



JavaOne

# The Future of the Java Web Tier

**Rajiv Mordani**

Senior Staff Engineer  
Sun Microsystems

<https://glassfish.dev.java.net>

Session TS-6381

# Goal of This Talk

Learn about the Java™ Platform Web Tier and what is coming in the future and how to use it to build next generation web applications

# Agenda

Where We Are

Servlets 3.0

JavaServer™ Faces Platform 2.0

REST

AJAX

Feeds (RSS/Atom)

Scripting

Summary

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## Where We Are

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# Where We Are

## State of the union

- Java platform popular in the web tier
- Lots of web frameworks based on Servlets
- Lots of open source libraries/frameworks available for building next generation web applications based on AJAX, REST, Scripting
- Java Platform Web Tier in Java Platform 2 Enterprise Edition (J2EE™ platform)/Java Platform, Enterprise Edition (Java EE) not revised since J2EE 1.4 platform
- Ease-of-development for the web tier major theme for Java EE 6 platform

# Agenda

Where We Are

**Servlets 3.0**

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# Servlets 3.0

- Servlets still popular for web application development
- Lots of web frameworks based on Servlets
- Not had a major revision since J2EE Platform 1.4
- Java EE Platform 5 focused on Ease Of Development (EoD) for Web Services, EJB™ architecture, JDBC™ API, persistence
- Notably missing from the list was Servlets and other web tier Java Specification Requests (JSRs)

# Servlets 3.0

- Use of annotations/generics and other language features to make it happen
- Make web.xml optional via annotations
- Use better defaults



# Example

```
@Servlet(name="..", servlet-mapping="..")
public class MyServlet {
    public void doGet(HttpServletRequest req,
                      HttpServletResponse res)
    {
        ...
    }
    public void doPost(HttpServletRequest req,
                       HttpServletResponse res)
    {
        ...
    }
}
```

# Example

```
@ServletFilter
@FilterMapping(filter-name="..", servlet-
name="..", dispatcher="..")
public class MyServletFilter {
    ...
}
```

# Servlets 3.0

- Web framework plugability
  - Make it possible to use web frameworks by including Java Archive (JAR) files in the application
- Asynchronous support (Comet)
  - Non-blocking input/output
  - Delayed request handling
  - Delayed response close
- Security
  - Login/Logout support
  - Self-registration

# Servlets 3.0

- Alignment
  - Enable JavaServer Faces Platform 2.0
  - Enable REST API
- Miscellaneous
  - File upload
  - Container wide definition of init params
  - ServletContextListener ordering
  - Better welcome file support
  - And more...

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# JavaServer Faces 2.0 Platform

- EoD
  - Use more annotations for declarative style programming
  - Better defaults
  - Eliminate configuration files
  - Eliminate JavaServer Pages™ (JSP™) technology tag handler authoring (can generate most of the tag handlers needed)
  - Support for declarative renderers

# JavaServer Faces 2.0 Platform

- AJAX support
  - Change request processing life cycle
  - Allow partial updates of views
- Improve component development process
  - Make it easier for developers to write components

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# JAX-RS: Java API for RESTful Web Services

- REST a popular alternate to the WS-\* stack
- Identifies resources using URIs
- APIs in the platform today too low level for implementing RESTful web services
- API focused on developing RESTful web services
- Aim to provide a high level, easy to use, API
- Will work with Servlets and Java APIs for XML Web Services (JAX-WS)

# Example

```
@UriTemplate("/{imageid}")  
public class MyRestService {  
    @HttpMethod  
    @ProduceMime("application/jpeg")  
    public InputStream getImage(  
        @UriParam("imageid") String imageId)  
    {  
        ...  
    }  
}
```

# REST

- API will make it easy to develop services that support the Atom Publishing Protocol amongst other popular RESTful APIs
- For more details attend:  
TS 6411-Marc Hadley, Paul Sandoz

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# AJAX—Project JMaki

- Lightweight framework
- Allows to wrap JavaScript™ technology libraries and make them accessible to Java platform web applications
- Out-of-the-box support for widgets
  - DOJO
  - Yahoo
  - Scriptaculous
  - Spry
  - Google

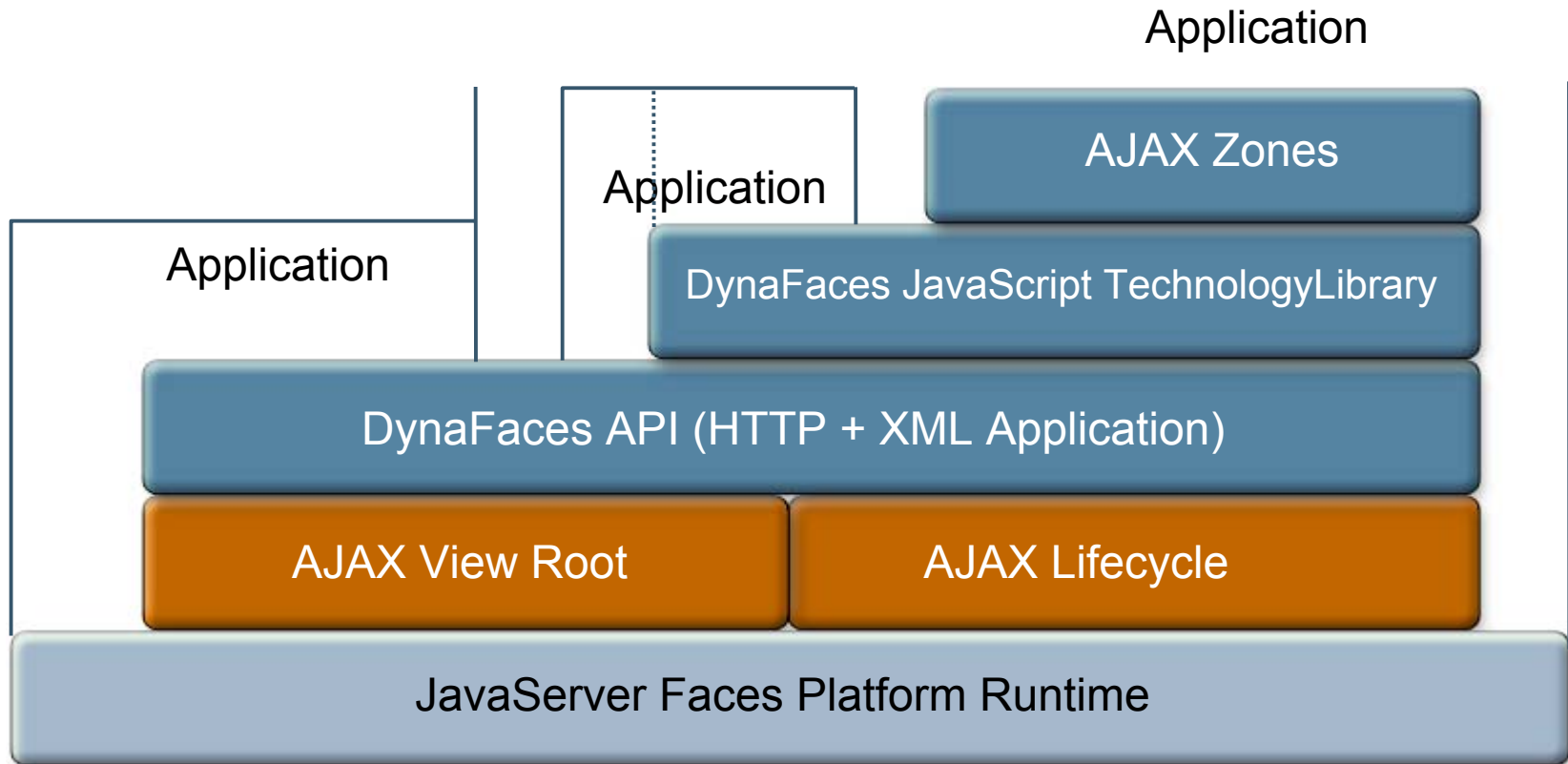
# AJAX—Project JMaki

- Uses JSP technology/JavaServer Faces components with JavaScript technology bootstrapper
- Supports themes
- Support for Java platform, PHP, Ruby
- Tools support
  - Netbeans™ platform
  - Eclipse

# AJAX—Dynafaces

- Incremental update to JavaServer Faces Platform 1.2 runtime to enable first class AJAX support in JavaServer Faces technology
- Extends the JavaServer Faces platform lifecycle to work on AJAX requests
- Ready-to-use JavaScript technology library included
- Need to drop a JAR file to any JavaServer Faces Platform 1.2 compliant container to enable Dynafaces

# Dynafaces Entry Points





# Comet

- Support for asynchronous “push” model for data server side
- Long-lived connection with server sending data
- Applications can deliver data to client at any time
- Confirms to HTTP 1.1 specification

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# Feeds (RSS/Atom)

- Foundation for simple REST based web services
  - Examples include Yahoo pipes, Google Data
- Atom feed format an IETF standard
  - Defines a feed format for representing data
  - Widely used in blogs
  - Format generic—not restricted to blogs
- Atom publishing protocol soon to be finalized as an IETF standard
  - Protocol for editing resources

# Feeds (RSS/Atom)

- Libraries available for consuming and producing feeds
  - ROME
  - Abdera
- Libraries for building Atom client and server
  - ROME-Propono

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# Scripting—Phobos

- Server Side Scripting using JavaScript
- Lightweight application framework
- Runs on Java platform
- Supports multiple scripting languages
- Focus on JavaScript technology
- Tools support with NetBeans modules including debugging support for JavaScript
- Deploys on any Servlet container



# DEMO



# Sun™ Web Developer Pack

- Free, integrated toolkit for building next generation web applications
- Includes runtimes, tools support, samples and tutorials
- Run on top of any Java EE Platform 5 web container including GlassFish™ project, Tomcat 6.x

## Sun Web Developer Pack

Ride the next generation technologies for web application development.

[Get It Now »](#)





# Sun Web Developer Pack

- Contents include Project jMaki, Dynafaces, WADL, REST, Phobos, ROME, Propono
- Available from <http://developers.sun.com/web/swdp>

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- Many exciting things happening in the Java Platform Web Tier
- Enhancements available today for building next generation web applications
- Many upgrades planned for the next version of the Java EE Platform

# For More Information

## List

- AJAX—TS 6375
- Comet—TS 6807
- REST—TS 6411
- RSS/Atom—TS 6029
- Scripting—TS 6957
- Sun Web Developer Pack  
<http://developers.sun.com/web/swdp>
- GlassFish project  
<https://glassfish.dev.java.net>



# Q&A

Rajiv Mordani





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Senior Staff Engineer  
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