

# All ways on, mostly connected, always integrated, the API economy

Phil Prosser  
Solution Architect  
October 2017

# Context Slide

Red Hat Stack, where am I....

# BY THE YEAR 2020

THERE WILL BE MORE THAN

26

BILLION  
INTERCONNECTED  
DEVICES

215

TRILLION  
STABLE  
CONNECTIONS

63

MILLION  
CONNECTIONS  
PER SECOND

Source: Gartner, *Building Platforms for a Digital Society: Key Insights From the 2016 Gartner Symposium/Itxpo Keynote*, Nov 2016. ID#G00317081.

# THE WAY WE DO BUSINESS HAS CHANGED

THE NUMBERS TELL THE STORY (AND IT'S NOT OVER YET)

**90%**  
of all data was  
created in the  
last 2 years [1]

**BIG DATA**

**77%**  
of Americans  
own a  
smartphone  
[2]

**MOBILE**

**85%**  
of customers  
making a major  
purchase start  
online [3]

**SOCIAL**

**41%**  
of enterprise  
workloads are  
running on  
cloud [4]

**CLOUD**

**29B**  
devices  
connected to  
the internet  
by 2022 [5]

**IoT**

**\$284B**  
in mobile  
commerce in  
the US by  
2020. [6]

**API ECONOMY**

[1] IBM, [10 Key Marketing Trends for 2017](#), Dec 2016. [2] Pew Research Center, [Mobile Fact Sheet](#), Jan 2017. [3] Synchrony Financial, [2016 Major Purchase Study](#), Dec 2016.

[4] 451 Research, [Voice of the Enterprise: Cloud Transformation](#), September 2016. [5] Ericsson, [Ericsson Mobility Report](#), Nov 2016.

[6] Business Insider, [The Rise of M-Commerce: Mobile Shopping Stats & Trends](#), Dec 2016.

# EVERY COMPANY NEEDS TO BE SOFTWARE COMPANY

Software is Eating the World

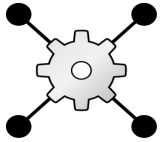
“The big question is always, Do we car manufacturers learn to become tech companies more quickly than a tech company learns to be an automotive player?”

Peter Schwarzenbauer,  
a member of the BMW management,  
<https://www.nytimes.com/2017/02/08/business/germany-bmw-daimler-volkswagen-uber.html?smprod=nytcore-ipad&smid=nytcore-ipad-share>

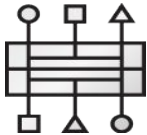
# BE COMPETITIVE

Enterprise IT is undergoing fundamental change. To remain competitive, businesses need an integration platform capable of supporting current *and* next generation architectures.

## Service Endpoints

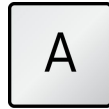


Webservices

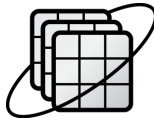


APIs

## Architecture

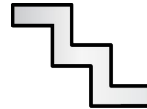


Monolith

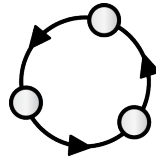


Microservices

## Development Process



Waterfall

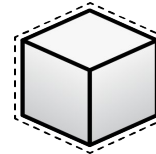


CI/CD

## Deployment

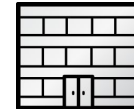


Server/VM



Container

## Infrastructure

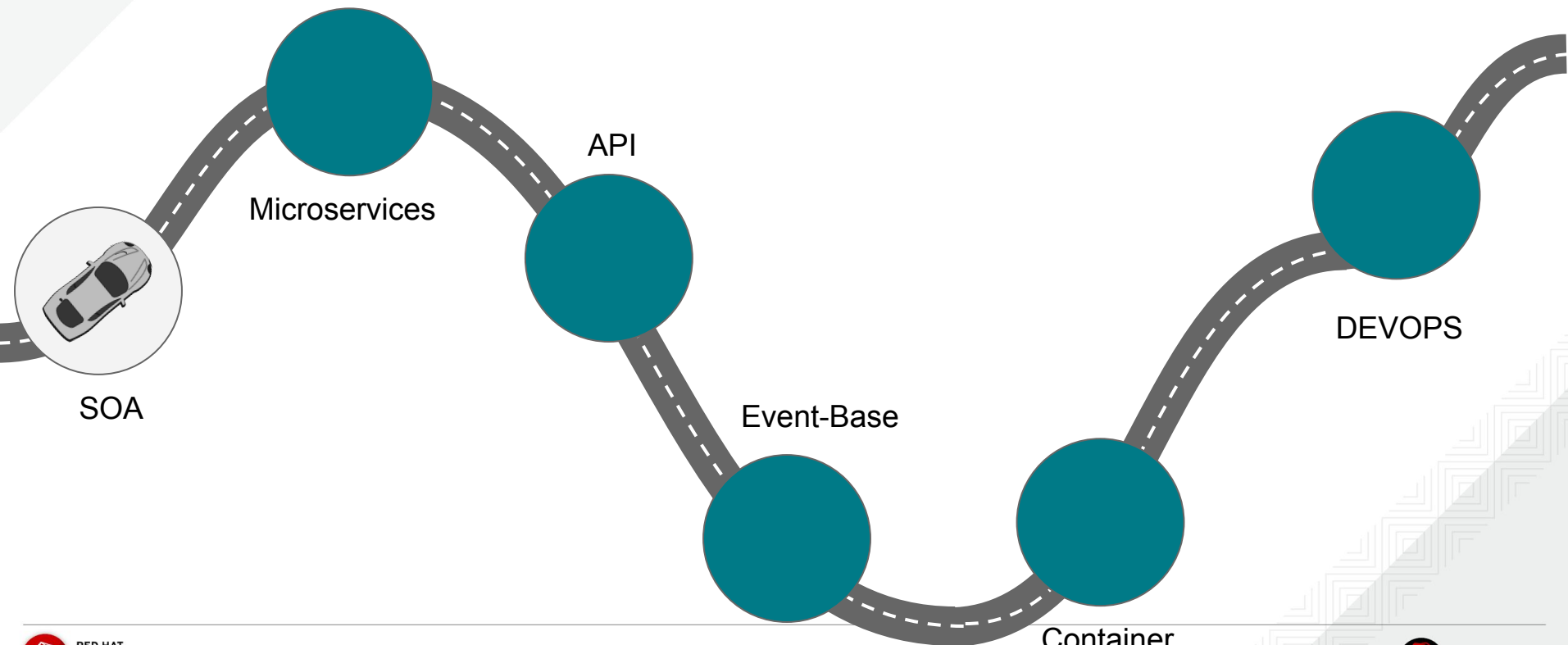


Data Center



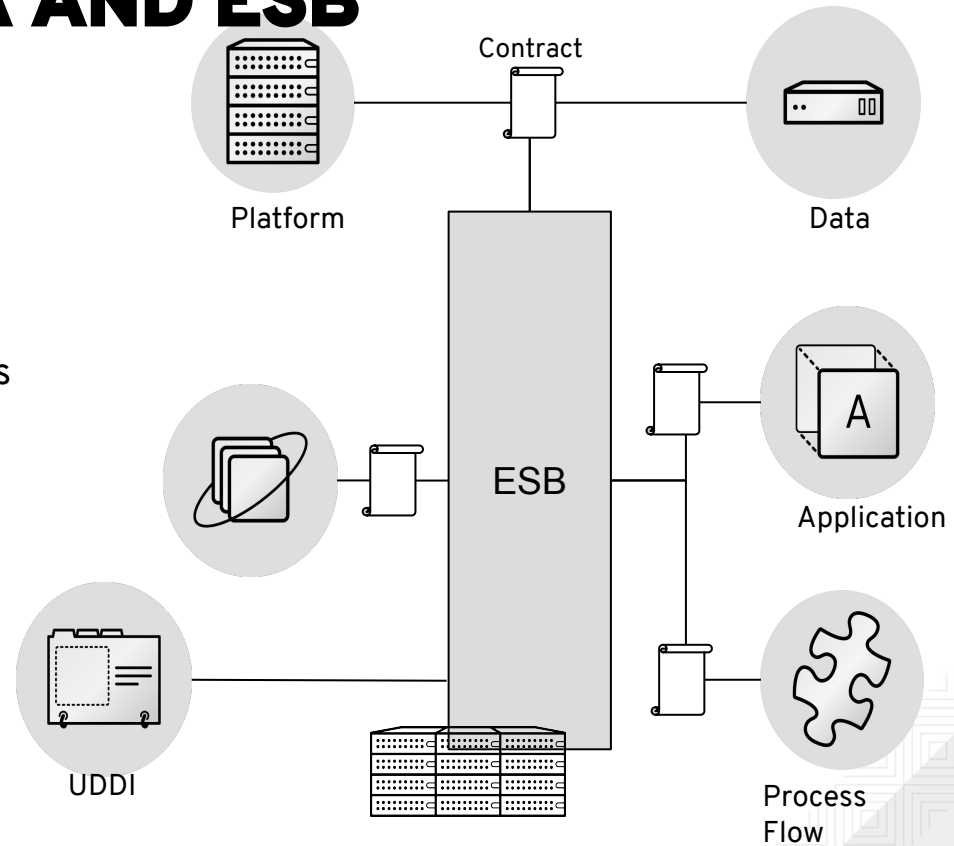
Cloud

# Does SOA fit?



# SOA AND ESB

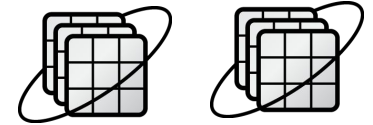
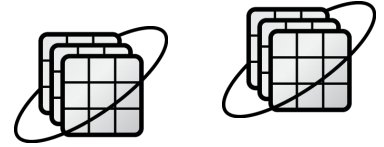
- Created by Vendors for EA's
  - Little support from Dev's
- Central, often Canonical Contracts
  - WSDL
  - BPEL
- Long software delivery cycle
- Everything or nothing
  - Scale
  - Availability
  - Upgrading
- Intelligent Hub



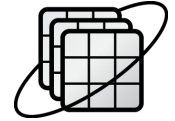


# MICROSERVICES

**Faster Software Delivery**



**Resource Scalability**

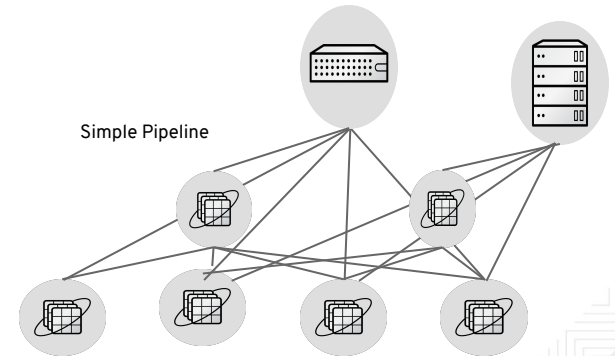
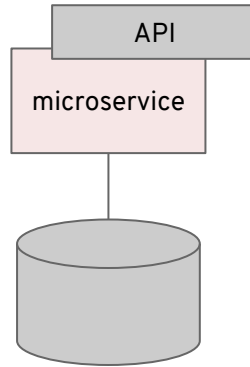


**Failure Isolation**

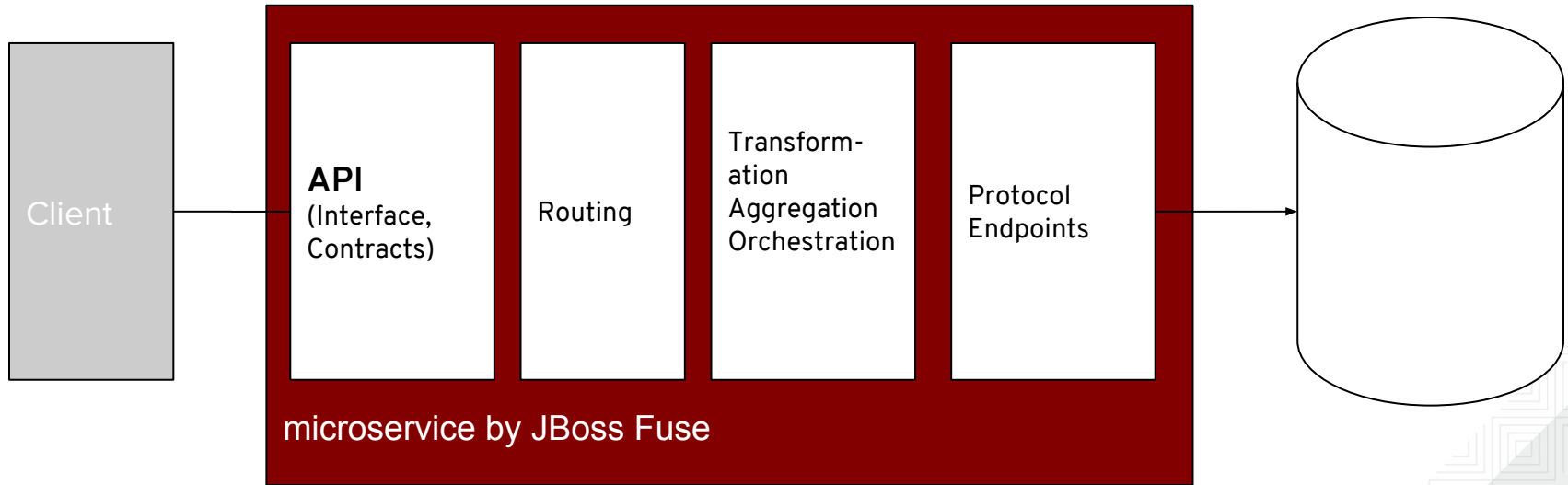


# MICROSERVICES

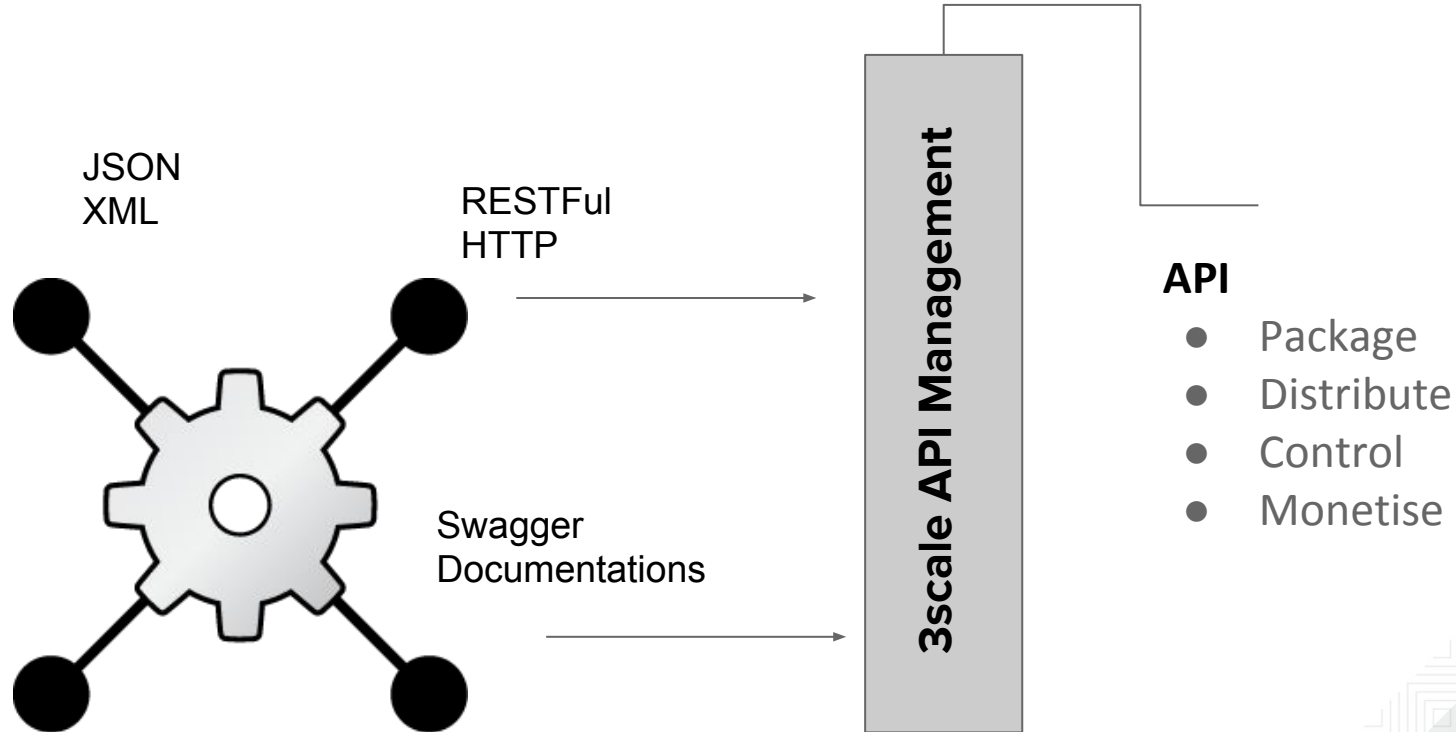
- Simple,small
  - Smart Endpoints, simple pipeline
- Boundary and Replaceable
  - Easy to reuse
  - Granularity?
- Independence



# SMART ENDPOINT

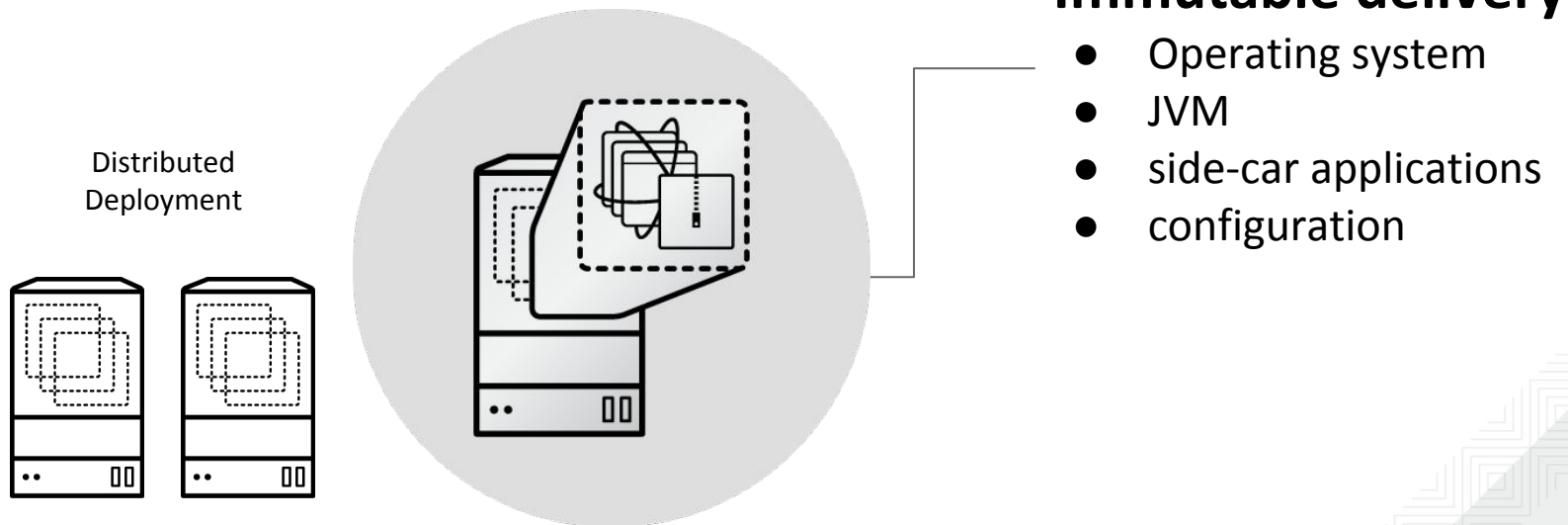


# APIs and API Management

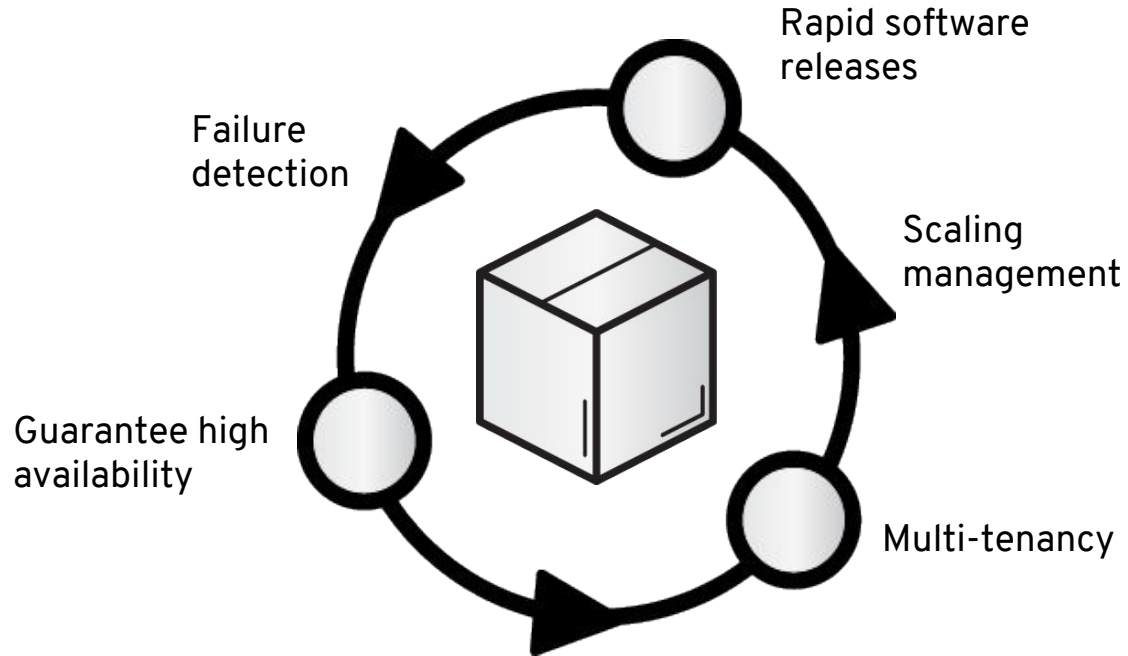


# CONTAINERS

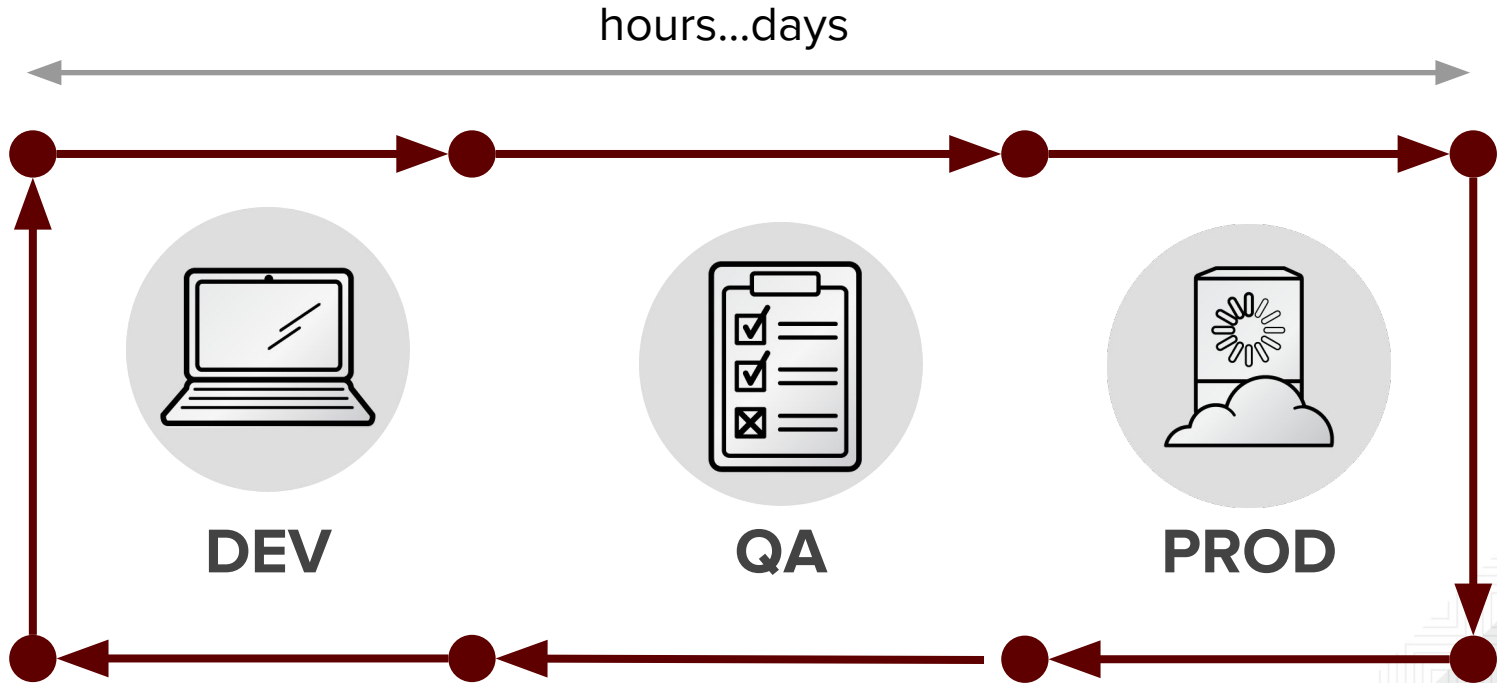
Deploy and manage as independent modules in a distributed environment



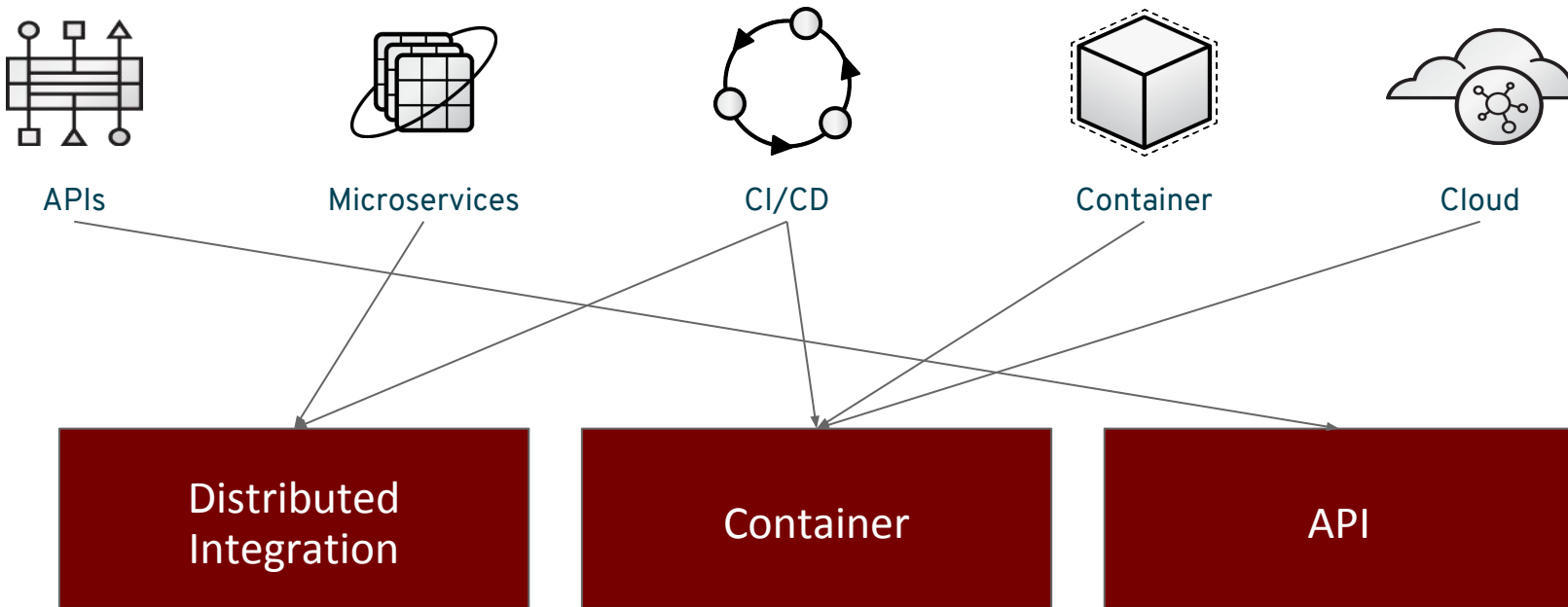
# OPENSIFT AND CONTAINERS



# DEVOPS - CI/CD

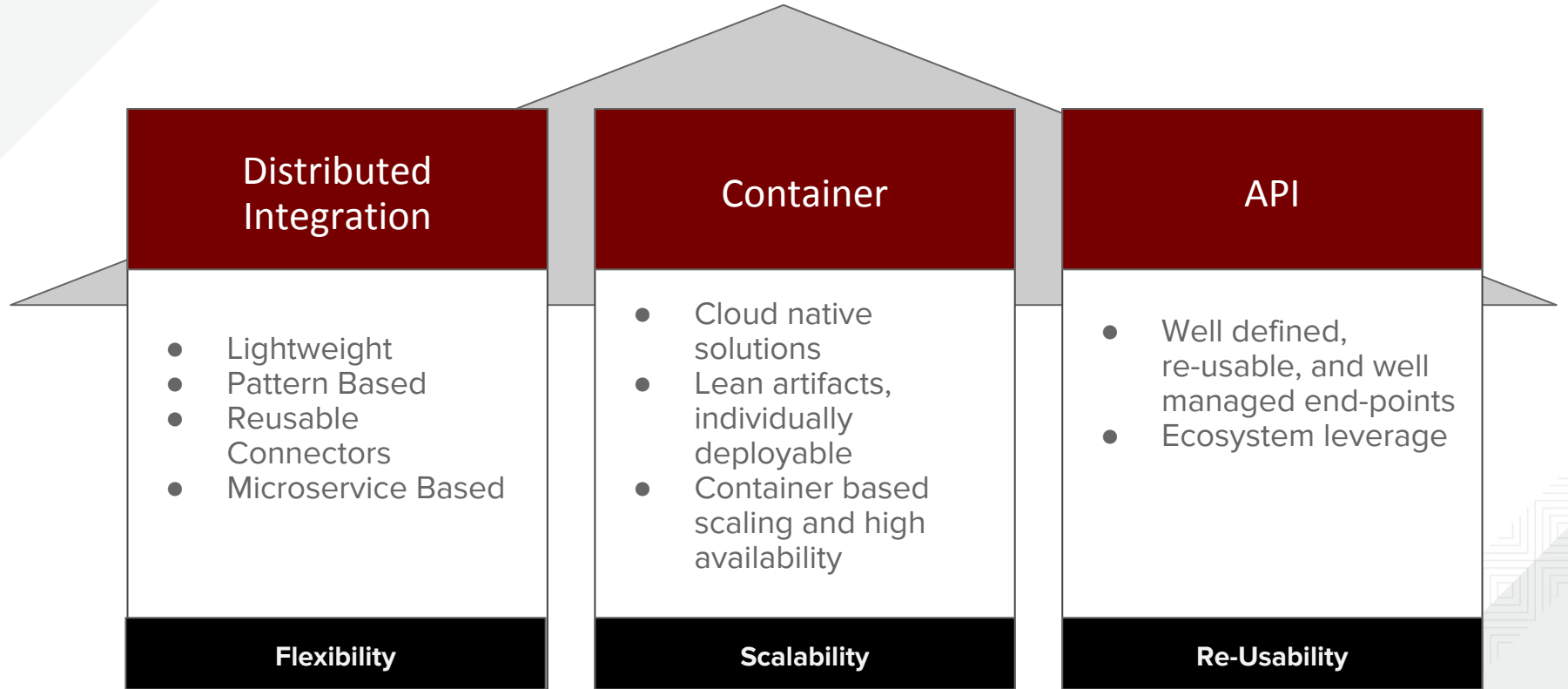


# BE COMPETITIVE

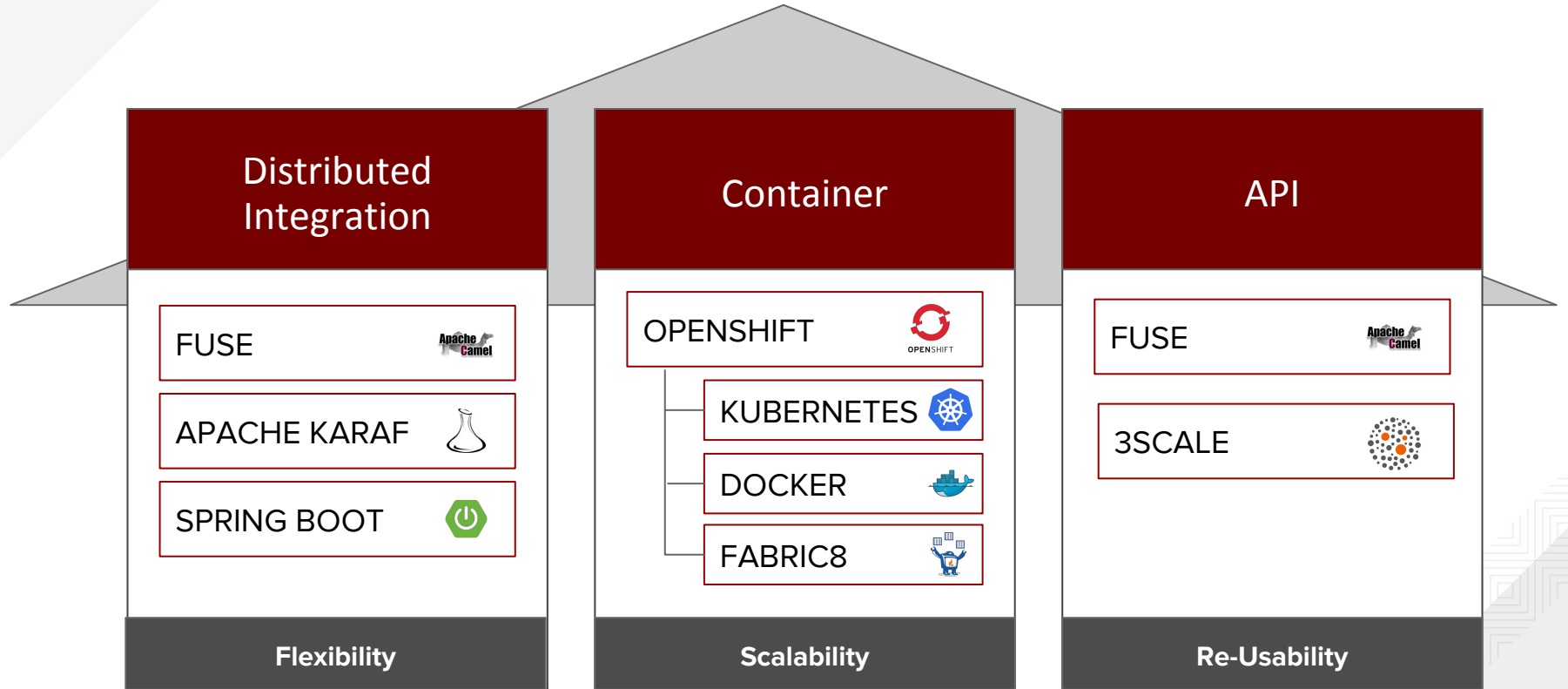




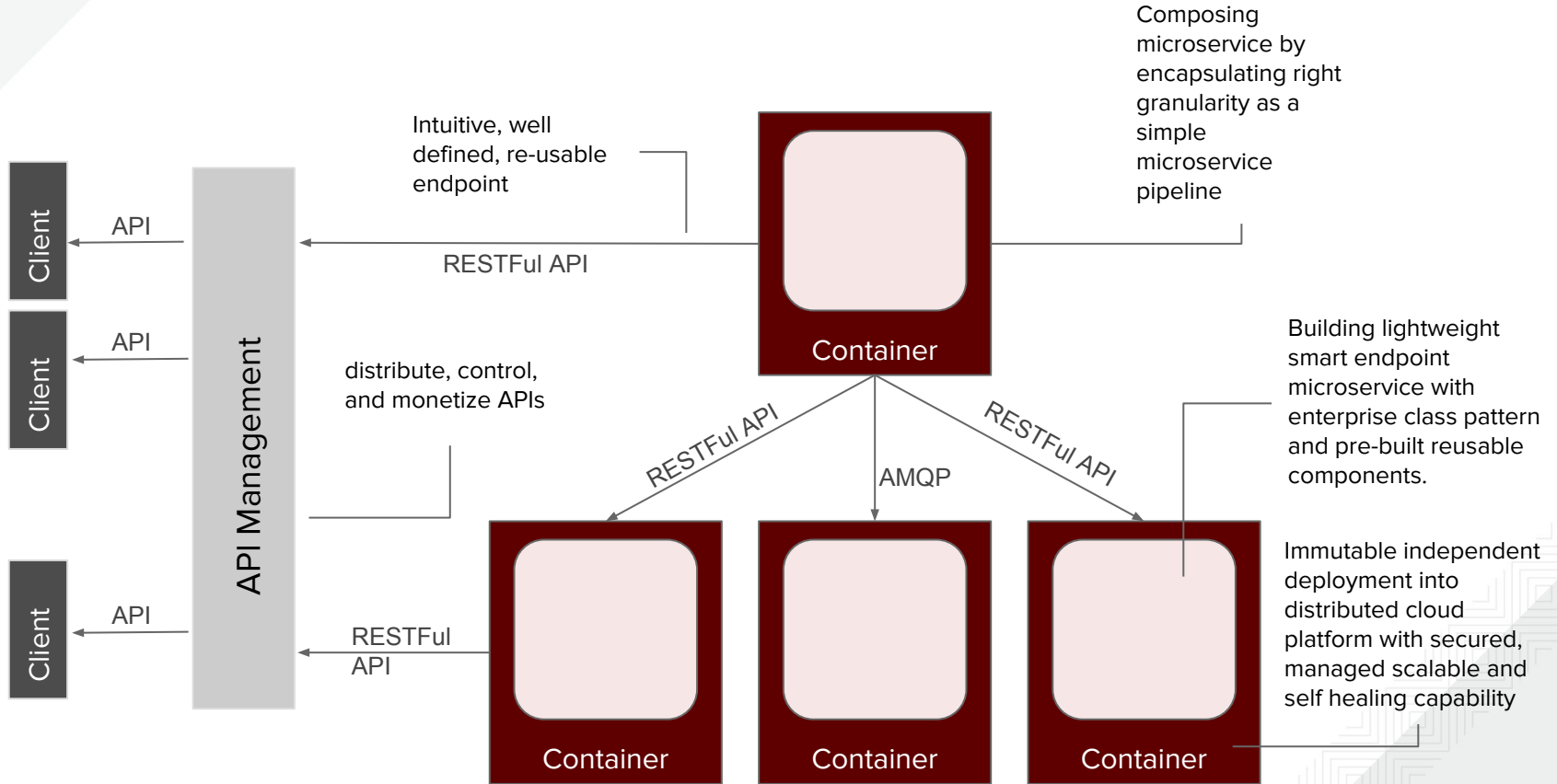
# AGILE INTEGRATION



# AGILE INTEGRATION



# AGILE INTEGRATION



# Agile Integration

## Distributed Integration

- Lightweight
- Pattern Based
- Reusable Connectors
- Microservices Based

**Flexibility**

### Container

- Cloud native solutions
- Lean artifacts, individually deployable
- Container based scaling and high availability

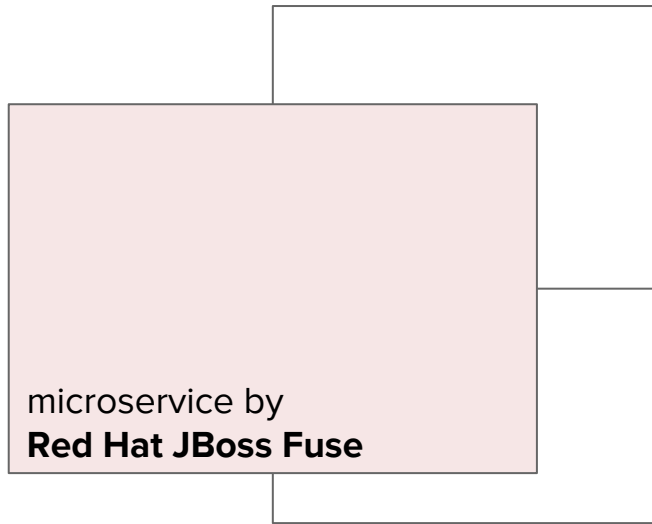
**Scalability**

### API

- Well defined, re-usable, and well managed end-points
- Ecosystem leverage

**Re-Usability**

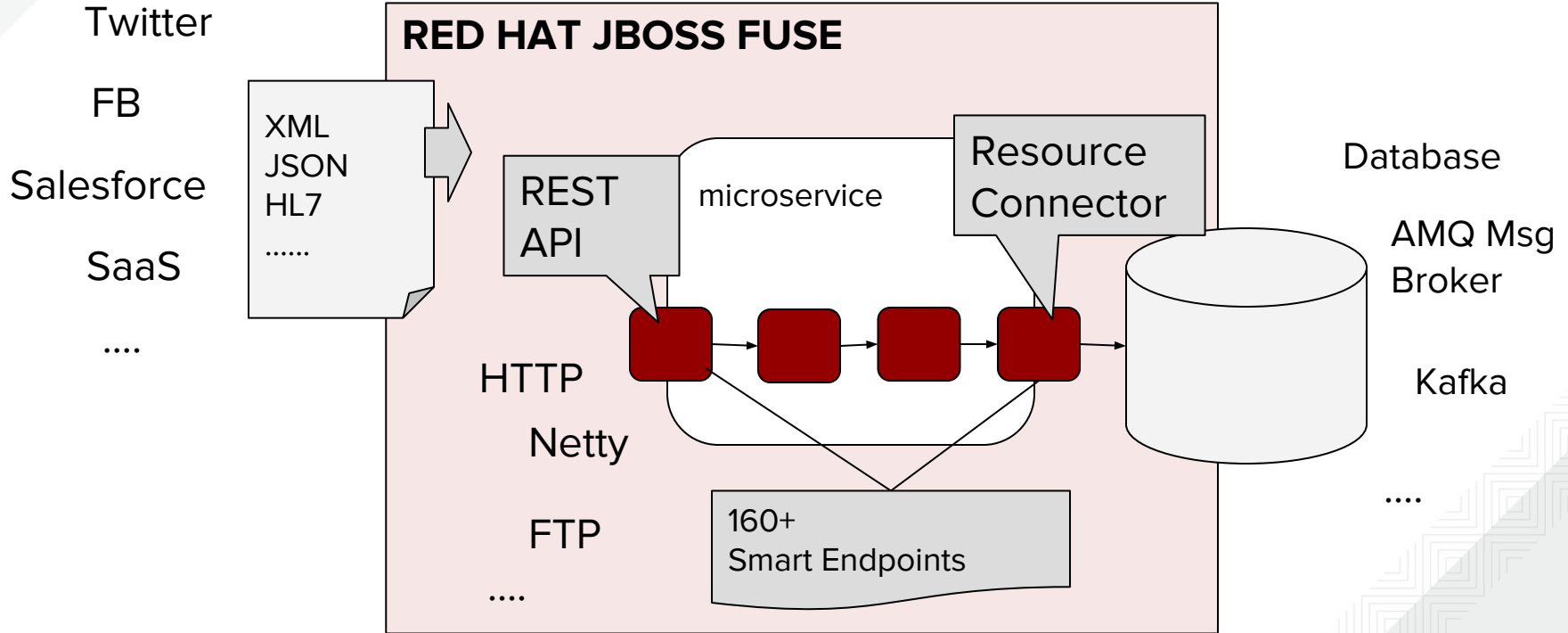
# DISTRIBUTED INTEGRATION - Microservice



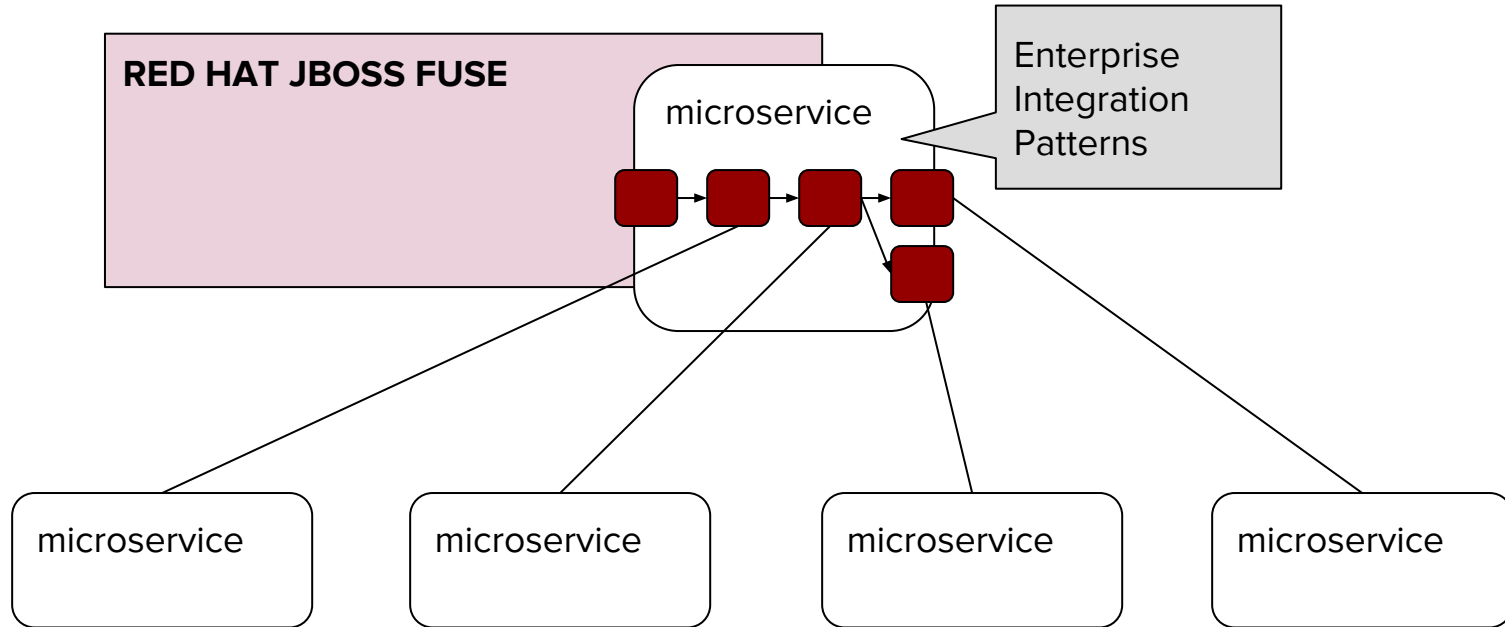
- **Lightweight**
  - Spring Boot deployment
  - DSL
  - S2i
- **Pattern Base**
  - Enterprise Integration Pattern
- **Reusable Connector**
  - Camel components

# Building microservices with Fuse

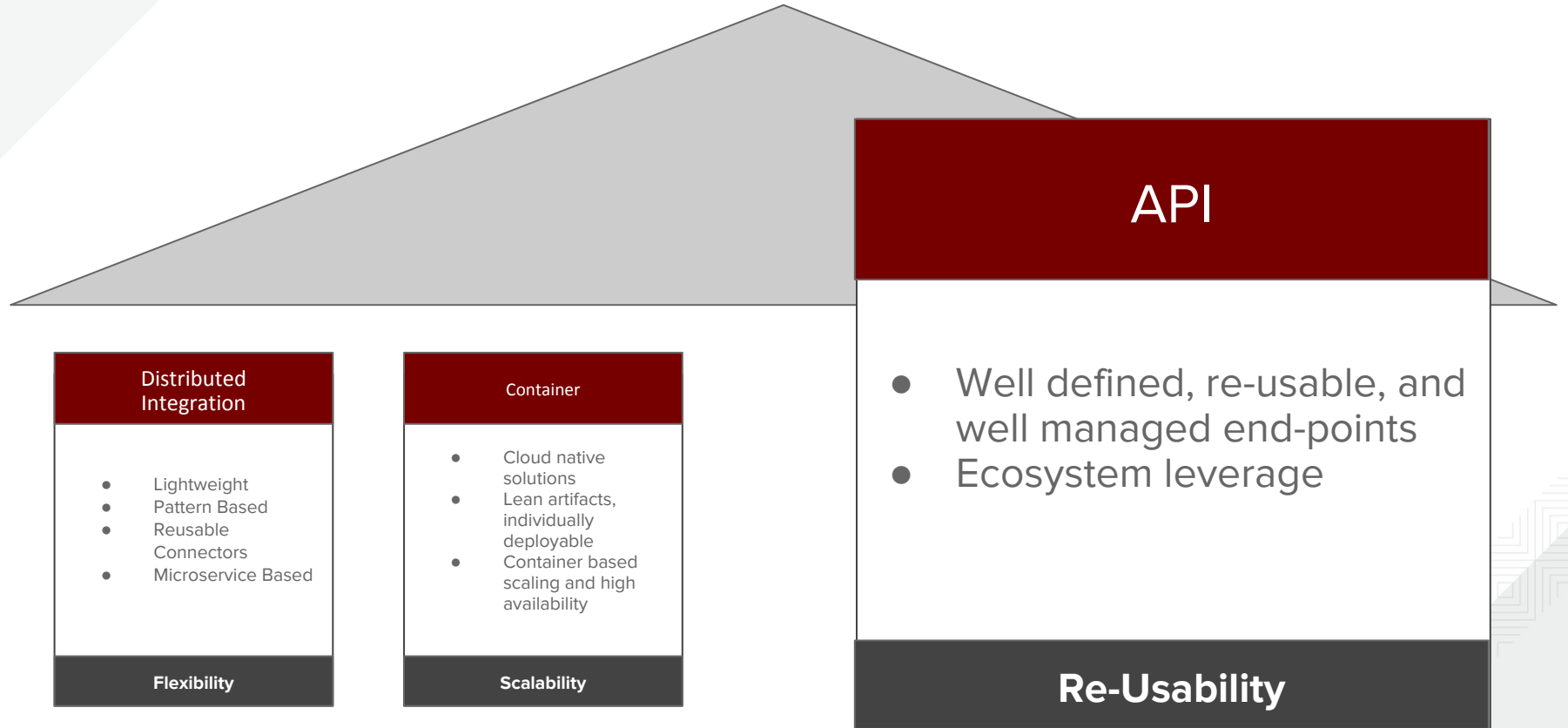
Smart Endpoint



# Composing Microservice with Fuse

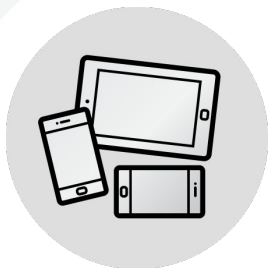


# Agile Integration





# API



## Multiple Device Support

Device are not limited to screen  
Voice enable  
Drome, VR



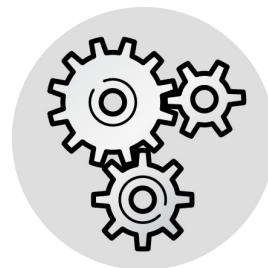
## Customer/ Vendor/ Partner

More complex ecosystem  
SaaS  
Frequency  
Data volume



## Monetize Service

Increased revenue  
market share  
Open up new opportunities



## Modularize and agility

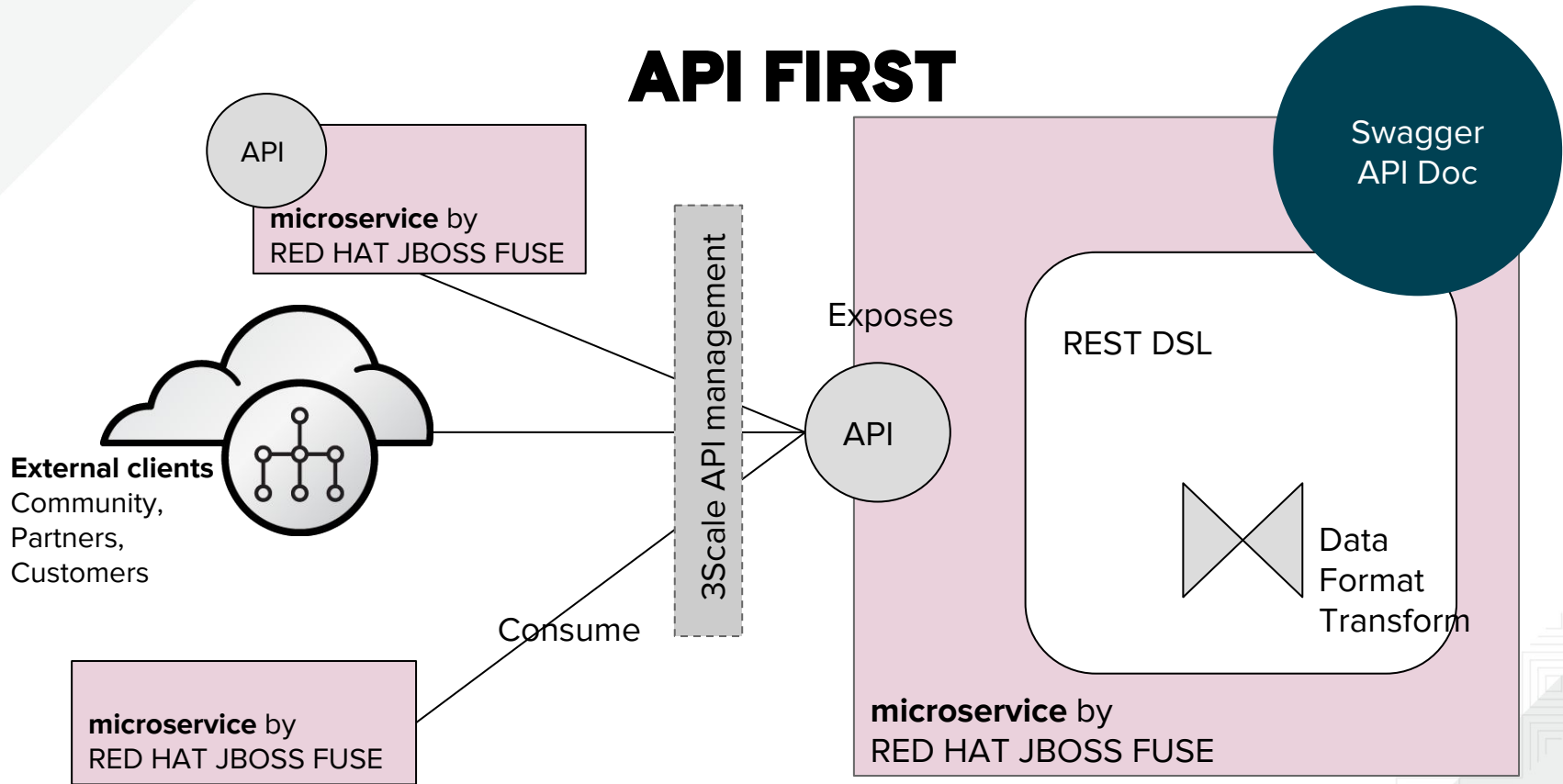
Enhanced developer experience  
Reuse code  
Hide implementation details



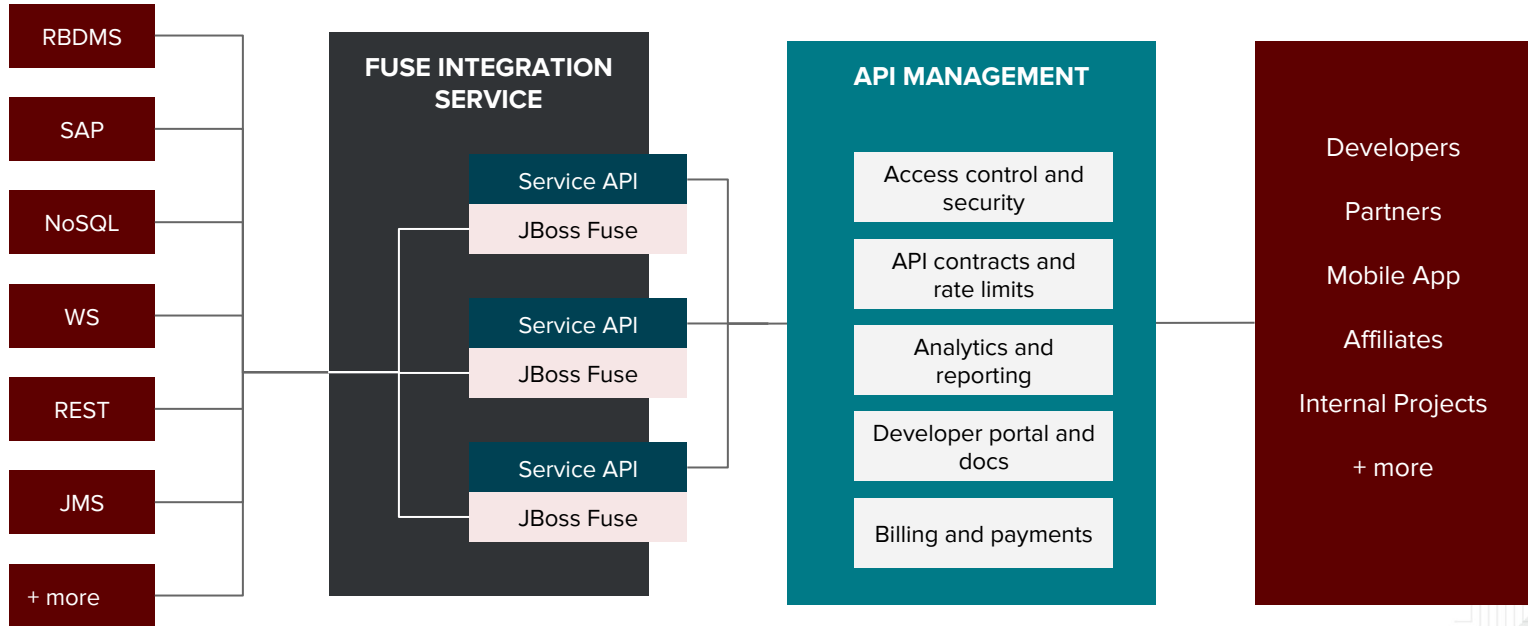
## Scalability in Distributed System

Able to flexibly allocate resource  
Cloud enabled

# API FIRST

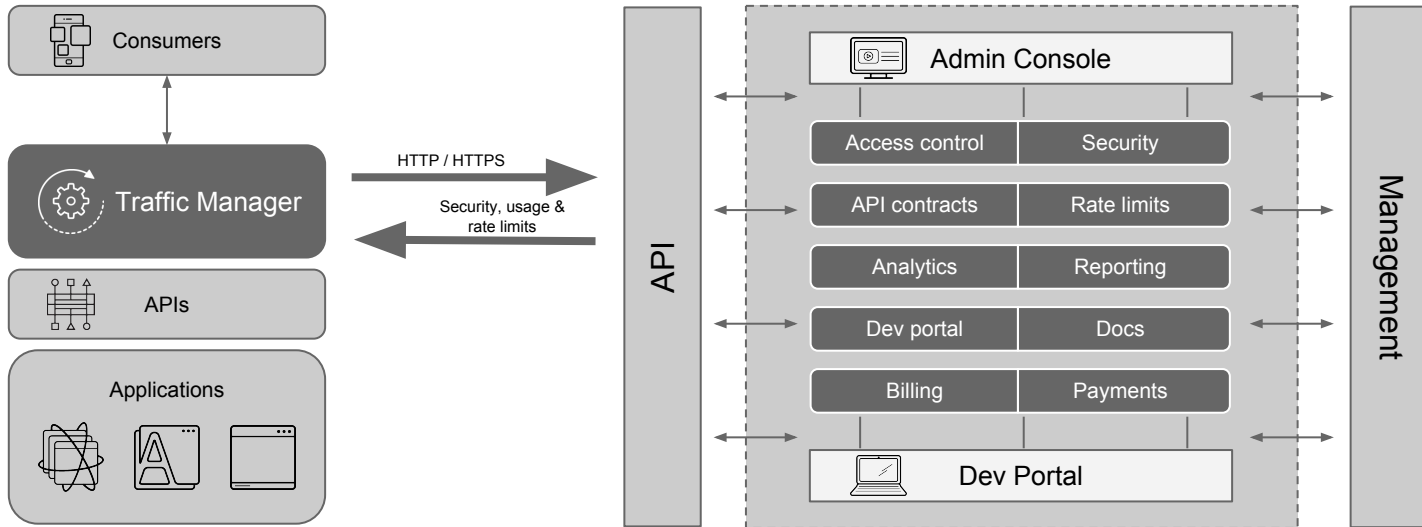


# 3Scale API Management

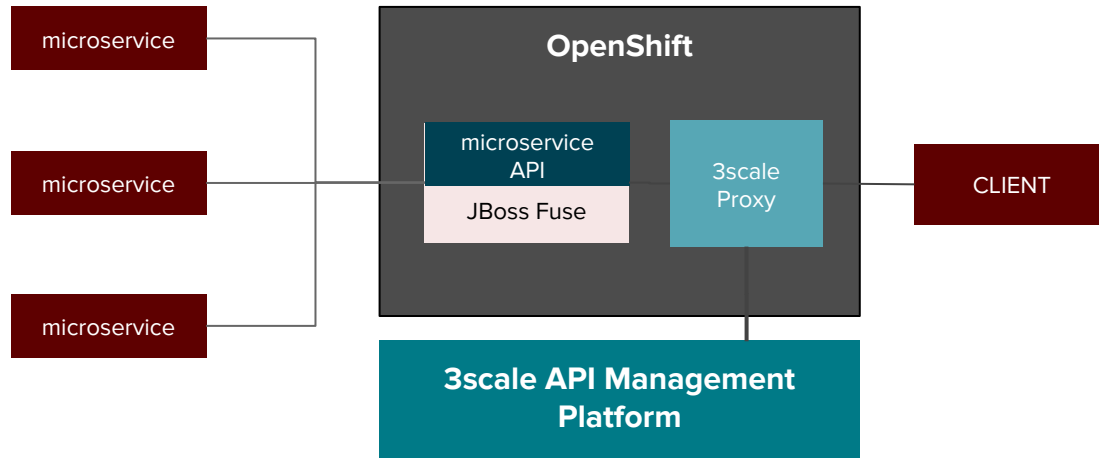


# 3Scale API Management

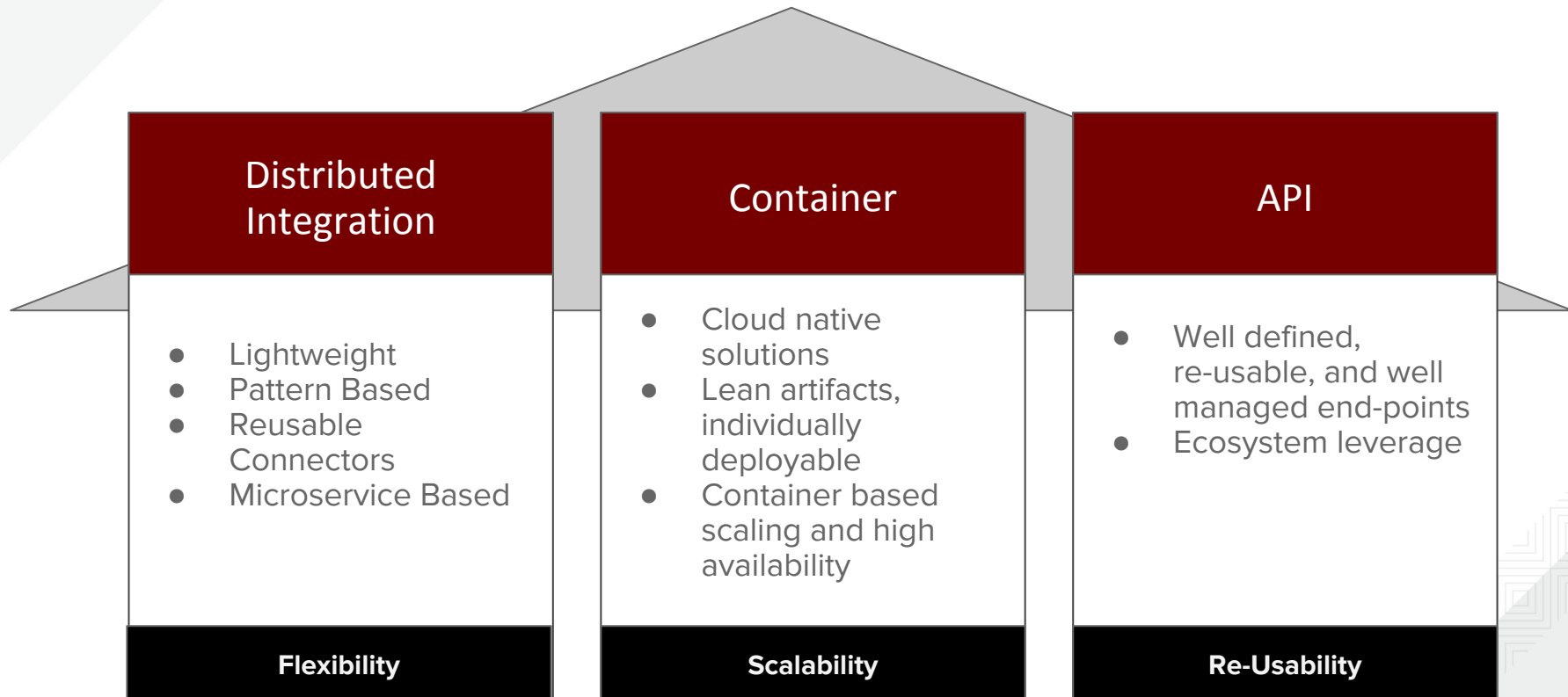
Stack



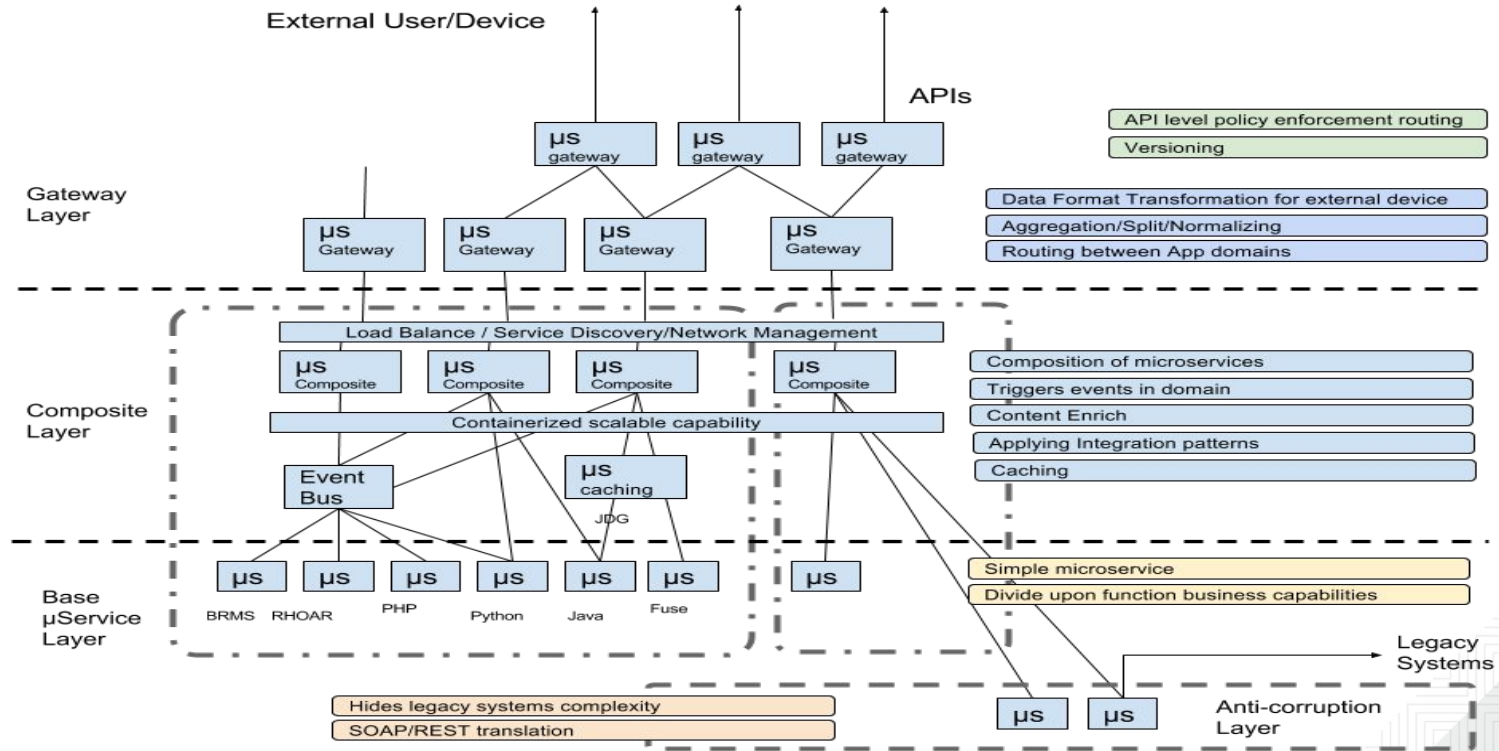
# 3scale API Management



# AGILE INTEGRATION - ARCHITECTURE



# AGILE INTEGRATION - ARCHITECTURE



# INTEGRATION AND APIs DRIVE AIR TRAVEL INNOVATION

## APIs

- Well defined, re-usable, and well managed end-points
- Ecosystem leverage



- Schiphol Airport aims for world class traveller experiences
- Using Red Hat JBoss Fuse to create the right API endpoints and then putting them in the hands of partners creates an extended team to deliver innovation
- Flight, baggage, reservation, and other data are available throughout the airport and to all partners
- APIs through 3scale API Management provide the foundation for seamless handoff between the airport and its partners



# All ways on, mostly connected, always integrated, the API economy

With Agile Integration

All ways on

Red Hat Openshift

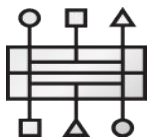
Mostly connected,  
always integrated

Red Hat JBoss Fuse  
(inc. AMQ)

API economy

JBoss Fuse  
3Scale by Red Hat

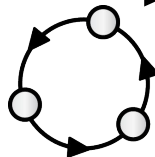
## and deliver competitiveness



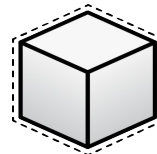
APIs



Microservices



CI/CD



Container



Cloud

# Call to action slide

Demo room

Beers!! Etc



**RED HAT**  
**FORUM**  
Europe, Middle East & Africa