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Fully Orchestrating Applications, Microservices and Enterprise Services with Docker at Societe Generale

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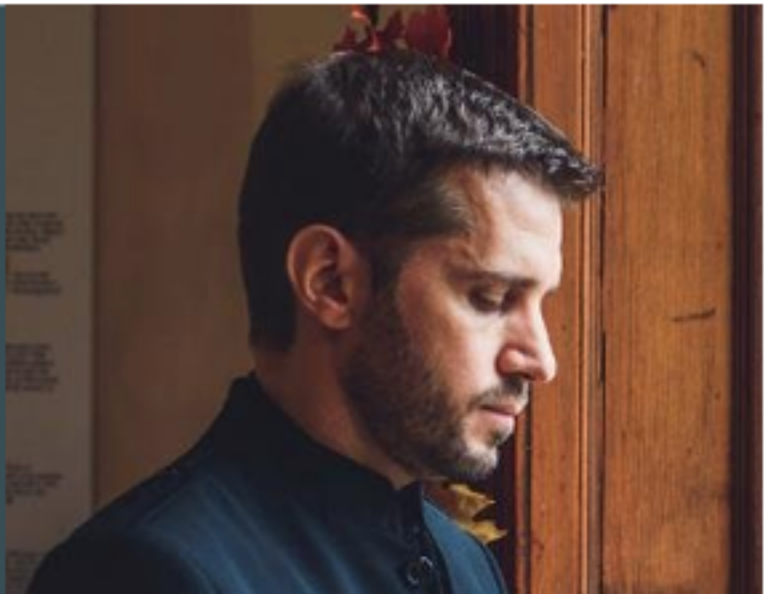

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@cedric_coroir

Agenda

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Problem: How to build a PaaS for a corporate with thousands applications?

Though Process	**Convergence Challenge**	**How did we Achieve it**	**Epilogue**
Context	Expectations	Standardizing	What's next
Journey	Challenge	Transformation	Docker Word
Goals	'The bet'	New pattern	Q/A

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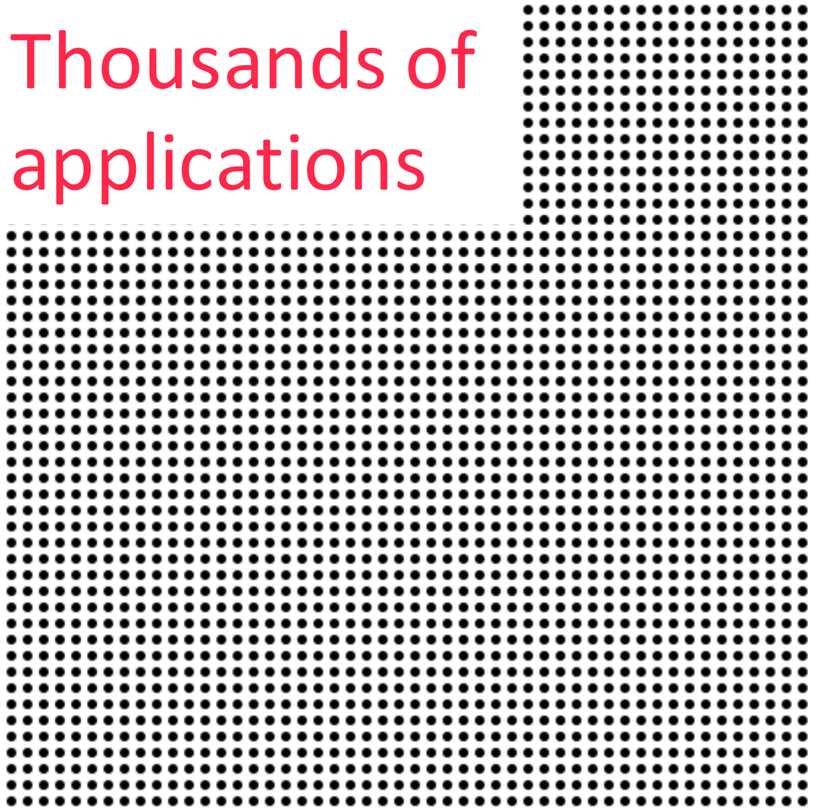
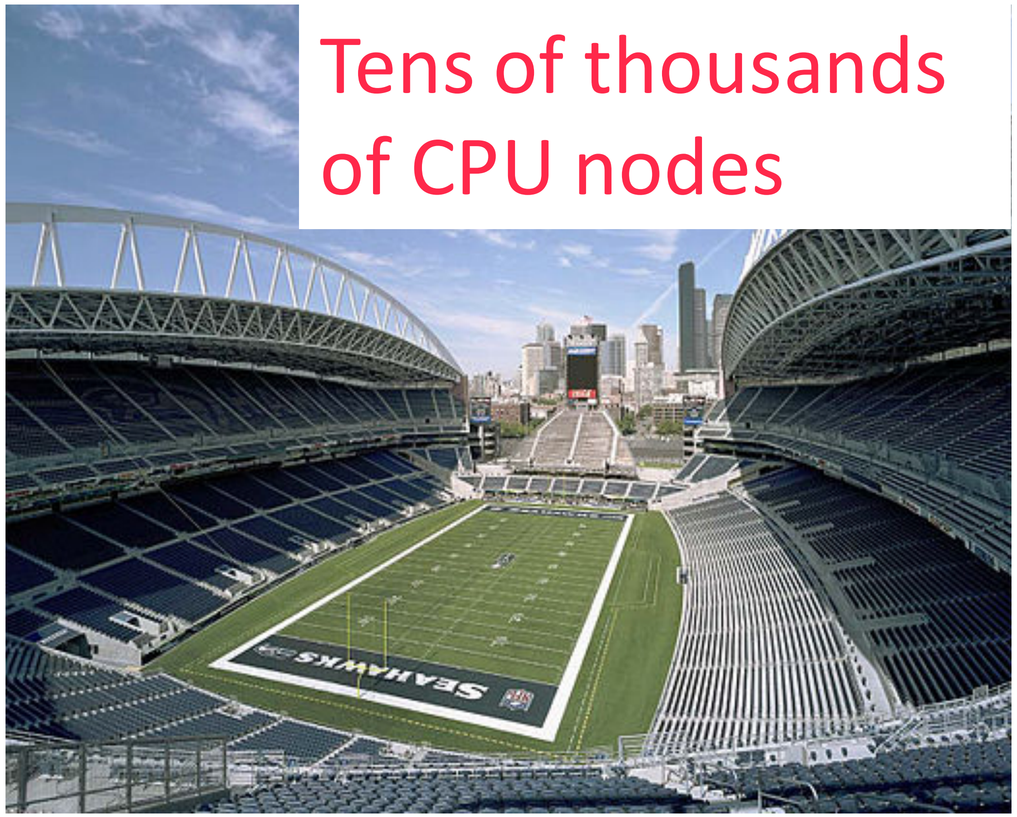
Societe Generale IT infrastructure:

Thousands of applications



Tens of thousands of CPU nodes



CentutyLink Field, Seattle Seahawks
Capacity 67,000

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We are on a journey toward automation

WE HAVE BARE METAL CLUSTERS, VM AND IAAS...
NOW IT'S ALL ABOUT CONTAINERS

Platform as a Service goals at SG

2020 Target
80% App to Cloud at PaaS level

Inherently enable best time to market, IT rationalization and scalability

Critical enabler of Digital Transformation and Continuous Delivery

- Time to market
- Productivity and Innovation
- Costs savings
- Scaling to usage

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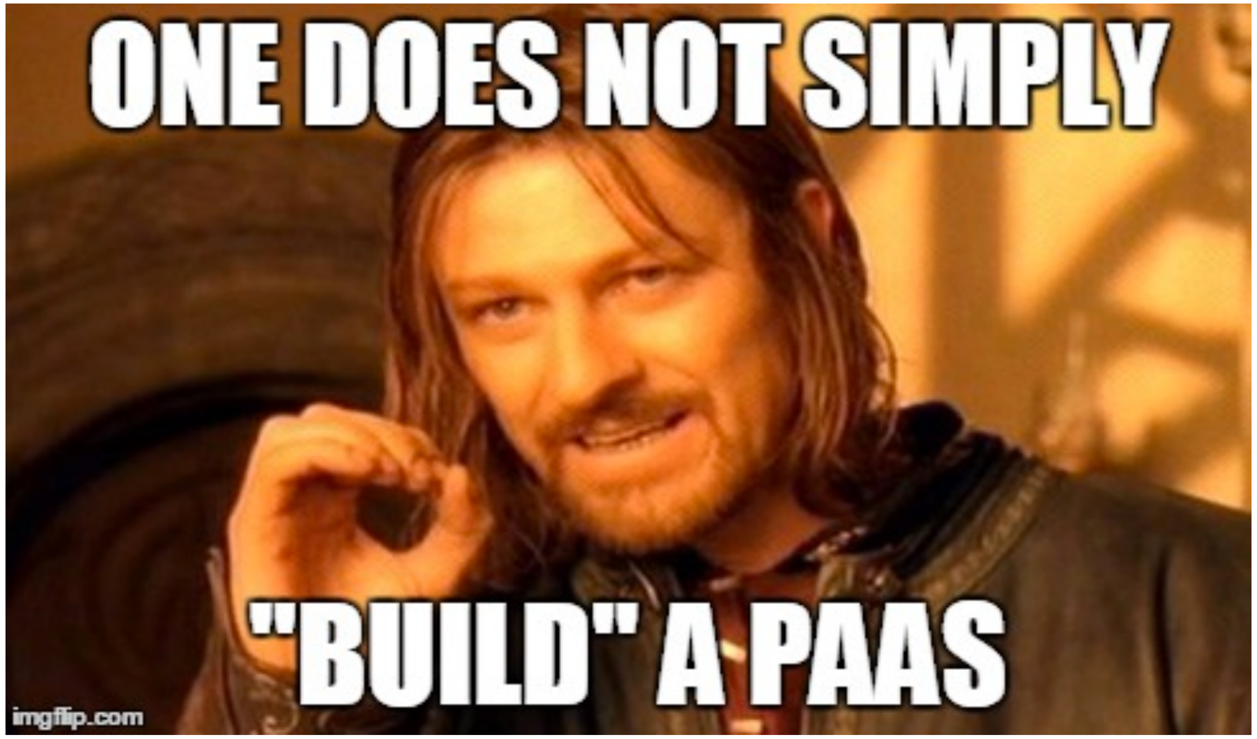
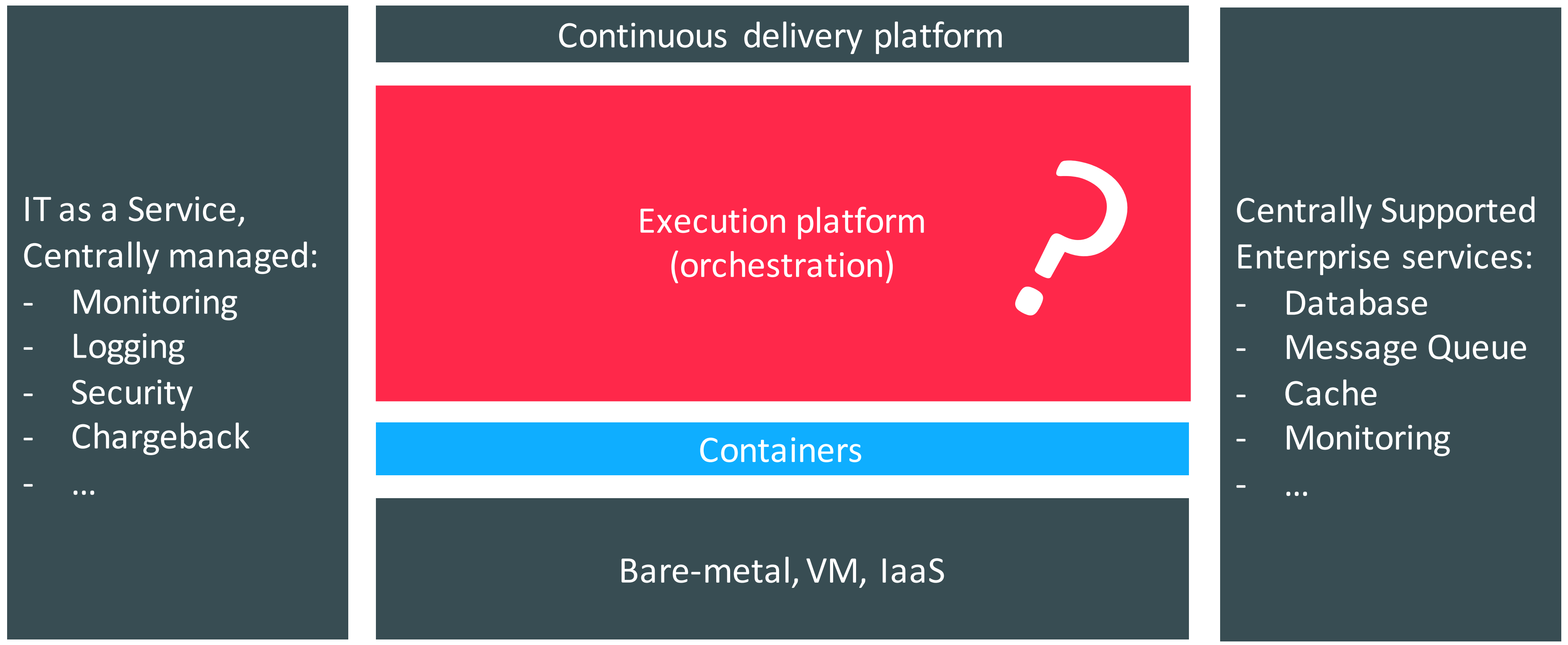
Now how to do a container centric PaaS?



http://blogs.gartner.com/richard-watson/ok-get-dockers-great/

What we expect from a corporate PaaS?

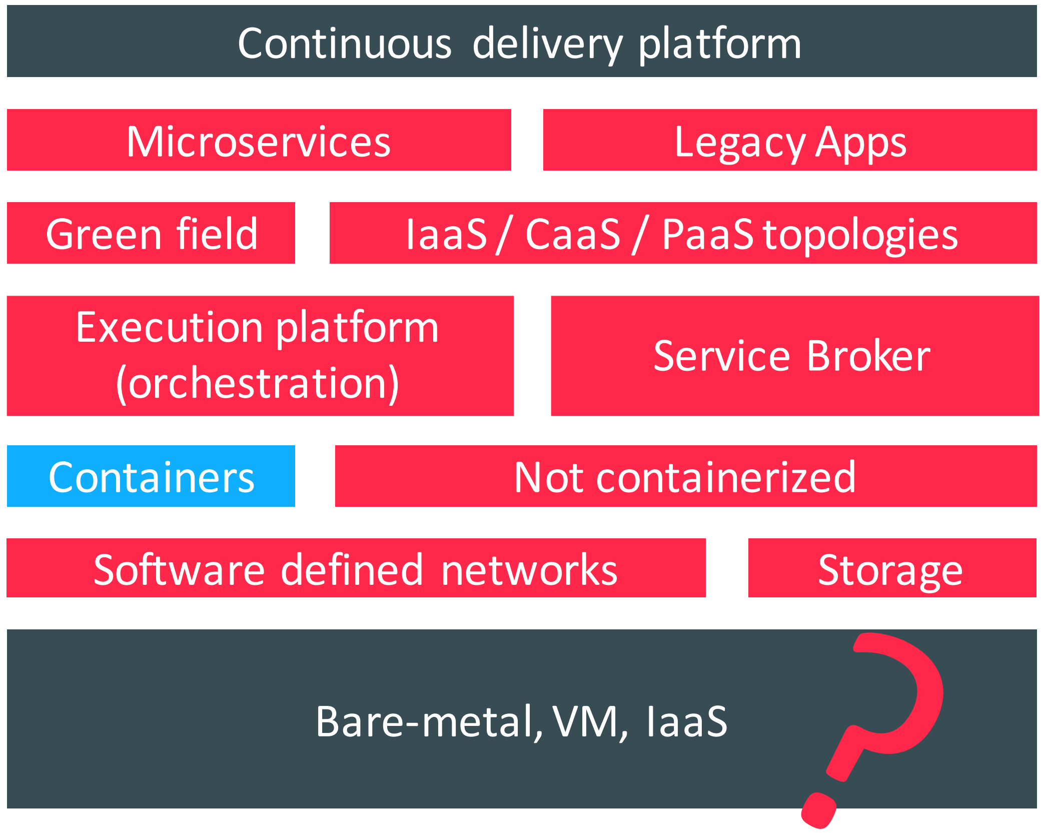


Which PaaS for our nebulae of App?

High expectations lead to complexity

IT as a Service,
Centrally managed:

- Metrology
- Security
- Quotas
- Chargeback
- …



Continuous delivery platform
Microservices
Legacy Apps
Green field
IaaS / CaaS / PaaS topologies
Execution platform (orchestration)
Service Broker
Containers
Not containerized
Software defined networks
Storage
Bare-metal, VM, IaaS

Centrally Supported
Enterprise services:

- Database
- Message Queue
- Cache
- Monitoring
- …

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Convergence challenge

Engage through adoption

Simple user experience for developers and devops

One language for dev and ops

Integrate legacy applications without high refactoring effort

Engage through completeness

Advanced orchestrating features

Ability to orchestrate IaaS & CaaS

xPaaS service enabler

Linux and windows support asap

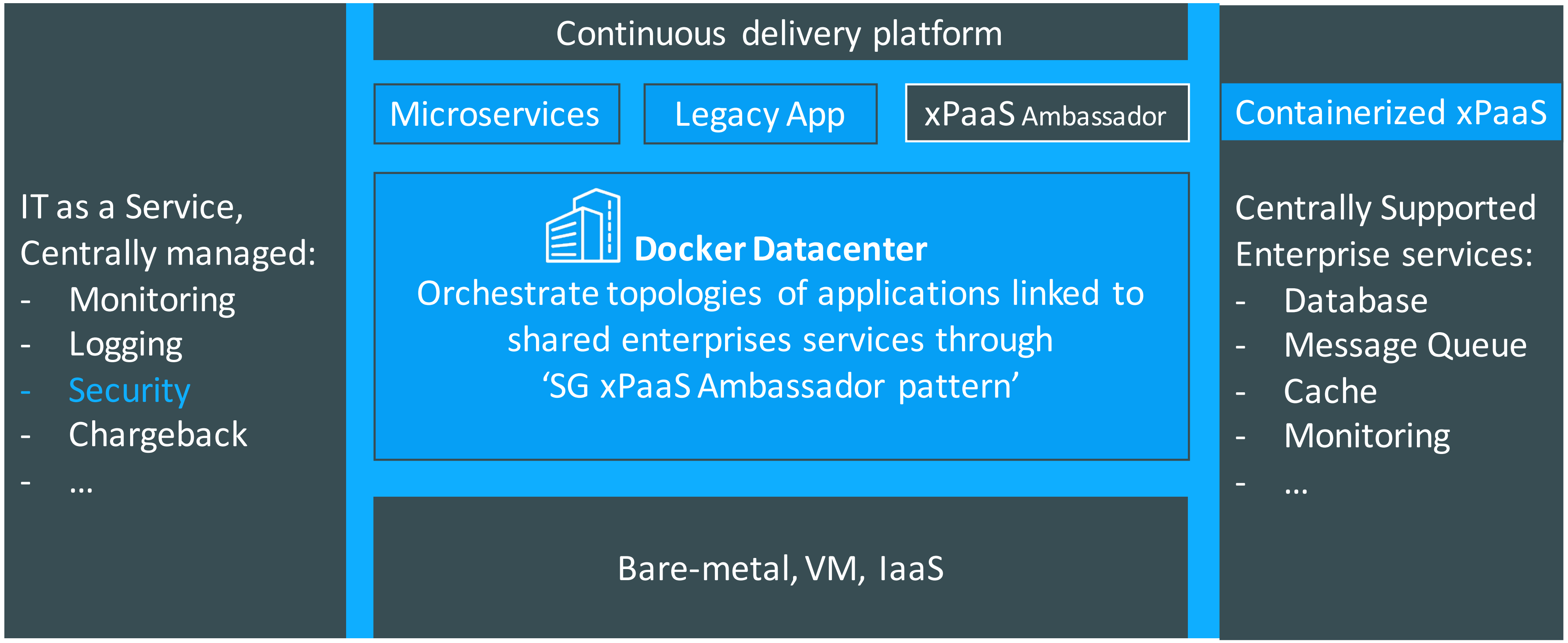
Advanced programming models SDK

Innovation is not waiting,
Developers & Ops
start using Docker in
small pockets

We bet on Docker technology and developers wide adoption

IT WILL BE REALLY CHALLENGING TO TRANSFORM 80% OF OUR IT
WHAT IF THE DEVELOPERS DO IT THEMSELVES?

Standardizing orchestration on Docker



Continuous delivery platform

Microservices | Legacy App | xPaaS Ambassador

Containerized xPaaS

IT as a Service,
Centrally managed:
- Monitoring
- Logging
- Security
- Chargeback
- …

Docker Datacenter
Orchestrate topologies of applications linked to shared enterprises services through 'SG xPaaS Ambassador pattern'

Centrally Supported Enterprise services:
- Database
- Message Queue
- Cache
- Monitoring
- …

Bare-metal, VM, IaaS

Fully Orchestrating Applications, Microservices and Enterprise Services

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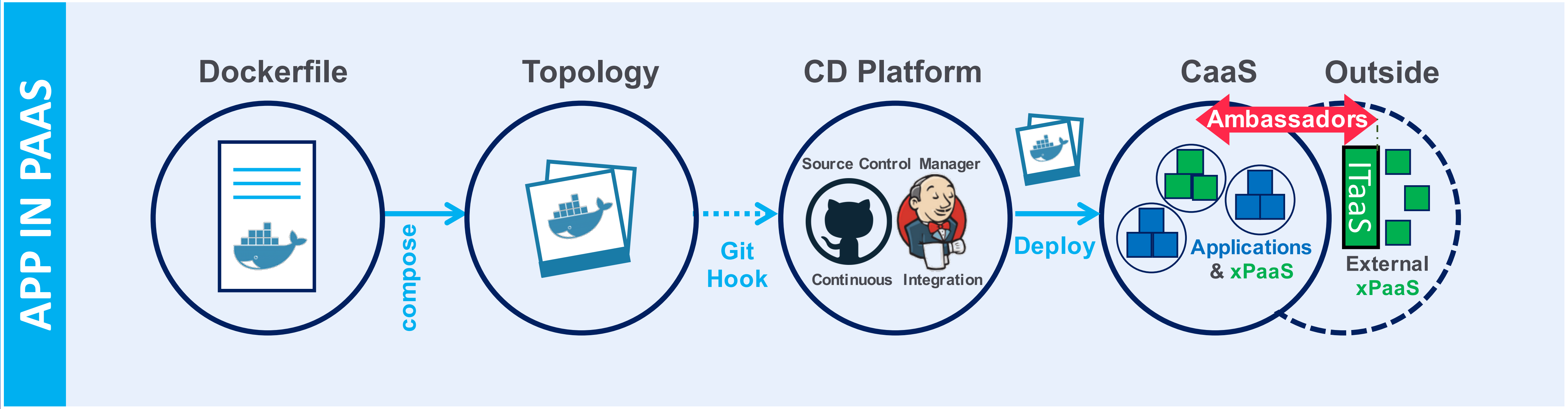
The new continuous delivery chain



When Docker is deployed in small pockets, It is technical debt at corporate level…

How did we achieve it ?

Transform the relevant pilots

- One of the biggest and less Docker-friendly App

- A Microservices centric App

- The Continuous delivery platform itself

Operate one central Docker Datacenter

At the right place within the Infrastructure service

Build foundations

Metrology, security, chargeback, etc.

Enterprise Services Ambassador

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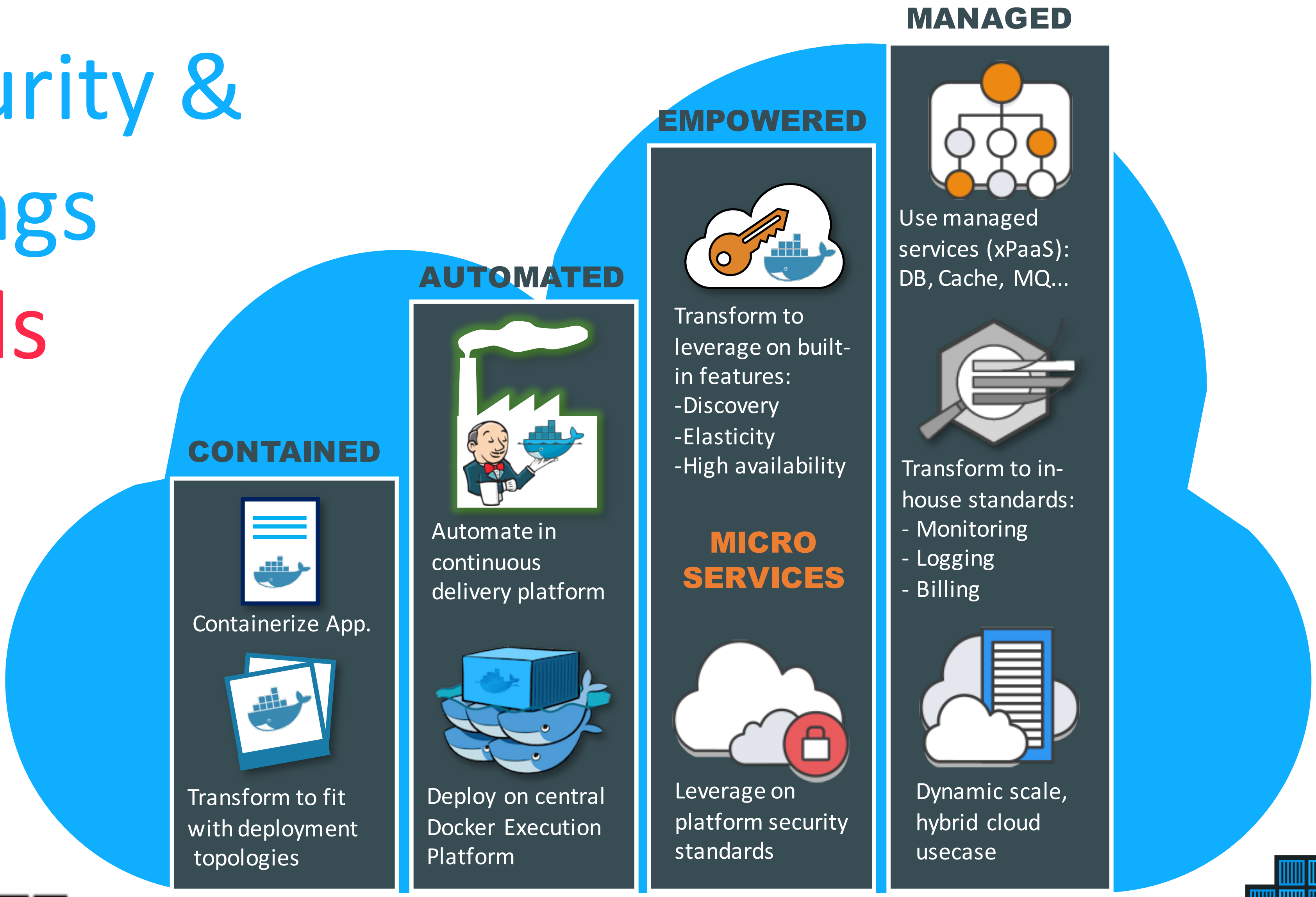
Maturity & Savings Levels



CONTAINED

Containerize App.

Transform to fit with deployment topologies

AUTOMATED

Automate in continuous delivery platform

Deploy on central Docker Execution Platform

EMPOWERED

Transform to leverage on built-in features:
-Discovery
-Elasticity
-High availability

MICRO SERVICES

Leverage on platform security standards

MANAGED

Use managed services (xPaaS): DB, Cache, MQ…

Transform to in-house standards:
- Monitoring
- Logging
- Billing

Dynamic scale, hybrid cloud usecase

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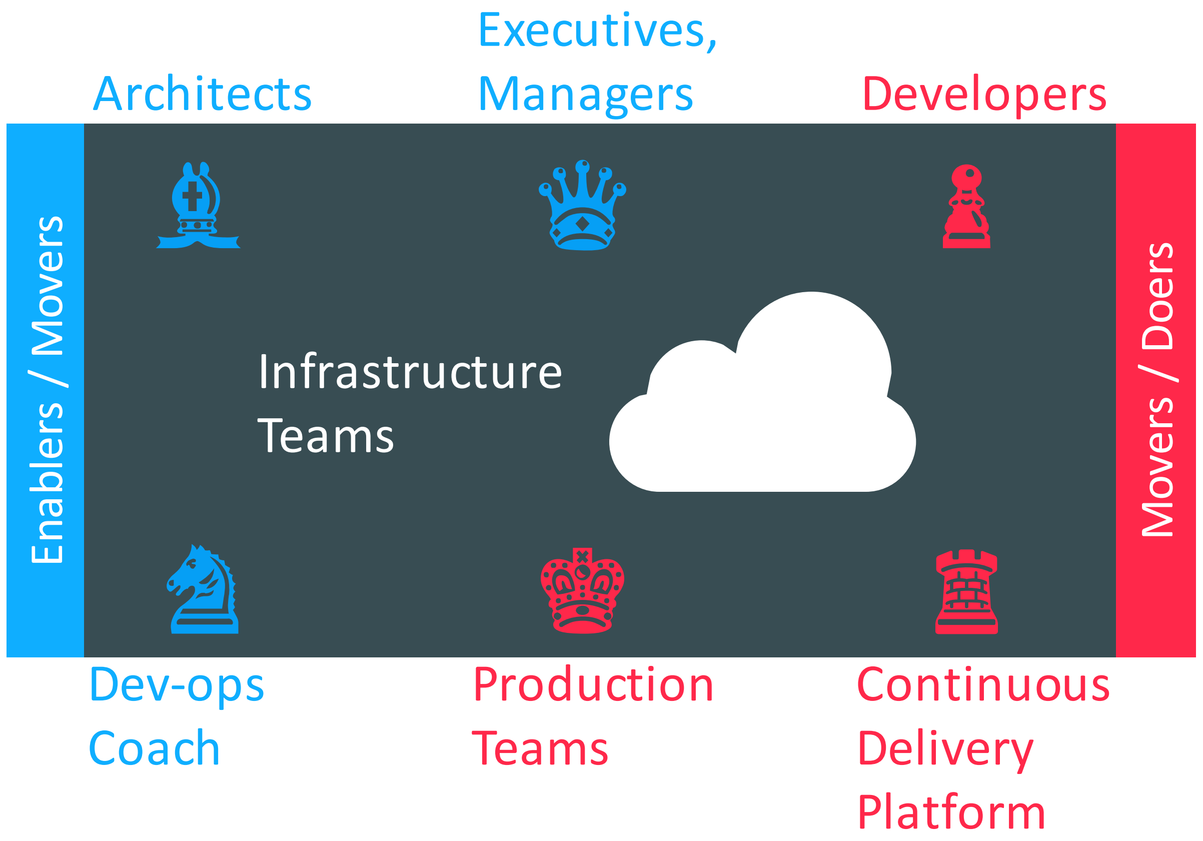
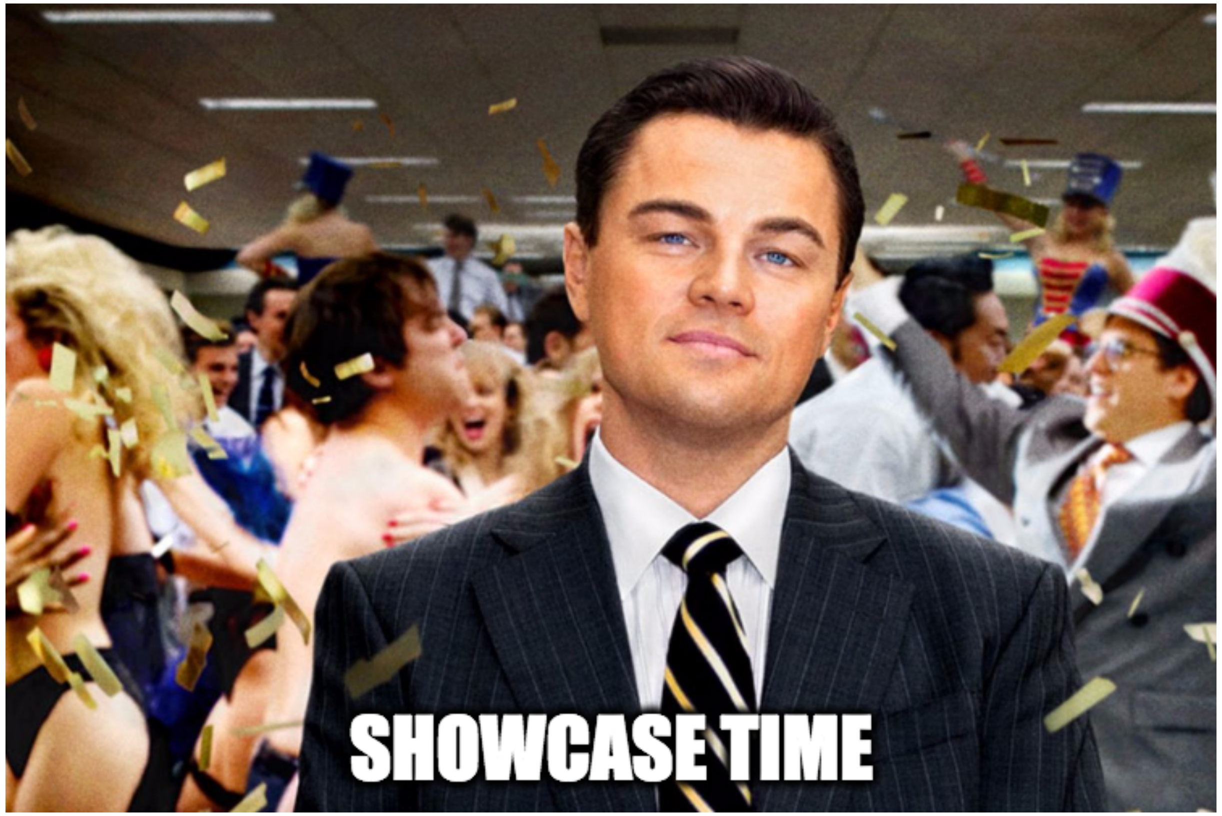
Move the applications collaboratively



How to orchestrate enterprise services?

Ambassador pattern + Topologies

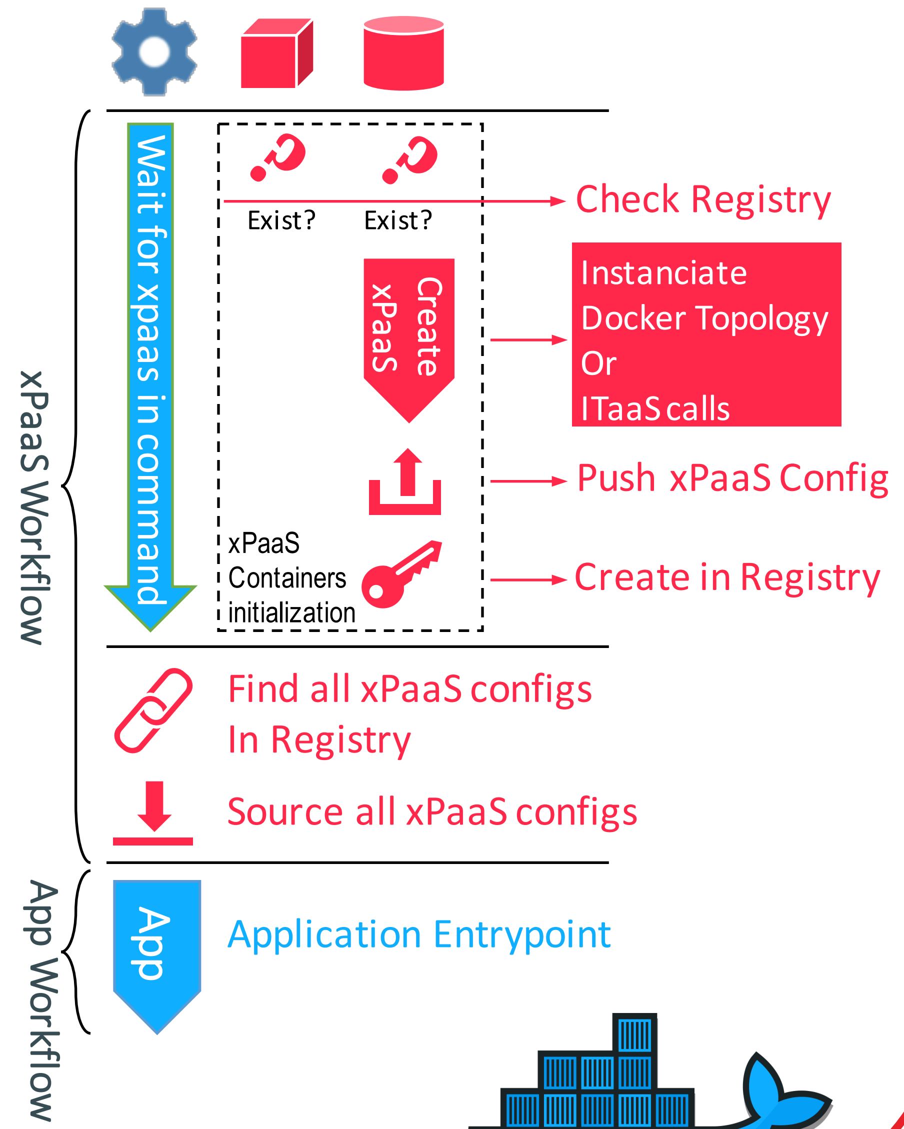


```
my_scalable_app:
  image: gbis/my-scalable-app
  # know beforehand which variables will be set
  environment:
  - ./redis_vars.env
  - ./oracle_vars.env
  # bind and initiate xPaaS before starting
  command: ./xpaas bind sharedRedis myOracle; ./entrypoint.sh'

cache:
  image: ambassador
  command: bind --name 'sharedRedis'

database:
  image: ambassador
  environment:
  - ./customize.env
  command: try_create_and_bind --name 'myOracle'
                                        --plan 'oracle/1.0/dev_plan'
```

Docker topology execution workflow



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What’s next: Go to Production, Share the Vision, Expand Transformation

Thanks to all the teams and brilliant individuals involved in this journey!