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The JISC's Shibboleth Programme

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Summary

- Athens

- Shibboleth

- JISC Core Middleware Programme

- Early adopter projects with NHS relationship

- The UK Federation & the Future of Athens

- Wider picture

- Challenges

- **Athens**

  - over 10 years old

  - solution to problem of multiple identities accessing multiple remote services

  - centralised authentication + authorisation

- **Technology plus infrastructure**

  - Help desk, local administrators etc

- **Very successful**

  - 500 HE/FE institutions; over 2 million usernames registered

  - "Ahead of its time"

- **Most service providers have provided an Athens compliant access mechanism**

  - Mandatory for recent supplier contracts with JISC

 - Approximately 200 licensed resources controlled via Athens

So, why change?

- Requires management of separate "Athens accounts"
    - Users must obtain separate Athens username password ("Classic Athens")
    - Have to remember Athens username/password – only used for remote services
    - AthensDA works more like Shibboleth (local id's used)
- Little take-up of Athens outside UK
    - though used in other sectors in the UK - eg Health service
- Service providers have to licence Athens - cost
- Centralised service – relatively high operational costs
- Not well suited to increasingly complex authorisation scenarios
- Meanwhile, other countries starting to adopt SAML/Shibboleth based technologies

Shibboleth – what is it?

- An **architecture** developed by the Internet2 middleware community

- NOT an <u>authentication</u> scheme (relies on home site infrastructure to do this)

- NOT an <u>authorisation</u> scheme (leaves this to the resource owner)

- BUT an open, standards-based protocol for securely transferring attributes between home site and resource site

- Term "Shibboleth" also used to refer to:

  - the **project** that has managed the development of the architecture and code

  - the **code package**, running on a variety of systems, that implements the architecture

- Excellent introductory material on SWITCHaai website

  - http://www.switch.ch/aai/

Shibboleth – how it works *(thanks to SWITCHaai!)*

Authenticate at home organisation (IdP)

Authorize at resource *without knowing user's identity (SP)*

JISC's Core Middleware Programme
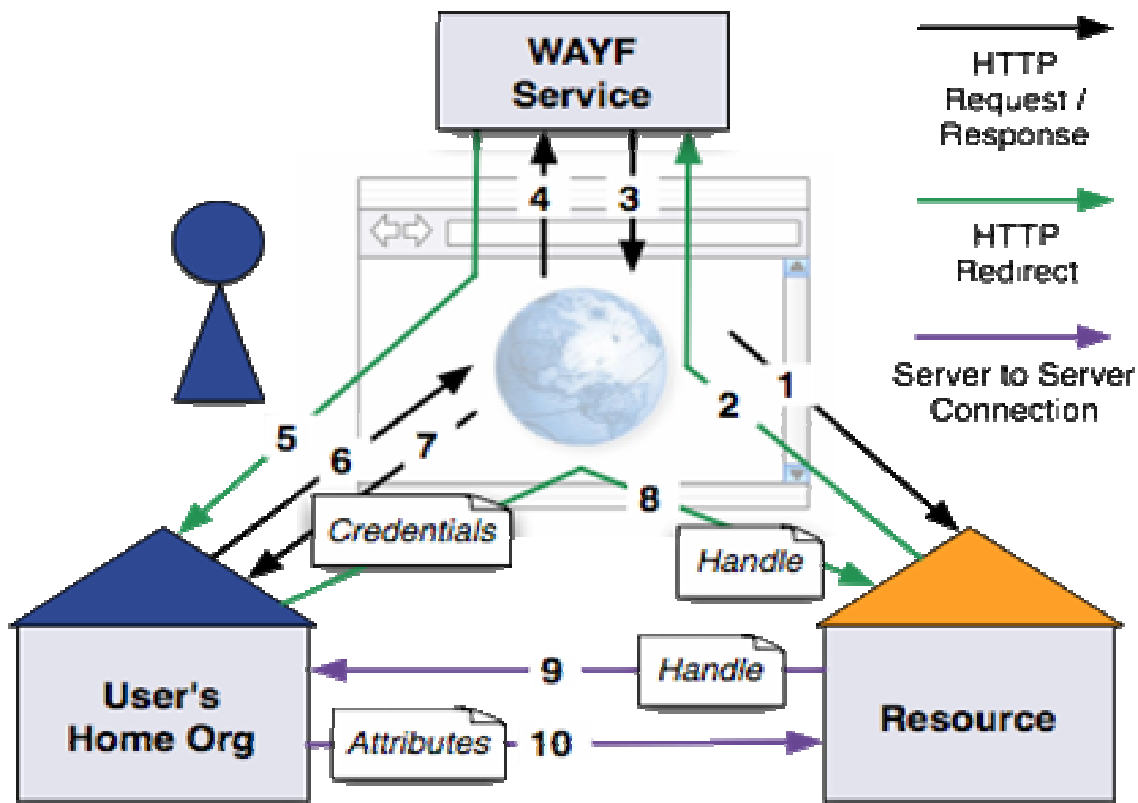
Programme :

- Commenced April 2004; two components:
  - Technology Development
  - Infrastructure

Aims:

- better understanding of middleware potential and application within HE and FE

- build a working Shibboleth infrastructure

- support take-up and use of Shibboleth within HE and FE

- ensure join-up across JISC development in relation to middleware

- More details online at
  - http://www.jisc.ac.uk/programme_middleware.html

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Projects

Development overview

Current projects

Completed projects

Current programmes

Completed programmes

Forthcoming programmes

Information for Project Staff (2004)

Core Middleware: Technology Development Programme

Core Middleware: Technology Development Programme

Supporting Information

The JISC is funding middleware developments under two programmes. Information on the Technology Development Programme can be found on this page. Details about the Core Middleware: Infrastructure Programme can be found **here**.

A definition of middleware can be found on the **Middleware Team** page, along with links to **supporting documentation** for the programmes. A **Roadmap** of the JISC Core Middleware programme is also now available which describes the latest timetable and future directions.

For an overview of Shibboleth within the context of the programme, there is a recent briefing paper called **'Shibboleth: Connecting People and Resources'** which contains useful information and links - this is available at: **http://www.jisc.ac.uk/index.cfm?name=pub_shibboleth** .

Core Middleware: Technology Development

The Core Middleware: Technology Development Programme runs between April 2004 – March 2007 andencompasses a wide range of activities; from the development and evaluation of tools leading to improved national middleware services, to institutional deployment and use of tools and policies. This development will draw on a range of experience gained from JISC development, including the **AAA Programme**, the **Shared Services Programme**, and the recently funded **Shared Services and Middleware Studies**.   Work in this area is also expected to contribute to the core **JISC Frameworks Programme**.

The work of the **AAA Programme** provided an audit of next generation access management technologies in order to inform the development plan for

Done   Internet

Core Middleware

Technology Development Programme
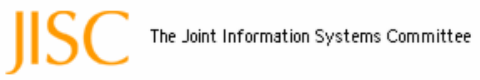
Technology Development

- Core Middleware: Technology Development Programme
  - April 2004 – March 2007

- Some of the technologies investigated:
  - PERMIS (Privilege and Role Management Infrastructure Standards)
  - RADIUS (Wireless Networking and Roaming)
  - SHIBBOLETH

- 15 Projects eg:
  - IAMSECT: Inter-institutional Authorisation Management to Support eLearning with reference to Clinical Teaching

- Supported By:
  - SDSS (Shibboleth Development & Support Services) - Edinburgh University
  - Studies & Expert reports (e.g. Single Sign-on)

Core Middleware

Infrastructure Programme

Address http://www.jisc.ac.uk/index.cfm?name=programme_cminfrastructure

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alternate versions**

Projects
**Development
overview**
Current projects
**Completed
projects**
**Current
programmes**
**Completed
programmes**
**Forthcoming
programmes**
**Information for
Project Staff
(2004)**

Core Middleware Infrastructure Programme

Core Middleware: Infrastructure Programme

As part of an award from the Comprehensive Spending Review, the JISC has launched a programme of work to improve the core middleware infrastructure within the UK. The programme includes the following components:

Early Adopter Programme

The JISC is funding a number of institutions to assist them in exploring the adoption of Shibboleth-based technologies. The original **call for proposals** is still available online.

The following proposals have been approved for funding under that call:

- ADAMS - Authentication & Delivery across Medical courses using Shibboleth - St George's Hospital Medical School.
- **ASMIMA** - Shibboleth protection for multiple resources including NHS material - Cardiff University.
- **Cheshire at University of Liverpool**: Implementing Shibboleth in a Metasearch Environment.
- East Midlands Shibboleth Support: Nottingham Trent University.
- **GILEAD** led by the University of Leeds.
- LSIP – Liverpool Shibboleth Implementation Programme, University of Liverpool.
- Metaleth - University of Bristol.
- **SAFARI** - Shibboleth Authentication for Access to the Resource Infrastructures of the UKDA.
- **SAPIR** – Shibboleth-enabled Access to Portals and Institutional Resources, University of Newcastle.
- The **ShibboLEAP** consortium of 6 London colleges: Birkbeck College, Imperial College, King's College London (KCL), Royal Holloway College, School of Oriental and African Studies (SOAS), University College London (UCL). The consortium is being overseen by the London School of Economics

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- Aim - establish a working UK Shibboleth infrastructure

- Government Comprehensive Spending Review funding

  - Additional funding to JISC's main annual budget

  - Approx £3.4m from Apr 2004 to Mar 2006

- Main work areas:

  - Making <u>Data Centre services</u> (MIMAS and EDINA) Shibboleth compliant

  - Funding for organisations willing to be <u>early Shibboleth adopters</u>

  - Creating a service to <u>assist</u> the early adopters

  - Creating <u>Athens/Shibboleth gateways</u>

  - Establishing a national UK <u>federation</u>

  - Liaising with <u>suppliers</u>: publishers, subscription agents etc

- Aim - most of UK HE & research community using Shibboleth by 2008

- Early Adopter Programme runs from March 2005 – December 2006

- Institutional Adopters (introducing Shibboleth at a university, FE college etc)
  - 12 projects from first call
  - 7 projects approved so far from second call (two more under review)
  - Funding up to £50,000 available per institution

- Distributed E-learning Regional Pilot projects
  - 9 of the projects funded to add Shibboleth capability
  - Up to £40,000 available

- 12 Institutional early adopter projects funded:

  – ShibboLEAP (consortium of 6 London University colleges plus LSE)

  – Leeds (GILEAD)

  – Nottingham (UNISA)

  – Nottingham Trent (East Midlands deployment)

  – UK Data Archive (SAFARI)

  – Newcastle (SAPIR)

  – Bristol (Metaleth)

  – Liverpool (LSIP)

  – Liverpool (Cheshire Project)

  – **Cardiff (ASMIMA)**

  – **Exeter (Project SWISh)**

  – **St George's Hospital Med Sch (ADAMS)**

- The following are including Shibboleth in their e-learning pilot projects:

  – University of Newcastle (EPICS)

  – University of Central England

  – University of Nottingham (RIPPLL)

  – Liverpool John Moores University

  – University of Staffordshire

  – Birkbeck, University of London (L4ALL)

  – University of Wolverhampton

  – University College Worcester

  – University of Essex (EERN) (Chimera)

Middleware Assisted Take-Up Service (MATU)

- Dedicated support service for early adopters

- Scoping future requirements for institutions adopting Shibboleth

- Support services include:

  - Comprehensive website

  - Documentation

  - Help desk

  - Onsite support

  - Training events

  - Links to, and information about, software

See: http://www.matu.ac.uk

SWISh – South West Implementation of Shibboleth

- Lead site – Exeter University (Library and IT Services)

- Partners:

  - Peninsula Medical School (PMS) – an Exeter University Dept

  - Peninsula Allied Health Collaboration (PAHS) – includes Devon & Cornwall NHS

  - Combined Universities in Cornwall (CUC)

- Aims:

  - Shibboleth Pilot service – members of all the above

  - Integration with the University portal

  - Investigate use of Shibboleth for other campus services eg the VLE and Library Management system

  - Investigate issues regarding federations and collaborative working in the South West

Project SWISh at the University of Exeter - Mozilla Firefox

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http://www.projects.ex.ac.uk/swish/   Go

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Shibboleth-Athens Gateway Success

On Tuesday 20th September the first Athens resources were accessed using Shibboleth. A demonstration WAYF URL is available and a set of test accounts can be used to verify the correct operation.

IdP with LDAP Success

At 11:00 on 22nd June the first login to the Exeter Shibboleth Identity Provider (IdP) was successfully authenticated against the Exeter LDAP service.

The **SWISh** (**S**outh **W**est **I**mplementation of **Sh**ibboleth) project was proposed by the University of Exeter in response to the JISC Circular 11/04: Core Middleware - Early Adopters, in which institutions were invited to become early adopters of the next generation of tools to manage access to online resources.

The project, a collaboration between the Library and I.T. Services, is being funded by the JISC to become an early adopter of Shibboleth technology - a possible replacement, in the future, for the ATHENS Devolved Authentication system currently in use at the University of Exeter.

Done

# Adoption of Shibboleth for Multiple Identity Management Applications

- Lead Institution – Cardiff University

  - 10,000 active Athens accounts

  - Strong connections with NHS Hospital of Wales

- Project plan includes workpackage: "*Access to Secure NHS Resources from Complex and Overlapping User Communities*"

  - Examine requirements for secure access to permitted resources by various classes of users, including remote undergraduate students, postgraduate students in training, clinical academic staff, and NHS staff with University contracts

  - Will seek participation from Cardiff & Vale NHS Trust in determining access to permitted resources on the University Network from the Trust Network and vice-versa

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Address http://www.cardiff.ac.uk/schoolsanddivisions/divisions/insrv/news/shibboleth.html Go Links Web assistant

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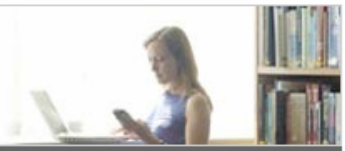
Information Services

Shibboleth Project

Shibboleth is an initiative to develop an open, standards-based solution to enable organisations to exchange information about their users in a secure, and privacy-preserving manner.

This information is commonly used to allow a user in one organisation, using their normal username and password, to access resources provided by another organisation.

For example, this includes enabling organisations to build single sign-on environments that allow their users to access web-based resources from a wide range of providers using a single login.

Information Services is currently managing a project looking at implementing Shibboleth at an early date.

The ASMIMA Project

The ASMIMA (Adoption of Shibboleth for Multiple Identity Management Applications) project will test the applicability of Shibboleth on a range of managed resource areas:

- an e-Science Application Target
- access to Secure NHS Resources from overlapping user communities
- improving upon the existing Cardiff methods, which require users to have separate Athens usernames and passwords, to validate access to online data

The information and expertise acquired will be made available to JISC for the benefit of all.

Project Aims and Objectives

Cardiff University is a major user of Identity Management (IDM) systems and is actively engaged in upgrading its IDM procedures. It is particularly appropriate for it to be an early adopter site leading the way for Shibboleth users elsewhere.

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- <u>Lead institution</u>: St George's Hospital Medical School

- Testing Shibboleth for provision of scalable authentication for secure delivery of core online medical teaching resources to any UK university/college

- <u>Current process</u> requires details of every student to be sent to St George's

- ADAMS will allow controlled access to targeted materials without burdensome administration

  - <u>Attribute release policies</u> will determine student's grade and thereby control access to appropriate level of resources (including sensitive medical materials)

- GPs have expressed interest in supplying materials to St George's

  - Currently achieved by giving local access to VLE

  - If Shibboleth adopted by NHS, possibility of tying local surgeries into a GP network

The UK HE & Research Federation

- A blueprint for a UK Federation put out for consultation over the summer
  - Comments received embedded in report considered by CMAB in September
  - CMAB – Core Middleware Advisory Board
  - Report endorsed by CMAB
- UKERNA asked to submit proposal to operate the UK Federation
  - Submission due end-November
  - Puts UK in line with other NRENs
- A support service will be required
  - Likely to go to tender
- Full UK Federation in production no later than July 2006
  - Meanwhile projects will use SDSS test federation

- Athens contract with JISC due for renewal 2006

  – Likely to be renewed for further 2 years (but possible conditions)

  – Expectation that support will diminish/stop after that

- Athens will also be operating two gateways

  – Enable Shibboleth/Athens interoperability

- Gateway 1

  – Shibboleth Identity Provider - IdP (Origin) > Athens Service Provider – SP (Target)

  – In production now

- Gateway 2

  – Athens IdP > Shibboleth SP

  – Available for testing now

  – Production version by end 2005

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- **Countries with established Shibboleth federations**
  - US (InCommon), Switzerland (SWITCHaai), Finland (HAKA)

- **Countries actively investigating Shibboleth (or using compatible technologies)**
  - Netherlands, Spain, Germany, Norway, Australia/New Zealand
  - US Federal Government also investigating Shibboleth

- **Inter-federation working subject of international Cotswolds Meeting**
  - Held in Upper Slaughter, Gloucestershire 12 months ago
  - Sponsored by JISC

- **Issues now being taken forward by REFEDS group**
  - REFEDS = Research & Education Federations
  - JISC an active member

- **BECTA have announced adoption of Shibboleth by UK school sector**
  - Will liaise with JISC to ensure interoperability

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- Suppliers (eg publishers) need to be persuaded to adopt the technology
  - May be "pushing at open doors"; some (eg Elsevier) taking the initiative

- Cultural, organisational change
  - Shifting functions from libraries to computing services

- Persuading institutions to move from Athens to Shibboleth
  - Resistance to change
  - Short term cost for long term gain
  - Letter to VCs, Heads of Libraries, IT Departments by end of Nov/early Dec

- Early adopter experiences will encourage other institutions
  - Strong interest in second call for early adopters – 18 bids

- Educating the community on the advantages of a Shibboleth regime
  - Examples: more flexible subscription models; fine control of courseware access

Further Information

- JISC web pages –
  http://www.jisc.ac.uk/programme_middleware.html

- Internet2
  http://shibboleth.internet2.edu

- Athens
  http://www.athensams.net/shibboleth

- BECTA
  http://www.becta.org.uk

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