Equinox Project 3.5 Release Review

RT Project PMC
Highlights

• 3.5 new features:
  – Implementation of OSGi R4.2 core framework specification and various compendium services specifications
  – Redesigned p2 UI, more robust p2 implementation

• API quality:
  – High. No breaking changes to Equinox API
  – Binary compatible for compliant plug-ins
  – 42 classes or interfaces with new API (either new types, or existing types with new members)
  – 1 deprecated class, 7 deprecated methods

• End-of-life issues:
  – No longer distributing Jetty 5.1, replaced with Jetty 6.1

• IP Clearance and Licenses:
  – All licenses and about files are in place as per the Eclipse Development Process, the Due Diligence Process was followed for all contributions

• Community and Committer Diversity:
  – 33 committers, 17 active in past 9 months
  – Organizations: IBM (10), Individuals (2), Prosyst, EclipseSource, compeople AG, Cloudsmith, WeigleWilczek GmbH (1 each)
  – Geographies: Canada (8), USA (3), Germany (3), Bulgaria (1), Sweden (1), France (1)
  – Commits: IBM (83.4%), EclipseSource (6.3%), Individuals (6%), Prosyst (1.8%), WeigleWilczek GmbH (1.4%), Cloudsmith (1.1%), Compeople (0.1%)
  – Consumed by all other Eclipse projects
Themes and Plan Items

• Scalability
  – Reduce size and improve performance of framework
  – Improve install time
  – Improve performance of “uses” directive in resolver

• Robustness
  – Improve framework thread safety
  – Improve security tests
  – Improve p2 test coverage
  – Improve robustness of installation
  – Investigate use of alternate HTTP clients for install
  – Improved path and URL support
  – Extensible execution environments
  – WebStart support on latest VMs
  – Pass arguments to a running Eclipse application
  – Improved logging story
  – Support undeploying servlet bridge
  – Improve robustness of download operations

• Consumability
  – Improve security UI
  – API completeness
  – New p2 UI workflows
  – Improve p2 error reporting
  – Improve p2 responsiveness
  – Improved configurability for Jetty HTTP service
  – Simplify addition of repository content
  – Integration of servlet bridge with p2
  – Create p2 API

• The Future
  – OSGi standards participation
  – Update to the latest Jetty release
  – Investigate improvements to the extension registry

Deferred 3.5 Plan Items

- Improve performance of “uses” directive in resolver
- Webstart support on latest VMs
- Pass arguments to a running Eclipse application
- Improve security UI
- API completeness
- Create p2 API
- Integration of servlet bridge with p2
- Investigate improvements to the extension registry
New and Noteworthy

• Enhancements to conditional permission admin service to support RFC 120
• New publisher bundle in p2
• Service registry enhancements to support RFC 126
• Standardized OSGi framework launching support - RFC 132
• Support for composite bundles (nested frameworks, RFC 138)
• New core framework API to support OSGi R4.2 framework specification
• New Equinox concurrency provisional API (futures, executors)
• Enhanced DebugOptions to support dynamic debug changes
• New Equinox tracing API for writing trace data to a file or other output
• Declarative services implementation changes to support RFC 134 in OSGi R4.2 spec
3.5 Plug-in Changes from 3.4

**Added Plug-ins (7)**
- org.eclipse.equinox.concurrent
- org.eclipse.equinox.ds
- org.eclipse.equinox.p2.publisher
- org.eclipse.equinox.p2.repository
- org.eclipse.equinox.p2.repository.tools
- org.eclipse.equinox.p2.ui.sdk.scheduler
- org.eclipse.equinox.util

**Removed Plug-ins (0)**
- None

**Added 3rd Party Plug-ins (6)**
- org.apache.commons.codec
- org.apache.commons.httpclient
- org.eclipse.ecf.provider.filetransfer.httpclient
- org.eclipse.ecf.provider.filetransfer.httpclient.ssl
- org.mortbay.jetty.server
- org.mortbay.jetty.util

**Removed 3rd Party Plug-ins (1)**
- org.mortbay.jetty

Note: 3rd party plug-ins are plug-ins consumed in the Equinox SDK but not produced by the Equinox Project
Non-Code Aspects

• The 3.5 release will contain updated User and ISV documentation

• Community is very active
  – Mailing lists and newsgroups have steady activity
    • Equinox-dev@eclipse.org, p2-dev@eclipse.org
  – Blogs dedicated to Eclipse are active e.g.
    • http://www.planeteclipse.org
  – Wiki content is growing
    • http://wiki.eclipse.org/Equinox
    • http://wiki.eclipse.org/Equinox/p2
Non-Code Aspects

- **Internationalization**
  - Latin1 and Latin2 locales are supported in all operating environments
  - DBCS locales are supported on all platforms
  - GB18030-1 Chinese codepage standard is supported on Windows, Linux GTK and Mac.

- **Localization**
  - Tested for Localization and participating in Babel Project

- **Accessibility**
  - Tested for accessibility, but Equinox has minimal GUI code
Non-Code Aspects

• Articles, examples, and tutorials
  – Numerous Webinars and Podcasts
  – Library of demo code in Equinox incubator
  – Tutorials given at EclipseCon and other conferences
Platform Quality API

- API quality is a collaborative effort that involves the experience of the developers working on the Equinox project, and feedback from consumers.
- API changes and proposed API additions are often broadcast to mailing lists to raise awareness of the changes and encourage discussion and feedback.
- API changes between 3.4 and 3.5 are checked automatically by API tooling integrated into integration build process.
- No breaking API changes in 3.5
- Some org.osgi APIs had breakage as draft implementations evolved along with specification changes in OSGi R4.2
- The PMC is comfortable supporting the API that is in the Equinox project 3.5
3.5 API – Equinox

**New**
- Updated to OSGi R4 V4.2 APIs and the following implementations have been updated
  - OSGi Core Framework Specification
  - OSGi Compendium Services Specification, including: application container, declarative services, preferences, initial provisioning, http service etc.
- Added provisional API for futures (org.eclipse.equinox.concurrent.future)
- Enhanced trace APIs to allow for dynamic enablement of trace options and more advanced tracing.
- Added platform constants for os390 and zOS operating systems and cocoa windowing system

**Deprecated**
- The EventListeners class has been deprecated in favor of the CopyOnWriteIdentityMap class for performance improvements and to simplify the implementation of event hooks in OSGi.
- Deprecated methods on ConditionalPermissionUpdate to allow atomic updates of multiple condition rules
- Deprecated PlatformAdmin.getResolver() in favor of createResolver()
- PackagePermission.EXPORT deprecated to allow for more fine-grained package permissions
Tool Usability

• As part of the Runtime project, tooling falls outside the Equinox project mandate

• Some developer tools such as console, command line tools provided

• Work closely with the PDE project which provides tooling for Equinox
**Architectural Issues**

- Primary runtime is still a 1.4 JRE. Complementary functionalities on Java SE 5 (junit4, APT 5) and Java SE 6 (APT 6, compiler API)
- Minimum execution environment for some bundles moved up from Foundation 1.0 to Foundation 1.1
- Framework execution environment moved up to OSGi minimum 1.2 profile
- 7 new bundles, zero removed bundles
End of Life Issues

- When evolving API the Equinox Project will, whenever possible, deprecate the affected API methods and continue to keep them operational.
- Exceptions to this rule are in the 3.5 migration guide.
- No longer distributing Jetty 5.1, instead shipping Jetty 6.1
Bugzilla

• Between June 25, 2008 and May 30, 2009 (RC3)
  – More than 2,500 reports were created
  – Over 2,200 were resolved
  – Over 800 were resolved without changing code
    • invalid, duplicate, worksforme, etc...
  – Over 80 were backported to 3.4.x maintenance

• Current state (RC3) is
  – 2 blockers, 10 critical
  – 0 P1, 6 P2
# Bug resolution during 3.5

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Resolved bugs
including fixed, invalid, …
Fixed bugs (only)

- 3.5 M1: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M2: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M3: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M4: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M5: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M6: 15 enhancements, 5 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 M7: 150 enhancements, 50 trivial, 0 minor, 0 normal, 0 critical, 0 major, 0 blocker
- 3.5 RC1: 5 enhancements, 0 trivial, 0 minor, 0 normal, 1 critical, 0 major, 0 blocker
- 3.5 RC2: 1 enhancements, 0 trivial, 0 minor, 0 normal, 0 critical, 0 major, 0 blocker
- 3.5 RC3: 1 enhancements, 0 trivial, 0 minor, 0 normal, 0 critical, 0 major, 0 blocker
Standards

- OSGi
  - Service Platform Core Specification, Release 4.2
  - Elements of the OSGi Service Platform Service Compendium, Release 4.2
  - New implementations of OSGi RFC’s in 3.5 release: 120, 126, 132, 134, 138
UI Usability

- Strings are externalized to support translation into other languages.
- Extensive use of mnemonics and shortcut keys in the user interface enhances usability.
- Full Bidirectional support (mirroring) on Windows and Linux GTK, bidirectional text on Mac OS X
- Accessibility support for Windows, Linux GTK and Mac OS X
- We are not aware of any non-compliance with accessibility standards in the user interface
Schedule

• Milestones every 6 weeks, 6 cycle duration
  – API frozen on March 13 (M6), Feature freeze May 1 (M7)
  – Adjusted M5/M6 duration (resp. 7 weeks and 5 weeks) for EclipseCon

• Tracked schedule
  – All milestones except M5 delivered as promised
    • M5 three days late due to last minute Eclipse Foundation certificate change

• End game (release candidate) milestones for 4 cycles
  – Duration reduced from 2-week to 1-week cycles at RC2 milestone
  – No new features or API allowed without proper approvals
  – Development to end on June 12, 2009
  – Increasingly stringent approval, checking, and change notification requirements in this stage
  – http://www.eclipse.org/equinox/planning/freeze_plan_3.5.php
Process

- The Equinox project is developed using an open, transparent, and inclusive process
- Teams rely on Bugzilla, mailing lists and newsgroups for input
- Weekly planning calls conducted with the PMC and component leads
  - Meeting minutes posted on the Equinox wiki page
- Component teams have publicly available milestone plans on the wiki
Community

- Equinox team members are active in Bugzilla, newsgroups, and mailing lists
- Blogs started by Equinox committers are active
  - [http://www.planeteclipse.org](http://www.planeteclipse.org)
- Some teams are using the equinox-dev IRC channel
  - irc://irc.freenode.net/#equinox-dev
- The Equinox team participates in code camps, conference presentations, and tutorials, including
  - EclipseCon, JavaOne, JavaWorld, JAOO, Eclipse Summit Europe, Eclipse Forum Europe, JAX, JAX Asia
- The Equinox team interacts with other open source projects, standards bodies, and other projects on eclipse.org, including
  - OSGi, Apache, JCP
IP Issues

• All significant and third party contributions have been reviewed and approved by Eclipse legal.
• About files and license files are complete and correct.
• Draft IP log:
Project Plan for Equinox 3.6

• Still in planning stage