



Emerging Internet Technologies

# Using Eclipse to Develop AJAX Applications (ATF and JSDT)

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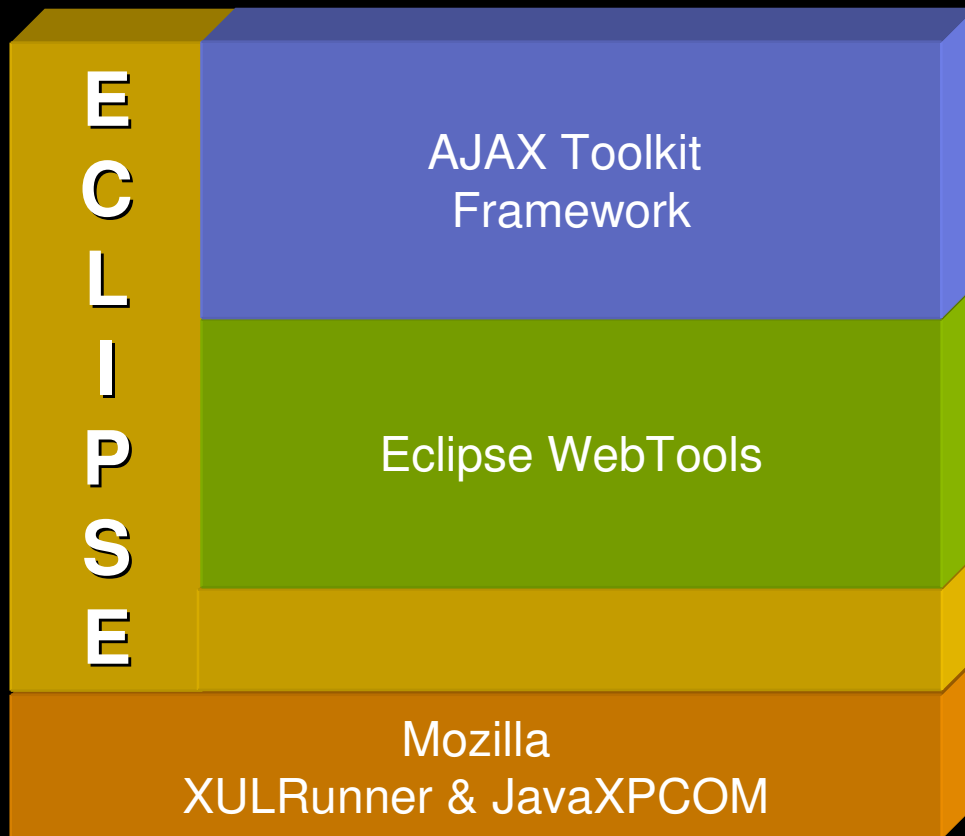
# Agenda

- Overview
- ATF Architecture
- Installing ATF
- Configuring ATF
- ATF Components
- How you can use ATF Technology
- Where to get ATF

# Overview

- ATF is an
  - Integrated Development Environment (IDE) for AJAX developers
  - Extensible framework for adding AJAX toolkits and JS libraries into the IDE
- ATF Provides
  - Tools to develop any DHTML/AJAX application
  - Tooling to facilitate use of various AJAX toolkits and JS libraries
  - Tight integration with the existing Eclipse user interface and development paradigm
- ATF aims to continue to provide high-function tools for AJAX and DHTML developers
- ATF tooling is available for web pages as well as projects
- ATF is included by a number of companies (Aptana, Borland, etc.)
- ATF is currently in incubation on Eclipse.

# ATF Architecture



ATF is a set of about 20 Eclipse plug-ins plus Mozilla XULRunner and JavaXPCOM

# Installing ATF

- ATF Unzip Packages
  - ✓ Two packages available
    - WST only
    - WST and JST (J2EE support).
- ATF Archive Site Zip
- All-in-one Packages
  - ✓ Windows (XP), Linux (32 bit), Mac OS X
  - ✓ Requires a Java 5 JRE to be installed separately
  - ✓ Contains only the Eclipse/ATF functionality needed by the Web Developer
    - Web Development and Web Tools Perspectives
    - Views and Menus only needed by Web Developers.
      - No Java Development Tools and Java Enterprise Editions (JSPs, JSF, etc.)

## Configuring ATF

### ➤ Install AJAX Runtimes or other JS Libraries (optional)

- ✓ Ability to configure and use most AJAX Runtimes
- ✓ Runtimes need to be manually downloaded
  - ATF doesn't ship AJAX runtimes!
- ✓ AJAX Runtimes are optional
- ✓ ATF tooling useful for JavaScript/DHTML development

### ➤ Ajax Toolkit Project

- ✓ Wizards to create a AJAX Project and configure an AJAX Runtime
- ✓ Web Tools Static and Dynamic Web Projects are also supported
  - Add ATF Support as a facet

# ATF Components

- JavaScript™ Development Tools (JSDT)
- JavaScript™ Debugger
- Mozilla SWT Browser Widget
  - ✓ JavaXPCOM
  - ✓ Full DOM access
- Browser Tooling
  - ✓ DOM Inspector
  - ✓ Browser Console
  - ✓ Request Monitor
  - ✓ CSS Tools

# JavaScript Development Tools

## ➤ JavaScript Development Tools (JSDT)

- ✓ A new WST component to provide robust JavaScript Tooling
  - Real JavaScript Model
  - Enhanced code completion
  - Enhanced Outline view
  - Code formatting
  - Code refactoring
  - “Language level” searching
  - etc.
- ✓ Provide JDT level of functionality for JavaScript.
- ✓ Usable as a stand alone editor and integrated into WTP

# JavaScript Debugger

- Full featured debugger
- Breakpoints in HTML and JavaScript files
- Debug Views for JavaScript
  - ✓ Call Stack
  - ✓ Variables
  - ✓ Breakpoints
  - ✓ Scripts View
- Expression Support
- Suspend on
  - ✓ start, errors, exceptions, debugger keyword

## Mozilla SWT Browser Widget

- Mozilla technology integrated into Eclipse using XULRunner
- Provides the engine for AJAX Tooling
  - ✓ JavaScript Debugger
  - ✓ Browser Tooling
- Uses JavaXPCOM to access browser APIs
- Browser Widget (and JavaXPCOM) can be used separately from ATF

## Browser Tooling (DOM)

### ➤ DOM Inspector

- ✓ Shows the DOM tree rendered by the Browser
- ✓ Dynamically updated to reflect changes within the browser
- ✓ Attributes of a node can be edited, added to, and removed
- ✓ A breadcrumb trail of hyperlinks is created for the node's path

### ➤ DOM Source

- ✓ Displays the HTML source of the selected DOM node
- ✓ Source can edited, validated, and updated back to the browser
- ✓ Notification of a DOM element's source being out of sync with the browser

### ➤ DOM Watcher

- ✓ Watch events for a selected node.

## Browser Tooling (CSS)

### ➤ Style Rules

- ✓ See Implicit vs. Explicit
- ✓ Edit, add, delete properties
- ✓ Highlight DOM elements that correspond to rule/property
- ✓ Open corresponding CSS file

### ➤ Computed Styles

- ✓ Every style rule computed by the browser

### ➤ Box Model

- ✓ Dimensions, x-y coordinates, padding, border, margin

### ➤ Diffs

- ✓ Shows changes made to CSS rules and properties
- ✓ Cut and paste to your web application

## Browser Tooling (Misc)

### ➤ Browser Console

- ✓ Shows all browser (i.e JavaScript, CSS) errors, warnings, and logging messages
- ✓ Double clicking on an error opens to the relevant line of code

### ➤ Request Monitor

- ✓ Observe HTTP request/response information
- ✓ Formatting of the response body based on content-types

### ➤ JavaScript Eval view

- ✓ Interactive JavaScript Evaluation

## How You Can Use ATF Technology

- Embed the Mozilla SWT Browser Widget

  - ✓ <http://www.eclipse.org/swt/faq.php#howusemozilla>

- Access all Mozilla Public Interfaces via JavaXPCOM

  - ✓ <http://www.eclipse.org/swt/faq.php#howusejavaxpcom>

- Use the browser tools in your application

- Use JSDT as your JavaScript editor

## Project Status

- We need more AJAX Developers using this tool!
  - ✓ Tell us what you like or dislike
  - ✓ Enhancements that should be made.
  - ✓ Want an active and vibrant user community
  
- Looking for Contributors
  - ✓ The team is stretched
  - ✓ Small team needs help to move the project forward

## Where to go for more information

### ➤ Website

✓ <http://www.eclipse.org/atf>

### ➤ Newsgroup

✓ <news://eclipse.org.webtools.atf/>

### ➤ Listserv

✓ [atf-dev@eclipse.org](mailto:atf-dev@eclipse.org)

### ➤ Milestones and “Weekly” builds

✓ <http://www.eclipse.org/atf/downloads/>

### ➤ Demo Movies and Presentations

✓ <http://www.eclipse.org/atf/demos/>

### ➤ Source code in Eclipse CVS

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