Object Teams combined review: Indigo – 2.0 Release – Graduation

Planned Review Date: June 1-8, 2010
Communication Channel: objectteams-dev@eclipse.org
Submitted by: Stephan Herrmann
Introduction

- The Object Teams Project provides tooling for developing highly modular evolvable software using the language OT/J
  - compiler and runtime for OT/J based on the JDT compiler
  - comprehensive IDE for OT/J based on the JDT
  - extension for executing OT/J code within Equinox

- Self application
  - the Object Teams Development Tooling (OTDT) extensively uses OT/Equinox for its implementation
History

- At objectteams.org
  - Start implementation of OT/J 2001
  - Start Eclipse-based implementation 2003
  - Release OTDT 1.0.0 (Eclipse 3.2) 2007
  - Release OTDT 1.4.0 (Eclipse 3.6M6) 2010

- At Eclipse.org
  - Project creation: Jan 2010
  - Initial commit to SVN: Apr 2010
  - Release 0.7.0 (Incubation): Jul 2010
  - Joined Indigo at M3: Nov 2010
Version numbers

- During incubation
  - Release 0.7.0
  - Milestones towards 0.8
    - Up-to 0.8 M7
    - however, no release 0.8 planned, but ...
    - version switch happened between M7 and RC1:

- At graduation
  - Release 2.0.0
    - Clearly indicate that this supersedes all previous releases up-to 1.4.0 which have been published from objectteams.org

- After graduation
  - Will apply the Eclipse version number rules
Features

- After an essentially feature complete 0.7.0 release, the new release brings these improvements:
  - Adopt small languages changes
    - Changes: http://www.objectteams.org/def/1.3/sB.html#sB.1.3
    - Additions: http://www.objectteams.org/def/1.3/sB.html#sB.2.3
  - Summary of user visible changes since the 0.7.0 release:
    - http://www.eclipse.org/objectteams/pages/new_in_0.7.1.html
    - Changes are in:
      - Views/Dialogs • Content Assist • Refactoring • Run/Debug
      - Language • API (OT/J reflection)
      - Compiler • Runtime
Non-Code Aspects

- Comprehensive documentation at http://wiki.eclipse.org/Category:Object_Teams
  - Total of 60 wiki pages in 6 categories.
  - User documentation
    - Quick-start, examples, patterns, etc.
  - Developer documentation
    - Runtime parameters, format of byte code attributes, ...
    - Dependencies, implementation strategies, build system, ...

- Documentation/examples shipped with the tool:
  - User guide, incl. language definition etc.
    - updated for current version
  - Auto-installing examples
    - no update was necessary since 0.7.0
APIs

- API of all components are defined and stable
  - Java API
  - Extension Points

- All packages are exported
  - Non-API packages marked as x-internal or x-friends
Architectural Issues

- Architecture has matured over the years
  - Minor re-arrangements during API consolidation
  - OTDT serves as a major show case for OT/J
    - Has been used for examples in several blog posts on OT/J
    - OT/Equinox provides new dimensions of extensibility

- Works with Eclipse 4.1
  - No branching needed to support 3.x and 4.x
Tool Usability

- The OTDT aims at providing the same usability and convenience for OT/J as the JDT does for Java
  - most existing features of the JDT have been extended to work with OT/J, too
  - new features have been developed specifically for OT/J:
    - views & wizards
    - code assist
- The OTDT doesn't expect the user to know every detail about Object Teams, but aims at teaching the user those bits that might be relevant to her/him.
- Specific quickfixes exist for migrating old OT/J projects
End-of-Life

- No functionality has been end-of-lifed
- This is the first release with strong API promises
Retention Policy

- Final releases (incl. SRs) will be kept indefinitely
- Milestone releases will be kept until the final release
- No promise for unstable versions
**Bugzilla**

- At time of 0.7.0 release:
  - 29 bugs open (all at P3)
    - 13 enhancement
    - 13 normal
    - 3 minor

- “Now” (after RC1 verification):
  - Open real bugs

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![Bugzilla Table]

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Bugs over Time

Status Counts for Objectteams

- Release 0.7.0
- Release 0.7.1
- Release 0.8M3
- Release 0.8M4
- Release 0.8M5
- Release 0.8M6
- Release 0.8M7

Migrating issues from previous trac to bugs.eclipse.org

- almost constant
- growing
- breathing
Standards

- No standard exists for OT/J, the project provides the only implementation for this technology
  - Language definition (OTJLD) is maintained at objectteams.org. Version 1.3 will be frozen as the basis for the OTDT 2.0.0
- OT/J is executed on a standard **Java virtual machine**
- OT/Equinox runs on the **Equinox framework** using ...
  - only standard **OSGi** headers in MANIFEST.MF
  - only regular **extensions** in plugin.xml
  - **AdapterHooks** as supported by Equinox
- Installing the OTDT (and any OT/Equinox appl.)
  - using only existing **p2** mechanisms
UI Usability

- UI closely follows the JDT lead
  - Not a new IDE, but a seamless extension of the JDT
- I18N
  - The project participates in Babel
    - Currently language packs suffer from https://bugs.eclipse.org/344764
  - No usage of problematic classes from java.text etc.
Planning 0.7.0 → 2.0.0

- High Priority: Indigo Participation (see next)
- Medium Priority: bring more contributions
  - OT/JPA (work in progress, not included in release)
  - Runtime Weaver (work in progress, not included in release)
- Continuous attention: bug fixing / RFEs
  - see bugzilla statistics
**Indigo Participation**

- Object Teams participates in Indigo release train since M3
  - Contributed at +2 for each milestone since
  - Resolved issue regarding our JDT/Core patch
    - Ensure patch is not accidentally installed by user
      - [https://bugs.eclipse.org/330534](https://bugs.eclipse.org/330534)
    - Clearly label the patch feature
      - feature name + [https://bugs.eclipse.org/330338](https://bugs.eclipse.org/330338)
    - Don't overwrite config settings from other plug-ins
      - [https://bugs.eclipse.org/329784](https://bugs.eclipse.org/329784)
    - Exception regarding use of `org.eclipse.jdt` namespace
      - approved by Eclipse PMC in a vote on 2011/01/28
  - Documented usage/adaptation of internals
    - [http://wiki.eclipse.org/OTDT/NonAPI](http://wiki.eclipse.org/OTDT/NonAPI)
Communities

- Developers:
  - One committer still preparing his initial contribution for IP-analysis (*many* dependencies):
    - Olaf Otto for OT/JPA
  - Project lead became a committer for JDT/Core, too.
    - Living the synergy of improving the core and its extension

- Users:
  - Community is not large but very qualified
    - high-detail technical discussions in the Forum
    - qualified suggestions in Bugzilla
    - great feedback at DemoCamps etc.
  - Users of the OTDT are *adopters* of OT/J & OT/Equinox
Communities (cont'd)

- Actively reaching out
  - Forum
    - Questions usually answered the same day, max. delay 5 days.
  - Blog
    - 12 (comprehensive) posts since the 0.7.0 release
  - Eclipse Market Place
    - participate since the EPIC days
  - Conferences
    - Tutorial at EclipseCON’11
  - DemoCamps etc.
    - Jan. ’11 Braunschweig ("Stammtisch")
    - Jun. ’11 Dresden & Jena

- Involvement in bugzillas throughout all of eclipse
**IP Issues**

- The initial contribution had been reviewed and approved by Eclipse legal before 0.7.0
- IP log submitted using the tool
- External contributions
  - all CQs approved
  - 6 contributions (mostly test cases) submitted via bugzilla
- Eclipse Software User Agreement
  - version of February 1, 2011
  - applied for all delivered features
- About files and license files are complete and correct.
Credits and Kudos

- Initial Contribution donated by
  - Technische Universität Berlin (5 authors)
  - Fraunhofer FIRST (10 authors)
  - Additional individuals

- Guidance during establishing the project
  - Mentors, EMO, Tools PMC, Eclipse Legal
  - Special thanks to Chris Aniszczyk and Sharon Corbett for excellent feedback with very low latency

- Guidance for resolving the namespace issue
  - OTDT contains a plug-in named org.eclipse.jdt.core_3.7.0.OTDT_r080_...
  - Needed to negotiate technical necessities versus Eclipse rules
  - Advice from about everybody from Tools PMC, AC, Equinox team & more
Non-committer contributions

- Bug reports, mostly high quality:
  - 21 directly in bugzilla
    - Special thanks to Jan Marc Hoffmann for 16 excellent bug reports
  - 5 issues originally discussed in the forum, later converted into bugzillas
Planning beyond Indigo

- Maturing the alternative bytecode weaver
  - Result from a student project (finished in 2009, then a few test cases passed)
  - Improved in winter 2010/11, current status:
    - 1804 test cases pass (from 2112 relevant test cases)
    - Will bring more flexibility, still better integration with OSGi

- Bring OT/JPA to Eclipse.org (persistence for OT/J)
  - CQs for essential dependencies, avoid problematic deps.
    - See http://wiki.eclipse.org/OTJPA_dependencies
    - Updating/maturing the existing implementation

- Improve Maven support
- Adopt Java 7
- More code assists, refactoring etc.
Next Releases

Indigo Service Releases

Object Teams shall contribute its 2.1.0 to Juno
Additional Information Regarding Graduation

Compiled along the hints in http://wiki.eclipse.org/Community_Development_for_Eclipse_Projects
On being two committers

- Stephan Herrmann has two roles
  - JDT/Core committer
    - Lots of opportunities to learn the Eclipse way
    - Guidance by Olivier Thomann and his team
  - Object Teams project lead
    - Transfer the gained know-how to the Object Teams project

- Dispatch bugs between projects
  - Raise JDT bugs original discovered in an Object Teams context
    - Several new tests and fixes
    - Some white box issues that are only found when working on the code
  - Redirect OT-bugs mistakenly reported against JDT
    - So far only 1 case
Transparency & Publicity

- The Object Teams Project actively uses
  - Wiki: Documentation for users and developers
  - Bugzilla: Discussions about bugs and enhancement requests
  - (evidence to be found in previous slides)

- Project Website
  - Short paragraphs describing benefits w/ links to more in the wiki
  - Standard sub-pages download, documentation etc.
  - Links to project plan and project summary
  - List of recent events

- Project summary is filled with up-to-date info
Community Interaction

- Forum
  - low latency (see above)
- Other lists:
  - participation in, e.g., cross-project-issues-dev@eclipse.org
- Blog
  - registered in planet.eclipse.org
- Bugzilla
  - small backlog of unresolved bugs
  - highly in sync with commits to SVN

Remaining items already covered in previous slides