



Rational Application Developer 8.0.3 – What's new and enhanced for the developer?

Ankur Goyal, Rational Brand Architect
ankurgoyal@in.ibm.com

IBM Software

Innovate2011

The Premier Event for Software and Systems Innovation



Software. Everywhere.

August 11 , Delhi



Please Note:

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Agenda

Introduction

[Building Clients](#)

[Building Services](#)

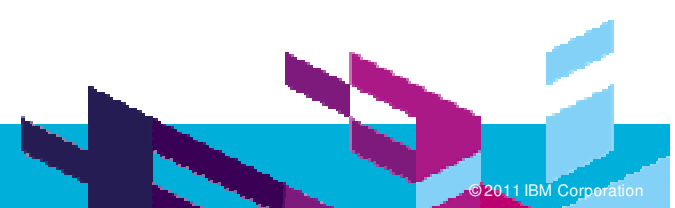
[Deployment and Testing](#)

[Problem Determination](#)

[Life in the Clouds](#)

[The Software Delivery Lifecycle](#)

[Epilogue](#)



Enterprise Java development from the web to services and beyond

1st Tier




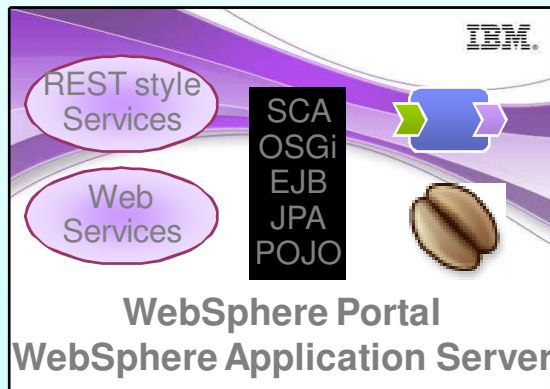

Web Client

- JavaScript
- Dojo
- JSF

Portal Client

Rich Java UI Client

2nd Tier

REST style Services

Web Services

SCA
OSGi
EJB
JPA
POJO

WebSphere Portal

WebSphere Application Server


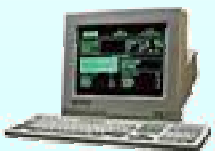


Tomcat

JBoss

IBM Mashup Center

WAS Community Edition

3rd Tier

- IBM CICS Transaction Server
- IBM InfoSphere DB2
- Oracle
- IBM InfoSphere IMS
- SAP
- PeopleSoft
- Siebel
- ...

Themes

- **Theme 1: Improve Developer Productivity**
 - ▶ Support for iterative creation, validation, revision and deletion of application artifacts
 - ▶ Advanced Web 2.0 development tools to build rich internet applications
 - ▶ Spec migration and workspace migration support from RAD 7.0.x and RAD 7.5.x
- **Theme 2: Improve Application Quality**
 - ▶ Improved static problem determination tools: Line level code coverage enhancements.
 - ▶ Improved dynamic problem determination tools: Debug tools; Enhanced profiling.
- **Theme 3: Cloud support**
 - ▶ Integration with the IBM Smart Business Development and Test on the Cloud.
 - ▶ Support for WebSphere Application Server test server environments on the Cloud.
- **Theme 4: Integrations with other IBM products**
 - ▶ WebSphere Application server test environment
 - ▶ WebSphere Portal server test environment
 - ▶ Rational Team Concert for improved development team productivity
- **Theme 5: Support for Standards and Standards Currency**
 - ▶ Eclipse 3.6.x
 - ▶ Tools for Java EE 6: EJB 3.1, JPA 2.0, JSF 2.0, Servlet 3.0.
 - ▶ Tools for WAS feature packs: Web 2.0, CEA, OSGI & JPA 2.0, SCA, Modern Batch.

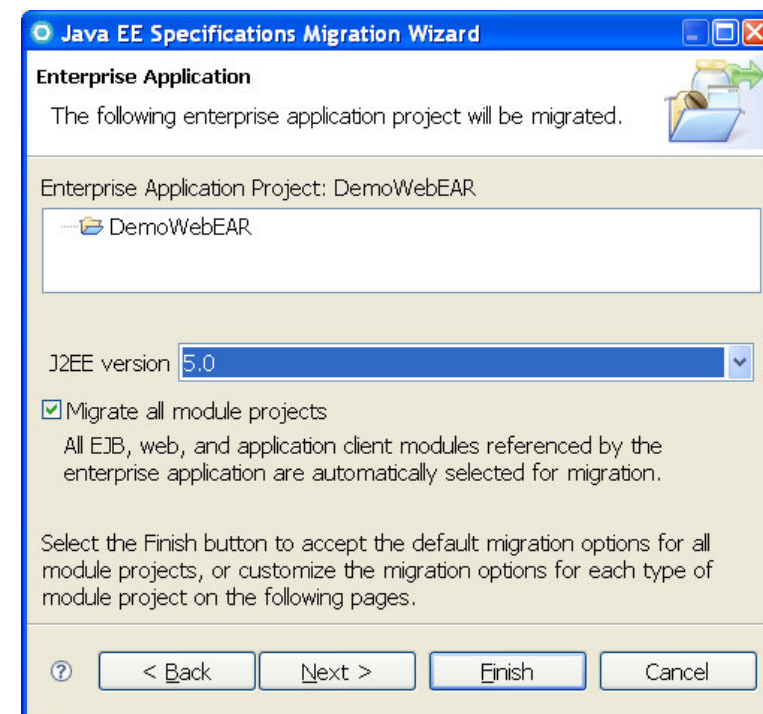
Installation

- Built on Eclipse 3.6.x, IBM JRE 1.6
- Install RAD as a complete offering with its own Eclipse platform. Other options:
 - ▶ Into an existing Eclipse, if both are on the same Eclipse levels.
 - ▶ 3rd party plug-ins can be installed into RAD via p2 (Eclipse updater)
- IBM Installation Manager simplifies and optimizes your install...
 - ▶ Example footprints:
 - Full install: ~3.5 GB.
 - Default size: ~1.14 GB.
 - Web development: ~0.67 GB.
 - ▶ Memory requirements
 - 2 GB minimum.
 - 3 GB recommended if running RAD and the WAS Test Environment
 - ▶ Enterprise install capabilities for simple maintenance and provisioning of your own standardized install configurations
 - Create response files for the configuration you want for your enterprise.
 - ▶ Help can be installed locally, served remotely on-premise, or served by IBM



Migration to new specifications

- New “Spec Migration” wizard will migrate individual Java EE module projects from any of (1.1, 1.2, 1.3, 1.4) to Java EE 5
- Migrate entire EAR's (including contained modules)
- Selected projects ‘server target’ automatically checked for compatibility with target version, and switched if necessary
- Files that will change when moving from J2EE 1.4 -> Java EE 5
 - ▶ EJB: ejb-jar.xml
 - ▶ Web: web.xml
 - ▶ EAR: application.xml
 - ▶ App client: application-client.xml
- Any module containing webservices.xml will migrate from JSR109 1.1 -> JSR109 1.2



Agenda

Introduction

Building Clients

Building Services

Deployment and Testing

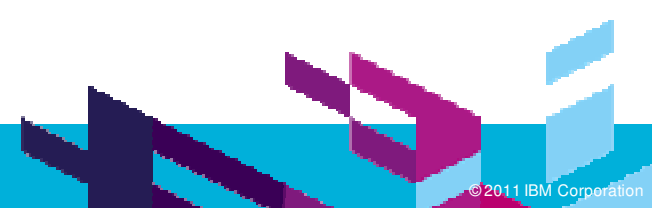
Problem Determination

Life in the Clouds

The Software Delivery Lifecycle

Epilogue

- *Web 2.0*
- *JSF*
- *iWidgets*
- *Mobile*
- *Portal*



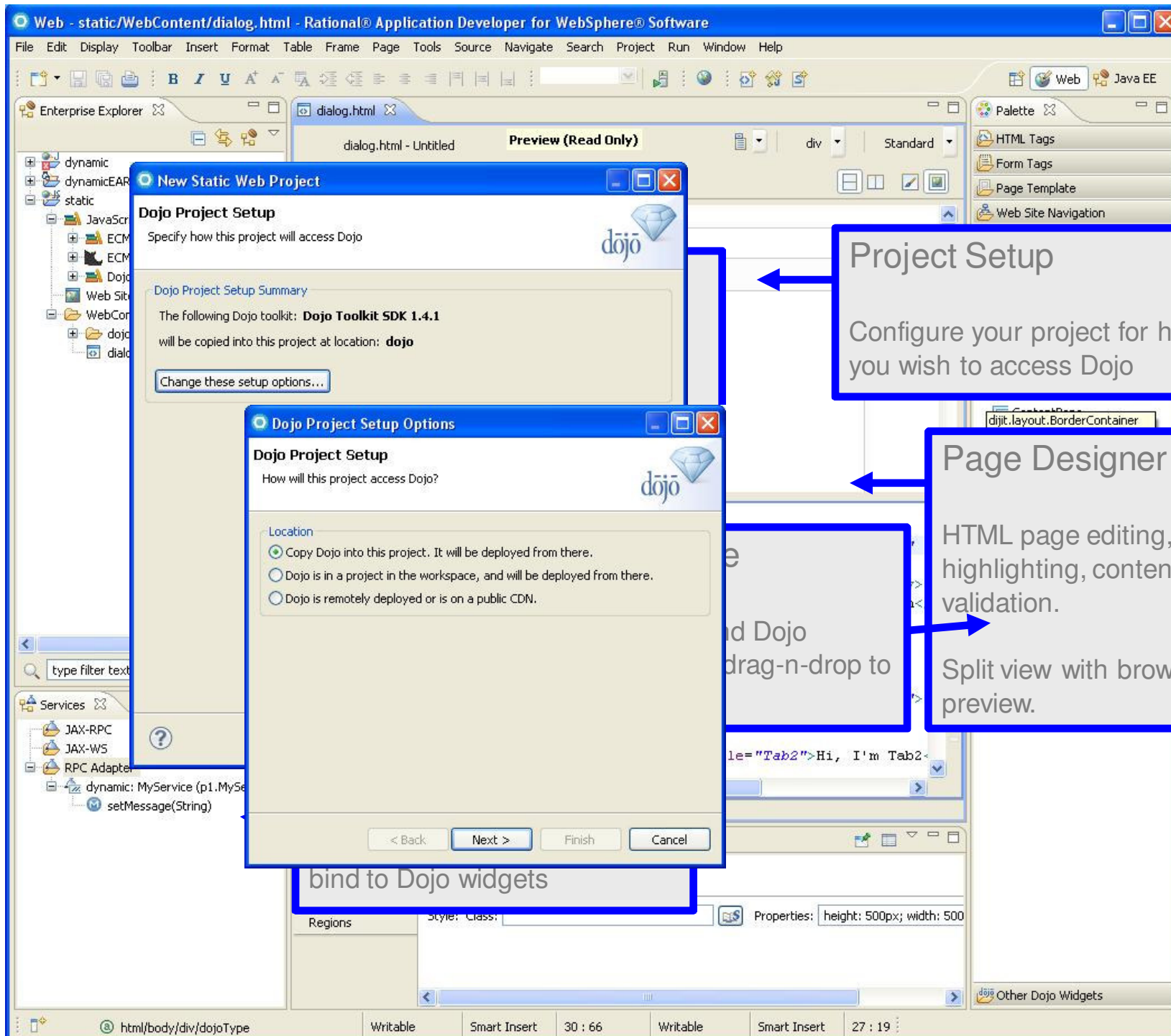


Tools for developing Web applications

- RAD helps lower the barriers of adoption of Web 2.0 technology, providing tools for building rich internet applications to **improve online user experience** and **increase customer satisfaction**
- Visual development of Web 2.0 pages
 - ▶ Page Designer for HTML, JSP, JSF and Dojo applications
 - ▶ Source level tools for JavaScript* and Dojo development
 - ▶ Dojo toolkit
 - ▶ iWidgets
- Test and debug with the help of
 - ▶ Lightweight Ajax Test Server to rapidly preview Web pages
 - ▶ Multiple browser previews
 - ▶ Firebug integration
- HTML 5
 - ▶ Content assist and validation in the source editor



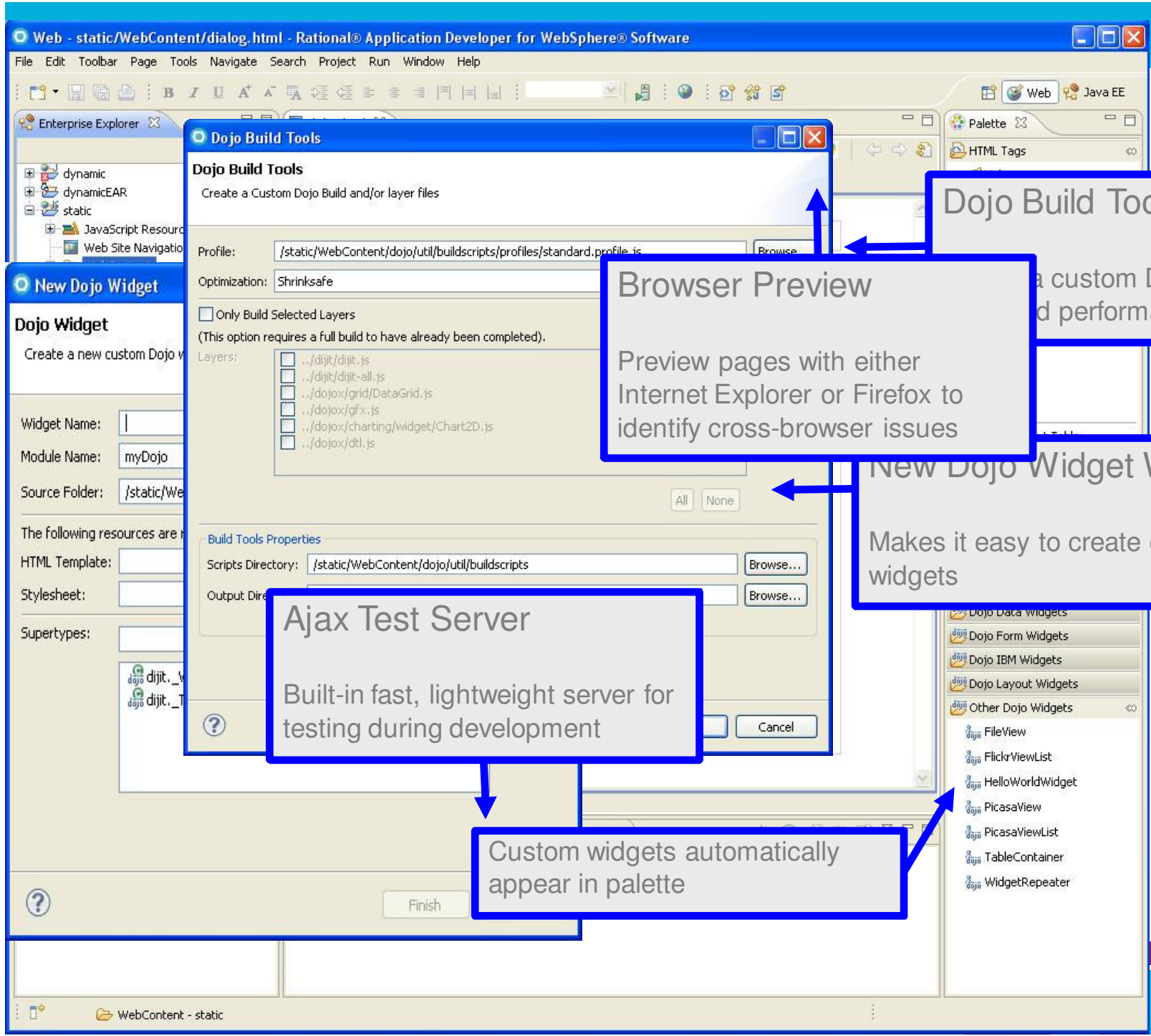
* Inherited from Eclipse WTP



Project Setup
Configure your project for how you wish to access Dojo

Page Designer
HTML page editing, syntax highlighting, content-assist validation.
Split view with browser preview.

bind to Dojo widgets



Dojo Build Tools
Create a custom Dojo build for performance

Browser Preview
Preview pages with either Internet Explorer or Firefox to identify cross-browser issues

New Dojo Widget Wizard
Makes it easy to create custom widgets

Ajax Test Server
Built-in fast, lightweight server for testing during development

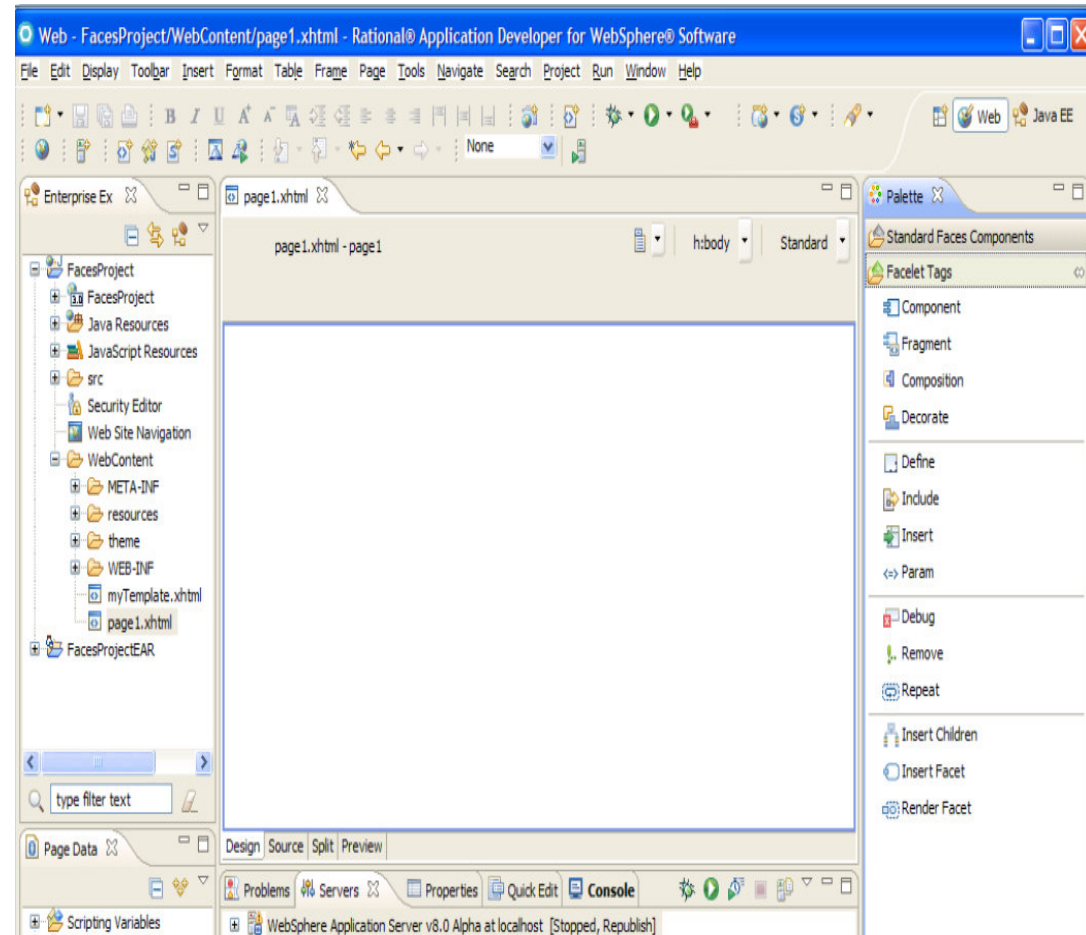
Custom widgets automatically appear in palette

- Dojo Data widgets
- Dojo Form Widgets
- Dojo IBM Widgets
- Dojo Layout Widgets
- Other Dojo Widgets
- FileView
- FlickrViewList
- HelloWorldWidget
- PicasaView
- PicasaViewList
- TableContainer
- WidgetRepeater



JavaServer Faces (JSF) 2.0

- JSF 2.0 introduces Facelets, a new way to define JSF pages.
- Easily build custom, composite components using Facelets technology.
- New Facelet Tags are available on palette.
- New components are available (e.g. button, link, stylesheets and script components).
- Any component can be configured to initiate an Ajax request.
- Improved navigation.

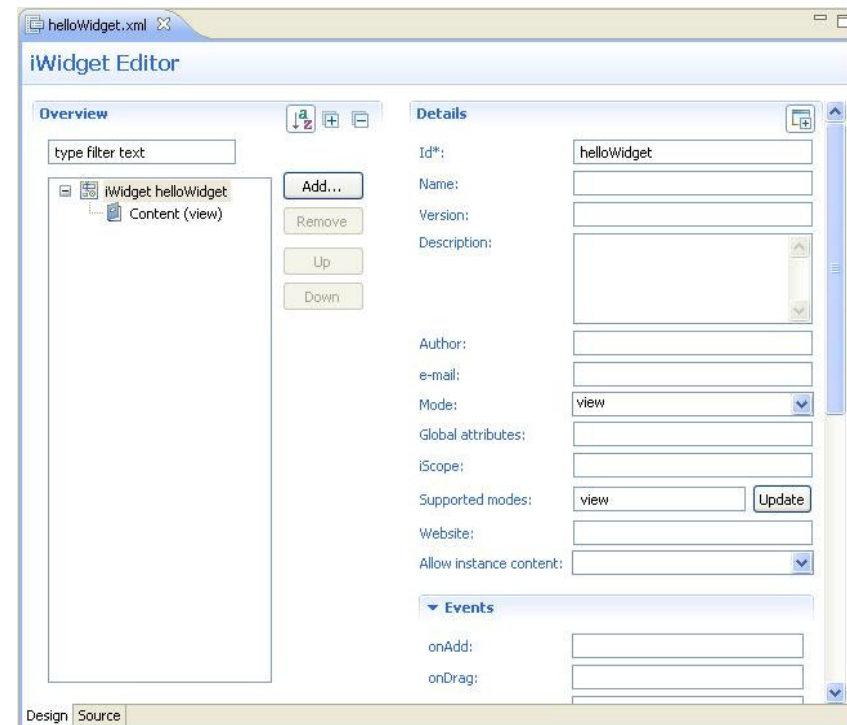
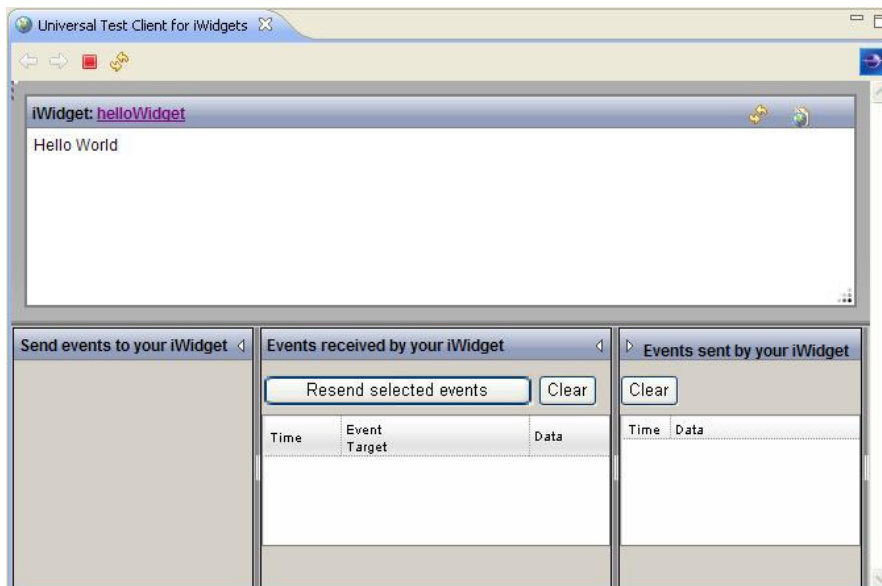




iWidgets

- Develop and test iWidgets that can be used in IBM Mashup Center.
 - ▶ Project configuration for iWidget development.
 - ▶ Wizard for easily creating new iWidgets.
 - ▶ Editor for iWidget XML including validation.
 - ▶ Universal Test Client for testing iWidgets, including markup and events.

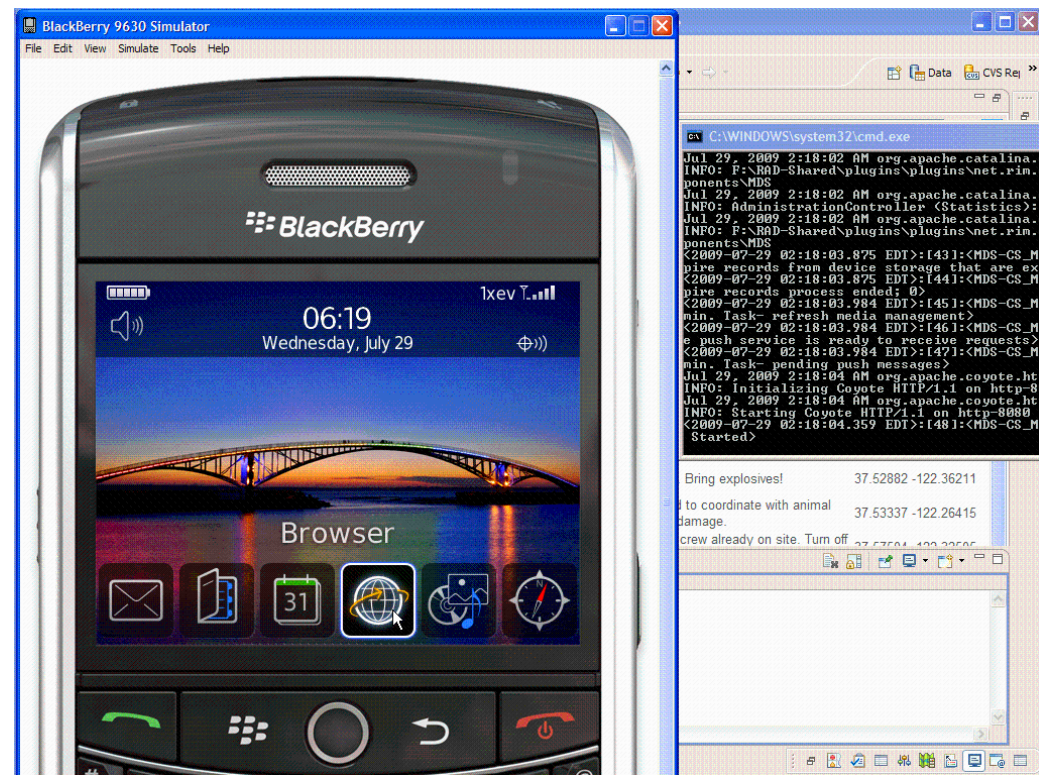
■ Publication to IBM Mashup Center



Mobile

- RAD can be used to develop WAS applications that are accessed via browsers on mobile devices such as the BlackBerry.
- BlackBerry simulator can be installed into RAD and used to test the application.

- BlackBerry: <http://www.blackberry.com/developers/ibmr/ad>





Portal

- Easy integration of features into Portlet Projects
 - ▶ Choice of Portlet API (e.g. JSR-286)
 - ▶ Choice of Portlet type (e.g. Faces Portlet)
 - ▶ Choice of Web 2.0 features
 - Ajax proxy
 - Client-side capabilities
 - Dojo toolkit
 - RPC adapter
 - Support for WebSphere Portal V7
 - ▶ Stubs contain all jars necessary for development and compilation of JSR-286, JAX-WS and other portal / portlet features.
 - ▶ Incremental publish.
 - Developer experience enhancements
 - Usability Improvements
 - ▶ Portal run-time segregation for WAS/WID
 - JSF Best Practices & Performance study
 - JPA enabled portlets
 - JAX-WS for Portal V7
- Portal Dojo Library (dijit support)
 - ▶ Easily build compelling, highly interactive portlets
 - ▶ Create client-side charts and graphics
 - iWidget Support (v1.1, v2.0)
 - ▶ Creation wizard
 - ▶ Consume iWidgets and static pages in portal
 - ▶ Publish iWidgets and Pages to Portal
 - ▶ Test using Mashup enabler v2.0
 - Site Designing Portlet
 - ▶ Manage layout and content of your Portal site from within RAD
 - ▶ Faster than ever preview of Portlets and iWidgets

Beyond
Eclipse

New in
v8.0.1

WebSphere Portal 7.0

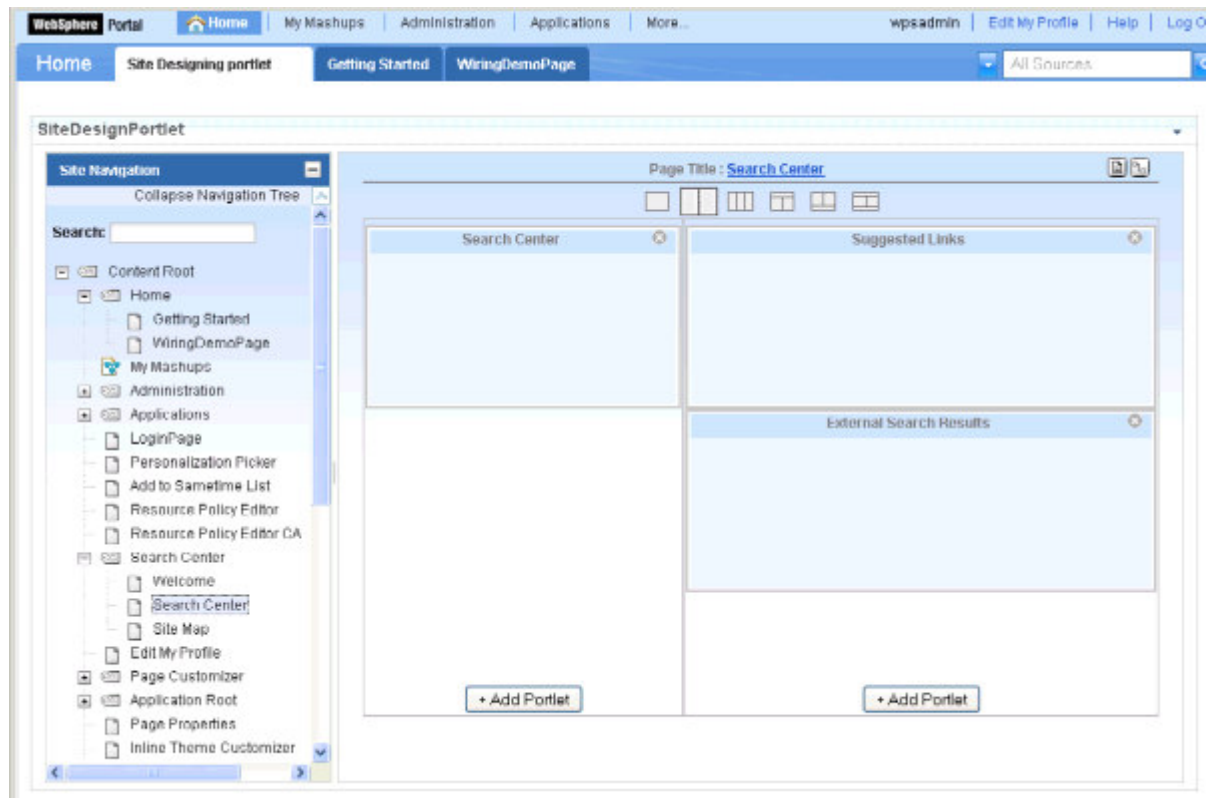
- RAD 8.0.1 supports WebSphere Portal 7.0
- Client Side Aggregation (CSA) 2.0
- Portlets and iWidgets can coexist on the same portal page

The screenshot displays the IBM Rational Developer for WebSphere Portal 7.0 interface. On the left, the 'Enterprise Explorer' shows a project structure for 'PortletAndIWidgetProject'. The 'Portlet Publishing' configuration panel is open, showing 'Page Creation Settings' where 'CSA Mode' is selected. The main window shows a live preview of a WebSphere Portal page with a 'Rational Components' menu and a 'PortletAndIWidgetProject' portlet containing an 'iWidget' with the text 'Hello World'.



Site Designing Portlet

- Light weight Web 2.0 Ajax-based user interface
- Universal Catalog
- Portlet Design View
 - ▶ Page Navigation
 - ▶ Site Design



Agenda

[Introduction](#)

[Building Clients](#)

[Building Services](#)

[Deployment and Testing](#)

[Problem Determination](#)

[Life in the Clouds](#)

[The Software Delivery Lifecycle](#)

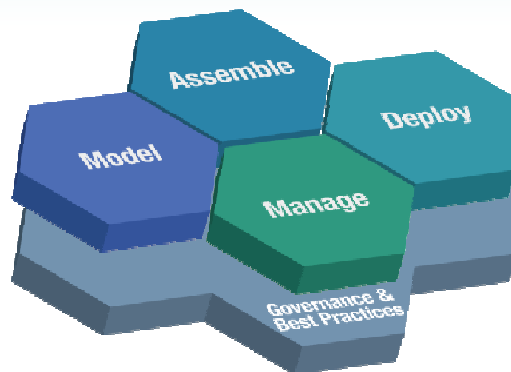
[Epilogue](#)

- *Java EE*
- *OSGi*
- *SCA*
- *Modern Batch*

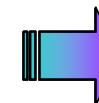
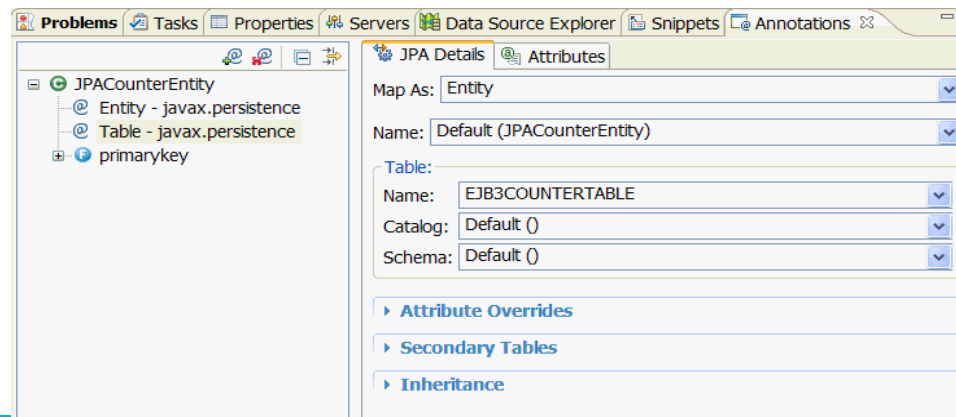
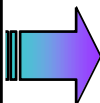
Java Platform Enterprise Edition

A standard programming model that provides functionality to deploy fault-tolerant, distributed, multi-tier Java software, based largely on modular components running on an application server.

Develop Java EE assets including EJBs, JPA beans, web services, servlets, JSPs, portlets and connectors.



Java EE app server handles transactions, security, scalability, concurrency and management of the components.

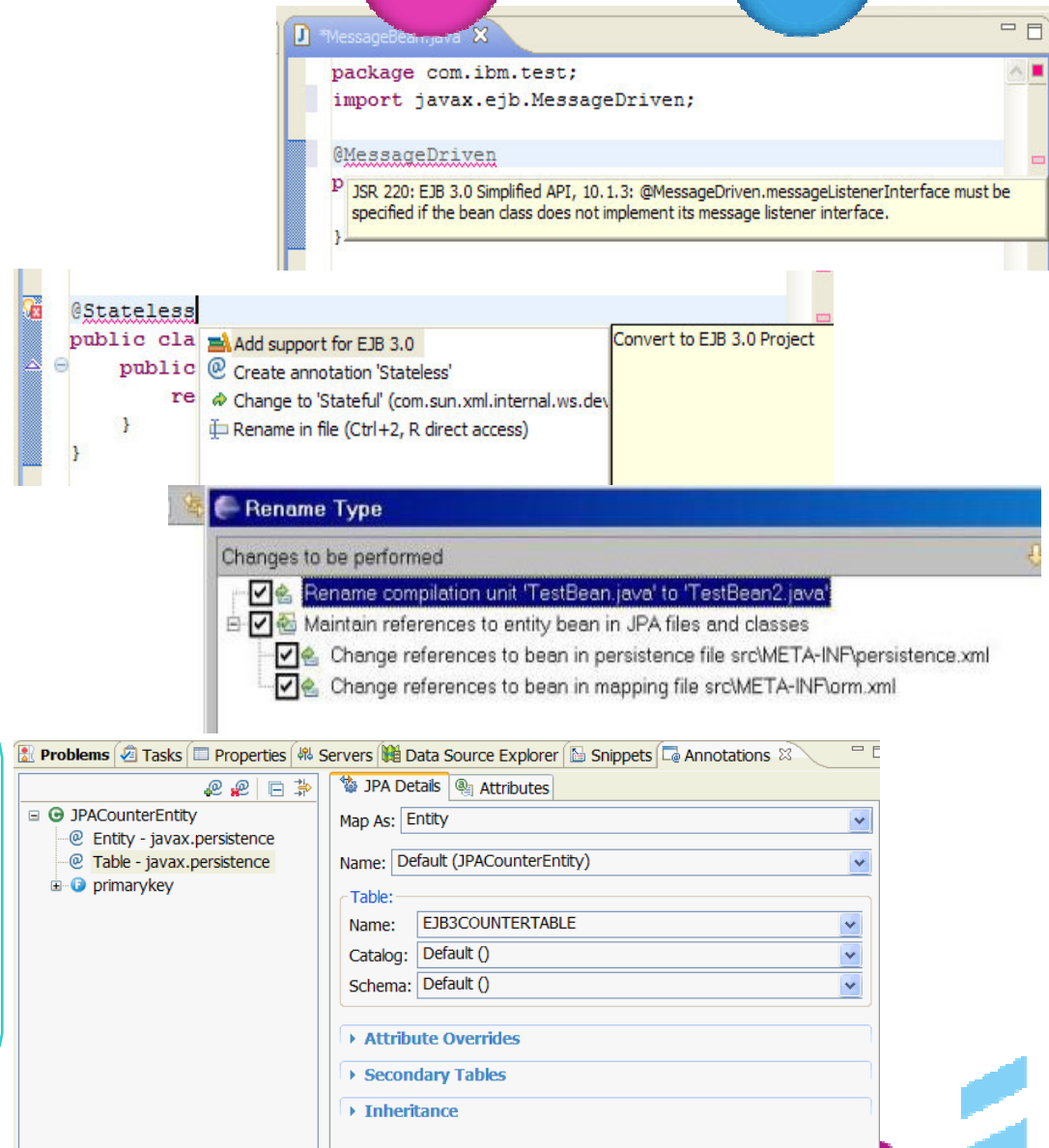


Beyond
Eclipse

New in
v8.0

Java EE 6 Development

- Content assist and as you type validation
 - Quick fixes for code and project configuration
 - Advanced refactoring options to allow you to modify and maintain code in an iterative manner
 - Annotation view to manage and modify annotation properties
- More flexible assembly of modules into EARs.
 - Develop EJBs directly within Web projects (for WAS v8 Beta).



New in
v8.0.1



Java Persistence Architecture (JPA) 2.0

- Create and automatically initialize mappings
 - ▶ Top-down: Create new database tables from existing entity beans.
 - ▶ Bottom-up: Create new entity beans from existing database tables.
 - ▶ Meet-in-the-middle: Define mappings between existing database tables and entity beans.
- Generate entities > Create beans > Filter results
- Upgraded for JPA 2.0 in RAD v8.0

Generate Entities

Generate Entities from Tables

Source folder:

Package:

Synchronize Classes in persistence.xml

Table	Entity Name
<input checked="" type="checkbox"/> DEPARTMENT	Department
<input type="checkbox"/> DEPT	Dept
<input type="checkbox"/> EMP	Emp
<input type="checkbox"/> EMPACT	Empact
<input checked="" type="checkbox"/> EMPLOYEE	Employee
<input type="checkbox"/> EMPMDC	Empmdc

JPA Manager Bean Wizard

Tasks

Select a JPA Entity from the top table and a task from the left column.

Department
Employee

Select a task from the left column to modify the associated properties.

- Primary Key
- Query Methods
- Relationships
- Concurrency Control
- Other

This displays queries used to retrieve JPA data. You can add new queries or edit existing queries to return results tailored to your needs.

```
getDepartment
getDepartmentByAdmrdept
getDepartmentByDeptname
getDepartmentByLocation
getDepartmentByMgmo
getDepartmentOrdered
```

Edit Query Method

Modify filters, order results, and select the attributes returned by the query.

Query Method Name:

Result Attributes | Filter Results | Order Results

Select which attributes should be returned by the query:

Attribute	Type
<input checked="" type="checkbox"/> admrdept	employees.list.Department...
<input type="checkbox"/> departmentCollection	java.util.Set<employees...
<input checked="" type="checkbox"/> deptname	String
<input checked="" type="checkbox"/> deptno	String
<input checked="" type="checkbox"/> employeeCollection	java.util.Set<employees...
<input checked="" type="checkbox"/> location	String
<input checked="" type="checkbox"/> mgmo	employees.list.Employee

Select All | Deselect All

Use an existing java bean to contain the results

Query Statement:

Named Query Name:

```
SELECT d.admrdept, d.deptname, d.deptno, d.employeeCollection, d.location, d.mgmo FROM Department d
```

OK Cancel

New in v8.0



Web services and REST services

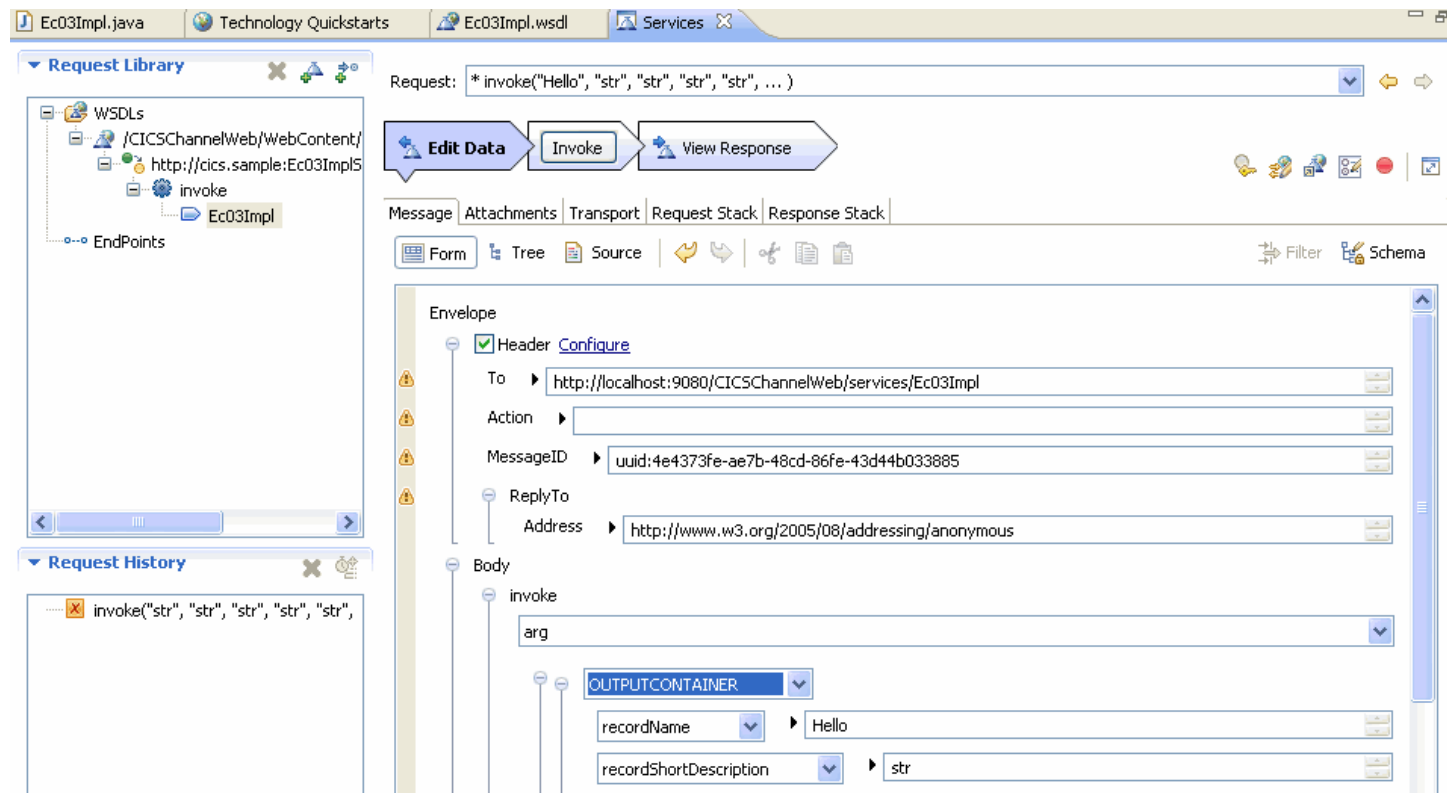
- JAX-RS (REST style Web Services)
 - ▶ Manage any number of JAX-RS libraries
 - Automatic integration with the WAS JAX-RS support (in the Web 2.0 FEP)
 - A new preference page can be used to import JAX-RS libraries
 - ▶ Java editor support for JAX-RS annotations with validation to the spec (JSR 311)
 - ▶ Java and web.xml quick fixes to simplify development of REST applications
- Quick fixes to create singleton EJB 3.1 Web services from POJOs in a Java project.
- Web service client MTOM enablement from the Web service wizards.
- Improvements to policy set attachments
 - ▶ Attachment to service references.
 - ▶ Service ref inheritance from service client.
- No more router projects for EJB based JAX-WS web services.
 - ▶ Courtesy Java EE 6 and RAD v8.0.1 support for EJBs in Web projects.
- Support for custom key-value properties in binding configuration editors.





Web services and the Generic Services Client

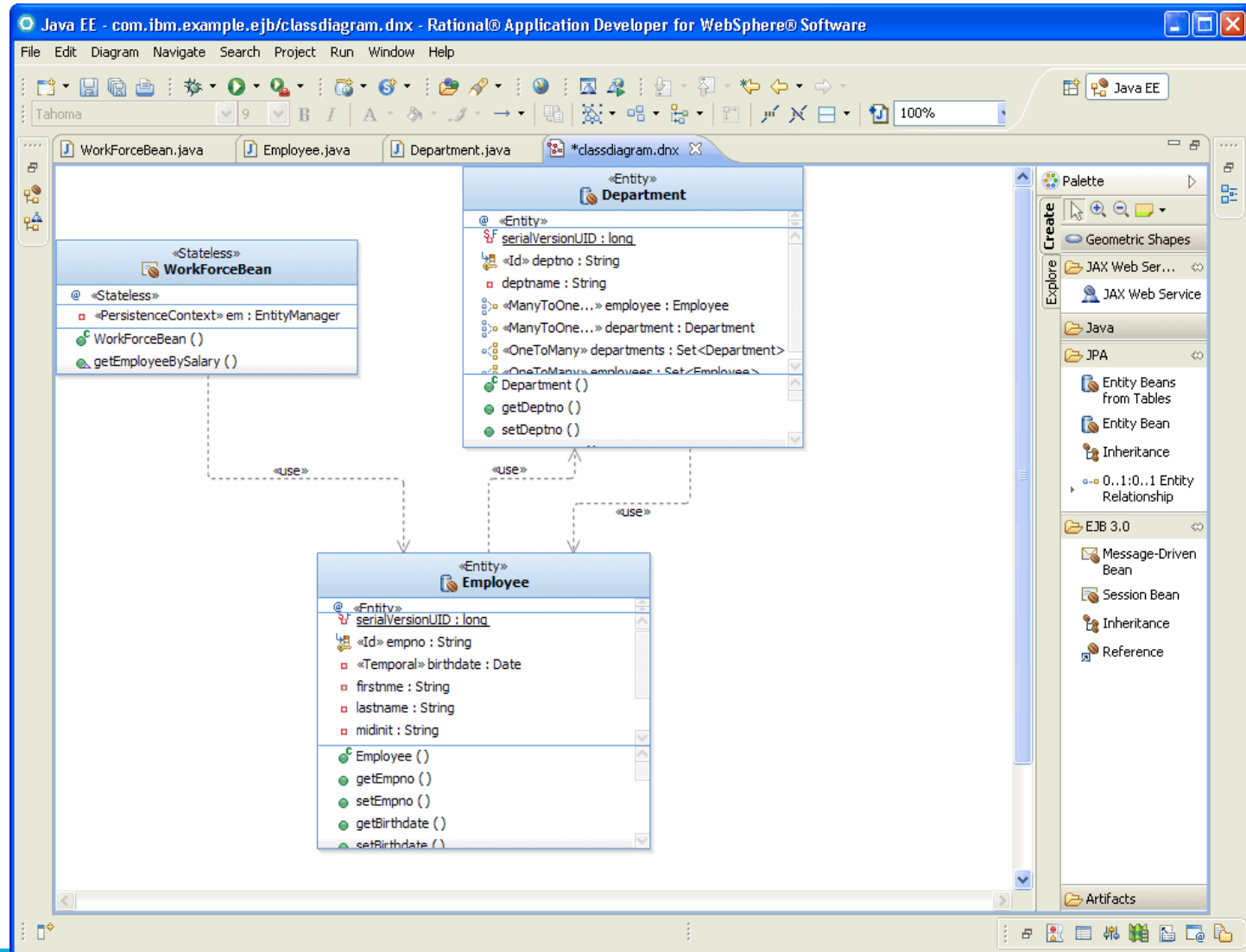
- Interactive invocation of services using HTTP, JMS or WebSphere MQ transports.
- Common component with Rational Performance Tester or Rational Service Tester.
 - ▶ Some features, e.g. test case recording, enabled only via those products.
- Supports SOAP 1.1 and 1.2 invocation over HTTP and JMS transports.





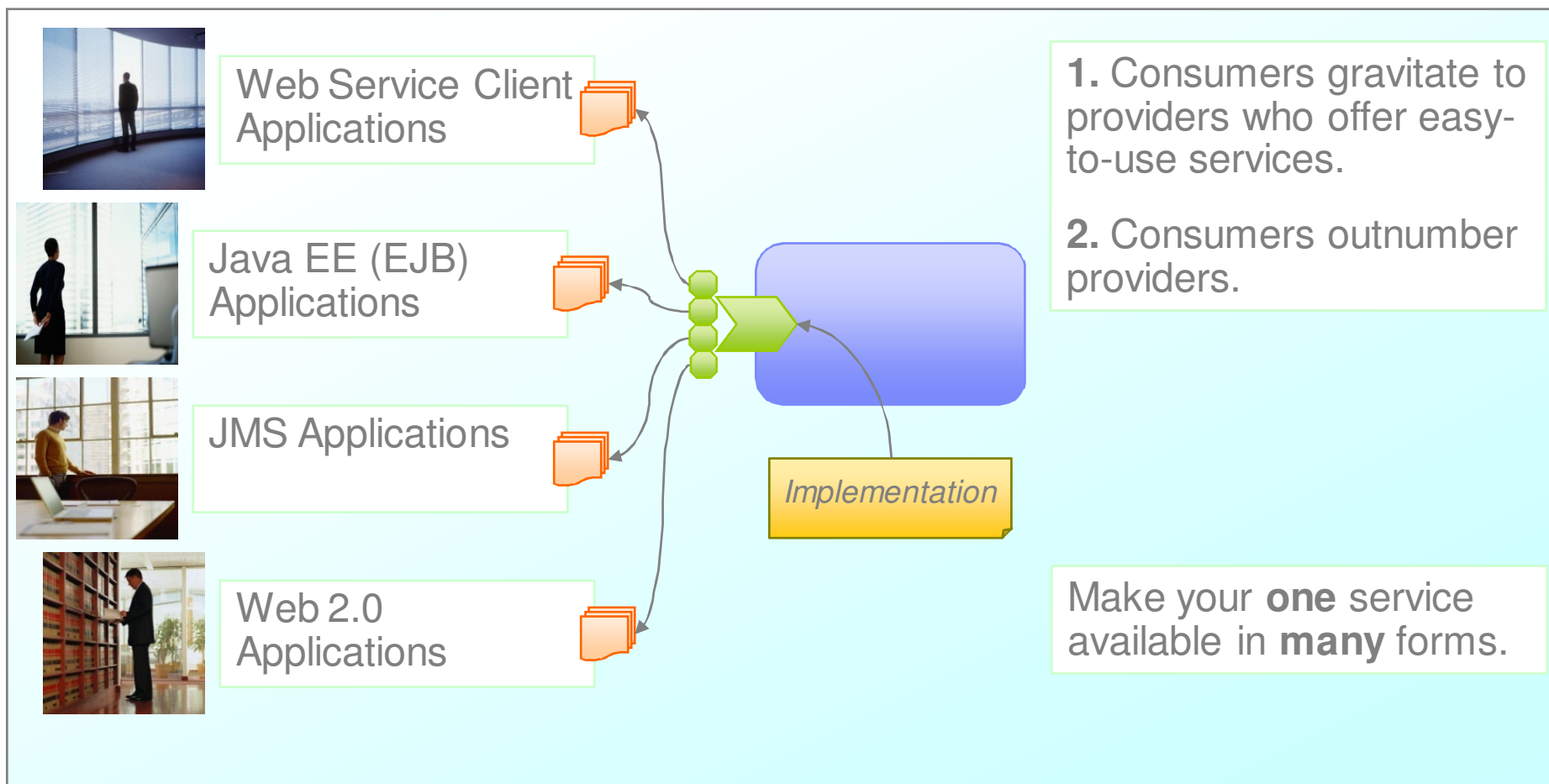
Code visualization

- Visualize Java classes, EJBs, JPA beans and web services.
- Diagrams include class, sequence and topic.
- RAD supports visualization.
- RSA supports full modeling.



Maximum Reach

- How do I enable lines of business with diverse skills, applications and programming models to share my service?





Bringing real services to life

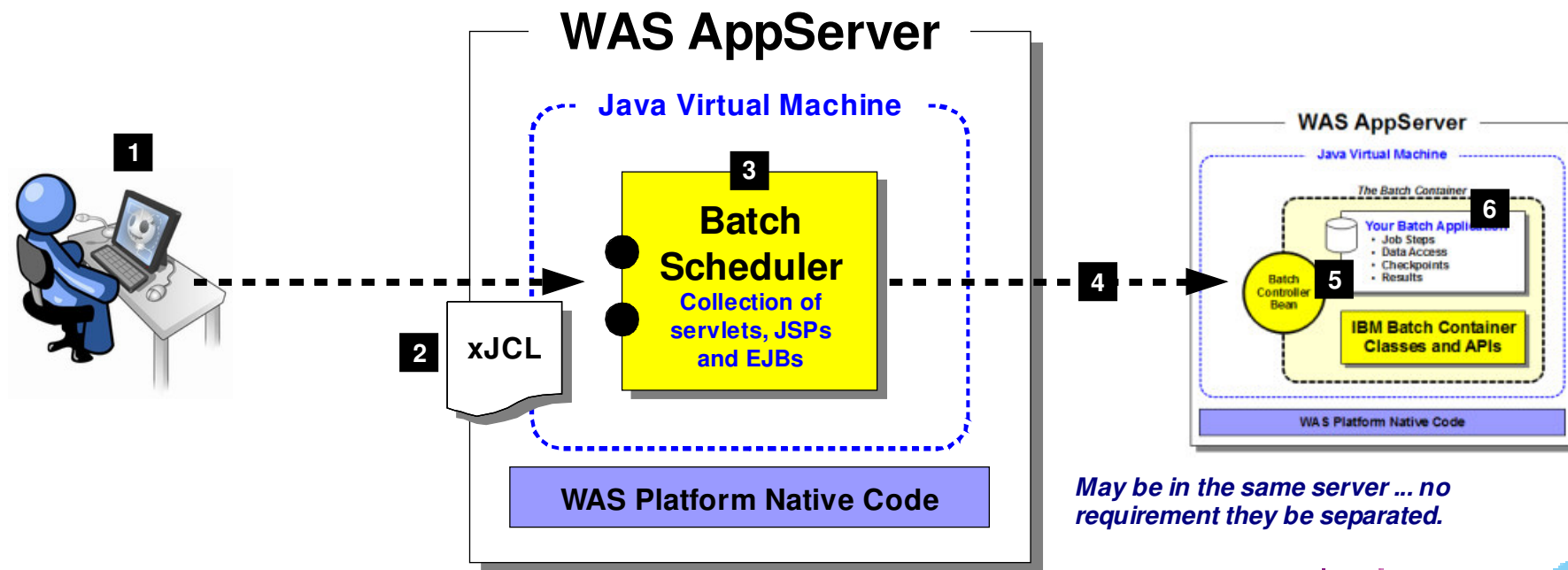
The screenshot illustrates the Eclipse IDE environment for developing Service Component Architecture (SCA) applications. Key components and annotations include:

- Enterprise Explorer:** Shows a project structure for `AccountServices` with source files like `Banking.java`, `BankingImpl.java`, `ChequingAccount.java`, `ChequingAccountImpl.java`, `SavingsAccount.java`, and `SavingsAccountImpl.java`. An annotation **Explore** is placed over this view.
- Code Editor:** Displays the implementation of `BankingImpl` with annotations **Implement** and **Assemble**. The code includes `@Service (Banking.class)`, `public class BankingImpl implements Banking`, and a `@Reference` for `ChequingAccount`.
- Service Component Architecture Diagram:** A diagram showing the assembly of `Bank` into `Chequing` and `Savings` components.
- Deployable composites:** A view showing the deployment of the `Bank` composite to a server. An annotation **Package** is placed over this view.
- Wizards:** A wizard for creating SCA artifacts, with an annotation **Create** placed over it.
- Service Component Architecture Configuration:** A configuration panel for validation rules, with an annotation **Configure** placed over it.
- Add and Remove Projects Dialog:** A dialog box for managing projects on the server, with annotations **Run** and **Debug** placed over it.
- Integrated Solutions Console:** A console for managing the application, with an annotation **Manage** placed over it.

WebSphere Application Server v7 Feature Pack for Modern Batch

Use RAD to build modern batch applications using the Modern Batch FeP on WAS v7.

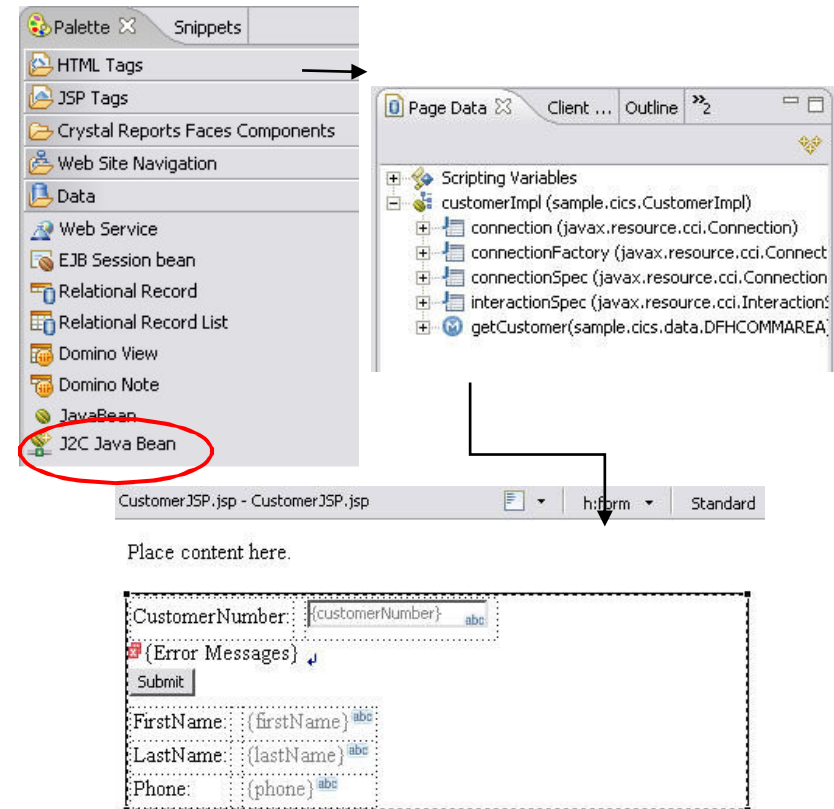
The modern batch FeP provides a Java batch programming model, job monitor and operational controls for compute intensive batch and OLTP workload execution.





Java Connector Architecture (JCA)

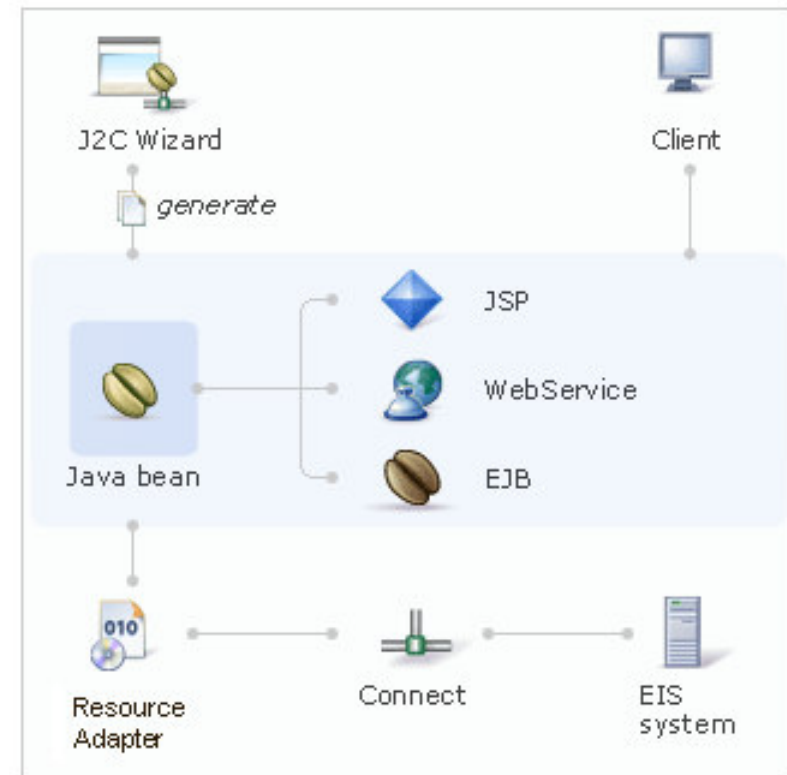
- Support for CICS ECI and IMS resource adapters
- CICS Transaction Gateway included (developer use)
- Page Designer integration
 - ▶ Drag and drop J2C beans from the palette
- Enhanced Editing Support
 - ▶ Wizard based guidance to expose J2C InteractionSpec properties as input arguments
 - ▶ E.g.: User name, password
- Wizard Session Recording
 - ▶ Create Ant build file that captures the user interaction with the J2C Wizards to allow command line based regeneration of J2C Java Beans and the Language Data Beans
- COBOL, C, MFS and PL/I as supported native languages.





WebSphere Application Adapters

- Tools supporting development time adapters for:
 - ▶ SAP
 - ▶ PeopleSoft Enterprise
 - ▶ Siebel
 - ▶ Oracle E-Business Suite
 - ▶ JD Edwards
- Outbound support for WAS Adapters
 - ▶ J2C Java bean wizard
 - ▶ Live connection to discover objects and methods
- Edit data type's schema
 - ▶ Refactoring and regeneration of Java data binding and J2C bean
- Support deploy options for new adapters in the existing deploy wizard
 - ▶ Simple JSP, Faces JSP, EJB, Web Services



Agenda

Introduction

Building Clients

Building Services

Deployment and Testing

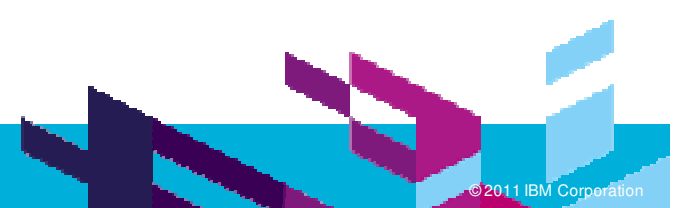
Problem Determination

Life in the Clouds

The Software Delivery Lifecycle

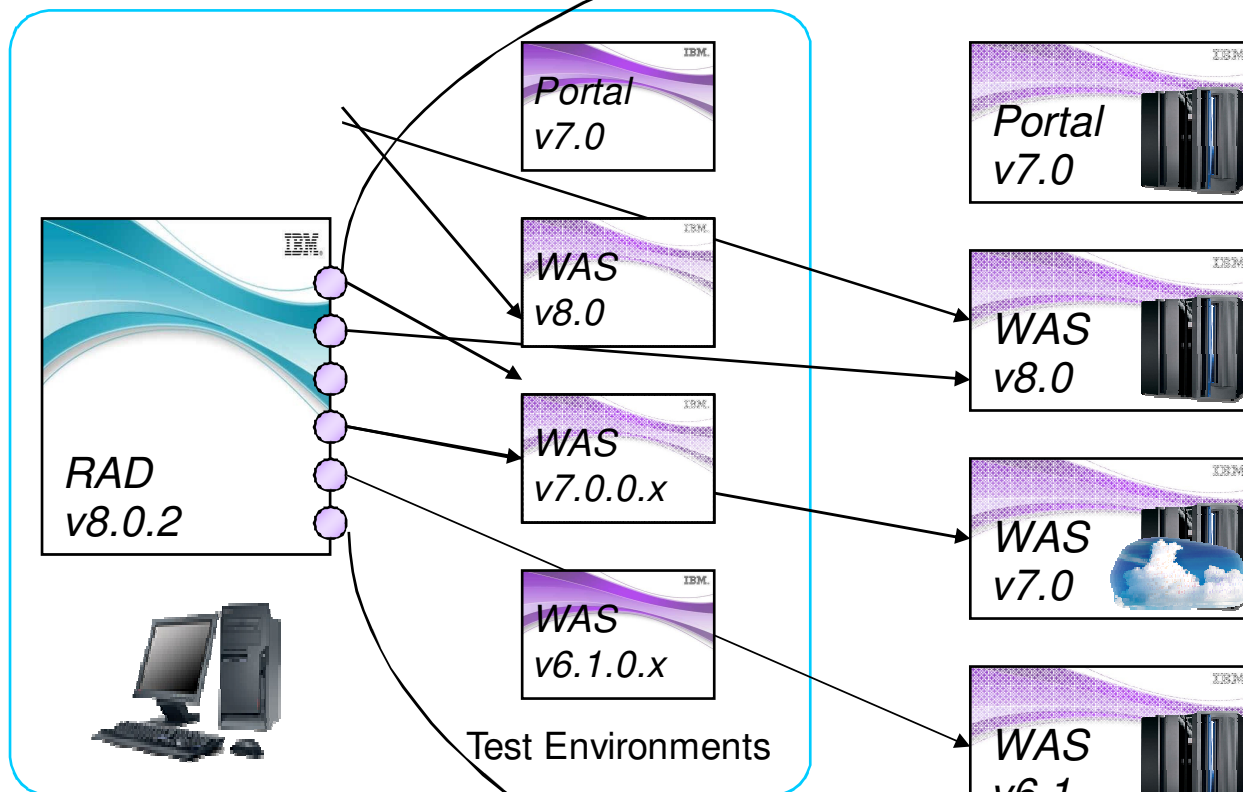
Epilogue

- *WAS 6.0*
- *WAS 6.1 [TE]*
- *WAS 7.0 [TE]*
- *WAS 8.0 [TE]*
- *Portal Server 6.1*
- *Portal Server 7.0 [TE]*





WebSphere Application Server WebSphere Portal Server



Feature Packs

+ Web 2.0	+ SCA
+ OSGi & JPA 2.0	+ XML
+ Modern batch	+ CEA

+ Web 2.0
+ EJB 3.0
+ Web services

+ Web 2.0

- Remote deployment to all servers.
- Universal Test Client to drive Java EE apps
- Ajax test server included for Web apps

No TE.

Agenda

Introduction

Building Clients

Building Services

Deployment and Testing

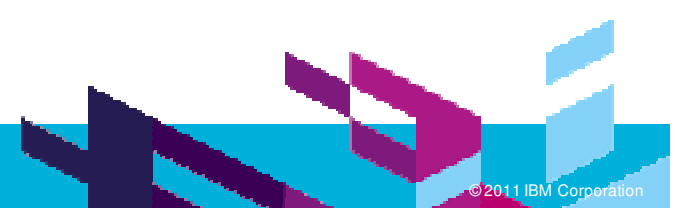
Problem Determination

Life in the Clouds

The Software Delivery Lifecycle

Epilogue

- *Static analysis*
- *Code coverage*
- *Dynamic profiling*
- *Debugging*

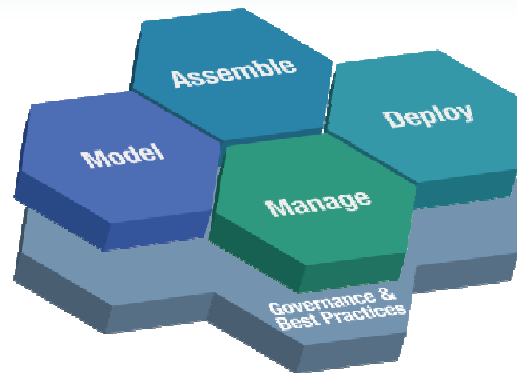




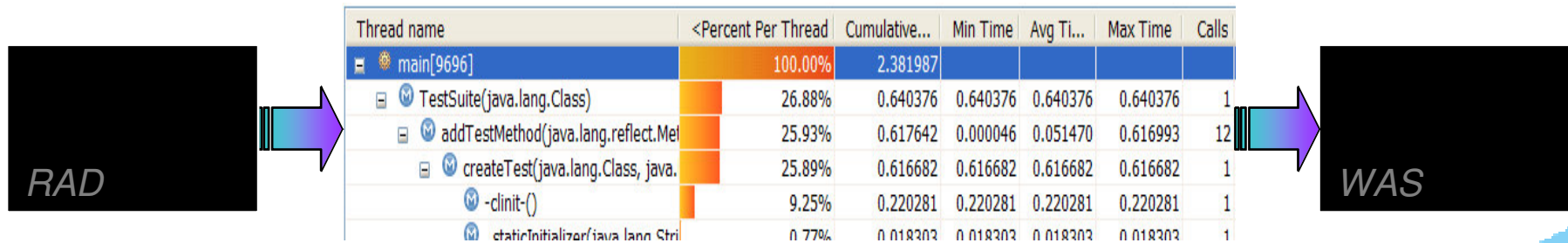
Problem determination tools

Tools help you find and rectify anti-patterns, memory issues, performance bottlenecks and other problems that can plague the development lifecycle.

Static analysis rules and line level code coverage help find potential or actual problems in the code and the tests for it.



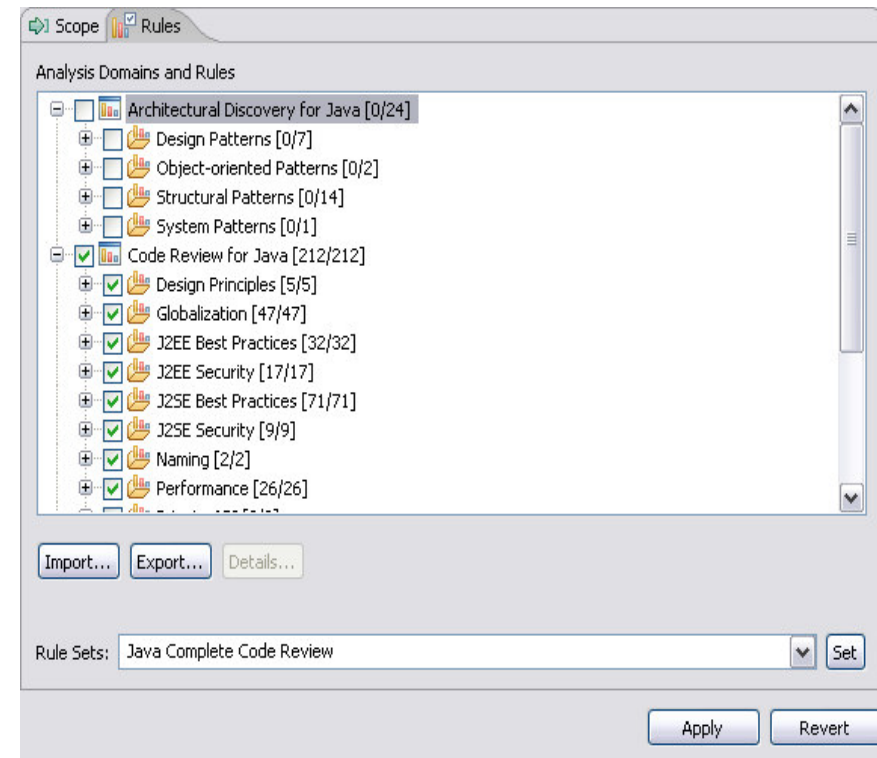
Debugging and profiling tools help find memory, performance and threading problems in the running code.





Code quality assurance

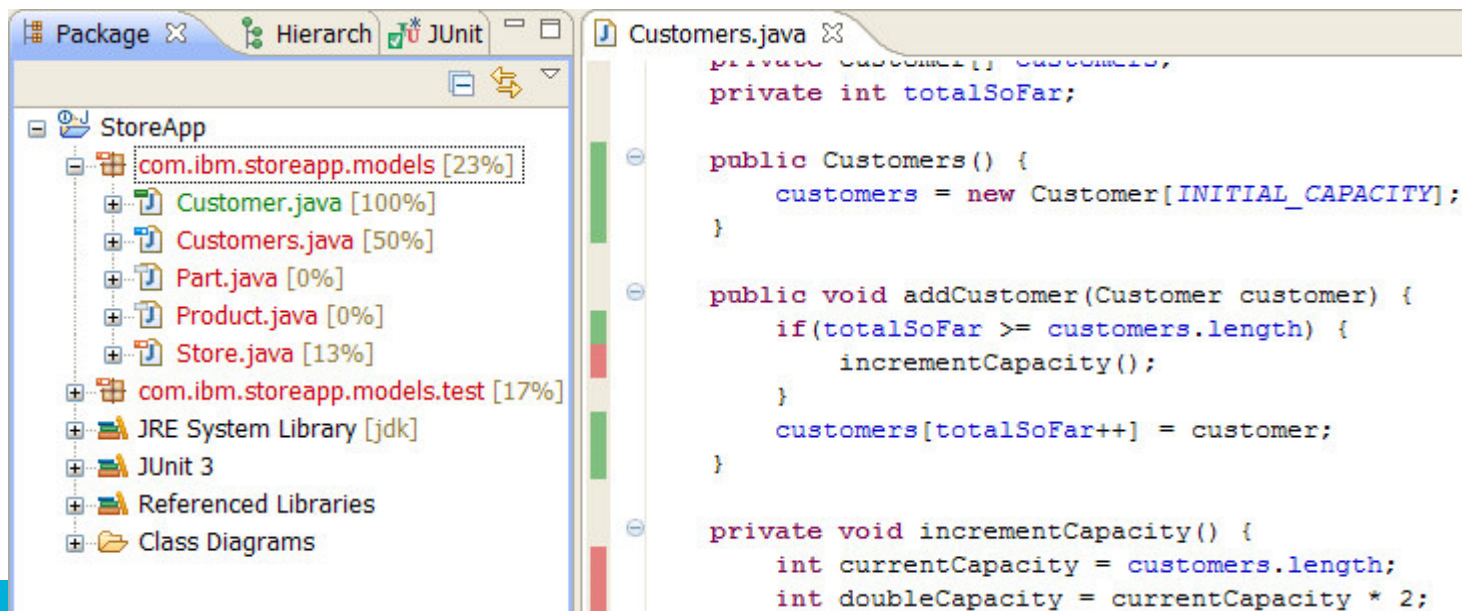
- Analyze Project/Workspace to find problems of various types:
 - ▶ Globalization
 - ▶ J2EE & J2SE Best Practices
 - ▶ J2EE & J2SE Security
 - ▶ Naming
 - ▶ Performance
 - ▶ Private API
- Over 200 rules.
- Produce interactive reports with violations and metrics
- Provides explanations, examples, and quick fixes for problems
- Allow users to create, enable and disable validation rules
- Allow users to create their own rules based on rule templates
 - ▶ Complete Code Review





Dynamic code coverage

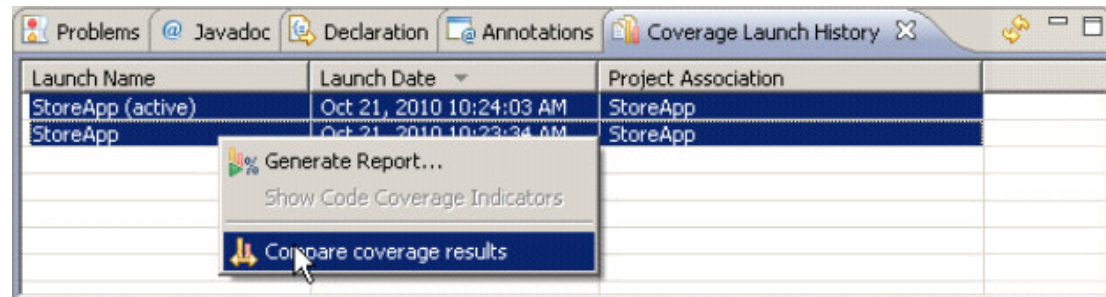
- Get detailed information on code paths traversed – or not – during program execution
- As users interact with a web app, the user will see coverage statistics get dynamically updated as they run through certain scenarios (instead of waiting for user's app to complete).
- Powerful tool to help determine xUnit test coverage, potential dead code
- Command line and Ant capability for build integration
 - JUnit, code coverage data collection and html report generation





Code coverage comparisons

- Select any two code coverage reports and request a comparison.
- Eclipse and HTML comparison reports are available.
- Start with aggregate comparison data and drill in to find the hot spots.



Code Coverage Comparison Summary
Coverage comparison report for StoreApp

Element	Coverage	Covered Lines	Total Lines
[StoreApp] com.ibm.storeapp.models.test	17%	11	64
TestProductsImproved.java	0%	0	23
TestProducts.java	0%	0	19
TestCustomerImproved.java	100% (100)	11 (11)	11
TestCustomer.java	0% (-100)	0 (-11)	11
[StoreApp] com.ibm.storeapp.models	31% (8)	27 (7)	88
Store.java	13%	7	54
Product.java	0%	0	6
Part.java	0%	0	8
Customers.java	100% (50)	14 (7)	14
Customers	100% (50)	14 (7)	14
Customer.java	100%	6	6

The numbers in parenthesis show the change in the report values between the current and last report.



Code coverage comparisons – HTML

Code Coverage Comparison Report

Overall Summary	Code Coverage Summary	Report Info
Total Packages: 2 Total Source Files: 9 Total Types: 9 Total Methods: 32 Total Blocks: 250 Total Lines: 152	Type Coverage: 44 % Method Coverage: 38 % (4%) Block Coverage: 22 % (3%) Line Coverage: 25 % (5%)	Generation Date: Oct 21, 2010 10:25:02 AM Analysis Date: Oct 21, 2010 10:23:35 AM - Oct 21, 2010 10:24:04 AM

Packages	Covered Lines	Total Lines	% Coverage
[StoreApp] com.ibm.storeapp.mo	31	100	31%
[StoreApp] com.ibm.storeapp.models.test	11	64	17%
[StoreApp] com.ibm.storeapp.models	27 (7)	88	31% (8)

[1287671043203-StoreApp-org.eclipse.jdt.junit.launchconfig.analysis, 1287671012984-StoreApp-org.eclipse.jdt.junit.launchconfig.analysis]

Performance and memory diagnosis

Analyze

- ▶ Tables and graph views to analyze profiling data
- ▶ Tune Java code to address performance & memory issues
- ▶ Timing
- ▶ Memory usage statistics

- ▶ Live heap instance data

Launch WAS in Profile Mode

- ▶ Execution time
- ▶ Memory usage
- ▶ Threads

Profiling Quick Start wizard guides you thru common profiling scenarios and configures initial settings appropriately.

Heap instance data round-tripping

The screenshot displays two Eclipse IDE windows. The top window, titled 'Execution Statistics', shows a table of performance data for various packages. The bottom window, titled 'UML2 Trace Interactions', shows a sequence diagram for class interactions.

>Package	Base Time (sec...)	Average Base ...	Cumulative Tim...	Calls
com.ibm.ejs.ras	6.295418	0.006295	6.295418	1000
com.ibm.library.datastore	0.070146	0.000045	19.505424	1548
com.ibm.library.datastore.jdbc	0.839347	0.000276	60.941807	3043
com.ibm.library.filters	0.096694	0.000178	68.986425	542
com.ibm.library.model	0.342220	0.000033	64.471738	10342
com.ibm.library.servlets	0.391820	0.000759	68.516333	516
ListPatronItems	0.391820	0.000759	68.516333	516
displayItem(com.ibm.libra	0.330664	0.000661	28.270569	500
displayPatrons(java.util.<	0.059008	0.011802	42.280348	5
displaySystemError(java.	0.000000	0.000000	0.000000	0
doGet(javax.servlet.http	0.000424	0.000085	68.516116	5
doPost(javax.servlet.httj	0.000000	0.000000	0.000000	0
ListPatronItems()	0.000133	0.000133	0.000217	1
processRequest(javax.se	0.001590	0.000318	68.515691	5

The UML2 Trace Interactions window shows a sequence diagram for PID 1204. It features lifelines for ListPatronItems, HttpServlet, Appender, and Object. Interactions include ListPatronItems() and HttpServlet() calls. A callout box shows a timing diagram with a value of 95.265 μs between Min and Max markers.

Beyond Eclipse

New in v8.0.1



Debug tools

- Java EE / Web application debugging
 - ▶ Advanced debug support for WebSphere Application Server, including EJBs, SCA components, JSP pages and servlets.
- XSLT 2.0 debugger
 - ▶ The XSLT debugger enables you to detect and diagnose errors in XSLT Transformations
- Step-by-Step Debugging
 - ▶ Control debugging at a higher level. Provide user the ability to stop on entry to every object loaded by the JVM or server.
 - ▶ Supported object types: Web objects, XSLT
- Logical display of complex variable types
 - ▶ Display variables in a logical manner, allowing the user to examine variables more easily.
 - ▶ Supported complex variable types: JSP 2.0 Implicit object variables, EMF, DOM
- Java and mixed language debugger
 - ▶ Seamless debugging of calls between Java and other language programs, e.g. SCA, C++
- Debugger for WebSphere Jython Scripts
- Collaborative debug

Agenda

Introduction

Building Clients

Building Services

Deployment and Testing

Problem Determination

Life in the Clouds

The Software Delivery Lifecycle

Epilogue

- *Developing and deploying to WebSphere Application Server on the IBM Smart Business Development and Test on the Cloud.*

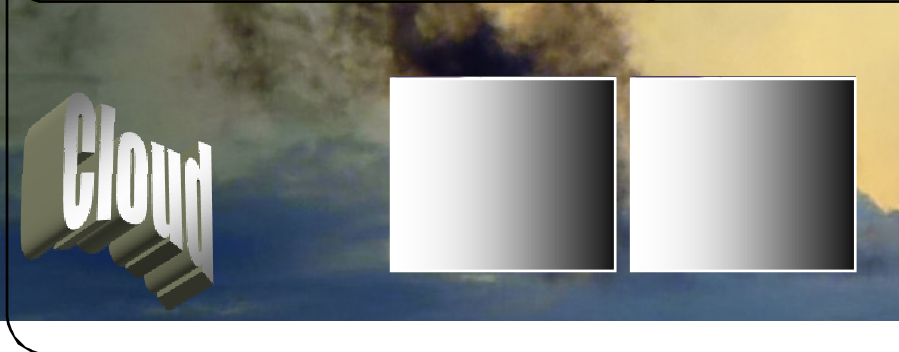


The Cloud Client Toolkit for RAD and RSA



RAD and RSA plus the cloud client toolkit

- Running on the desktop.
- Provisioning and using WAS on the cloud.



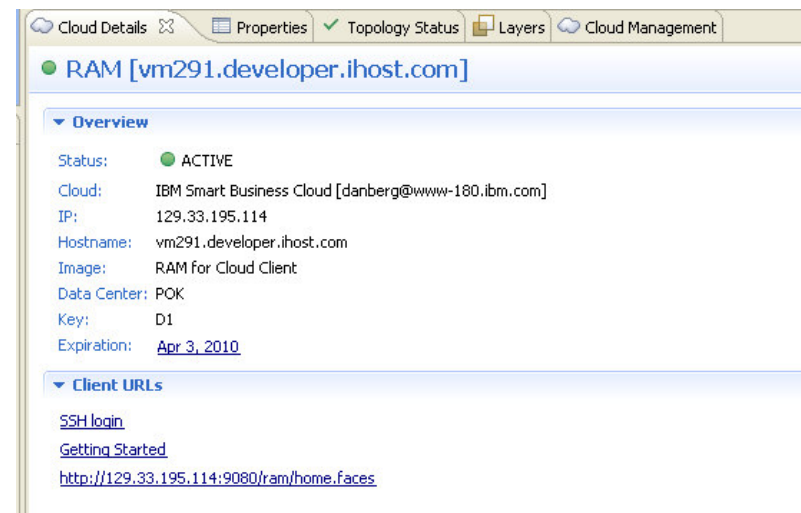
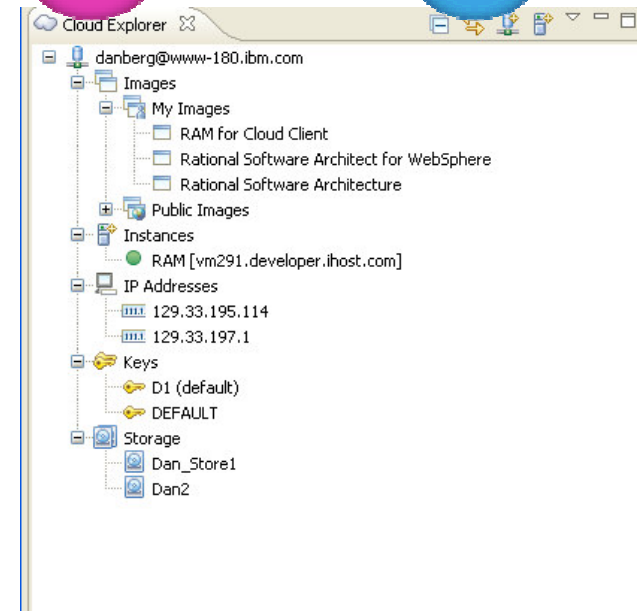
IBM Smart Business Development and Test on the IBM Cloud (IBM hosted enterprise cloud)

Beyond Eclipse

New in v8.0

Cloud Client

- Work with the IBM Smart Business Development and Test on the Cloud from the comfort of the IDE.
- Search for public or captured images.
- Manage...
 - ▶ Images
 - ▶ Instances
 - ▶ IP addresses
 - ▶ Keys
 - ▶ Storage units
- Provision and discover instances.
- Capture new images.

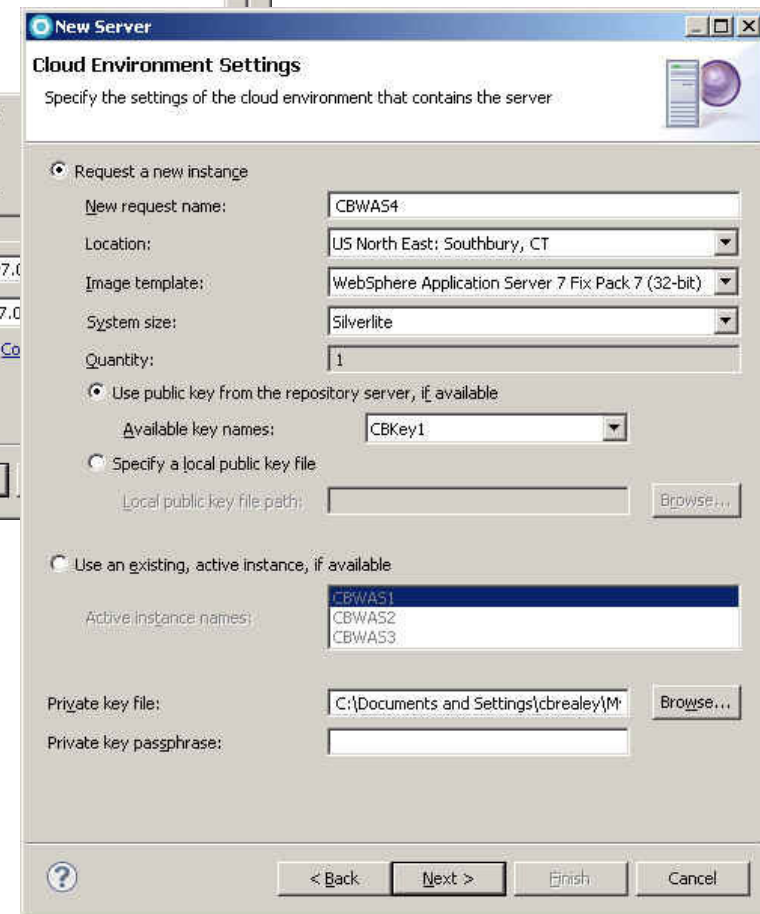
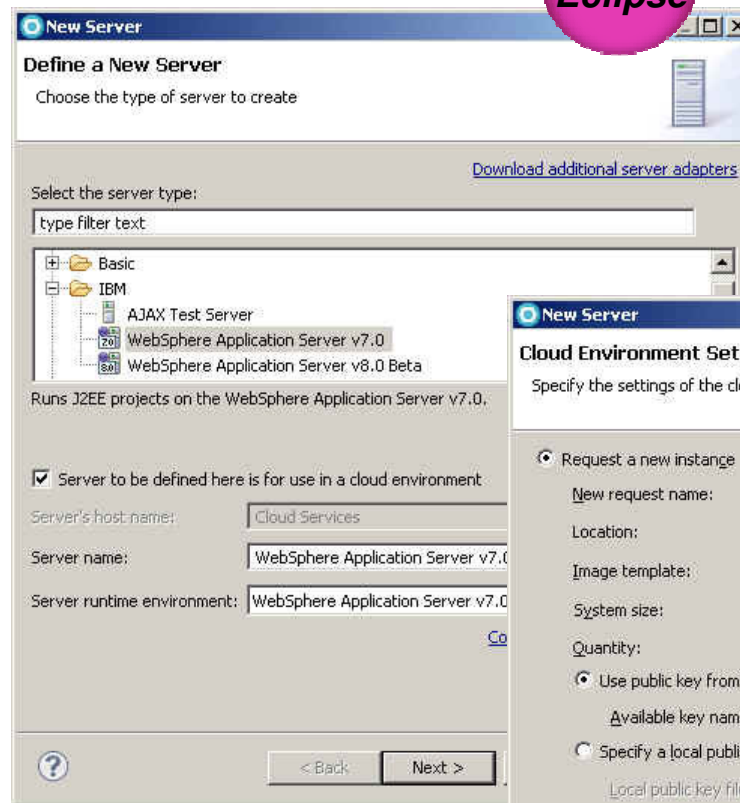


Beyond Eclipse

New in v8.0

Cloud Server Tools

- Provision or reconnect to WebSphere Application Servers running on the IBM Smart Business Development and Test on the Cloud.
- Choose your data center, desired WAS image, system size, provide your key, and go!
- Resulting server in RAD or RSA is essentially the same as a remote WAS.



Agenda

Introduction

Building Clients

Building Services

Deployment and Testing

Problem Determination

Life in the Clouds

The Software Delivery Lifecycle

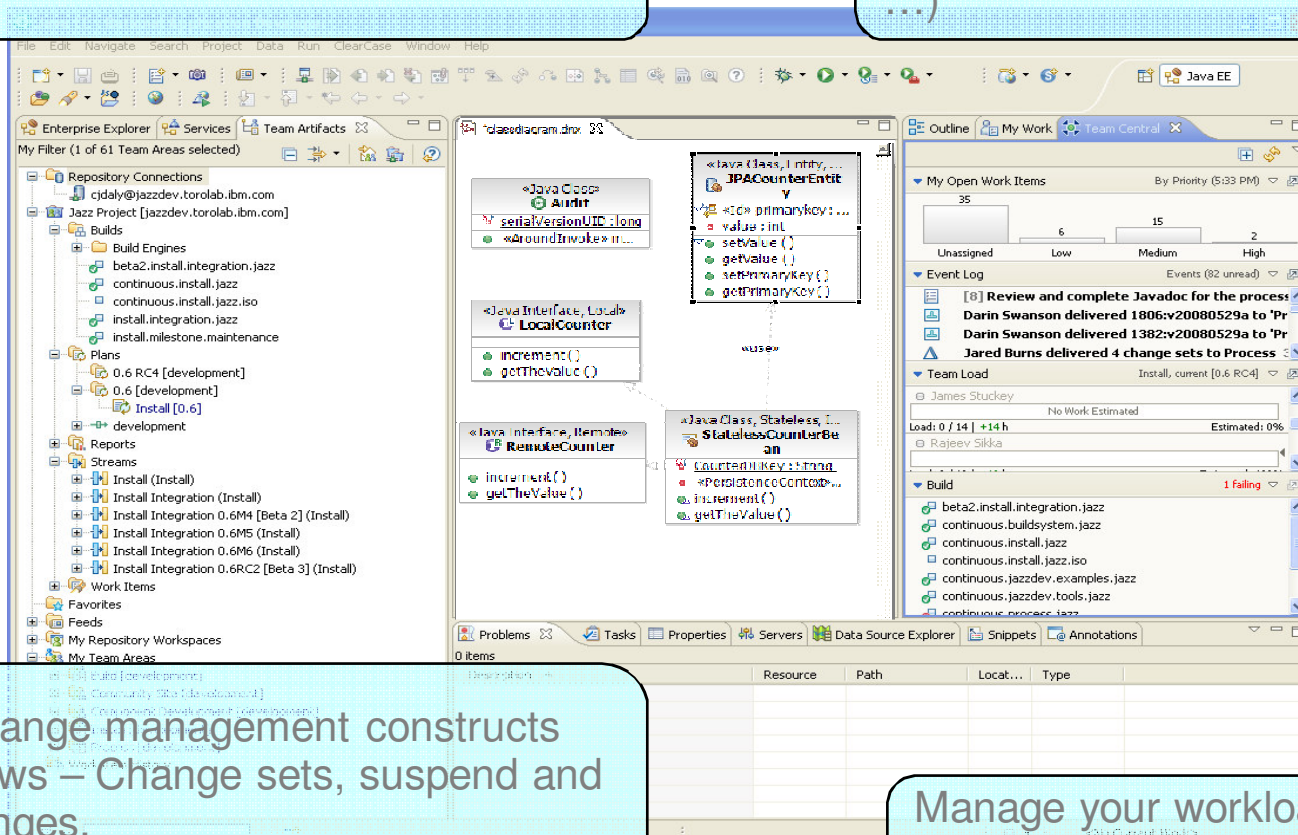
Epilogue

- *Rational Team Concert*
- *Collaborative debugging*
- *Integrated code coverage*
- *Sharing the shell*

Rational Team Concert integrated into the RAD / RSA shell

Work with your development artifacts in the 'Team Artifacts' view

Develop in RAD and RSA perspectives (Modeling, Java EE, ...)



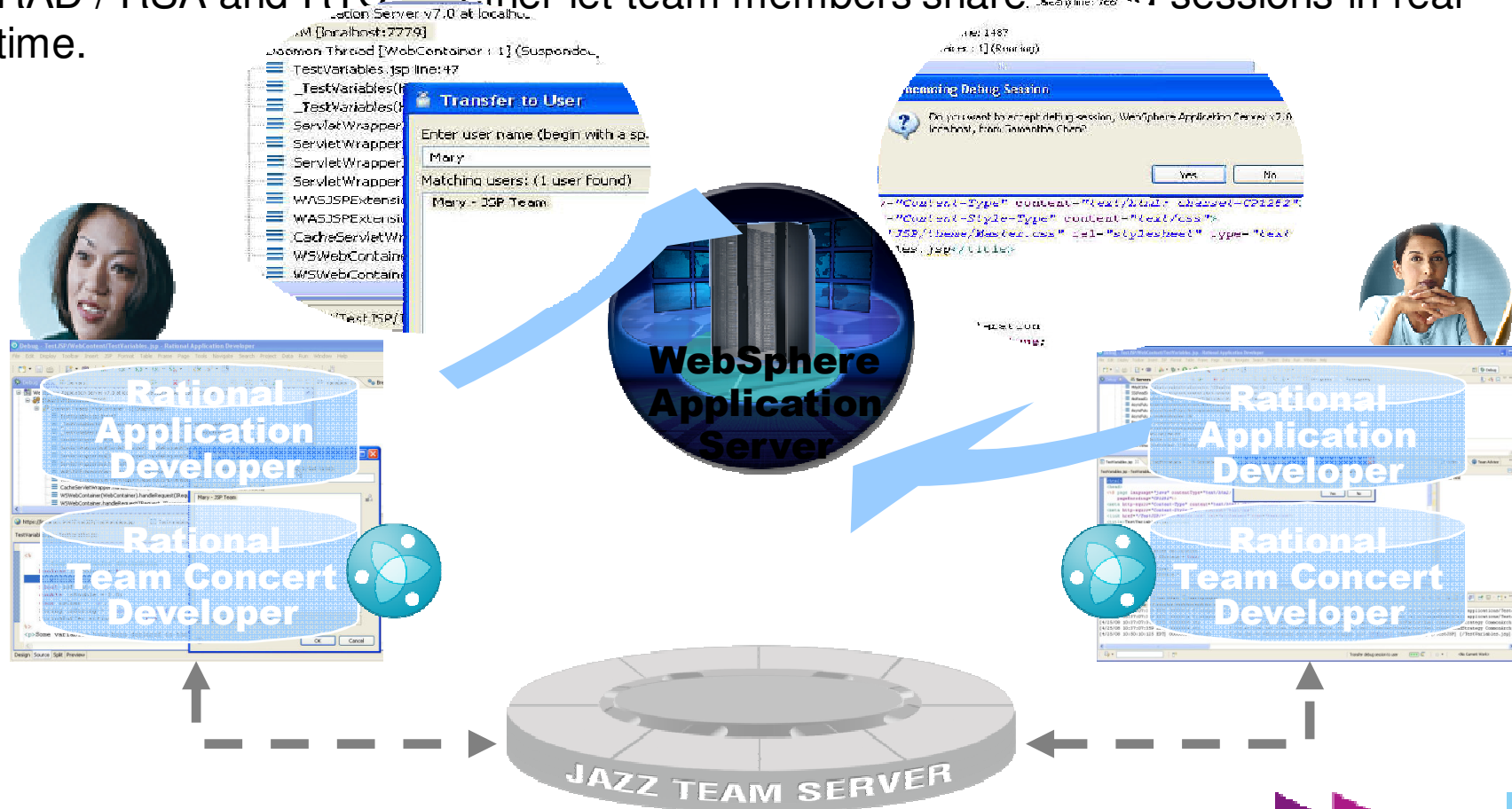
Use Jazz change management constructs and work flows – Change sets, suspend and resume changes. Workspace hosted on the Jazz server.

Manage your workload in the 'Team Central' and 'My Work' views



Debugging is a team sport

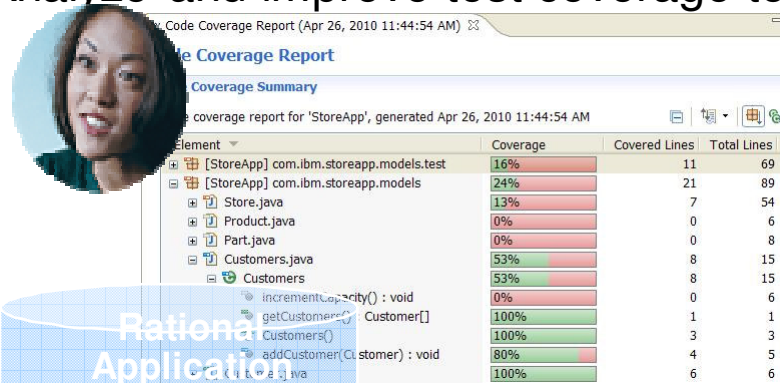
- RAD / RSA and RTC together let team members share debug sessions in real time.





Code quality is a team sport

- Share code coverage information from automated tests
- Analyze and improve test coverage to maximize code quality



```

public void addCustomer(Customer customer) {
    if(totalSoFar >= customers.length) {
        incrementCapacity();
    }
    customers[totalSoFar++] = customer;
    for (int i = 0; i < 5000; i++)

```

Lines 18 to 20: Covered

Rational Application Developer

Rational Team Concert Developer

Rational Application Developer

Rational Team Concert Developer





Code coverage integration with RTC

- RTC Build details viewer extension – RAD and Web browser
 - ▶ Show summary of code coverage statistics
 - ▶ Additional Code Coverage tab to show detailed coverage statistics report
- Integrated work item search and creation
- Import to local workspace for rich viewing in navigator and source views

Build StoreApp Project build w/ Code Coverage 20100421-1319

Completed

Duration: 1 minute, 2 seconds
 Start Time: April 21, 2010 4:19:44 PM
 Completed: April 21, 2010 4:20:47 PM

Status Trend: [Progress Bar]

Reported Work Items

None reported against this build

Buttons: Create a new work item, Associate an existing work item

Coverage: **type: 40%, method: 32%, block: 19%, line: 20%**

JUnit: 1 test, 0 failures, 0 errors

Repository Workspace: Build Stream Workspace

Work Items: None included

Associated Release

Released builds are available as choices in the work item "Found In" field.

Buttons: Create a release to associate with this build

Navigation: Overview | Activities | Compilation | JUnit | Downloads | Logs | Coverage

coverage

Customers.java

Customers	50%
incrementCapacity() : void	0%
getCustomers() : Customer[]	100%
Customers()	100%
addCustomer(Customer) : void	75%

Customers.java

Customers	50%	7	14
incrementCapacity() : void	0%	0	6
getCustomers() : Customer[]	100%	1	1
Customers()	100%	3	3
addCustomer(Customer) : void	75%	3	4
Customer.java	100%	6	6

Navigation: Overview | Activities | Compilation | JUnit | Downloads | Logs | Coverage

Agenda

[Introduction](#)

[Building Clients](#)

[Building Services](#)

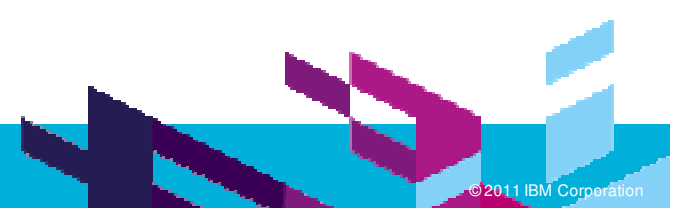
[Deployment and Testing](#)

[Problem Determination](#)

[Life in the Clouds](#)

[The Software Delivery Lifecycle](#)

[Epilogue](#)



Resources

- RAD for WebSphere
<http://www-01.ibm.com/software/awdtools/developer/application/index.html>
- RAD Standard Edition for WebSphere software
<http://www-01.ibm.com/software/rational/products/developer/application/standard/>
- RAD Wiki
<http://www.ibm.com/developerworks/wikis/display/rad/Home>
- RAD v8 Redbook (*this and others available via the RAD Wiki*)
<http://www.redbooks.ibm.com/Redbooks.nsf/RedpieceAbstracts/sg247835.html>
- What's New in RAD 8.0.1
<http://www-01.ibm.com/support/docview.wss?uid=swg27018924#801>
- What's New in RSA 8.0.1
<http://www-01.ibm.com/support/docview.wss?uid=swg27018759>

Copyright and Trademarks

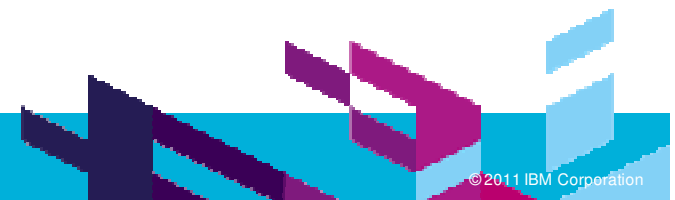
© IBM Corporation 2011. All Rights Reserved.

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.

QUESTIONS



www.ibm.com/software/rational





www.ibm.com/software/rational

© Copyright IBM Corporation 2011. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. IBM, the IBM logo, Rational, the Rational logo, Telelogic, the Telelogic logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.