Baltic Microsoft Developers Community

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Integrations with Azure API Management

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Uros Kastelic | LinkedIn

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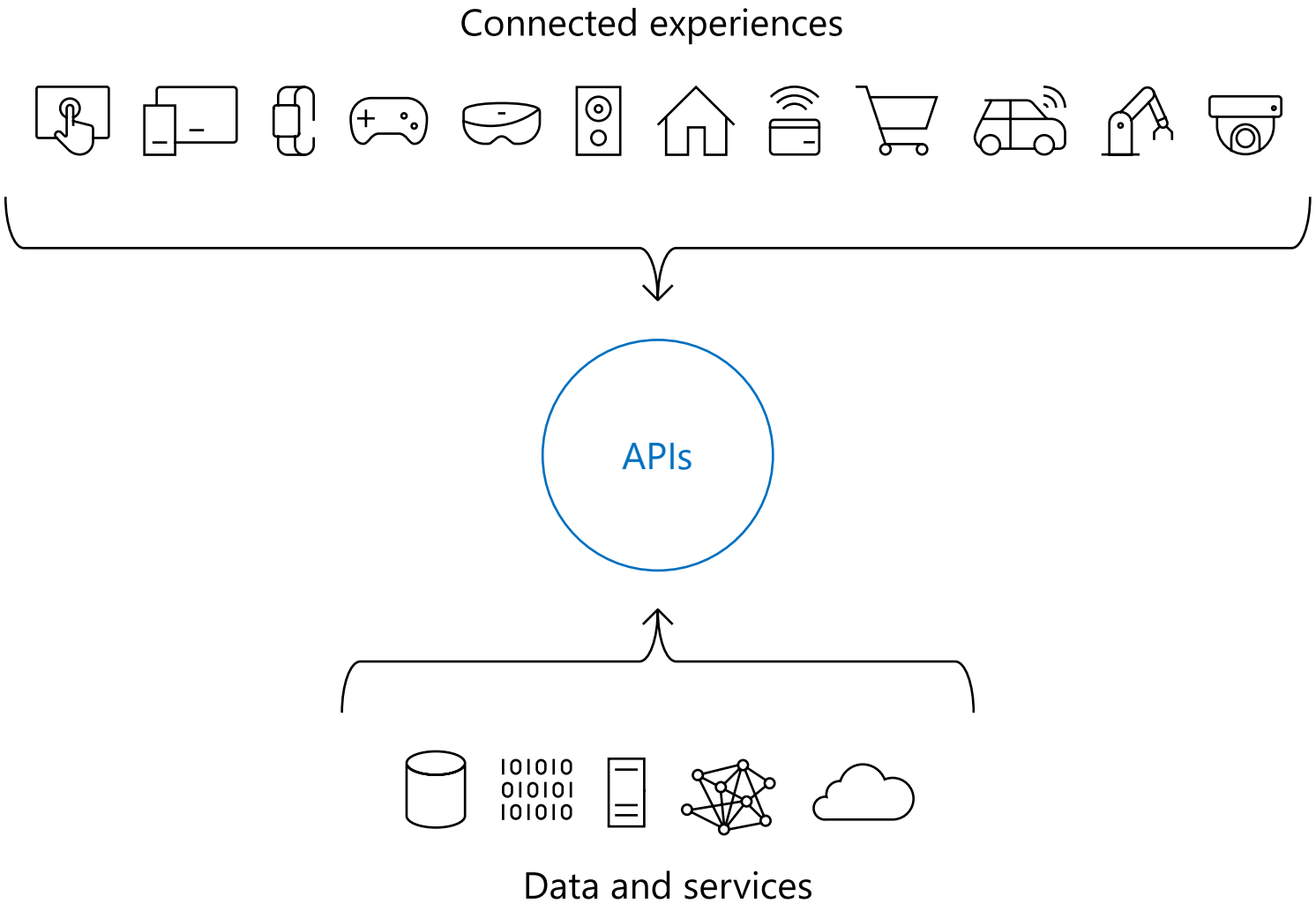
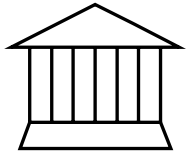
Let’s start...

Digital Transformation is built on APIs



Essence of API management



Facade

Hide backends from frontends

Move backends without impacting frontends

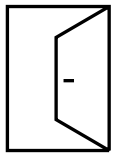
Re-architect backends without impact on frontends

Expose a subset of backend capabilities

Aggregate or slice backends into APIs

Modernize legacy backends

Decouple frontend developers with mocks



Front door

Single point of ingress

Route

Authenticate

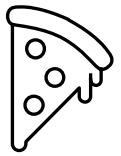
Authorize

Throttle

Transform

Trace

Meter



Frictionless consumption

Self-service user onboarding

Discover APIs

Learn how to use APIs

Try APIs without writing any code

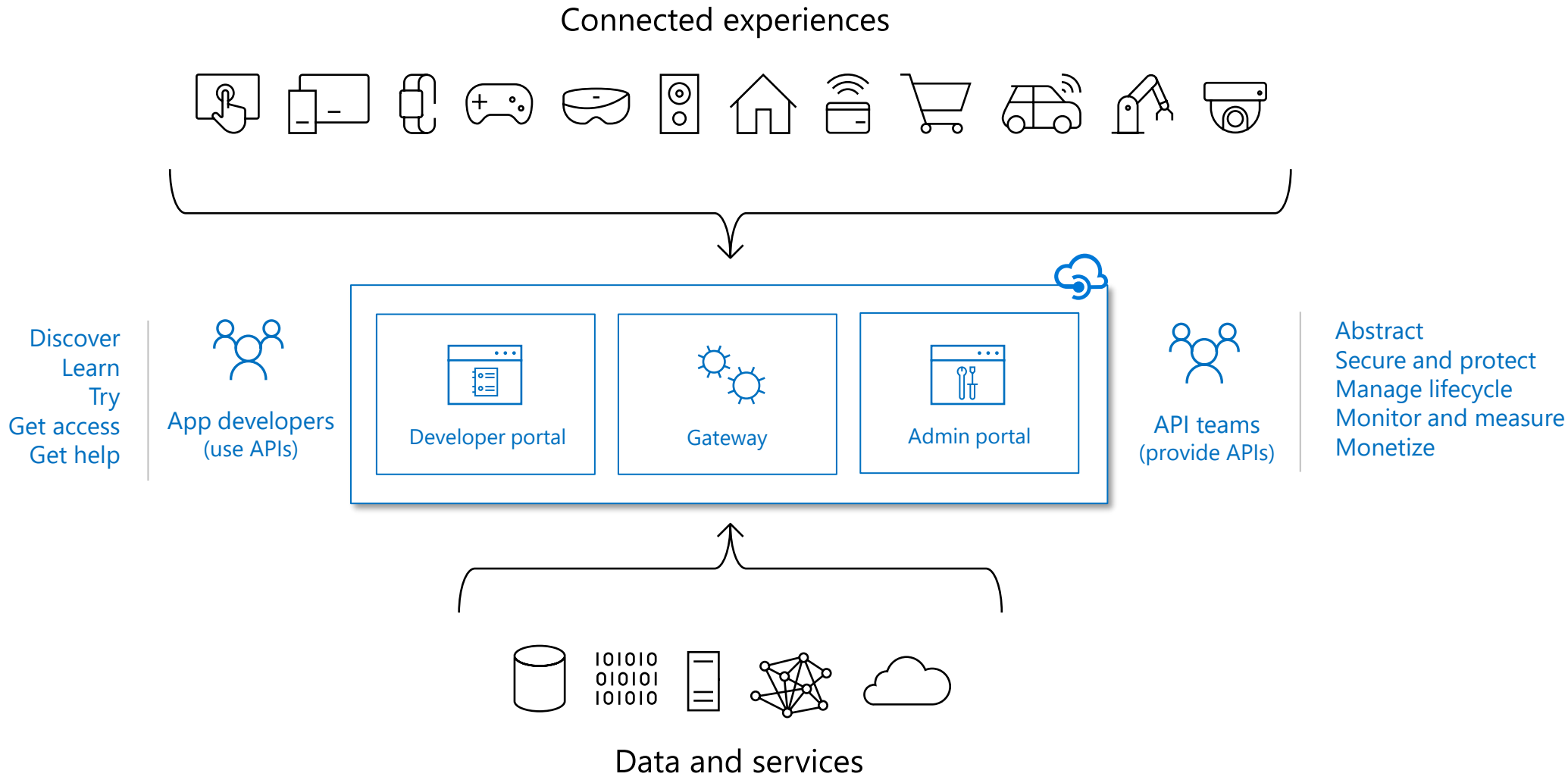
Request and receive access to APIs

Download API specs, samples, and SDKs

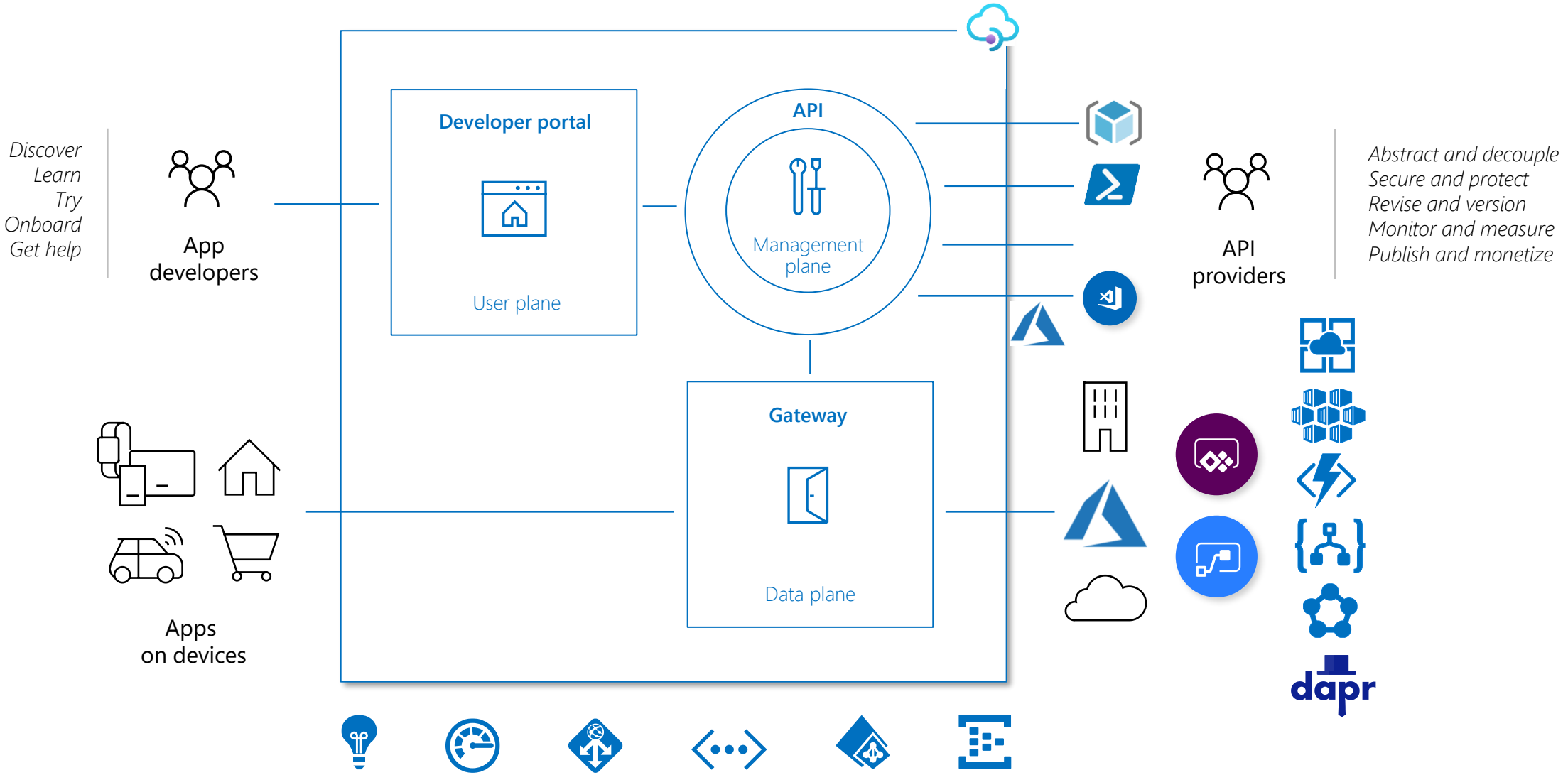
Interact with the API provider

Get usage reports

API management solves API-related challenges



Azure API Management



Gartner named Microsoft a leader in 2020 Gartner Magic Quadrant for Full Life Cycle API Management

Value proposition

- Mature full life cycle API management solution
- Abstract, secure, observe, and make APIs discoverable in minutes
- One solution for APIs across clouds and on-premises
- Dependable, secure, scalable, and performant
- DevOps- and developer-friendly
- Azure-native and integrated with other Azure services
- Globally available and supported
- Low-barrier-to-entry pricing

Top scenarios for API Management

Cloud migrations	Replacement for API management solution used on-premises Reach-back to on-premises APIs
Cloud-born apps	App modernization and cloud-native apps API gateway for PaaS, container and serverless-based microservices
IoT solutions	Management of control plane APIs
Big Data platform	Management of reporting and insights APIs
Two-speed IT	Digital transformation Enterprise-wide API catalog and governance

[API Management pricing | Microsoft Azure]

Pricing

Region: West Europe | Currency: Euro (€) | Display pricing by: Hour

Pricing details

	CONSUMPTION	DEVELOPER	BASIC	STANDARD	PREMIUM	ISOLATED PREVIEW
Purpose	Lightweight and serverless version of API Management service, billed per execution	Non-production use cases and evaluations	Entry-level production use cases	Medium-volume production use cases	High-volume or enterprise production use cases	Enterprise production use cases requiring high degree of isolation
Price (per unit)	€2.95155 per million calls (1M calls free[3])	€0.06/hour	€0.18/hour	€0.80/hour	€3.23/hour	TBA[8]
Cache (per unit)	External only	10 MB	50 MB	1 GB	5 GB	5 GB
Scale-out (units)	N/A (automatic scaling)	1	2	4	10 per region (call support to add more)	10 per region (call support to add more)
SLA	99.95%	No	99.95%	99.95%	99.99%[1]	99.99%
Isolation	Shared	Private	Private	Private	Private	Private

There is a policy for that

Encapsulate common API management functions

Access control, Protection, Transformation, Caching, …

Mutate request context or change API behavior

E.g. add a header or throttle

Set in the inbound and outbound directions

Applied at a variety of scopes or on error

Scope determines which APIs are affected

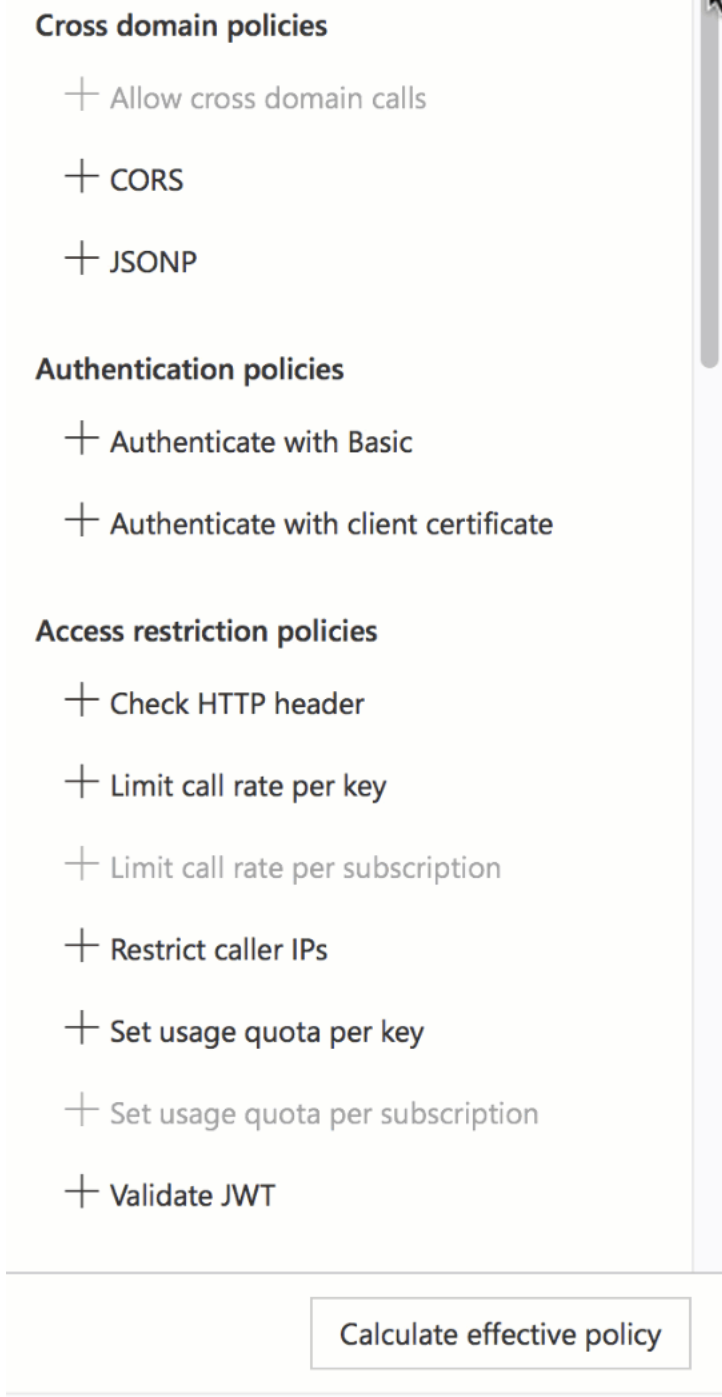
Can define custom scopes in addition to four available b default

Composed into a pipeline from effective scopes

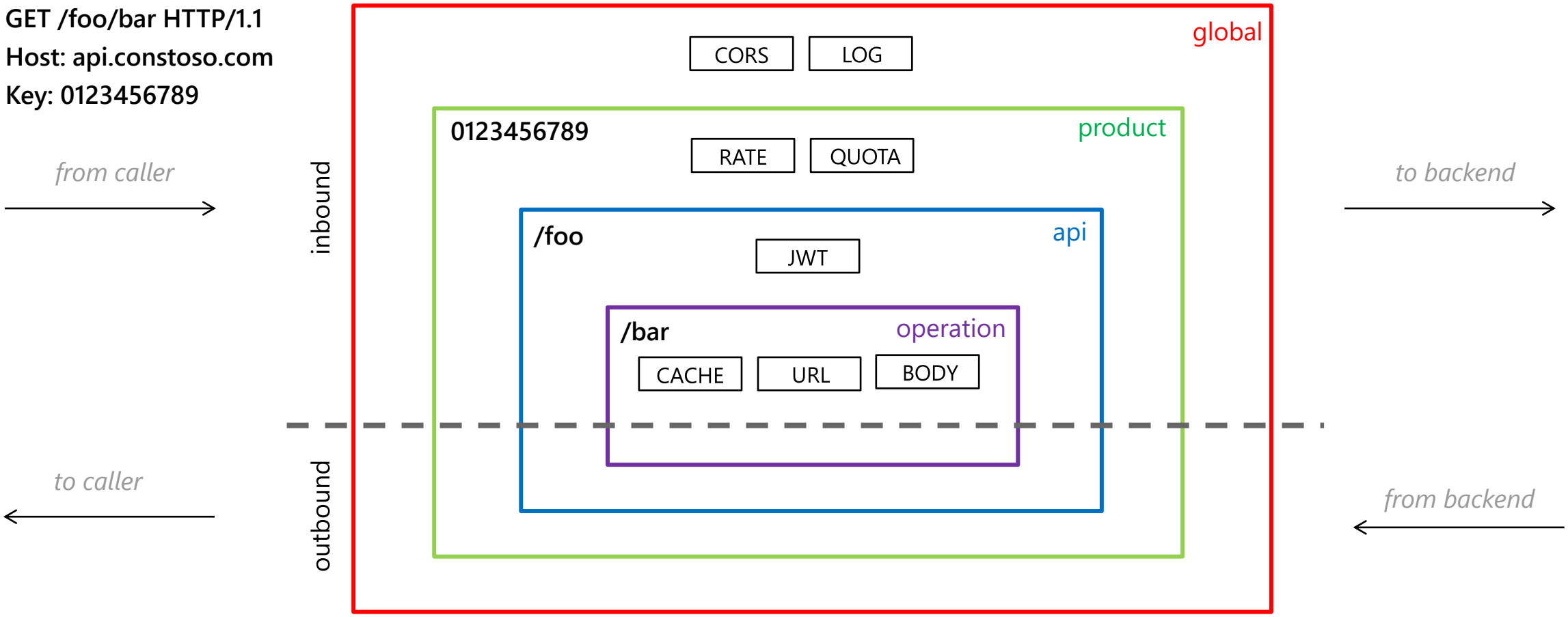
Degree of control over inheritance of scopes, i.e. <base/> element

Don't delete <base/> inadvertently

http://aka.ms/apimpolicyexamples



Policy scopes



Target use cases for the Consumption tier

- Gateway for serverless microservices
  - Functions and Logic Apps
- Simplified and secure façade for serverless resources
  - Instant Provisioning, Automated scaling, per action pricing
- Entry-level API management for breadth customers
- Gateway for traditional backends with highly spiky traffic
- Non-production environments and evaluations

Versions and revisions

Versioning is an opt-in

Versions are represented at the system level

Choice of versioning scheme options

Versions are reflected on the developer portal

Control over when the versions are published

Revisions

Providers choose when to deploy

Versions

Consumers choose when to adopt

"I found this approach refreshing, as it provides a more pragmatic approach to API versioning while steering clear of semantic versioning that doesn't necessarily map directly to HTTP-based APIs."

From "A guide for when (and how) to version your API"

https://tyk.io/blog/guide-version-api/

Self-hosted API Gateway

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Self-hosted API gateway

Deployable to on premises or to a cloud

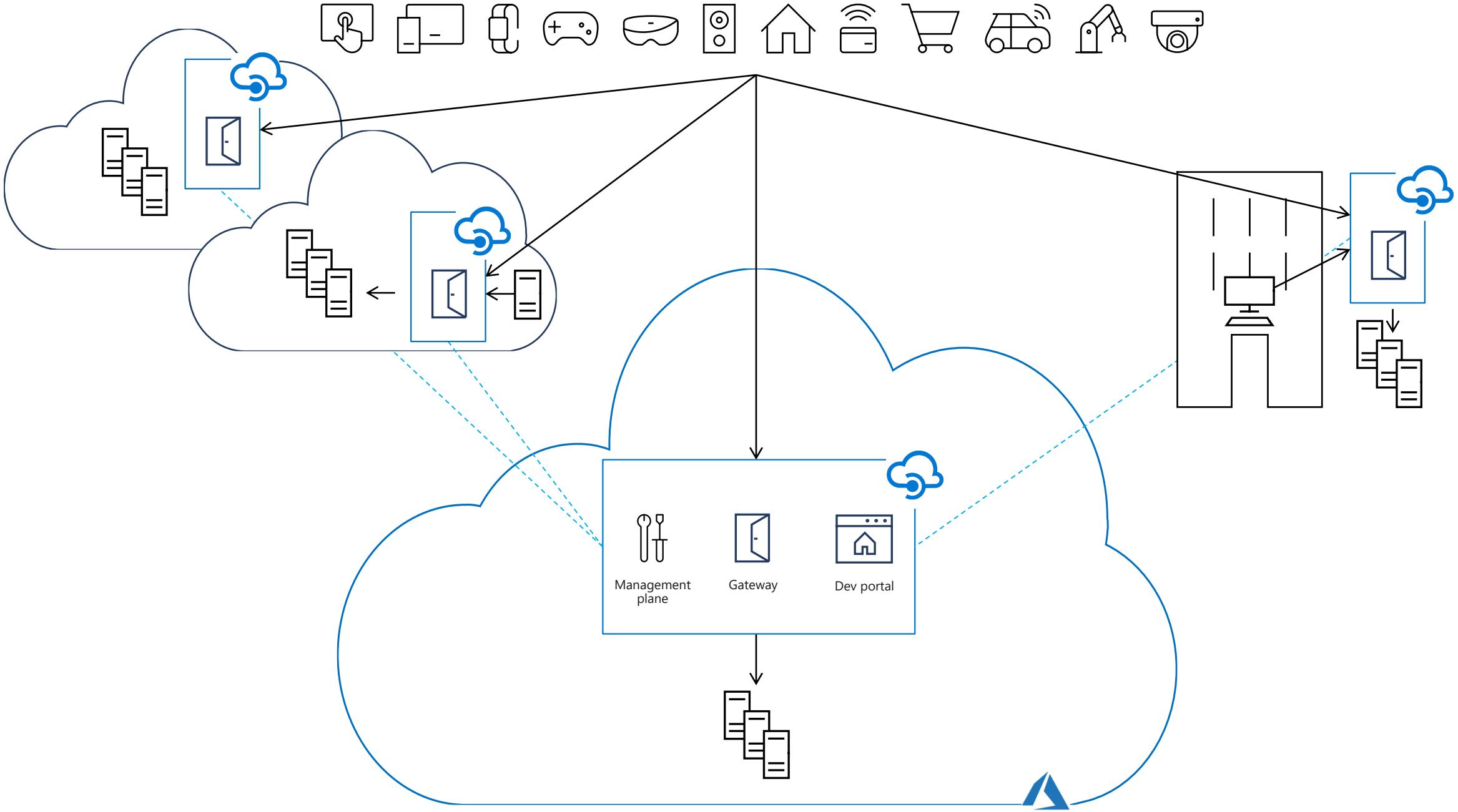
Functionally equivalent to the managed gateway
Packaged as a Linux-based Docker container image
Available from the Microsoft Container Registry

Managed and observed from Azure

Requires only outgoing connectivity to Azure on port 443
Connects to a “parent” API Management service
Pulls down configuration and pushes up telemetry

Simple to provision and operate

Just a single container
Easy to evaluate on a laptop with Docker Desktop or Minikube
Kubernetes provides availability, scaling, rolling upgrades, and more


Management plane
Gateway
Dev portal

Sample architecture

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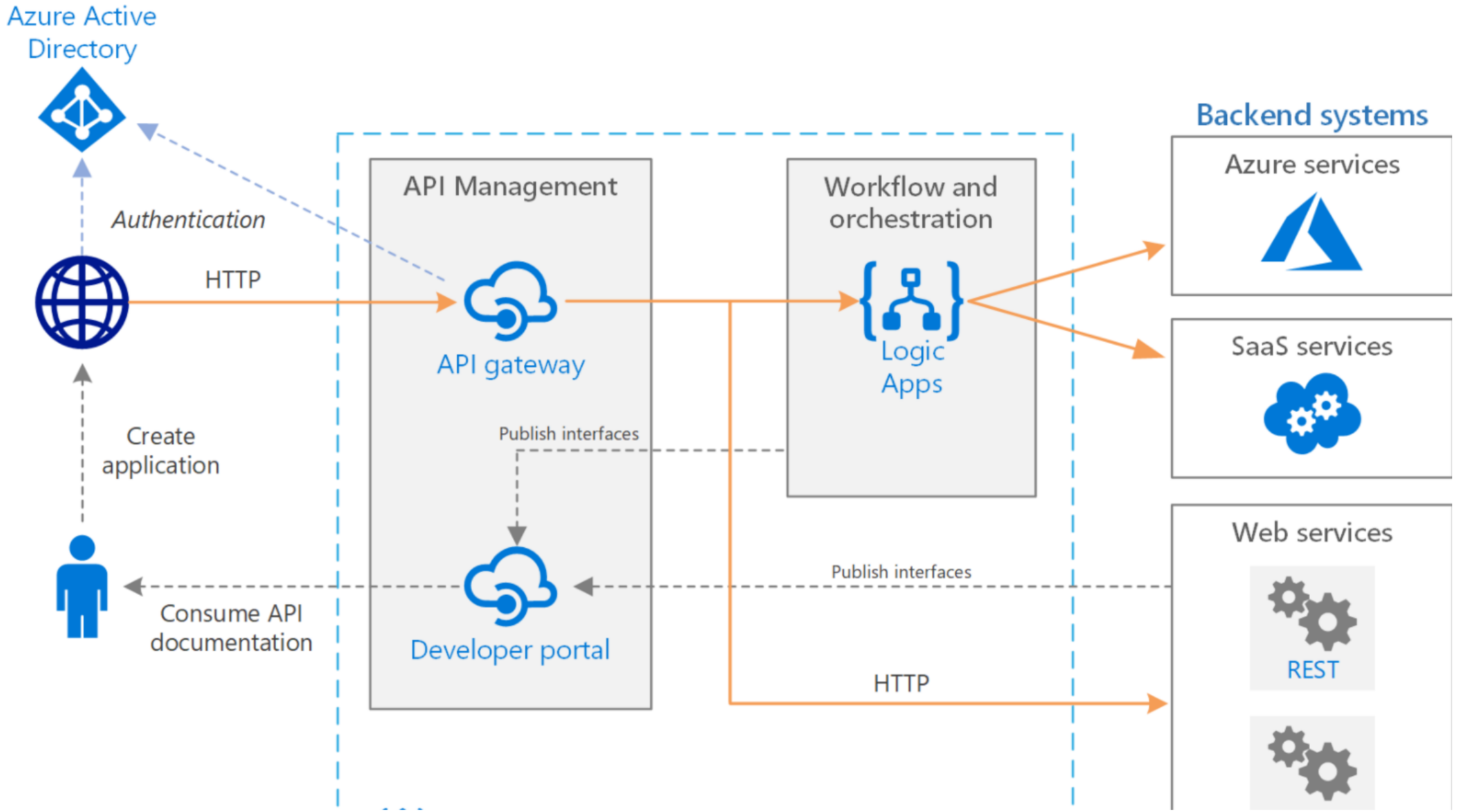
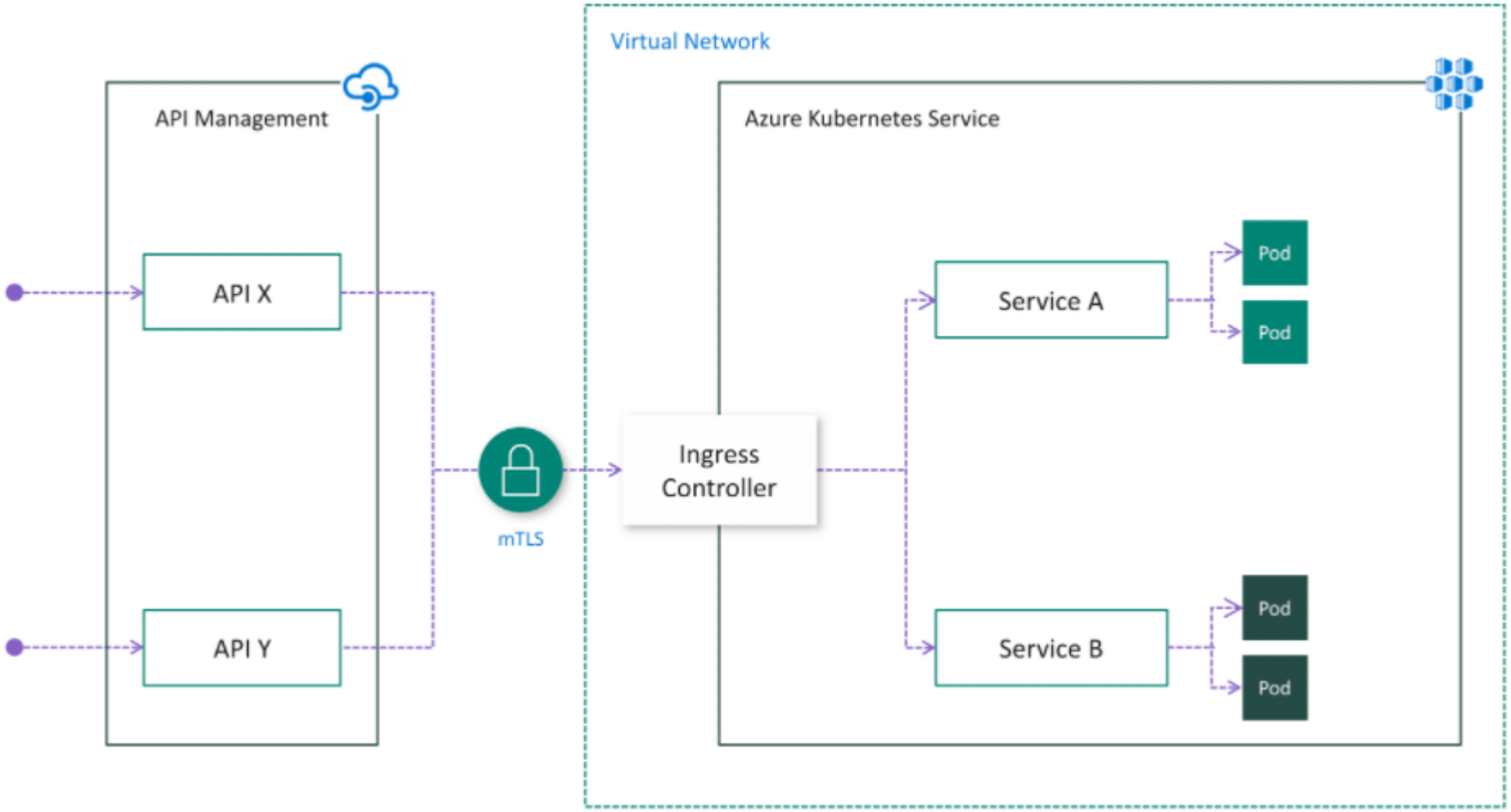
[Basic enterprise integration on Azure - Azure Architecture Center | Microsoft Docs]

Basic Enterprise integration



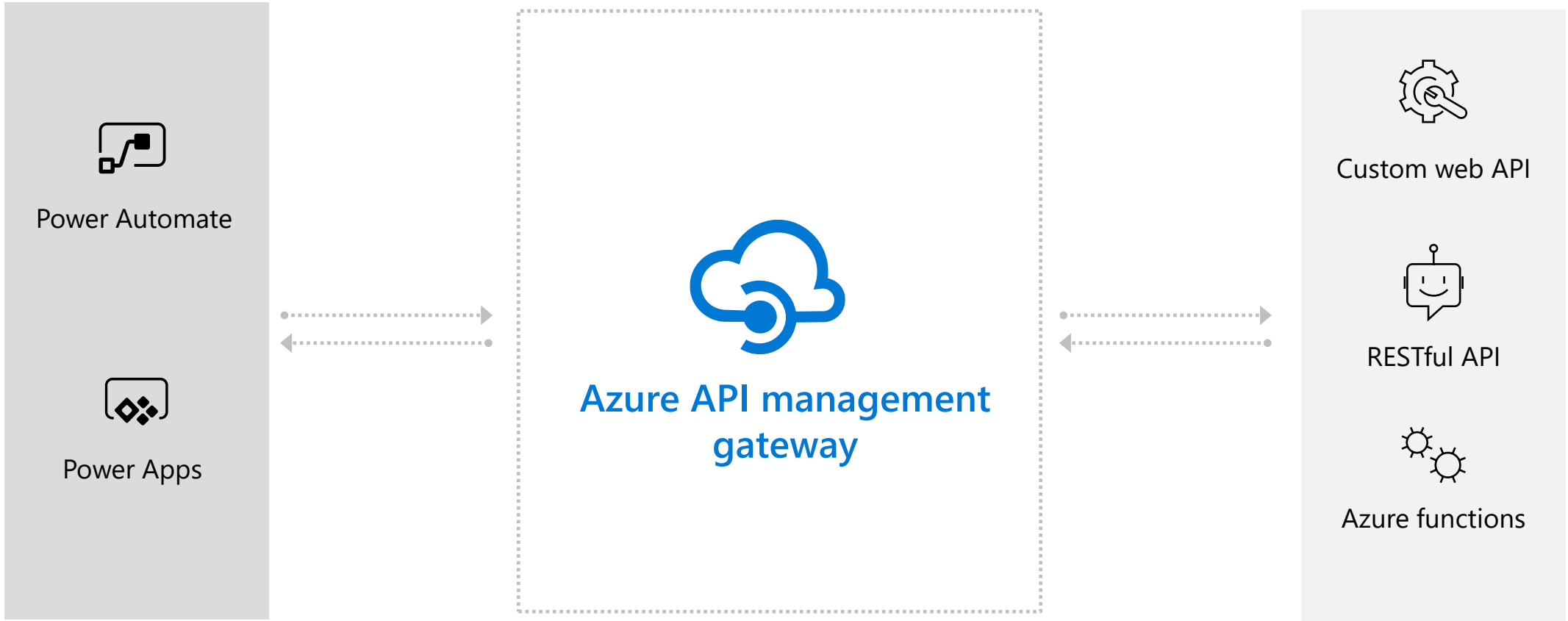
API Management in front of AKS



This architectural diagram shows just one of multiple options. Please review the documentation and select the best for your solution.

Use Azure API Management with Microservices Deployed in Azure Kubernetes Service | Microsoft Docs

Power Platform + Azure API Management



Lean more

DevOps

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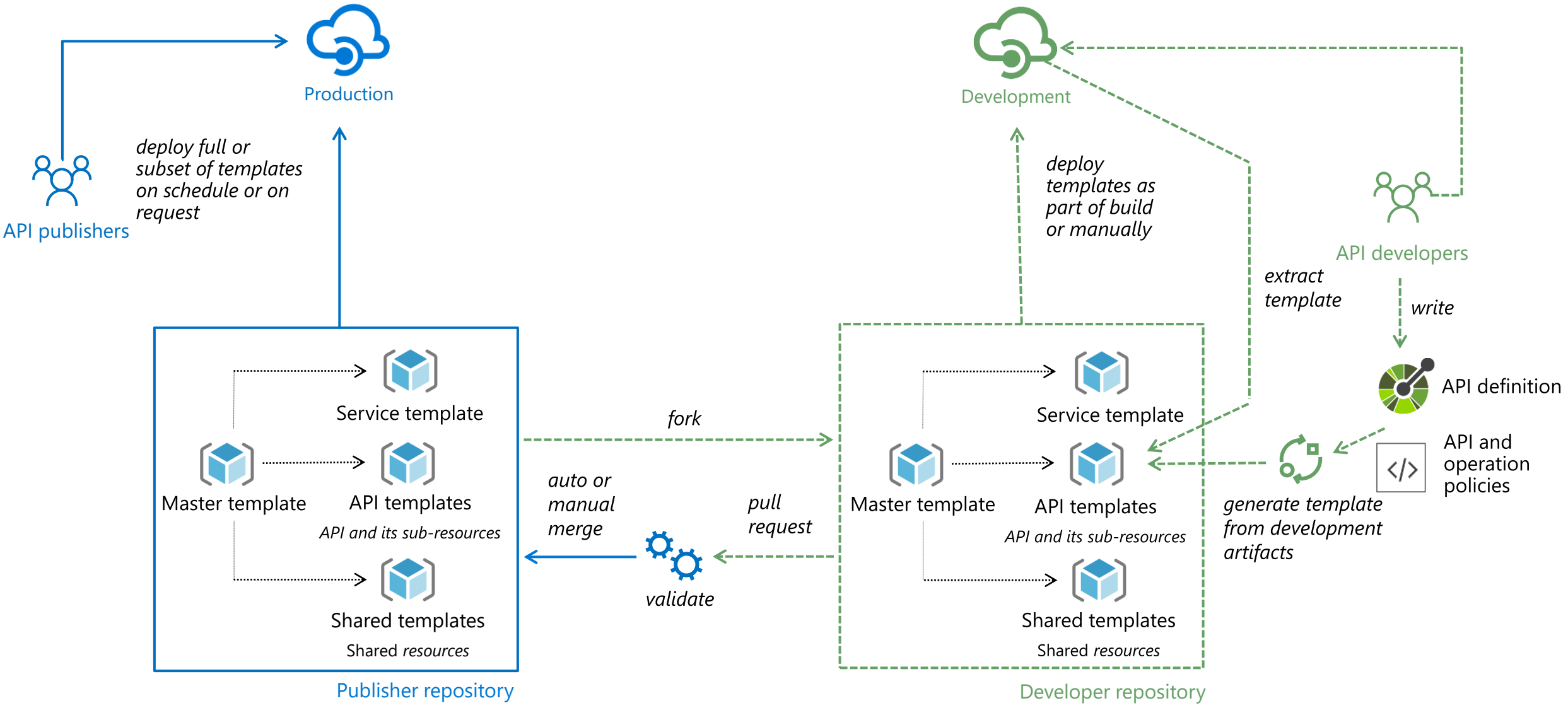
Production
Development
API publishers
deploy full or subset of templates on schedule or on request
deploy templates as part of build or manually
API developers
extract template
write
API definition
API and operation policies
Service template
Master template
API templates
API and its sub-resources
Shared templates
Shared resources
fork
auto or manual merge
pull request
validate
generate template from development artifacts
Publisher repository
Developer repository

Demo

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Thank you!

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Q&A time

And don’t forget to move and grab something to drink if you need to

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