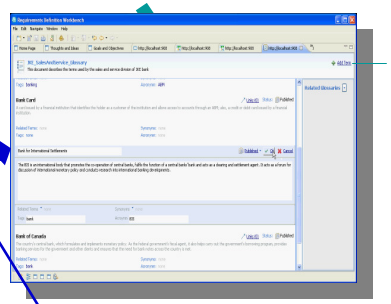
Capture And Connect The Web Of Information

文字說明
Use **Rich-text Documents** to capture structured and unstructured information (links, images, emails)



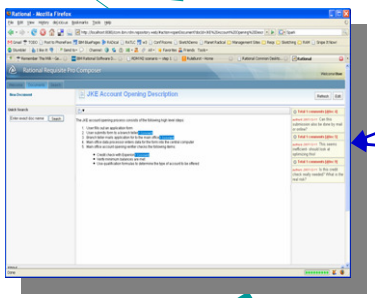


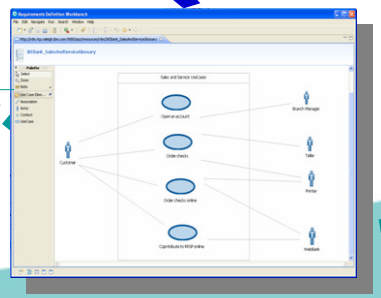
業務流程圖
Capture the Current and Propose a Future State with **Business Process Diagrams**



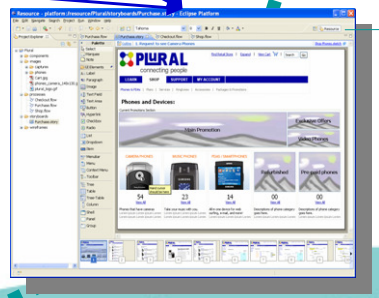
共享資料字典
Remove Ambiguity on Business and Technology Terminology with **Shared Glossaries**

討論知識分享區
Collaborate in real-time using **Wiki-like discussions**, to quickly achieve sign-off.





使用案例
Build **Use Case Models** and Elaborate on the Processes, Actors and Activities



使用者介面圖示
Visualize the User Experience with **User Interface Sketches and Storyboards**

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Rational Quality Manager (品質管理中心):

Build High Quality Solution

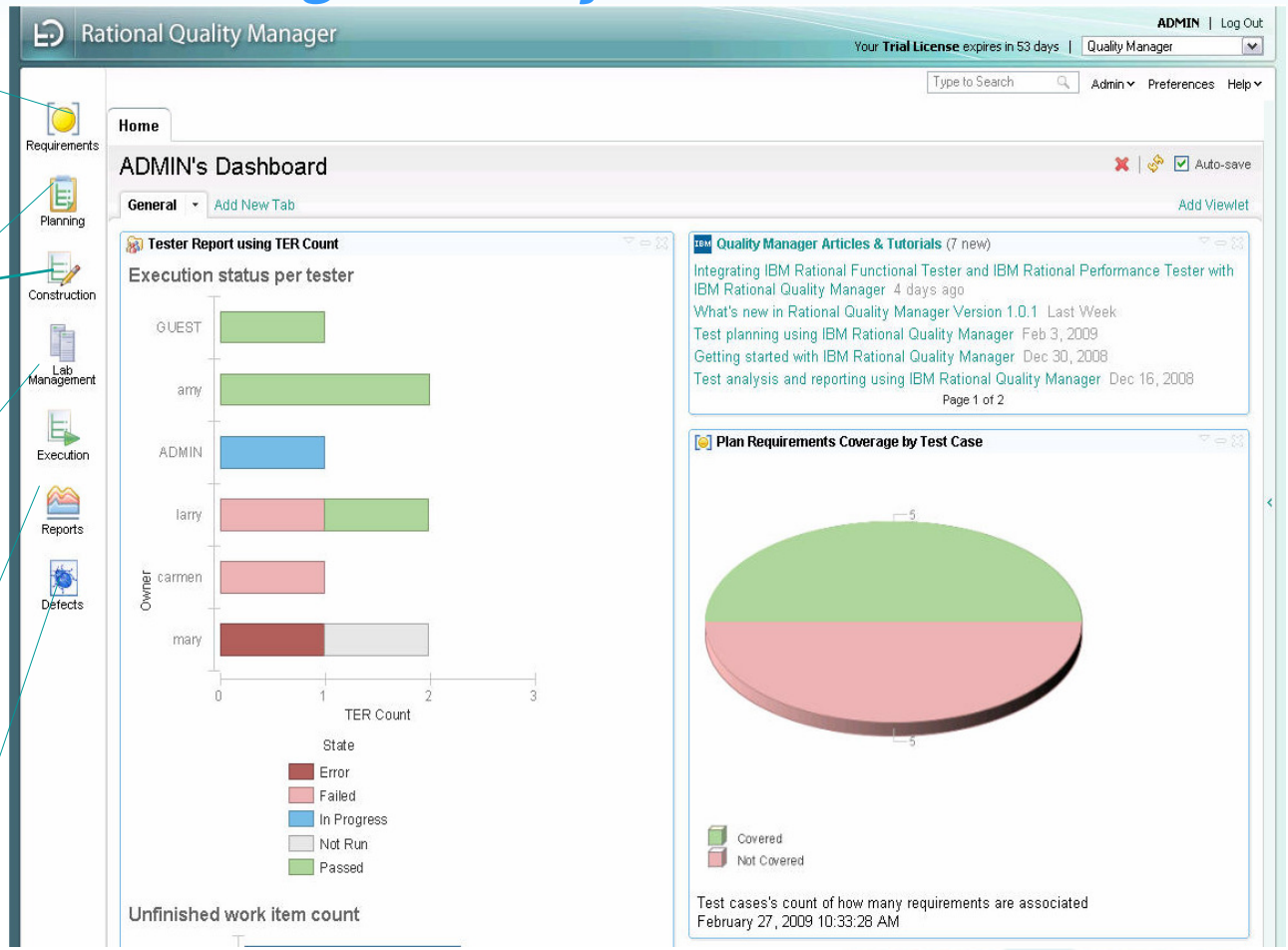
需求關聯
Integrate with Requirement Tools- RequisitePro, Doors, Excel

測試計劃,測試個案
Dynamic Project Plan. Test Cases

自動化測試
Integrate through Test Lab to connect automation Testing tool RFT, RPT, Appscan, and HP Mercury.

測試結果報表
Tailorable presentation of execution Results.

開立缺陷單
Create defect in Rational Team Concert



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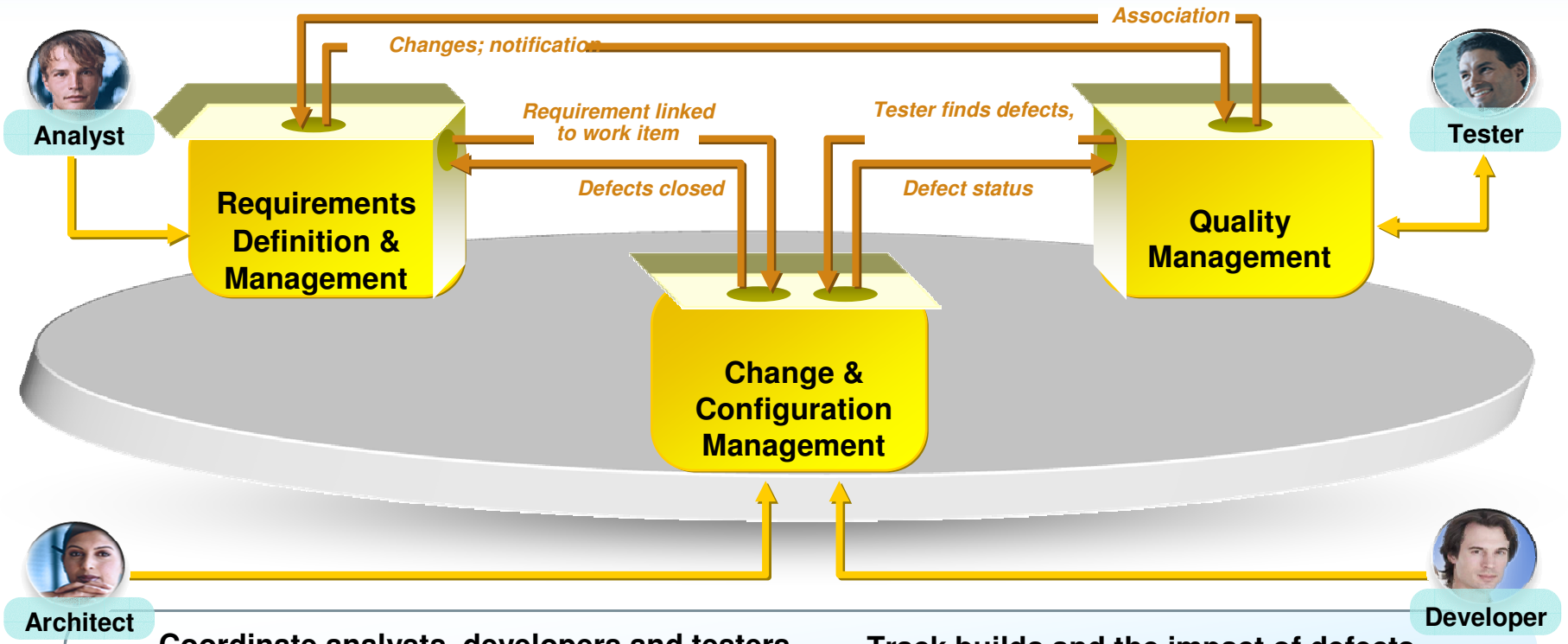
Collaborative ALM connects Analysts, Developers and Testers



- **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

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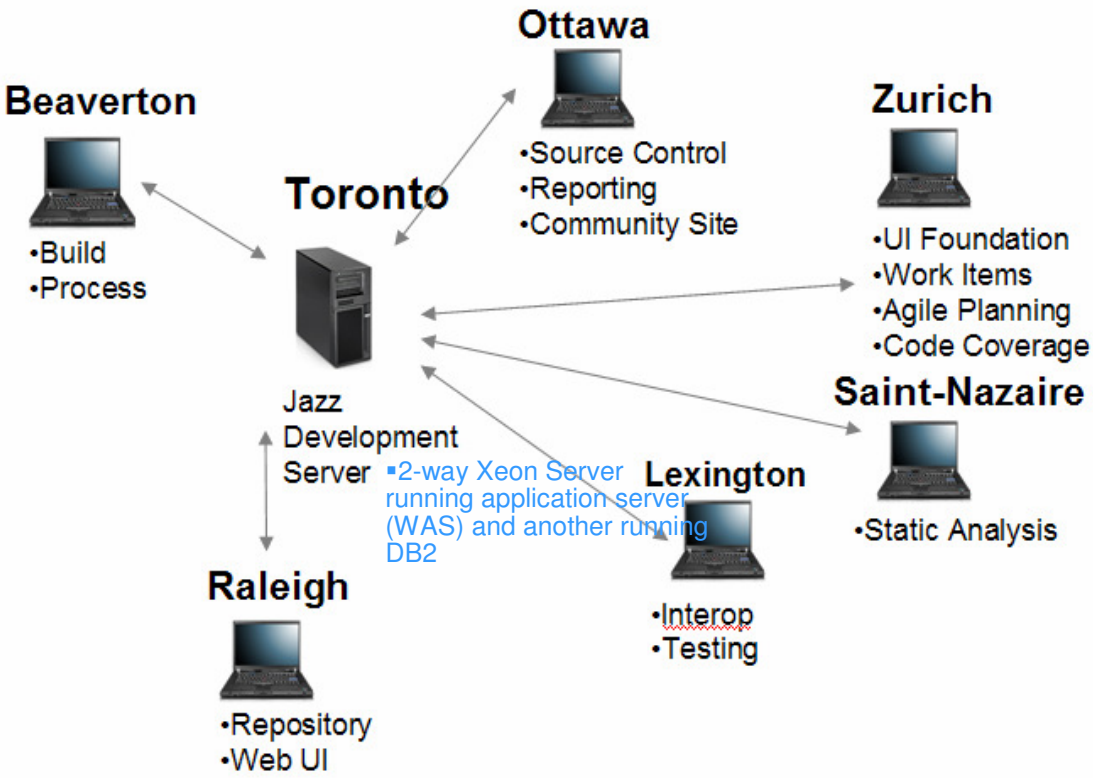
How we use Rational Team Concert in IBM ?

Jazz Developer Team & Other IBM Team

- Jazz Project – Using bi-weekly iteration builds
  - Jazz and Rational Team Concert self hosting since 4Q06
  - Global team in 7 locations in NA Europe and India
  - ~100 developers, plus jazz.net webclient access
  - Repro > 10G, 66K files, 43K work items



- Over 60 internal Rational development teams , ~1000 users leveraging Rational Team Concert
- More than 125+ Other IBM teams using Rational Team Concert

- Rational Development
- Rational Customer Support
- WebSphere Development
- Lotus Development
- Tivoli Development
- IBM Research Division
- IBM Global Business Services

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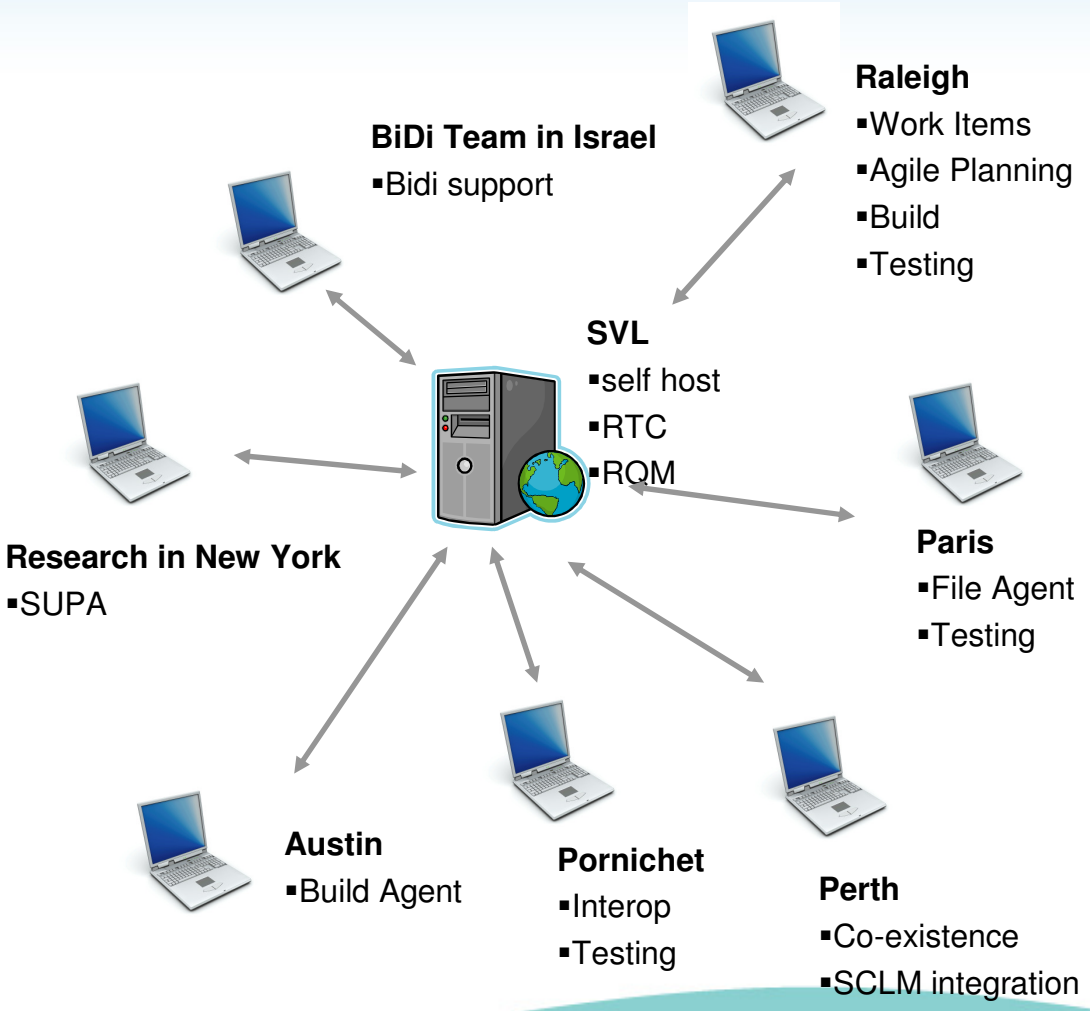
How we develop Rational Team Concert for System z

- RTCz team deploys RTCz on z/OS using WAS and DB2 z/OS
  - Also using Rational Quality Manager (RQM) on zLinux
- RTCz team in multiple locations
  - Raleigh, North Carolina, USA
  - Paris, France
  - Pornichet, France
  - Perth, Australia
- Extended teams
  - Austin, Texas
  - Israel
  - New York, USA
- All project management, design, code done with RTCz
- FVT and SVT test coordinated with Rational Quality Manager



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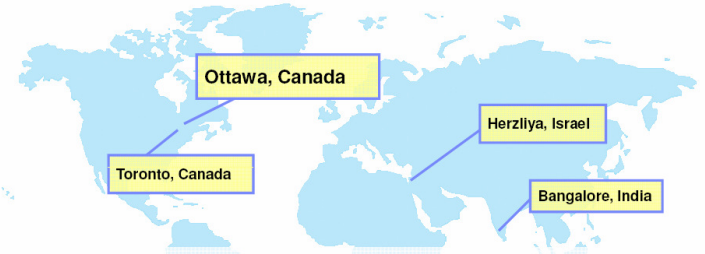
Rational AppScan move to RTC

How we worked just a few years ago

How we work now



- Most of our development team is located in Ottawa, Canada
- Some team members in Toronto, Herzliya and Bangalore
- Size of our team is about 40 developers and testers
- We produce Rational AppScan Enterprise, which is an application security testing product
- Working on multiple steams in parallel, delivering multiple products
- We have three Scrum teams focused on new development and one team focused on L3 support

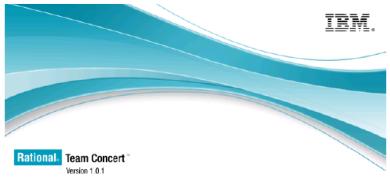
The development tools we used before migration

Microsoft Visual Studio

C:\>

Quality Center

Why we chose Rational Team Concert



- RTC addresses the needs of our geographically distributed, agile development team, doing parallel development
- We like the balance RTC strikes between power and simplicity
- We had positive experiences using RTC on other projects
- Low cost of ownership was important to us
- Jazz is a strategic platform for Rational

資料來源: RSC2009 NCRM02 Rolling Out IBM ® Rational Team Concert™ into a Microsoft Shop,

Craig Conboy

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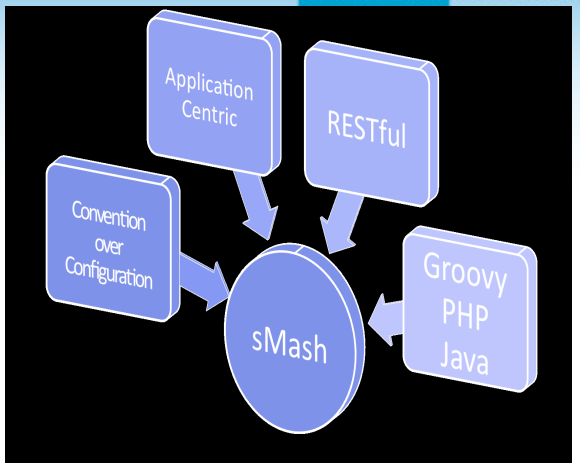
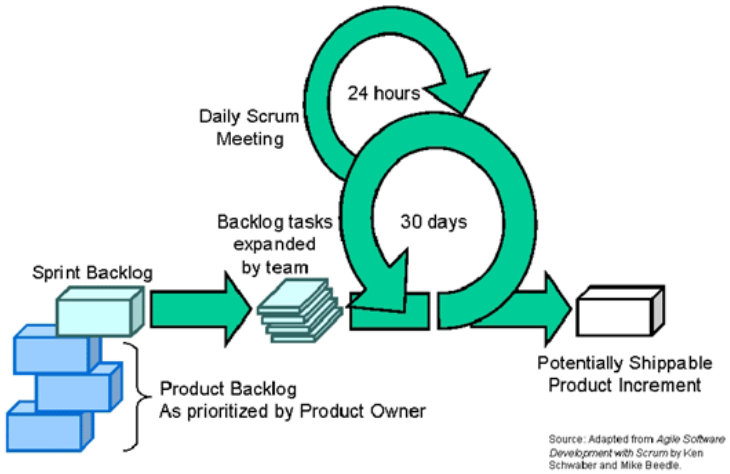
IBM

WebSphere sMash

Rational. software



Supporting **SCRUM** is the key reason we select RTC.



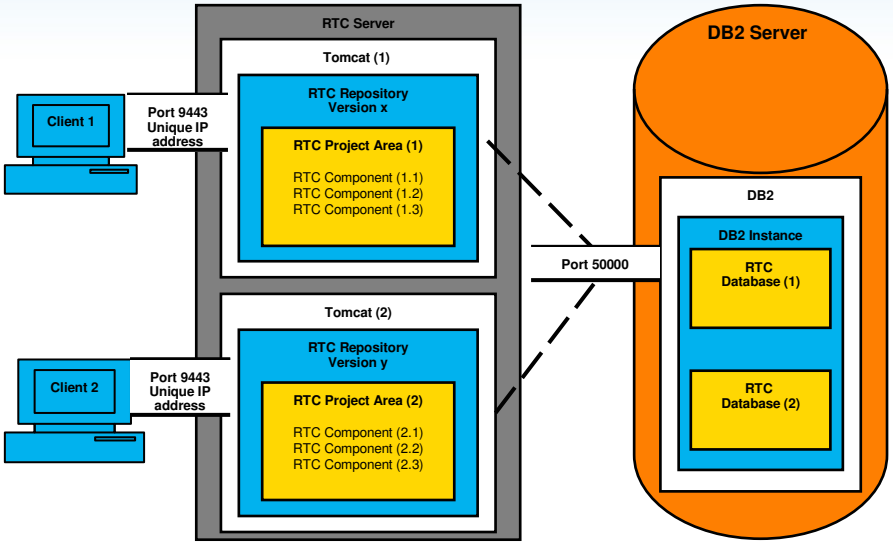
- Globally Distributed Team
  - US (10) – Product Owners, Management, Dev Lead, Dev Sub-Team Lead
  - UK (8) – Product Owners, Dev Sub-Team Lead
  - China (14) – Sub-Team Lead, Test support
  - India (3) – Test support

資料來源: RSC2009 RWI04 Lessons Learned: Using Scrum with Rational Team Concert
Brandon J. W. Smith

RTC Hosting for IBM internal projects

- Hardware
  - 2 pSeries 9133-55A for both application and database server
  - 8 GB memory
    - 1 4-core 1.65GHz P5+ Processor Card
    - 8 146.8GB 10K RPM SCSI Drives (~1.2 TB/600GB mirrored)
- Software
  - Server – AIX 5.3
  - Application Server – Tomcat 5.5
  - Database – DB2 9.1
  - Clients – Windows & Linux
- Allocations for Users
  - Diskspace
    - Baseline of 1 GB of disk space per repository for application files
    - 250 MB of disk space per user
  - Memory
    - 1 GB per repository

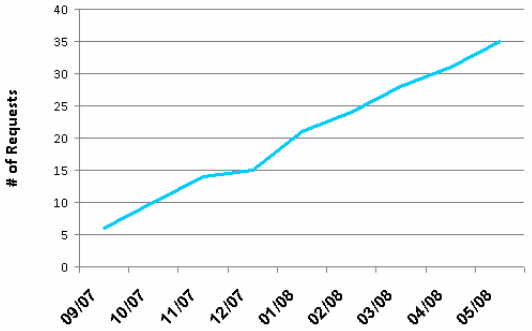
RTC Hosting Architecture



RTC Hosting Request Form

1.	What is your project name?
2.	Please provide a brief project description
3.	Requested start date for hosting
4.	Who will be signing the service agreement?
5.	What is your Group, Division and Department?
6.	Who is your financial analyst?
7.	Who is the primary point of contact for this project?
8.	Who is the project owner or manager?
9.	Who will be your RTC administrator for this project?
10.	What kind of artifacts will you be storing? (Work Items, Builds, Plans, Requirements, Streams)
11.	How many developer & contributor licenses do you anticipate needing for this project?
12.	If you are moving from an existing RTC Server, please provide a link.
13.	Estimated initial disk space requirements in GB (for source code & attachments.)
14.	Estimated long-term space requirements in GB:
15.	Is your project currently shared with any other group? If so, what groups?

Total RTC Hosted Projects



資料來源: RSC2009 SDP30 Jazzing Up IT
Best Practices from Internal Deployment of IBM Rational Team Concert

Doug Weissman, Cathy Col

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Rational. software

Development and Test on IBM Cloud.

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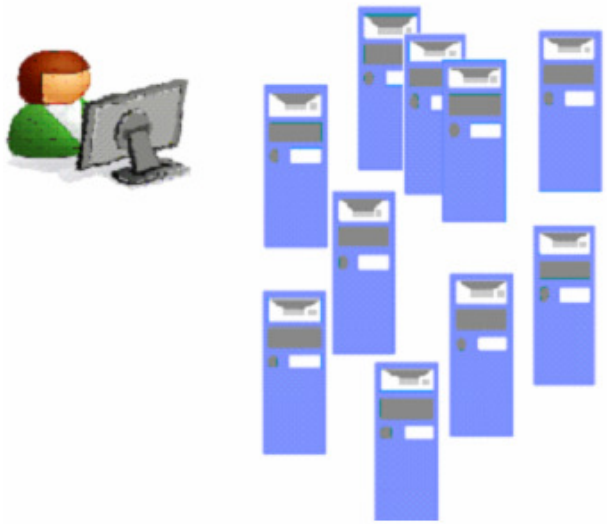
Making Current Environment more productive, agile and Dynamic

Current typical test environment with large number of test servers, little virtualization, and primarily manual allocation and configuration of individual test environments.

Current



Manual Scheduling,
Provisioning & Configuration

To Be

Automated Request Driven Scheduling, Provisioning & Configuration of HW,OS, Middleware and Apps. Automated Tracking, Monitoring and De-provisioning. Virtualization Management, Capacity, and Image Management.

Capital & Operational Expense Reduction, Defect Reduction, Increased Productivity & Innovation

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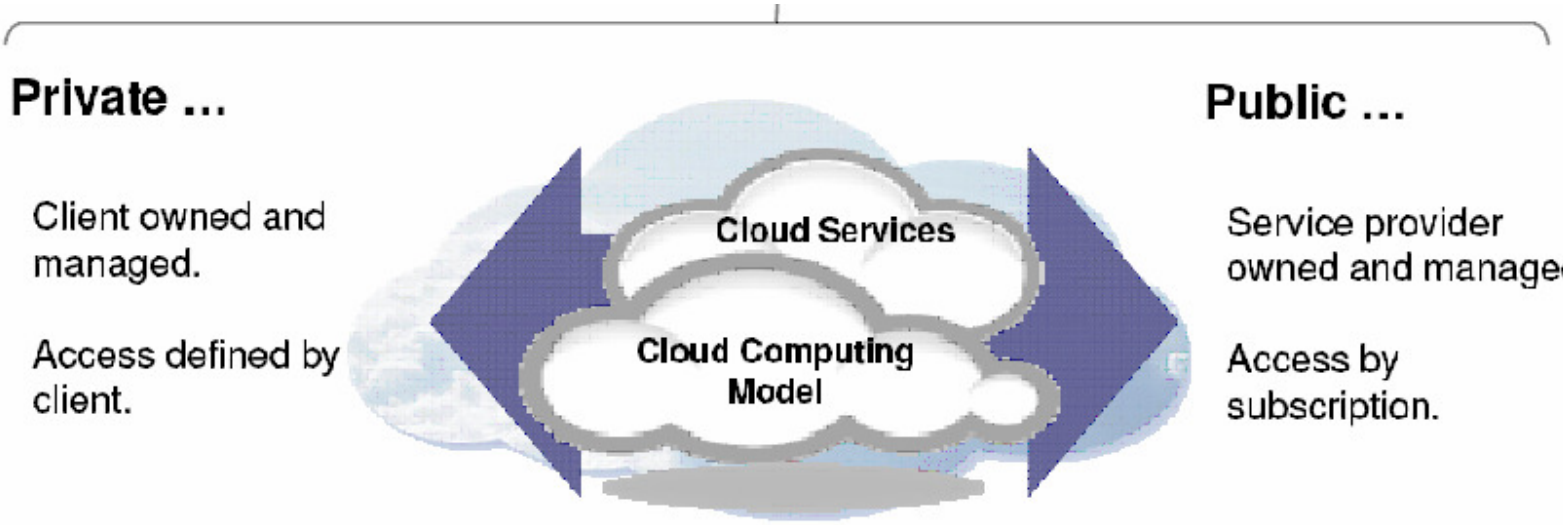
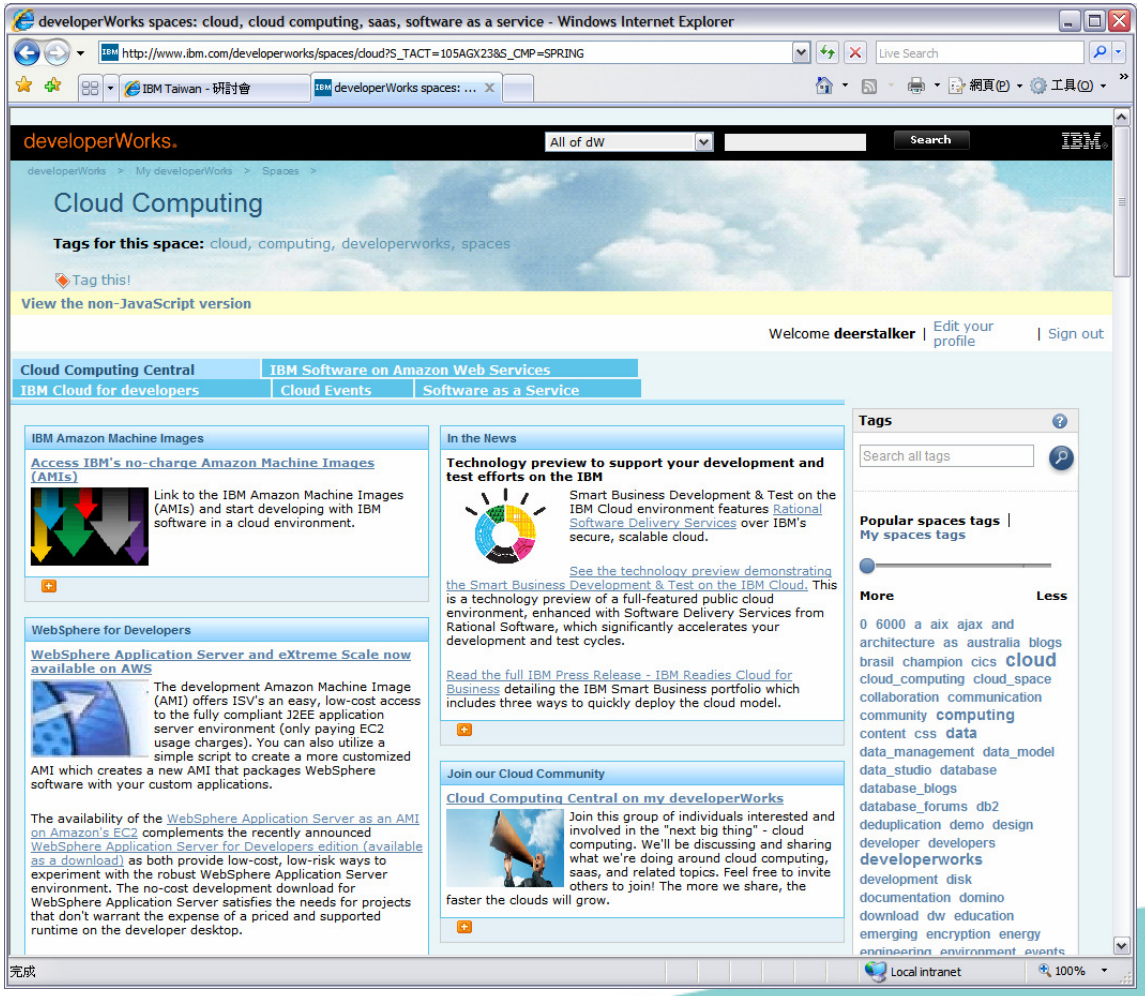
Cloud Drive new sourcing options



IBM Cloud Computing

http://www.ibm.com/developerworks/spaces/cloud?S_TACT=105AGX23&S_CMP=SPRING



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Rational in the Cloud

Rational in the Cloud

Leverage a cloud delivery model to increase innovation and gain flexibility

Rational's next evolution of Jazz, a new technology platform for collaborative software delivery, will help transform software delivery by leveraging a cloud delivery model to transform how people work together to build software. Jazz will leverage the cloud to provide services delivered in a dynamically provisioned and scaled runtime environment, for a fully integrated collaborative application lifecycle management (ALM) solution in a cloud delivery model.

Learn more about the next evolution of Jazz, and how you can exploit the cloud delivery model to quickly gain access to everything needed to design, develop, test and deploy applications.

You can also read the recent Jazz Team Blog to understand the implications of cloud computing to Jazz-based products.

IBM Software Delivery Services(SDS) for the Could

Offerings:

1. **Tools in the cloud**
   - Software delivery tools that can easily be provisioned as services in the cloud. Customers can 'rent' services from public cloud or buy licenses for services in private cloud

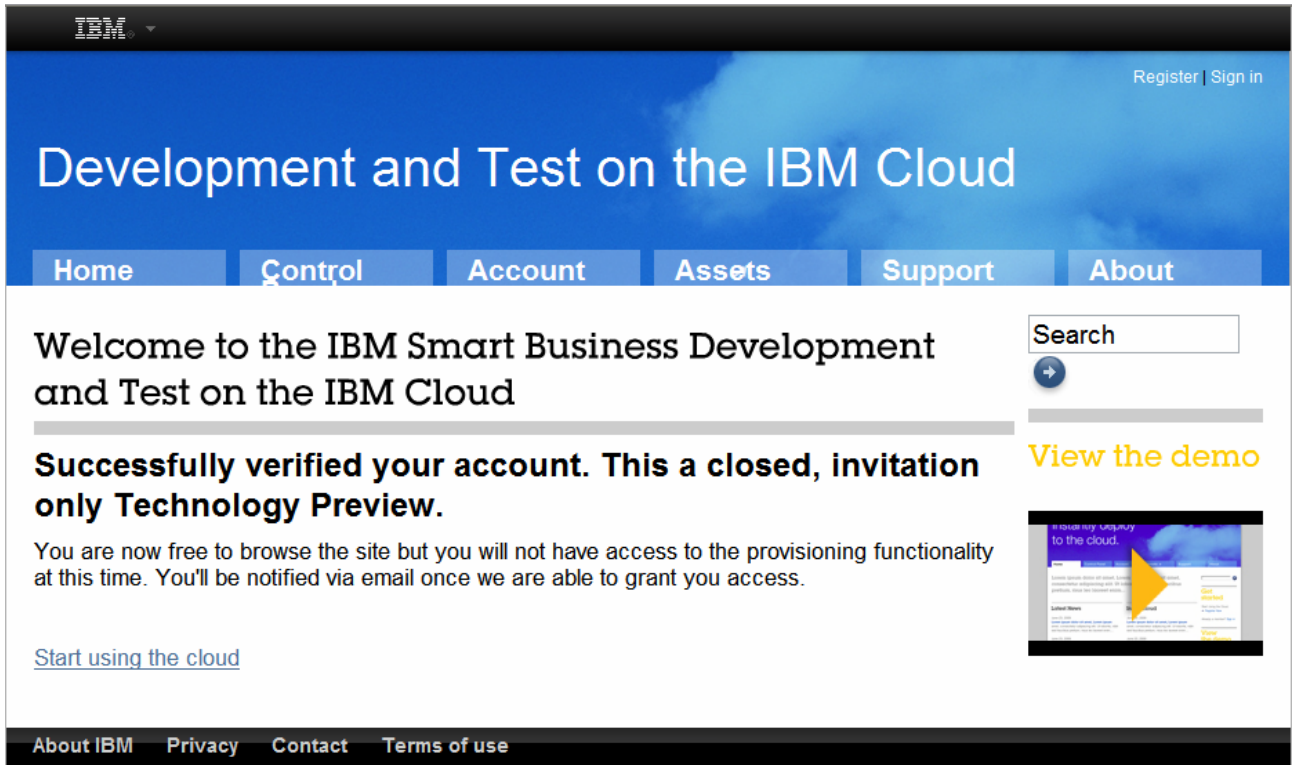
2. **Tools for the cloud**
   - Offline tools with functions to design and provision cloud resources and 'exploit' those resources to perform development or testing work, e.g. running tests or running builds in the cloud.

Examples:

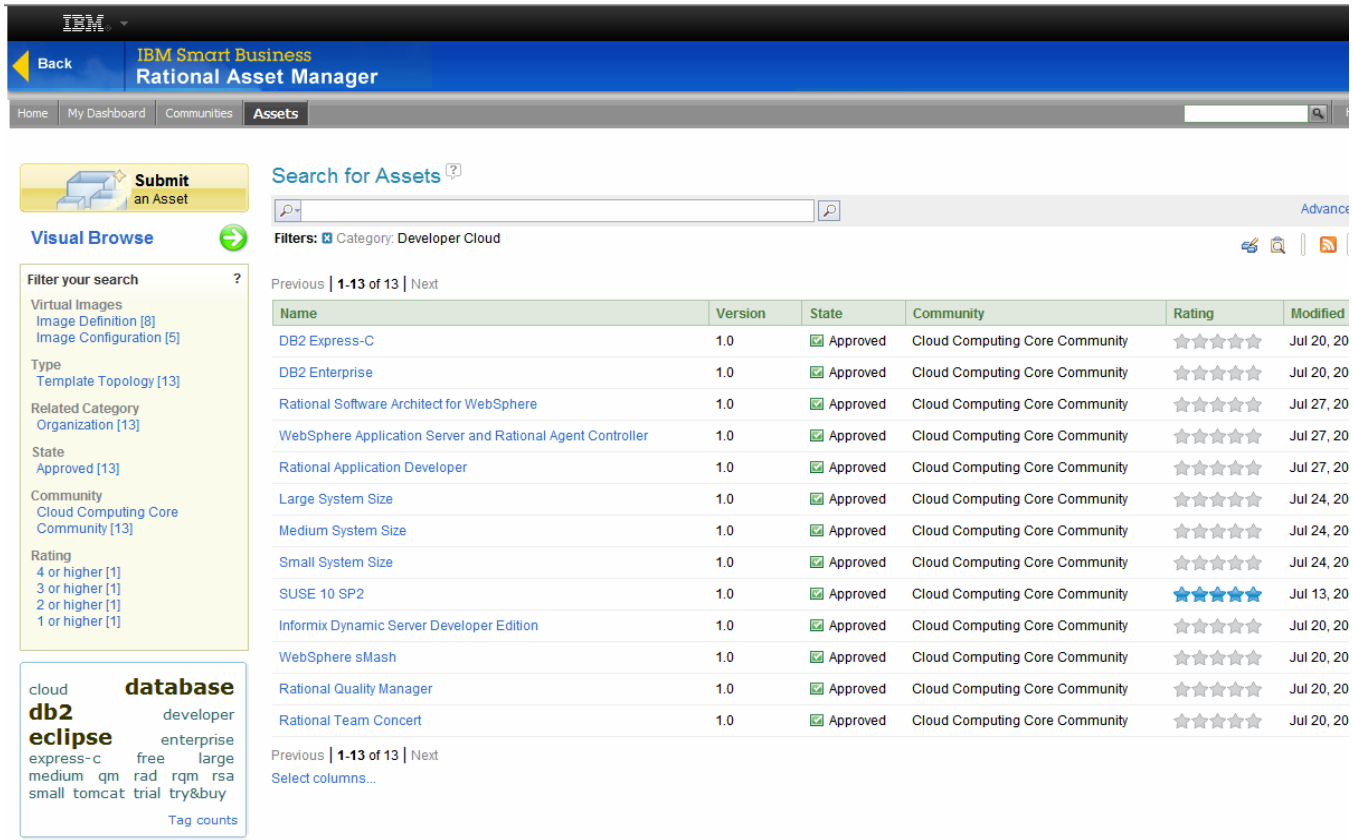
- **Rational Jazz server products such as Team Concert, Quality Manager or Requirements Composer instantly provisioned and hosted in the Cloud.**

- **Rational Quality Manager performing tests in the cloud or Build Forge conducting builds in the cloud. RSA designing applications while considering cloud deployment.**

Developing & Testing On the Cloud



IBM use Rational Assets Manager to Manage VM image in the Cloud



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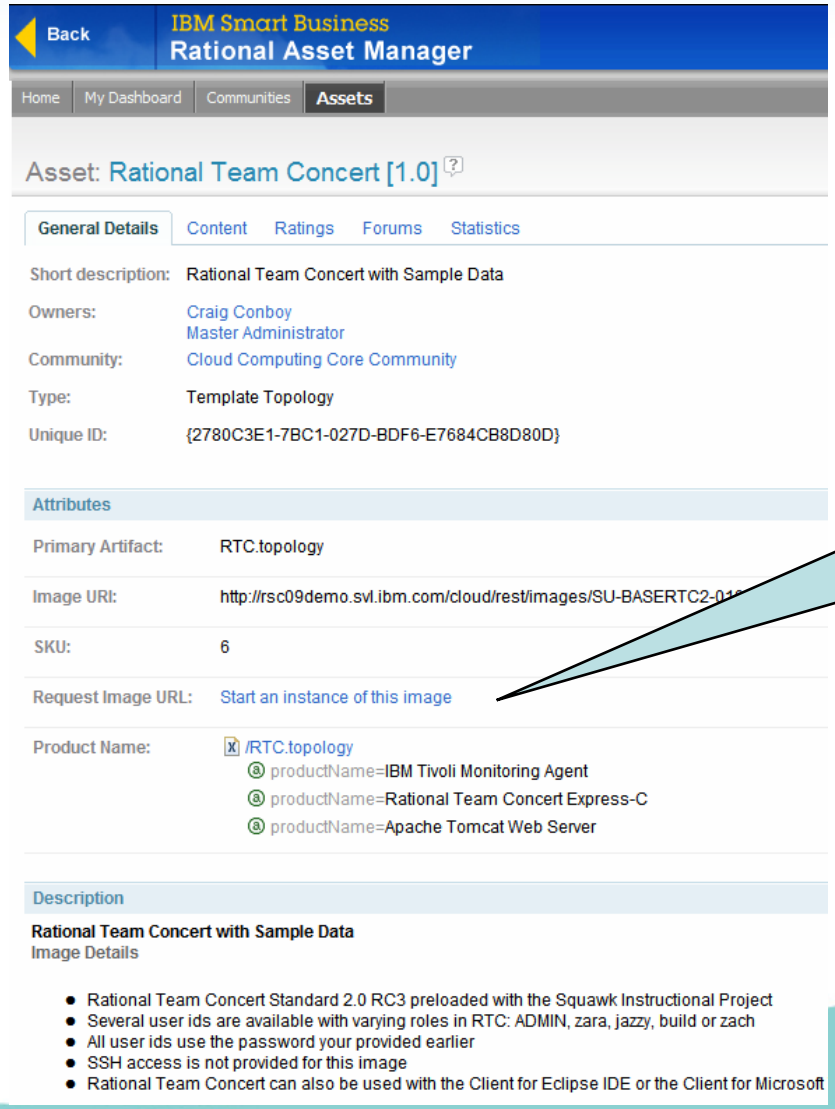
Currently we have following VM images in the Cloud for Developing & Testing

Name
DB2 Express-C
DB2 Enterprise
Rational Software Architect for WebSphere
WebSphere Application Server and Rational Agent Controller
Rational Application Developer
Large System Size
Medium System Size
Small System Size
SUSE 10 SP2
Informix Dynamic Server Developer Edition
WebSphere sMash
Rational Quality Manager
Rational Team Concert

Request RTC image



Click here to start an instance of RTC image.

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Developing & Testing On the Cloud

- Goto IBM Cloud demo

Questions

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