EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT API MANAGEMENT (BUT WERE AFRAID TO ASK)

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... AT THE END
WHAT CAN YOU DO???

Write code
- Caching is easy, but what about throttling?
- ...and quota...
- You have to manage users...
- Re-test everything!
- And so on....

Use API Management
- Convince your customer
- Convince your customer
- Convince your customer
- Because ...........

#WEBDAY2021
2400 euros a month? Are we joking?
WHAT IS API MANAGEMENT

Azure API Management allows you to implement a **consistent and secure** access layer to your APIs.
API MANAGEMENT ARCHITECTURE

API consumers

AZURE API MANAGEMENT

Abstraction    decouple
modernize
optimize
...

Middleware    secure
protect
cache
...

Monitoring    usage
health
monetization
...

Developer    discover
document
on-board
...

APIs on Azure

Azure APIs

On-prem APIs

3rd party APIs
API MANAGEMENT – COMPONENTS
API MANAGEMENT – COMPONENTS

- Accepts API Calls from clients
- Verifies API keys and other credentials
- Enforces quotas and rate limits
- API Transformations
- Caching
- Logging

- Define APIs and Operations
- Define Products
- Configure Policies
- Analytics
- Subscriptions
- Groups

- Find available APIs
- Read API Documentation
- Test APIs
- Create accounts and subscribe to products
- Access usage analytics

- Developer portal
- Gateway

- Apps on devices

#WEBDAY2021
Each API represents a set of operations available to developers.

Each API contains a reference to a back-end service that implements the API.

Each Operations map the operations exposed by the back-end services.

You can configure the operations configuring the URL mapping, query string parameters, request and response content.
DEMO
ADDING API IN API MANAGEMENT
Policies

- Change the behavior of the API through configuration
- Collection of statements that are executed sequentially in a pipeline
- Can be defined at multiple levels (Global, Product, API, Operation)
- Encapsulate common API management functions (e.g., protocol transformation, caching, quota, throttling)
- Can be triggered on error
- Each policy is defined as an XML document
GET /foo/bar HTTP/1.1
Host: api.constoso.com
Key: 0123456789
GET /foo/bar HTTP/1.1
Host: api.constoso.com
Key: 0123456789

```xml
<policies>
  <inbound>
    <base />
    <quota-by-key calls="10000" bandwidth="40000" renewal-period="3600">
      counter-key="@((context.Request.IpAddress))"
    </quota-by-key>
  </inbound>
  <outbound>
    <base />
  </outbound>
</policies>
```
DEMO
MANAGING POLICIES IN API MANAGEMENT
Developers represent the user accounts in an API Management service instance.

Products are how APIs are surfaced to developers. Products in API Management have one or more APIs, and are configured with a title, description, and terms of use.

A subscription is the most common way for API consumers (Developers) to get access to APIs published through an API Management instance (Products).
<table>
<thead>
<tr>
<th>Purpose</th>
<th>LIGHTWEIGHT and serverless version of API Management service, billed per execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (per unit)</td>
<td>€2.95155 per million calls (1M calls free)</td>
</tr>
<tr>
<td>Cache (per unit)</td>
<td>External only</td>
</tr>
<tr>
<td>Scale-out (units)</td>
<td>N/A (automatic scaling)</td>
</tr>
<tr>
<td>SLA</td>
<td>99.95%</td>
</tr>
<tr>
<td>Isolation</td>
<td>Shared</td>
</tr>
<tr>
<td>estimated maximum throughput (per unit)</td>
<td>N/A (automatic scaling)</td>
</tr>
<tr>
<td>Compute Isolation</td>
<td>No</td>
</tr>
</tbody>
</table>

**Serverless (no dev portal)**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Non-production use cases and evaluations</th>
<th>Entry-level production use cases</th>
<th>Medium-volume production use cases</th>
<th>High-volume or enterprise production use cases</th>
<th>Enterprise production use cases requiring high degree of isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (per unit)</td>
<td>~€40.51/month</td>
<td>~€124.11/month</td>
<td>~€579.11/month</td>
<td>~€2,357.17/month</td>
<td>TBA³</td>
</tr>
<tr>
<td>Cache (per unit)</td>
<td>10 MB</td>
<td>50 MB</td>
<td>1 GB</td>
<td>5 GB</td>
<td>5 GB</td>
</tr>
<tr>
<td>Scale-out (units)</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>10 per region (call support to add more)</td>
<td>10 per region (call support to add more)</td>
</tr>
<tr>
<td>SLA</td>
<td>No</td>
<td>99.95%</td>
<td>99.95%</td>
<td>99.99%¹</td>
<td>99.99%</td>
</tr>
<tr>
<td>Isolation</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>estimated maximum throughput (per unit)</td>
<td>500 requests/sec</td>
<td>1,000 requests/sec</td>
<td>2,500 requests/sec</td>
<td>4,000 requests/sec</td>
<td>4,000 requests/sec</td>
</tr>
<tr>
<td>Compute Isolation</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
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TAKEAWAYS

- End to end solution for managing the lifecycle of your APIs
- Developers, products, subscriptions management out-of-the-box
- APIs abstraction from their implementation and integration with on-cloud and on-prem backend
- Scenarios in which it makes sense to have a fixed monthly cost of managing API Management
  - companies that sell services
  - companies that need to modernize "old-style" APIs
Microsoft is a Leader in the 2020 Gartner Magic Quadrant for Full Life Cycle API Management

**TAKEAWAYS**

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Source: Gartner (September 2020)
API Management is awesome!!
Thanks for your attention!!!!!!

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REFERENCES

- API Management Official Documentation
  https://docs.microsoft.com/en-us/azure/api-management/

- API Management Pricing

- Azure Updates for API Management

- Video
  - How to get started with Azure API Management
    https://www.youtube.com/watch?v=gA2yxwKo0M0
  - Azure API Management updates: serverless, schemas, and a new dev portal
    https://myignite.microsoft.com/sessions/54880
  - How to Configure Azure API Management (APIM)
    https://www.youtube.com/watch?v=cW4XZClFNMY
  - Azure API Management 101
  - How to build a CI/CD pipeline for API Management

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