

Developing APIs with the Apigee API Platform

This three-day course covers how to design, build, manage, deploy, and secure APIs using the Apigee API Platform. Learn to use policies and custom code to build API proxies, and discover how to package APIs for app developers.

Key topics include securing APIs against threats using OAuth, JSON Web Tokens (JWTs), federated security, threat protection, and traffic management. Gain hands-on experience validating and extracting payload data, calling external services, and transforming HTTP requests and responses.

Explore how Apigee powers AI-driven experiences by protecting apps from harmful prompts and responses, caching responses by semantic similarity, and managing token usage. Learn about advanced Apigee features for API management, security, and discovery.

A series of hands-on labs ensures practical experience building fully featured, secure APIs on Apigee.

**DURATION**

3 days

**LEVEL**

100 - Introductory

**FORMAT**

Instructor-led

What you'll learn

- Describe the features of Apigee that are used to create and manage APIs throughout the API lifecycle.
- Describe the fundamentals of REST API design.
- Discuss API products and API product strategies.
- Discuss the role of user authentication and authorization and the importance of API security.
- Describe the use cases and flows for the OAuth 2 grant types.
- Discuss the Apigee platform capabilities for implementing mediation, traffic management, caching, and fault handling.
- Describe how Apigee integrates with and enhances the use of large language models in AI-based APIs and apps.
- Describe advanced Apigee features that can help with API management, security, and discovery.
- Build APIs with the Apigee API Platform.

Overview

Who this course is for	• Developers, architects, and engineers responsible for the solutioning, design, implementation, or management of APIs, API products, or digital products that leverage APIs.
Products	• Apigee Starter • Apigee Hybrid
Prerequisites	• Familiarity with HTTP, XML, JSON, and JavaScript is helpful.

Module 01

Apigee Overview

Topics	• Apigee overview • API lifecycle • Apigee organizations and environments
Objectives	• Describe the features of Apigee that are used to create and manage APIs throughout the API lifecycle.
Activities	• Quiz

Module 02

API-first and OpenAPI specifications

Topics	• REST API design: Basics • API-first development • OpenAPI specifications
Objectives	• Describe the fundamentals of REST API design.
Activities	• Quiz

Module 03

API Proxies

Topics

- Apigee API proxies
- Proxy endpoints and environment groups
- Conditions, flows, and policies
- Target endpoints, route rules, and target servers

Objectives

- Build APIs with the Apigee API Platform.

Activities

- Quiz
- Lab: Generating an API Proxy Using an OpenAPI Spec
- Lab: Target Servers
- Lab: Route Rules and the Debug Tool

Module 04

API Products

Topics

- API products, developers, apps, and API keys
- API product strategies
- REST API design: Responses

Objectives

- Discuss API products and API product strategies.

Activities

- Quiz
 - Lab: API Products, Developers, Apps, and API Keys
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Module 05 Authentication, Authorization, and OAuth

Topics	• API security concerns • Identity, authentication, and authorization • OAuth introduction • OAuth client credentials grant • OAuth password grant • OAuth authorization code grant • OAuth wrap-up • JWT, JWS, and OpenID Connect
Objectives	• Discuss the role of user authentication and authorization and the importance of API security. • Describe the use cases and flows for the OAuth 2 grant types.
Activities	• Quiz • Lab: Using OAuth Client Credentials Grant Type

Module 06 Content, Transport, and Platform Security

Topics	• Protecting against content-based attacks • Transport security • Apigee platform security
Objectives	• Discuss the role of user authentication and authorization and the importance of API security.
Activities	• Quiz • Lab: JSON Threat Protection • Lab: Regex Threat Protection • Lab: Internal Threat Protection • Lab: Data Masking

Module 07

Mediation

Topics	• JSON, XML, and SOAP • Mediation and service callouts • Custom code • Shared flows • Fault handling
Objectives	• Discuss the Apigee platform capabilities for implementing mediation, traffic management, caching, and fault handling.
Activities	• Quiz • Lab: Add XML Support • Lab: Mashing Up Services • Lab: Call Services in Parallel using JavaScript • Lab: Shared Flows • Lab: Fault Handling

Module 08

Traffic Management

Topics	• Apigee components • Managing traffic spikes • Spike arrest algorithms • Quotas • Caching
Objectives	• Discuss the Apigee platform capabilities for implementing mediation, traffic management, caching, and fault handling.
Activities	• Quiz • Lab: Traffic Management • Lab: Caching

Module 09

Apigee and AI

Topics	• LLMs, agents, and Apigee • Securing prompts and resources • Limiting token usage • Semantic caching
Objectives	• Describe how Apigee integrates with and enhances the use of large language models in AI-based APIs and apps.
Activities	• Quiz • Lab: Sanitize Gemini Prompts and Responses with Apigee • Lab: Manage LLM Token Usage with Apigee • Lab: Semantic Caching with Apigee

Module 10

API publishing

Topics	• REST API design: Versioning • Developer portals
Objectives	• Describe advanced Apigee features that can help with API management, security, and discovery.
Activities	• Quiz • Lab: Developer Portal

Module 11

Logging and analytics

Topics	• Message logging • Apigee API analytics
Objectives	• Describe advanced Apigee features that can help with API management, security, and discovery.
Activities	• Quiz



Module
12

Advanced topics

Topics	• Apigee offline development and CI/CD • Deployment options • Advanced Apigee features
Objectives	• Describe advanced Apigee features that can help with API management, security, and discovery.
Activities	• Quiz