



# AZURE API MANAGEMENT

Strategy, Implementation & Automation  
as a Service

Microsoft  
Partner



2021 Partner of the Year Winner  
Financial Services Award  
Global SI Digital Transformation Award  
Analytics Award





# MANUAL SELF-HOSTING OF API MANAGEMENT RESULTS IN LONGER TIME TO INNOVATE FOR FINANCIAL SERVICES ORGANIZATIONS

API Management as a Service offering is a flexible solution based on architecture artifacts, accelerators and resources which are modular and automated with industry standards like Swagger and OpenAPIs, which enables Capgemini experts to quickly help Financial Services Organizations to integrate their existing and new APIs with the Microsoft managed API Gateways with minimum or no efforts.

## CHALLENGES

Manual management of APIM would cause lot of challenges:

- Time to integrate APIs with Partners for B2B scenarios is high.
- Repetitive work by multiple API teams which causes delays
- Lack of Co-ordination across teams.
- Gaps b/w Developers & DevOps engineer in integrations leading to slower deliveries.

## IDEAL SOLUTION

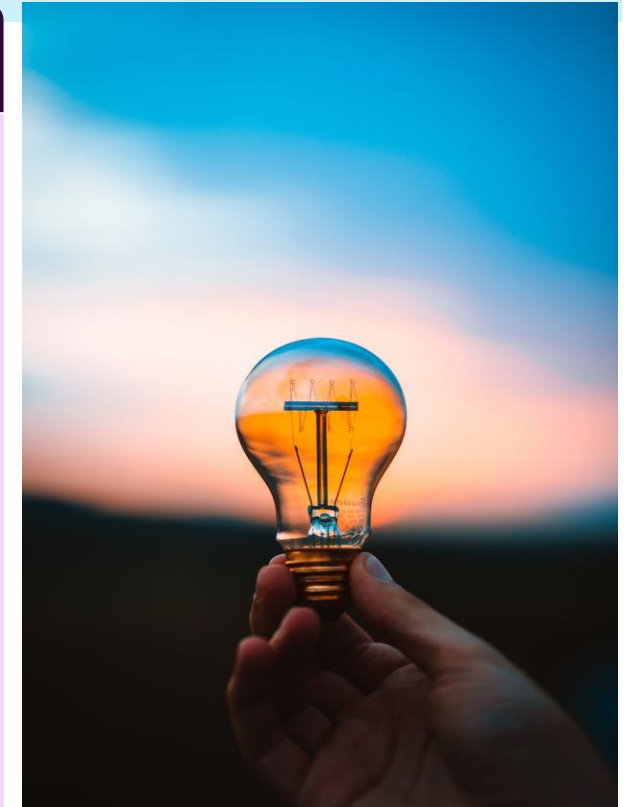
Using best of breed technologies, we help address the challenges our customers face:

- On Boarding DevOps processes for automating the API Integrations into Azure API Management solutions
- Entire automation by generating IaC files based on API Specs.

## DESIRED OUTCOMES

Some of the benefits our solutions offers are:

- Faster time to value
- Focus on business goals rather than IT hassles
- Increased quality of the implementation



## Capgemini's Engagement Model: 4 weeks

A typical engagement take 4 weeks where a team of experts from Capgemini to perform APIs assessment and automate provisioning of Azure APIM, APIs with policy transformations with API Gateway and DevOpsfication of end-end APIM across environments.



# CAPGEMINI AZURE APIM SERVICE

Microsoft Azure is the preferred Cloud platform for many of Fortune 500 Financial Services Organizations to quickly build their API Gateways using Azure Cloud-Native PaaS technologies.

## Manage APIs across Azure and On-Prem

We help customers to incrementally migrate their distributed APIs / Microservices and provide a unified API Gateways that wraps both the APIs hosted in On-Premises as well as the APIs hosted on the cloud

## Protect APIs with Policies

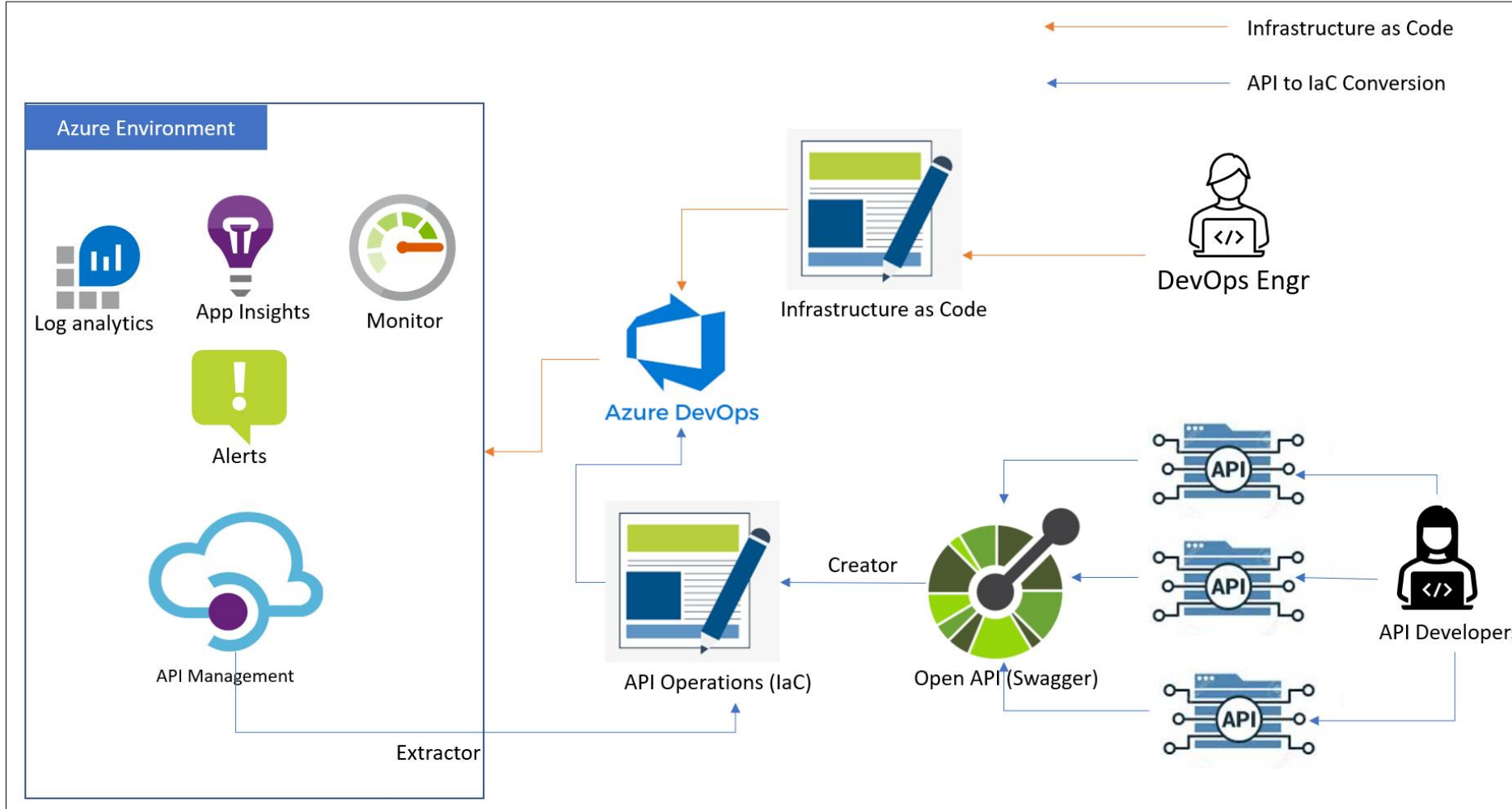
Our solution leverages both built-in and customized policies that helps in protecting APIs in a unified platform. Policies can be configured globally or at the scope of a Product, API, or Operation.

## End-to-End Automation with Azure DevOps

Deploy and Run Azure DevOps CI/CD pipelines with Infrastructure as Code that leverages Terraform, configure and manage all API Operations and transformations with API Management DevOps toolkit.



# CAPGEMINI AZURE APIM SERVICE - USECASE SCENARIOS



- ### Use Case Scenarios:
- ✓ Provisioning of Azure APIM Resources
  - ✓ Provisioning of New APIs
  - ✓ Extract and provision Existing APIs from Azure APIM
  - ✓ Auto configuration of API transformation Policies
  - ✓ Auto Monitoring of Azure APIM with Log Analytics and Security enablement
  - ✓ Automation of Azure DevOps Artifacts - Projects, Boards, Repos and Pipelines etc.



# CAPGEMINI AZURE APIM SERVICE – POLICIES SUPPORTED

Policies are a powerful capability of Azure APIM that allows the publisher to change the behavior of the API through configuration in both request as well as the response.

Authentication policies	Advanced policies	Caching policies	Transformation policies
<ul style="list-style-type: none"><li>✓ Existence of Header</li><li>✓ IP Restriction</li><li>✓ Throttling by Key</li><li>✓ Certificate Validation</li></ul>	<ul style="list-style-type: none"><li>✓ Conditional Flows</li><li>✓ Implement Retries</li><li>✓ Set Variables</li><li>✓ Set Status Codes</li></ul>	<ul style="list-style-type: none"><li>✓ Store data to Cache</li><li>✓ Get Data from Cache</li><li>✓ Remove Data from Cache</li></ul>	<ul style="list-style-type: none"><li>✓ Convert XML to JSON</li><li>✓ Convert JSON to XML</li><li>✓ Set Query Parameters</li><li>✓ Set Headers</li></ul>



# CAPGEMINI AZURE APIM SERVICE - ACCELERATED DEPLOYMENT ENABLERS



## One Click Deployment

- Web based tool, APIM Code Generator, to create APIM artifacts.
- Tool creates the IaC code in a repository.
- Creates the multi-staged YAML pipelines
- Run the multi-staged pipeline to create Infrastructure and APIM Operations.



## Flexible, Customized Automation

- Provides customized and flexible options in selected components to be installed.
- Customers with existing APIM instance may opt-out for IaC for APIM, if it's already in place.
- Helps to validate APIM integration on existing APIs by creating pilot APIs, to ensure no impact on existing APIs.



## Pre-Tested Modules

- The installed IaC Modules (into Azure DevOps) could be operational from Day1
- The multi-staged pipelines are tested thoroughly which executes the IaC code in multiple environments along with approvals for higher environments



## Automation of Existing APIM

- The tool is flexible in leveraging existing APIM instance in customer organization, in addition to setup a new APIM Instance as well.
- The utility tool named Extractor extracts the IaC code from existing APIs of the APIM solution hosted in Azure.
- The DevOps pipelines can be used for end-to-end automation



# CAPGEMINI AZURE APIM SERVICE - CODE GENERATOR TOOLKIT

**APIM-as-a-Service Code Generator – a Web based tool enabled with SSO and IaC based automation to provision APIM, APIs with the APIM Gateway, and generate artifacts like Boards, Repos and YAML pipelines etc.**



- 1 Login to Customer Azure DevOps with SSO enabled
- 2 Display Customer's Azure DevOps Organization
- 3 Select a Project where in APIM artifacts to be created

- 4 Choose APIM artifacts (Boards, Repos, Pipelines, IaC, Policy etc.) to be generated
- 5 Generate selected APIM artifacts like Boards, Repos, Pipelines, APIs and API Operations etc., and deploy to customer Azure subscription

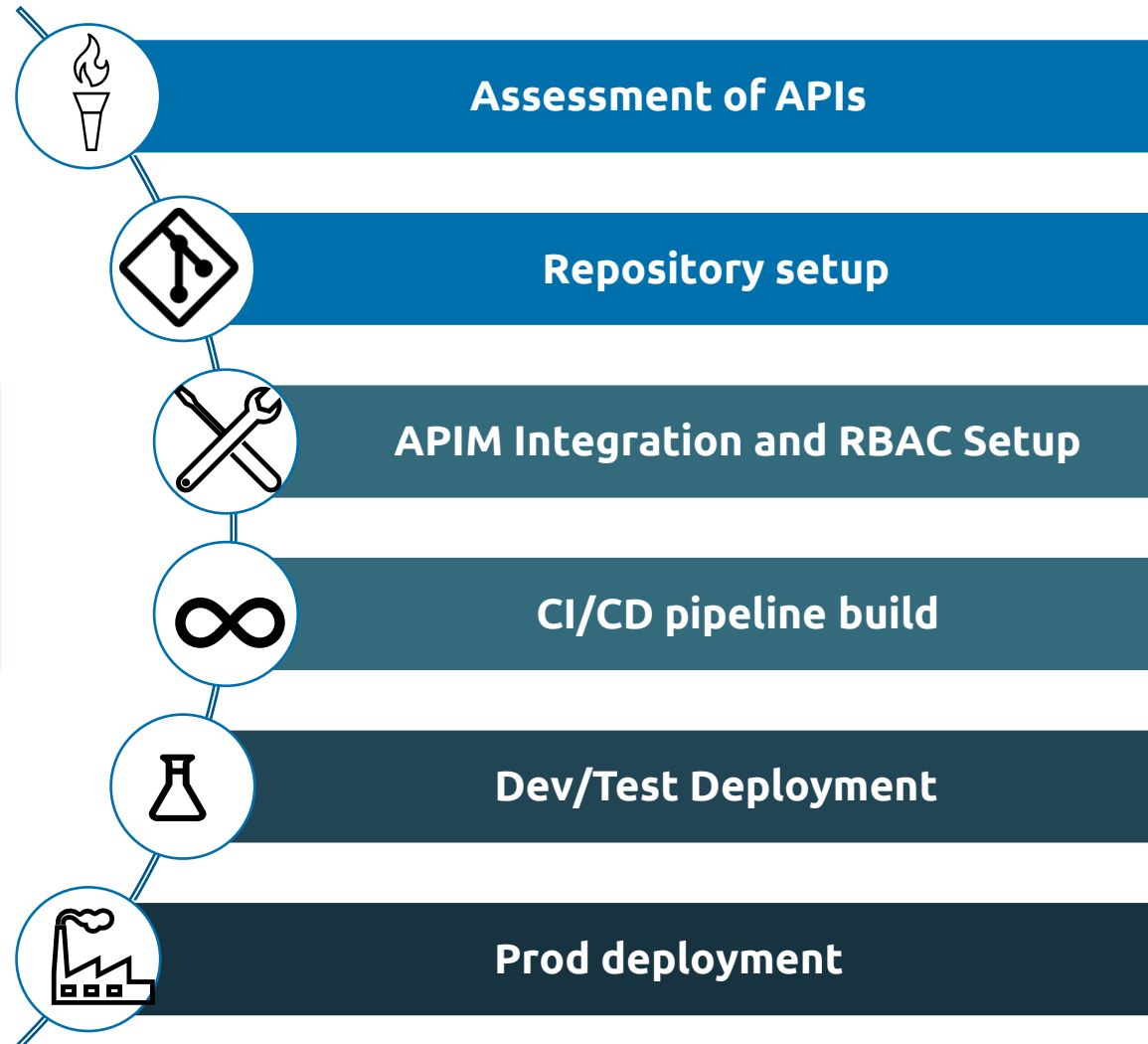


# CAPGEMINI AZURE APIM SERVICE - ENGAGEMENT PROCESS

**Engagement can take up to 4 weeks**

**Prerequisites:**

- Existing Azure Subscriptions are assumed
- DevOps tooling is available
- APIs has Open API Specification (or similar tooling)





# CAPGEMINI AZURE APIM SERVICE - IMPLEMENTATION SCREENSHOTS



## Repos

- APIM-as-a-Service
  - apimtemplate
  - Infra
    - modules
    - templates
      - main.tf
      - terraform.tfvars
      - variables.tf
  - Pipelines
    - DeployTerraform.yml
    - .gitignore
    - gitignore
    - README.md

## ADO Pipelines

Stages Jobs

Stage	Job	Status	Duration
DeployAPIMService	DeployAPIM	Completed	1m 3s
	Initialize job	Completed	1s
	Checkout API...	Completed	3s
	TerraformInsta...	Completed	1s
	Init Terraform	Completed	3s
	Validate Terraf...	Completed	1s
	Plan Terraform	Completed	21s
	Apply Terrafo...	Completed	28s
	Post-job: Ch...	Completed	<1s
	Finalize Job	Completed	<1s
Generate_Deploy_ARM	Generate_D...	Completed	3m 28s
	Initialize job	Completed	3s
	Checkout API...	Completed	3s
	Build	Completed	12s
	Publish	Completed	2s
	Create_Folders	Completed	<1s
	Copy Files to...	Completed	<1s
	Generate ARM...	Completed	4s
	PowerShell	Completed	1s
	Copy ARM Te...	Completed	12s
Deploy O...	Completed	2m 45s	
Publish Artifact	Completed	1s	

## APIM

Dashboard > APIMaaS-dev-eus-apim2

### APIMaaS-dev-eus-apim2 | APIs

API Management service

Search (Ctrl+/) Search APIs Filter by tags Group by tag

+ Add API

All APIs

Echo API

myAPIVersionSet

v1

Products Subscriptions Named values Backends API Tags Power Platform

#### REVISION 1

CREATED Oct 4, 2021, 5:29:03 PM

Design Settings Test Revisions Change log

##### General

- Display name: myWeatherCastAPI
- Name: myWeatherCastAPI
- Description:
- Web service URL: e.g. httpbin
- URL scheme:  HTTP  HTTPS  Both
- API URL suffix: WeatherForecastAPI
- Base URL: https://apimaas-dev-eus-apim2.azure-api.net/WeatherForecastAPI
- Tags: e.g. Booking
- Products: Starter x

Save Discard

# CAPGEMINI API MANAGEMENT ACCELERATOR

## Microsoft Partnership:

<https://www.capgemini.com/partner/microsoft/>

**Contact us:** microsoft.fs@capgemini.com

## Learn more:

Link to your Microsoft Commercial Marketplace offer

Microsoft  
Partner



Gold Cloud Platform  
Gold Security  
Gold DevOps  
Gold Application Development  
Gold Data Platform





## About Capgemini

Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 270,000 team members in nearly 50 countries. With its strong 50 year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fuelled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2020 global revenues of €16 billion.

Get the Future You Want | [www.capgemini.com](http://www.capgemini.com)



This presentation contains information that may be privileged or confidential and is the property of the Capgemini Group.

Copyright © 2021 Capgemini. All rights reserved.