

# Breathing new life into JSP with OSGi!

## Why Bother???

Raymond Augé <[raymond.auge@liferay.com](mailto:raymond.auge@liferay.com)>

 @rotty3000 | #OSGi #eclipsecon #jspinosgi

## Outline

- JSP!!! What's the meaning of this?
- Bytecode is Better
- Initial Problems
- Compiling
- Designing a Solution
- Key Java EE OSGi Bundles
- Jasper

- Compilation - [javax.tools](http://javax.tools)
- OSGi Support - [org.osgi.framework.wiring](http://org.osgi.framework.wiring)
- Phidias
- Liferay JSP Compiler
- Some Details
- Demo Time

---

## ➡ JSP!!! What's the meaning of this?

- Isn't **JSP** a dead tech?
- Enterprises use **JSP** *a lot*
  - **find -type f -regex .\*\.jspf? | wc -l**
    - Eclipse = 59
    - Liferay = 1696
    - Liferay Plugins = 669

---

## ➡ Bytecode is Better

- ***Compiled to Bytecode*** view templates *still* most efficient server side
  - w.r.t. memory consumption and performance
  - Other ***compiled to bytecode*** view tech not as widely known
    - **Play Scala Templates**
    - **Google Soy Templates**

---

## ➡ Initial Problems

- Java EE instantiation model (**ServiceLoader**, **Class.forName**, TCCL)
- Limitations to the existing JSP servlet impls required ugly hacks
- Compilation dependencies lead to complex runtime dependencies

---

## ➔ Compiling

- Traditionally - JDT *load the world* compilation strategy
  - JDT is not a small dependency
- Other compilation options non-existent
- OSGi had no way to natively support compilation process

---

## ➔ Designing a Solution

- Re-use existing tech when possible
- Use JDK compiler API (since Java 6)
- Avoid lots of hacks
- Keep a small footprint
- Limit usage requirements

---

## ➡ Key Java EE OSGi Bundles

- Key API/RIs are OSGi bundles
  - Servlet
  - JSP
  - JSTL
  - EL

Thanks Glassfish!



---

## ➔ Jasper

- Proven and stable
- Has limited dependencies
- Recently solved issues enabling easier OSGi use

Thanks Glassfish!

---

## ➡ Java SE Support - javax.tools

- Since Java SE 6
- Full blown compiler support
- .. complicated to use

---

## ➡ **OSGi Support - `org.osgi.framework.wiring`**

- Since Core R4.3
- Deep classloader & wiring resource access

---

## ➔ Phidias

- Small OSS bundle which crosses
  - javax.tools
  - org.osgi.framework.wiring
- Provides simplified OSGi aware compiler support
- Alpha (0.3.4)

---

## ➔ Liferay JSP Compiler

- Extends Jasper with custom
  - JSP compiler which uses Phidias
  - JSP servlet which transparently handles classloading concerns

---

## ➔ Some Details

- Entire JSP support ~ 1.3MB
- Most modern versions of JSP, JSTL, EL available
- No need to declare any JSP related imports in JSP *enabled* bundles

- No need to include any libs or standard TLDs
- No need to WAB your bundles
  - Can use regular old jar layout + web fragment subtree
    - Place JSPs in **META-INF/resources/**

## ➔ Demo Time

- **A Quick DEMO**





## ➔ OSGi Aware Compilation

- Does this open the door for other interesting topics?
  - Limit compile time view of the world to public APIs?



---

➞ **Thank you!**

**• Questions?**

