

Cloud Computing Regulations and Compliance in North American Financial Institutions: A Strategic Framework

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Abstract: *As financial institutions across North America increasingly adopt cloud technologies to drive innovation, cost-efficiency, and operational agility, they face a complex and evolving regulatory landscape shaped by federal mandates, state and provincial statutes, and industry-specific governance expectations. The integration of cloud platforms into core financial operations demands more than technical enablement; it necessitates a robust compliance strategy that ensures data protection, legal conformity, and sustainable risk management. This paper presents an in-depth analysis of key cloud compliance regulations in the financial sector—including the U.S. Federal Financial Institutions Examination Council (FFIEC) guidance, Gramm-Leach-Bliley Act (GLBA), Canada's Personal Information Protection and Electronic Documents Act (PIPEDA), and California's Consumer Privacy Act (CCPA). It further proposes a strategic compliance framework and highlights real-world case studies to guide financial institutions in aligning technology innovation with legal obligations. In doing so, the paper aims to provide a practical roadmap for executives, compliance officers, and cloud architects to successfully navigate the regulatory terrain while maintaining operational efficiency and market competitiveness*

Keywords: Cloud compliance, financial regulations, FFIEC, GLBA, PIPEDA, CCPA, data residency, auditability, regulatory risk, financial cloud governance, compliance automation

