Helios

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The Eclipse Foundation

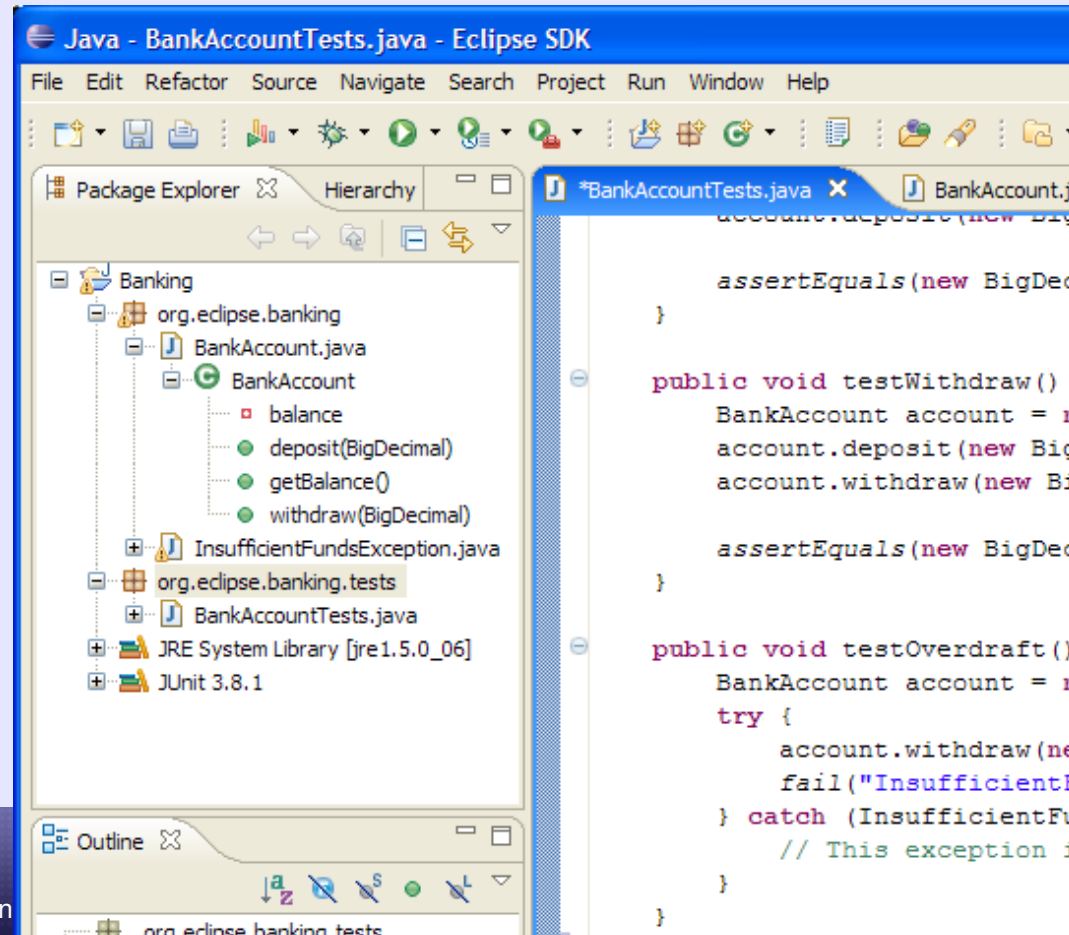**Eclipse Helios**

What is Eclipse?

Eclipse Helios

Eclipse is a Java IDE

- Language-aware editors, views, …

- Refactoring support

- Integrated unit testing and debugging

- Incremental compilation and build

- Team development support

Eclipse is an IDE Framework

- Eclipse + JDT = Java IDE

  - First class framework for Java, language aware editor, incremental build, integrated debugging, ...

- Eclipse + CDT = C/C++ IDE

  - First class framework for C/C++, language aware editor, refactoring, search

- Eclipse + PDT = PHP IDE

- Eclipse + JDT + CDT + PDT = Java, C/C++, PHP IDE

  - Ruby, TCL, JavaScript, ...

Eclipse is a Tools Framework

- Plug-ins make Eclipse whatever you need it to be

- Platform of frameworks and exemplary tools

- Tools extend the platform using bundles/plug-ins

  - Business Intelligence and Reporting Tools, Web Tools, Data Tools, Eclipse Modeling Framework, ...
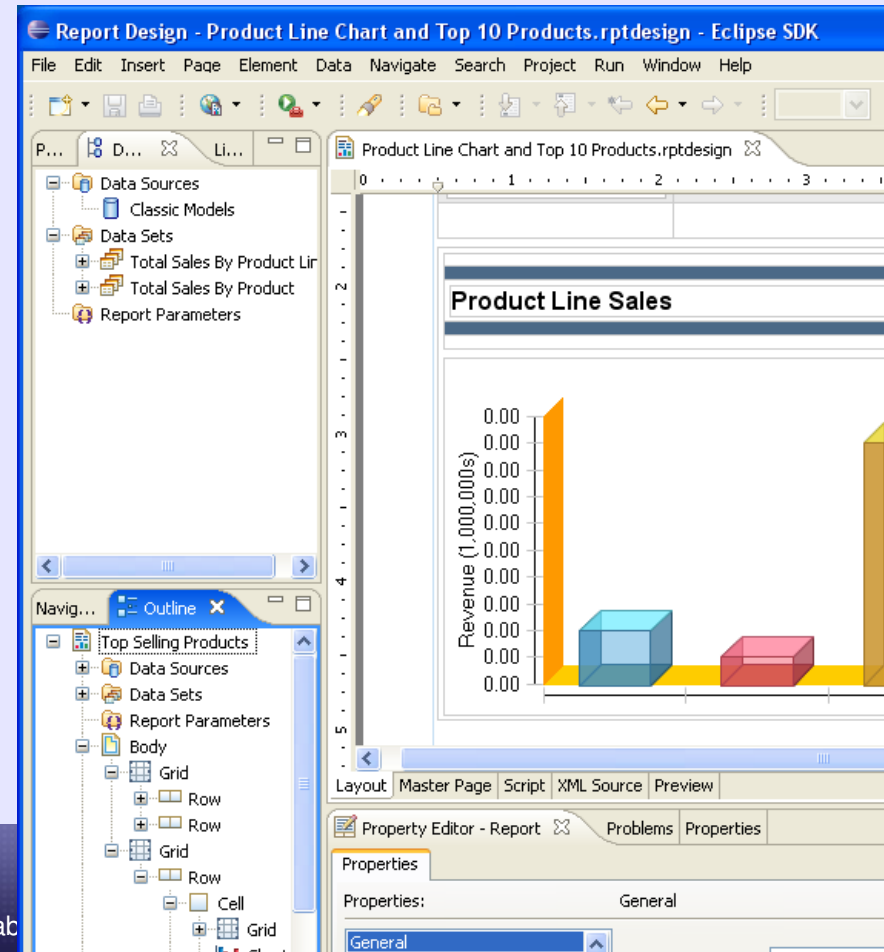
eclipse

Eclipse is a Application Framework

- Remove the IDE elements; you're left with a general-purpose application framework
  - Linux, Windows, Mac OSX, UNIX, embedded
  - Rich widget set, graphics
  - Native-OS integration (drag and drop, OLE/XPCOM integration)
- A platform for rich clients
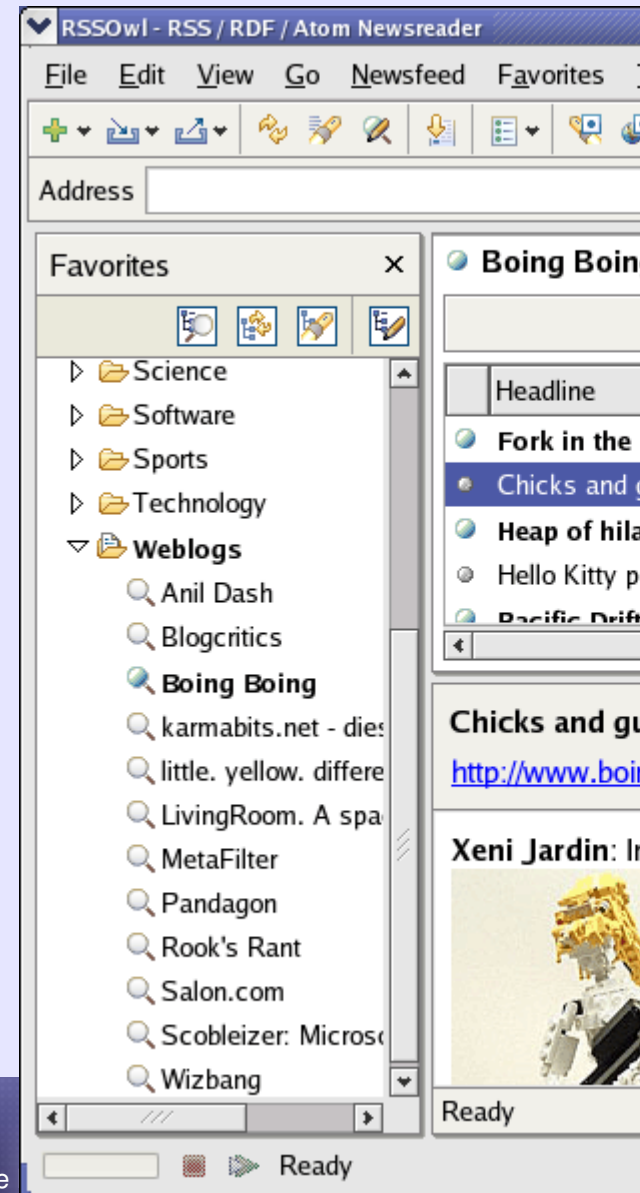
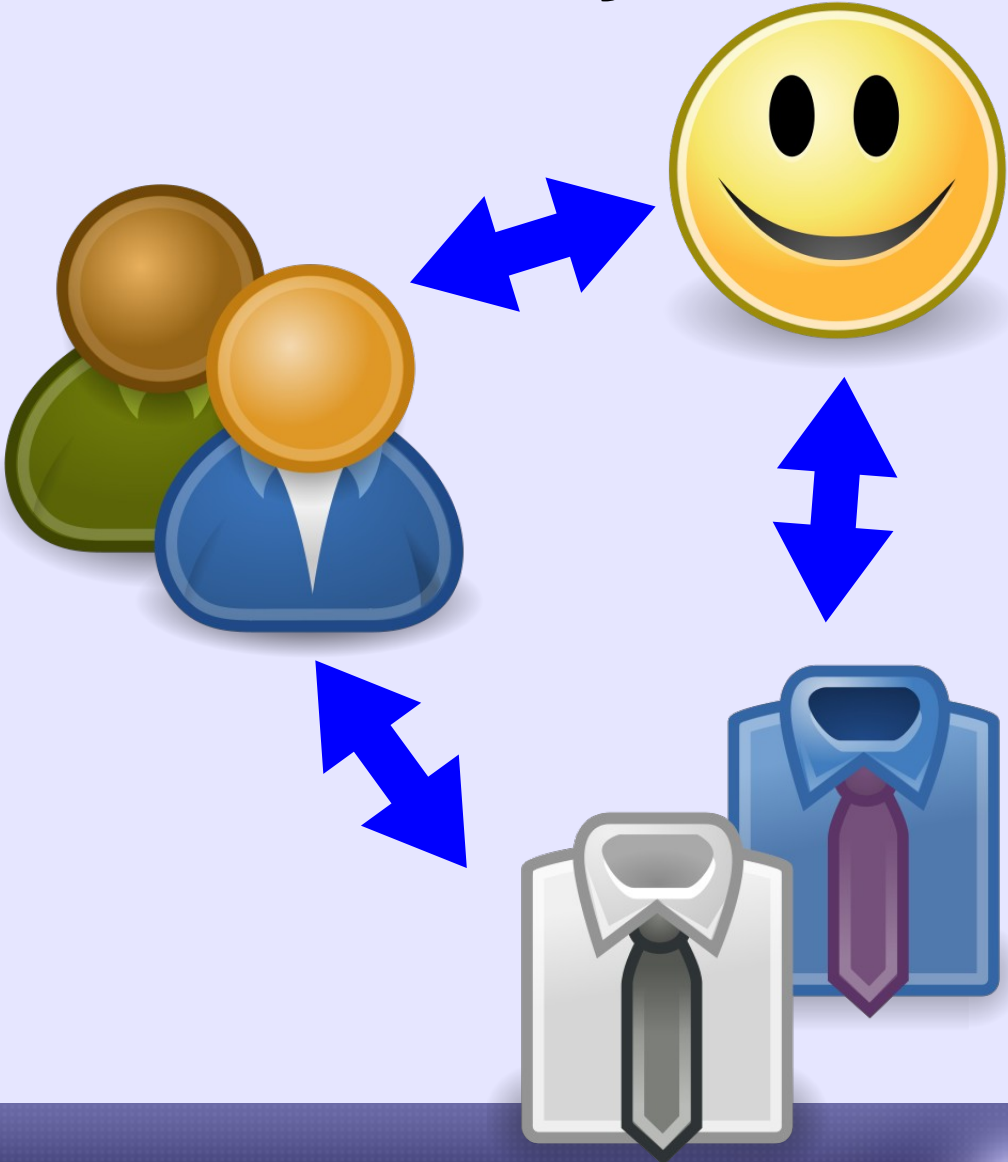eclipse

Eclipse is Runtimes!

- Remove the UI elements and you're left with a general-purpose component model

  - Equinox, an implementation of the OSGi R4 core framework specification

  - Headless applications, servers, embedded, ...

- Dozens of runtime technologies at eclipse.org

  - Eclipse Communication Framework, EclipseLink, eRCP, Gemini, Gyrex, Higgins, Jetty, Rich Ajax Framework, Riena, SeMantic Information Logistics Architecture, Swordfish, Virgo, ...

Top Level Projects

- Business Intelligence and Reporting Tools (BIRT)
- Data Tools Platform
- ~~Device Software Development Platform~~
- Eclipse
- Modeling

- RT
- SOA
- Technology
- Tools
- Web Tools Platform
- Test & Performance Tools Platform

Eclipse is a Community

Eclipse is an Ecosystem

- Eclipse is focused on nurturing the ecosystem to complement, and enhance the Eclipse Platform

    - Hundreds of organizations build Eclipse plug-ins

    - Companies collaborate on Eclipse projects

    - Companies compete with products based on Eclipse technology

- Many members, including major Java, Enterprise, Linux, and Embedded vendors

    - http://www.eclipse.org/membership/

Eclipse is a Foundation

- The Eclipse Foundation

    - Manages and directs the ongoing development

    - Provides IT infrastructure required by development teams

- Independent not-for-profit Foundation formed in 2004

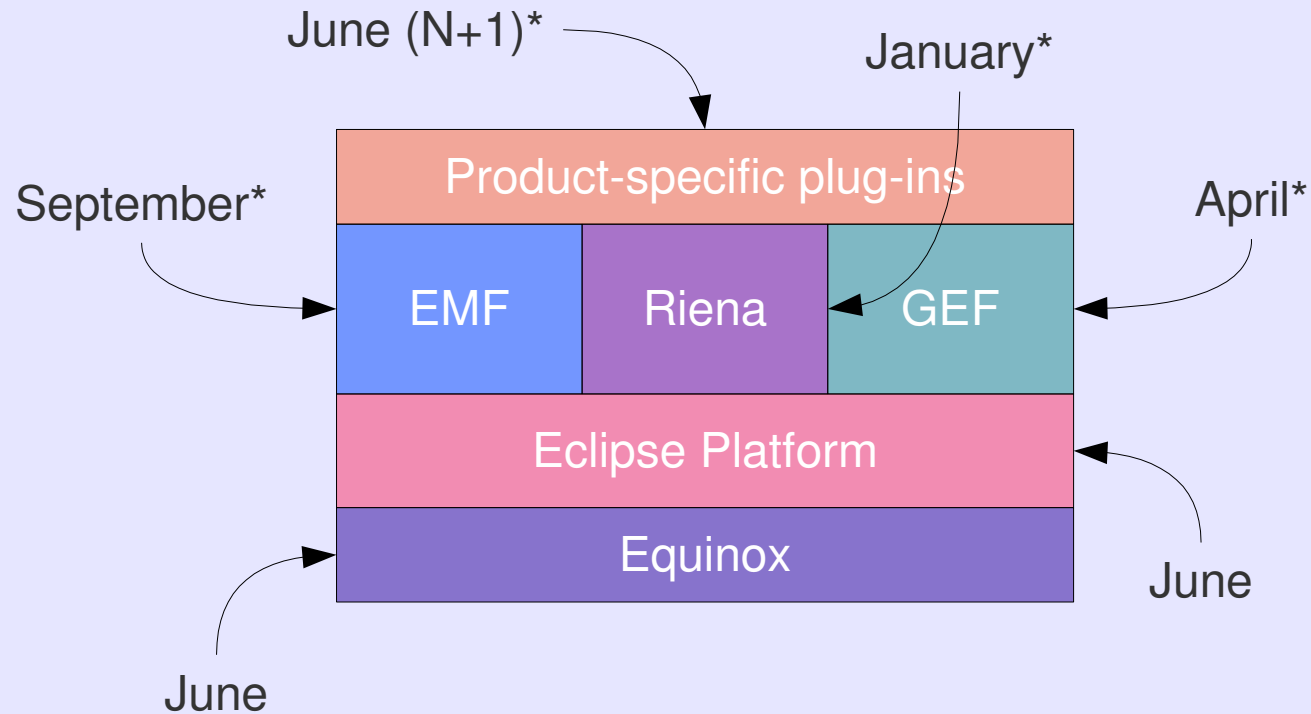- Does not directly employ developers for Eclipse projects
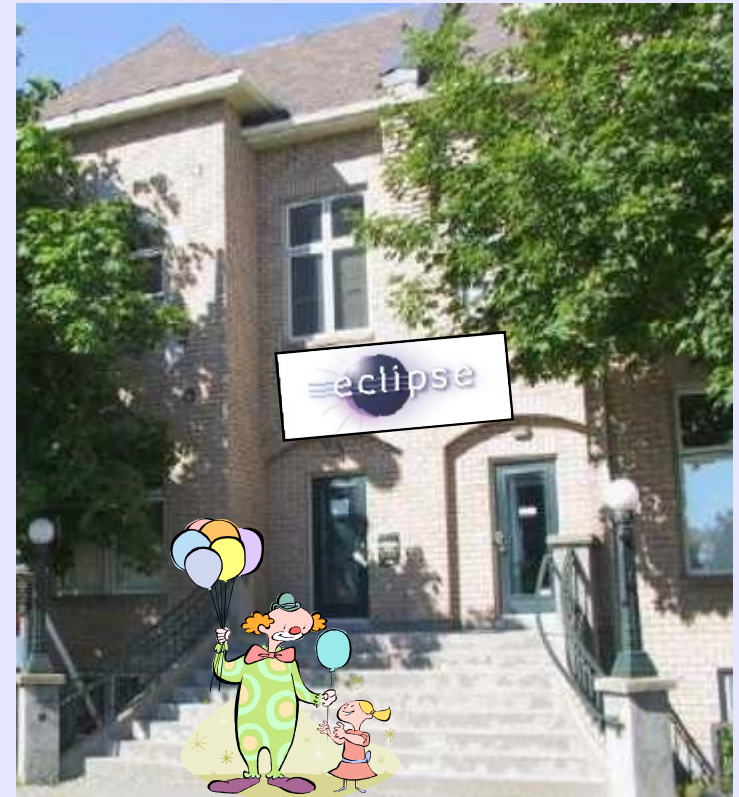
Helios

finally, geesh...

Eclipse Helios

Why a Simultaneous Release?

- Help spur commercial adoption of Eclipse technology

- Consumers use many projects not just the Platform

- Inter-dependency between projects

  - Eclipse project teams are independent, but the project code is inter-dependent

- Alignment of version compatibility

- Remove latency between project releases

Before the Simultaneous Release

June (N+1)*

January*

September*

April*

Product-specific plug-ins

EMF

Riena

GEF

Eclipse Platform

Equinox

June

June

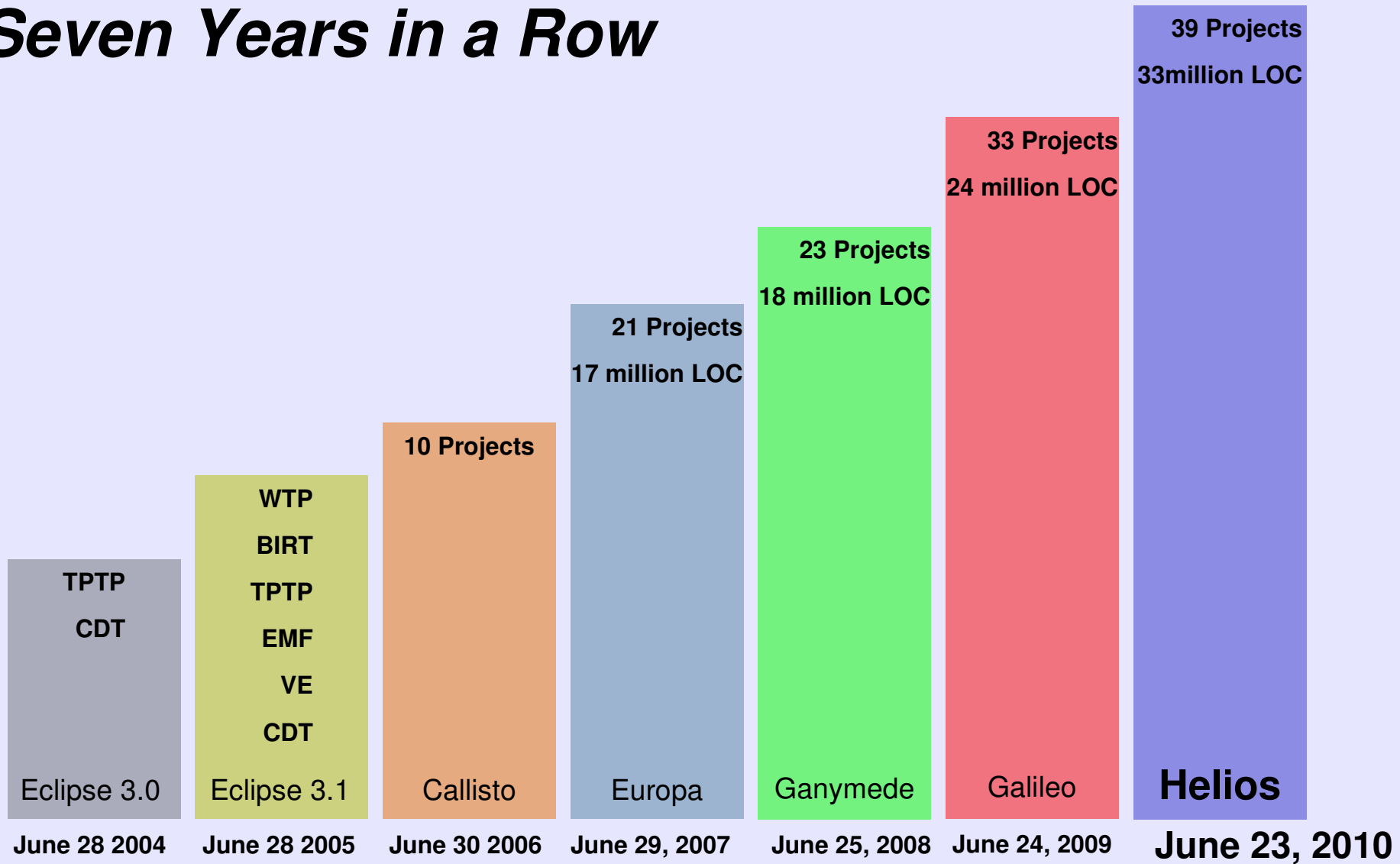*Hypothetical and ridiculously simplified

What is Helios?

- Simultaneous release of 39 Eclipse projects

- A transparent and predictable development cycle

  - Allow ecosystem members to start their own integration, cross-project, and cross-product testing efforts earlier

  - Developers helping developers serve the whole Eclipse community

Not Project Unification

- Each project remains a separate open source project

- Projects remain independent

    - Own project leadership

    - Own committers

    - Own project plan

- Projects coordinate their plans and schedules with other participating projects

Seven Years in a Row

39 Projects

33million LOC

33 Projects

24 million LOC

23 Projects

18 million LOC

21 Projects

17 million LOC

10 Projects

WTP

BIRT

TPTP

EMF

VE

CDT

TPTP

CDT

Eclipse 3.0

Eclipse 3.1

Callisto

Europa

Ganymede

Galileo

Helios

June 28 2004

June 28 2005

June 30 2006

June 29, 2007

June 25, 2008

June 24, 2009

June 23, 2010

eclipse

More Pragmatically... (1/2)

- Coordination

    - Projects have a better sense of downstream use and requirements

    - Staged, predicable release schedule

    - Frequent milestone releases

- Collaboration

    - Project teams work together

    - Reduced functional redundancy

	Staging					Release	
	+0	+1	+2	+3	EPP	Server Freeze	Public Access
M2	Sep 21	Sep 26	Oct 3	n/a	Oct 5	n/a	Oct 9
M2+	Oct 22			n/a	Oct 24	n/a	Oct 25
M3	Nov 2	Nov 7	Nov 14	Nov 16	Nov 19	?	Nov 20
M4	Dec 14	Dec 17	Jan 7	Jan 8	Jan 9	Jan 10	~~Jan 11~~ Jan 16
M5	Feb 8	Feb 11	Feb 18	Feb 20	Feb 22	Feb 25	Feb 26
M6 - API Freeze	Mar 28	Mar 31	Apr 7	Apr 9	Apr 11	Apr 14	Apr 15*
M7	May 2	May 5	May 6	May 7	May 9	May 12	May 13*
RC1	May 16	May 19	May 20	May 21	May 23	May 26	May 27*
RC2	May 23	May 26	May 27	May 28	May 30	Jun 2	Jun 3*
RC3	May 30	Jun 2	Jun 3	Jun 4	Jun 6	Jun 9	Jun 10*
RC4	Jun 6	Jun 9	Jun 10	Jun 11	Jun 13	Jun 16	Jun 17*
Ganymede	Jun 13	Jun 16	Jun 17	June 18*	June 23	June 24	June 25

More Pragmatically... (2/2)

- Build Aggregation
  - All components collected together
  - Easily installed via a single repository
- Communication
  - All this goodness comes from getting the project teams to talk to each other

Official Helios Stats

- 39 project teams

- 33+ million LOC

- 44 companies providing committers

- 490 committers

  – 382 associated with a company

  – 108 individual committer

39 Projects, You Say...

- 39 declared participation

- 54 sets of documentation were sent to the EMO for the release review;

- 58 projects submitted a short description of their Helios contributions;

- 62 IP Logs were submitted; and

- 71 Eclipse "Projects" participated in release.

Confused?

- You probably should be...
- Definition of "project" at Eclipse is pretty flexible
    - We'll tighten this up next year...

Level 1: "Top Level Project"

Level 2: "Project"

Level 3: "Subproject"
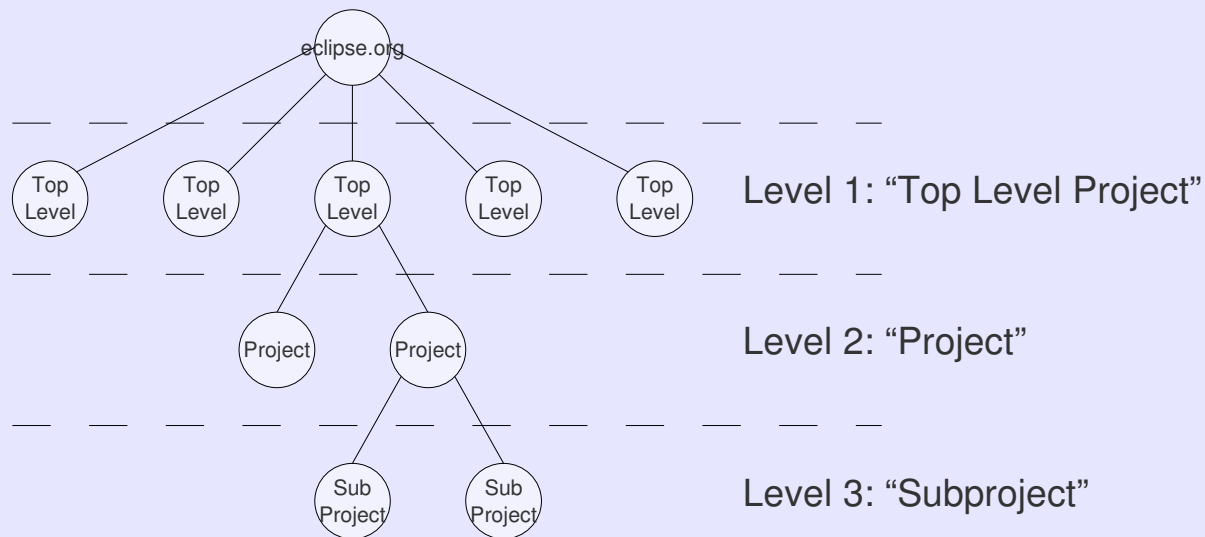
What's the Version Number?

- 'Helios' is the version name

    - eclipse-<package>-<version>-<platform>

    - e.g. eclipse-java-helios-linux-gtk

- 'Helios' will be followed by the 'Helios Fall' and 'Helios Winter' releases

- Why no number?

    - What would you call Eclipse SDK 3.6 + Web Tools 3.2 + EMF 2.5 + CDT 6.0 + ... ?

Participating Projects Must... (1/4)

- Declare participation by M4

- Complete project plans by M4

- Subscribe to cross-project mailing list

- Document use of internal APIs

- Support Translations

  - All strings externalized

  - Participate in Babel

  - Use Eclipse message bundles

- Use ICU4J, where appropriate

Participating Projects Must... (2/4)

- 4-part version numbers

- OSGi bundle format

- List execution environment

- Sign bundles

- Use JARred bundles

- Re-use and share common third party jars

- Provide optimized p2 repositories

Participating Projects Must... (3/4)

- Provide basic capability/activity definitions

- Branding

  - 'About' dialog icon with hover text that displays the provider name

  - Descriptive provider-name (for features)

  - Bundle-Vendor header (for plug-ins)

  - Contribute to the welcome page

- Use standard forms of license documents

- Work together with other projects in any combination of any install

Participating Projects Must... (4/4)

- Have a mature, stable build process

- Have some unit tests that can verify at least basic functionality of a build or distribution

- Have a written ramp down policy by M6

  - Describe when the project plans to be feature complete, have API frozen, ...

- API Policy Defined and Documented.

  - Includes how 'APIs' are distinguished from non-API and 'provisional' API, if any

Participating Projects Should... (1/2)

- Engage Community

- Follow the User Interface Guidelines

  - Participate in a User Interface Best Practices Working Group UI walkthrough

- Test Localization using the Babel Pseudo Translation Test

- Design and test for enabling all languages

  - Bidi, unicode characters, etc.

- Design and test for accessibility compliance

Participating Projects Should... (2/2)

- Define and document their retention policy

- Have measurable performance criteria

  - Devote at least one milestone to performance and scalability improvements

- Should provide some summary metrics

  - Number of bundles, number of committers, lines of code, number of bugs opened and fixed

Helios Projects

Eclipse Helios

Helios Projects (1/7)

- Acceleo

- Accessibility Tools Framework (ACTF)

- ATL – Atlas Transformation Language

- BPMN Modeler

- Buckminster

- Business Intelligence & Reporting Tools (BIRT)

Helios Projects (2/7)

- C/C++ Development Tooling (CDT)

- CDO Model Repository

- Dali Java Persistence Tools

- Data Tools Platform (DTP)

- Dynamic Languages Toolkit (DLTK)

- Eclipse Communication Framework (ECF) Eclipse Git Team Provider (eGit)

- Eclipse Modeling Framework (EMF)

- Eclipse Packaging Project (EPP)

Helios Projects (3/7)

- Eclipse Platform

- Eclipse Web Tools Platform Project (WTP)

- EclipseLink Project

- EMF Compare

- EMF Teneo Model Relational Mapping

- Equinox

- Extended Editing Framework (EEF)

- Fortran Development Tools (Photran)

- GEF – Graphical Editor Framework

Helios Projects (4/7)

- Graphical Modeling Framework (GMF)

- Java Emitter Templates (JET2)

- Java implementation of Git (jGit)

- Java Workflow Tooling (JWT)

- Java Script Development Tools (JSDT)

- JavaServer Faces (JSF)

- JDT – Java Development Tools

- Linux Tools

- Marketplace Client (MPC)

Helios Projects (5/7)

- MDT: OCL, UML2, XSD

- Memory Analyzer (MAT)

- Mint

- Mobile Tools for Java (DSDP MTJ)

- Model Discovery (MoDisco)

- Model to Text (M2T): M2T, Xpand

- Modeling Amalgamation

- Modeling Team Framework

- Modeling EMFT Ecore Tools MWE

Helios Projects (6/7)

- Mylyn
- Net4J Signalling
- Platform Parallel Tools Platform (PTP)
- PHP Development Tools (PDT)
- Rich Ajax Platform (RAP)
- Jetty
- SCA Tools
- Sequoyah
- SOA Tools (STP)

Helios Projects (7/7)

- Subversive

- Swordfish

- Target Management (DSDP TM)

- Test and Performance Tools Platform Project (TPTP)

- Web Tools

- Xtext

New Projects to the Release Train

- eGIT/ jGIT
- EEF
- Photran
- JSDT
- Linux Tools
- Marketplace Client (MPC)

- MoDisco
- Modeling Amalgamation
- Modeling Team Framework
- PTP
- Jetty

Helios Highlights

Eclipse Helios

New and Noteworthy: Platform

- New platforms: PowerPC 64-bit, Windows 7, and Ubuntu 10.04

- Opening a file from the command line

- Linux users can now use WebKitGTK+ instead of Mozilla as the Browser control's native renderer

- UNIX file permissions

- Progress shown in platform task bar
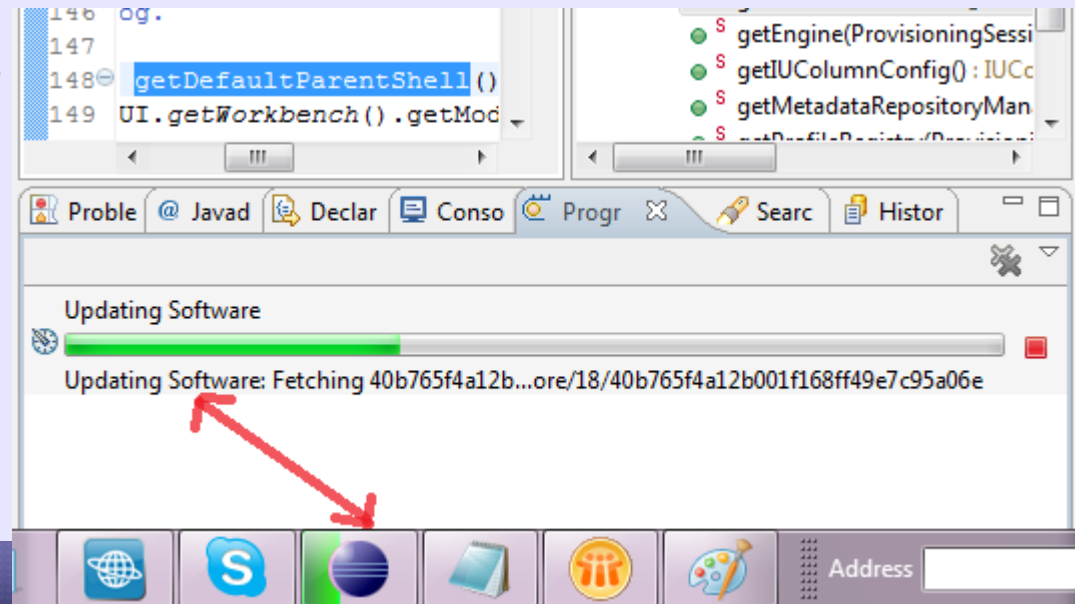
New and Noteworthy: PDE

- OSGi console interacts with the running framework

- Feature based launch

- Support software installation while running and debugging

- Import from CVS

  - Import projects from CVS corresponding to bundles in the target platform
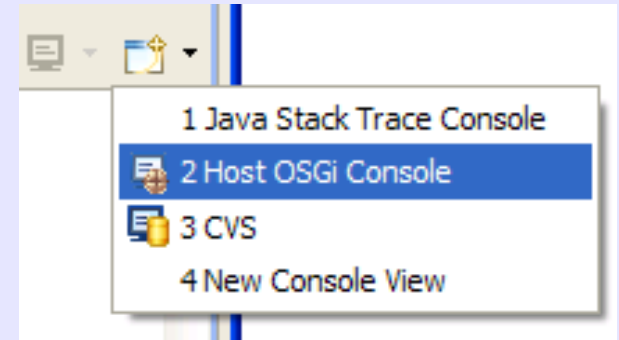
Marketplace Client

- Find open source and commercial Eclipse-related offerings

- Searchable

- Multiple Markets

- ~1 click installation, update, and removal

Git Team Provider

- Git is a distributed SCM

    - Every developer has a full copy of all history of every revision of the code

- JGit is an EDL (BSD) licensed, lightweight, pure Java library implementing Git

- EGit is an Eclipse Team provider for Git

- (aside) Git repositories for projects at eclipse.org
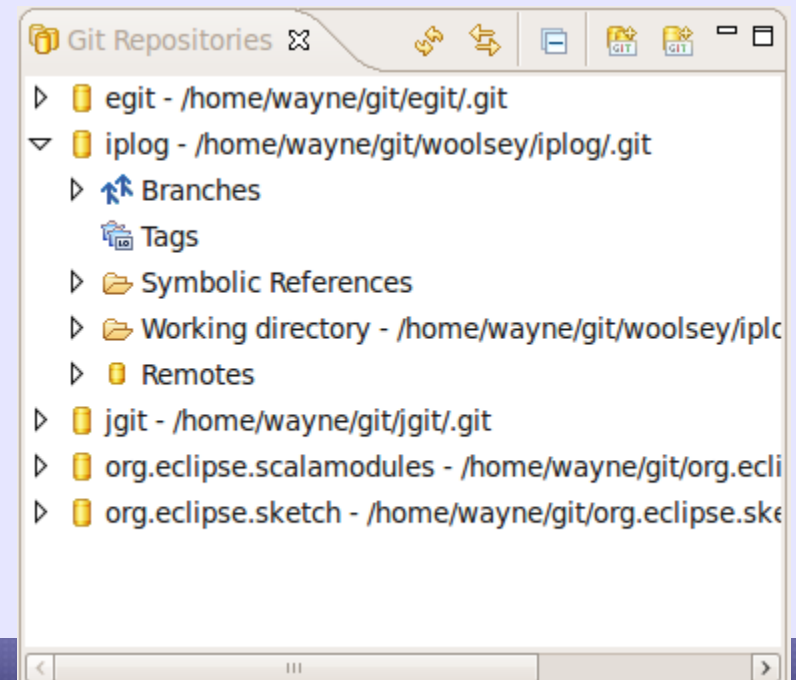
Linux Tools

- Autotools, Valgrind, Oprofile, Gprof, GCov integration
- C/C++ call graph utility
- RPM .spec editor with rpmlint integration

Extended Editing Framework (EEF)

- Helps users create editors, views and wizards for EMF models

- Runtime and a development environment to generate advanced edition UI for EMF model
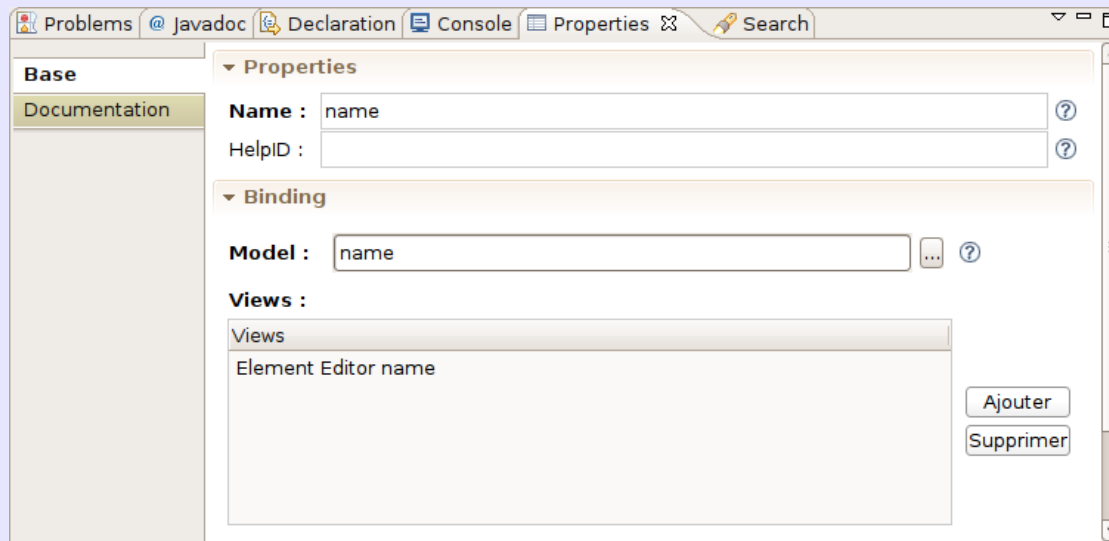
JavaScript Development Tools (1/2)

- Improved namespace support

- The JavaScript Debug Interface (JSDI)

    - An API that consumers can implement to hook into the use of the debug core and UI bundle

- Rhino Debug Support, Console

- Step Into Script Load

JavaScript Development Tools (2/2)

- Breakpoint Participants

- Line, Function, Script Load Breakpoints

- Breakpoint Detail Panes, Properties

- Suspend when any script loads

- Universal Launching Support

- Watch Expressions

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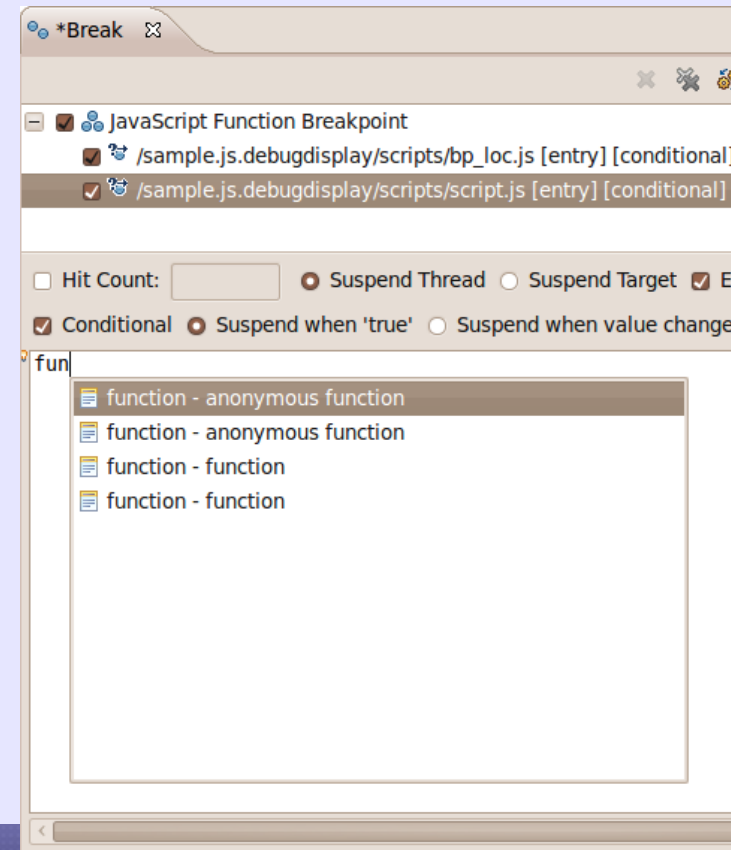
Rich Ajax Platform (1/2)

- RAP implements a subset of the SWT API
  - Target RCP and RAP from a single code base
  - Extended in Helios to cover close to 100% of SWT
- Improved and customizable Look and Feel
  - Rounded borders, gradients, and animations
- EMF provides RAP support for Helios
- Riena's ridgets run on RAP
- Single sourced version of the Memory Analyzer

Rich Ajax Plaform (2/2)

BIRT

- Polar/Radar chart, pie chart rotation, palette hashing, sort locale and strength

- Bidirectional enhancements (e.g. enhanced BIDI support in BIRT emitters)

- Performance improvements

  - Improved PDF image inclusion performance

  - Improved performance of large datasets

- Usability improvements

  - Multiple resource files, accessibility improvements

Getting Help, Getting Involved

Eclipse Helios

Getting Involved

- Test new releases

- Create bug reports, feature requests, patches

  - https://bugs.eclipse.org/bugs/

- Ask and answer questions in the forums

  - http://www.eclipse.org/forums

- Blog/Podcast/... about Eclipse

Forums and Mailing Lists

- http://www.eclipse.org/mail/

  - Communication among project committers

- http://www.eclipse.org/forums/

  - news://news.eclipse.org

  - Communication between and among developers and users

- When in doubt, start with the forums

Forums

- Bugzilla ID and password required

- Each project has at least one newsgroup

- If you're not sure, post to eclipse.newcomer

  - Somebody will point you in the right direction

- Well thought-out questions get answered

  - Provide enough information, do your homework

  - Be polite

- Give back: ask and answer questions

Mailing Lists

- Used for communication amongst the project committers

  - Committers are the people who can actually commit code into Eclipse repositories

- Everybody can sign up for a mailing list

  - Feel free to "listen in on the conversation" and contribute

- "How to use" questions should be directed to the project forum

IRC

- [alias]@irc.freenode.net/#eclipse
- IRC via Eclipse Communication Framework
  - http://www.eclipse.org/ecf
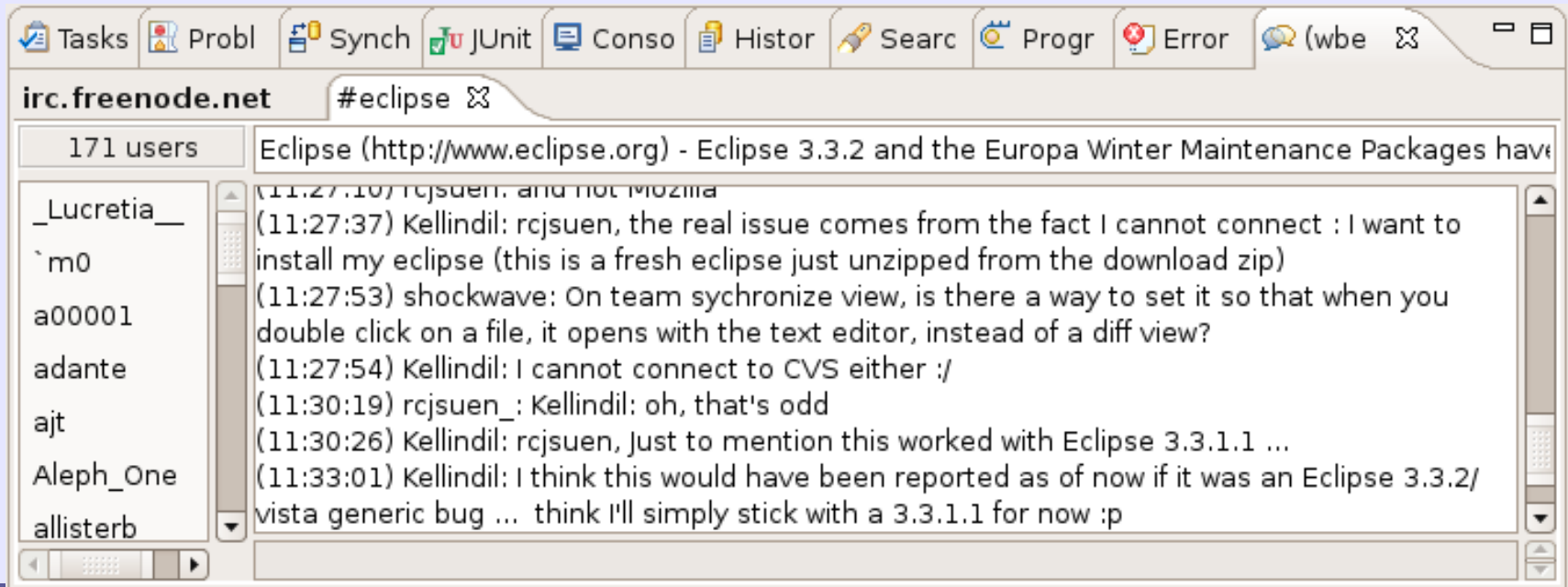
Summary

The best way to get involved with the Eclipse community is to get involved with the Eclipse community.