



Eclipse 4.0 Release Review

July 28, 2010

Review communication channel: e4-dev@eclipse.org

Highlights



- 4.0 is an early adopter release of work graduating from the e4 incubator combined with plug-ins from the Helios (2010) release
- The goal is to provide a stable platform for adopters to begin testing and migrating their applications to a major new generation of the platform user interface
- This release is not suitable for commercial products: all new API is provisional, no maintenance releases planned, incomplete localization support
- Includes implementations of significant new technology:
 - Model-based user interface: highly configurable
 - Highly decoupled service-based programming model
 - Declarative user interface styling
 - New user interface look and feel
 - Completely new, binary-compatible implementation of the 3.x generation workbench API
- Also releasing components remaining in the e4 incubator:
 - New version of the XWT declarative UI design tool
 - Tooling support for model-based UI
 - Semantic file system: a mechanism for connecting the platform resource model to remote resources exposed via REST-style APIs
 - Support for integrating JavaScript and OpenSocial-based views in a rich client
- JDT and PDE sub-projects not participating in the release (releasing identical content as Helios 3.6 release)

Highlights



- Committer and community diversity (for e4 and new code in 4.0):
 - 64 committers, 19 active in past 9 months
 - Organizations: IBM (10), Individuals (3), BestSolution.at, Soyatec, SAP, Siemens, Anyware Technologies, Instantiations (1 each)
 - Geographies: Canada, Germany, Austria, Poland, France, USA
 - Commits: IBM (51%), BestSolution.at (32%), Soyatec (9%), SAP (3%), Individuals (3%), Anyware, Instantiations, Siemens (<1% each)
- Seven new committers on platform project components as a result of technology graduating from the e4 incubator

Themes and Plan Items



- **Easier to Develop**

- API compatibility
- Eclipse application services

- **Easier to Assemble**

- Model-based workbench
- Skinnable UI
- Service-oriented programming model

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



Themes and Plan Items

- Deferred plan items (remaining in incubation):
 - OpenSocial gadget container
 - Web UI components

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

New and Noteworthy



Platform

- Model-based UI
- Pluggable widget renderer
- Full API binary compatibility
- Dependency injection
- Annotations for injection
- Hierarchical context service binding system
- Common event bus
- Pluggable add-ons mechanism for customizing UI behavior

Declarative Styling

- Styling SWT widgets with CSS
- Declarative styling with gradients
- Margins for spacing between widgets
- Extensive styling support for CTabFolder
- Modeled UI informs of active state
- Styling support for CTabItem
- Setting button and label alignment with CSS

New Look and Feel

- New tab folder look
- Use of spacing rather than extra lines for a cleaner, less cluttered look
- Global search bar

New and Noteworthy



XWT

- Support for JFace ComboViewer
- Simplified JFace viewers
- Support for viewer filters
- Master/detail support
- More operators in conditions
- Eclipse forms support
- UI profile support
- Data binding change notification
- Workbench state management
- Data binding aggregation
- Animation support
- Data binding validation and error handling
- Support for null layout
- Resource pre-processing

Tooling

- XWT visual designer
- 4.0 workbench visual design tool
- E4 project wizard
- Model integrity control
- Form-based workbench model editor
- Category display in hierarchical outline view

Other incubating content

- OpenSocial gadget container
- Semantic file system: integration of resource model with REST-style APIs
- Semantic file system team integration
- Sample e4 IDE



Non-Code Aspects

- The 4.0 release contains no new documentation, but there is extensive documentation on the e4 wiki
- Webcasts and presentations planned to spread the word about the new release
- Community is very active
 - Mailing lists and newsgroups have steady activity
 - E4 mailing list: e4-dev@eclipse.org
 - Lots of e4 blog activity:
 - <http://www.planeteclipse.org>
 - Wiki content is extensive and growing
 - <http://wiki.eclipse.org/E4>



Non-Code Aspects

- **Internationalization**
 - The 4.0 release has not undergone Internationalization testing
- **Localization**
 - Most message strings are localized
 - No localization of strings in user interface model
- **Accessibility**
 - The 4.0 release has not been tested for accessibility

Non-Code Aspects



- Articles, examples, and tutorials
 - e4 whitepaper provides overview of e4 technology:
 - <http://eclipse.org/e4/resources/e4-whitepaper.php>
 - e4 presentations/symposia/tutorials at:
 - EclipseCon 2008, 2009, 2010
 - Eclipse Summit Europe 2008, 2009
 - Eclipse Application Developer Day 2009
 - Several Eclipse Helios DemoCamps
 - e4 presentation material available on e4 wiki
 - Two complete e4 example applications: Photo viewer and Contacts application

Platform Quality API



- The 4.0 release includes some new provisional API, but is subject to change in the future
- Binary compatible with the platform 3.x generation API
- Some old API incompatible with new technology will no longer work as expected:
 - Old workbench styling and presentation APIs



Tool Usability

- Mostly relying on Eclipse platform tooling support and EMF tools for models
- Some new tooling available in e4 incubator:
 - XWT graphical design editor
 - Form-based model editor and model tooling

Architectural Issues



- Primary runtime is Java SE 5
- User interface can now be configured in multiple ways:
 - Plug-ins can contribute either traditional extensions via plugin.xml, or model extensions
 - Applications can fully control the user interface model to achieve greater customization of layout
- Pluggable UI renderer converts the UI model into widgets
 - SWT-based renderer using CSS styling is provided but alternate renderers can be used
- EMF runtime is now included in platform and RCP features

End of Life Issues



- Some e4 bundles reaching end of life due to lack of active development:
 - SWT Browser Edition
 - Toolkit Model: EMF-based tool for writing views and editors
- E4 JavaScript debugging support moved to new JavaScript Development Tools (JSDT) project

Bugzilla



- Since July 31, 2009
 - Over 1589 bugs were created
 - Over 1057 were resolved
 - 126 were resolved without changing code
 - invalid, duplicate, worksforme, etc...
 - 289 resolved with no specific milestone set
- Current state (RC3) is
 - 0 blockers, 5 critical
 - 0 P1, 1 P2

Bug resolution during 4.0

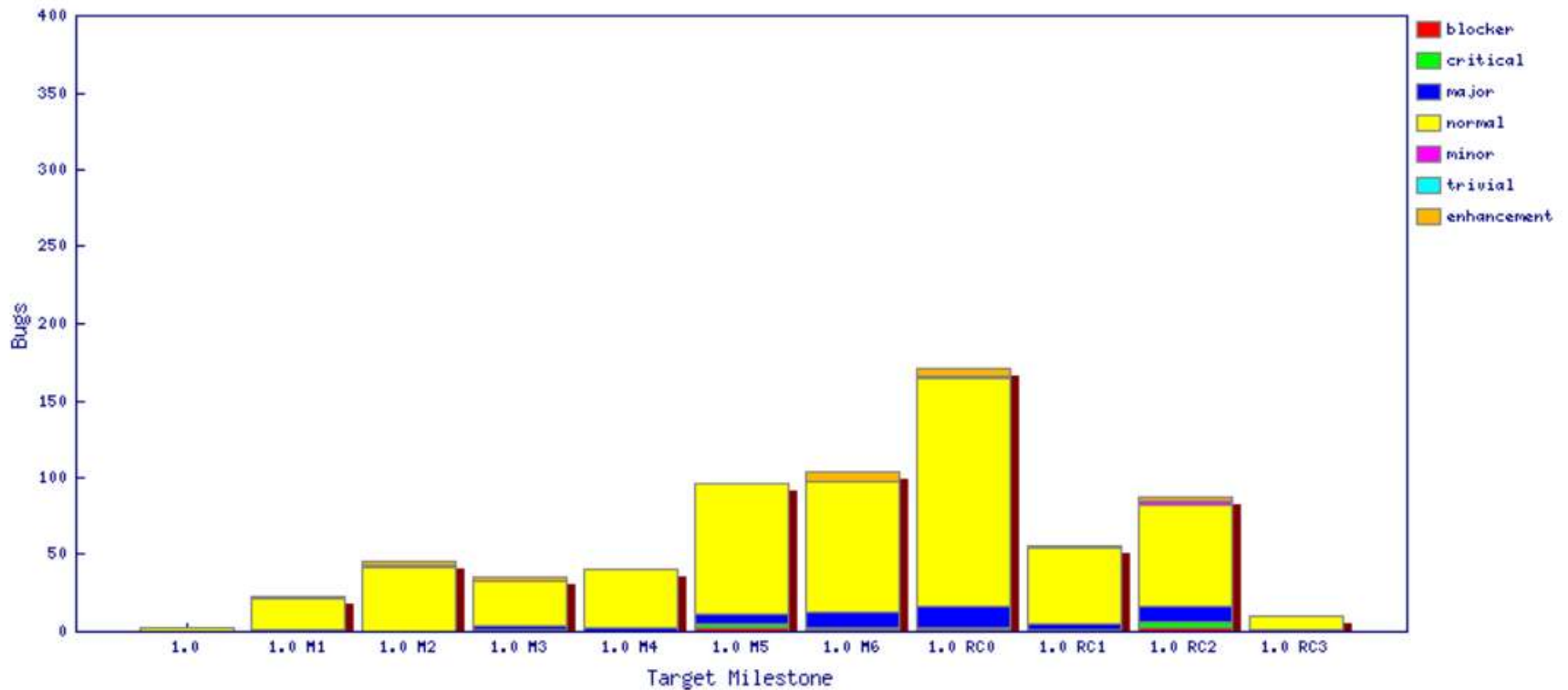


Target Milestone

| | 1.0 | 1.0 M1 | 1.0 M2 | 1.0 M3 | 1.0 M4 | 1.0 M5 | 1.0 M6 | 1.0 RC0 | 1.0 RC1 | 1.0 RC2 | 1.0 RC3 | Total |
|--------------------|----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-----------|-----------|-----------|------------|
| blocker | . | . | . | . | . | <u>3</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>2</u> | . | <u>8</u> |
| critical | . | . | . | <u>1</u> | . | <u>2</u> | <u>1</u> | <u>2</u> | . | <u>4</u> | . | <u>10</u> |
| major | . | <u>1</u> | . | <u>3</u> | <u>2</u> | <u>6</u> | <u>11</u> | <u>13</u> | <u>4</u> | <u>11</u> | <u>1</u> | <u>52</u> |
| normal | <u>2</u> | <u>21</u> | <u>42</u> | <u>29</u> | <u>38</u> | <u>85</u> | <u>84</u> | <u>148</u> | <u>49</u> | <u>65</u> | <u>9</u> | <u>572</u> |
| minor | . | . | . | . | . | . | <u>1</u> | <u>1</u> | . | <u>3</u> | . | <u>5</u> |
| trivial | . | . | <u>1</u> | . | . | . | . | <u>1</u> | . | . | . | <u>2</u> |
| enhancement | . | <u>1</u> | <u>3</u> | <u>2</u> | <u>1</u> | . | <u>6</u> | <u>5</u> | <u>2</u> | <u>2</u> | . | <u>22</u> |
| Total | <u>2</u> | <u>23</u> | <u>46</u> | <u>35</u> | <u>41</u> | <u>96</u> | <u>104</u> | <u>171</u> | <u>56</u> | <u>87</u> | <u>10</u> | <u>671</u> |

Severity

Fixed bugs



Schedule



- Milestones every 6 weeks, 6 cycle duration
 - Final milestone May 21 (M6)
 - Long end-game (four release candidates over nine weeks)
 - http://www.eclipse.org/projects/project-plan.php?projectid=eclipse.e4#release_milestones
- Tracked schedule
 - All milestones delivered, some minor delays
 - End-game used to stabilize for release
 - Final release date: July 28, 2009

Process



- The Eclipse project is developed using an open, transparent, and inclusive process
- Teams rely on Bugzilla, mailing lists and newsgroups for input
- Bi-weekly planning calls conducted with **all** e4 contributors welcome
 - http://wiki.eclipse.org/E4/Meeting_Minutes
- Extensive use of e4 wiki for brainstorming, planning, and development notes

Community



- Eclipse team members are active in Bugzilla, newsgroups, and mailing lists
- Blogs started by Eclipse committers are evolving
 - Use blogging infrastructure at Eclipse.org
 - <http://www.planeteclipse.org>
- Some teams are using the eclipse-dev IRC channel
 - `irc.freenode.net#eclipse-dev`
 - `irc://irc.freenode.net/#eclipse-e4`
 - also see: <http://wiki.eclipse.org/index.php/IRC>
- The Eclipse team participates in code camps, conference presentations, and tutorials, including
 - EclipseCon, JavaOne, JavaWorld, JAOO, Eclipse Summit Europe, Eclipse Forum Europe, JAX, JAX Asia
- The Eclipse team interacts with other open source projects, standards bodies, and other projects on eclipse.org, including
 - OSGi, Apache Ant, JLS, WTP, Apache Harmony, GCJ, GTK



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 project log:
 - http://www.eclipse.org/projects/ip_log.php?projectid=eclipse.platform

Project Plan for Eclipse 4.1



- Still in planning stage
- Main focus will be on achieving full commercial quality:
 - High quality API
 - Full localization support
 - Documentation
- Developing 3.7 and 4.1 in parallel on common release train schedule