# Google API Gateway

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What is API?

- API stands for "Application Programming Interface". It is a set of defined rules that enable different applications to communicate with each other. APIs act as an intermediary layer that processes data transfers between systems, letting companies open their application data and functionality to external third-party developers, business partners, and other organizations[12]
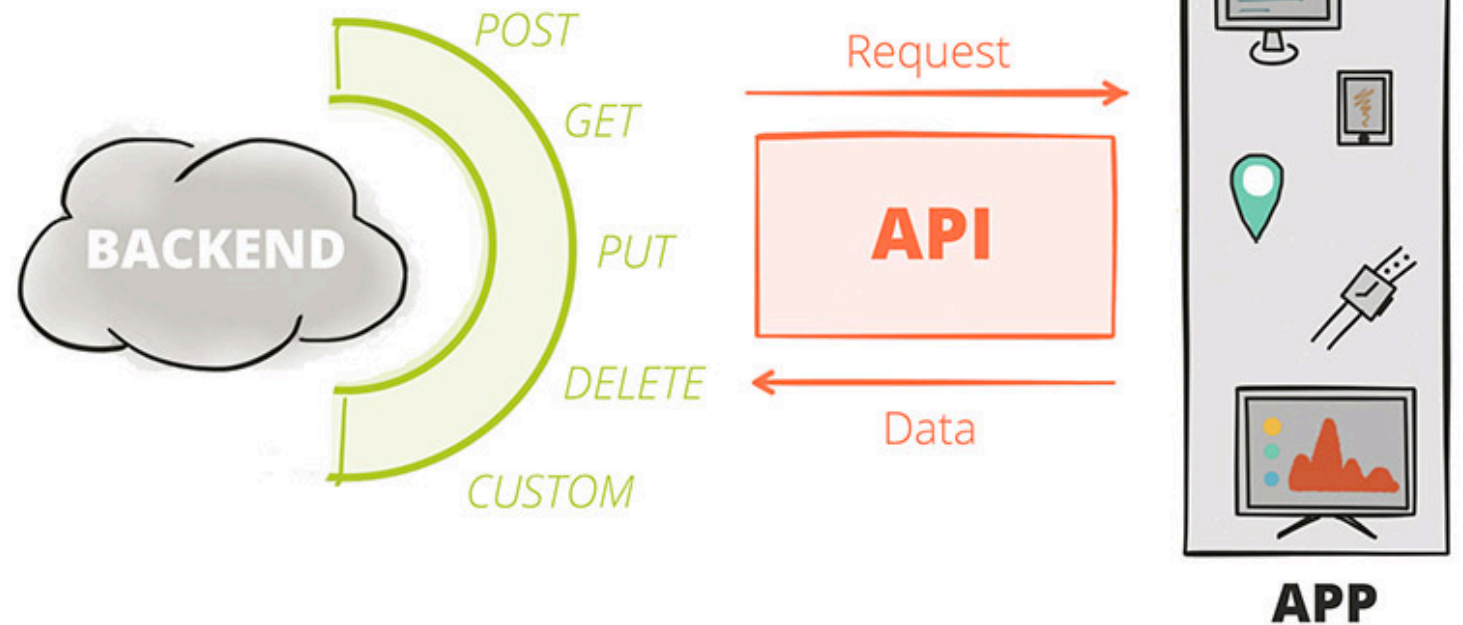
What is OpenAPI ?

- OpenAPI is a standard for describing computing interfaces known as APIs (Application Programming Interfaces). The OpenAPI Specification defines an open, vendor-neutral description format for API services.

```yaml
 1  openapi: 3.0.3
 2  info:
 3    title: K8Sug Session
 4    description: |-
 5      This is a sample K8Sug Singapore Demo
 6    termsOfService: https://tos.k8sug.com
 7    contact:
 8      email: info@k8sug.com
 9    license:
10      name: K8sug
11      url: http://www.k8sug.org/licenses/LICENSE-2.0.html
12    version: 1.0.11
13  externalDocs:
14    description: Find out more about Swagger
15    url: http://swagger.io
16  servers:
17  - url: https://qa.example.com
18    description: QA
19  - url: https://prod.example.com
20    description: Prod
21  tags:
22  - name: pet
23    description: Everything about your Pets
24    externalDocs:
25      description: Find out more
26      url: http://swagger.io
27  - name: store
28    description: Access to Petstore orders
29    externalDocs:
30      description: Find out more about our store
31      url: http://swagger.io
32  - name: user
33    description: Operations about user
34  paths:
35    /v1/beer :
36      get:
37        responses:
38          '200' :
39            'description': This is for Testing
40            content:
41              application/json:
42                schema:
43                  maxItems: 100
44                  minItems: 1
45                  type: array
```

What is API Gateway?

- An API gateway sits between clients and services. It acts as a reverse proxy, routing requests from clients to services. It may also perform various cross-cutting tasks such as authentication, SSL termination, and rate limiting. If you don't deploy a gateway, clients must send requests directly to front-end services.
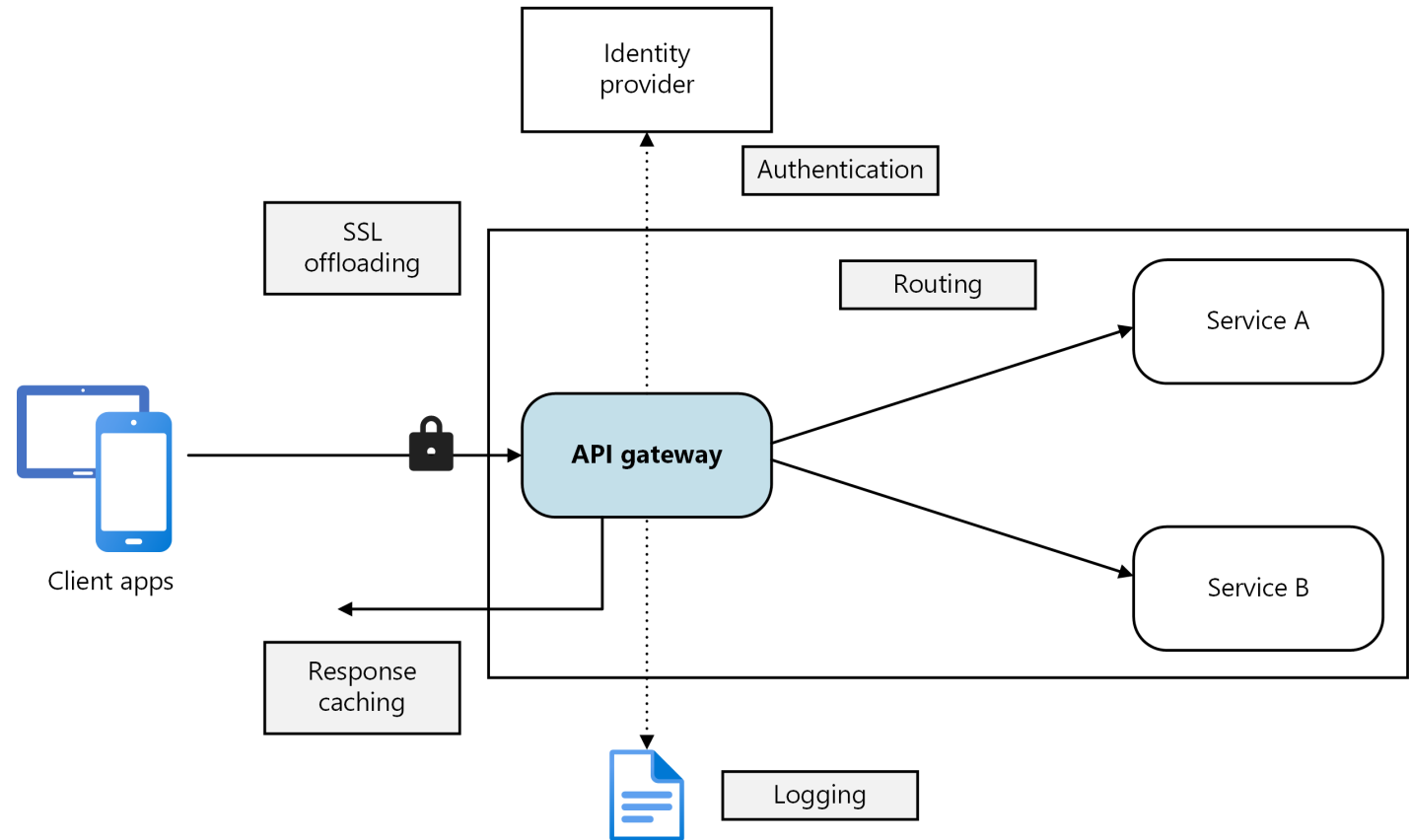
Google API Deployment Options

1 — API Gateway

Fully managed service tailormade to package serverless functions as RESTful APIs

2 — Cloud Endpoints

Customer managed service with extensible service proxy to run tactical use cases

3 — Apigee API Management

Comprehensive solution to build, manage, and secure APIs—for any use case, environment, or scale

Google API Gateway Components

Service Control API

- [Service Control API](#) applies API management rules at runtimes, such as API key authentication, monitoring, and logging. Service Control provides the following methods:

Service Management API

- use the [OpenAPI specification](#) to define your API. You then use the gcloud CLI to upload the OpenAPI spec to Service Management, which creates the API config. Other configuration-related tasks also happen here, such as sharing your API with other developers, enabling or disabling the API in different projects, and generating API keys
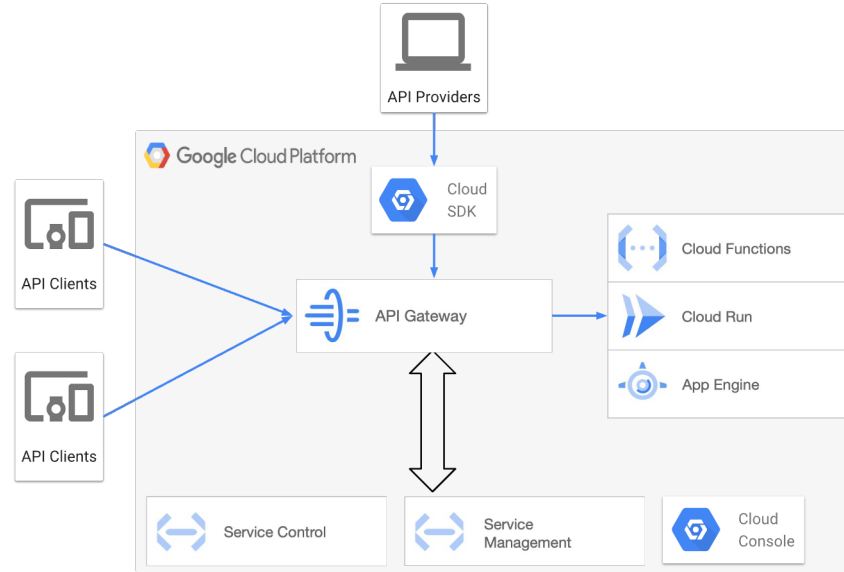
Google API Gateways Architecture

DEMO

Reference

- [Google Reference Open API](#)
- [GitHub Open API v2.0](#)
- [Google Cloud API Gateway Documentation](#)
- [QR Code Generator](#)

END