Training: Google Cloud
Google Cloud Architect Bootcamp

TRANING TERMS

2026-11-30 | 5 days | Virtual Classroom
2026-12-07 | 5 days | Virtual Classroom

TRAINING GOALS:

This training is a combination of an Architecting with Compute Engine course, Getting Started with Google Kubernetes Engine course and Architecting with Google Cloud: Design and Process course.

This class introduces participants to the comprehensive and flexible infrastructure and platform services provided by Google Cloud. This course also covers deploying practical solutions including securely interconnecting networks, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring. It is also equipping students to containerize workloads in Docker containers, deploy them to Kubernetes clusters provided by Google Kubernetes Engine, and scale those workloads to handle increased traffic. Students also learn how to continuously deploy new code in a Kubernetes cluster to provide application updates. Moreover, students learn to build highly reliable and efficient solutions on Google Cloud using proven design patterns.

Course objectives:

Through a combination of presentations, demos, and hands-on labs, participants explore and deploy solution elements, including infrastructure components such as networks, systems, and application services, learn to design Google Cloud deployments that are highly reliable and secure; and how to operate Google Cloud deployments in a highly available and cost-effective manner.

Audience:

Cloud Solutions Architects, DevOps Engineers, Site Reliability Engineers, Systems Operations professionals, Application developers, IT managers, Individuals using Google Cloud to create new solutions or to integrate existing systems, application environments, and infrastructure.

CONSPECT:

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Introduction to Google Cloud
  - List the different ways of interacting with Google Cloud.
  - Use the Cloud Console and Cloud Shell.
  - Create Cloud Storage buckets.
  - Use the Google Cloud Marketplace to deploy solutions.
- Virtual Networks
  - List the VPC objects in Google Cloud.
  - Differentiate between the different types of VPC networks.
  - Implement VPC networks and firewall rules.
  - Implement Private Google Access and Cloud NAT.
- Virtual Machines
  - Recall the CPU and memory options for virtual machines.
  - Describe the disk options for virtual machines.
  - Explain VM pricing and discounts.
  - Use Compute Engine to create and customize VM instances.
- CloudIAM
  - Describe the Cloud IAM resource hierarchy.
  - Explain the different types of IAM roles.
  - Recall the different types of IAM members.
  - Implement access control for resources using Cloud IAM.
- Storage and Database Services
  - Differentiate between Cloud Storage, Cloud SQL, Cloud Spanner, Cloud Firestore and Cloud Bigtable.
  - Choose a data storage service based on your requirements.
  - Implement data storage services.
- Resource Management
  - Describe the cloud resource manager hierarchy.
  - Recognize how quotas protect Google Cloud customers.
  - Use labels to organize resources.
  - Explain the behavior of budget alerts in Google Cloud.
  - Examine billing data with BigQuery.
- Resource Monitoring
  - Describe the services for monitoring, logging, error reporting, tracing, and debugging.
  - Create charts, alerts, and uptime checks for resources with Cloud Monitoring.
  - Use Cloud Debugger to identify and fix errors.
- Interconnecting Networks
  - Recall the Google Cloud interconnect and peering services available to connect your

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

infrastructure to Google Cloud.
    - Determine which Google Cloud interconnect or peering service to use in specific circumstances.
    - Create and configure VPN gateways.
    - Recall when to use Shared VPC and when to use VPC Network Peering.
- Load Balancing and Autoscaling
    - Recall the various load balancing services.
    - Determine which Google Cloud load balancer to use in specific circumstances.
    - Describe autoscaling behavior.
    - Configure load balancers and autoscaling.
- Infrastructure Modernization
    - Automate the deployment of Google Cloud services using Deployment Manager or Terraform.
    - Outline the Google Cloud Marketplace.
- Managed Services
    - Describe the managed services for data processing in Google Cloud.
- Introduction to Containers and Docker
    - Create a container.
    - Package a container using Docker.
    - Store a container image in Google Container Registry.
    - Launch a Docker container.
- Kubernetes Basics
    - Provision a complete Kubernetes cluster using Kubernetes Engine.
    - Deploy and manage Docker containers using kubectl.
    - Break an application into microservices using Kubernetes' Deployments and Services.
- Deploying to Kubernetes
    - Create a Kubernetes deployment.
    - Trigger, pause, resume, and rollback updates.
    - Understand and build canary deployments.
- Creating a Continuous Delivery Pipeline
    - Provision Spinnaker or Jenkins in your Kubernetes cluster.
    - Manage application code in a source repository that can trigger code changes to a continuous delivery pipeline.
    - Create a continuous delivery pipeline and start it manually or automatically with a code change.
    - Implement a canary deployment that hosts two versions of your application in production for release testing.
- Defining the Service

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Describe users in terms of roles and personas.
- Write qualitative requirements with user stories.
- Write quantitative requirements using key performance indicators (KPIs).
- Evaluate KPIs using SLOs and SLIs.
- Determine the quality of application requirements using SMART criteria.

- Microservice Design and Architecture
  - Decompose monolithic applications into microservices.
  - Recognize appropriate microservice boundaries.
  - Architect stateful and stateless services to optimize scalability and reliability.
  - Implement services using 12-factor best practices.
  - Build loosely coupled services by implementing a well-designed REST architecture.
  - Design consistent, standard RESTful service APIs.
- DevOps Automation
  - Automate service deployment using CI/CD pipelines.
  - Leverage Cloud Source Repositories for source and version control.
  - Automate builds with Cloud Build and build triggers.
  - Manage container images with Google Container Registry.
  - Create infrastructure with code using Deployment Manager and Terraform.
- Choosing Storage Solutions
  - Choose the appropriate Google Cloud data storage service based on use case, durability, availability, scalability and cost.
  - Store binary data with Cloud Storage.
  - Store relational data using Cloud SQL and Spanner.
  - Store NoSQL data using Firestore and Cloud Bigtable.
  - Cache data for fast access using Memorystore.
  - Build a data warehouse using BigQuery.
- Google Cloud and Hybrid Network Architecture
  - Design VPC networks to optimize for cost, security, and performance.
  - Configure global and regional load balancers to provide access to services.
  - Leverage Cloud CDN to provide lower latency and decrease network egress.
  - Evaluate network architecture using the Cloud Network Intelligence Center.
  - Connect networks using peering and VPNs.
  - Create hybrid networks between Google Cloud and on-premises data centers using Cloud Interconnect.
- Deploying Applications to Google Cloud
  - Choose the appropriate Google Cloud deployment service for your applications.

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Configure scalable, resilient infrastructure using Instance Templates and Groups.
- Orchestrate microservice deployments using Kubernetes and GKE.
- Leverage App Engine for a completely automated platform as a service (PaaS).
- Create serverless applications using Cloud Functions.

- Designing Reliable Systems
  - Design services to meet requirements for availability, durability, and scalability.
  - Implement fault-tolerant systems by avoiding single points of failure, correlated failures, and cascading failures.
  - Avoid overload failures with the circuit breaker and truncated exponential backoff design patterns.
  - Design resilient data storage with lazy deletion.
  - Analyze disaster scenarios and plan for disaster recovery using cost/risk analysis.
- Security
  - Design secure systems using best practices like separation of concerns, principle of least privilege, and regular audits.
  - Leverage Cloud Security Command Center to help identify vulnerabilities.
  - Simplify cloud governance using organizational policies and folders.
  - Secure people using IAM roles, Identity-Aware Proxy, and Identity Platform.
  - Manage the access and authorization of resources by machines and processes using service accounts.
  - Secure networks with private IPs, firewalls, and Private Google Access.
  - Mitigate DDoS attacks by leveraging Cloud DNS and Cloud Armor.
- Maintenance and Monitoring
  - Manage new service versions using rolling updates, blue/green deployments, and canary releases.
  - Forecast, monitor, and optimize service cost using the Google Cloud pricing calculator and billing reports and by analyzing billing data.
  - Observe whether your services are meeting their SLOs using Cloud Monitoring and Dashboards.
  - Use Uptime Checks to determine service availability.
  - Respond to service outages using Cloud Monitoring Alerts.

REQUIREMENTS:

Completion of Google Cloud Fundamentals or equivalent experience Basic proficiency with command-line tools and Linux operating system environments. Systems operations experience, including deploying and managing applications, either on-premises or in a public cloud environment.

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud.

TRAINER:

Authorized Google Cloud Trainer.

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007