

EclipseCon 2009: feedback



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A few words about the event

- Santa Clara, CA
- March 23rd-26th
- Organized by Eclipse Foundation
- 1000+ attendees
 - ▶ usually experienced Eclipse developers
 - ▶ more non-US attendees than the other years
- 200+ talks
- Simultaneous event: OSGi DevCon



More and more successful

- ▶ 10+ talks dedicated to CDT
- ▶ Many attendees to the CDT BoF

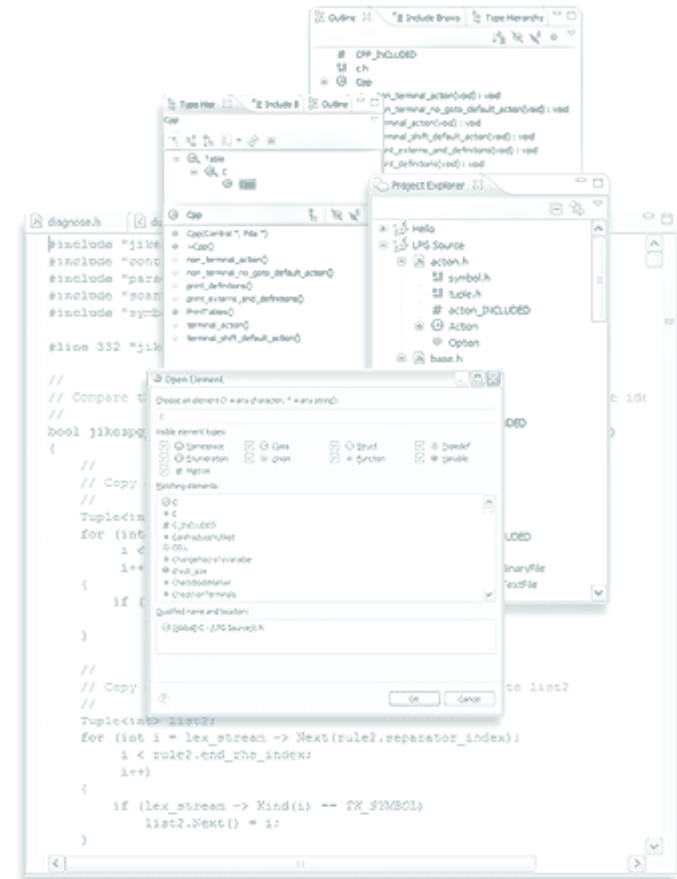
CDT 6.0 (Galileo release train)

- ▶ 450+ bug fixes
- ▶ Lots of features improved
 - refactoring, macro management, indexing, ...
- ▶ Stabilization of the development
- ▶ Integration of **DSF**



Future of CDT

- ▶ Focus on **quality**
 - Documentation, test, ...
- ▶ Improved **modularity**
 - For Fortran, Objective-C, ADA, ...
- ▶ Powerful **debug**
 - thanks to DSF
- ▶ **Refactoring** of MBS
 - tool chains management
 - makefile generation
- ▶ **Profiling** capability



Debug Service Framework

- ▶ API for integrating debuggers
- ▶ Support of remote Debugging
 - Multi-threaded, asynchronous architecture
- ▶ Design for specific debugger
 - Multi-core, DSP, ...
 - Based on OSGi services for modularity
- ▶ Improved user experience
 - Common data model
 - stepping, expression views, update policies



GDB Debugger

- ▶ New default CDT debugger
- ▶ Tightly coupled with GDB dev
- ▶ Multi-process capabilities
- ▶ Reverse debugging
 - Complete control of execution flow
- ▶ CLI console
 - Interaction with GDB
- ▶ Useful views
 - Disassembly, memory, registers, ...



The D-Pack initiative :

- ▶ IDE for embedded systems :
 - CDT and DSDP
 - Specific binaries and tools
- ▶ Simplify distribution
 - Providing packaging and provisioning system
- ▶ Use of Eclipse technologies
 - Packaging : RTSC or SPM ?
 - Provisioning : P2 / Buckminster



Real Time Software Component

- ▶ Component based development
- ▶ Based on JS metadata
- ▶ Lightweight runtime



Software Package Management

- ▶ Packaging system
- ▶ Use EMF model
- ▶ Remote / local repository



Web site : http://www.eclipse.org/projects/project_summary.php?projectid=dscp.rtsc

Lots of interesting languages on JVM

- ▶ Dynamic scripting
 - JavaScript, JRuby, Groovy, ...
- ▶ Functional languages
 - Scala, Clojure, ...

Solutions to Java flaws ?

- ▶ Lack of closures
- ▶ Clunky typing system
- ▶ Poor concurrency solutions



Studies for integration in Eclipse / OSGi

- ▶ E4
- ▶ JS
 - Already a prototype
- ▶ Scala
 - Very trendy
- ▶ Clojure
 - Implementation planned
- ▶ Some problems though
 - Mainly class loading



- What is OSGi, by the way?
 - ▶ a service-oriented, component-based environment for developers
- It focused initially the embedded world (automotive, electronics, ...)
- But is now used in many areas:
 - ▶ Application Servers (Websphere, JOnAS, Glassfish, ...)
 - ▶ Mobile phones (Nokia, Android, ...)
 - ▶ SOA



- Component oriented programming
 - ▶ is of course possible using « raw » OSGi APIs
 - ▶ but it can be complex
- Component frameworks
 - ▶ they can really ease the implementation of components
 - ▶ ... but there is more than one to choose from 😊



- Declarative Services

- ▶ standard OSGi declarative model
- ▶ very light and efficient runtime (at least in Equinox 3.5)
- ▶ tooling available in Eclipse PDE (Galileo release)



- Apache iPojo

- ▶ Java annotations + bytecode instrumentation
- ▶ thread-safeness and concurrency are automatically addressed by the annotation compiler
- ▶ Cons: performs « black magic » behind the scenes



- Spring limitations

- ▶ it can be hard to wire thousands of beans, in a « flat » namespace



- Spring-DM *OSGifies* Spring

- ▶ the best approach to modularize an existing Spring-based application
- ▶ the most sophisticated **dependency injection** solution
- ▶ 10x heavier than DS ☹...
- ▶ quite complex because of Spring's concepts
- ▶ **Blueprint Service** to become a standard in OSGi 4.2 (see RFC 124)



- Challenges

- ▶ growing engineering team, monolithic code base
- ▶ growing product team wanting more and more features
 - upgrading/adding back-end services requires downtime & painful configuration
 - upgrading front-end requires redeploy
- ▶ growing operations team, deploying more and more servers...
 - big scaling issue: they *only* have 12GB of RAM ☺



- **Distributed services**

- ▶ every service can be moved from one container/server to another
- ▶ smaller footprint
- ▶ software load balancing (vs. hardware)



- OSGi is quite low-level: it's hard to "hide" the complexity to the developers (=> Spring-DM)
- Tooling is not quite there yet
- More info at <http://blog.linkedin.com/?s=osgi>



- What is it all about?!

- ▶ new UI directions
- ▶ bring modeling to the IDE
- ▶ open to other languages
- ▶ keep on leveraging and promoting OSGi and Equinox



- ▶ See also <http://wiki.eclipse.org/E4>



- Interesting progress done regarding **declarative UIs**
 - ▶ XWT to describe SWT using an XML dialect
 - ▶ Textual DSL:
<http://code.google.com/p/eclipsecon2009dui/>
 - ▶ CSS 2 support
- **New resource model** to deal with complex project layouts
 - ▶ compatible with 3.x API!
- **SWT to ActionScript compiler: SWT "Browser Edition"**
 - ▶ debugger support



- **Distributed VCS at eclipse.org**
 - ▶ GIT? Mercurial? Bazaar?
- **SWTBot**
 - ▶ UI testing for SWT and Eclipse
 - ▶ stable, and usable in continuous integration tools
- **xText to design Domain Specific Languages**
 - ▶ large community adoption, good tooling
 - ▶ perfect integration with EMF, GMF, ...



- Eclipse Summit Europe 2009
 - ▶ Oct 27th-29th
 - ▶ Call for Papers deadline is Aug 18th



- EclipseCon 2010
- Eclipse Days (see Eclipse Wiki)

- DemoCamps





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