2024 Application Hosting Strategy

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Message from Treasury Board of Canada Secretariat and Shared Services Canada

In today's digital landscape, there are more opportunities than ever to drive innovation, enhance efficiency, and encourage collaboration. The Government of Canada (GC) is working to improve the overall digital environment and delivery of modern services. The Application Hosting Strategy (the Strategy) marks a significant milestone in the GC's ongoing efforts to have the best digital solution for application hosting, based on cost effectiveness and business value. Traditional approaches to application hosting methods cannot always meet the evolving needs of citizens and

public servants. This Strategy recognizes the need to adopt modern hosting solutions to foster innovation, streamline operations, and mitigate the risks associated with legacy systems.

Improving application hosting selection processes enables us to unlock numerous benefits, including enhanced agility, scalability, risk mitigation, and cost-effectiveness. These benefits align with our commitment to sustainability and fiscal responsibility. Cloud-based hosting platforms offer agile and scalable options. This means that federal institutions can adapt quickly to changing demands and deliver services with greater efficiency and flexibility. At the same time, GC owned data centres offer known physical security benefits and give the GC direct control of its data for business continuity purposes, providing greater assurance for services to Canadians.

Additionally, in line with the Digital Ambition, we work together to improve the GC's overall digital environment and delivery of modern services that are secure, reliable, user-centric, and barrier-free, and meet privacy and transparency needs. Our vision is for the GC to have an application hosting ecosystem that enables robust stewardship, smart procurement, sustainable funding, and centralized services. We look forward to continued engagements with our partners to realize the GC's digital modernization and continued transformation.

Application Hosting Strategy

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Background

In 2016, the Treasury Board of Canada Secretariat (TBS) published the GC Cloud Adoption Strategy. The strategy provided federal institutions with two new options for application hosting: cloud services and enterprise data centres. The Cloud Adoption Strategy was updated in 2018 and 2023 in

consultation with the GC Chief Information Officer and Chief Financial Officer communities. The latter update aimed to optimize the use of cloud hosting to maximize business value, reduce technical debt, and continue to evolve the service-focused culture of the GC. In the first few years of cloud adoption, the GC understood it needed to address costs in operating in this environment and needed additional rigour through a whole-of-government approach. To ensure a sustainable future in which Canadians continue to receive high-quality digital services while optimizing costs and reducing risks to the GC, it became clear that the current approach to application and data hosting required immediate review and improvements. In December 2023, the Chief Information Officer of Canada announced that a new strategy would arrive in 2024. TBS and Shared Services Canada (SSC) have been working together to develop the new application hosting strategy. This Strategy replaces the Cloud Adoption Strategy and is intended to deliver an updated vision and framework for application hosting in the GC that is holistic, future-oriented, and considers all digital infrastructure options. This marks a significant milestone in the GC's ongoing efforts to ensure federal institutions have access to cost-effective application hosting solutions that deliver the best value to Canadians in digital services.

What is application hosting?

Application hosting is the process of deploying and running software applications on servers located in data centres or on cloud-based infrastructure. These applications require underlying digital infrastructure such as servers, storage network, and security. The GC can either outsource the hosting and management of applications to specialized service providers, or can opt to host these applications within its owned enterprise data centre facilities.

Data centres are physical facilities where the GC can host and manage its data and applications directly. In contrast, cloud-based application hosting services are offered by Cloud Service Providers (third parties) outside of the

government-owned and managed data centres, providing access to computing resources, such as servers and storage, over the internet. There are advantages and disadvantages to both models, which must be carefully weighed when selecting the optimal hosting approach for applications.

Introduction

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Context

Federal institutions collect information and data that need to be securely stored and used to run applications to deliver programs and services. The GC uses applications to deliver programs and services to employees, Canadians, and Canadian businesses. There are different ways to host data and applications. Hosting models typically fall under two categories: GC data centres and cloud hosting. There are also hybrid solutions that combine elements of GC data centres and cloud hosting.

The following are key types of GC data centres:

- legacy data centres: facilities that were originally built to serve an individual department or a cluster of departments.
- enterprise data centres: modern, reliable, and secure facilities that serve and bring efficiencies to the entire federal government.

The following are key types of cloud computing services available through cloud hosting, which is reliable and secure and provides:

- Infrastructure-as-a-Service (IaaS): hardware that provides access to the most basic technology resources such as computing resources, storage, and networking.
- Platform-as-a-Service (PaaS): a set of managed services where the cloud provider manages some of the operational aspects for the consumer including databases, machine learning, and security monitoring.

- Software-as-a-Service (SaaS): an entire business solution is outsourced to a third party, such as a business application.

Federal institutions have access to different application hosting services for their applications, data, and programming needs. As of March 1, 2024, there are over 8,000 distinct business applications in operation across the GC. Just over 1,500 of these are mission-critical applications that federal institutions rely upon to deliver key services to Canadians, such as employment insurance and weather services. From planning to procurement to hosting to monitoring and evaluation, the GC puts significant effort and resources into application management.

As part of the GC's digital transformation efforts, numerous federal institutions have pursued cloud adoption for its ability to scale up a service and deploy new features quickly. Leveraging cloud services also enables federal institutions to work toward their sustainability goals while reducing overall environmental impact. However, the adoption of cloud technology within the GC has been limited in the past by outdated applications, organizational structures, processes, and traditional financial models for information technology. For instance, federal institutions have procured cloud contracts in isolation of other departments, which may have inadvertently led to an inefficient use of resources across the GC. These siloed investments in cloud hosting have prevented the GC from realizing the full potential of cloud technology.

The GC must assess the best application hosting solution for each investment, while considering the flexibility and agility of cloud hosting alongside the more predictable costs and stability of data centres. While cloud remains an important option for federal institutions in application hosting, the decisions surrounding application procurement and hosting are complex and the GC processes must support smart decision-making.

The GC's technology and digital talent must be able to quickly respond to changing needs and priorities for modern service delivery. An updated vision for the whole of government is needed to improve transparency and coordination of application hosting and meet these service delivery demands.

Scope

This Strategy provides direction and guidance for federal institutions in leveraging application hosting services efficiently and effectively, aligning with broader government objectives of digital transformation while mitigating risks of delivering services to Canadians. This Strategy is the result of consultation with partners across the federal public service. Federal institutions are encouraged to align the Strategy to their own departmental investment plans, improve their internal and external business services and operations, and contribute to the overall GC-wide efforts in service modernization. Deputy heads should view this Strategy as a means to reduce silos and improve internal and cross-government coordination and transformation efforts.

Vision

To provide optimal application hosting solutions that are cost effective with high business value to support the delivery of digital services to Canadians.

This Strategy has four broad goals:

1. Provide robust governance and oversight of application hosting performance and costs.
2. Leverage competitive procurements that support long-term operations.
3. Drive sustainable funding that is predictable and transparent.
4. Promote cohesive and consolidated application hosting services to reduce burdens on federal institutions.

What this looks like

- Sustainable funding models, with effective spend and cost controls, shape application hosting ecosystem
- Procurement power that mitigates business risks
- Applications are onboarded agilely
- GC has access to optimized, secure shared hosting solutions
- GC has improved ability to serve Canadians
- Application hosting solution decision-making is clear and transparent

Framework

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Overview

This Strategy describes a unified strategic direction for all federal institutions governed by the _Policy on Service and Digital_. The framework provides a clear governance structure for application, which makes coordination easier.

All GC application hosting, whether in a data centre or in the cloud, will be streamlined. SSC will be at the centre of all GC application hosting operations and be the service provider for all shared service delivery needs. Federal institutions will work closely with SSC and TBS to determine the hosting model that provides the greatest business value for each application. Additionally, SSC will continue to apply a robust costing methodology and will disclose applicable information to give federal institutions clear insight into their spending on application hosting. Empowered by SSC's cost transparent model, federal institutions will be further equipped to make decisions about application architecture that bring the greatest value to Canadians.

TBS (Office of the Chief Information Officer of Canada lead with support from other TBS Sectors) will provide policy, oversight, and governance for application hosting. This includes a framework, tools, guidance, and incentives to be used by federal institutions, SSC, and TBS in making application hosting decisions. To achieve the outcomes of this Strategy, TBS will monitor and report on performance to demonstrate whether federal institutions are agile and meeting service standards. Additionally, TBS will monitor responsible application spending using departmental data and identify opportunities for cost efficiencies and optimization.

Role of federal institutions

Federal institutions play an important role in the success of this Strategy. Deputy heads should gather data on the status of information technology projects within their federal institution and take a government-wide lens when making their hosting decisions, consistent with TBS's direction and collaborating effectively with SSC to optimize across the GC. Federal institutions will have to manage their cloud and data center consumption, including the ongoing support and maintenance of existing assets within their respective funding envelopes. Federal institutions will be onboarded to an approved application hosting funding model over time. Federal institutions should continually strive to modernize their applications and develop a digital workforce to manage them. In particular, federal institutions should ensure that their applications are sustainable, have been modernized, and are ready to be hosted ahead of launching a request.

Key responsibilities

TBS will	SSC will	Federal institutions will
• set strategic direction and guidance	• implement direction and guidance	• address technical risk

- establish roles and responsibilities
- monitor progress through governance, assess performance against outcomes
- address issues of non-compliance
- implement an application hosting funding model including transparent reporting for federal institutions

- deliver hosting services
- make operational decisions with institutions
- liaise with outside suppliers
- create a transparent environment around costing, performance, and consumption
- provide IaaS and PaaS*

- modernize and optimize applications to drive effectiveness
- manage cloud and/or data centre consumption costs as agreed upon
- report on the health and cost of applications to TBS
- engage with TBS and SSC throughout the application hosting process

*Current policies and processes related to provision of SaaS will continue to be followed.

Conclusion

With this updated vision and framework, TBS and SSC will continue to work with its partners and federal institutions to improve application hosting within the GC for employees, Canadians, and Canadian businesses.

This Strategy will work in conjunction with associated plans, tools, and guidance which will be updated as required through the lifecycle of the Strategy.

Related Links

[Government of Canada Cloud Adoption Strategy: 2023 Update](#)