



JavaOneSM
Sun's 2000 Worldwide Java Developer Conference*



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JavaServer PagesTM (JSPTM) Technology and Servlets— Architecting an Enterprise Solution

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Overview

- The web layer
 - Roles
 - Tasks
 - Architectures
-
- Review
 - Resources

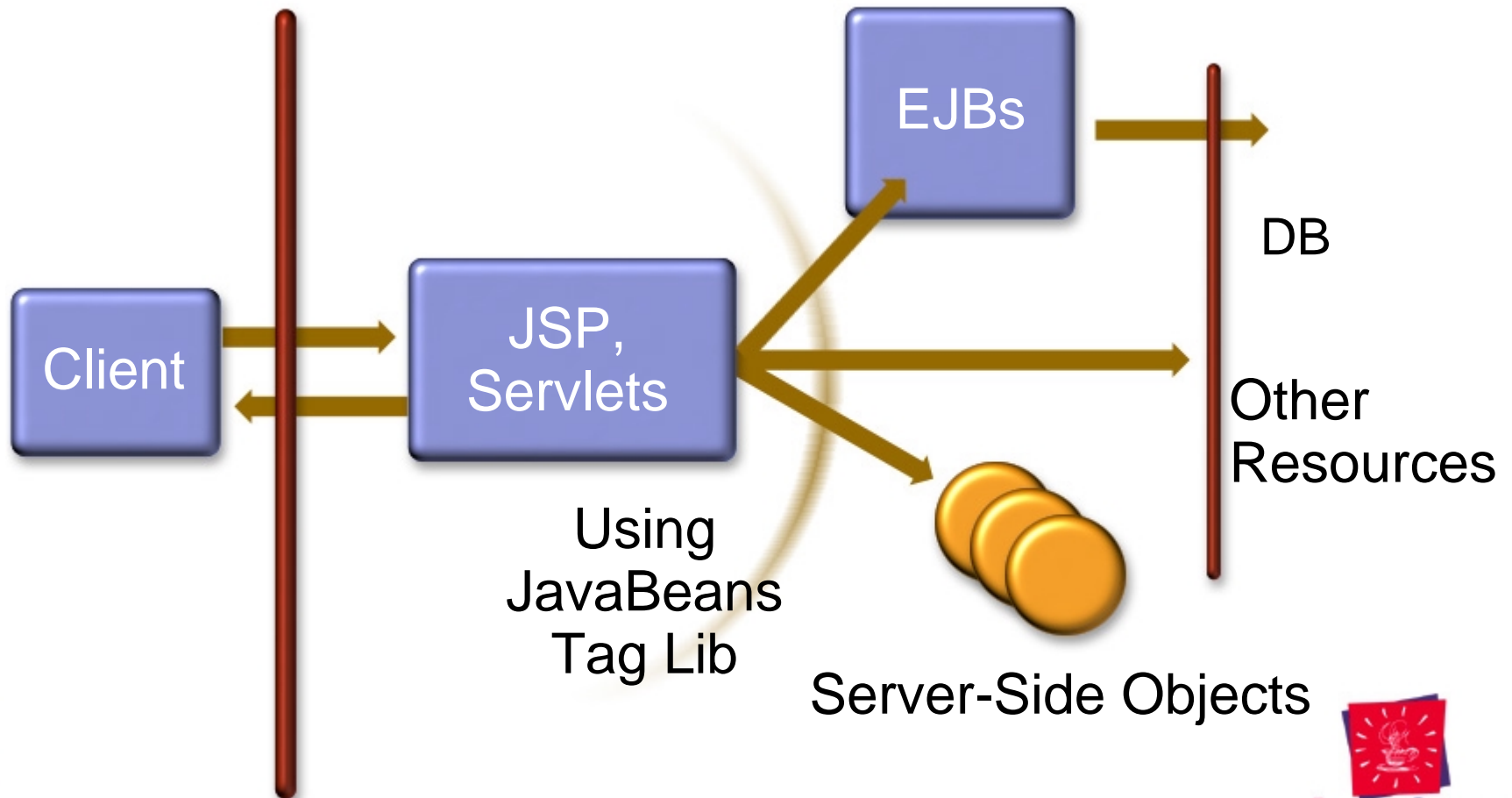


What Is the Web Layer

- Entry point to application
- Interacts with the *exterior*
- Usually through HTTP
- Client may be:
 - Browser
 - Applet
 - Desktop application
 - Server application (B2B)



Web Layer



Roles Involved

- Page and Site Author
 - Creates presentation from *developer* data
 - Expert in UI
- Developer
 - Provides access to data for *page author*
 - Expert in server-side organization



Developer

- Creates abstractions
 - JavaBeans™ component
 - Tag Libraries
 - Enterprise JavaBeans™ component
- Interacts with page author
- May use IDE



Page Author

- Uses
 - Tag libraries and JavaBeans component
 - Encapsulated knowledge
- Adds
 - Structure, conversation threads
 - Presentation organization
- Interacts with developer
- May use page authoring tool



Tag Libraries

- Specialized server-side JavaBeans component
 - Better integration in a JSP page
 - Easier to compose and customize
- Abstracts functionality
 - Reusability
 - Tool manipulation
- Abstraction may
 - Do presentation (e.g. Forms)
 - Do no presentation



JavaBeans™ Architecture-based component and Tag Libraries: Prototypical Uses

- Platform and Tool Vendors
 - Further platform advantage
 - Better integration with tools
- Consultants / Integrators
 - Support their methodology
 - Integrate with favorite tools



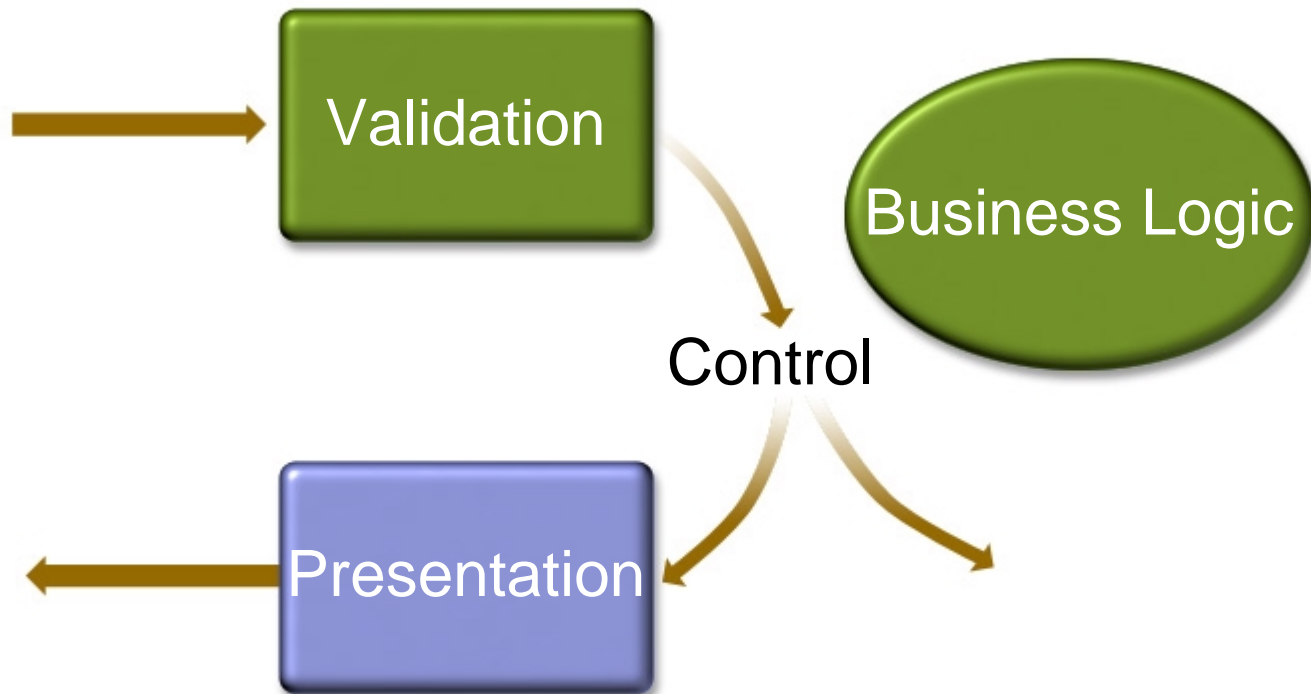
JavaBeans component and Tag Libraries:

Prototypical Uses, 2

- Web Site Groups
 - Provide uniform access to data
 - Simplify changes to look and feel
- Web Services
 - Access to specialized web services
 - Capitalize on standard tool support



Tasks in Web Layer



Typical Tasks

- Validation of Input
 - Client **and** server-side validation
 - Is form data complete and well-formed?
- Interaction with Business Logic
 - Create data
 - Extract data for this user
- Controller
 - What is the next step in conversation?
- Presentation of content
 - Present data to client



Who Does What

- Developer
 - Provides validation methods
 - Provides business logic methods
- Page Author
 - Conversation flow
 - Page presentation
 - Invokes validation methods

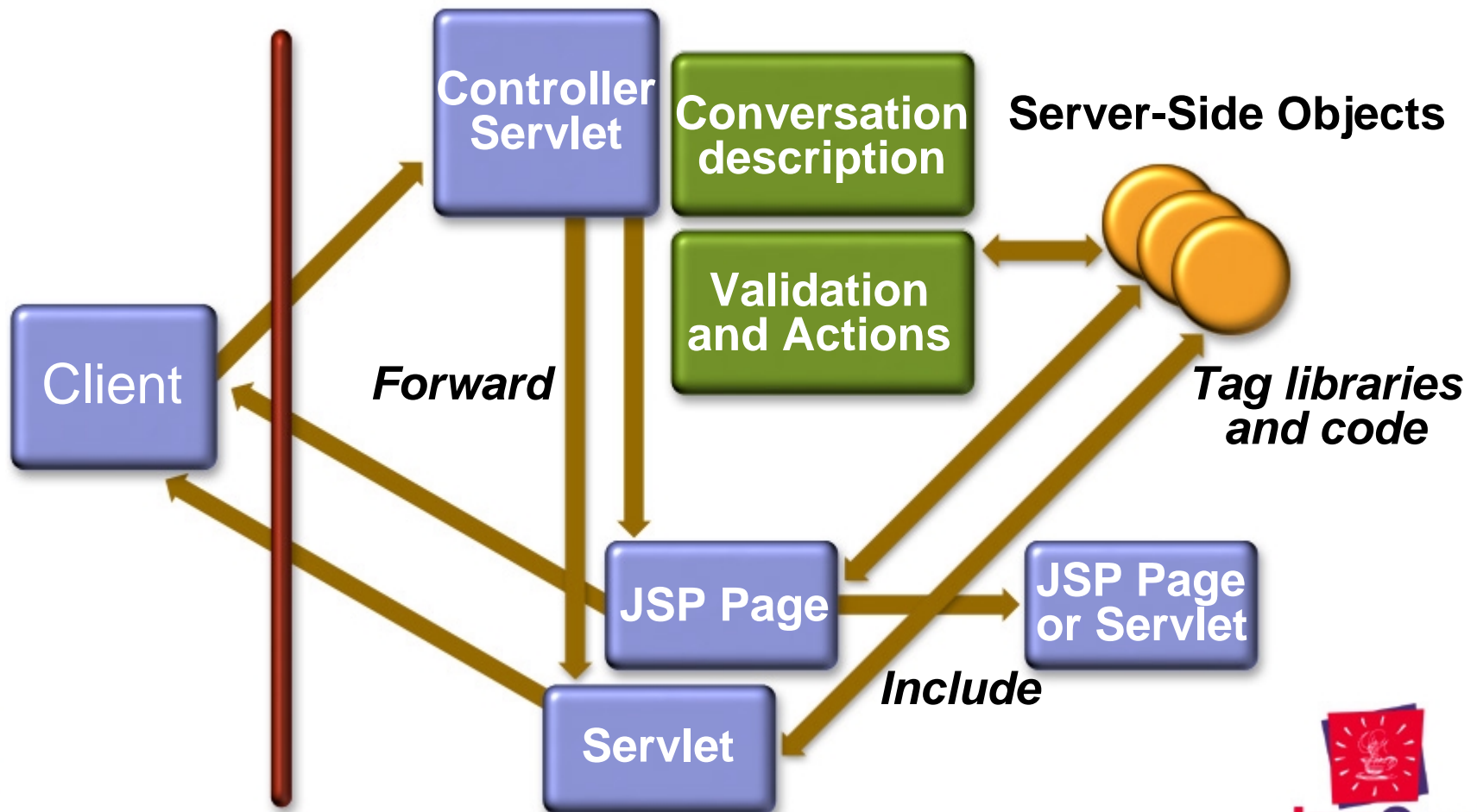


Implementation Alternatives

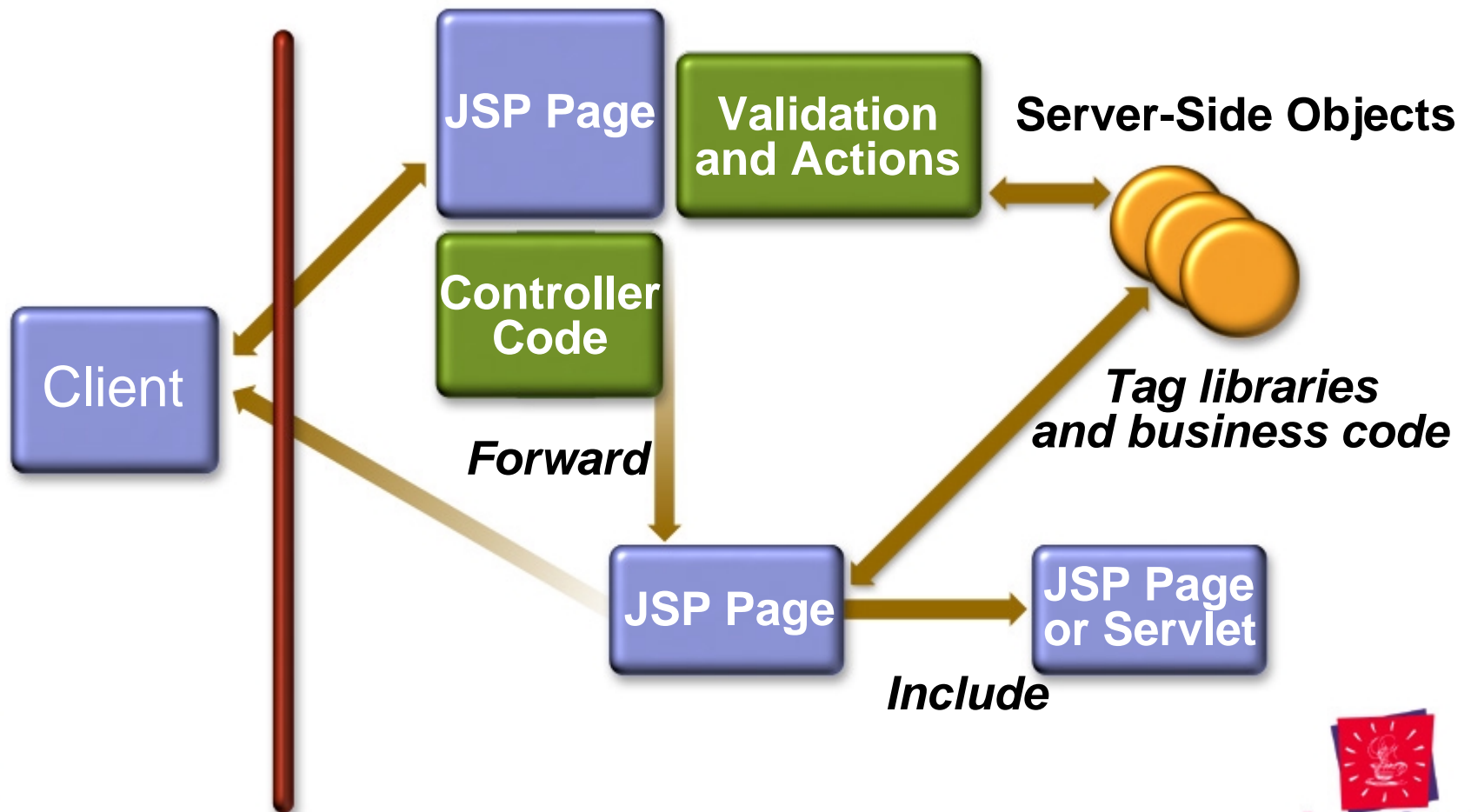
- Controller
 - Embedded into some code
 - Transition Engine + Description
 - Wired-in
- Validation
 - Tie-in with presentation fields
- Validation and Action
 - Code from controller or elsewhere
 - Raw code / Custom action



Validation and Actions Near Controller

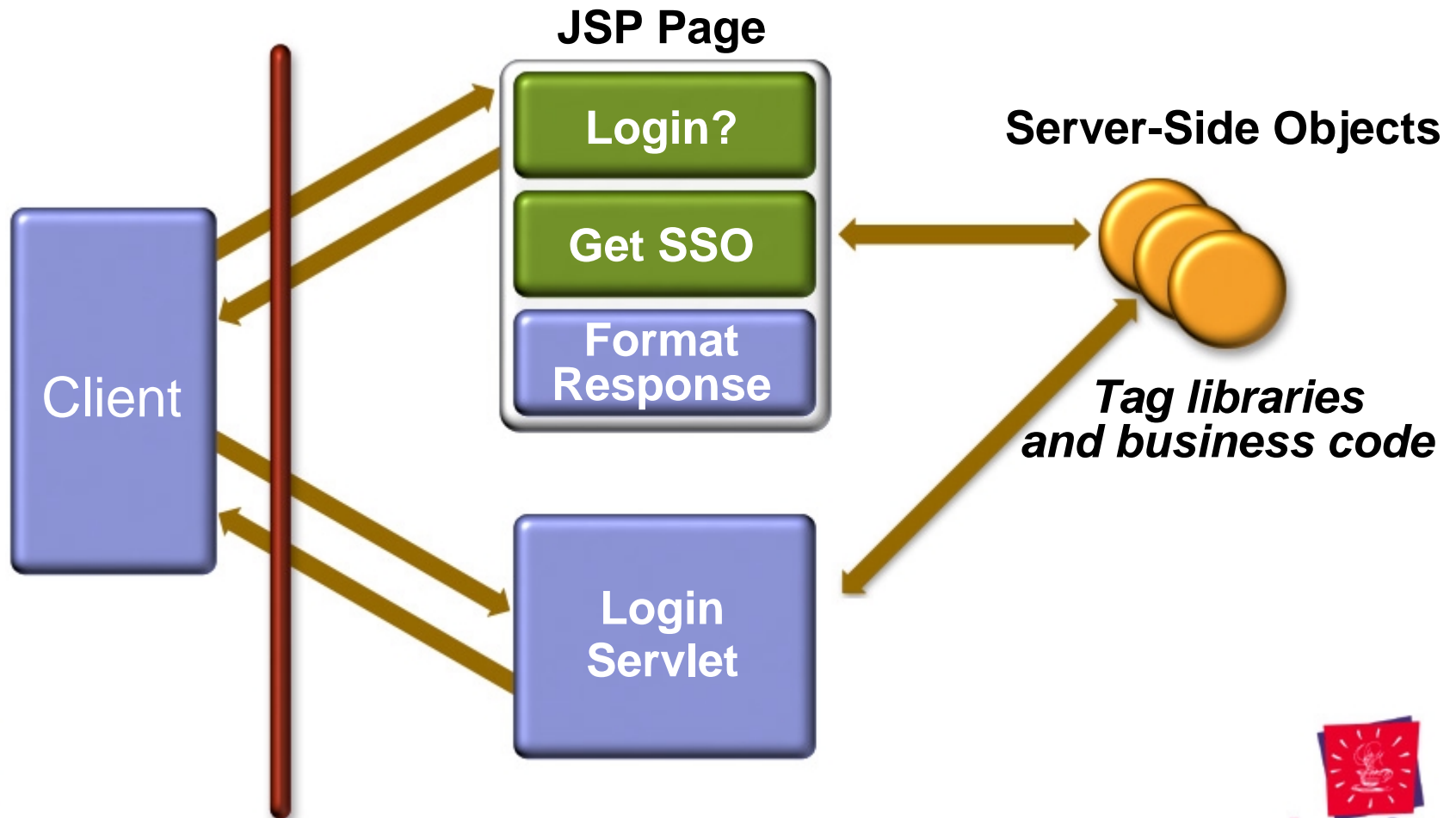


Validation and Actions Near Presentation Page

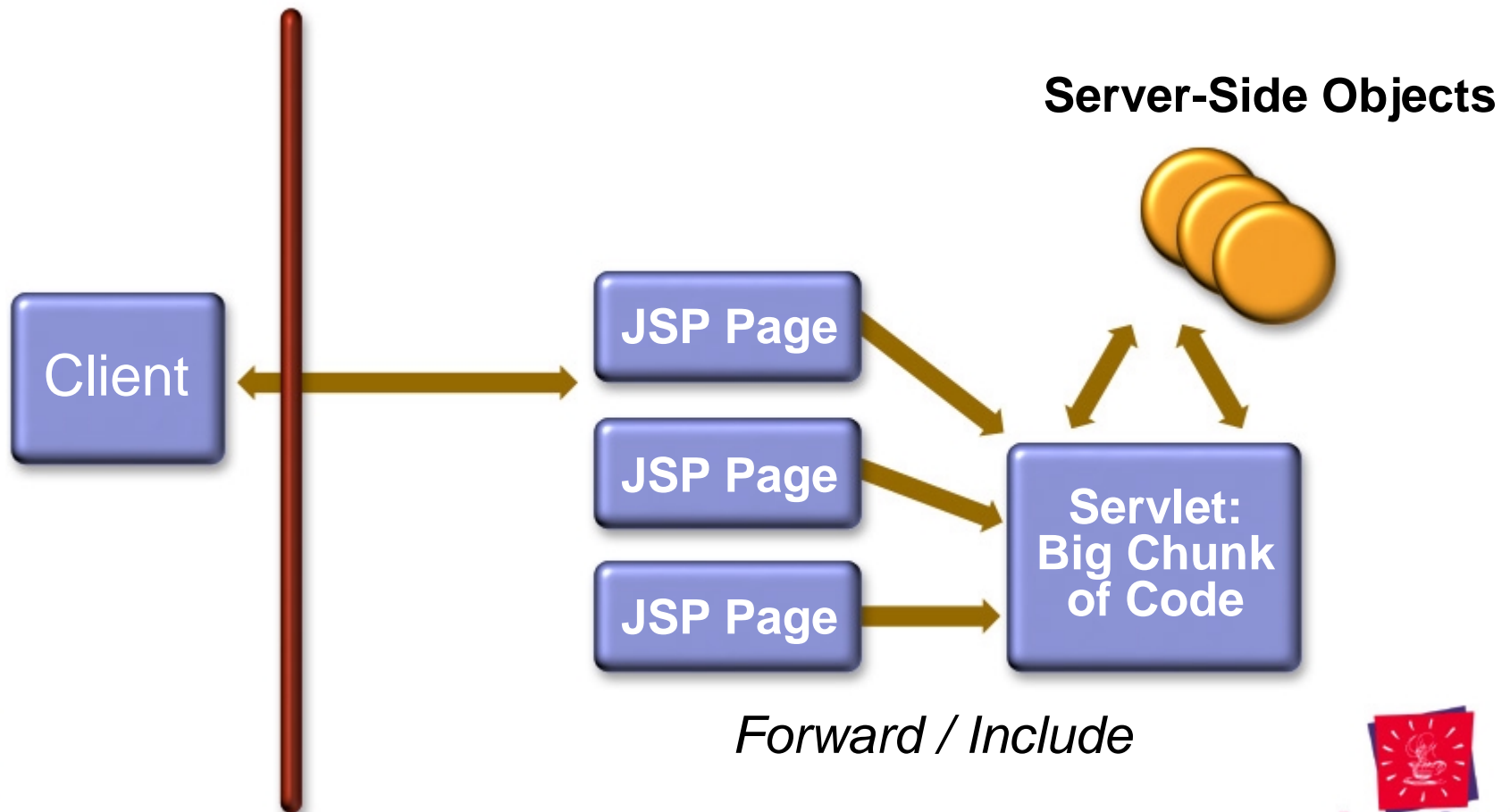


Simple Login + Pages

J1 @ j.s.c site

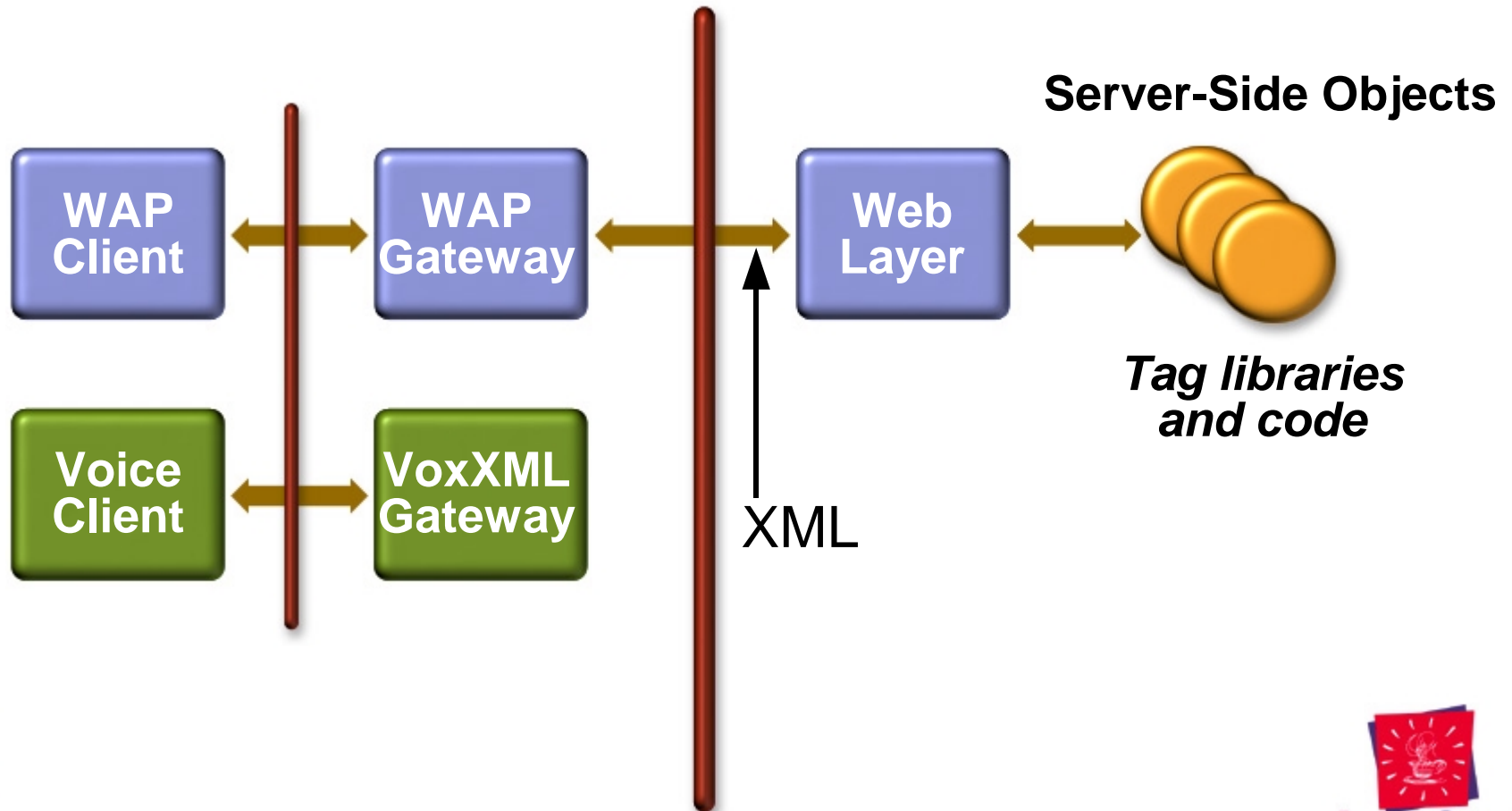


JSP™ Pages as Front to Servlets: Perceptual Robotics



VoiceXML and WAP Gateways

Many Examples



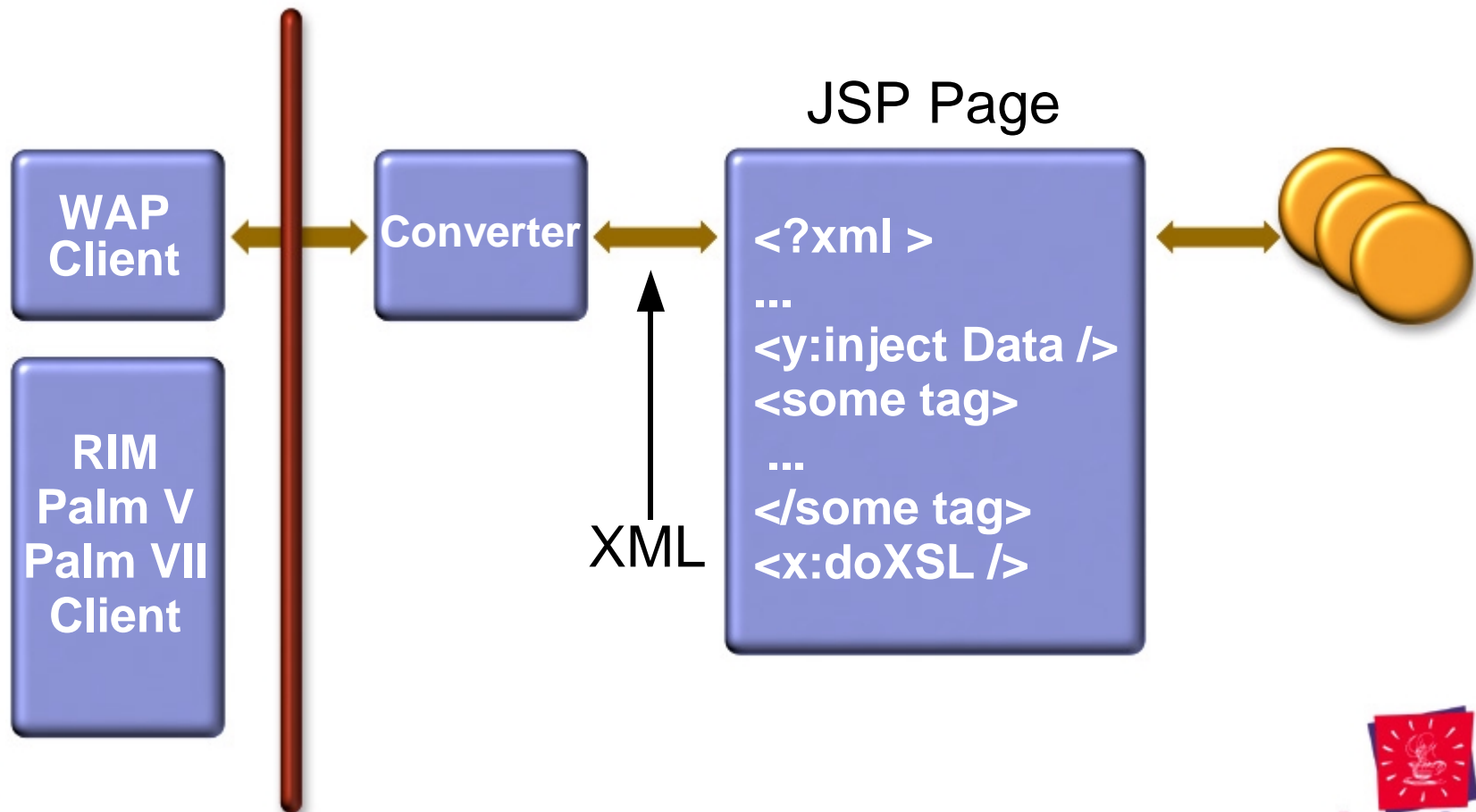
XML and JSP Technology

- Many combinations
 - Manipulation of XML for different tasks
 - Injection of data from XML source
 - DB queries
 - Common data + XSLT as presentation



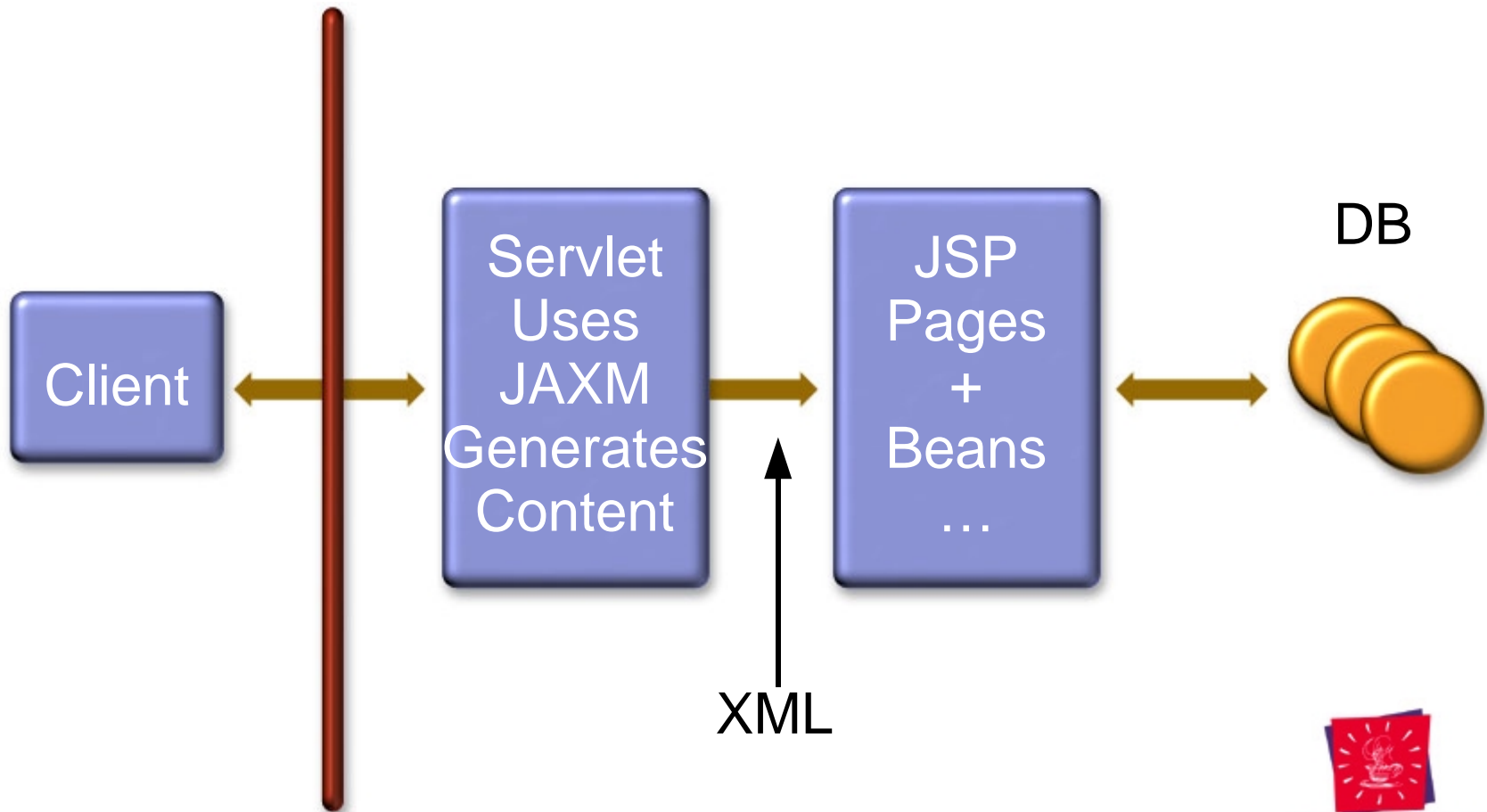
Generating XML

J1 @ java.sun.com



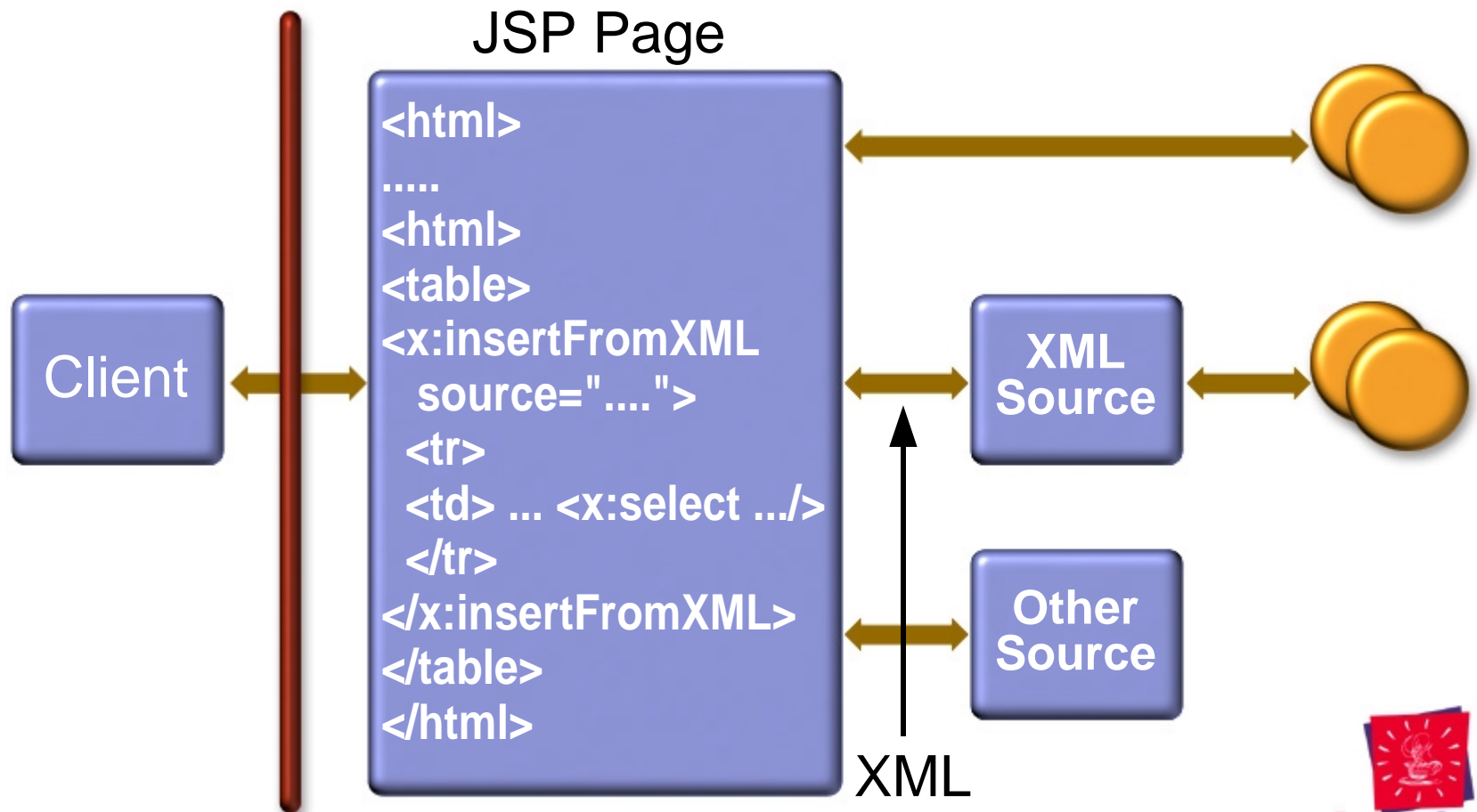
Servlets Processing XML

J1 @ java.sun.com



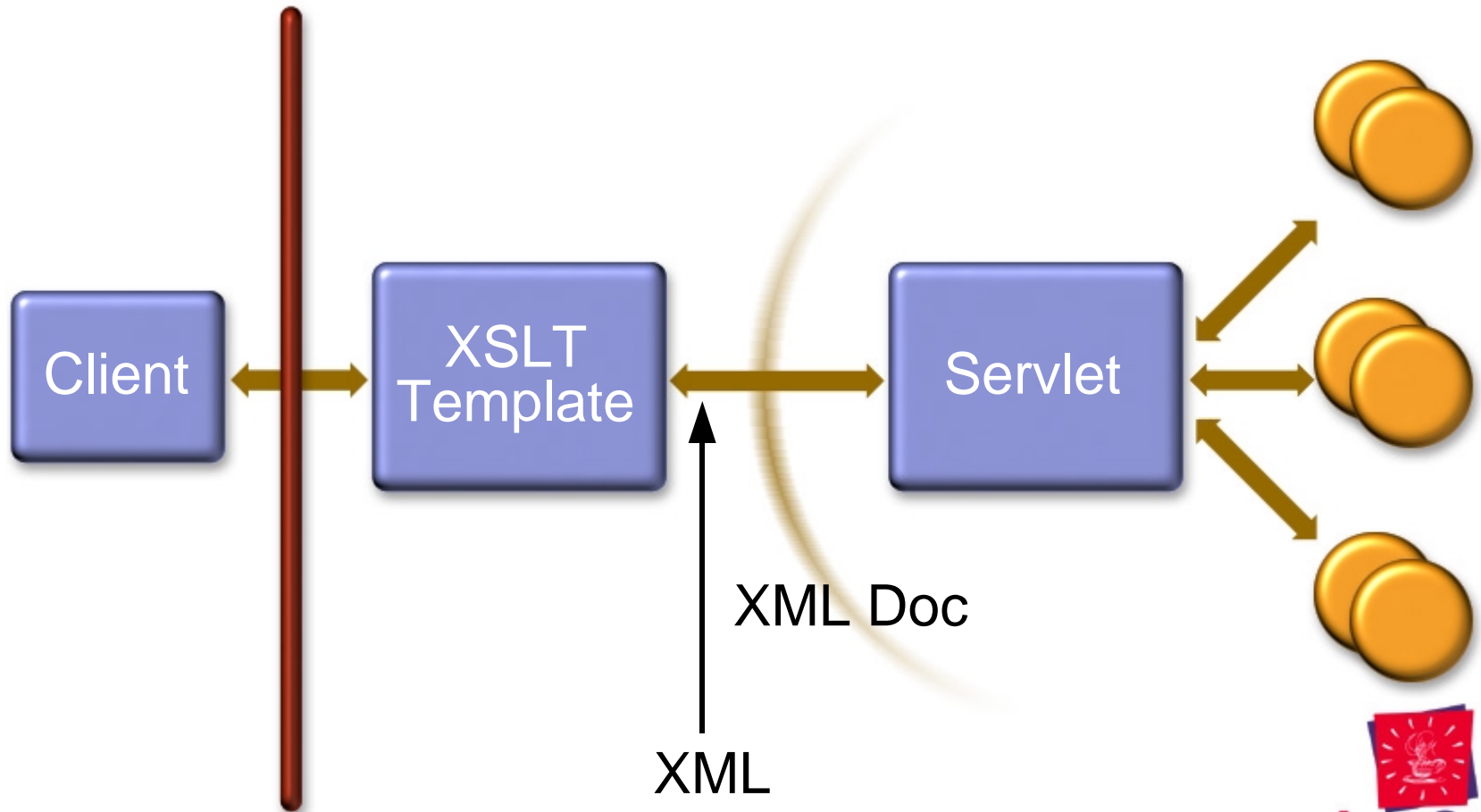
JSP as Templates for XML Data

Booth #119



XSLT on XML

sparks.com

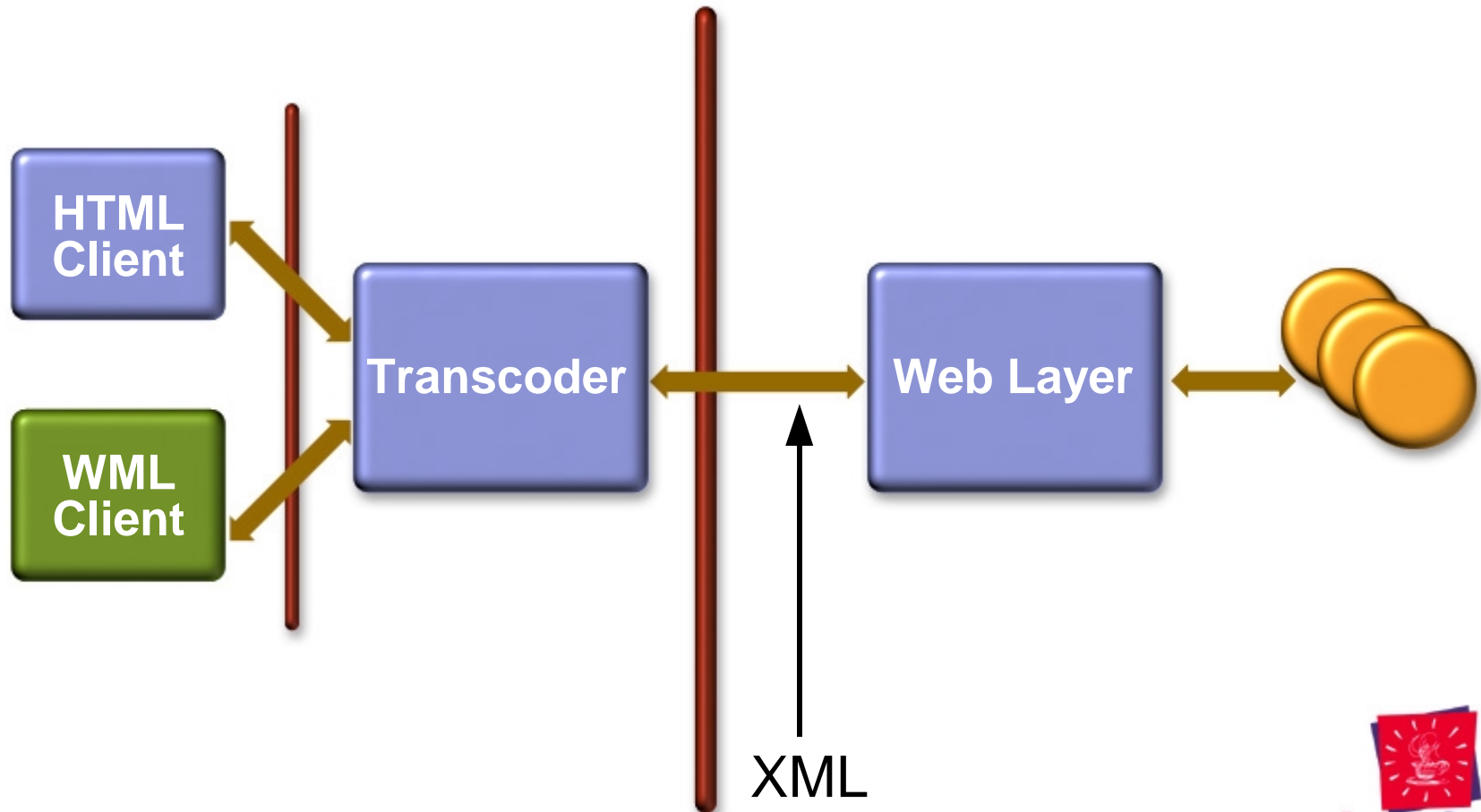


JavaServer PagesTM Technology (JSPTM) and XSLT

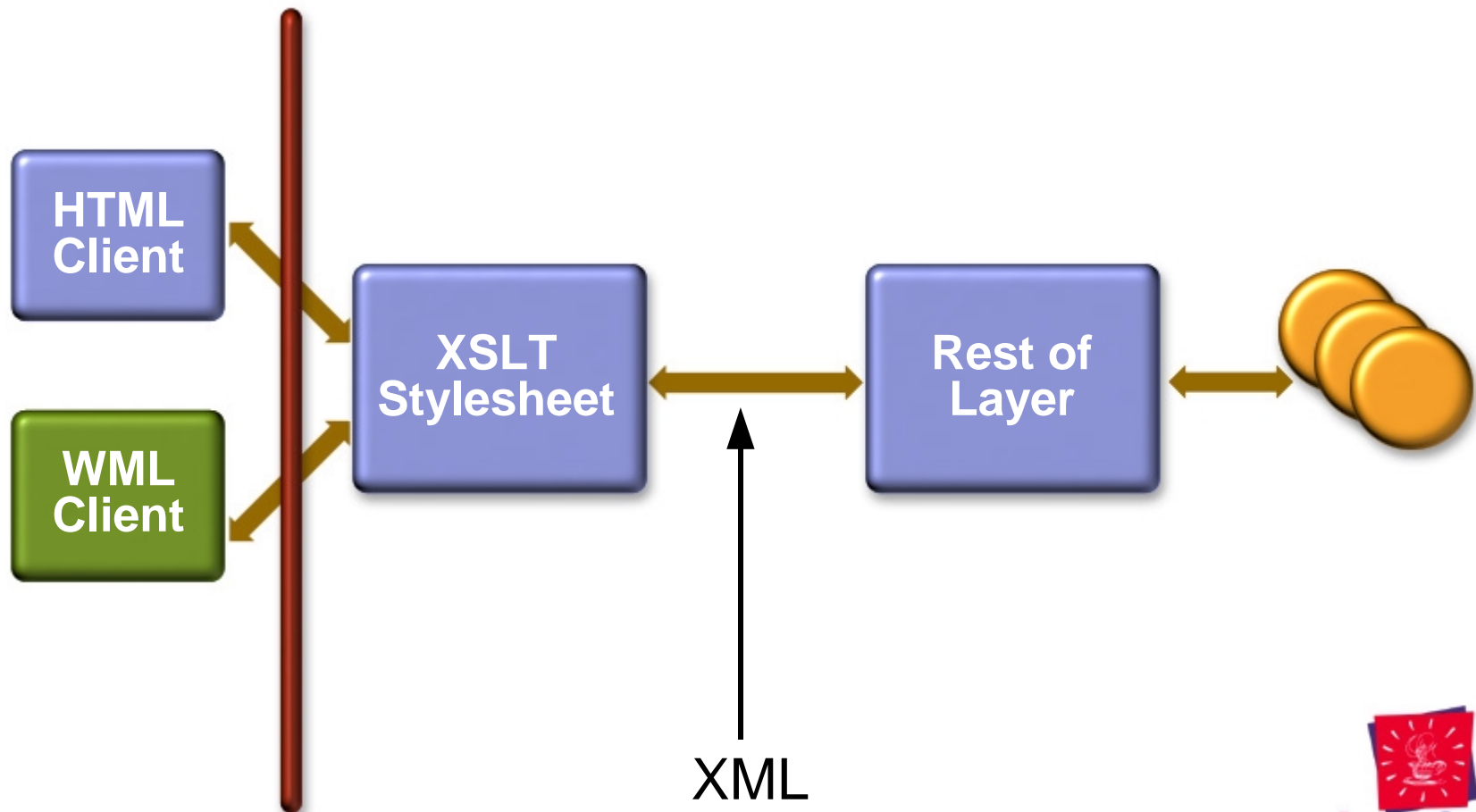
- JSP strengths
 - Template Framework
 - Multiple Sources
 - Portable Abstraction
 - Very open ended
- XSLT strengths
 - Xpath
 - Tree transformation



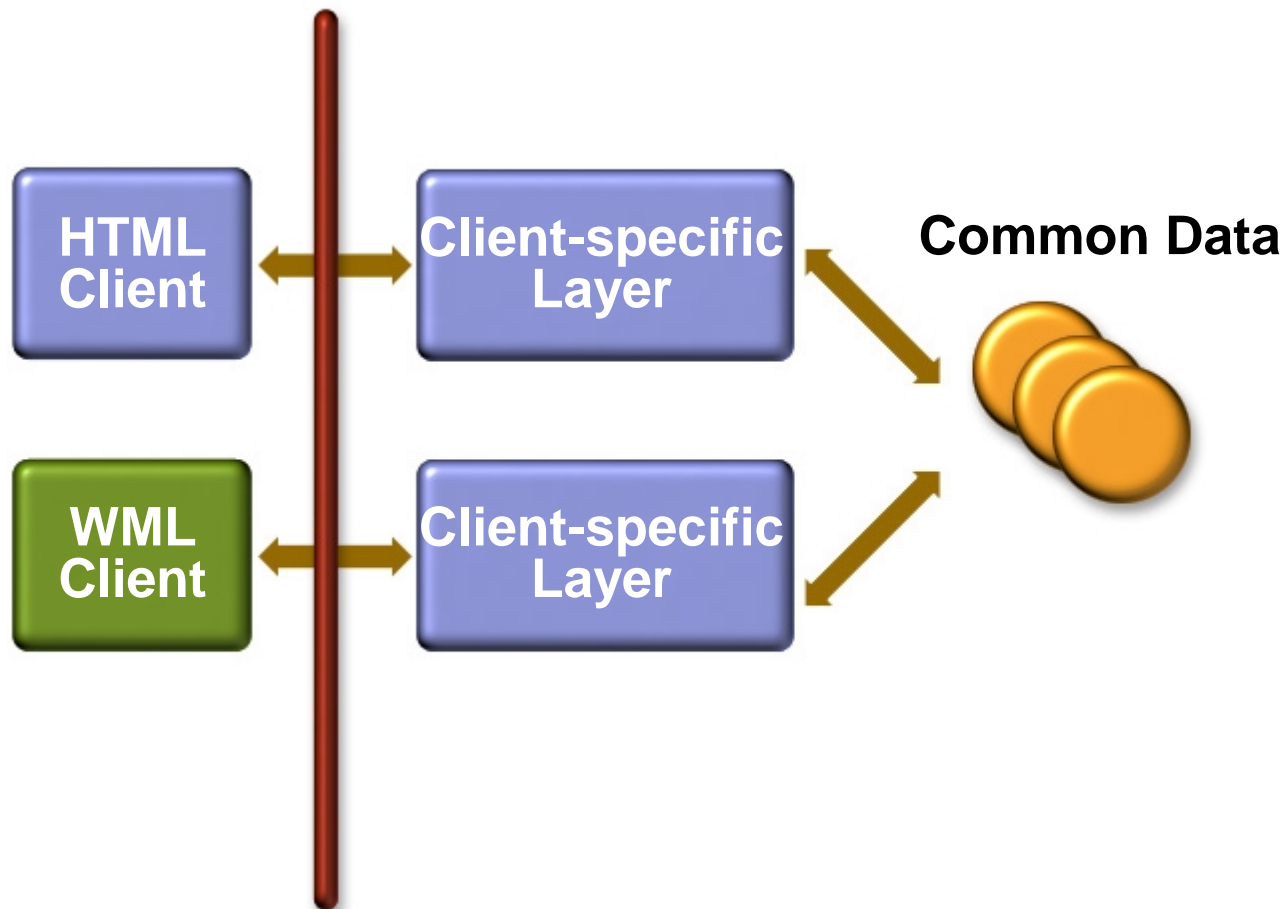
Multiple Clients Transcoder



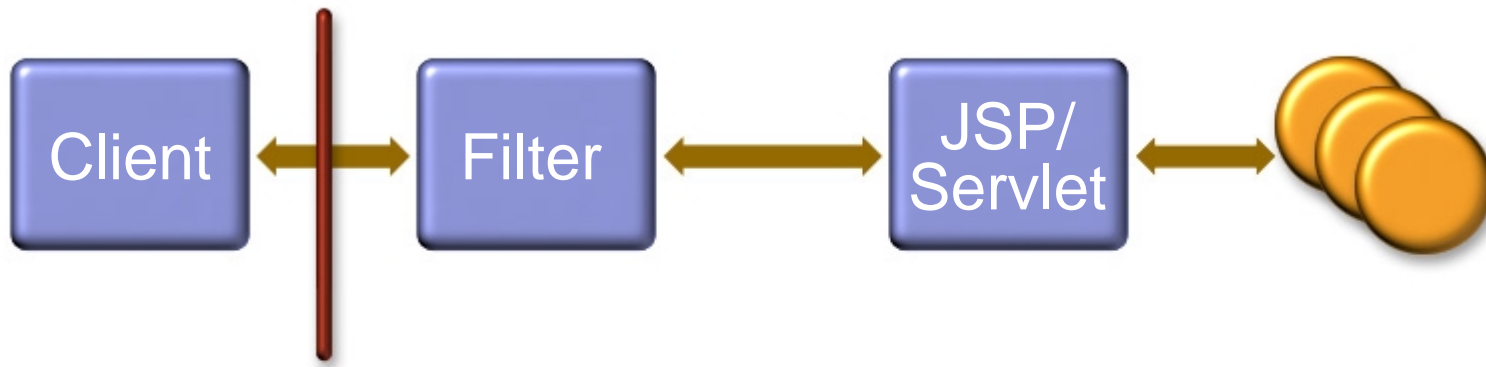
Multiple Clients XSLT Stylesheet



Multiple Clients Short Pipelines



Data Pipelines



- Stream of Characters
- Stream of Events
 - SAX, etc.

How to Evaluate?

- Roles
 - Who does what? How many of each?
- Tools
 - What is available? When?
- Paradigm
 - Expertise. Flexibility
- Time Frame
 - When? How often will redo?
- Performance



Review

- What is the web layer?
- Roles
 - Page Author & Developer
- Tasks
 - Validation, Actions, Presentation, Control
- Architectures
 - JSP components, Servlets, XML, XSLT
 - Evaluation Criteria



What Else at the JavaOneSM Conference

- By Java Platform Group:
 - BOF-1552: Tomcat (Wed 7pm, Yerba Buena 8)
 - BOF-1555: Case Studies (Thu 9pm, 132 Moscone)
 - TS-953: Tomcat (Thu 4pm, Gateway 104)
 - Booths: 119
- Other presentations
<http://java.sun.com/jsp/JavaOne.html>



Resources

- <http://java.sun.com/products/jsp>
- <http://java.sun.com/products/servlet>
 - Mailing Lists
 - Implementations
 - Industry Support
 - White papers
 - Presentations





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