DG DIGIT

Unit.D2 (Interoperability Unit)

Open Source Software Country Intelligence Report

Luxembourg

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WAVESTONE

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LUXEMBOURG

Executive summary

In 2018, the Luxembourg government presented the responsibilities of the new Ministry of Digitalisation[1], showcasing the country's desire to prioritise digitalisation in the public and private sector in order to improve citizens' daily lives. The Luxembourg National Centre for Information Technologies (CTIE), under the supervision of the Ministry for Digitalisation, is a long-time user of open source software (OSS). Since 2003, many servers in the Ministry offices are Linux-based and various OSS solutions are used on workstations.

The first mention of OSS within policy documents is in the 2018-2023 governmental programme[2], with the government promising to further promote the use of OSS solutions within public administrations and to develop open standards.

There are a variety of initiatives in Luxembourg relating to the use of OSS solutions, particularly in the education sector. Many schools use a mix of proprietary and OSS solutions in order to best prepare young students for higher education and professional life. Computer sciences courses often offer training sessions on Linux and the history of OSS solutions in general. Other examples of successful OSS initiatives include the development of collaboration tools and educational open source programmes.

Actors

This section presents the policy makers who are active in digitalisation efforts and influence the status of open source in public sector, as well as the main strategic players that work together with the government at all levels to raise awareness on OSS. In Luxembourg, there is no governmental body that is specifically responsible for OSS policies.

Policy makers

- The Ministry for Digitalisation[3] aim is to achieve the digital government. To reach this, two main pillars have been identified as major priorities namely to further develop the eGovernment and digital inclusion in Luxembourg.

- The Luxembourg National Centre for Information Technologies (CTIE - *Centre des Technologies de l'Information de l'Etat Luxembourgeois*)[4] works under the auspices of the Ministry for Digitalisation. The Centre is tasked with equipping many state institutions with ICT. As reported

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[1] https://digital.gouvernement.lu/fr/le-ministere.html
[2] https://gouvernement.lu/dam-assets/documents/actualites/2018/12-decembre/Accord-de-coalition-2018-2023.pdf
[3] https://digital.gouvernement.lu/fr.html
[4] https://ctie.gouvernement.lu/fr.html

in 2019, the ministries and administrative bodies equipped with ICT by the CTIE use the following server operating systems: Linux (59%), Windows (29%), Unix (11%) and other (1%).

Strategic players

- GNU/Linux User Group Luxembourg (LiLux)[5] is a non-profit organisation promoting the use of the GNU/Linux system as well as other free and OSS solutions. LiLux gives technical advice and support and helps promote the free software movement at the political level.

Policy and legal framework

This section summarises the main open source software related policies and legal acts of the last ten years, including the first known milestone in this domain. The list is presented in a chronological order, starting from the most recent milestone.

- In December 2019, Member of Parliament Mr. Sven Clement launched a motion to promote OSS in public administrations.[6] He invited the government to:

    o Actively support and strengthen free and OSS in public administrations.

    o Publish all newly developed, state-funded, logics as open source.

    The motion has not yet been voted on.[7]

- In July 2019, Mr. Marc Goergen of the Pirates Party launched a motion to install OSS operating systems and programmes in public administrations' workstations.[8] The timeline to achieve this was set at 50% by 2021 and 100% by 2027. The voting resulted in 3 votes in favour of the motion, 11 abstentions, and 23 votes rejecting the motion.

- The Government Council adopted the National Interoperability Framework (NIF)[9] in March 2019 that aims to guide the public sector to attain a higher level interoperability. The first of eleven principles of the NIF is openness, referring to data, specifications, and software. Open source software is considered to reduce development costs, avoid a lock-in effect and allow rapid adaptation to specific or emerging needs within public sector organisations.

- The Coalition Agreement of 2018-2023[10] includes the promotion of OSS, open standards and open data in the section on government digitalisation. Their use will be promoted in public administrations.

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[5] http://www.lilux.lu/about-us.html
[6] Document of Luxembourgish Parliament   I-2019-O-M-5607-01   Motion de Monsieur Sven Clement, Député: Promotion de logiciels libres et ouverts dans les administrations publiques. Can be accessed via www.chd.lu.
[7] Reported on 4 March 2020.
[8] Document of the Luxembourg Parliament I-2018-O-A-5469-01 Annexe Motion: Installation de logiciels et de systèmes d'exploitation Open-Source dans l'administration étatique jusqu'en 2027 par: Président :Bulletin de vote. Can be accessed via www.chd.lu.
[9] https://digital.gouvernement.lu/en/dossiers/2019/NIF-2019.html
[10] https://gouvernement.lu/dam-assets/documents/actualites/2018/12-decembre/Accord-de-coalition-2018-2023.pdf

Open source software initiatives

This section presents an overview of the main open source software related initiatives in Luxembourg. The list is presented in a chronological order, starting with the most recent initiative.

- Linux training sessions, ongoing[11]: The Luxembourg Lifelong Learning Centre offers training sessions supported by the Chamber of Employees.[12] Among these, training sessions are offered on various OSS solutions such as the Linux system, RedHat, Centos, Ubuntu, Debian, and Raspbian.[13]

- Cloud in administrations, 2019[14]: In addition to building a communal private cloud, the Luxembourg City municipality favours the use of open operating systems, including open programming and open programming languages. Since 2016, 101 of 102 municipalities have put in place an ambitious migration plan to replace all commercial programs with an OSS solution. As of 2019, more than a third of the central systems of all municipalities and almost all new developments are based on OSS solutions. The choice to use OSS systems over proprietary versions depends on the solutions offered, the guaranteed safety of such solutions and the quality criteria that solutions must meet.

- OSS in education, 2018[15]: The Minister of Education has endeavoured to promote a healthy mix of commercial and non-commercial IT products in its schools in order to prepare young students for higher education and professional life. Luxembourgish schools use Microsoft Office 365 and some classes are taught with Apple iPads; however, they also use Google Classroom as a learning platform or the OSS system "CGU-based" eduMoodle application. Other initiatives in schools supporting the use of OSS[16] include:

  o The Computer Education Management Centre (CGIE – *Centre de Gestion Informatique de l'Education*) has been working in a server environment that is largely run on Linux for years. Many servers in Luxembourgish schools also run on Linux.

  o Students receiving technical training in computer science and electronics are given an introduction to Linux operating systems.

  o Depending on students' training, division and section, the following OSS programs are used in schools: Gimp, Scratch, XMind, BlueJ, Unimozer, Structorizer, P'titStock, VLC, 7-Zip, XnView, InkScape, Composer, Geogebra, and Thunderbird. Depending on the

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[11] https://www.lifelong-learning.lu/Formateur/luxembourg-lifelong-learning-center-de-la-chambre-des-salaries/en
[12] https://www.lifelong-learning.lu/Formateur/luxembourg-lifelong-learning-center-de-la-chambre-des-salaries/en
[13] https://www.lifelong-learning.lu/formations/informatique/linux/en
[14] Document of the Luxembourg Parliament Q-2018-O-E-0484-02 Réponse de la Ministre de l'Intérieur, du Ministre de la Fonction publique et du Ministre délégué à la Digitalisation à question N°0484 de Monsieur Marc Goergen concernant Systèmes d'exploitation utilisés par le secteur public. Can be accessed via www.chd.lu.
[15] Document of the Luxembourg Parliament Q-2018-O-E-0617-02 : Réponse du Ministre de l'Education nationale, de l'Enfance et de la Jeunesse et du Ministre de la Digitalisation à question N°0617 de Monsieur Marc Goergen concernant Tablettes. Can be accessed via www.chd.lu.
[16] Document of the Luxembourg Parliament Q-2018-OE-0919-02: Response from the Minister of National Education, Childhood and Youth to question N ° 0919 from Mr Paul Galles concerning Use of Microsoft Office software in the context of "Digital classroom Luxembourg". Can be accessed via www.chd.lu.

type of training, more specific and technical programs (such as virtual machines) have been installed on some school computers.

- o In addition to Microsoft Office, schools' desktop computers often have Open Office installed.

- o All the firewalls, both in schools and in national education administrations, are based on Linux.

- o Portable Raspberry Pi devices are also increasingly used in the collaborative workspaces ('makerspace') of schools.

- Open source Electronic Health Record, 2007[17]: Gecamed (*Gestion de Cabinets Médicaux* – Management of Medical Offices) is an open source Electronic Health Record (HER) system developed in Luxembourg in 2007. This HER system achieved interoperability of the health records management system used by *eSanté*, the country's national eHealth agency. Gecamed's development was funded by the Ministry of Culture, Higher Education and Research, Luxembourg's medical association (AMMD), and two multinational pharmaceutical companies.

- High Performance Computing (HPC), 2007[18]: The University of Luxembourg has used Debian in its HPC infrastructure since 2007. OSS developers are sponsored and receive support for the development of the University's HPC and Grid infrastructure.

- Ministry of Education, 2002[19]: In an internal Parliamentary question in 2003 regarding operating systems, it was clarified that the primary education department of the Luxembourg Ministry of Education has been operating on Linux servers since 2002. In secondary and technical secondary establishments, the servers are distributed between Microsoft, Novell and Linux. Microsoft and Novell are normally found on file servers and most servers accessible via Internet run on Linux.

- Cadastre Administration[20]: The cadastre administration in Luxembourg uses OSS solutions where possible. The administration is active on GitHub[21], and also readily exchange input when other organisations get in touch and are seeking to improve their own code and share knowledge.[22] The tool to order cadastral extracts, for example, is also built on OSS.

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[17] http://www.gecamed.lu/start
[18] https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/luxembourg-university-sponsor
[19] Document of the Luxembourg Parliament Q-2002-O-E-2241-02 : Réponse de Mme Hennicot-Schoepges, Brasseur, MM. Grethen, Biltgen à la question n° 2241 de M. Robert Garcia - Initiatives gouvernementales en faveur du logiciel libre dans les administrations publiques. Can be accessed via www.chd.lu.
[20] https://act.public.lu/fr.html
[21] https://github.com/Geoportail-Luxembourg
[22] https://act.public.lu/fr/parcelles-residences/doc-cadastrale/commande-extraits.html

- Data.public.lu[23]: The Luxembourgish Open Data Portal runs on various open source-based solutions such as the official uData theme[24]. On GitHub[25], the Open Data Portal hosts six further repositories of open source solutions.

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[23] https://data.public.lu/fr/
[24] https://github.com/opendatalu/gouvlu
[25] https://github.com/opendatalu