Cocoon & WebDAV

Gianugo Rabellino, Matthew Langham

Cocoon GetTogether 2003

(pro-netics)
S&η netBank solutions

Agenda

- Introduction to WebDAV
- WebDAV in Cocoon
- Application Scenarios
- Q/A

OrixO the xml business alliance
the xml business alliance

WebDAV – Memory Lane

- Tim-Berners Lee's original vision of the Web was that of a collaborative readable and writable medium
- In 1990 a prototype Web editor/browser was introduced on the Next platform
  - "WorldWideWeb" (later "Nexus")
  - Could edit documents in the "file:" space
- But with the advent of NCSA Mosaic – "Publish/Browse" became the dominant model for the Web
- 1995/1996 Netscape Navigator Gold
  - Allowed editing and publishing pages to the Web
- 1996/1997
  - Microsoft Word 97, Lotus WordPro 97 etc. offer HTML editing and remote publishing

(pro-netics)

WebDAV – History

- An ad-hoc collection of people met at the WWW4 conference in 1995 and then at America Online in 1996
  - Extensions to the HTTP Protocol were needed
  - Now known as the WEBDAV working group
- March 20, 1997 – Internet Engineering Steering Group and IETF approve charter of the WebDAV working group
- RFC 2518 – HTTP Extensions for Distributed Authoring – WebDAV
  - Note: No "Versioning" in the rfc
- Separate working groups for DASL, DELTA-V, Access Control

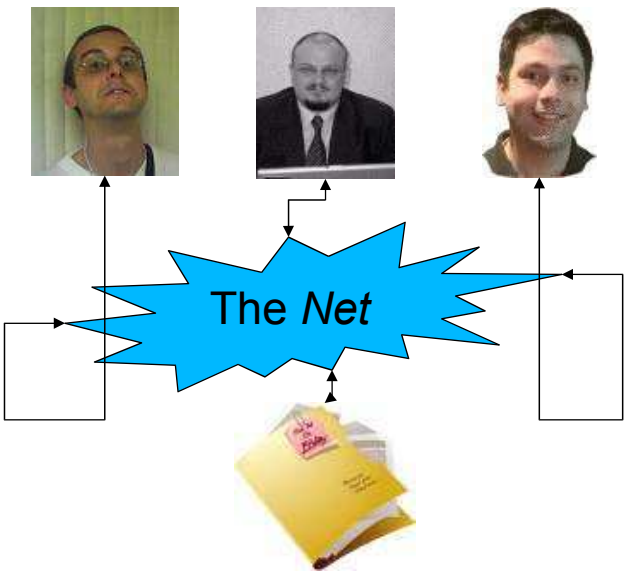
OrixO the xml business alliance

WebDAV – Mission

- "The World is a Folder"
- Allow collaborative authoring of all document types on the Web
- Metadata repository infrastructure
- A Web-based network file system
- A replacement protocol that can handle email, calendaring, directory lookup and more
  - e.g. Apple's iCal supports WebDAV publishing

(pro-netics)
S&η netBank solutions

WebDAV – Mission



Working together on the same document, wherever you are and whatever you use

OrixO the xml business alliance
the xml business alliance

Technical Benefits

- It's Simple !
- It's Extensible !
  - e.g. Using and extending document properties
- Ubiquitous HTTP infrastructure can be used
  - Authentication
  - Encryption
  - Firewall / Proxy navigation
- Allows pluggable data storage (stores)
  - RDBMS
  - XML Database
  - File-System
- Deployment in Internet or Intranet
- Tools available
- Large Know-How pool

(pro-netics)
S&N netBank solutions

Business Benefits

- Technical Infrastructure exists already
- Adding WebDAV support to products is economically possible
  - Components and Toolkits are available
- Build distributed infrastructures quickly and cost-efficiently
- Use as a base for CMS, Project collaboration, Document management etc.
- WebDAV Server provided as add-ons to existing RDBMS or XML Databases
- Investment protection
  - Easily change WebDAV server or data storage (in theory)
- Large number of servers and tools available

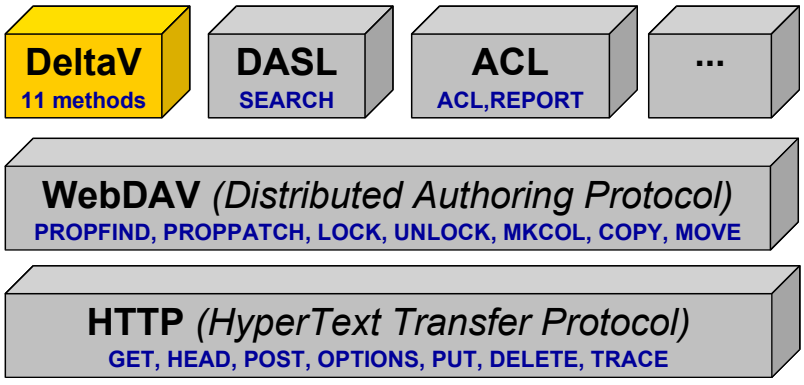
OrixO the xml business alliance
the xml business alliance

Functionality

- WebDAV Basic Functions
  - Locking
  - Metadata Management
  - Namespace Operations
- WebDAV DeltaV
  - Auto-Versioning
  - Checkout/Checkin
  - Version History
- WebDAV ACL
  - Access Control Management
- WebDAV DASL
  - Server-side searching
- A fast progressing standard

(pro-netics)

Functionality - Overview



OrixO the xml business alliance

WebDAV Servers

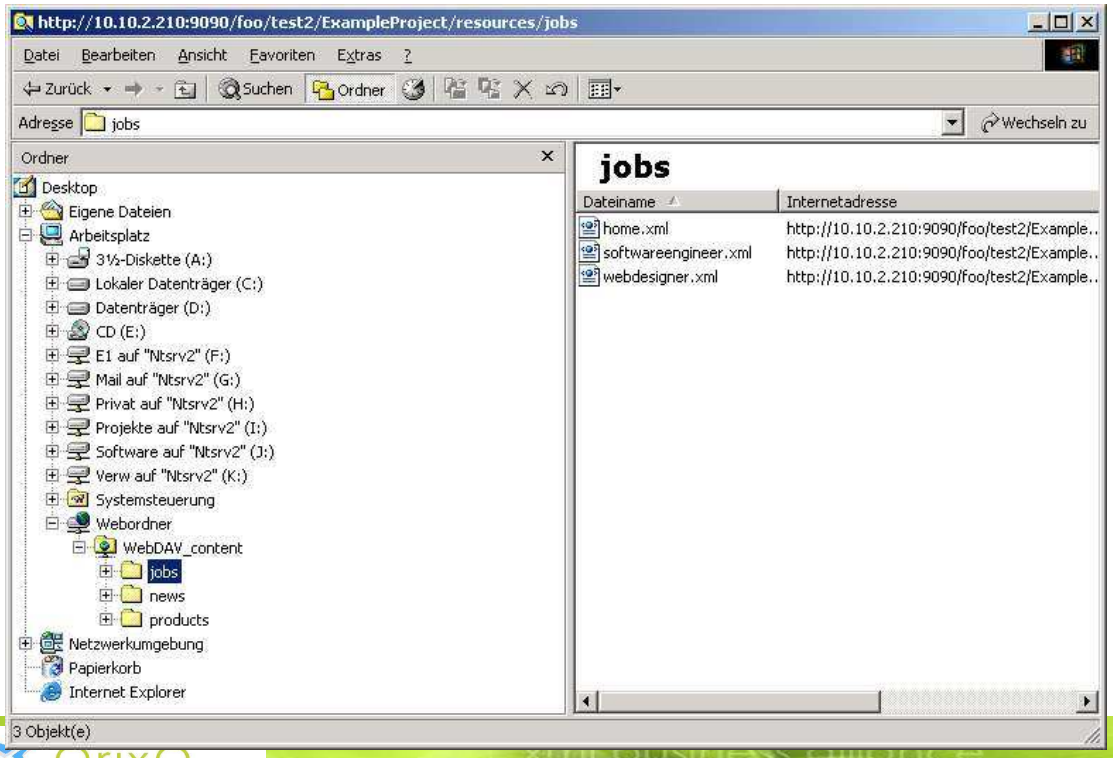
- Apache 2.0
- Catacomb
- Subversion
- Slide
- Tamino WebDAV Server
- Oracle Internet File System
- Microsoft
  - Internet Information Server
  - Exchange Server
  - Sharepoint Portal Server
- Xythos WebFile Server

(pro-netics)

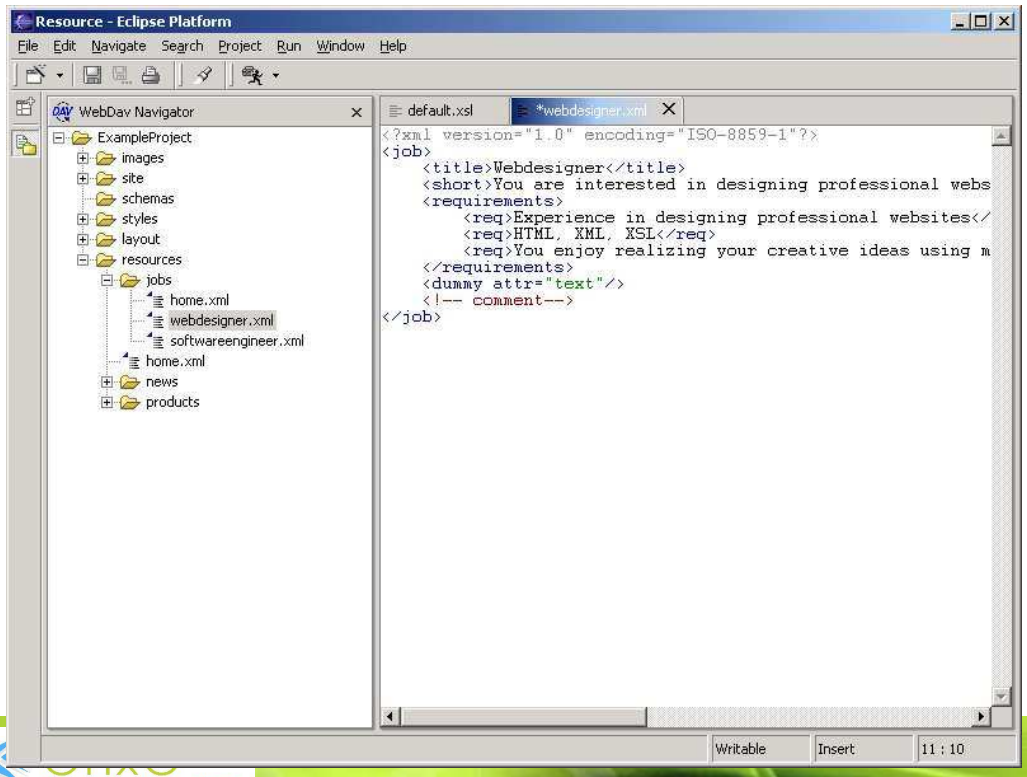
WebDAV Clients

- XML Spy
- XMetal
- Microsoft
  - Office
  - Windows Explorer
- Adobe
  - GoLive
  - Photoshop
- Macromedia Dreamweaver
- WebDrive
- WebDAVfs
- sunDance

OrixO the xml business alliance



(pro-netics)



OrixO the xml business alliance

Cocoon and WebDAV

(yet another) Dynamic Duo?

- (Networked) filesystem + metadata metaphore
- (Extensible) metadata expressed and exposed as XML
- (Revamped) HTTP + XML based protocol

(pro-netics)

WebDAV strong points

S&η netBank solutions

- HTTP based transport, plain HTTP can be intermixed (GET still works)
- Rich semantics for metadata
- Easy to use for easy tasks
- Ubiquitous and cross platform

OrixO the xml business alliance

the xml business alliance

(pro-netics)

WebDAV weak points

S&η netBank solutions

- HTTP is not used a pure transport
  - WebDAV directives are both in HTTP headers and payload (e.g. COPY method)
- No real support for real XML metadata (implementation issue)
- Difficult to use for difficult tasks
- Specs somehow unclear, too many extensions in draft phase (DeltaV, DASL, DAV ACL…)

OrixO the xml business alliance

the xml business alliance

WebDAV in Cocoon

- Support is included in the *webdav* block
- Can be used as
  - client (stable)
  - server (needs work)
  - proxy (unstable but promising)

PROPFIND example response

Dead property

```
<?xml version="1.0" encoding="utf-8"?>
<D:multistatus xmlns:D="DAV:">
  <D:response xmlns:ns3=http://cocoon.apache.org/cms/state/1.0>
    <D:href>/catacomb/test.xml</D:href>
    <D:propstat>
      <D:prop>
        <ns3:status>publish</ns3:status>
        <D:creationdate>2003-07-15T09:05:42Z</D:creationdate>
        <D:resourcetype/>
        <D:getcontentlength>26067</D:getcontentlength>
        <D:getcontenttype>text/xml</D:getcontenttype>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
  </D:response>
</D:multistatus>
```

WebDAV client components

- `WebDAVSource`: Avalon Source implementing all the Source subinterfaces (Traversable, Modifiable, Inspectable…)
- `SourcePropsWritingTransformer`: enables write access to resource properties
- `DASLTransformer`: performs DASL queries (think SQLTransformer)

WebDAV server components

- None needed, sitemap is enough! (well, almost…)
- The webdav block contains a dir2propfind.xsl to ease property handling
- Needs rework of Cocoon core to be effective (more on this later…)

WebDAV proxy components

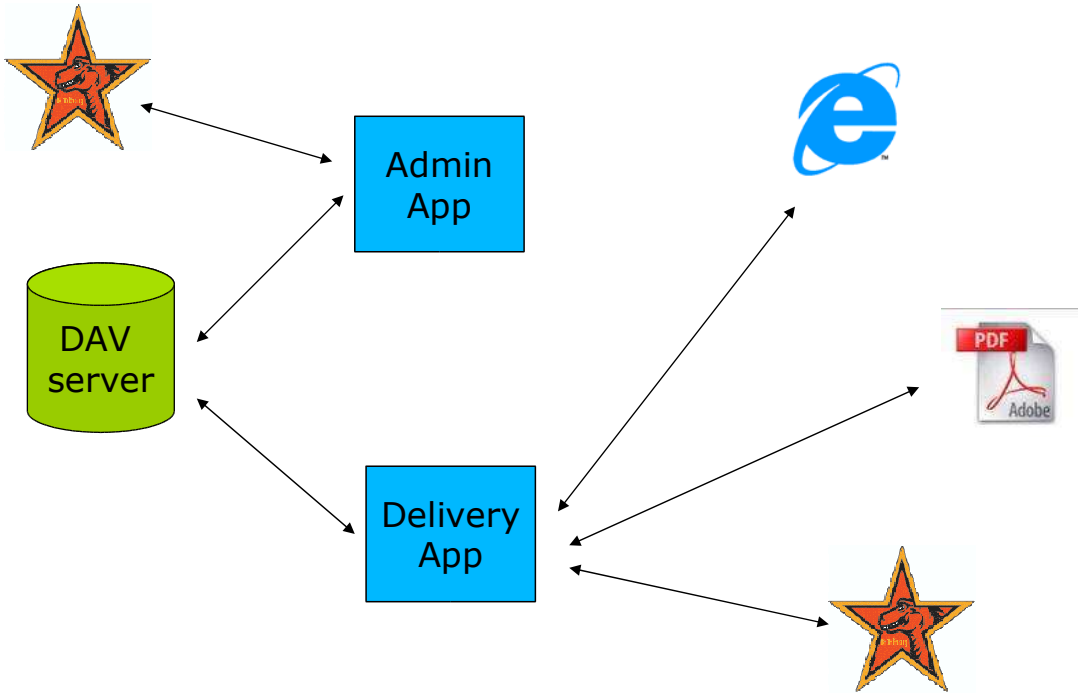
- Could be used to implement missing features on backend WebDAV servers (e.g. DASL)
- The proxy block contains a generic forwarding proxy, the rest is done via the sitemap
- Proxying is done at the Servlet API level (cloning the Request/Response objects)
- Very promising, but again needs core rework

Why a WebDAV proxy?

- Add virtual resources (e.g. a PDF view or resized images)
- Perform tasks upon WebDAV events (send an email when a file is changed)
- Provide easy, pluggable and effective authentication
- Mangle properties using simple Explorer-like file managers

(pro-netics)

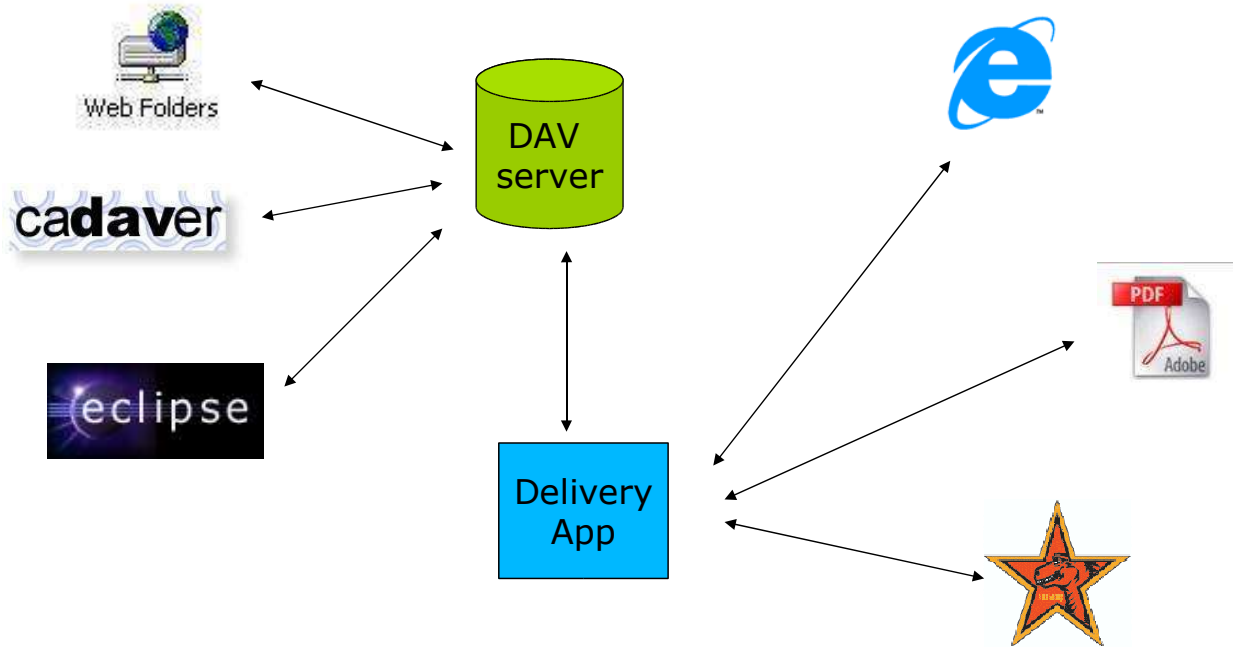
Cocoon/WebDAV architectures



OrixO the xml business alliance

(pro-netics)

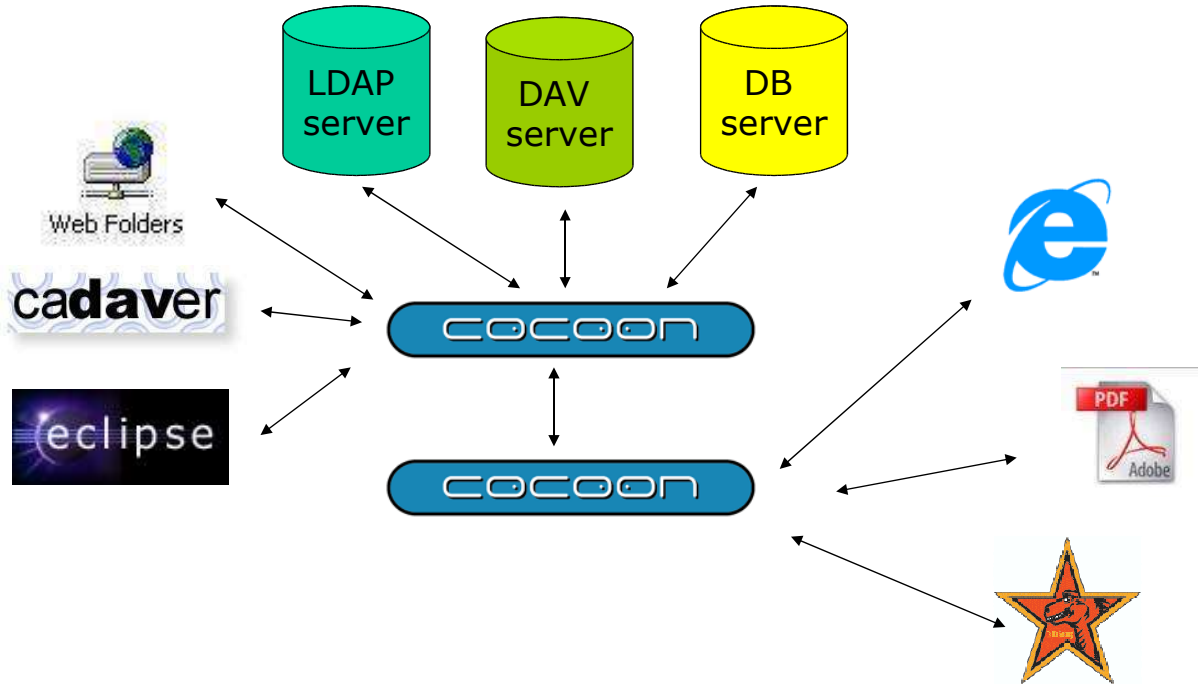
Cocoon/WebDAV architectures



OrixO the xml business alliance

(pro-netics)

Cocoon/WebDAV architectures



OrixO the xml business alliance

(pro-netics)

WebDAV/Cocoon dream list

- Cocoon needs much easier access to the request body (e.g. matchers, selectors, flow…)
- Is a different Environment enough?
- WebDAV proxying needs transaction support (e.g. for DASL)

OrixO the xml business alliance

Shameless plug

- Pro-netics is working on an enhanced Catacomb version supporting ODBC as the backend
- The final result (of course) will be Open Source

(pro-netics)

Links

- IETF WebDAV Working Group
  - http://ftp.ics.uci.edu/pub/ietf/webdav/
- RFC 2518 – HTTP Extensions for Distributed Authoring – WebDAV
  - http://ftp.ics.uci.edu/pub/ietf/webdav/protocol/rfc2518.txt

OrixO the xml business alliance