IBM Software

UKInnovate **2010**

The Rational Software Conference

Smarter software for a smarter planet.

Future Forward: Application Development and Modelling

Steve Arnold & Rod Little

IBM Software
UKInnovate2010
The Rational Software Conference

Smarter software for a smarter planet.

Agenda

What's new in RSA

CAM Server - coming soon

What's new in RAD

Rational for System z

Rational Developer for Power w/Linux support

EGL

Rational Power Appliance

Proven Results

- **Major Media Company**
  - **30%-50% saving** for architects translating to millions in development savings
- **Large Government Agency**:
  - From **3 days** of highly skilled resource, to **10 min** of much lower skill
  - Potential Savings: **50 person years**
- **Vendor of SOA-based ERP Applications**
  - 50% reduction in development time and cost for new services
  - New service clients delivered in under **4 hours** with **minimal training**, (*2 days to become productive*).
  - **Globally Distributed Development:** precise definition of work, improved estimating, and improved progress monitoring
- **Large Telecommunications Service Provider**
  - **Invested 68 hours to realize reduction of 1016 hours**

- **Major Financial Services firm**
  - **30 day** tasks now done in **1 day**
  - **65% of code** automatically generated from the design – uniform and well structured
  - "RSA allows developers to model a solution utilizing UML, which is usually easily understood by developers as well as business"
  - "RSA saves development time and time spent on documentation, and enhances understanding of the system being built."

Experts Agree – Rational is the Leader

Gartner, Inc.[1]

Rational is "worldwide market share leader in application development"

Evans Data Corporation[2]

"*Software Development Platform*" survey was conducted in Spring of 2009 and polled 1,200 worldwide developers

Rational received top honors for Overall Software Development Platform

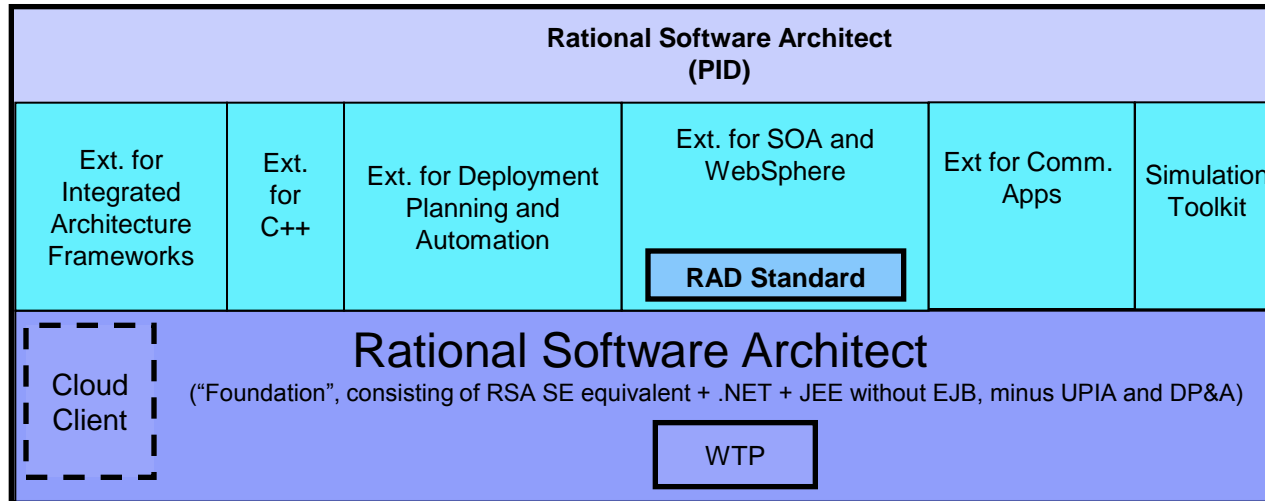Rational also gained top honors for Application Modeling Tools

> *"IBM is a leading example of a vendor that is moving beyond simply selling point products to customers, but rather helping meet their evolving needs by offering a complete, end-to-end application lifecycle management solution (ALM). The robust development environment and rich assortment of tools that are provided by IBM sets a standard of excellence in development tools as evidenced by its users overall satisfaction ranking in our annual survey."*
>
> John Andrews, president and CEO, Evans Data Corporation

1) Gartner, Inc., "Market Share: Application Development Software, Worldwide, 2008" by Laurie Wurster, Teresa Jones and Asheesh Raina, May 2009.

2) Survey: "Evans Data Corp. Software Development Platform User Satisfaction Survey, 2009" June 2009.

Repackaging of RSA

Rational Software Architect (PID)					
Ext. for Integrated Architecture Frameworks	Ext. for C++	Ext. for Deployment Planning and Automation	Ext. for SOA and WebSphere **RAD Standard**	Ext for Comm. Apps	Simulation Toolkit
⌐ ¬ Cloud Client ∟ ⌐	Rational Software Architect ("Foundation", consisting of RSA SE equivalent + .NET + JEE without EJB, minus UPIA and DP&A) WTP				

- RSA much reduced in price

- RSM is no longer marketed – customers will get RSA

- Extensions for specific roles and industries.

Structured Data Importer

Spreadsheets, CSV files are imported into the model "data dictionary"

ElementType	ElementName	Description	RelatedTo	RelatedType	Owner
Package	testPackage1	Test creation of Package.			
Actor	testActor	Test creation of Actor.			testPackage1
Usecase	testUsecase	Test creation of Usecase.			testPackage1
Class	testClass1	Test creation of Class.			testPackage1
Class	testClass2	Test creation of Class.			testClass1
Interface	testInterface	Test creation of Interface.			testClass1
Class	testClass3	Test creation of Class.			testInterface
Operation	testOperation	Test creation of Operation.			testInterface
Parameter	testParameter	Test creation of Parameter.			testOperation
Parameter	returnParameter	Test creation of Parameter.			testOperation
Attribute	testAttribute	Test creation of Attribute.			testInterface
	testInterface	Test creation of Dependency	testClass1	Dependency	
	testClass2	Test creation of InterfaceRealization	testInterface	InterfaceRealization	
	testClass3	Test creation of Generalization	testClass2	Generalization	

Sample

Simulate Models to identify possible runtime issues!
Integrated Simulation and Deployment Modeling optimize applications
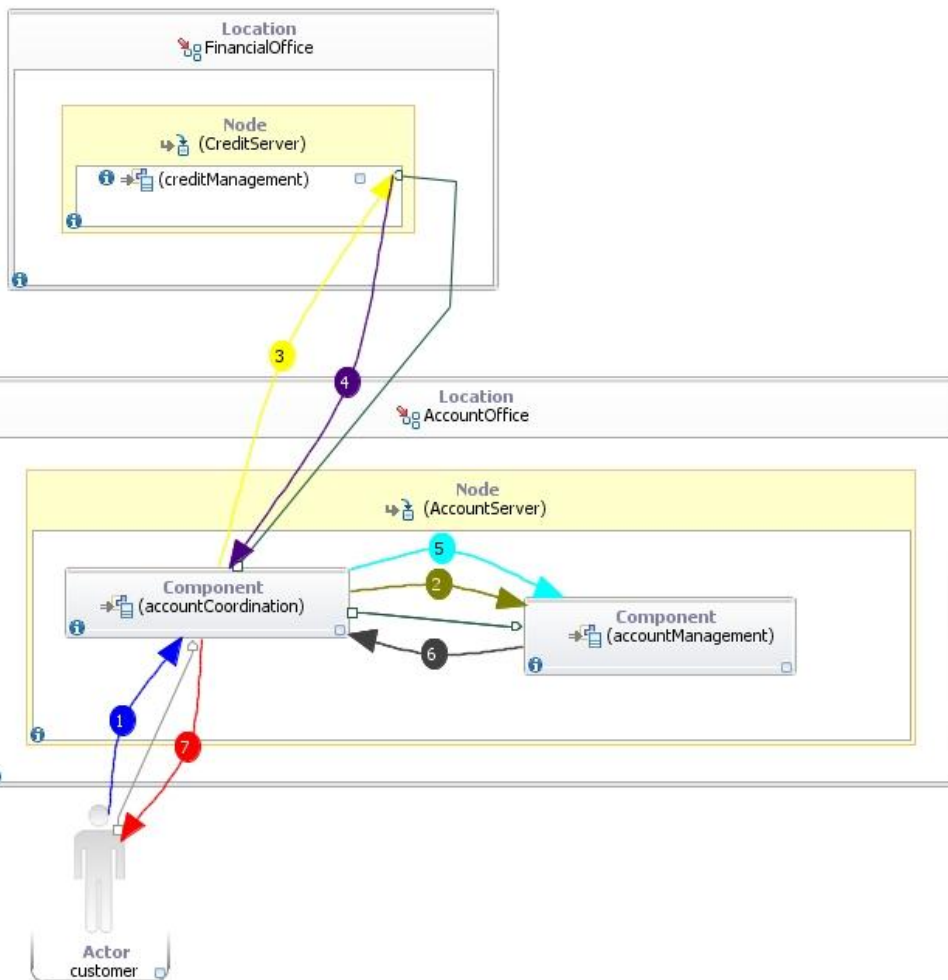
In this case, simulation of the current design shows how a **customer** interacts with software at the **AccountOffice** and the various other components that might be local or in a remote **FinancialOffice. "UML Debugging"**
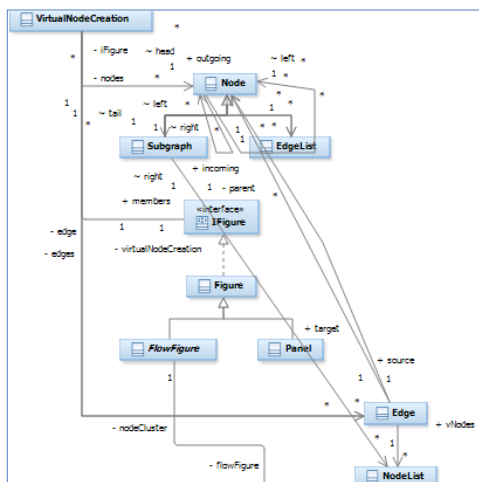
> **50% of applications put into production are later rolled back.**
> *(Gartner)*

Can you afford to have these errors?

What is the potential cost of failure?

Useability

- Diagram Feedback
- Themes and Layers
- Diagram Layouts
- Simplified Shell
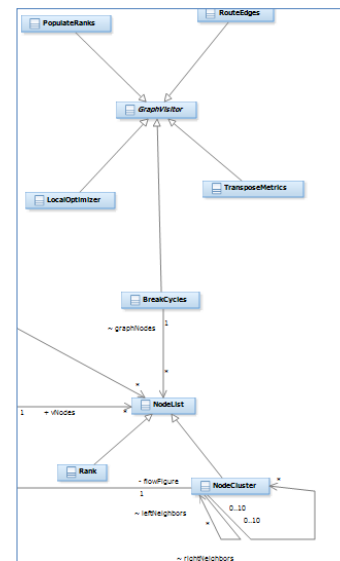
Integrated Self Paced Training

Essentials of Rational Software Architect v8 course content available from the product help

Embedded help and Infocenter

Training lessons

Modular lessons in help topics

Exercises

Hands-on labs guidance in Cheat Sheets

(and also printer-friendly HTML format)

Sample models

RSA models and labs solutions

Demonstrations

Videos to show product usage
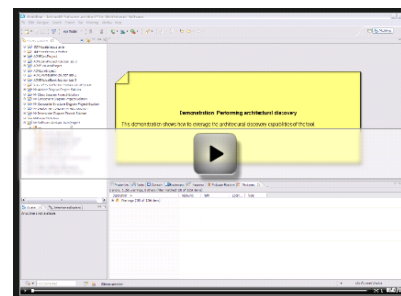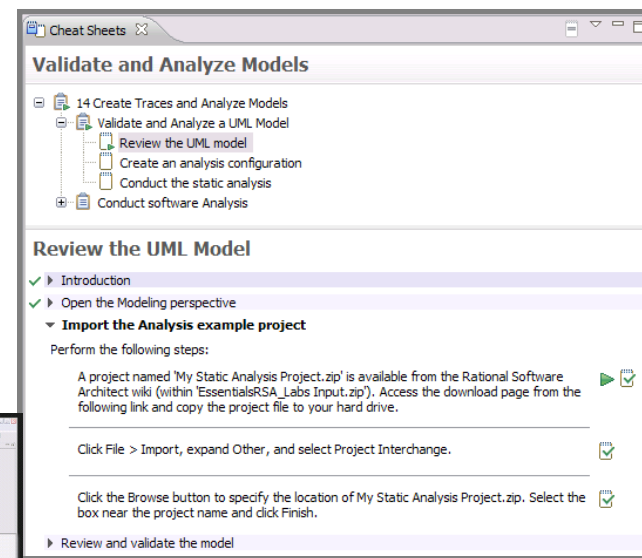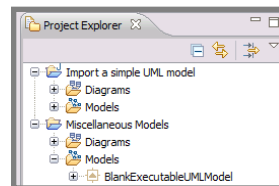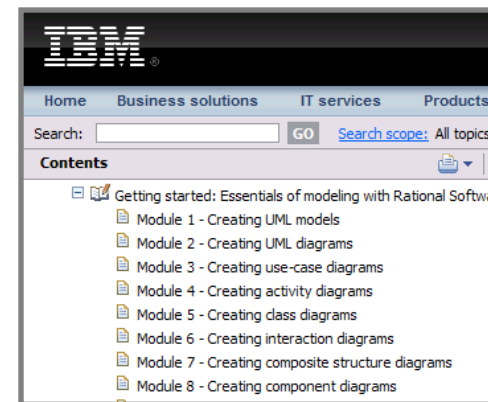
Deployment Modeling Solution
Integrates Development & Operations

Deployment Models are precise and detailed specifications of infrastructure capabilities and deployment requirements

… created with "smart" tools that reuse *approved* architectures which accelerate your time to deployment

… and guide you with automation to verify deployment requirements

… to reduce:

the Development-Operations communication gap through better governance and

the last-minute fire drills that occur when deployments fail due to lack of precision or miscommunication

Coordination Architect

Subject Matter Expert
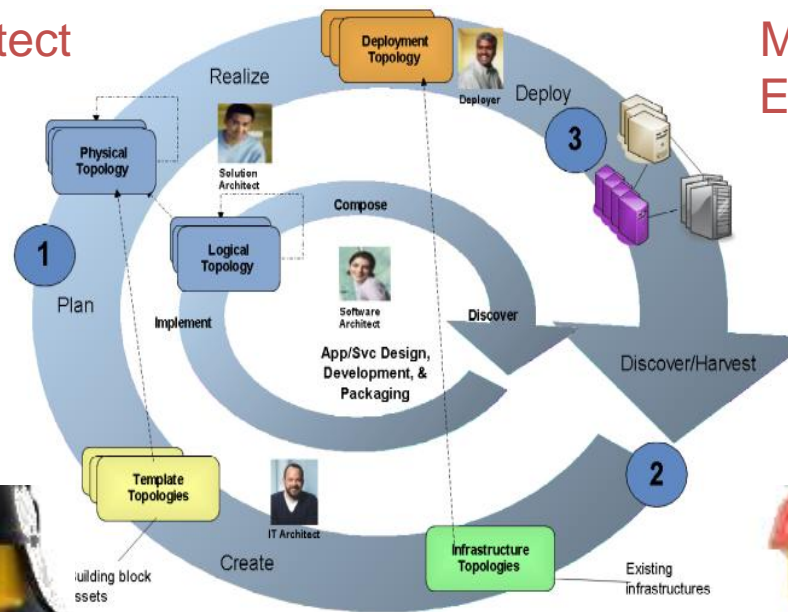
Application Architect

Deployer

Collaborative Architecture Mgmt Server

Initial Jazz Offering

Model Repository

>Browse models

>Link to model elements

>Link to any jazz element

>View links and traceability

Review and Commenting

>View models in the web

>Add comments visible in eclipse

>Annotate diagrams
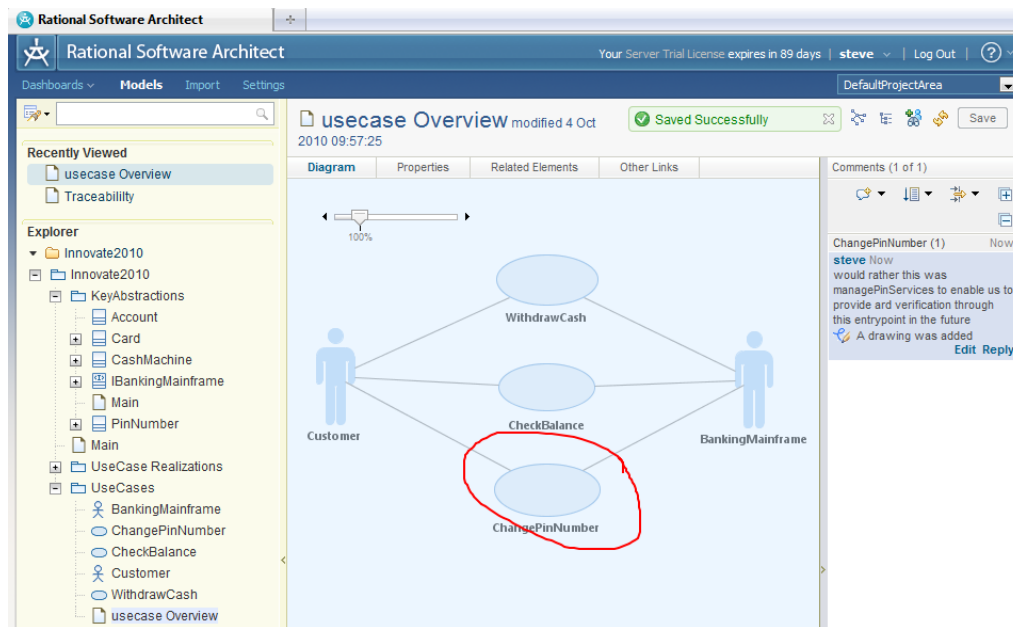
CAM Server (eclipse)
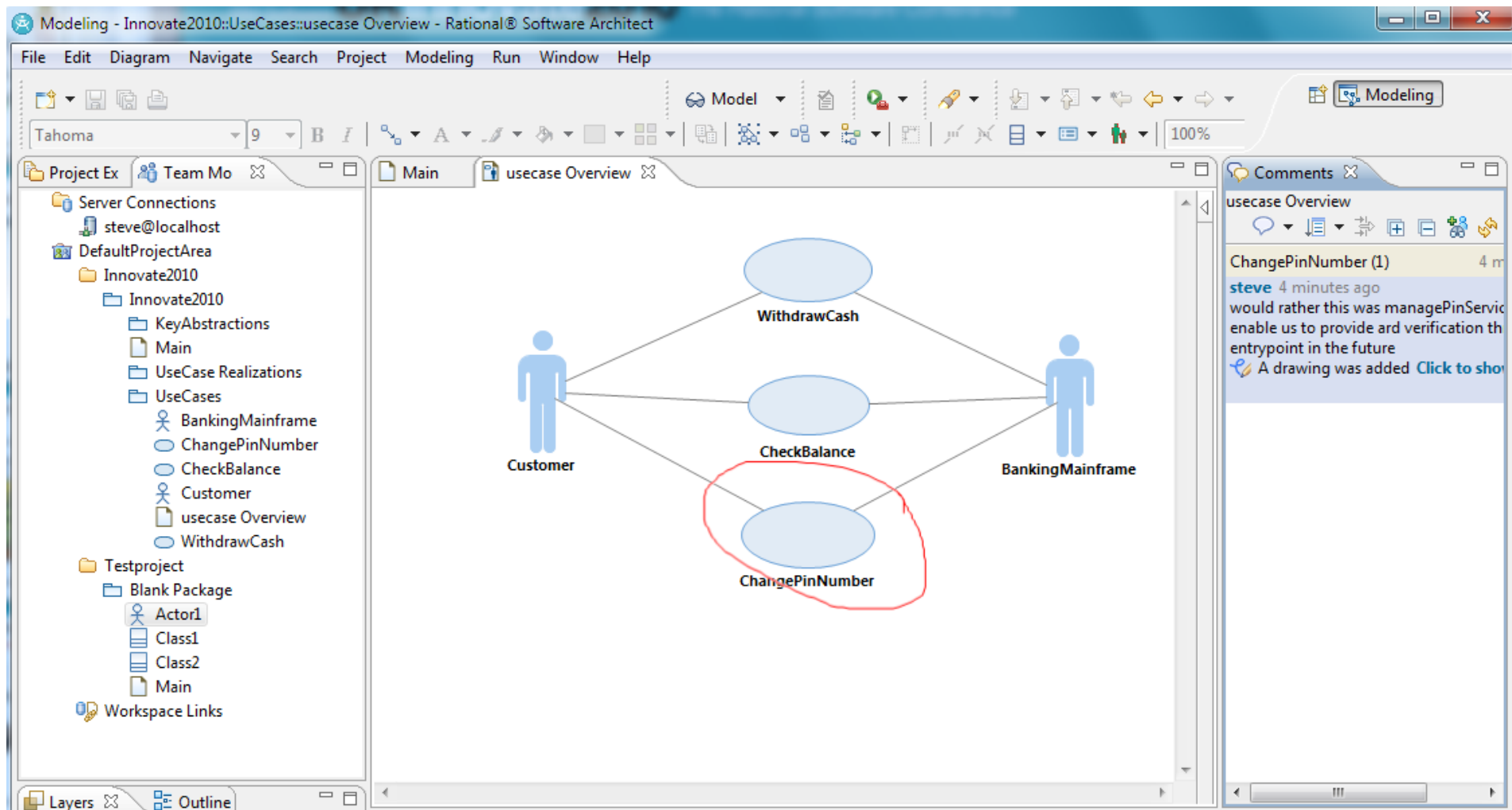
Updated Standards Support in RAD 8

Java Platform, Enterprise Edition (Java EE 6)

Java EE 6 contains many ease-of-use and functional enhancements over Java EE 5

Updated standards include **EJB 3.1**, **JPA 2.0**, and **JSF 2.0**

RAD v8.0 supports these standards with new creation wizards, editors, and validators

Java EE 6 applications can be deployed to the **WAS version 8.0 beta**

OSGi specification support

Develop and deploy modular applications

Manage dependencies between modules

Replace individual modules of the application
without having to restart the entire application

OSGi applications can be deployed on
WAS version 7.0 Aries Feature Pack
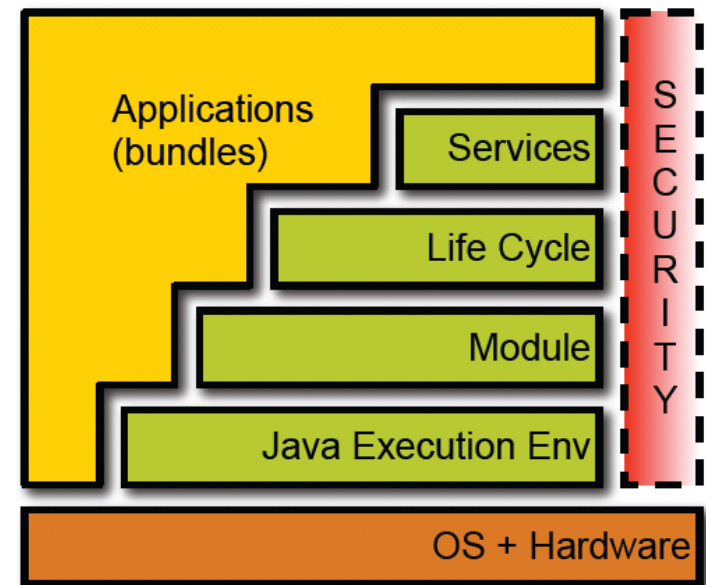
Improved Developer Productivity

Red font = New in RAD v8.0

RAD v8.0 makes it easier to develop Web 2.0 applications

Build rich internet applications to improve online user experience and increase customer satisfaction

Lower the barriers of adoption of Web 2.0 technologies

Visual development of Web 2.0 pages

Source level tools to aid with Javascipt and dojo development

Enhanced debug capabilities with Firebug integration

Multiple browser previews

Expose server side assets as Web 2.0 consumable services

Lightweight Ajax test server

Rapidly preview web pages that include images, scripts, services, and data

Quickly create Dojo applications

Drag Dojo widgets from the palette to your page

Create Dojo widgets and templates, add them to the palette

Improved Development Quality

Generate code coverage reports to better understand what lines and methods are not exercised in your Java application

- Code coverage instrumentation is done at run time with a code coverage flag
- The application can run on a remote server or a local test environment

Enhanced RAD-Rational Team Concert integration support

- Generate code coverage statistics during a project build
- Download the statistics to your workspace
- Open work items related to the report
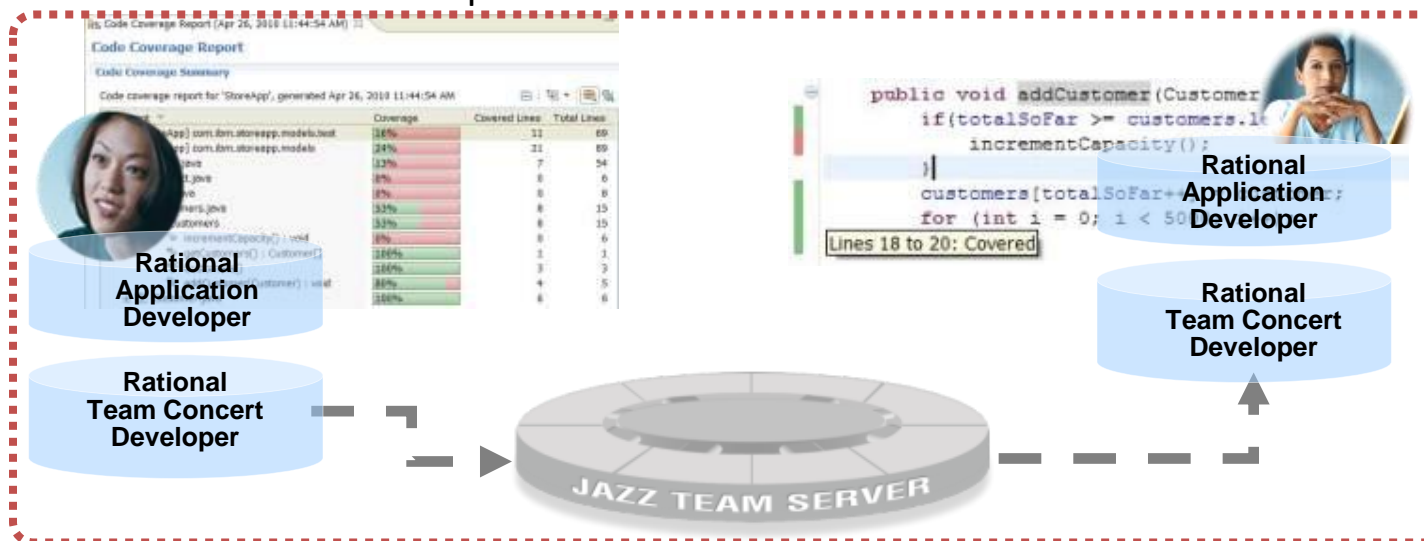
Support for the Cloud

A cloud-based solution helps companies reduce capital and licensing expenses

Introducing [IBM Rational® Software delivery services (SDS) for cloud](#)

Set of computing tools

Agile, flexible cloud computing model

Simplify and streamline operations so delivery teams can work faster — no matter where they are

Provision a WAS cloud image and develop applications as usual

At application deployment:

connect to an existing WAS
Version 6.1 or 7 cloud image

or provision a new WAS server
cloud image
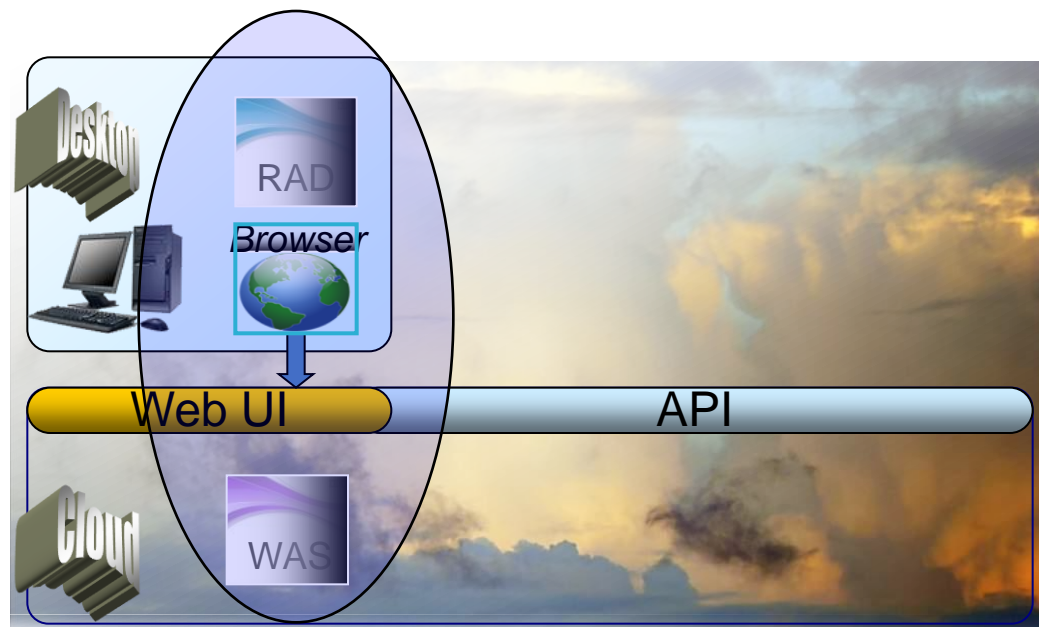
Rational for System z

IBM Rational Enterprise Modernisation

Optimise your applications, people, team and infrastructure investments

Increase flexibility

Boost productivity

Maximise business agility

Increase system utilisation

Revitalise Applications

Empower People

Unify Teams

Exploit Infrastructure
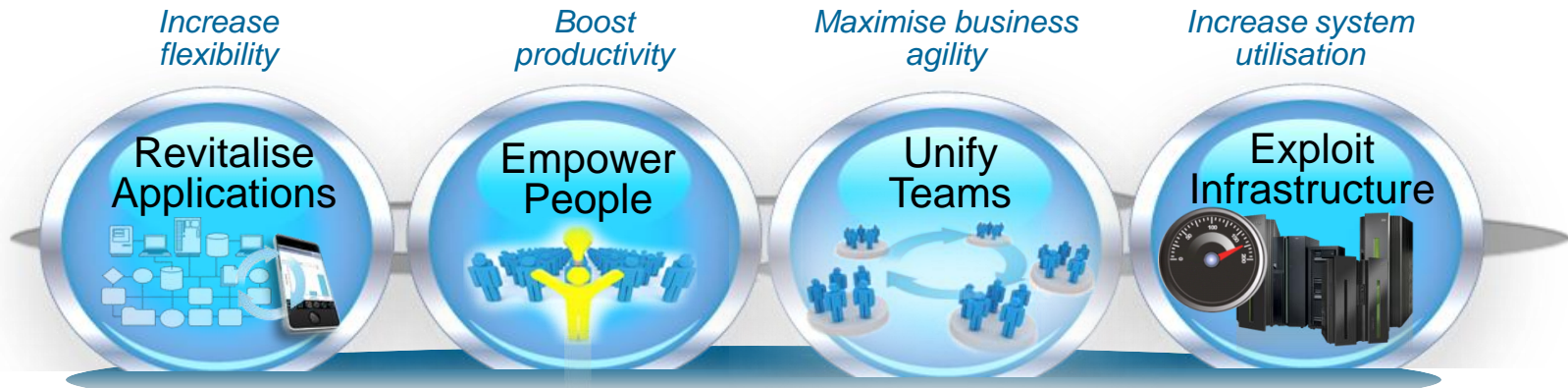
- Boost productivity and accelerate innovation with modern skills
- Maximise business agility by bridging organisational silos
- Increase flexibility by revitalising existing application portfolios
- Increase system utilisation by leveraging hardware capabilities

Rational Software Delivery Platform *powered by* ***Jazz***

Rational Enterprise Modernisation

Rational Developer for System z

- IDE for COBOL, PL/1, C/C++, Java
- Increase productivity

Rational Team Concert for System z

- Common repository across multiple platforms & languages
- Different processes by developer type
- Integrated or loosely federated processes across all development groups

RDz Unit Test feature

- Unit test freeing valuable MIPS for production use

| Change Governance | Rapid Application Test | Application Understanding |

Modern Development Platform

Rational Software Delivery Platform *powered by* jazz

The RDz Unit Test Feature

System z environment for testing on x86 Linux systems

COBOL, PL/I, C++, Java, EGL, Batch, Assembler, Debug Tool

IMS DB/2 CICS WAS MQ

z/OS

x86 PC running Linux

RDz user

RDz user

RDz user

ISPF user

RDz & ISPF user

RDz user
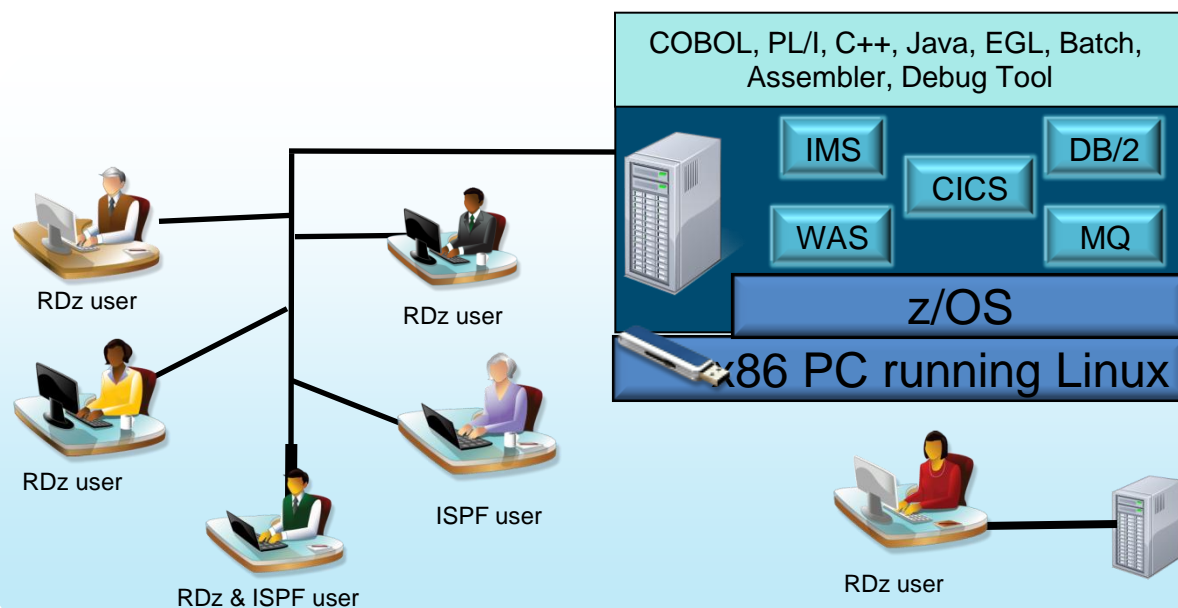
- Liberate developers to rapidly prototype new applications Develop and test System z applications anywhere, anytime
- Free up mainframe development MIPS for production capacity
- Eliminate costly delays by reducing dependencies on operations staff

Note: This Program is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.

Rational Developer for Power V8.0 with support for Linux Developers

Rational solutions for Power Systems

IBM Rational Developer for Power Systems Software
Common developer desktop delivering integrated **developer tools** for Power operating systems and programming languages.

IBM Rational Compilers
New **compilers** exploit Power Systems including the latest POWER7 architecture and multi-core technology, boosting performance, productivity and portability.

IBM Rational Team Concert for Power Systems Software

Common server infrastructure enables **collaborative coordination** for multi-platform development teams.

IBM Rational Power Appliance for AIX

A total solution including hardware, AIX operating system and Rational tools and compilers for C/C++ or COBOL development

Learn more: www.ibm.com/software/rational/announce/power/

Rational Developer for Power 2010

- ## RD Power 7.5 (February)
  - ▶ First release of "RD Power"
  - ▶ IBM i only content: RPG and COBOL Development Tools for IBM i
    - • Major function: DDS Screen Designer and Report Designer

- ## RD Power 7.6 (April)
  - ▶ Focused on AIX development tools (C/C++ and COBOL)
  - ▶ Adds support for IBM i 7.1

- ## Coming soon: RD Power 8.0
  - ▶ **Announce: October 7th / eGA: October 26th**
  - ▶ New: C/C++ Development Tools for Linux on Power
  - ▶ New: xLinux client (in addition to Windows)
  - ▶ New: *Power Tools* packages
  - ▶ New capabilities for C/C++ and COBOL on AIX

Rational Developer for Power V8.0 Win/Linux

- **NEW Linux Client** in addition to MicroSoft Windows Client
  - Both clients support all features of Rational Developer for Power
  - Linux client can be used for Linux, AIX or IBM i development on Power
  - Supported Linux Clients include:
    - Red Hat Enterprise Linux (RHEL) Desktop 5 x86-32
    - SUSE Linux Enterprise Desktop (SLED) 10 x86-32
    - SUSE Linux Enterprise Desktop (SLED) 11 x86-32
- **Rational Developer for Power - C/C++ Development tools Linux**
  - Supported Linux server operating systems:
    - Red Hat Enterprise Linux (RHEL) Server 5 for IBM Power
    - SUSE Linux Enterprise Server (SLES) 10 for IBM Power
    - SUSE Linux Enterprise Server (SLES) 11 for IBM Power
  - Supported compilers:
    - IBM C/C++ for Linux, versions 10.1 or 11.1

Rational Developer for Power Systems Software

Integrated tools for Power operating systems and programming languages

Remote development environment supporting edit, compile, and debug of native AIX, Linux and IBM i applications on Power Systems, from a local Windows or Linux workstation

One integrated solution – supporting multiple environments *

C/C++ and COBOL on AIX

RPG, COBOL, CL, C/C++, DDS on IBM i

Java on AIX and IBM i

C/C++ on Linux   **NEW!**

It also allows organizations to attract and retain new talent, many of whom are already familiar with the Eclipse workbench

Lower development and application maintenance costs – do more with less!

C/C++ Developer | COBOL Developer | Java Developer | RPG Developer | EGL Developer

IBM Rational Developer for Power Systems Software   **NEW!**

Rational Software Delivery Platform powered by Jazz

IBM Power Systems

AIX   i for Business   Linux   POWER7 BUILT ON Power

Creating projects and files was easy as I had a prior knowledge on the Eclipse-based tools. COBOL edit features made the application programming easier and reduced the developer's work effort"

Major AP IT Development Company

Asia

* For EGL development use Rational Business Developer or RDi SOA

Rational Developer for Power Systems Software

Rational Compilers for Power
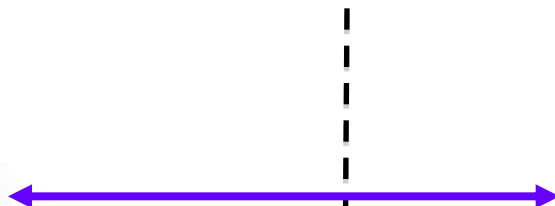
Rational Developer for Power V8.0 Features:

- RPG and COBOL for IBM i
- COBOL for AIX
- C/C++ for AIX
- **C/C++ for Linux on Power**
- C/C++ Developer Studio for AIX
    - RDPower + compiler
- COBOL Developer Studio for AIX
    - RDPower + compiler
- **C/C++ Developer Studio for Linux**
    - **RDPower + compiler**
- **Power Tools for AIX**
    - **RDPower C/C++ and RAD SE**
- **Power Tools for IBM i**
    - **RDPower RPG/COBOL and RAD SE**

Oct 7

- **Linux Developer Desktop Support**

- IBM XL C/C++ for AIX and Linux V11.1
- IBM XL Fortran for AIX and Linux V13.1
- IBM COBOL for AIX V4.1
- IBM Rational Development Studio V7.1
    - IBM i compilers RPG/COBOL/C/C++
- Rational Open Access: RPG Edition V1.1

RD Power 8.0: Packaging

Rational Developer for Power
(Separate chargeable components)

Development Environments

- C/C++ Development Tools for AIX
- COBOL Dev Tools for AIX
- RPG & COBOL Dev Tools for IBM i
- C/C++ Development Tools for Linux

Studio Bundles (tools and compiler)

- C/C++ Development Studio for AIX
- COBOL Development Studio for AIX
- C/C++ Development Studio for Linux

Power Tools Bundles

- Power Tools for IBM i
- Power Tools for AIX

- C/C++ Development Tools for AIX
- XL C/C++ for AIX compiler

- COBOL Dev Tools for AIX
- COBOL for AIX compiler

- C/C++ Development Tools for Linux
- XL C/C++ for Linux compiler

- Rational Application Developer SE
- RPG & COBOL Dev Tools for IBM i

- Rational Application Developer SE
- C/C++ Development Tools for AIX

Rational Developer for Power Systems Software V8.0

C/C++ Development Tools for AIX and Linux

- Eclipse-based development environment with integrated search, edit, analysis, build, and debug capabilities.
- Remote access to files, processes, and shells
- Rich editor support (content assist, outline view, colour)
- Integrated build support with error feedback
- Debugging with support for threads and monitoring of variable changes
- Debug core files for postmortem analysis (AIX only)
- Call and type hierarchy views (C/C++)
- Language aware searching (C/C++)
- Integration with Rational Team Concert

NEW

- New C/C++ Development tools for Linux
- New remote include hierarchy view
- New remote managed build for Remote C/C++ projects
- Improved performance for remote indexing
- Debug Enhancements
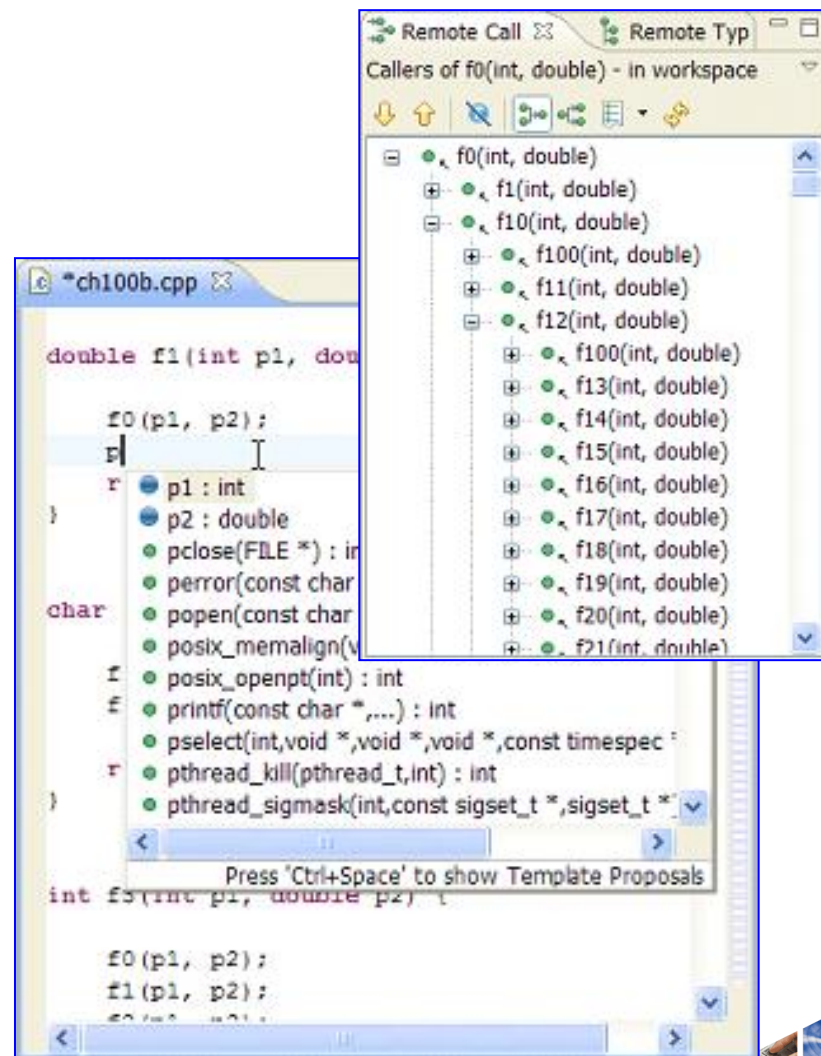
Rational Developer for Power Systems Software V8.0

COBOL Development Tools for AIX

- Eclipse-based development environment with integrated search, edit, analysis, build, and debug capabilities.

- Remote access to files, processes, and shells

- Rich editor support (content assist, outline view, color tokenizing,…)
  Integrated build support with error feedback

- Debugging with support for threads and real-time monitoring of variable changes

- Integration with Rational Team Concert

NEW

- Live syntax checking

- Color tokenizing and syntax checking for embedded CICS and SQL statements

- Content assist for embedded SQL statements

- Code templates

- Snippets view support

- Refactoring tool to select and extract source into a new paragraph
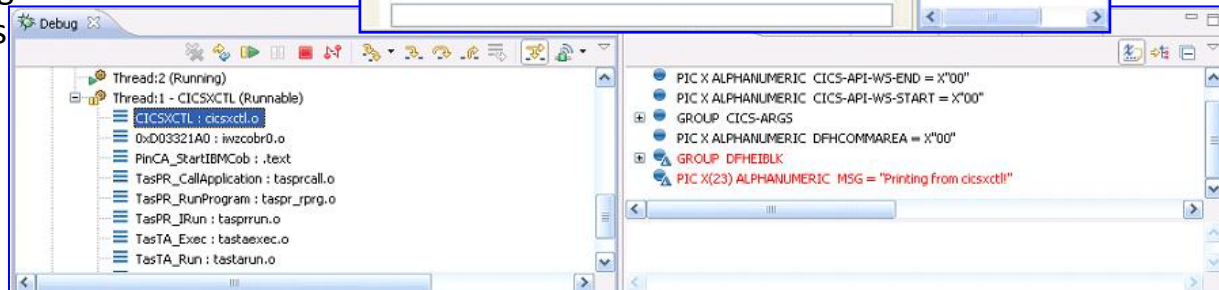
Rational Developer for Power Systems Software V8.0
RPG and COBOL Development Tools for IBM i Feature

Follow on to **Rational Developer for i** as the modern development tools for IBM i

There is NO follow on to WDSC.

Features

- Lightweight, modern, development tools for RPG, COBOL, CL, and DDS
- Integrated file access, search, edit, compile and debug
- Rich editing features such as outline view, content assist, formatting, color tokenizing
- Visualise program structure with Application Diagram
- Easily debug batch, interactive, and Web applications and Web services with a common visual debugger
- Visual DDS design tools: Screen and Report Designer
- Integration with Rational Team Concert for Power

IBM Rational Application Developer Standard Edition for WebSphere Software V8.0

- Rich set of Eclipsed-based tools for developing applications using
  - Java, Java EE
  - Portal,
  - Service oriented architecture (SOA)
  - Web 2.0

- Rational Application Developer Standard Edition includes features that simplify development and increase programmer productivity.
  - Wizards
  - Visual designers
  - Rich source editors
  - Integrated WebSphere Application Server test environments
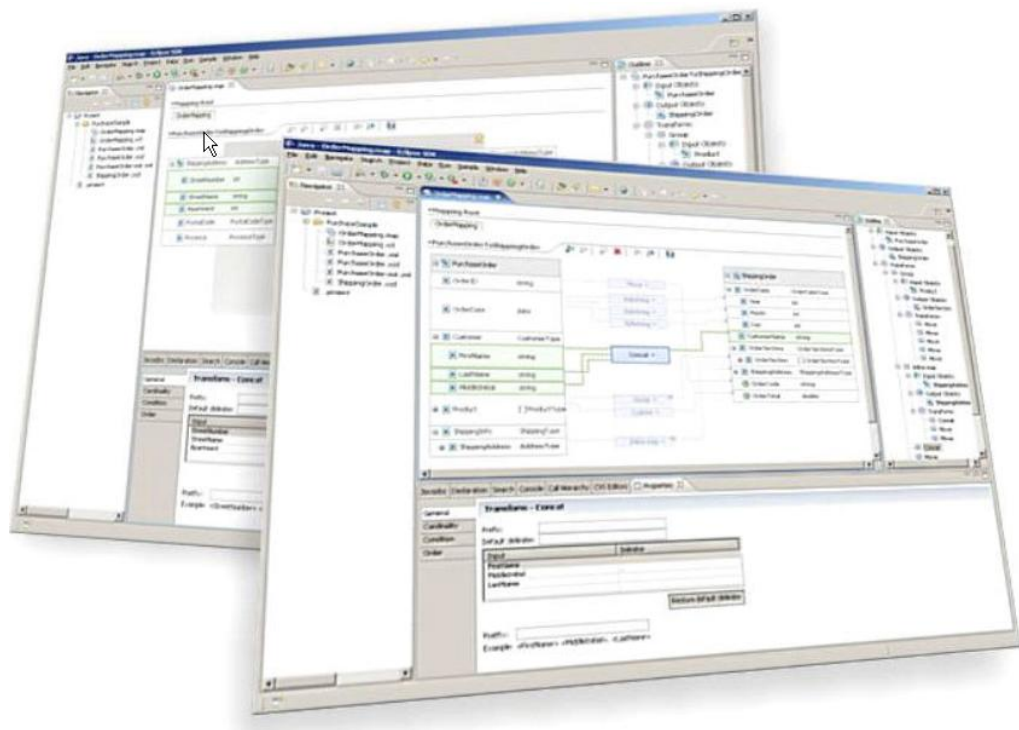
The Power Tools Packages

Power Tools for IBM i

For organizations who are integrating applications written in RPG or COBOL on IBM i
with Web Services and Web front-ends that leverage Java, Java EE, Web 2.0 SOA or Portal.

| Power Tools for IBM i | ----→ | *Rational Application Developer SE* |
| | | *RPG & COBOL Dev Tools for IBM i* |
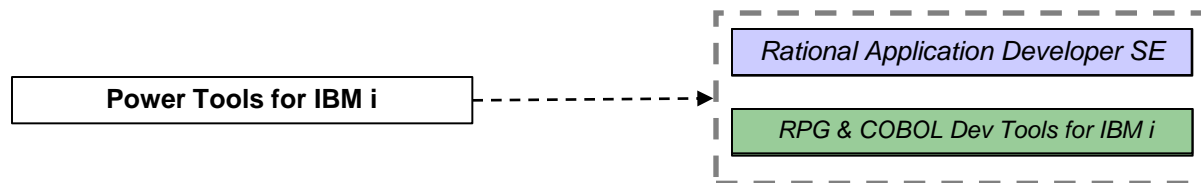
Power Tools for AIX

For organizations who are integrating applications written in C/C++ on AIX
with Web Services and Web front-ends that leverage Java, Java EE, Web 2.0 SOA or Portal.

| Power Tools for AIX | ----→ | *Rational Application Developer SE* |
| | | *C/C++ Development Tools for AIX* |
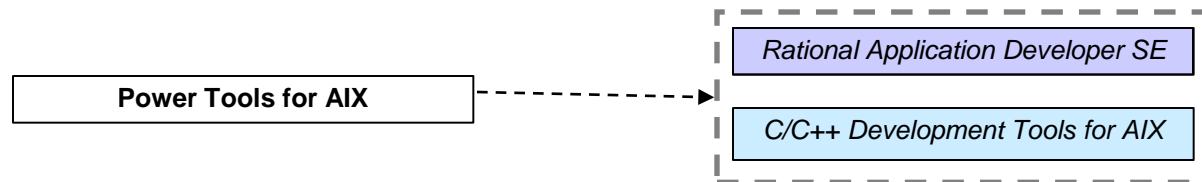
Power Tools Packages allow developers to have a single, productive, workbench

with all of their development tools integrated. Can be ordered through PPA and AAS.

IBM Rational Business Developer - EGL

- Simplify the development of JavaScript-based Web 2.0 applications and services with EGL

- Extend existing business logic on Power

- Skills flexibility and high productivity for building all types of enterprise applications

- Platform independent for portability

web 2.0

Accelerate development of traditional RPG and COBOL applications and web services and SOA for IBM i
IBM Rational Developer for i for SOA Construction V7.6

Rational Developer for Power

- RPG, COBOL, CL
- Edit, Compile, Debug
- New 5250 Screen Designer
- New application diagrammer
- Smaller footprint (minimum 512mb memory)

+

RDi SOA

- Traditional RPG, COBOL development
- Create Web Services from IBM i programs
- Consume Web Services via EGL
- Create modern Web 2.0 applications leveraging RPG/COBOL via EGL

+

Rational Business Developer (RBD)

- EGL (Enterprise Generation Language
- Java without the Java
- Web 2.0
- Web Services
- Modern language and user interfaces
- Generate JavaScript & API support

Modern Language Merges with Core Business Systems & Heritage Languages

Note: RDi SOA can be used with the HATS toolkit

IBM Rational Power Appliance
One Integrated Package

NEW!

IBM Rational Power Appliance

- IBM Rational Developer for Power
- IBM Rational Team Concert for Power
- IBM Rational Compiler for AIX

Rational Developer for Power V7.6
COBOL for AIX
Or
C/C++ for AIX

eclipse

Rational Team Concert for Power V2.0
AIX Feature
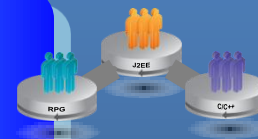
Rational COBOL for AIX Compiler
Or
Rational XL C/C++ for AIX Compiler

Power 710 2U Rack Server		Power 730 2U Server		Power 750 4U Server
1 socket (4 cores)	OR	1 socket (8 cores)	OR	2 socket (16 cores)
64GB RAM		128GB RAM		256GB RAM
4x 146GB 15k HDDs		4x 300GB 10k HDDs		6x 300GB 10k HDDs
Express - 5 developers		Standard - 20 developers		Enterprise - 40 developers

http://www.ibm.com/software/rational/products/appliance/power/

Cothern Computer Systems
Improves developer productivity and time to market

Empower People

COTHERN COMPUTER SYSTEMS, INC.

The Challenge

Provide an Integrated Development Environment for AIX with useful debugging and editing tools

IDE based on Eclipse for open development.

Business Value

A modern IDE which enables greater productivity

Consistent IDE across system platforms which is easy to use.

Solution

Rational Developer for Power C/C++ and COBOL for AIX

Cothern Computer Systems, Inc.

- System Conversions and Contact Center Technologies
- Worldwide customers base

"RDp is an outstanding development environment for AIX development. The LPEX editor and the debugger are far superior to other tools I have used for AIX development. As a user of other Eclipse based Rational development tools, RDp has been very easy to use and our team was able to be productive in only a week versus months. It also provides a consistent development experience across computing environments providing up to a 20% productivity improvement. "

**Morris Wright
Senior Consultant**

Modern application development environment
What you need to deliver better software faster!
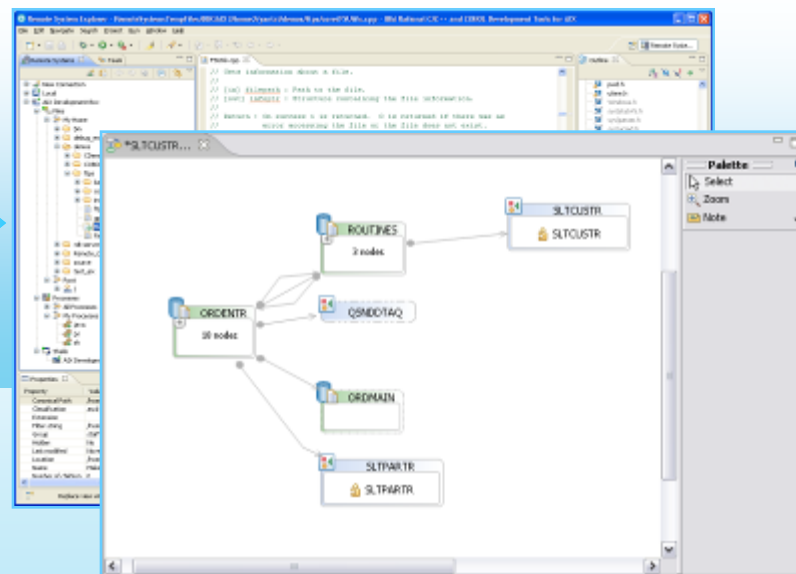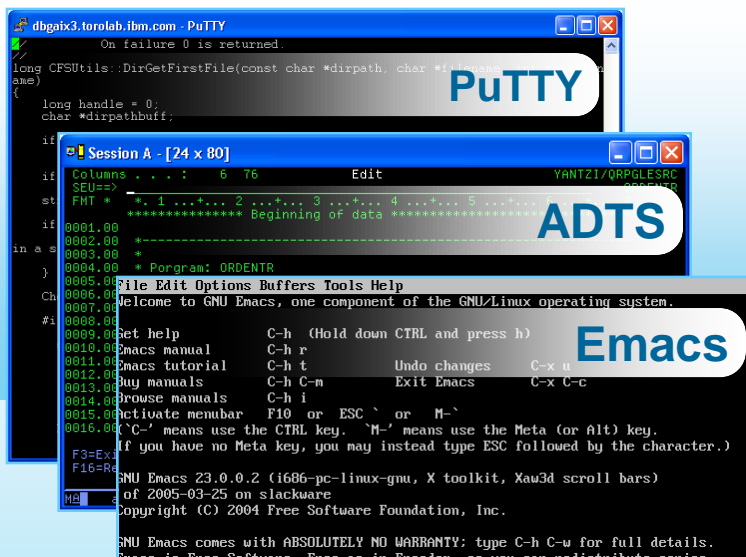
- 20% or more improvement in developer productivity[1]
- Tools with which to attract new talent
- New visual tools boost productivity and accelerate innovation

[1]Based on IBM customer study, *"Making a Business Case for IBM Rational Developer for i"*

To learn more visit: **ibm.com/software/rational/announce/power/**

Thank You

For more information visit ibm.com/rational

IBM i Development Tools Comparison by Feature

Feature	WDSC	WDSC AE	RD Power for RPG & COBOL on IBM i	RDi SOA	RAD SE	Power Tools for IBM i
RSE (interface to IBM i))	X	X	X	X	-	X
LPEX Editor (RPG, COBOL, CL, C/C++ for IBM i)	X	X	X	X	-	X
End to End Debugger	X	X	X	X	X	X
ILE Application Diagrammer	-	X	X	X	-	X
5250 Screen Design Tool	-	X	X	X	-	X
VisualAge RPG & CODE/400	X	X	-	-	-	-
Report Design tool			X	X	-	X
JSF Web Design & Servlet Support	X	X	-	-	X	X
J2EE with EJB support	-	X	-	-	X	X
Web Service Wizards (for RPG & COBOL)	X	X	-	X	-	X
XML tools	X	X	-	-	X	X
RPG and COBOL call wizards	X	X	-	X	-	X
WebSphere Application Server test environment	X	X	-	X	X	X
Support for WebSphere Portal	-	X	-	-	X	X
Support for HATS Toolkit V7.5.1 – without Portal support	X	X		X	X	X
Support for HATS Toolkit V7.5.1 – with Portal Support	-	X	-	-	X	X

Note: HATS Toolkit V7.5.1 can not install with RAD SE V8.0 or Power Tools for IBM i V8.0

Note: Compilers & ADTS sold separately from tools

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