Web Tools Platform (WTP) 3.7

for the Mars Simultaneous Release Review

Full Release Review Materials
June 4, 2015
Prepared by Chuck Bridgham and sub-project leads

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Introduction and Purpose

This document is to fulfill the requirements of the Eclipse Release Review [1] for WTP 3.7 planned for release at the end of June, 2015.

Communication Channel: wtp-dev mailing list (See https://dev.eclipse.org/mailman/listinfo).

History

The Eclipse Web Tools Platform Project was originally proposed in 2004 by ObjectWeb, IBM and others. The Eclipse Foundation creation review was in June, 2004 with full time development since October, 2004. The original code contributions were from IBM and Eteration ("ObjectWeb Lomboz"). Since then several other large contributors have joined the effort, such as Oracle and SAP, and others and several new subprojects formed, such as Dali and JSF, Libra, and new incubator VJet in 2012.

Previous Releases

- WTP 0.7 July, 2005 and subsequent 0.7.1
- WTP 1.0 December 2005 and subsequent 1.0.1, 1.0.2, 1.0.3
- WTP 1.5 June, 2006 and subsequent 1.5.1, 1.5.2, 1.5.3, 1.5.4, 1.5.5
- WTP 2.0 June, 2007 and subsequent 2.0.1, 2.0.2
- WTP 3.0 June, 2008 and subsequent 3.0.1, 3.0.2, 3.0.3, 3.0.4, 3.0.5
- WTP 3.1 June, 2009 and subsequent 3.1.1, 3.1.2
- WTP 3.2 June, 2010 and subsequent 3.2.1, 3.2.2, 3.2.3, 3.2.4,3.2.5
- WTP 3.3 June, 2011 and subsequent 3.3.1, 3.3.2
- WTP 3.4 June, 2012 and subsequent 3.4.1, 3.4.2
- WTP 3.5 June, 2013 and subsequent 3.5.1, 3.5.2
- WTP 3.6 June, 2014 and subsequent 3.6.1, 3.6.2

Project Organization

Below is the list of current sub-projects and project leads as of June, 2015, that are part of this release.

Project	Lead
Common: tools and infrastructure not directly related to web tools, but required by Web Tools Platform	Carl Anderson, IBM
Dali (Java Persistence Tools): infrastructure and tools for JPA and JAXB applications	Neil Hauge, Oracle
Java EE Tools: Common Project Infrastructure, Java EE models, preferences, classpath model, publish api, refactoring, EJB Tools (merged project contents)	Chuck Bridgham, IBM
JSF Tools: infrastructure and tools for Java Server Faces.	Raghu Srinivasan, Oracle
Server Tools: tools and infrastructure to define and	Elson Yuen, IBM

[1] http://www.eclipse.org/projects/dev_process/release-review.php

Project	Lead
interact with servers.	
JavaScript Development Tools (JSDT): Tools for editing and debugging JavaScript.	Victor Rubezhny, Exadel
Source Editing: xml, dtd, xsd, xsl, sse infrastructure, html, css, jsp	Nick Sandonato , IBM
Web Services: Web services wizards and frameworks, Axis1 & Axis2 support, Web Servcies Explorer, WSDL Editor, JAX-WS support.	Keith Chong, IBM
Libra: Enterprise Tools for the OSGi Service Platform. Provides tools to develop OSGi Enterprise applications.	Kaloyan Raev, Zend

PMC Organization

Our Project Management Committee, as of June, 2015, is made up of four active members, each having a WTP-wide management role, in addition to the project-specific roles they have. In the execution of their tasks within these roles, the PMC members will form groups, organize meetings, etc., to accomplish their goals. In other words, they don't do all the work ... they just manage it!

Member	Role
Chuck Bridgham, IBM	PMC Lead, Architecture
Neil Hauge, Oracle	Quality, Architecture
Raghu Srinivasan, Oracle	Planning, Requirements
Carl Anderson, IBM	Release Engineering, Architecture
David Williams, IBM (not-active)	
Naci Dai, Eteration (not-active)	

WTP 3.7 Goals and Plans

Our Requirements Planning, Process, and Documentation is managed by Raghu Srinivasan, with substantial participation from each project lead.

We provide a standard-format WTP Project Plan which is updated every milestone as items are delivered or deferred, as part of our iterative development cycle.

Detailed requirements, plans, and progress are tracked (mostly) via Bugzilla, with 'plan' added as a keyword.

Themes and high-level requirements are coordinated through Eclipse Requirements Council and Planning Council representation.

Chuck Bridgham is the official WTP PMC representative to the Eclipse (EMO) Planning Council, and we are fortunate that two other PMC members also have representation on the council, by virtue of them being Eclipse Strategic Members (that do not otherwise lead a Top Level Project PMC): David Williams (IBM), and Neil Hauge (Oracle).

Features

We document all our new and noteworthy items[2] for each milestone, for every release. The following summarizes the functionality provided by each sub-project with emphasis on what's new this release.

Common Tools

Continuing to support and improve:

- *Deployment Assembly Framework*
  A framework for Component Deployment that defines resource and archive dependency mappings. It also includes an extensible property sheet for specifying domain-specific deployment mappings.
- *Faceted Project Framework*
  Provides a technique and UI for modeling server and runtime capabilities to associate with projects. This release moved some provisional API to be API, and usability improvements made in the UI for selecting facets for projects.
- *Validation Framework*
  Provides preferences and APIs to provide domain specific validation for resources and projects. Provided official API this release, instead of only provisional.
- *Snippets View*
  Offers a more visual mechanism for patterned text reuse through drag-and-drop.
- Internet Cache

Server Tools

Continuing to support and improve:

- Support for Application Servers of several types (Java EE, HTTPD)
  - Configure, publish, start/stop, debug
- Generic server adapter
- XML based configuration files for quick setup
- Includes JOnAS, WebLogic, WebSphere Application Server Liberty Profile, Oracle Application Server, Jboss, Tomcat
- Custom (Java) server adapter for total control
  - Includes Tomcat (included), Geronimo adapters (downloadable)

JavaScript Development Tools (JSDT)

Continuing to support and improve:

- Source evaluation while debugging
- JavaScript editing and debug framework
- Nature, project configuration and conversion tools
- Validation for JavaScript sources and Client-side JavaScript within web pages
- Integration with Common Navigator

[2] http://www.eclipse.org/webtools/development/news/main.php

Source Editing

Continuing to support and improve:

- Web Language Tools
- HTML source editor
- Content model upkeep with the HTML 5 specification
- CSS source editor
- JSP editor including syntax highlighting, integrated content assist for HTML, CSS, Java, JSF, EL, custom tags, and JSR-45 compliant debugging
- Content assist within custom tags now properly proposes html tags appropriate for the context
- XML Language Tools
- XML design and source editor
- XSD editor - Graphical and source editor
- DTD source editor
- XSL source editor, XPath selection view, and XSLT debugging
- Shortcuts have been added for launching XSL Transformations
- Structured Source Editing (SSE) framework
- Smart Insert Functionality can now be used in text viewers that are not embedded in a text editor

Web Service Tools

Continuing to support and improve:

- JAX-RS support
- JAX-WS support
- Extensible Web Service Wizards
- JAX-WS Annotation Properties View
- Creation of servlet based Web service using Axis1 and Axis2 runtimes
- Extension points for finding, creating and testing Web service
- Integrated into Java EE Navigator
- JAX-RPC codegen
- JSR 109 deployment ready
- Web services Ant tasks
- Web Services Explorer - UDDI, WSDL and WSIL pages
- WSDL Editor - graphical and source modes, integrated with XSD Editor
- WS-I Test Tools - Validate WSDL and SOAP for WS-I compliance
- Models for Web services deployment descriptors
- Service policies

Java EE Tools(Now including EJB Tools)

Continuing to support and improve:

- Java EE 5,6, and 7 Support, including
  - Servlet 2.5, 3.0 and 3.1 support including web fragments
  - EJB 3.0, 3.1, 3.2
  - Connector 1.5, 1.6, 1.7
- Wizards for creating Web artifacts: Servlet Filters and Application Lifecycle Listeners
- Usability enhancements in the toolbar of the Java EE perspective
- EAR Bundled Libraries support
- Java EE Deployment Descriptor nodes in the Project Navigator view
- Improved Java EE classpath management/UI
- Ability to read Java EE models from binary archives
- Java EE Core Models and Model Provider Framework
- Natures and Builders
- Java EE Views and Navigators
- Java EE Projects and Modules
- Support for WAR, EJB-JAR, EAR, etc
- Java EE Navigator view
- Ability to target on different servers
- New wizard page in Java EE project wizards for configuring Java facets
- Better compliance with the UI guidelines for the Dynamic Web and EAR project wizards
- Improved default layout of the Java EE perspective
- Java EE preferences page introduced
- Avoid having the .JETEmitter system project in workspace by default
- Easier creation of new Servlets from existing Servlets and JSP pages
- Easier creation of new Filters from existing Servlets and JSP pages
- EJB 3.0, 3.1 and 3.2 support.
- Wizards for creating EJB artifacts: Session Beans and Message-Driven Beans
- Projects, Module, Deployment support
- EJB Validation

JSF Tools

Continuing to support and improve:

- Support for JSF 2.2
- Web Page Editor
- Multi-page Editor
- Design View
- Visual rendering of JSF, JSP and HTML tags
- Support for JSF RI components
- Support for Apache MyFaces Trinidad components

- Extensibility framework to simplify adding support for other component libraries
- Source View
- Enhanced Source Editor gives content assists, both syntax and semantic validations, Hyperlink, Hover help
- Preview Page
- JSF Validation
- Faces Configuration Model, Editor and Wizards
- Multi-page Editor
- Graphical diagram editor for navigational rules
- EMF model of the application configuration resource file
- Support for JSF 1.1, 1.2 and JSF 2.0 versions

Dali

Continuing to support and improve:

- Basic support for JPA 2.1
- Basic support for EclipseLink MOXy XML Mapping File
- EclipseLink Validation Preferences
- JPA 2.0 Support for the JPA Diagram Editor
- JPA Diagram Editor
- JAXB 2.1/2.2 tooling support
- Content assist and validation for JPQL Named Queries
- Comprehensive, rich UI and validation for JPA 1.0/2.0 metadata
- Provisional API for JPA model
- Extensible persistence.xml Editor
- Project Explorer Content for JPA projects
- New XML Mapping File wizard
- New Entity wizard
- Entity Generation from Tables wizard
- WTP (Facet) integration
- DTP Integration for DB metadata
- XML Mapping Descriptor editing support (JPA 1.0/2.0 orm.xml)
- Code completion for JPA annotation values
- Annotated Java and ORM XML context based defaulting
- Comprehensive EclipseLink JPA support

Libra

Continuing to support and improve:

- OSGi Bundle Facet - enables easy creation of OSGi Bundle projects that have the structure of a WTP project and a PDE project simultaneously
- OSGi Launchers - WTP Server Adapters for open source OSGi frameworks like Equinox, Felix, Knopflerfish, etc.

- OSGi Bundle Editor - add-on for the server editor that displays information about the installed OSGi bundles and their dependencies, including graph visualization.
- WAR Products - a derivative of the PDE Product feature that enables the export of Server-Side Equinox applications to WAR files

VJet – Incubator(Not in release train)

- Committer help with Nodejs 0.10 support updates and many bug fixes
- Community help in upgrading VJET to Mars and improving VJET JS syntax parser.
- Community Adoption by Sencha with the Sencha Eclipse Plugin many improvements have been sponsored by Sencha (built on top of VJET)

Non-Code Aspects

Developer and API Documentation

Project-wide architectural overview (on website)

Describes nature and relationship of components

Presentations and tutorials provide drill down on selected topics (such as server definition)

Component overview (on website)

Describes operation of an individual component and relationships among its parts, lifecycle issues, and other emergent properties of component

JavaDoc Package documentation

Describes contents and inter-relationship of package contents

Per-file JavaDoc

Conventional JavaDoc guidelines apply; scope is the class/interface being documented and its immediate surface area

Extension point documentation

Provided with and as part of the API and JavaDoc documentation.

End-User Documentation and Examples

Tutorials and presentation materials available on our WTP Project Community website [3]. Some major additions were added this release and provided as re-usable education materials to teach web development.

Contributed to conference presentations (e.g. EclipseCon), articles, etc.

[3] http://www.eclipse.org/webtools

Two known books: Pro Eclipse JST, Eclipse Web Tools Platform.

WTP downloads and installations includes end-user documentation. Additionally, this same documentation will be available on the internet, via an Eclipse info-center provided by the Eclipse Foundation.

APIs

In general we provide APIs according to Eclipse Quality API standards [4]. But, we are aware that we (WTP) still do not provide enough APIs and still have too large a "provisional debt".

We have published an API Policy[5] document that describes how we protect some non-API so that adopters can invest with some assurance of continuity, but also detail the limits to that policy, so that eventually we can provide complete API.

In addition this year we have started tracking our extensive collection of Provisional API[6] in an effort to reduce, and graduate to public API. This effort is ongoing, and will be added to our Mars plans.

Architectural Issues

Chuck Bridgham manages overall WTP Architecture for WTP and along with Neil Hauge, represents WTP PMC on the Eclipse Architecture Council.

Tool Usability

WTP provides a lot of functionality to web developers as indicated by the number of downloads and the traffic on the webtools newsgroup. It does emphasize Java based web development, even though it has some tools for pure HTML, CSS, XML and JavaScript development.

All WTP subprojects usually have "Ease of Use" in their plan for a release to address usability issues.

One way we contribute to the overall usefulness experience to Eclipse end-users is to participate in the EPP packaging project, by "owning" the Eclipse IDE for Java EE Developers package.

End-of-Life

No end-of-life changes this release.

Quality (Bugzilla)

Neil Hauge manages the general, overall measurement and monitoring of our quality and bug handling.

Focused Quality Activities

In order to make sure we focused on quality of particular types, that are important to our project's health, we devoted part of each of our weekly status meetings to discussing and reducing our bug backlog in specific areas.

First we focused on older bugs that had a a severity of "Major" or higher to ensure that these potentially serious issues were being addressed, or at least correctly categorized.

[4] http://www.eclipse.org/projects/dev_process/eclipse-quality.php

[5] http://wiki.eclipse.org/WTP_API_Policy

[6] http://wiki.eclipse.org/WTP_Provisional_API_Reduction

Next we focused on “bugs with patches attached” to make sure we were being responsive to non-committers efforts to improve parts of WTP that was important enough to them to contribute a patch.

Finally we focused on reviewing newer bugs that had a a severity of “Major” or higher to ensure that these potentially serious issues were being addressed, or at least correctly categorized.

Bugzilla statistics

The statistics in the table below reflect overall Bugzilla entries (since project inception) with snapshots obtained on May 25, 2010, May 26, 2011, May 31, 2012, May 29, 2013,June 9, 2014, and June 2nd , 2015(4 weeks before release) respectively.

	Helios	Indigo	Juno	Kepler	Luna	Mars
Total bugs	23929	26537	28026	28685	29446	29941
Total Resolved/Closed bugs	21133	22939	24185	24709	25381	25714
Total Open bugs	2796	3598	3841	3976	4065	4227
Blocker/Critical	0	0	4	6	1(incubator)	3
Major	88	160	156	135	142	163

The statistics in table below show the delta for bugs in each release(for Mars the period is May 31, 2014 to June 4, 2015)

	Helios	Indigo	Juno	Kepler	Luna	Mars
Bugs opened	3434	2608	1370	1194	762	508
Bugs resolved	3668	2126	1254	1049	722	375
Fixed	2529	1777	943	738	440	253
Invalid	145	72	45	44	40	22
Wontfix	244	72	96	89	55	19
Duplicate	377	30	98	96	50	38
Worksforme	344	142	58	55	97	22
Not Eclipse	29	18	14	27	14	10

Our open bug backlog increased by 4% during the Mars release.. This was a larger increase than the past few releases, and should be a focus in the upcoming Neon release. There was a 14% increase in Major bugs in the backlog.

Standards

W3C and OASIS standards

HTML 4.01, XHTML 1.0 / 1.1, XML Catalog 1.0, CSS 2.0, ECMAScript 262

HTML5 (partial support, such as HTML Source Editor)

CSS3 (partial support, such as HTML and CSS Source Editor)

XML 1.0, XSD 1.0, WSDL 1.1, WS-I Basic Profile 1.1

SOAP 1.1, WS-I Attachment Profile 1.0.

SOAP 1.2

XML Catalog 1.1

JCP standards

J2EE 1.2 / 1.3 / 1.4: Servlet, JSP, EJB, JAX-RPC, JSR045, JSR109, JSR921

Java EE 5

Java EE 6

Java EE 7

JDBC 2.1

JSR 220: EJB 3.0 JSR

JSR 220: JPA 1.0

JSR 317: JPA 2.0

JSR 338: JPA 2.1

JSR 127: JSF 1.1

JSR 252: JSF 1.2

JSR 127: JSF 1.1

JSR 252: JSF 1.2

JSR 314: JSF 2.0

JSR 344: JSF 2.2

JSR 318: EJB 3.1

JSR 345:EJB 3.2

JSR 315: Servlet 3.0

JSR 340: Servlet 3.1

JSR 311: JAX-RS 1.1

JSR 339: JAX-RS 2.0

JSR 322: Connector 1.6

JSR-224 JAX-WS

JSR-181 Web Services Metadata for the Java Platform

JSR-222 JAXB 2.0

UI Usability

We are familiar with, and follow, the Eclipse User Interface Guidelines .[7]

We do have some contributors that often open bugs for Accessibility and National Language issues so we can fix those bugs before end-users encounter them.

We participate in UI walk through, from time to time.

Schedule

WTP followed the simultaneous release schedule, and delivered all milestones on time.

We plan to participate in simultaneous maintenance as well.

WTP may elect to deliver additional maintenance, tech preview milestones, or off-cycle releases in addition, if adopter or user requests warrant.

In addition to providing predictable milestones and releases, we also frequently "step up" to building and testing with our prerequisite software (usually weekly) so that we can find bugs early and get fixes in the platform and other prerequisite on behalf of the whole release train.

Communities

Committers and Contributors

Many active committers from several companies (including individuals)

Committer elections and removals have followed charter principles

Continuing to recruit additional contributors (organizations and individuals)

Many, diverse, Contributing Organizations (current and previous): Eteration, Exadel, IBM, Innoopract, JBoss, ObjectWeb, Oracle, SAS, Thales, University of Karlsruhe, SAP, Sybase

Open communications via mailing lists and newsgroups

- Mailing lists: PMC, wtp-dev, wtp-releng, JSF, Dali, Libra
- Meetings, meeting, meetings – numerous, open, and documented
- Weekly PMC, weekly dev status, requirements as needed, bi-weekly architecture
- PMC minutes available on website:
http://www.eclipse.org/webtools/development/index_pmc_call_notes.php
- Weekly status telecon minutes available on website:
http://wiki.eclipse.org/WTP_Development_Status_Meetings
- Open and inclusive release planning and tracking processes
- Bugzilla used to request and track all defects, enhancements, and milestone plans
- Additional reports (defect summaries, test stats, etc) used to enhance planning / tracking
- All contributions made directly to Eclipse Git (Formerly CVS)
- Continuous, weekly integration builds, and release builds available to the community
- Coordination/cooperation with other Eclipse projects
- Platform, JDT, DTP, EMF, GEF, PDT
- Leverage other open source technologies in the project
- Participate in Orbit

[7] http://wiki.eclipse.org/index.php/User_Interface_Guidelines

End-User Community

Substantial WTP download activity for milestones and releases

- WTP is one of the most popular downloads
- Substantial website content
- Download links, New & Noteworthy, mailing lists, presentation DB
- Tutorials, documentation, presentation summary,
- Evangelism and outreach in the market & broader community
- Website lists WTP events (conferences, etc.)
- Multiple commercial implementations
- Working with Eclipse and industry press to promote WTP
- Presence at EclipseCon, Eclipse World, others

Adopter Community

Many, known commercial, Eclipse, and other open source project adopters, such as

- IBM – Rational Application Developer, WebSphere Developer Tools
- Oracle Corporation - Oracle Enterprise Pack For Eclipse (OEPE)
- SAP – NetWeaver Studio
- Eteration – Lomboz
- Genuitec – MyEclipse
- Innoopract – Yoxos
- Exadel – Exadel Studio
- JBoss – JBoss Developer Studio
- SpringSource IDE – VMWare
- Eclipse PHP Development Tools
- Xerces (Xerces-J uses our PsychoPathXPathProcessor for XML Schemas 1.1 assertion support)

Many Server Adapters available, another sign of diversity:

Open Source

- Apache Tomcat
- Apache Geronimo
- JBoss
- Jetty
- ObjectWeb JONAS
- GlassFish Server

Commercial

- IBM WebSphere
- Pramati Server

- Oracle WebLogic Application Server
- Oracle GlassFish Server
- SAP NetWeaver Application Server Java

IP Issues

IP Checks

Project Leads have all proof-read, double checked and confirmed the following:

About files and use licenses are in place as per the Guidelines to Legal Documentation.

All contributions (code, documentation, images, etc) has been committed by individuals who are either Members of the Foundation, or have signed the appropriate Committer Agreement. In either case, these are individuals who have signed, and are abiding by, the Eclipse IP Policy.

All significant contributions have been reviewed by the Foundation's legal staff. Include references to the IPZilla numbers of all clearances.

All non-Committer code contributions, including third-party libraries, have been documented in the release and reviewed by the Foundation's legal staff. Include references to the IPZilla numbers of all clearances.

All Contribution Questionnaires have been completed

The "provider" field of most feature is set to "Eclipse Web Tools Platform" (Note: many were left as the previous “Eclispe.org” so as not to change too much unnecessarily, but will be corrected over time.

The "copyright" field of each feature is set to the copyright owner.

Any third-party logos or trademarks included in the distribution (icons, help file logos, etc) have been licensed under the EPL.

Any fonts or similar third-party images included in the distribution (e.g. in PDF or EPS files) have been licensed under the EPL.

IP Log and Documentation

Submitted separately

A list of third party software distributed with WTP, including information on the license and a link to the WTP CQ.

The name of every committer for this release

The name of every non-committer who contributed code via Bugzilla entries, with bug numbers.

Our IP Log contains a detailed description of our dependencies on third party software that is not re-distributed with WTP. In summary:

Users can install their own Application Servers, where server adapters have been provided.

EJB 2.1 developers can install Xdoclet for “old style” annotations

Axis2 developers will need to install their own Axis2 runtime, if it is not part of their application server.

JSF developers need to provide a JSF runtime and component libraries, if it is not part of their application server.

JPA developers need to provide their own JPA runtime, if it is not part of their application server.