Logging, Monitoring, and Observability in Google Cloud

Category: AI, Data & Analytics | **Vendor:** Google Cloud

Duration: 16.00 hours (2 days) **13.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This three-day instructor-led course teaches participants techniques for monitoring, troubleshooting, and improving infrastructure and application performance in Google Cloud. Guided by the principles of Site Reliability Engineering (SRE), and 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.

About This Course

This three-day instructor-led course teaches participants techniques for monitoring, troubleshooting, and improving infrastructure and application performance in Google Cloud. Guided by the principles of Site Reliability Engineering (SRE), and 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.

Who Should Attend

This class is intended for the following participants:

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

Prerequisites & Entry Requirements

General Prerequisites:

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

- Google Cloud Fundamentals: Core Infrastructure (GCF-CI) or equivalent experience
- Basic scripting or coding familiarity
- Proficiency with command-line tools and Linux operating system environments

Learning Outcomes

Upon successful completion of this course, participants will be able to:

This course teaches participants the following skills:

- Plan and implement a well-architected logging and monitoring infrastructure
- Define Service Level Indicators (SLIs) and Service Level Objectives (SLOs)
- Create effective monitoring dashboards and alerts
- Monitor, troubleshoot, and improve Google Cloud infrastructure
- Analyze and export Google Cloud audit logs
- Find production code defects, identify bottlenecks, and improve performance
- Optimize monitoring costs

Detailed Course Outline

Module 1 - Introduction to Google Cloud Monitoring Tools

- Understand the purpose and capabilities of Google Cloud operations-focused components: Logging, Monitoring, Error Reporting, and Service Monitoring
- Understand the purpose and capabilities of Google Cloud application performance management focused components: Debugger, Trace, and Profiler

Module 2 - Avoiding Customer Pain

- Construct a monitoring base on the four golden signals: latency, traffic, errors, and saturation
- Measure customer pain with SLIs
- Define critical performance measures

- Create and use SLOs and SLAs

- Achieve developer and operation harmony with error budgets

Module 3 - Alerting Policies

- Develop alerting strategies

- Define alerting policies

- Add notification channels

- Identify types of alerts and common uses for each

- Construct and alert on resource groups

- Manage alerting policies programmatically

Module 4 - Monitoring Critical Systems

- Choose best practice monitoring project architectures

- Differentiate Cloud IAM roles for monitoring

- Use the default dashboards appropriately

- Build custom dashboards to show resource consumption and application load

- Define uptime checks to track aliveness and latency

Module 5 - Configuring Google Cloud Services for Observability

- Integrate logging and monitoring agents into Compute Engine VMs and images

- Enable and utilize Kubernetes Monitoring

- Extend and clarify Kubernetes monitoring with Prometheus

- Expose custom metrics through code, and with the help of OpenCensus

Module 6 - Advanced Logging and Analysis

- Identify and choose among resource tagging approaches
- Define log sinks (inclusion filters) and exclusion filters
- Create metrics based on logs
- Define custom metrics
- Link application errors to Logging using Error Reporting
- Export logs to BigQuery

Module 7 - Monitoring Network Security and Audit Logs

- Collect and analyze VPC Flow logs and Firewall Rules logs
- Enable and monitor Packet Mirroring
- Explain the capabilities of Network Intelligence Center
- Use Admin Activity audit logs to track changes to the configuration or metadata of resources
- Use Data Access audit logs to track accesses or changes to user-provided resource data
- Use System Event audit logs to track GCP administrative actions

Module 8 - Managing Incidents

- Define incident management roles and communication channels
- Mitigate incident impact
- Troubleshoot root causes
- Resolve incidents
- Document incidents in a post-mortem process

Module 9 - Investigating Application Performance Issues

- Debug production code to correct code defects
- Trace latency through layers of service interaction to eliminate performance bottlenecks
- Profile and identify resource-intensive functions in an application

Module 10- Optimizing the Costs of Monitoring

- Analyze resource utilization cust for monitoring related components within Google Cloud
- Implement best practices for controlling the cost of monitoring within Google Cloud, Investigating Application Performance Issues, Optimizing the Costs for Operations Suite, Introduction to Google Cloud Operations Suite, Monitoring Critical Systems, Alerting Policies, Advanced Logging and Analysis, Working with Audit Logs, Configuring Google Cloud Services for Observability, Monitoring Google Cloud Network and Data Access

Skills You Will Learn:

This course teaches participants the following skills:

- Plan and implement a well-architected logging and monitoring infrastructure
- Define Service Level Indicators (SLIs) and Service Level Objectives (SLOs)
- Create effective monitoring dashboards and alerts
- Monitor, troubleshoot, and improve Google Cloud infrastructure
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Frequently Asked Questions

Q: What delivery options are available for Logging, Monitoring, and Observability in Google Cloud?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 2-day Logging, Monitoring, and Observability in Google Cloud course provides up to 13.0 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Logging, Monitoring, and Observability in Google Cloud training?

The training takes place over 2 day(s), with each day lasting approximately 16.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Logging, Monitoring, and Observability in Google Cloud?

Yes, we provide corporate training, dedicated training, and closed classes for Logging, Monitoring, and Observability in Google Cloud. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Logging, Monitoring, and Observability in Google Cloud, Data Analysis, LMOGC, Logging Monitoring and Observability in Google Cloud, Google Cloud, vILT

Q: Why choose Nexus Human for Logging, Monitoring, and Observability in Google Cloud?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Logging, Monitoring, and Observability in Google Cloud training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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