QUICK REFERENCE CARD

API Management Essen+ials

THERE IS A BETTER WAY

"With a taste of a poison paradise, I'm addicted to you, Don't you know that you're toxic"
- Britney Spears - ***In the Zone*** album - 2004

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We believe that API IS THE ENGINE OF **DIGI+AL STRATEGY**
WE KNOW ***that the Web infiltrates*** AND ***transforms*** COMPANIES
WE **WORK +OGETHER,** ***with passion,*** TO CONNECT BUSINESS & IT
We help you CREATE **OPPORTUNITIES** AND EMBRACE THE WEB **Inside & Out**

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Octo Technology
PART OF Accenture Digital

Cette Refcard est imprimée sur papier certifié PEFC.

When to implement an API Management product.

This decision tree aims to help you:

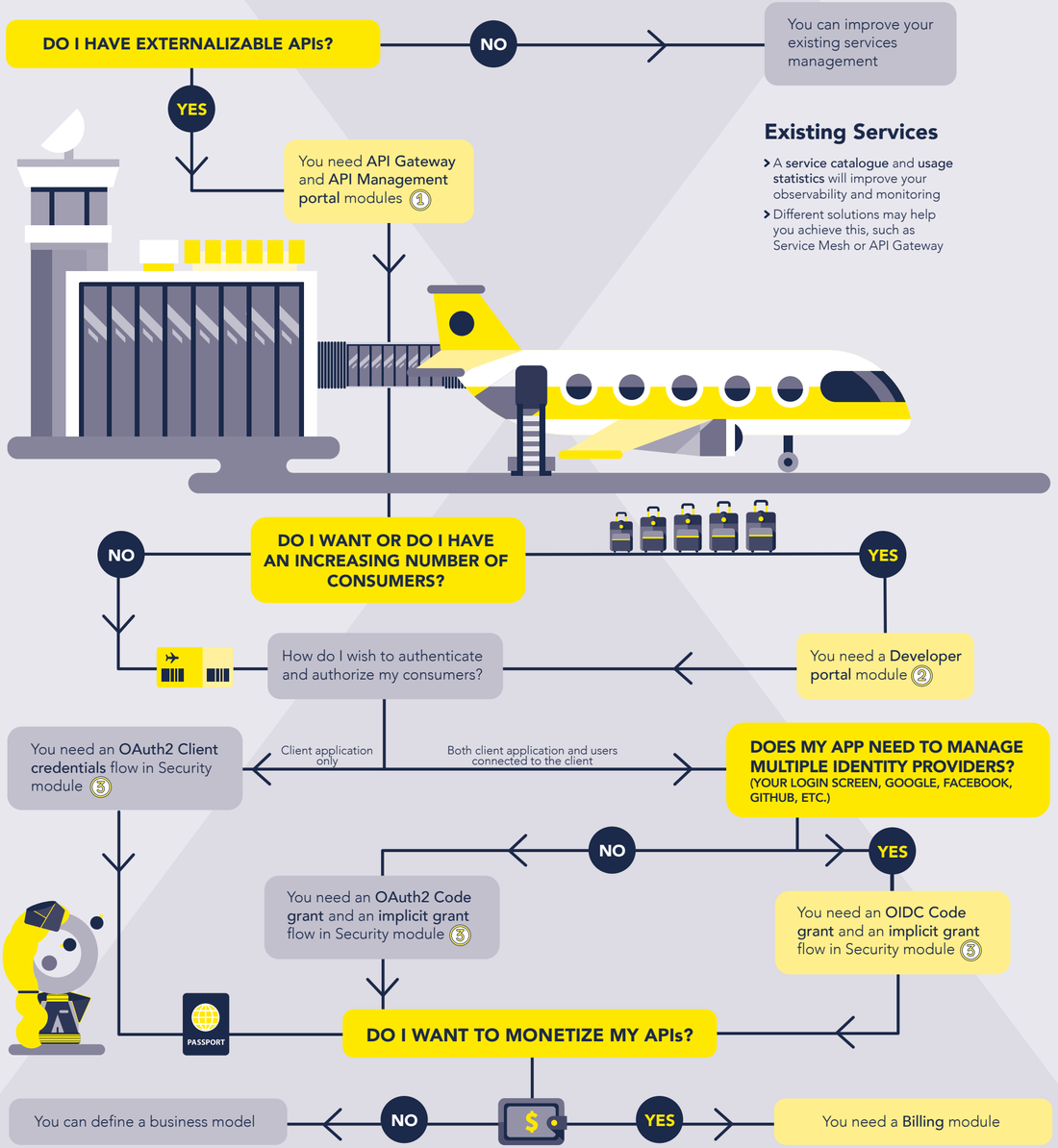
- Know when to use API Management products
- Know when to setup incrementally and use a specific API Management module when needed

Start Simple and Add Features Incrementally

- Your solution should be **usable as soon as possible** with prioritized features
- A new feature **should not block** the use of the API Management solution
- You must **own the deployment and configuration** of your API's publication
- For a better TTM (Time To Market), **think "value-first"**: implement API Management features that meet your and your consumers' needs

Externalizable APIs must...

- **Be well-designed:** vulgarized, intuitive, inspired by the state-of-the-art of API designs
- **Handle fine-grained access:** authentication and authorization
- **Be testable:** provide a sandbox environment
- **Offer a clear SLA (Service Level Agreement) in accordance with the product strategy**



Existing Services

- A **service catalogue** and **usage statistics** will improve your observability and monitoring
- Different solutions may help you achieve this, such as Service Mesh or API Gateway

API Management Essentials.

"Anytime, Anywhere, Any Device" is the main objective of digital transformation. APIs are a solution providing "Business Agility" as they allow the creation of new business models and to quickly build new applications for upcoming digital devices.

- APIs are the industrialization of the consumption of an enterprise's resources on the Web, facilitated by API Management platforms.
- API management is the process of publishing APIs, enforcing their usage policies, controlling access, nurturing the subscriber community, collecting and analyzing usage statistics, and reporting performance metrics and data.
- An API strategy is often summarized as "buying the right API Management product." But the reality is that API Management solutions only address a minor part of an API strategy's objectives.

This reference card enumerates the key features of API Management platforms and how to integrate them incrementally to ease and accelerate its implementation. Our recommendations are based on our vision and our hands-on experience in API development.

DISCLAIMER

OCTO Technology is an independent consulting and implementation company: hence, we don't receive any fees from API Management vendors. Please check out our blog https://blog.octo.com, and feel free to comment or challenge this API cookbook. We're really looking forward to hearing from you.

AUTHORS

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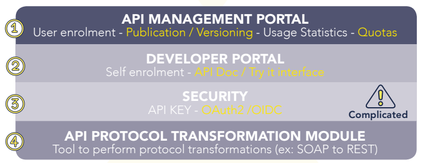
What is an API Management Solution?

An API Management solution is a tool that industrializes the consumption of your APIs and is made for three kinds of users:

- Developers consuming APIs
- Developers publishing their APIs
- API Managers configuring the API Management solution, monitoring consumption, communicating with consumers, planning the roadmap...

AN API MANAGEMENT GENERALLY OFFERS THE FOUR FOLLOWING FEATURES:



WARNINGS

SECURITY 3

Most API Management solutions offer a security module and Identity Provider features. Those features are almost never Plug&Play and will require customization and development. We recommend the use of a dedicated security module with on-premise or cloud solutions.

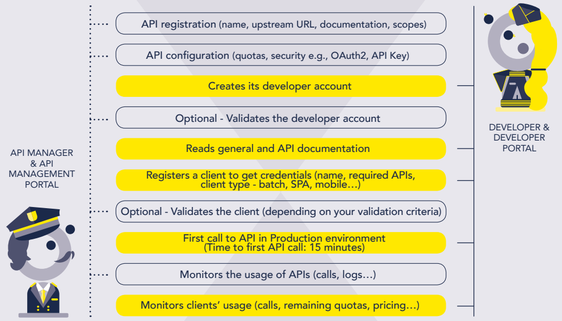
API PROTOCOL TRANSFORMATION MODULE 4

We don't recommend the use of this module because it is proprietary and locks you into a vendor, thus creating maintenance complexity of your produced API.

How it works.

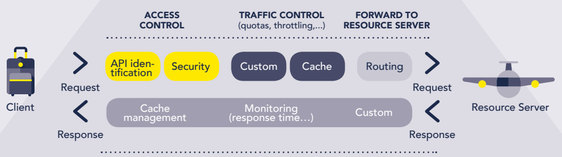
Developer portal & API management portal: initialization scenario

API Managers perform their actions (API registration, monitoring…) in the API Management portal, while Developers must use the Developer portal. These steps are not dependant on a particular API Management solution.



Gateway & Security

When a client submits a request to an API through an API Management tool, the following steps occur, no matter the chosen API Management solution.



API Management governance.

The following organization patterns are the ones we see the most. In fact, we frequently observe an evolution from Centralized API Facade pattern to Decentralized API Component teams or Decentralized Feature teams patterns. At large scale, decentralized API Component teams pattern is the most observed. This model mixes scaled agile organizations and API Management product constraints. Global API product owner and global API technical leader are key roles, as they share their knowledge with communities of practice and promote the API vision.

Centralized API Facade

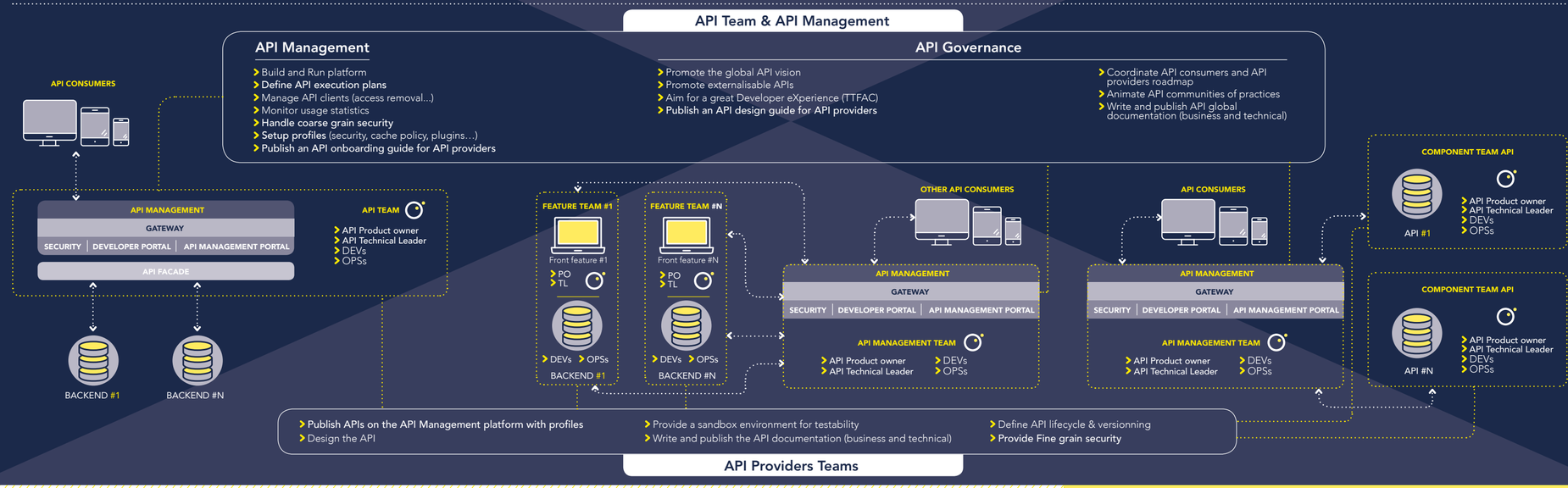
- When the number of API consumers is not scaling
- To start building an API with a fast TTM
- When the scope of the API and related front-end applications is small (a team of 10 people is enough to develop it)

Decentralized Feature teams

- When the main asset of the company is one main front-end application, which requires a short TTM
- When the API is not a strategic asset

Decentralized API Component teams

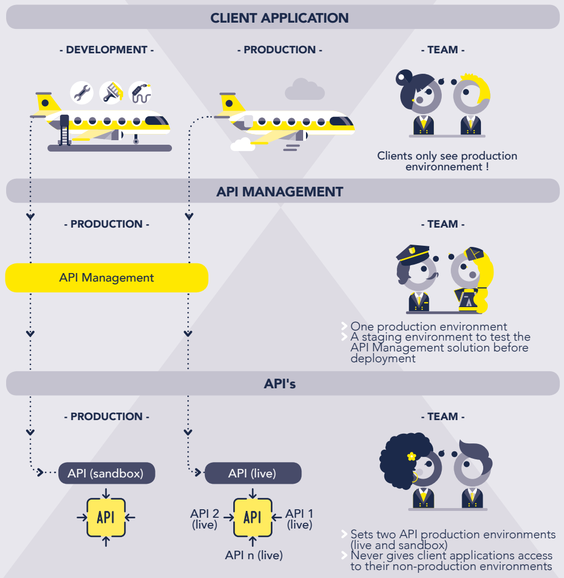
- When the company has several front-end applications of major importance
- When API is considered as a strategic asset by the company



How to manage your API environments?

We believe that API teams must expose a live version and a sandbox of their API. A single development environment is necessary for the team to develop and test the API before deploying.

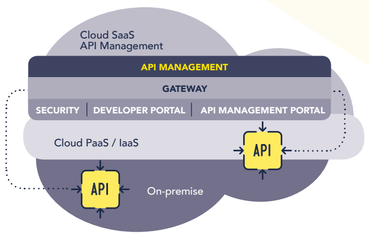
- One sandbox environment for all non-production environments
- Sandbox & live APIs are only accessible through gateway
- Client must not have access to API development environment directly
- Client may use a try-it API linked with sandbox



API Management integration patterns.

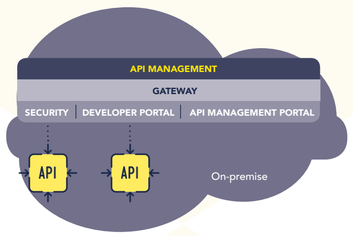
Full SaaS

- ⊕ Excellent TTM
- ⊖ The API Management vendor has an access to your Information System
- ⊖ Higher latency between cloud gateway and on-premise API



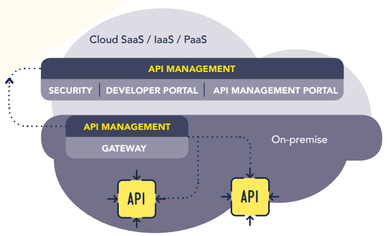
On-Premise

- ⊕ Suitable when cloud deployment is not allowed for security reasons: storing sensitive data is your core business or a strategic asset.
- ⊖ Requires maintaining the solution (patch, security…)
- ⊖ Poor time to market



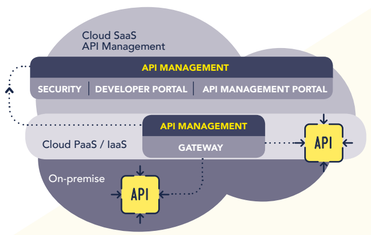
Hybrid

- ⊕ Gateway close to on-premise APIs
- ⊖ Requires monitoring response time if providers are on the cloud



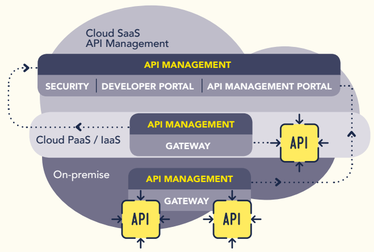
Hybrid with Cloud Strategy

- ⊕ Good TTM
- ⊕ Good choice if your strategy targets cloud API back-end
- ⊕ Gateway close to APIs deployed on PaaS/IaaS
- ⊖ Higher latency between cloud gateway and on-premise API



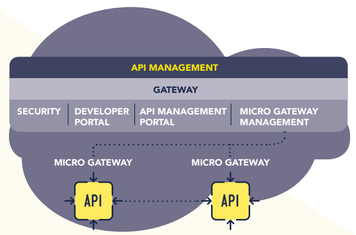
Hybrid Double Gateway

- ⊕ Better performance with external users on cloud gateway and internal users on on-premise gateway
- ⊕ Gateway always close to APIs
- ⊖ No direct communication between the entry point (gateway in the cloud) and the Information System (on-premise): monitor response time



Coming soon... Microgateway

- ⊕ Optimization of network flows and performance
- ⊖ Hard to implement: more OPS effort to supervise and deploy
- ⊖ There are no PROD-Ready solutions



Common mistakes.

BELIEVING THAT AN API MANAGEMENT TOOL IS A GOLDEN HAMMER

API Management products only address a minor part of an API Strategy (functional, technical, organizational objectives).

RELYING ONLY ON YOUR API MANAGEMENT PLATFORM TO BUILD YOUR API

Your API will need to be crafted by developers with love.

IMPLEMENTING ALL FEATURES OF THE PRODUCT BEFORE USING IT

You must iterate on the implementation of the API Management tool in order to understand and adapt it to real use-cases in production.

BELIEVING THAT AN API MANAGEMENT TOOL HELPS FOR VERSIONING AND API LIFECYCLE

API Management must not manage the versioning of your APIs, which must instead be crafted and developed at the applicative level. However, API Management can ease breaking changes by allowing you to know your consumers, the endpoints they use, and communicate with them.

API management platforms are evolving

Two patterns are opposing: the central gateway vs. the microgateway. There are currently no tools able to answer to both patterns. Some API Management solutions are introducing Service Mesh features. Service Mesh tools are also introducing API Management features. So, be aware and make your API Management solution as evolutive as possible – you should be able to easily make changes and updates.

Start the quizz >

to know which API Management solution best fits your context.

Or go to :
https://api-by-octo.octo.com