APACHE SLING & FRIENDS TECH MEETUP

BERLIN, 26-28 SEPTEMBER 2012

A JCR view of the world

Alexander Klimetschek, Adobe

JCR

CONTENT REPOSITORY

FEATURES OF AN
RDBMS

Transactions, Query, Structure, Integrity

FEATURES OF A
FILESYSTEM

Binaries, Hierarchy, Locking, Access Control

+

ALL THE OTHER
GOOD STUFF
YOU ALWAYS WANTED

Data First, Versioning, Full-text,
Multi-Value, Sort-Order, Observation

David`s Model

1. Data first, Structure Later
2. Drive the Content Hierarchy
3. Reduce # of Workspaces
4. Beware of Same Name Siblings
5. References Considered Harmful
6. Files are Files are Files
7. ID`s are evil

http://wiki.apache.org/jackrabbit/DavidsModel

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- **Strict schemas harm evolution**
  - Structure is expensive
  - Constraints only where 100% future proof
- **Easier to extract patterns from real data**
  - allow end users to structure their content
- **Use `nt:unstructured` instead of `my:Type`**
  - CQ: use `cq:Page`
  - Sling: use `sling:Folder`

Pages / Documents

- **Outer hierarchy**
  - files & folders
- **Inner document structure**
  - micro tree
  - separated by `jcr:content`
- `nt:hierarchyNode`
  - used for replication in CQ
- **Pages: generic UIs & authoring**
  - `/etc/replication`

hierarchy

document
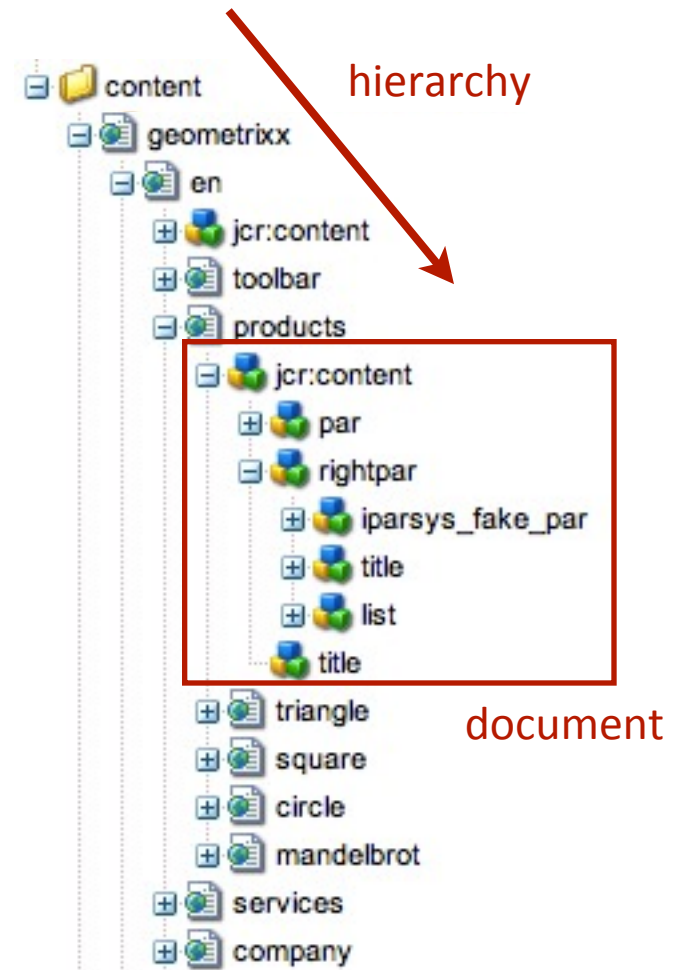
Shadow paths

- Need to store separate information?
- But not within original content?

- Use shadow paths:
  /some/path => /alternate**/some/path**

- Samples:
  - /content/usergenerated
  - /var/clientlibs
  - /var/audi/com.day.cq.wcm.core.page

#2 Drive the Content Hierarchy

- ▪ Content hierarchy is valuable
- ▪ Look at ownership & permissions
- ▪ Good design:
  - ▪ intuitive, understandable & easily explorable
  - ▪ uses less ACLs
  - ▪ like a well-ordered and well-named filesystem
  - ▪ always try to use hierarchy conventions instead of node types
  - ▪ don`t simply „copy" relational models

Root

- **Inspiration: Unix filesystem**
  - for CMS

- `/content`
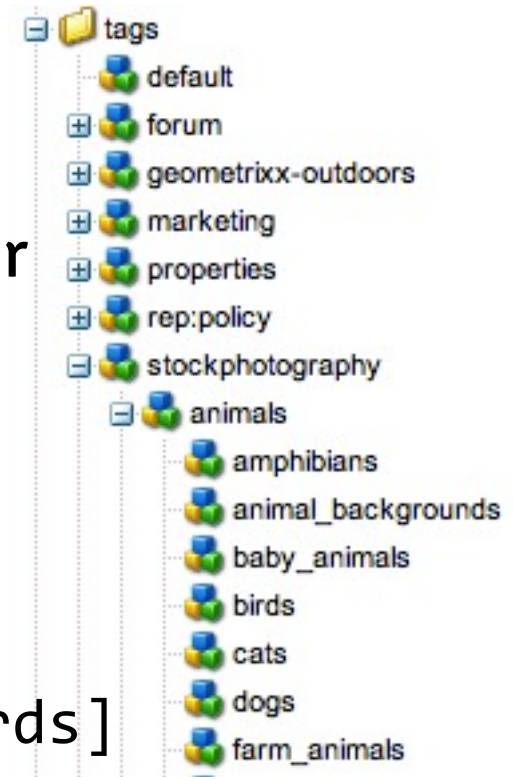- `/apps` **over** `/libs`

- **mess:** `/etc`

Access Control

- **Structures driven by permissions**
  - `/public`
  - `/private`

- **By organizational structure**
  - `/customers/lufthansa/systems/...`

- REFERENCEs imply referential integrity

- Two documents linked via a reference...
  - cannot be imported/exported separately
  - create larger transactional boundary
  - UUID reference is not human readable

- WEAKREFERENCE still relies on UUIDs

- Better use soft references
  - STRING with node path
  - code: handle missing target without failure

Tagging

- **Lazy references**
  - Scalability
  - Priviliges: tag librarian vs. content author
- **Tags under** `/etc/tags`
  - taxonomy, titles, metadata etc.
- **Tagged resources:** `cq:tags` **property**
  - **array:** `[stockphotography:animals/birds]`
  - not automatically updated when tags change

Flexible hierarchies

- Fixed structures below a base
- Referenced by path
- /home (~)
- /content/campaigns
- /libs/*/* (components)
- /etc/packages/**day/product/550**/...

Relative paths

- Overlays: `/apps` over `/libs`

- projects over product, custom over default

- Samples
  - resource types: `foundation/components/text`
  - tags: `geometrixx:activity/biking`
    - or: /etc/tags/geometrixx-outdoors/activity/biking

#6 Files are Files are Files

- Files and folder-**like** elements should use `nt:file` and `nt:folder`

- Built-in node types maximize re-use
  - HTTP range download, WebDAV

- Allows mime-type and meta data

- If content needs binary data (eg. an image)
  - add a sub-node of type `nt:file`
  - for a list, add a sub-node of `nt:folder`

Images

- **Embed in pages**
- **Assets have renditions**
- **Using `nt:file`**
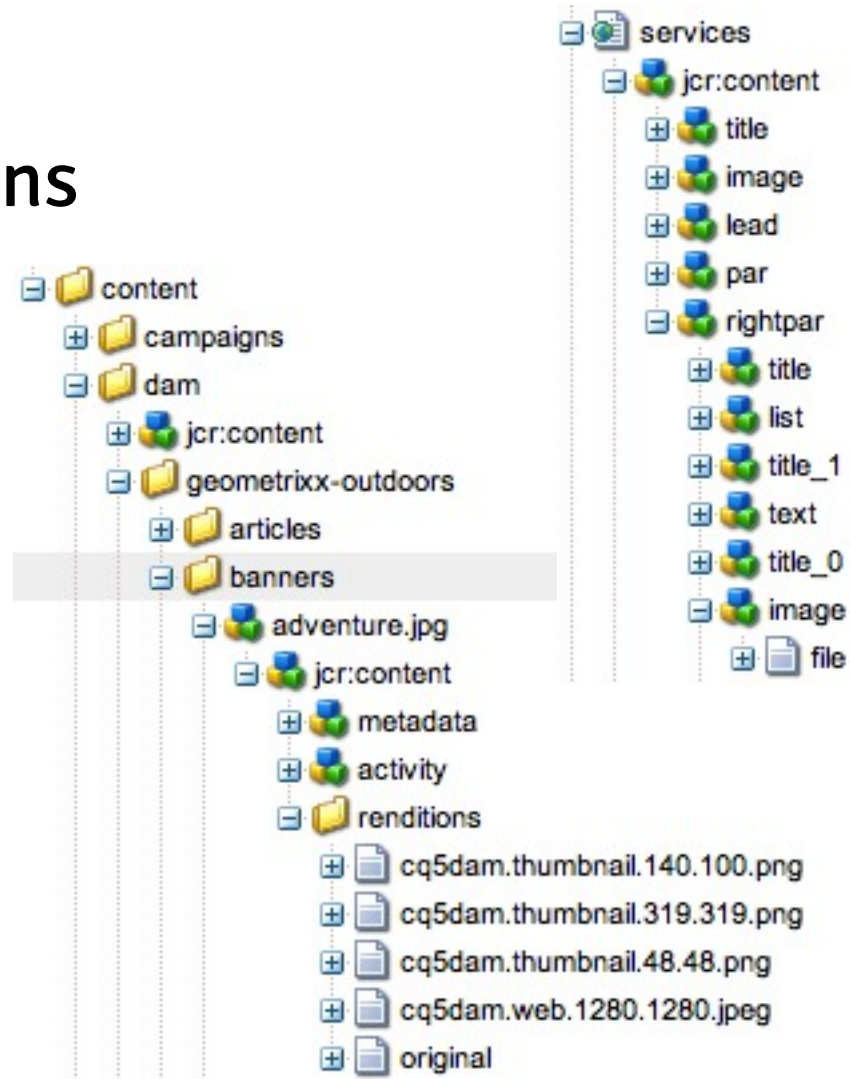
- **IDs necessary in RDBMS for relations**
  - Not required in JCR at all, see #5
- **Use a proper content hierarchy instead**
  - find node names for your content
  - greatly enhances explorability
  - `/mails/38956` **VS.** `/mails/2008/08/14/happy_birthday`
- **Naming**
  - title of the object
  - hierarchy: categories, dates, letter-groups

Date based structures

- **If nothing works, dates work**
  - `.../2012/09/26/...`

- **Samples**
  - Calendar
  - Blog
  - `/var/statistics/queries`
  - `~/activities/foo/2012/09/12/...`

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Thank You!

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