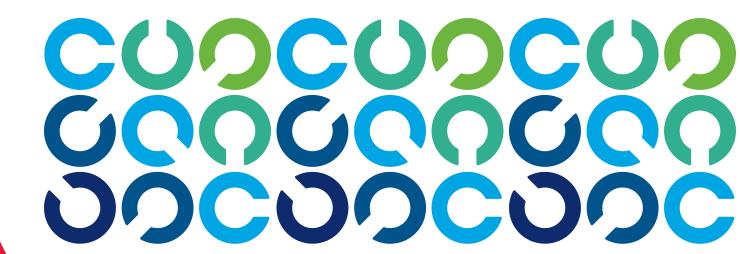
See ISACA

Google Cloud Platform (GCP) Audit Program



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ABSTRACT

As many companies undergo digital innovation and transformation, optimize global workforce access to productivity tools and shift business operations to hybrid, single cloud or multicloud environments, auditors must be prepared with a framework to understand and assess risk across various enterprise cloud technologies. ISACA has been an early leader in developing auditing templates for the widely used enterprise cloud services providers: Microsoft Azure and Amazon Web Services (AWS). With the continued growth and adoption of the Google Cloud Platform (GCP), which is now the third-largest provider of cloud services, ISACA has developed an audit program that helps auditors assess and test the internal control adequacy and effectiveness of GCP services, adding to the library of frameworks that exists for the two other major cloud providers.

Once at the forefront of emerging technology, most enterprises and government entities have moved some level of critical services either partially or entirely to the cloud. This allows them to take advantage of the availability, flexibility and scalability of cloud platforms and services. Although the classification of "cloud computing" necessitates having certain characteristics, each cloud provider differentiates itself with the types of services provided, the terminology it uses, and the enhancements and innovations offered. ISACA created the GCP Audit Program to help auditors develop an audit program that caters to the uniqueness of GCP while effectively assessing an enterprise cloud environment for adherence to organizational risk and compliance objectives.¹

¹ Google Cloud, "State of Cloud Threat Detection and Response Report," March 2023, https://services.google.com/fh/files/misc/gcat_cloud_dr_survey_report_2023.pdf

Google Cloud Platform Audit Program

Audit Objective

This audit program assists IT auditors in performing operational and compliance assessments for GCP designed to address both general cloud computing attributes and specialized Infrastructure-as-a-Service (laaS), Platform-as-a-Service (PaaS), Software-as-a-Service (SaaS) and even Identity-as-a-Service (IDaaS) services. The program will aid IT auditors in evaluating whether the enterprise has configured and enabled GCP services in a way that securely supports the enterprise's business, operational and compliance goals.

Audit Scope

The audit program covers the following areas:

- Governance
- Network configuration and management
- Resource configuration and management
- Data security and integrity
- · Security incident response
- Business continuity and resiliency
- Security logging and monitoring
- Identity and access management

Business Impact and Risk

In general, one of the most significant areas of risk within a cloud environment is the prevalence of misconfigurations and misunderstandings about shared cloud responsibilities as enterprises tailor and scale services to meet the needs of their operations. In particular, for GCP, it is vitally important to understand concepts around identity and access management, the Organization/Project/Folder structure, the impacts of

inheritance and hierarchy on access and permissions and the enablement/disablement of logging options. Not understanding these can lead to missing areas of assessment as well as an increased likelihood that risk goes undetected until an incident occurs. Most security professionals believe maintaining security within a cloud environment is more difficult and involves greater risk than an on-premises environment.² Given the dynamic nature of the cloud and the pace and frequency at which cloud services are evolving—with newly added services, new features of existing services, deprecation of services and newly detected vulnerabilities— security professionals' concerns regarding the business impact of risk are well-founded.

Minimum Audit Skills

The GCP Audit Program assumes that auditors exercise due professional care and possess professional competencies culminating in the proficiency to conduct an audit inclusive of cloud computing environments. ITAF Standard 1005 requires that the auditor exercise due diligence and professional care; professional skepticism and effective communication should be maintained throughout the course of an audit. ITAF Standard 1006 also requires that the auditor have professional competence and technical skill in the areas under assessment³. This expectation is particularly relevant to auditors who do not hold the CISA (or another appropriate) certification designation.

Testing Steps

Refer to the accompanying spreadsheet file for guidance on testing GCP services.

² Ibid

³ ISACA, IT Audit Framework (ITAF™): A Professional Practices Framework for IT Audit, 4th Edition, 2020

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Disclaimer

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