

Extending the Web Tools Platform with Ant and PDE

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Slides

- The slides for this session can be found at

<http://www.genixcorp.com/eclipseworld>



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Scope of this session

- Some information about WTP
- Getting up-and-running with WTP
- The inevitable need for extension
- Extension through Ant [Customization]
- Extension through PDE

Scope of this talk

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What is WTP?

- The Eclipse Web Tools Platform (WTP) project extends the Eclipse platform with tools for developing J2EE Web applications. The WTP project includes the following tools: source editors for HTML, Javascript, CSS, JSP, SQL, XML, DTD, XSD, and WSDL; graphical editors for XSD and WSDL; J2EE project natures, builders, and models and a J2EE navigator; a Web service wizard and explorer, and WS-I Test Tools; and database access and query tools and models.

- from the WTP Project site

<http://www.eclipse.org/webtools>

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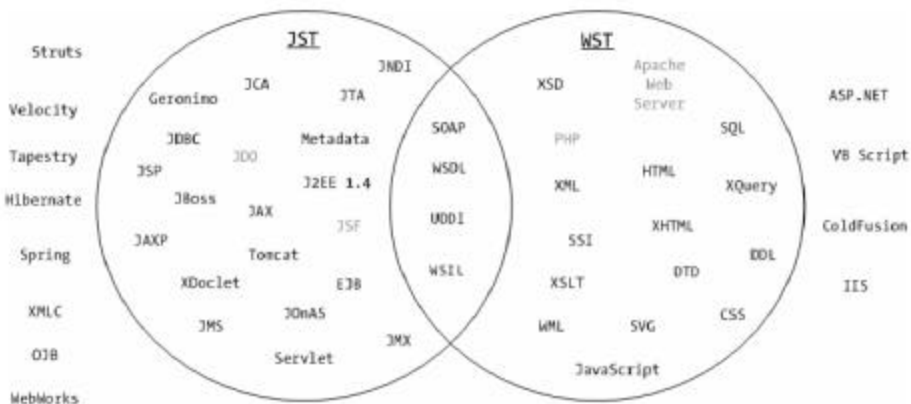
More about WTP

- Consists of three sub-projects
 - WST - Extends Eclipse to support several open Web standards
 - JST - Extends WST to provide support for several J2EE JSRs
 - JSF - Support for Java Server Faces
- Is a top-level Eclipse project
- Provides development tools and not a runtime environment

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WTP Scope (created by Christopher Judd)



01/30/2006

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Judd Solutions

What all this means to you... [The nutshell version]

1. Install Eclipse
 - Write Java applications
2. Install WTP
 - Write Enterprise Java applications

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Using WTP... [The stepwise version]

1. Install Eclipse (www.eclipse.org)
2. Install WTP (www.eclipse.org/webtools)
 - All in one package option recommended (negates the need for step 1)
 - Eclipse Member bundles also available that include WTP (IBM, BEA)
3. Install application server(s)
4. Optionally install additional tools
 - XDoclet (<http://xdoclet.sourceforge.net/>)
5. Configure WTP
 - a. Java Runtime Environment
 - b. Server Runtime Environment
 - c. XDoclet (optional)
 - Repeat for every new workspace

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Do I need WTP?

- If you're adventurous, all you need for writing J2EE applications, are:
 - A text editor (vi, emacs, Textpad or Notepad)
 - A Java Development Kit
 - J2EE runtime libraries
 - **And absolutely no deadline**
- For the rest of us, we need tools:
 - WTP provides them

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What are these tools?

- Development
 - Project Creation and Artifact management
 - Source Editors
 - XML
 - Servlet
 - JSP
 - EJB
 - Web Services
- Development-Related
 - Server Management
 - Internet
 - Data Access
- Are there tools for everything I need?

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Extending WTP

- What?
 - Expansion of the platform functionality to suit specific needs using the extension points defined within WTP
- Why?
- How?
 - Using Ant - Eclipse uses Ant, the equally popular (and capable) build tool for a litany of internal operations. It provides support for customisation of a project's build script.
 - Using PDE - The Plug-In Development Environment provides a powerful tool that can be used in the creation/customisation of plug-ins for Eclipse.

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Extension using Ant

- WTP uses Ant internally for its build operations and provides facility for extension.
- Easiest form of extension with the least learning curve
- Ability to reuse existing build files created for other IDEs that support Ant integration

How?

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Steps for Ant Extension

The pre Eclipse 3.2 way:

- Export build file from project
- Add targets to build-user.xml

The Eclipse 3.2+ way:

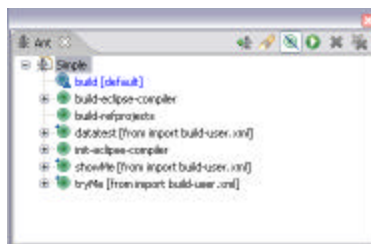
1. Export build file from project
2. Create your buildfiles(s) in the same directory
3. Add the `<?eclipse.ant.import?>` processing instruction
4. Re-export the build file from the project

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Ant View

Window > Show View > Other > Ant > Ant



- Shows all your targets
[Tip: Hide internal targets to reduce clutter]

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Use your buildfile

Create a run configuration

- Supports the invocation of a composition of targets
- Could be replicated with a target that uses antcall tasks

Use the Ant View

- Shows all your targets
- [Tip: Hide internal targets to reduce clutter]

Limitations of Ant Integration

- Suited for transient operations
 - Context based support is not available and the usage of command-line arguments to simulate this is arguably cumbersome.
- Cannot support functionality that requires integration with Eclipse. E.g.
 - Supporting a new server runtime definition
 - Integrated actions/views

Extension using PDE

- Two mechanisms exist for PDE extension:
 - Fragments
 - Plug-ins
- Fragments extend the behaviour of a host plug-in to provide additional functionality without the need of a full release. E.g.
 - Providing support for additional server runtimes
 - Plug-in internationalisation
- Plug-ins are pluggable modules that can be used to extend the functionality of the Eclipse platform. A plug-in can extend other plug-ins and provide extension points so that it can itself be extended.

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Steps for PDE Extension

1. Create Plug-In or Fragment
 - a. Create PDE Project
 - b. Create class(es)
 - c. Add libraries (as needed)
 - d. Add Extension to reference class(es)
2. Package for deployment by:
 - Packaging as a plug-in jar
 - Creating a Feature
 - Packaging as a feature jar
 - Creating an Update Site
3. Deploy

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WTP Track

- **Wednesday, September 6**
 - All Day [T-4](#) Develop Better J2EE Applications With the Web Tools Platform – Judd
- **Thursday, September 7**
 - 8:30 AM [101](#) Quick Tour of the Eclipse Web Tools Platform – Ryman
 - 8:30 AM [107](#) Leveraging JSF Components – Katz
 - 10:30 AM [201](#) How to Build Java Web Applications With the Web Tools Platform – Ryman
 - 1:15 PM [301](#) Facing JavaServer Faces Development With JSF Tools – Jacobi
 - 3:15 PM [401](#) Consuming and Producing Web Services With Web Tools – Judd
- **Friday, September 8**
 - 8:45 AM [501](#) Developing Java Web Services With the Web Tools Platform – Ryman
 - 10:45 AM [601](#) Extending the Web Tools Platform With Ant and PDE – Shittu
 - 1:45 PM [701](#) Building Applications With the Java Persistence API and Dali – S. Smith
 - 3:45 PM [801](#) How to Use and Extend Eclipse's XML and Schema Tools – Williams, Salter, Dahyabhai

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The JSF Tools Project

- Technology Preview release with WTP 1.5
 - Features
 - Full-fledged Faces Config Editor
 - Enhanced JSF-JSP Source Editor
 - JSF Library Registry
 - Extensible framework
 - Download
 - <http://download.eclipse.org/webtools/downloads/drops/R1.5/R-1.5.0-200606281455/>
- Release 1.0-WTP2.0
 - Features
 - Visual JSF Page Designer
 - JSF 1.2 support
 - First release of API's
 - Requirements
 - http://wiki.eclipse.org/index.php/Release_1.0_Requirements

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Dali JPA Tools Project



The Persistence of Memory

- Tools and frameworks for building applications with the Java Persistence API (JPA) —part of Java EE 5.
 - Support for both EE and SE development
 - O-R Mapping validation with intelligent code assist for both Java and Database values.
 - Quick start generation wizards
 - Entities from Tables
 - Tables from Entities

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AJAX Toolkit Framework

- Provides tools for developing AJAX/DHTML applications
 - JavaScript Debugger
 - Embedded Mozilla Browser
 - DOM Inspector / JavaScript Console
 - JavaScript Validation
- Extensible framework for adding AJAX runtimes to eclipse
 - AJAX Personality Builder
- New Enhancements
 - New CSS Tools and Improved DOM Inspector
 - Configuring and Deploying to a HTTP Server
 - JavaScript Debugging Enhancements
 - Debugging using a HTTP/File URL.
 - Expression Support
- Project in Incubation Phase (www.eclipse.org/atf).

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Questions/ Comments?
Project files will be available at
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