



Taming content repositories with Apache Sling

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Taming Content Repositories

Web Development

The Web vs. JCR - Intro

Blog in 15 minutes

So what?



Intro to JCR

JCR = Java Content Repository API

JSR-170 / JSR-283



Everything Is Content - and JCR manages it as trees of Nodes and Properties, using rich data types.

What's JCR?

JSR-170

Content Repository for
Java™ technology API

Spec-Lead:
Day Software

Status:
Final Release 17-jun-2005



Expert Group:



What's JCR?

JSR-170

JSR-283

Content Repository for Java™ technology API v2.0

Spec-Lead:
Day Software

Status:
Public Review Closed sep-2007



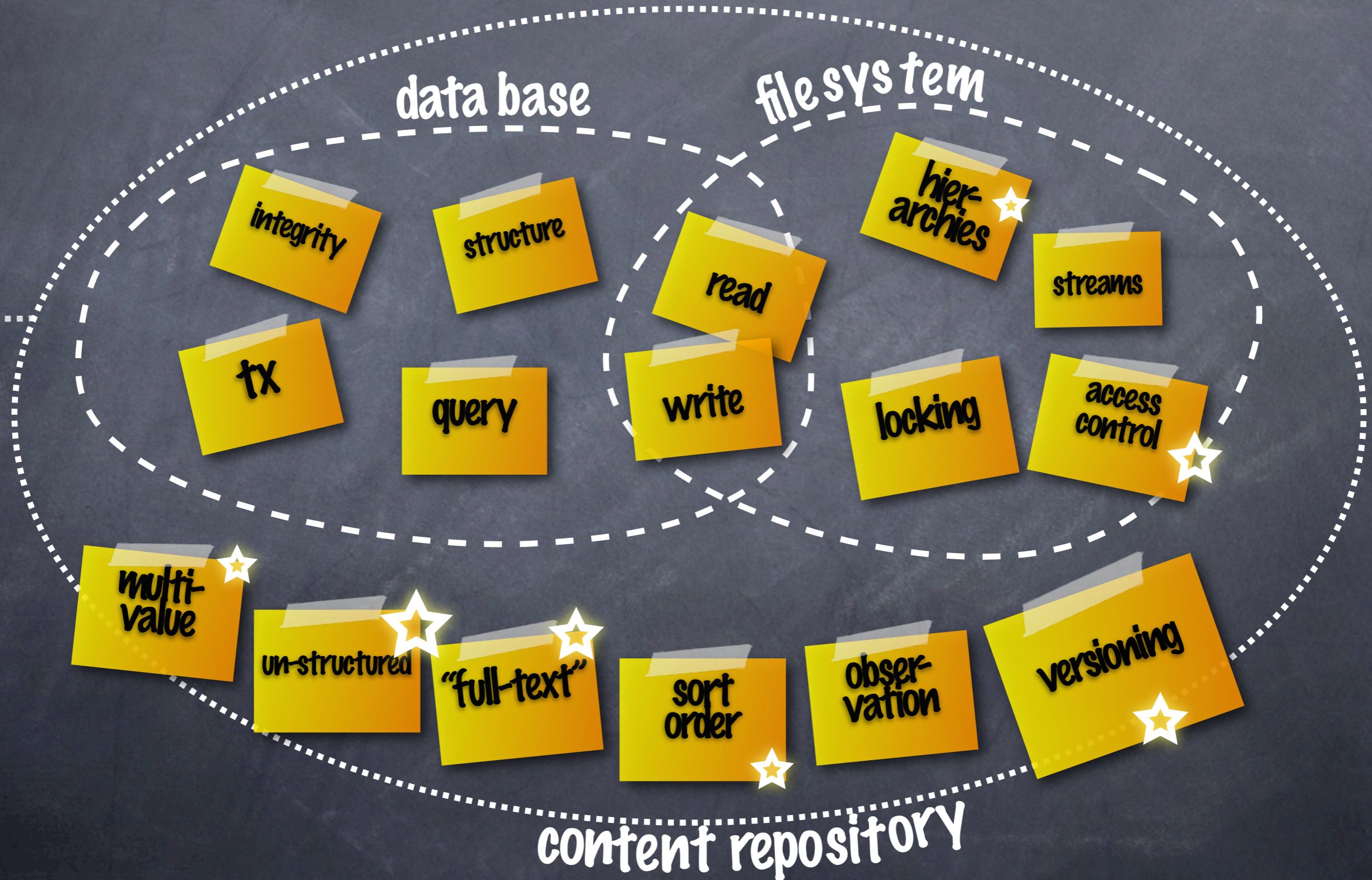
Expert Group:



What's JCR?

“The API should be a standard, implementation independent, way to access content bi-directionally on a granular level to a content repository.” ?

Best of both worlds.



Known compliant Repositories

* using third party connector

 <p>Apache Jackrabbit</p>	  <p>Oracle XML DB</p>	  <p>Exo ECMS Platform</p>	<p>*</p>  <p>Microsoft Sharepoint</p>	<p>*</p>  <p>OpenText Livelink</p>
 <p>Day CRX</p>	  <p>IBM FileNet P8</p>	  <p>Xythos Repository</p>	  <p>Alfresco ECM</p>	<p>*</p>  <p>Vignette V7</p>
<p>*</p>  <p>Interwoven Repository</p>	  <p>IBM CM</p>	<p>*</p>  <p>EMC Documentum</p>	<div style="background-color: white; padding: 10px; transform: rotate(-5deg);"> <p>+hundreds of TCKs registered</p> </div> <div style="background-color: yellow; padding: 10px; transform: rotate(-5deg);"> <p>How many RDBMS vendors do you need?</p> </div>	

Some known JCR Applications

BEA Portal

Sun OpenPortal

JBoss Portal

Oracle Portal

Fast Enterprise Search

magnolia WCMS

Apache Sling

Alfresco ECMS

QSLabs Compliance

Apache Cocoon

Apache James

Artifactory Maven Proxy

medic-2-medic mapofmedicine

IBM FileNet WebSiteManager

GX WebManager

Exo ECMS Platform

TYPO3 v5.0 WCM

Nuxeo ECM

InfoQ Online Community

Hippo CMS

Sakai E-learning

Percussion Rhythmix

QuickWCM WCMS

Jahia Framework

Lutece Portal

Sourcemix Sourcemix

JCR code excerpt

```
Repository repository = new TransientRepository();  
Session session = repository.login(...);
```

```
// Create content
```

```
Node root = session.getRootNode();  
Node hello = root.addNode("hello");  
Node world = hello.addNode("world");
```

```
world.setProperty("message", "Hello, World!");  
session.save();
```

```
// Retrieve content
```

```
Node node = root.getNode("hello/world");  
print(node.getPath());  
print(node.getProperty("message").getString());
```

Sling builds on top of JCR

Scriptable applications layer on top of JCR

OSGi-based industrial-strength framework

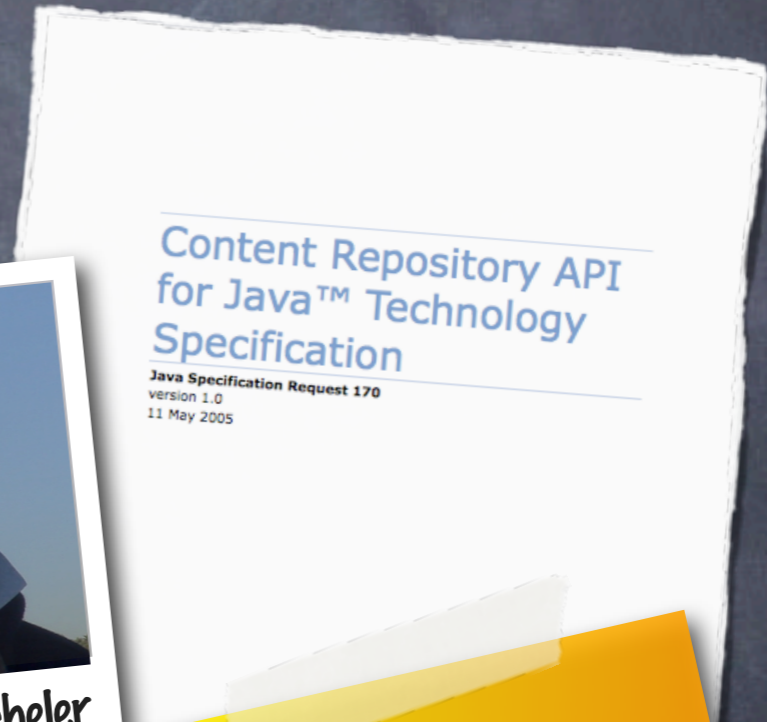
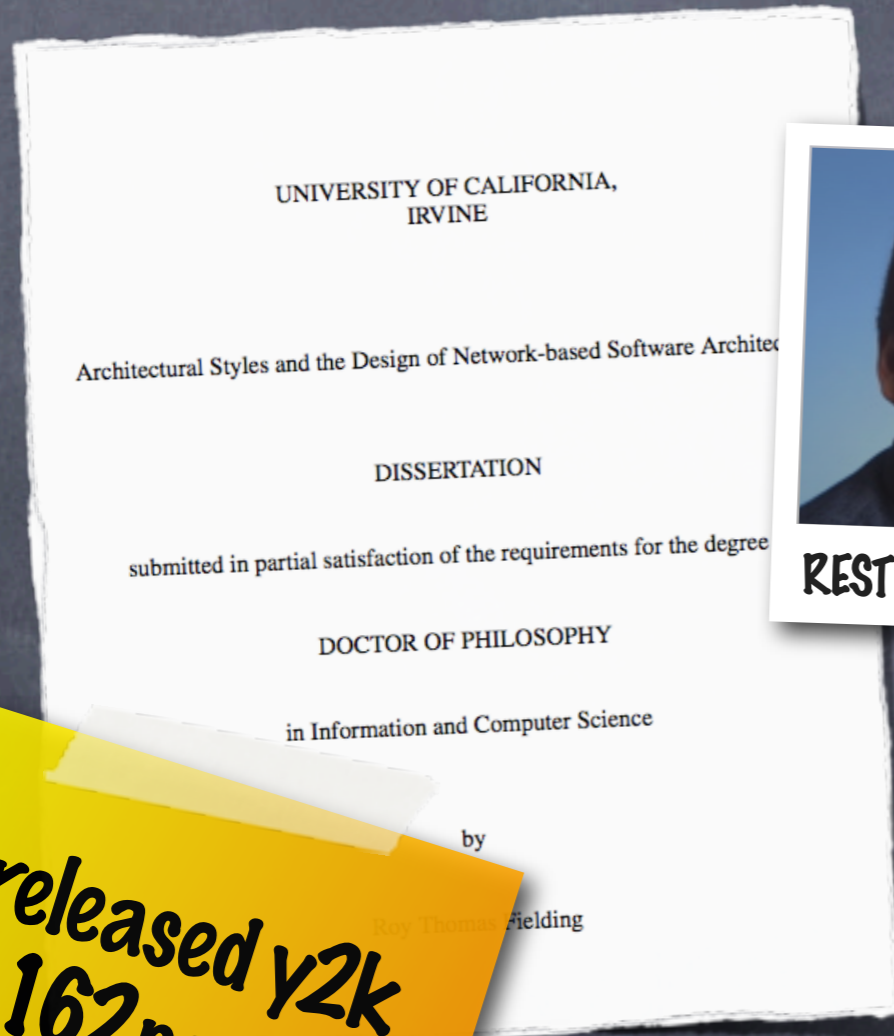
Simple, powerful, **JCR** inside

Runs on Apache Jackrabbit by default

<http://incubator.apache.org/sling>



REST over JCR



released y2k
162 pages



v1.0 released 2005
+300 pages

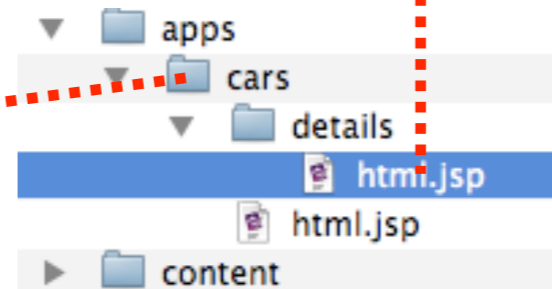
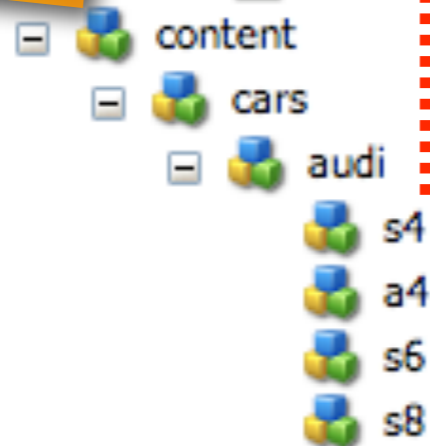
Reclaiming the web. Sling URL decomposition.

/cars/audi/s4.details.html

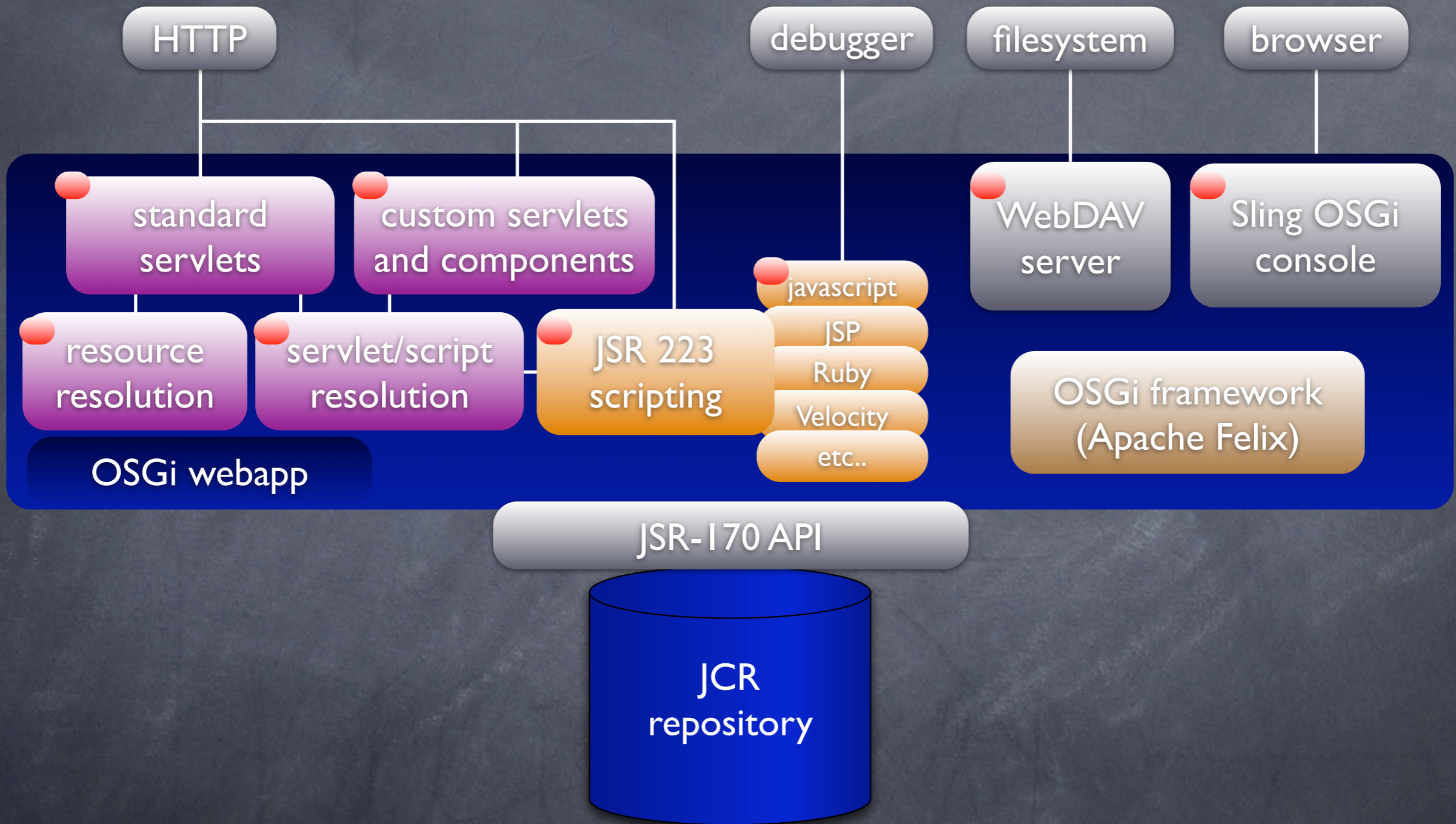
Repository

Content
Repository Path

...selects a
particular script



Sling architecture



A Sling-based blog

282 lines of code

100% scripted, no tools required besides Sling

Simple, modular code structure

Promotes RESTful thinking

Sling blog scripts

admin.esp	56 lines - admin page (.admin.html)
header.esp	7 lines - <head> generation (sling.include)
html.esp	75 lines - html rendering of a post (.html)
list.esp	60 lines - list of posts (.list.html)
menu.esp	18 lines - home/admin/new (sling.include)
post.esp	39 lines - "new post" page (.post.html)
xml.esp	27 lines - RSS feed (.xml)
TOTAL	282 lines (including whitespace/comments)

Creating content (post.esp)

```
<form method="POST"
  action="/content/myblog/posts/*">
<p><label>Title</label>
<input name="title" type="text"/></p>

<p><p><label>Body</label>
<textarea name="posttext" cols="40" rows="5">

<input name=":redirect" type="hidden"
value="/content/myblog/posts.admin.html"/>

<input type="submit" value="Post">
</form>
```

Rendering content (html.esp)

```
<html>
```

```
<% sling.include("/content/myblog.header.html") %>
```

```
<body>
```

```
<h2> <%=currentNode.title %> </h2>
```

```
<%
```

```
var a = currentNode.getNode("attachments").getNodes();
```

```
for(i in a) {
```

```
    var attachmentNode = a[i];
```

```
    ... %>
```

```
}
```

```
</body>
```

```
</html>
```



Sling blog demo

Can I have fries with that?

How do we add functionality that is not easily scriptable?

Example: thumbnails generated in Java code, by observing the repository for new files.

JCR observation

```
String[] nodeTypes = { "nt:file" };  
boolean isDeep = true;
```

```
observationManager.addEventListener(  
    this,  
    Event.NODE_ADDED | Event.NODE_REMOVED,  
    "/content/myblog/posts",  
    isDeep, ...types);
```

...

```
public void onEvent(  
    EventIterator eventIterator) { ... }
```

Thumbnails bundle demo

Conclusions

JCR rocks - and everything is content!

Sling makes JCR easy and fun.

A good JCR content model is key.

Join the fun at incubator.apache.org/sling/!