



VOSpace 2 and WebDAV

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VOSpace 2+ & WebDAV

- Motivation

- Two systems have broadly similar use case scopes - 'remote file system'
- Many existing WebDAV clients - every desktop OS has one bundled...
- VOSpace 1.0 not suitable for producing user client - learn from webdav
- Produce WebDAV client for NGAS.
 - NGAS <http://archive.eso.org/NGAST/> ESO bulk storage archive system.

WebDAV Standards

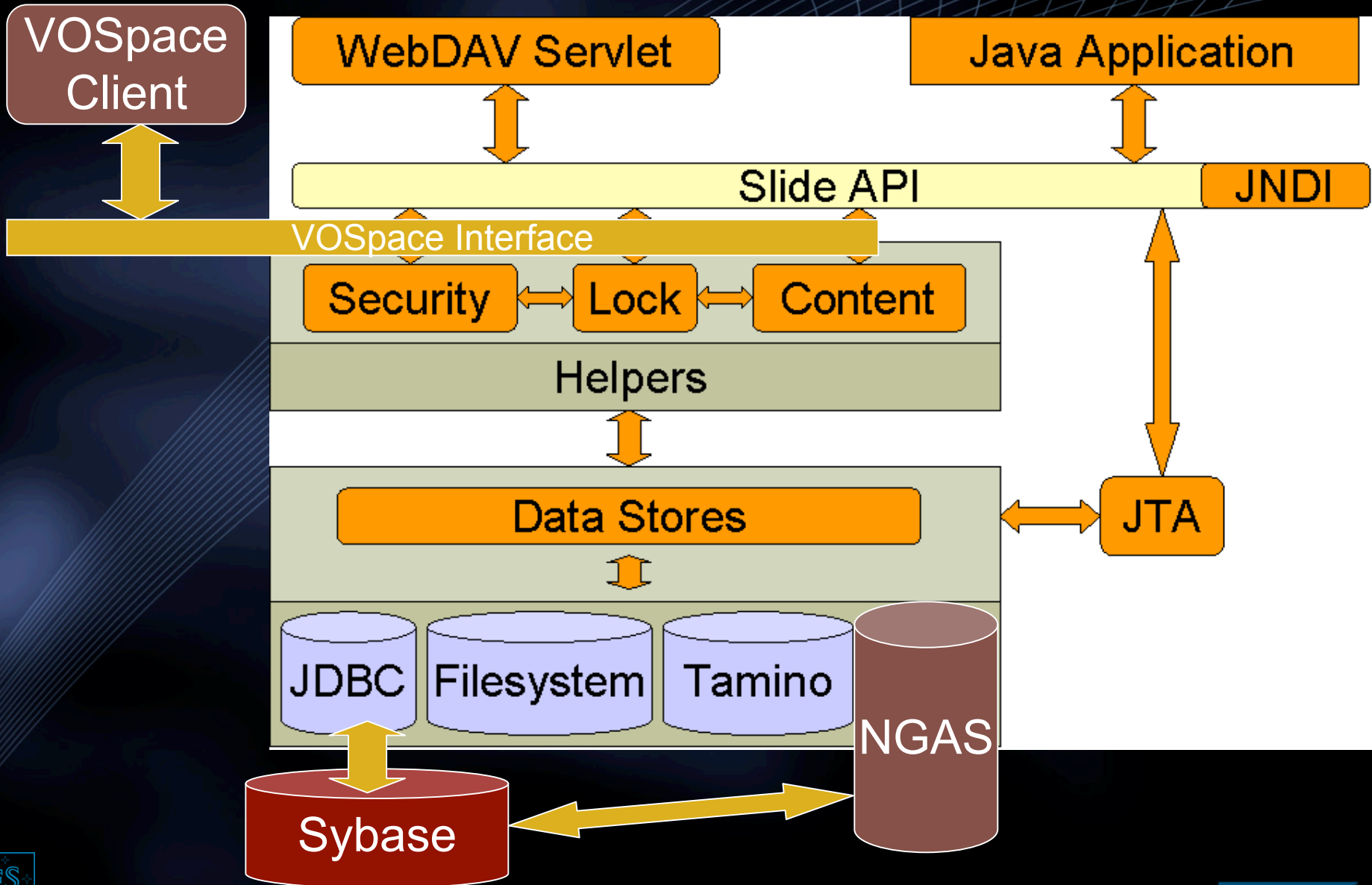
<http://www.webdav.org/specs/> have features that we have already said we want in VOSpace.

- Core is RFC 2518
 - Collections, locking.
- DAV Searching and Location (DASL)
- WebDAV bindings - VOSpace links
- RFC 3744 - ACL - authorization.
- The biggest piece of functionality that we (possibly) do not want is versioning (RFC 3253) - that is used in Subversion for instance.

Apache Slide

- Base the WebDAV implementation on Slide code <http://jakarta.apache.org/slide/>
 - implementation in Java as J2EE
 - Reasonably well layered
 - BUT perhaps Apache JackRabbit is better (JCR implementation)
- Extend by
 - Add NGAS as a ‘content store’
 - Implement a VOSpace 1.0 interface
- Common metadata stores for WebDAV, VOSpace and NGAS

System Architecture



Implementation

- NGAS WebDAV content store complete
- VOSpace interface only partially implemented.
- Components
 - Sybase - database for all metadata (NGAS, VOSpace and WebDAV) - unified where possible.
 - NGAS - content store
 - WebDAV/VOSpace front end running under Apache Tomcat

VOSpace/WebDAV Similarities and Differences

- Similar
 - Properties. URI key
 - Basic CRUD operations
- Different
 - Schema for messages different -
 - WebDAV actually has a DTD.
 - WebDAV property value is XML fragment.
 - WebDAV has many more verbs - e.g. MKCOL
 - WebDAV encodes some information in http headers
 - Authentication & Authorization

Lessons for VOspace

- WebDAV big standard - we can reuse many parts without having to go through the same pain again.
 - Webdav defines 'protocol'
 - Nothing about the internal organization of the resources is stipulated, just how they must appear to the outside world
- Despite having extensive standards, WebDAV not perfect.
 - There are some places that are open to interpretation.
 - all WebDAV clients not the same...
 - Many clients only implement the parts that fit with their OS filesystem model (usually no extensible metadata)

Possible VOspace futures

- Different clients
 - VOspace interface used mainly by machine clients - eg. In workflows
 - WebDAV used for user interface clients
- VOspace Unique Selling Points
 - vos: URI scheme - indirection service.
 - Multi-protocol asynchronous transfers.

VOSpace and REST

- Recent move towards REST by GridWG.
- Let's not invent our own - WebDAV is *the* archetypical REST protocol.
 - Make sure that VOSpace is at least a minimal WebDAV server.
- Perhaps we could engage the WebDAV standardization groups to add VOSpace features?
 - E.g. Teach WebDAV to suck... i.e. pull data to the server rather than only pushing data to the server

Future Development

- Will use this code to develop the VOSpace 1.1 service - so for NGAS there will be a VOSpace and a WebDAV interface.
- Use the implementation to inform the VOSpace 2+ standards