“Guvnor” – A BRMS for Drools and Managing Other Asset Types

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The Problem(s)

How store rules

How to govern rules

There are more artifacts then just rules

A Solution

Content repositories are well known (and sometimes loved)

Requires a mind shift: Rules are data, not code (well not always)

Database vs. Content Repository

Databases are great for “strongly defined” relational data.

The problem is if you are managing rules + more, its likely to be heterogeneous data (spreadsheets, text files, binary files...)

Normal RDBMS doesn't do a lot for this (but its reliable)

Its also going to be hierarchical for the most part...

Content repos.

Inherently hierarchical

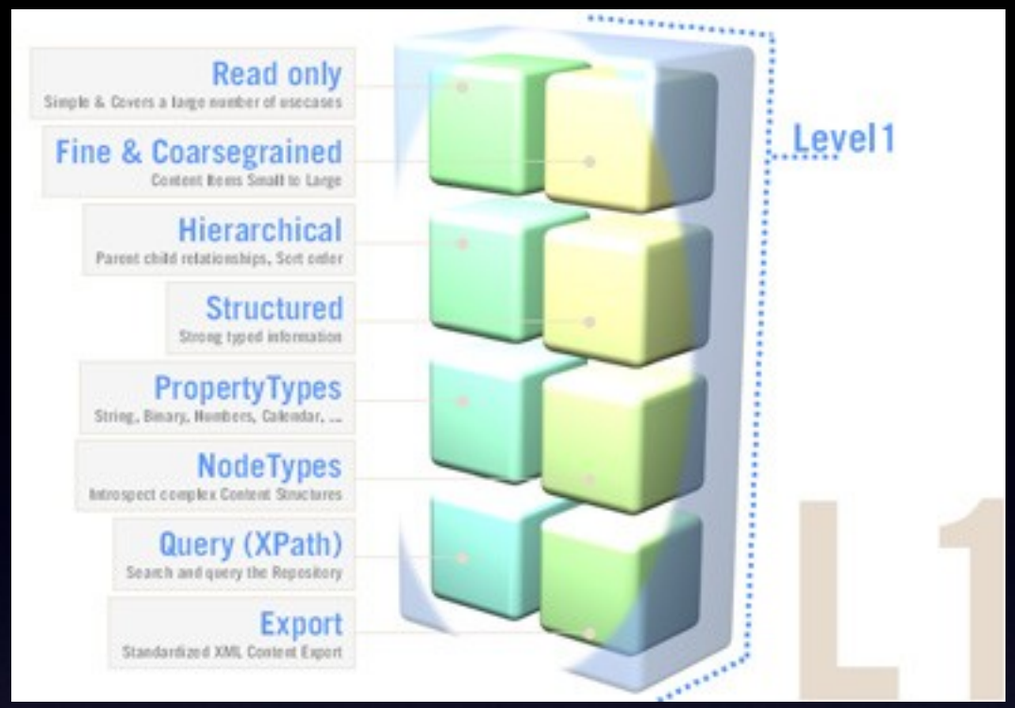
Java standard: JSR-170, JCR

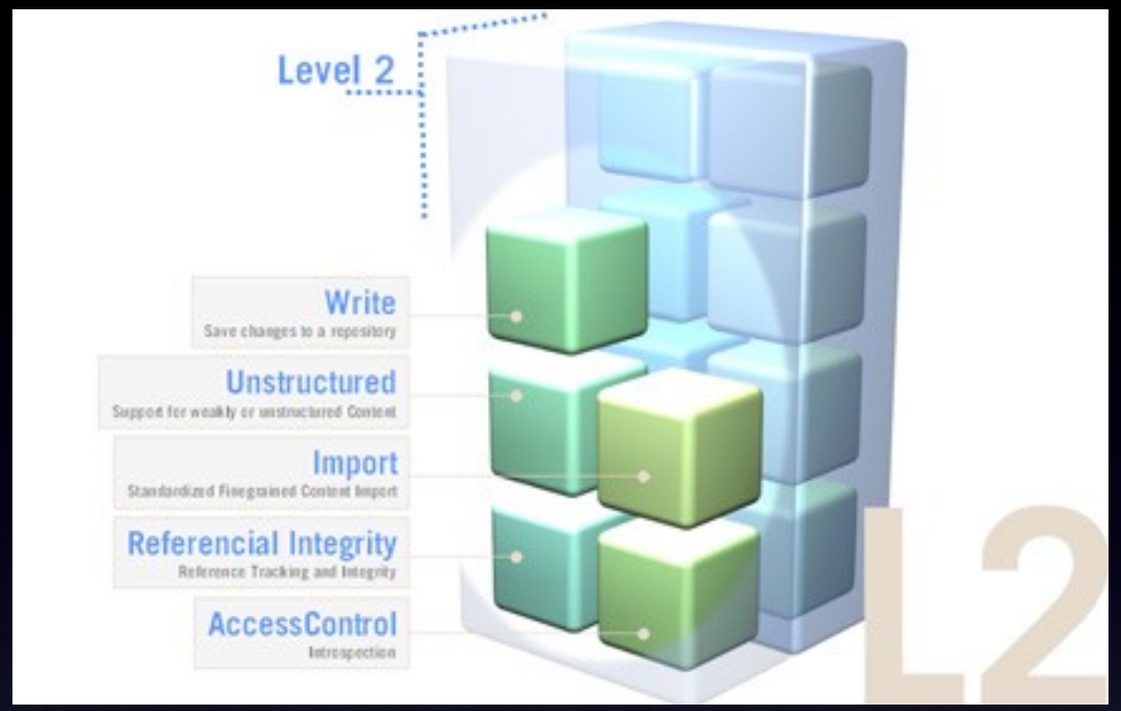
JCR

Java Content Repository
JSR 170
http://www.jcp.org/en/jsr/detail?id=170

Standard interface for content repositories

Allows portability
Less wheel reinventing


Read only
Simple & Covers a large number of usecases
Fine & Coarsegrained
Content Items Small to Large
Hierarchical
Parent child relationships, Sort order
Structured
Strong typed information
PropertyTypes
String, Binary, Numbers, Calendar, ...
NodeTypes
Introspect complex Content Structures
Query (XPath)
Search and query the Repository
Export
Standardized XML Content Export
Level1
L1


Level 2
Write
Save changes to a repository
Unstructured
Support for weakly or unstructured Content
Import
Standardized Finegrained Content Import
Referencial Integrity
Reference Tracking and Integrity
AccessControl
Introspection
L2

Versioning
Workspaces, Merge, Update, Label, ...
JTA Support
(XA) Transactions
Observation
Monitor changes in the Repository
Query (SQL)
Search the Content Repository using SQL
Locking
Session based and persistant
Adv

Known Compliant Repositories

(* using 3rd party connectors)

Apache **Jackrabbit**	Oracle **XML DB**	Exo **ECMS Platform**	Microsoft **Sharepoint** *	OpenText **Livelink** *
Day **CRX**	IBM FileNet **P8**	Xythos **Repository**	Alfresco **ECM**	Vignette **V7** *
Interwoven **Repository** *	IBM **CM**	EMC **Documentum** *	+hundreds of TCKs registered	How many RDBMS vendors do you need?

How we use it

Ideal for all artifact types
Excel spreadsheet
DRL
XML
jar files...

User can provide any content, any format, no database changes required

Back end database support

(Currently using jackrabbit)

Connectors for all major databases

But filesystem based one (which actually uses derby) works just fine – out of the box, zero configuration.

Searching and indexing

Lucene (index is separate to main database)

Versioning

JCR provides versioning “for free”

Very simple to use, each artifact has its own version history

Trivially easy to “snapshot” things at versions in time
(so can have versions of collections of artifacts)

What's it like to code JCR?

```
node.setProperty( “property-name”, comment );
node.checkin(); //creates new version

//its a bit like a file system, a bit like a DOM
//but with versioning

//copying a tree of content is trivial:
workspace.copy( source, newName );

//as its all hierarchical, easy !

//SQL like query language, very easy

//versions:
node.getVersionHistory();
```

Plenty of open source options

Alfresco

Apache Jackrabbit (RI)

eXo

...

More problems...

How to expose to users.

Different users:

Systems
Rule people/analysts
Developers
Architects

How we solved

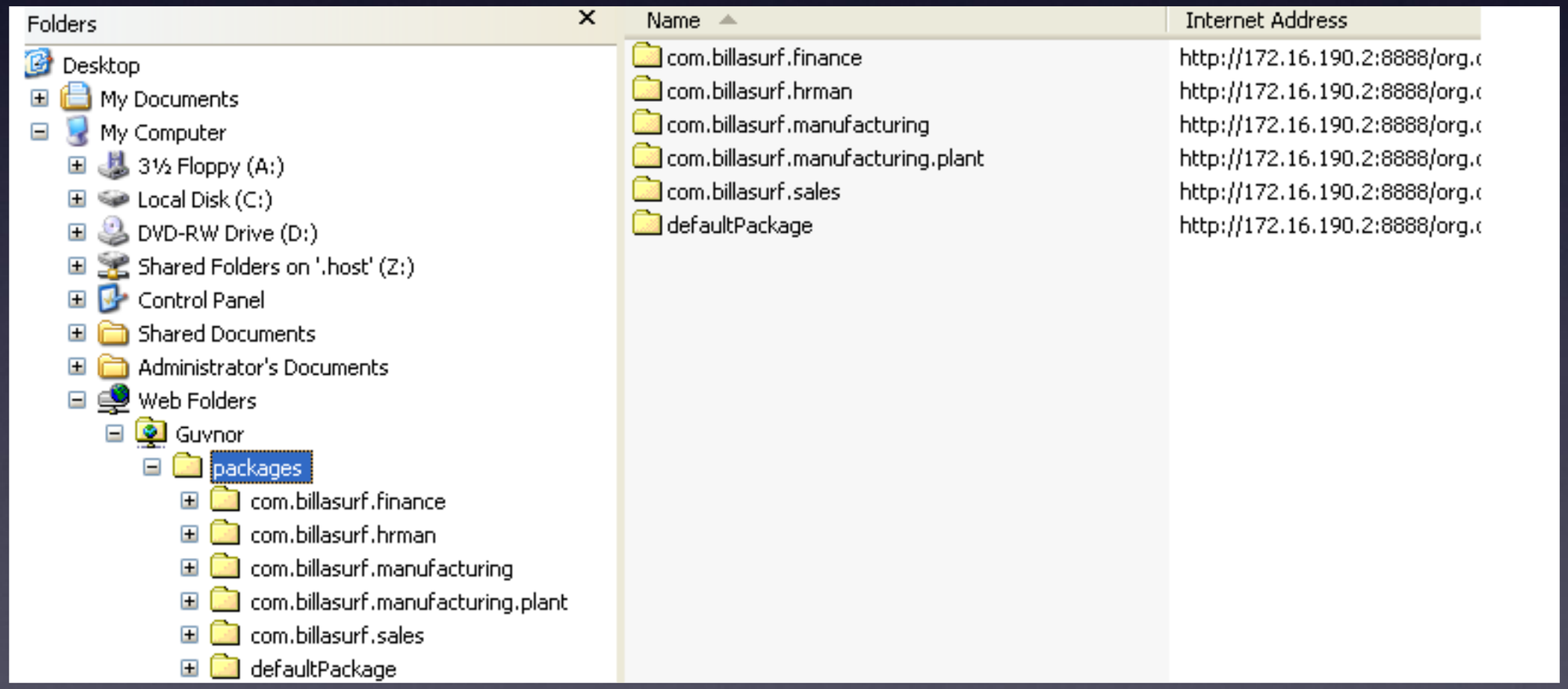
Systems:

Use the web: HTTP/REST
WebDAV (for use as a filesystem !)

(JCR has remoting API for more advanced use cases if needed)

WebDAV

Access repository as file system
Store any/all business rule assets
(even non executable stuff)



The Future: AtomPub

(watch this space !)

How we solved...

Developers:

We have an IDE
Hook up to repository: WebDAV for general purpose (as a filesystem)

Or, a new eclipse plug in (which uses HTTP apis)

IDEs are best for dev-ish things. Can keep artifacts in SCM + Guvnor if needed.

File Edit Navigate Search Project Run Window Help

Guvnor Repository Exploring | Resource

Guvnor Repositories

- http://localhost:8080/drools-guvnor/org.drools.guvnor.Guvnor/web
- http://localhost:8080/drools-guvnor/org.drools.guvnor.Guvnor/web
  - anotherPackage/
  - defaultPackage/
    - addFromWebDav.txt
    - derby.log
    - drools.package
    - guvnor-listing.xml
    - listing.html
    - newFileAdded.txt
    - simpleRule.drl
    - test.xml
    - versionHistoryTest.txt
- http://localhost/cal
- http://localhost/cal/

simpleRule.drl

```
#declare any global variables here


rule "Your First Rule"

    when
        #conditions
    then
        #actions

end

rule "Your Second Rule"
    #include attributes such as "salience" here...
    when
        #conditions
    then
        #actions
```

Text Editor | Rete Tree

Navigator

- anotherproject
- Demo
  - simpleRule.drl 1, 2008-07-15T15:37:56
- test

Properties

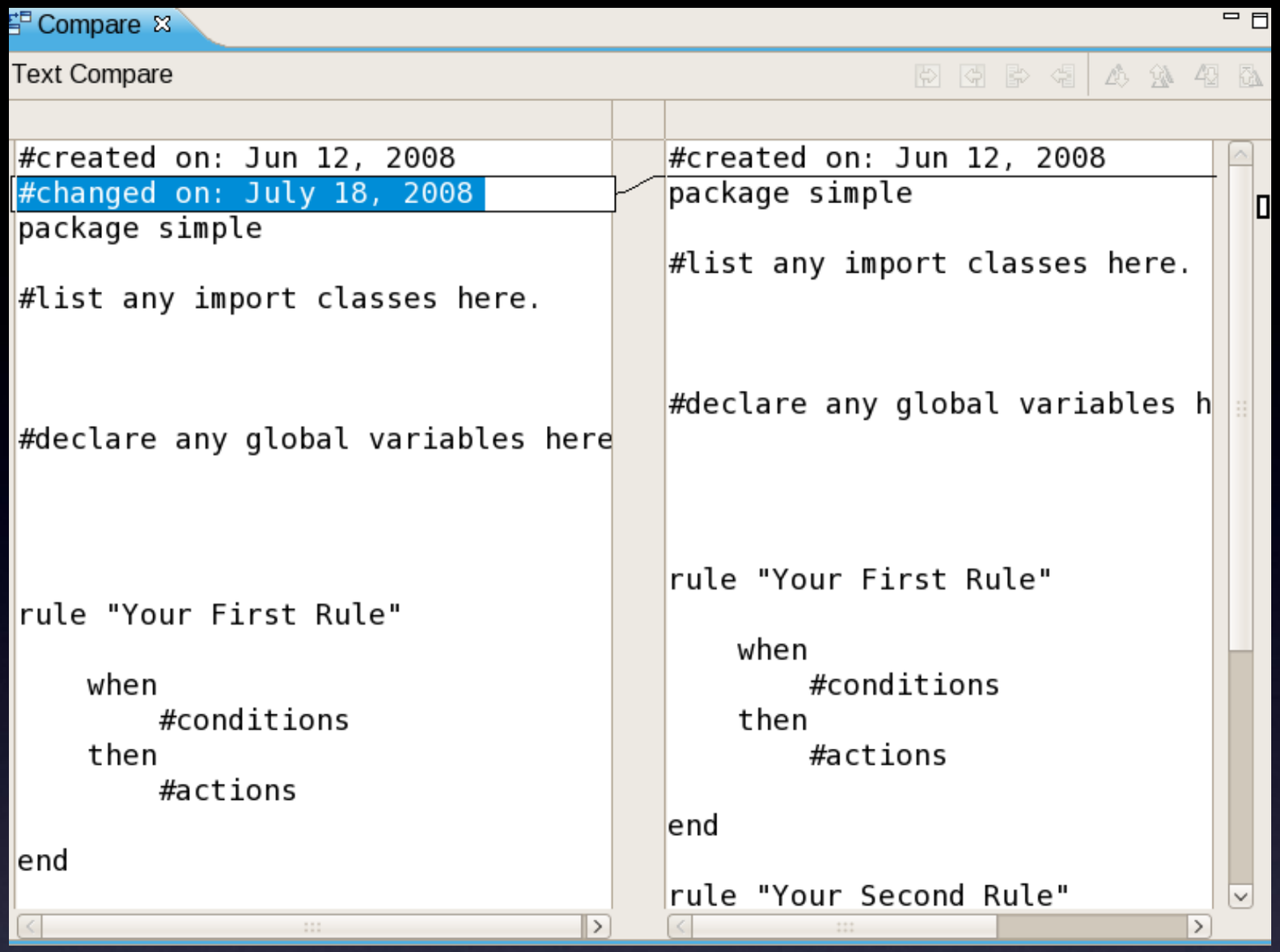
Property	Value
Created	2008-07-15T20:37:56Z
Last Modified	2008-07-15T15:37:56
Location	/defaultPackage/simpleRule.drl
Name	simpleRule.drl
Revision	1
Type	file

Guvnor Resource History

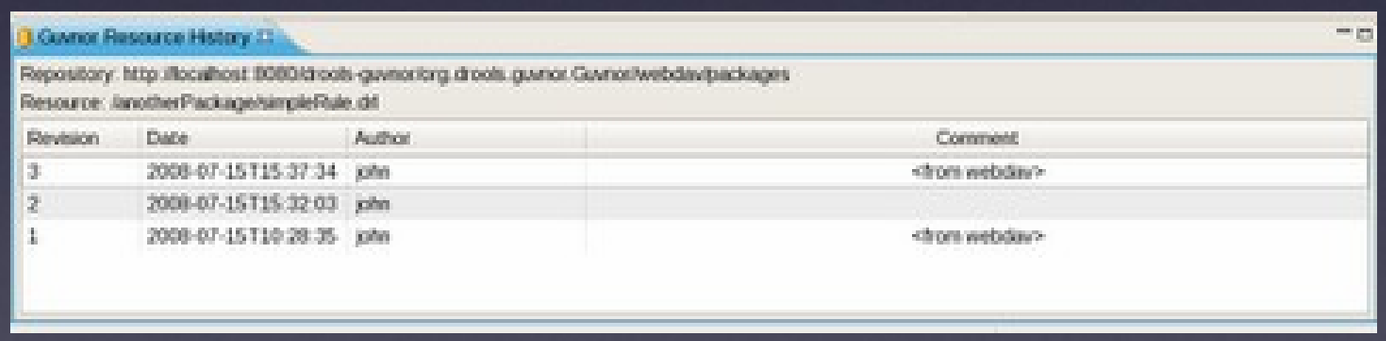
Repository: http://localhost:8080/drools-guvnor/org.drools.guvnor.Guvnor/webdav/packages
Resource: /defaultPackage/simpleRule.drl

Revision	Date	Author	Comment
1	2008-07-15T15:37:56	john	<from webdav>

Compare ...



Repository version history in Eclipse ...



How we solved...

Rule authors/analysts...

The Web !

Web != web pages.

Rich Web Applications
(which need modern toolkits, not legacy)

One repo, many interfaces

WebDAV/HTTP (future AtomPub)
Eclipse IDE
Web

“Different horses for different courses”

The Browser...

Is now a very powerful application platform in its own right.

Netscape's vision was correct. Just took a while.

Now look at the competition:
Chrome, Safari (SquirrelFish), Firefox. IE8.

IE6 must die. If you use IE6, you shouldn't be here. And if your company requires it, find a new job. NOW.

Web Toolkits

GWT was chosen. Code for a GUI turns out to be a timesaver (code fast, refactor later).

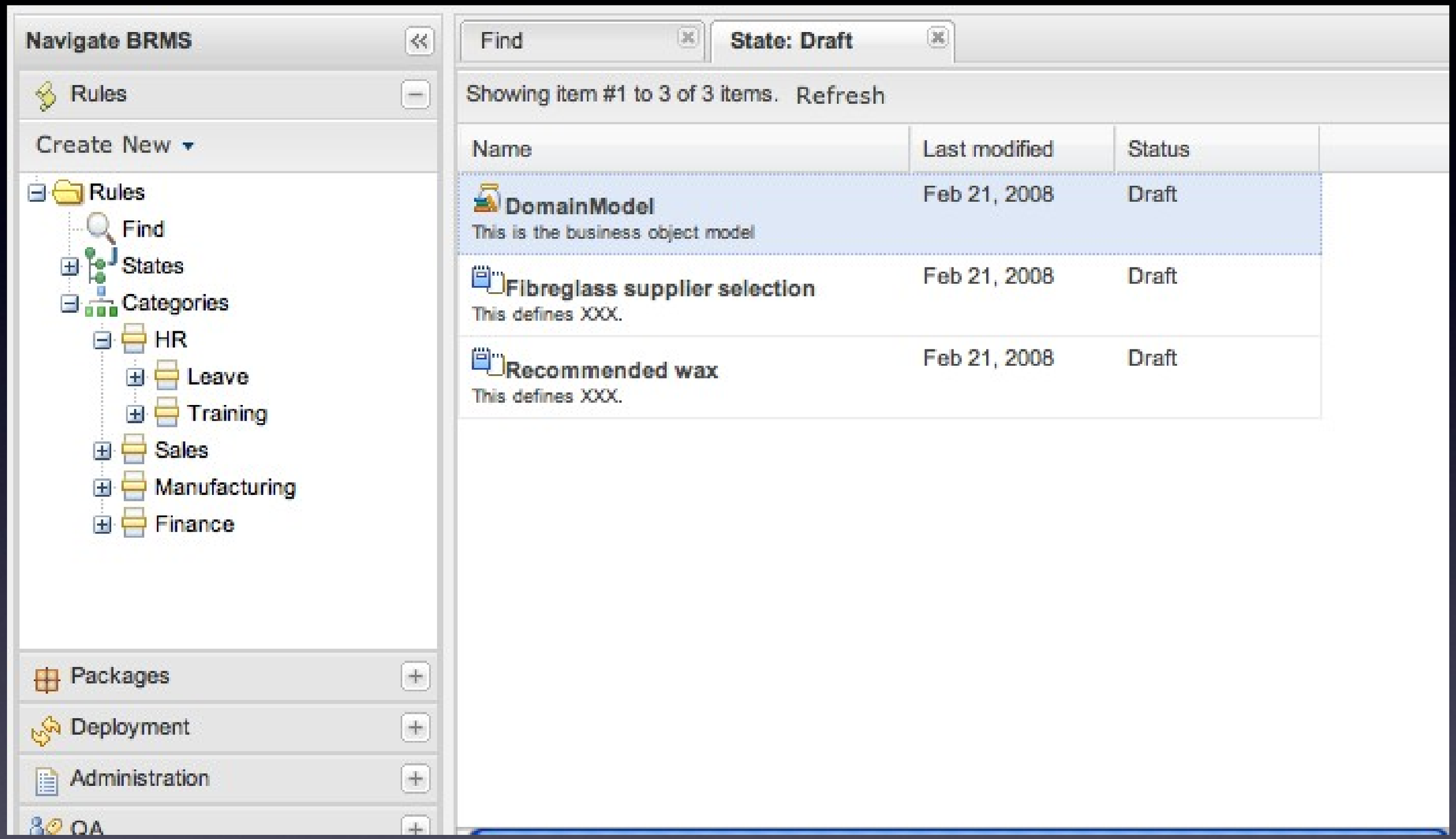
Compile down to tight JS code for multiple rendering engines.

No compatibility hassles (well less).

CSS for styling still.

If its from google, its always good (Michael is a fanboi)

Web tools:


Navigate BRMS
Rules
Create New
Rules
Find
States
Categories
HR
Leave
Training
Sales
Manufacturing
Finance
Packages
Deployment
Administration
QA
Find
State: Draft
Showing item #1 to 3 of 3 items. Refresh
Name
Last modified
Status
DomainModel
This is the business object model
Feb 21, 2008
Draft
Fibreglass supplier selection
This defines XXX.
Feb 21, 2008
Draft
Recommended wax
This defines XXX.
Feb 21, 2008
Draft

Run scenario

Results: 66%

Summary:
[p] field [age] was [42].
[p] field [name] was [bob].
[b] field [name] was [boogie] expected [booger].

GIVEN

insert [Board]

[b]

name: boogie

insert [Person]

[p]

name: bob

age: 42

EXPECT

Use real date and time

1 rules fired in 0ms.

Board [b] has values:

Person [p] has values:

age: equals 42

name: equals bob

GIVEN

insert [Board]

[b2]

cost: 42

EXPECT

Use real date and time

0 rules fired in 0ms.

Board [b] has values:

name: equals booger (Actual: boogie)

More...

(configuration) All rules may fire

(globals)

GWT allows widget composition, reuse

Decision table

Modify…

	Description	Advertiser type	age is at least	Postcode gre…	Postcode les…		Set the value…	Set the rea…
Advertiser type: Agency (3 Items)								
1	Good suburbs	Agency	10	4000	4100	→	42	Loyal
2	Good suburbs	Agency		2000	2100	→	43	Good region
4	Good suburbs	Agency		2200	2300	→	43	Good region
Advertiser type: Partner (1 Item)								
3	Partners	Partner	1			→	49	Other

GWT make web frameworks uninteresting

Server is really just a collection of services, almost no state needed.

Back to the future: Requires thinking a little client server.

Other options: Dojo, YUI, SproutCore, Cappaccino (a new favourite of Michaels)

BORING STUFF: Fine grained security

Role based, work with LDAP/AD.
Less wheel reinvention.
Data driven: package or category based

Guvnor Demo