Equinox Project 3.7 Release Review

Equinox Project Leadership

1

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Highlights

- 3.7 new features:
    - Implement the new R4.3 Core Framework OSGi specification
    - Implement selected new R4.3 Compendium specifications
        - Coordinator, EventAdmin, MetaType
    - Unified eclipse logging
    - p2 performance improvements
    - Several enhancements to the p2 director application
    - Support in p2 for export/import of software from/to an installation
- API quality:
    - High. No breaking changes to Equinox API
    - Binary compatible for compliant plug-ins
    - New API: 7 types, 40 methods, 0 constructors, 9 fields
    - Deprecated API: 0 types, 10 methods, 4 constructors, 0 fields
- 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:
    - 41 committers, 22 active in past 9 months
    - Organizations: IBM, EclipseSource, Cloudsmith, Individuals, Prosyst, Sonatype, compeople AG, WeigleWilczek GmbH, Tasktop, Vmware, SAP, Intel, Wind River
    - Consumed by all other Eclipse projects

2

Themes and Plan Items

- Scalability
  - Performance improvements in p2
- Robustness
  - Better support for multi-user shared install

- Consumability
  - Unify eclipse logging APIs
- The Future
  - OSGi standards participation

http://www.eclipse.org/projects/project-plan.php?planurl=http://www.eclipse.org/equinox/planning/equinox_indigo_plan.xml

Deferred 3.7 Plan Items

- None

New and Noteworthy

- OSGi R4.3 Core Framework implementation
    - Updated OSGi API including use of generic signatures
    - Generic Capabilities and Requirements for bundles
    - Bundle Wiring Implementation provides a much richer model of the wiring relationship between bundles
    - Implementation of the new framework hooks which includes Bundle, Resolver and Weaving Hooks
- Update OSGi R4.3 Compendium services
    - New Coordinator service implementation
    - Updated Event Admin service implementation
    - Updated Metadata service implementation
- Unified Eclipse logging APIs to aggregate through the Equinox Extended OSGi Log Service
    - Core Equinox Framework now provides the Equinox Extended OSGi Log Service
- Enhancements for p2
    - Reduced memory usage when loading p2 repos
    - More metadata customizations in p2 for setting -vm arguments and config.ini settings
    - Support in the p2 director application to label install operations
    - Support in p2 director application to download artifacts without installing them
    - Support in p2 for export/import of software from/to an installation

5

3.7 Plug-in Changes from 3.6

Added Plug-ins (8)

- org.eclipse.equinox.coordinator
- org.eclipse.equinox.launcher.gtk.aix.ppc64
- org.eclipse.equinox.launcher.gtk.aix.ppc
- org.eclipse.equinox.launcher.gtk.hpux.ia64
- org.eclipse.equinox.p2.publisher.eclipse
- org.eclipse.equinox.p2.transport.ecf
- org.eclipse.equinox.p2.ui.importexport
- org.eclipse.equinox.security.win32.x86

Removed Plug-ins (6)

- org.eclipse.equinox.launcher.gtk.linux.ppc
- org.eclipse.equinox.launcher.motif.aix.ppc
- org.eclipse.equinox.launcher.motif.hpux.ia64
- org.eclipse.equinox.launcher.motif.linux.x86
- org.eclipse.equinox.launcher.motif.solaris.sparc
- org.eclipse.equinox.p2.metadata.generator

Non-Code Aspects

- The 3.7 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
  - New project named Toast in the Examples project demonstrating the various runtime technologies at Eclipse.

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 3.6 and 3.7 are checked automatically by API tooling integrated into integration build process.

- No breaking API changes in 3.7

- The PMC is comfortable supporting the API that is in the Equinox project 3.7

10

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)

- Many core Equinox bundles use the OSGi minimum 1.2 profile

- Many Equinox bundles uses Java SE 5 syntax (generics etc.) but are down compiled to support J2SE 1.4 and the OSGi minimum 1.2 profile

- 8 new bundles, 6 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 3.7 migration guide.
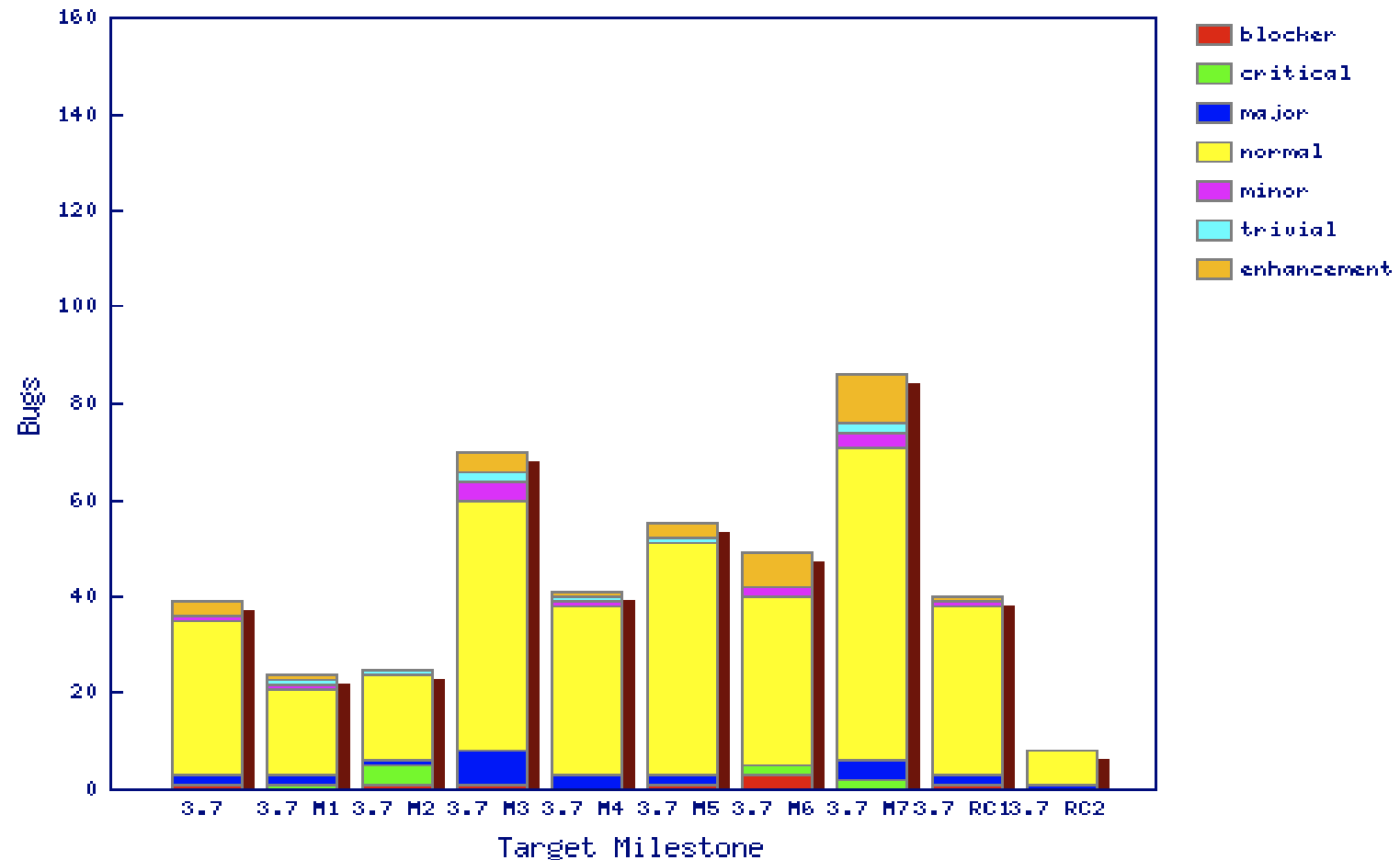
13

Bugzilla

- Between June 24, 2010 and May 18, 2010 (RC2)
  - More than 1000 reports were created
  - Over 750 were resolved
  - Over 250 were resolved without changing code
    - invalid, duplicate, worksforme, etc...
  - Over 65 were backported to 3.5.x maintenance

- Current state (RC3) is
  - 1 blockers, 28 critical

14

Bug resolution during 3.7

Target Milestone

Severity	3.7	3.7 M1	3.7 M2	3.7 M3	3.7 M4	3.7 M5	3.7 M6	3.7 M7	3.7 RC1	3.7 RC2	Total
blocker	1	.	1	1	.	1	3	.	1	.	8
critical	.	1	4	.	.	.	2	2	.	.	9
major	2	2	1	7	3	2	.	4	2	1	24
normal	32	18	18	52	35	48	35	65	35	7	345
minor	1	1	.	4	1	.	2	3	1	.	13
trivial	.	1	1	2	1	1	.	2	.	.	8
enhancement	3	1	.	4	1	3	7	10	1	.	30
Total	39	24	25	70	41	55	49	86	40	8	**437**

Resolved bugs
including fixed, invalid, …

Standards

- OSGi
  - Service Platform Core Specification, Release 4.3
  - Elements of the OSGi Service Platform Service Compendium, Release 4.2 and Release 4.3
  - Continued development of the next OSGi Specification (tentatively called Release 4.4) is going on. Currently planned for 3.8 Equinox release.

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 11 (M6), Feature freeze April 29 (M7)
  - http://www.eclipse.org/projects/project-plan.php?planurl=http://www.eclipse.org/equinox/planning/equinox_indigo_plan.xml#release_milestones
- Tracked schedule
  - All milestones delivered as promised
- 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 2, 2010
  - Increasingly stringent approval, checking, and change notification requirements in this stage
  - http://www.eclipse.org/eclipse/development/plans/freeze_plan_3_7.php

19

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 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
- Some teams are using the equinox-dev IRC channel
  - irc://irc.freenode.net/#equinox-dev
  - also see: http://wiki.eclipse.org/index.php/IRC
- 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:
    - http://www.eclipse.org/projects/ip_log.php?projectid=rt.equinox

Project Plan for Equinox 3.8

- Still in planning stage