

APIGEE — An API Management Service on Google Cloud

Streamline Your API Management with APIGEE: A Powerful Solution on Google Cloud



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What is an API (Application Programming Interface)?

APIs, or Application Programming Interfaces, are **protocols** that **allow** software applications to **communicate** and **exchange information**. They **define methods, data formats, and conventions** for integration between systems in modern software development.

In the context of Google Cloud, APIs are a **standardized way** for **developers** to **interact** with Google Cloud **services** and **integrate** them into **their applications**. Google Cloud offers **RESTful APIs** that provide **programmatic access** to various **services** like computing resources, storage, databases, and machine learning.

These APIs **allow developers** to **create virtual machines, manage storage, process images with machine learning, and analyze data with BigQuery**, making them **crucial for building cloud-based applications** on Google Cloud Platform.

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Why API needs to be managed?

APIs are like a set of **rules** that **allow** different **software applications** to **talk** to each other and **share information**. But **just like any relationship**, APIs **need to be managed** to work smoothly.

API management involves **designing, developing, deploying, and monitoring APIs** to make sure they are **secure, scalable, and reliable**. This **helps organizations expose their digital assets and services** to external developers, partners, and customers in a **controlled and secure way**, while

also **getting** valuable **insights** into how APIs are used and perform. It's like having a plan in place to ensure smooth communication and optimal performance for APIs, so that everyone can work together effectively.

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What is APIGEE?

Apigee, a prominent **platform for API management**, offers a **comprehensive suite of tools and services** that are designed to **help organizations** effectively manage their APIs.

The company was **founded in 2004** under the name Sonoa Systems and **introduced** its flagship product, the “**Apigee Enterprise API Platform**,” in 2008. In 2013, Apigee went public with its initial public offering (IPO) and later in 2016, it was **acquired by Google** for a staggering \$625 million.

Since then, Apigee has continued to thrive and evolve as part of Google Cloud, **delivering advanced API management capabilities** to organizations around the world.

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Apigee API Management — Key Features

Simplified API Development

Enhanced API Security

Scalability & Performance

API Analytics & Monitoring

Developer Portal

API Monetization

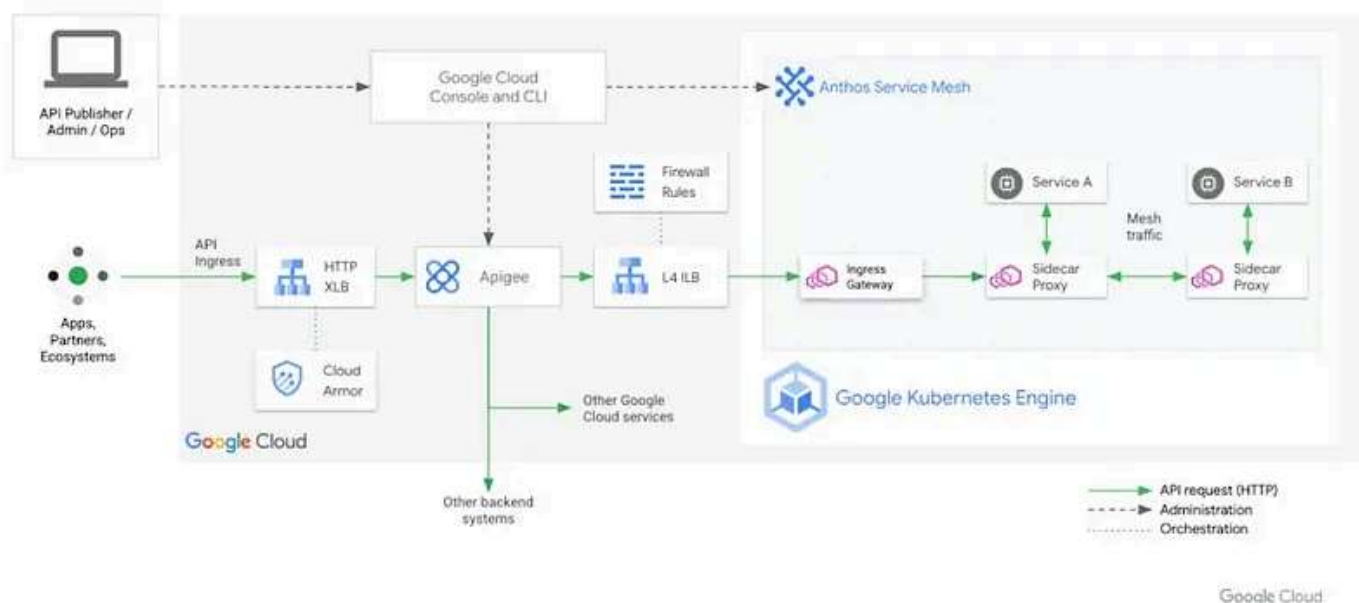
Multi-Cloud Deployment

Customization & Extensibility

Simplified API Development:

With features like API design, testing, and documentation, Apigee makes it easier for developers to design and develop high-quality APIs.

Apigee API Management and Anthos Service Mesh



<https://cloud.google.com/architecture/microservices-architecture-introduction>

It allows developers to define the structure and functionality of their APIs, while the testing feature enables them to thoroughly test their APIs for performance and functionality. The documentation feature provides comprehensive documentation, making it easier for other developers to understand and use the APIs.

Enhanced API Security:

Apigee provides strong security features to safeguard APIs from potential threats. These features include **authentication, authorization, and threat protection** mechanisms that follow industry-leading security best practices like **OAuth, API key management, and SSL encryption.** This ensures the **security and privacy of APIs and data,** allowing organizations to implement robust security measures for their APIs.

WAAP (Web application and API protection)



Google Cloud

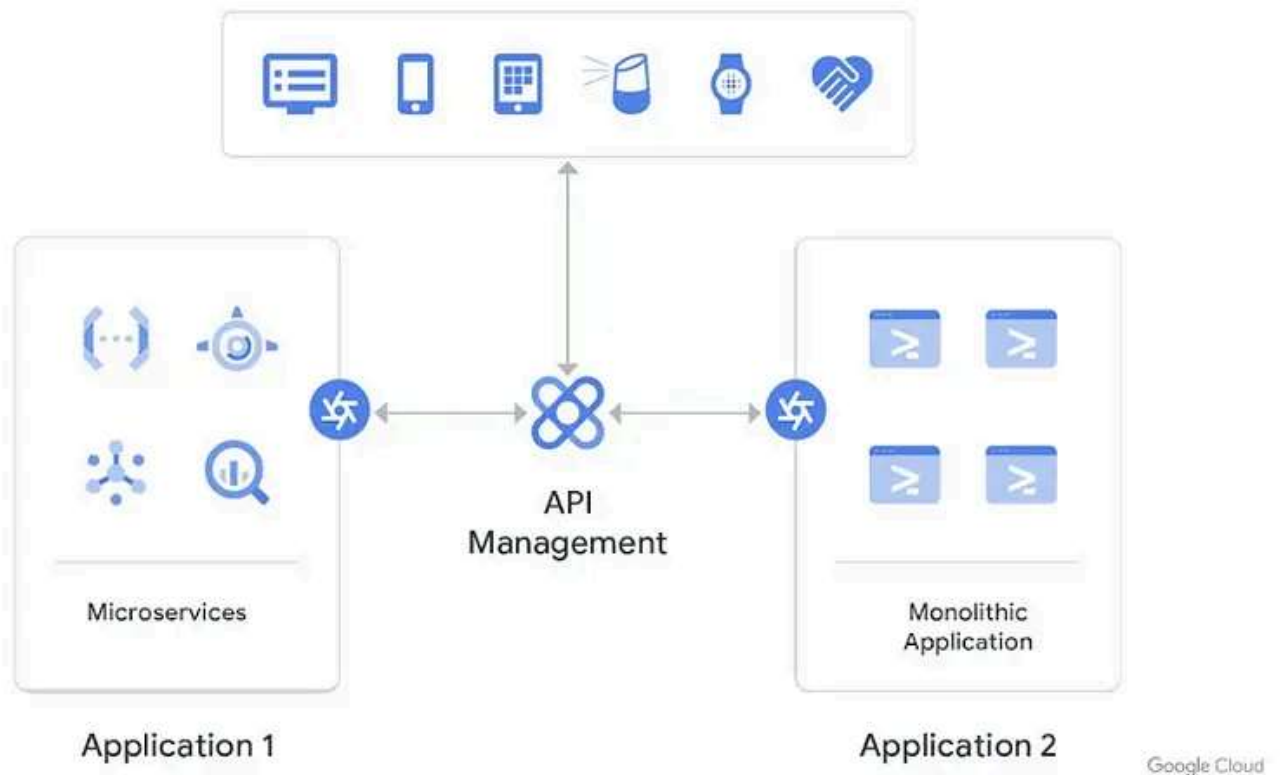
<https://cloud.google.com/blog/products/api-management/better-app-security-with-google-clouds-waap>

Scalability & Performance:

Apigee is built on a scalable and high-performance platform that enables organizations to efficiently handle a large number of API requests.

With features such as **caching, load balancing, and throttling,** Apigee **optimizes API performance, ensuring reliable and responsive APIs even under high loads.** This means that **APIs powered by Apigee can handle a**

large number of concurrent requests without sacrificing performance, providing a seamless experience for users accessing APIs.



API Analytics & Monitoring:

Apigee offers **robust analytics and monitoring capabilities** that provide organizations with **valuable insights into API usage, performance, and user behavior**. Through **intuitive dashboards, alerts, and reports**, Apigee allows organizations to **monitor and analyze API traffic, identify and troubleshoot issues, and optimize API performance** based on real-time data.

These analytics tools **enable organizations to gain valuable insights** into how APIs are being used, **identify areas for improvement**, and make **data-driven decisions to optimize their APIs for better performance and user experience**.

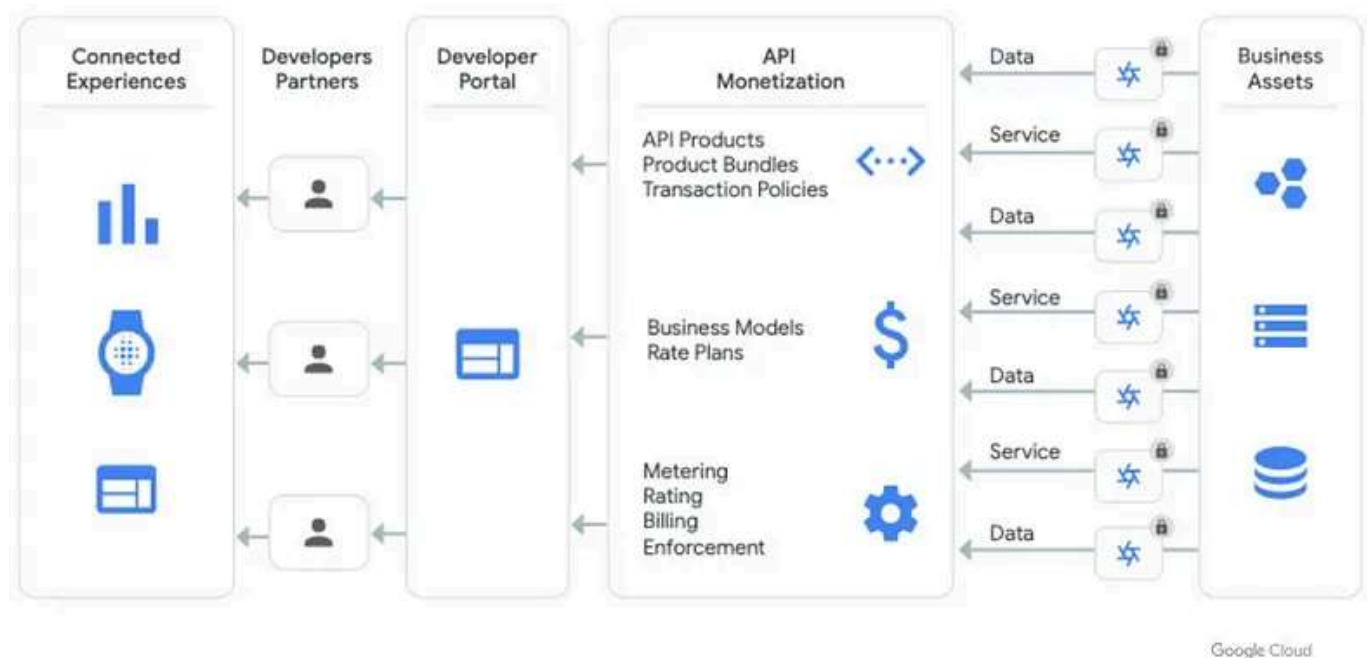
Developer Portal:

Apigee includes a **developer portal** that **allows organizations to create a customized portal** for developers to **access, discover, and consume APIs**.

This self-service platform **enables developers to explore APIs, access documentation, test APIs, and manage API keys**, fostering engagement and collaboration.

API Monetization:

Apigee empowers organizations to **generate revenue from their APIs through monetization features such as rate limiting, usage tracking, and billing integration**.



<https://cloud.google.com/apigee/docs/api-platform/publish/publishing-overview>

Organizations can create different tiers of API access with varying pricing plans, allowing them to **explore new business models and generate income from their APIs**. With Apigee's monetization capabilities, organizations can

Multi-Cloud Deployment:

The diagram illustrates the Apigee architecture and its integration with Google Cloud Platform (GCP) services. It is divided into two main sections, each within a GCP environment.

Top Section (Management Plane):

- Google Cloud Platform** (indicated by the GCP logo).
- Management Plane** (Hosted by Apigee):
 - Apigee Services** (represented by the Apigee logo).

Bottom Section (Runtime Plane):

- Google Cloud Platform** (indicated by the GCP logo).
- Runtime Plane** (Customer Managed):
 - Apigee Runtime** (represented by the Apigee logo).

Integration and Flow:

- Developer/Admin** (represented by a laptop icon) interacts with the **Management Plane** and the **Runtime Plane**.
- Backend/App servers/Targets** (represented by a server icon) are connected to the **Runtime Plane**.
- Private data centers or GCP** (indicated by a double-headed arrow) are connected to the **Runtime Plane**.
- Client Apps** (represented by a laptop and mobile phone icon) interact with the **Runtime Plane**.
- Google Cloud Platform Services** (represented by icons for Cloud IAM, Cloud Identity, Projects, Logging, and Metrics) are integrated with the **Runtime Plane**.

This enables organizations to leverage Apigee's capabilities in different cloud environments, ensuring scalability and adaptability in their API management strategy. With Apigee's cross-cloud compatibility, organizations can seamlessly implement API management in their preferred cloud environment, regardless of their cloud provider choice.

Customization & Extensibility:

Apigee provides options for **customization** and **extensibility**, empowering organizations to **tailor their API management platform** to meet their unique requirements.

This includes the **ability to create custom policies, extensions, and plugins**, allowing organizations to **add their own business logic and integrations** to the **API management platform**. With Apigee's flexibility in customization, organizations can **create a highly adaptable and personalized API management solution** that **aligns** with their specific needs and **business objectives**.

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Summary

To Conclude, APIs are like **rules** that **allow software applications to talk and share information** with each other. **Managing APIs is crucial for efficient and secure communication** between apps. **Apigee**, a popular **API management platform** by Google Cloud, **provides tools for designing, securing, and analyzing APIs**. With features like **policy enforcement, access management, and developer portal**, Apigee **streamlines API management, enhances security, and improves developer experience**. It helps organizations **build powerful APIs** for their applications and services, making them **scalable, secure, and efficient**.

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References

Apigee API Management | Google Cloud

Build, manage, and secure APIs-for any use case, environment, or scale. Google Cloud's API management solution to...



cloud.google.com

Google Cloud Platform

This repository holds the content submitted to <https://cloud.google.com/community>. Files added to the tutorials/...

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GitHub - GoogleCloudPlatform/apigee-samples: A repo for Apigee X/hybrid samples

This repository contains a collection of sample API proxies that you can deploy and run on Apigee X or hybrid. The...

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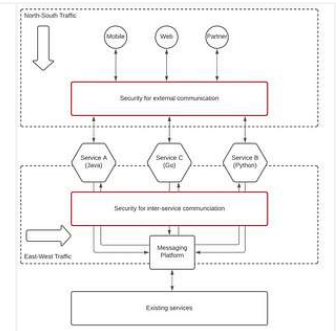
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About me — I am a GCP Cloud Architect with over a decade of experience in IT industry. A multi-cloud certified professional. Past few months I wrote 17+ cloud certification (10x GCP).

My current engagements are helping customer migrate their workloads from on-prem datacenter and other cloud providers to Google Cloud.

If you got any question, you can reach me on [LinkedIn](#) and twitter [@jitu028](#) and DM, I'll be happy to help!!

You can also schedule 1:1 discussion with me on <https://www.topmate.io/jitu028> for any Google Cloud related support.

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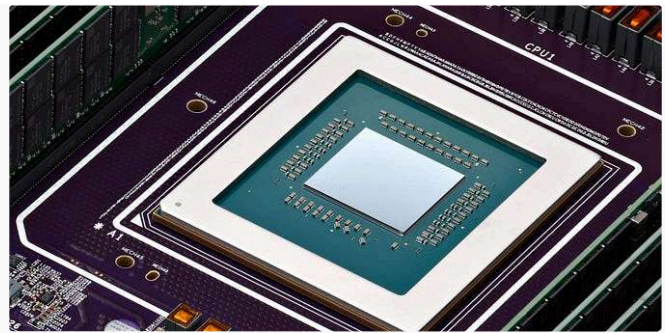


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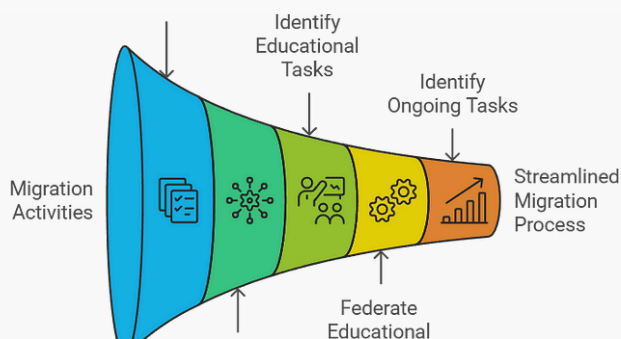


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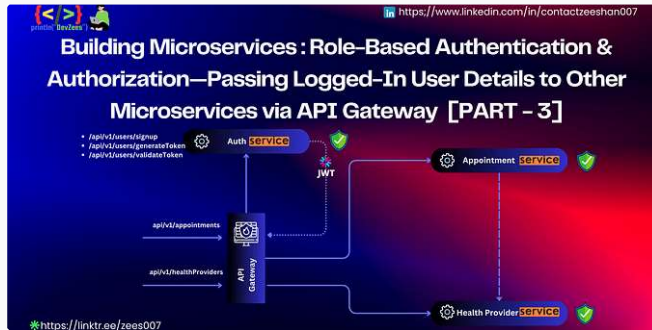
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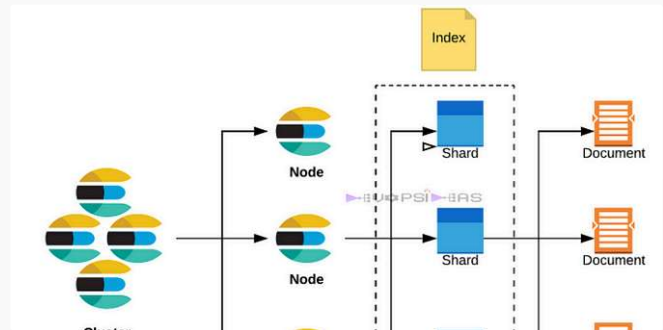


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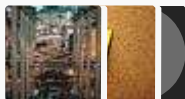
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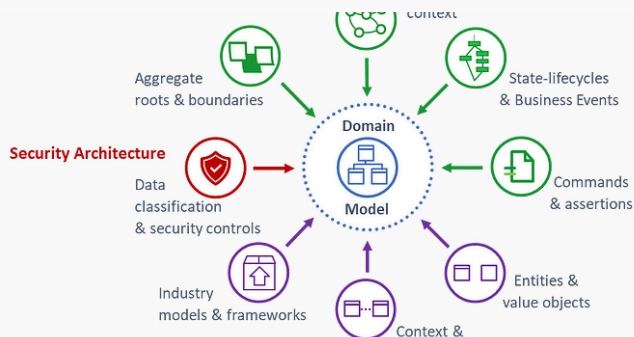
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