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# Integration

## IBM Perspective

# The need for Integration increases



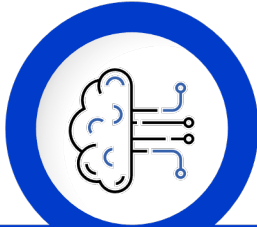
**SaaS  
Adoption**



**IoT**



**Process  
Automation**



**AI**

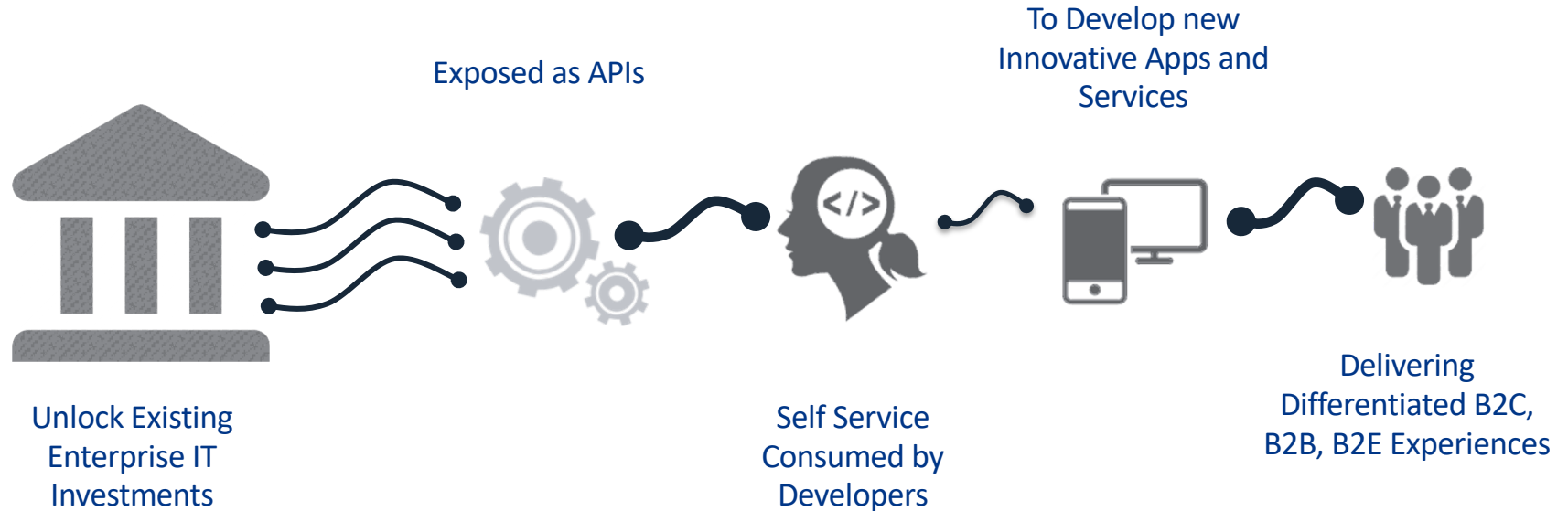


**Micro services  
Design**

# API Management

## IBM Perspective

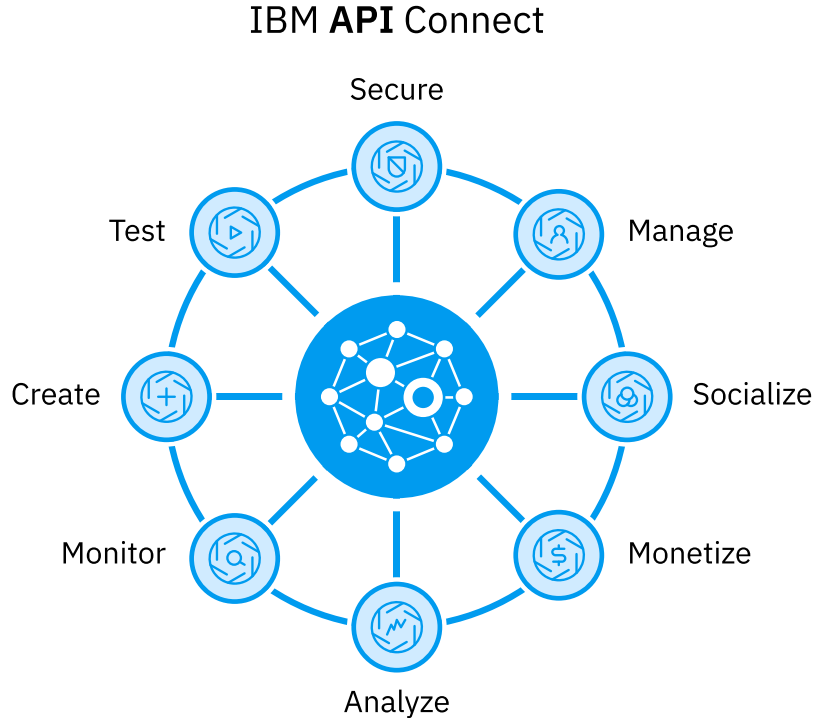
# Basic concept - Shift focus to consumers



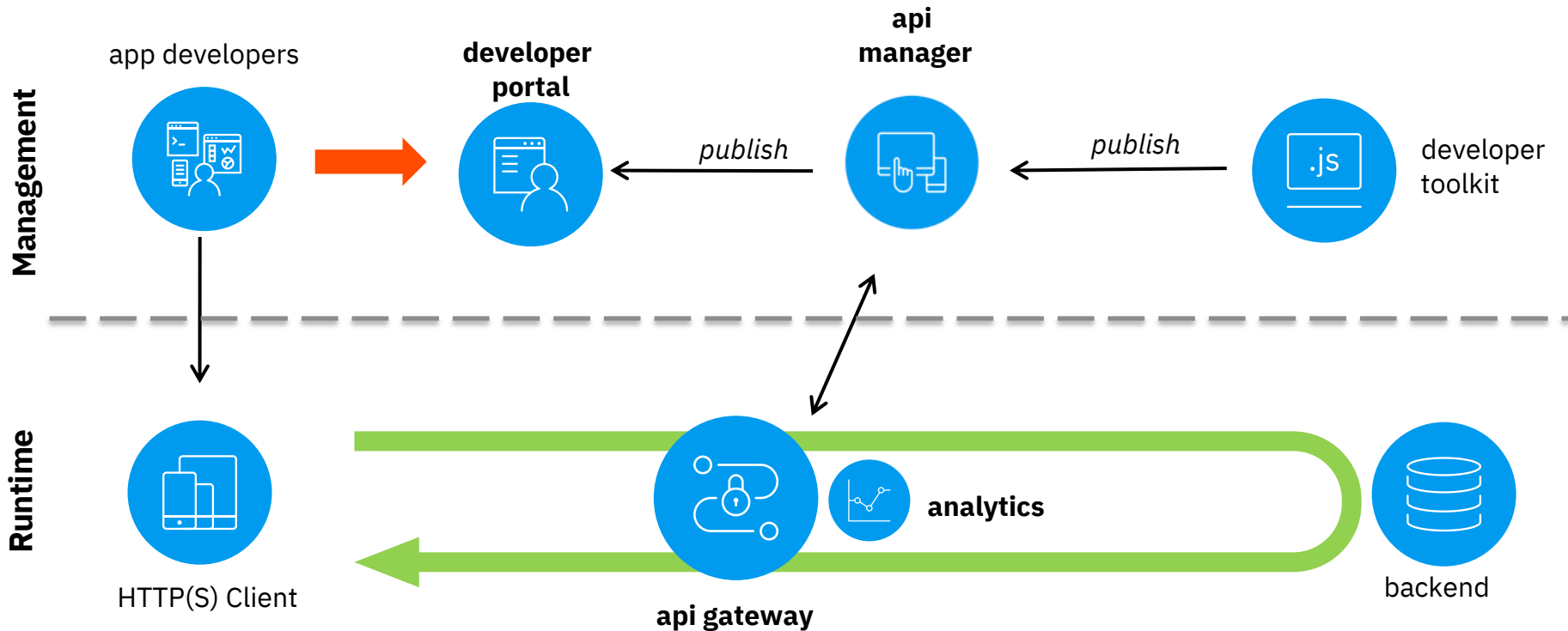
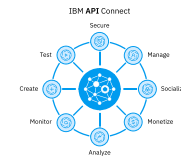
# API Management

## IBM API Connect

### Overview



# API Connect – Components



# Components functionality



## Gateway Instance

- API Policy Enforcement
- Security & Control
- Connectivity & Scale
- Traffic control & mediation
- Workload optimization
- Monitoring/Analytics data Collection



## Analytics Instance

- API Monitoring Analytics



## Management Instance

- API Discovery
- API Policy Creation
- Manage Containers through auto-scaling
- Product Version & Lifecycle Management

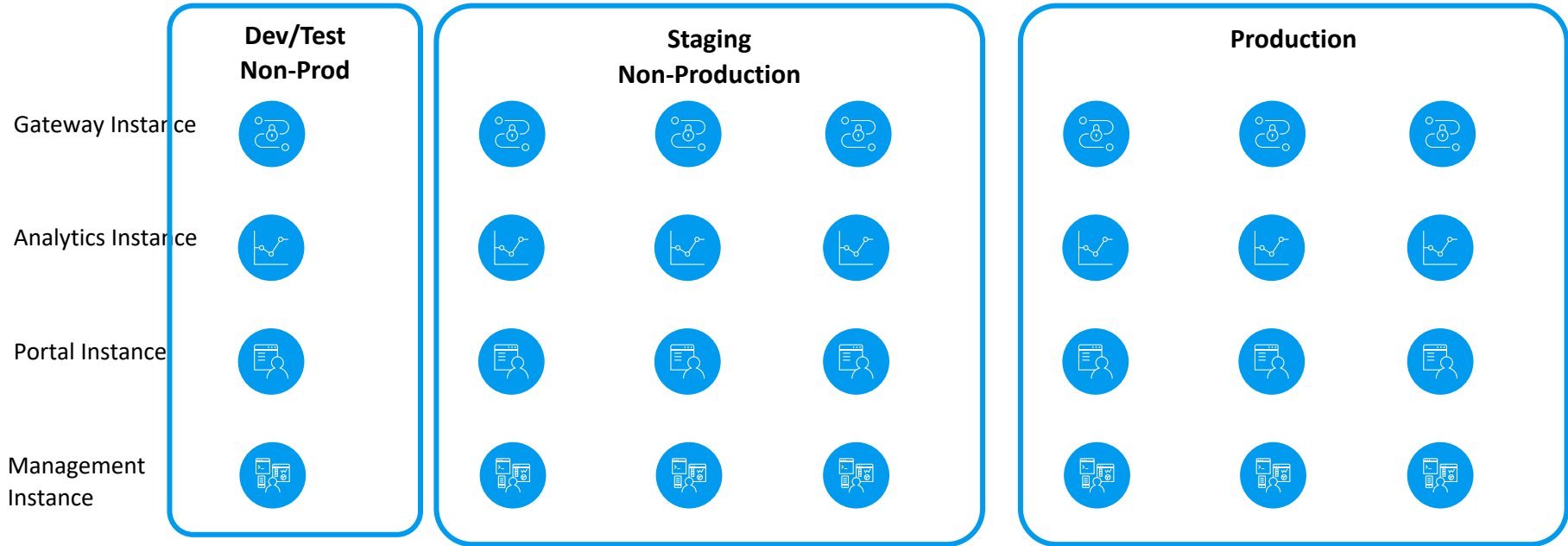
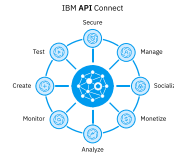


## Portal Instance

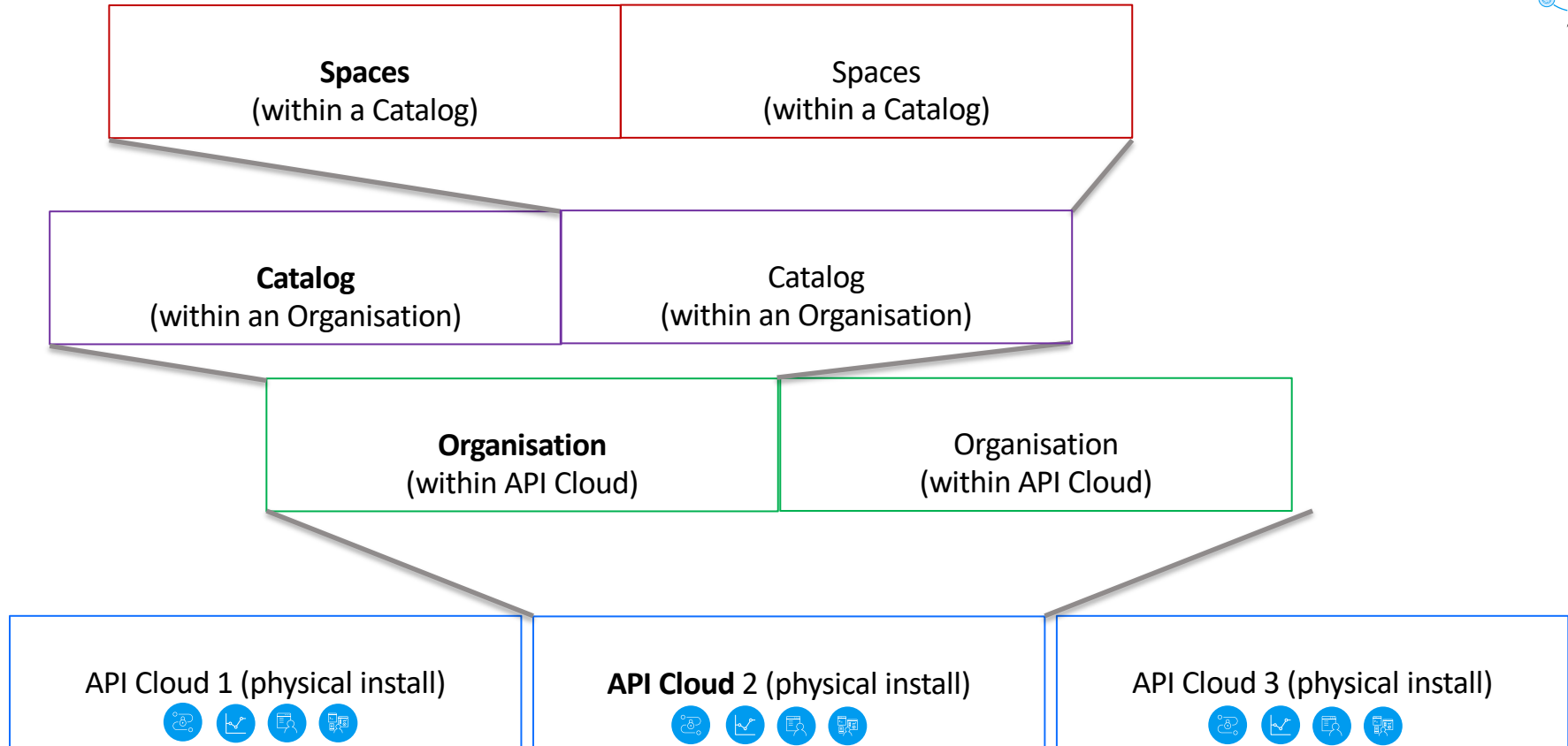
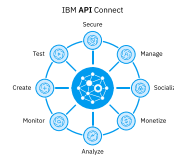
- Self-service App Developer Portal based on Drupal 8
- User Management
- Social Collaboration
- Subscription & Community Management



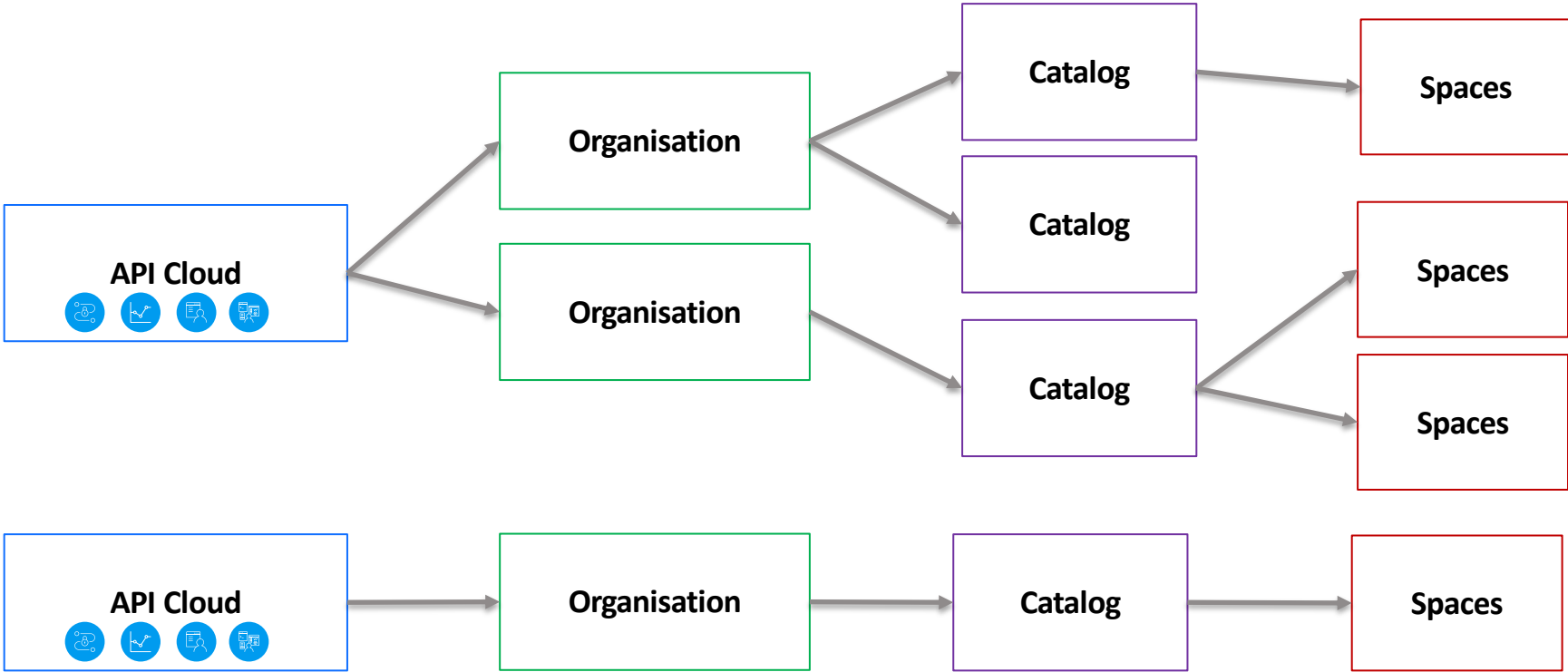
# Topology



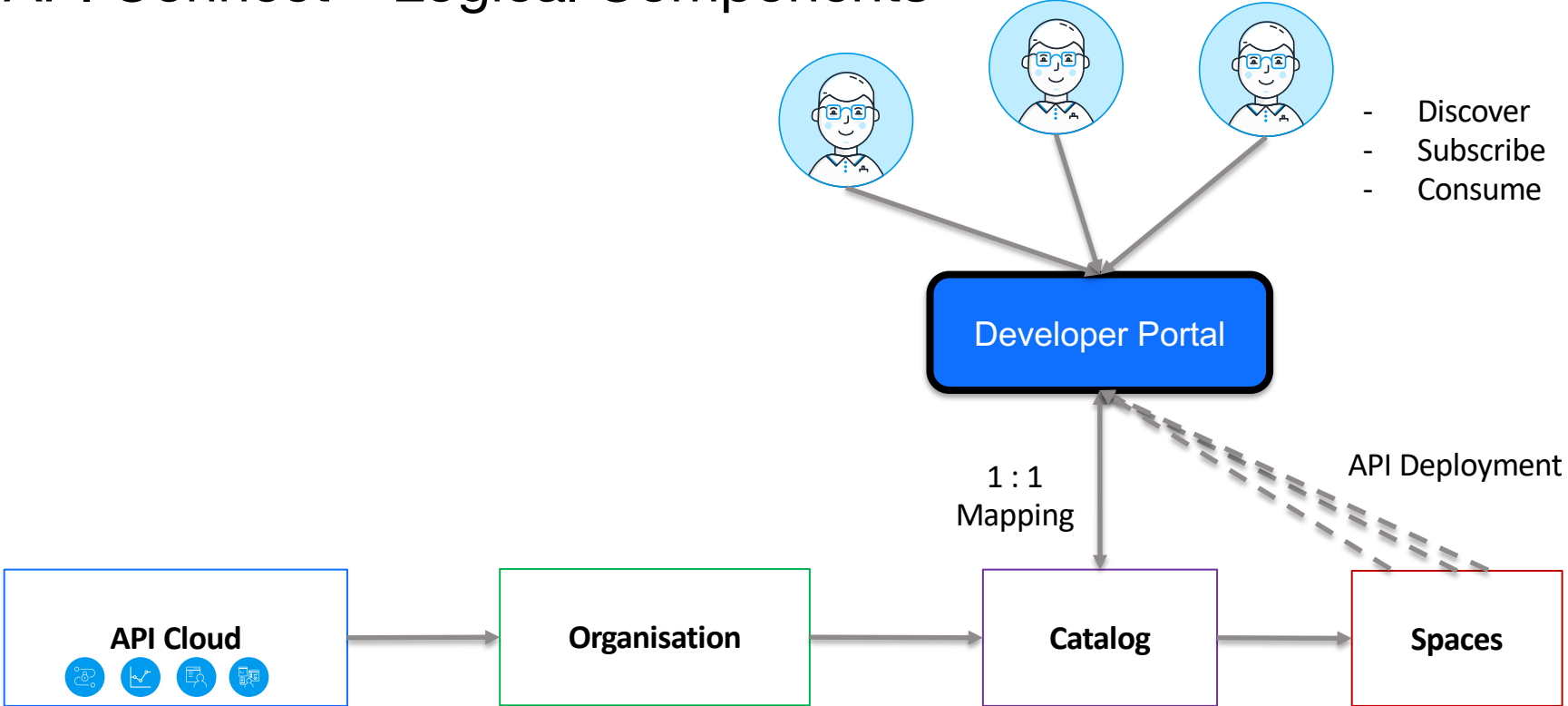
# Levels of Segregation



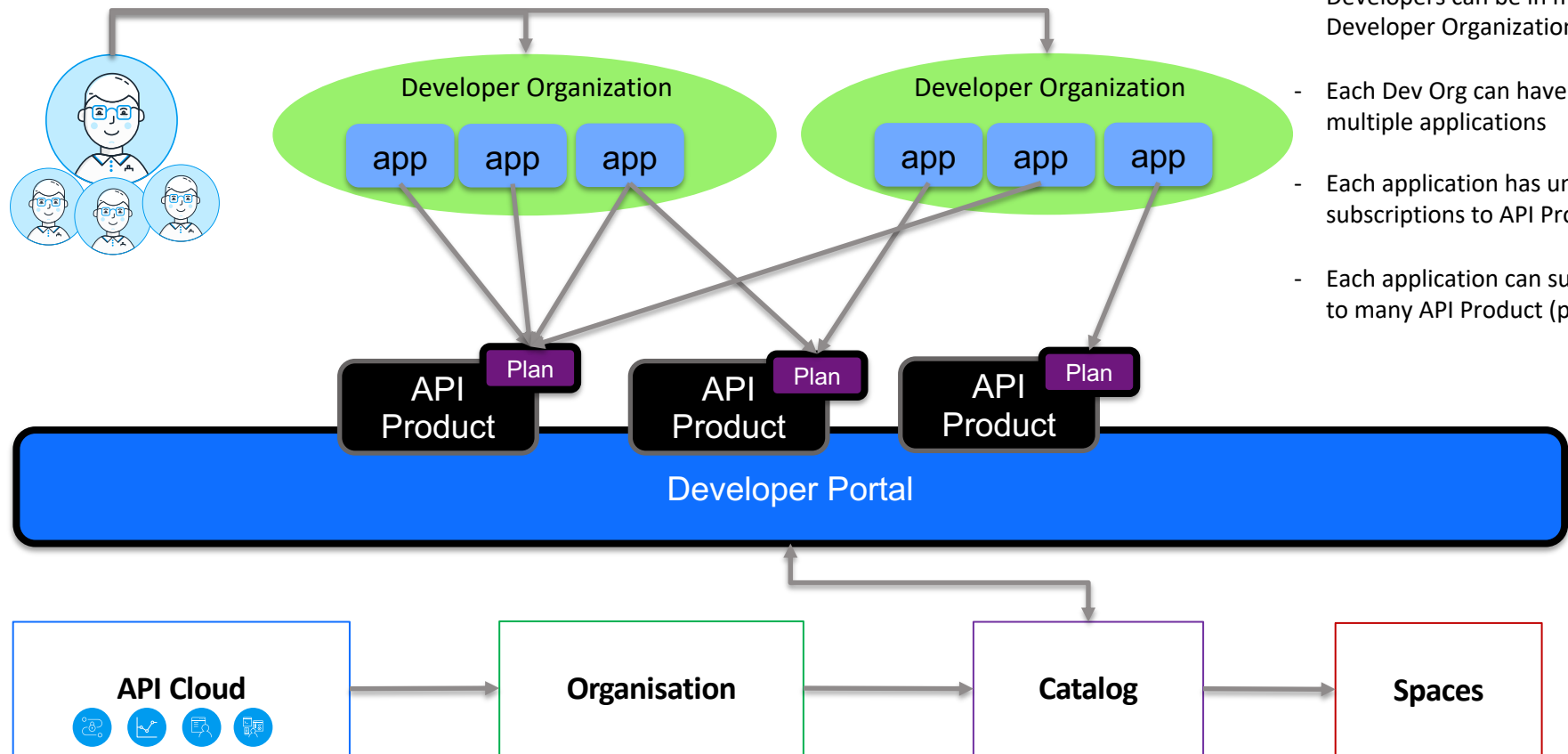
# API Connect – Logical Components



# API Connect – Logical Components

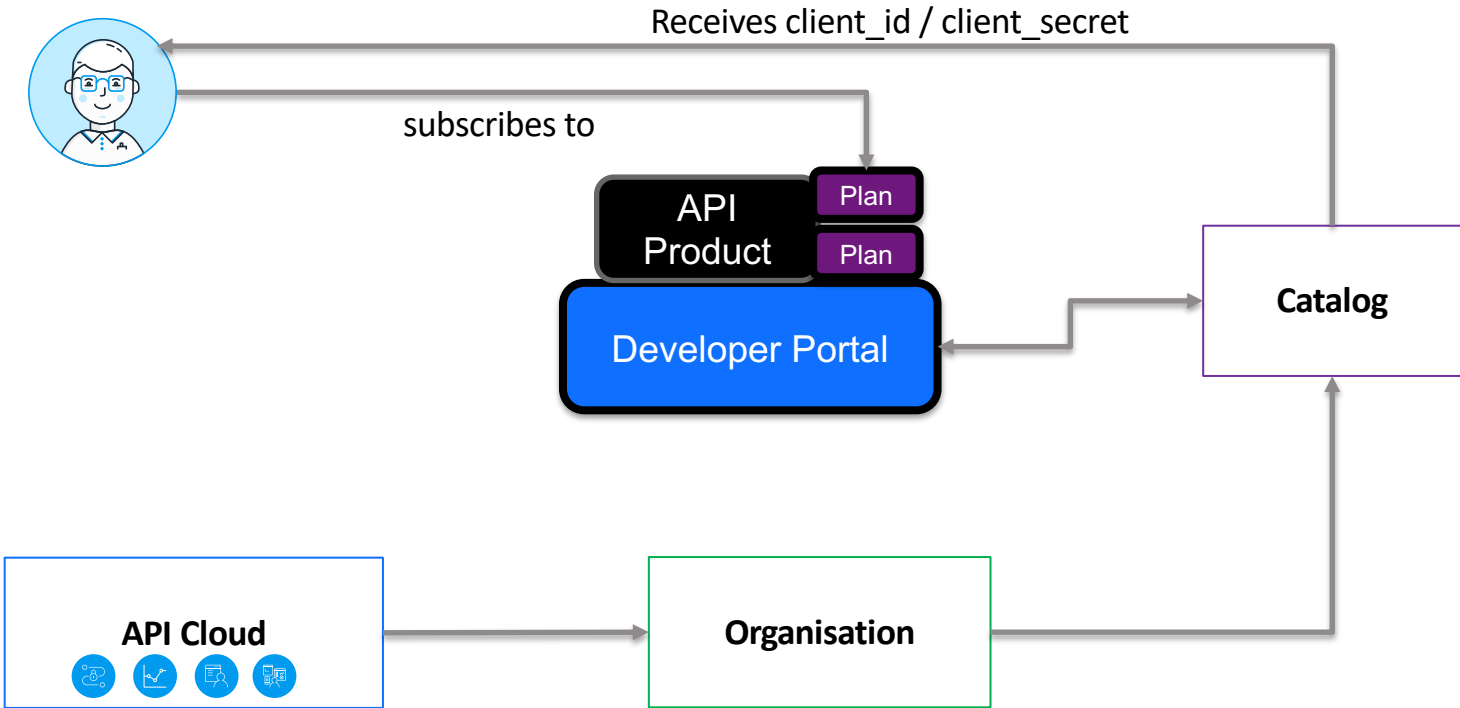


# API Connect – Logical Components

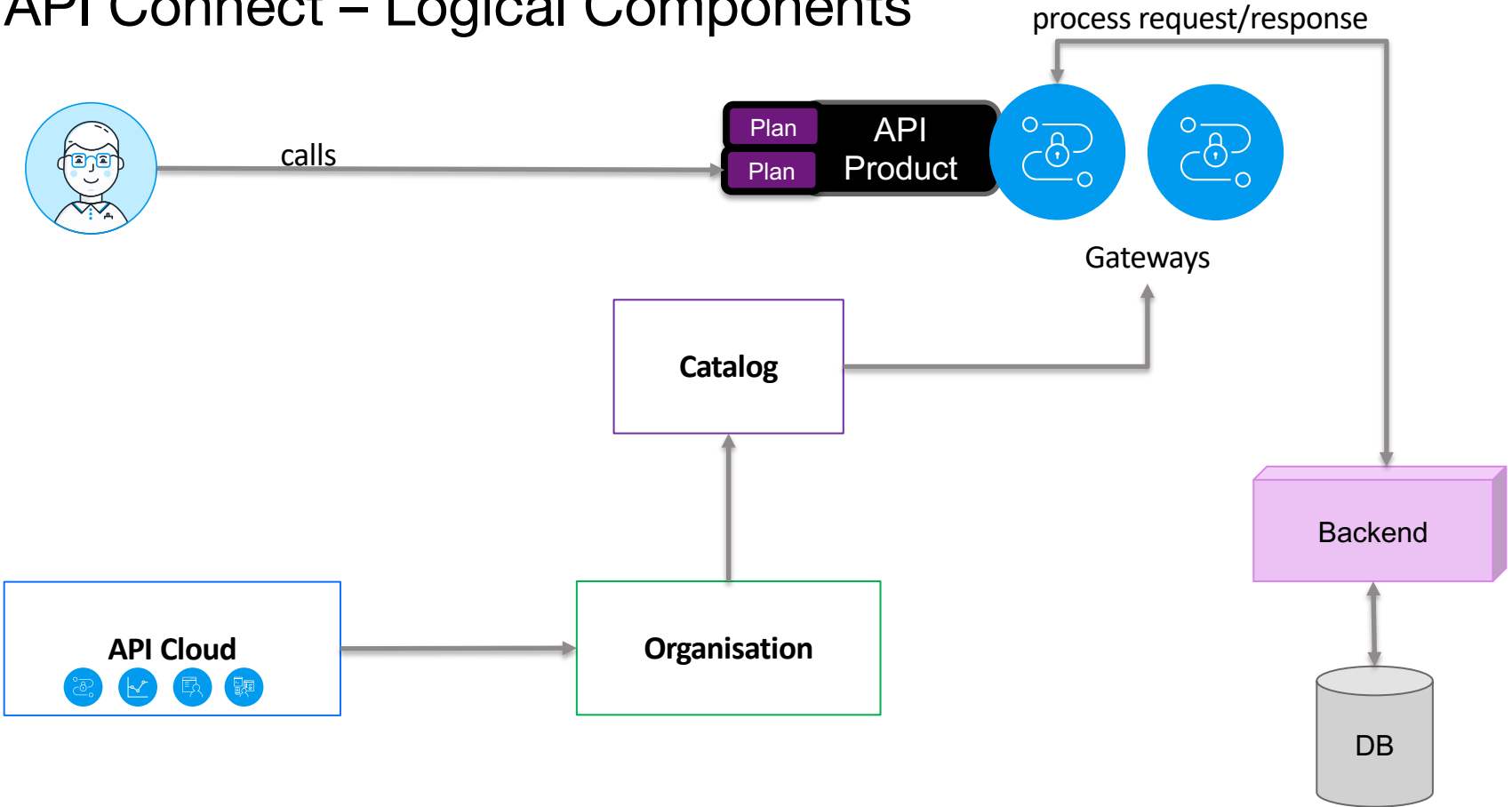


- Many Developers can be in 1 Developer Organization
- Developers can be in many Developer Organizations
- Each Dev Org can have multiple applications
- Each application has unique subscriptions to API Products
- Each application can subscribe to many API Product (plans)

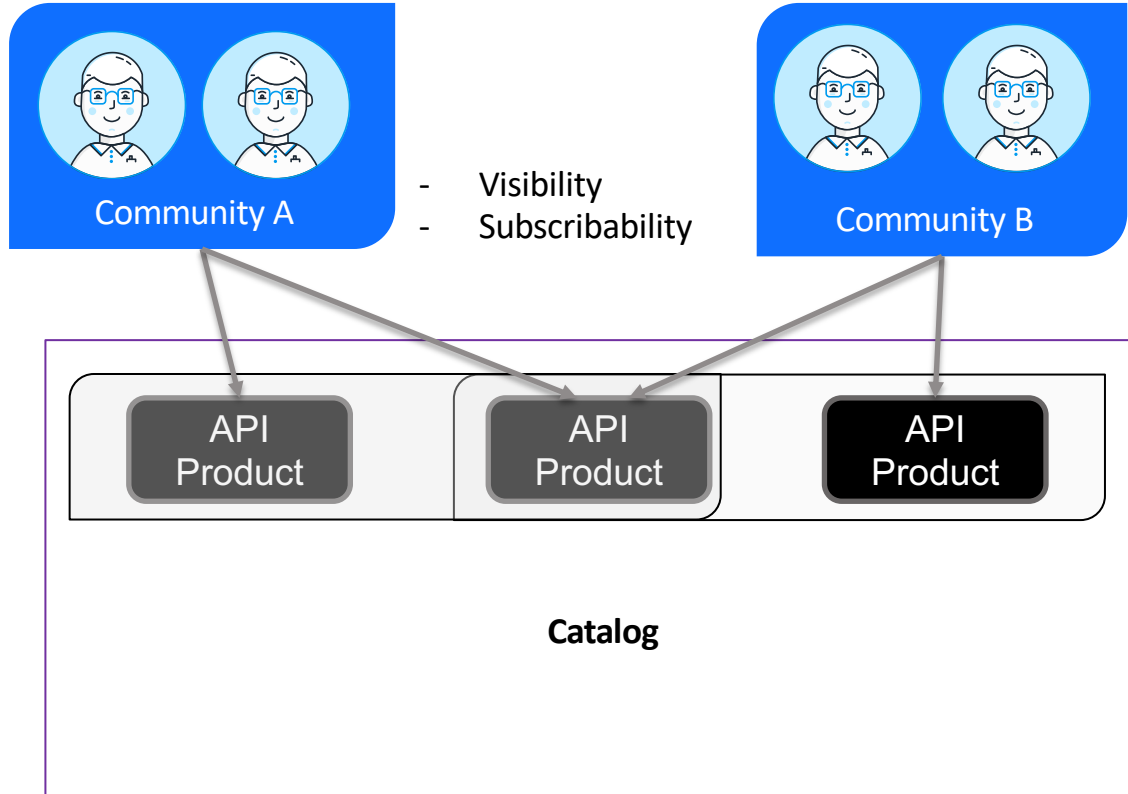
# API Connect – Logical Components



# API Connect – Logical Components



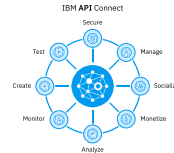
# API Connect – Logical Components



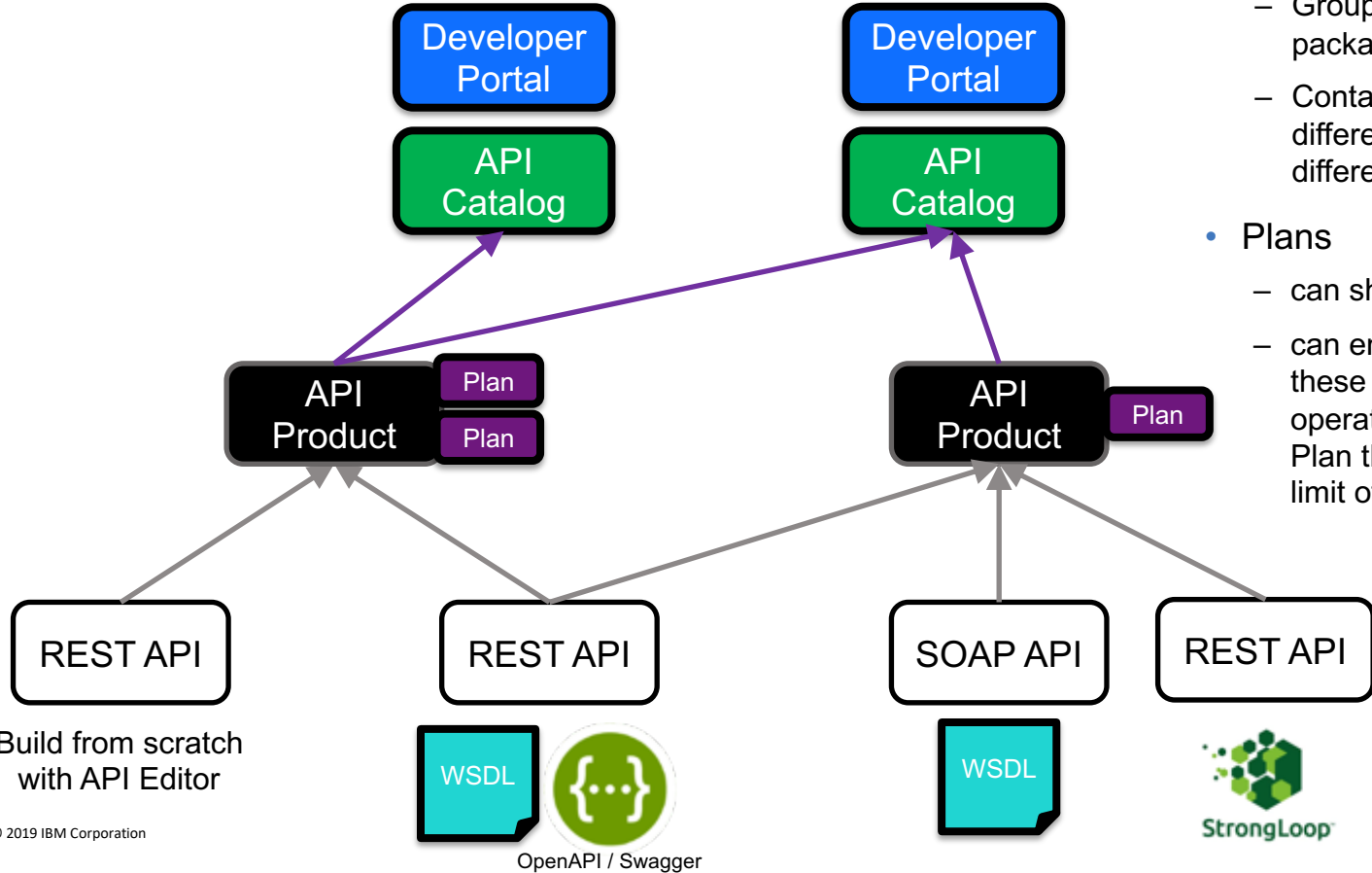
- Developer Organizations assigned communities in the Catalog
- API Products assigned Visibility and Subscribability communities in the Definition
- Changed configuration pushed to Developer Portal



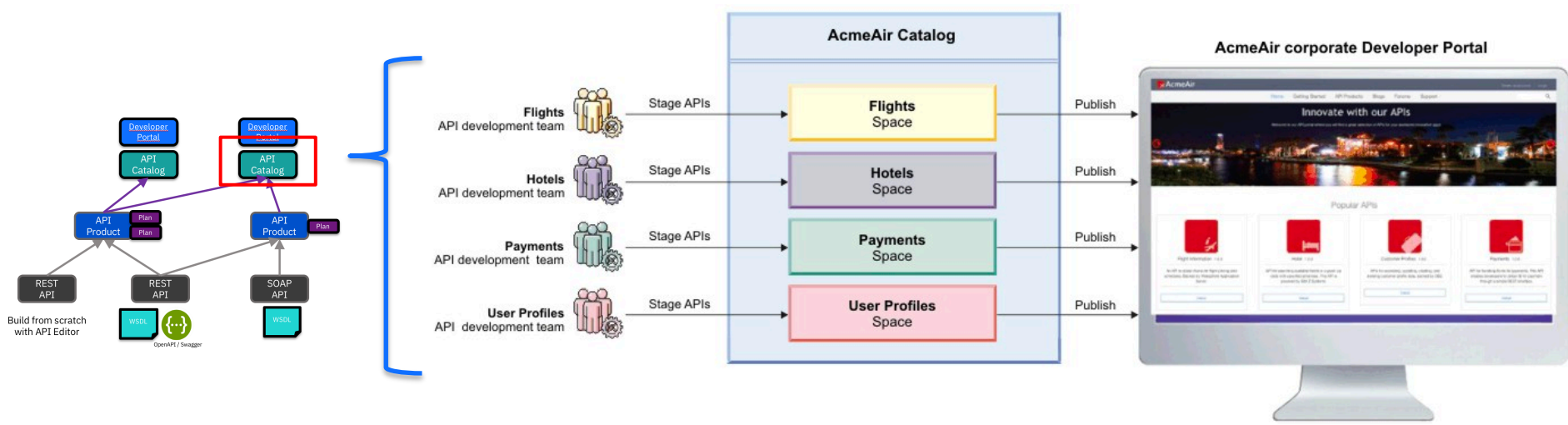
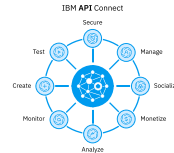
# API Hierarchy



- Products
  - Group APIs into a package
  - Contain Plans to differentiate between different offerings.
- Plans
  - can share APIs
  - can enforce rate limits through these Plans, or through operations within the APIs of a Plan that override the rate limit of the Plan.



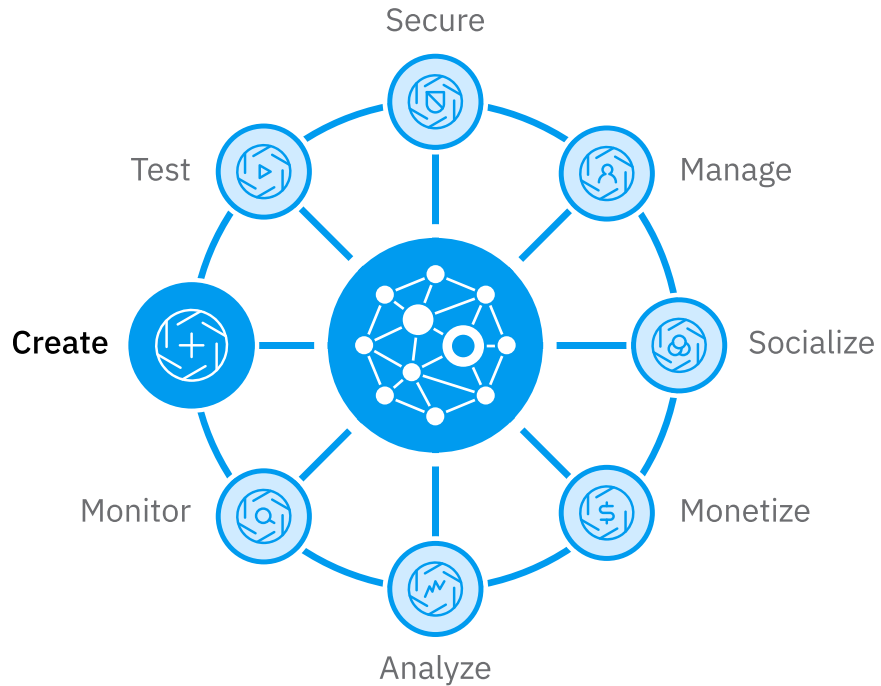
# A powerful – Syndication / Spaces



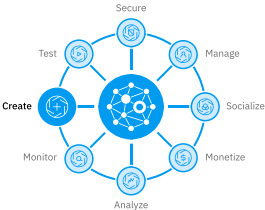
# API Management

## IBM API Connect

### Create

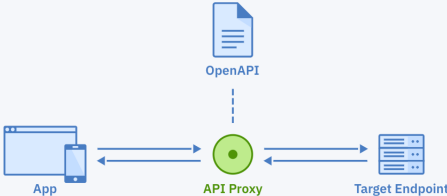


# Creating APIs



## Create

- From target service**  
Create a REST proxy that routes all traffic to a target API or service endpoint
- From existing WSDL service (SOAP proxy)**  
Create a SOAP proxy based upon a WSDL described target service
- From existing WSDL service (REST proxy)**  
Create a REST proxy based upon a WSDL described target service
- New OpenAPI**  
Compose a new REST proxy by defining paths and operations

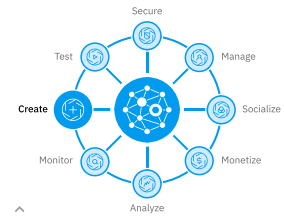


## Import

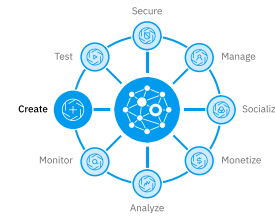
- Existing OpenAPI**  
Use an existing definition of a REST proxy

Cancel Next

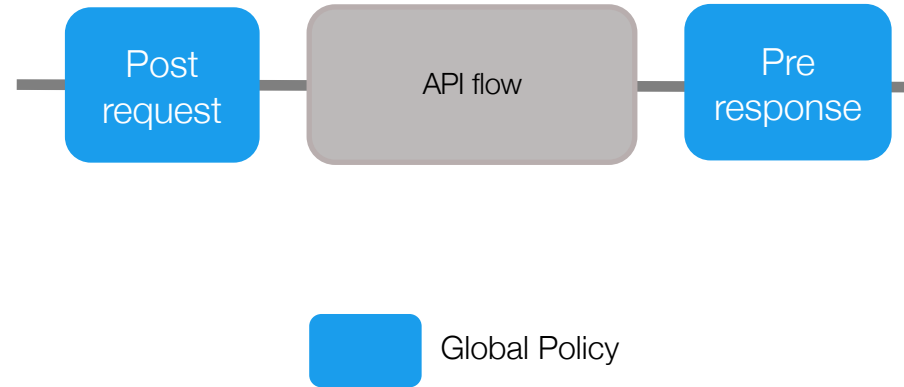
# Three views – same source



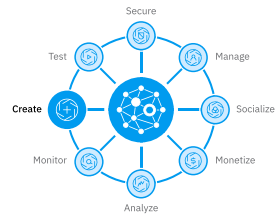
# Global Policies for Corporate Governance



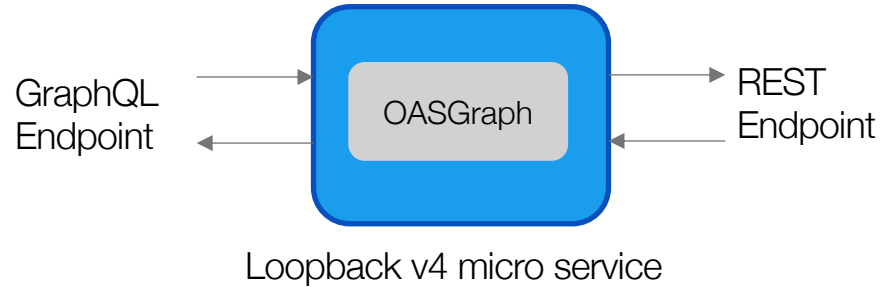
- **Enforce corporate standards** and centralize governance with common security and logging policies without impacting API development
- **Flexible security permissions for deploying global policies**, enabling CSO / security professionals additional access control and flexibility
- **Accelerated definition** as it follows the same assembly constructs of that within the API



# Auto Create GraphQL Interfaces from REST APIs

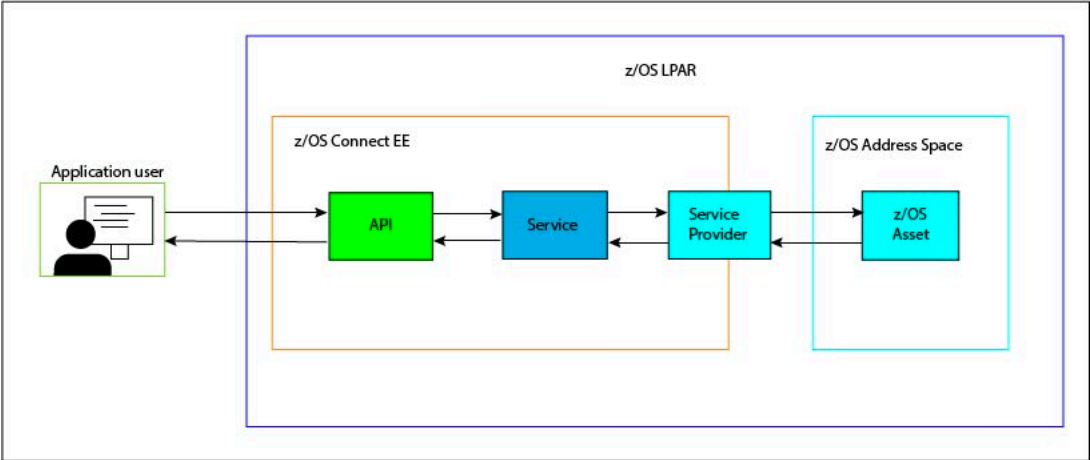
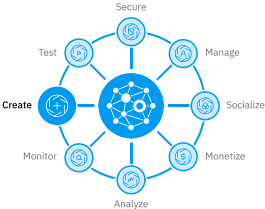


- Re-use existing REST interfaces to auto create GraphQL interface
- Simplified user experience through open source Loopback tooling
- CLI for CI/CD automation to generate GraphQL schema with Loopback module to support dynamic enforcement



[Learn more](#)

# Integration with Mainframe\*



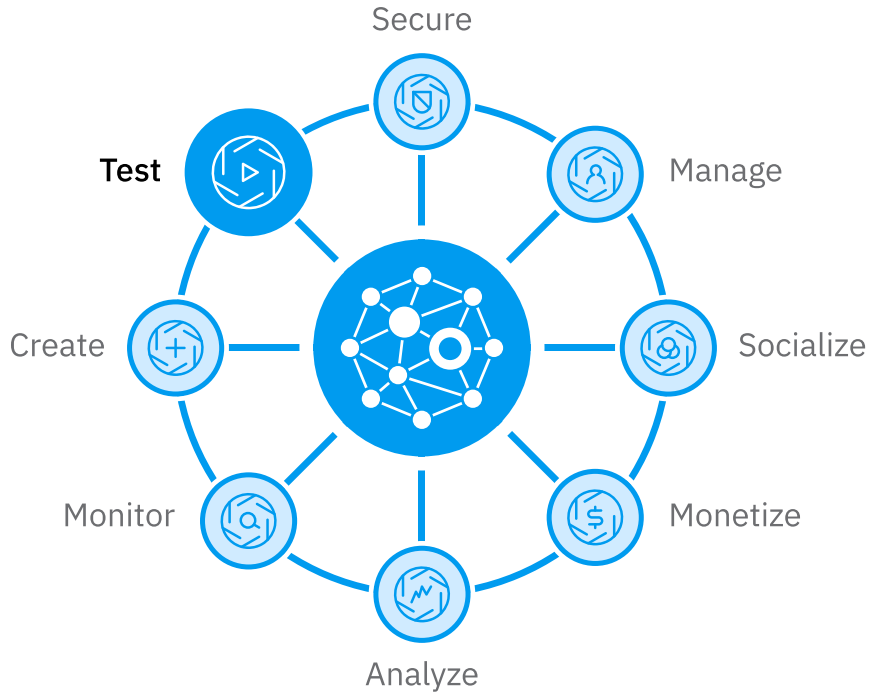
\*IBM zOS Connect is an optional add-on



# API Management

## IBM API Connect

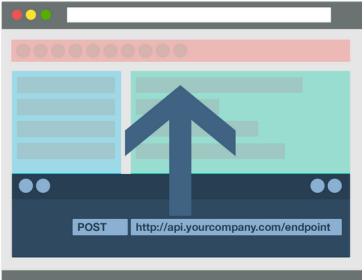
### Test



# API Test and Monitor

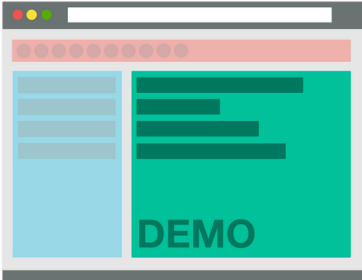


Let's Get Started!



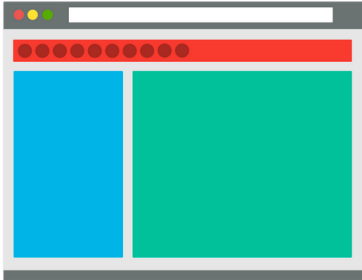
Quick start from an API call

Select



Quick start from an example unit

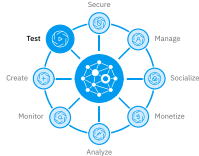
Select



I got this, let's start from scratch

Select

# API Test and Monitor



## Create Projects

Test status: Live

✓ Last Run

✓ PASSED  
10/23/2018 @ 08:30:02

🔔 Notifications

✓ You (Murali\_Sitaraman) will be notified for any failure

🔍 Runs Stats

Runs count: 1  
Locations: us-east

👁️ ⏸️

This is a draft version of the test you are currently editing. This version is NOT live, and is not the test being executed by your schedule. To push live click the Publish button.

**Working Copy**  
Author: Murali\_Sitaraman  
Modified: 10/11/2018 2:13 PM

**Published Version**  
Author: Murali\_Sitaraman  
Modified: 10/03/2018 4:57 PM

This is the LIVE version of the test. It is the test that is executed based on the schedule you have set. To update the test edit a Working Copy and hit the Publish button. Do so with caution, there is no undo button.

Show/hide test information (ProjectID, TestID)



Compose



Publish



Clear Working Copy



Schedule



Build from SPEC



Automatch



Copy To Clipboard



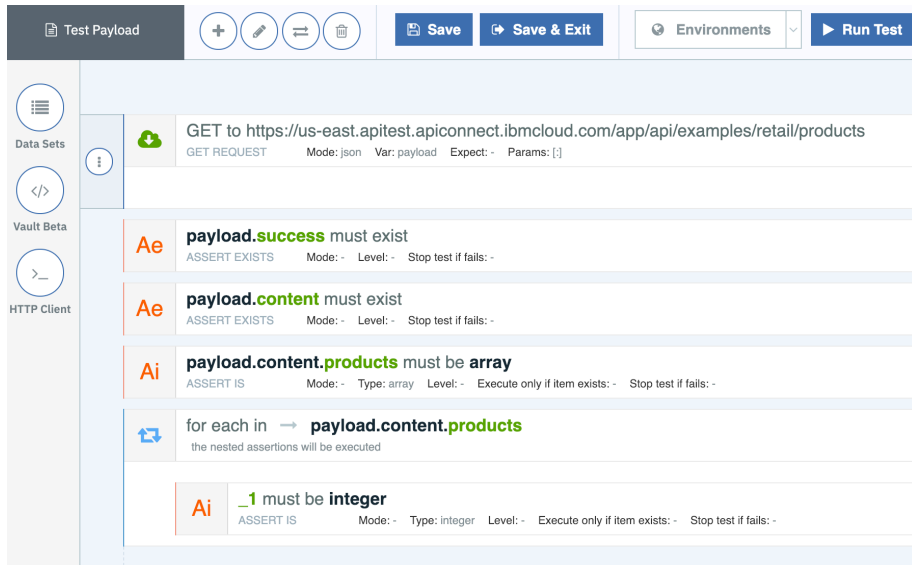
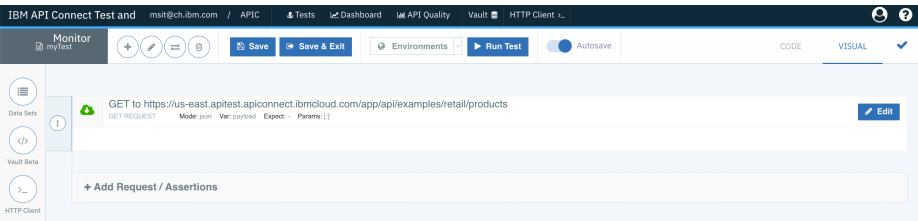
Resources



Delete Test

<http://ibm.biz/apitest>

# API Test and Monitor



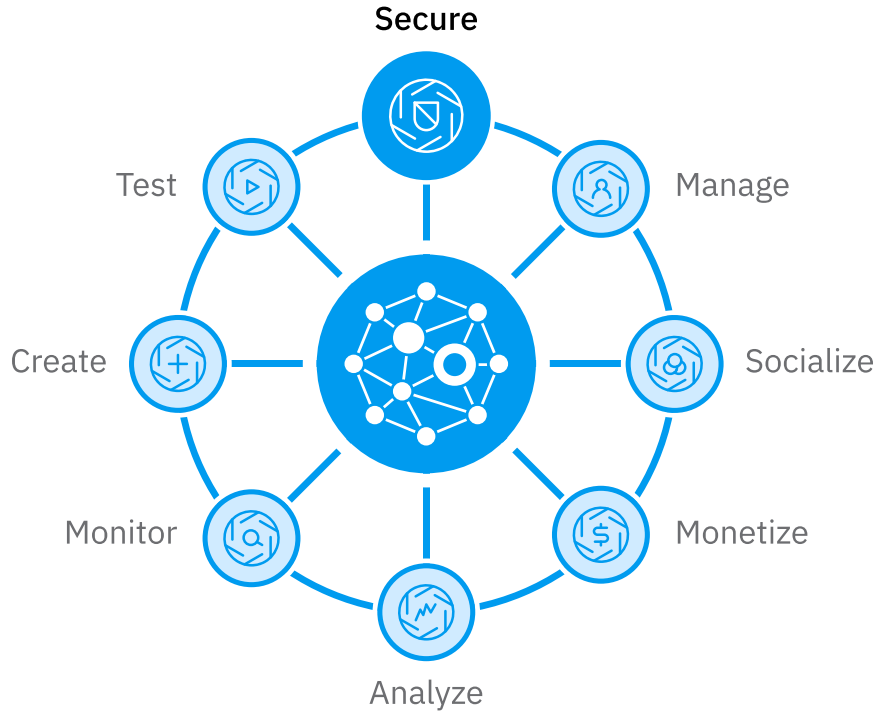
Test for availability and response times

Test for availability and response times  
& validate responses

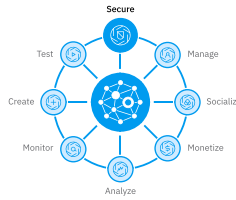
# API Management

## IBM API Connect

### Secure



# Requirements for an API Gateway



An API Gateway needs to be

 Secure
  High performant
  Customizable
  Robust

Some components, for example Java, require frequent patching, and very few vendors would recommend running them in the DMZ

*Would we run our App Server directly in the DMZ?*

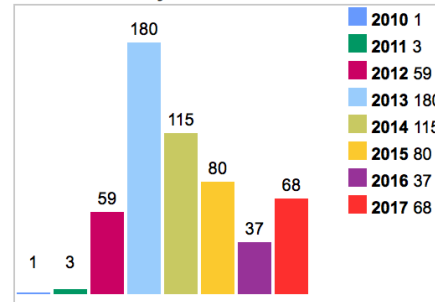
Article <https://developer.ibm.com/apiconnect/2017/05/30/secure-api-strategy/>

## Secure your API Strategy

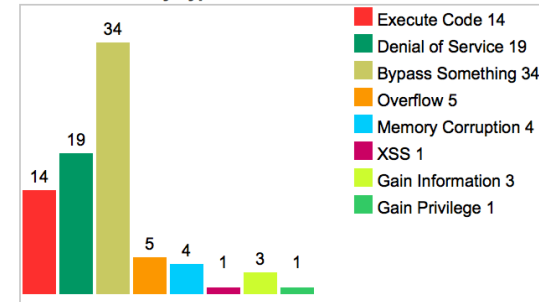
“For all its prominence in the news, security can still be an afterthought when companies expose new back end services to internal and third party developers”.

	Product Name	Vendor Name	Product Type	Number of Vulnerabilities
1	<a href="#">Linux Kernel</a>	<a href="#">Linux</a>	OS	<a href="#">1970</a>
2	<a href="#">Mac Os X</a>	<a href="#">Apple</a>	OS	<a href="#">1915</a>
3	<a href="#">Chrome</a>	<a href="#">Google</a>	Application	<a href="#">1523</a>
26	<a href="#">JRE</a>	<a href="#">Oracle</a>	Application	<a href="#">543</a>
28	<a href="#">JDK</a>	<a href="#">Oracle</a>	Application	<a href="#">532</a>

Vulnerabilities By Year



Vulnerabilities By Type

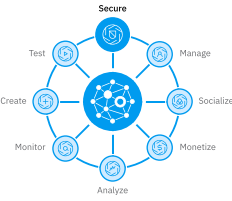


Source: [https://www.cvedetails.com/product/19116/Oracle-JDK.html?vendor\\_id=93](https://www.cvedetails.com/product/19116/Oracle-JDK.html?vendor_id=93)

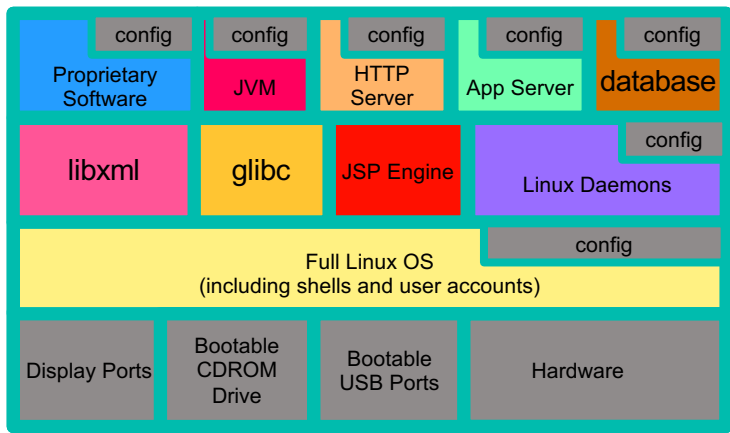
# Simple & Secure Architecture

- How is API Gateway Gateway different? **Purpose-built, secure** gateway platform
  - Complete gateway platform delivered as hardened image
  
- Guiding philosophy is to centralize common security, traffic management, mediation, acceleration functions and optimize them** in a security-hardened gateway stack delivered in Docker container, Linux application, Virtual machine and Physical appliance form factors

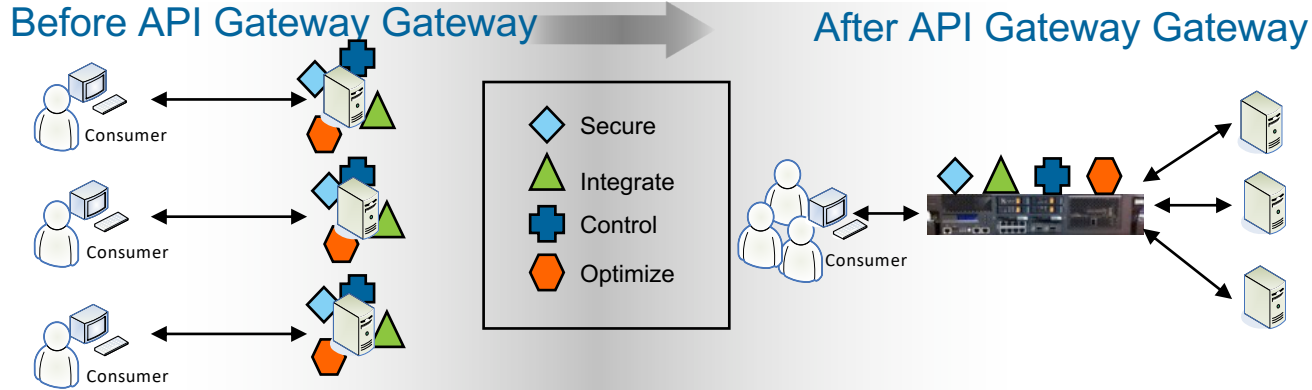
## API Gateway Gateways (Secure & Easy to Manage)



## Commodity Gateways (Insecure & Hard to Manage)



# Rapidly deliver secure integration & optimized access for a full range of workloads



## Secure

Authentication, authorization, auditing  
Security token translation  
Threat protection  
Schema validation  
Message filtering  
Digital signatures  
Encryption/decryption  
Application Firewall (XML, Web....)

## Integrate

Any-to-any message xform  
Transport protocol bridging  
Message enrichment  
Database connectivity  
Mainframe connectivity  
B2B trading partner connectivity  
Hybrid cloud integration  
Amazon EC2/SoftlayerCCI

## Control

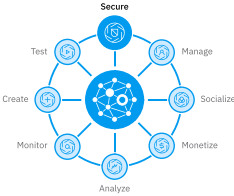
Quota enforcement, rate limiting  
Content-based routing  
Failure re-routing  
Integration with governance platforms  
B2B partner management

## Optimize

SSL/TLS offload  
Hardware accelerated crypto operations  
JSON, XML offload  
JavaScript, JSONiq, XSLT, Xquery acceleration  
Response Caching  
Intelligent load distribution



# API Gateway Form Factors



CLOUD READY

## PHYSICAL

GATEWAY	
	Signed & Encrypted Gateway Stack
	IBM Optimized Embedded OS
	REST & SOAP
HARDWARE	
	Trusted Platform & Hardware Security
	Crypto Acceleration

## VIRTUAL

GATEWAY	
	Signed & Encrypted Gateway Stack
	IBM Optimized Embedded OS
	REST & SOAP

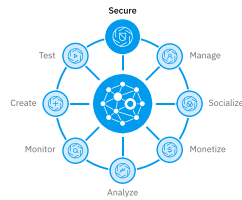
## LINUX

GATEWAY	
	Signed & Encrypted Gateway Stack
	IBM Optimized Application Layer
	Operating System
	REST & SOAP
	File Systems

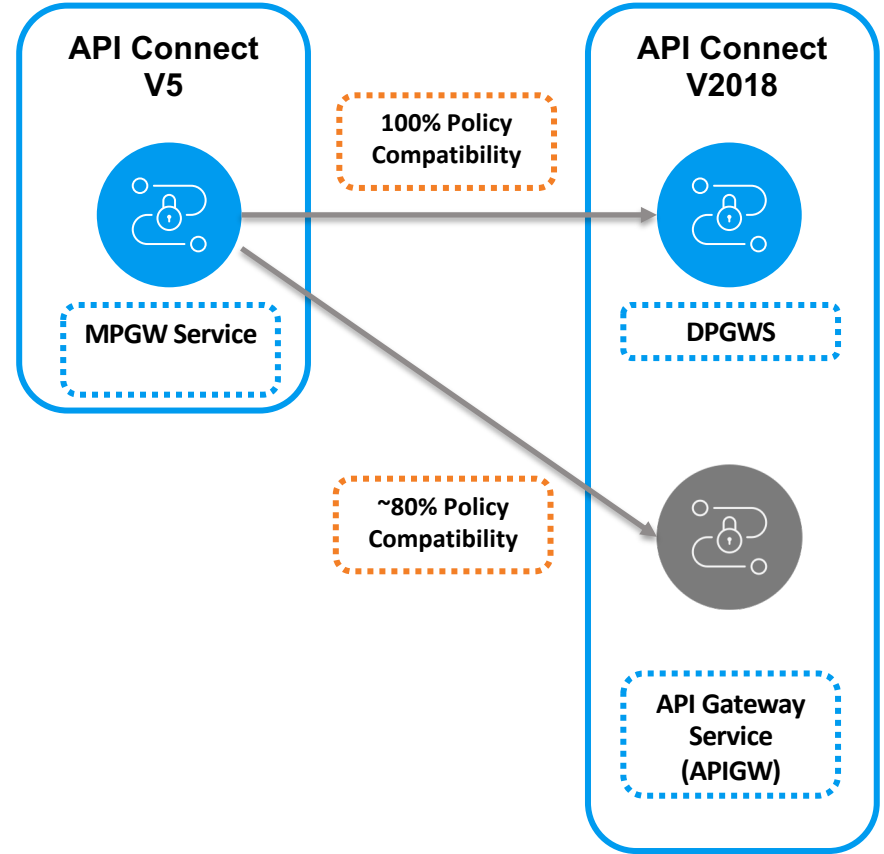
## DOCKER

GATEWAY	
	Signed & Encrypted Gateway Stack
	IBM Optimized Application Layer
	Docker Container
	REST & SOAP
	Volume

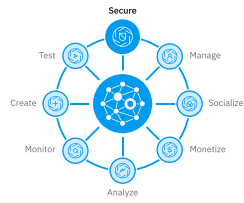
# API Connect V5 and API Connect V2018 Gateway Services



- API Connect V5
  - Multi-Protocol Gateway (MPGW) Gateway Service
- API Connect V2018
  - DataPower Gateway Service (DPGWS)
  - API Gateway Service (APIGW)
- DPGWS (V2018) supports the same gateway workload as the API Connect V5 Gateway service (MPGW)



# Policies for Enforcement on API Gateway Service



**API Gateway  
Service (APIGW)**

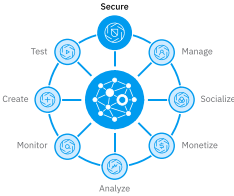
- Gateway Script and XSLT policy support provides flexible message mediation & dynamic security enforcement
- Dynamic Routing support through Conditional Policy
- Enforce strong security through Parse, JSON and XML Schema Validation policy
- OpenID Connect support to enable banks to meet PSD2 / Open Banking regulations
- OAuth Token revocation to enable self-service token management

Foundational	Security	Mediation
Invoke	API Key <sup>+</sup>	Map
Activity Log <sup>+</sup>	JWT Validate	JSON/XML
Rate Limit <sup>+</sup>	JWT Generate	Gateway Script
Throw	OAuth Policy	XSLT
Set Variable	Parse (Threat Detection)	
Conditional	Validate <sup>*</sup>	
	User Security	
	OpenID Connect <sup>*+</sup>	

+ Configured outside API Assembly

\* Available as part of 2018.4.1.1

# Lead with API Gateway Service (APIGW), DataPower Gateway Service (DPGWS) enables Migration

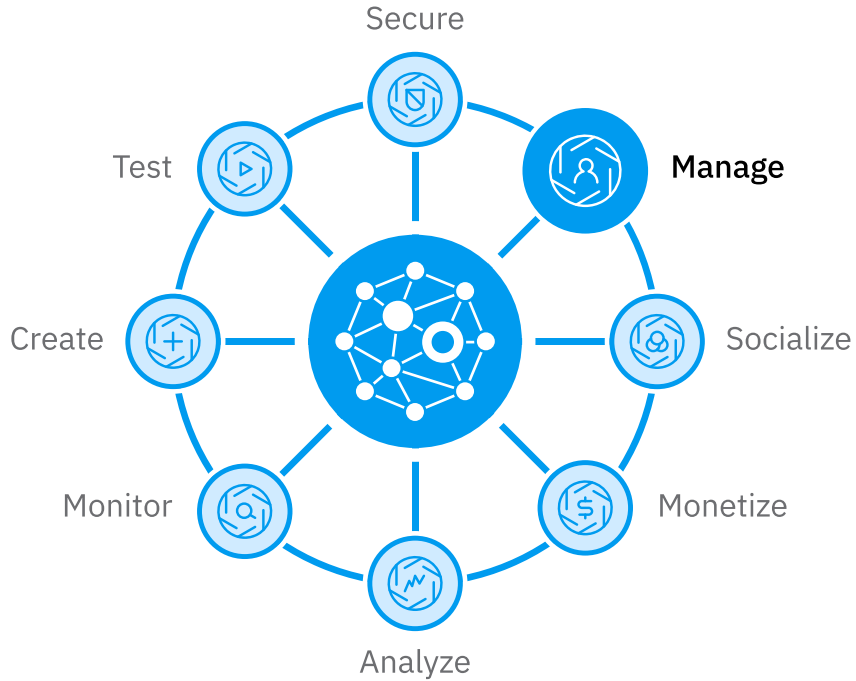


	API Gateway (APIGW)	DataPower Gateway Service (DPGW)
Target Customers	New customers	Existing v5 customers migrating to V2018
Autonomous Gateway Management	Yes	Yes
Policy Extensibility	Gateway Script + Custom policies (1Q 2019)	Gateway Script + Custom policies
Investments	Additional policies, Istio / Service Mesh etc.	Continued support for customer success
Performance	5x	1x

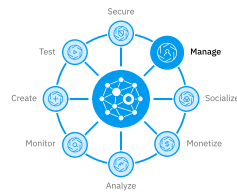
# API Management

## IBM API Connect

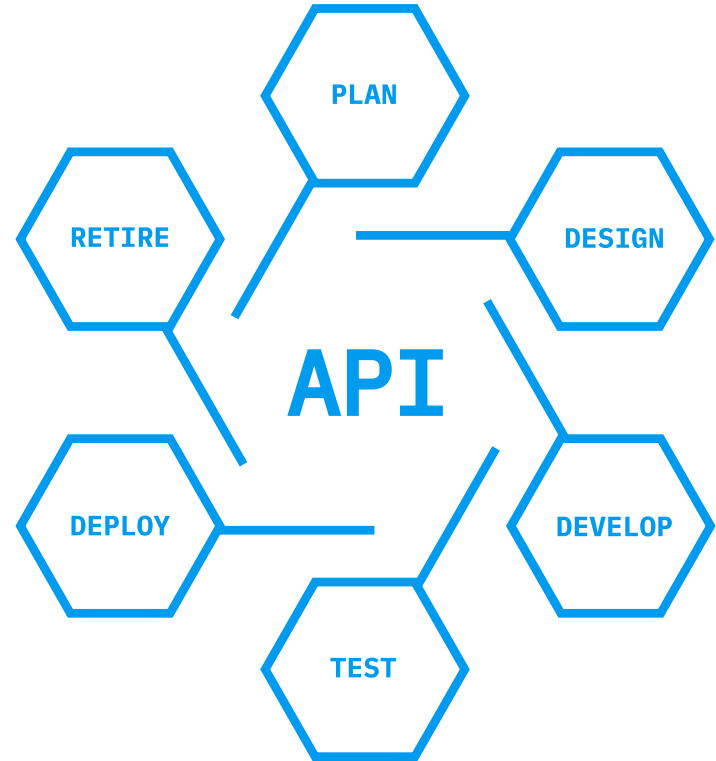
### Manage



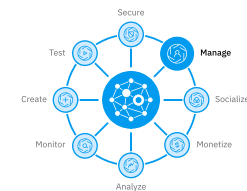
# Manage APIs through the API Lifecycle



- **Define & Import REST or SOAP APIs** to enable clients to evolve their SOA tier
- **Package APIs into Products** and tailor them to target specific consumer markets
- **Publish and Promote** across different environments to align with DevOps practices
- **Manage and Control API Lifecycle and versioning** from staging to deprecation to meet corporate governance needs
- **Subscription and Community management** to grow go-to-market channels



# Products & Plans



Products:

- Branches auto p... 1.0.0 (5 stars)
- FindBranch auto... 1.0.0 (5 stars)
- Offering1 1.0.0 (5 stars)
- Offering1 2.0.0 (5 stars)

Plans

In order to subscribe, you must create an account or sign in.

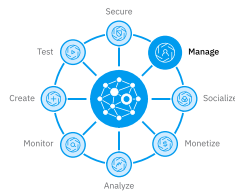
FreeTier	Low Usage	Medium Usage	High Usage
Subscribe	Subscribe	Subscribe	Subscribe

[View details](#)

APIs	FreeTier	Low Usage	Medium Usage	High Usage
<a href="#">FindBranch 1.0.0</a>	Subscribe	Subscribe	Subscribe	Subscribe
	100 calls per week	100 calls per day	500 calls per day	10000 calls per day

[Hide details](#)

# Enhanced API Publishing Control



- **Blue/Green deployment support** out of the box for new API versions with ease
- **Granular control to selectively publish APIs to specific gateways** providing flexibility for multiple line of business operation

Publish from Marketing

Select product Select publish targets

### Publish To

Description goes here

**Catalog**

Sandbox

Select the spaces and gateway services to publish this product to

- SPACE
  - Space 01
    - GATEWAY SERVICE**
    - Gateway Service US Main
    - Gateway Service US West
    - Gateway Service US Central
    - Gateway Service US East
  - Space 02
  - Space 03
  - Space 04
  - Space 05
  - Space 06

### Lorem Ipsum

Spicy jalapeno bacon ipsum dolor amet prosciutto capicola tongue salami doner. Rump strip steak cupim, pork chop burgdoggen jowl corned beef. Spicy jalapeno bacon ipsum dolor amet prosciutto capicola tongue salami doner. Rump strip steak cupim, pork chop burgdoggen jowl corned beef.

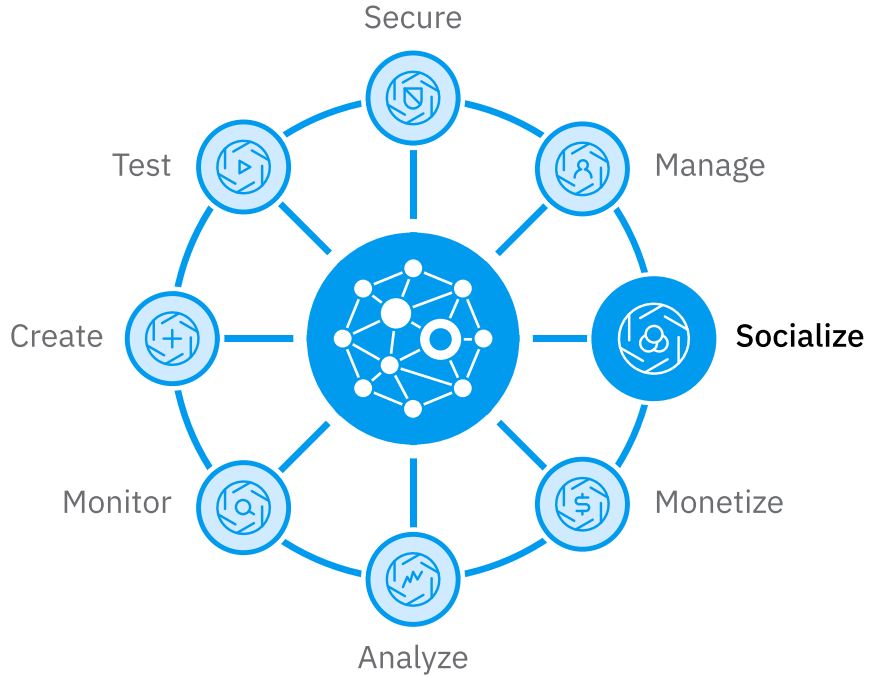
[Learn more](#)



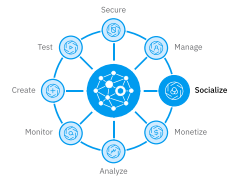
# API Management

## IBM API Connect

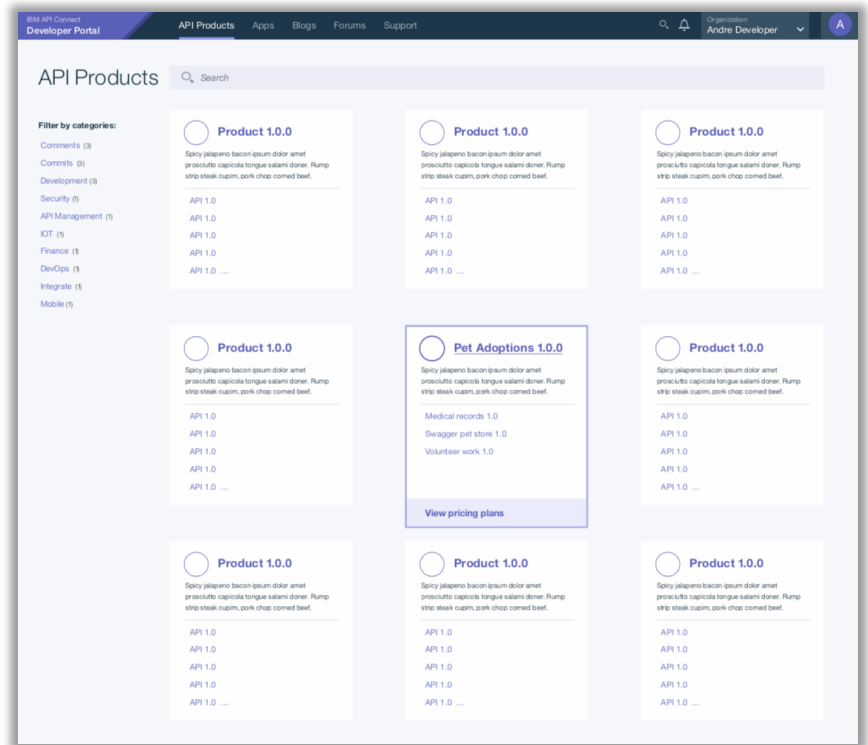
### Socialize



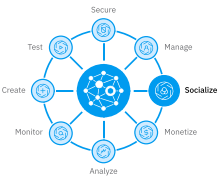
# Developer Portal



- **Modern UI/UX design** based on customer and market feedback
- **Simple, powerful and extensible** customizations built on open-source Drupal 8
- **Fast track app creation** with a simple subscription wizard designed to reduce friction
- **Delight and increase app developer productivity** with a first class Portal Analytics experience
- **Effectively engage your developer community** with custom email support

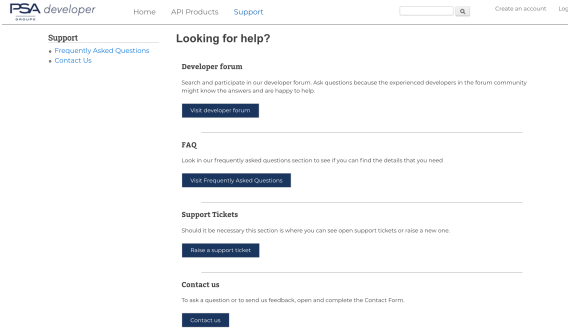


# Examples



We are shortly going to block access to Carrefour's APIs through TLS 1.0 and 1.1 protocols. TLS 1.2 will then be the only available protocol. You are invited to update your applications consequently.

<https://developer.fr.carrefour.io/>



<https://developer.psa-peugeot-citroen.com/inc/help>



<https://developer.royalmail.net/api>

# Accelerate Consumer On-boarding

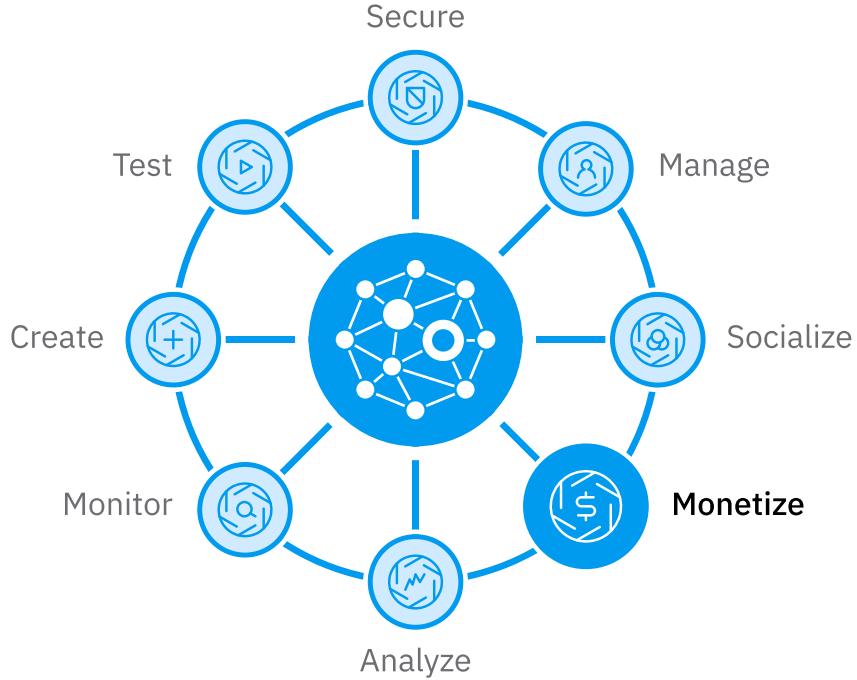
- OIDC support for external registries to accelerate consumer onboarding as it does not require customer to manage
- PSD2 / Open Banking ready through OIDC integration
- Support for Social identity providers on developer portal for Google, GitHub, Facebook etc.



# API Management

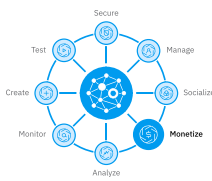
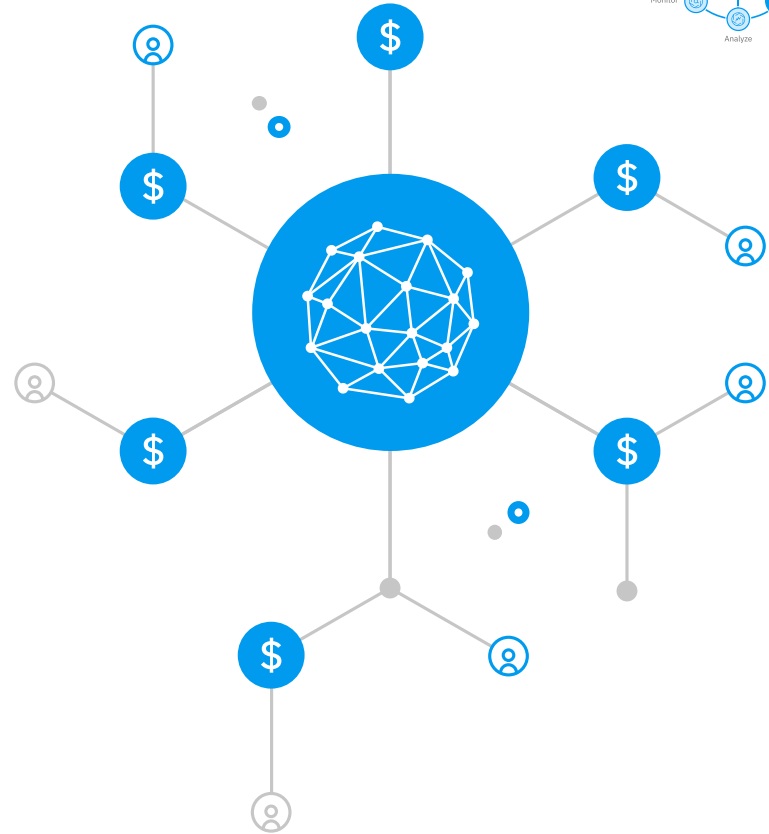
## IBM API Connect

### Monetize



# Monetize your API Calls

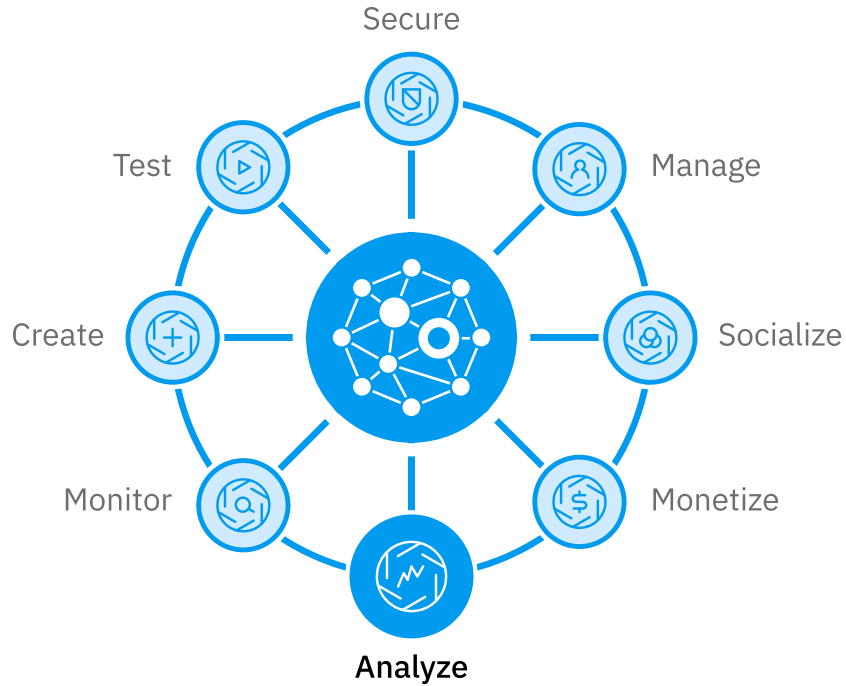
- **Modern approach & intuitive user experience** providing flexibility to define pricing details
- **Subscription pricing support** to enable recurring payments, popular in SaaS go-to-market strategies
- **Stripe integration OOTB** for smooth user-onboarding and payment collection
- **Analytics, customizable reports** for detailed insights into revenue, usage of monetized APIs
- **Offload API usage data** to existing enterprise tools to handle customized invoicing processes



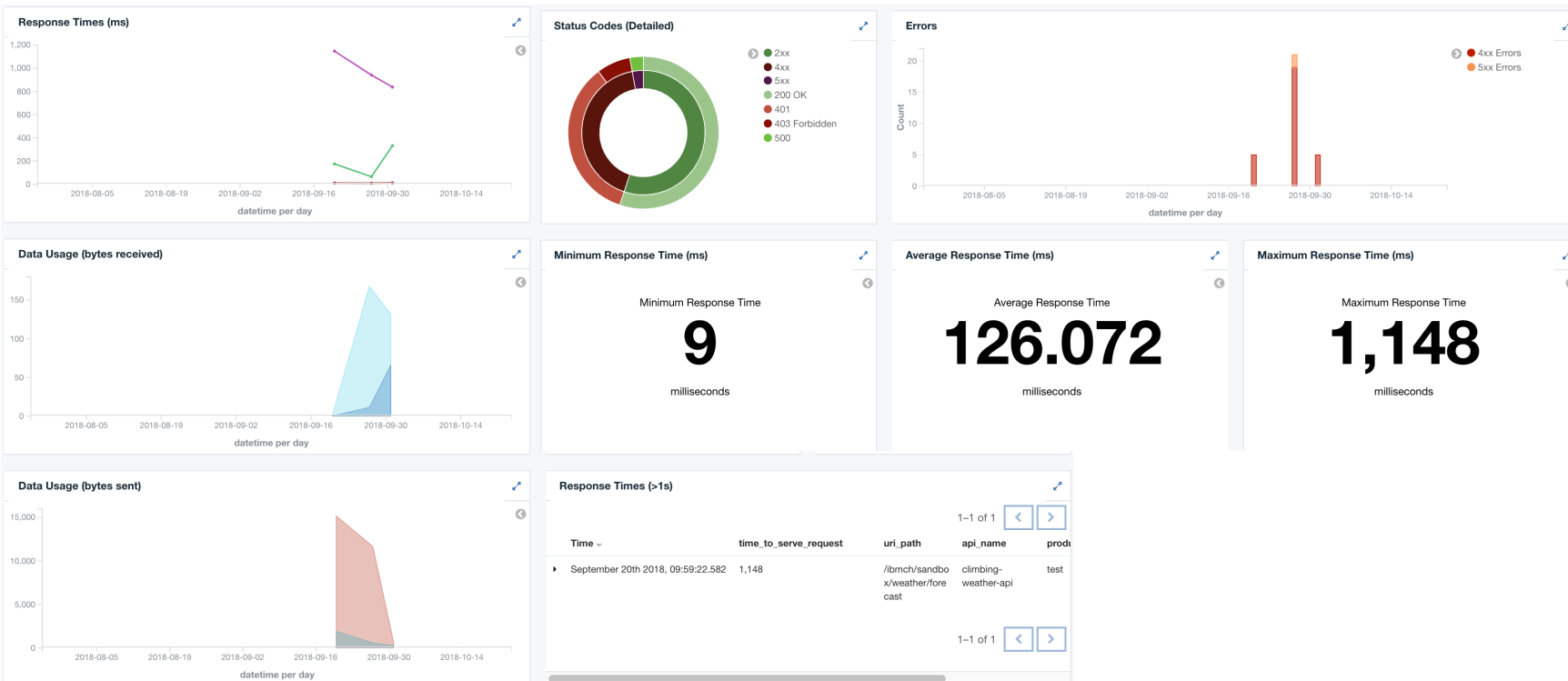
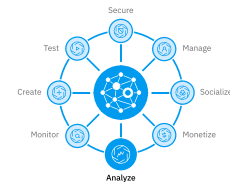
# API Management

## IBM API Connect

### Analyze



# Dashboards – out of the box and custom

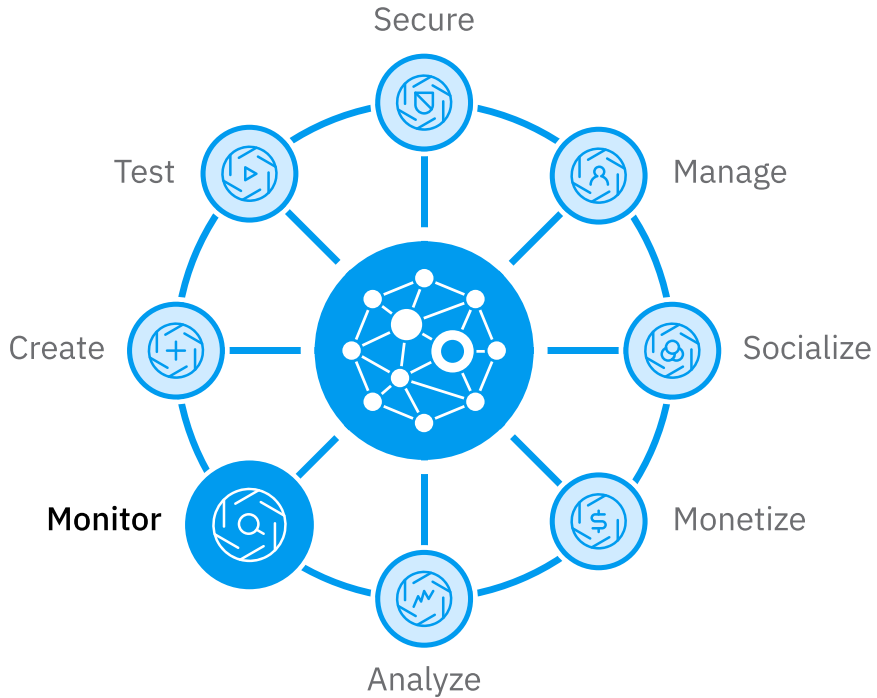




# API Management

## IBM API Connect

### Monitor



# API Test and Monitor



Status  
 Successes  
 Failures  
 Scheduled Runs  
 Tests

Events  
 64  
 0  
 1  
 1



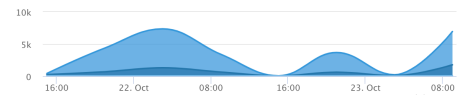
## Events

Events details for the selected time frame. Click on a record to show the related actions.

Test Name	Date	Time	Warnings	Failures	Location	Status
responsetime	10/23/2018	08:30:02	0	0	us-east	●
responsetime	10/23/2018	08:00:01	0	0	us-east	●
responsetime	10/23/2018	07:30:00	0	0	us-east	●
responsetime	10/23/2018	07:00:01	0	0	us-east	●
responsetime	10/23/2018	06:30:00	0	0	us-east	●
responsetime	10/23/2018	06:00:03	0	0	us-east	●
responsetime	10/23/2018	05:30:00	0	0	us-east	●
responsetime	10/23/2018	05:00:02	0	0	us-east	●
responsetime	10/23/2018	04:30:00	0	0	us-east	●
responsetime	10/23/2018	04:00:02	0	0	us-east	●

Scheduled Runs  
 Events  
 Tests

1  
 64  
 1



## Metrics

Metrics details for the selected time frame.

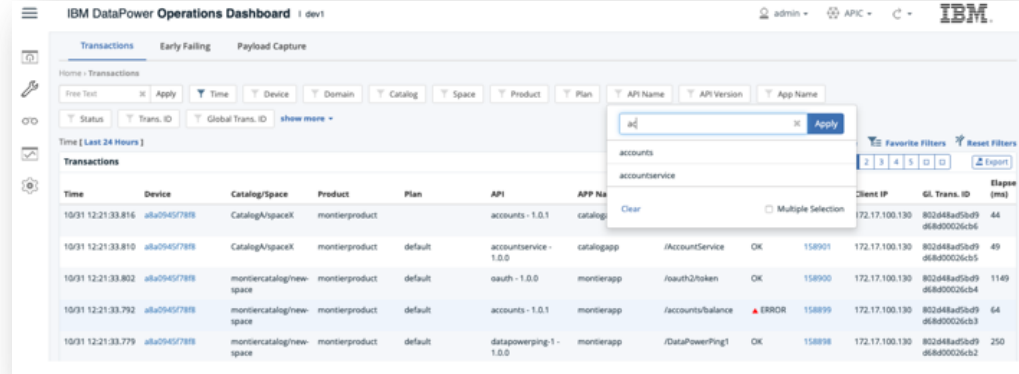
Footprint	Date	Time	Latency	Fetch	Location	Status
randomuser.me/api	10/23/2018	08:30:02	20	38	us-east	200 ●
randomuser.me/api	10/23/2018	08:00:08	21	6914	us-east	200 ●
randomuser.me/api	10/23/2018	07:30:00	16	39	us-east	200 ●
randomuser.me/api	10/23/2018	07:00:01	20	185	us-east	200 ●
randomuser.me/api	10/23/2018	06:30:00	14	160	us-east	200 ●
randomuser.me/api	10/23/2018	06:00:07	18	3192	us-east	200 ●
randomuser.me/api	10/23/2018	05:30:00	17	86	us-east	200 ●
randomuser.me/api	10/23/2018	05:00:03	16	54	us-east	200 ●
randomuser.me/api	10/23/2018	04:30:00	20	47	us-east	200 ●
randomuser.me/api	10/23/2018	04:00:02	33	70	us-east	200 ●

Page 1 / 7



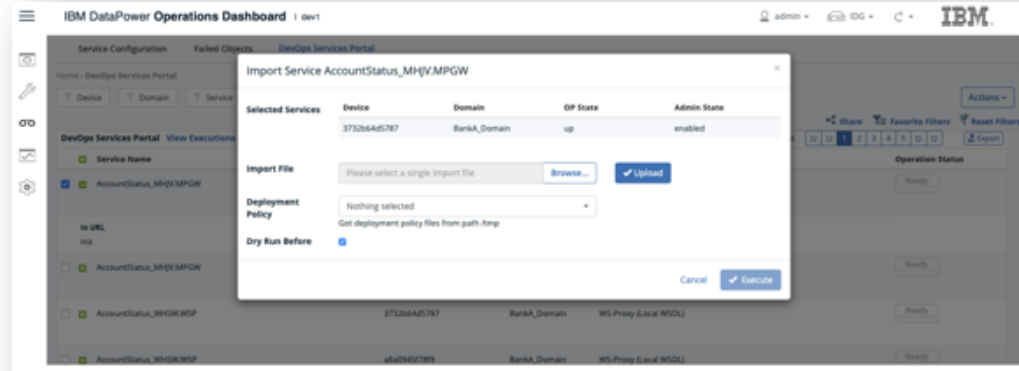
# Optimize Operations with DPOD V1.0.8.5

- **Troubleshoot API Workload between versions** with new API Versions dashboards to compare latency
- **DevOps enabled** to import and manage DataPower services into multiple devices at once
- **High performance, federated deployment mode** for large installations
- **New Modern UX** for simplified navigation and troubleshooting



The screenshot displays the 'IBM DataPower Operations Dashboard' with the 'Transactions' tab selected. A search filter 'ac' is applied to the 'API Name' column. The table below shows a list of transactions with columns for Time, Device, Catalog/Space, Product, Plan, API, APP Name, Client IP, GI Trans. ID, and Elapse (ms).

Time	Device	Catalog/Space	Product	Plan	API	APP Name	Client IP	GI Trans. ID	Elapse (ms)
10/31 12:21:33.816	u8a09437789	Catalog/SpaceX	monierproduct	default	accounts - 1.0.1	catalog	172.17.100.130	802648d5b49d6840026cb6	44
10/31 12:21:33.810	u8a09437789	Catalog/SpaceX	monierproduct	default	accountservice - 1.0.0	catalog	172.17.100.130	802648d5b49d6840026cb5	49
10/31 12:21:33.802	u8a09437789	moniercatalog/new-space	monierproduct	default	oauth - 1.0.0	monierapp	172.17.100.130	802648d5b49d6840026cb4	1149
10/31 12:21:33.792	u8a09437789	moniercatalog/new-space	monierproduct	default	accounts - 1.0.1	monierapp	172.17.100.130	802648d5b49d6840026cb3	64
10/31 12:21:33.779	u8a09437789	moniercatalog/new-space	monierproduct	default	datapowering-1-1.0.0	monierapp	172.17.100.130	802648d5b49d6840026cb2	250



The screenshot shows the 'IBM DataPower Operations Dashboard' with the 'DevOps Services Portal' tab selected. A dialog box titled 'Import Service AccountStatus\_MH\J\MPGW' is open, displaying a table of selected services and options for import and deployment.

Selected Services	Device	Domain	OP State	Admin State
	3732644d5787	BankA_Domain	up	enabled

Import File: Please select a single import file.

Deployment Policy: Nothing selected. Get deployment policy files from path: Amp

Dry Run Before:

# API Management

## References

# Capability Matrix

<b>Scalability</b>	Sberbank	Largest number of API Gateways (appx 200)
<b>Peak Transactions</b>	Danske Bank	peaks of 5000 Tx/s
<b>B2B Portal</b>	Fiat – Chrysler Automotive Group	global deployment with global portal, internal portals and regional portals
<b>Business Innovation</b>	PSA Group	Connected Cars monetize Data to Insurance & Weather companies
<b>Swissness</b>	Panalpina	B2B Portal

# API Management Topologies

# Form Factors

Kubernetes

Cloud Pack for  
Integration

- On Prem
- On Cloud IaaS
- On Cloud Managed K8s

OVA

- On Prem VMWare
- On Cloud VMWare

On IBM Cloud

- Public
- Reserved
- IBM Cloud Dedicated

# On the Cloud: A range of powerful options



APIC on  
**IBM Cloud**



APIC  
Reserved Instance



APIC on  
**IBM Cloud Dedicated**

Multi-tenant APIC
Shared Gateway
Shared Infra for Runtimes
Shared Infra for Services
IBM Managed
Min APIs: 0 (Lite) 4M (Enterprise)

Single-tenant APIC
Isolated Gateway
Shared Infra for Runtimes
Shared Infra for Services
IBM Managed
Min APIs: ~25M/ Month

Single-tenant APIC
Isolated Gateway
Isolated Infra for Runtimes
Isolated Infra for Services
IBM Managed
Min APIs: ~25M/ Month

**Flexibility**

**Value**

**Isolation**

Fully multi-tenant shared infrastructure;  
Faster / automated deployment

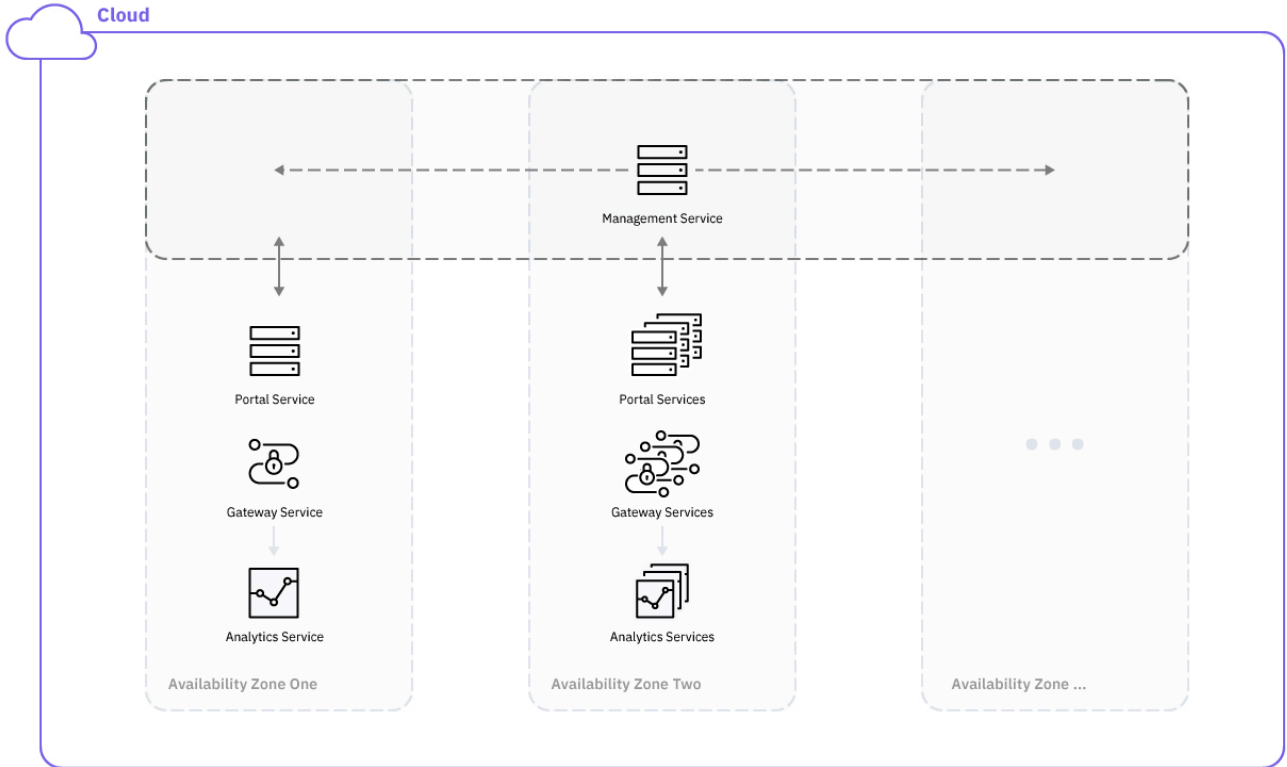
Greater resource / security isolation;  
Slower / Custom deployment



# Picking the right cloud

	APIC on IBM Cloud	APIC Reserved Instance	APIC on IBM Cloud Dedicated
APIC Tenancy	Multi tenant	Single tenant; isolated workload	Single tenant; isolated workload
GW: Remote DP Connectivity	Not supported	<b>Supported</b> ; users must work with APIC Ops team to configure	<b>Supported</b> ; users must work with APIC Ops team to configure
GW: DP user-defined policies	Not supported	<b>Supported</b> ; must develop user-define policies using DataPower on Docker	<b>Supported</b> ; must develop user-define policies using DataPower on Docker
GW: Access to DP console	Not supported	Not supported	Not supported
GW: DP Syslog config	Not supported	<b>Supported</b> ; users must work with APIC Ops team to configure	<b>Supported</b>
Multi datacenter deployment for HA / DR	Not supported	<b>Supported</b>	<b>Supported</b>
Topology options for separate prod/non-prod	Not supported	<b>Supported</b> (additional purchase needed to address physical separation between prod/non-prod)	<b>Supported</b> (additional purchase platform and APIC needed to address physical separation between prod/non-prod)
VPN to access APIM	Not supported	Not supported	<b>Supported</b> , and included
Secure Gateway	<b>Supported</b>	<b>Supported</b> ; service must be added from the IBM Cloud public catalog	<b>Supported</b> ; service must be added from the Dedicated catalog

# Multi-Cloud/Site setup



# Deployment Options

Feature	Public cloud	Cloud dedicated	IBM Cloud Private	On-premises
Managed by IBM operations	Yes	Yes	No	No
Shared gateways	Yes	No	No	No
Dedicated gateways	No	Yes	Yes	Yes
Remote gateways	No	Yes	Yes	Yes
VPN connectivity	No	Yes	Yes	Yes
Single-DC HA	Yes	Yes	Yes	Yes
Multi-DC HA	No	Available at an extra cost.	Available at an extra cost	Yes
Custom branding	Yes	Yes	Yes	Yes
CMC access	No	No	Yes	Yes
API Manager access	Yes	Yes	Yes	Yes
DataPower UI access	No	No	No	Yes
User-defined policies	No	Yes	Yes	Yes
Gateway log offload	No	Yes	Yes	Yes
Analytics offload	No	Coming soon	Coming soon	Yes

# RI: A strategic APIC single-tenant SaaS offering

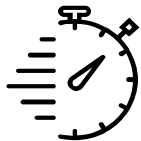


## APIC Reserved Instance

---

- **Market-leading** API Management platform
  - **Performance and scalability** of IBM Cloud infrastructure
  - **Operational expertise** of APIC DevOps SMEs
  - **Reliability and workload isolation** of IBM Cloud Dedicated
  - **Cost-effectiveness** of APIC on IBM Cloud public
- **Introduced in 2Q 2017**
  - **Rapid adoption in 3Q/4Q 2017**
  - **Enhanced capabilities based on Sponsor User feedback**
  - **Streamlined provisioning process to meet aggressive 2018 sales demand**

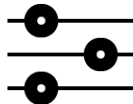
# APIC Reserved Instance: Key benefits for clients



## Accelerate time to value

Focus on your API projects, while we deploy and configure your APIC environment to scale to your needs.

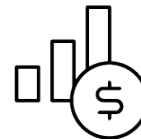
We'll even migrate your workload from IBM Cloud public!



## Get more control

Create user-defined policies, configure syslog targets for DP logs, use you own DNS/SSL configuration, and more...

We'll even connect to your Datapower GW running on premise or in AWS!






## Optimize your IT spending

No need for upfront CapEx; monthly subscription includes deployment on best-in-class infrastructure, maintenance and updates, routine backups and disaster recovery.

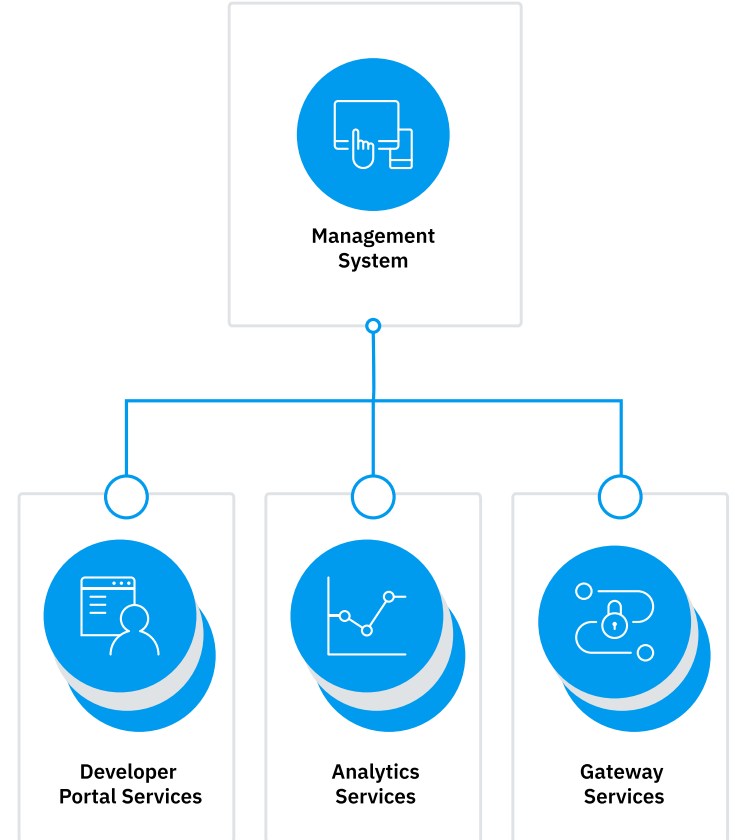
We even have a ramp-up option to help you start small and scale up usage with time.

# APIC Reserved Instance: Highlights

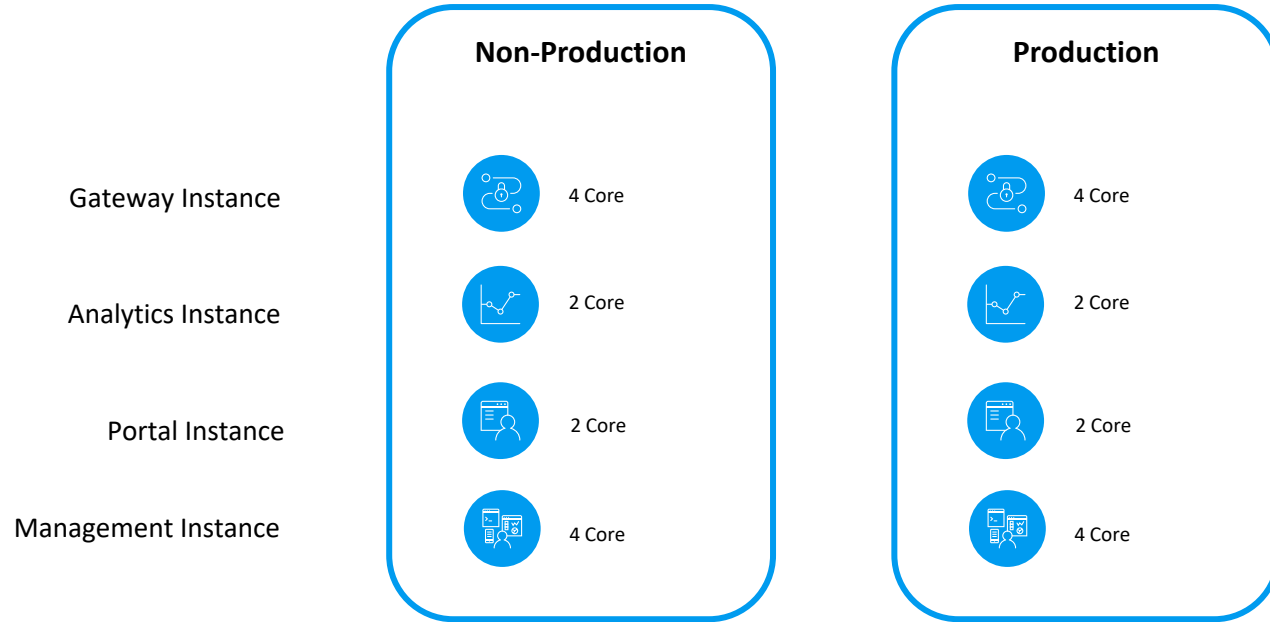
<p><b>Datacenters</b> Global locations</p> <p><b>30+</b></p>	<p><b>SLA</b> Availability; single datacenter</p> <p><b>99.5 %</b></p>	<p><b>HA</b> Single datacenter (included)</p> <p></p>	<p><b>RTO</b> Disaster Recovery</p> <p><b>24 hrs</b></p>	<p><b>Bandwidth</b> Outbound (included)</p> <p><b>UNLIMITED</b></p>
<p><b>Migration</b> from IBM Cloud public (available)</p> <p></p>	<p><b>SLA</b> Availability; dual datacenter</p> <p><b>99.95 %</b></p>	<p><b>HA</b> Dual datacenter (additional)</p> <p></p>	<p><b>RPO</b> Disaster Recovery</p> <p><b>12 hrs</b></p>	<p><b>Bandwidth</b> Inbound (included)</p> <p><b>UNLIMITED</b></p>

# API Connect V2018.1: Component options

- **Standalone API Analytics component** to scale independently based on API project growth
- **Zero to N portal clusters** can be configured to a API Connect deployment to align with API project growth
- **Native install of APIC toolkit** for enhanced user experience
- **V5 to V2018 Upgrade** through automated migration scripts with a parallel stack setup following modern software practices, coming 2Q18

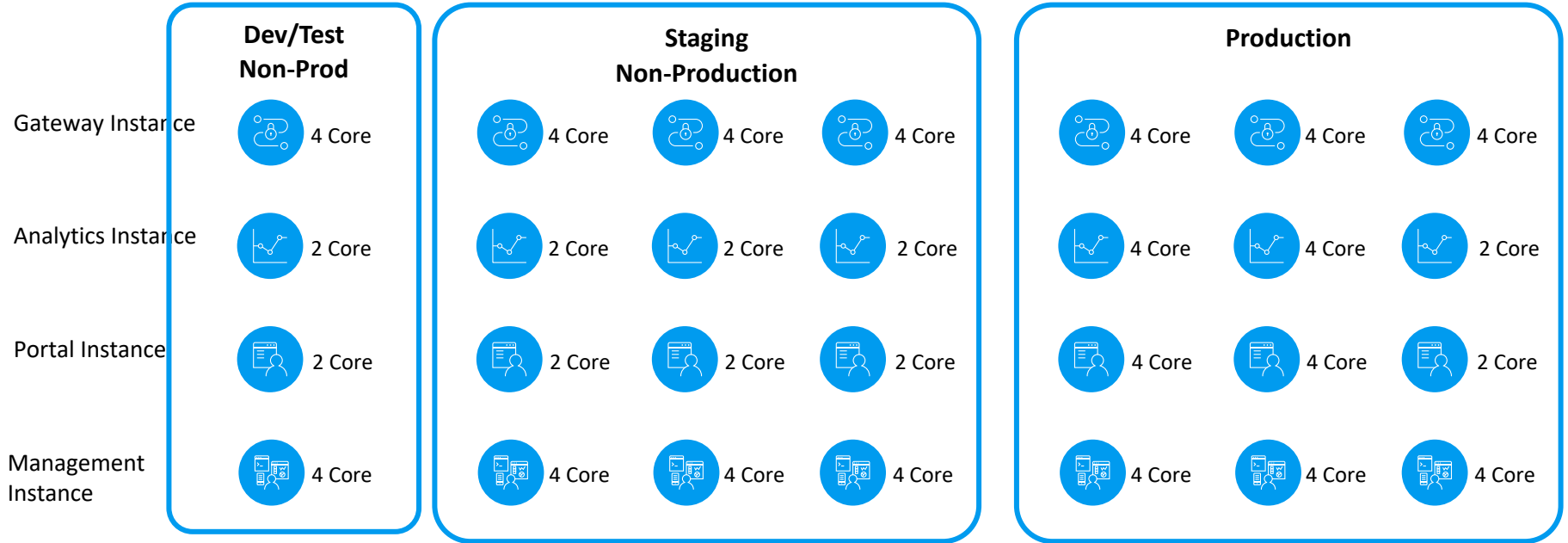


# Starter T-Shirt- Topology

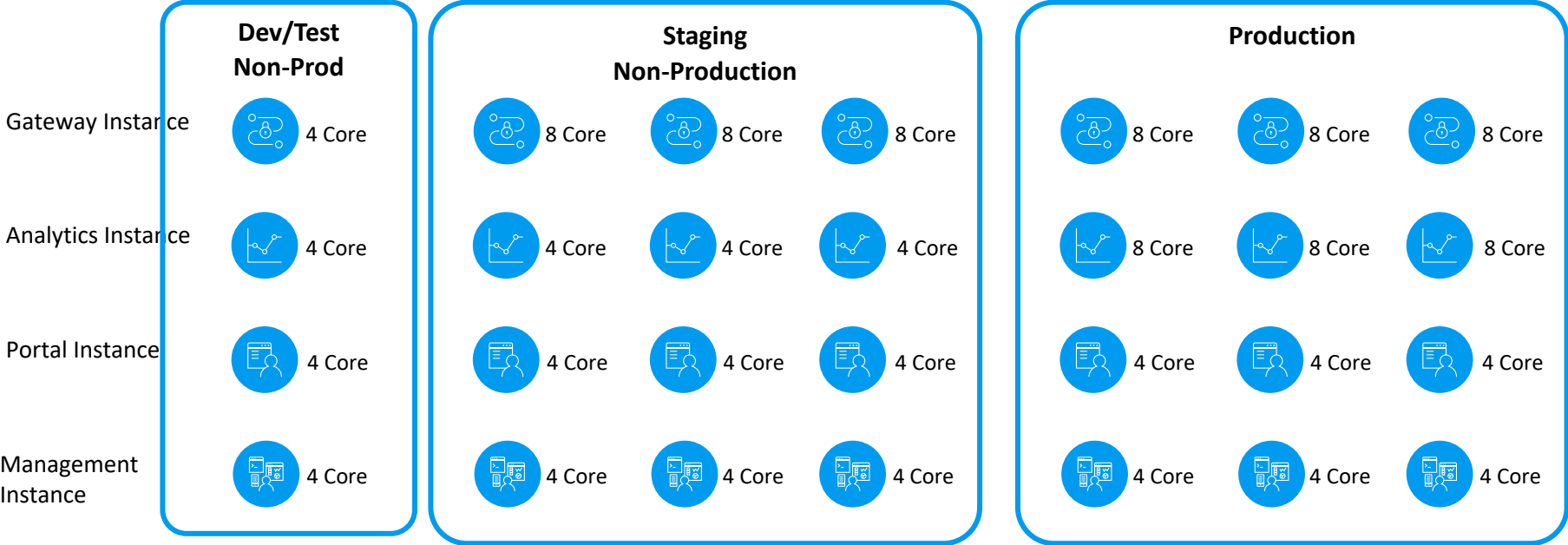




# Small T-Shirt- Topology



# Medium T-Shirt- Topology



# Large T-Shirt- Topology

## Dev/Test Non-Production

## Staging Non-Production

## Production

Gateway Instance

8 Core   8 Core   8 Core

8 Core   8 Core   8 Core

8 Core   8 Core   8 Core   8 Core   8 Core

Analytics Instance

4 Core   4 Core   4 Core

8 Core   8 Core   4 Core

8 Core   8 Core   8 Core   4 Core   4 Core

Portal Instance

4 Core   4 Core   4 Core

4 Core   4 Core   4 Core

4 Core   4 Core   4 Core   4 Core   4 Core

Management Instance

4 Core   4 Core   4 Core

4 Core   4 Core   4 Core

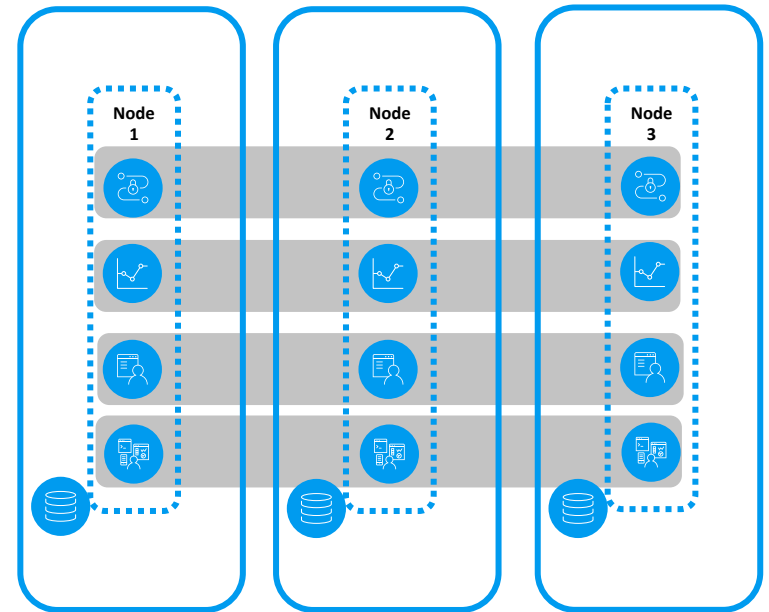
6 Core   6 Core   6 Core   6 Core   6 Core

# V2018 LTS: Availability, Backup & Restore, Upgrade

- Available in both **OVA** and **K8** form factors
- **Highly Available** for all components and deployment topologies
- **Simplified Backup and Restore** through simplified command interface
- **Upgrade V2018.4.1.0 LTS** from V2018.3.7 CD or latest CD



HA Ready ✓



# Multiple Select if required

# What does LTS translate in to?

- Supported a minimum of 2 years from release
  - API Connect V2018.4.1.0 LTS will GA Nov 15 2018 and be supported minimum till late 2020
  - DataPower Gateway V2018.4.1.0 LTS will GA Nov 15 2018 and be supported minimum till late 2020
- Focus is on defect fixes and security updates for future fixpacks

API Connect V2018.x support schedule

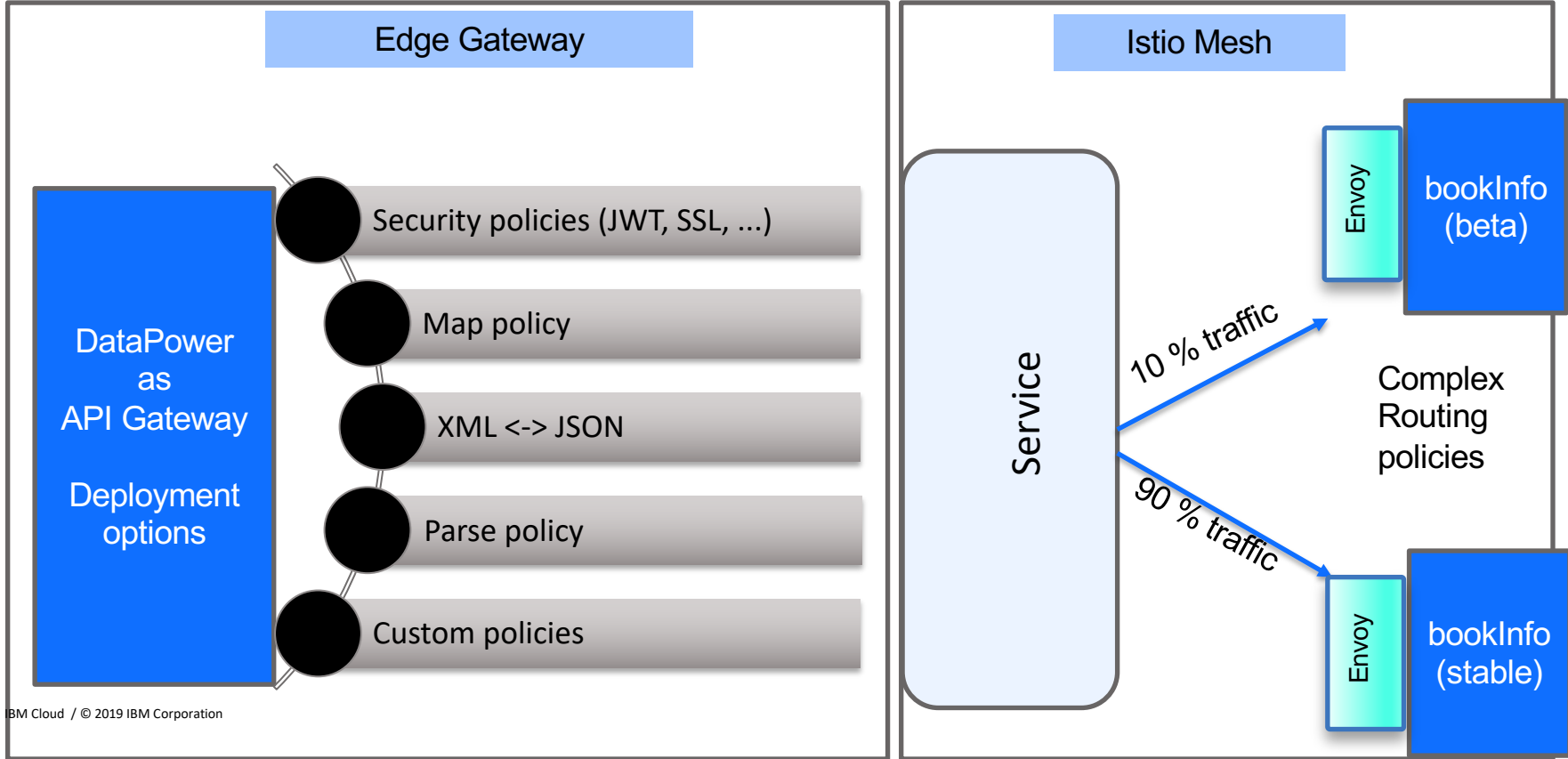
Year.Quarter.Update	Release Type	GA Date	End of Fix Support	End of Support
2018.1.0	CD	Mar 30, 2018	Apr 6, 2018	NA
2018.2.1	CD	Apr 6, 2018	Apr 13, 2018	NA
2018.2.2	CD	Apr 13, 2018	Apr 20, 2018	NA
2018.2.3	CD	Apr 20, 2018	Apr 27, 2018	NA
2018.2.4	CD	Apr 27, 2018	May 4, 2018	NA
2018.2.5	CD	May 4, 2018	May 11, 2018	NA
2018.2.6	CD	May 11, 2018	May 18, 2018	NA
2018.2.7	CD	May 18, 2018	May 25, 2018	NA
2018.2.8	CD	May 25, 2018	June 1, 2018	NA
2018.2.9	CD	June 1, 2018	June 8, 2018	NA
2018.2.10	CD	June 8, 2018	June 27, 2018	NA
2018.2.11	CD	June 27, 2018	July 6, 2018	NA
2018.3.1	CD	July 6, 2018	July 13, 2018	NA
2018.3.2	CD	July 13, 2018	July 20, 2018	NA
2018.3.3	CD	July 20, 2018	July 27, 2018	NA
2018.3.4	CD	July 27, 2018	August 3, 2018	NA
2018.3.5	CD	August 3, 2018	August 20, 2018	NA
2018.3.6	CD	August 20, 2018	September 13, 2018	NA
2018.3.7	CD	September 13, 2018	*	*
2018.4.x	LTS	*	*	*

\* - Not yet announced

# Microservice Management

## IDG and Istio

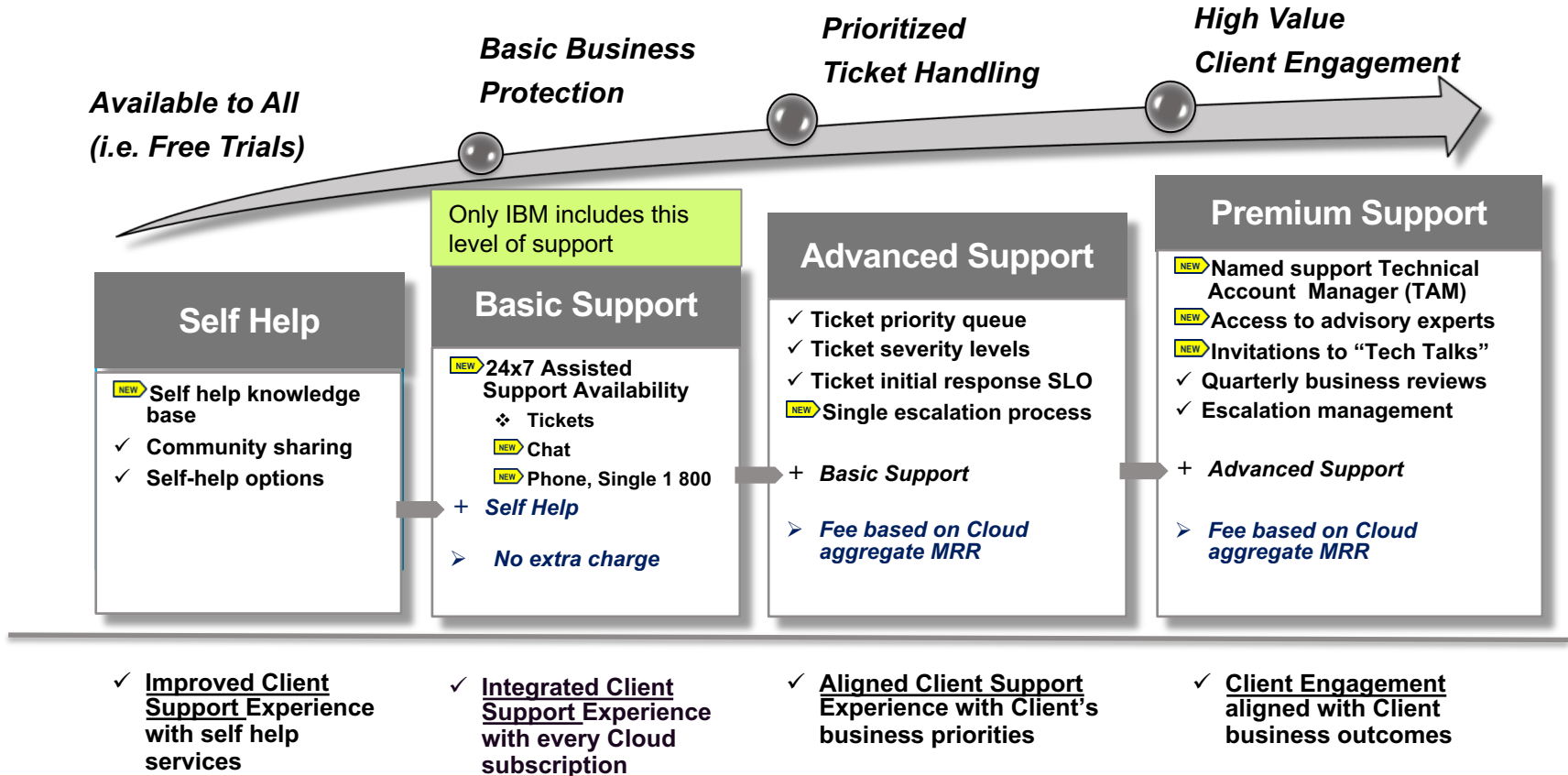
# Bringing APIM and Istio worlds together





# API Management Support

# IBM Cloud Support – Tiered Offerings



Details about IBM Cloud Support Plans and Getting support can be found here:

<https://cloud.ibm.com/docs/get-support?topic=get-support-support-plans#support-plans>

# Support Tiers Case Severities and Service Levels

## Priority Issue Handling by Assigned Support Engineers (Advanced, Premium)

In depth technical support provided by assigned, specially trained and knowledgeable support engineers on all support tickets opened by clients.

## The Ability to Set Ticket Severities (Advanced, Premium)

Clients may choose between 4 severity designations on all support tickets.

## Initial Response Time Service Level Objective (Advanced, Premium)

IBM will make commercially reasonable efforts to provide clients initial responses for severities defined below:

<https://cloud.ibm.com/docs/get-support?topic=get-support-support-plans#support-plans>

Severity	Severity Definition	Initial Response Time Objective
Severity 1	<b>Critical business impact or service is down</b> Business critical functionality is inoperable or critical interface is failed. This severity usually applies to a production environment and indicates that an inability to access services is leading to a critical impact on operations. This condition requires an immediate solution.	Premium: Within 15 minutes Advanced: Within 1 hour Basic: N/A
Severity 2	<b>Significant business impact</b> A service feature or function is severely restricted in its use or you are in danger of missing business deadlines.	Premium: Within 1 hour Advanced: Within 2 hours Basic: N/A
Severity 3	<b>Minor business impact</b> A service feature or function is usable, but has some problems that affect its use. No critical impact on operations is caused.	Premium: Within 2 hours Advanced: Within 4 hours Basic: N/A
Severity 4	<b>Minimal business impact</b> An inquiry or non-technical request.	Premium: Within 4 hours Advanced: Within 8 hours Basic: 24 hours

# Legal statement

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

