Java™ in Web 2.0

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• Java overview
• Technologies supported by Java Platform to create Web 2.0 services
• Future trends
The Java Eco-System

- $3B Java Mobile Game Market
- $2.8B In Java App Servers
- 6.5+ M Java Dev. world wide
- 250+ M JavaFX runtime
- 850+ M GlassFish Downloads Per month
- > 4.0 Million
- 850+ M PCs with Java
- Multi-Function Printers
- Blu-ray Disc Devices
- Digital TVs & Set-Top Boxes
- GlassFish Downloads Per month
- > 2.6 Billion Java Powered Phones
- > 6 Billion Java Cards Deployed
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Java and Web 2.0

- **End to end**: server side but also allows to deliver services to smart cards, phones, desktop and TVs
- **Convergence**: mix and match Communications & Web
- **Service Orientation**: reusable and reuse other services (including legacy)
- **Role specialization**: different classes of developers: Communication, Enterprise, BPM, Web 2.0, ..
- **Rich and robust platform**: large set of specs and APIs
- **Standards based**
Java and Web 2.0 mash-ups

What's your preferred mashup language?

- Flash: 130 votes
- Java: 325 votes
- .NET: 379 votes
- PHP: 621 votes
- Python: 178 votes
- Ruby: 135 votes

Total Votes: 1768

Top APIs for Mashups:

- GoogleMaps (44%)
- Flickr (11%)
- YouTube (10%)
- Amazon (7%)
- Twitter (6%)
- eBay (4%)
- VirtualEarth (4%)
- del.icio.us (3%)
- Google (3%)
- YahooMaps (3%)

Protocol Usage by APIs:

- REST (68%)
- SOAP (20%)
- JavaScript (6%)
- XML-RPC (2%)
- Atom (2%)

ProgrammableWeb.com 10/06/09
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Technologies supported by Java Platform to create Web 2.0 services

- SOA
- Web Services
  - SOAP WS
  - RESTful WS
- SIP Services
- Java EE 6
- AJAX
- Dynamic languages and web frameworks
- Java FX
SOA

- [https://open-esb.dev.java.net/](https://open-esb.dev.java.net/)
- Enterprise Service Bus
- Service engines: BPEL, Intelligent Event Processing, XSLT, Data Mashup, Encoding, etc.
- Wide range of adapters: communications, databases, EIS, etc.
- Very easy to use through Netbeans IDE
SOAP Web Services

- https://metro.dev.java.net/
- High-performance, extensible, easy-to-use web service stack
- Secure, reliable and transactions WS: WS-*
- Interoperable with .NET
- Transport neutral
- Very easy to use through IDEs support
RESTful Web Services

- [https://jersey.dev.java.net/](https://jersey.dev.java.net/)
- Standard annotation-driven API to build RESTful Web services in Java: Resources / Methods / Representations
- Rapid creation of RESTful WS from JPA entity classes and patterns.
- Generation of JavaScript client stubs from RESTful web services for building RESTful client applications.
- Test client generation for testing RESTful web services.
- Very easy to use through IDEs support
SIP Services

- https://sailfin.dev.java.net/
- Standard (JSR 116, 289) for developing and deploying communications applications
- Adds SIP servlet support on top of Java EE / GlassFish
- Allows Converged Java EE, SIP applications
- Highly scalable and carrier-grade
- Test client generation for testing SIP services.
- Very easy to use through IDEs support
Demo

• Done from scratch using IDE:
  > RESTful Web Services Creation from Database tables leveraging Google Map
  > Twitter status updates based on SIP Presence

• Netbeans 6.8 beta
  > http://www.netbeans.org/downloads/
  > Includes GlassFish V3 Preview
  > Java EE 6, SE, ME, Java FX, PHP, Ruby, Groovy, C/C++, etc.

• SailFin V2 (based on GF 2.1.1)
  > https://sailfin.dev.java.net/downloads/instructions.html
Java Enterprise Edition 6

- Most public reviews complete: Final release scheduled for Q4 2009
- GlassFish v3 is the Reference Implementation
- Flexible - One size no longer has to fit all
  > Full Platform
  > Web Profile: Servlet 3.0, EJB Lite 3.1, JPA 2.0, JSP 2.2, EL 1.2, JSTL 1.2, JSF 2.0, JTA 1.1, JSR 45, Common Annotations
  > Opportunity for more profiles
- Extensible: Embrace Open Source Frameworks
- Productivity: More annotations, more POJOs, less XML, simplified packaging
Java Enterprise Edition 6

- **Servlet 3.0:**
  > Ease of use: annotations for ease of development, optional web.xml, etc.
  > Web Framework pluggability; Asynchronous Processing

- **EJB 3.1**
  > Ease-of-use improvements: no-interface view: once source file per bean;
    EJB inside web applications: No ejb-jar; Use WEB-INF/classes; Shared
    component environment; Portable JNDI
  > Singleton beans: [@Singleton]; Lightweight asynchronicity
  > Enhanced EJB Timer Service; Embeddable EJB Container

- **Java Persistence Architecture 2.0**

- **Java Contexts & Dependency Injection (AKA - “Web Beans”)**

- **Java Server Faces 2.0:** MVC based, Easier to use than JSP.

- **JAX-RS 1.1 – RESTful services**
AJAX and reverse AJAX

• Java Server Faces 2.0
  > Integrated AJAX support
  > Simplified component creation

• Comet
  > Techniques that enable a server to push data to client browsers through an HTTP open line of communication
Dynamic languages

• Pros vs Java
  > Agile development
  > More flexibility
  > Metaprogramming and run-time code generation
  > Domain-specific languages
  > Productivity

• Cons vs Java
  > Slower execution
  > Scalability
  > Different languages require different runtimes
  > Maturity: contributors, ecosystem, testing, available libraries and frameworks, tooling, manageability, etc.
Dynamic languages and JVM: JRuby ex

- High performance, Real threading
- Vast array of libraries

Dynamic languages and web frameworks

• Run dynamic language applications along side Java EE apps with security, scalability, Java language and APIs benefits.
Dynamic languages – Pluggable Web Framework

Key
- GlassFish v3 Modules
- Web Framework Interface
- Java Framework
- Ruby Framework
- Python Framework

JSF, Grails, ... Servlet Spec
Rails, Merb, ... Rack
Web Container, JRuby Container, Jython Container
V3 Kernel
Grizzly

JVM
Other languages available on Java VM ..

- Clojure (Lisp)
- Scala
- PHP
- Rhino (JavaScript)
- Java FX
- And others ..
Demo

• Done from scratch using IDE:
  > Ruby + Java demo
  > Ruby on Rails

• Netbeans 6.8 beta
  > Includes GlassFish V3 Preview
  > Java EE 6, SE, ME, Java FX, PHP, Ruby, Groovy, C/C++, etc.
Java FX

- [http://javafx.com/](http://javafx.com/)
- Platform for creating and delivering Rich Internet Applications across multiple screens
- Powered by the Java Platform
- Declarative Scripting Language
- Escape the browser deployment model linking with Java and Javascript
- Richness of Java development
Agenda

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Development

• Team collaboration
  > Presence
  > Chat
  > Continuous integration
  > Issue Tracking
  > Team Member Status Resources

• Cloud Plug-In
• Web on Web
• etc.
Runtime

- Multi screens
- Mixing and matching frameworks and languages
- PaaS
- Event processing
- Web based Integration
- New APIs: Semantic Web programming, NLP, Augmented Reality, etc.
Resources

• Open ESB
  > http://wiki.open-esb.java.net/

• SailFin
  > https://sailfin.dev.java.net/

• GlassFish (Java EE RI)
  > https://glassfish.dev.java.net/
    > https://jersey.dev.java.net/
    > https://javaserverfaces.dev.java.net/
    > http://glassfish-scripting.dev.java.net/

• Jruby
  > http://jruby.org/
  > http://kenai.com/projects/jruby/pages/CallingJavaFromJRuby

• Java FX
  > http://javafx.com/
THANK YOU

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