Training: Google Cloud
Logging, Monitoring and Observability in Google Cloud

TRANING TERMS

2025-09-04 | 2 days | Kraków / Virtual Classroom
2025-10-02 | 2 days | Warszawa / Virtual Classroom
2025-11-06 | 2 days | Kraków / Virtual Classroom
2025-12-04 | 2 days | Warszawa / Virtual Classroom

TRAINING GOALS:

This course teaches participants techniques for monitoring and improving infrastructure and application performance in Google Cloud. Using a combination of presentations, demos, hands-on labs, and real-world case studies, attendees gain experience with full-stack monitoring, real-time log management and analysis, debugging code in production, tracing application performance bottlenecks, and profiling CPU and memory usage.

Course objectives

- Explain the purpose and capabilities of Google Cloud's operations suite.
- Implement monitoring for multiple cloud projects.
- Create alerting policies, uptime checks and alerts.
- Install and manage Ops Agent to collect logs for Compute Engine.
- Explain Cloud Operations for GKE.
- Analyze VPC Flow Logs and firewall rules logs.
- Analyze and export Cloud Audit Logs instances.
- Profile and identify resource-intensive functions in an application.
- Analyze resource utilization cost for monitoring related components within Google Cloud.

Audience

- Cloud architects, administrators, and SysOps personnel
- Cloud developers and DevOps personnel

CONSPECT:

- Module 1 Introduction to Google Cloud Operations Suite
    - Objectives
        - Describe the purpose and capabilities of Google Cloud's operations suite
        - Explain the purpose of the Cloud Monitoring tool.
        - Explain the purpose of Cloud Logging and Error Reporting tools.
        - Explain the purpose of Application Performance Management tools.
    - Activities
        - 1 quiz

- Module 2 Monitoring Critical Systems
    - Objectives
        - Use Cloud Monitoring to view metrics for multiple cloud projects.
        - Explain the different types of dashboards and charts that can be built.
        - Create an uptime check.
        - Explain the cloud operations architecture.
        - Explain and demonstrate the purpose of using Monitoring Query Language (MQL) for monitoring.
    - Activities
        - 1 quiz
        - 1 lab

- Module 3 Alerting Policies
    - Objectives
        - Explain alerting strategies.
        - Explain alerting policies.
        - Explain error budget.
        - Explain why server-level indicators (SLIs), service-level objectives (SLOs), and service-level agreements (SLAs) are important.
        - Identify types of alerts and common uses for each.
        - Use Cloud Monitoring to manage services.
    - Activities
        - 1 quiz
        - 1 labs

- Module 4 Advanced Logging and Analysis
    - Objectives
        - Use Log Explorer features.

- Explain the features and benefits of logs-based metrics.
- Define log sinks (inclusion filters) and exclusion filters.
- Explain how BigQuery can be used to analyze logs.
- Export logs to BigQuery for analysis.
- Use log analytics on Google Cloud.

- Activities
  - 1 quiz
  - 1 lab

- Module 5 Working with Audit Logs
  - Objectives
    - Explain Cloud Audit Logs.
    - List and explain different audit logs.
    - Explain the features and functionalities of the different audit logs.
    - List the best practices to implement audit logs.
  - Activities
    - 1 quiz
    - 1 lab

- Module 6 Configuring Google Cloud Services for Observability
  - Objectives
    - Use the Ops Agent with Compute Engine.
    - Enable and use Kubernetes Monitoring.
    - Explain the benefits of using Google Cloud Managed Service for Prometheus.
    - Explain the usage of PromQL to query Cloud Monitoring metrics.
    - Explain the uses of Open Telemetry.
    - Explain custom metrics.
  - Activities
    - 1 quiz
    - 1 lab

- Module 7 Monitoring Google Cloud Network and Data Access
  - Objectives
    - Collect and analyze VPC Flow Logs and firewall rules logs.
    - Enable and monitor Packet Mirroring.
    - Explain the capabilities of the Network Intelligence Center.
  - Activities
    - 1 quiz
    - 1 lab

- Module 8 Investigating Application Performance Issues
  - Objectives
    - Explain the features and benefits of Error Reporting, Cloud Trace, and Cloud Profiler.
    - Explain the functionalities of the Error Reporting, Cloud Trace, and Cloud Profiler.
  - Activities
    - 1 quiz
    - 1 lab
- Module 9 Optimizing the Costs for Operations Suite
  - Objectives
    - Analyze resource utilization cost for monitoring related components within Google Cloud.
    - Implement best practices for controlling the cost of monitoring within Google Cloud.
  - Activities
    - 1 quiz

REQUIREMENTS:

To get the most out of this course, participants should:

- Have completed the Google Cloud Fundamentals: Core Infrastructure course or have equivalent experience.
- Have basic scripting or coding familiarity.
- Be proficient with command-line tools and Linux operating system environments.

Difficulty level

CERTIFICATE:

The participants will obtain certificates signed by Google Cloud.

TRAINER:

Authorized Google Cloud Trainer.