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Oxford DAMS – Design for Longevity

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Design For Longevity

- Introduction to SERS/OULS
- DAMS Design Principles
- DAMS Architecture
- Projects

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Introduction to SERS/OULS

- Bodleian one of ~110 libraries
- 32 OULS Libraries
- 29 Non-OULS Libraries
- 46 College Libraries
- And a few others!

OULS

- 750 Staff
- £25M budget (€32)
- 11 million items
- 156 shelf miles (250 km)
- SERS provides all electronic services

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Core Services

- Library Management System
- Electronic Resources
  - 600 Bibliographic Databases, 40K Journals
- Digital Library
- Hybrid Library
  - Integrated discovery and delivery
  - Integration beyond library/institution
  - 365x24x7

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Digital Library

- Digital Asset Management System (DAMS)
  - Common infrastructure for DL applications
  - Legacy digitisation projects (~5TB)
  - 1M digital surrogates (~5TB)
  - “1M” Google Library Project (?TB)
  - Current digitisation programmes
  - Born-digital materials

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DAMS Design Principles

- The Theory...
  - Content centred design
  - Layered component architecture
  - Generics over specifics
  - Capability focus
- Hindsight is a wonderful thing...

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Content Centred Design

- “Librarian's View”
  - People change
    - Requirements & processes change
  - Buildings/containers change
    - Only the content persists
- User requirements/process modelling can only take us so far
  - End up as limitations

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Layered Component Architecture (1)

- Systems and standards change rapidly
- “Big bang” implementations are a bad fit
  - Infrequent, inflexible, failure-prone
- Loosely coupled components
  - Web services model a good fit
- Any component can be replaced
  - Design/select with a view to replacement
    - Few, simple, well-defined API's

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Layered Component Architecture (2)

- Multiple layers
  - Applications (Collections, Archives)
  - Tools (Indexing, Discovery, Scheduling)
  - Object Management
  - Storage
- Architecture requires discipline
  - Concise, simple, standardised API's

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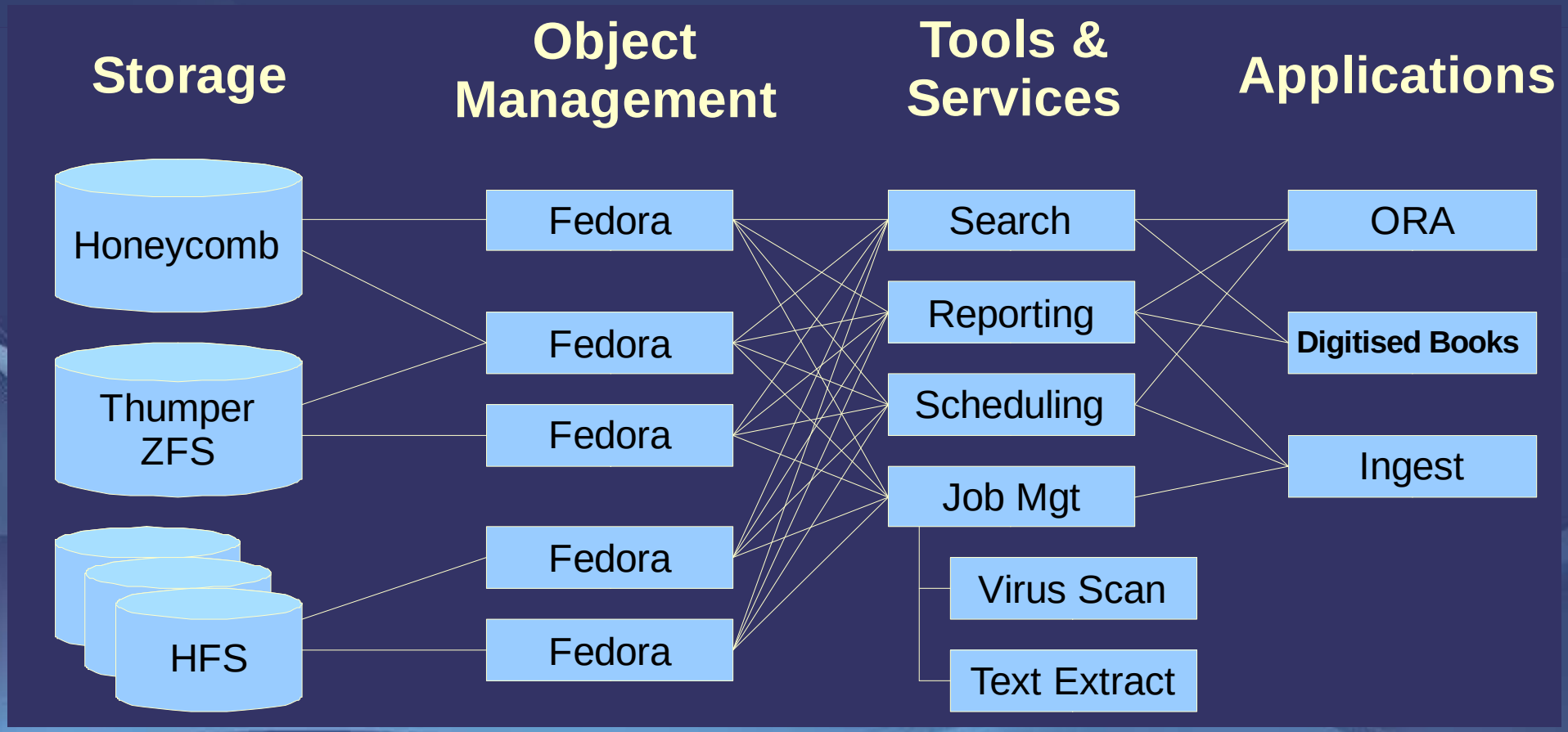
Layered Component Architecture (2)



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Generics over Specifics

- Identify generic operations in applications
  - Push into the tools layer
  - Simplifies future application development
  - Replacement can upgrade all applications
- A generic capability is much less likely to become obsolete than a specific one
  - Protects investment in development

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Capability Focus

- Every design decision should be reviewed...
  - What does it allow us to do?
  - What might it prevent us from doing that we will really regret later?
- Scalability will always be an issue
- Short workflows
  - Decouple actions as much as possible

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DAMS Architecture

- The practice...

Oxford University Research Archive
ora.ouls.ox.ac.uk

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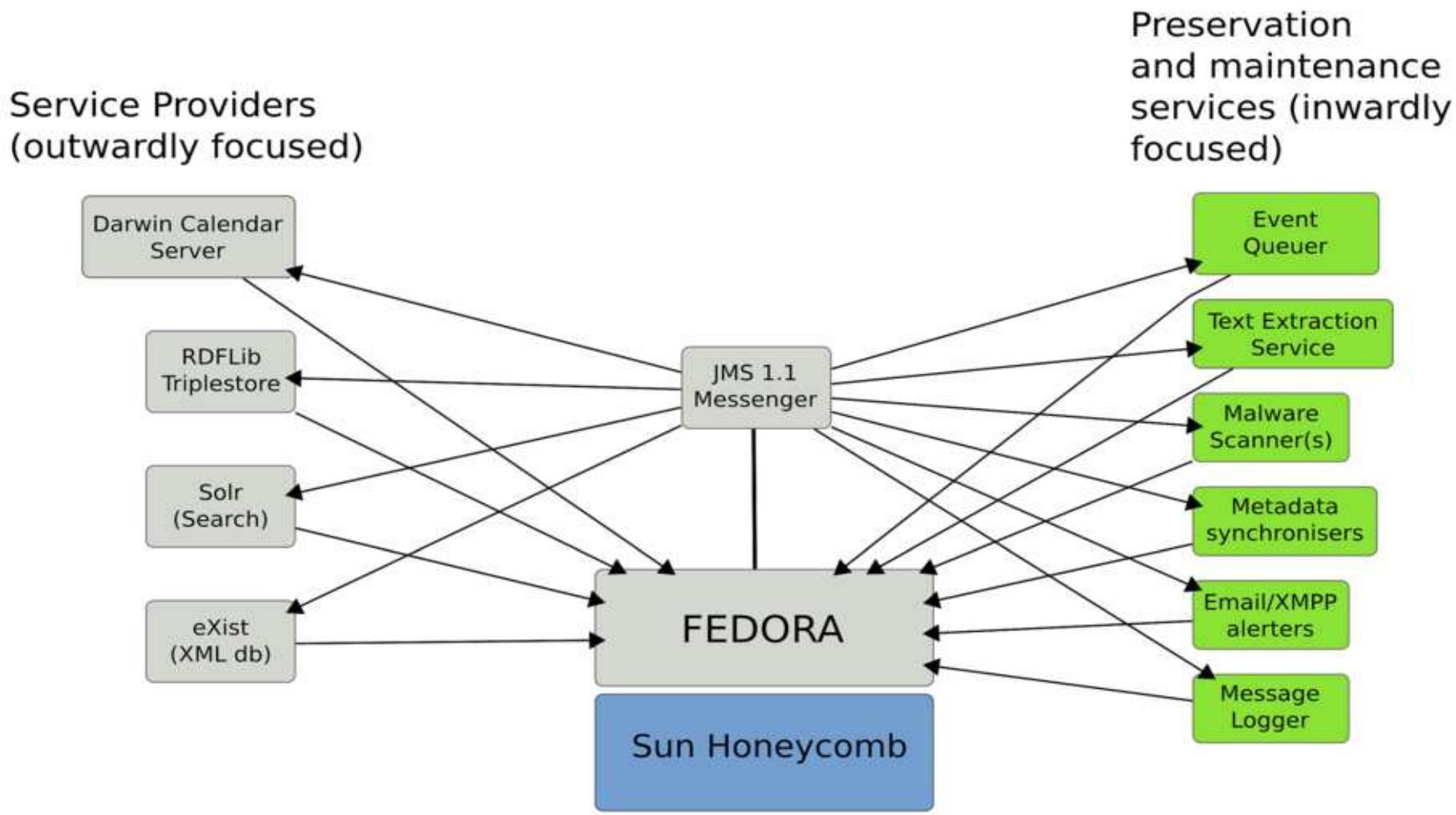
'Backend' systems - service provision view



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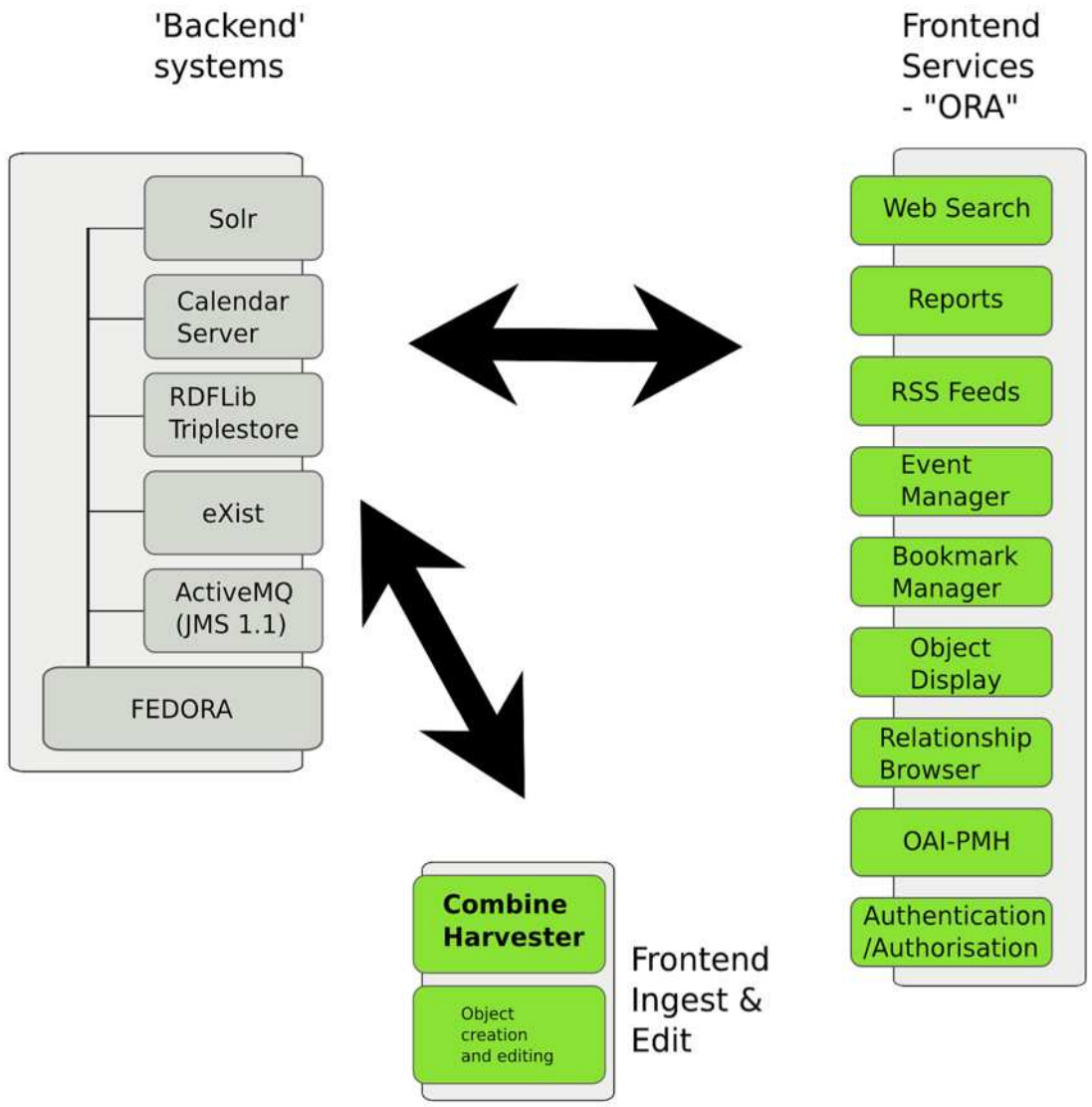
Frontend to Backend - service view



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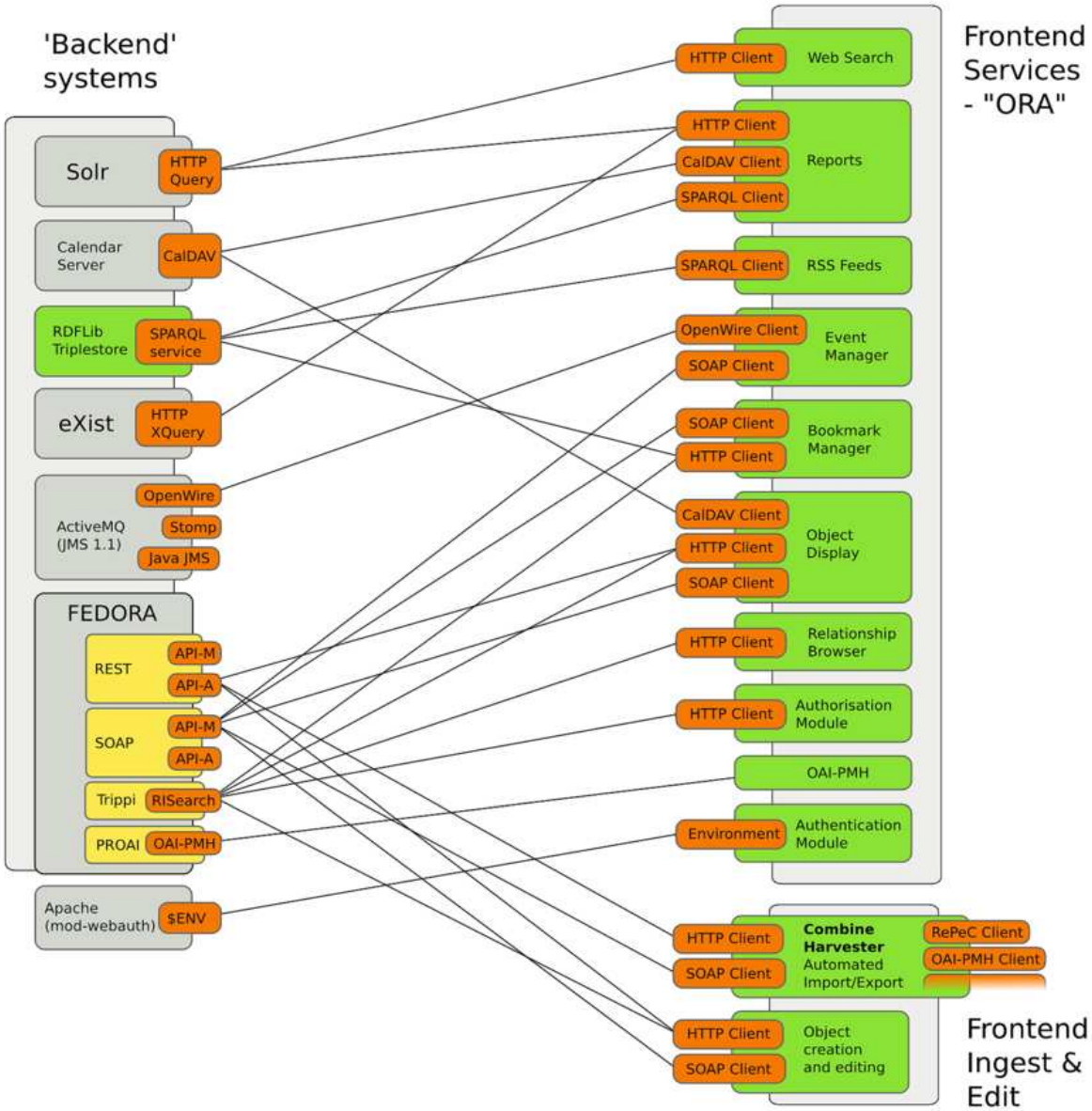
Frontend to Backend connections



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Example Design Decisions

- Fedora Commons (www.fedora-commons.org)
  - Flexible object/metadata model
- UUID's preferred over handles
  - Scalability, dependencies
- No OAIS/METS!
  - Longevity, efficiency, scalability
- Calendaring
  - Generic capability, additional benefits

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Projects Themes

- JISC has been a key driver in the UK
- Interoperability between systems
  - Systems integration
- Preservation
  - Maintain diversity
- Expand the scope of the repository
  - New content types

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Interoperability

- BID (Bridging the Interoperability Divide)
  - Oxford Research Archive (Fedora)
  - Virtual Learning Environment (Sakai)
  - Grid Datasets (SRB)
- DART Europe, NEEO, ETHOS
  - eTheses projects based on interoperability and information sharing
  - Different scopes and requirements

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Preservation

- PRESERV2
  - Southampton, The National Archive
  - Preservation tools/services for repositories
  - OR08 – Whole repository migration
- SHERPA DP2
  - Multiple UK Institutions and Arts and Humanities Data Service
  - Provision of outsourced preservation service

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Expansion

- DISC Datashare
  - Bringing datasets into repositories
  - Metadata standards
- PARADIGM/CAIRO
  - Complex objects, personal digital archives
  - Security and longevity are key
- Digitisation: Google, John Johnson...

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Questions

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Oxford Research Archive

ora.ouls.ox.ac.uk

Developer's Blog

oxfordrepo.blogspot.com

Google Code

look for: python fedora-commons