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Cloud Comparison Guide

Azure vs AWS vs GCP for Canadian SMBs

PIPEDA/Law 25 context · CA Regions · Field numbers · Direct recommendations

Azure vs **AWS** vs **GCP**

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Table of Contents

1. The "Everyone Uses AWS" Trap

The IT director walks into my office, arms crossed. "We're choosing AWS. That's what everyone does." Three months later, his 85 VMs are running on EC2 ca-central-1. The bill is 40% over budget. And his team realizes that 70% of their workloads — primarily Exchange, SharePoint, and a dozen .NET apps on Windows Server — would have run better on Azure, with native integration they had to configure manually on AWS.

Recalculation with Azure Hybrid Benefit + 3-year reservations: -30% on the total bill.

This guide doesn't claim one cloud is universally better. It gives you the criteria to choose the right one for your actual situation.

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2. The Canadian Context: What Changes Everything

PIPEDA and Quebec Law 25

The Personal Information Protection and Electronic Documents Act (PIPEDA) governs personal data processing in Canada. Quebec Law 25 (in force since 2022) imposes additional obligations for Quebec organizations: explicit consent, privacy impact assessments (PIAs), and data localization.

Practical consequence: your personal data must generally stay on Canadian soil.

Canadian Regions for All 3 Clouds

Cloud	CA Regions	Toronto Latency	Montreal Latency
Azure	Canada Central (Toronto) Canada East (Quebec City)	< 5 ms	< 10 ms
AWS	ca-central-1 (Montreal) ca-west-1 (Calgary — limited)	~ 10-15 ms	< 5 ms
GCP	northamerica-northeast1 (Mtl) northamerica-northeast2 (Toronto)	< 5 ms	< 5 ms

Key point: Azure is the only cloud with a region in Quebec City — essential for intra-provincial DR under Law 25.

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3. The 6-Dimension Comparison

Dimension	Azure	AWS	GCP

Canadian Presence	5/5 - 2 regions incl. QC City	4/5 - 2 regions (Mtl+Calgary)	4/5 - 2 regions (Mtl+Toronto)
Microsoft Ecosystem	5/5 - Native: M365, AD, SQL	3/5 - Third-party integration	2/5 - Few native MS integrations
Service Catalog	4/5 - ~200 services	5/5 - 240+ services, leader	3/5 - ~150, data/ML focus
SMB Pricing	5/5 - Hybrid Benefit, CSP	4/5 - Reserved + Savings Plans	4/5 - Auto Sustained Use
SMB Support	4/5 - Strong CSP partners CA	5/5 - Largest ecosystem #1 CA	3/5 - Fewer partners in CA
CA Compliance	5/5 - PIPEDA, Law 25, SOC2	4/5 - PIPEDA, SOC2, no QC	4/5 - PIPEDA, SOC2, 2 regions

4. Azure: When It's the Right Choice

If your SMB has an existing Microsoft environment — Office 365, Active Directory, SQL Server, .NET applications, Windows Server licenses — Azure isn't just "an option." It's the obvious answer.

Key Arguments

- Azure Hybrid Benefit: Windows Server licenses with SA → savings up to 40% on Windows VM costs. On-prem SQL Enterprise → Azure SQL MI with no additional license cost.
- Azure AD / Entra ID: AD Connect syncs in 20 minutes. Native SSO to all cloud apps. AWS requires AD Connector or IAM Identity Center.
- 2 Canadian regions including Quebec City: Canada East (QC City) + Canada Central (Toronto) = only native option for intra-provincial DR under Law 25.
- Azure OpenAI Service: only cloud to deploy Microsoft AI tools privately with data residency in Canada.

Real Case: 180-User SMB, Microsoft Stack

Industrial distributor, 180 employees, Quebec. 45 Windows Server VMs, SQL Server 2019, Exchange, SharePoint on-prem, branches in Montreal and Toronto.

Indicator	Before (on-prem)	After (Azure)	Change
Monthly infra cost	28,400 CAD	18,460 CAD	**-35%**
Licenses included	BYOL separate	Hybrid Benefit	**Included**
Availability	99.2%	99.95%	**+0.75%**
Investment recovery	—	8 months	**—**

5. AWS: When It's the Right Choice

AWS remains the most mature and complete cloud. If you're not in a Microsoft ecosystem and want the broadest service catalog with the most active community, AWS is hard to beat.

Key Arguments

- Service catalog: 240+ managed services. Largest catalog, richest documentation, largest community.
- Partner ecosystem in CA: largest number of certified partners in the country. Consultants, integrators, MSPs — best local choice.
- Reserved Instances / Savings Plans: 1-year commitment → -40% vs on-demand. 3 years → up to -60%. Most effective cost-reduction tool on the market.
- ca-central-1 (Montreal): mature region, majority of services available. ca-west-1 Calgary remains limited.

Real Case: B2B SaaS Startup

HR SaaS, 35 employees, US + CA expansion. Node.js, PostgreSQL, Redis, ElasticSearch. Multi-tenant, 3x growth expected in 18 months.

- AWS ca-central-1: RDS PostgreSQL + ElastiCache + OpenSearch + Auto Scaling
- 10x traffic spike absorbed without manual intervention
- Multi-region US deployed in 2 weeks using the same patterns

4,200 CAD/month for 50,000 active users · AWS Activate: 100,000 USD startup credits

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6. GCP: When It's the Right Choice

GCP is underestimated by SMBs. Its "cloud for data scientists" reputation sticks, but there are cases where GCP is objectively the best choice — sometimes by a wide margin.

Key Arguments

- GKE (Google Kubernetes Engine): Google invented Kubernetes. GKE remains superior to AKS and EKS in operational ease, auto-upgrade, and total cost.
- BigQuery: no server to manage, per-query billing (5 USD/TB analyzed). Terabyte-scale performance without expensive Redshift or Synapse clusters.
- Sustained Use Discounts: automatic discounts up to 30% when usage exceeds 25% of the month. No explicit reservation needed.
- Cheaper egress: ~30% less than AWS and Azure. For high-outbound architectures: thousands of dollars in monthly savings.

Real Case: Data-Intensive SMB

Data marketing agency, 45 employees. Daily processing: 2 TB of event data. Stack: dbt + BigQuery + Looker + GKE.

GCP vs AWS Redshift + EKS comparison: -28% over 12 months · Migration: 6 weeks

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7. Quick Decision Guide

Situation	Recommendation	Estimated Savings
Microsoft stack (M365, AD, SQL Server, .NET)	Azure	Hybrid Benefit: -35 to -45%
Multi-region SaaS startup, broad catalog needed	AWS	Reserved 1 yr: -40 to -60%
Analytics, BigQuery, native ML/AI	GCP	Sustained Use: -20 to -30%
Managed Kubernetes, DevOps teams	GCP	GKE + SUD: -25%
General SMB, first cloud, tight budget	Azure or AWS	Negotiate CSP/MPSA: -20%
QC Law 25 + strict PIPEDA, intra-QC DR	Azure	2 QC regions available
Data-intensive app, expensive egress elsewhere	GCP	GCP egress 30% cheaper

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8. Pitfalls to Absolutely Avoid

Pitfall 1 — Egress: The Invisible Cost

All 3 clouds charge 0.08–0.09 USD/GB for egress. A SaaS app at 50 TB/month outbound = 4,000–4,500 USD/month on AWS/Azure. On GCP: ~2,800 USD. Over 12 months: 14,000–20,000 USD difference. Calculate your egress profile before choosing.

Pitfall 2 — Subtle Vendor Lock-In

Real lock-in doesn't come from VMs. It comes from proprietary managed services: DynamoDB, Azure Service Bus, Google Spanner. Identify portable vs. proprietary services from the start. Limit lock-in to services where differential value justifies it.

Pitfall 3 — The "Cloud Is Cheaper" Myth

Without active FinOps: +20% costs. With FinOps (reservations + right-sizing + no idle + egress management): -35%. Cloud isn't magically cheaper — it requires active management.

Pitfall 4 — Underestimating Support Costs

AWS Business support: 100 USD/month + 10% of bill. On 20,000 USD/month = 2,000 USD/month. That's 24,000 USD/year just for support. Azure and GCP have similar models. Factor this into your TCO from day one.

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9. Conclusion: The Right Cloud for Your Context

There's no universally best cloud. There's the best cloud for you, based on your stack, your team, your legal obligations, and your 3-year objectives.

- Microsoft-heavy → Azure: Hybrid Benefit + native ecosystem = -30 to -45%
- Multi-region SaaS, broad catalog → AWS: maturity + partners + Reserved Instances
- Data-intensive or Kubernetes-first → GCP: BigQuery + GKE + Sustained Use Discounts

What doesn't change: the choice must be made before migrating, based on a portfolio assessment and a comparative 3-year TCO. Not after 3 months of migration in the wrong direction.