



Essentials of Monitoring Critical Systems

Course description

Monitor, Analyze, and Optimize Critical Cloud Workloads. Learn Google Cloud Monitoring, Dashboards, PromQL, Uptime Checks, and AI-Powered Observability with Gemini.

- Course level: Intermediate
- Duration: 1 day

Activities

This course includes instructor-led sessions, hands-on demonstrations, and interactive discussions to reinforce learning.

Course objectives

In this course, you will learn to:

- Describe the purpose and key components of Google Cloud Monitoring.
- Monitor resources across multiple Google Cloud projects.
- Create and customize dashboards for operational visibility.
- Query metrics using Prometheus Query Language (PromQL).
- Configure uptime checks to monitor service availability.
- Leverage Google Cloud Gemini to improve observability and monitoring workflows.

- Build a strong foundation in cloud monitoring and operational excellence.

Key features

- Introduction to Cloud Monitoring
- Monitoring Across Multiple Projects
- Data Model and Dashboards
- Querying Metrics with PromQL
- Monitoring Demonstrations
- Uptime Checks and Availability Monitoring
- AI-Powered Observability with Google Cloud Gemini
- Knowledge Validation and Best Practices

Intended audience

This course is intended for:

- Cloud Engineers
- Site Reliability Engineers (SREs)
- System Administrators
- DevOps Engineers
- Cloud Operations Engineers
- Platform Engineers
- Infrastructure Engineers
- Technical Support Engineers
- IT Operations Professionals
- Anyone responsible for monitoring and maintaining Google Cloud environments.

Prerequisites

We recommend that attendees of this course have:

- GCP Fundamentals.
- General cloud computing and IT knowledge.
- Familiarity with monitoring tools is helpful.

- Application development background is beneficial.
- Understanding of DevOps and Site Reliability Engineering (SRE) principles is recommended.

Course outline

Module 01 - Monitoring Overview

- Introduction to Google Cloud Monitoring
- Cloud Monitoring Architecture
- Platform Monitoring
- Application Monitoring
- Hybrid Cloud Monitoring

Module 02 - Monitoring Multiple Projects

- Metrics Scopes
- Monitoring Project Configuration
- Centralized Monitoring

Module 03 - Data Models and Dashboards

- Cloud Monitoring Data Model
- Metrics
- Resources
- Time-Series Data
- Dashboard Builder
- Metrics Explorer
- Chart Configuration

Module 04 - Querying Metrics with PromQL

- Introduction to PromQL
- Managed Service for Prometheus
- Custom Metrics
- Advanced Queries

Module 05 - Uptime Checks and Alerting

- Uptime Checks
- Availability Monitoring

- Alerting Integration

Module 06 - Enhancing Observability with Google Cloud Gemini

- Gemini Cloud Assist
- AI-assisted Monitoring
- AI-driven Troubleshooting
- Operational Insights

Module 07 - Course Summary and Quiz

- Monitoring Best Practices
- Course Review
- Knowledge Assessment

Certification details

CloudThat Course Completion Certificate will be awarded to all learners who successfully complete the training.

FAQs

Who is this course intended for?

This course is designed for cloud engineers, SREs, system administrators, and professionals responsible for monitoring Google Cloud environments.

What products are covered in this course?

The course focuses on Google Cloud Monitoring and Prometheus, including Google Cloud Managed Service for Prometheus.

What monitoring concepts are covered?

Topics include monitoring architecture, metrics scopes, dashboards, PromQL, uptime checks, observability, and AI-assisted monitoring.

Will I learn how to create dashboards?

Yes. The course covers predefined dashboards, custom dashboards, Dashboard Builder, Metrics Explorer, and chart configuration.

What is PromQL?

PromQL (Prometheus Query Language) is used to query and analyze monitoring metrics for advanced observability and troubleshooting scenarios.

Does the course cover uptime monitoring?

Yes. Learners will create uptime checks, configure monitoring policies, and connect uptime monitoring with alerting workflows.

How is Gemini used in monitoring?

The course explores Gemini Cloud Assist and its ability to enhance observability, analyze application behavior, and assist with monitoring-related tasks.

Are there hands-on demonstrations?

Yes. The course includes demonstrations involving Ops Agent, Compute Engine, GKE, Cloud Run, and Managed Service for Prometheus.

Will I receive a certificate?

Yes. A CloudThat Course Completion Certificate will be awarded upon successful completion.

How long is the training?

The course duration is 3 hours and is delivered as an instructor-led training program.