HeidelbergCement Apigee

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Google Cloud

Google Team Set Up

Ezgi Demir
Enterprise Account Executive

Marvin Neumann
Cloud Engineer

Marc Bartel
Apigee Account Executive

Tyler Ayers
Apigee Cloud Engineer &
Cloud Architect

Google Cloud

Agenda

- 03:00 - 03:05 | *Introduction*

- 03:05 - 03:10 | *Why Google for HeidelbergCement*

- 03:10 - 03:50 | *HC's 9 Questions & Demo*

- 03:50 - 4:00 | *Q&A, Next Step*

Google Cloud

Why Google for HeidelbergCement

Google Cloud

Why **Multi-Cloud**?

Build with the best tools available

Each cloud provider has unique advantages.

Use **Apigee** to modernize your IT infrastructure, build microservices or manage apps in multi-cloud environments

Google Cloud

What makes Google Cloud different

Best-in-class Security ❯ Protect systems, data, and users

Hybrid & Multi-Cloud ❯ Enables choice

Fully Managed No Ops ❯ Ease of use with serverless

Embedded AI & ML ❯ Intelligence in everything

Best of Google ❯ Bringing culture of innovation to customers and partners

Google Cloud

Google Cloud & privacy

You own your data, not Google

Google **never sells customer data** to third parties

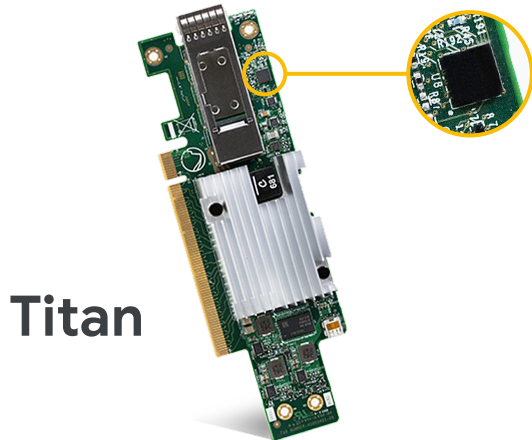Google Cloud **does not use customer data** for advertising

All your data is **encrypted at rest and in transit by default**

We **guard against insider access** to your data

We **never** give any government entity "backdoor" access

Our privacy practices are **audited against international standards**

Google Cloud

8

End-to-end provenance & attestation

Titan

Google's purpose-built chip to establish hardware root of trust for both machines peripherals on cloud infrastructure.

Purpose-built **chips**

Purpose-built **servers**

Purpose-built **storage**

Purpose-built **network**

Purpose-built **data centers**

Reduced "vendor in the middle" risk

Google Cloud

Compliance offerings

Americas	Europe, Middle East & Africa	Asia Pacific

Global

ISO/IEC 27001
ISO/IEC 27017
ISO/IEC 27018
ISO/IEC 27701
SOC 1
SOC 2
SOC 3
PCI DSS
CSA STAR
MPAA
Independent Security Evaluators Audit
GxP

Americas

USA

HIPAA
HiTrust
FedRAMP
FIPS 140-2
COPPA
FERPA
NIST 800-53
NIST 800-171
NIST 800-34
Sarbanes- Oxley
SEC Rule 17a-4(f)
CFTC Rule 1.31(c)-(d)
FINRA Rule 4511(c)
HECVAT
DISA IL2
CCPA
CJIS

Canada

Personal Information & Electronic Documents Act
Personal Health Information Protection Act

Argentina

Personal Data Protection Law

Europe, Middle East & Africa

Europe

GDPR
EU Model Contract Clauses
TISAX
EBA Guidelines

Germany

BSI C5

Switzerland

FINMA

France

HDS

Spain

Esquema Nacional de Seguridad

South Africa

POPI

UK

NCSC Cloud Security Principles
NHS IG Toolkit

Asia Pacific

Australia

Australian Privacy Principles
Australian Prudential Regulatory Authority Standards
IRAP

Japan

FISC
My Number Act
NISC
CSV Guidelines
3G3M

Singapore

MTCS Tier 3
OSPAR
MAS Guidelines
ABS Guide

Google Cloud

Google: a Leader in IaaS Platform Native Security

Of the 7 vendors evaluated, Google Cloud scored **highest overall in the current offering category**, and received the highest scores possible in the following current offering criteria: global data centers, guest OS & container protection, storage & data security, solution delivery, and navigation & integrated environment.

Google Cloud also received the **highest scores possible** in the strategy category criteria of: execution roadmap, market approach: developers and sales, partner ecosystem, commercial model, and plans in security posture management, hypervisor security, guest OS & container, and network security.

Google Cloud

HC's 9 Questions & Demo

Google Cloud

Question 1

Please describe which are the on-boarding, ramp-up and technical skills required to effectively configure, implement and manage your APIM solution (please add a rough effort estimation) - Examples:

a. Programming languages skills required, java, .net, node.js, other, etc.

b. Infrastructure: setting up connectivity to the assigned tenant, security and virtual networks.

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Full API Lifecycle

Design
Develop
Secure
Deploy
Publish
Monitor
Analyze
Monetize

Apigee

Google Cloud
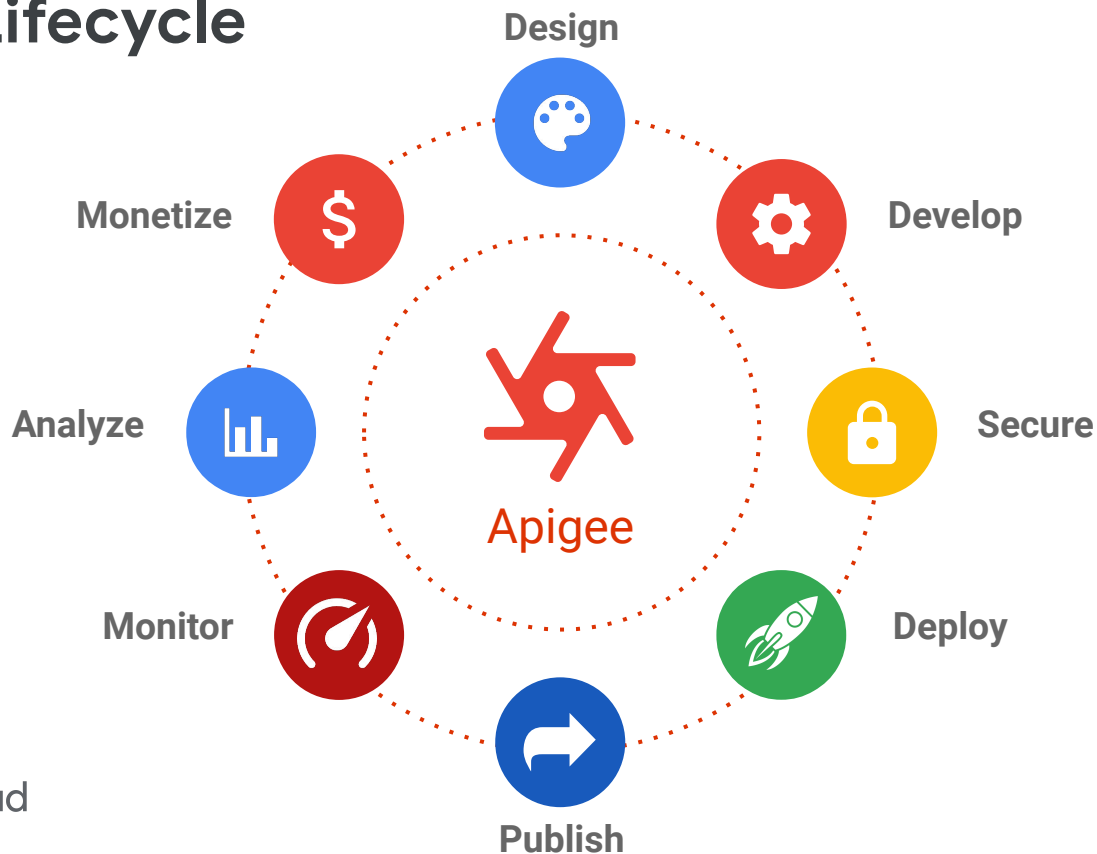
Apigee API Management Platform

Developer Ecosystem	API Catalog	Smart Docs	API Products	API Monetization	API Marketplace
API Analytics	Developer Engagement Metrics	Business Metrics	Operational Metrics	API Program Metrics	API Monitoring
Mediation Engine	Security	Transformation	Extensions	Orchestration	API Abuse Prevention
API Runtime	SaaS Runtime	Hybrid Runtime	Envoy Adapter		

On-Prem & Multiple Clouds

Google Cloud

Apigee **proven availability** and scale

US West

CA Montreal

US East

EU Ireland

EU Frankfurt

AP Tokyo

UK London

EU Belgium

US Central

SA Brazil

AP Sydney

AP Singapore

99.999% API availability   **24+** global regions   **6B+** transactions/day

Provisioning Apigee example: Organisation & Environments

org: example-apim-**nonprod**

us-west1	eu-west4

dev

qa

sandbox

org: example-apim-**prod**

us-west1	eu-west4

prod

sandbox
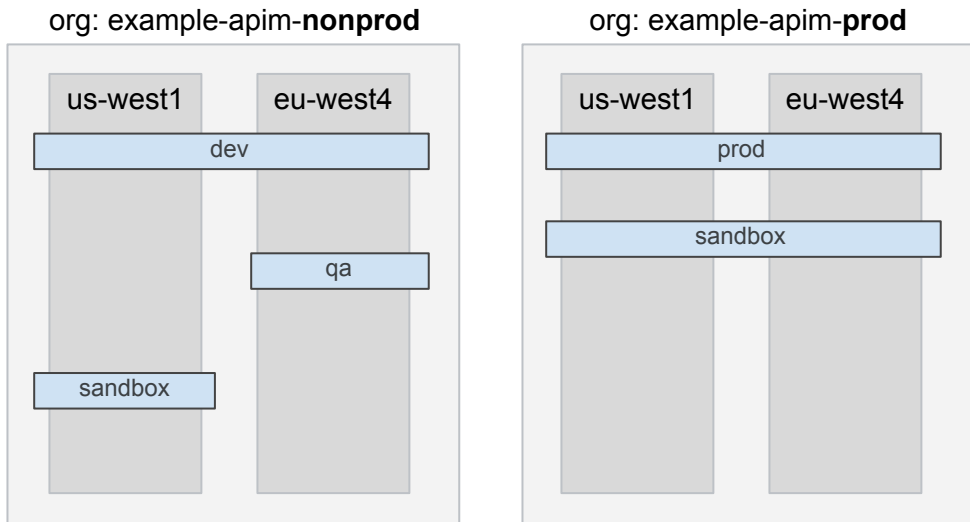
Each organization is mapped to a distinct GCP project
You can provision other resources into that project as well: Cloud Run, VMs, databases.

You choose the Environment configuration to fit your needs.
Proxies in dev or qa can target multiple distinct SDLC environments, dynamically.

CI/CD can deploy target any of these environments.

Google Cloud

Looking ahead at Program Expansion - Orgs and Envs

Expansion on various dimensions will require more organization and environment units.

org: xyz-**nonprod**

us-west1	eu-west4

np-dev
- team1-dev (..dev2,)
- team2-dev
- team3-dev
- team4-dev

np-qa
- team1-qa
- team2-qa
- team3-qa
- team4-qa

np-sb
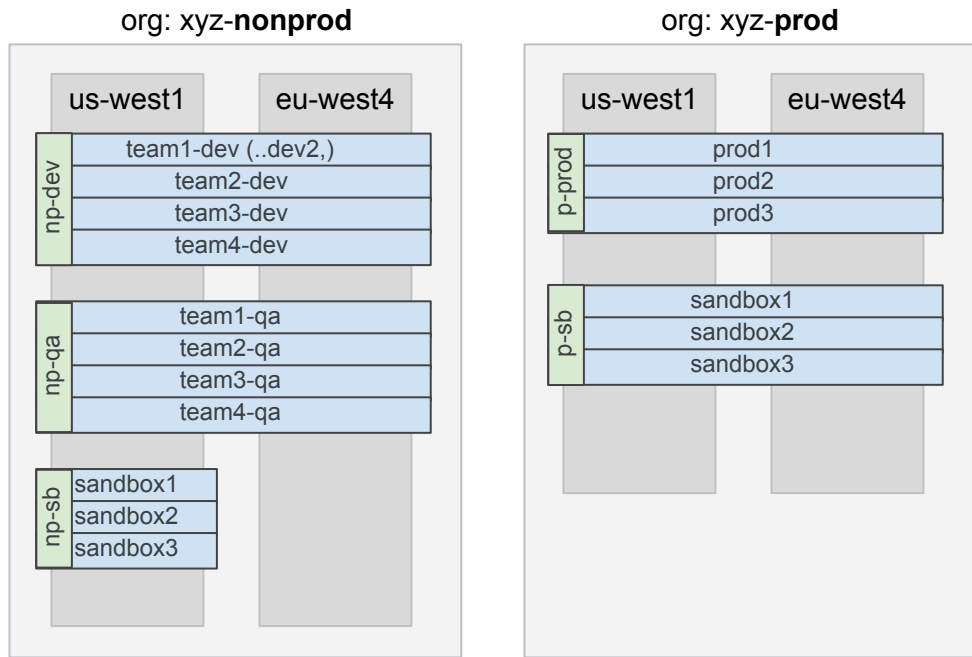- sandbox1
- sandbox2
- sandbox3

org: xyz-**prod**

us-west1	eu-west4

p-prod
- prod1
- prod2
- prod3

p-sb
- sandbox1
- sandbox2
- sandbox3

Dimensions to consider:
- # Teams
- # of Proxies per team*
- SDLC Stages
- Regions (us-west, eu-west)

* Teams can also separate specific "busy" proxies into their own environments to provide greater isolation.

All of these affect the *number of units* required to support the program as it grows.

Remember: transaction volume is a separate issue, it does not drive org + env structure. API call volume is addressed in the commercial agreement.

Google Cloud

Commercials

Google Cloud

Commercials - Subscription

Apigee Enterprise, including the following:

- 2 organizations and 10 environments
- 1.2 billion total API calls per each twelve (12) month period (combined SaaS and hybrid calls)
- 1.2 billion calls API advanced operations (Anomaly detection).
- 99.9% runtime SLA (can be extended to 99.99% if you extend to a second region)
- 3 months of analytics storage
- 10 TiB of total network data
- API monitoring
- PCI compliance
- Apigee hybrid features:
    - 300 vCPUs of Anthos restricted to Apigee hybrid
    - 25 additional organizations for hybrid deployment (up to 75 environments per Hybrid organization)

Price: $98.000 / yearly, for a 3-year-contract

Commercials - add-on options

Apigee Enterprise, growth pricing for HeidelbergCement:

- 1 Organisation / 5 Environments pack: 22.500 USD
- 5 Environments: 9.000 USD
- 500m additional *SaaS* calls and 5 TiB of data: 10.000 USD
- 500m additional *Hybrid* calls (incl. 100 additional vCPUs of Anthos): 5.000 USD
- 500m API Monetization calls: 10.000 USD
- 10 TiB of data for SaaS API calls: 2.000 USD

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Commercials - Implementation

Implementation through partner:

Prices are indications and may vary according to the scope.

- Initial estimate for implementation (through our partners): 10.000€
    - SaaS Onboarding
    - IAM Integration in Azure AD (SAML based)
    - CI/CD Integration (into existing tooling)

- Apigee hybrid gateway implementation on HeidelbergCement's premises if required: approx. 10.000€

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Apigee Onboarding and Architecture Demo

Question 2 & 3

Please describe (ideally with communication flows) how your APIM would integrate and be best deployed within the HC Landscape considering HC has a hybrid deployment and multi-cloud in the near future.

- *Azure Public: CRM365, Marketo*
- *Azure Private Cloud: Digital Foundation (deployed to three regions), HC Data Platform (DaaS), and potentially SAP CPI and S/4Hana Cloud Extended edition.*
- *APIM overall deployment*
- *On-Premise: SAP ECC or S/4Hana interfacing to SCM 3rd party systems via SAP PI.*

Which is your proposal in terms of the gateway deployment considering the question #2 described landscape?

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Apigee in Hybrid Cloud architecture: Overview

→ config
← analytics

Apigee Edge

SaaS

SaaS

APIs

Public Cloud

User and/or App

Federated
Gateway

APIs

On Premises

User and/or App

Federated
Gateway

APIs

Private Cloud

User and/or App

Google Cloud

Apigee in Hybrid Cloud architecture: Overview

← API products, credentials
→ API analytics

Apigee Edge

SaaS

SaaS

User and/or App

Public Cloud

Istio

Apigee Envoy
adapter

Microservices
(Service mesh)

Google Cloud

APIs

User and/or App

On Premises

APIs

User and/or App

Private Cloud
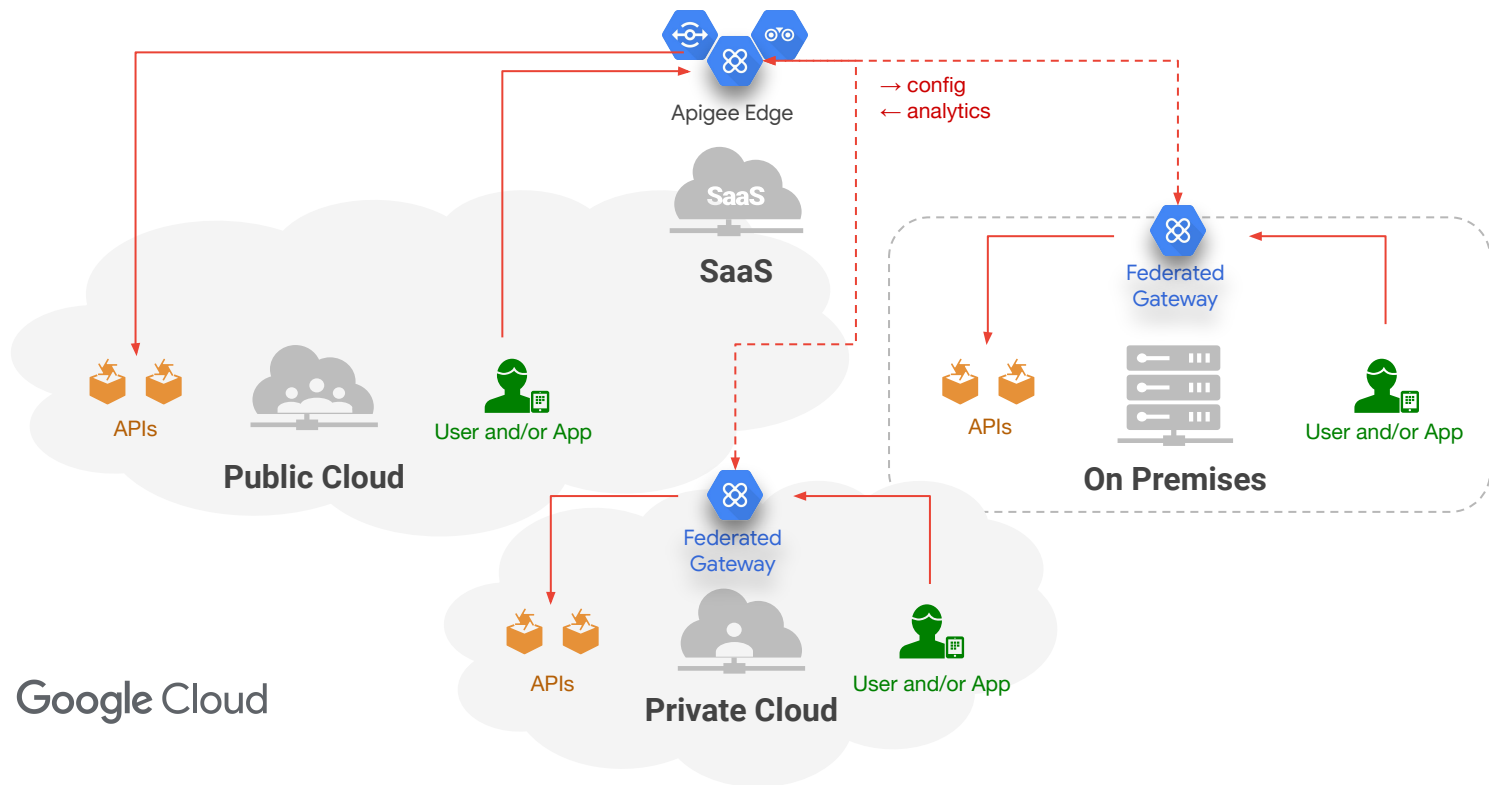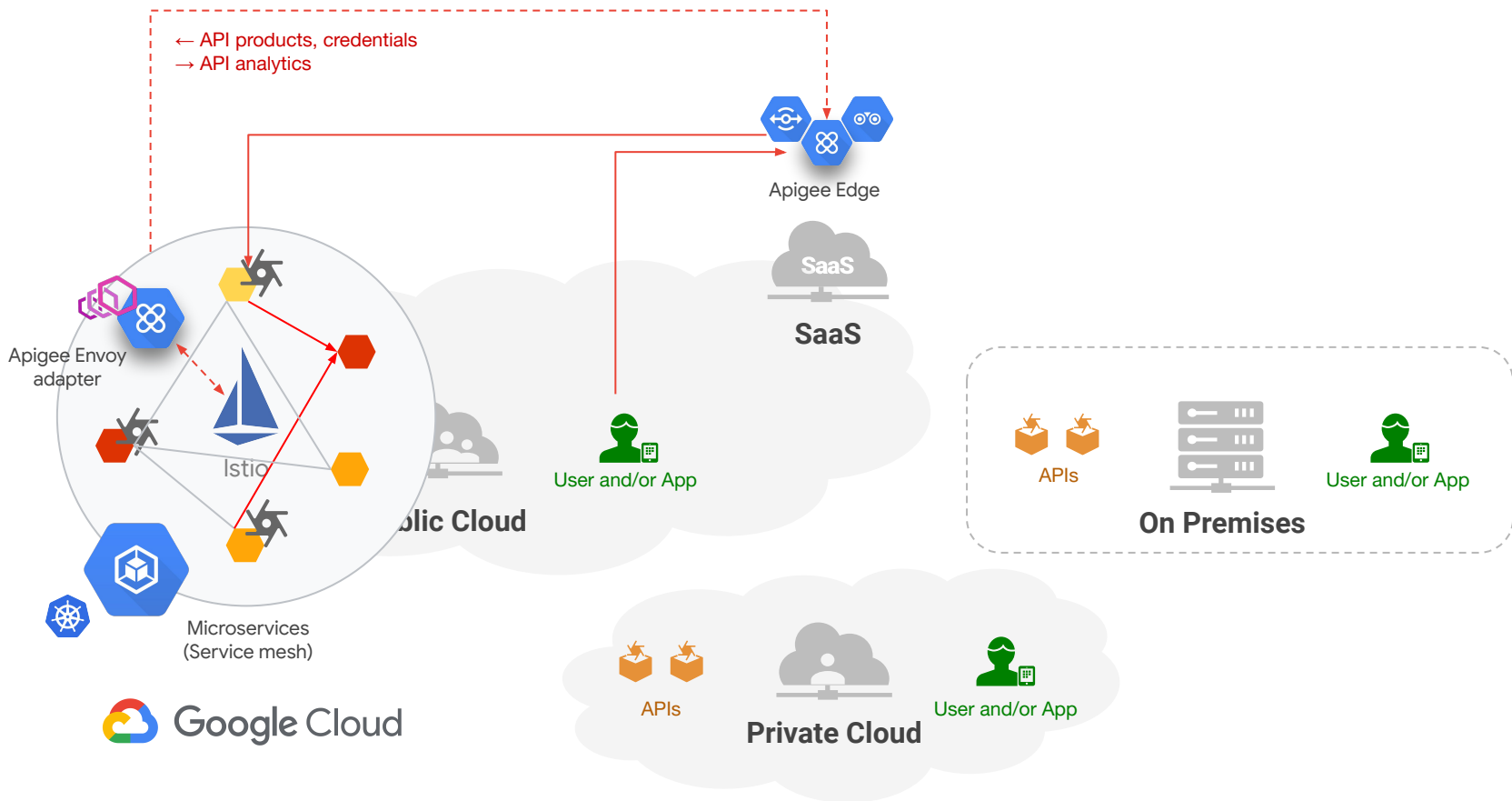
Summary: Apigee in Hybrid Cloud Architectures
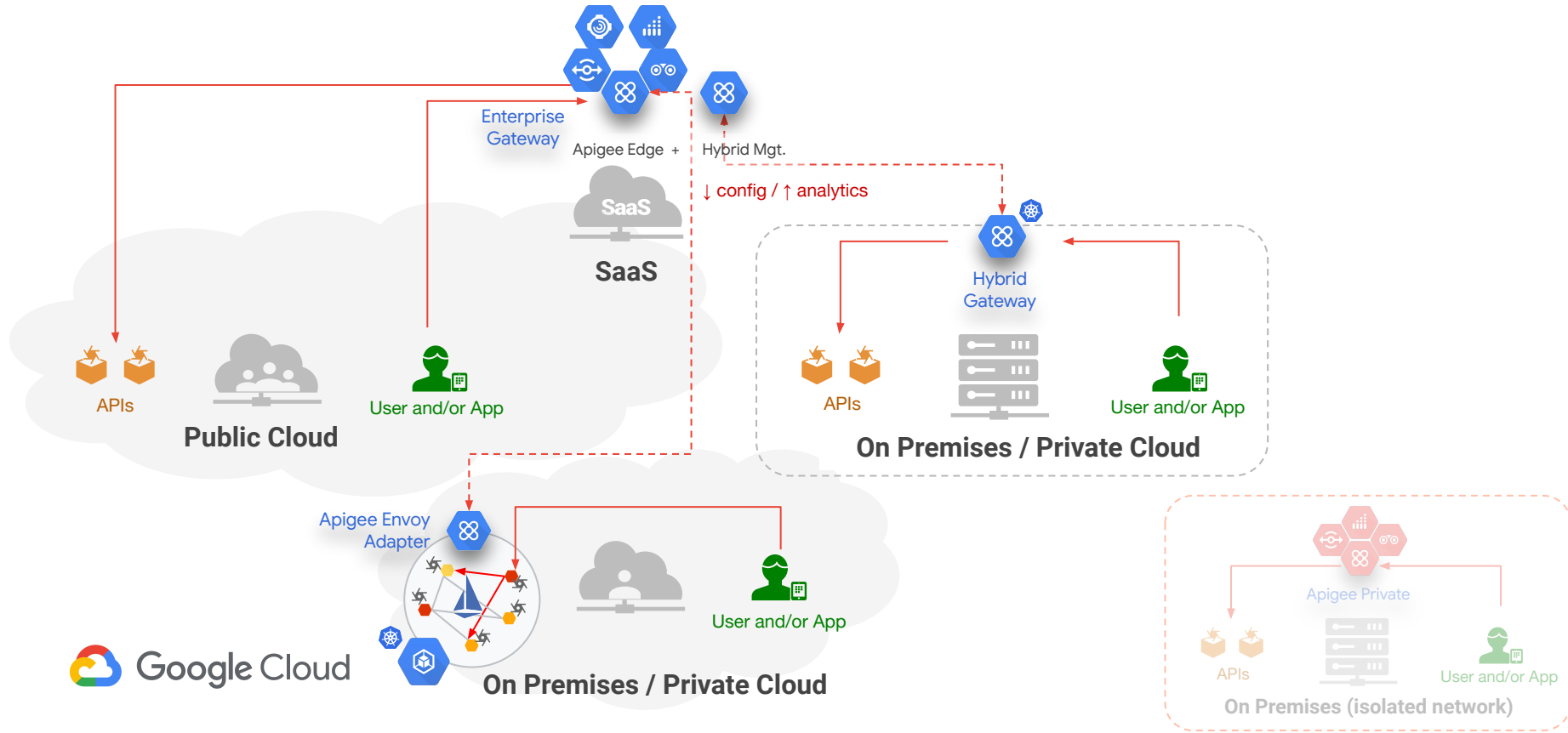
Apigee Runtime Options

Enterprise Gateway (SaaS)

Industry-leading full lifecycle API management as a managed service. Fully featured runtime capable of high scale and high throughput of API traffic. Multi-region and autoscaling built-in.
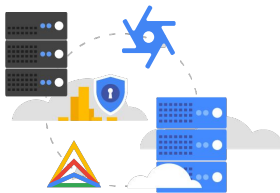
Apigee hybrid

Fully featured runtime identical to the enterprise gateway. Can be deployed in a distributed fashion to multi-cloud and on-premises Kubernetes environments - connected to a management plane.
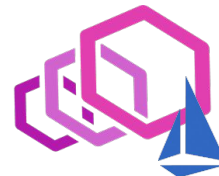
Apigee Adapter for Envoy

Apigee Adapter for Envoy is an Apigee-managed API gateway that uses Envoy to proxy API traffic. You can run Apigee Adapter for Envoy on premises or in a multi-cloud environment.

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HC Hybrid API Architecture Proposal
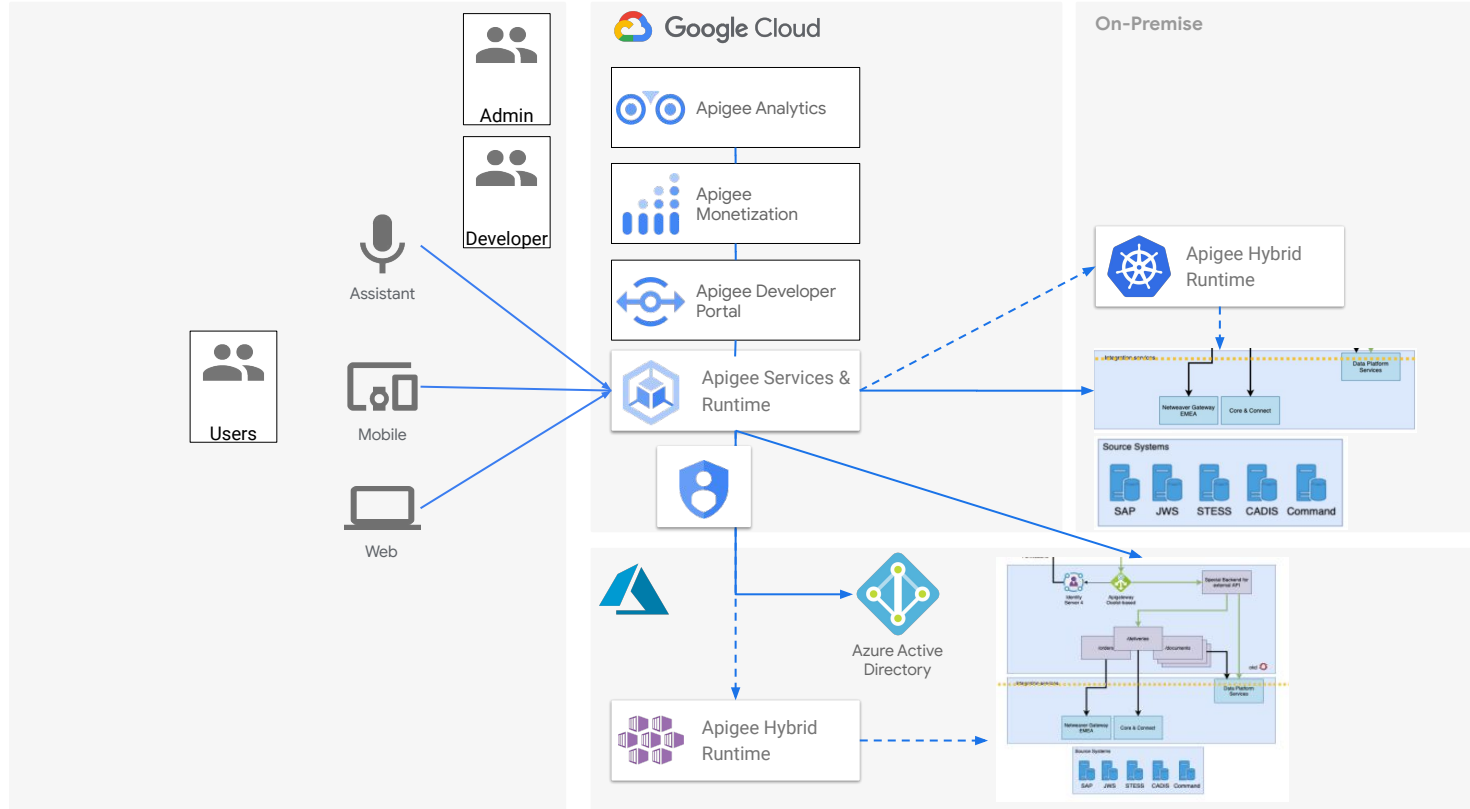
Apigee Communication & Deployment Demo

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Question 4

How can HC integrate your solution to its CI/CD? Which are the typical scenarios towards your customers CI/CD integration infrastructure? Currently HC uses Gitlab

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Apigee CI/CD Lifecycle

Developer

Check in source code

Fetch source from SCM

Run code quality analysis using eslint

Run unit tests with test coverage analysis

Build, deploy & configure API Bundle

Run integration test

Publish reports

Update API docs (sandbox environments)

Google Cloud
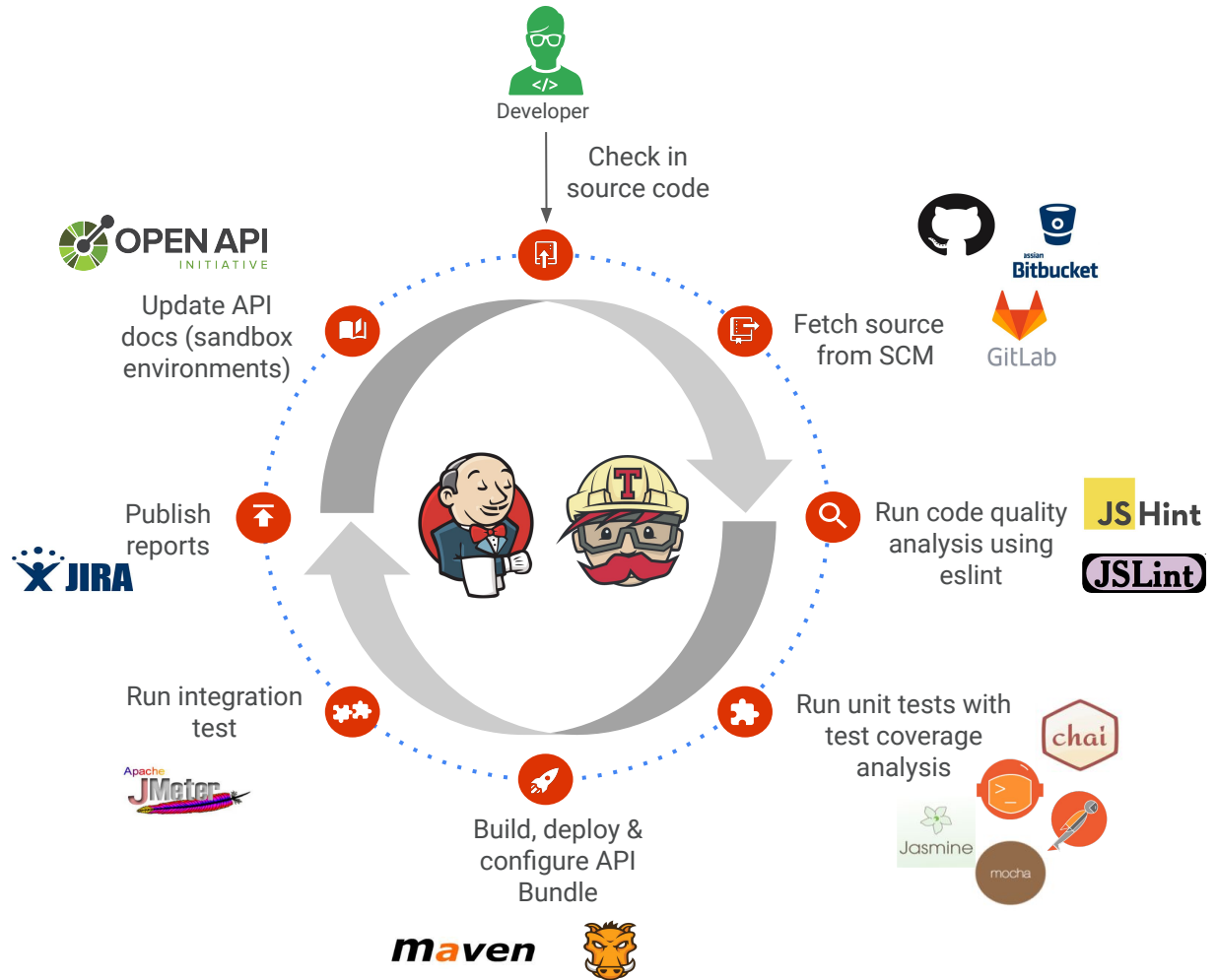
Revisions and Deployments for API Proxies

Orgs

Envs

exco-nonprod

DEV   R1
TEST   R2
QA ⭐   R3-R#

exco-prod

SAND BOX   R1
PROD ⭐   R2-R#

Apigee

update user revision

update revision

update revision

add new revision

update revision

add new revision

Feature development and testing work is deployed to DEV environment by User locally

Feature development is committed to feature branch and deployed to DEV environment by Jenkins

- Builds can be configured for continuous deployment to downstream environments.
- Pull requests can be used to manually trigger downstream deployments (e.g to QA or PROD)
- Deployment to QA and PROD adds a new revision

Proxy Developer

git "push" → SCM Repository → push trigger → CI Build Server

⭐ Requires Approval

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Apigee CI/CD Demo

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Question 5

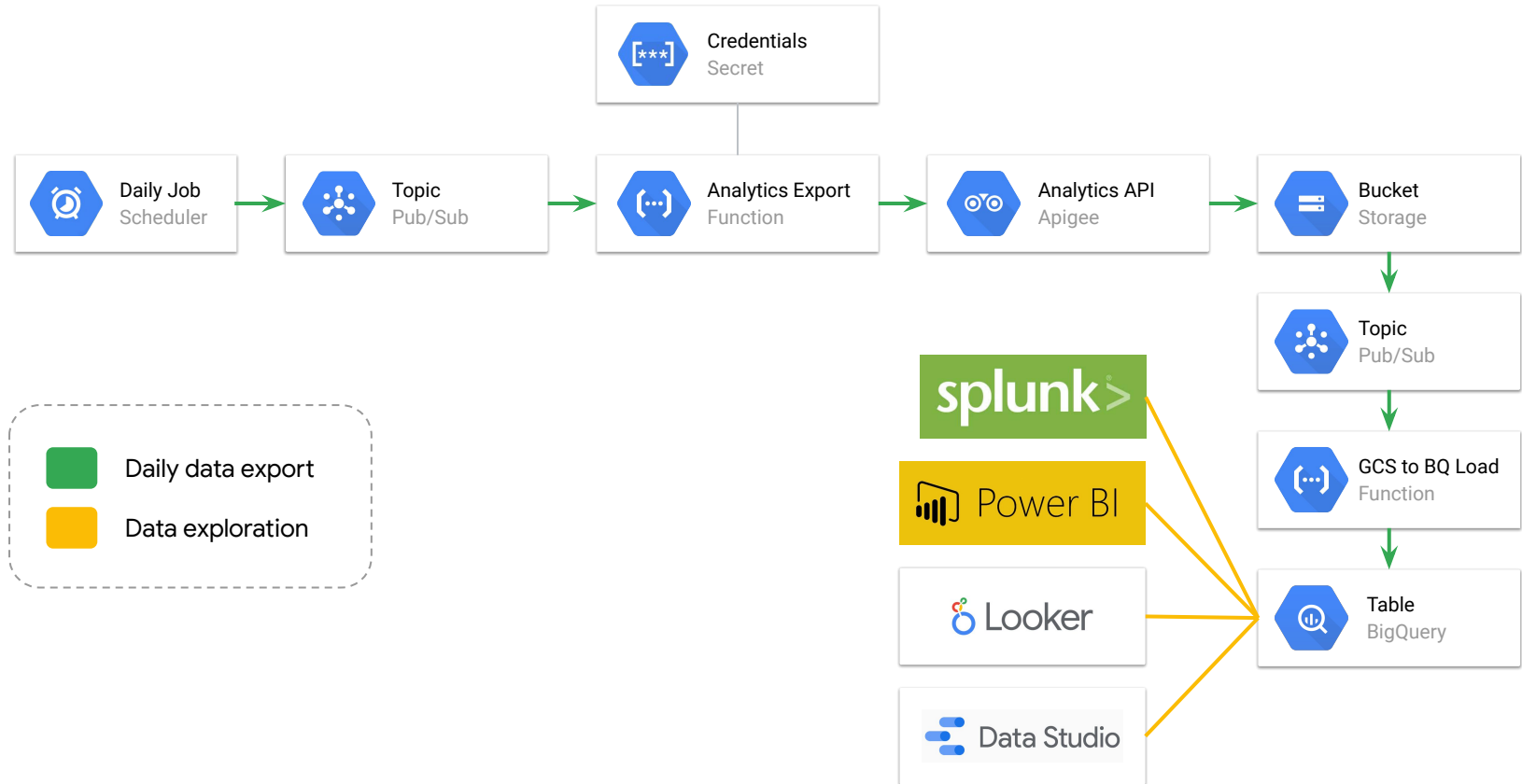Please state which components are out-of-the-box in your offer, and whether any complementary technology components are required from your palette of solutions to make full usage of your APIM, and what is at the end the impact on your pricing offer. For instance, whether usage of the APIM Analytic metrics has as pre-requisite additional storage or data warehouse for analysis.

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Multi-Layer Security Architecture

Good and bad
traffic from Internet

Cloud Armor

DDoS and Web Attack
Defense on Global Edge

Apigee

Intelligent API defense

reCAPTCHA Enterprise

Advanced Bot &
Fraud Detection

Web apps & APIs hosted
on Google Cloud

Cloud

Web apps & APIs hosted
on other clouds

Web apps & APIs hosted
on-premises

Google Cloud
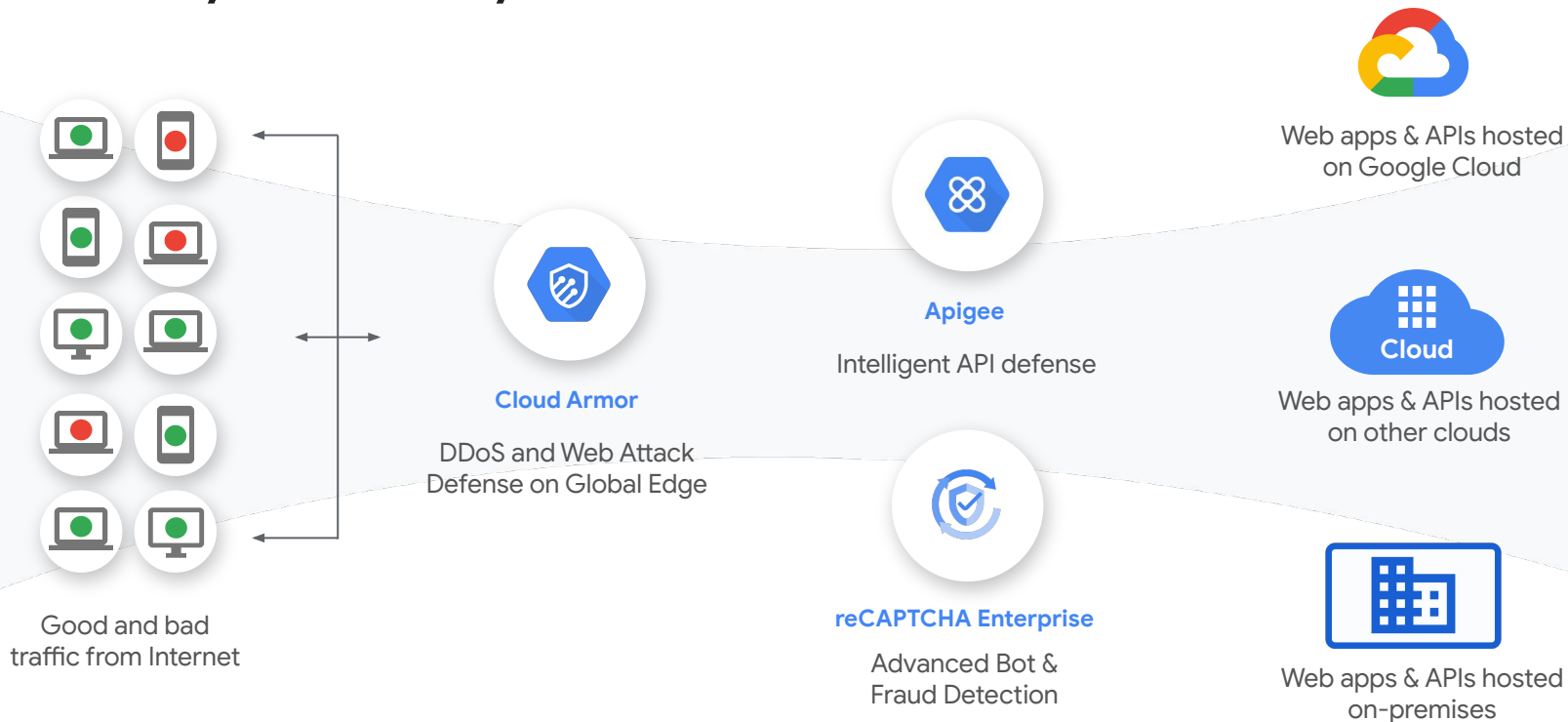
Apigee Custom Monitoring & Analytics

Apigee Analytics + Custom Metrics Demo

Google Cloud

Question 6 & 7 & 8

Please state if your offer also includes connectivity adapters to 3rd party systems (like SAP) and, if you provide any predefined integration content accelerating integration to SAP systems.

Please describe how your APIM solution would interact with the SAP CPI integration flows/integration packages.

How do you compete with the predefined content offered by the SAP API Business Hub? Which is your approach to accelerate integration to SAP Systems? If HC were to license the SAP API Business Hub, would it be possible to import those API definitions into your APIM solution?
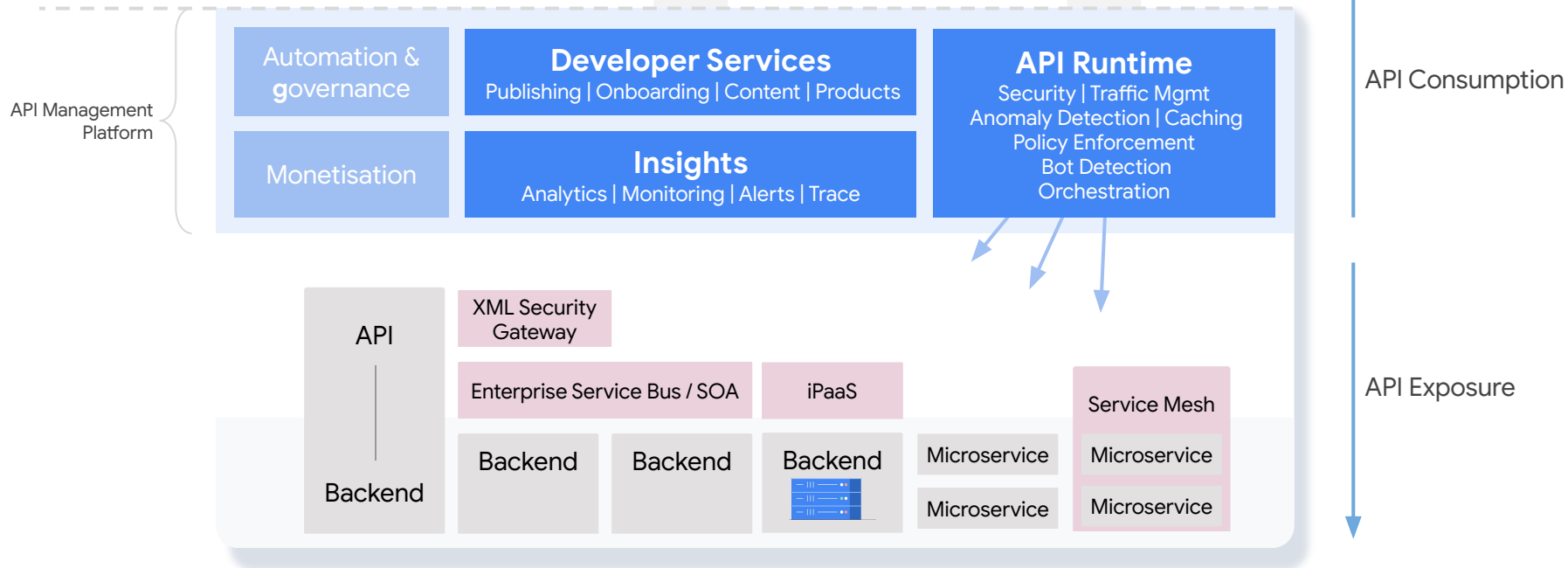
API Management & Integration

Partners + Internal/External Developers

Apps

API Management Platform

Automation & governance	**Developer Services** Publishing | Onboarding | Content | Products	**API Runtime** Security | Traffic Mgmt Anomaly Detection | Caching Policy Enforcement Bot Detection Orchestration
Monetisation	**Insights** Analytics | Monitoring | Alerts | Trace	

API Consumption

API Exposure

API

Backend

XML Security Gateway

Enterprise Service Bus / SOA

iPaaS

Backend

Backend

Backend

Microservice

Microservice

Service Mesh

Microservice

Microservice

Google Cloud

Apigee Extensions Today

Google Cloud Services Extensions	Stackdriver Logging	Cloud Pub/Sub	Cloud Storage	Cloud Vision
	Cloud Natural Language	Cloud Data Loss Prevention	Cloud Firestore	Cloud Spanner
	Cloud authentication	Cloud Functions	Cloud Machine Learning Engine	BigQuery
3rd Party Extensions	Informatica	AWS S3	AWS Lambda	Salesforce

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Apigee Integration Roadmap

- Based on Google's internal integration & orchestration platform, already used at scale
- Sync, Event Driven / Messaging, Complex Orchestration, Long running processes / Async, Scatter-Gather, Advanced Retries, Data Mapping, Scripting
- SAP, Salesforce, HTTP (REST), Pub/Sub, SQL, BigQuery, Kafka, Connector SDK, Extensions
- Currently in private preview with customers
- Target v1 GA: Q2 2021

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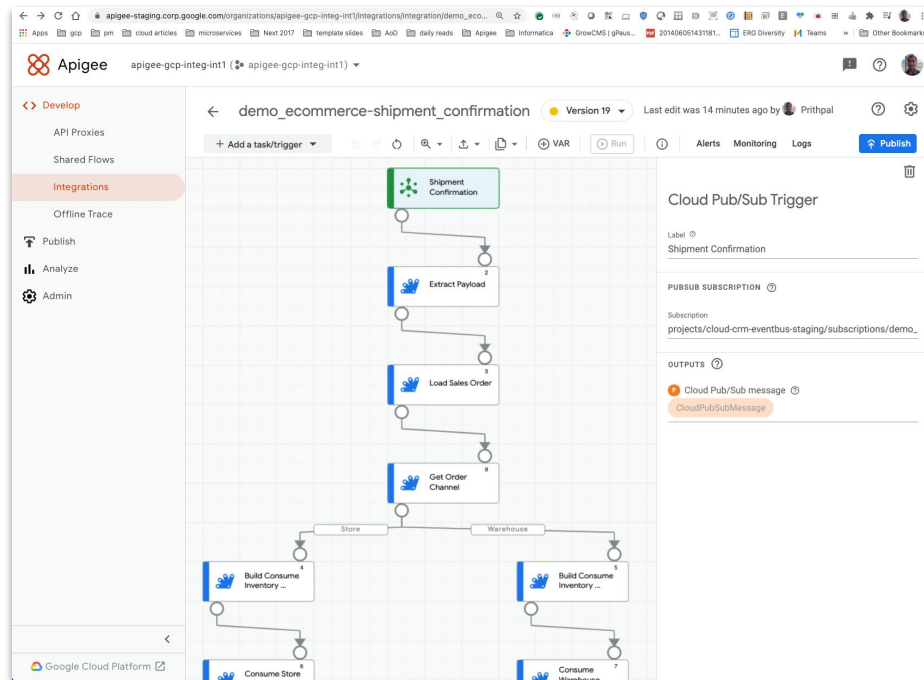
Question 9

HC currently has a pre-development of the MVP based on Microsoft API, which are the options, tools, to swiftly migrate to your solution?

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Apigee Migration Objectives

Detail an approach used by Apigee with multiple customers to migrate their API traffic to Apigee. Most customers have the following goals in mind for their migration.

- No impact to the business
- Minimal impact on users
- No changes to existing APIs and apps
- Minimal impact on developers

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Apigee Migration Recommended Phases

Take the Traffic

- Deploy passthrough proxy
- Route all traffic through Apigee to existing solution

Import the Data

- Import or create the products
- Import the developers and apps

Get the Tokens

- Build and deploy the OAuth service (token collector)

Google Cloud

Apigee Migration, Monetization & Dev Portal Demo

Conclusion

Google Cloud

What makes Google Cloud Apigee different

Best-in-class Security Hybrid & Multi-Cloud
> Protect systems, data, and users

Proven API Program Execution
> Time-to-market with API products & scalability

Fully Managed No Ops
> SaaS platform keeps risks and costs low

Advanced Features w Embedded AI & ML
> Monetization, API Ops, Advanced Portals & CI/CD

Best of Google
> Bringing culture of innovation to customers and partners

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Q&A | Next Steps

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Thank you

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