

Building your own portal with Apache Jetspeed-2 Enterprise Portal

Ate Douma & David S. Taylor
ApacheCon US 2007, Atlanta Nov 12-16



Agenda

- An overview of the main Jetspeed-2 features
- Ways to build your own Jetspeed-2 Portal
- Showing off a custom Portal and Jetspeed-2 features
- Jetspeed-2 Architecture and Configuration
- Online customization
- A roadmap to version 2.x and beyond
- Questions and Answers



Main Jetspeed-2 features

- A *Portal* as well as a *Portal Integration Framework*
- Fully open and standards based, JSR-168 compliant
- Component based from top to bottom
- Extendable and programmable through the Jetspeed API
- Fully customizable through IOC
- Assembled and wired together using Spring
- Runs on Tomcat, Jetty, Geronimo, Jboss, Glassfish as well as on WebSphere (5..6) and Weblogic
- Authentication/authorization through LDAP or database



Main Jetspeed-2 features

- Pluggable and configurable request pipeline(s)
- Extensive configurable and pluggable security layer
- Profiler for dynamic mapping of requests to pages:
 - hostname/role/group/user/browser/language/mediatype/[custom criteria]/... based matching
- Subsites for hosting multiple communities
- Hierarchical site model for themes, decorations, menus
- Everything is rendered through portlets
- Parallel rendering
- Clusterable



Ways to build your own portal

Challenges

- everyone wants it differently
- configurability is great but also difficult to automate
- integration with different app servers, security systems, databases can be very complex
- maven (1 & 2) hasn't been, and still isn't, everybody's favorite and at times really `*@%~(` hard to use



Ways to build your own portal

Current state and the near future

- maven-1 plugin (since 2004)
- maven-2 archetypes (since late 2005)
- ANT scripts using the installer (now)
- new maven-2 plugins (early 2008, release 2.2) with support for execution within ANT scripts



Ways to build your own portal

This presentation: ANT scripts using the installer

- Self contained
- Easy to master (everybody loves ANT)
- Flexible enough for most straight forward customization
- Possibly less optimal if you really need to *modify/extend* the portal core
- Easily integrated/used from within Eclipse or Netbeans

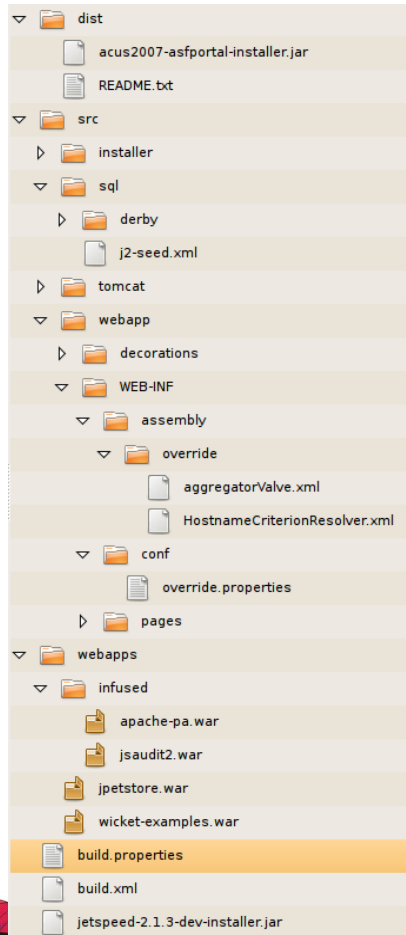


Ways to build your own portal

Using custom portal ANT script:

- uses downloadable Jetspeed-2 installer(s) as template
- overlays/merges customizations with the installer provided portal and creates a new custom installer
- supports customization of:
 - spring configuration / assembly
 - XML based “seed” of security, preferences, capabilities etc.
 - PSML pages, folders, decorators (skins)
 - prepackaging your own / third party portlet applications
 - using a custom portal name / context
- can also “hot” deploy customizations

Ways to build your own portal



```
build.properties x
1 # general properties
2 portal.name = apache
3
4 # installation properties
5 installer.src.jar = jetspeed-2.1.3-dev-installer.jar
6 installer.target = ./target
7 installer.dst.jar = acus2007-asfportal-installer.jar
8
9 # development deployment properties
10 app.server.home = ${user.home}/acus2007-asfportal/server
11
12
```

```
build.xml x
1 <?xml version="1.0" encoding="ISO-8859-1"?>
2
3 <project name="asfportal" default="delta" basedir=".">
4
5 <property file="build.properties"/>
6
7 <target name='clean'>
8
9
10
11 <!--
12 <target name='create.installer'>
13
14
15
16
17
18
19
20
21
22 <target name="run.installer">
23
24
25
26
27
28
29
30
31
32 <target name='install.assembly'>
33
34
35
36
37
38
39
40
41
42 <target name='install.decorations'>
43
44
45
46
47
48
49
50
51
52 <target name='install.pages'>
53
54
55
56
57
58
59
60
61
62 <target name='install.apps'>
63
64
65
66
67
68
69
70
71
72 <target name='repackage.installer'>
73
74
75
76
77
78
79
80
81
82 <!--
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101 <target name='deploy.decorations'>
102
103
104
105
106
107
108
109
110
111 <target name='deploy.pages'>
112
113
114
115
116
117
118
119
120
121
122 <target name='delta'>
123
124
125
126
127
128
129
130
131
132 <target name='deploy.webapps'>
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155 </project>
156
```

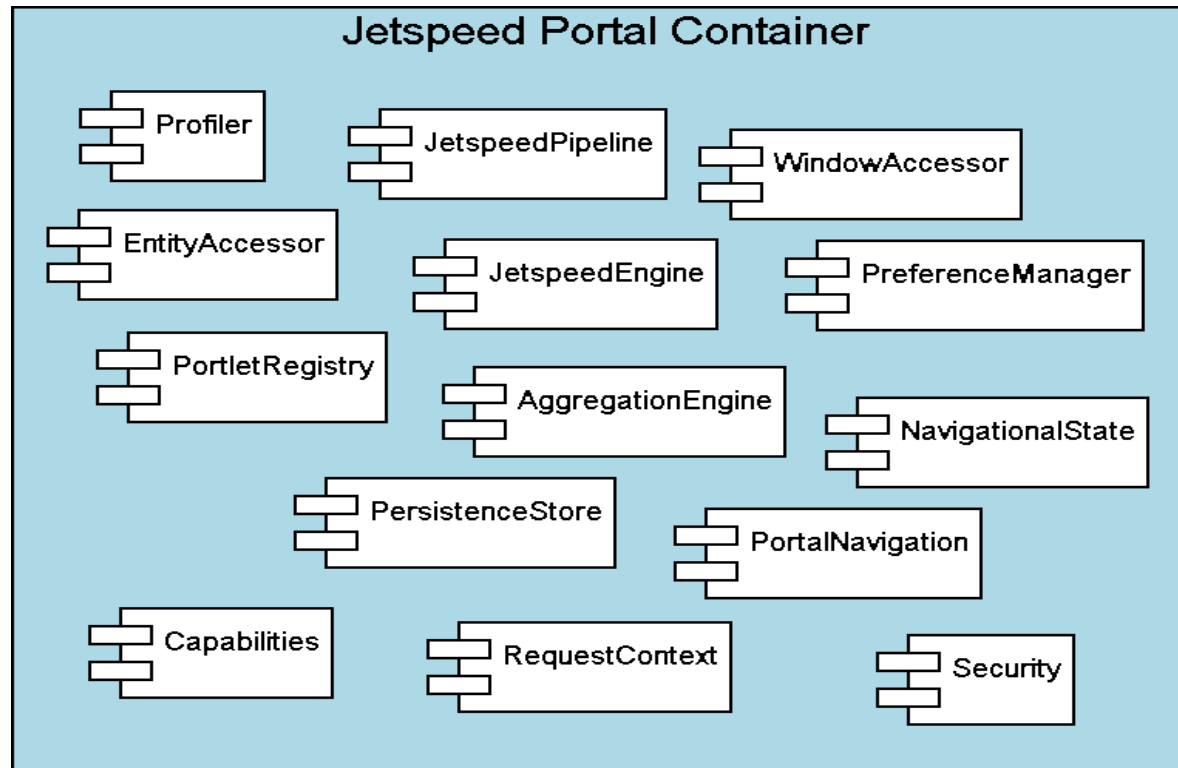
A custom Portal and features

Demo



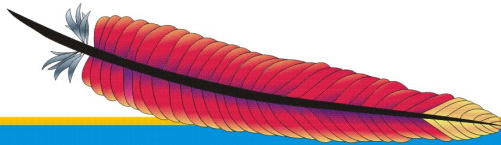
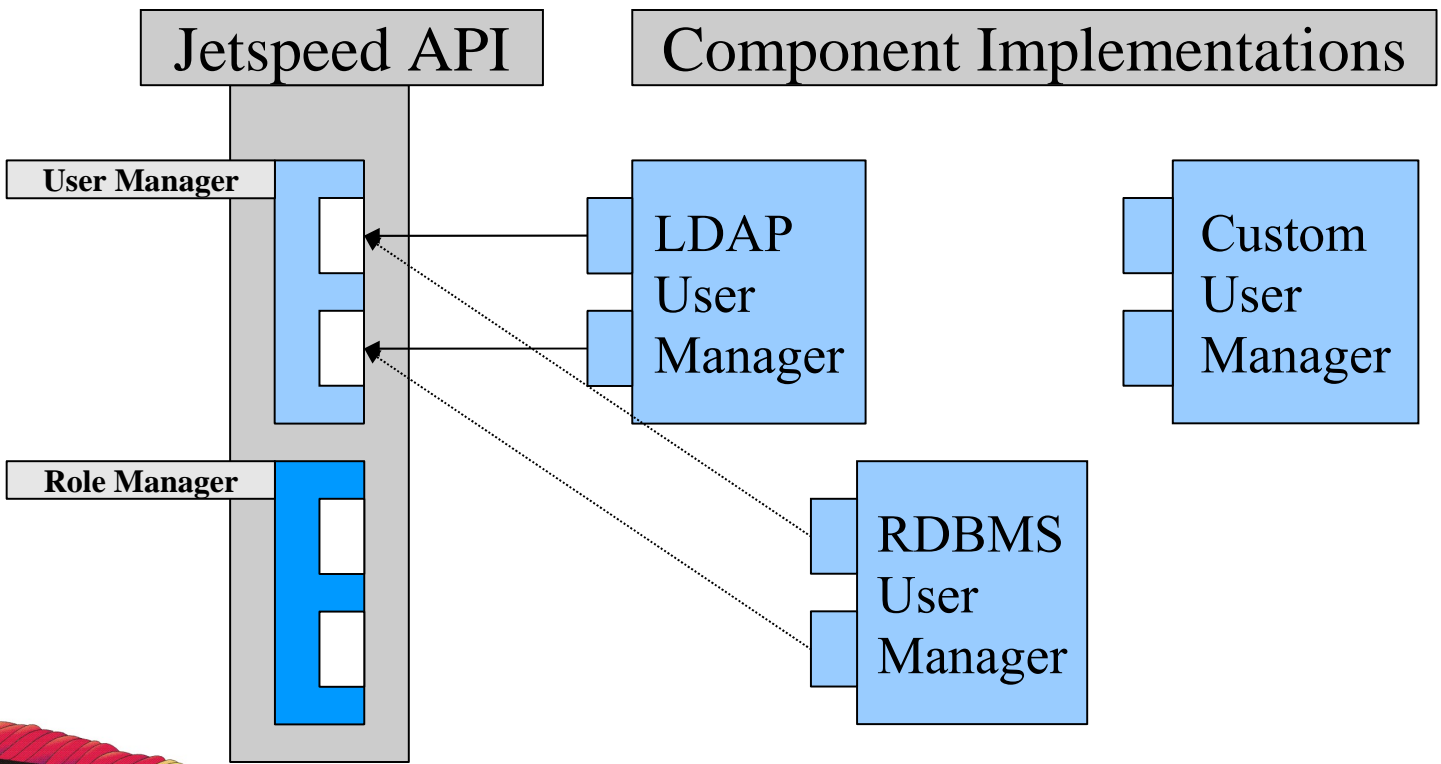
Architecture and Configuration

A Portal of pluggable components



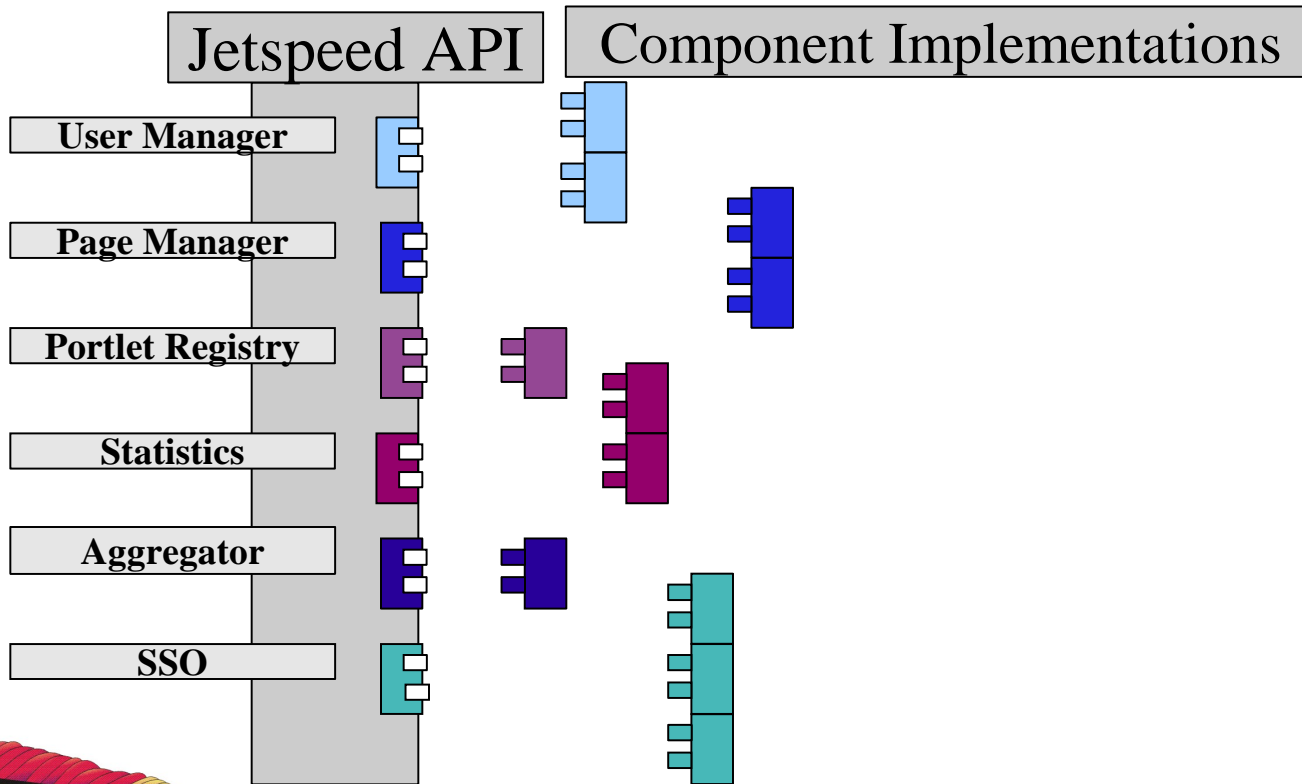
Architecture and Configuration

Interface Driven Development: the Jetspeed API



Architecture and Configuration

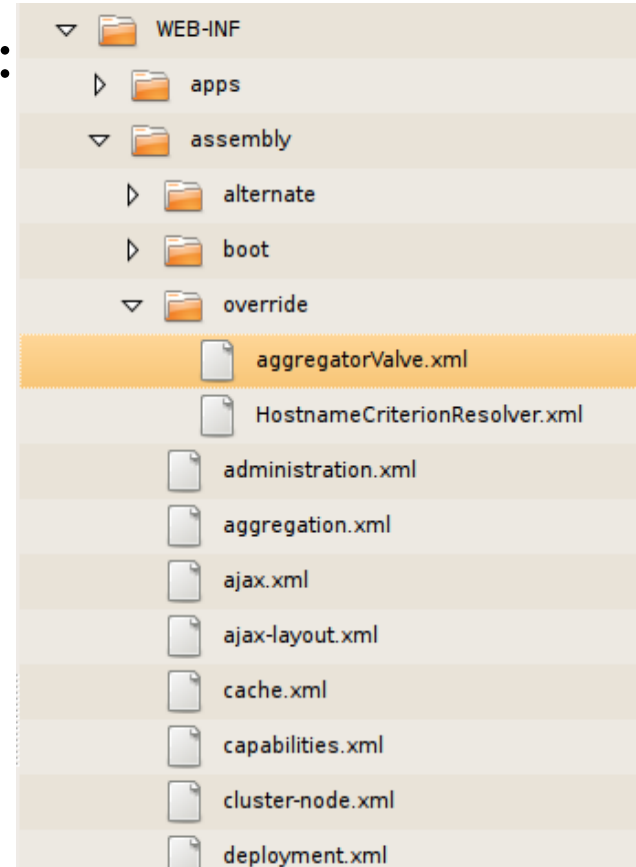
All Jetspeed components are setup to be pluggable:



Architecture and Configuration

Spring based assembly/configuration:

```
aggregatorValve.xml x
16 See the License for the specific language governing permissions and
17 limitations under the License.
18 -->
19 <beans>
20
21   <bean id="aggregatorValve"
22         class="org.apache.jetspeed.aggregator.AggregatorValve"
23         init-method="initialize"
24   >
25     <constructor-arg>
26       <!-- replace default PageAggregator -->
27       <ref bean="org.apache.jetspeed.aggregator.AsyncPageAggregator"/>
28     </constructor-arg>
29   </bean>
30
31 </beans>
32
```



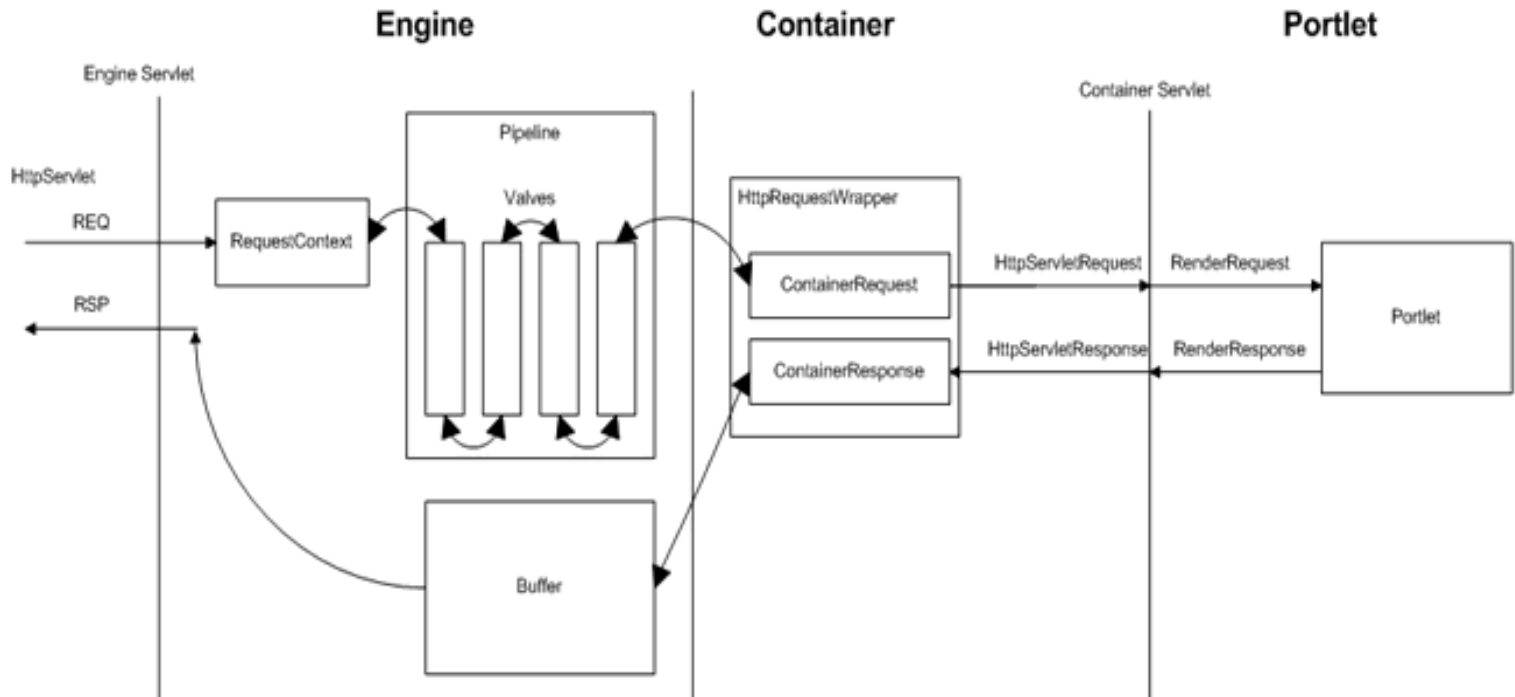
Architecture and Configuration

- Configuration changes best done without touching the defaults to support easier upgrade and maintenance:
 - Spring assembly under WEB-INF/assembly/override
 - global properties in WEB-INF/conf/override.properties
- Commonly changes for:
 - request pipelines processing through custom valves
 - security (authentication & authorization)
 - page manager
 - profiler
 - administration (mailserver, root user etc.)



Architecture and Configuration

Pipeline Request Processing



Architecture and Configuration

XML Seed Data

- abstracted from database (native) sql format
- one format which also is more endurable
- both import and export for:
 - security (users, groups, roles, permissions)
 - capabilities
 - preferences
 - site (psml pages and configuration)



Architecture and Configuration

XML Seed Data:

```
j2-seed.xml
263 <Role>user</Role>
264 <Role>guest</Role>
265 <Role>wicket</Role>
266 </Roles>
267 <Groups>
268 <Group>accounting</Group>
269 <Group>engineering</Group>
270 </Groups>
271 <Users>
272 <User name="admin">
273 <credentials password="admin" enabled="TRUE" requiresUpdate="FALSE"/>
274 <roles>user,manager,admin</roles>
275 <userinfo>
276 <preference>
277 <name value="user.name.given"/>
278 <value value="Jetspeed"/>
279 </preference>
280 <preference>
281 <name value="user.name.family"/>
282 <value value="Administrator"/>
283 </preference>
284 </userinfo>
285 <Rules>
286 <Rule locator="page" rule="j2"/>
287 </Rules>
288 </User>
289 <User name="guest">
290 <roles>guest</roles>
291 <groups></groups>
292 <preferences/>
293 <userinfo/>
294 <Rules>
295 <Rule locator="page" rule="subsite-by-hostname"/>
296 </Rules>
297 </User>
298 <User name="wicket">
299 <credentials password="wicket" enabled="TRUE" requiresUpdate="FALSE"/>
300 <roles>user</roles>
301 <preferences/>
```



Architecture and Configuration

Decorators

- “Everything is a portlet”, including the “layout” portlets
- scriptable with Velocity or JSP
- (hot) deployable in Jetspeed 2
- layout decorator: css, header/footer, menus, structure
- layouts can be nested as well
- portlet decorator: css, window, actions



Online customization

Demo



Roadmap to 2.x and beyond

- Release 2.1.3: Dec 2007 or early Jan 2008 the latest
- Release 2.2: Mar 2008
 - completely new maven-2 build environment
 - redesigned configuration through specific maven-2 plugins
 - ANT custom portal building fully supported (besides maven-2)
 - Portlet Preferences reimplemented (no more Java Prefs)
 - (start of) Admin portlets rewritten/designed in Wicket
- Release 2.3 (3.0): Summer 2008
 - JSR-286
 - OpenJPA (instead of OJB)
 - Jetspeed “light”



More information

- This presentation and example ANT portal project
<http://people.apache.org/~ate/acus-2007>

Documentation for the ANT based portal building will be provided online on the Jetspeed-2 website before the 2.1.3 release

- Apache Portals project
<http://portals.apache.org>
- Jetspeed-2 website
<http://portals.apache.org/jetspeed-2>

