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# API Led Hybrid Integration

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*"APIs and integration are just two sides of the same coin."*

*— Massimo Pezzini, Gartner —*

# API DEVELOPMENT
## VALUE CREATION



APPS

APP USERS

DEVELOPERS

VALUE

APIS

API PROVIDERS

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# BUILD IT AND THEY WILL COME
## OR WILL THEY?



Source: wikipedia.org   Source: wikipedia.org

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# API DEVELOPMENT
## VALUE CREATION



START HERE

APP USERS

APPS

DEVELOPERS

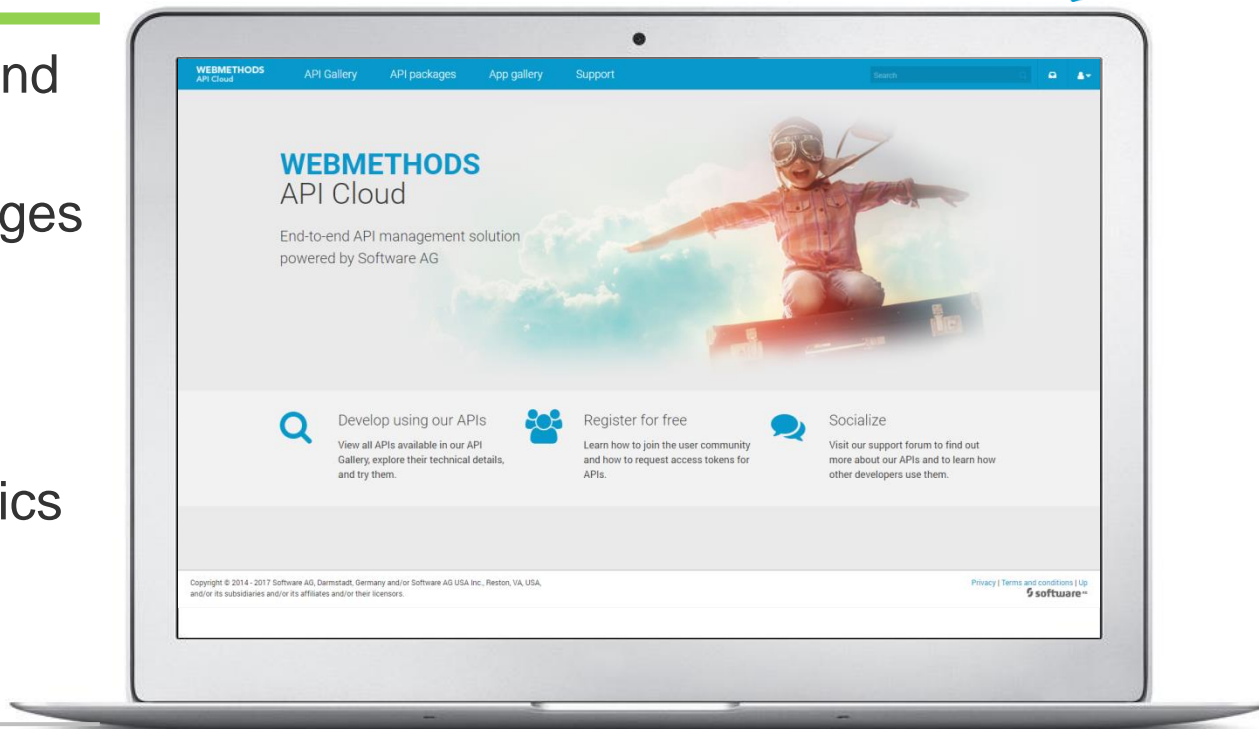VALUE

API PROVIDERS

APIS

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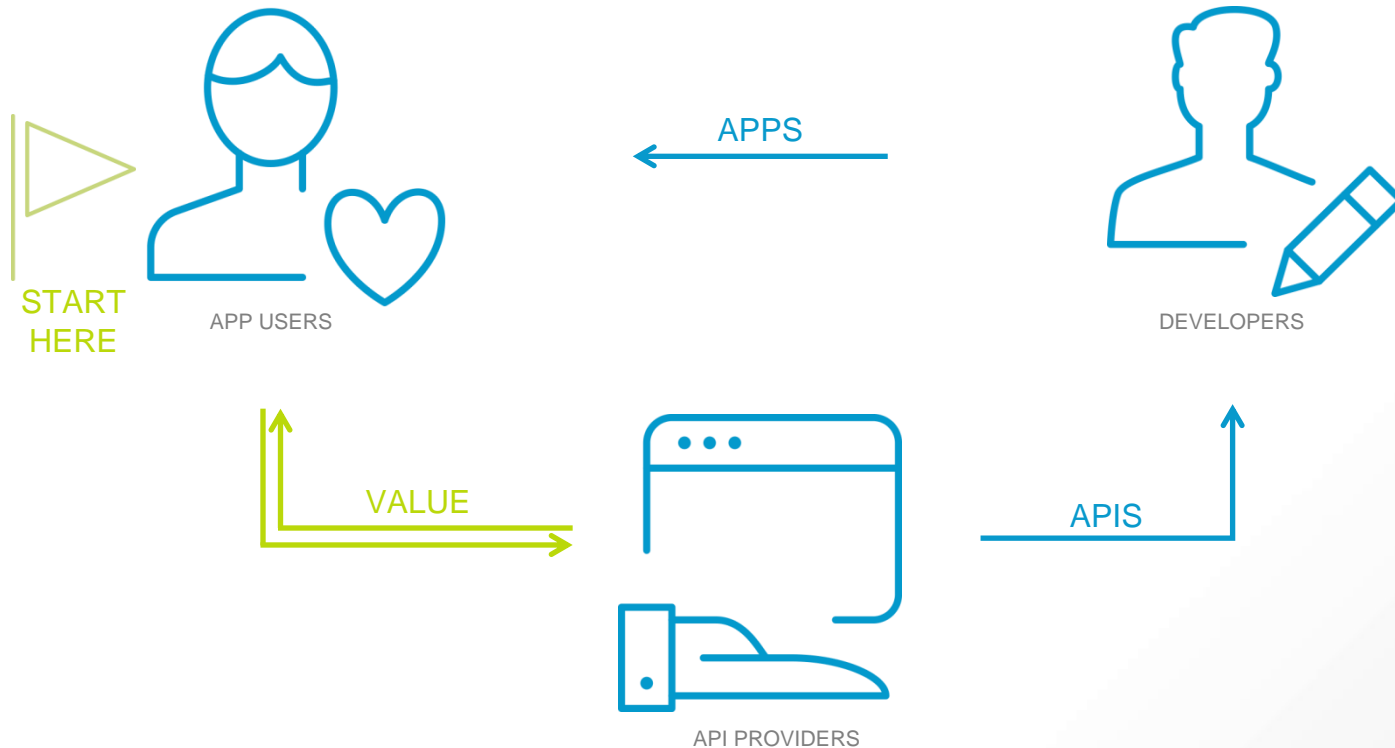
# API PORTAL
## YOUR API MARKETPLACE

- API documentation and try-out
- API products / packages
- APP marketplace
- Communities and collaboration
- Reporting and analytics
- Multiple API types

# API VALUE CREATION
## API PRODUCT MANAGER

- Creates APIs

- Prepares APIs for consumption
- Manages APIs roadmaps
- Manages relationship between cosumers and producers
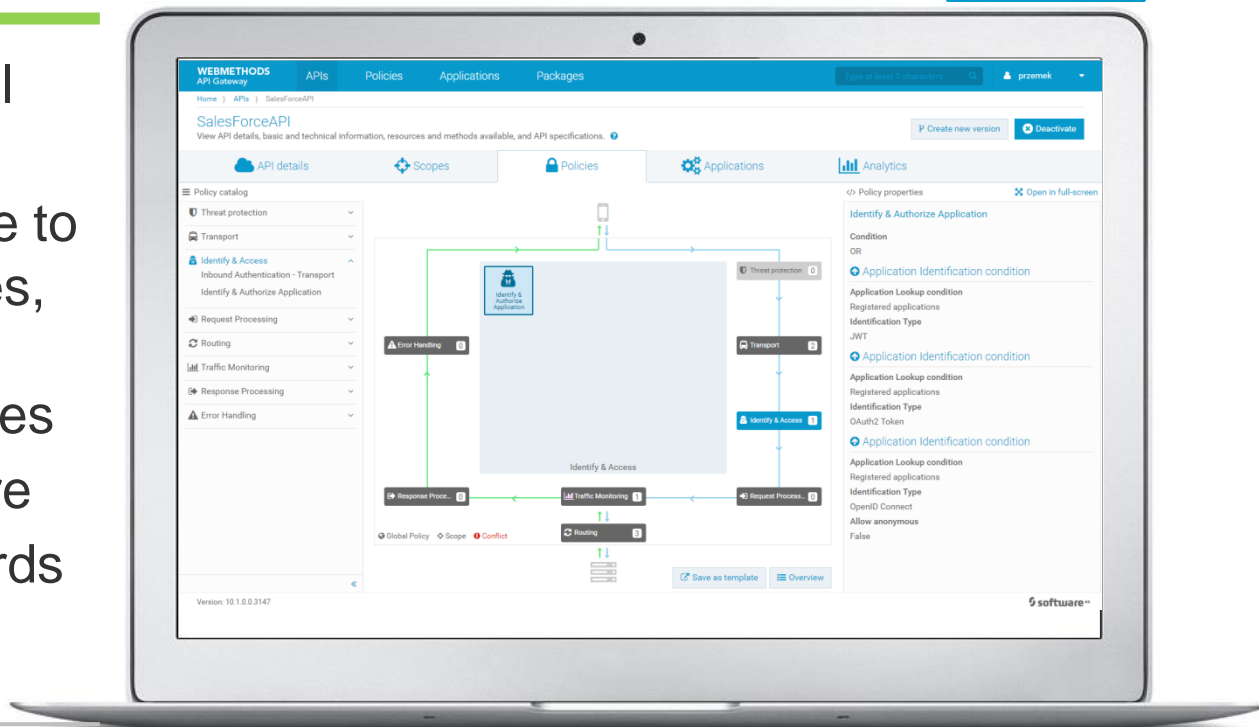- Understands API usage

- Builds solutions using APIs

API PRODUCER

API CONSUMER

API PRODUCT MANAGER

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# API GATEWAY
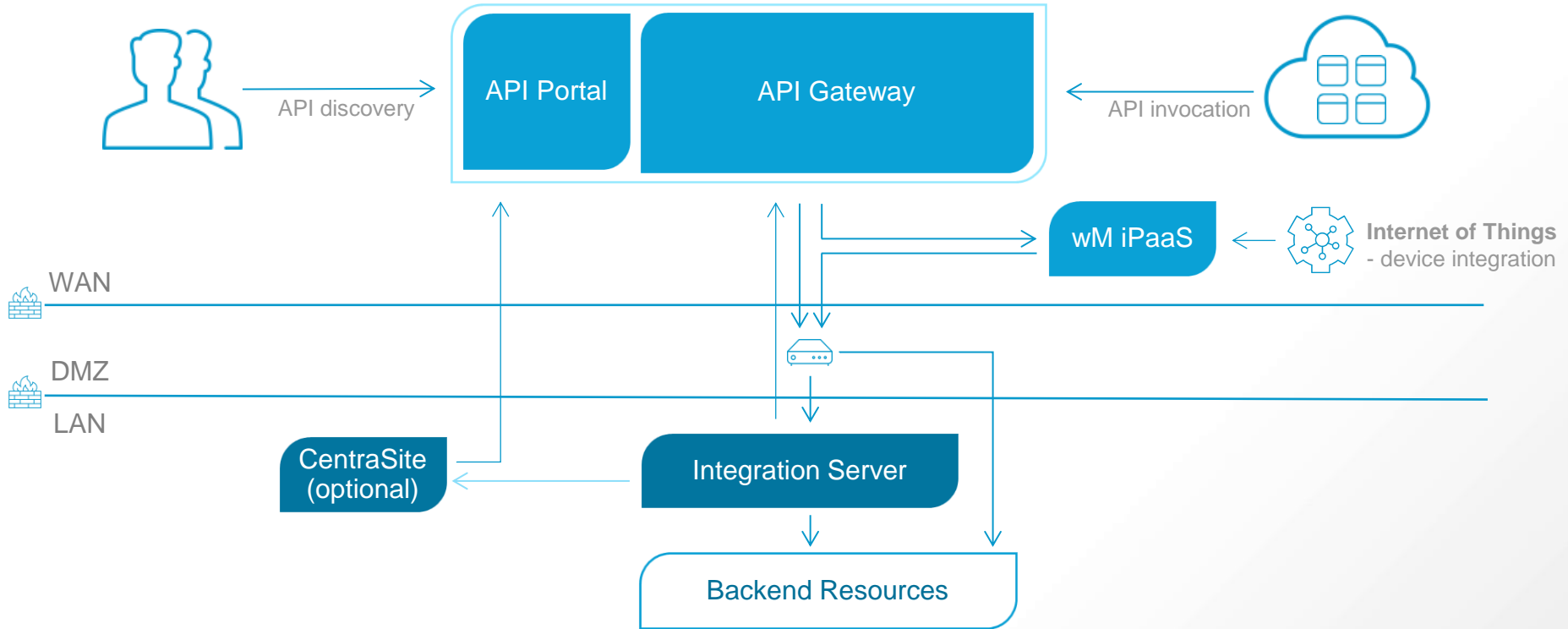## FOR SECURITY AND POLICY ENFORCEMENT

- Single gateway for all use cases
- Modern web interface to manage APIs, policies, applications, and administrative activities
- Simplified architecture
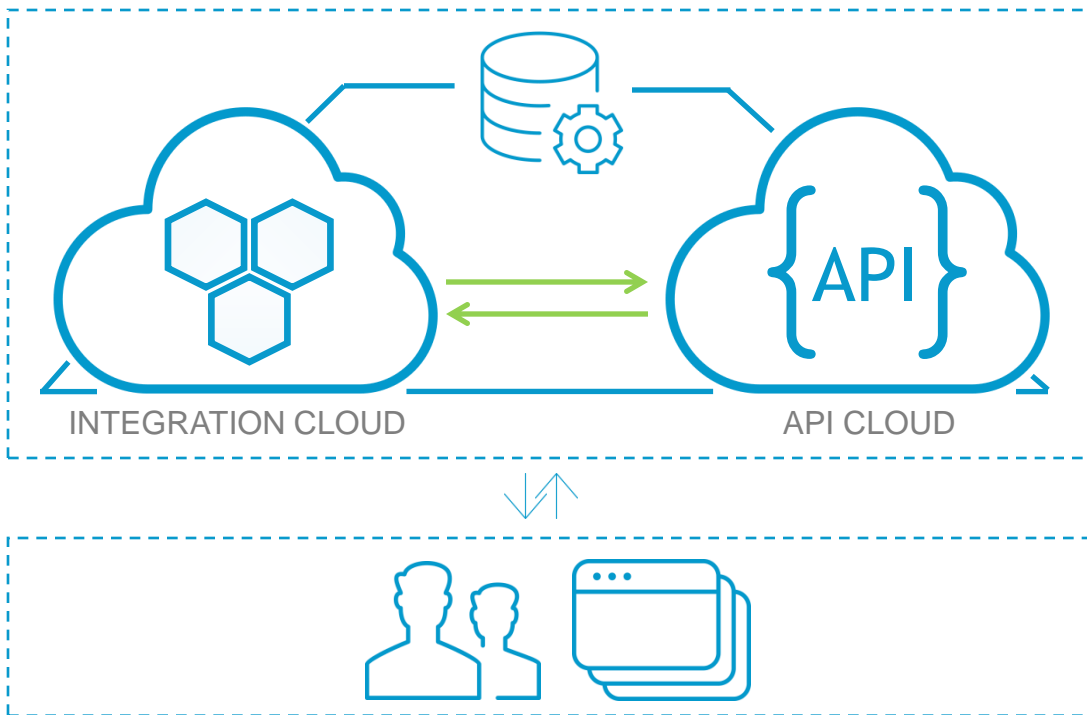- Informative dashboards for API analytics



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# API MANAGEMENT CLOUD DEPLOYMENT
## HYBRID INTEGRATION AND APIS



API discovery → **API Portal** | **API Gateway** ← API invocation

**wM iPaaS** ← **Internet of Things** - device integration

WAN

DMZ

LAN

**CentraSite (optional)** ← **Integration Server**

**Backend Resources**

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# API CLOUD & INTEGRATION CLOUD
## TWO SIDES OF THE SAME COIN



INTEGRATION CLOUD

API CLOUD

- Publish to API Cloud from Integration Cloud
- Pull integration from Integration Cloud for runtime policy enforcement
- Create integrations from API Cloud for custom policy implementations
- Orchestrate multiple integrations under one API
- Integrated stage management

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# MICROSERVICES RUNTIME
## POWERING REACTIVE MICROSERVICES ARCHITECTURE



### Self Registering Services

- Pluggable Service Registry support
- Support for the Consul registry
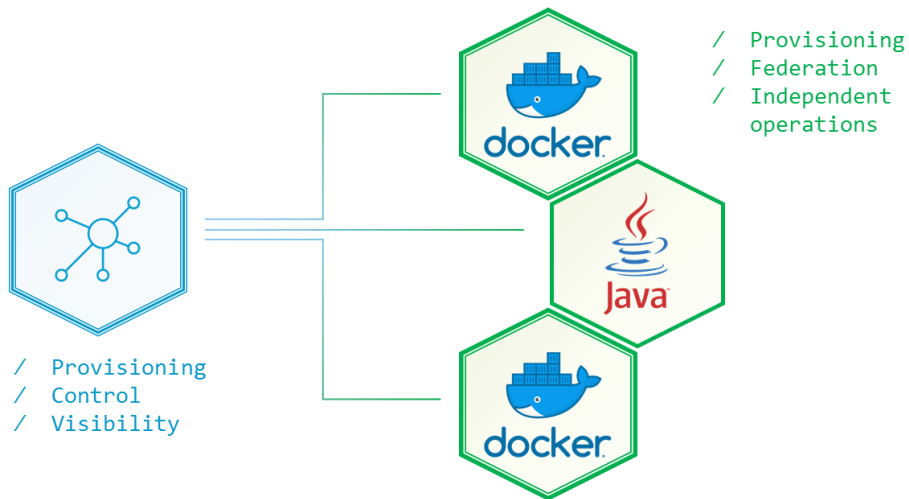


### Self Healing Services

- Circuit Breaker support
- Support for connection pooling, session management in adapters



### Self Scaling Services

- Support for Kubernetes, OpenShift
- Support for Docker based DevOps
- Dynamic Scale using Command Central, Kubernetes, OpenShift

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# WEBMETHODS MICROGATEWAY

**MANAGE API ACCESS TO MICROSERVICES**

/ Provisioning
/ Federation
/ Independent operations

/ Provisioning
/ Control
/ Visibility

**1** New independent Microgateway with option to federate with main API Gateway

**2** Multiple form factors and deployment options

**3** Easily provision and scale across Microservices architecture

**4** Very low footprint runtime with fast startup

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# WHY THE NEED FOR MICROGATEWAYS?
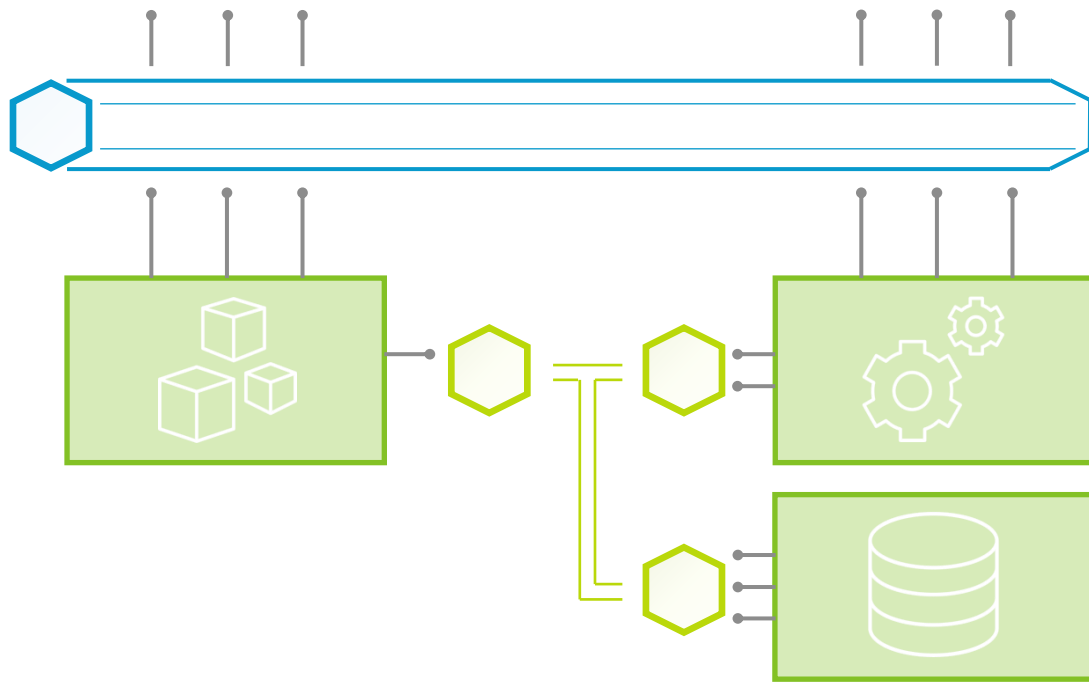
Support distributed / microservices architectures

Prevent overloading main gateways

Reduce impact from routing all traffic though a single gateway

Support east-west traffic

Reduce gateway footprint

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# API GATEWAYS
## FIT FOR PURPOSE



- Main / Edge gateway serves nort-south traffic
- Protects and mediates public APIs

- Microgateways serve east-west traffic
- Protest and mediate private APIs
- They are light weight and only carry the policies they need right now
- Today's microgateways are mostly build on node.js

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# MICROGATEWAY
## FLAVORS

Self contained Java app — INDEPENDENT

Headless implementation — LIGHTWEIGHT

Using customJjava profile — AGILE

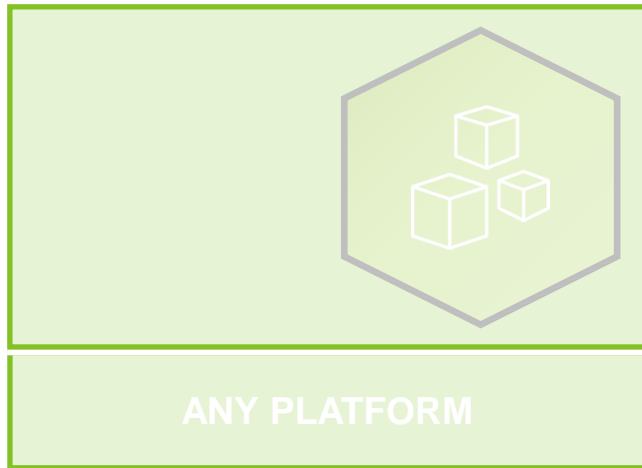Dockerized version — SCALABLE

Externalized configuration — IMMUTABLE

Using micro linux host — LEAN

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# MICROGATEWAY DEPLOYMENT
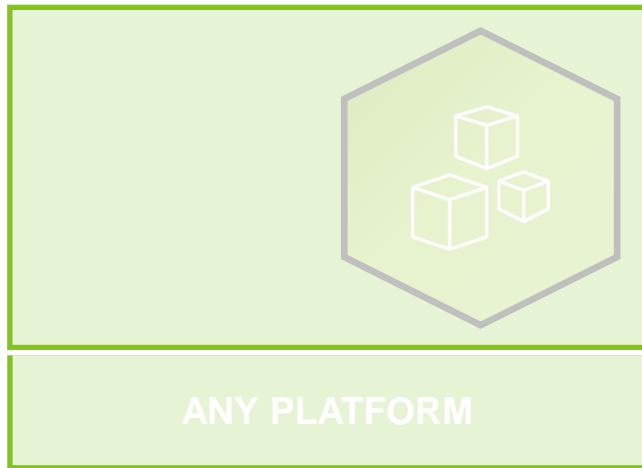## INDEPENDENT

**ANY PLATFORM**

✓

- Microgateway runs independently from the microservice
- When microservice dies, microgateway lives
- Microgateway can host more APIs, from other microservices
- Scaling can be done independently

✗

- Microgateway problems may impact more microservices
- Additional administration needed

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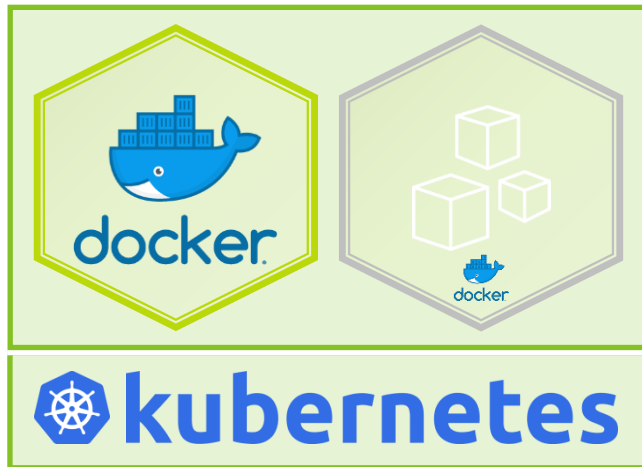
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# MICROGATEWAY DEPLOYMENT
## SIDECAR

- Microgateway runs close to the business logic
- Easier management and administration running together
- Scales together with microservice

- Microgateway dedicated to local APIs
- Scales together with microservice

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# MICROGATEWAY DEPLOYMENT
SIDECAR



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