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IBM Cloud

Agenda

Situation@Client – motivation for API Management

API Management & of IBM Cloud Integration



API Connect overview/intro

API Lifecycle

- Create
- Test
- Secure
- Manage
- Sozialize
- Monetize
- Analyze
- Monitor

What is an API? and its definition is expanding

API stands for *Application Programming Interface*.

It defines how other components or systems can use it (Swagger / Open API). It defines the kinds of calls or requests that can be made, how to make them, the data formats that should be used, the conventions to follow etc.

We know this... but,

Infact, we should call them as :

- “Business APIs” (the correct term) are created to understand interfaces focused on business recognizable assets – e.g. a product, an order, a customer, etc.
Interface targeted towards understanding the consumer of API, and not provider application(s)
- “Web APIs” often used because many of these “business APIs” use web protocols

What **is** changing / new:

- APIs were strongly associated with REST / JSON, some might have included SOAP / XML as a second option.
- API implementation options are expanding. Now there are many additional styles of API: Events, Async APIs, GraphQL (API query language), Web Sockets, RPC, and even Files may be treated as Business APIs.

The need for Integration increases



SaaS
Adoption



IoT



Process
Automation



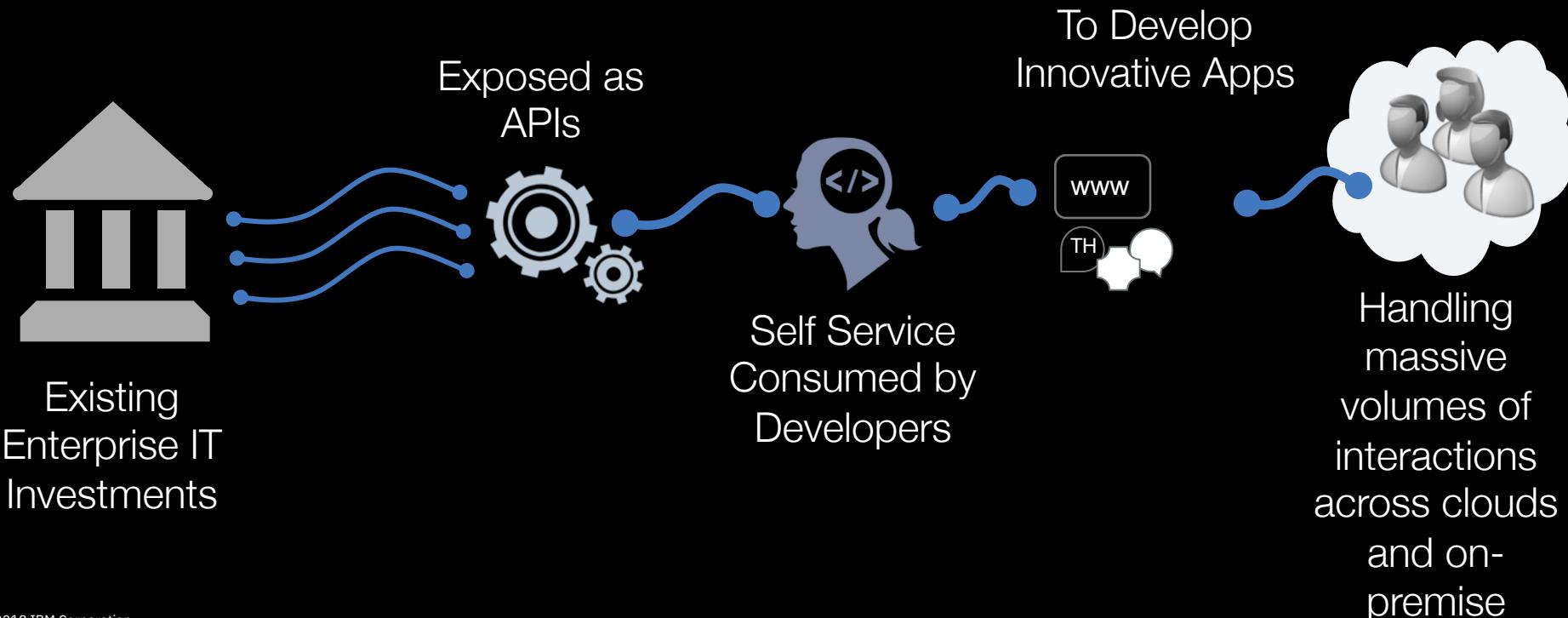
AI



Micro services
Design

API Economy Value Chain

Basic Concept – Shift focus to Customers



Challenges with Multi-Speed IT

Fast Speed



- What business outcome is expected?
- How will business & IT roles be impacted?
- How to manage the consumption of APIs across the enterprise?
- How to provide self-service for internal & external developers?
- How to enforce security at runtime?
- How to throttle and provide controlled access?
- How to introduce change with new versions?
- How do I know who is using my service and how much?
- How much should I charge for access to my service?

Steady Speed



An API Strategy to ...



Speed application development and ongoing app evolution via a library of reusable APIs



Securely expose systems of record apps and data to Mobile, Web, IoT, & cloud apps

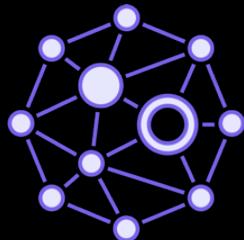


Publish APIs to expand brand reach and tap into broad developer & partner ecosystems to drive innovation



Enable new business channels by monetizing data & algorithms

What is IBM API Connect?



IBM API Connect

The Scalable Multi-Cloud API Platform

A complete, modern and intuitive API lifecycle platform to create, securely expose and manage APIs across clouds to power digital applications



Create

Automatically create and test APIs to expose data, microservices, enterprise applications and SaaS services.



Secure

Easily apply built-in and extensible policies to secure, control and mediate the delivery of APIs with unmatched scale.



Manage

Rapidly publish, lifecycle govern, socialize, analyze, monitor and monetize APIs with built-in capabilities.

Who uses API Management?

API Providers



SHAVON
API DEVELOPER



STEVE
API PRODUCT MANAGER



WILL
API OPERATIONS

API Consumers



ANDRE
APPLICATION
DEVELOPER

There are two kinds of people in the world, we must serve both

An Inherent Tension



VS



Openness

Reuse code, gain insights
from customer's data,
make it easy to interact
with existing databases

Security

The risk and fall-out of a
data-breach can
outweigh gains from
openness

There is an inherent tension that we must answer

API Needs



Secure

Protect databases, PII, health/financial data, business secrets, personal data



Manage

If an API is changed it will impact EVERYONE – who can change an API? Who can approve it? Who can change security settings?



Share

Need to be able to quickly share APIs, without impacting security and performance of underlying system

There are three key needs that we must meet

API Management –must haves



Secure: API Gateway

Provide security for apps + databases, many options for authentication and authorization



Manage: API Manager

API Lifecycle management and organizational controls meet security, APIs are treated as products



Share: API Portal

Manage users and app and provide a self-service portal for internal or external developers

There are three capabilities that we must answer these needs with

Big value adds



Hybrid Cloud

Need a solution that can be deployed anywhere, on any cloud, in modern, cloud-native form factors like Kubernetes



Scalable

Platform must be scalable through microservices, saving money and allowing for responsive, multi-cloud architectures

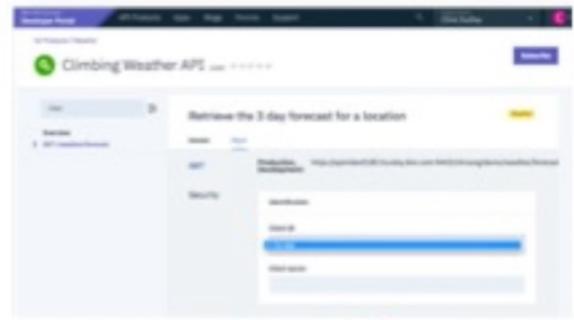
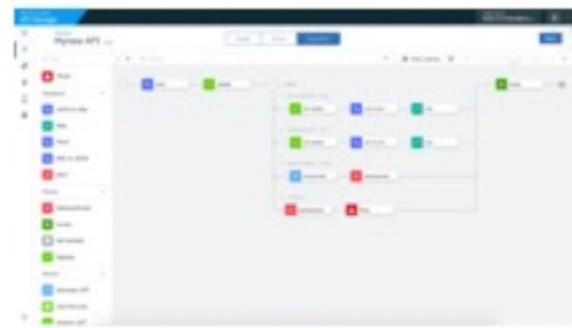


Test and Monitor

See business analytics of the APIs, monetize ones that make sense, test&monitor APIs, to ensure SLAs are met and developers are happy

There are three capabilities that set a solution apart

IBM API Connect



Secure: API Gateway

DataPower API Gateway provides world-class security for backend services and databases



Manage: API Manager

Full lifecycle management
approve users
communicate changes, add
governance



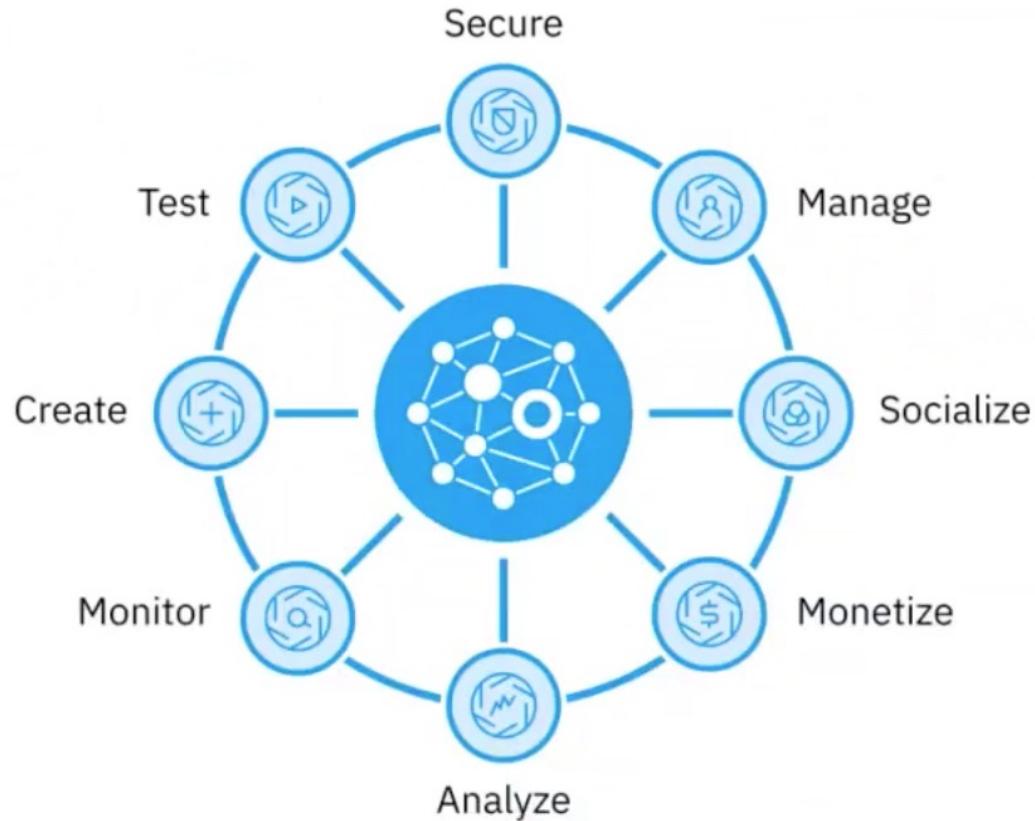
Share: API Portal

Self-service portal for 3rd party developers to sign-up and consume APIs – driving business adoption

API Connect excels at meeting the needs

API Connect Key Capabilities

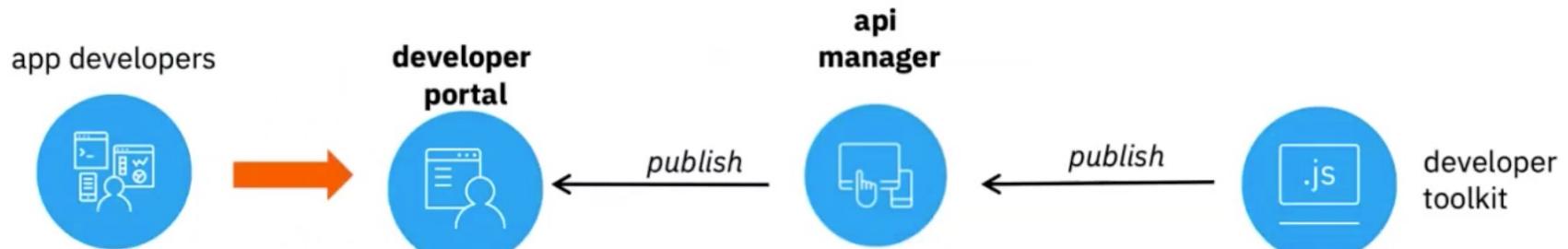
IBM API Connect



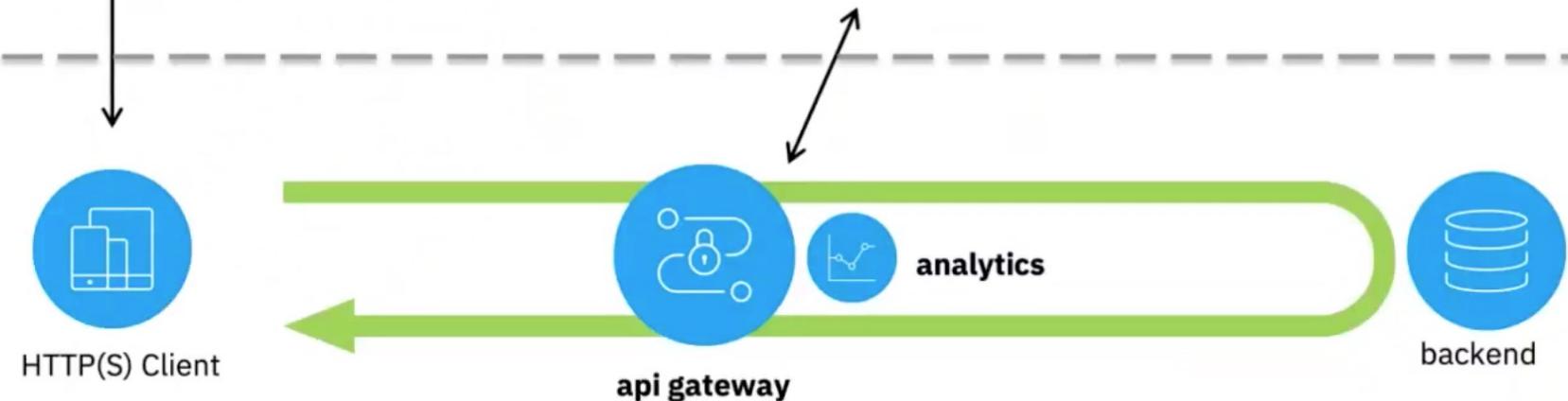
API Connect – Components



Management



Runtime



API traffic

API Portal Access

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

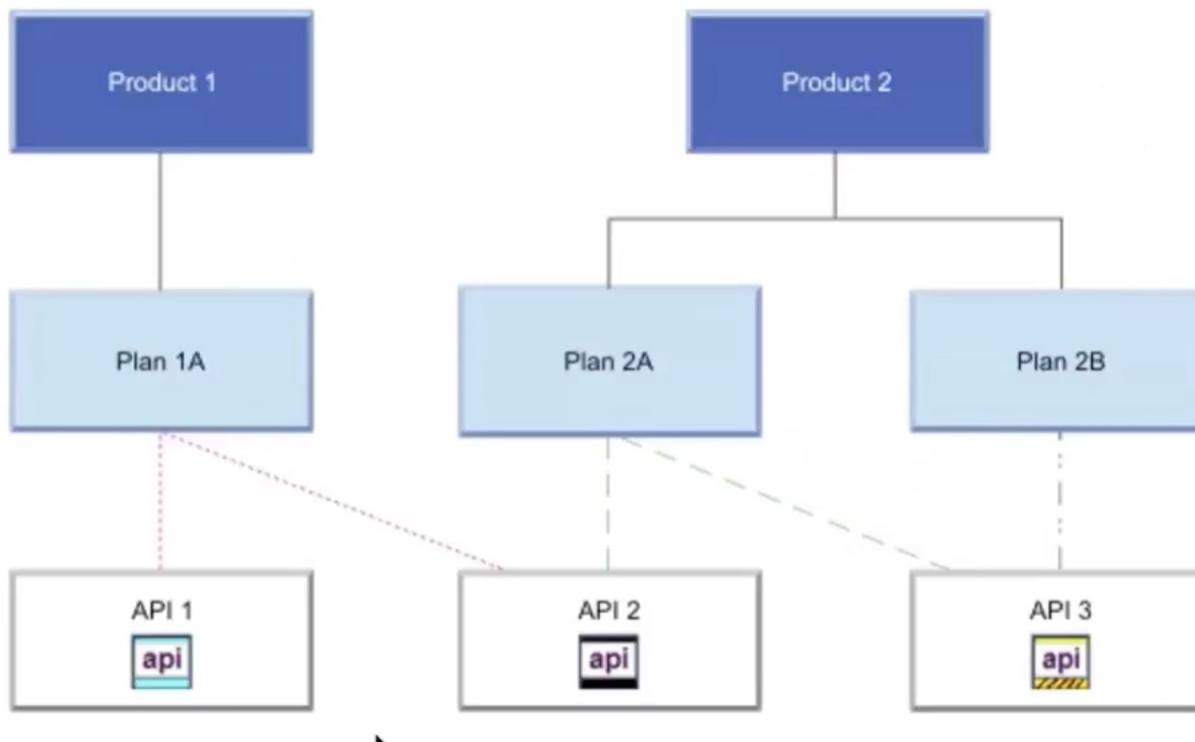
- Self-service App Developer Portal based on Drupal 8
- User Management
- Social Collaboration
- Subscription & Community Management



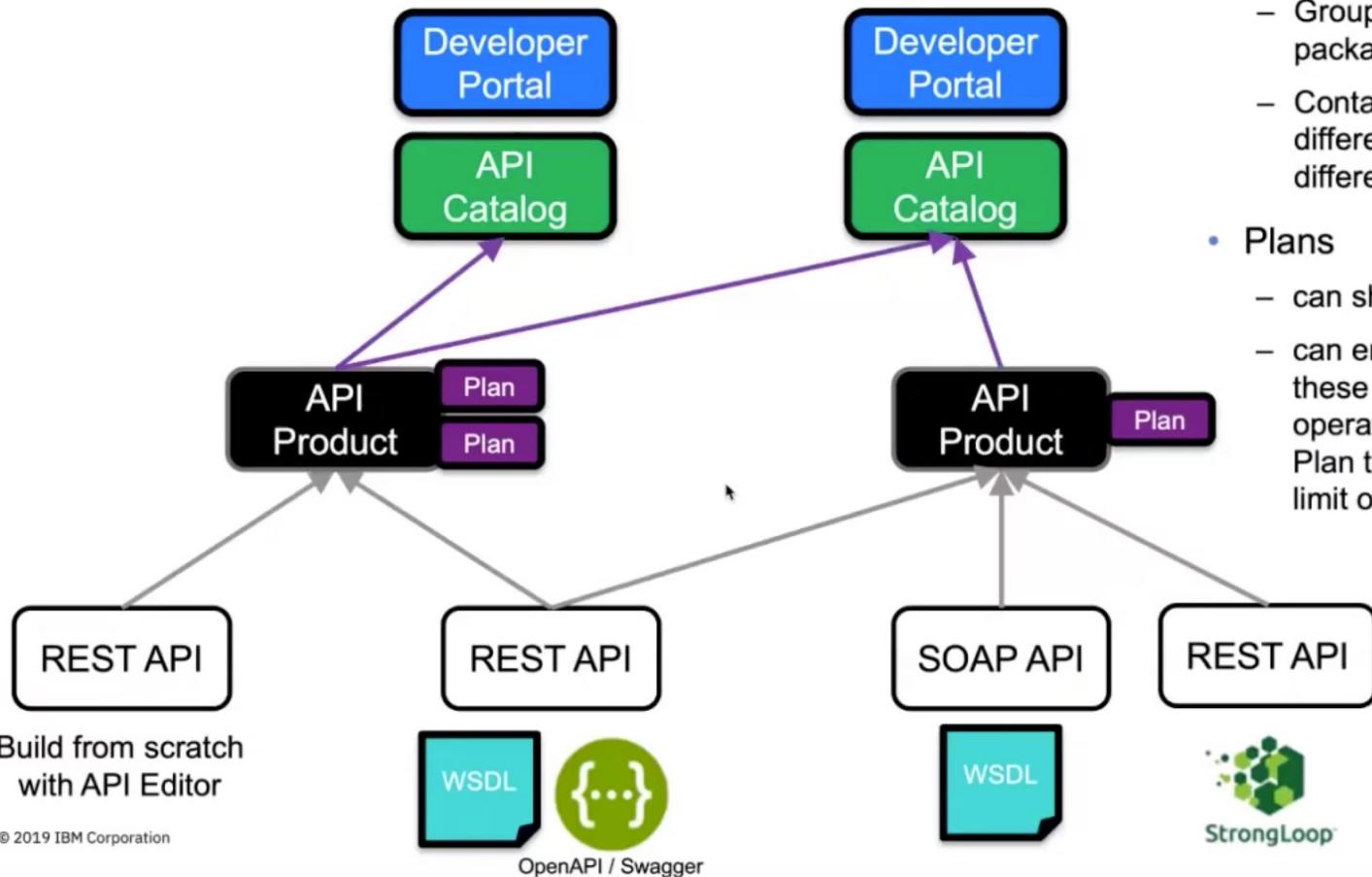
Analytics Instance

- API Monitoring Analytics

Products, Plans, and APIs - Levels of Segregation



API Hierarchy



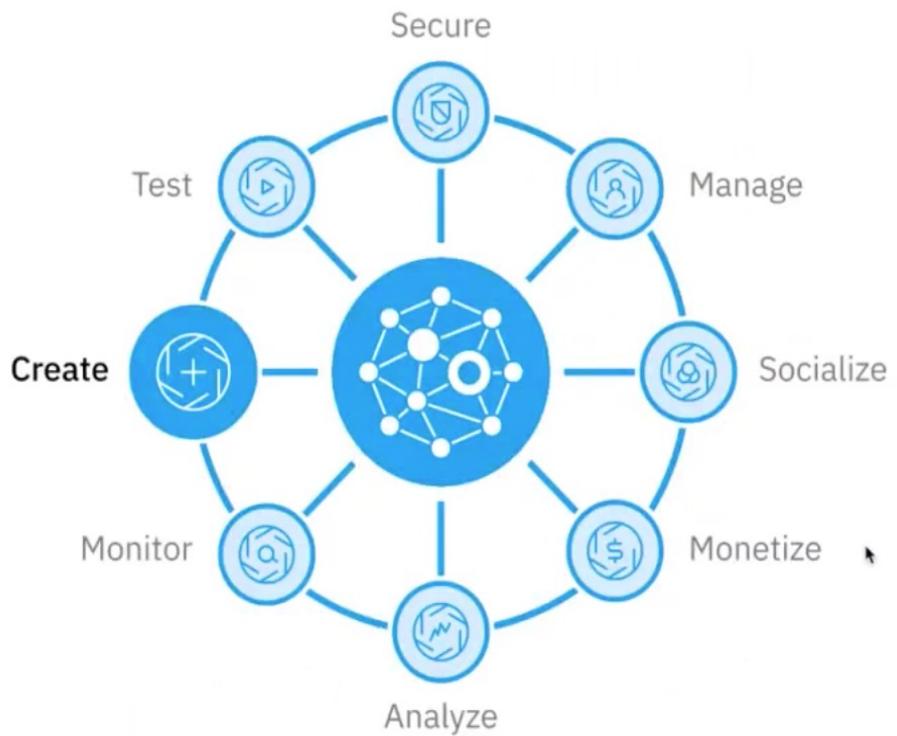
- **Products**
 - Group APIs into a package
 - Contain Plans to differentiate between different offerings.
- **Plans**
 - can share APIs
 - can enforce rate limits through these Plans, or through operations within the APIs of a Plan that override the rate limit of the Plan.



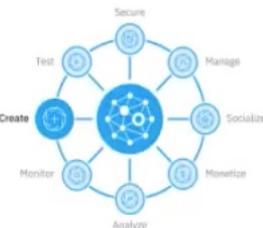
API Management

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

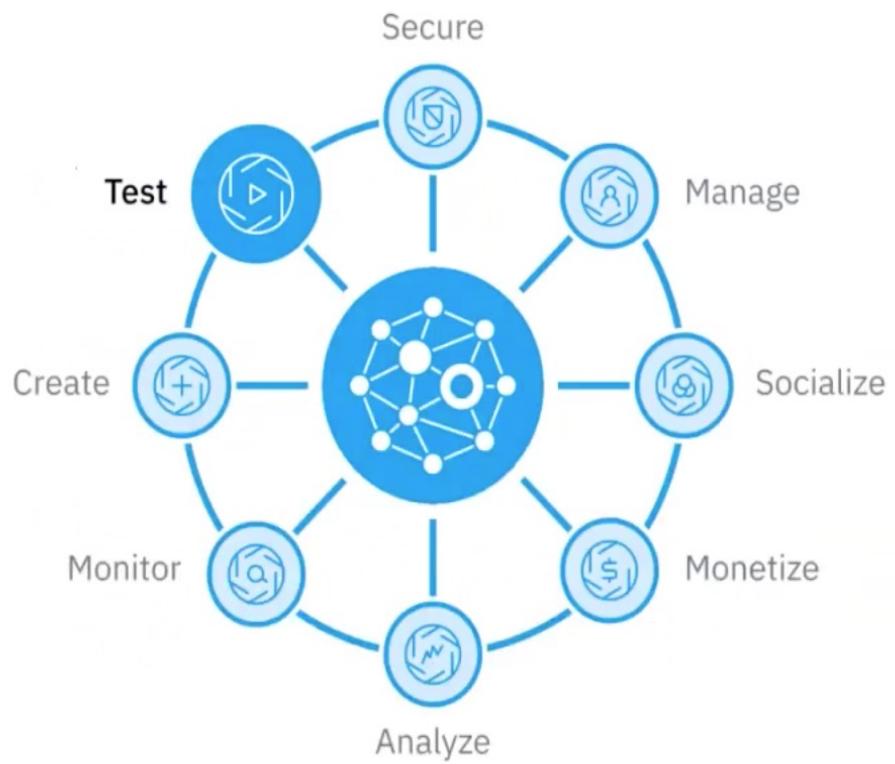
Cancel

Next

API Management

IBM API Connect

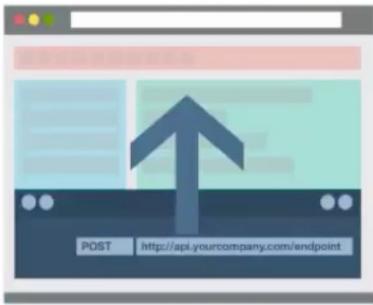
Test



API Test and Monitor



Let's Get Started!



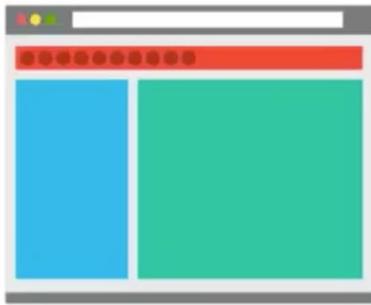
Quick start from an API call

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
① 10/23/2018 @ 08:30:02

Notifications
✓ You (Murali_Sitaraman) will be notified for any failure

Runs Stats
Runs count: 1
Locations: us-east

Eye icon and play/pause icon

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)

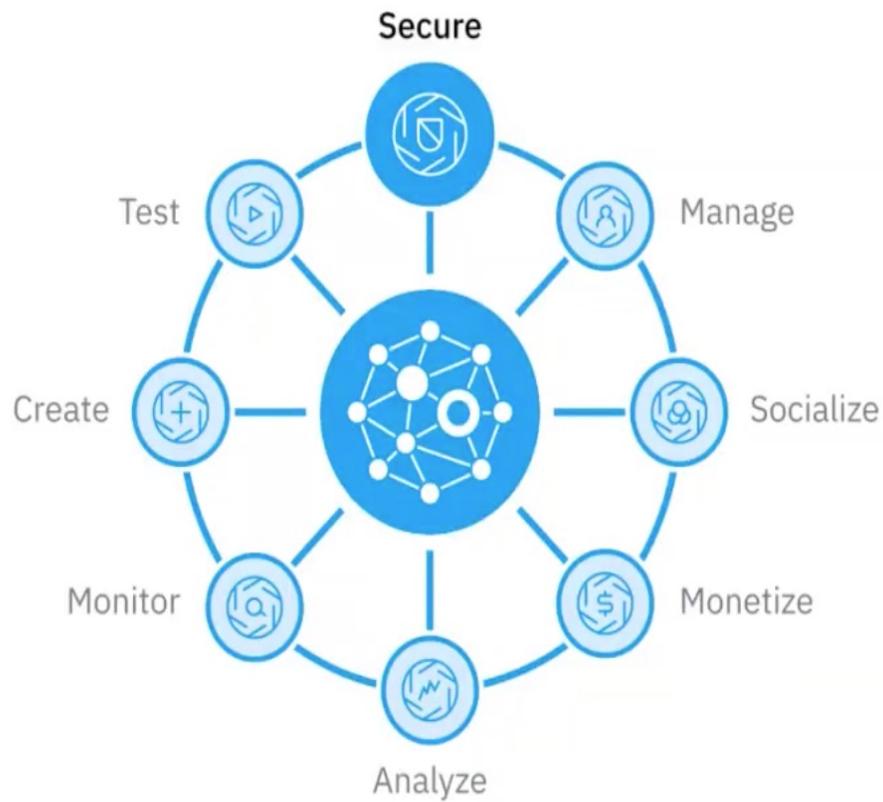


<http://ibm.biz/apitest>

API Management

IBM API Connect

Secure



Requirements for an API Gateway

An API Gateway needs to be



Secure



High performance



Customizable



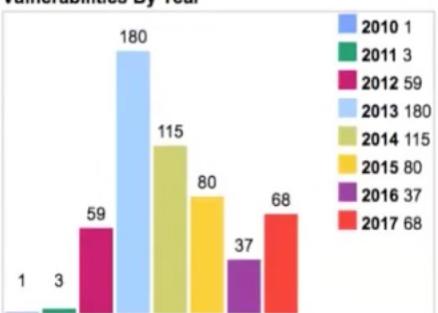
Robust

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



IBM Cloud Pak for Integration (CP4I)

Simple

Fast

Secure



IBM API Connect

Unlock business data
and assets as APIs



IBM App Connect

Connect your cloud and
on-prem applications



IBM MQ and IBM Event Streams

Deliver msgs reliably
with enterprise-grade
messaging



IBM Aspera

Super fast & secure
data transport across
any cloud



IBM DataPower Gateway

Control access
to vital resources
wherever
they are

Helping You Succeed with Thought Leadership

Principles for API Security

Provides a set of security principles to drive the highest possible level of API protection.

<https://ibm.biz/BdqZYR>

Recommendations for an API Economy Center of Excellence

How to organize both IT and business roles in order to have a successful API agenda.

<https://ibm.biz/BdqiEn>

Can You Trust Your APIs?

What do you need to trust your APIs from Dev to Production?

<https://ibm.biz/testapi>

Agile API Development Powered by API Connect

Iteratively develop, test and promote API across environments.

<https://ibm.biz/api-ops>

