



DG DIGIT

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Open Source Software Country Intelligence Report

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Canada

Executive Summary

The Government of Canada (GOC) is striving to become a digital government and, in this quest, has decided upon an open source software (OSS) first approach when designing its digital solutions. Thus, all layers of government are involved in the making of OSS solutions, created by the Canadian Digital Service. In general, digital legislation is overseen by the Minister of Digital Government and over the last decade, several political initiatives have been implemented at the federal level regarding the use of OSS solutions in the public sector.

Canada is committed to the adoption and promotion of OSS through a variety of programmes. The Open Resource Exchange (ORE) for example serves as a platform for the sharing of OSS resources and initiatives across all levels of government in Canada, creating a gathering space for OSS developers and users. The GOC and many provinces and cities are active members of the GitHub community and openly share their OSS solutions.

In Canada, the ten provinces and three territories are powerful entities and have some legislative autonomy in the area of OSS use and promotion and often drive the innovation of OSS solutions. Several Provinces or municipalities have also developed local OSS legislation and initiatives. The large amount of OSS initiatives on the lower levels of government signal a ready uptake by the provincial and municipal level of Canada's OSS first approach.

Actors

This section presents the key governmental bodies that are responsible for setting OSS policies and the main strategic players that work together with the government at all levels to raise awareness on OSS.

Policy makers

- The Government of Canada (GOC) has been using OSS successfully for years, and increasingly since 2014.¹ As a part of its goal to become a digital government, the GOC not only gives preference to the use of OSS, it is also mandated to release its own source codes under Open Source Licences as long as it is compatible with core administrative law principles such as transparency, accountability, legality and procedural fairness.²
- The Minister of Digital Government³ oversees the Shared Services Canada (SSC)⁴ and the Treasury Board of Canada Secretariat, ensuring the GOC is moving towards more digital

¹ <https://code.open.canada.ca/en/index.html>

² <https://github.com/canada-ca/open-source-logiciel-libre>

³ <https://www.canada.ca/en/government/system/digital-government.html>

⁴ <https://www.canada.ca/en/shared-services.html>

solutions. The Shared Services Canada (SSC)⁵ is an agency of the Government of Canada responsible for providing and consolidating information technology services across federal government departments as well as delivering digital services to the Government of Canada. The Treasury Board of Canada Secretariat⁶ is responsible for overseeing public finances and also designs digital strategies and programmes for Canada.

- The Canadian Digital Service (CDS)⁷ partners up with federal departments to design, test and build simple, easy to use services. The goal is to improve the experience – for people who deliver government services and people who use those services.

Strategic players

- The Linux Professional Institute (LPI)⁸ is a Canadian non-profit organisation. The LPI promotes the use of OSS by supporting OSS communities. LPI wants to enable economic and creative opportunities for everybody by making open source knowledge and skills certification universally accessible.
- The Canadian Open Source Software Incubator seeks to provide developers with the funding, tools, experience, culture, and promotion necessary for running a successful OSS project.⁹ The aim is to provide sufficient funding and housing for six OSS developers in the early stages.
- LinuQ is a non-profit organisation that promotes the use of OSS in Québec.¹⁰ The organisation is responsible for a variety of events such as workshops or open discussions to bring together practitioners, policy makers and OSS enthusiasts.

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. Due to the legislative powers the provinces and regions have in the area of OSS, this section will first explain the policy and legal framework on the federal level and will then show examples on the provincial, regional or city levels.

Federal

- The draft of the Government of Canada Digital Playbook¹¹ first published in 2018 provides practical and detailed guidance to assist the Government of Canada in digital transformation and augmented service delivery, including becoming more agile, open and user-focused.

⁵ <https://www.canada.ca/en/shared-services.html>

⁶ <https://www.canada.ca/en/treasury-board-secretariat.html>

⁷ <https://digital.canada.ca/2020/02/24/why-open-source-matters/>

⁸ <https://www.lpi.org/>

⁹ <http://indevelopment.ca/>

¹⁰ <https://linuq.org/doku.php>

¹¹ <https://canada-ca.github.io/digital-playbook-guide-numerique/en/overview.html>

- The First Open White Paper¹² published in 2020 by the Treasury Board of Canada Secretariat had the aim to organise the board’s ideas on how to shift government to an “Open” approach, including OSS setting standards.
- The Directive on Management of Information Technology, Appendix C¹³ from 2009 and updated in 2018, decreed that, where possible, OSS be used first in Canadian public administration. Thus, it is recommended for departments to contribute all source code modifications made to third party open source software back to the community, whether done in-house by employees of the Canadian government or through procurement contracts.¹⁴
- The Canada Action Plan 2018-2020¹⁵ declares the aim of the Canadian government to prioritize open source code in development and in development and procurement of digital solutions
- The Directive on open government¹⁶, published in 2014, decrees that Canada fosters an “open by default” policy, providing clear and mandatory requirements to departments which will ensure that Canadians get access to as much government information and data possible.
- The Federated Architecture Program (FAP)¹⁷ of 2004 did not require the adoption or the evaluation of solutions based on open source software and in generally remained neutral on the question of OSS in public administration.
- Since 2003, Canada does not distinguish on the basis of software development models.¹⁸

Provincial, regional and city level

- The government of Québec advocates the use of OSS when it is the best choice and will ensure that leaders have the necessary support to do so.¹⁹
- The City of Montréal has an OSS policy that applies both to development and procurement. Its open source software/hardware development and usage policy²⁰ decreed that all its administrative units choose and use OSS.²¹ Additionally, Montréal also has a Directive on contributing to an Open-Source Project, which aims to eliminate bugs, permit better use by the City and community and add product features, to meet municipal and community needs.²²

¹² <https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/open-source-software/open-first-whitepaper.html>

¹³ <https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/open-source-software/guide-for-using-open-source-software.html>

¹⁴ <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=15249#appC>

¹⁵ https://www.opengovpartnership.org/wp-content/uploads/2019/01/Canada_Action-Plan_2018-2020_EN.pdf

¹⁶ <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=28108>

¹⁷ <https://open.canada.ca/en/blog/open-source-software-and-open-standards-government-canada>

¹⁸ <https://www.csis.org/analysis/government-open-source-policies> and http://www.e-cology.ca/canfloss/report/CANfloss_Report.pdf - Please note that the original source is currently not accessible.

¹⁹ <https://www.tresor.gouv.qc.ca/ressources-informationnelles/logiciels-libres/>

²⁰ https://ville.montreal.qc.ca/pls/portal/docs/PAGE/PRT_VDM_FR/MEDIA/DOCUMENTS/politique_materiel_libres_en.pdf

²¹ <https://github.com/VilledMontreal/politique-libre/blob/master/Politique/PolitiqueDuLibre.md#english-version>

²² <https://github.com/VilledMontreal/politique-libre/blob/master/Directives/ContributionAProjetLibre.md#english-version>

Under the Directive on Publication and Maintenance of an Open-Source Municipal Project, Montréal will also publish projects developed as open-source projects by and for the city.²³

- The City of Vancouver decreed in 2009 that, “when replacing existing software or considering new applications, will place open source software on an equal footing with commercial systems during procurement cycles.”²⁴

Open source software initiatives

This section presents an overview of the main open source software related initiatives in Canada. The list is presented in a chronological order, starting with the most recent initiative. The GOC has published a list with all Canadian OSS initiatives on their website²⁵.

- Government of Canada COVID Alert Mobile App, 2020²⁶: Canada’s COVID-19 exposure notification app. It can alert Canadians to possible exposures before they have symptoms and runs on OSS.
- COVID-19 Courthouse and School Screening Tools, 2020²⁷: This application by the Government of Ontario features screening tools that take the citizens of the region through a series of questions to determine whether they should be attending court or school. It is based on the Covid-19 Self-Assessment Tool Codebase and runs on OSS.
- COVID-19 Office Entry App, 2020²⁸: The app allows employees to request access to workplace sites and managers to monitor, review and approve employee requests. Employees can submit requests to access specific workplace areas based on predetermined building capacities. The manager will review the requests in the app.
- Nova Scotia - When to call 811 about COVID-19, 2020²⁹: Self-assessment tool to find out if one should call the health services about COVID-19. For the citizens of Nova Scotia, Canada.
- British Columbia Digital Marketplace, 2020³⁰: The Digital Marketplace is a web application that administers British Columbia's procurement programs. It enables public sector employees to create and publish procurement opportunities, and vendors to submit proposals to these opportunities.
- FireGUARD (Fire Growth under Uncertainty for Appropriate Response Decision Support), 2020³¹: is designed to support wildland fire response decision-making. FireGUARD contains four core

²³ <https://github.com/VilledeMontreal/politique-libre/blob/master/Directives/PublicationProjetVille.md#english-version>

²⁴ <https://www.csis.org/analysis/government-open-source-policies>

²⁵ <https://code.open.canada.ca/en/open-source-codes.html?wbdisable=true>

²⁶ <https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19/covid-alert.html>

²⁷ <https://github.com/onqov/covid-19-screening-tools>

²⁸ <https://github.com/justicecanada/oqd-office-entry-am-entree-au-bureau>

²⁹ <https://github.com/Nova-Scotia-Digital-Service/when-to-call-811>

³⁰ <https://github.com/ExchangeBC/devox>

³¹ <https://github.com/onqov/FireGUARD>

elements: generation of weather forecast scenarios, generation of a burn probability map from replicated simulation of fire growth, smouldering, and natural extinction under the weather scenarios and stochastic fire behaviour scenarios, assessment of 'risk' (i.e. likelihood-weighted impacts) by multiplying the spatial burn probability by a spatial rating of potential socio-economic impact, and, (in progress for future implementation) estimation of the cost of response alternatives. The FireGUARD is based on OSS.

- Small business rent assistance calculator, 2020³²: Tool launched by the Government of Ontario which includes three yes/no questions that help small business tenants or landlords determine if they are eligible for the Canada Emergency Commercial Rent Assistance (CECRA).
- Parking Ticket System, 2020³³: A tool for managing and tracking parking tickets issued by the City of Sault Ste Marie. The system interfaces with the Province of Ontario's Ministry of Transportation to handle ownership lookups and parking ticket convictions. The system is still in the Beta phase and is expected to be fully functional in early 2021.
- Lottery Licence Manager, 2019³⁴: A tool by the City of Sault Ste Marie for managing the municipal lottery licensing requirements in Ontario. Within the tool, lottery organisations and their records can be found, a lottery license can be acquired, and lottery events and their locations are being published.
- The Open Resource Exchange (ORE), 2019³⁵: The ORE serves as a platform for the sharing of innovative ideas across all levels of government in Canada, creating a gathering space for open source solutions developed from coast to coast. It includes five main services that focus on sharing solutions in an open source format: open source projects, open source software, open standards, partnerships and open design.
- The Health Gateway for British Columbians, 2019³⁶: The goal of the health gateway project is to develop a responsive design web application that empowers citizens with access and control over their health record. It enables a citizen to not only view and act on their health information, but also to connect it safely and securely with third-party health care applications. The Health Gateway is based on OSS.
- TalentCloud, 2018³⁷: Talent Cloud aspires to be a cross-sectoral initiative testing new realities for talent in-and-out of government. This initiative is designed to test the viability of a new model for recruiting and mobilizing talent in the Public Service. The Talent Cloud itself is a repository of pre-assessed talent, where the curation and distribution of talent is optimized for

³² <https://github.com/ongov/small-business-rent-assistance-calculator>

³³ <https://github.com/cityssm/parking-ticket-system>

³⁴ <https://github.com/cityssm/lottery-licence-manager>

³⁵ <https://code.open.canada.ca/en/index.html>

³⁶ <https://github.com/bcgov/healthgateway>

³⁷ <https://github.com/GCTC-NTGC/TalentCloud>

fast placement for project-based work. TalentCloud was developed by the Treasury Board of Canada Secretariat.

- mPacParser, 2017³⁸: This project attempts to simplify filling out the Year End Tax files by converting them to more friendly formats. Currently a CSV output is provided, but the project can be adapted for other output formats. It was developed by the City of Sault Ste Marie.
- YouCanBenefit, 2016³⁹: The City of Edmonton’s web application that increases social benefit programme discoverability for persons of lesser means.
- The Municipal Innovation Pilot Project (MIPP), 2016⁴⁰: The MIPP is an initiative aiming to support research and development of OSS solutions on all levels of Canadian government and to bring together all levels of governments and related groups working on OSS. The idea is to enable and support the pooling of investment for collective impact.
- Alberta Compensation Transparency Toolkit, 2016⁴¹: An Open Source toolkit to support disclosures under Alberta's Public Sector Compensation Transparency Act. It is a JavaScript toolkit built to simplify the process of setting up an interactive grid for compensation transparency web pages and automatically generates a table that comes with paging, navigation, sorting and filtering functionality.
- Open GIS Infrastructure (IGO), 2015⁴²: Launched by the government of Quebec and it is a free Web Geospatial solution developed in Quebec, Canada. Its goal is to disseminate geographic data produced by the Government of Quebec and to enable users to take advantage of this geographic data thanks to a cartographic interface accessible by a Web browser. IGO has multiple features, such as Web GIS viewer, layer tree Manager and many more.
- Open data portal, 2013⁴³: The portal enables to search for GOC open data, e.g. data about Government of Canada services, financials, national demographic information or high resolution maps. Its goal is also to help Canadians learn how to work with datasets, and to see what people have done with open data across the country. The portal runs on OSS.⁴⁴
- Integrated Rapid Infectious Disease Analysis (IRIDA), 2012⁴⁵: IRIDA is Canada’s Integrated Rapid Infectious Disease Analysis Platform for Genomic Epidemiology. IRIDA is designed to make infectious disease genomics accessible to epidemiologists, clinical microbiologists, and the

³⁸ <https://github.com/cityssm/mpacParser>

³⁹ <https://github.com/yeg-relief/youcanbenefit>

⁴⁰ <https://code.open.canada.ca/en/index.html>

⁴¹ <https://github.com/abgov/ab-compensation-transparency-toolkit>

⁴² <http://www.igouverte.org/english/>

⁴³ <https://open.canada.ca/en/open-data>

⁴⁴ <https://events19.linuxfoundation.org/wp-content/uploads/2017/11/Open-Standards-and-Open-Source-Software-in-the-Government-of-Canada-S%C3%A9bastien-Lemay-Treasury-Board-of-Canada-Secretariat.pdf>

⁴⁵ <https://github.com/phac-nml/irida>

broader research community by developing software that makes it possible to transition these big data files out of the labs and make them available for the wider community.

- KAN⁴⁶: KAN an open source data management software that enables open data programs in governments, non-profits, and businesses all over the world. Canada’s Open Government Portal is powered by CKAN and the Open Government team actively contributes to the core development of this robust suite of tools.

⁴⁶ <https://open.canada.ca/en/blog/canada-contributes-open-source-community>

