The Future of the Java Web Tier

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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

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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("/images/{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

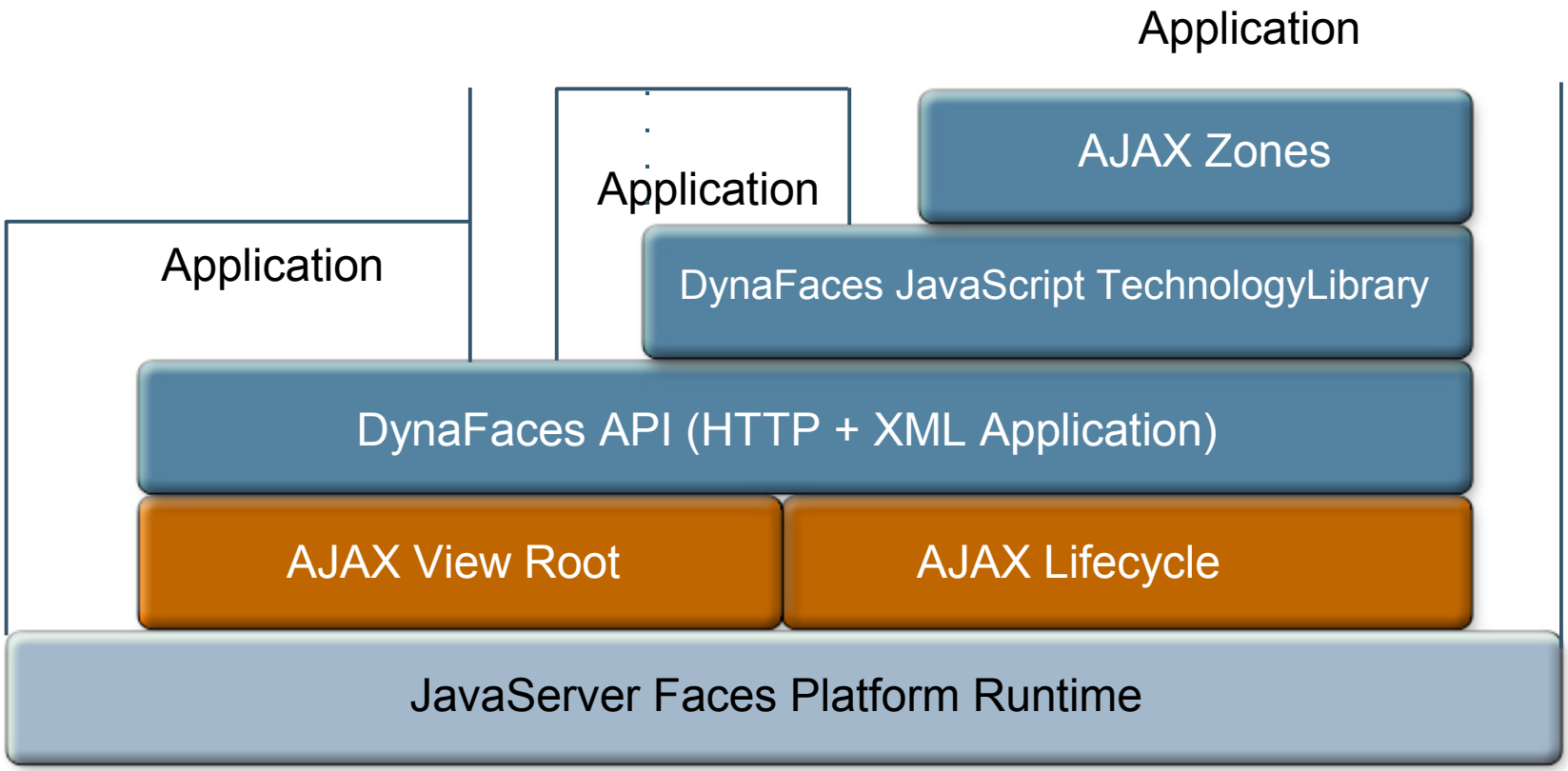
AJAX—Project JMaki

- 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

- 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

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