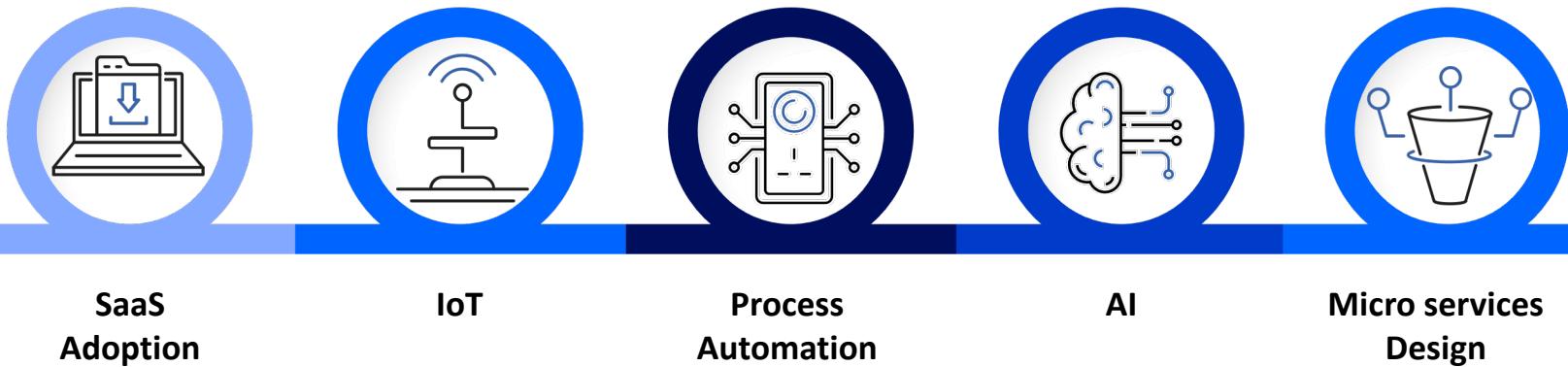


Daniel Kim
Cloud Pak Acceleration Team
daniel.s.kim@ibm.com

Integration

IBM Perspective

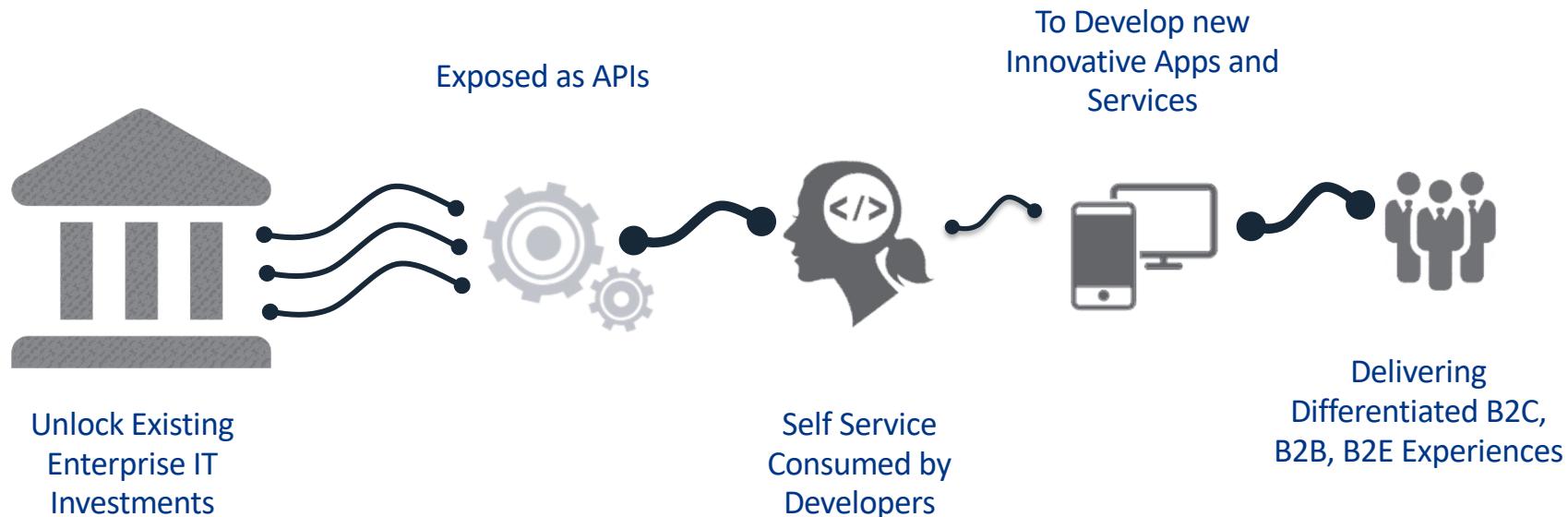
The need for Integration increases



API Management

IBM Perspective

Basic concept - Shift focus to consumers

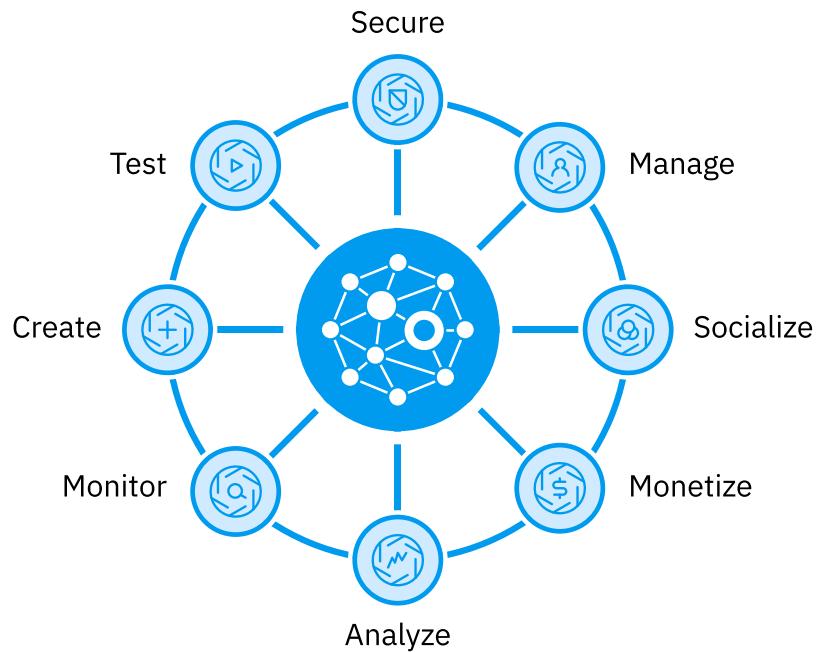


API Management

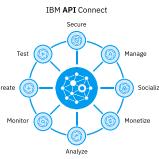
IBM API Connect

Overview

IBM API Connect

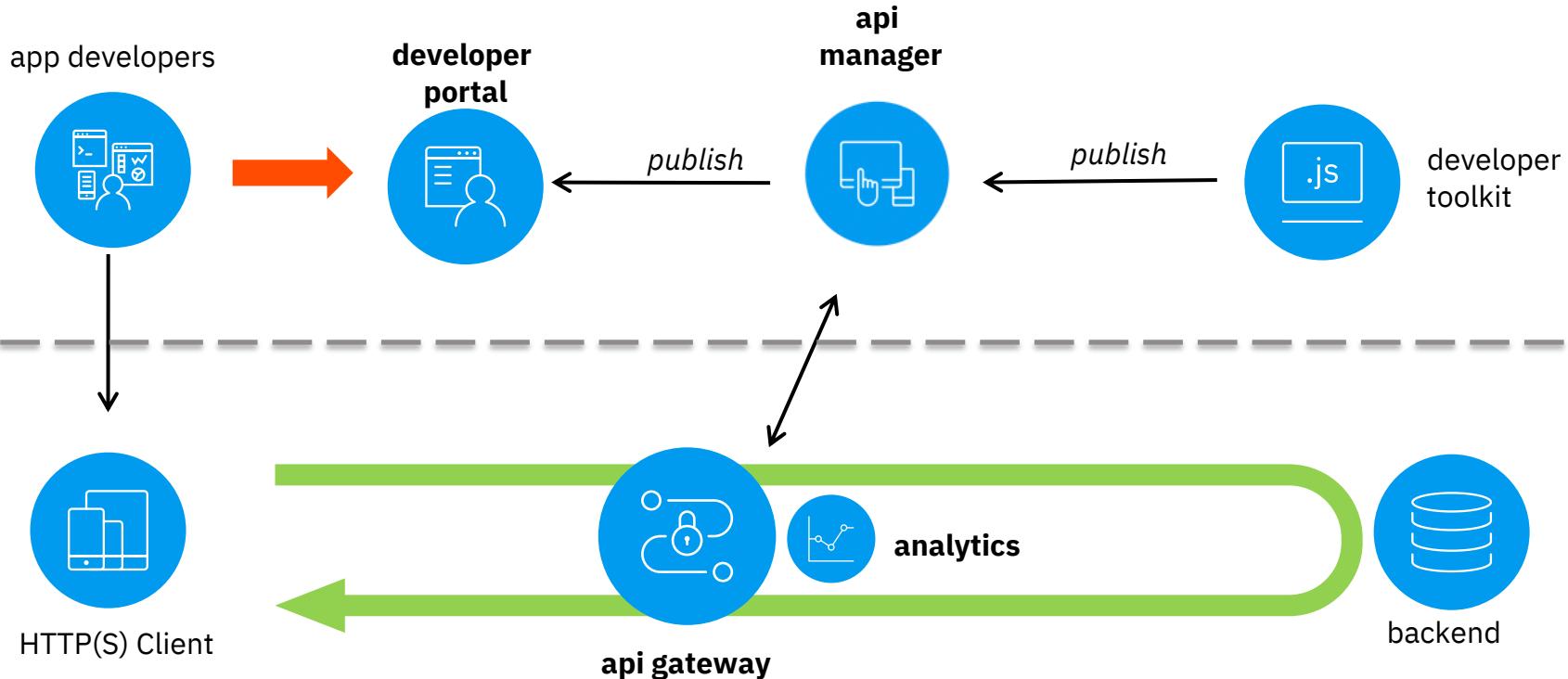


API Connect – Components



Management

Runtime



Components functionality



Gateway Instance

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



Management Instance

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



Portal Instance

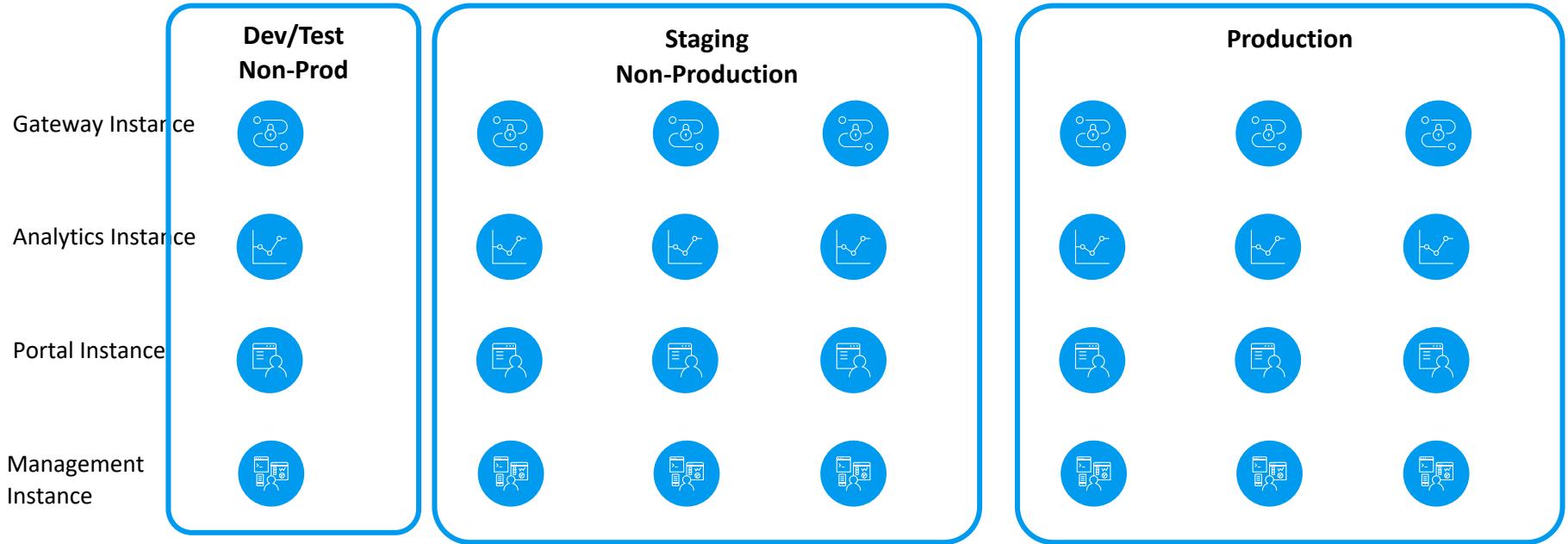
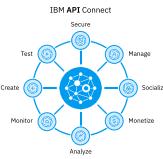
- Self-service App Developer Portal based on Drupal 8
- User Management
- Social Collaboration
- Subscription & Community Management



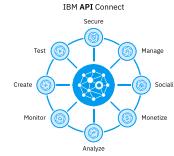
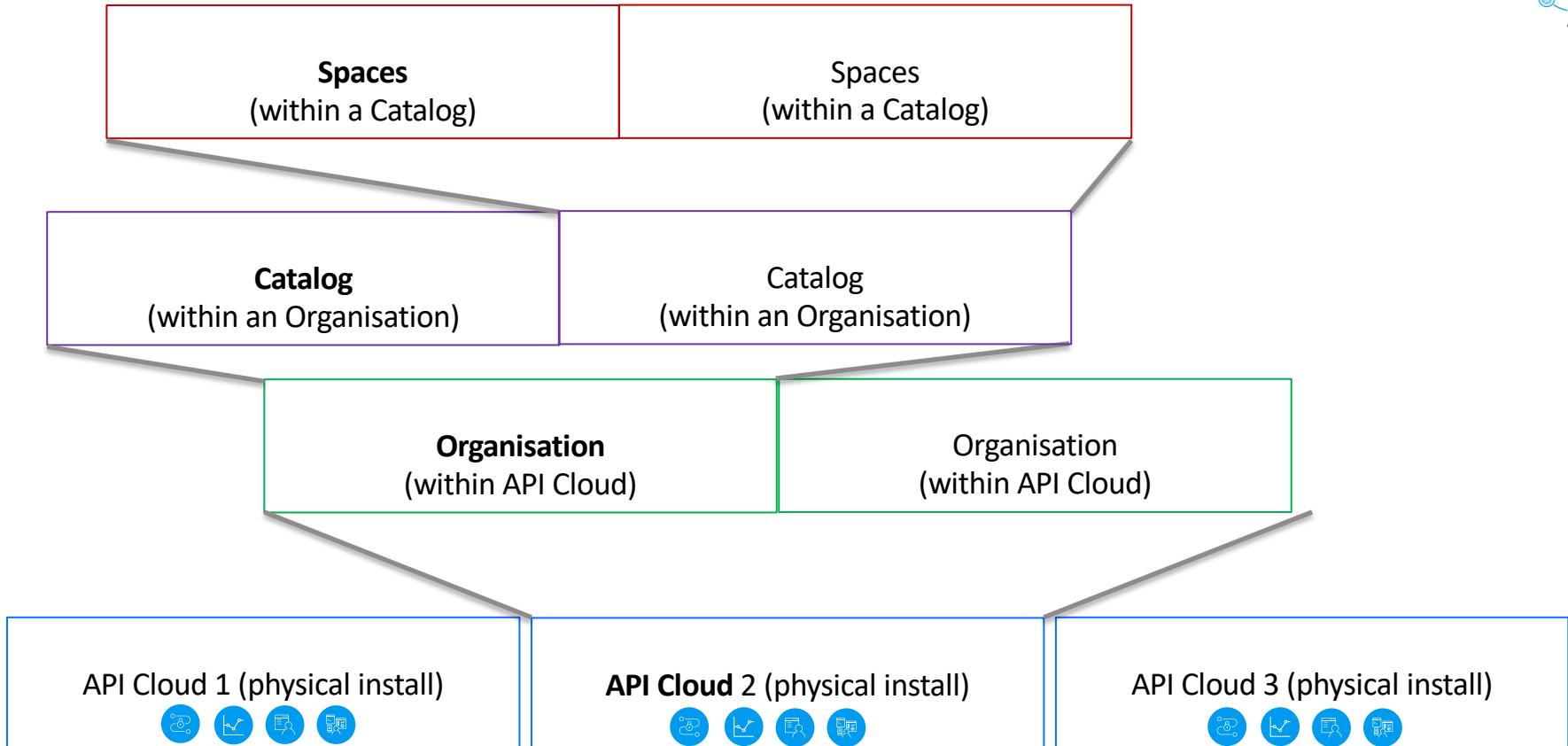
Analytics Instance

- API Monitoring Analytics

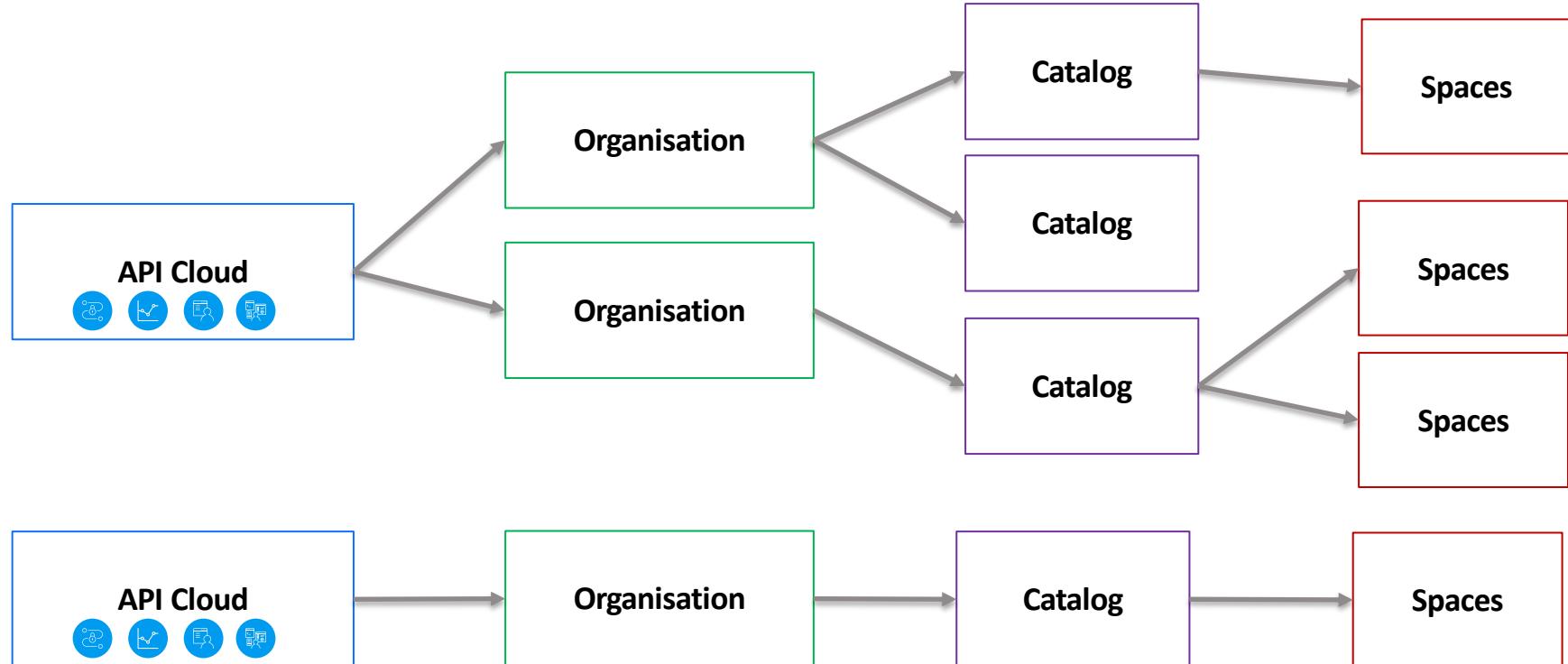
Topology



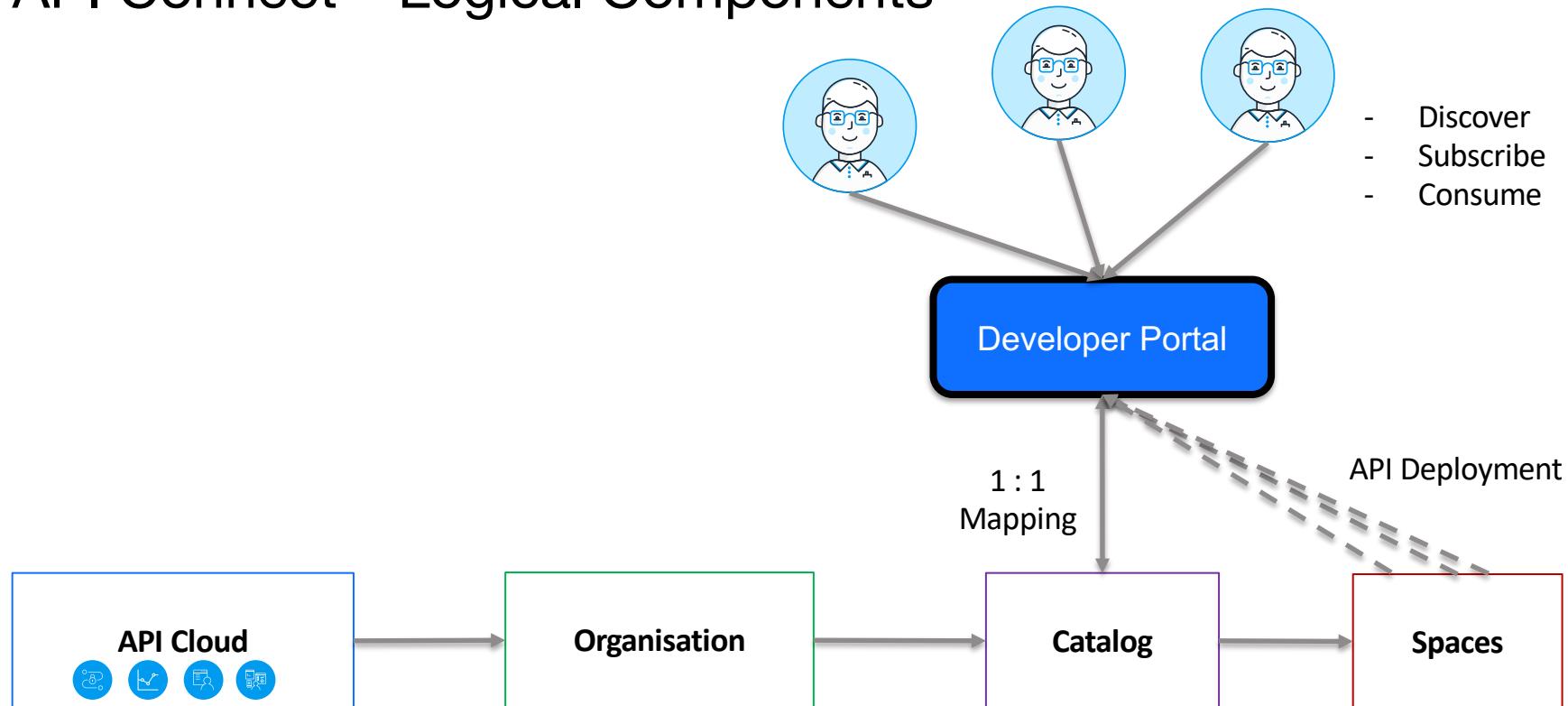
Levels of Segregation



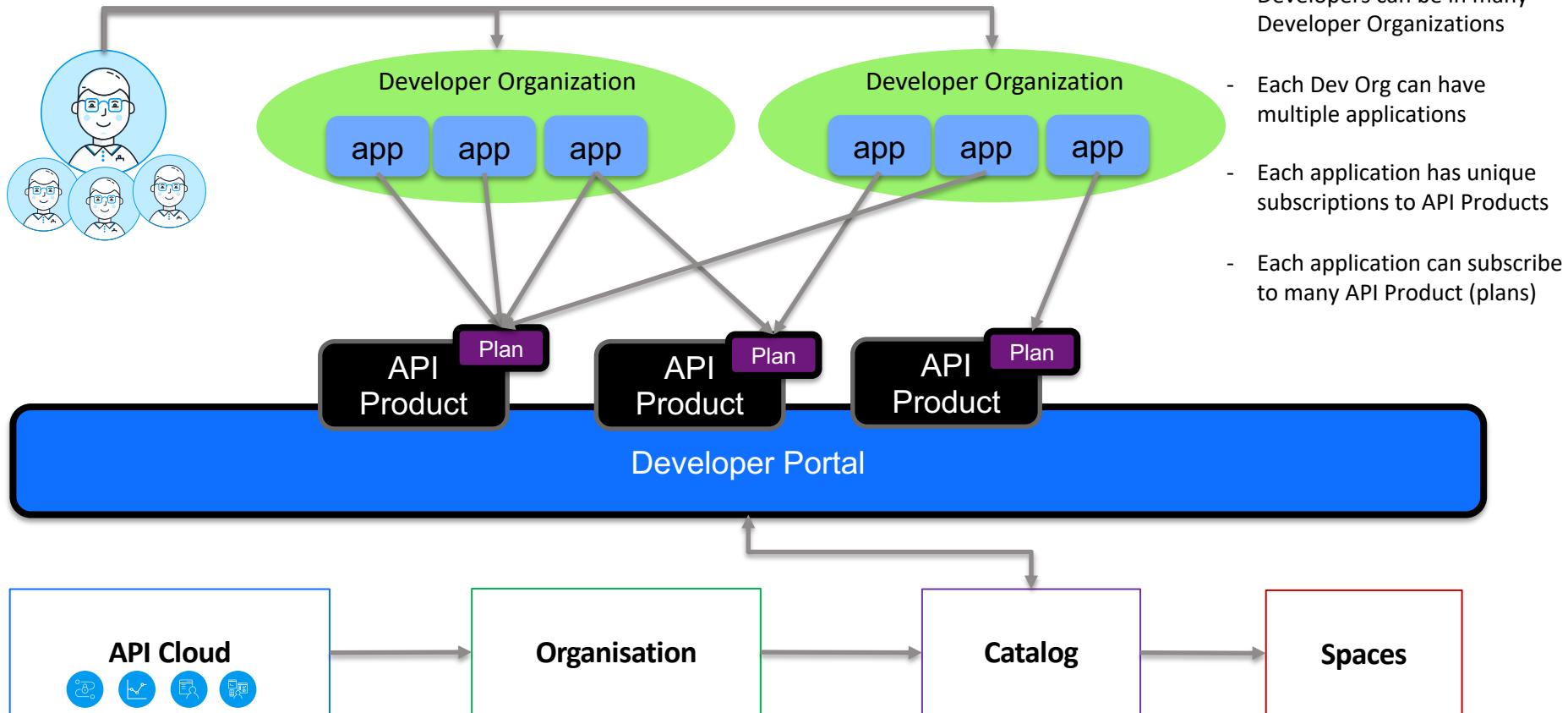
API Connect – Logical Components



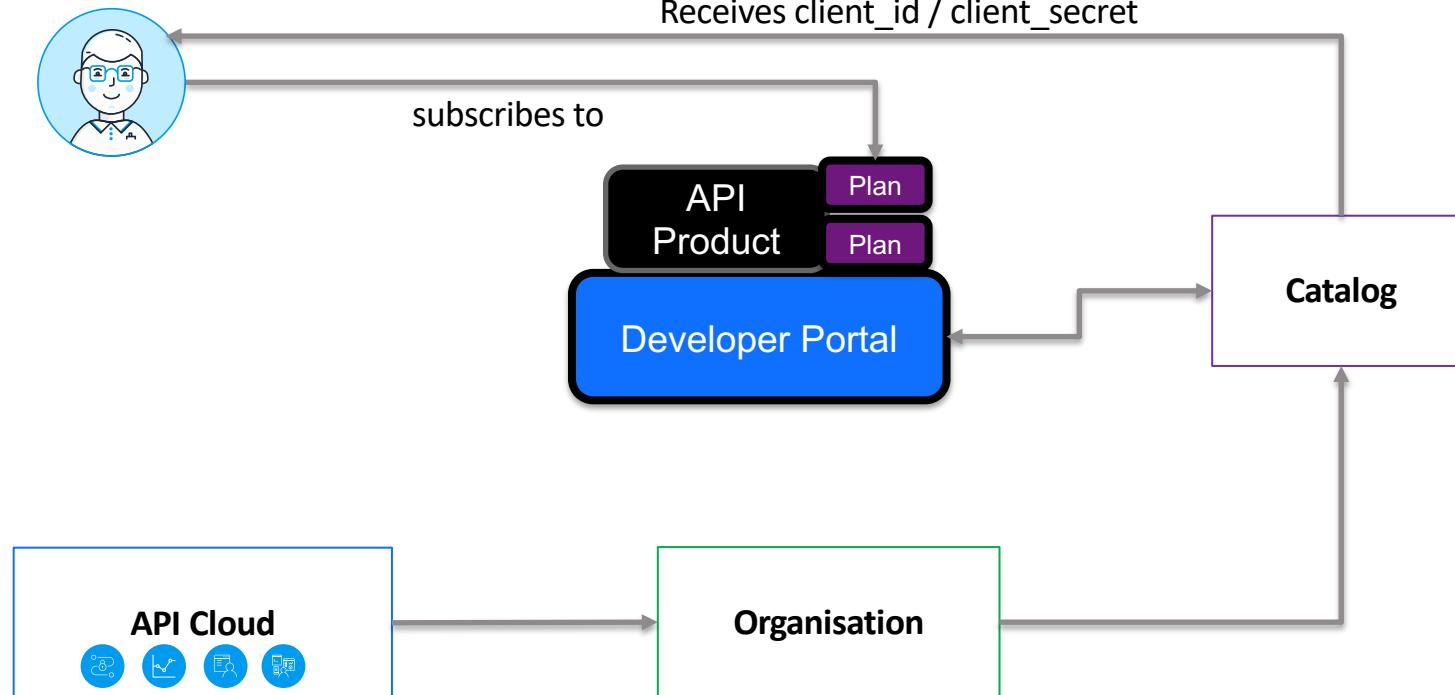
API Connect – Logical Components



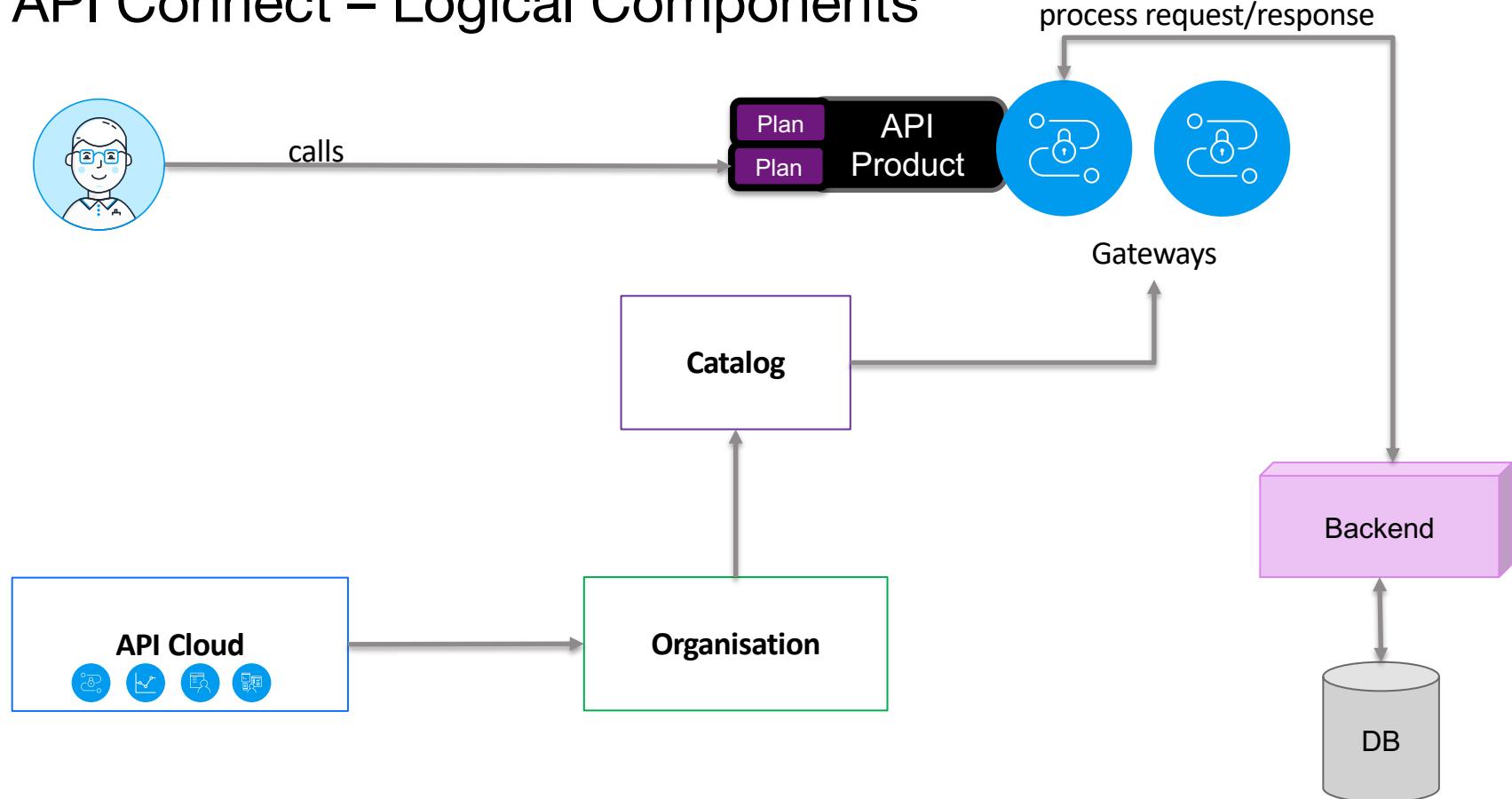
API Connect – Logical Components



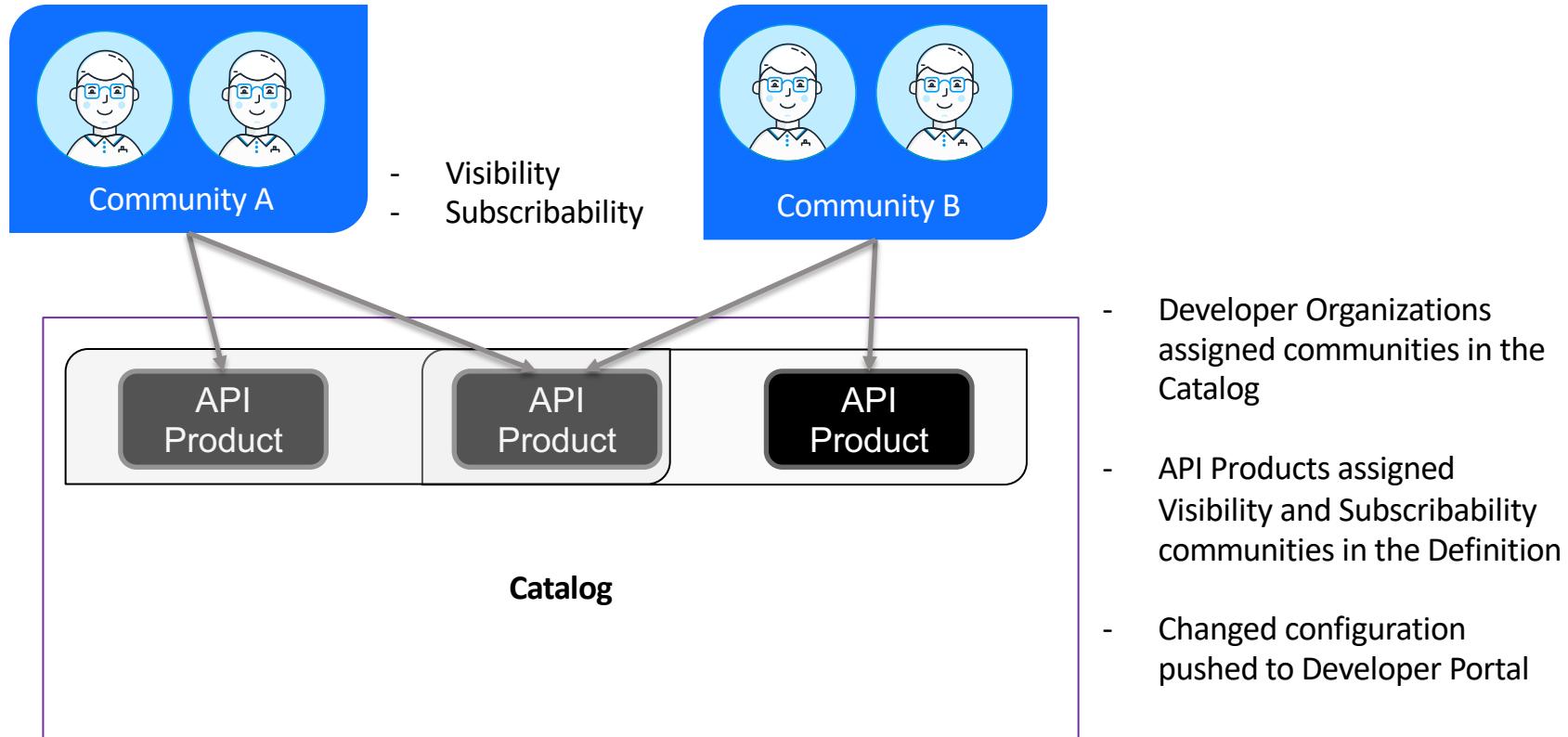
API Connect – Logical Components



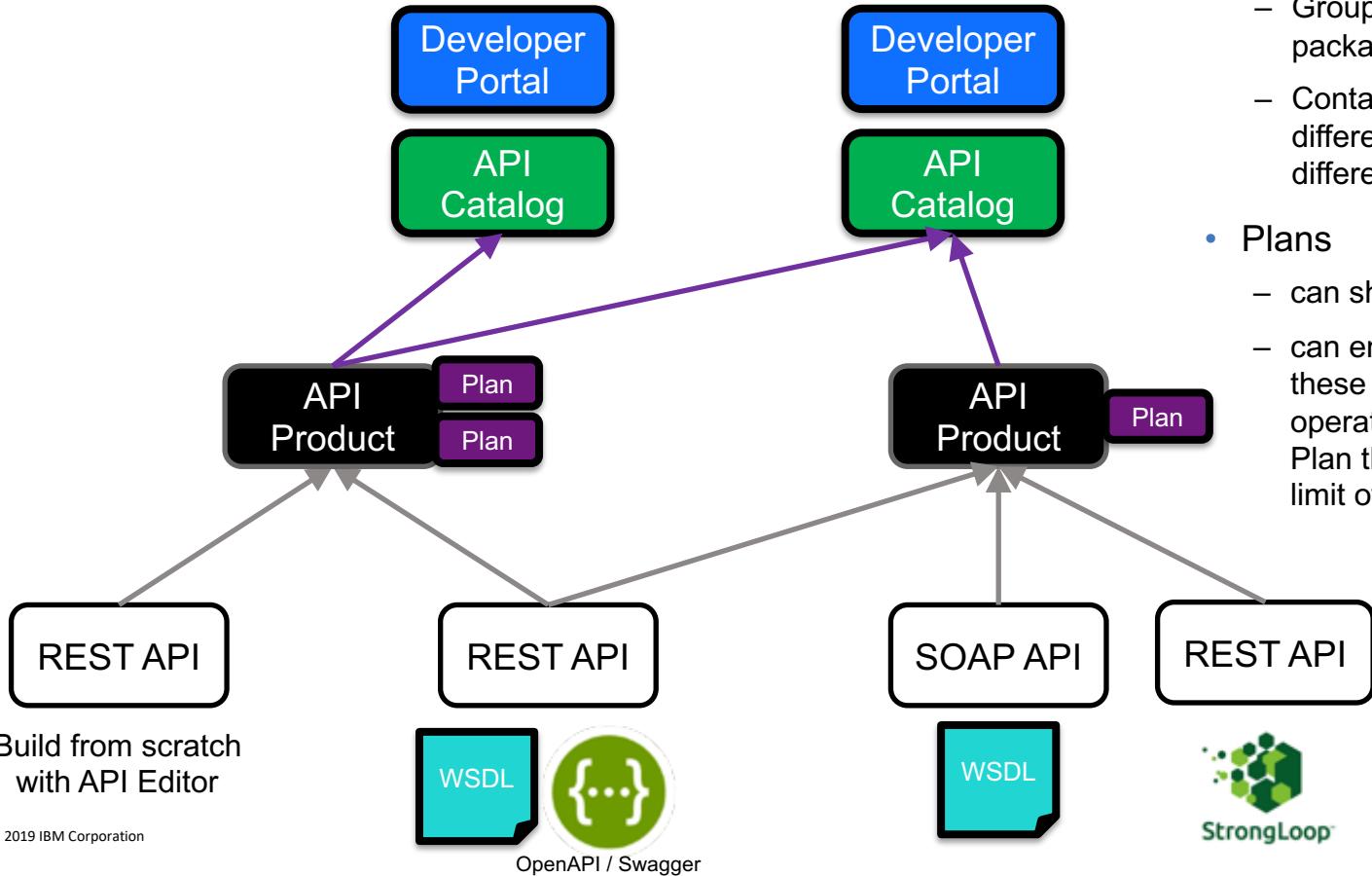
API Connect – Logical Components



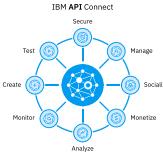
API Connect – Logical Components



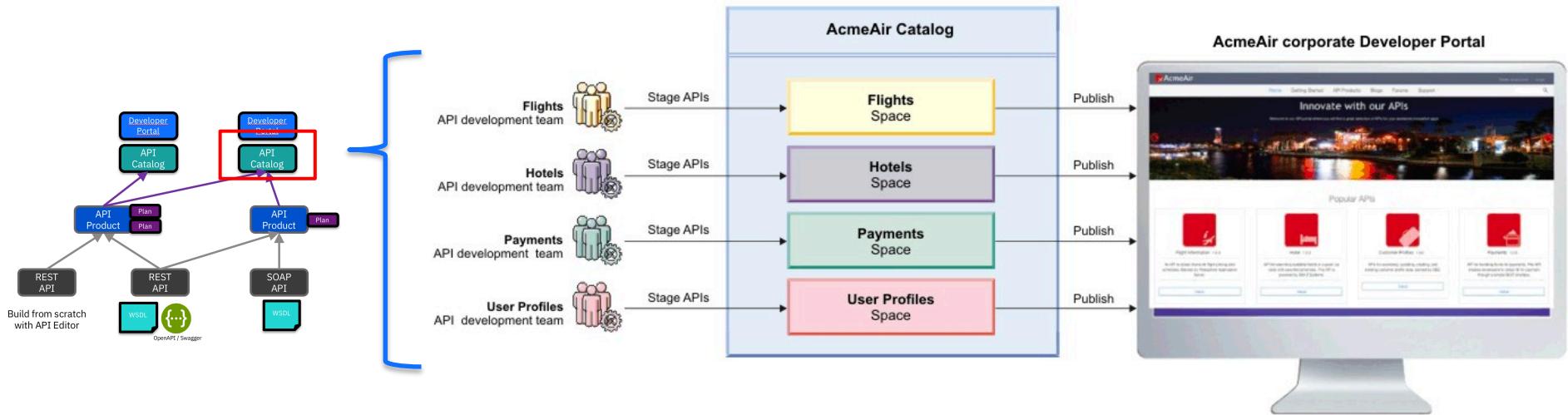
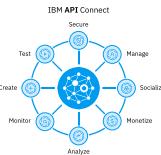
API Hierarchy



- **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.



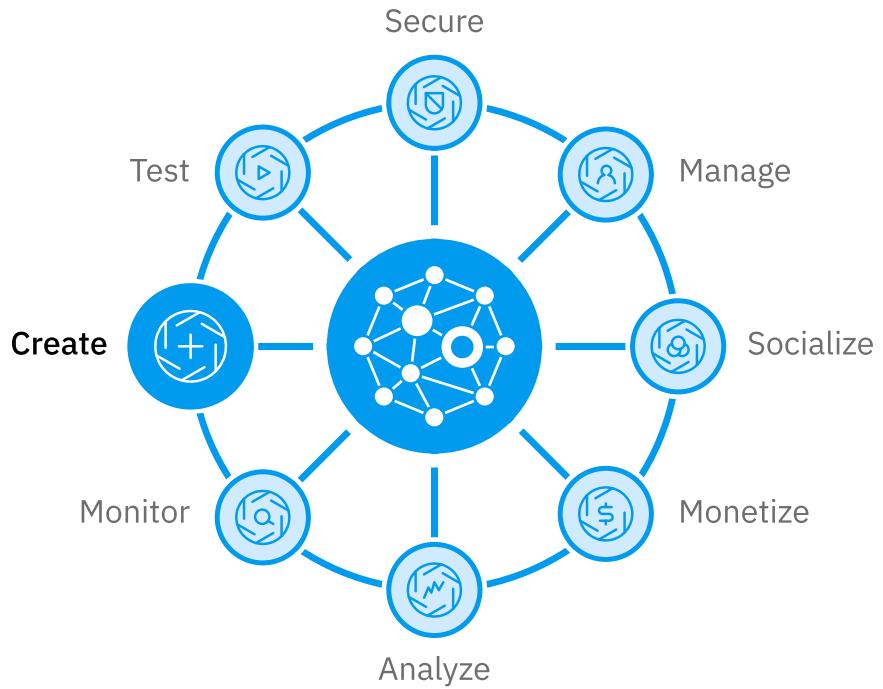
A powerful – Syndication / Spaces

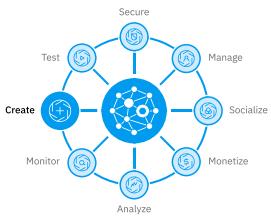


API Management

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)

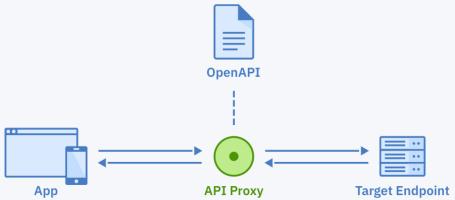
Create a SOAP proxy based upon a WSDL described target service

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

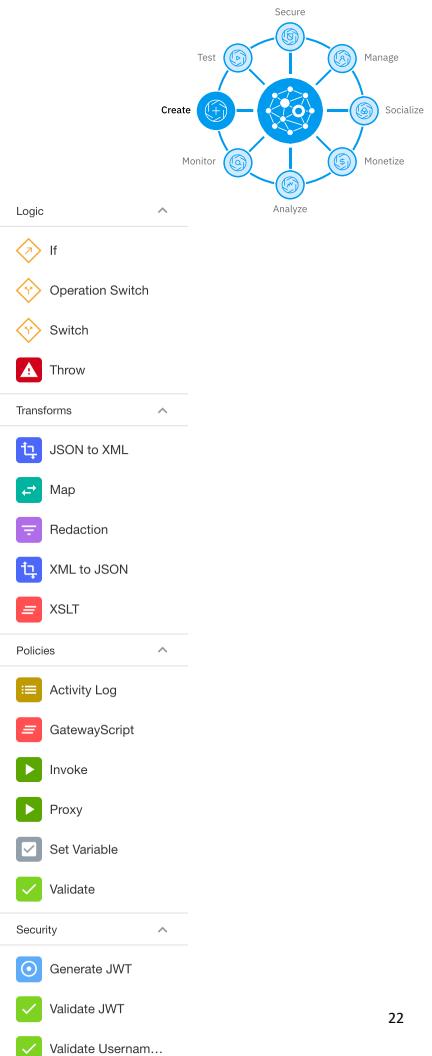
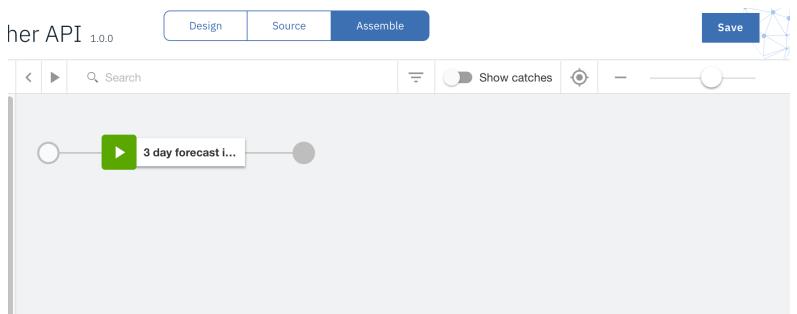
Cancel

Next

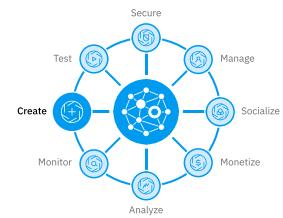
Three views – same source

The screenshot shows the IBM API Connect API Manager interface with three tabs: API Setup, Source, and Assemble. The API Setup tab is active, displaying the 'Climbing Weather API' configuration. The Source tab shows the API definition in JSON format:

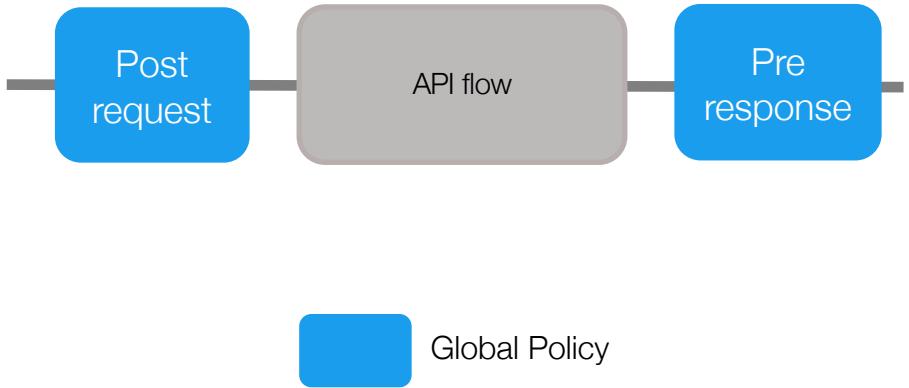
```
1  "swagger": "2.0"
2  "info": {
3    "title": "Climbing Weather API",
4    "x-ibm-api-name": "climbing-weather-api",
5    "x-ibm-client-id": "ibmCH"
6  },
7  "host": "scalable-host",
8  "schemes": [
9    "https"
10 ],
11  "basePath": "/",
12  "produces": [
13    "application/json"
14  ],
15  "consumes": [
16    "application/json"
17  ],
18  "securityDefinitions": [
19    {
20      "name": "client-secret",
21      "in": "header",
22      "type": "apiKey",
23      "description": "X-IBM-Client-Secret",
24      "x-ibm-client-id": "client-ID"
25    }
26  ],
27  "security": [
28    {
29      "type": "http",
30      "value": "Basic"
31    }
32  ],
33  "operations": [
34    {
35      "method": "GET",
36      "path": "/forecast",
37      "x-ibm-client-id": "client-ID"
38    }
39  ],
40  "responses": [
41    {
42      "description": "3 day forecast invocation"
43    }
44  ],
45  "x-ibm-gateway": "true"
46  }
```



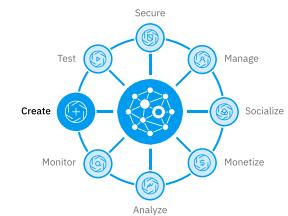
Global Policies for Corporate Governance



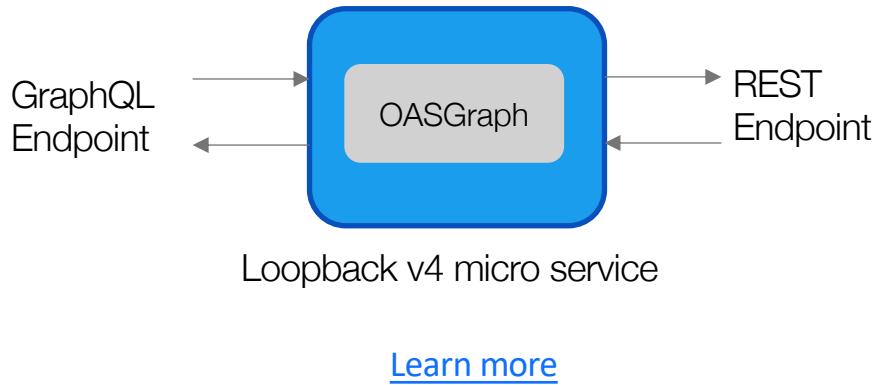
- **Enforce corporate standards** and centralize governance with common security and logging policies without impacting API development
- **Flexible security permissions for deploying global policies**, enabling CSO / security professionals additional access control and flexibility
- **Accelerated definition**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



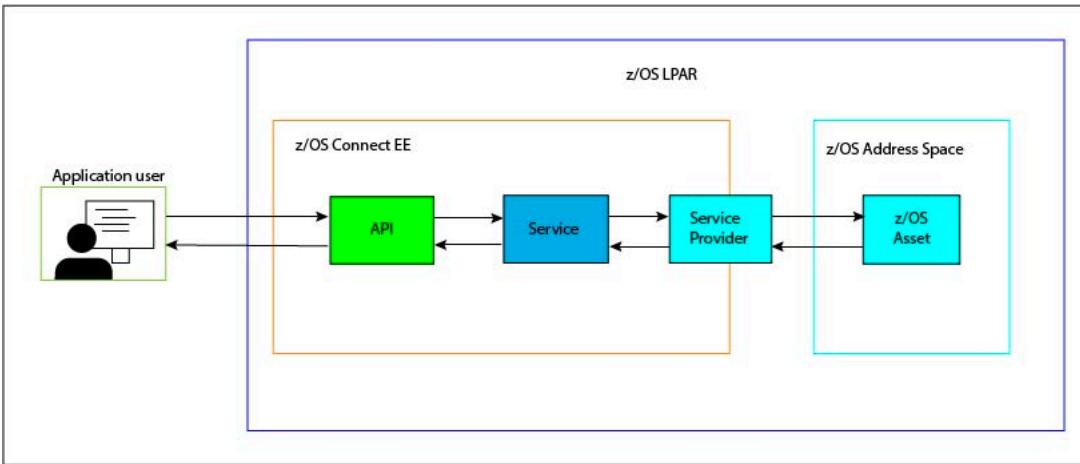
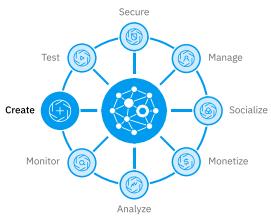
Auto Create GraphQL Interfaces from REST APIs



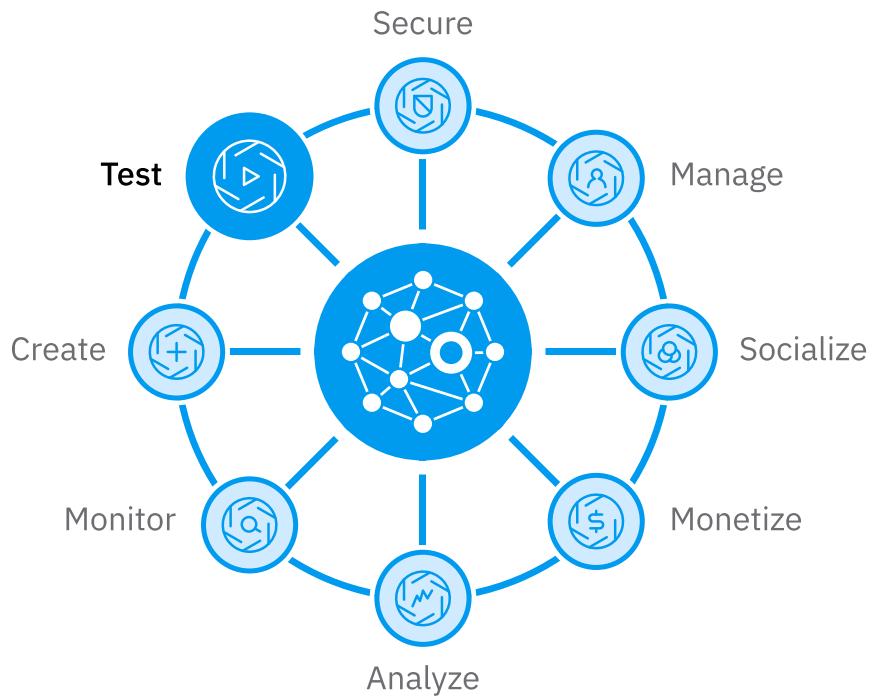
- Re-use existing REST interfaces to auto create GraphQL interface
- Simplified user experience through open source Loopback tooling
- CLI for CI/CD automation to generate GraphQL schema with Loopback module to support dynamic enforcement



Integration with Mainframe*



*IBM zOS Connect is an optional add-on



API Management

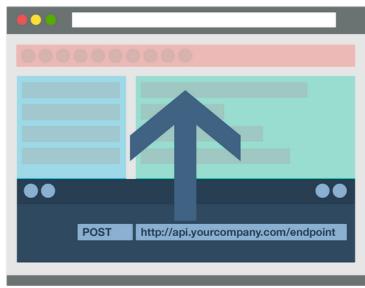
IBM API Connect

Test

API Test and Monitor



Let's Get Started!



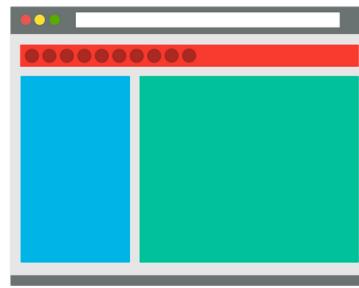
Quick start from an API call

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
Oct 23/2018 @ 08:30:02

🔔 Notifications

✓ You (Murali_Sitaraman) will be notified for any failure

i 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

The screenshot displays the IBM API Connect Test and Monitor interface. On the left, the 'Monitor' tab is active, showing a single test step: 'GET to https://us-east.apitest.apiconnect.ibmcloud.com/app/api/examples/retail/products'. On the right, the 'Tests' tab is active, showing a 'Test Payload' configuration. The payload is defined as follows:

```
GET to https://us-east.apitest.apiconnect.ibmcloud.com/app/api/examples/retail/products
GET REQUEST
Mode: json Var: payload Expect: -
Params: []
```

The assertions defined in the 'Test Payload' are:

- Ae | payload.success must exist
ASSERT EXISTS Mode: - Level: - Stop test if fails: -
- Ae | payload.content must exist
ASSERT EXISTS Mode: - Level: - Stop test if fails: -
- Ai | payload.content.products must be array
ASSERT IS Mode: - Type: array Level: - Execute only if item exists: - Stop test if fails: -
- for each in → payload.content.products
the nested assertions will be executed
- Ai | _1 must be integer
ASSERT IS Mode: - Type: integer Level: - Execute only if item exists: - Stop test if fails: -

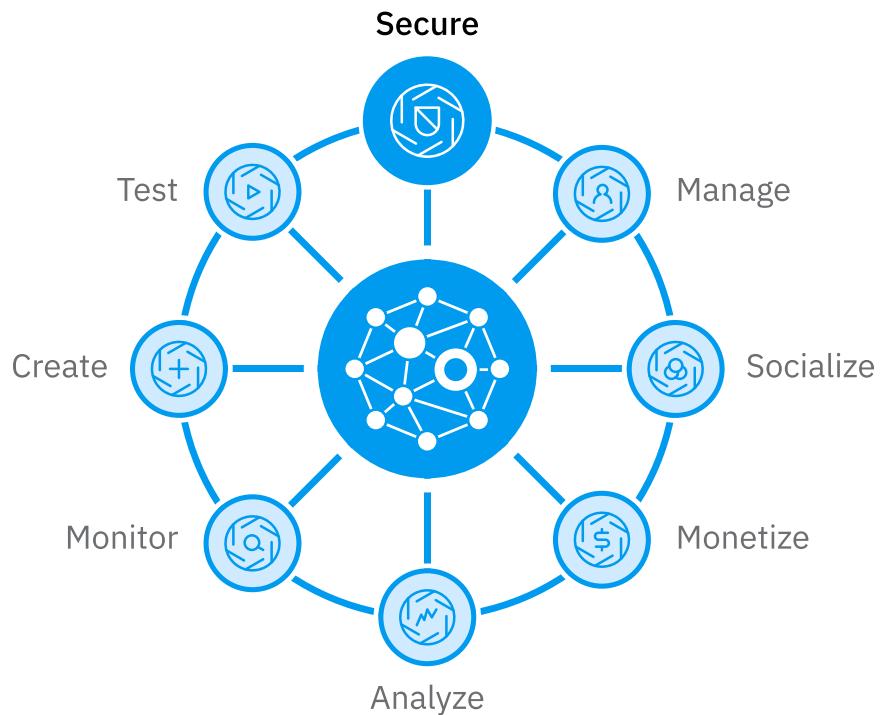
Test for availability and response times

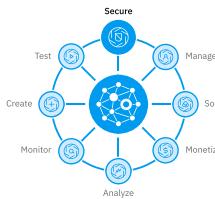
Test for availability and response times & validate responses

API Management

IBM API Connect

Secure





Requirements for an API Gateway

An API Gateway needs to be



Secure



High performant



Customizable



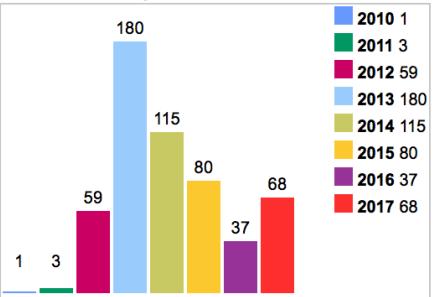
Robust

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

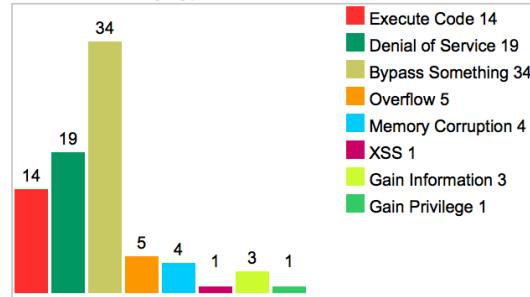
Would we run our App Server directly in the DMZ?

	Product Name	Vendor Name	Product Type	Number of Vulnerabilities
1	Linux Kernel	Linux	OS	1970
2	Mac Os X	Apple	OS	1915
3	Chrome	Google	Application	1523
26	JRE	Oracle	Application	543
28	JDK	Oracle	Application	532

Vulnerabilities By Year



Vulnerabilities By Type

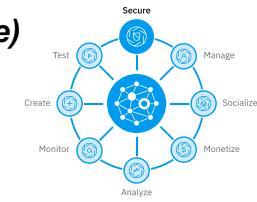


Source: https://www.cvedetails.com/product/19116/Oracle-JDK.html?vendor_id=93

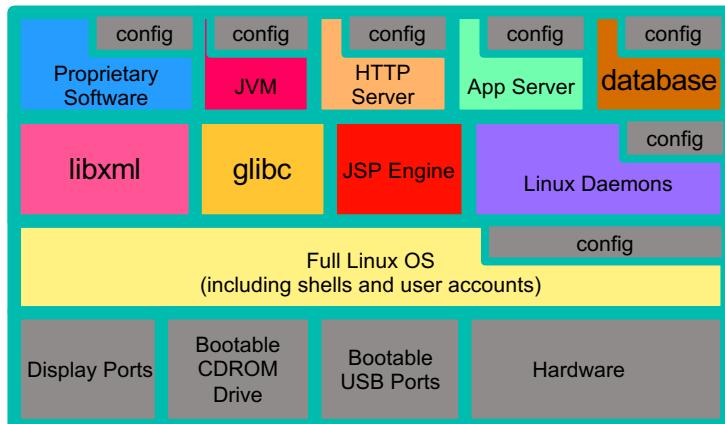
Simple & Secure Architecture

- 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**

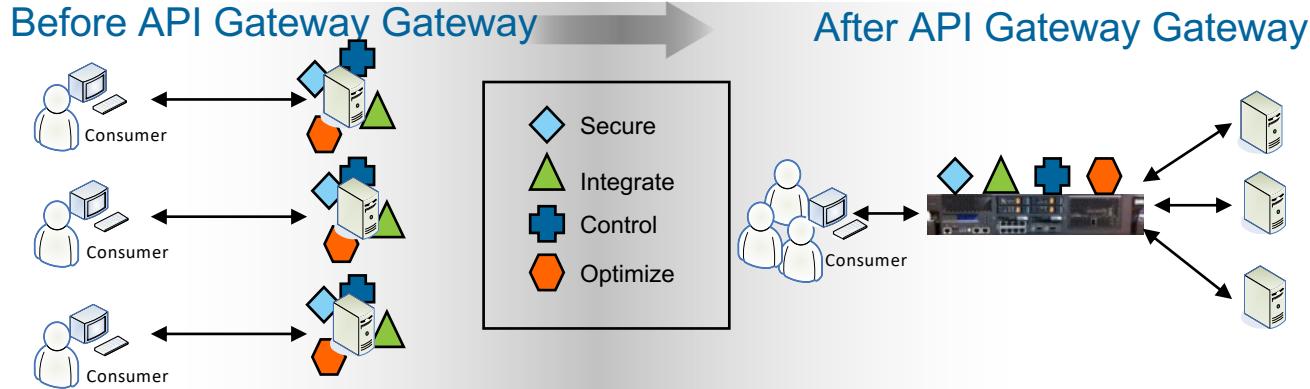
API Gateway Gateways (*Secure & Easy to Manage*)



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

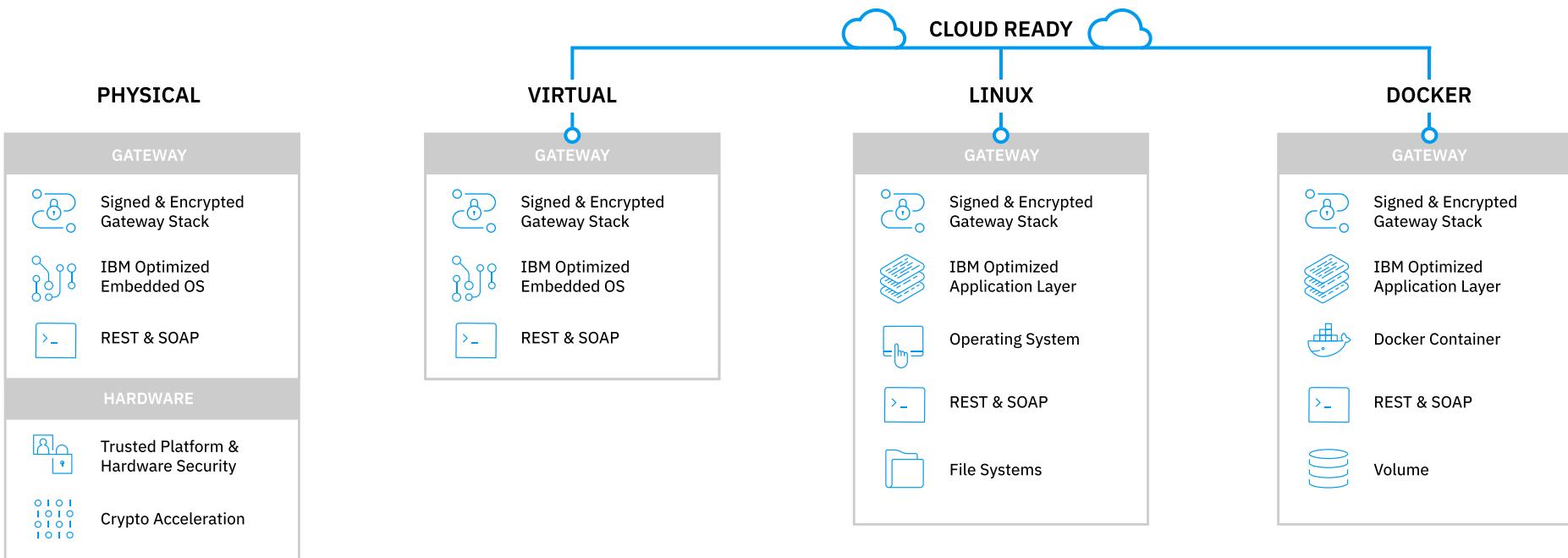
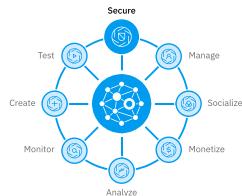
Control

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

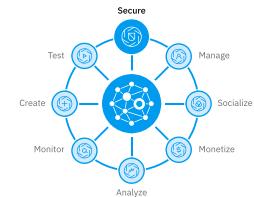
Optimize

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

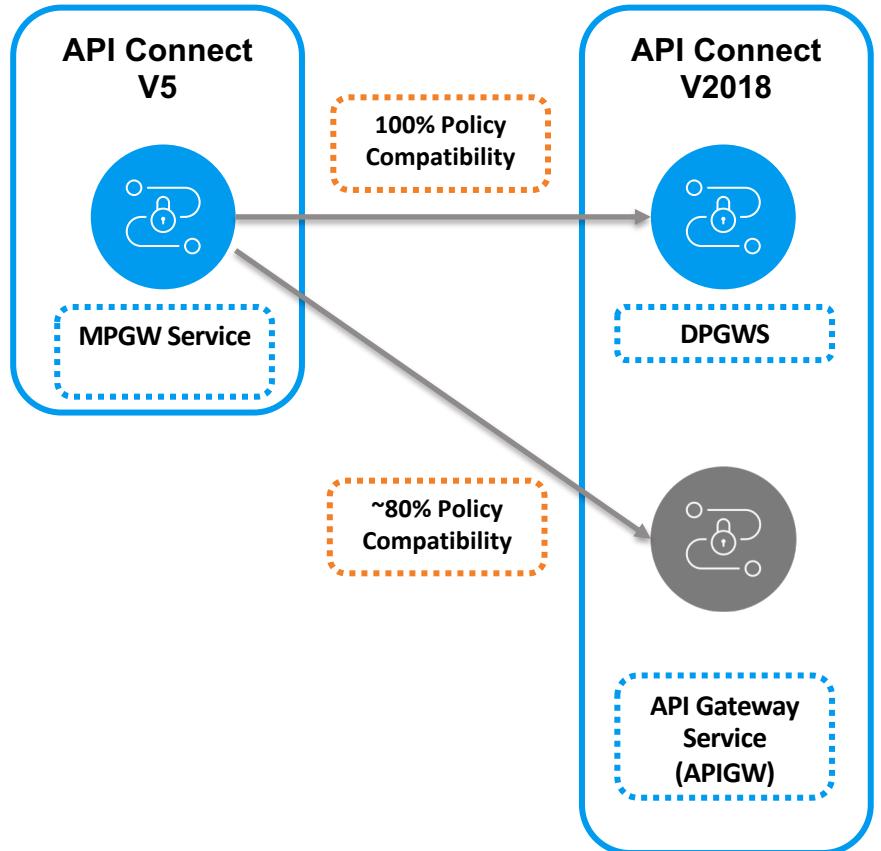
API Gateway Form Factors



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)

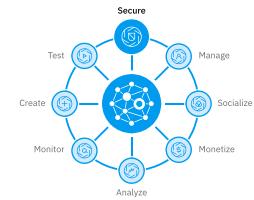


Policies for Enforcement on API Gateway Service

- 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



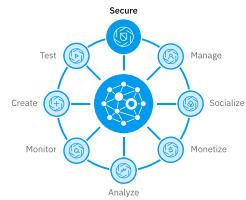
API Gateway
Service (APIGW)



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

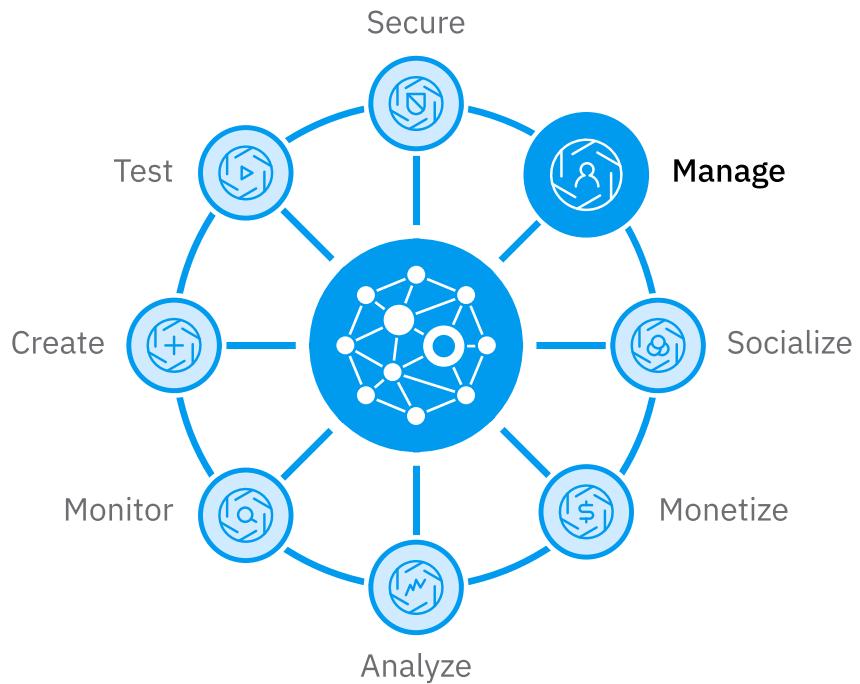
+ Configured outside API Assembly

* 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 (DPGWS)
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

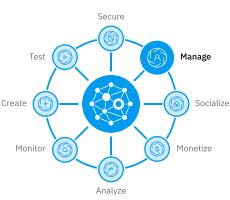


API Management

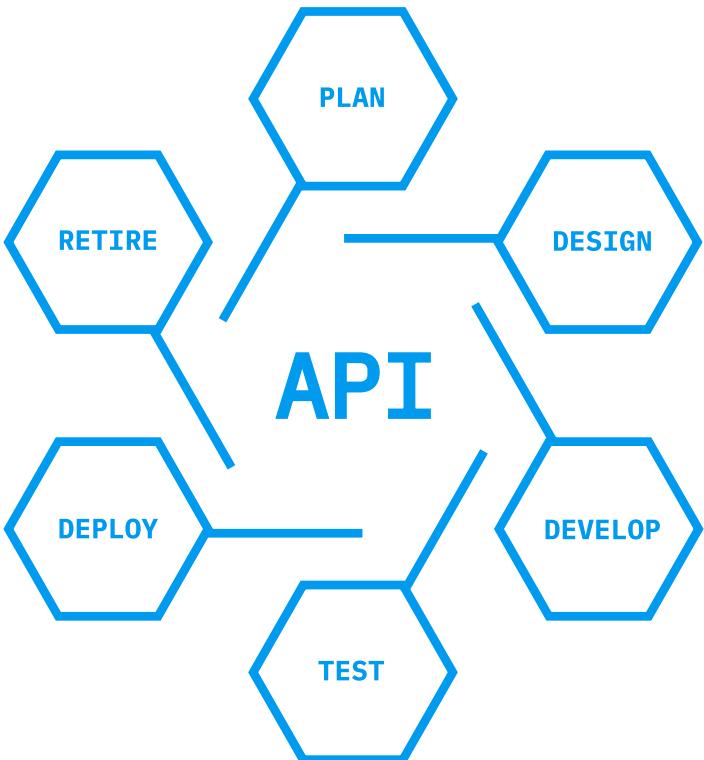
IBM API Connect

Manage

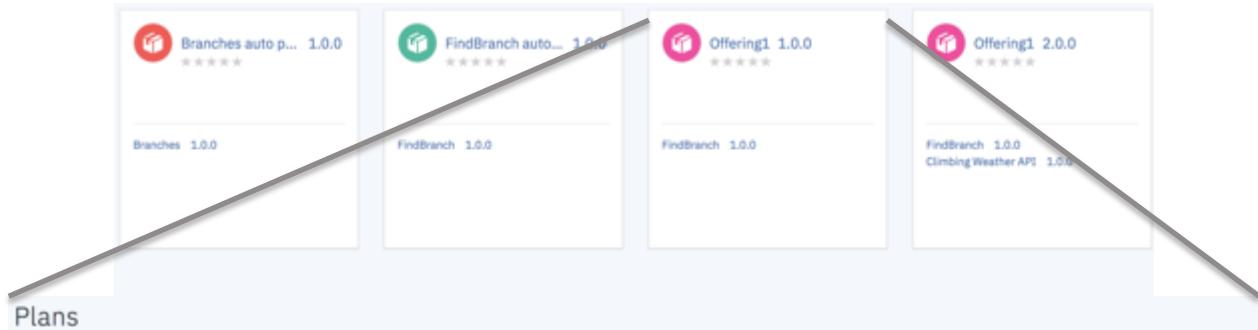
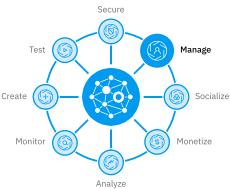
Manage APIs through the API Lifecycle



- **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



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

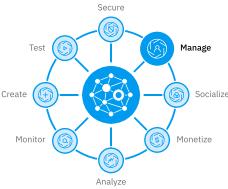
FreeTier	Low Usage	Medium Usage	High Usage
Subscribe	Subscribe	Subscribe	Subscribe

[View details ▾](#)

APIs	FreeTier	Low Usage	Medium Usage	High Usage
	Subscribe	Subscribe	Subscribe	Subscribe
› FindBranch 1.0.0	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

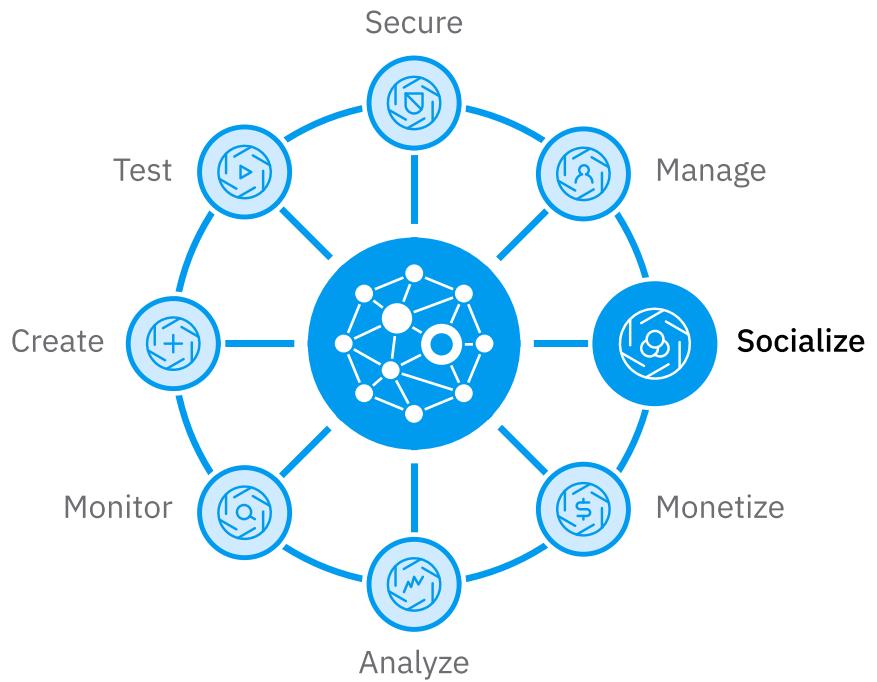
Catalog Sandbox

Select the spaces and gateway services to publish this product to

<input checked="" type="checkbox"/> SPACE
<input checked="" type="checkbox"/> Space 01
GATEWAY SERVICE
<input checked="" type="checkbox"/> Gateway Service US Main
<input checked="" type="checkbox"/> Gateway Service US West
<input checked="" type="checkbox"/> Gateway Service US Central
<input checked="" type="checkbox"/> Gateway Service US East
> <input type="checkbox"/> Space 02
> <input type="checkbox"/> Space 03
> <input type="checkbox"/> Space 04
> <input type="checkbox"/> Space 05
> <input type="checkbox"/> 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](#)

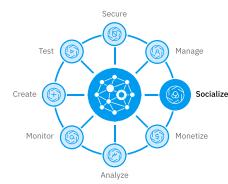


API Management

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

API API Connect
Developer Portal

API Products Apps Blogs Forums Support

Organization Andre Developer

Search

API Products

Filter by categories:

- Comments (3)
- Commits (0)
- Development (8)
- Security (1)
- API Management (1)
- IoT (1)
- Finance (9)
- DevOps (1)
- Integrate (1)
- Mobile (1)

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

API 1.0
API 1.0
API 1.0
API 1.0 ...

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

API 1.0
API 1.0
API 1.0
API 1.0 ...

Product 1.0.0

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API 1.0
API 1.0
API 1.0
API 1.0 ...

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

API 1.0
API 1.0
API 1.0
API 1.0 ...

Pet Adoptions 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

Medical records 1.0
Swagger pet store 1.0
Volunteer work 1.0

[View pricing plans](#)

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

API 1.0
API 1.0
API 1.0
API 1.0 ...

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

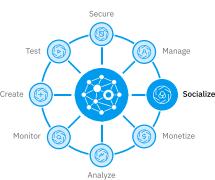
API 1.0
API 1.0
API 1.0
API 1.0 ...

Product 1.0.0

Sed quia sapientia bacon ipsum dolor amet
producit capicula tongue salami doner. Rump
strip steak cupim, pork chop corned beef.

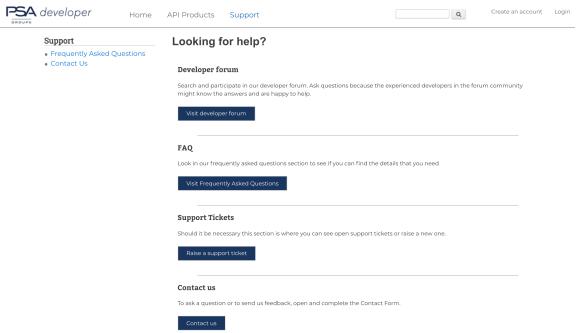
API 1.0
API 1.0
API 1.0
API 1.0 ...

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/>



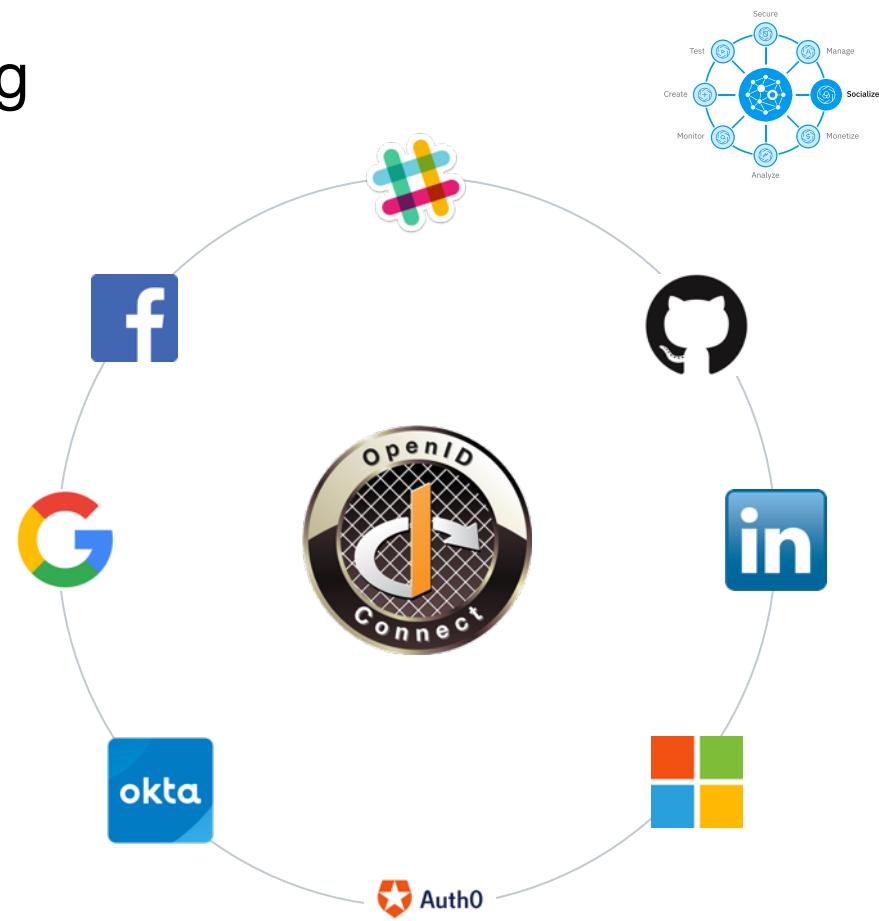
<https://developer PSA-peugeot-citroen.com/inc/help>

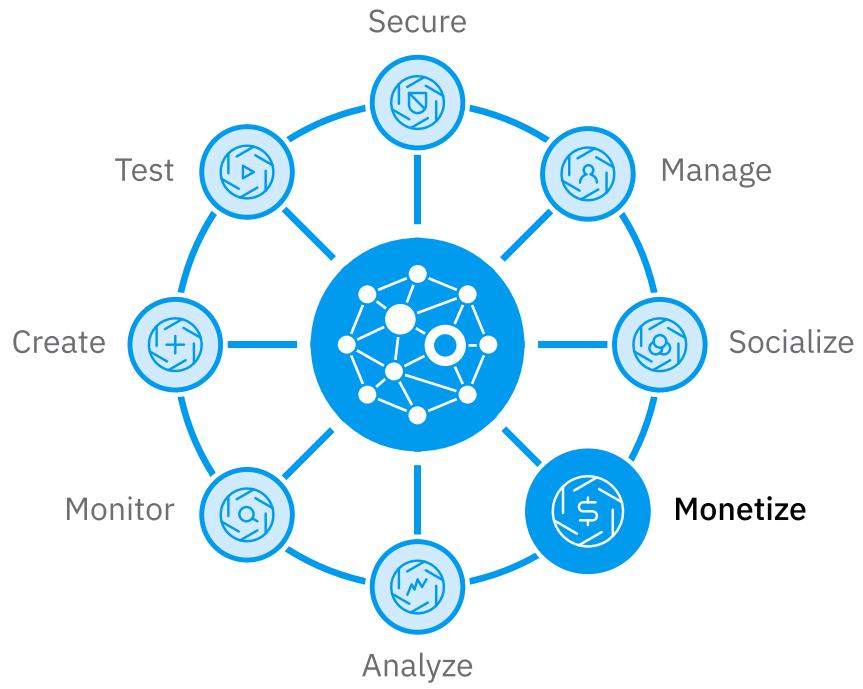


<https://developer.royalmail.net/api>

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.





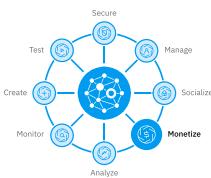
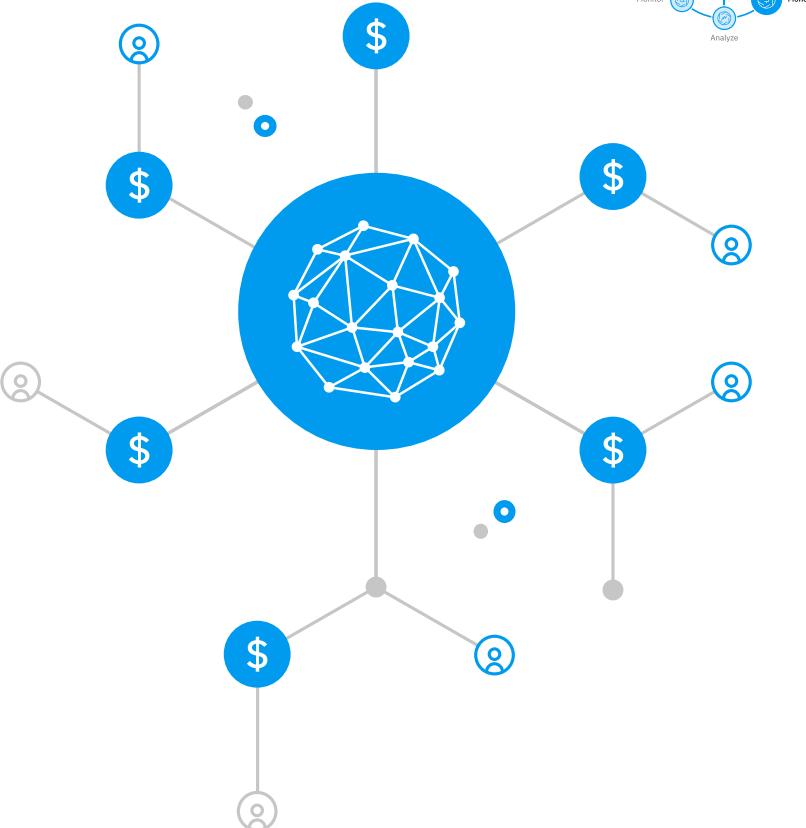
API Management

IBM API Connect

Monetize

Monetize your API Calls

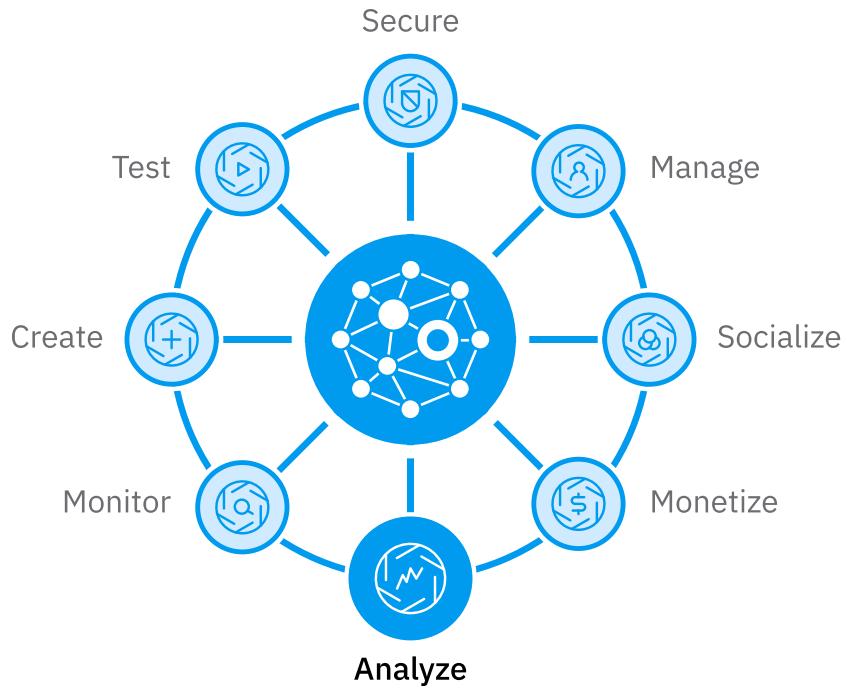
- **Modern approach & intuitive user experience** providing flexibility to define pricing details
- **Subscription pricing support** to enable recurring payments, popular in SaaS go-to-market strategies
- **Stripe integration OOTB** for smooth user-onboarding and payment collection
- **Analytics, customizable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



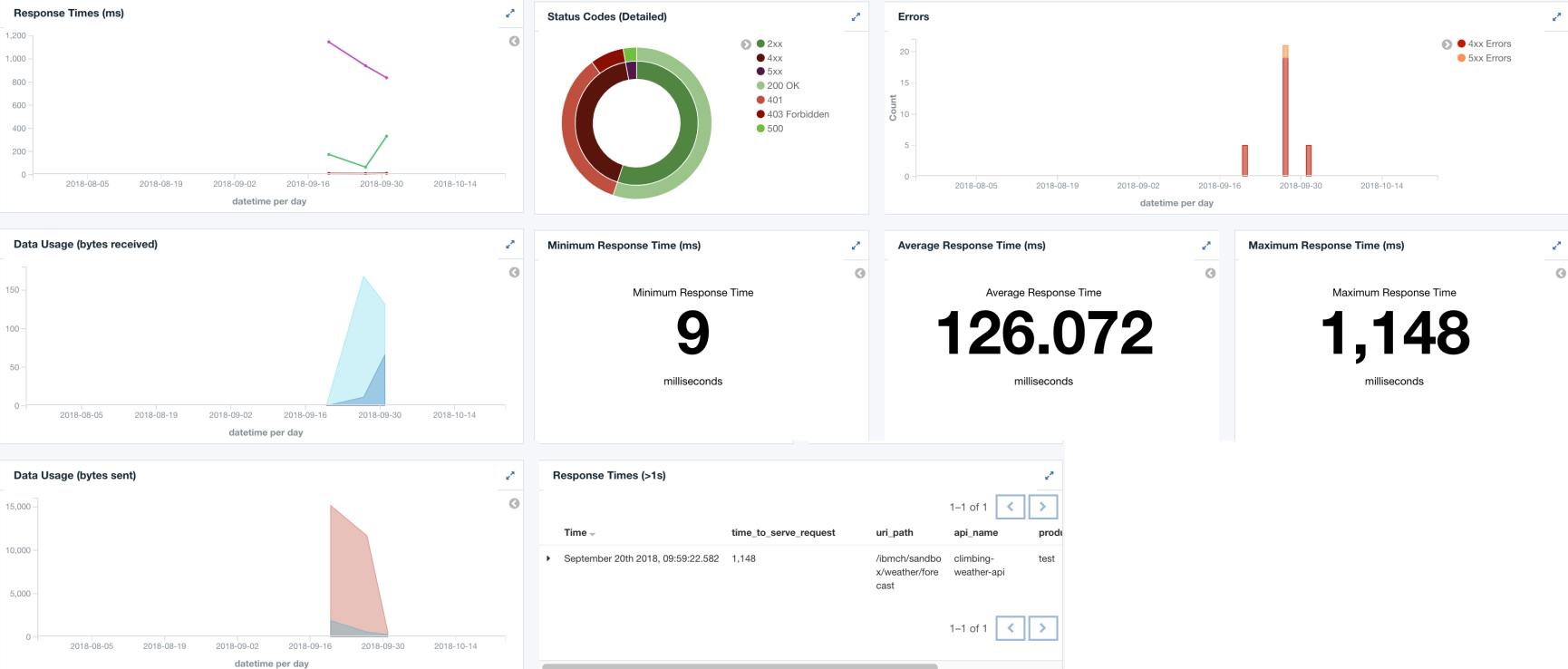
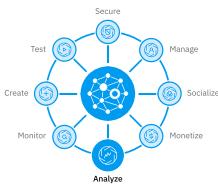
API Management

IBM API Connect

Analyze



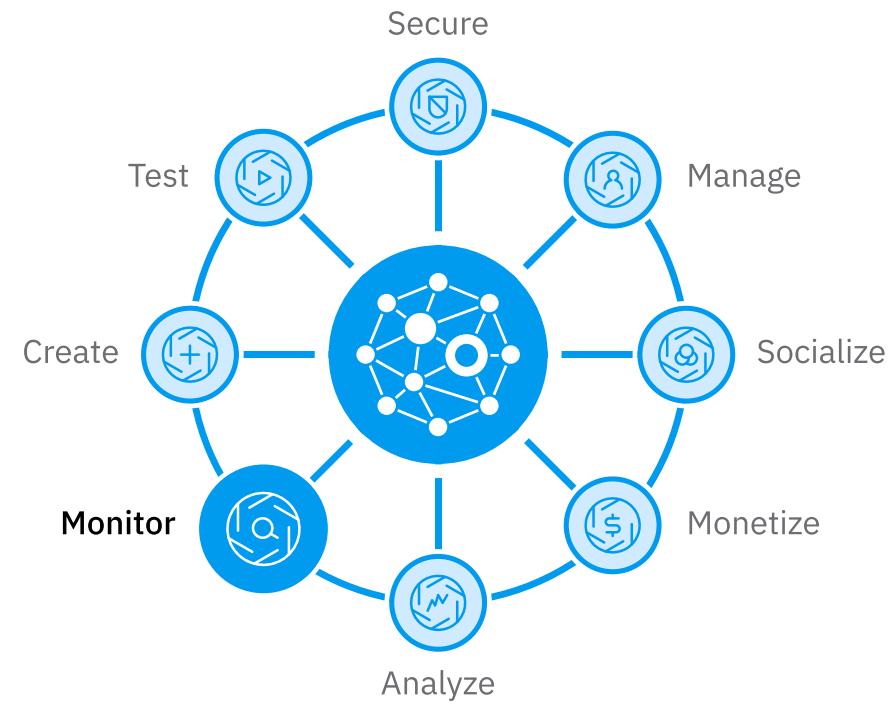
Dashboards – out of the box and custom



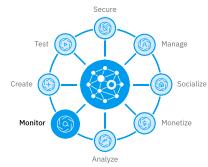
API Management

IBM API Connect

Monitor



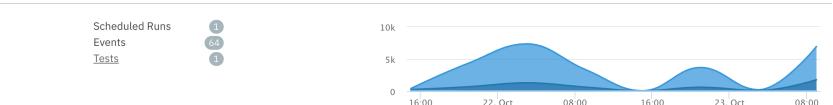
API Test and Monitor



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	●



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 shows the 'Transactions' tab of the IBM DataPower Operations Dashboard. The interface includes a search bar at the top right with filters for 'API Name', 'API Version', and 'App Name'. Below the search is a table with columns: Time, Device, Catalog/Space, Product, Plan, API, APP Name, Status, Response, Elapsed (ms), Client IP, GL Trans. ID, and a 'show more' button. The table lists several transaction entries, such as account creation and catalog access, with details like device ID, timestamp, and response status.

The screenshot shows the 'DevOps Services Portal' tab of the IBM DataPower Operations Dashboard. It features a sidebar with service names like 'AccountStatus_MHv9MPGW' and 'AccountStatus_WH58WSP'. The main area displays a table of selected services with columns: Selected Services, Device, Domain, DP State, and Admin State. A modal window titled 'Import Service AccountStatus_MHv9MPGW' is open, showing fields for 'Import File' (with a 'Browse...' button and 'Upload' checkbox), 'Deployment Policy' (with a dropdown menu showing 'Nothing selected'), and 'Dry Run Before' (with a checked checkbox). The background shows other service entries and a 'Actions' menu.

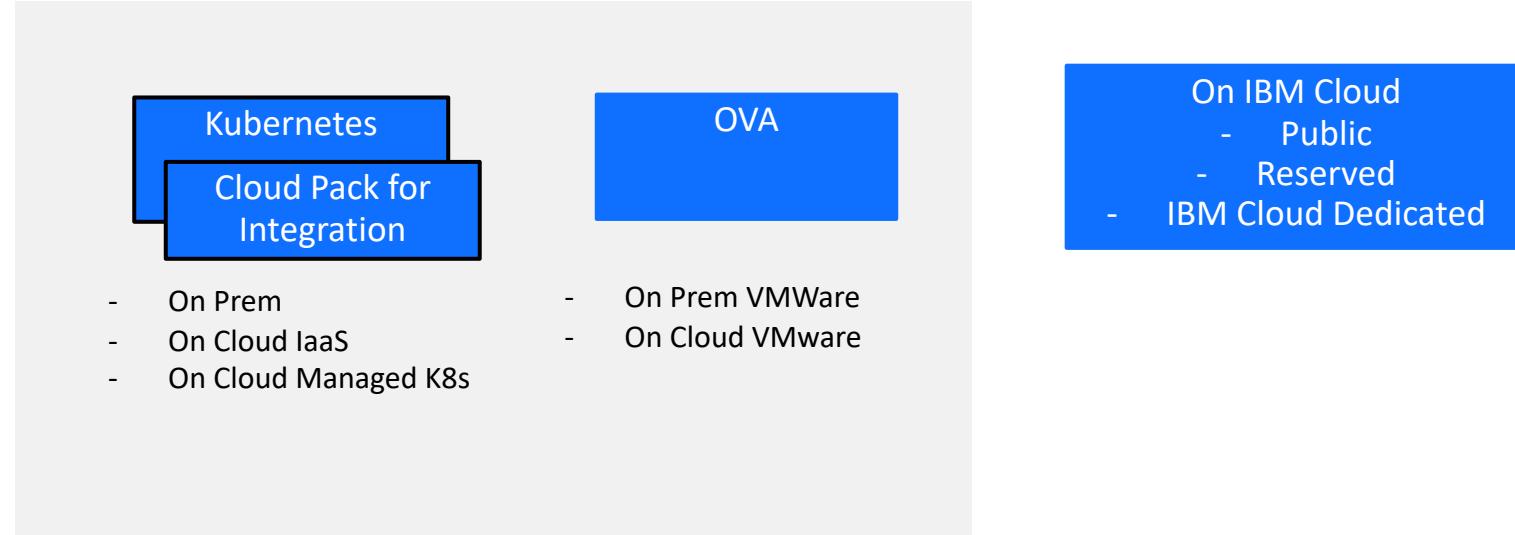
API Management References

Capability Matrix

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

API Management Topologies

Form Factors



On the Cloud: A range of powerful options



APIC on IBM Cloud

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

Flexibility

Fully multi-tenant shared infrastructure;
Faster / automated deployment



APIC Reserved Instance

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

Value



APIC on IBM Cloud Dedicated

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

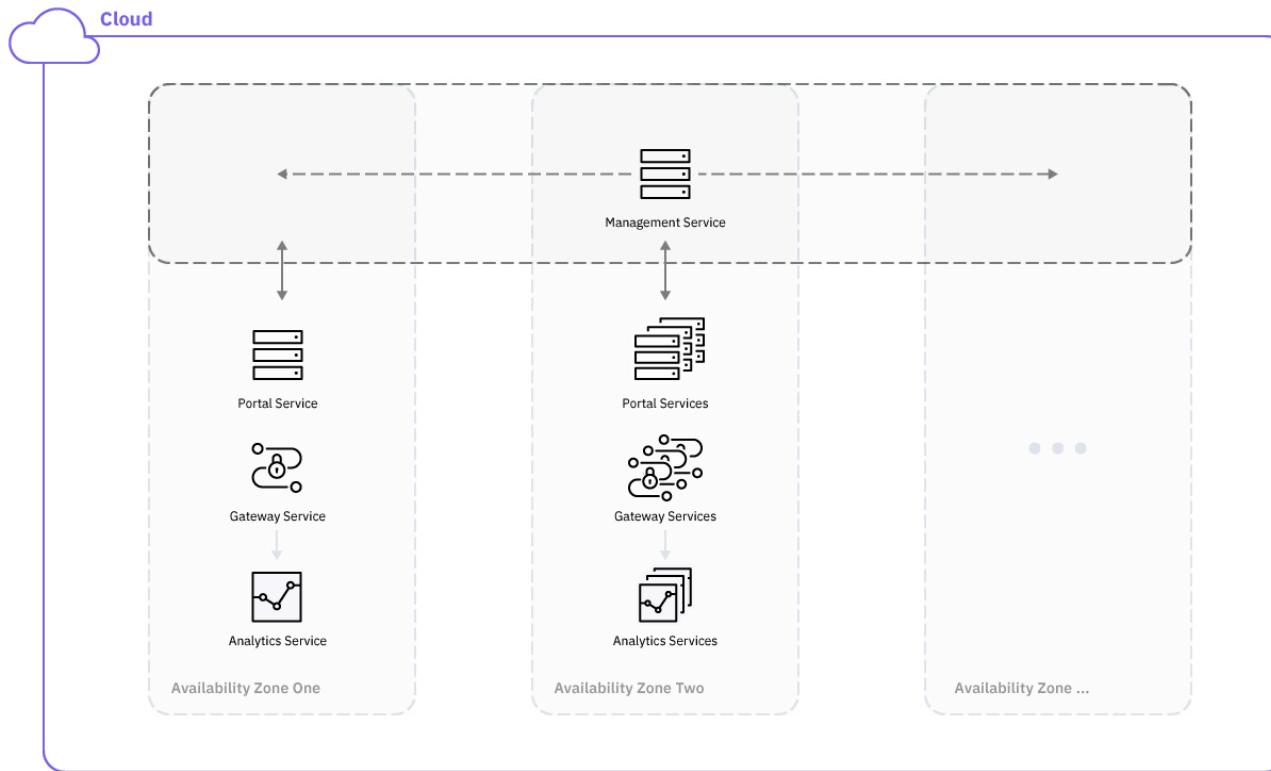
Isolation

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

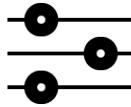
APIC Reserved Instance: Key benefits for clients



Accelerate time to value

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

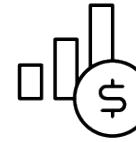
We'll even migrate your workload from IBM Cloud public!



Get more control

Create user-defined policies, configure syslog targets for DP logs, use your 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.

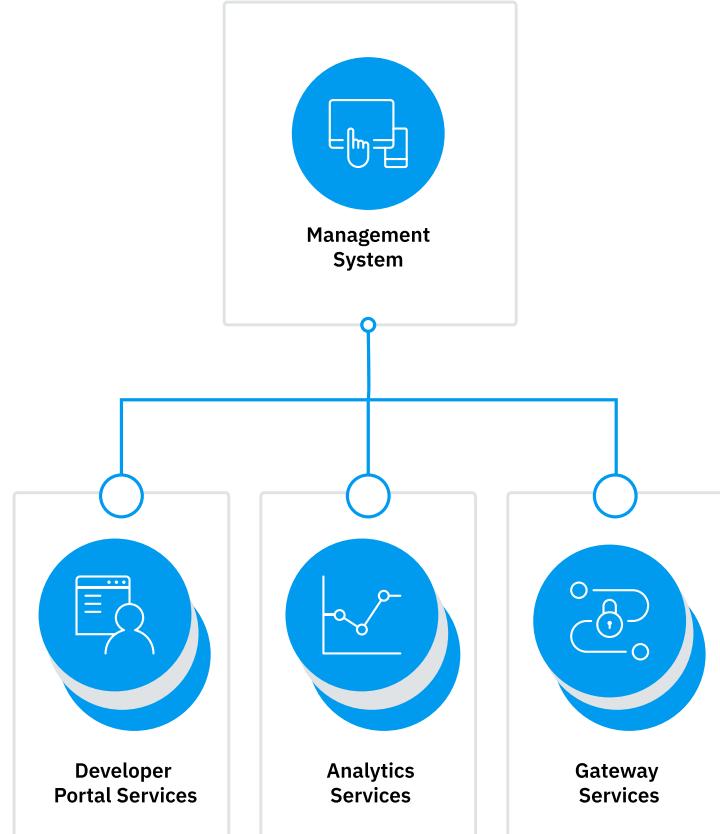
We even have a ramp-up option to help you start small and scale up usage with time.

APIC Reserved Instance: Highlights

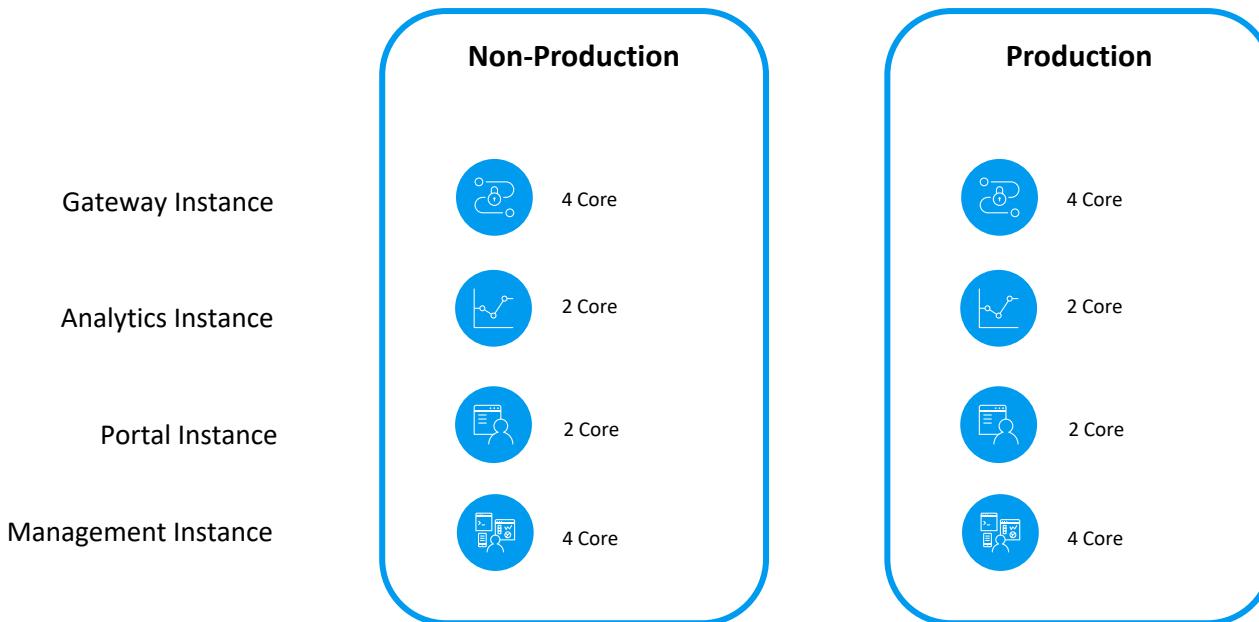
Datacenters Global locations 30+	SLA Availability; single datacenter 99.5 %	HA Single datacenter (included) 	RTO Disaster Recovery 24 hrs	Bandwidth Outbound (included) UNLIMITED
Migration from IBM Cloud public (available) 	SLA Availability; dual datacenter 99.95 %	HA Dual datacenter (additional) 	RPO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

API Connect V2018.1: Component options

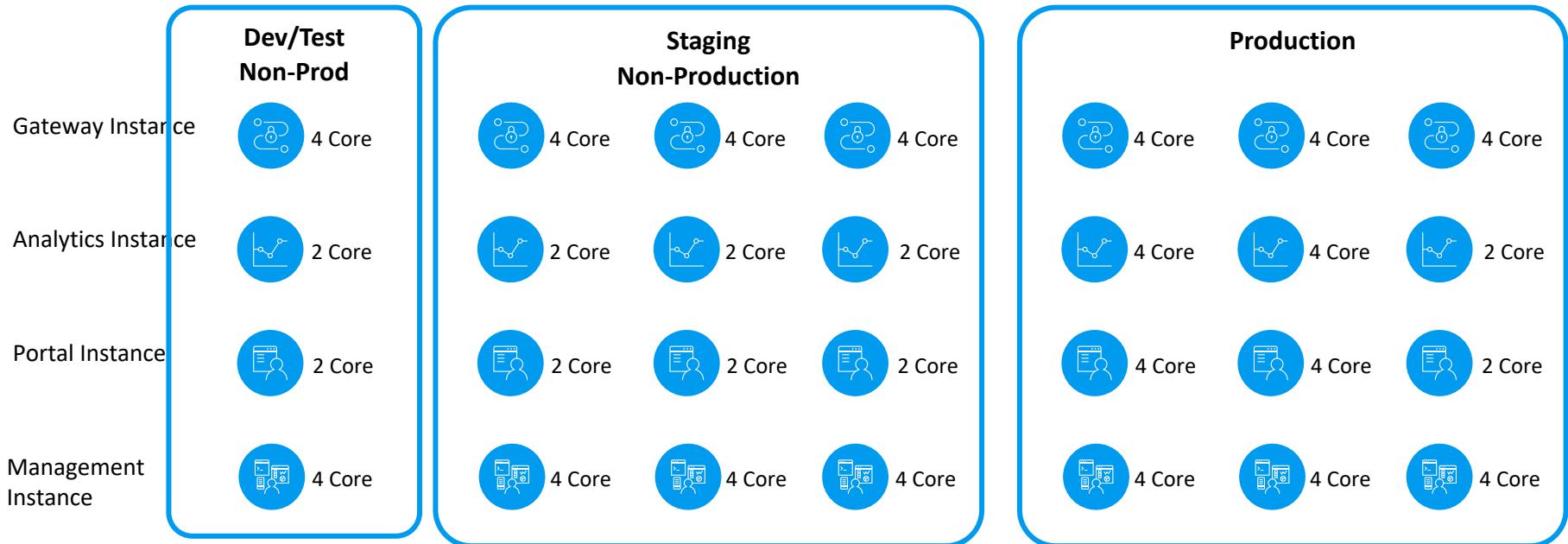
- **Standalone API Analytics component** to scale independently based on API project growth
- **Zero to N portal clusters** can be configured to a API Connect deployment to align with API project growth
- **Native install of APIC toolkit** for enhanced user experience
- **V5 to V2018 Upgrade** through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



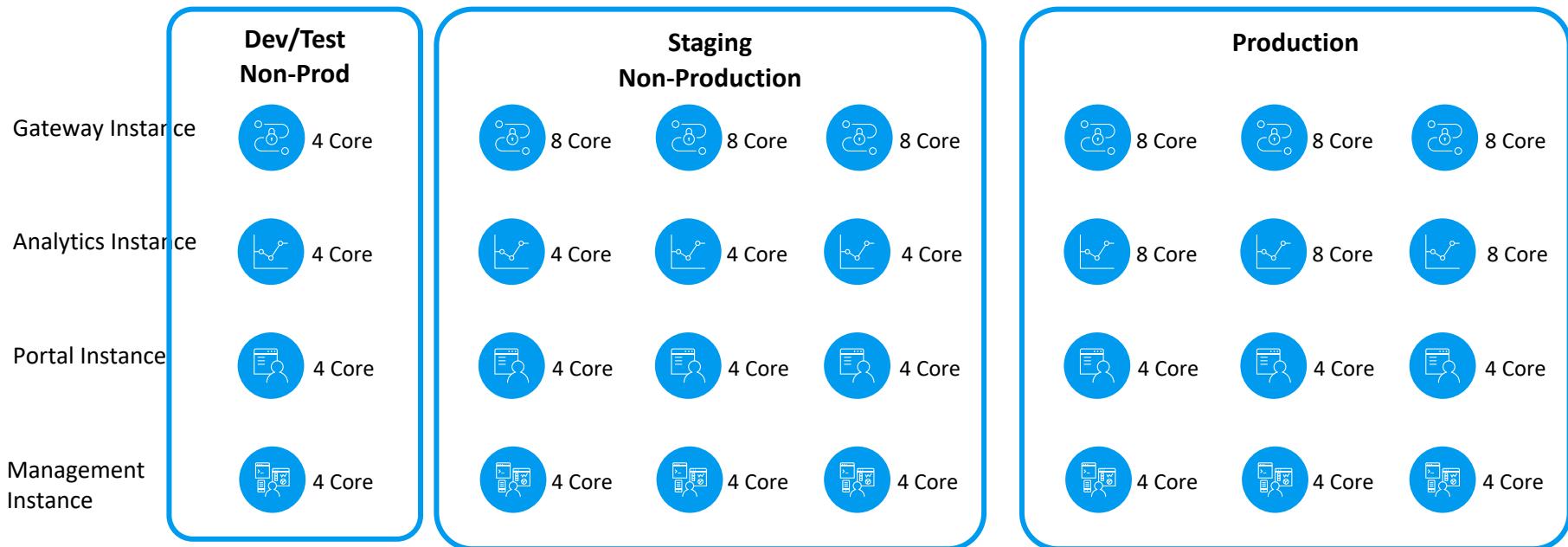
Starter T-Shirt- Topology



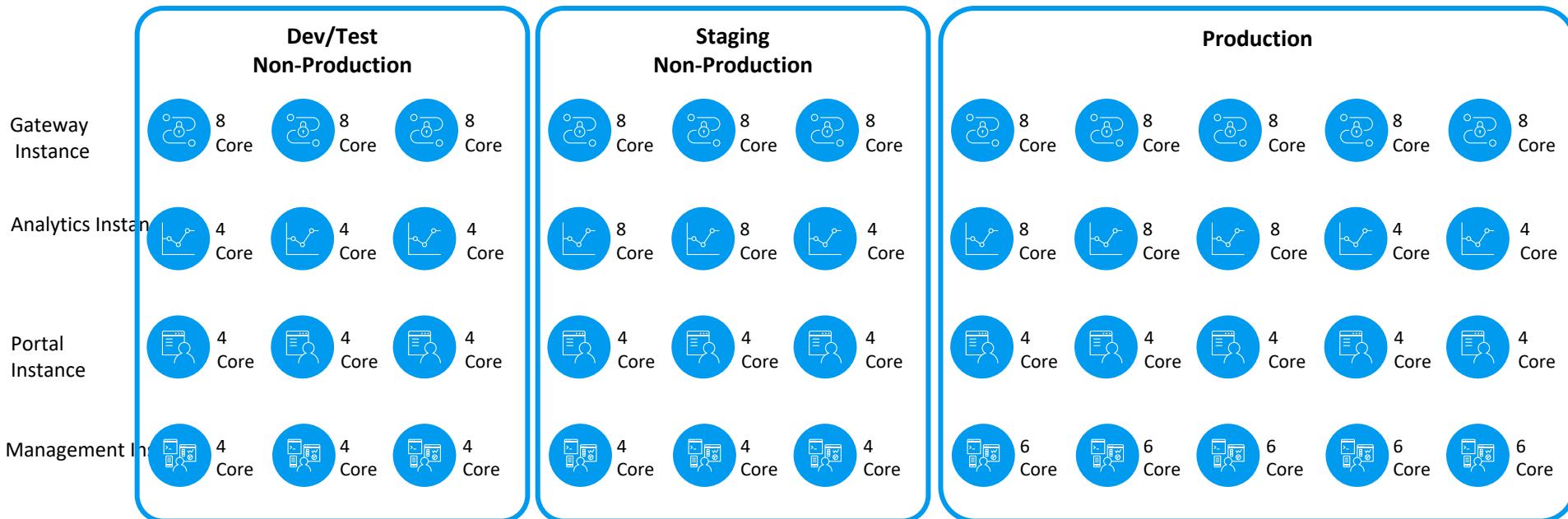
Small T-Shirt- Topology



Medium T-Shirt- Topology

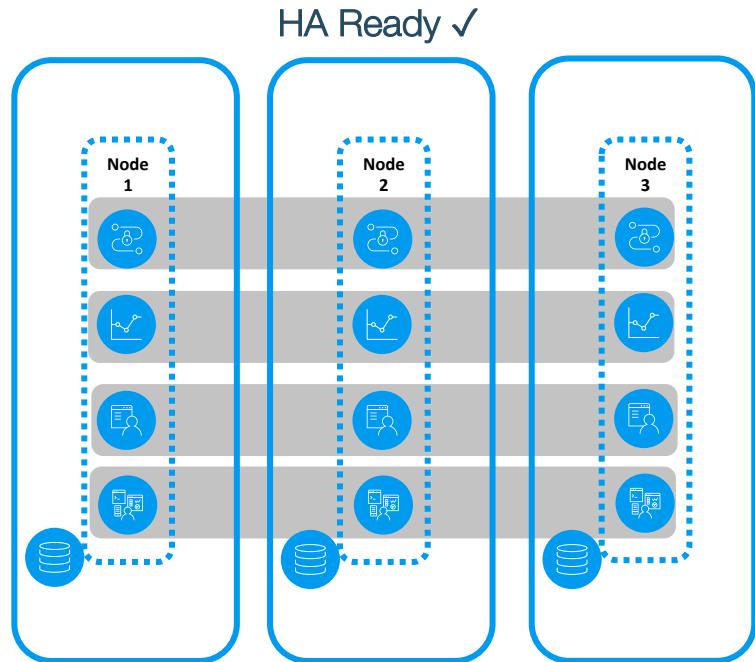


Large T-Shirt- Topology



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



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

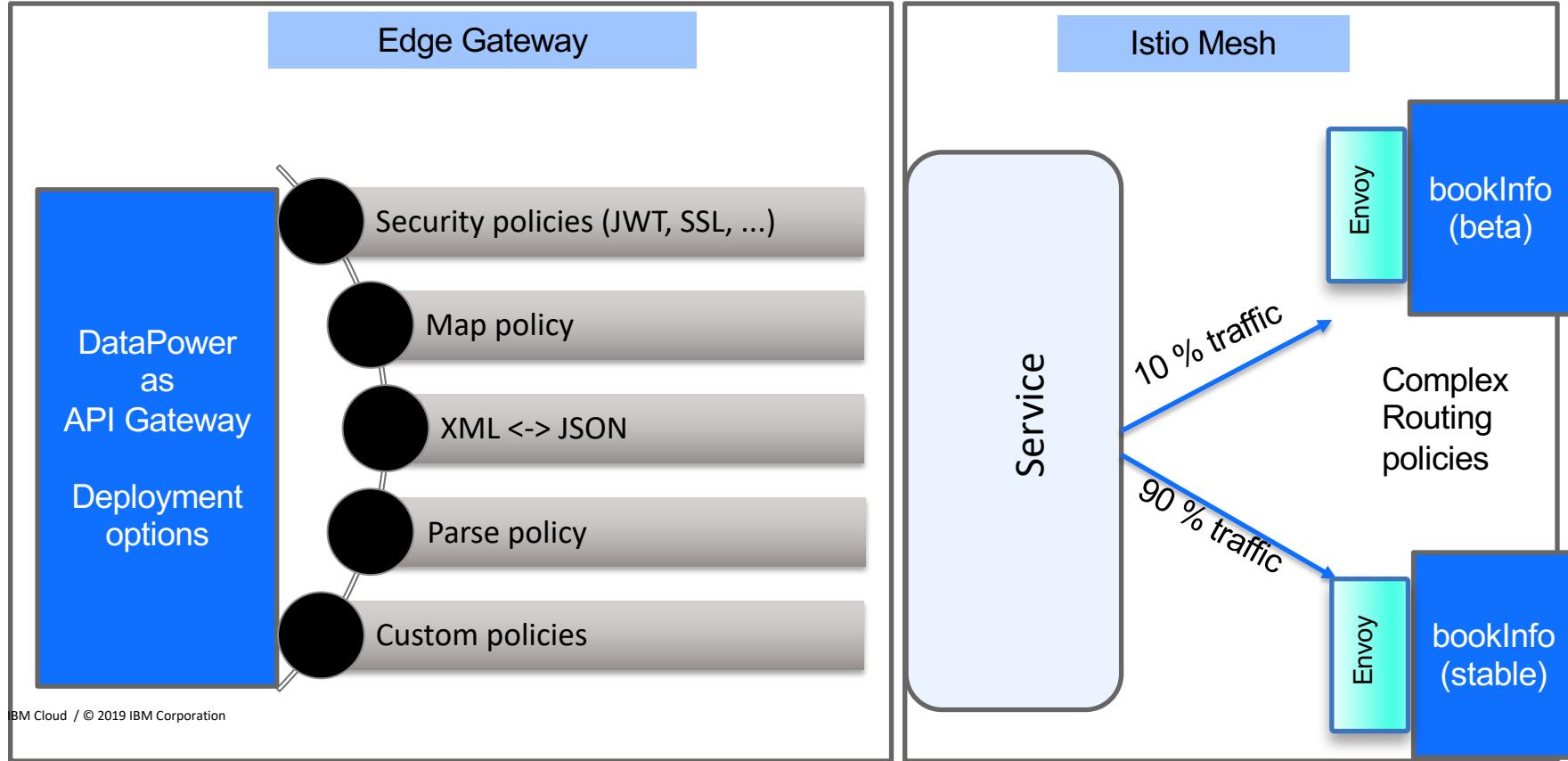
Year.Qtr	Update	Release Type	GA Date	End of Fix Support	End of Support
2018.1.0		CD	Mar 30, 2018	Apr 6, 2018	NA
2018.2.1		CD	Apr 6, 2018	Apr 13, 2018	NA
2018.2.2		CD	Apr 13, 2018	Apr 20, 2018	NA
2018.2.3		CD	Apr 20, 2018	Apr 27, 2018	NA
2018.2.4		CD	Apr 27, 2018	May 4, 2018	NA
2018.2.5		CD	May 4, 2018	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

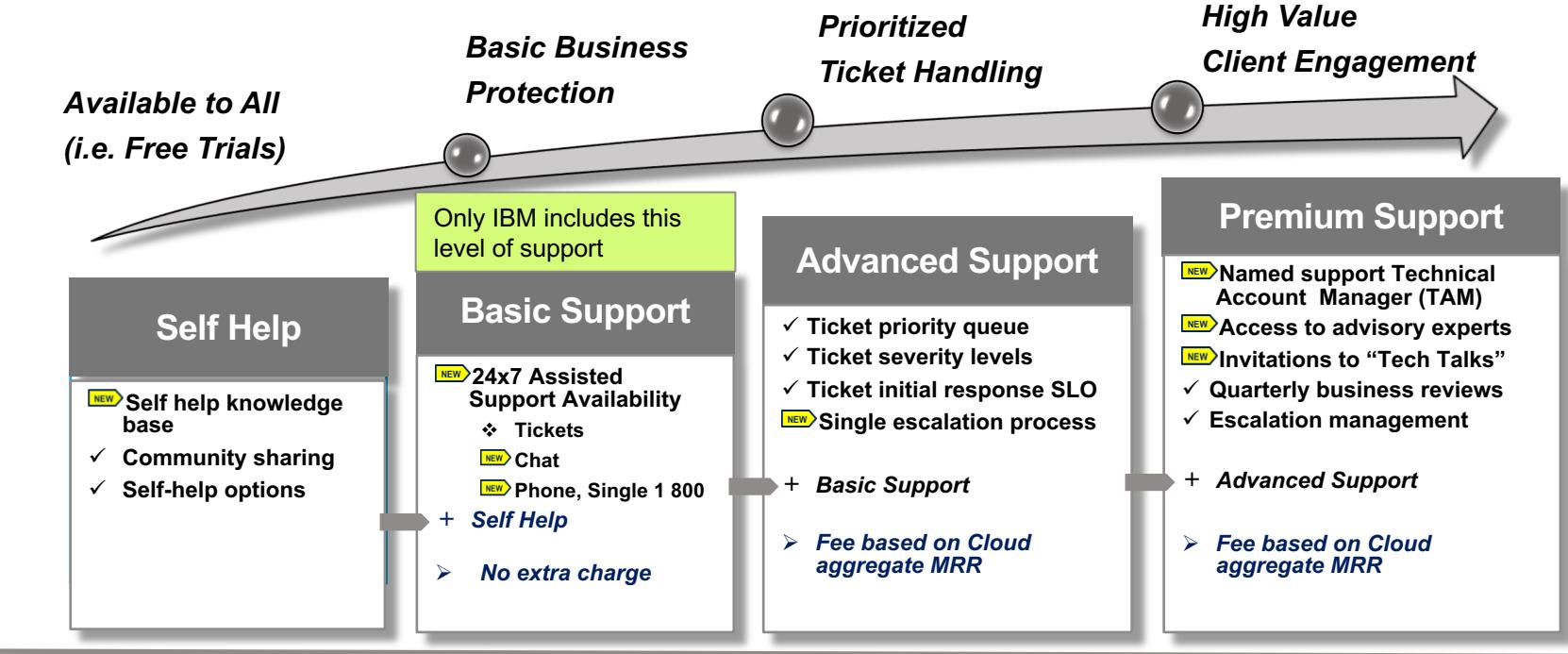
IDG and Istio

Bringing API and Istio worlds together



API Management Support

IBM Cloud Support – Tiered Offerings



✓ Improved Client Support Experience with self help services

✓ Integrated Client Support Experience with every Cloud subscription

✓ Aligned Client Support Experience with Client's business priorities

✓ Client Engagement aligned with Client business outcomes

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	Critical business impact or service is down 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	Significant business impact 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	Minor business impact 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	Minimal business impact An inquiry or non-technical request.	Premium: Within 4 hours Advanced: Within 8 hours Basic: 24 hours

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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.

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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.

