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Field Guide

On-Prem to Cloud Migration

Rehost / Replatform / Refactor — Azure, AWS, GCP

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The Cloud Promise... and the Reality

The CEO walks into the boardroom with boundless energy. 'We're migrating everything to the cloud in 6 months. We'll cut costs, accelerate deployments, and finally become agile.' Applause in the room.

Nine months later, the infrastructure bill has tripled. The three best developers have resigned. The main application consumes 40 oversized EC2 instances with 60% of resources sitting idle.

We've lived this story. Multiple times. And every time, the root cause is the same: a cloud migration without adequate preparation.

i This guide distills what we learn in the field. Not vendor theory. The reality of Canadian SMBs.

The 3 Fatal Migration Mistakes

1. Blind Lift & Shift

The most common mistake: take each on-prem server and recreate it as-is in the cloud. You pay for cloud, but you have all the drawbacks of on-prem without any native benefits.

Observed result: 40 EC2 instances running 24/7, most below 20% CPU utilization. 60% of resources wasted. Monthly bill: double the planned budget.

2. Underestimating Real Costs

The industry benchmark is brutal: plan for 1.4x your initial estimate. Visible costs (compute, storage) represent only half the actual bill.

3. Ignoring Technical Debt

Migrating an application with 10 years of technical debt means transplanting it with its problems. Worse: cloud amplifies certain inefficiencies (query costs, inter-service network latency).

The 3 Migration Models

Rehost (Lift & Shift)

Principle: Direct migration, no modification. VMs are moved as-is to the cloud.

- Fast to execute, low technical risk
- No cloud-native benefits, near-systematic over-sizing
- Estimated savings: 10-15%

i Use as a planned transitional step, not as a final strategy.

Replatform (Lift, Tinker & Shift)

Principle: Migration with light optimizations. Use cloud managed services without rewriting application code.

- Replace self-hosted MySQL with Amazon RDS or Azure Database for MySQL
- Replace on-prem Redis with ElastiCache or Azure Cache for Redis
- Move static files to S3 or Azure Blob Storage

Estimated savings: 25-35% — Best ratio for SMBs.

Refactor (Re-architect)

Principle: Rewriting the application to fully leverage cloud-native capabilities: microservices, containers, serverless, event-driven architecture.

- 50-70% savings over 3 years
- Significant effort: 6-18 months
- Reserve for strategic high-traffic applications

Comparative Model Table

Criteria	Rehost	Replatform	Refactor
Complexity	Low	Moderate	High
Duration	2-6 wks	2-4 months	6-18 months
Savings (3 yrs)	10-15%	25-35%	50-70%
Technical risk	Low	Moderate	High
Cloud benefits	Minimal	Substantial	Maximum
Recommended for	Legacy + deadline	SMBs (80%)	Strategic apps

Azure vs AWS vs GCP: Which Cloud for Your Canadian SMB?

Microsoft Azure

Recommended if: your organization is Microsoft-heavy (Office 365, Active Directory, SQL Server, .NET).

- Canadian regions: Canada Central (Toronto) + Canada East (Quebec City)
- Native Active Directory and Microsoft 365 integration
- Azure Hybrid Benefit: savings on existing Windows/SQL Server licenses
- PIPEDA, SOC 2, ISO 27001 compliance

Amazon Web Services (AWS)

Recommended if: you want the broadest catalog and maximum maturity.

- Canadian region: ca-central-1 (Montreal) + ca-west-1 (Calgary)
- 200+ managed services — the largest catalog

- Reserved Instances: 40-60% savings vs on-demand

Google Cloud Platform (GCP)

Recommended if: data analytics, machine learning, or native Kubernetes.

- Canadian regions: northamerica-northeast1 (Montreal) + northeast2 (Toronto)
- BigQuery for large-scale analytics
- GKE: the best managed Kubernetes on the market
- Automatic Sustained Use Discounts (no reservation needed)

5-Step Migration Plan

Step	Duration	Objective	Key Deliverable
1. Assessment	2-4 wks	App inventory, 3-yr TCO	App matrix + strategy
2. Pilot	4-6 wks	Validate arch, train team	Runbook + actual costs
3. Wave 1	6-10 wks	Priority apps (best ratio)	Cloud vs on-prem KPIs
4. Optimize	Ongoing	Right-sizing, FinOps	-20-30% additional bill
5. Scale	Ongoing+	Remaining apps, cloud-native	Full migration

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Hidden Costs

Budget items systematically omitted from cloud quotes:

Cost Item	Estimate
Network egress	0.08-0.09 USD/GB outbound — 10 TB/month = 800-900 USD/month extra
Enterprise support	10%+ of monthly bill — $50K/month = $5-8K/month support
BYOL licenses	Windows Server, SQL Server — verify usage rights carefully
Team training	15,000-25,000 CAD for 3-4 people properly certified
Idle resources	1 forgotten instance = $130 USD/month — x20 = $2,600 wasted

i Golden rule: budget 1.4x your initial estimate. Always.

BOTUM Case Study: -40% Costs in 90 Days

Context: Services-sector client, 120 on-prem VMs, aging infrastructure, datacenter lease expiring in 8 months.

Assessment (3 weeks)

- 45% of apps: Replatform-ready
- 35%: Rehost phase 1 then Replatform
- 20%: Refactor candidates (phase 2)
- 15 VMs to decommission (abandoned apps still running)

Results at 90 days

Metric	Before	After	Delta
Infra costs	100%	60%	**-40%**
Availability	99.2%	99.97%	**+0.77%**
Deploy time	4 hours	12 minutes	**-95%**
Idle VMs	15 active	0	**-$3,200/month**

i The most effective migration isn't necessarily the fastest. It's the one that's prepared.

Conclusion

Migrating to the cloud is a strategic decision, not a technical one. It starts with an honest assessment of your application portfolio, a rigorous business case, and a clear strategy per application.

The Replatform model offers the best risk/benefit ratio for most SMBs. Budget 1.4x your estimate. Train your teams. Activate FinOps from day one.

Need help with your cloud migration?
BOTUM teams help organizations assess, plan, and execute cloud migrations. Contact: www.botum.ca/contact

→ Online version: blog.botum.ca/on-prem-to-cloud-migration-complete-guide/