Equinox Project 3.6 Release Review

Equinox Project Leadership

Highlights

- 3.6 new features:
    - Introduction of p2 API
    - Multiple instances of p2 in one VM
    - New Discovery UI
    - Multi-locale support in extension registry
    - Added support to send arguments to a running instance of Eclipse
- API quality:
    - High. No breaking changes to Equinox API
    - Binary compatible for compliant plug-ins
    - 24 new p2 API/SPI packages
    - In addition to the new p2 API 26 other classes or interfaces have new API (either new types, or existing types with new members)
- 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, 21 active in past 9 months
    - Organizations: IBM, EclipseSource, Cloudsmith, Individuals, Prosyst, Sonatype, compeople AG, WeigleWilczek GmbH, Tasktop
    - Geographies: Canada (9), USA (6), Germany (3), Bulgaria (1), Sweden (1), France (1)
    - Commits: IBM (52.0%), Sonatype (27.0%), Cloudsmith (10.1%), EclipseSource (5.9%), Individuals (1.9%), Prosyst (1.4%), Tasktop (1.2%)
    - Consumed by all other Eclipse projects

2

Themes and Plan Items

- Scalability
  - Support added for low memory events
  - Improve p2 resolver and engine performance
- Robustness
  - Define p2 API and JavaDoc
  - Multi-locale support in the extension registry
  - Provide p2 repository verification tools

- Consumability
  - API completeness
  - New p2 UI workflows
  - Improve p2 error reporting
  - Improve p2 responsiveness
  - Integration of servlet bridge with p2
  - Define p2 API
- The Future
  - OSGi standards participation
  - Investigate improvements to the extension registry

http://www.eclipse.org/projects/project-plan.php?projectid=eclipse

3

Deferred 3.6 Plan Items

- p2 install flexibility
- Use p2 to manage and run on other OSGi framework implementations

New and Noteworthy

- New Equinox Weaving feature included in Helios
- Support for multi-session Equinox console
- Added Event Admin implementation to RCP
- Revert support added to p2 director
- Multi-locale support in extension registry
- Added Servlet filter support
- Performance improvements in p2
- Improvements in proxy handling
- Defined event topic for memory events
- New server side features for products to use

3.6 Plug-in Changes from 3.5

Added Plug-ins (10)

- org.eclipse.equinox.p2.discovery.compatibility
- org.eclipse.equinox.p2.discovery
- org.eclipse.equinox.p2.operations
- org.eclipse.equinox.p2.ql
- org.eclipse.equinox.p2.ui.discovery
- org.eclipse.equinox.servletbridge.extensionbundle
- org.eclipse.equinox.weaving.aspectj
- org.eclipse.equinox.weaving.caching
- org.eclipse.equinox.weaving.caching.j9
- org.eclipse.equinox.weaving.hook

Removed Plug-ins (2)

- org.eclipse.equinox.p2.exemplarysetup
- org.eclipse.equinox.p2.tools

Non-Code Aspects

- The 3.6 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

7

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 3.5 and 3.6 are checked automatically by API tooling integrated into integration build process.
- No breaking API changes in 3.6
- The PMC is comfortable supporting the API that is in the Equinox project 3.6

3.6 API – Equinox

New p2 API/SPI packages

- org.eclipse.equinox.frameworkadmin
- org.eclipse.equinox.p2.core
- org.eclipse.equinox.p2.core.spi
- org.eclipse.equinox.p2.engine
- org.eclipse.equinox.p2.engine.query
- org.eclipse.equinox.p2.engine.spi
- org.eclipse.equinox.p2.metadata
- org.eclipse.equinox.p2.metadata.expression
- org.eclipse.equinox.p2.metadata.index
- org.eclipse.equinox.p2.operations
- org.eclipse.equinox.p2.planner
- org.eclipse.equinox.p2.ql

- org.eclipse.equinox.p2.query
- org.eclipse.equinox.p2.repository
- org.eclipse.equinox.p2.repository.artifact
- org.eclipse.equinox.p2.repository.artifact.spi
- org.eclipse.equinox.p2.repository.metadata
- org.eclipse.equinox.p2.repository.metadata.spi
- org.eclipse.equinox.p2.repository.spi
- org.eclipse.equinox.p2.repository.tools.analyzer
- org.eclipse.equinox.p2.repository.tools.comparator
- org.eclipse.equinox.p2.touchpoint.eclipse.query
- org.eclipse.equinox.p2.ui
- org.eclipse.equinox.simpleconfigurator.manipulator

11

3.6 API – Equinox

New

- Support to allow multiple OSGi console sessions
- Support to get a bundle data area from a Location service
- Support to dynamically enable and set debug tracing
- Launcher options to pass parameters to a running Eclipse instance
- Platform constants for ppc 64
- LocaleProvider service interface to support multi-locale scenarios
- Support for asynchronous application results
- Defined event topic constant for memory events
- Support programatic access to declarative services runtime
- Support for servlet filters
- Support to determine when preferences have been overridden
- Support for wildcards to match preference keys to transfer

- Support for multi-locale extension registry

12

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

13

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

- p2 uses Java SE 5 syntax (generics etc.) but is down compiled to support J2SE 1.4 and the OSGi minimum 1.2 profile

- 10 new bundles, 2 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 3.6 migration guide.

Bugzilla

- Between June 25, 2009 and May 21, 2010 (RC2)
  - More than 1500 reports were created
  - Over 1500 were resolved
  - Over 500 were resolved without changing code
    - invalid, duplicate, worksforme, etc...
  - Over 70 were backported to 3.5.x maintenance
- Current state (RC3) is
  - 3 blockers, 18 critical
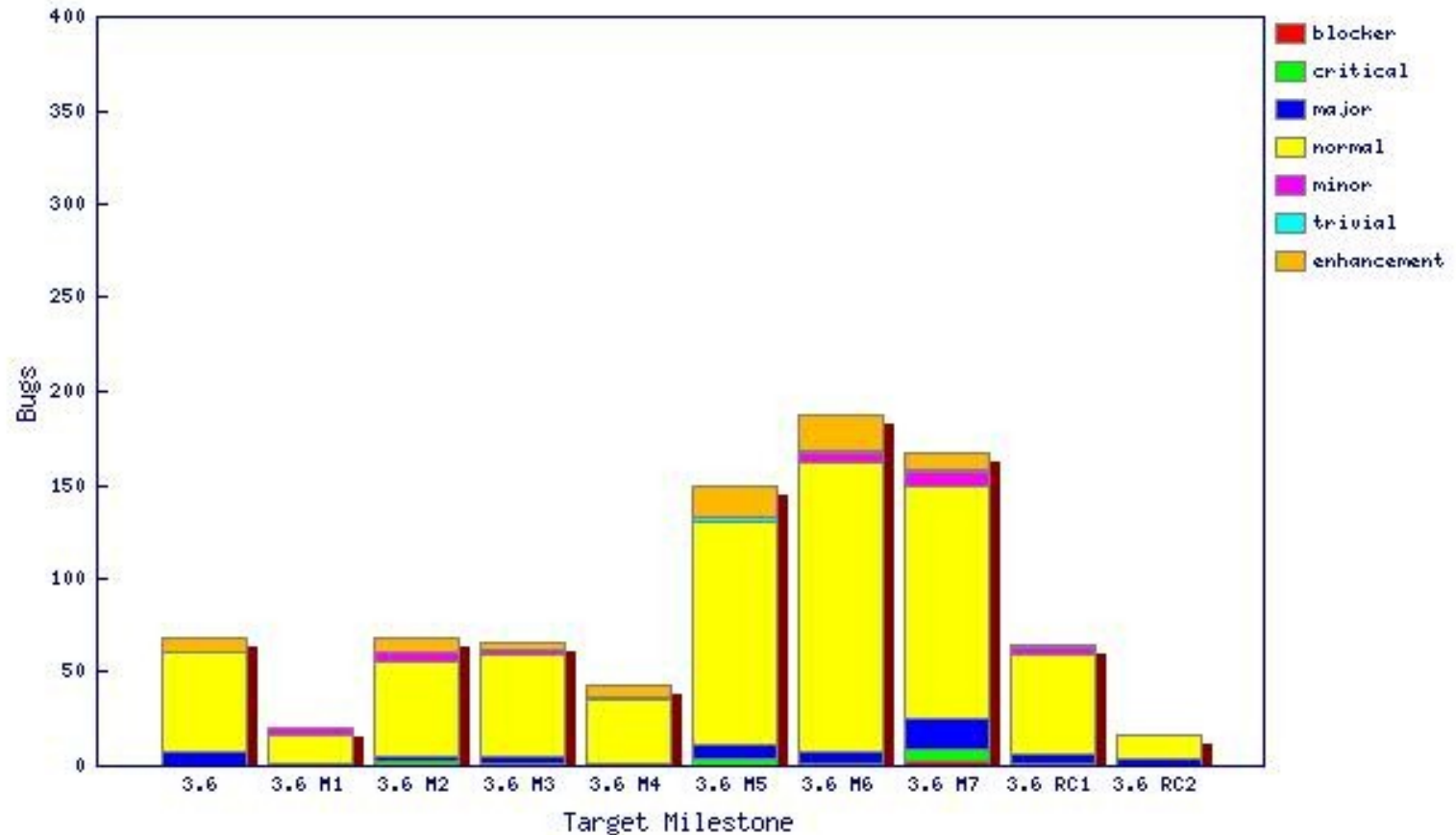 - 0 P1, 8 P2
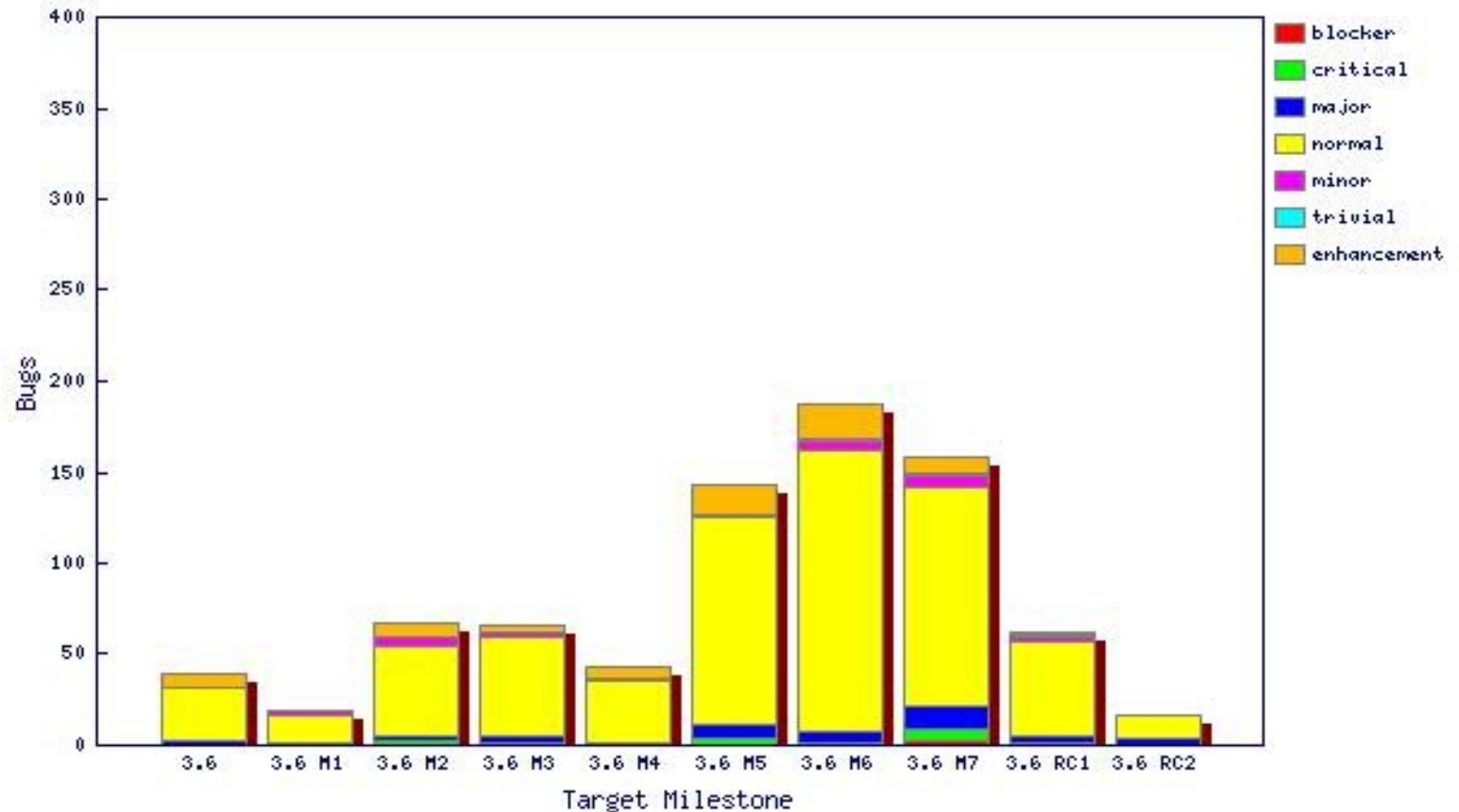
Bug resolution during 3.5

FIXED

Target Milestone

Severity	3.6	3.6 M1	3.6 M2	3.6 M3	3.6 M4	3.6 M5	3.6 M6	3.6 M7	3.6 RC1	3.6 RC2	Total
blocker	.	.	.	.	.	.	1	3	1	.	5
critical	.	.	2	1	1	4	.	6	.	.	14
major	2	1	3	4	.	7	7	13	4	4	45
normal	30	15	50	55	35	114	154	120	52	13	638
minor	.	3	5	2	.	.	5	6	3	.	24
trivial	.	.	.	.	1	2	1	1	1	.	6
enhancement	7	.	7	4	6	16	19	9	1	.	69
Total	39	19	67	66	43	143	187	158	62	17	801

Resolved bugs
including fixed, invalid, …

Fixed bugs (only)

Standards

- OSGi
  - Service Platform Core Specification, Release 4.2
  - Elements of the OSGi Service Platform Service Compendium, Release 4.2
  - Continued development of the next OSGi Specification (tentatively called Release 4.3) is going on in a branch.

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 12 (M6), Feature freeze April 30 (M7)
  - http://www.eclipse.org/projects/project-plan.php?projectid=rt.equinox#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 3, 2010
  - Increasingly stringent approval, checking, and change notification requirements in this stage
  - http://www.eclipse.org/eclipse/development/plans/freeze_plan_3.6.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
- 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 3.7

- Still in planning stage