Database Applications using Eclipse

IBM developerWorks Live!
Developing on open standards databases

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What is Eclipse?

- **A Technology Offering**
  - Universal platform for building and integrating development tools and rich client applications
  - Open, extensible architecture based on standards
  - Licensed for royalty free world-wide distribution

- **An open source project**
  - Delivers and supports the technology

- **A Community**
  - Contributes to the project and technology
  - Brings to market commercial offerings

- **Started with $40M software/R&D from IBM as initial Eclipse technology**

- **Initial consortium members included:**
  - IBM, RedHat, SuSE, Rational, Merant,
  - QNX, TogetherSoft, WebGain,
  - Borland, and Rational
In the News…

**Gartner**

"IBM is first to launch a 'community property, best-of-breed' AD platform to integrate a variety of tools from a variety of vendors ... the implications are not only significant, but far-reaching."

**The New York Times**

"Eclipse is a break from the proprietary pattern, it come at a critical time in the industry...it's a very aggressive move"

**Illuminata**

"This is IBM's most audacious open source gambit so far... it's real code designed to do real work."

**IDC**

"Eclipse will very likely be a quick & cost-effective way of forging alliances in the all-important battle for developers ... using open standards & open source software as the means to gather those developer resources."

**TheServerSide.com**

"I have used NetBeans somewhat, and for an IDE written in Swing, it's not bad. The features that Eclipse offers such for refactoring, incremental compilation, debugging, etc. are really hard to beat."
"In [...] its most significant announcement in 2001 IBM Corp yesterday donated a claimed $40 million of software [...] to a new open source application development community called eclipse.org"

IBM's plans can change the entire industry. As revolutions go, this one is a bargain.

"Suddenly IBM is cool"

"IBM Aims to Eclipse Tools Market...for Microsoft, Eclipse presents something of a problem...they will have to content with yet another open source threat on a relatively unprotected flank..."

"The name of this new open source initiative is Eclipse, as in overshadowing of Microsoft's proprietary approach ... it may take a long time, but the open-source movement eventually will accomplish what the government failed to do ."
Eclipse Value Proposition

- **Users of Eclipse-based offerings benefit from**
  - Offerings, research, knowledge from the entire Eclipse ecosystem
  - Higher quality software – a product of the open source community
  - Their ability to reuse skills

- **Java developers using Eclipse benefit from**
  - Highest function Java IDE
  - One that’s easy to use and easy to extend
  - Native look and feel with cross platform support

- **Developers of tools benefit from**
  - Portable, customizable industry tool platform - The “middleware of tooling”
  - A head start - they no longer have to start from scratch
  - Seamless tool integration
  - Ability to focus on core competencies
  - Eclipse ecosystem to enable a total solution
Project Goals

- Provide open platform for application development tools
  - Run on a wide range of operating systems
  - Support both GUI and non-GUI applications

- Remain language neutral
  - Permit unrestricted content types
  - HTML, Java, C, JSP, EJB, XML, GIF, …

- Facilitate seamless tool integration
  - At UI and deeper
  - Add new tools to existing installed products
Basic Architecture

Many plug-ins built on top

Help (optional) Update (optional) Text (optional) IDE IDE Text Compare Debug Search Team/CVS

UI (Generic Workbench) Resources (optional)

JFace SWT

Runtime (OSGi)

Eclipse-based products and extensions
Plug-in Architecture

- Plug-in
  - smallest unit of eclipse functionality
  - details specified in its plug-in manifest (plugin.xml)
  - plugins can add code, define extension points, and contribute to extension points
- Extension point
  - named entity for collecting contributions
  - Defines API contract
  - example: extension point to add menu actions
- Extension
  - an instance of an extension point contribution
  - example: a specific menu action
- Controlled extensibility
Layers & Subsystems

- Embedded Tooling
- Web Tooling
- Modeling Tooling
- Test & Perf Tooling
- GUI Builder X

Extensible Tooling Frameworks

- Embedded Tool Frameworks
- Web Tool Frameworks
- Model & Design Frameworks
- Test & Perf Frameworks
- GUI Builder Frameworks

Basic Frameworks

- Agile Lang Tooling
- Cobol Tooling
- C++ Developer Tooling
- Java Developer Tooling
- Eclipse Modeling Framework
- Graphical Editing Frameworks

Language Developer Toolkit

Core

Tooling Platform

App Runtime

Java Virtual Machine

Developing on Open Standards Databases
Eclipse 3.x New Look and Feel

- New title bars and tabs
- Changed view and editor mgmt
- Perspective bar changes
- Detached views
- View maximize, restore, collapse
- Better drag and drop feedback
- Fast view bar changes
- Fonts indicate background processing
- Progress area
Cheat Sheets

- **Goal is to guide a user through multi step operations**
  - provide active “do its”
  - links into help documentation
- **Implementation**
  - contents defined in XML
  - callouts to actions for “do its”
UI Responsiveness

- Responsiveness: how often the user interface is in a state where the user can interact with it
- Job Scheduler with UI to show work in progress
  - common solution for background activities
  - CVS, debug uses new support
- Minimize long term workspace locking
- Background builds
  - auto-build is a platform activity that occurs after workspace modifications
CVS

- New synchronize view
- CVS operations in the background
- CVS checkout wizard
- CVS commit sets
- CVS date tags
- CVS history linking
- CVS SSH2 support
- Show Annotation
Other Significant Improvements

- File>Open…
- Workspace synch.
- Multiple workspace mgmt
- Improved file encoding support
- Improved keyboard bindings
- Improved editor management
- Dynamic help content
- SWT mirroring for BiDi (Windows)

- Build Working Set
- Display HTML in widget
- Forms-based UI toolkit
- 64 bit SWT
- 508 Web Accessibility
- Improved resource control
- Customizable annotations
- Search for regular expressions
- Help Index outside workspace
### Eclipse Release Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Nov: Eclipse 1.0</td>
</tr>
<tr>
<td></td>
<td>June: Eclipse 2.0</td>
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<tr>
<td></td>
<td>Sept: Eclipse 2.0.1</td>
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<tr>
<td></td>
<td>Nov: Eclipse 2.0.2</td>
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<tr>
<td>2002</td>
<td>Mar: Eclipse 2.0.3 &amp; 2.1</td>
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<tr>
<td></td>
<td>June: Eclipse 2.1.1</td>
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<tr>
<td>2003</td>
<td>Oct: Eclipse 2.1.2</td>
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<tr>
<td></td>
<td>Feb: Eclipse 2.1.3</td>
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<tr>
<td>2004</td>
<td>June: Eclipse 3.0</td>
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<tr>
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<td>Sept: Eclipse 3.0.1</td>
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<tr>
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<td>Mar: Eclipse 3.0.2</td>
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<tr>
<td></td>
<td>2Q: Eclipse 3.1</td>
</tr>
<tr>
<td>2005</td>
<td>3Q: Eclipse 3.1.1</td>
</tr>
</tbody>
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#### 3.1 Themes
- Built to last - Measure and improve performance
- Enterprise Development - Preferences, logical resources, large scale workspaces, team policies
- Simple to use
- Rich client platform
- PDE Enhancements - J2SE 1.5 support
- Large-scale development
- Broadening the community
The Eclipse Foundation

- **Eclipse Foundation Transition**
  - From: A loose association around IBM driven development
  - To: A not-for-profit corporation managing collaborative development by multiple industry leaders and establishing a broad ecosystem
  - 75 member companies, including HP, SAP, Intel, MontaVista, QNX, Serena

- **Solutions for Growth**
  - Institute a scalable organization: the Eclipse Foundation
    - Four membership classes:
      - Strategic Developers, Strategic Consumers, Add-in Providers, and Open Source project leaders
    - Full time management organization
    - Board of Directors
  - Initiate collaborative development among Strategic Developer teams
  - Expand technology leadership
    - Establish SWT/SWING coexistence and interoperability
    - Industry-leading C/C++ IDE
    - Infrastructure for J2EE tooling
    - Academic and research outreach
Adding Commercial Value to Open Source

- Commercial offerings add value to open source in several ways
  - Additional function
    - E.g. by developing additional plug-ins and offering these only in commercial products
  - Deeper integration
    - Eclipse enables integration
    - Inter-tool integration requires work between the tool providers
  - Test and QA
    - Testing and providing patches to harden an open source base for commercial use
  - Support
    - Acting as a proxy for customers
- Eclipse-based offerings from IBM do all of this
  - Important factor: having committers on the project
Success in Numbers

- **Eclipse Platform download requests** topped 3.1 Million in first year
- **To date over 39 Million download requests**
  - This does not include data from ~41 mirror sites in 22 countries
  - Over ~880K developers, companies, or organizations from over 125 countries
  - 15% Linux downloads, 80% Windows downloads, 3% Solaris
- **Number of open source projects**: 34
- **Number of third party plug-ins**: 680+
- **Number of books published about Eclipse**: 19
  - Books in German, Japanese, Korean
- **Eclipse related projects listed on SourceForge**: 500+ Broad community growth
- **Over 20 Eclipse information sites worldwide**

*Download data as of 4Q04*
Industry Awards

- SD Times 2004 Best of the Best in Tools and Environments
- 14th Annual Software Development Jolt Product Excellence and Productivity Awards – Languages and Development environments
- InfoWorld 2003 Technology of the Year award for Application Development – Best Development Tool
- Java Developer’s Journal 2004 Reader’s Choice Award for best Java component – SWT
- InfoWorld 2003 Technology of the Year for Best Application Development Tool
- O’Reilly’s OSDir.com 2003 Editor’s Choice for Development Tools and Best Java Application
- Eclipse awarded two JDJ 2003 Editors’ Choice Awards by Jason Bell, J2SE Editor and Glen Cordrey, J2ME Editor
- Eclipse places first in Best Java Development Suite and Most Valuable Java Development Product in the Java Pro 2003 Reader’s Choice Awards
- AspectJ Project awarded Most Innovative Java Product or Technology in the JavaWorld 2002 Editors' Choice Awards. Eclipse was also a Finalist in this category.
- First place in the 2003 Standards Bodies and Consortia category, SD Times 100 Innovators And Leaders
- Best Java Product Award 2003 by the readers of JavaSpektrum and ObjektSpektrum magazines
- Nominated for Best Open Source Project, LinuxWorld Open Source Produce Excellence Awards, January 2003
- Finalist in Languages and Development Environments Category, CMP Media’s 2002 Jolt Product Excellence Awards
- Placed in Development Software Category, Linux New Media Awards 2002
Demo

- Eclipse and IBM Integration Plug-In
- Java Database application
- Web Application
The End

Thank You

Danke

Obrigado

Merci

Gracias

Thank You

Japanese

Simplified Chinese

Traditional Chinese

Arabic

Italian

Russian

Hindi

Hebrew

Thai

Tamil

Korean

Spanish

Portuguese

French

German

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