South West Grid for Learning

The UK Access Management Federation
FOR EDUCATION AND RESEARCH

Interviewed: Ian White, SWGfL Consultant

BACKGROUND

South West Grid for Learning (SWGfL) is a charitable trust which does the job of a Regional Broadband Consortium (RBC), delivering broadband and associated services – filtering, e-mail, portals and others – to fifteen local authorities across the south west of England. The Grid covers approximately 650,000 students and 2400 schools.

The latest upgrade to the network is now being rolled out: the Grid is facing the challenge of trying to provide 100Mbit/s to every secondary and 10Mbit/s to every primary school across a very rural area. Traffic levels to the Internet are 2Gbit/s.

REGIONAL IDP

SWGfL has spent about three years now developing the Merlin project, a framework that will deliver an IdP, VLEs and other learning services to schools in the region. The Grid provides tools and facilities to schools, and it is up to the schools to make their own choices as to which to use. The complexity of the task requires at least a simplified sign on service, and a single sign on service where possible.

SWGfL's vision of what it wanted was not based around technology: rather, 'it was based on what we wanted to achieve,' says SWGfL Consultant Ian White, 'and how it was going to work. The strategy was about how to get to that vision. We had 2400 schools, all separate self-contained entities, to move towards it. Some will do it because the Grid says so; some will do it because they're told to; and some will ask what the point is and put their head in the sand. They all need to be brought along.' Accordingly SWGfL has a busy awareness-raising programme, including a roadshow with Becta and DCSF to present the vision of a learning platform to schools.

The work of implementing Merlin was done through an EU procurement, not directly by SWGfL. Ian comments, 'It's big and needs real experts.' The tender process, Ian says, was one of the keys to the project's success: the time taken led to risk reductions as all the people who needed to understand were involved. It helped them all understand the limitations of what could and couldn't be delivered, and helped get standards in place.

The contract for Merlin was drawn up in February 2008; development continued to October 2008 and it is now rolling out. 1000 schools have been provisioned and can use the service, and the remainder will be able to do so by the end of April. The infrastructure is in place for any school. 600 of these are now registered with the federation – by the end of February this will be 1200 and by the end of April, all of them. Over the term of the contract the whole service will cost about £1.50 per pupil per annum. The IdP alone costs significantly less than £1 per pupil per annum, fully managed and supported.

There are 10,000 registered users at the moment, in the rollout plan, whose identities were provisioned by importing CSV files or manually. This number has deliberately been kept small so as to spare the Grid having

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to go through a massive reconciliation process when the MIS[1] – the system that will populate user accounts – goes live. Otherwise, says Ian, they would inevitably end up with redundant or duplicate accounts that need handling.

An SIF[2] infrastructure has been implemented as a consistent method of extracting data from the MIS systems within schools and using it to populate accounts. SIF is an automated methodology that lets the IdP call an MIS and grab data from it overnight, every night. The system performs any necessary reconciliation overnight and change any values ready for the following morning. The account is ready for the user the very next morning. If a pupil moves school, that should just be changed in the IdP – their login will change to a different school but they will keep their work.

When a user signs on to SWGfL, collaboration services and workspaces are made available but not VLEs. This is because, says Ian, one size does not fit all: different groups of users have different needs. The present system works for 3-year-olds to 90-year-olds: with some special interfaces for very young children, the whole age range is catered for. All can use Shibboleth but they need to be handled differently to make it easier for them to log on. How, for instance, Ian asks, can a five year old handle a password? Thus password policies for that age range are probably something that would drive professional security people mad – but they are still kept secure within the Grid.

A lot of work was needed with suppliers to get them ready too. The national scene of suppliers and IdPs is like the chicken and the egg, says Ian: suppliers won't come until there's an IdP, but it's not worth putting money into an IdP until the suppliers are on board. SWGfL is working with JANET and other organisations to improve this. Ian points out that at present four or five RBCs have big IdPs, meaning approximately 50% of UK schools have the opportunity to use them, though whether they choose to take the opportunity is up to them. It's a marketable place for suppliers to get involved.

OBSTACLES OVERCOME

There is a lot of identity matching to be handled, Ian says – a user can be a teacher at one school, a governor at another, and possibly even a student at a third. The software needs to know where the user is coming from.

One MIS Provider was unable to cooperate with the SIF, leading to discontinuity between the SIF and Shibboleth communities. Ian points out that Shibboleth can't be used for an IdP across a large number of sites without a sensible data extraction mechanism, and schools had different means of providing data. 'This should have been dealt with earlier on,' he admits: 'We were in both camps, but not joining the camps together.' As a result of this hang-up, even though the IdP went live in October 2008 it is only now at a stage where accounts can be provisioned directly from MIS.

A long term solution, Ian says, lies in the Grid working with both the UK federation and the SIF community as a whole to help each other out. An overarching strategic direction to move in should be decided on, and the Shibboleth and SIF communities should work together to fulfil this.

It was difficult to get agreement on synthesised URLs – the web spaces allocated to different organisations. People don't understand the implications of the sheer volume of data, says Ian: for instance the Grid has 17 organisations called St Mary's on it, two of them in the same town, and getting uniform URLs for them all is a significant challenge. To make it manageable, the Grid has become actively involved in the project, to define the format of a synthetic scope for use by RBCs and Local Authorities to allow the individual reference of schools within the IdP. This was sorted out in September and the system launched in October – 'a bit too tight,' Ian comments.

There was a slight discontinuity between Shibboleth 1.3 and Shibboleth 2.0. At the time, v2.0 was just off the stocks and not in use readily, though six months later Ian describes it as 'fairly robust'. The IdP was therefore

1   Management Information System
2   Systems Interoperability Framework

implemented in 1.3. A bug in this was then discovered – SWGfL wanted to stop it displaying attributes for certain sites – and the Grid had to use its own fix to solve this. 'It broke the code,' Ian remarks: 'we ironed it out, but not nicely. So, we need a strategy for taking people forward to Shibboleth 2 or even 3.0.'

The IdP was easy to implement technically, but service providers found it difficult because, Ian says, 'they haven't got their mindset round it. More attributes are put through Shibboleth than it's designed for. A different methodology is needed to get class and group information into the system and then tie it up with Shibboleth.'

Issues also arise with user mobility. A pupil might move school and lose access because the new school hasn't joined, then move school again to one that has: do they then get their data back? A teacher might work at more than one school: how do they manage access rights within the software? Existing accounts, especially e-mail, must be matched up. Shibboleth can't tell a user has left a site and so leaves dead accounts in the system. For the time being SWGfL is having to leave them there, but they will be tidied up eventually.

LESSONS LEARNT

Ian notes that being first in the game is always difficult, and it is very important to stick to guns and keep standards as pure as possible. 'Every time you think about weakening a standard to fit a new scenario, it will come back to bite you.' Strength lies in everyone working together, keeping a community of support for each other.

One interesting change is that identity management has previously been within the ICT department of schools, but it is now moving to the school office. A site might be a small primary school with a secretary working two days a week, handling the data on top of other jobs too. If they don't get it right then wrong accounts are created, and users can't do their work or get access to their information. A cultural change is needed here, says Ian: people must be educated in what the IdP means with regards to change of workload and practices.

LOOKING AHEAD

SWGfL is working with government initiatives to join the federation up to other authentication mechanisms and help them learn to trust each other: 'to share authentication without reinventing the wheel,' as Ian puts it. He would also like to go international: 'there are lots of schools abroad; it would be nice if they were in a similar federation which we could trust so we could pass data between them and set up collaborations. There is no reason why we can't as long as we understand the rules and pass data through correctly, then leave it up to the service provider to sort it out. It requires some form of pan-European or even worldwide governance, but that's no different to the http standard.'[3]

Our thanks to Ian White for agreeing to be interviewed for this case study.

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3   Note that TERENA's REFEDS group (http://www.terena.org/activities/refeds/) is doing just that. – *Ed*