

FREE/LIBRE/OPEN SOURCE SOFTWARE: SCOTTISH POLICY STATEMENT

A Report by the Open Source Software Working Group

Contents

Introduction.....	3
Background and existing policies	4
The Scottish policy	7
Rationale	8
Considerations.....	10
Next steps.....	13
References.....	14
Annex A: The Open Source Software Working Group	18

Introduction

What is open source software?

1. Open source software (OSS) is computer software where the underlying source code is made available under a license. This can allow individuals and organisations who use the software to modify it, either to improve the software or adapt it to better meet their needs.
2. Open source does not necessarily mean free of charge. The term “free” commonly refers to the concept of freedom attached to open source - freedom to modify the source code. The Free Software Foundation (FSF) publishes an earlier variation of the definition where it refers to "free software" rather than OSS. The FSF definition stresses that “free” software is a matter of liberty with “free” derived from “freedom” (libre), not from “no price” (gratis). The terms open source, free software and free open source software (FOSS) are also often used as is free/libre/open source software (FLOSS)¹.
3. There are different licensing models under which FLOSS is made available. Generally the licensing conditions are intended to facilitate the ongoing re-use and wide availability of the software. In contrast, vendors of closed, proprietary software provide only executable binary code, and not the human readable source from which that code is derived. Proprietary software vendors usually also place very specific limits on redistribution of the software.

Why is the public sector interested in free/libre/open source software?

4. Public service delivery is often supported by sophisticated and proprietary software applications. The perceived benefits of FLOSS make it an attractive option for information and communication technology (ICT) solutions in the public sector as it strives to deliver an efficient and interoperable ICT infrastructure.

Who has produced this report and why?

5. This report has been produced by the Open Source Software Working Group², which was set up by the Scottish Executive to examine the role which FLOSS could play in the Scottish public sector. It explores the Scottish implications of the Office of Government Commerce (OGC) report on Open Source Software Trials in Government and sets out a policy position for the Scottish public sector.
6. This policy will be followed by the Scottish Executive, its agencies and non-departmental public bodies (NDPBs); the National Health Service in Scotland, local government and the wider public and voluntary sectors are encouraged to also adopt this policy.

¹ The terms “open source software”, “libre software” and “free software” are often used interchangeably throughout the ICT Profession to refer to the same phenomenon; the term FLOSS (free/libre/open source software) is used in this document for consistency.

² More information about the Open Source Software Working Group is available in [annex A](#).

Background and existing policies

What work has already been undertaken?

7. In 2004 the OGC reported on its trials of FLOSS in government. The trials set out to gather information about implementing FLOSS in the public sector through a number of live case study situations. The report concluded that:
 - FLOSS is a viable and credible alternative to proprietary software for infrastructure implementations and for meeting the requirements of the majority of desktop users;
 - the main obstacles to widespread implementation of FLOSS are the current lack of complex functionality in desktop applications and the lack of business products to compete with large-scale proprietary enterprise-level products;
 - FLOSS can generate significant savings in hardware and software costs for infrastructure implementation, and reduce the licensing costs and hardware refresh requirements for desktop implementation; and
 - adoption of FLOSS, particularly for the desktop, requires investment in planning, training of users, development of skills for implementation and support, and detailed consideration of migration and interoperability issues.
8. Following on from these trials the Open Source Academy (OSA)³ was formed by the Office of the Deputy Prime Minister (ODPM). The OSA is an e-Innovations project that brings together a partnership of English local authorities and other organisations to promote the use of FLOSS in the UK public sector. The OSA aims to encourage the use of FLOSS by demonstrating its benefits and providing best practice advice and guidance from those local authorities who use open source in the development of their ICT systems.
9. As part of the OSA initiative the UK National Computer Centre (NCC) announced that it would provide public sector organisations, aiming to adopt FLOSS, with a laboratory for testing this technology. This independent test environment allows public sector organisations to evaluate open source based application to proprietary solutions. Local administrations have the possibility to prove the viability of FLOSS applications and to experiment with different configuration scenarios finding a technical basis for a migration towards FLOSS. Access to the lab for public sector organisations is free.
10. However, despite these initiatives, a report by the University of Maastricht in 2005 into FLOSS⁴ found the UK to have a below average proportion of local government FLOSS users: 32.1% of all software users compared to the 78.7% European average. Further information about open source developments across Europe is available on the Open Source Observatory website at europa.eu.int/idabc/en/chapter/452.

³ More information about the OSA is available at www.opensourceacademy.gov.uk.

⁴ The Free/Libre/Open Source Software: Policy Support project deliverables are available at flosspols.org.

11. The Society of Information Technology Management (SOCITM) has also undertaken exploratory work to determine the suitability of FLOSS for use in the UK public sector. In April 2006 it published a report on the viability of Linux as a business desktop operating system - Linux On The Desktop. The report found that FLOSS products can provide a suitable operating system in a business environment, however compatibility with existing hardware and software applications should be thoroughly tested.
12. In a Scottish context the open source based office suite OpenOffice.org has been translated into Gaelic⁵. The language project was funded by the Scottish Executive through the education body, Learning and Teaching (LT) Scotland, and in 2005 it equipped schools in Scotland with the adapted software.
13. Central Scotland Police (CSP) migrated to an open source office application suite and began work to develop an open source electronic document management system (EDMS) as part of the OGC proof of concept trials, announced in September 2003. However, after a review of its ICT infrastructure in late 2004 the force reverted to a proprietary office solution and halted work on its open source EDMS. CSP cited that it would achieve better value for money from off-the-shelf packages and these would allow for better interoperability between its systems and those of its partners.

Related policies

14. The Scottish Executive's public service reform agenda sets the challenge of transforming Scotland's public services around five key values:
 - increased personalisation and choice;
 - quality and innovation;
 - efficiency and productivity;
 - joining-up; and
 - accountability.

In addition, the shared services consultation, A Shared Approach to Building a Better Scotland, confirmed that the delivery of high quality, user focussed and innovative public services in Scotland has been a key priority for the Scottish Executive since the creation of the Scottish Parliament in 1999. Shared services is one of the five workstreams within the Scottish Executive's Efficient Government Plan and therefore is a significant priority.

15. The effective use of ICT is vital to achieving world class public services in Scotland. ICT solutions which are based upon commonly agreed, open standards and specifications are a prerequisite for joined-up, shared and efficient public services. This is set out in the Openscotland Information Age Framework (OSIAF), which is the

⁵ More information about the Gaelic version of OpenOffice.org is available at www.ltsotland.org.uk/news/press.asp?newsid=396.

Scottish Executive's framework supporting the use and development of common standards in public sector ICT systems.

16. The Scottish Executive has undertaken a public sector ICT scoping study. The study has gathered data on the ICT landscape, and the resources used to deliver it, across the Scottish public sector. The data is being used to provide a clearer understanding of the interoperable opportunities and to allow the articulation of possible actions to make step changes in improvement over the next 5, 10 and 15 years.
17. The UK Government published its Transformational Government Strategy in November 2005, which confirms that three key transformations must be achieved - redesign of services to be citizen and business centred, shared services and professionalism.
18. The European Commission's i2010 (Information Society 2010) initiative also recognises that open and inclusive ICT standardisation is a key factor in achieving interoperable e-government services. This is set out strongly in the European Interoperability Framework which cites the use of open standards and specifically FLOSS as key components for the successful delivery of pan-European electronic government services.
19. The Scottish Executive is broadly supportive of these related initiatives and is working to ensure that the architecture supporting Scotland's public services is developed in a way which prevents barriers to sharing e-government applications and best practice.

The Scottish policy

20. The Open Source Software Working Group supports a level playing field between FLOSS and proprietary software procurement within the public sector in Scotland. The group considers FLOSS solutions competitive and viable; providing users the opportunity to increase choice, competition and efficiency, whilst potentially achieving long term savings and providing alternative options for supplier relationships. However, there is a need to always procure a solution that gives best value and, whilst this solution could be a FLOSS solution, a proprietary solution or a mixture of both, decisions should be made on a case by case basis. Proprietary software and FLOSS should co-exist in most organisations.

The key elements of this policy are as follows:

- The Scottish public sector should consider FLOSS solutions alongside proprietary ones in ICT procurements. Contracts will continue to be awarded on a best value basis.
- The Scottish public sector should make open standards a prerequisite for all interoperability software development, thus contributing to the ease with which FLOSS can be implemented and adapted.
- The Scottish public sector should seek to avoid lock-in to solutions that may prohibit the delivery of efficient public services.
- The Scottish public sector should consider obtaining full rights to bespoke software code or customisations of COTS (commercial off-the-shelf) software it procures wherever this achieves best value for money.
- Where software is produced in-house by the Scottish public sector, or through publicly funded research and development projects, consideration should be given to making this available as FLOSS.

The aims of the Scottish policy are consistent with version 2 of the ‘Open Source Software; Use within UK Government’ policy document⁶ published in October 2004.

⁶ The UK Government’s FLOSS policy is available at www.govtalk.gov.uk/policydocs/policydocs_document.asp?docnum=905.

Rationale

21. In the 'Partnership for a Better Scotland', Scottish Ministers made a commitment to deliver first-class public services. One important factor in helping to achieve this was seen as the use of ICT to deliver services more effectively; sharing best practice and following common standards that allow interoperability and the delivery of cost-effective solutions. The OSIAF covers the UK Government's e-Government Interoperability Framework (e-GIF), as well as introducing standards emerging from the Scottish public sector. The standards and policies in the OSIAF favour open standards and avoid proprietary lock-in.
22. The Scottish policy is consistent with both UK and European agendas and entirely in line with public service reform. The UK policy was last articulated in version 2 of a policy document published in October 2004 - Open Source Software; Use within UK Government - and the European policy is set out in the European Interoperability Framework (EIF) for pan-European eGovernment Services, which is available on the IDABC⁷ website at europa.eu.int/idabc/en/document/3761.
23. There is a need to maximise the returns on, and benefits from, public investment in ICT systems as well as the need to procure solutions that offer best value. In considering FLOSS solutions alongside proprietary ones in ICT procurements decisions should be made on a case-by-case basis but value for money over the expected lifetime of the system must be compared rather than only implementation and migration costs. This may result in a FLOSS solution, or a proprietary solution, or a mixture of both. Further information on compiling a business case for a FLOSS solution can be found in the report 'Building a Business Case for StarOffice or OpenOffice.org' written by Bristol City Council for the OSA, it offers a guide to the critical issues involved in making a business case for office software migration⁸.
24. Administrative processes with FLOSS can be simpler than with some proprietary software, as there is not always a need to match software usage against licences and product upgrades can be made as and when required.
25. FLOSS applications tend to run on an increasingly wide variety of computer hardware, avoiding the need to purchase the latest sophisticated equipment if resources are limited.
26. FLOSS has a particularly strong presence in developer tools such as compilers, interpreters and scripting languages, and in software infrastructure such as operating systems, web servers and file and print servers. Many public sector organisations are comfortable making use of FLOSS in these areas but, in order to move forward, should consider the benefits of incremental change by diversifying FLOSS use beyond the

⁷ IDABC stands for Interoperable Delivery of European eGovernment services to Public Administrations, Businesses and Citizens. It uses the opportunities offered by ICT to encourage and support the delivery of cross-border public sector services to citizens and enterprises in Europe, to improve efficiency and collaboration between European public administrations and to contribute to making Europe an attractive place to live, work and invest.

⁸ The Bristol City Council report is available at www.opensourceacademy.gov.uk/osacademy/our_partners/bristol-city-council/business-case-guidance/building-a-business-case-for-staroffice-or-openoffice.org.

server platform to proven products like e-mail, LDAP (Lightweight Directory Access Protocol), web and internet browser.

27. The drive for efficiency improvement and shared services suggest that organisations should review the potential for FLOSS, for example in server consolidation, comparing the benefits and costs of FLOSS with proprietary solutions; and investigate the potential costs and benefits of migration to a FLOSS desktop for transaction users, (potentially in conjunction with use of “thin client” architecture solutions).

Considerations

Procurement

28. The procurement legislation and guidance which the Scottish public sector operates to applies equally to FLOSS as to the more traditional proprietary software purchased in Government. However, FLOSS has distribution routes independent of normal procurement routes and much FLOSS is distributed “free” over the Internet. The licence model attached to FLOSS usually makes this free distribution and use perfectly legal. There is however a large number of differing FLOSS licences, and in some instances these can contain numerous obligations on its use. Legal advice should therefore be sought on the terms of use of any FLOSS software to ensure compliance with what can be complex licensing provisions.
29. Notwithstanding the fact that FLOSS can be acquired independently of traditional procurement routes, the same issues of ownership and use; standardisation; support and maintenance; risk management; asset registration and control which apply to proprietary software need to be addressed.
30. Organisations should review their current infrastructure and applications well in advance of any planned procurement or renewal, and determine whether current technologies and ICT policies inhibit future choice; and if so consider what steps should be taken to prevent future lock-in.

Security

31. FLOSS is not intrinsically more or less secure than proprietary software. Open source does affect the security balance in a number of ways, but the influence of these effects very much depends on the specific circumstances involved. Open source projects rarely have the rigid infrastructure required for quality programs such as ISO 9000 implementation, but many of the methods used to implement ISO 9000 quality programs for software are amenable to automation and many large open source projects and several open source support sites have automated methods for running such tests. The freedom to change in FLOSS also allows security specific customisation to be undertaken; an example being the Security Enhanced Linux project, undertaken by the USA's National Security Agency. This provided a significantly larger set of security features, at the price of significantly higher maintenance and operating overhead.
32. Security of Scottish public sector ICT systems is a major concern but properly configured FLOSS can be at least as secure as proprietary systems and FLOSS is currently subject to fewer internet based attacks.

Skills

33. All Scottish public sector bodies should consider the need for open source development, deployment and operational skills within their organisation, and review the availability of such skills in their partner or outsourced ICT service providers. Opportunities for more joint and collaborative working on FLOSS projects within the Scottish public sector, to build on existing experience and skills, should also be considered.

34. Using FLOSS means a change in culture from both the end user and technical specialist.
35. The use of open source applications can require a greater understanding of the systems they interact with. Some ICT specialists, perhaps used to a scripting (4th generation language) development technology, will need to acquire different skills to develop in a FLOSS environment. The end-user experience can also require greater support as an unfamiliar interface means an extra learning effort.
36. Opportunities for more joint and collaborative working on FLOSS projects within the Scottish public sector, to build on existing experience and skills, should be considered. The establishment of a central repository for public sector software developments is one way this could be achieved.

Support for Assistive Technologies

37. Integration with assistive technology (AT) - software and hardware that is used by people with disabilities to enable them to work more easily and effectively with computers - is still an issue with desktop FLOSS offerings such as StarOffice and OpenOffice.org. Microsoft's market leading position means that most of the widely used assistive technologies available today are designed to work with Windows and Microsoft Office. The vendors have tightly scripted their products to integrate with Office and Internet Explorer, hooking into the Windows environment, picking up output to the screen, keyboard and mouse. Work is ongoing to improve this situation; Sun have created an API (application programming interface) that exposes all of their user interface to assistive technology. However, until the situation improves it is likely Microsoft Office will continue to be needed for people who use JAWS, HAL or Supernova screen-readers, or the Dragon Naturally Speaking range of voice recognition software.
38. Open sourcing offers great potential for AT software users, however currently there are a number of barriers that stop its use in AT situations. It is generally difficult to find on the internet and there are no specific areas dedicated to developing or downloading AT software. FLOSS can also be unfriendly to install, often obliging the user to download many different packages before it can be used. The Open Source Assistive Technology Software (OATS)⁹ pilot project set out to raise the profile and remove these barriers to open source AT software. The OATS consortium have developed a new and unique website-based "repository" of AT software and a "forge" to promote and develop new AT open source project.

Availability

39. Whilst the flexibility and freedom of open source allows organisations to select a combination of software applications specific to their needs from the range of open source products available there is currently considerable confusion within the public sector as to what FLOSS products are available and from where.

⁹ More information about the OATS pilot project is available at www.oatsoft.org.

Licensing

40. The Open Source Initiative's¹⁰ license proliferation committee was set up in 2005 in response to the growing concern that license proliferation was harmful to the success of open source, and with the aim of reducing the number of open source licenses. The first draft of the committee's report is now available¹¹ and reveals that it has been more difficult than anticipated to reduce the number of open source licenses in common usage. "It became apparent that there is no one open source license that serves everyone's needs equally well", stated the report. Instead of officially recommending specific licenses, the committee has instead separated the licenses into more descriptive categories: "licenses that are popular and widely used or with strong communities", special purpose licenses, licenses that are redundant, non-reusable licenses, and other/miscellaneous.

¹⁰ More information about the Open Source Initiative is available at www.opensource.org.

¹¹ The Open Source Initiative license proliferation committee's draft report is available at www.crynwr.com/cgi-bin/ezmlm.cgi?3:mss:11636:200607:nknhdligldemhkfb.

Next steps

41. There is a need to maximise the returns on, and benefits from, investments in publicly funded software. The ability to freely share software which has been developed within the Scottish public sector or bespoke software funded by the Scottish public sector would be enhanced by making this available as FLOSS. Copyright of software, documentation, design materials, manuals, user interface and source code should be released under an OSI-approved open source licence unless there is a compelling argument why this should not be the case and an alternative licensing model proposed.
42. Further consideration will be given to mechanisms for sharing ICT products and architectural components as part of the ICT transformation work which the Scottish Executive is taking forward under its public service reform agenda.

References

Definitions

- **Open Source Software (OSS)**
Open Source Initiative
www.opensource.org
- **Free/Libre/Open Source Software (FLOSS)**
Free Software Foundation
www.fsf.org

Background Articles

- **Free or open source definition debate**
www.gnu.org/philosophy/free-software-for-freedom.html
- **GNU¹² Philosophy**
www.gnu.org/philosophy/philosophy.html
- **Licensing**
www.fsf.org/fsf/licensing
- **Categories of OSS/FLOSS**
www.fsf.org/licensing/essays/categories.html
- **Groklaw**
www.groklaw.net/article.php?story=2004040421042728
- **Wikipedia**
en.wikipedia.org/wiki/FLOSS

Case Studies and Reports

- **Open Source Software Trials in Government**
Office of Government Commerce.
[no longer available on the OGC website]
- **Open Source Software; Use within UK Government**
Cabinet Office.
www.govtalk.gov.uk/documents/oss_policy_version2.pdf
- **Open Source Software postnote**
Parliamentary Office of Science and Technology.
www.parliament.uk/documents/upload/POSTpn242.pdf

¹² GNU - recursive acronym for GNU's Not Unix.

- **Linux on the Desktop**
Society of Information Technology Management.
www.socitm.gov.uk/NR/rdonlyres/CA9CF687-5556-4FB2-BCFD-23B2856EAEFD/0/SOSSLinuxReportv20.pdf
- **Open Source Academy**
Case studies of a number of open source implementations in local government, schools and business in the UK and Europe.
www.opensourceacademy.gov.uk/solutions/casestudies
- **IDABC¹³ Open Source Case Studies**
Case studies on implementation of FLOSS in European public administrations.
ec.europa.eu/idabc/en/chapter/470
- **Open Source Resources**
EU Open Source Observatory.
europa.eu.int/idabc/en/chapter/471
- **Benefits of OSS to EU public bodies**
IDABC Synergy 05 quarterly newsletter from January 2006.
europa.eu.int/idabc/en/document/5237/5584
- **Impact of public sector OSS**
EU e-Government Observatory
europa.eu.int/idabc/en/document/5547/194

EU Research

- **European Commission's Europa portal**
European Free/OSS-related research activities.
europa.eu.int/information_society/activities/opensource/european_activities/index_en.htm
- **flossproject (Rishab Ghosh, 2001-2002)**
Free/Libre and Open Source Software: Survey and Study.
www.flossproject.org
- **flossworld (Rishab Ghosh, 2005-2007)**
Free/Libre/Open Source Software: Worldwide impact study.
www.flossworld.org
- **flosspols (Rishab Ghosh, 2006-2007)**
Free/Libre/Open Source Software: Policy Support.
www.flosspols.org

¹³ IDABC - Interoperable Delivery of European eGovernment services to Public Administrations, Businesses and Citizens.

Communities (public sector)

- **Open Source Observatory (OSO)**
europa.eu.int/idabc/en/chapter/452
- **Open Source Consortium (OSC)**
www.opensourceconsortium.org
- **Society of Information Technology Management (SOCITM) Open Source Software Group**
www.socitm.gov.uk/Public/SIAG/Open+Source.htm
- **Open Source Academy (OSA)**
www.opensourceacademy.net
- **eGovOS**
www.egovos.org
- **OSS Watch**
www.oss-watch.ac.uk
- **Public Sector and Open Source**
www.publicsectoross.info

Communities (computing)

- **British Computer Society (BCS) Open Source Group**
ossg.bcs.org
- **Open Source Technology Group**
www.ostg.com/about
- **openforum europe**
www.openforumeurope.org
- **The Association for Free Software**
www.affs.org.uk

Repositories

- **SourceForge**
sourceforge.net
- **Schoolforge**
www.schoolforge.org.uk

- **Eduforge**
eduforge.org
- **OATSoft**
www.oatsoft.org

Annex A: The Open Source Software Working Group

The Scottish Executive set up the Open Source Software Working Group to examine the role which open source and free software could play across the Scottish public sector.

Remit

1. Consider the wider implications for Scotland of the Office of Government Commerce report on the trials of Open Source Software in Government and develop a policy statement for Scotland.
2. Examine the role which open source and free software could play in current and future projects across the Scottish public sector e.g. in support of shared services.
3. Determine the practicalities of introducing open source and free software through examining the technical and business case for implementation and identifying case studies.
4. Assess the potential efficiency savings which might be realised if the Scottish public sector were to adopt open source and free software.
5. Develop an implementation plan and provide leadership to the public sector through engaging with stakeholders and developers.

Membership

- Jim Buist, Glasgow City Council and the Society of Information Technology Management
- Dr Nick Hine, University of Dundee
- Dr Andy Judson, University of Dundee
- Julie Kane, Scottish Executive
- Lois MacFadyen, Scottish Executive
- Anne Moises, Scottish Executive
- Jonathan Moore, Scottish Executive
- Paul Spence, Scottish Executive
- Andy Wallace, General Register Office for Scotland

More information about the Open Source Software Working Group, including meeting agendas and minutes, is available at www.scotland.gov.uk/Topics/Government/Open-scotland/OpenSource.