Shibboleth Authentication & Blackboard: Would we recommend it yet?

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Durham University

UNIVERSITY OF NEWCASTLE UPON TYNE

Talk Outline

- What is Shibboleth?
- The IAMSECT project
- Blackboard Authentication methods
- Setting up Shibboleth
- Getting Blackboard talking
- Highlights and lowlights (bad perms)
- Current issues
- Recommendations

What is Shibboleth

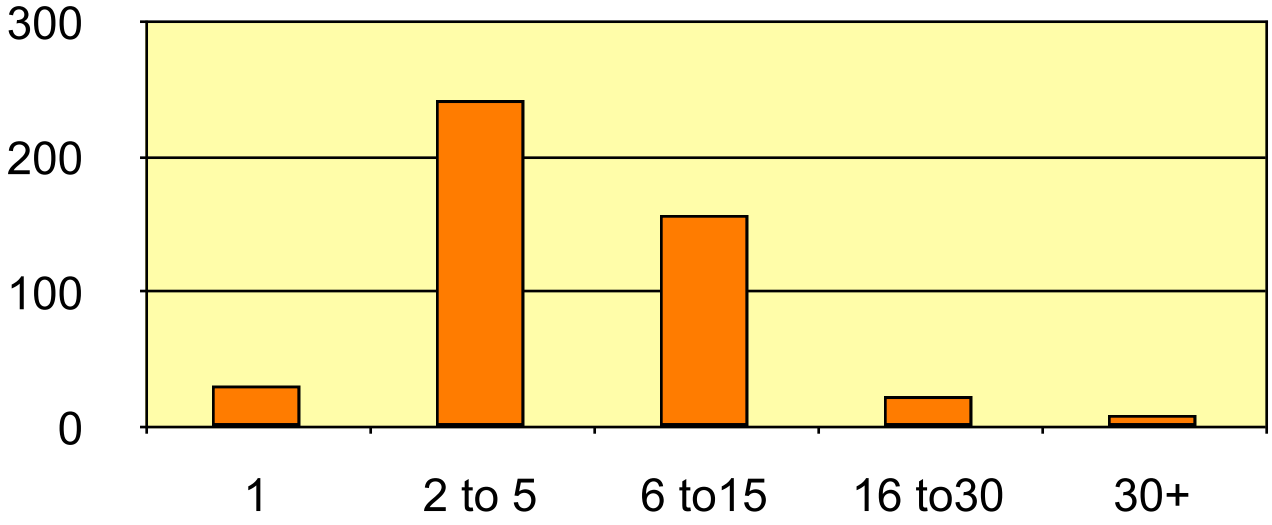
When you want to share secured online services or access restricted digital content, the Shibboleth system offers a powerful, scalable, and easy-to-use solution. It leverages campus identity and access management infrastructures to authenticate individuals and then sends information about them to the resource site, enabling the resource provider to make an informed authorization decision.

For example, when a student requests access to a protected video clip, her home organization requests her to authenticate (if she has not done so already) and then passes on the information that she is enrolled in Biology 562 to the site housing the video. The video provider uses the fact that she is enrolled in this course to determine her eligibility to access the video.

Plain talking…

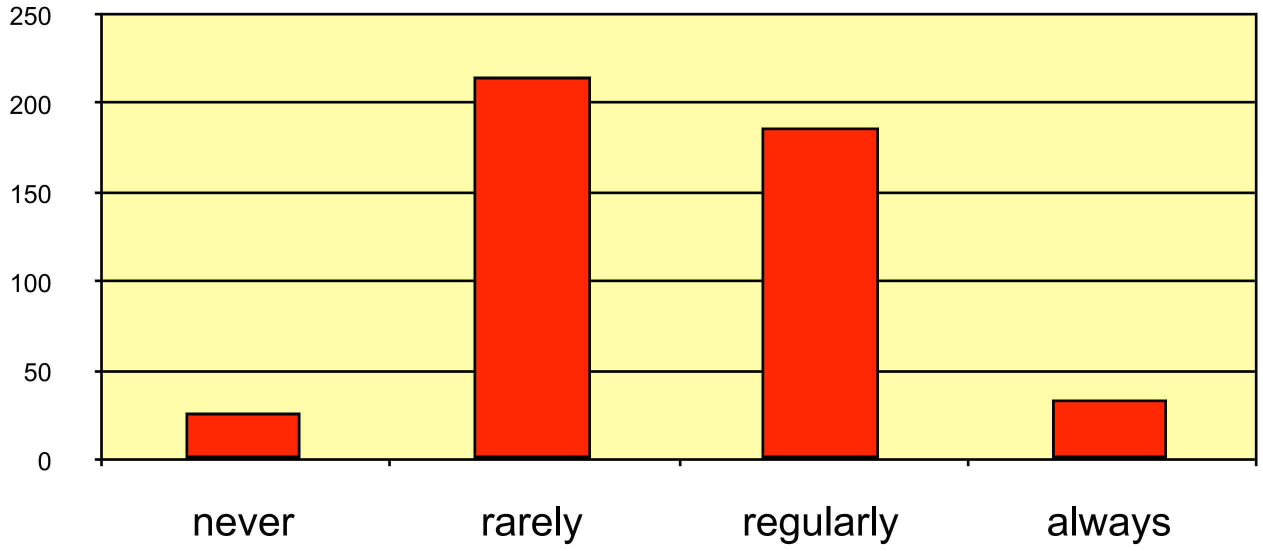
- Standard Federated Single Sign On (SSO) from American Universities via Internet2
- Based on SAML (Security Assertion Markup Language)
- Summary: Athens DA and Microsoft passport functionality combined with added privacy

Why SSO?



Source: IAMSECT Questionnaire 2005

Because…



The case for SSO

More secure

- Not repeatedly passing username and password

Easier for the end user

- Focus on the content
- Not how you can access it

Access Control

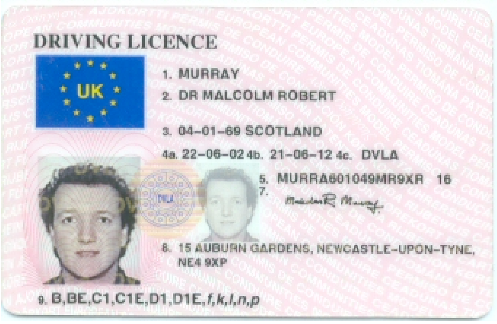
1. Authenticate
    - Pass
    - Fail

3. Authorisation
    - Based on some attribute (course membership)

Authentication & Authorisation

Authentication

- Knowing if someone is who they say they are



DRIVING LICENCE

UK

1. MURRAY
2. DR MALCOLM ROBERT
3. 04-01-69 SCOTLAND

4a. 22-06-02 4b. 21-06-12 4c. DVLA

5. MURRA601049MR9XR 16

7. Malcolm R Murray

8. 15 AUBURN GARDENS, NEWCASTLE-UPON-TYNE, NE4 9XP

9. B,BE,C1,C1E,D1,D1E,*f*,*k*,*l*,*n*,*p*

Authorisation

- Knowing if someone is allowed to use or do something

Shibboleth Concepts

WAYF

- Where are you from?
- Facilitates federated authentication

Origin Server

- Local Authentication
- Local Authorisation

User can control attribute release

- User anonymous externally
- Traceable internally

Target Server (Service)

- Grants access to resources (e.g. online journal)
- User Profile (persistent but externally anonymous ID)

Federation

- Shared Trust
- Legal Issues (Responsibility)
- Made up of multiple Origin and Target servers

Service/Target Request

Is the user authenticated

- has a valid cookie been set?

Is the user authorised for this service?

- request attribute data using the ticket

Show user their profile

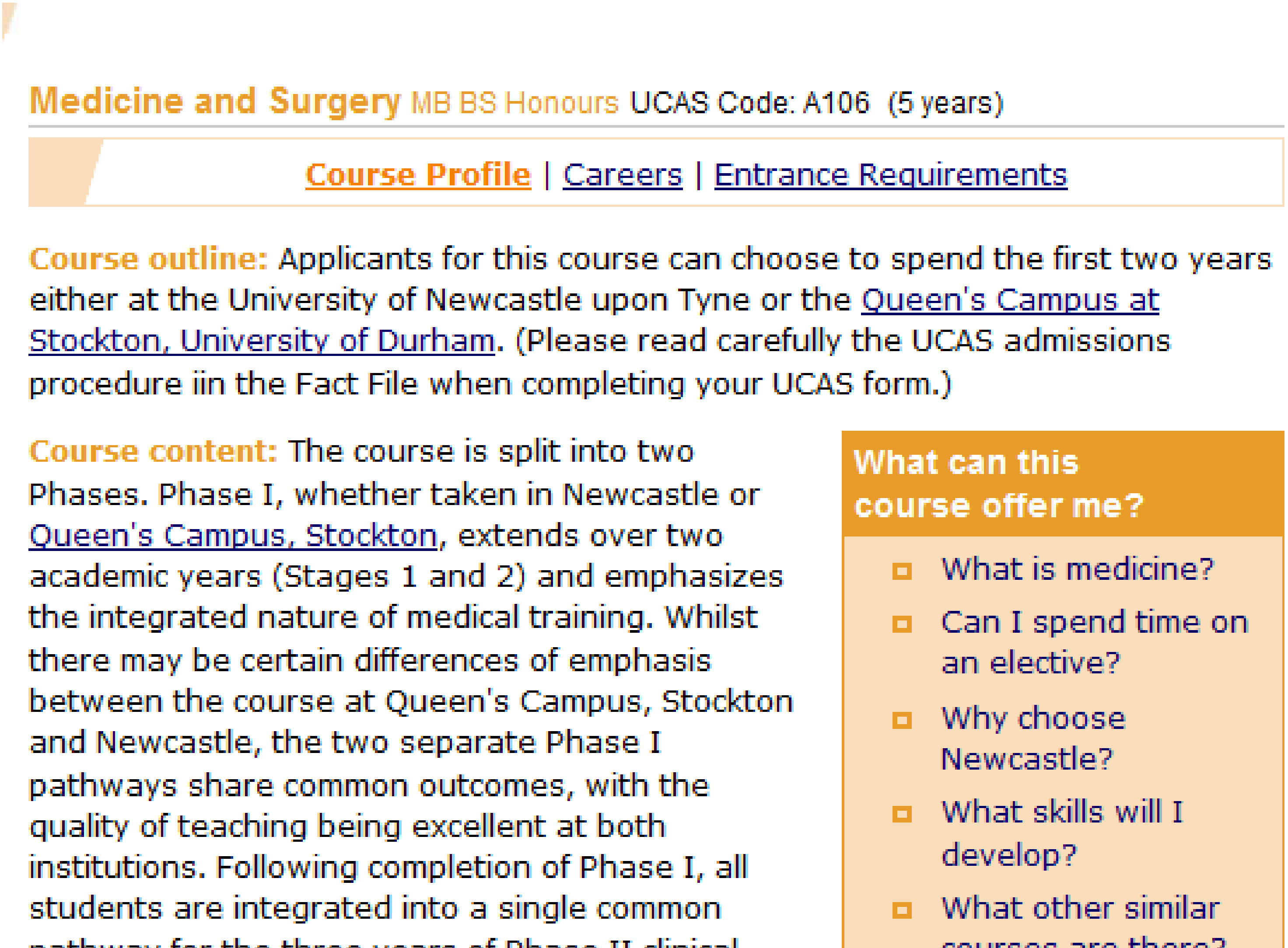
- request persistent but anonymous user ID

iamsect

Inter-institutional Authorisation Management to Support E-Learning with reference to Clinical Teaching

http://iamsect.ncl.ac.uk/

Target Users



Medicine and Surgery MB BS Honours UCAS Code: A106 (5 years)

Course Profile | Careers | Entrance Requirements

Course outline: Applicants for this course can choose to spend the first two years either at the University of Newcastle upon Tyne or the Queen's Campus at Stockton, University of Durham. (Please read carefully the UCAS admissions procedure iin the Fact File when completing your UCAS form.)

Course content: The course is split into two Phases. Phase I, whether taken in Newcastle or Queen's Campus, Stockton, extends over two academic years (Stages 1 and 2) and emphasizes the integrated nature of medical training. Whilst there may be certain differences of emphasis between the course at Queen's Campus, Stockton and Newcastle, the two separate Phase I pathways share common outcomes, with the quality of teaching being excellent at both institutions. Following completion of Phase I, all students are integrated into a single common pathway for the three years of Phase II clinical

What can this course offer me?

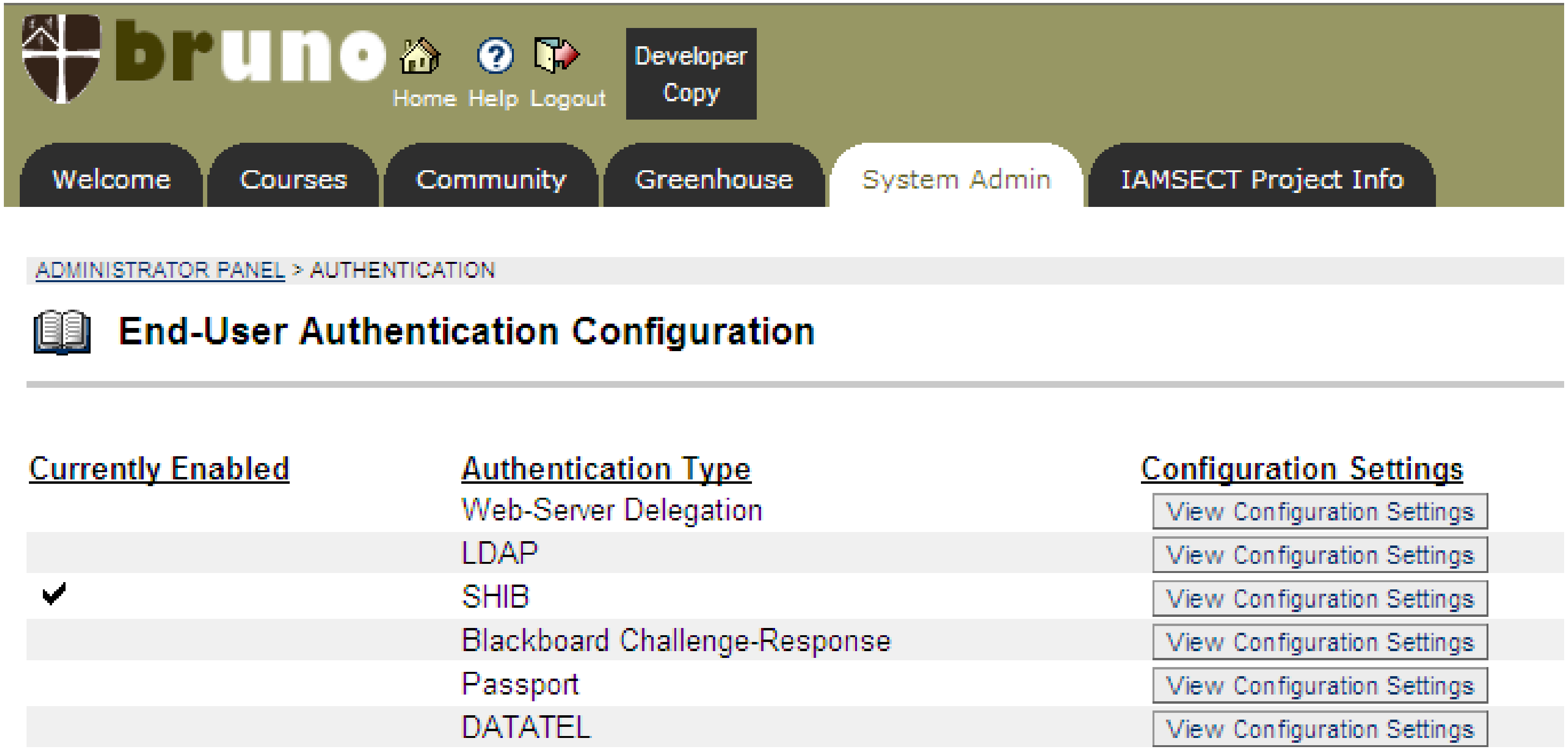
- What is medicine?
- Can I spend time on an elective?
- Why choose Newcastle?
- What skills will I develop?
- What other similar courses are there?

What we want

Shared Blackboard course

- Durham students authenticated by Durham
- Newcastle Students authenticated by Newcastle
- Students leave/fail – handled at source
- Library entitlements – reflect source institution

Blackboard Authentication



ADMINISTRATOR PANEL > AUTHENTICATION

End-User Authentication Configuration

Currently Enabled	Authentication Type	Configuration Settings
	Web-Server Delegation	View Configuration Settings
	LDAP	View Configuration Settings
✓	SHIB	View Configuration Settings
	Blackboard Challenge-Response	View Configuration Settings
	Passport	View Configuration Settings
	DATATEL	View Configuration Settings

Blackboard Authorisation

Only at simplest level – has this user an account?

Largely still the job of the Blackboard database, mapped to a user – not handled by Shibboleth

- System Role
- Institutional Roles
- Account Availability

- Course & Community Enrolments
- Course & Community Roles

Setting up Shibboleth

Origin Servers

- Authentication
- Authorisation

Targets

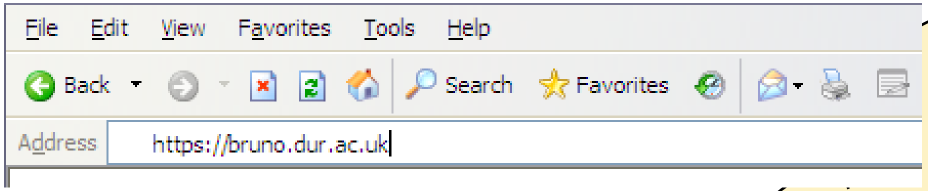
- Service Providers
- Internal
- External
- Blackboard Server

Join a Federation

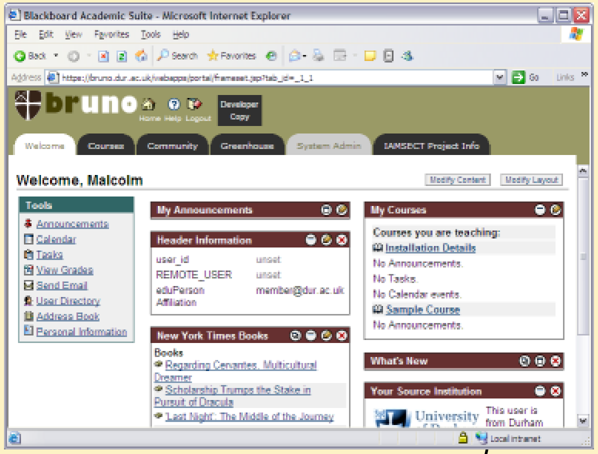
- **SDSS** – a development Federation based in Edinburgh

How it works

I attempt to access a service (Bb)



https://bruno.dur.ac.uk



https://bruno.dur.ac.uk/webapps/portal/frameset.jsp?tab_id=_1_1

Welcome, Malcolm

Tools
- Announcements
- Calendar
- Tasks
- View Grades
- Send Email
- User Directory
- Address Book
- Personal Information

My Announcements

Header Information

user_id	unset
REMOTE_USER	unset
eduPerson Affiliation	member@dur.ac.uk

New York Times Books

Books
- Regarding Cervantes, Multicultural Dreamer
- Scholarship Trumps the Stake in Pursuit of Dracula
- 'Last Night': The Middle of the Journey

My Courses

Courses you are teaching:
- Installation Details

No Announcements.

No Tasks.

No Calendar events.
- Sample Course

No Announcements.

What's New

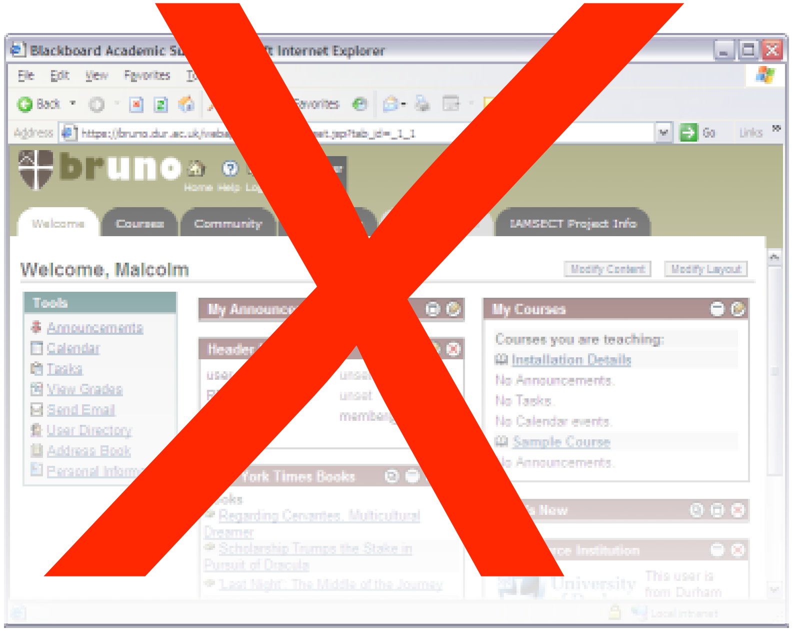
Your Source Institution

University of Durham This user is from Durham

How it works

Web browser checks for a cookie to see if I have already logged in…

If not Bb redirects me to our local Shibboleth Origin server, which sets a temporary cookie and ticket then displays a login page



Blackboard Academic Su… Internet Explorer

Address https://bruno.dur.ac.uk/webap… …et.jsp?tab_id=_1_1

Welcome, Malcolm

Courses you are teaching:

Installation Details

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Sample Course

No Announcements.

Regarding Cervantes, Multicultural Dreamer

Scholarship Trumps the Stake in Pursuit of Dracula

'Last Night': The Middle of the Journey

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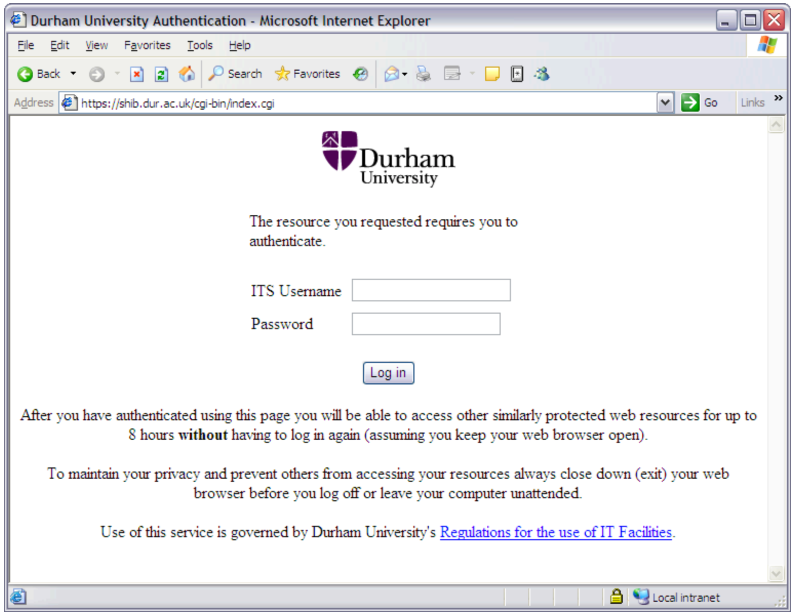


Durham University Authentication - Microsoft Internet Explorer

Address https://shib.dur.ac.uk/cgi-bin/index.cgi

The resource you requested requires you to authenticate.

ITS Username

Password

Log in

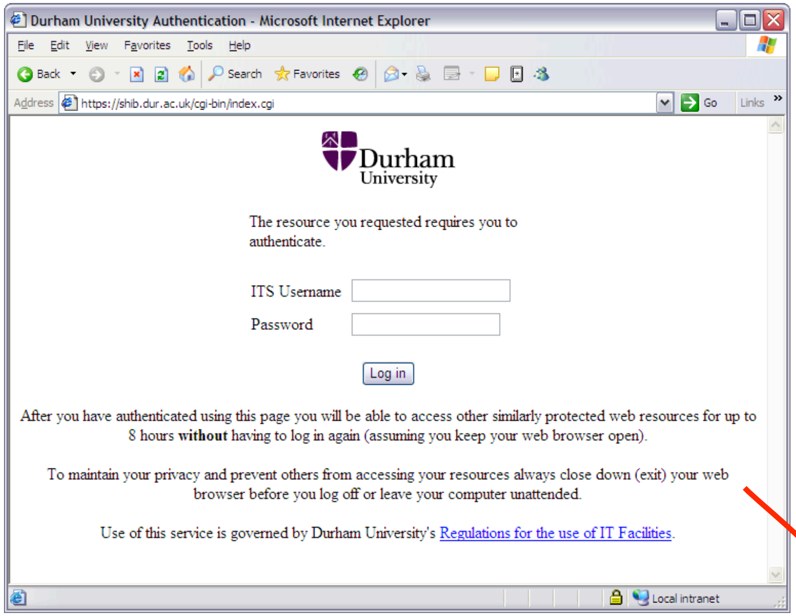
After you have authenticated using this page you will be able to access other similarly protected web resources for up to 8 hours **without** having to log in again (assuming you keep your web browser open).

To maintain your privacy and prevent others from accessing your resources always close down (exit) your web browser before you log off or leave your computer unattended.

Use of this service is governed by Durham University's Regulations for the use of IT Facilities.

How it works

Enter username and password - This checks my identity (e.g. against Active Directory)



Durham University Authentication - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address https://shib.dur.ac.uk/cgi-bin/index.cgi
Go Links
Local intranet

Durham University

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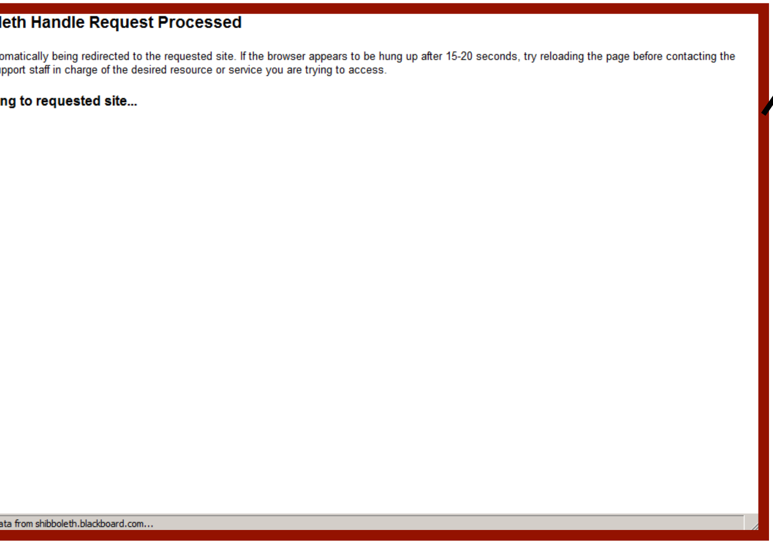
If I pass, it sets updates the cookie and redirects me to the original service I requested (Bb) with a new ticket

How it works

Blackboard uses the ticket to request a username attribute

Logs me in as this user – if it can…

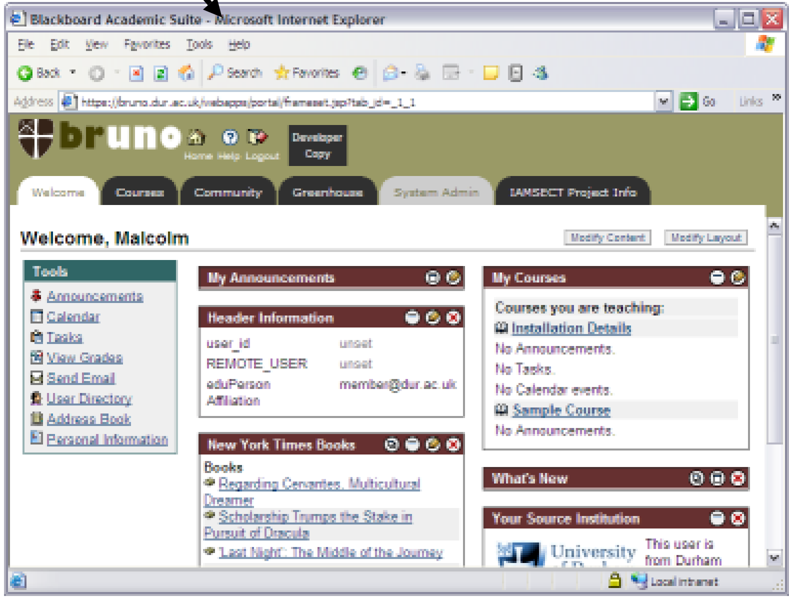


leth Handle Request Processed

omatically being redirected to the requested site. If the browser appears to be hung up after 15-20 seconds, try reloading the page before contacting the pport staff in charge of the desired resource or service you are trying to access.

ng to requested site...

ata from shibboleth.blackboard.com...



Blackboard Academic Suite - Microsoft Internet Explorer

https://bruno.dur.ac.uk/webapps/portal/frameset.jsp?tab_id=_1_1

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My Announcements

Header Information

user_id	unset
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Sample Course

No Announcements.

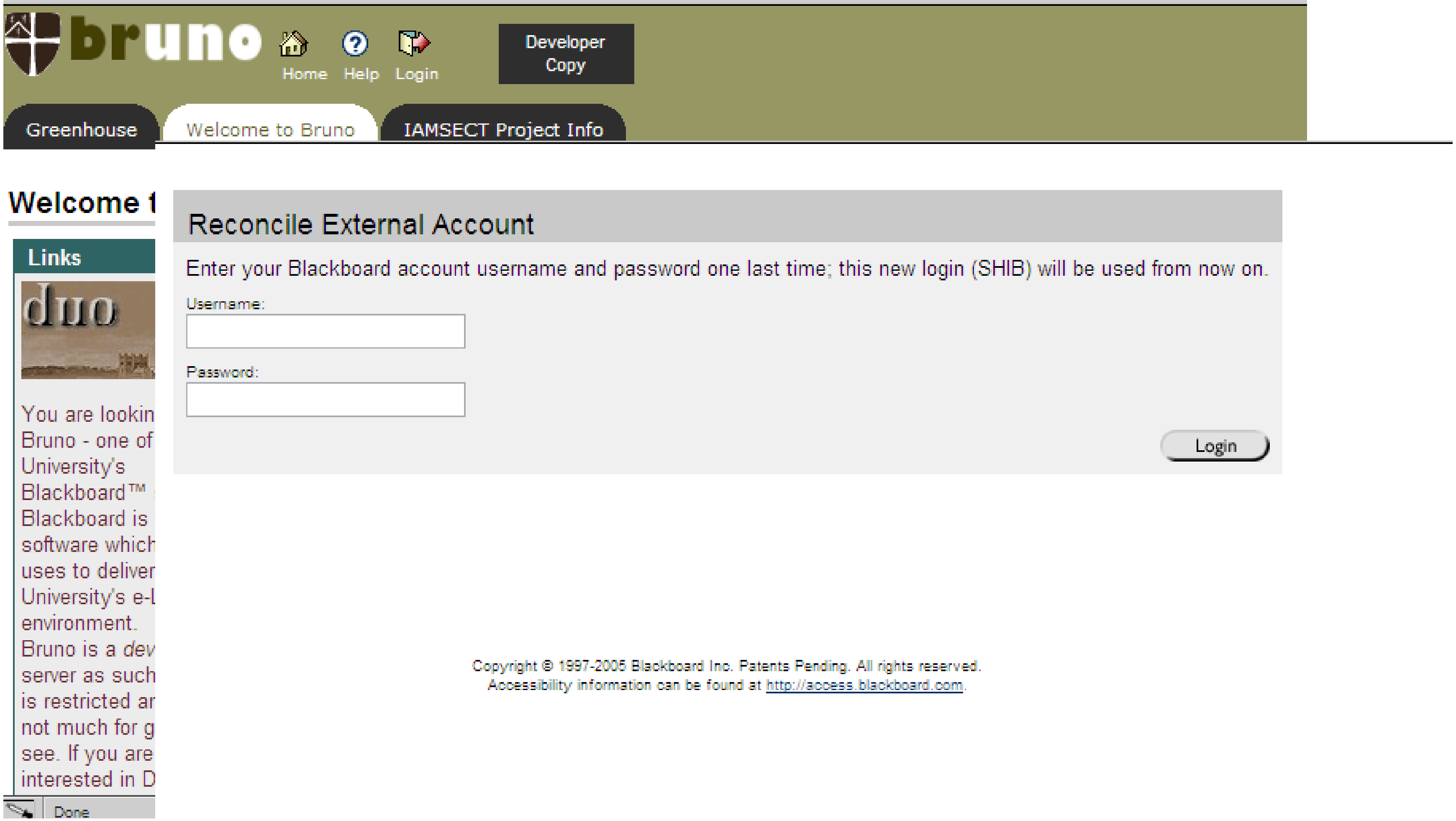
What's New

Your Source Institution

University

This user is from Durham

If it can't…



You are lookin
Bruno - one of
University's
Blackboard™
Blackboard is
software which
uses to deliver
University's e-l
environment.
Bruno is a *dev*
server as such
is restricted ar
not much for g
see. If you are
interested in D

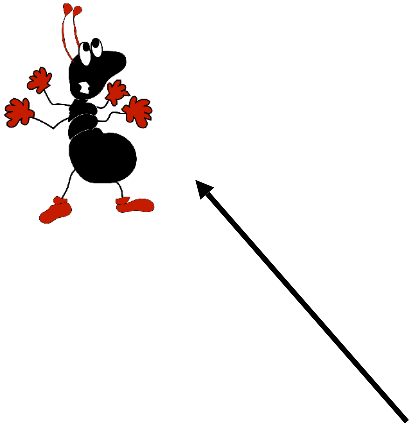
Reconcile External Account

Enter your Blackboard account username and password one last time; this new login (SHIB) will be used from now on.

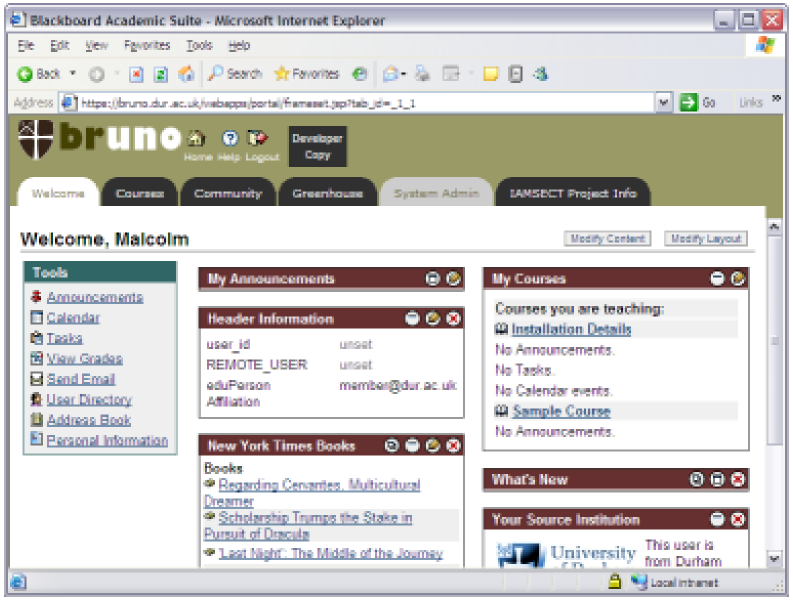
Username:

Password:

How it works



Browser has a cookie (authentication) and a ticket (authorisation) – used if the service needs to know more about me


Blackboard Academic Suite - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address https://bruno.dur.ac.uk/webapps/portal/frameset.jsp?tab_id=_1_1
Go Links
bruno
Home Help Logout
Developer Copy
Welcome Courses Community Greenhouse System Admin IAMSECT Project Info
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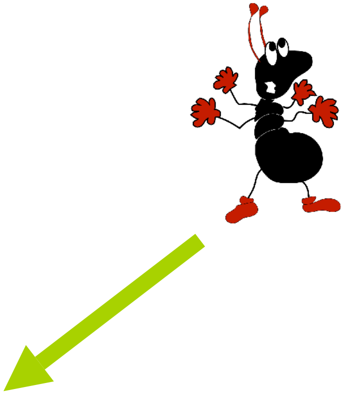
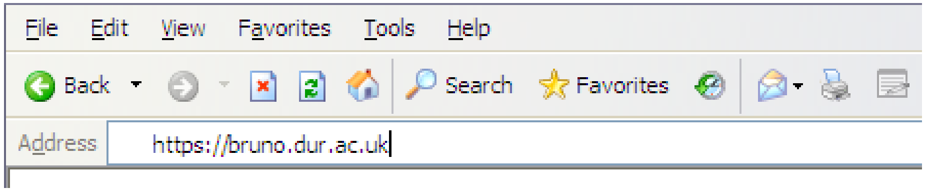
Live Demo

https://bruno.dur.ac.uk

How I want it to work

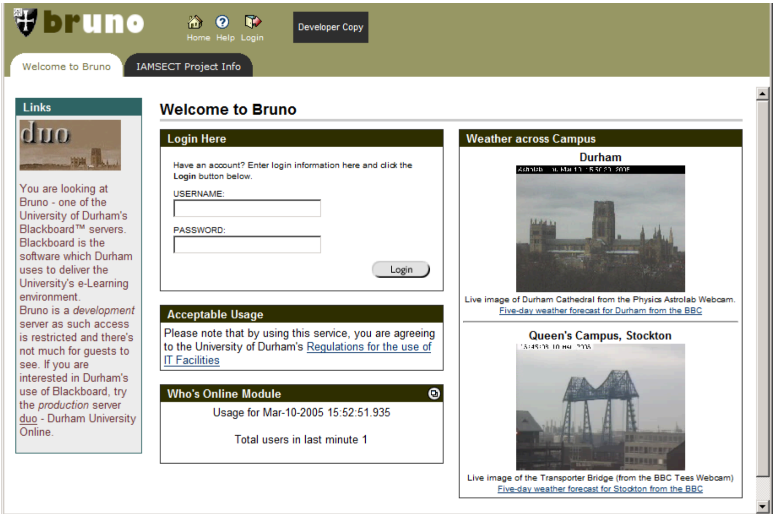


I attempt to access a service (Bb)



https://bruno.dur.ac.uk

I want to see my portal page and then log in



You are looking at Bruno - one of the University of Durham's Blackboard™ servers. Blackboard is the software which Durham uses to deliver the University's e-Learning environment.
Bruno is a *development* server as such access is restricted and there's not much for guests to see. If you are interested in Durham's use of Blackboard, try the *production* server duo - Durham University Online.

Welcome to Bruno

Login Here

Have an account? Enter login information here and click the **Login** button below.

USERNAME:

PASSWORD:

Login

Acceptable Usage

Please note that by using this service, you are agreeing to the University of Durham's Regulations for the use of IT Facilities

Who's Online Module

Usage for Mar-10-2005 15:52:51.935

Total users in last minute 1

Weather across Campus

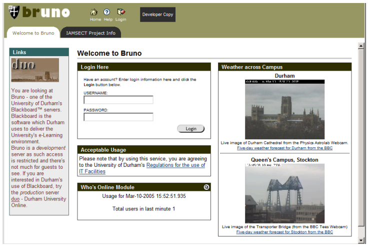
Durham

Live image of Durham Cathedral from the Physics Astrolab Webcam.
Five-day weather forecast for Durham from the BBC

Queen's Campus, Stockton

Live image of the Transporter Bridge (from the BBC Tees Webcam)
Five-day weather forecast for Stockton from the BBC

I am redirected to ‘WAYF’



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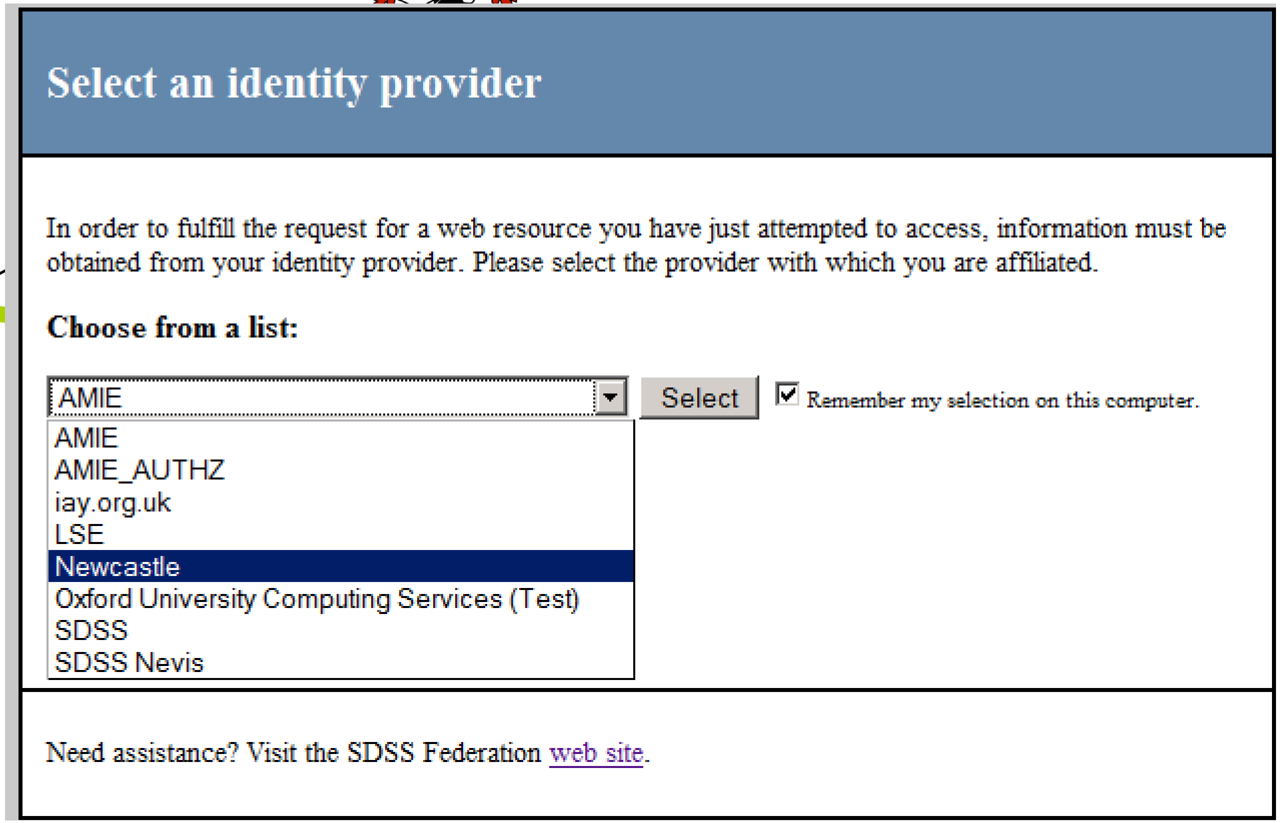


Select an identity provider

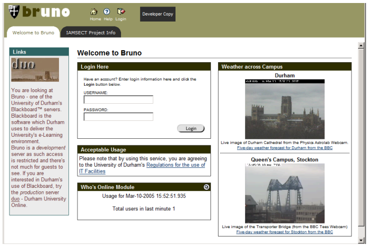
In order to fulfill the request for a web resource you have just attempted to access, information must be obtained from your identity provider. Please select the provider with which you are affiliated.

Choose from a list:

AMIE ▾ Select ☑ Remember my selection on this computer.

Need assistance? Visit the SDSS Federation web site.

I select my Identity Provider



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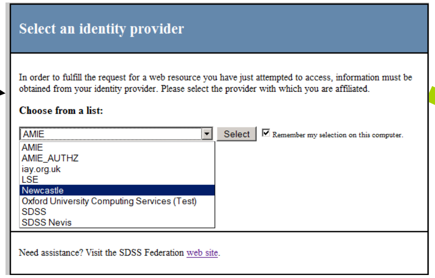

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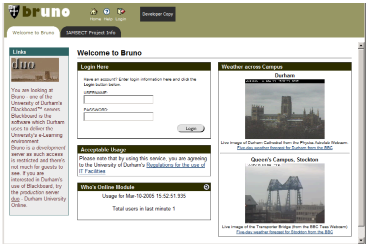
- AMIE
- AMIE_AUTHZ
- iay.org.uk
- LSE
- Newcastle
- Oxford University Computing Services (Test)
- SDSS
- SDSS Nevis

Need assistance? Visit the SDSS Federation web site.

WAYF redirects me…



Links

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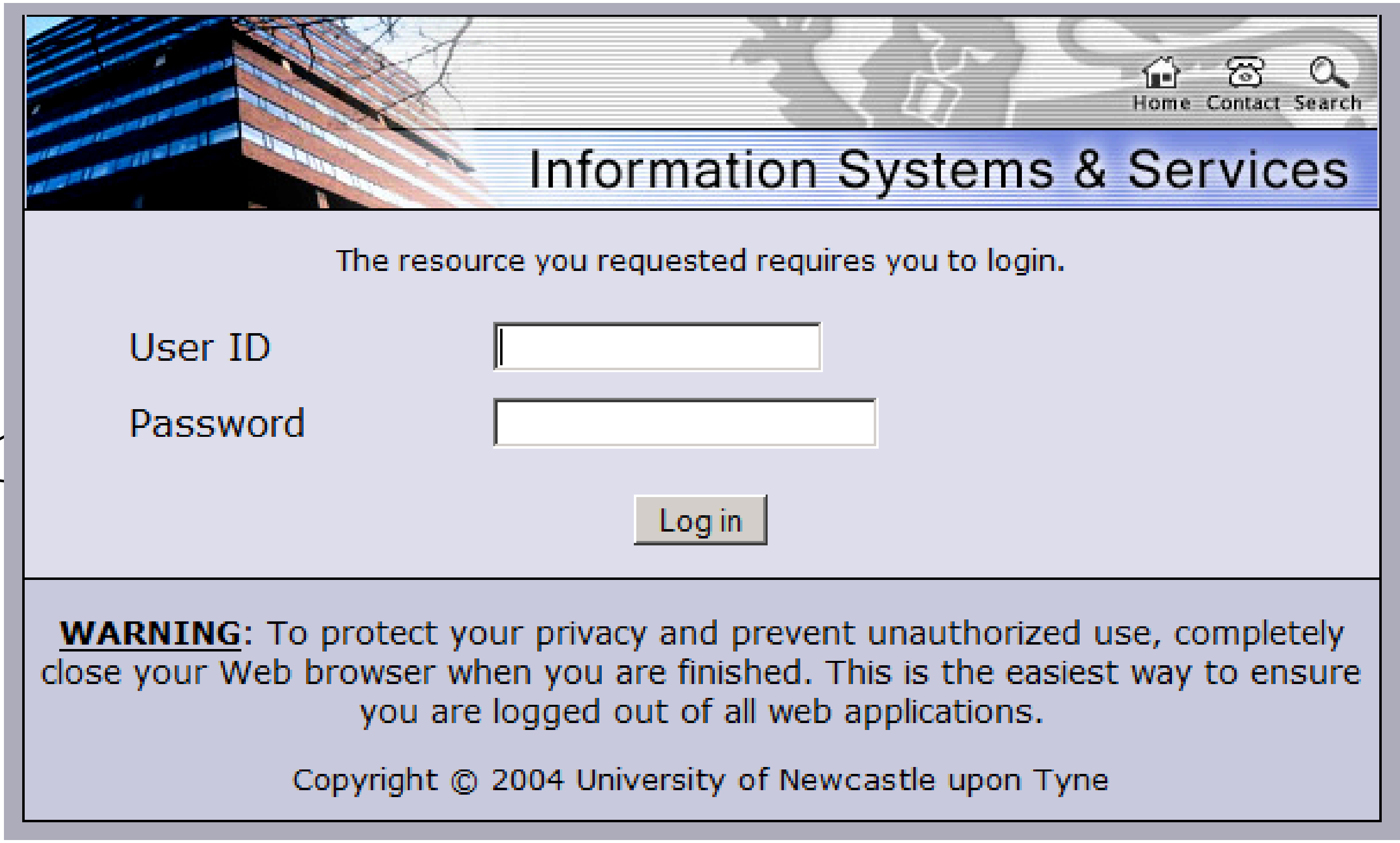

The resource you requested requires you to login.

User ID

Password

WARNING: To protect your privacy and prevent unauthorized use, completely close your Web browser when you are finished. This is the easiest way to ensure you are logged out of all web applications.

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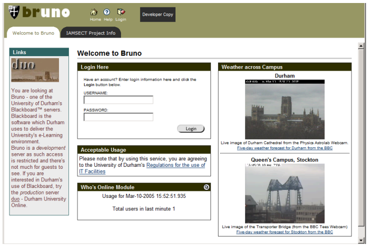
IdP authenticates User



bruno

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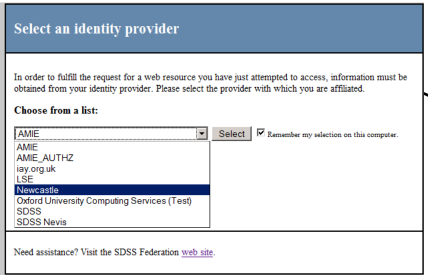

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iay.org.uk
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SDSS
SDSS Nevis

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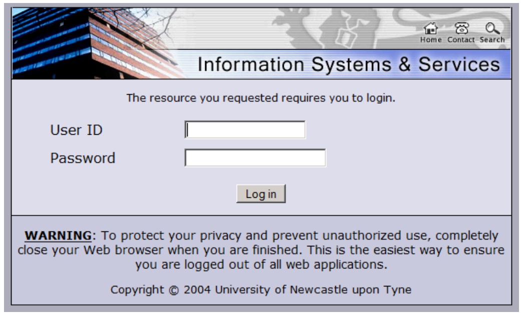

Information Systems & Services

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User ID

Password

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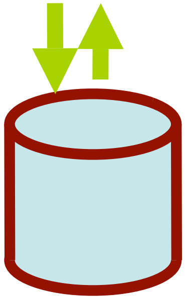
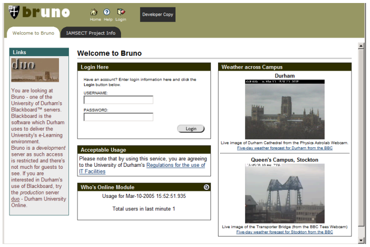
Checked locally e.g.
against Active
Directory



I am redirected back to Bb



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PASSWORD:

Login

You are looking at Bruno - one of the University of Durham's Blackboard™ servers. Blackboard is the software which Durham uses to deliver the University's e-Learning environment. Bruno is a *development* server as such access is restricted and there's not much for guests to see. If you are interested in Durham's use of Blackboard, try the *production* server duo - Durham University Online.

Acceptable Usage

Please note that by using this service, you are agreeing to the University of Durham's Regulations for the use of IT Facilities

Who's Online Module

Usage for Mar-10-2005 15:52:51.935

Total users in last minute 1

Weather across Campus

Durham

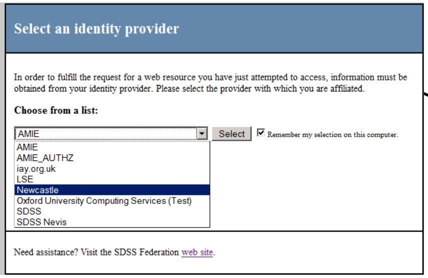
Live image of Durham Cathedral from the Physics Astrolab Webcam.

Five-day weather forecast for Durham from the BBC

Queen's Campus, Stockton

Live image of the Transporter Bridge (from the BBC Tees Webcam)

Five-day weather forecast for Stockton from the BBC



Select an identity provider

In order to fulfill the request for a web resource you have just attempted to access, information must be obtained from your identity provider. Please select the provider with which you are affiliated.

Choose from a list:

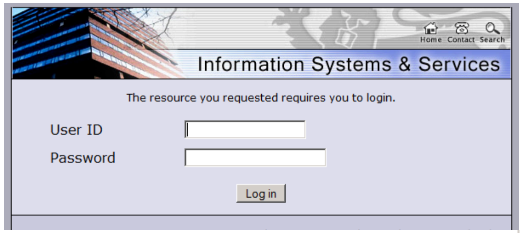
AMIE

Select

☑ Remember my selection on this computer.

- AMIE
- AMIE_AUTHZ
- iay.org.uk
- LSE
- Newcastle
- Oxford University Computing Services (Test)
- SDSS
- SDSS Nevis

Need assistance? Visit the SDSS Federation web site.

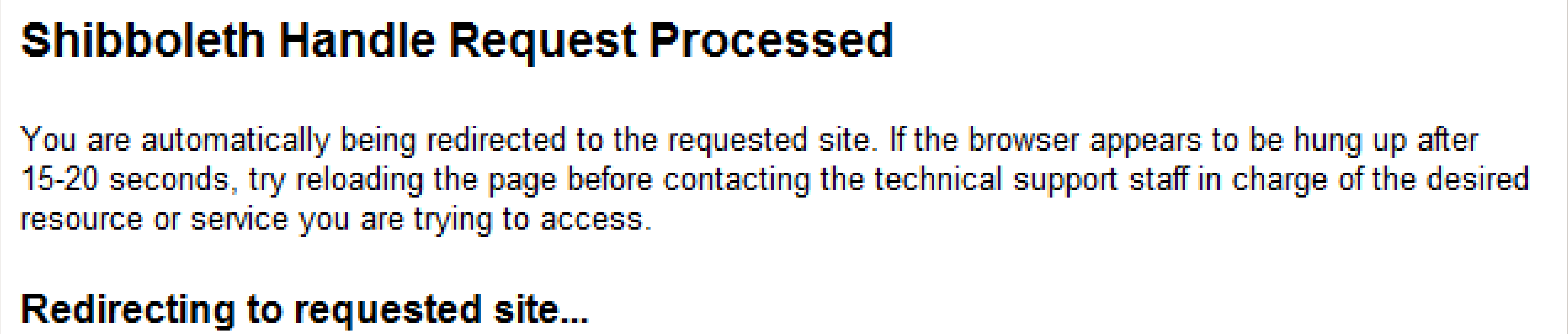


The resource you requested requires you to login.

User ID

Password

Log in

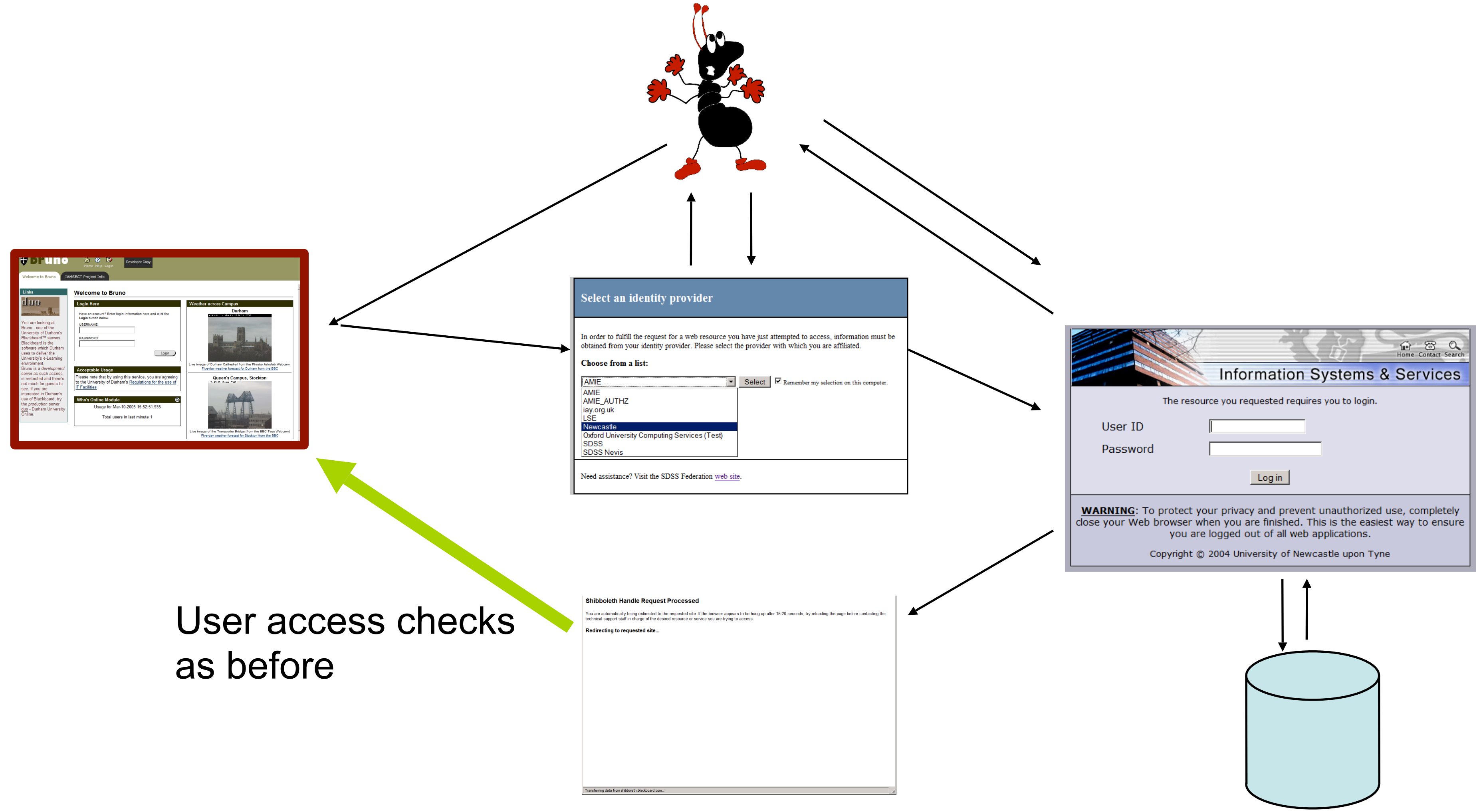


Shibboleth Handle Request Processed

You are automatically being redirected to the requested site. If the browser appears to be hung up after 15-20 seconds, try reloading the page before contacting the technical support staff in charge of the desired resource or service you are trying to access.

Redirecting to requested site...

Get access the Service



Bruno | Home | Help | Login | Developer Copy

Welcome to Bruno | IAMSECT Project Info

Links

duo

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Welcome to Bruno

Login Here

Have an account? Enter login information here and click the **Login** button below.

USERNAME:

PASSWORD:

Login

Acceptable Usage

Please note that by using this service, you are agreeing to the University of Durham's Regulations for the use of IT Facilities

Who's Online Module

Usage for Mar-10-2005 15:52:51.935

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Choose from a list:

AMIE ▾ | Select | ☑ Remember my selection on this computer.

- AMIE
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- iay.org.uk
- LSE
- Newcastle
- Oxford University Computing Services (Test)
- SDSS
- SDSS Nevis

Need assistance? Visit the SDSS Federation web site.

Home | Contact | Search

Information Systems & Services

The resource you requested requires you to login.

User ID

Password

Log in

WARNING: To protect your privacy and prevent unauthorized use, completely close your Web browser when you are finished. This is the easiest way to ensure you are logged out of all web applications.

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Shibboleth Handle Request Processed

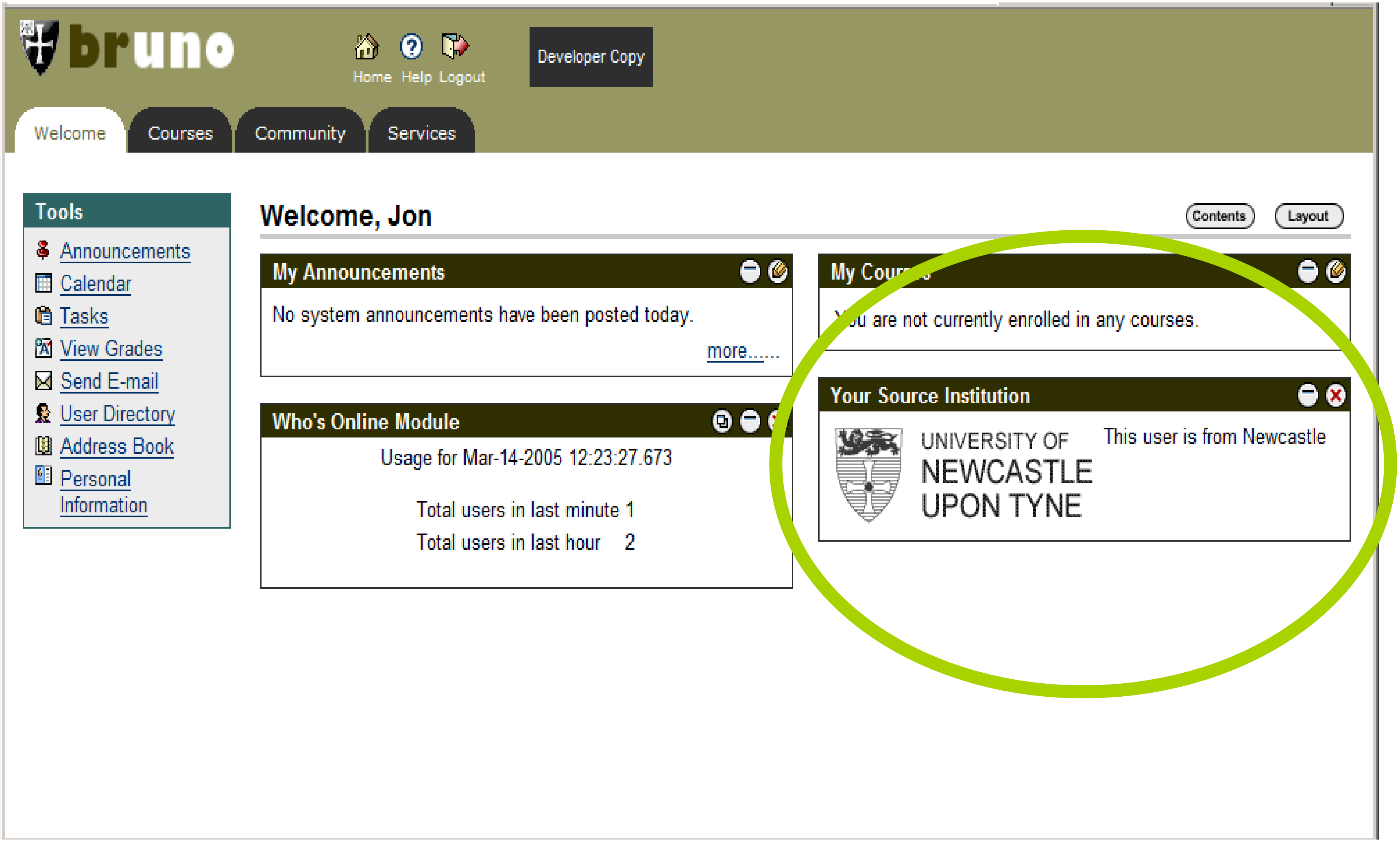
You are automatically being redirected to the requested site. If the browser appears to be hung up after 15-20 seconds, try reloading the page before contacting the technical support staff in charge of the desired resource or service you are trying to access.

Redirecting to requested site...

Transferring data from shibboleth.blackboard.com...

User access checks as before

https://bruno.dur.ac.uk/



Welcome, Jon

My Announcements

No system announcements have been posted today.

more......

Who's Online Module

Usage for Mar-14-2005 12:23:27.673

Total users in last minute 1

Total users in last hour 2

My Courses

You are not currently enrolled in any courses.

Your Source Institution

UNIVERSITY OF NEWCASTLE UPON TYNE

This user is from Newcastle

Getting Blackboard Talking

- Needs SSL enabled
- Watch out or you will break your collaboration server ☹
- Get your Origin setup
    - Needs to pass eduPerson Affiliation
- Get a Target set up for your Blackboard server
- Join a Federation
- Change Authentication method via GUI

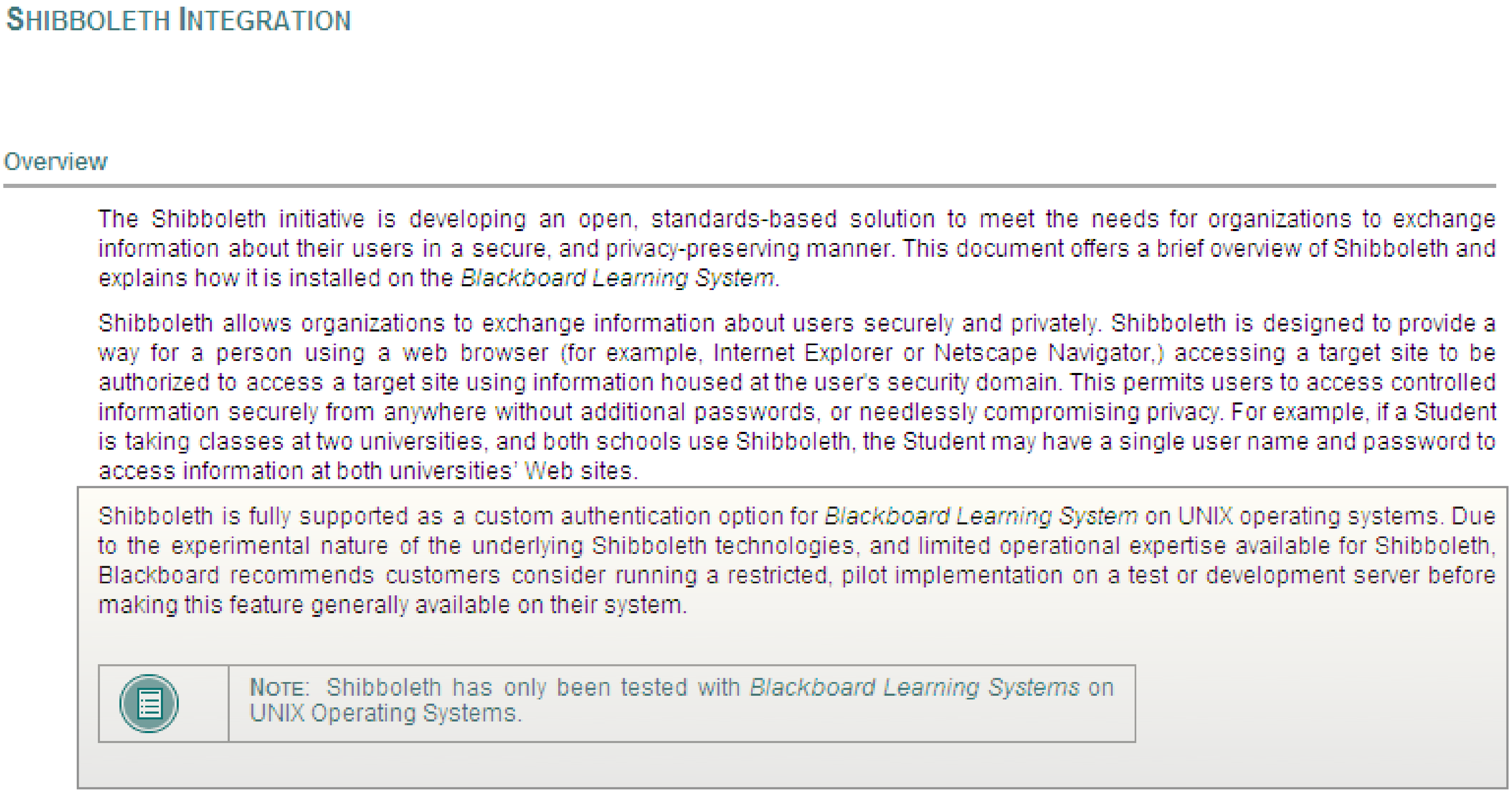
Highlights

- Getting it working at all!
- Authenticating against our Active Directory

Low Lights

- Lost portal direct access
- Can’t log out
- Most other services still want you to go through some authentication process
- One-time mapping of accounts is clumsy
- Bb Documentation out of date
- Not an easy/cheap option for Windows users
- Support issue – TSM or Global Services?

Sys Admin Manual



Shibboleth Integration

Overview

The Shibboleth initiative is developing an open, standards-based solution to meet the needs for organizations to exchange information about their users in a secure, and privacy-preserving manner. This document offers a brief overview of Shibboleth and explains how it is installed on the *Blackboard Learning System*.

Shibboleth allows organizations to exchange information about users securely and privately. Shibboleth is designed to provide a way for a person using a web browser (for example, Internet Explorer or Netscape Navigator,) accessing a target site to be authorized to access a target site using information housed at the user's security domain. This permits users to access controlled information securely from anywhere without additional passwords, or needlessly compromising privacy. For example, if a Student is taking classes at two universities, and both schools use Shibboleth, the Student may have a single user name and password to access information at both universities' Web sites.

Shibboleth is fully supported as a custom authentication option for *Blackboard Learning System* on UNIX operating systems. Due to the experimental nature of the underlying Shibboleth technologies, and limited operational expertise available for Shibboleth, Blackboard recommends customers consider running a restricted, pilot implementation on a test or development server before making this feature generally available on their system.

NOTE: Shibboleth has only been tested with *Blackboard Learning Systems* on UNIX Operating Systems.

Windows Users

Blackboard does offer Shibboleth authentication beginning with version 6.1.5.1 also for Windows based clients, however all implementations of this special authentication method will need to be made via an engagement of Blackboards Global Services team.

Breaking Things

Note that many custom auth schemes (such as Shibboleth or CAS) are webserver-authentication-based and work by setting the environment variable $REMOTE_USER in the webserver. Such schemes cannot use portal direct entry, since webserver-authentication is only triggered by the main login page. Also note that custom authentication will for similar reasons not work with WebDAV (aka Web Folders) for Content System users.

Current Issues

- Would like a Development version of the Content System to try this, but can’t get one despite repeated requests
- Can we login via a WAYF page?
- Ever-changing technology
- Should we move to Shibboleth 1.3?
- What are EduServe doing?

Recommendations

- Worth playing with
- Blackboard is a very undemanding target – only wants authentication
- Not ready for production yet ☹