Universiteit Utrecht

Davrods

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Agenda

Profile of Utrecht University as a new Consortium member
The dawn of the Davrods project
Davrods architecture
Demonstration
Wrap up and Q&A

Utrecht University

Facts & Figures

FOUNDED IN
1636

7
FACULTIES

6.742
STAFF MEMBERS
48% 52%

115.000
ALUMNI
12.000

381
PROFESSORS
excl. faculty of Medicine

Nobel prize
12

Spinoza prize
15

550
PROMOTIONS

32%
international
PhD's

7573
PUBLICATIONS

Undergraduate programmes
45
6

Graduate programmes
142
87

Teacher programmes
21

30.342
STUDENTS
5.572
first-year students

SHANGHAI RANKING 2015

1
THE NETHERLANDS

17
EUROPE

56
WORLD

Utrecht University joins the iRODS consortium

iRODS is a key component of our Research IT strategy

- to manage the integrity of research data sets
- to collaborate on research data

By joining the iRODS consortium we expect to

- **support continued availability, maintenance and innovation of the software**
  - we recognize that the iRODS products need sustained funding
- **connect with iRODS development team and with other Consortium members**
  - learn from the experts, share our use cases and best practices
- **understand, anticipate and influence the product roadmap**

Dawn of the Davrods project

WebDAV support is crucial to our iRODS based services

- Supported standard: supported by most operating systems e.g. Mac OS X, Linux, Windows
- Connectivity: clients from other institutes can connect even from behind firewalls
- User experience: easy access to iRODS via an intuitive native interface
- Security: we can control the set of exposed iRODS API functions

We faced a showstopper challenge upgrading our services to iRODS4

- Existing webdav interface Webdavis proved incompatible with iRODS4
- Alternative software products not yet released for production purposes (Oct 2015)
- Needed to migrate to iRODS4 asap, ultimately by Q1 2016 (YOUth project)

-> We decided to develop and maintain a Webdav interface to iRODS: Davrods

Our Davrods design goals

- **Must support a variety of client platforms**
  - WebDAV Class 2 compliance needed
- **Performance must match that of Webdavis to maintain the user experience**
- **Must be available quickly**
  - Leverage existing technology where possible to shorten development time
- **Should support PAM authentication scheme**
  - PAM allows us to authenticate users from other institutes (federated authentication)
- **Should be managed and packaged as an open source product**
  - In line with our university's societal responsibilities

Davrods

Davrods architecture

- **Apache module**
  - built using Apache APR development toolset
  - built after the *mod_davfs* module, yet connects to iRODS instead of filesystem
  - extends mod_dav, compliant with WebDav class 2 (IETF RFC2518)
  - easy to configure

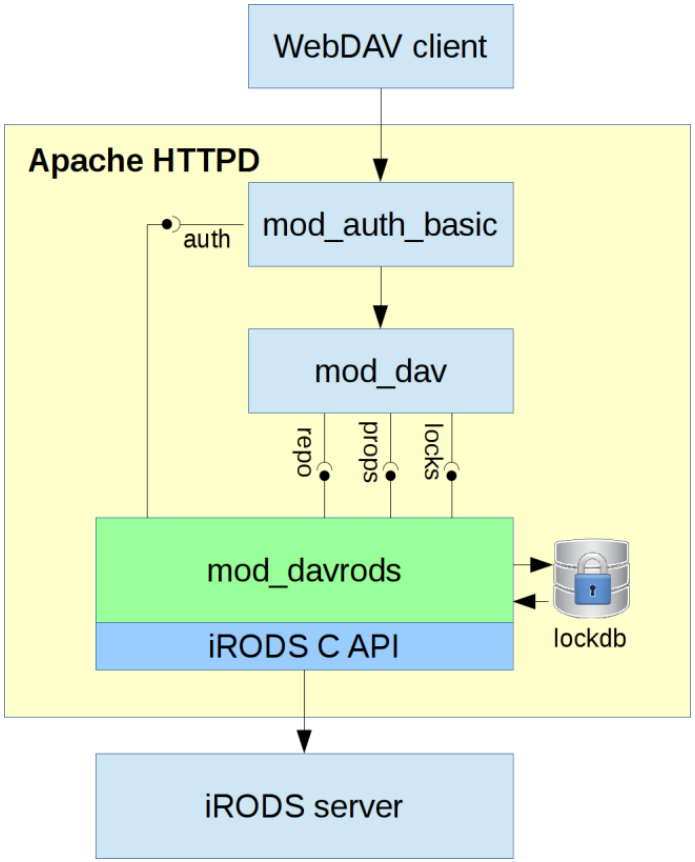
- **iRODS interface**
  - leverages iRODS consortium maintained C client library
  - PAM, iRODS 4.1+ compliant

Davrods architecture

Davrods = multiple Apache providers
- authentication via iRODS server
- DAV access to iRODS objects and iRODS system metadata

The iRODS connection lifetime is tied to the HTTP connection
- does not tie up iRODS agent
- supports multiple requests in a single connection (HTTP keepalive)

-> efficient communication

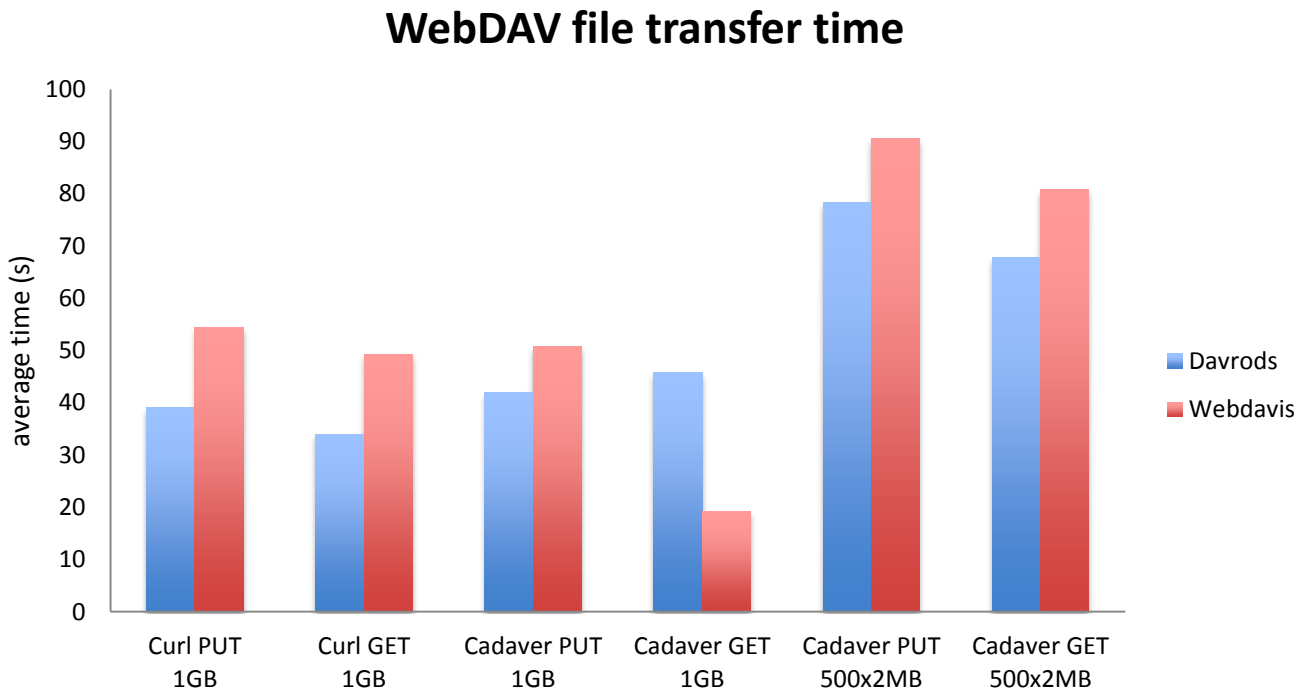


Davrods configuration using Apache directives

```
<Location />
    DirectoryIndex disabled
    Dav irods
    AuthType Basic
    AuthName DAV
    AuthBasicProvider irods
    Require valid-user
    DavRodsServer  irods.example.com 1247
    DavRodsZone    tempZone
    DavRodsAuthScheme       PAM
    DavRodsDefaultResource demoResc
    DavRodsExposedRoot      Home
</Location>
```

demo

Benchmark: Davrods outperforms Webdavis



Summary: Our Davrods design goals are nearly met!

✓ **Must support a variety of client platforms**
- WebDAV Class 2 compliance needed

✓ **Performance must match that of Webdavis to maintain the user experience**

✓ **Must be available quickly**
- Leverage existing technology where possible to shorten development time

✓ **Should support PAM authentication scheme**
- PAM allows us to authenticate users from other institutes (federated authentication)

- **Should be managed and packaged as an open source product**
  - In line with our university's societal responsibilities

Hence to finish off….. (end of June)

- We will package Davrods as open source (LGPL v3 license)
- and push source on github:

  https://github.com/UtrechtUniversity/Davrods
- Provide source and binary packages
  - Centos7 RPMs already built
  - Other packaging upon request, we consider a .deb package

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