


# Chapter 10

## Ensuring Compliance in Cloud Native Assurance and IT Audits

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### **ABSTRACT**

*This chapter fundamentally redefines compliance strategies for cloud-native environments, moving away from traditional audit practices that no longer align with the ephemeral and automated nature of modern infrastructure. Rather than relying on manual, after-the-fact evidence collection, the chapter advocates integrating compliance directly into development and deployment workflows. Approaches such as Infrastructure as Code and Policy-as-Code are emphasized, alongside automated enforcement mechanisms, immutable audit trails, and robust observability to support ongoing regulatory adherence. However, technology alone is not sufficient—success also hinges on fostering cross-functional collaboration, upskilling teams, and driving cultural change so that compliance becomes an intrinsic part of day-to-day operations. By aligning governance with the agility demanded by contemporary software delivery, this framework supports audit readiness, mitigates risk, and helps organizations maintain trust with stakeholders.*

### **INTRODUCTION**

Modern enterprises choose cloud-native architecture because it provides them with agility together with scalability and operational efficiency in the current digital transformation period. The combination of microservices with containers

DOI: 10.4018/979-8-3373-3078-5.ch010

and serverless functions and declarative infrastructure makes innovation faster and reduces market response times. The introduction of new technological advancements presents organizations with substantial obstacles in their efforts to keep systems compliant and audit-ready.

Traditional IT audits operated on monolithic systems that experienced rare infrastructure changes while maintaining direct traceability. Cloud-native systems operate with Continuous Integration and Continuous Deployment (CI CD) pipelines that execute thousands of code changes, deployments and configuration updates every week because they represent dynamic systems (IBM, n.d.). Complex systems create problems for conventional audit methods when trying to establish reliable controls.

Modern regulatory frameworks such as SOX (Sarbanes-Oxley Act), HIPAA (Health Insurance Portability and Accountability Act) enforce stricter requirements for documentation and traceability and system integrity. The adaptation of cloud-native environments requires both technical adjustments and fundamental changes in organizational culture to fulfill these requirements. Public cloud platforms present challenges to compliance because organizations need to establish clear definitions of internal control ownership within their shared responsibility model (Amazon Web Services, n.d.).

The rapid growth of cloud adoption among finance and healthcare industries together with retail and public sector organizations has led auditors to expect instant monitoring of systems and automated evidence collection alongside continuous control tracking. Static screenshots, spreadsheets, and point-in-time reviews are no longer sufficient. The development lifecycle needs to incorporate compliance through practices including DevSecOps and Infrastructure-as-Code (IaC) and Policy-as-Code and observability (Open Policy Agent, n.d.; Drata, n.d.).

The implemented tools and methodologies allow organizations to adopt a “compliance-as-a-product” model which automatically produces audit artifacts while continuously monitoring compliance status. Quality assurance teams used to function independently from governance have started working together with security and compliance functions to authenticate both functional and performance capabilities and regulatory adherence.

Organizations should handle compliance as an ongoing capability that involves collaboration between teams instead of treating it as an outside requirement. The transformation requires organizations to redefine how roles operate and their responsibilities together with their selection of tools. Compliance officers need to master both CI/CD pipeline operations and cloud control mechanisms while engineers require mastery of regulatory standards and control management systems. Operational resilience emerges from the unification of independent organizational functions that previously operated separately.

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