

WebSphere Application Server Developer Tools

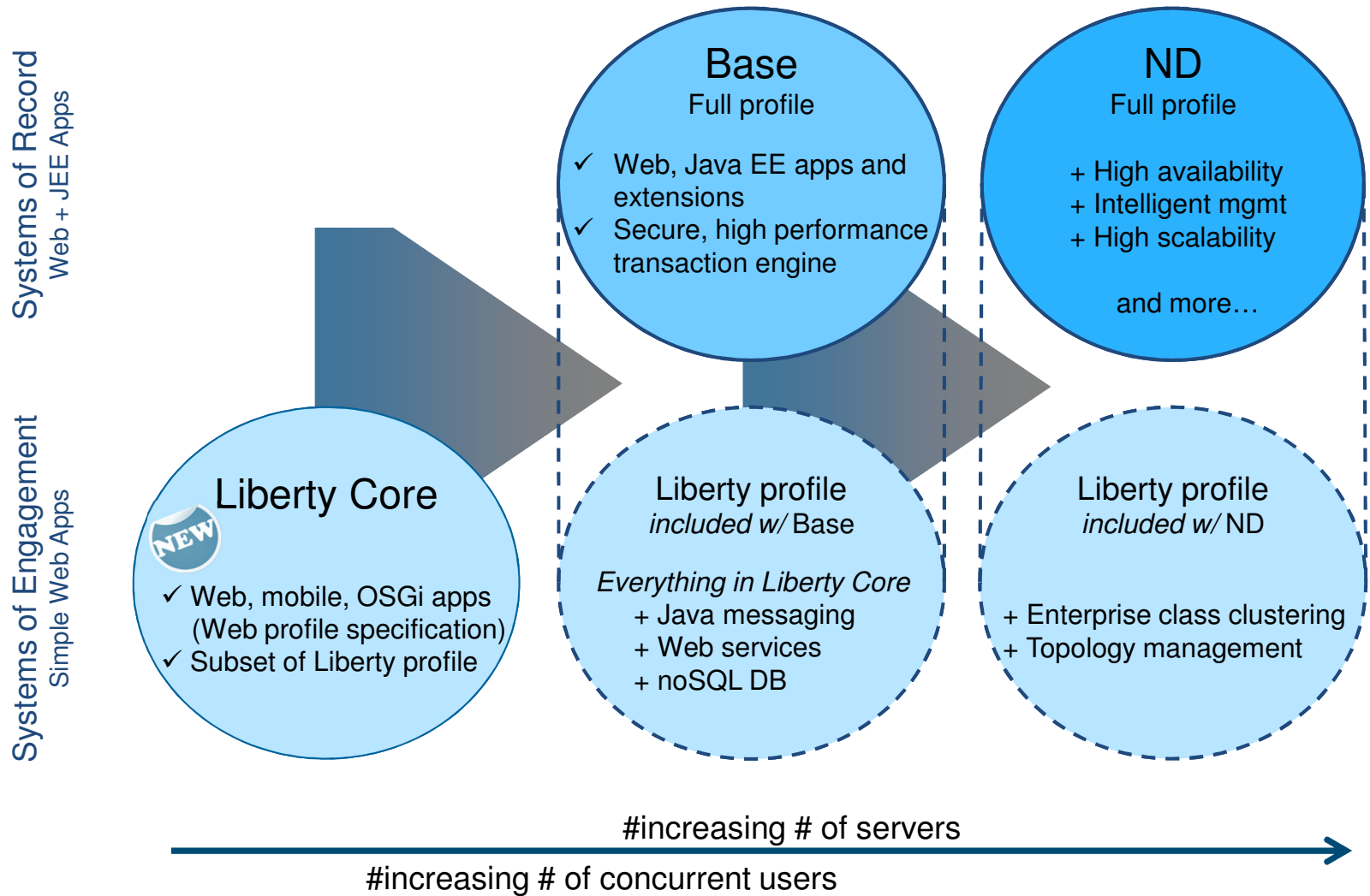
Anita Rass Wan,
WAS Product Manager
anitar@ca.ibm.com



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WebSphere Application Server Editions



Right fit development environment

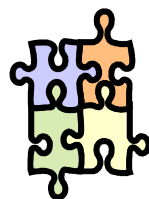
Tools, Liberty Repository, Ecosystem



WebSphere Application Server Developer Tools
Wizards, content assists, drag&drop capability
needed to quickly develop applications



Liberty Repository
Get the technology you need, when you need it



Ecosystem environment
Your choice of tools to compliment your
software lifecycle

WebSphere Application Server Developer Tools

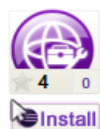


IBM WebSphere Application Server V7.0 Developer Tools for Eclipse Juno V8.5.5 Member Company

An eclipse Juno SR2 IDE for building and deploying Java EE and Web 2.0 applications to WebSphere Application Server V7.0. For more information about installing this version of...

[Application Development Frameworks](#) | [Application Server](#) | [IDE](#) | [J2EE Development Platform](#) | [Team Development](#) | [Tools](#) | [Web](#) | [Web Services](#) | [XML](#)

Last Updated on 11 September 2013 by Eric D. Peters

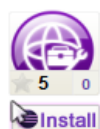


IBM WebSphere Application Server V8.0 Developer Tools for Eclipse Juno V8.5.5 Member Company

An eclipse Juno SR2 IDE for building and deploying Java EE, OSGi and Web 2.0 applications to WebSphere Application Server V8.0. For more information about installing this...

[Application Development Frameworks](#) | [Application Server](#) | [IDE](#) | [J2EE Development Platform](#) | [Mobile and Device Development](#) | [Team Development](#) | [Tools](#) | [Web](#) | [Web Services](#) | [Web, XML, Java EE and OSGi Enterprise Development](#)

Last Updated on 11 September 2013 by Eric D. Peters

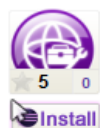


IBM WebSphere Application Server V8.5.5 Developer Tools for Eclipse Juno V8.5.5 Member Company

An eclipse Juno SR2 IDE for building and deploying Java EE, OSGi and Web 2.0 applications to WebSphere Application Server V8.5.5. For more information about installing this...

[Application Development Frameworks](#) | [Application Server](#) | [IDE](#) | [J2EE Development Platform](#) | [Mobile and Device Development](#) | [Team Development](#) | [Tools](#) | [Web](#) | [Web Services](#) | [Web, XML, Java EE and OSGi Enterprise Development](#)

Last Updated on 11 September 2013 by Eric D. Peters



IBM WebSphere Application Server V8.5.5 Liberty Profile Developer Tools for Eclipse Juno V8.5.5 Member Company

An eclipse Juno SR2 IDE for building and deploying Java EE, OSGi and Web 2.0 applications to WebSphere Application Server V8.5.5 Liberty Profile. For more information about...

[Application Development Frameworks](#) | [Application Server](#) | [IDE](#) | [J2EE Development Platform](#) | [Mobile and Device Development](#) | [Team Development](#) | [Tools](#) | [Web](#) | [Web Services](#) | [Web, XML, Java EE and OSGi Enterprise Development](#)

The tools are the same in each version except it includes version specific server

WAS v7.0	WAS v8.0	WAS v8.5.5	WAS v8.5.5 Liberty Profile
WebSphere Application Server Developer Tools			

Tools for the Developer Desktop



RAD

Install: IM

WebSphere Integration

- Support for WAS v6.1
- Test Environments for WAS v7.0, v8.0, v8.5
- Portal Tools / Portal Svr supt
- Profile applications on WAS
- Deploy to WebSphere or Portal instances in IBM SBDT cloud
- IWD 3.1, 3.0

Problem Determination

- Code visualization - class, sequence and topic diagrams
- Static analysis (code review)
- Code coverage: optimize unit testing
- Profiling

Team Productivity

- RTC integration
- Collaborative debug
- Collaborative code analysis

Extended Programming Model Support

- Advanced support for J2EE 1.4 and earlier:
 - EJB & Web Services deploy
 - DD editors
 - JAX-RPC
- Web:
 - Page designer
 - Struts, JSF support
 - iWidget support

Enterprise Connectivity

- J2C (EIS) tools
- CICS, and IMS Adapters
- Adapters for SAP, Siebel, JDE, Oracle, PeopleSoft

Programming Model Support

- SCA
- Java (WAS) Batch
- SIP/CEA
- XML (feature pack)

WDT

Install: Eclipse update site

JEE Tools

- Advanced support for JEE 5+
- DD editors, enhanced project explorer, additional validation

Web Tools

- Advanced web development tools
- Rich page (WYSIWYG) editor for HTML, JSP
- Web 2.0 and Mobile support

WebSphere Integration

- Support for WAS v7.0, v8.0, v8.5.5
- Support for WAS 8.5.5 Liberty profile
- Publish, start/stop the server
- Debug Jython/wsadmin scripts

WAS Extensions Support

- Binding and extension editors
- Support for non-spec extensions

OSGi Tools

- Full creation and editing support
- Blueprint editor and validation
- Visual Bundle Explorer

Liberty Integration

- Publish, start/stop the server
- Edit & manage server configuration

Eclipse (WTP, DTP)

Programming Model Support

- Basic creation, editing, and validation support for JEE applications:
 - Web, XML, JPA, EJB, EAR
- Database tools

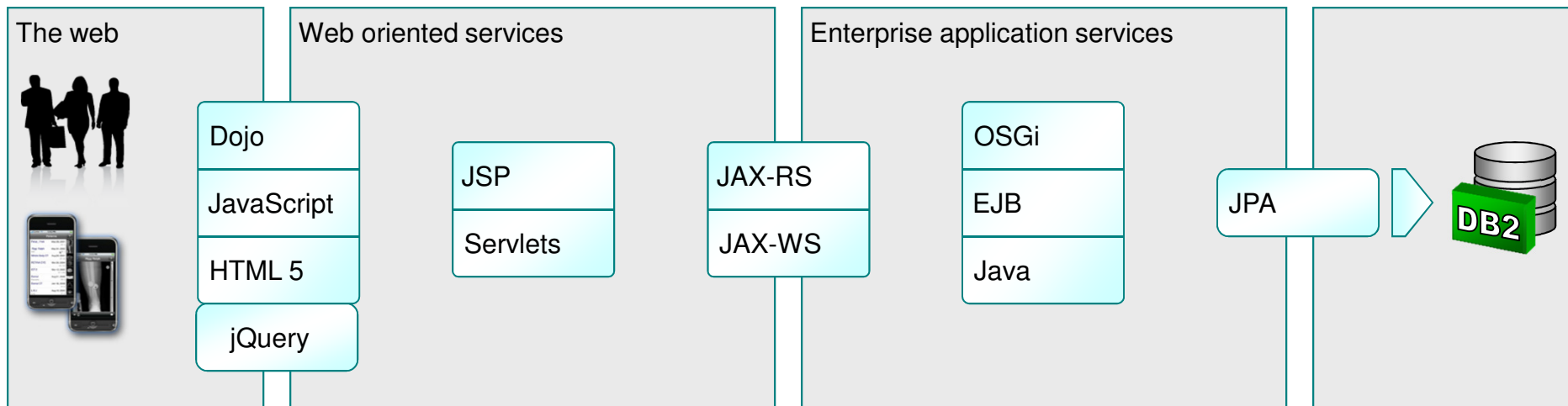
WDT adds support for Mac, possibly with exception of WebSphere Integration

WDT: The Right Tools for the Job, With Added Support

A cost effective IDE focused on web application and modern service development



Design web, Java EE and OSGi applications with persistence

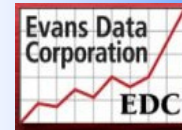


Available from the Eclipse Marketplace

WebSphere foundation

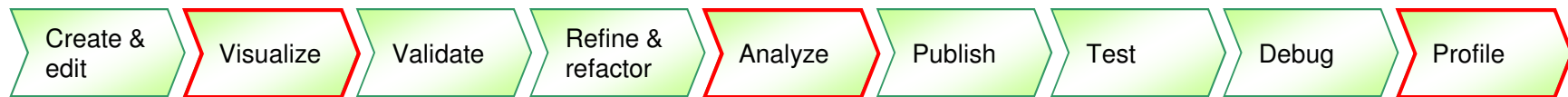
Public and Private Clouds

Enterprise Application Development with RAD

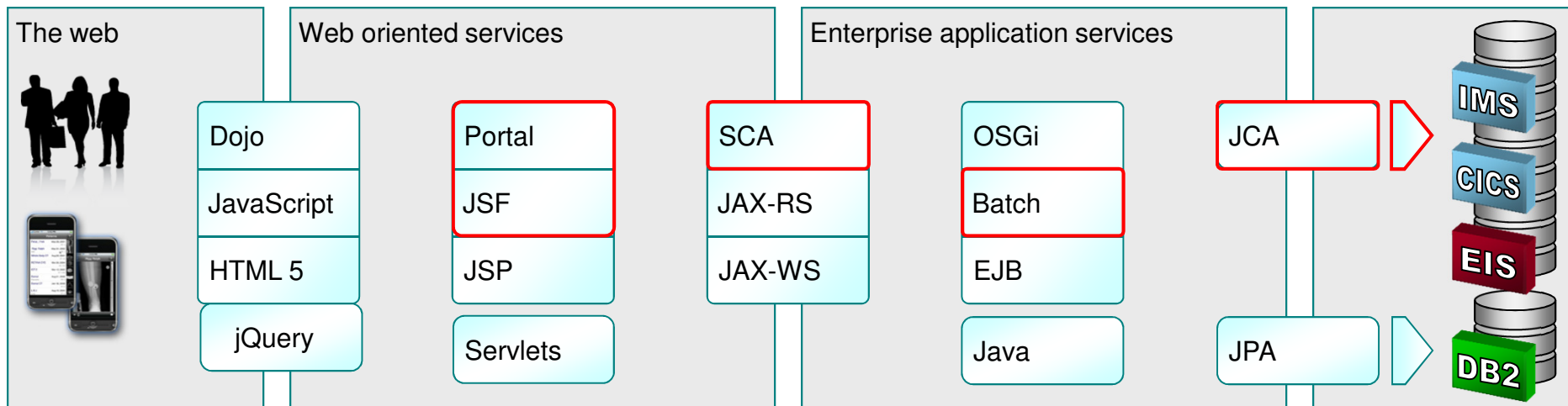


2012 Evans Data
IDE Users Choice Award
6 years in a row!

Optimize team development of robust, high quality, enterprise integrated applications



Integrate the enterprise to the social web using state of the art technology



Collaborate with agility, exploiting modern infrastructure and the Cloud



WAS v8.5.5 Liberty Profile “Enhanced”



WAS v8.5.5 delivers significant enhancements to Liberty profile, including new programming models, administration, qualities of service and development tools

Dynamic Server Profile
Not static like Web Profile; configured by app at a fine-grained level

“Developer First” Focus Enhanced!
Simplified, shareable XML server config. New integrated messaging server, DynaCache support, new prog. models, such as Web Services, JMS & EJB-Lite.

Start fast, run efficiently
Starts in <3s; Mem footprint <50MB; (TradeLite benchmark)

Small Download
50MB for Web Profile features

Integrated tools Enhanced!
Powerful tools in WDT Eclipse feature. Enhanced for v8.5.5 prog models, Maven integration, ++

Dynamically Extensible New!
Install new features from repository (local or remote) with no svr restart

Web Profile Certified New!
Create web apps for the Java EE Web Profile standard.



WAS v8.5.5 Liberty Profile & WAS Developer Tools for Eclipse (WDT)

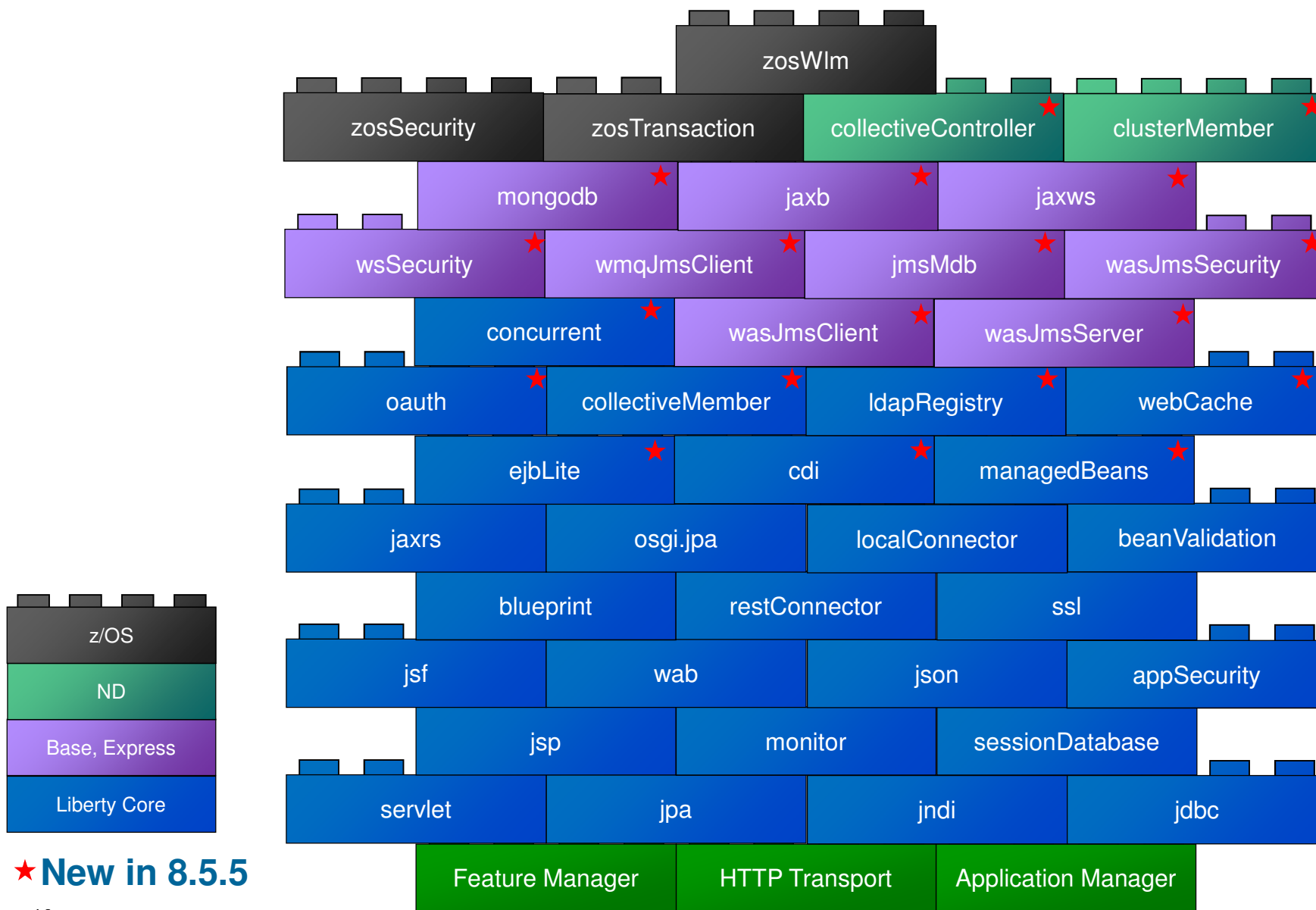
Lightweight cluster Mgmt New!
Liberty servers can join a lightweight cluster for workload balancing and high availability

Unzip install and deploy Enhanced!
IM or unzip to install. New option to deploy “server package” of app + config + required subset of server runtime for highest density deploy

Liberty Extensions New!
Add custom features and integrate 3rd party components via Liberty extensions interface

Fidelity to full profile WAS
Same reliable containers & QOS. Develop on Liberty profile and deploy to Liberty or full-profile WAS

Liberty v8.5.5 Feature Set

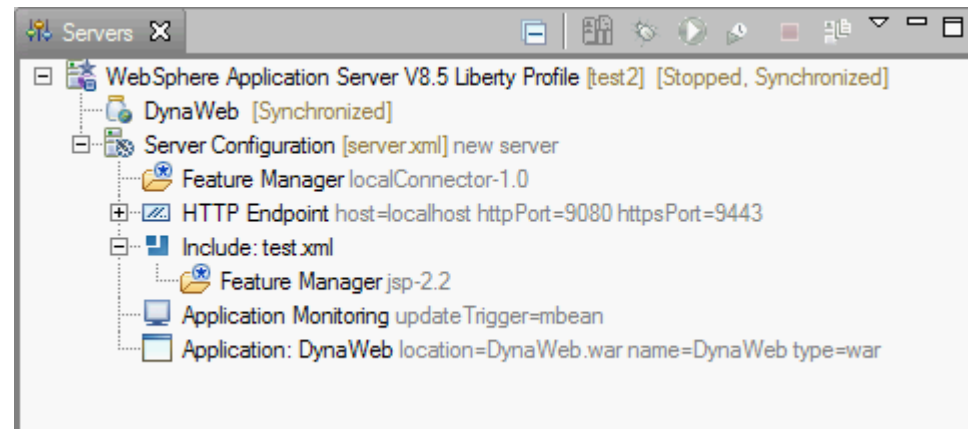
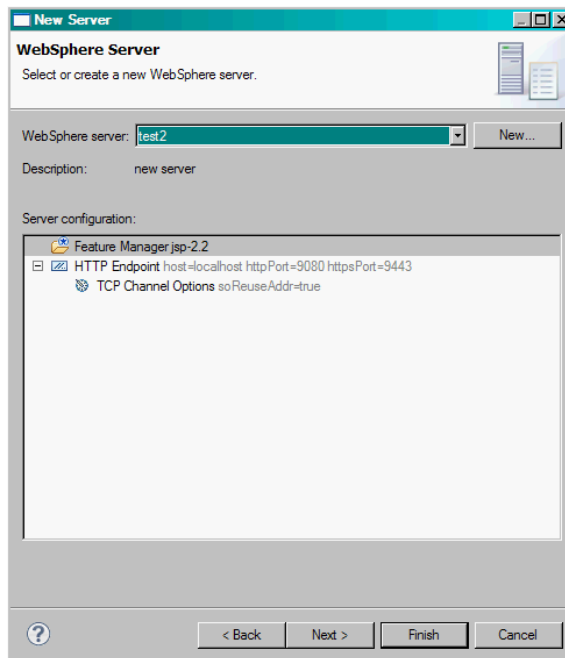


★ New in 8.5.5

The Simple Things



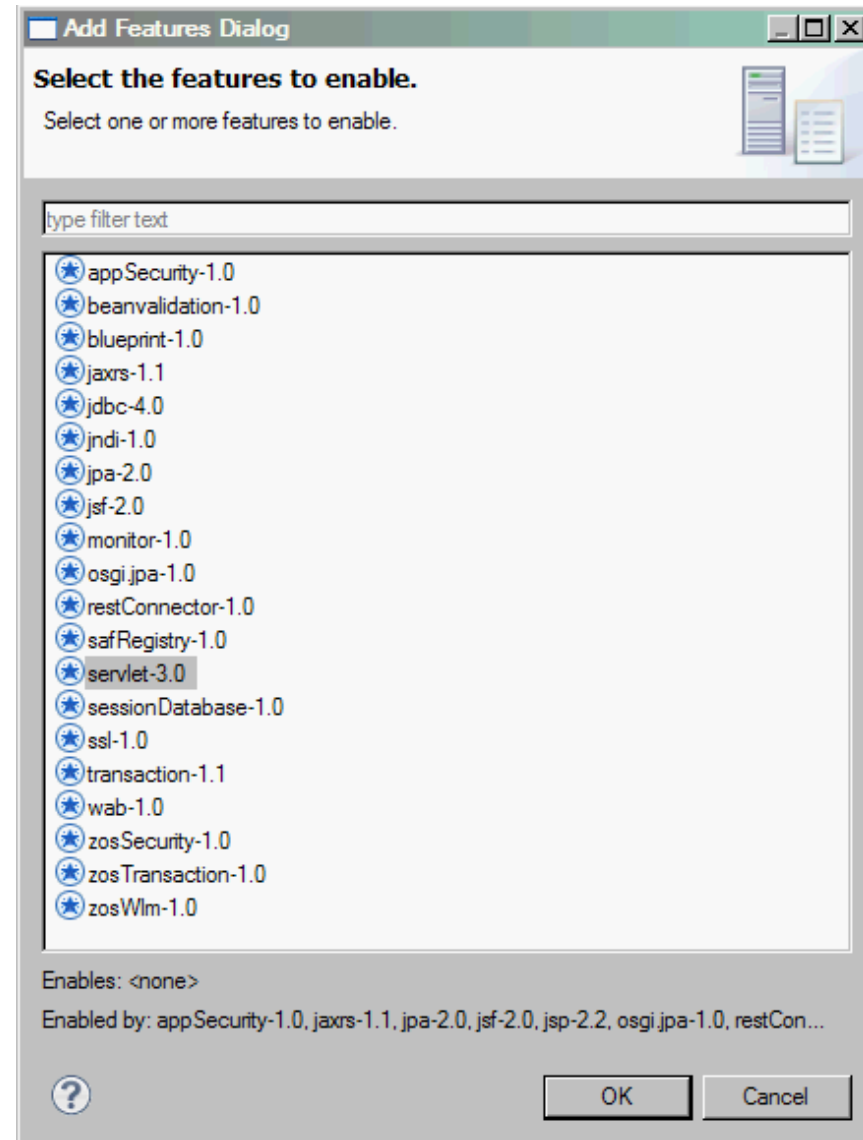
- The tool's primary goal is to expose the runtime's simplicity:
 - Show information where and when you need it
 - Add actions where you expect and save clicks
 - Match the runtime's simplicity, which often means minimal UI
- Need to know what features are enabled or what port number is used?
The server configuration is shown directly in the New Server wizard and Servers view



Automatic Provisioning



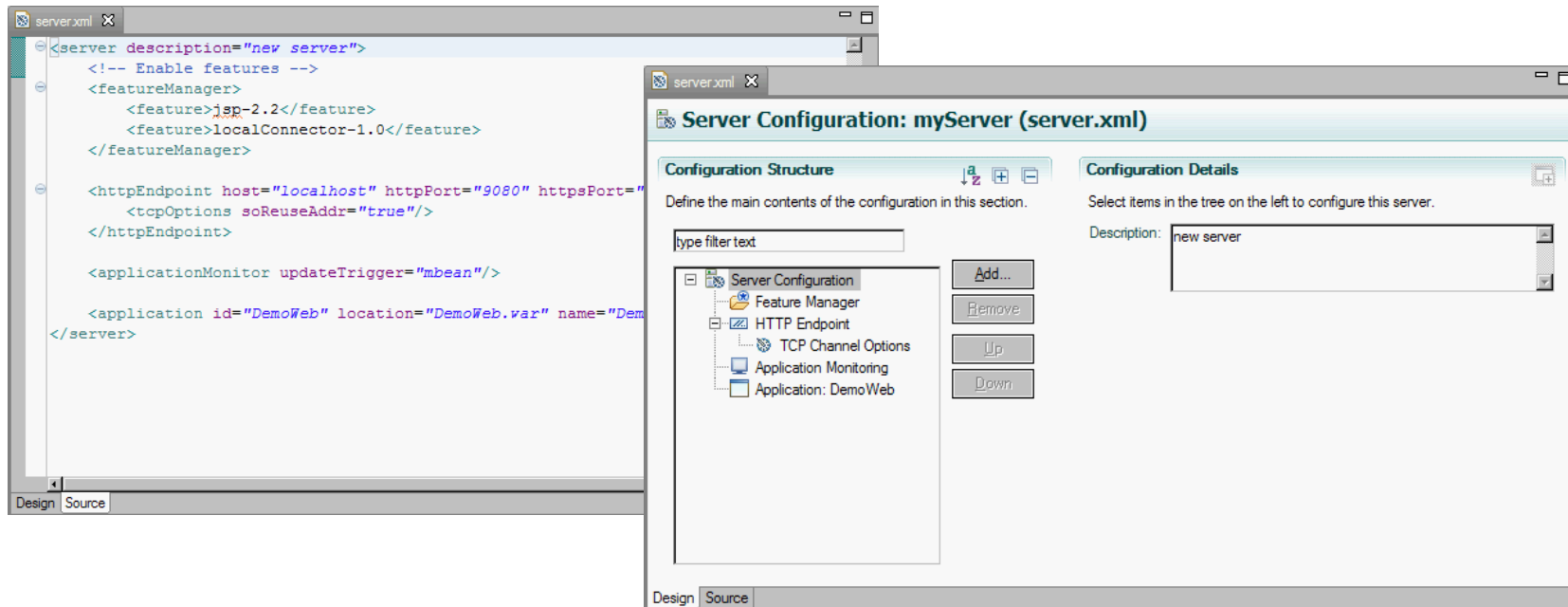
- Tools automatically provision required features when an application is deployed



Working with Server Configuration



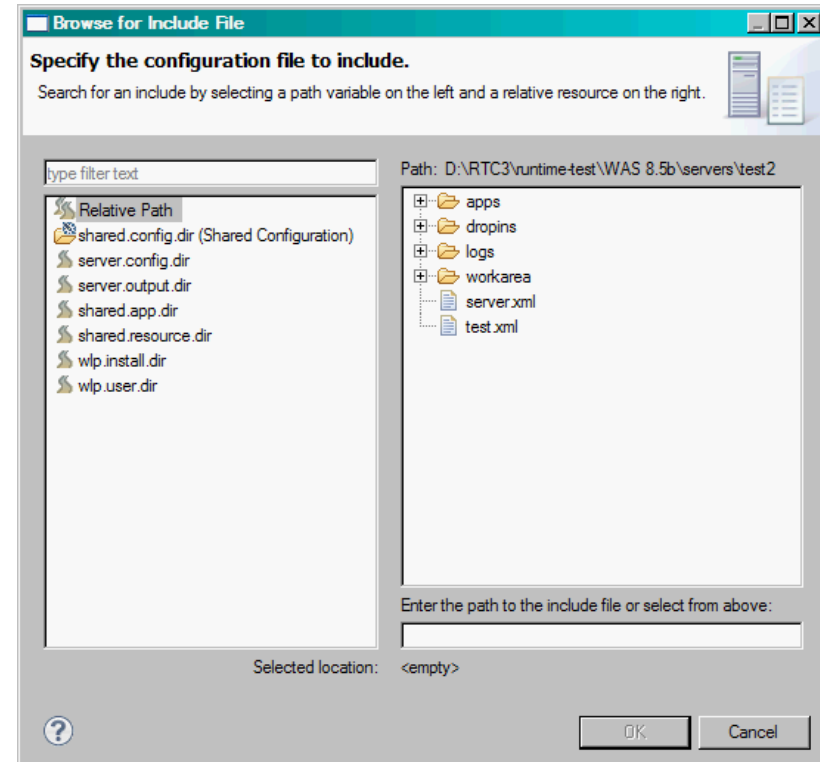
- Editing configuration is at the heart of working with any server
- Even with the simplicity of Liberty's configuration, a powerful configuration editor can be very helpful:
 - Source view with content-assist
 - Design view for advanced editing
 - Integrated support for features, variables, references, ...



Handling Variability



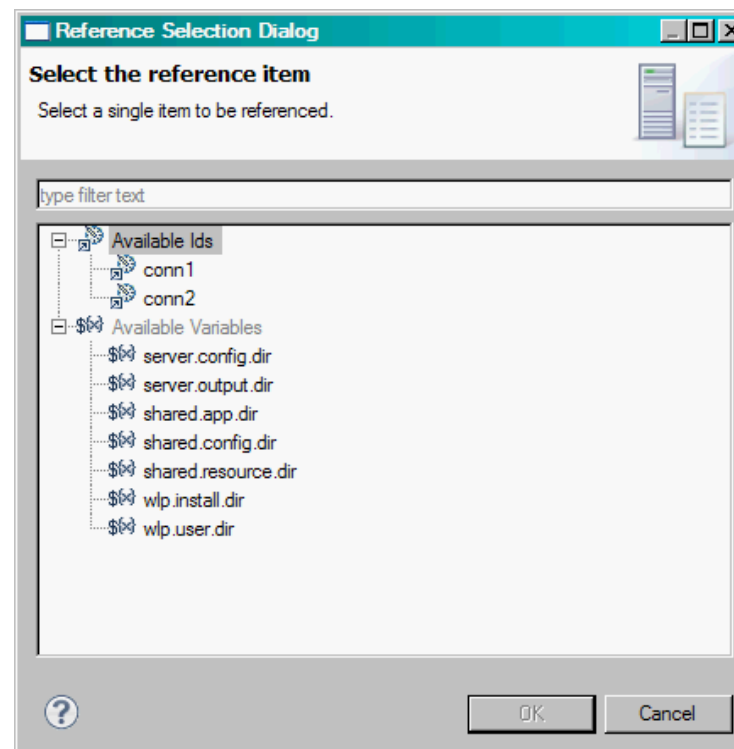
- The server configuration supports built-in and user-defined variables in the configuration: paths, ports, ids, ..., anywhere
- Configuration editor supports this in both source and design views:
 - Content assist in either view
 - Browsing for location supports variable and relative (or absolute) paths
 - Hover-help shows resolved values
 - Easy support for defining variables



References and Ids



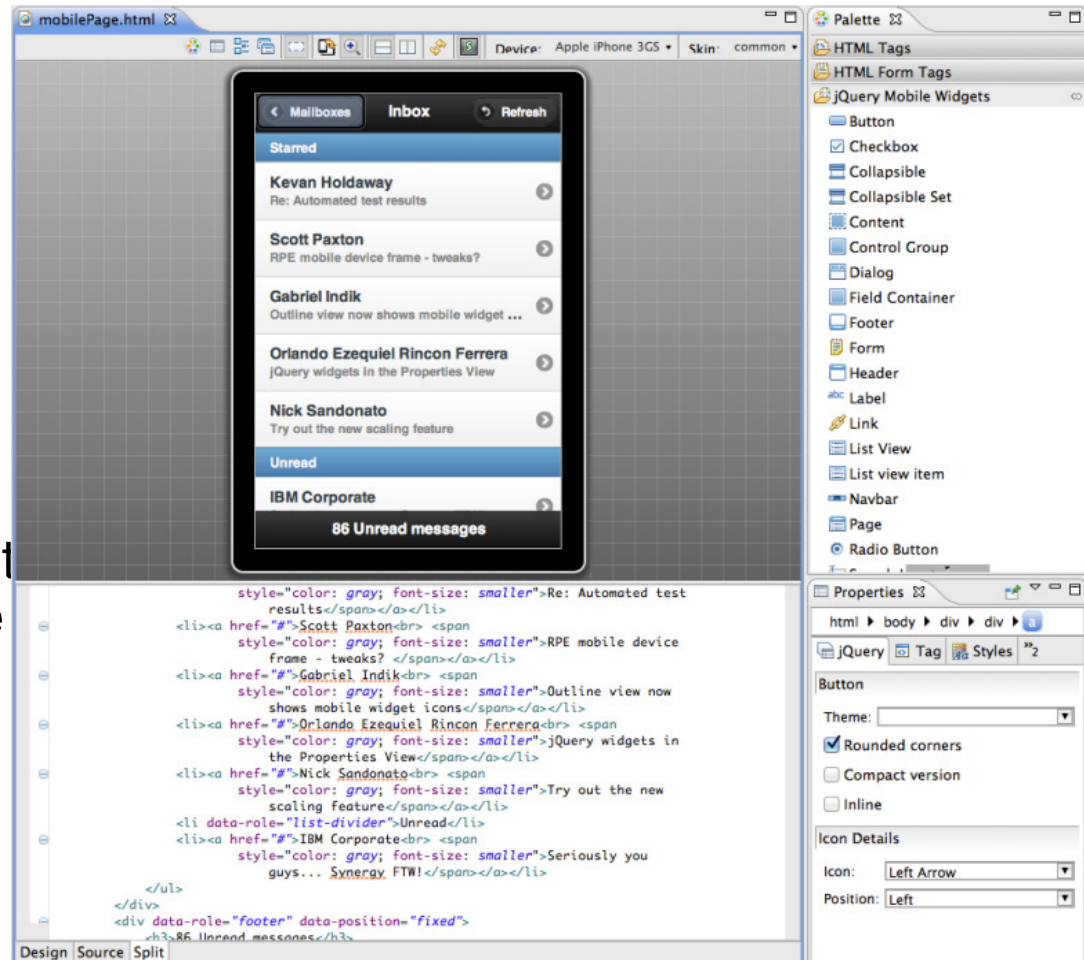
- Elements in the configuration can be nested (for simplicity) or referred to by id (for sharing)
- Editor supports both, in either view
- Browse for references (or variables)



Web and Mobile development



- **Classic Web and Web 2.0 application development**
 - Source editing
 - HTML5, CSS3, Dojo, JavaScript, JSON tools
 - Dojo tools, custom builds, unit testing
 - Web Preview Server
 - JavaScript debugging
 - JSF 2.0 tools
- **Mobile web development**
 - Mobile Web applications with the jQuery and Dojo mobile library
 - Rich Page Editor extended with target device form factors
 - Browser-based, simulated device application testing



Rich Page Editor



The screenshot displays the Eclipse IDE with a Rich Page Editor. The interface includes several key components:

- Enterprise Explorer:** Shows a project structure with folders like 'themes' and 'templates'.
- Outline:** A tree view of the page structure, including elements like 'MenuBar', 'TabContainer', and 'Dialog'.
- Design View:** A visual representation of the page content, featuring a calendar, buttons, and form widgets.
- Properties Palette:** A vertical panel on the right for editing widget properties, such as font, alignment, and color.
- Code Editor:** Shows the underlying HTML and JavaScript code for the widgets.

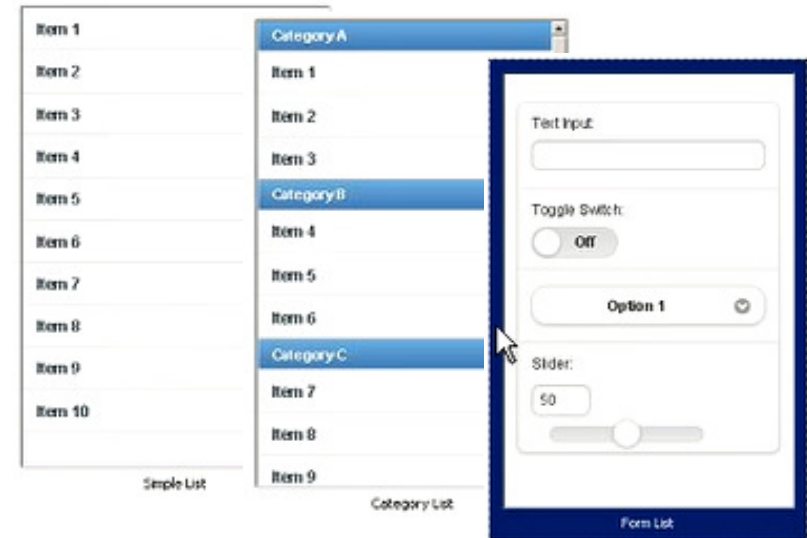
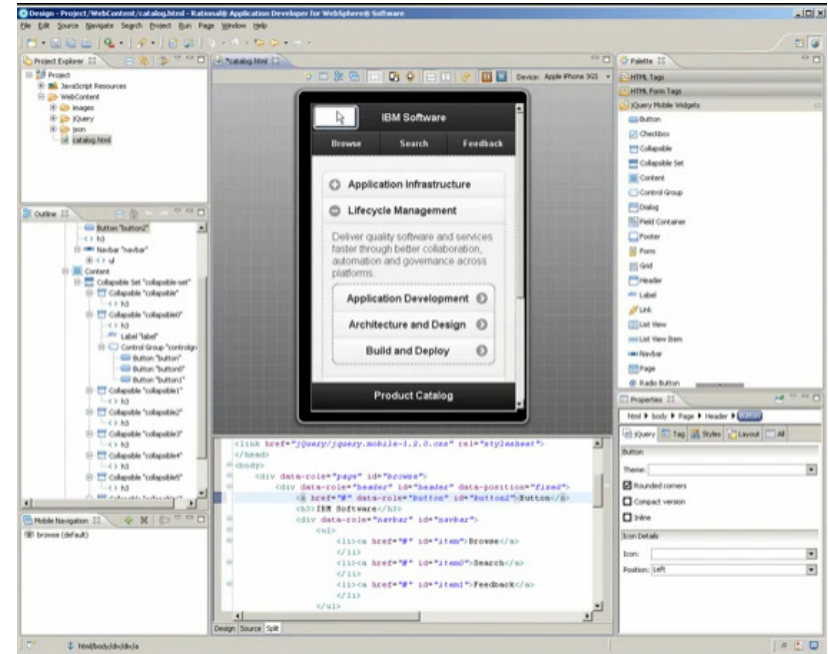
Annotations highlight specific features:

- High fidelity rendering using browser engine:** Points to the design view, indicating that the page is rendered using a real browser engine.
- Multiple browser preview:** Points to the 'Device: Standard' dropdown, suggesting the ability to preview the page on different devices.
- Precision drag-and-drop from palette:** Points to the Properties Palette, highlighting the ability to drag widgets from the palette onto the page with precision.
- Simplified Dojo Outline view:** Points to the Outline view, indicating a simplified view of the Dojo widget hierarchy.
- Vertical Properties view for maximum editing area:** Points to the Properties Palette, highlighting its vertical orientation to maximize the editing area.

jQuery Mobile Development

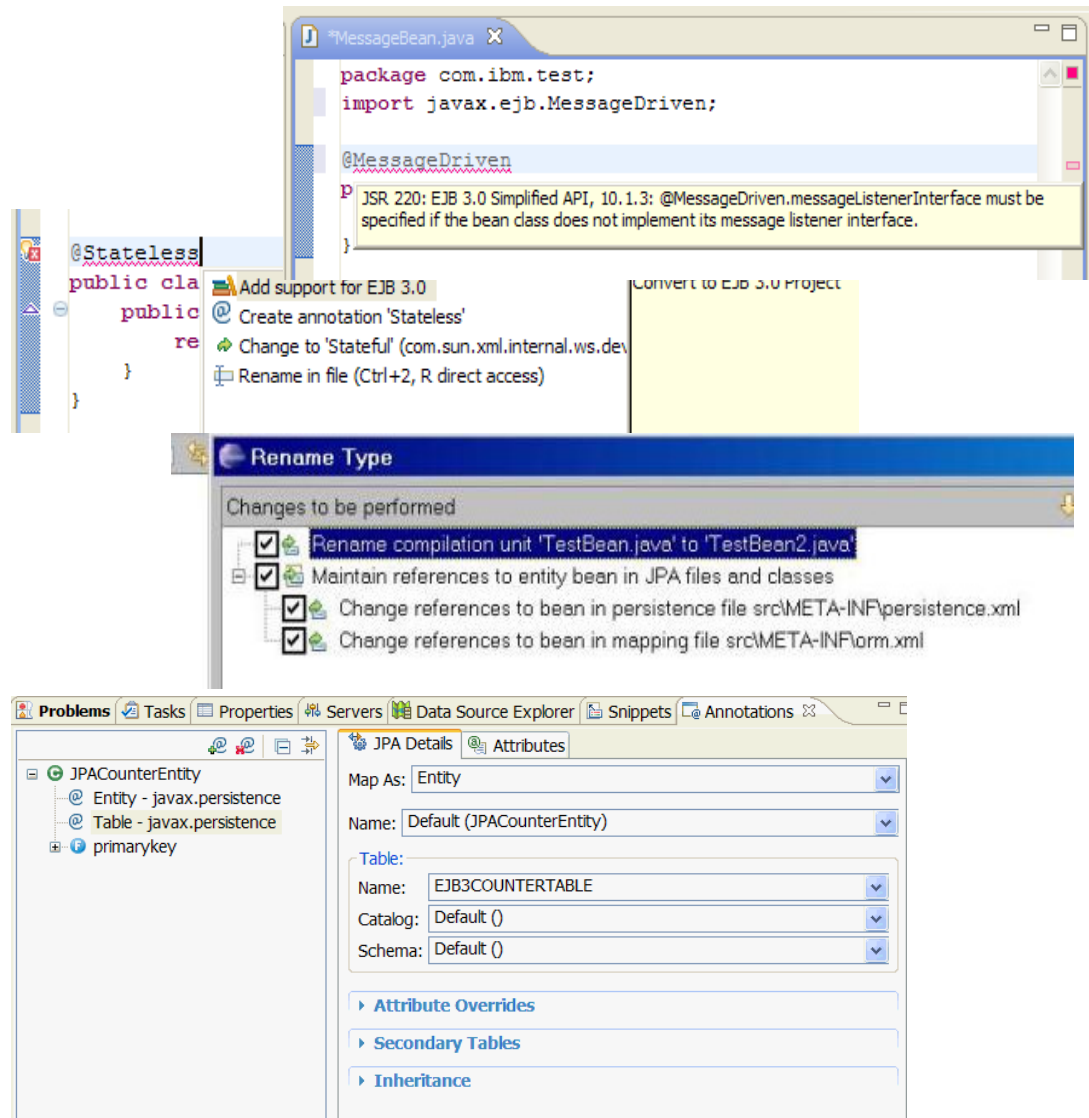


- Unified editing experience through Rich Page Editor
- Instant graphical feedback for jQuery selectors using “jQuery Smart Highlights”
- Over 20 reusable & extensible mobile web patterns to speed up development
- Drag & drop and visualize mobile widgets from the palette
- Content assist for jQuery API in source editor
- New wizards for jQuery Plugins & widgets creation
- In-editor “device” rotation and scaling



Mobile web patterns

- 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).



Java Persistence Architecture (JPA)



- 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

The screenshot displays the Eclipse IDE interface for configuring JPA. On the left, the 'Generate Entities' wizard is open, showing a table of database tables and their corresponding entity names. The 'JPA Manager Bean Wizard' is also visible, showing tasks for 'Department' and 'Employee' entities. On the right, the 'Edit Query Method' dialog is open, showing the configuration for the 'getDepartment' query method. The dialog includes a table of attributes to be returned by the query, a 'Query Statement' field, and buttons for 'OK' and 'Cancel'.

Generate Entities from Tables

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.Departm...
<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:

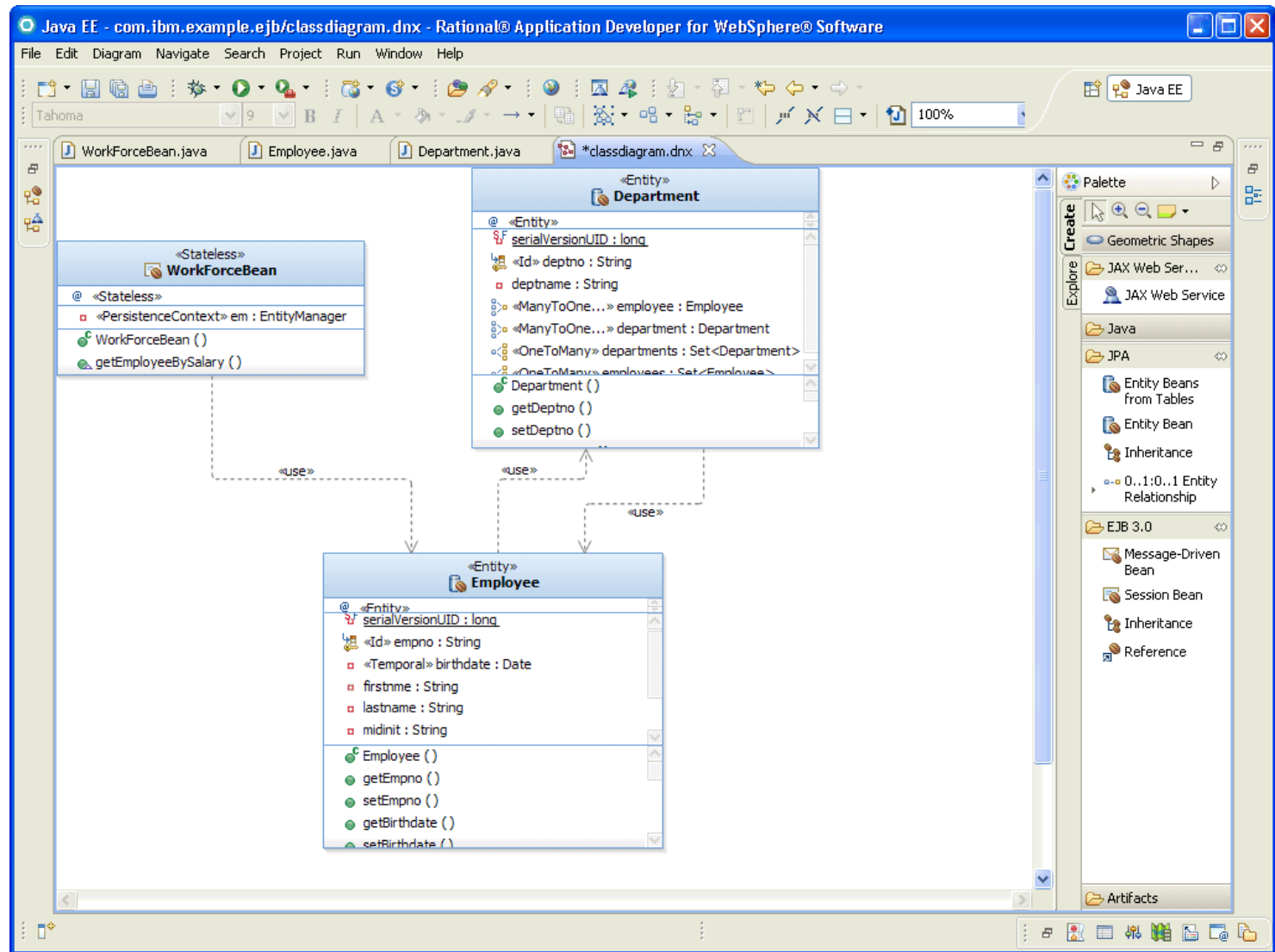
Named Query Name:

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

Code visualization



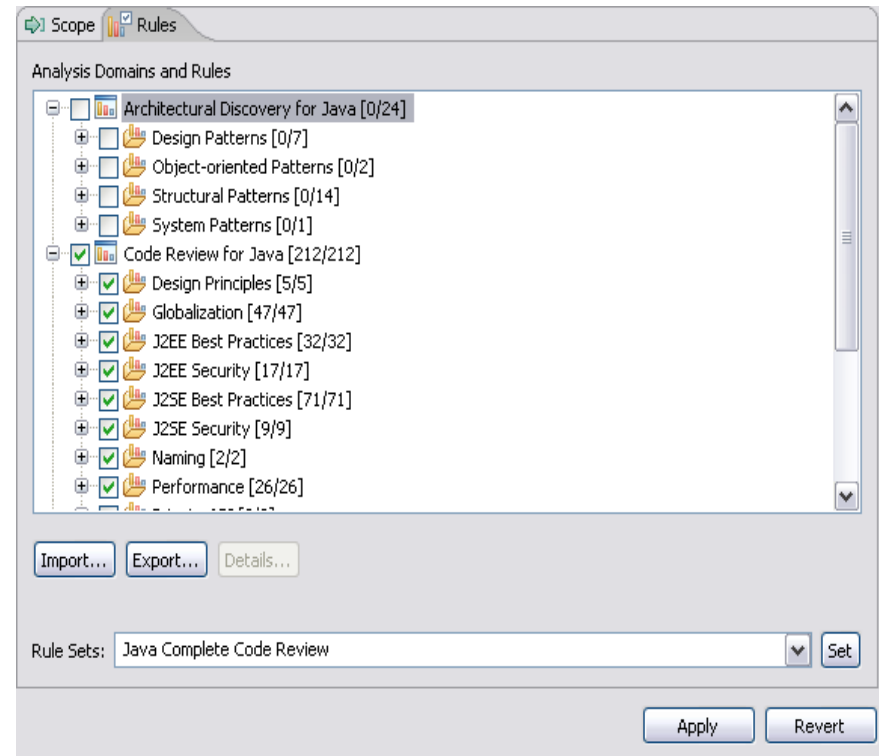
- Visualize Java classes, EJBs, JPA beans and web services.
- Diagrams include class, sequence and topic.
- RAD supports visualization.
- RSA supports full modeling.



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

RAD



- 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

The screenshot displays the IBM Rational Developer (RAD) IDE interface. On the left, the Package Explorer shows the project structure for 'StoreApp'. The package 'com.ibm.storeapp.models' is expanded, showing the following classes and their coverage percentages:

- com.ibm.storeapp.models [23%]
- Customer.java [100%]
- Customers.java [50%]
- Part.java [0%]
- Product.java [0%]
- Store.java [13%]

Below this package, other elements are listed: 'com.ibm.storeapp.models.test' [17%], 'JRE System Library [jdk]', 'JUnit 3', 'Referenced Libraries', and 'Class Diagrams'.

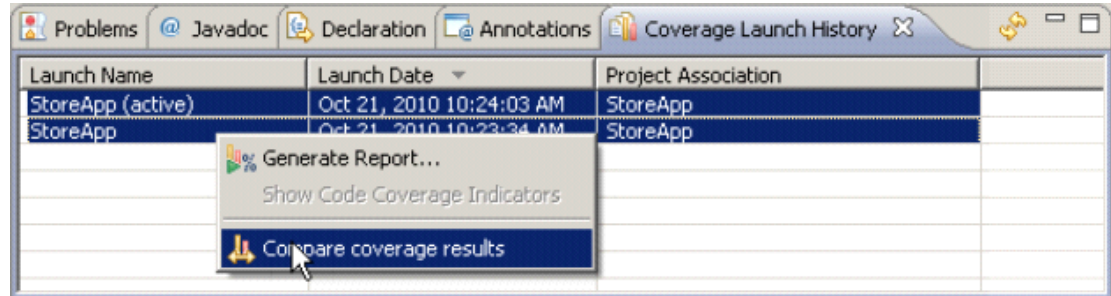
On the right, the source code for 'Customers.java' is displayed. A vertical bar on the left side of the code editor indicates the coverage status for each line. The code includes:

```
private Customer[] customers;  
private int totalSoFar;  
  
public Customers() {  
    customers = new Customer[INITIAL_CAPACITY];  
}  
  
public void addCustomer(Customer customer) {  
    if(totalSoFar >= customers.length) {  
        incrementCapacity();  
    }  
    customers[totalSoFar++] = customer;  
}  
  
private void incrementCapacity() {  
    int currentCapacity = customers.length;  
    int doubleCapacity = currentCapacity * 2;
```

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



Problems | Javadoc | Declaration | Annotations | Coverage Launch History | Internal Web Browser

Code Coverage Comparison Report

All Packages

- [\[StoreApp\] com.ibm.storeapp.mo \(31%\)](#) ⬆️ (8%)
- [\[StoreApp\] com.ibm.storeapp.mo \(17%\)](#)

All Source Files

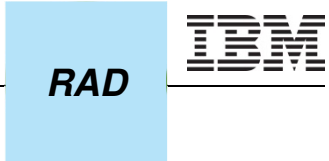
- [Customer \(100%\)](#)
- [Customers \(100%\)](#) ⬆️ (50%)
- [Part \(0%\)](#)
- [Product \(0%\)](#)
- [Store \(13%\)](#)
- [TestCustomer \(0%\)](#) ⬆️ (-100%)
- [TestCustomerImproved \(100%\) \(100%\)](#)
- [TestProducts \(0%\)](#)
- [TestProductsImproved \(0%\)](#)

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.models.test	11	64	17% <div style="width: 17%; height: 10px; background-color: red; border: 1px solid black;"></div>
[StoreApp] com.ibm.storeapp.models	⬆️ 27 (7)	88	⬆️ 31% (8) <div style="width: 31%; height: 10px; background-color: red; border: 1px solid black;"></div>

[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

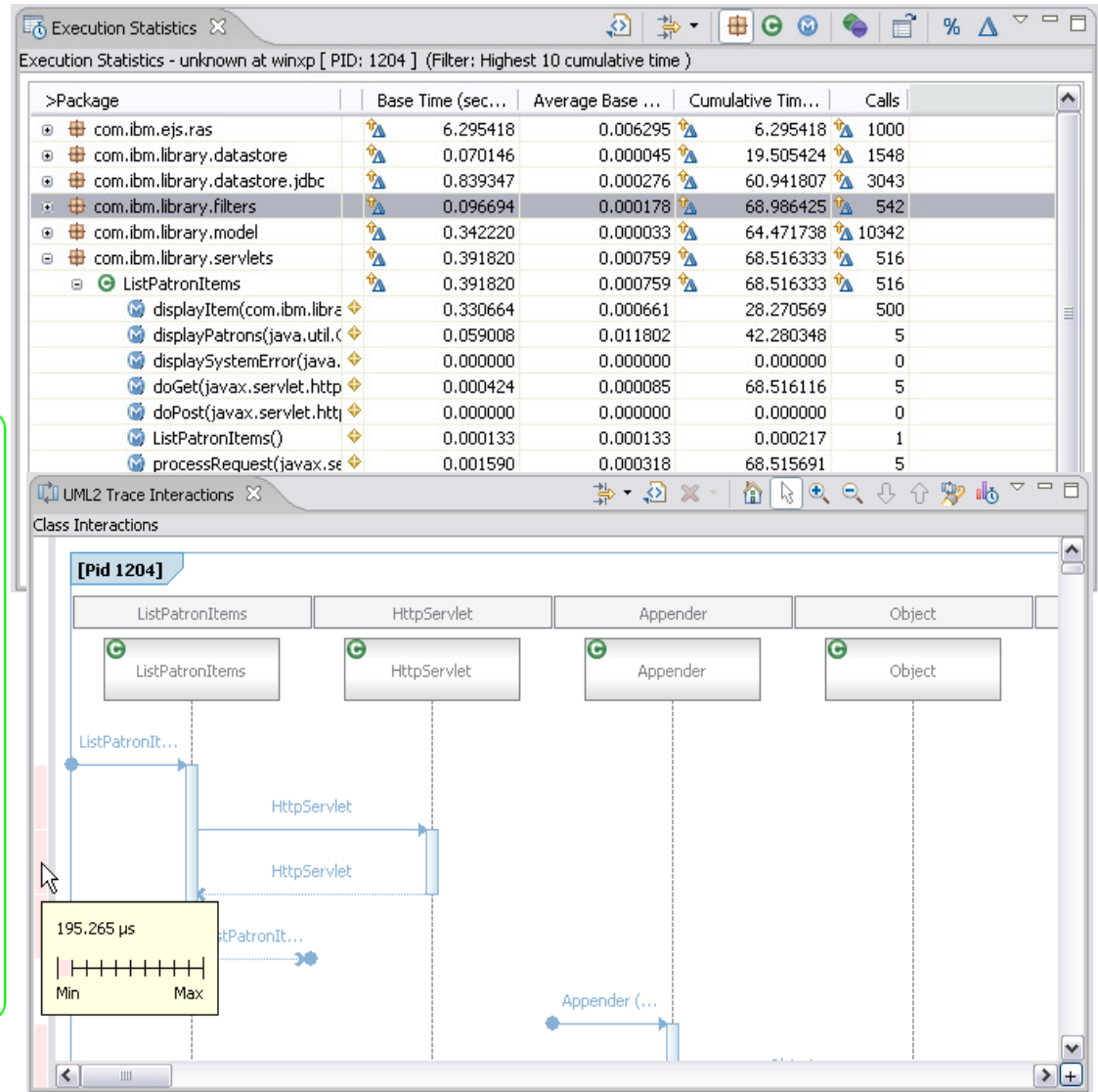
- Execution time
- Memory usage
- Threads

- Profiling Quick Start wizard

guides you thru common profiling scenarios and configures initial settings appropriately.

- Heap instance data round-tripping

- Probekit – Write your own probes






Profiling Quick Start Wizard

Method of Profiling



Here we will select the type of profiling data to collect, based on the type of problem that needs solving.

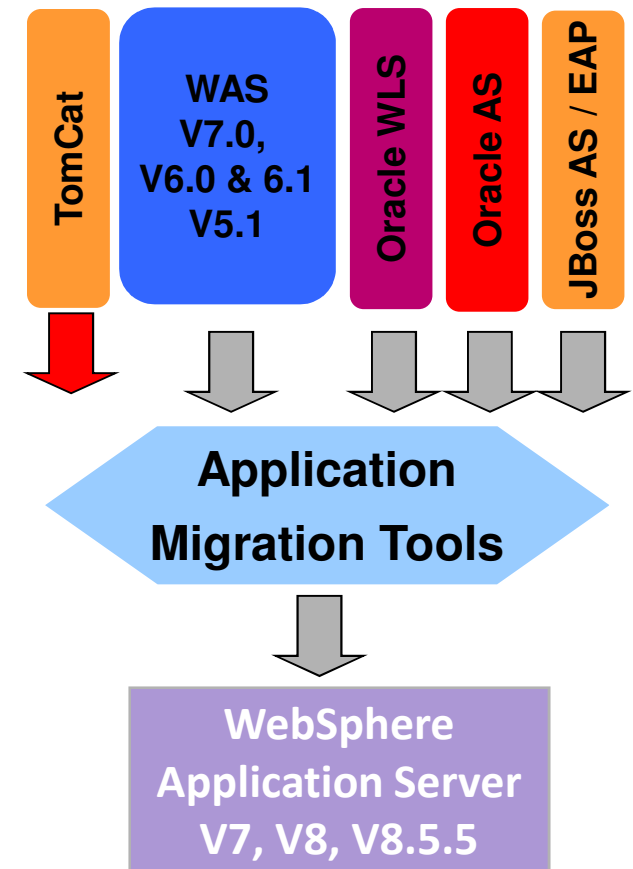
Profiling allows you to identify and eliminate performance problems. Select the performance issue below:

-  My application is slow
There's a performance bottleneck that is causing transaction throughput to be limited, or is hurting application response time.
-  My application takes up too much memory
There's a memory leak causing out of memory errors or inflating application size. The amount of memory used in application sessions is too high causing the number of concurrent sessions to be limited.
-  My application experiences long pauses independent of CPU activity
There are long pauses or hangs in the application that do not seem to be related to processor usage, but rather to thread contention, such as blocked threads or race conditions.

Application Migration Tools

Migrate applications from WebSphere & other Java EE application servers to WebSphere faster with minimized risk

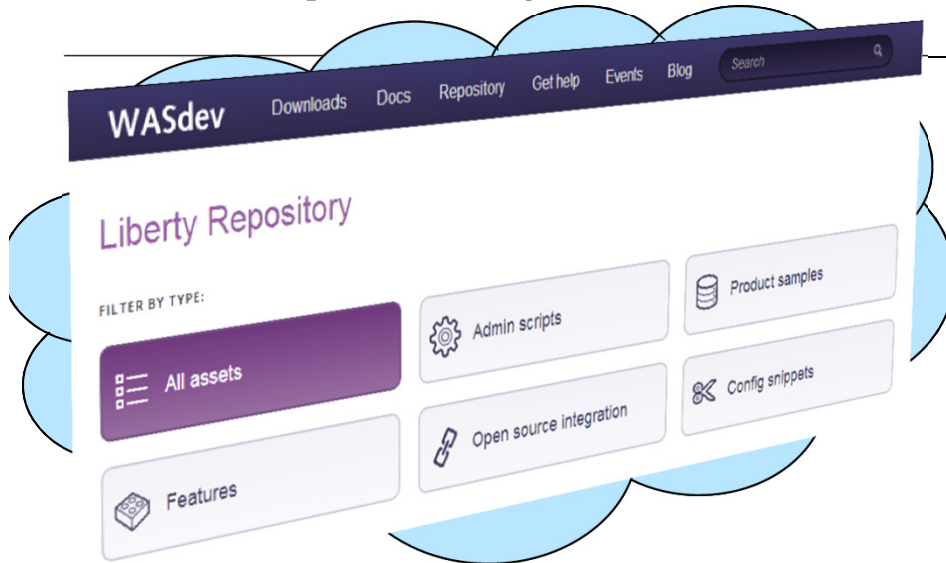
- **Support for Tomcat migration to WAS v8.5**
- Migrate applications from older releases to WAS V8 or V7
- Migrate from Oracle or JBoss faster and easier to WAS V8.5 Beta, V8 or V7
 - Migrate applications up to 2x as fast
 - Migrate web services up to 3x as fast
- Application Migration Tool
 - Analyzes source code to find potential migration problems:
 - Removed & deprecated features
 - Behavior changes
 - JRE 5 & JRE 6 differences
 - Java EE specification changes or enforcements
 - Capable of making some application changes
 - Provides guidance on how to make required changes
 - ✓ Works with Eclipse, WebSphere Developer Tools (WDT) or Rational Application Developer (RAD)



Get the Tool at No Charge: <http://ibm.co/hqfkdj>

✓ - Tools support available in RAD

Repository for Extending the Liberty Profile Runtime



- An **online repository** to deliver **Liberty platform extensions**
- Content includes:
 - Open source project integration
 - Individual Liberty features (ie. Program model support)
 - Samples (Liberty & 3rd party)
- Enables more **fine-grained**, content, simplest possible **integration with external open source**
- Install using Liberty command-line tools or WDT/RAD

PRODUCT SAMPLES

← PREV 1 / 2 NEXT →

FILTER BY TAG: (NONE)

Daytrader 3 Sample

FEBRUARY 12, 2014

This sample contains the DayTrader 3 benchmark, which is an application built around the paradigm of an online stock trading system.

Download

Hibernate Java Persistence API (JPA) Sample

FEBRUARY 12, 2014

The following sample contains a server definition which contains a very simple JPA application consisting of a single servlet and a JPA servlet. The sample shows how you can replace the default JPA provider in Liberty profile with an alternative JPA provider.

Download

WebSocket Sample

NOVEMBER 6, 2013

The following sample contains a server definition which supports WebSockets using a default configuration setting for HTTP transport and webcontainer.

Download

Custom User Registry Sample

AUGUST 21, 2013

This sample demonstrates how to configure a Custom User Registry Liberty user feature as a User Registry for authentication.

Download

WebSphere MQ JMS Messaging Sample

JULY 24, 2013

The following sample shows you how to do JMS messaging using the WebSphere MQ Client jars from an WebSphere MQ Client install

Download

WASdev Open Source Community on GitHub



- WASdev Open Source community extension to the WASdev developer community
 - <http://wasdev.github.io>
 - <https://github.com/wasdev>
- GitHub - 3.5M users, 6M repos (Jan 2013)
- Apache License, Version 2.0
- Resulting binaries hosted on Liberty Repository
 - <https://www.ibmdev.net/wasdev/repo>

The screenshot shows the GitHub search interface. At the top, the GitHub logo is on the left, and a search bar contains the text "Search or type a command". Below this, the search results for "WASdev" are displayed. The first result is the "WASdev" repository, which has a purple and black logo with the text "WASdev COMMUNITY". Below the repository name is a search bar with the text "Find a repository...". The search results list several repositories:

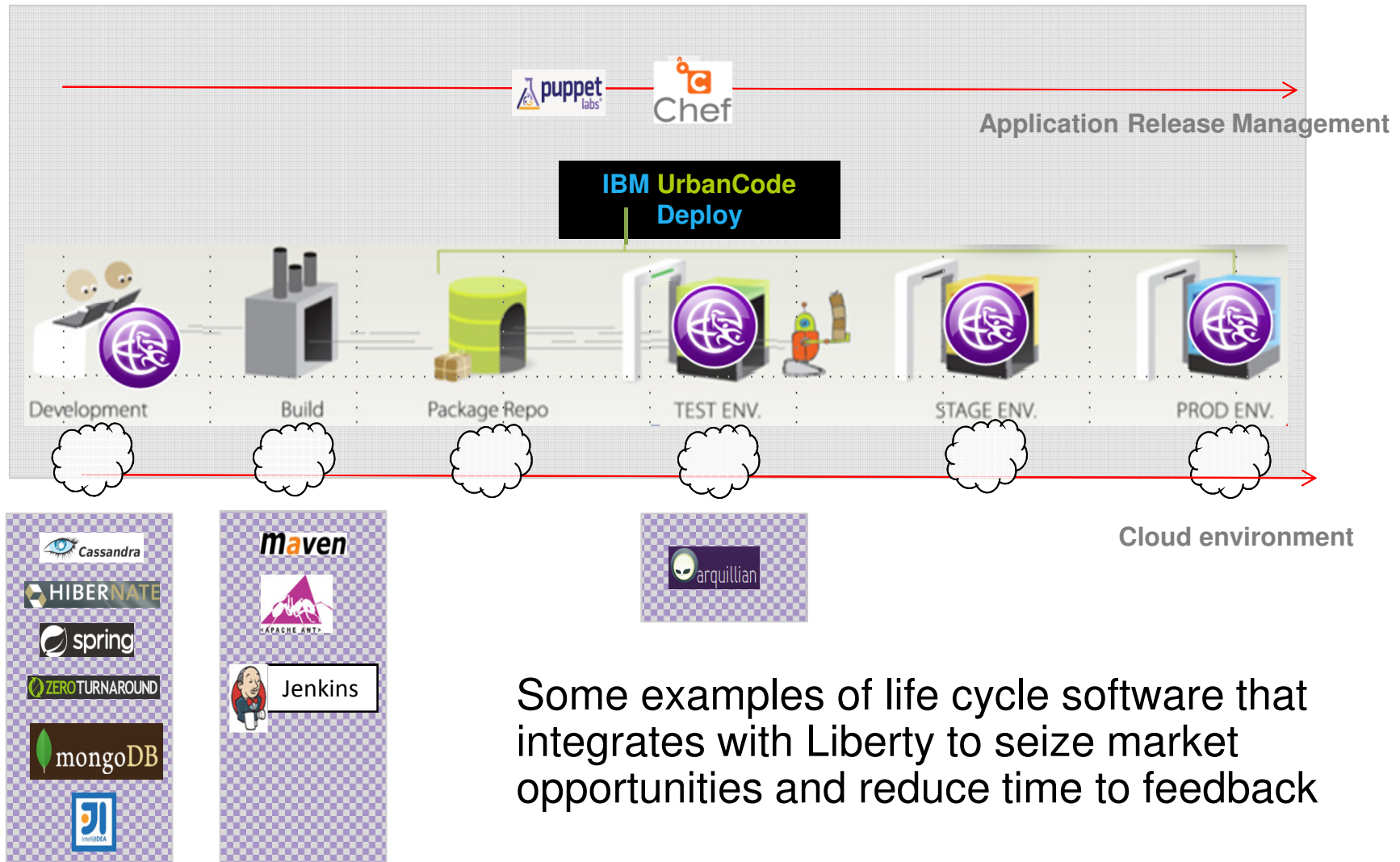
- ci.maven**: Maven plugins for managing Liberty profile servers #devops. Updated 4 days ago.
- ci.ant**: Ant tasks for managing Liberty profile server instances #devops. Updated 5 days ago.
- ci.chef.wxs**: Chef Cookbook to install and configure WebSphere eXtreme Scale. Updated 19 days ago.
- ci.chef.wlp.samples**: Chef recipes to run Liberty profile samples #devops. Updated 22 days ago.
- ci.maven.parent**: Stores parent poms used by builds in other repositories.

Enable your development lifecycle with agile integration options



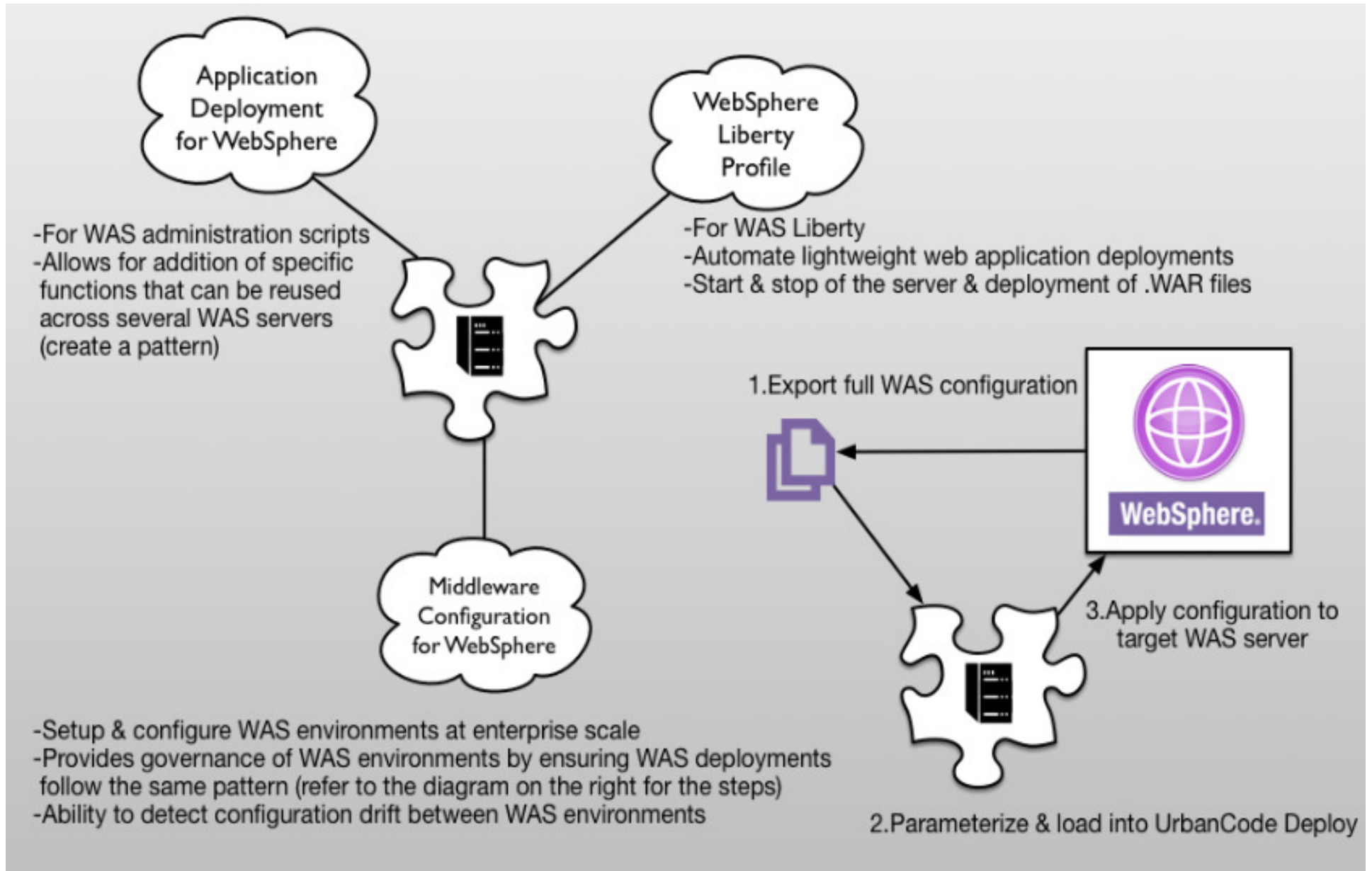
Third party software integration for Liberty

Dev Ops Cycle of an Application on Liberty



Some examples of life cycle software that integrates with Liberty to seize market opportunities and reduce time to feedback

IBM UrbanCode Deploy Plug-in for WAS & WAS Liberty



Chef recipe to install and configure WebSphere Application Server Liberty Profile

The screenshot shows the GitHub profile page for the WASdev community. On the left, there is a profile card for 'WASdev' with a purple and black logo, stating 'Joined on Jul 03, 2013', '8 public repos', and '3 members'. The main content area displays a search bar and a list of repositories. The first repository is 'ci.chef.wlp.application', described as a 'Chef cookbook for deploying applications to the WebSphere Application Server Liberty Profile', last updated 8 hours ago, with 0 stars and 0 forks. The second repository is 'ci.chef.wlp', described as 'Chef Recipes for Liberty profile', last updated 8 hours ago, with 2 stars and 0 forks. The third repository is 'ci.chef.wlp.samples', described as 'Chef recipes to run Liberty profile samples', last updated 6 days ago, with 0 stars and 0 forks. All repositories are in the Ruby language.

Integration with Maven



The WebSphere tools and runtime integrate with Maven to allow its usage as part of your software development process

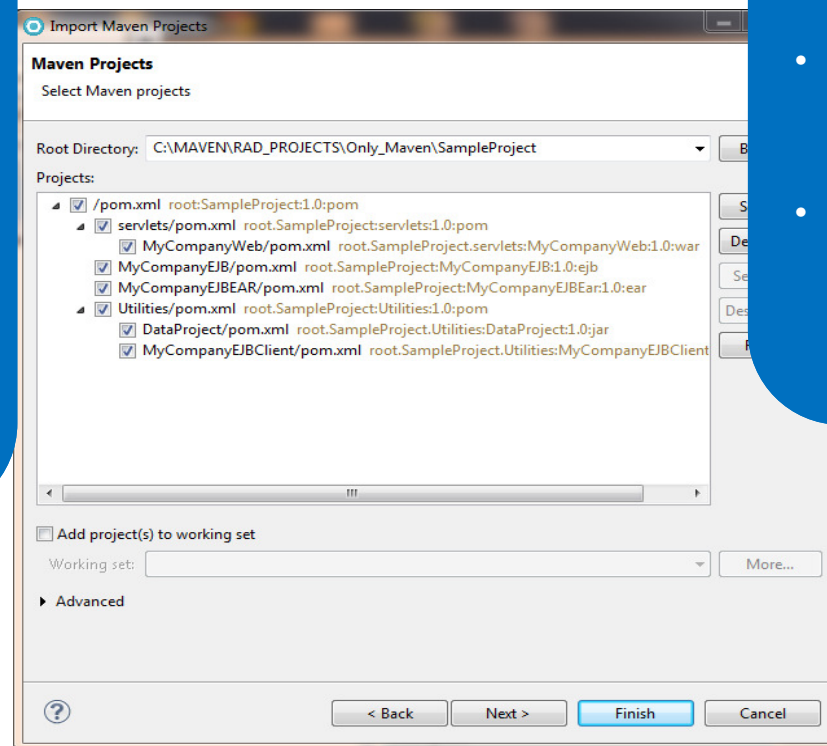
WDT/RAD Maven Tools

- “Mavenize” current tools projects
- Create new Maven projects
- POM editing
- Ability to browse repository (Local & Maven central)
- Maven Build (execute Maven commands)
- Maven tools for OSGi bundles



IBM Maven Repository

- WebSphere Liberty plugin
 - Start, stop, install, deploy
- Archetypes
 - Java EE, OSGi, Portal
- WebSphere target POMs
 - Replace server target classpath

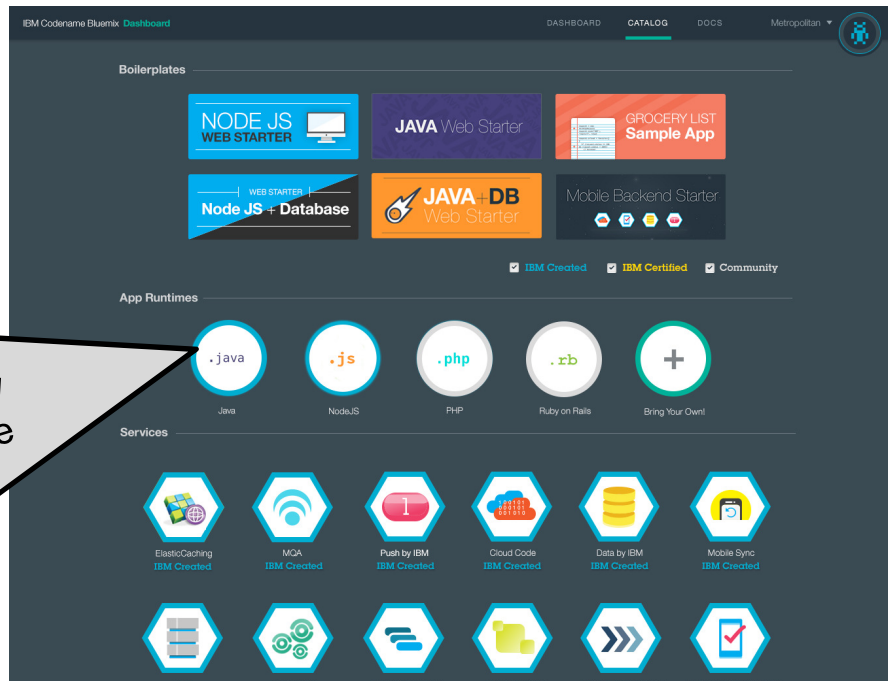


BUILD WebSphere Applications



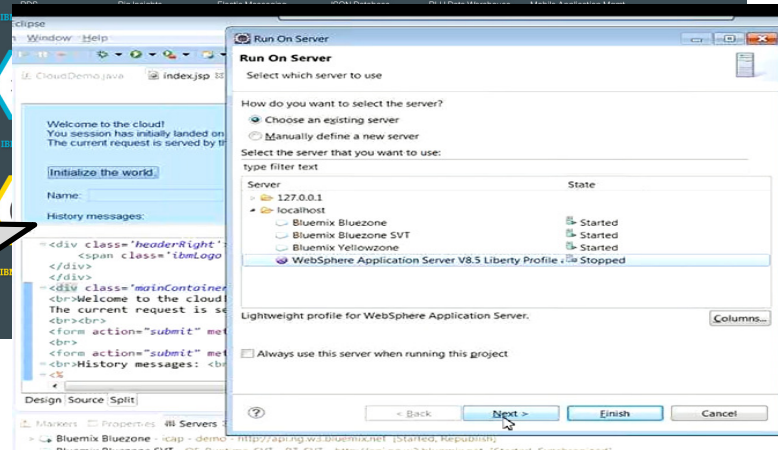
Codename: BlueMix

Delivering a Composable Services development environment



Liberty Profile

WAS Developer Tools



Run Your Apps

The developer can choose any language runtime or bring their own. Just upload your code and go.

DevOps

Development, monitoring, deployment and logging tools allow the developer to run the entire application

APIs and Services

A catalog of open source, IBM and third party APIs services allow a developer to stitch together an application in minutes.

Cloud Integration

Build hybrid environments. Connect to on-premises systems of record plus other public and private clouds. Expose your own APIs to your developers.

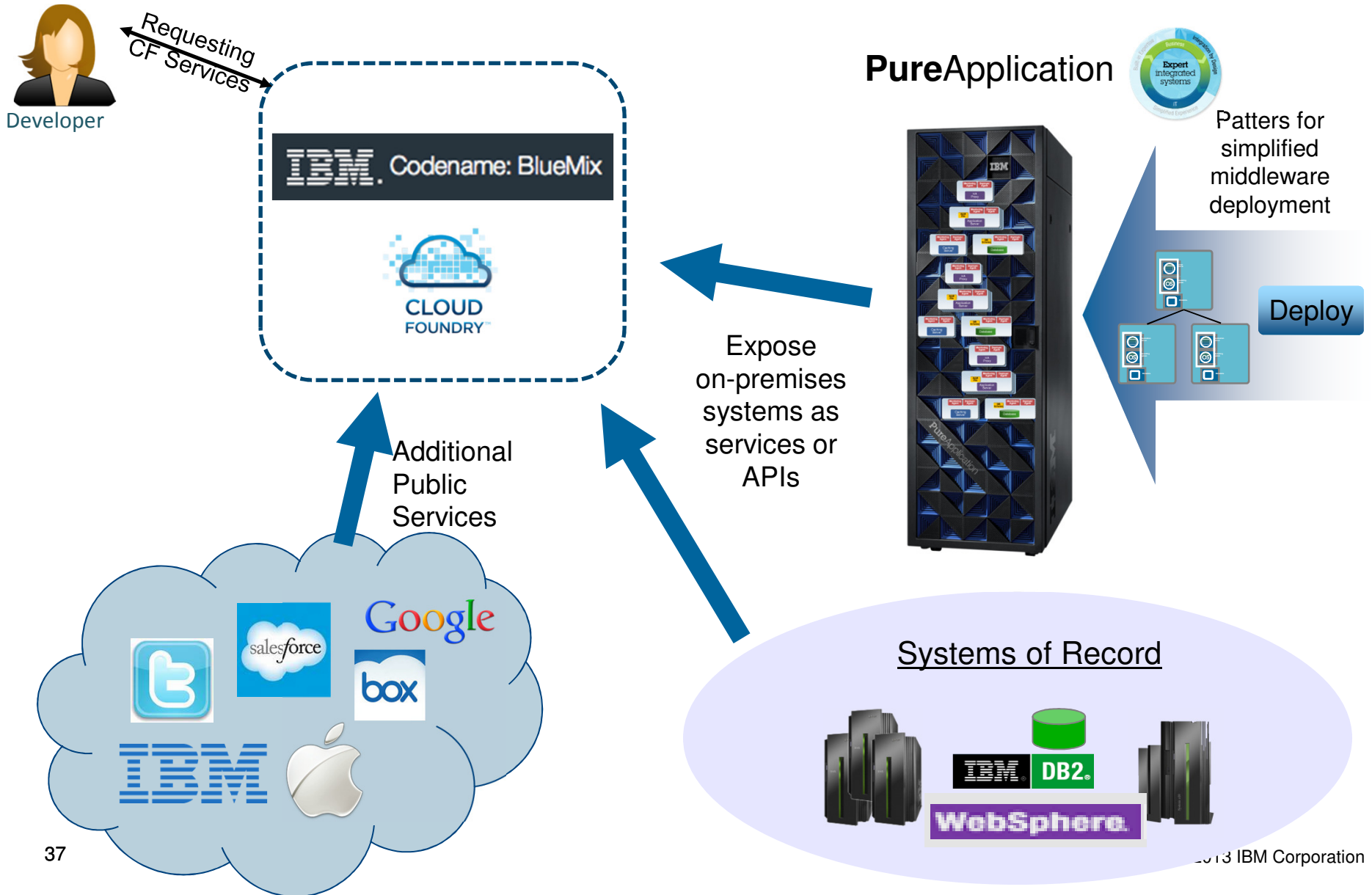
Built on IBM SoftLayer

Runs automatically on top of IBM's leading infrastructure as a service. No need to worry about provisioning or managing infrastructure.

BUILD WebSphere Applications



BlueMix Extends and Builds-on Systems of Record, Pure, and SaaS



What's New in WDT Beta: Overview

- Java EE
 - Enhanced EJB Tools
 - Enhanced Servlet Wizards
 - Introduction to Websockets

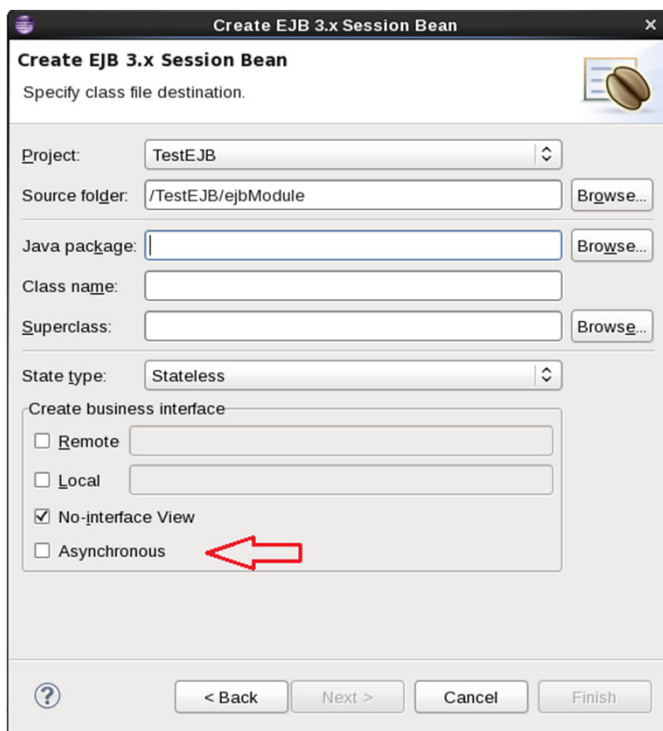
- Web Service Tooling enhancements

- Improved WebSphere Tools install experience

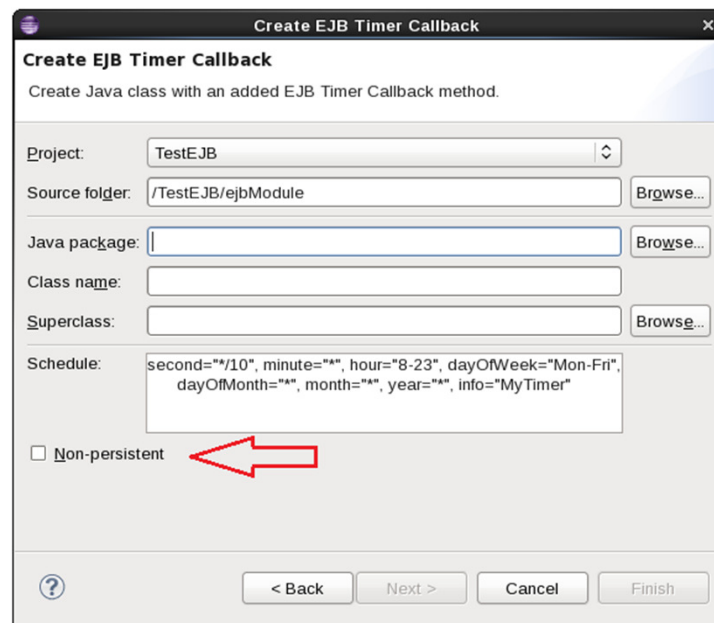
- Early access to Eclipse Luna

What's New in WDT Beta: Java EE - EJB Tools

EJB 3.1: Session Bean Asynch option



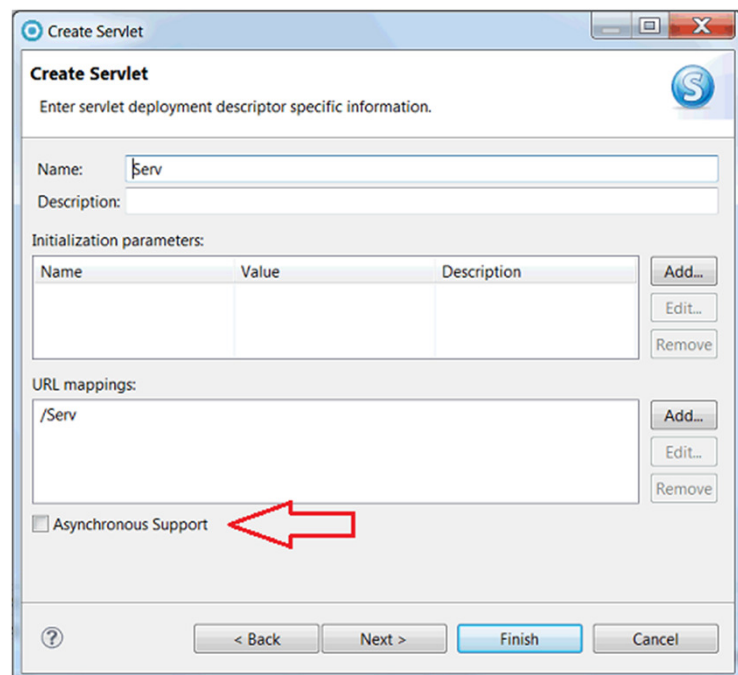
EJB 3.2: Non-persistent Timer support



** Available in Luna drivers

What's New in WDT Beta: Java EE - Servlet Tools

Servlet Asynchronous support



```

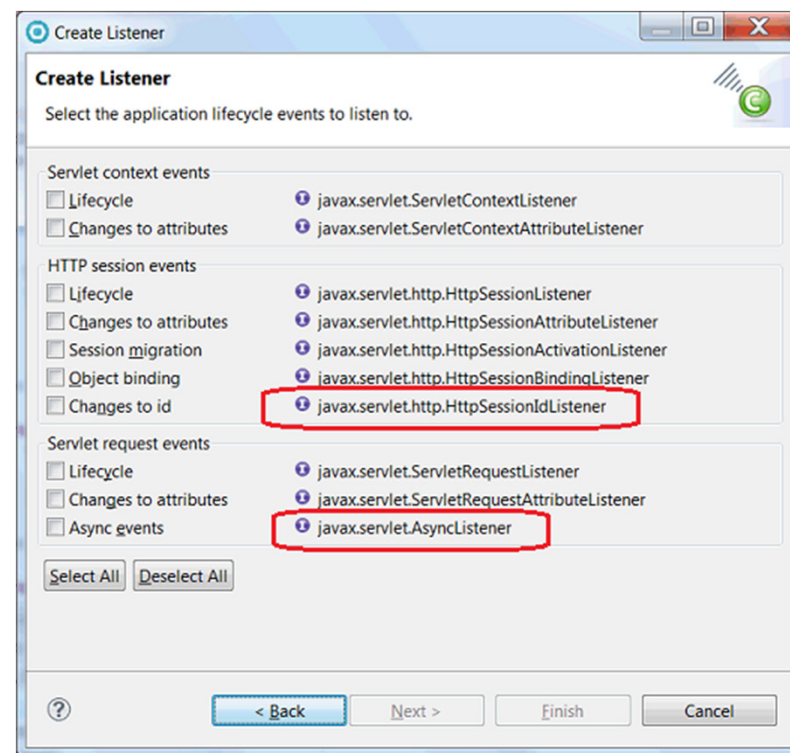
/**
 * Servlet implementation class Serv
 */
@WebServlet(asyncSupported = true, urlPatterns = { "/Serv" })

```

** Available in Luna drivers

Listener wizard enhancements

- Additional interface support



What's New in WDT Beta: Introduction to Websockets

- Full-duplex communication over a single TCP socket
- Used when long-lived real-time connections required
 - Example apps:(Stock ticker, traffic updates, games etc..)
- Can be used with either Servlet 3.0 or 3.1

- New Annotations: @ServerEndpoint, @ClientEndpoint, @OnMessage, @OnOpen , @OnClose, @OnError, @PathParam

Liberty Core App Server

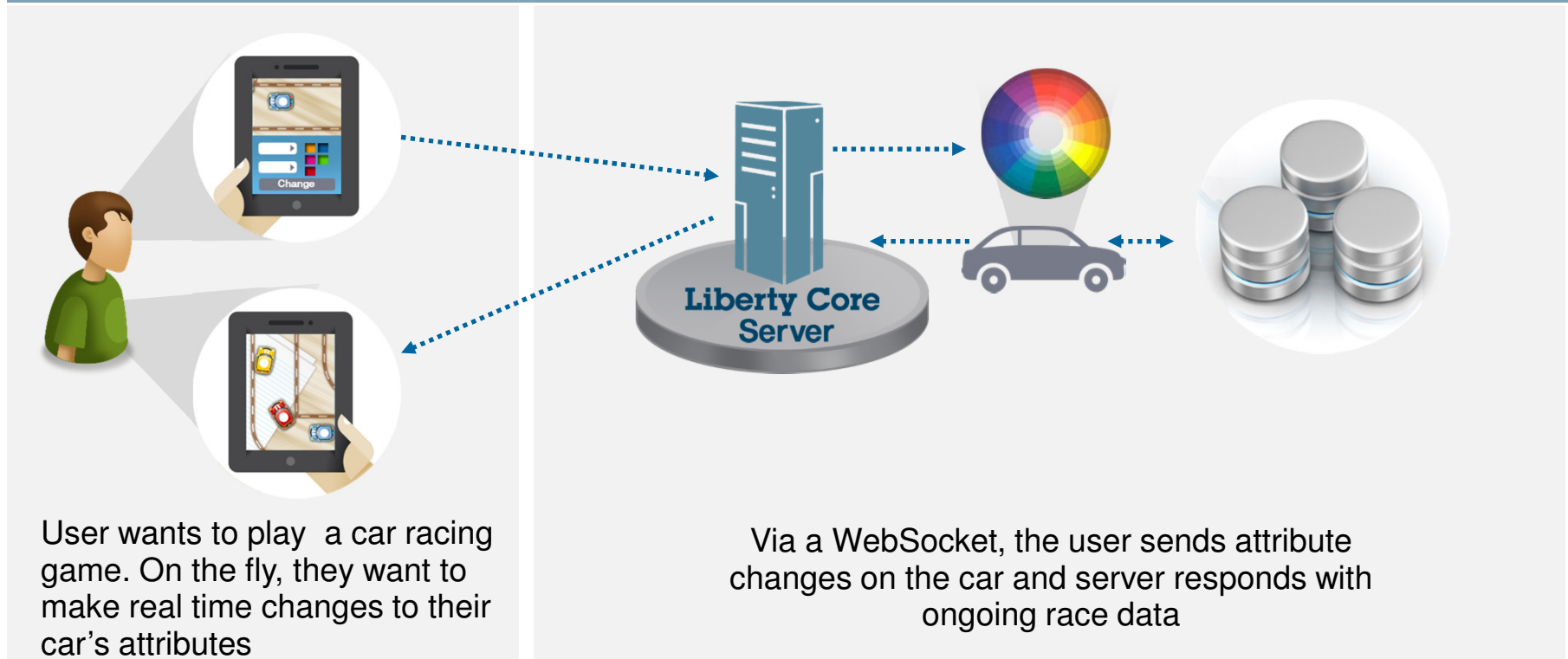


Types of Applications: Applications that require two way interaction (client \leftrightarrow server), low latency and low overhead

Application focus: Web Sockets (JEE 7)

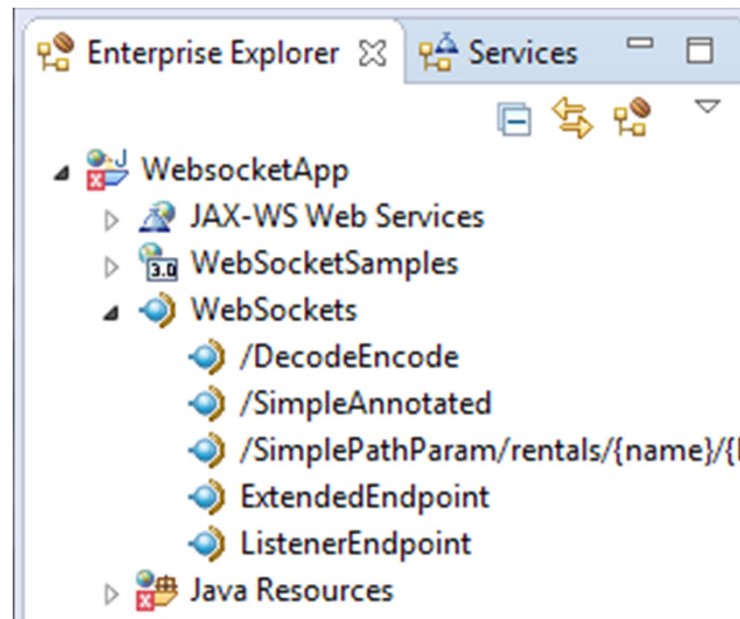
Examples:

1. A game that provides a constant stream of information between player and game so the player can make changes on the fly.
2. Monitoring real time information (ie. In data centre applications, ...)



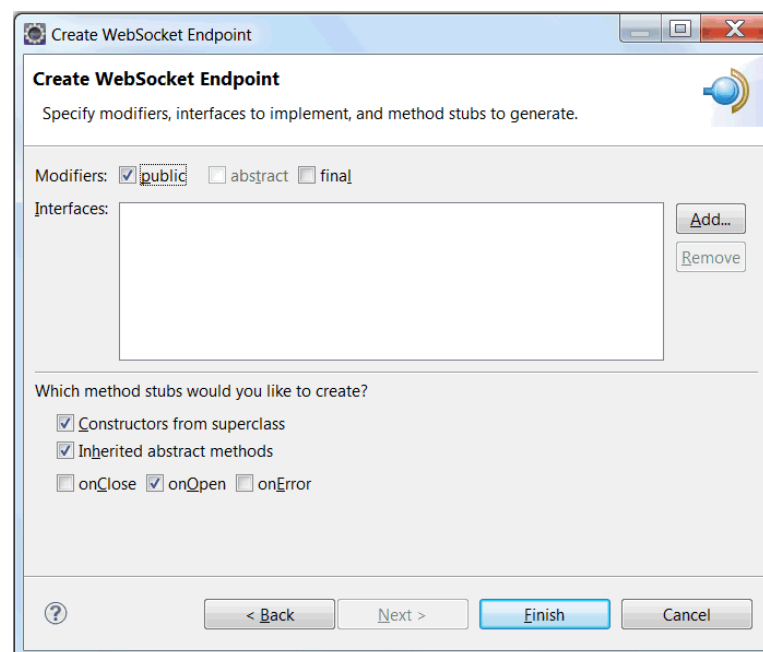
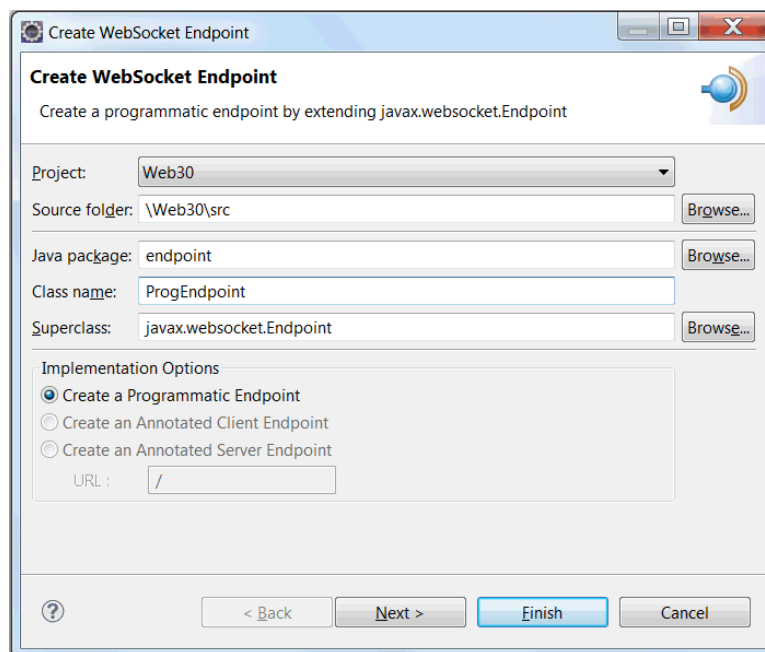
What's New in WDT Beta: Introduction to Websockets

- New Navigator node registers Websocket endpoints



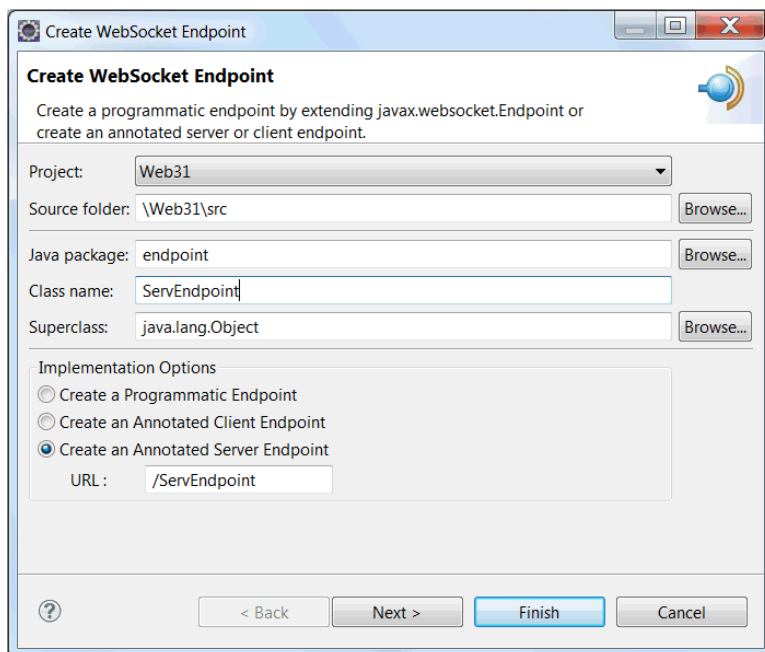
What's New in WDT Beta: Introduction to Websockets

- Create WebSocket endpoints using servlet 3.0 constructs and interfaces



What's New in WDT Beta: Introduction to Websockets

- Create endpoints using new annotations



```
ServEndpoint.java
```

```
package endpoint;

import javax.websocket.server.ServerEndpoint;

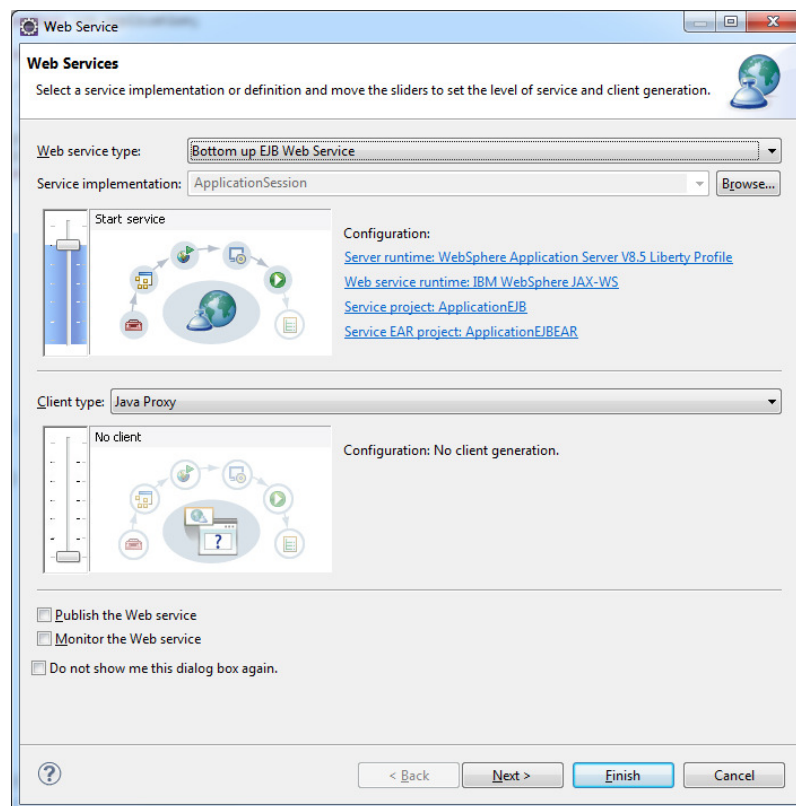
/**
 * WebSocket Endpoint implementation class ServEndpoint */
@ServerEndpoint("/ServEndpoint")

public class ServEndpoint {

    public ServEndpoint() {
        super();
        // TODO Auto-generated constructor stub
    }
}
```

What's New in WDT Beta: Web Service Tooling

- Bottom-up EJB Web Service support for JAX-WS
 - (Currently only available for JAX-RPC on WAS full profile)



What's New in WDT Beta: Web Service Tooling

- Support for additional security policies

Web Service Security Policy for Liberty Server

Web service security policy is specified in the service WSDL for Liberty servers.

Add a security policy entry to the Web service WSDL.

Policy name:

Policy template:

Description: This policy requires that you protect the message with HTTPS, and that a UsernameToken is used for authentication. The UsernameToken password is hashed with the created timestamp and nonce. There is also a message Timestamp.

To validate the UsernameToken in the Liberty profile server, you must provide a password callback handler class on the provider side by setting the ws-security.callback-handler attribute. The password from the callback handler must match the password that is used in the PasswordDigest. The password must also match the password in the user registry in the Liberty profile.

< Back Next > Finish

Web Service Security Policy for Liberty Server

Web service security policy is specified in the service WSDL for Liberty servers.

Select one or more policies to remove:

Policy	Policy ID
<input checked="" type="checkbox"/> UsernameToken with password digest (HashPassword) and timestamp over SSL	ApplicationPolicy

```

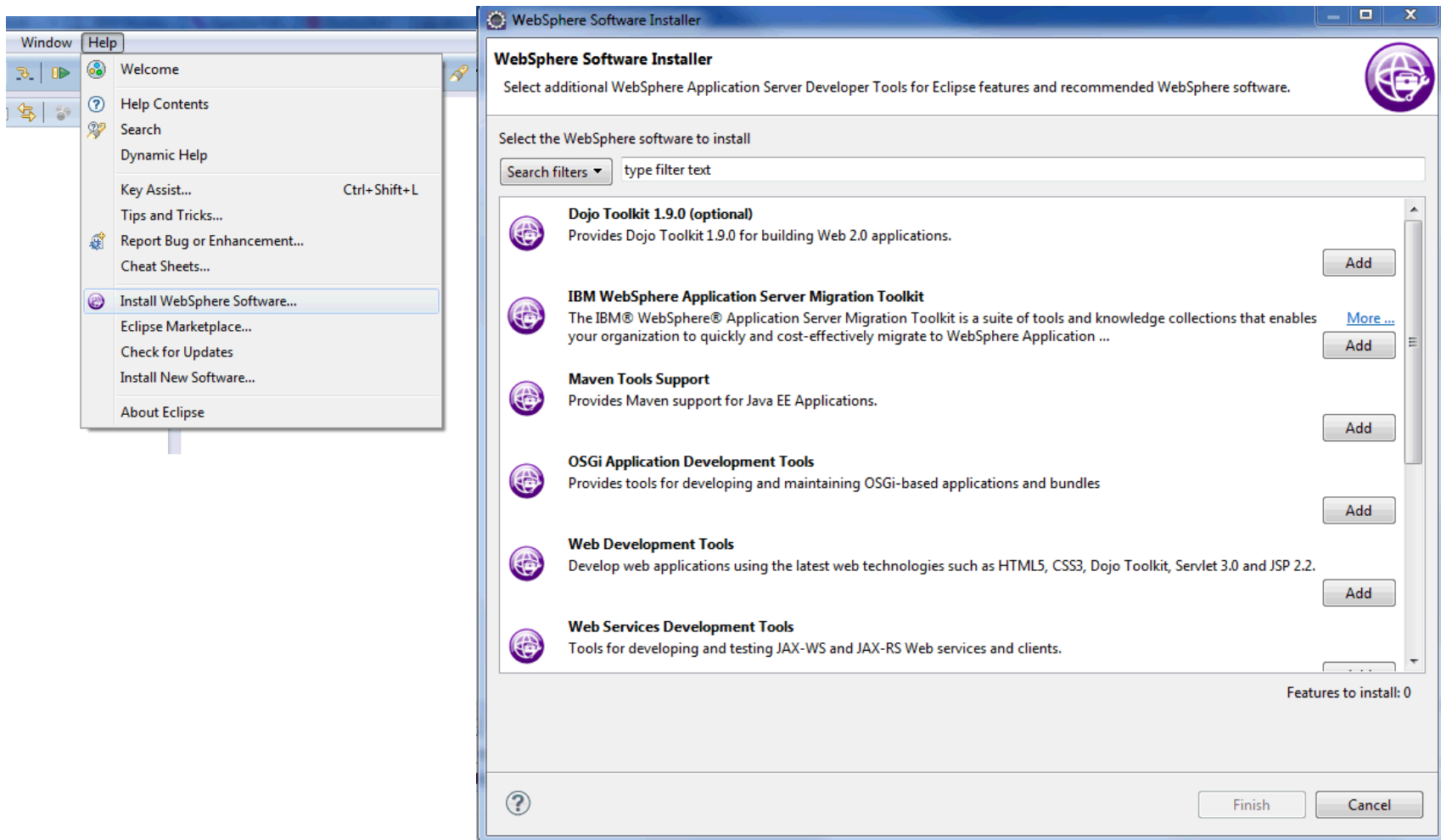
<wsp:Policy wsu:Id="ApplicationPolicy">
  <wsp:ExactlyOne>
    <wsp:All>
      <sp:TransportBinding>
        <wsp:Policy>
          <sp:TransportToken>
            <wsp:Policy>
              <sp:HttpsToken>
                <wsp:Policy/>
              </sp:HttpsToken>
            </wsp:Policy>
          </sp:TransportToken>
          <sp:Layout>
            <wsp:Policy>
              <sp:Lax/>
            </wsp:Policy>
          </sp:Layout>
          <sp:IncludeTimestamp/>
          <sp:AlgorithmSuite>
            <wsp:Policy>
              <sp:Basic128/>
            </wsp:Policy>
          </sp:AlgorithmSuite>
        </wsp:Policy>
      </sp:TransportBinding>
      <sp:SupportingTokens>
        <wsp:Policy>
          <sp:UsernameToken sp:IncludeToken="http://docs.oasis-open.org/ws-sx/ws-securitypoli
  
```

Finish Cancel

What's New in WDT Beta: Improved feature install

- Existing WDT install options: Eclipse Marketplace, or Eclipse update site
 - Hidden feature options
 - Offerings not highlighted
 - Difficult to view current state of workspace
- Websphere Software installer
 - Relevant WebSphere offerings and features in one view
 - Displays features and offerings from multiple update sites
 - Easy to see what is installed or missing
 - Easy to read descriptions of offerings

What's New in WDT Beta: Improved feature install



What's New in WDT Beta: Early access to Eclipse Luna

- WDT installs on Luna M6 Java EE EPP package



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