



Developing APIs with Google Cloud's Apigee API Platform

Course description

In this course, you will gain a comprehensive understanding of Google Cloud's Apigee API Platform, a leading full lifecycle API management solution. You will learn to design, secure, deploy, and manage APIs at scale, empowering your organization to build robust digital experiences and foster a vibrant API ecosystem. This course will cover foundational concepts, practical implementation techniques, and best practices for leveraging Apigee to expose backend services, enforce policies, provide analytics, and engage with developers effectively. By the end of this course, you will be proficient in using Apigee to accelerate your API development lifecycle and achieve your business objectives.

- Course level: Professional
- Duration: 3 days

Activities

This course includes presentations, extensive hands-on labs, live demonstrations, and group exercises focusing on real-world Apigee implementation scenarios.

Course objectives

In this course, you will learn to:

- Summarize the core concepts and architecture of the Apigee API Platform
- Design and create API proxies to expose backend services securely and efficiently
- Apply various Apigee policies for security, traffic management, mediation, and error handling
- Implement robust API security mechanisms using OAuth 2.0, API Keys, and JWT
- Create and manage API products, developer applications, and a custom developer portal
- Leverage Apigee analytics to monitor API performance, usage, and troubleshoot issues
- Integrate Apigee into CI/CD pipelines for automated deployment and management
- Discuss advanced Apigee features such as shared flows, flow hooks, and target servers
- Recognize Apigee best practices for API design, security, scalability, and operations

Intended audience

This course is intended for IT professionals involved in the design, development, and management of APIs:

- API Developers
- API Architects
- Site Reliability Engineers (SREs)
- Cloud Engineers
- Technical Leads
- Product Managers overseeing API initiatives
- DevOps Engineers

Prerequisites

We recommend that attendees of this course have:

- Basic understanding of RESTful API concepts (HTTP methods, status codes, request/response formats)
- Familiarity with cloud computing concepts, preferably Google Cloud Platform
- Basic knowledge of JSON and XML data formats

- Command-line interface (CLI) proficiency

Course outline

Module 1: Introduction to Apigee API Platform

- What is Apigee and API Management?
- Apigee architecture overview (Edge, runtime, control plane)
- Key Apigee components: API Proxies, Policies, API Products, Developer Portal
- Apigee deployment options: Apigee X, Apigee hybrid, Apigee Edge
- Typical Apigee use cases and business value
- Demo: Navigating the Apigee UI and basic setup

Module 2: Designing and Developing API Proxies

- Understanding API proxy fundamentals: Proxy Endpoints and Target Endpoints
- Creating your first API proxy: Proxying a simple HTTP target
- Configuring target servers and load balancing
- Understanding Apigee API proxy flow: Request/Response flows, PreFlow, PostFlow, Conditional Flows
- Debugging API proxies with the Trace tool
- Hands-on Lab: Building and Deploying a Basic API Proxy

Module 3: Enhancing APIs with Apigee Policies

- Introduction to Apigee policies: Types and categories
- Traffic management policies: Quota, Rate Limiting, Spike Arrest
- Mediation policies: Assign Message, Extract Variables, JSON/XML to JSON/XML Transformation
- Security policies: Verify API Key, OAuthV2, JWT (Verify, Decode, Generate)
- Error handling and fault rules: Raise Fault, Respond with Message
- Hands-on Lab: Implementing Traffic Management and Data Transformation Policies

Module 4: Securing APIs with Apigee

- API security fundamentals: Authentication, Authorization, Encryption
- Implementing API Key-based security
- OAuth 2.0 in Apigee: Grant types (Client Credentials, Authorization Code)

- Securing APIs with JWT policies: Verification, generation, and decoding
- CORS policy for cross-origin requests
- Best practices for API security in Apigee
- Hands-on Lab: Securing an API with OAuth 2.0 (Client Credentials)

Module 5: API Products, Developer Management, and Portals

- What are API Products and why are they important?
- Creating and configuring API Products
- Managing developers and developer applications
- Introduction to the Apigee Developer Portal: Out-of-the-box vs. custom
- Publishing APIs to the Developer Portal
- Monetization concepts with Apigee
- Hands-on Lab: Creating API Products and Registering Developer Apps

Module 6: Monitoring, Analytics, and Troubleshooting Apigee APIs

- Apigee Analytics overview: Dashboards, custom reports, metrics
- Monitoring API performance, usage, and traffic patterns
- Setting up custom reports and alert rules
- Troubleshooting APIs with the Apigee Trace tool
- Using logs for diagnostics and debugging
- API monitoring best practices
- Demo: Exploring Apigee Analytics and Custom Reports

Module 7: Advanced Apigee Features and CI/CD Integration

- Shared Flows: Reusable policy sequences
- Flow Hooks: Attaching shared flows to proxy/target flows
- Target Servers: Managing backend endpoints
- Virtual Hosts and Keystores
- Integrating Apigee into CI/CD pipelines: Apigee Maven plugin, Apigee for VS Code
- Extending Apigee with Service Callout, JavaScript, and Java Callout policies
- Hands-on Lab: Implementing Shared Flows and Automating Proxy Deployment

Module 8: Apigee Operations, Best Practices, and Course Wrap-up

- Apigee API design best practices
- Versioning strategies for APIs
- Environment management and promotion flows

- Operational considerations: Scaling, high availability, disaster recovery
- Security considerations: OWASP API Security Top 10 and Apigee
- Next steps and additional resources
- Course summary and Q&A

Your course overview ends here.
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About CloudThat

Established in 2012, CloudThat is an award-winning company and the first in India to offer cloud training and consulting services for individuals and enterprises worldwide. Recently, it won Google Cloud's New Training Partner of the Year Award for 2025, becoming the first company in the world in 2025 to hold awards from all three major cloud giants: AWS, Microsoft, and Google. CloudThat notably won consecutive AWS Training Partner of the Year (APJ) awards in 2023 and 2024 and the Microsoft Training Services Partner of the Year Award in 2024, bringing its total award count to an impressive 12 awards in the last 8 years.

CloudThat specializes in Cloud Migration, Data Platforms, DevOps, IoT, and cutting-edge technologies like Gen AI & AI/ML. As a Microsoft Solutions Partner, AWS Premier Tier Training Partner, Google Cloud Platform Partner, and collaborator with leading organizations like HPE, Oracle, Nvidia and Databricks, CloudThat has trained over 850,000 professionals across 600+ cloud certifications, empowering students and professionals worldwide to advance their skills and careers.

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