

ROLLER: AN OPEN SOURCE BLOGGING PLATFORM

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Staff Engineer S/W

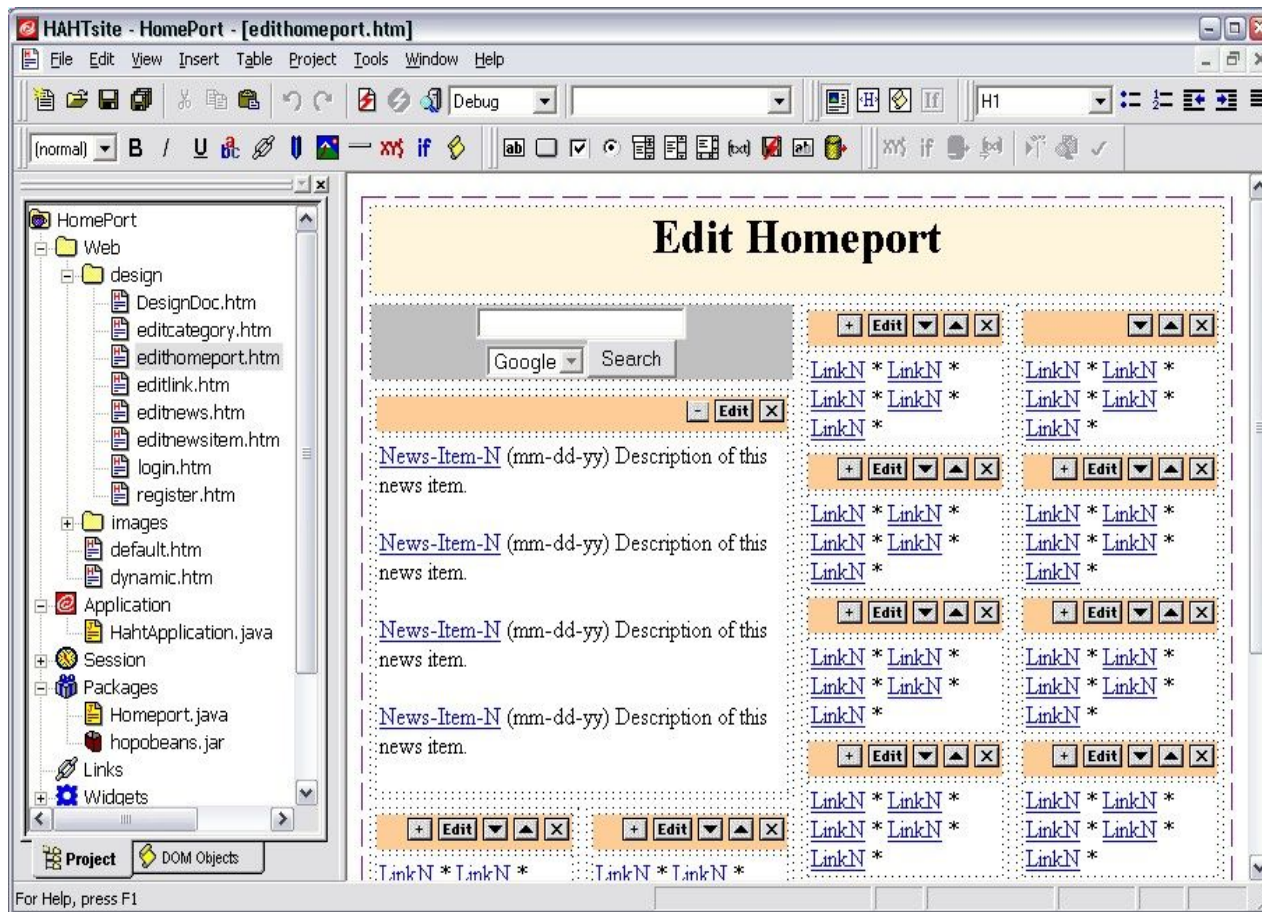
Sun Microsystems, Inc.

Agenda

- **Roller history**
- Roller features
- Roller community
- Roller internals: backend
- Roller internals: frontend
- Customizing Roller
- Roller futures

Roller started as an EJB example...

- Homeport – a home page / portal (2001)



... became an O'Reilly article

- Ditched EJBs and HAHTsite IDE (2002)
- Used all open source tools instead and thus...



Published on [ONJava.com](http://www.onjava.com/) (<http://www.onjava.com/>)
<http://www.onjava.com/pub/a/onjava/2002/04/17/wblogcsi2ee.html>
[See this](#) if you're having trouble printing code examples

Building an Open Source J2EE Weblogger

by [David Johnson](#)
04/17/2002

As a Java developer, you should be aware of the tremendous wealth of open source development software that is available for your use -- even if you have no desire to release any of your own software as open source. In this article, I will introduce you to some of the most useful open source Java development tools by showing you how I used these tools to develop a complete database-driven Web application called Roller.

... and escaped into the wild

FREE ROLLER

I am allowing others to use my installation of **Roller** for their weblogging. Hopefully this will provide a means for enhancing the Roller user base as well as provide a nice environment for communication and expression.

Anthony Eden
August 8, 2002



NC STATE UNIVERSITY



la Repubblica.it

... to find a new home at Apache



- Apache Roller (incubating)
 - > Incubation period: June 2005 - ???

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Roller features: standard blog stuff

- Individual and group blogs
- Hierarchical categories
- Comments, trackbacks and referrers
- File -upload and Podcasting support
- User editable page templates
- RSS and Atom feeds
- Blog client support (Blogger / MetaWeblog API)
- Built-in search engine

Edit Entry

Create & Edit

Preferences

[New Entry](#) | [Entries](#) | [Comments](#) | [Categories](#) | [Bookmarks](#) | [File Uploads](#) | [Referrers](#)

Editing weblog entry in weblog **roller**

Title

Status **Published (Last updated 6/3/06 12:38 AM)**

Category

Pub Time : :

Permalink http://rollerweblogger.org/page/roller?entry=status_cc_world8

Summary (optional)

[Style] [Font] [Size]

B **I** **U**                                                        

Blog client support

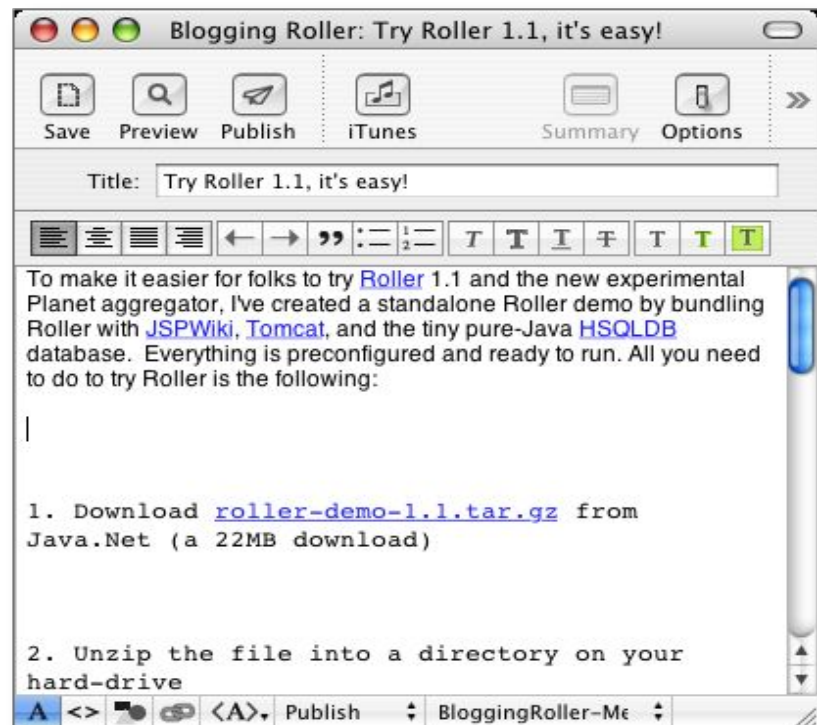
- XML-RPC based Blogger and MetaWeblog API
- Lots of blog clients work with Roller, for example:



ecto

<http://ecto.kung-foo.tv>

For Mac OSX and Windows



Multiple blogs per user

logged in as **roller**
rollerweblogger.org | Main Menu | Logout

Main Menu

Select a weblog to edit, manage, or configure.


Blogging Roller

Link	http://rollerweblogger.org/page/roller	 New Entry  Edit Entries  Settings
Permission	ADMIN	
Description	Dave Johnson on blogging, open source and Java	


Roller Weblogger Project

Link	http://rollerweblogger.org/page/project	 New Entry  Edit Entries  Settings  Resign
Permission	ADMIN	
Description	Roller Weblogger project blog	

Actions

Create new weblog

Feel like you've got more to say? Maybe another weblog is what you need.

Edit user profile

Change password, contact info, select language.

Server administration

Make site-wide administration changes.

Planet administration

Manage the planet aggregator. Add feeds, organize groups, set configs.

Multiple users per blog

logged in as **roller** - editing weblog **project**
rollerweblogger.org | [Main Menu](#) | [Logout](#)

Weblog Member Permissions

[Create & Edit](#)
[Preferences](#)

[Settings](#) | [Theme](#) | [Templates](#) | **[Members](#)** | [Pings](#) | [Custom Ping Targets](#) | [Maintenance](#)

Manage permissions of users in weblog **project**

You can change permissions of weblog members, or remove them from the weblog entire using the controls in the table below and clicking Save to commit your changes. Note that you are not allowed to demote or remove yourself from the weblog.

Username	Admin	Author	Limited	Remove
 project	☒	☐	☐	☐
 roller	☒	☐	☐	☐

Actions


[Invite new member](#)
 Invite somebody to help you write your weblog.

What are permissions?

Admin permission allows user to post entries, manage weblog and its users

Author permission allows user to post entries, but not to manage weblog

Limited permission allows user to save draft entries only

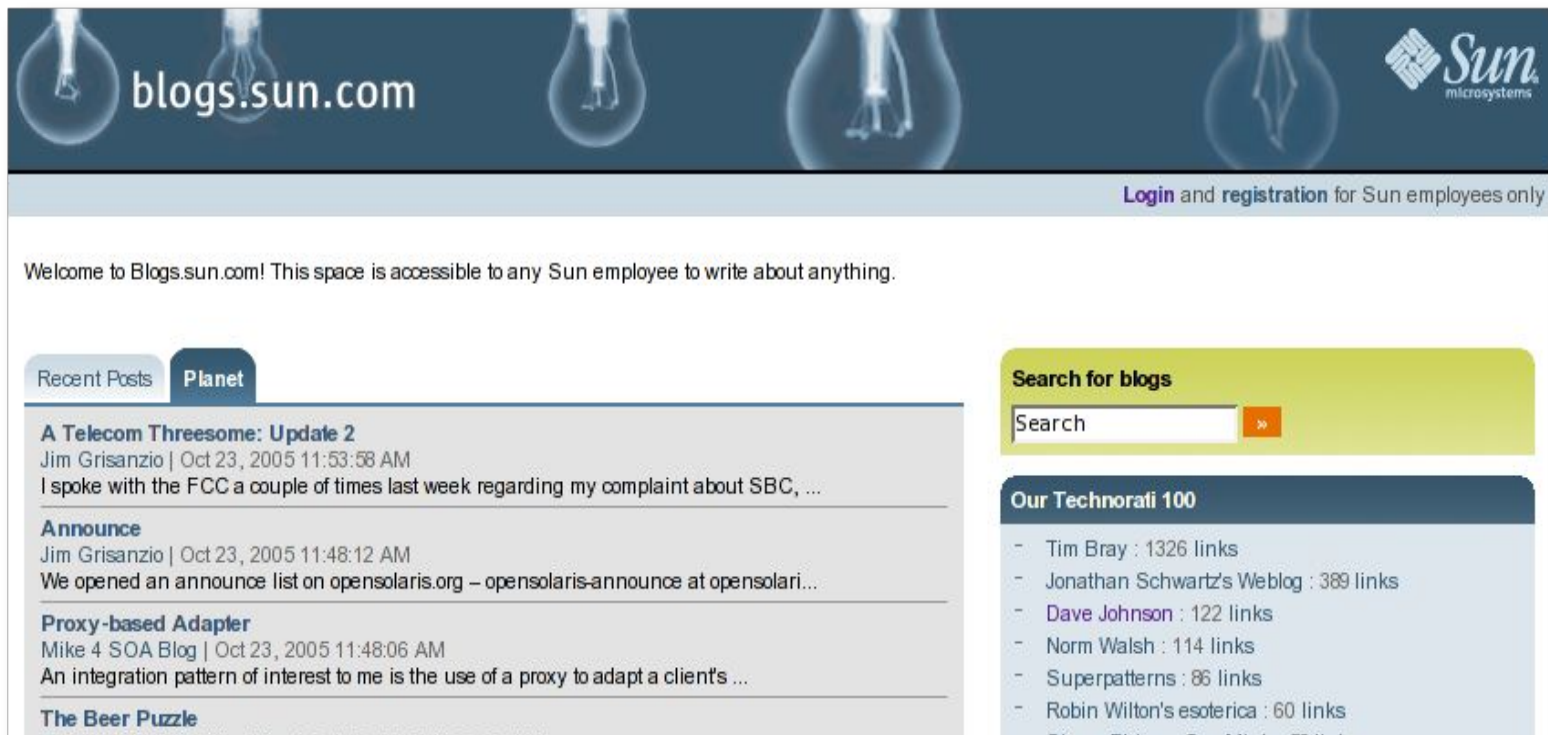
Powered by [Roller Weblogger 2.3-incubating](#) | [Report an Issue](#) | [User Guide](#) | [Macros](#) | [Mailing Lists](#)

Roller features, continued

- Get feedback via **comments** and **trackbacks**
 - > Enable / disable them at entry, blog and site-wide levels
 - > Email notification of new comments and trackbacks
 - > Comment moderation for both
- Talk back by sending **pings** and trackbacks
 - > Send trackbacks to blog posts that you're writing about
 - > Ping any set of Weblogs.com compatible services
- Promote your favorite web sites on your **blogroll**
 - > Bookmark management with OPML import and export
- See where today's hits are coming from
 - > Display of days **referrers** and referrer hit counts

Planet-style community aggregator

- To include local and off-site blogs on front page



Limitations

- Relatively small community compared to Wordpress
 - > Small number of plug-ins and themes
- Java dependency limits ISP options
 - > A good and Java-smart ISP can be hard to find
- Clustering requires some custom development
 - > At BSC, we use **memcached** and our own search engine
- SSO requires some custom development
 - > NSCU, Yale and others have done it

Why choose Roller?

- Proven, full-featured blogging solution for big sites
 - > Sun, IBM and others depend on it for corporate blogging
- Standard Java web application architecture
- Open source and Apache licensed
- Active and growing community at Apache

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What is the Roller community?

- The developers who write the code?
 - > Seven *committers* design, develop, test and release the code
- The system admins who build and run the sites?
 - > Big sites: JRoller, blogs.sun.com, IBM devWorks, Yale, NCSU
 - > Tens and perhaps hundreds of sites using Roller
- The bloggers who use the software?
 - > Thousands and perhaps tens of thousands of active bloggers
- A: all of the above

Roller community challenges

- Part of community needs to move fast
- Part of community needs stability
- Solution:
 - > **A release cycle that enables monthly releases**
 - > **Transparency in planning & a roadmap**

Roller release cycle

- Plan allows monthly releases, but doesn't mandate
- Second to last Thursday of month is RC day
 - > Committers: think we need a month release?
 - > If so, create an RC and call for week of testing
- Last Thursday of month is release day
 - > Create another RC and if confident: call for release vote
 - > Optionally: create release branch in SVN
 - > Once released, create a SVN tag

Roller planning: adding new features

- **Want to add a feature?**
- Write a proposal on the wiki
- Coordinate with folks writing other similar proposals
- Introduce proposal on mailing-list, call for feedback
- Tweak proposal, get consensus
- Do the work
- Submit patch or commit code to appropriate branch

Roller planning: planning releases

- **Want to make a release?**
- Write a proposal on the wiki
 - > Reference all JIRA issues to be addressed
 - > Reference all feature proposals to be included
- Introduce proposal on mailing-list, call for feedback
- Tweak proposal, get consensus
- Do the work
- Follow the release cycle: on RC day, create an RC

Great, so why is Roller still incubating?

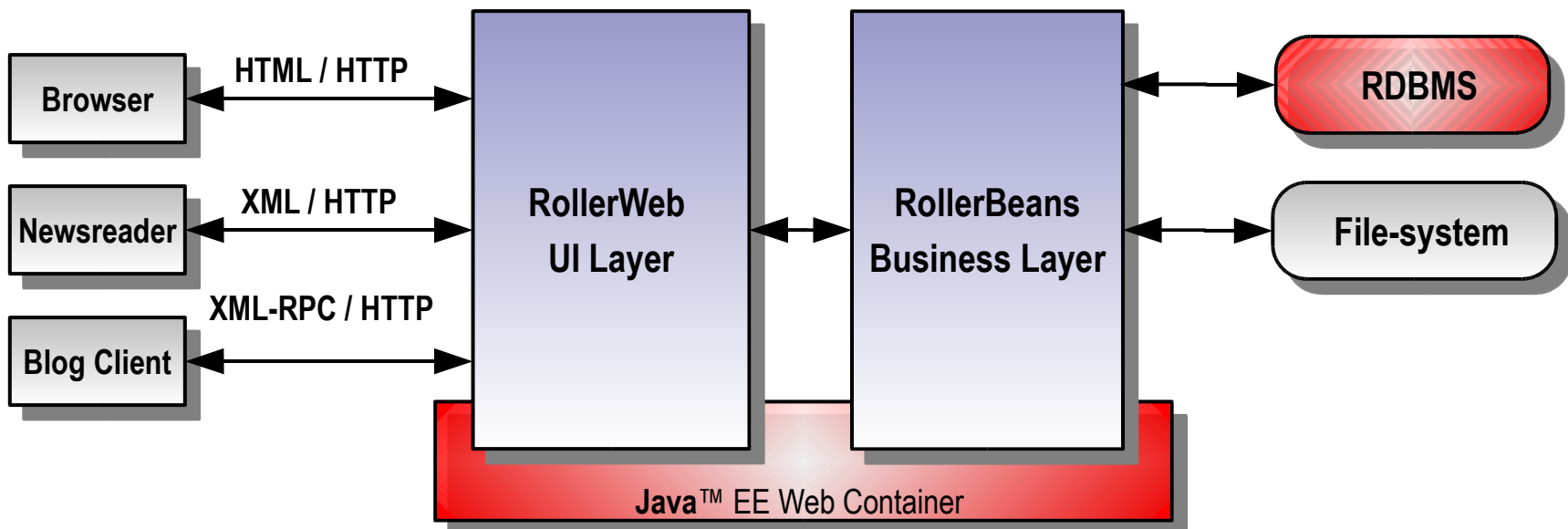
- ✔ Contributor agreements and grants
- ✔ Apache license headers
- ✔ Use Apache package names
- ✔ Migrate infrastructure
 - ✔ Source code and mailing lists
 - 🕒 Blog, wiki and bug tracker (post graduation?)
- ✔ Diverse and growing community
- ✔ Team follows the “Apache way”
- ⚠ Do ??? about LGPL dependencies

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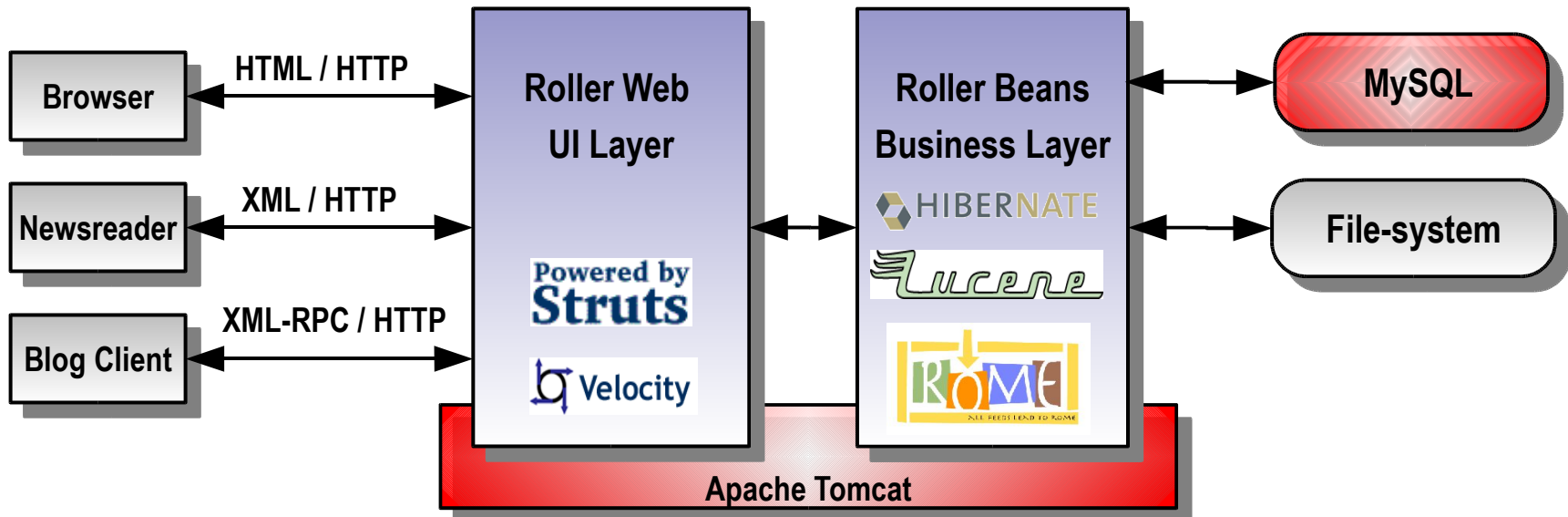
Enterprisey level architecture

- Web UI via Java™ Servlets and JSP
 - > Front controller, Web MVC and open session in view patterns
- Persistence via Java™ Database Connectivity
 - > Factory, facade and data mapper patterns



Java geek level architecture

- Roller Web: Web and UI layer
 - > Editor UI via **Struts and JSP**, blog and feed rendering via **Velocity**
 - > Feed parsing via **ROME**, Blogger API via **Apache XML-RPC**
- Roller Beans: Business and persistence layer
 - > **Hibernate** for DBMS, **Lucene** for search and file-system for uploads

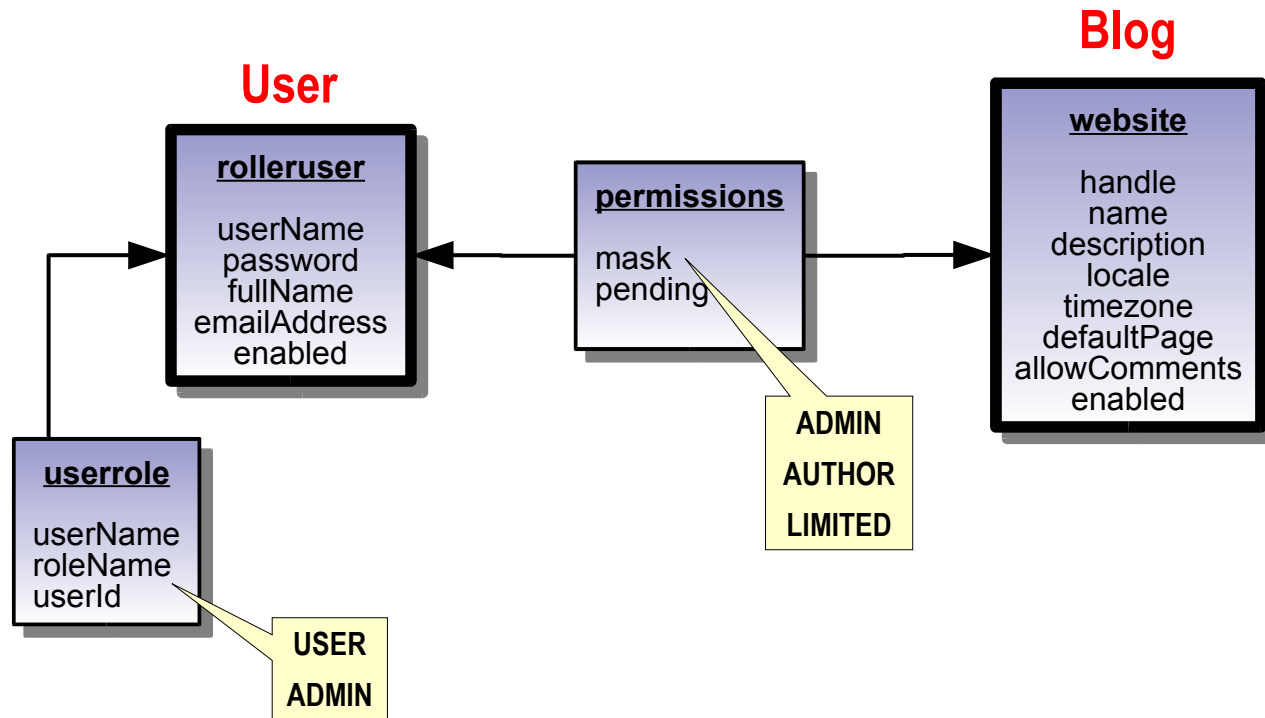


First, let's talk business

- Business layer is made up of:
 - > Plain old **Java objects**
 - > i.e. POJOs
 - > Interfaces that create, retrieve, update and delete
 - > i.e. **Manager interfaces** that do CRUD of POJOs

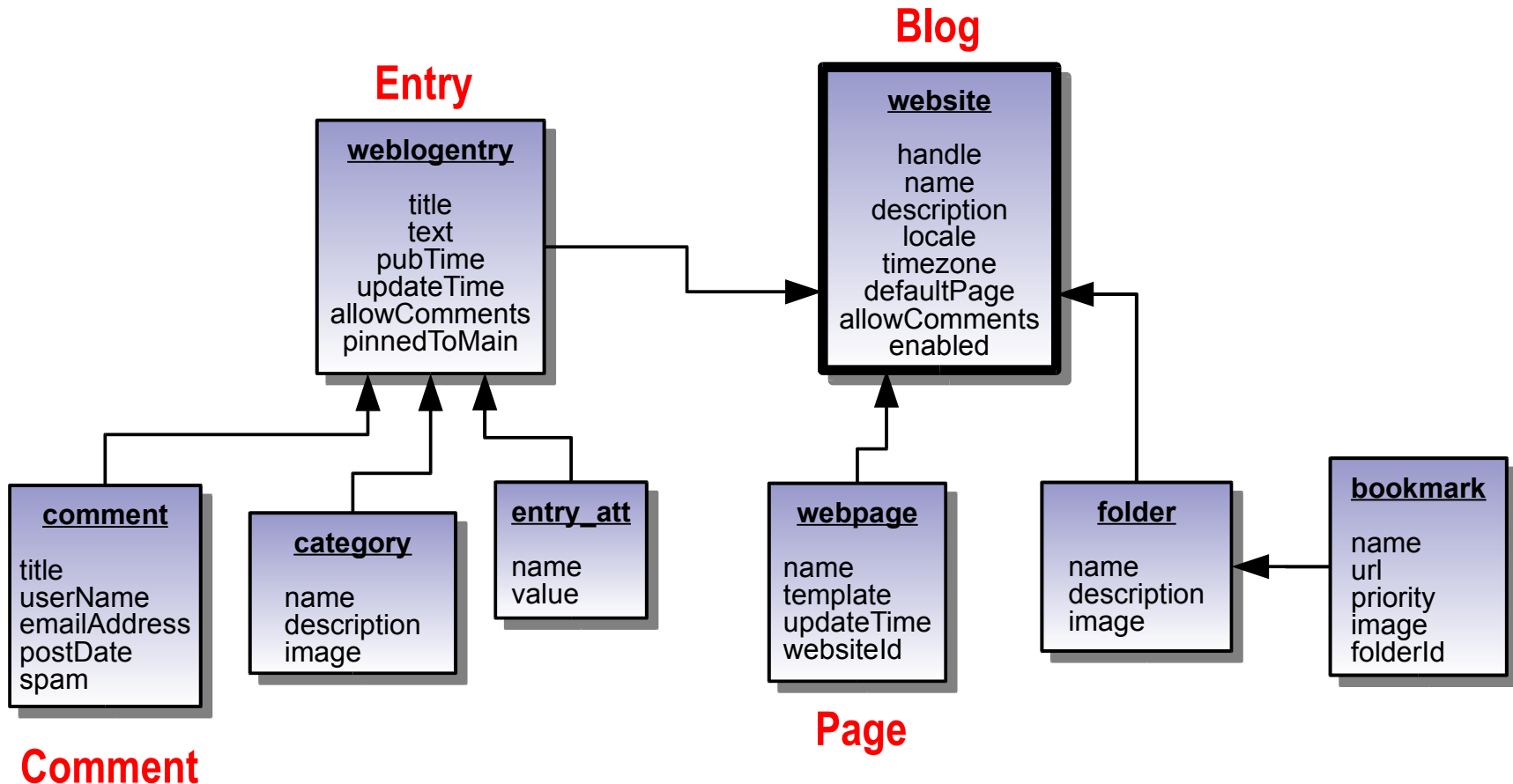
Roller POJOs: users and blogs

- User has global role
- User has permissions in blogs



Roller POJOs: blogs and entries

- A blog has entries, pages and comments



Roller POJO markup

```

/** @hibernate.class table="website"
 *  @struts.form include-all="true"
 */
public class WebsiteData extends org.roller.pojos.PersistentObject
    implements java.io.Serializable {

    /**
     * @hibernate.property column="description"
     *      non-null="false" unique="false"
     * @roller.wrapPojoMethod type="simple"
     */
    public String getDescription() {
        return this.description;
    }
    public void setDescription(String description) {
        this.description = description;
    }
    ...

```

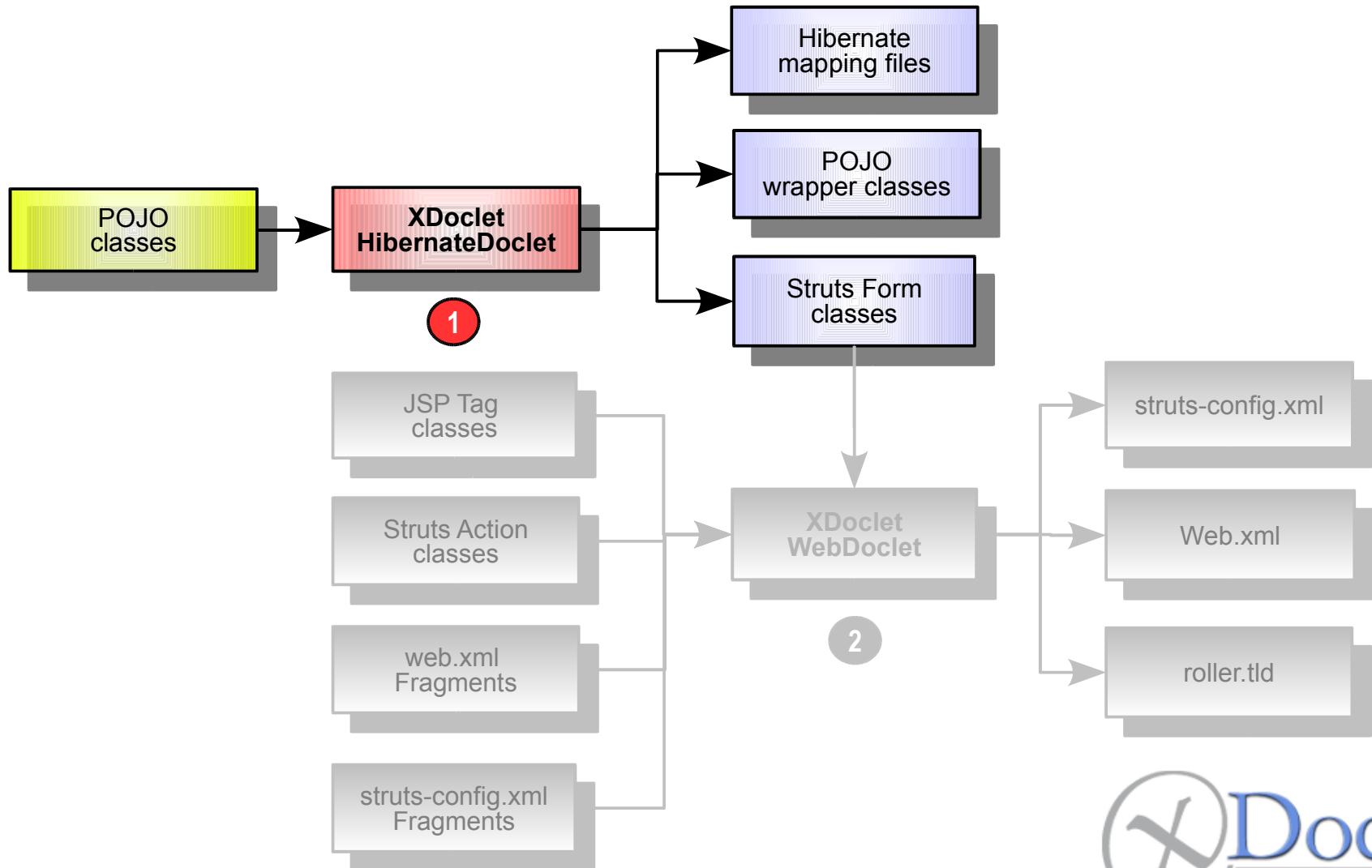
Hibernate mapping generation

Struts form bean generation

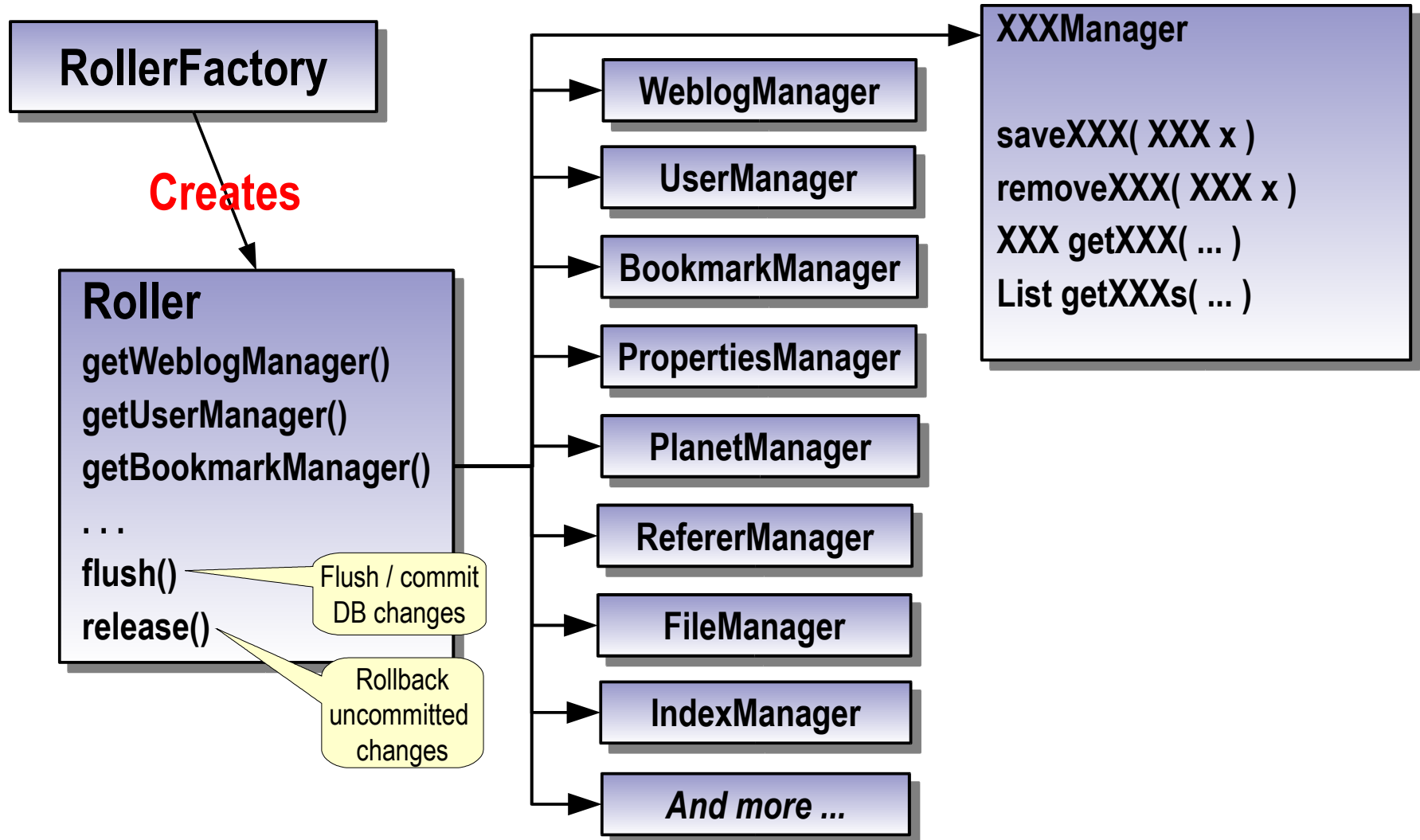
Hibernate mapping generation

POJO wrapper generation

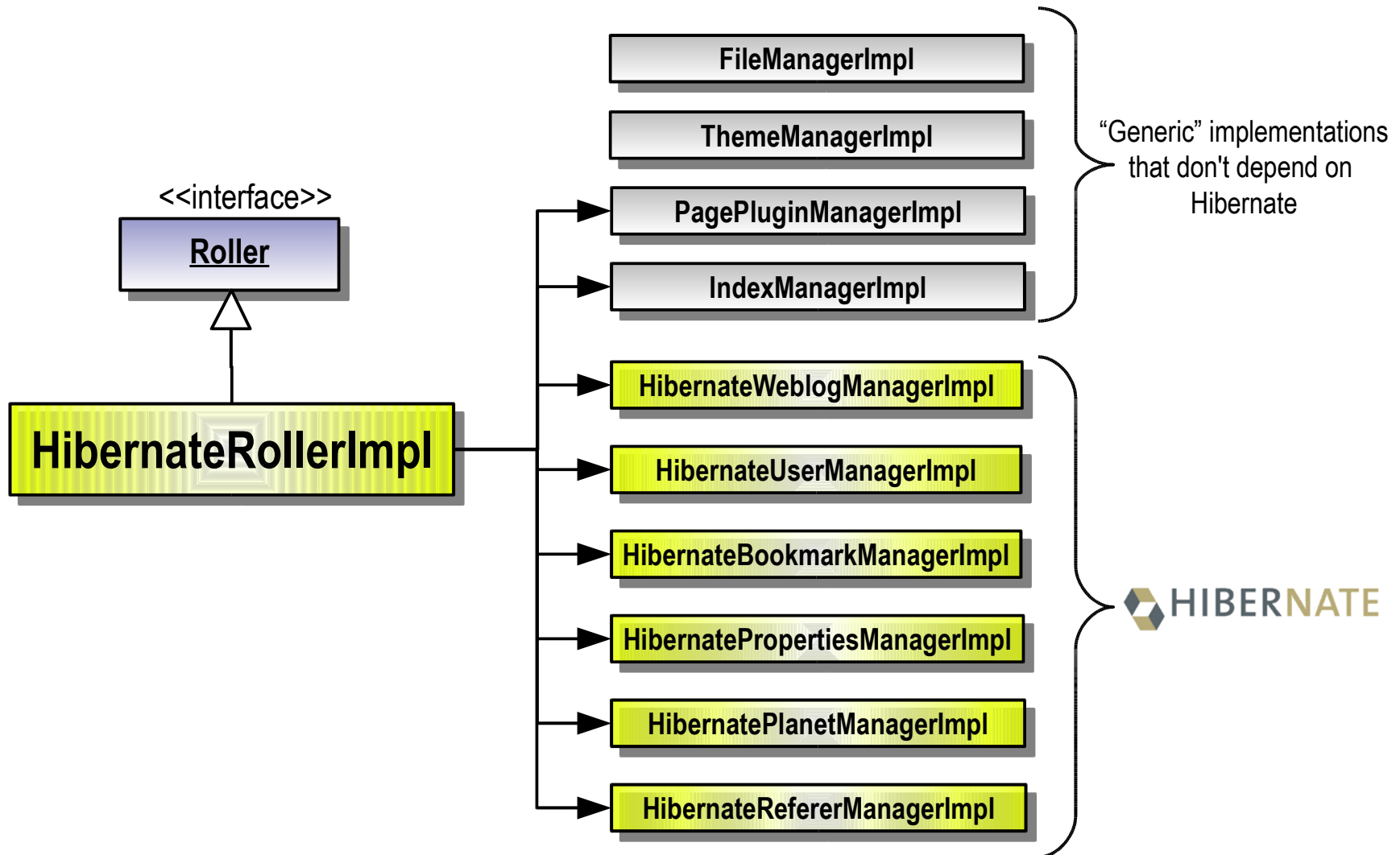
XDoclet code gen, phase 1



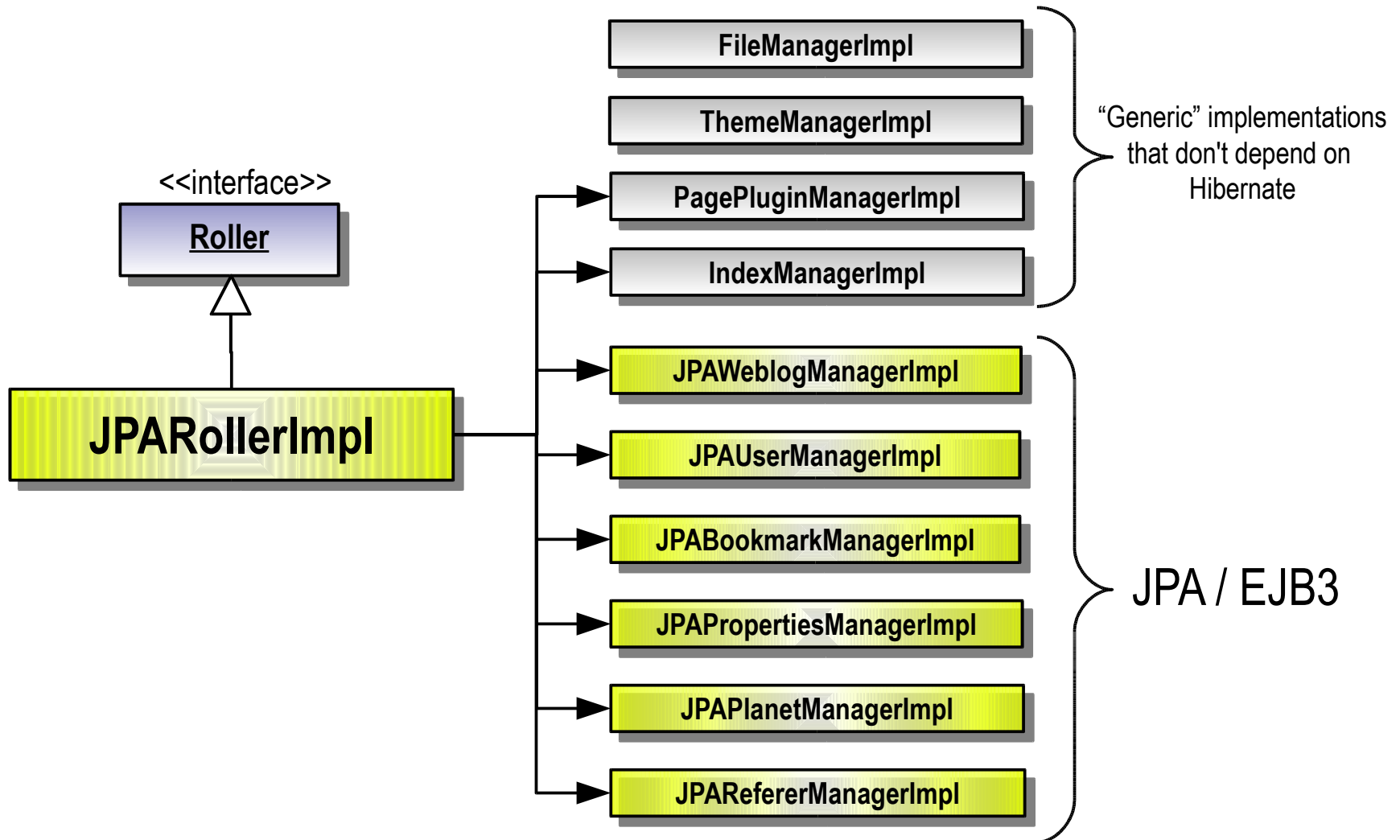
The Roller manager interfaces



The Hibernate implementation



Someday... a JPA implementation



So, for example...

```
Roller roller = RollerFactory.getRoller();
WeblogManager mgr = roller.getWeblogManager();

WeblogEntryData entry = new WeblogEntryData();

entry.setTitle("My first blog post");
entry.setText("&lt;p&gt;Hi everybody!&lt;p&gt;");
entry.setAnchor("hi_everybody");
entry.setPubTime(new Date());
entry.setUpdateTime(new Date());
entry.setWebsite(weblog);
entry.setCreator(user);
entry.setCategory(weblog.getDefaultCategory());

mgr.saveWeblogEntry(entry);
roller.flush();
```

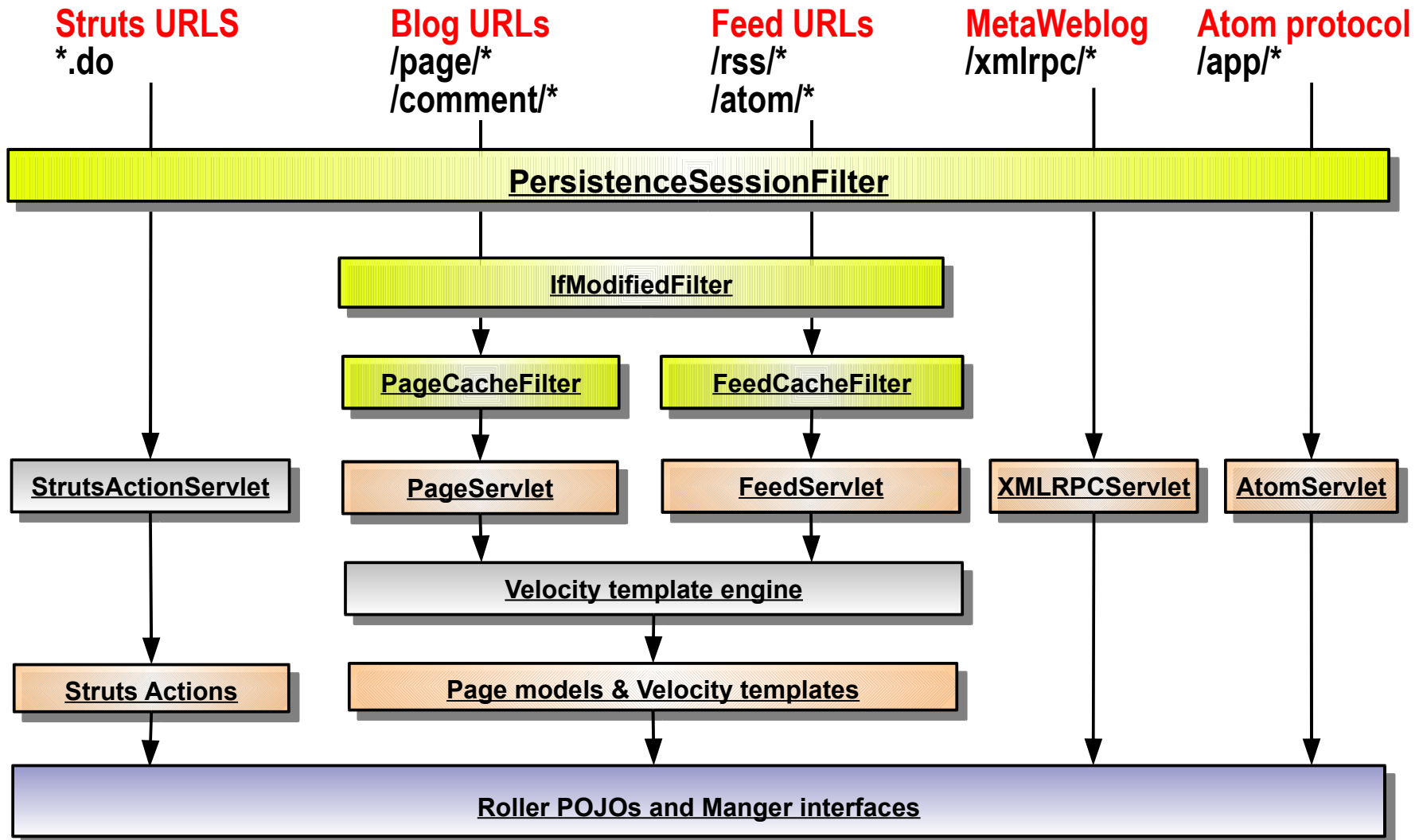
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Two parts of the Roller UI

- **#1 - The authoring and admin UI**
 - > Classic Struts/Tiles and JSP user interface
- **#2 - The blog page and feed rendering engine**
 - > Each blog's layout & style defined by Velocity templates
 - > Templates call Roller page models and Velocity macros
- Both call Roller manager interfaces
- Both use page model concept

Web request stack



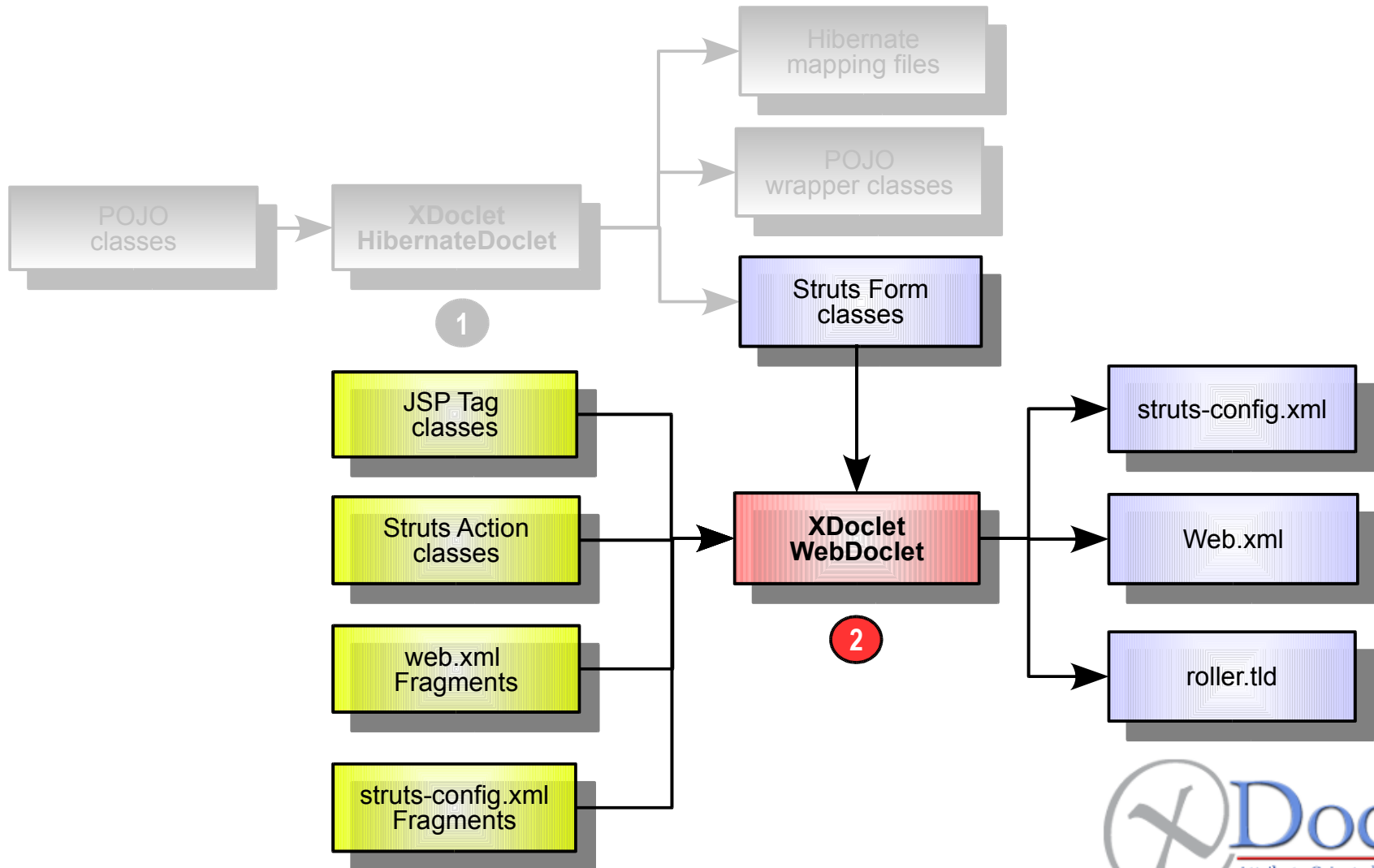
Struts actions markup

```
/**
 * @struts.action path="/BookmarkSave" name="bookmarkFormEx"
 *   validate="true" input="/BookmarkEdit.do"
 *
 * @struts.action-forward name="Bookmarks"
 *   path="/Bookmarks.do?method=selectFolder"
 */
public class BookmarkSave extends Action {

    public ActionForward execute(
        ActionMapping      mapping,
        ActionForm          actionForm,
        HttpServletRequest   req,
        HttpServletResponse res) throws Exception {

        // save a bookmark
        Roller roller = RollerFactory.getRoller();
        // etc...
    }
}
```

XDoclet code gen, phase 2

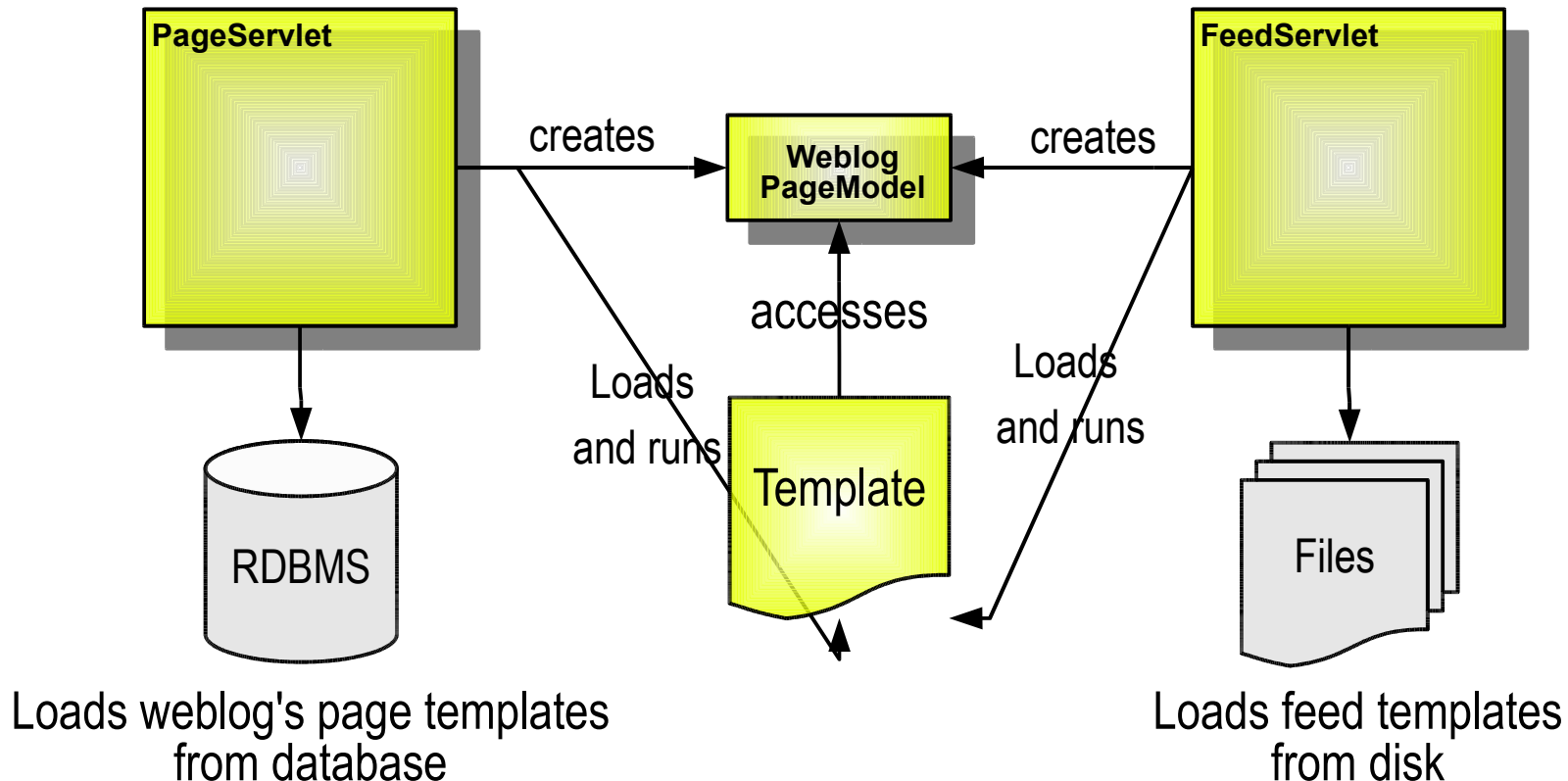


Page and feed rendering

- Each blog defined by user-editable templates
- Roller provides:
 - > Page models so templates can access POJOs
 - > Macros for generating HTML within templates
- Why Velocity instead of JSP?
 - > Safety: we can limit objects available to users
 - > Ease-of-use: Velocity is easy to learn



Page and feed rendering Servlets



Roller template macros

- Templates can use any of > 50 different macros

displayWeblogCalendar
evaluateString
formatDate
genOpml
includePage
refererDisplayUrl
showBasicNavBar
showBigWeblogCalendar
showBookmarks
showCommentForm
showComments
showCommentsDiv
showCommentsLink
showCommentsPageLink
showContentLanguage
showContentType
showDayPermalink
showEditorNavBar
showEntryDate
showEntryDescription

showEntryPermalink
showEntryText
showImage
showLinkbacks
showMenu
showNavBar
showNewsfeed
showOneBookmark
showOpmlLink
showPageDescription
showPageName
showPageUpdateTime
showRSSAutodiscoveryLink
showRSSBadge
showRSSLinks
showRecentEntries
showReferers
showResourceImage
showResourcePath

showSearchForm
showStatusMessage
showThemeImage
showThemeImagePath
showThemePath
showThemePath
showThemeScript
showThemeScriptPath
showThemeStyle
showThemeStyleImport
showThemeStylePath
showTrackbackURL
showVersion
showWeblogCalendar
showWeblogCategoryChooser
showWeblogEntries
showWebsiteDescription
showWebsiteTitle
spaces



Example weblog page template

```
<html>
<head>
  <title>#showWebsiteTitle()</title>
  #showRSSAutodiscoveryLink()
</head>
<body>
<table border="0" align="center" width="95%"><tbody><tr>
  <td class="entries" width="80%" valign="top">
    <h1>#showWebsiteTitle()</h1>
    <p class="descrip">#showWebsiteDescription()</p>
    #showWeblogEntries("_day" 15)
  </td>
  <td class="sidebar" width="20%" valign="top">
    <h2>Calendar</h2>
    #showWeblogCalendar()<br>
    <h2>RSS Feeds</h2>
    #showRSSBadge()
    <h2>Links</h2>
    #showBookmarks("Blogroll" true false)
  </td>
</tr></tbody>
</table>
</body>
</html>
```



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As an end user you can:

- Without hacking HTML or CSS:
 - > Preview and switch to new theme
 - > Add bookmarks to your blogroll
 - > Add categories
- With some HTML, CSS and template hacking:
 - > Customize your blog templates
 - > Override Roller macros
 - > Create your own blog themes

As a developer you can

- Use Roller web services from any language
 - > Automate blogging via MetaWeblog or Atom protocol
 - > Automate admin via Roller Admin Protocol
- Add new plug-ins, written in Java:
 - > Rendering models
 - > Weblog Entry plug-ins
 - > Caching implementations
 - > Comment authenticators

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Roller 3.0 – Atlas frontpage & macros

- **Bring the front page to life by making it a blog**
- Add new page models so front page blog can:
 - > Display entries filtered by category, language, etc.
 - > Display planet-style aggregations
 - > New bloggers, hot blogs, most commented blogs
 - > User directory and user profiles
 - > Blog directory and blog profiles
- **Make theme development easier**
 - > Introduce new simplified page models and macros
 - > *Deprecate but continue to support old macros*

Roller 3.0 – new URL structure

- **New URLs**

```
/roller/<weblog-handle>/date/<8-char-date>  
/roller/<weblog-handle>/entry/<entry-anchor>  
/roller/<weblog-handle>/page/<page-name>  
/roller/<weblog-handle>/feed  
/roller/<weblog-handle>/resource/<file-name>
```

- **To replace crufty old URLs**

```
/roller/page/<weblog-handle>/<8-char-date>  
/roller/page/<weblog-handle>?entry=<entry-anchor>  
/roller/page/<weblog-handle>/<page-name>  
/roller/resources/<weblog-handle>/<file-name>  
/roller/rss/<weblog-handle>
```

- *Deprecate but continue to support old URLs*

Futures: tagging

- UI for adding tags to entries
- Macros for displaying tag cloud on weblogs
- Macros for displaying site wide tag cloud
- Macros for searching via tags
- Tag-based dynamic feeds
- *Roller 3.1 time frame, early fall 2006?*

Futures: protected weblogs

- Use cases
 - > Family blog
 - > Book group blog
 - > Other member-only blogs
- Protected blogs available only to:
 - > Those with a login,
 - > Those who are members of a weblog or
 - > Specific OpenID identifies

Futures: modular Roller

- Core Roller
 - > User management, permissions, caching
- Pluggable modules
 - > Blog server
 - > Planet server
 - > Wiki
 - > Forums
 - > Photo gallery
 - > Aggregation engine

Conclusion

- Join the fun and give Roller a try:
 - > On your on server
 - > On JRoller.com
 - > With the Blogapps server (blogapps.dev.java.net)
- Report bugs and RFEs to the Roller issue tracker
- Join the mailing lists and get involved
- For more information:
 - > <http://rollerweblogger.org>



Thanks for listening!

Dave Johnson

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