

# Solace SUG

# 2017

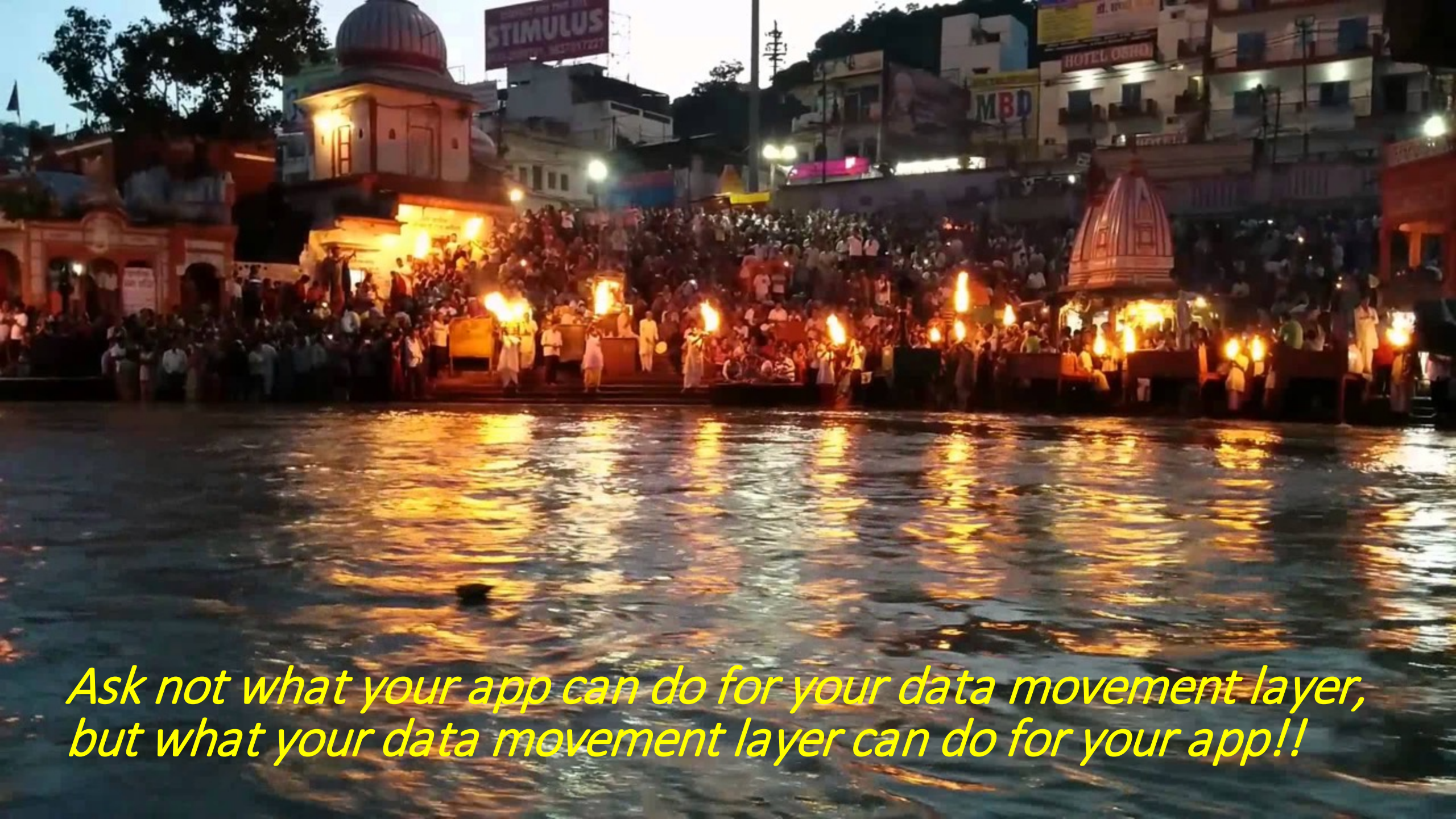
Solace  
Do  
What  
Ah?



# The Four Old-World River Valley Cultures







*Ask not what your app can do for your data movement layer,  
but what your data movement layer can do for your app!!*

# What do we expect from the “Data River”





Burst Handling





Load Balancing





Throttling



# And a lot more...

## Functional

Message Exchange Patterns

Request Reply

Pub Sub

Queuing

QoS

Guaranteed

Direct/Reliable

Topic/URL Routing

Multi Protocol Interoperability

Subscription Management

## Non Functional

Slow Consumer Handling

High Availability – Zero RPO, RTO

Disaster Recovery

Elastic Scalability

Multi Data Centre and Multi/Hybrid

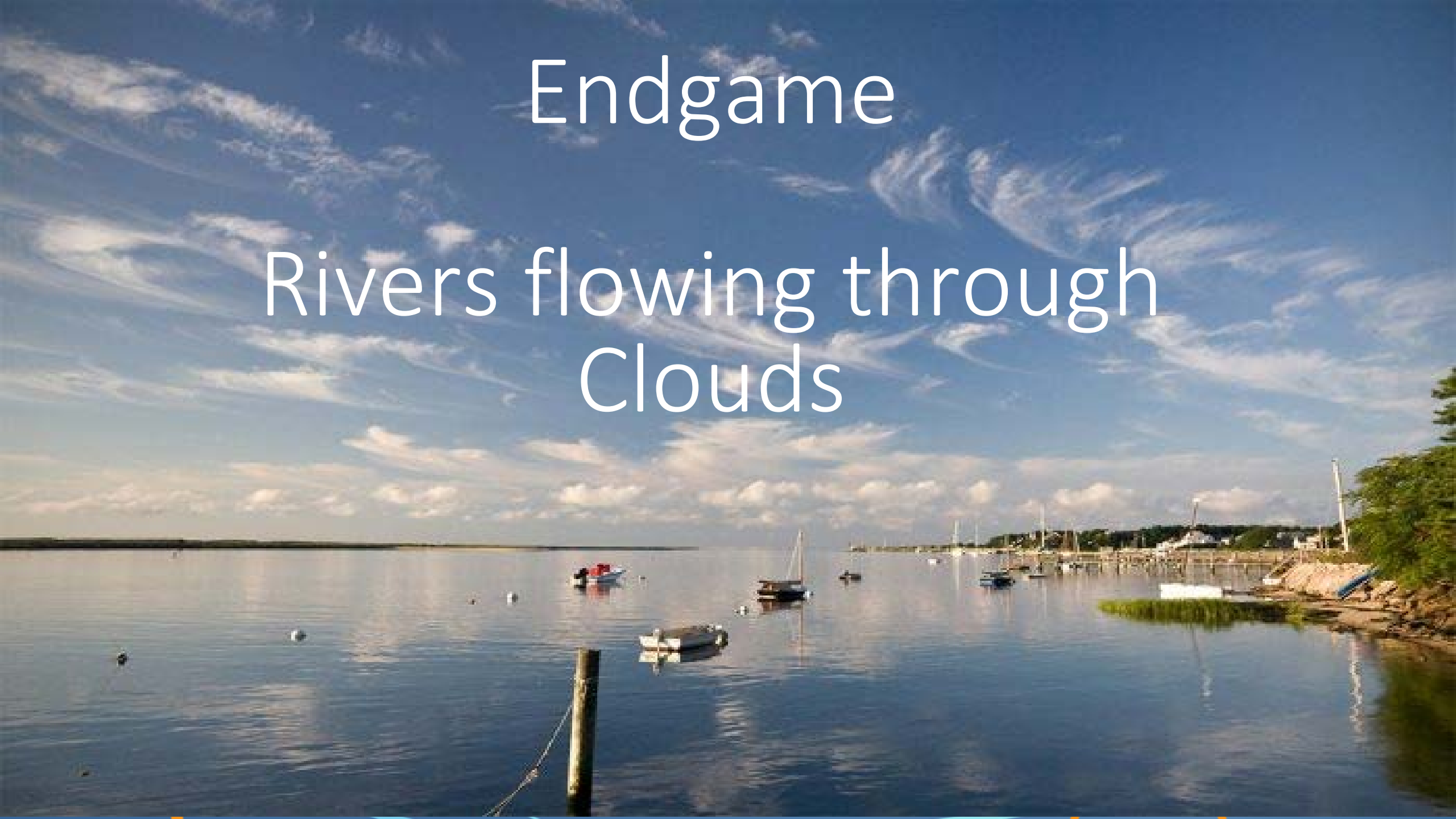
Cloud Agnosticiy

Security

WAN Optimization

# Endgame

## Rivers flowing through Clouds





# Open Data Movement

## The Major Industry Trends

Big Data



Cloud



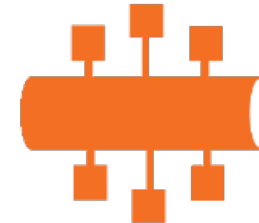
IoT



Digital  
Backbone



Next-Gen  
Messaging

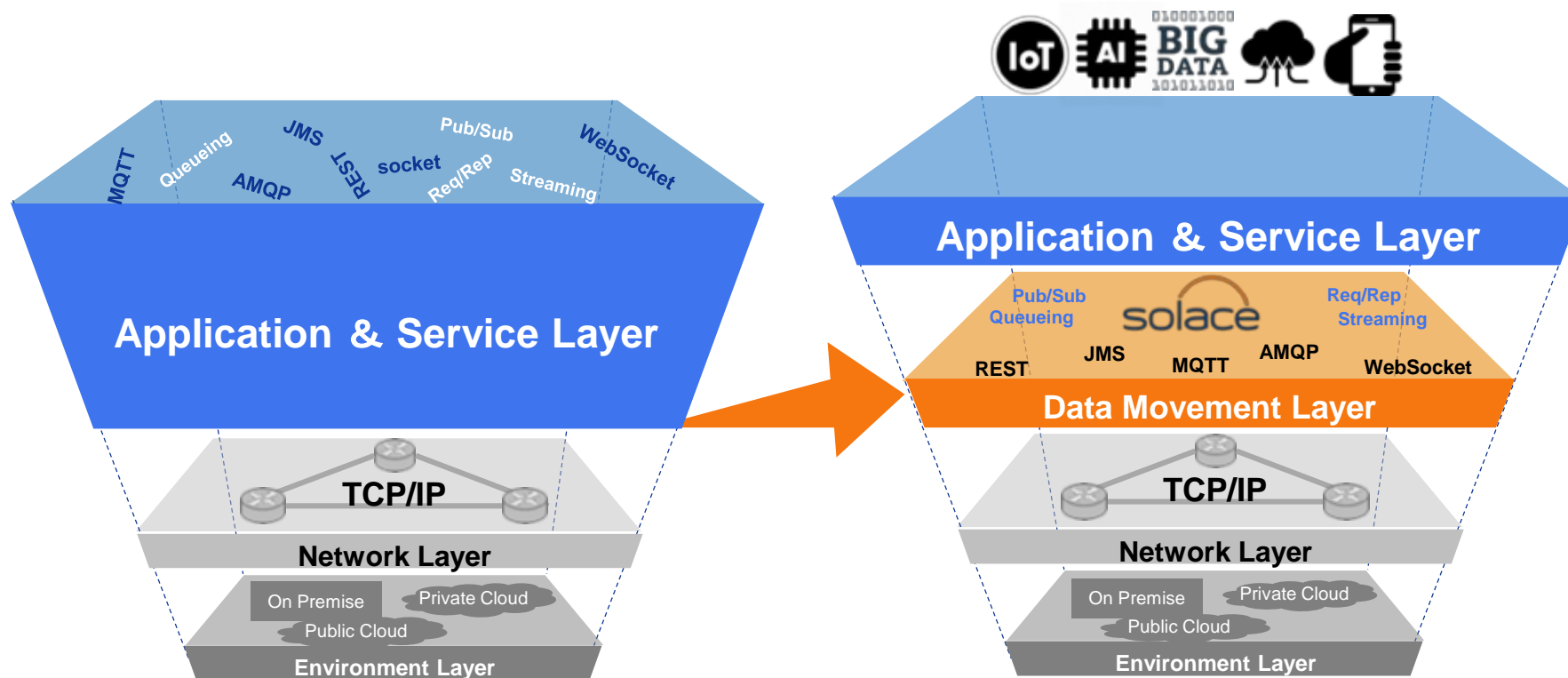


# The Digital Data River

**Solace moves data across applications/devices/clients**

- from/to where-ever in the network
- in whatever way as needed
- with open protocols & APIs

- ✓ Capability
- ✓ High Speed
- ✓ Robust
- ✓ Secure
- ✓ Operational

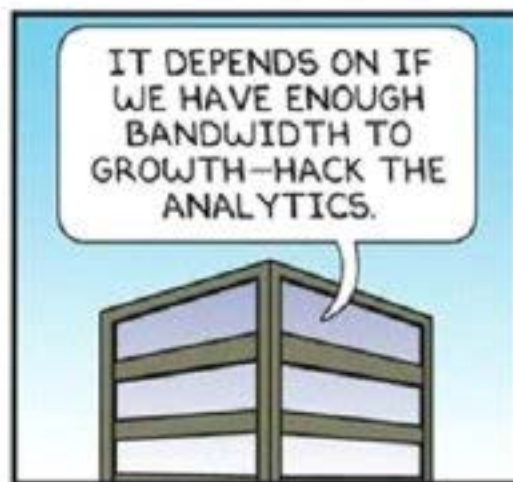
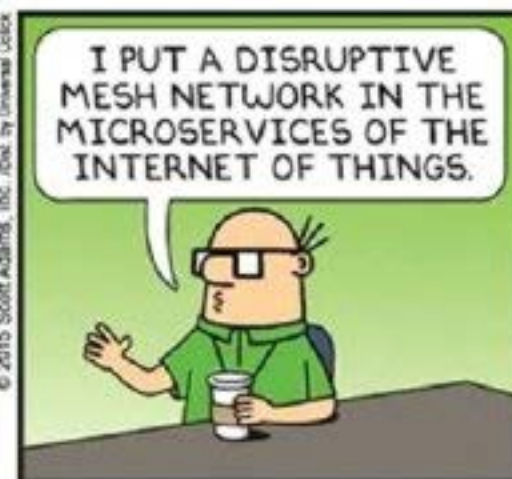




# Event Driven Architecture

## Self Orchestrating MicroServices

## DILBERT





# Data Movement Patterns – Not Just Request Reply

In Only

In Out

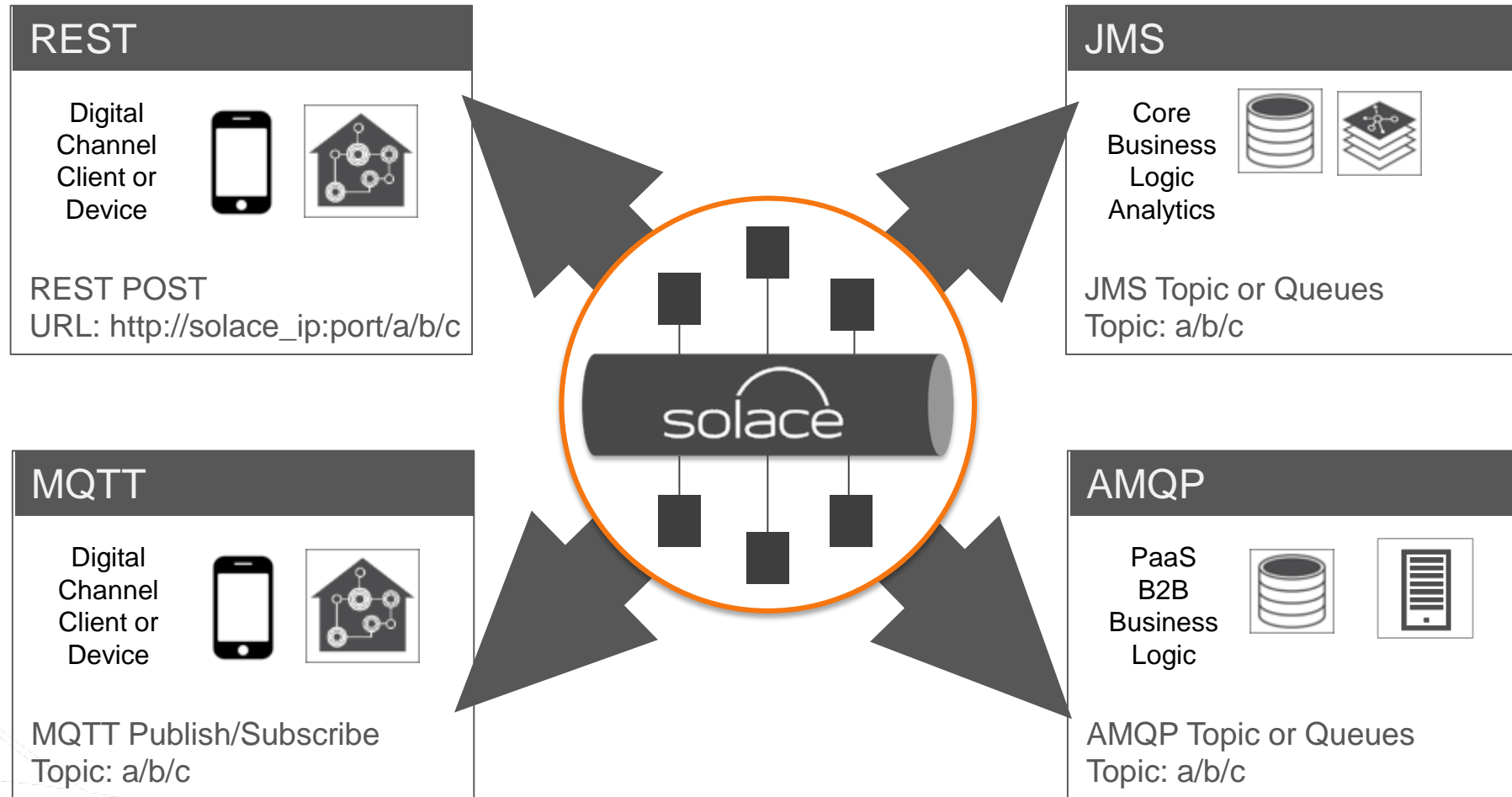


This is usually what RESTful microservices are limited to

Out Only

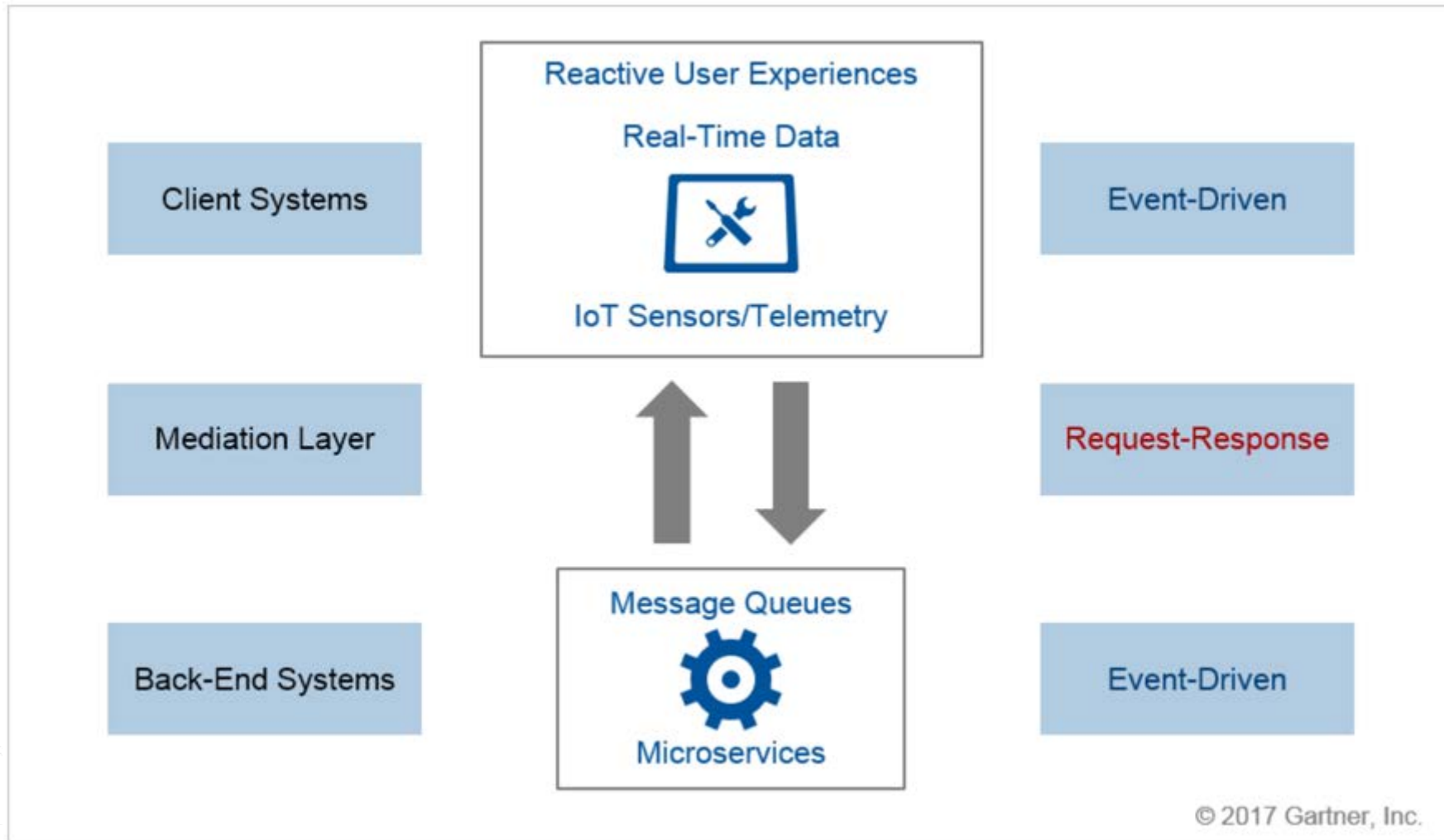
Out In

# Multi Protocol Interoperability



- Solace allows interoperable data exchange between multiple protocols **without any proxies or bridges**
- Native **wireline** conversion between REST, MQTT, AMQP and JMS support
- This works across all message exchange patterns, In Out, Out In, In Only, Out Only – protocols can be mixed and matched

# The Impact of Event-Driven IT on API Management

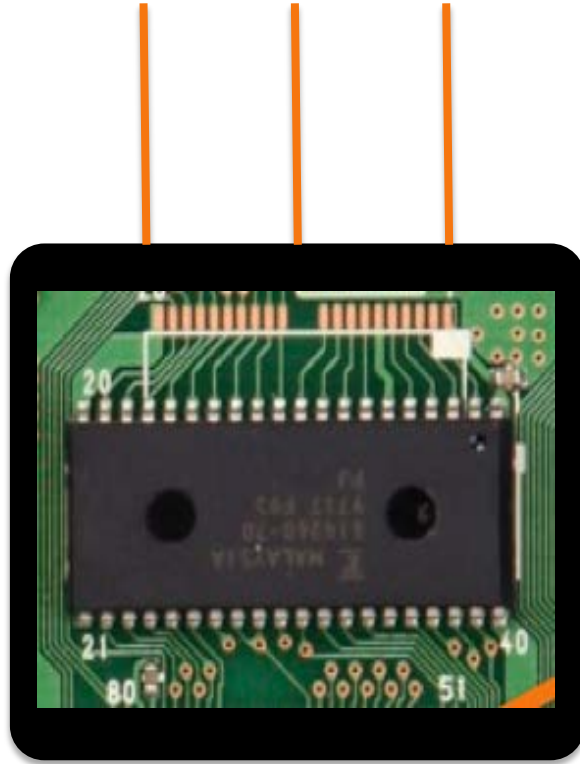


**C**ommand  
**Q**uery  
**R**esponsibility  
**S**egregation



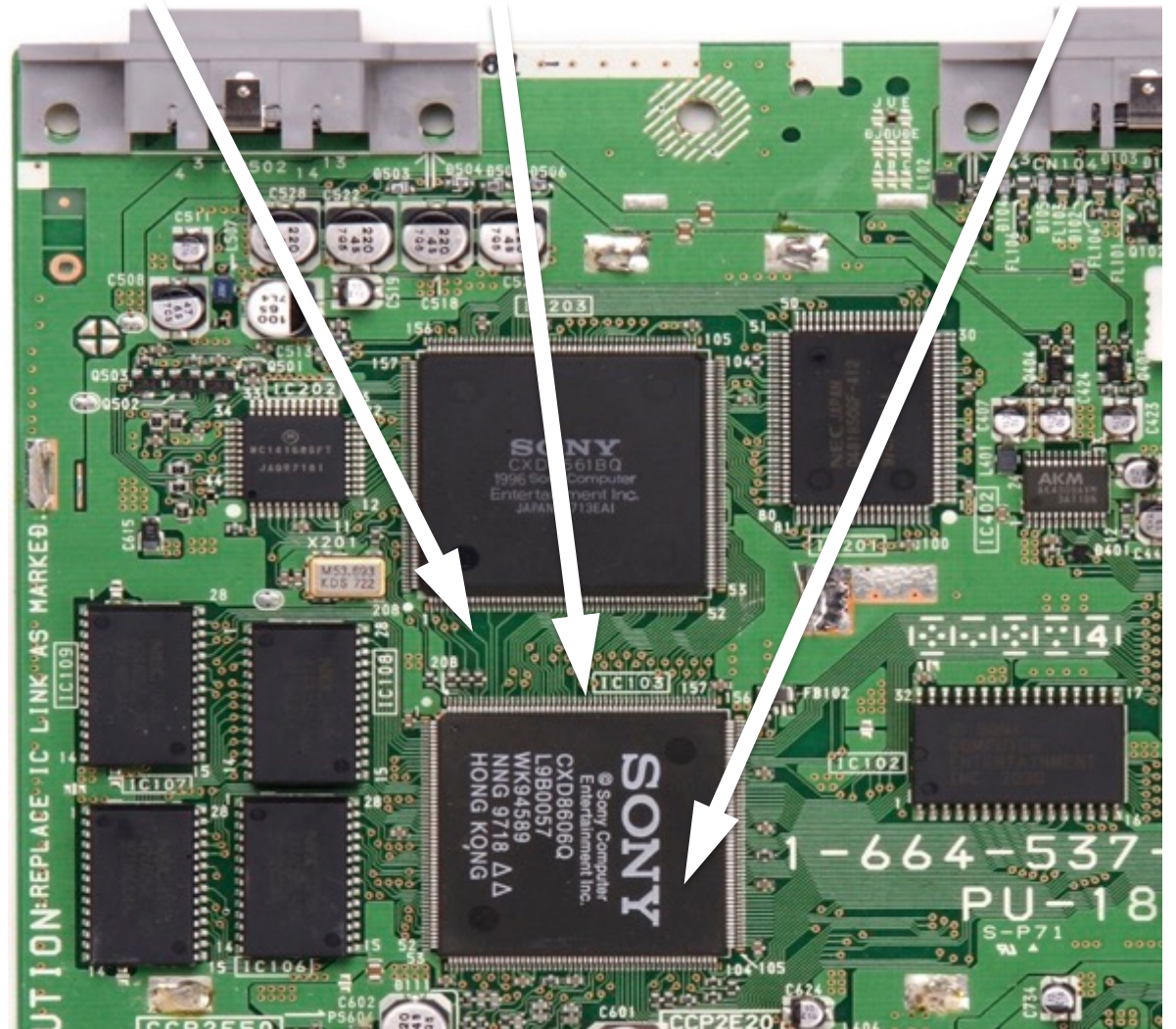
# Microservices

REST AMQP MQTT



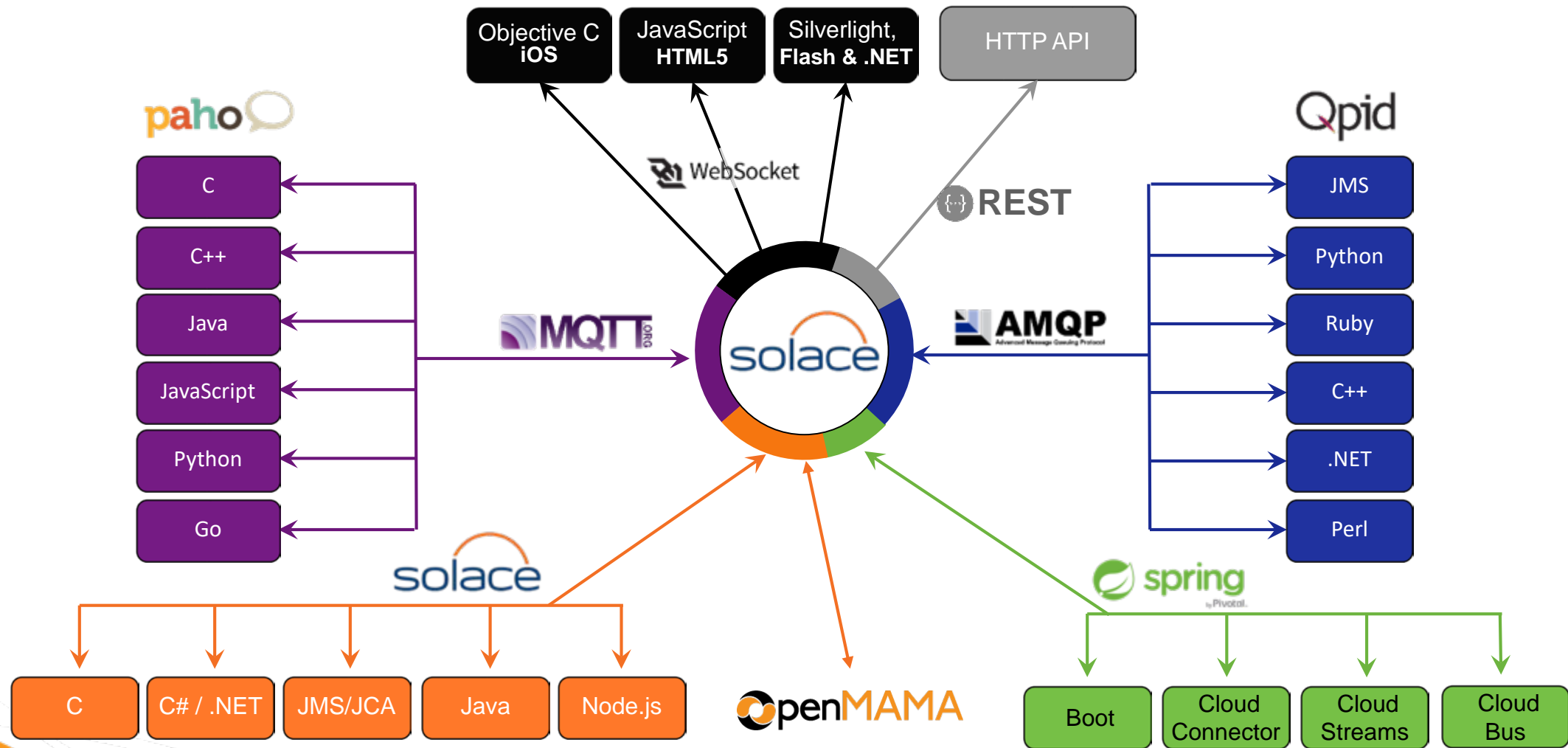
Solace is the “glue” which allows  
Microservices to self orchestrate in an  
**Event Driven Architecture**

Data River Endpoints Business Logic

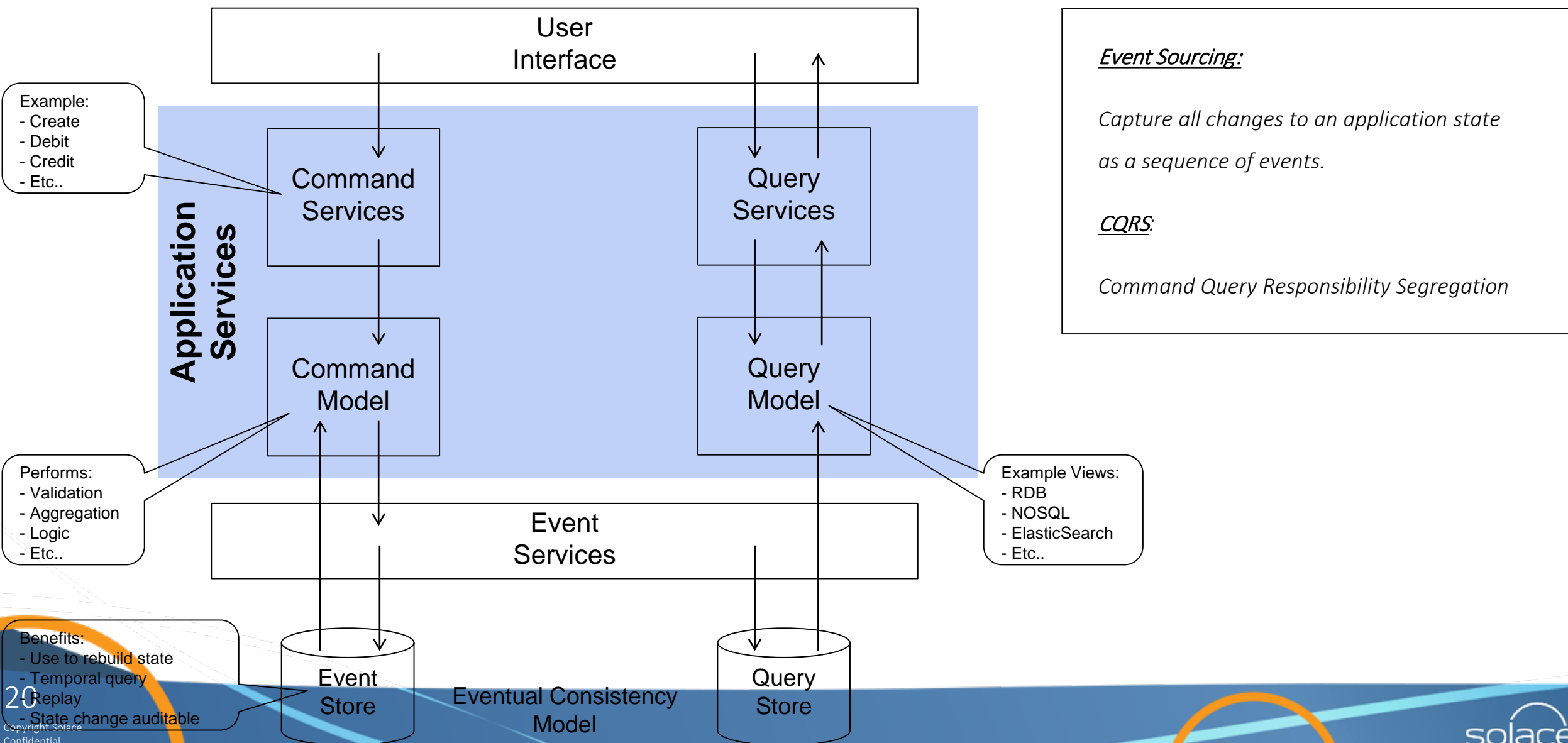


# Single Technology Core, Multi-Protocol Edge

## Open API and Open Wireline Protocols

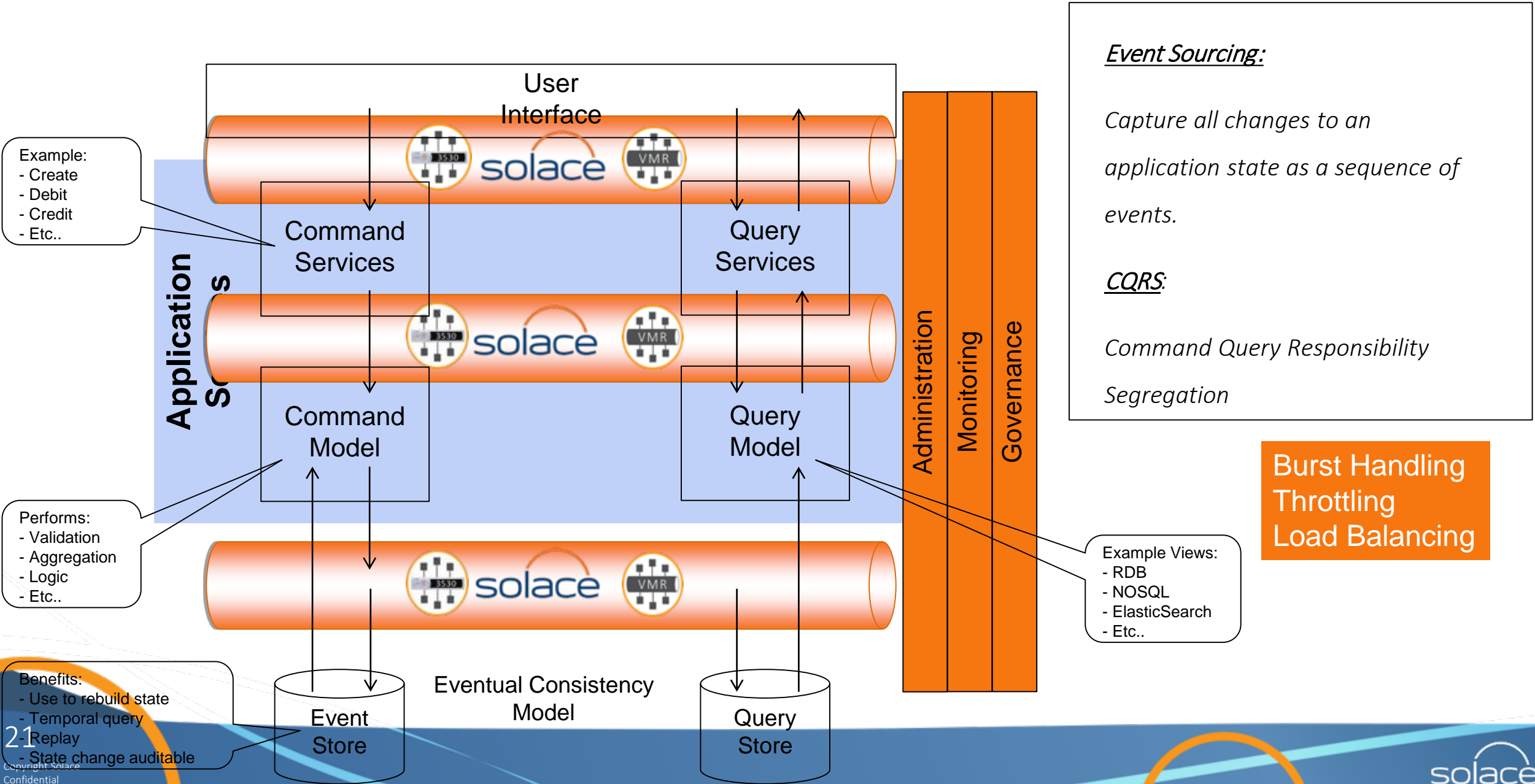


# Event Sourcing & CQRS Patterns





# Applying Event Sourcing & CQRS Patterns



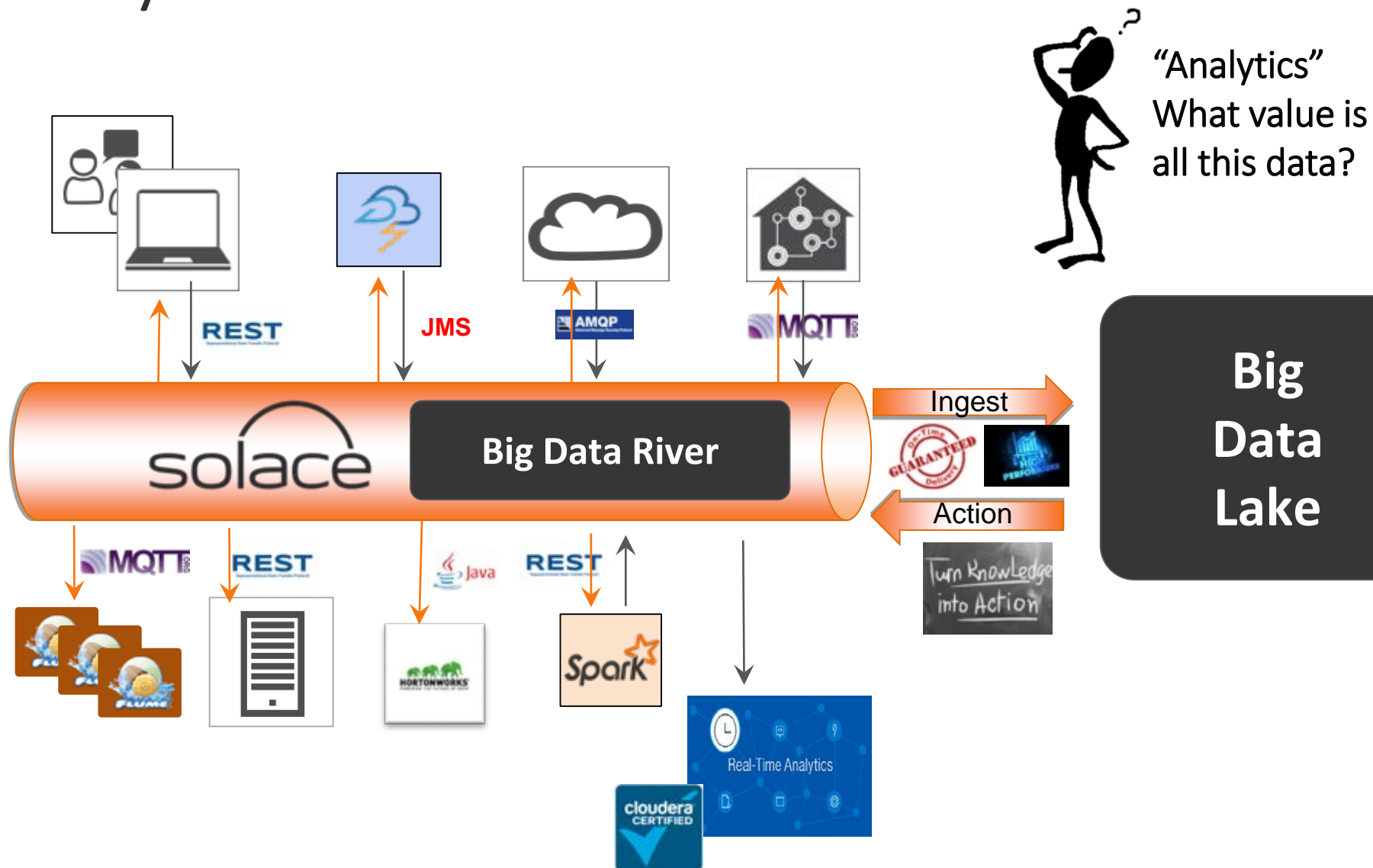
# Big Data River Data Lakes Need Data Rivers to Feed Them

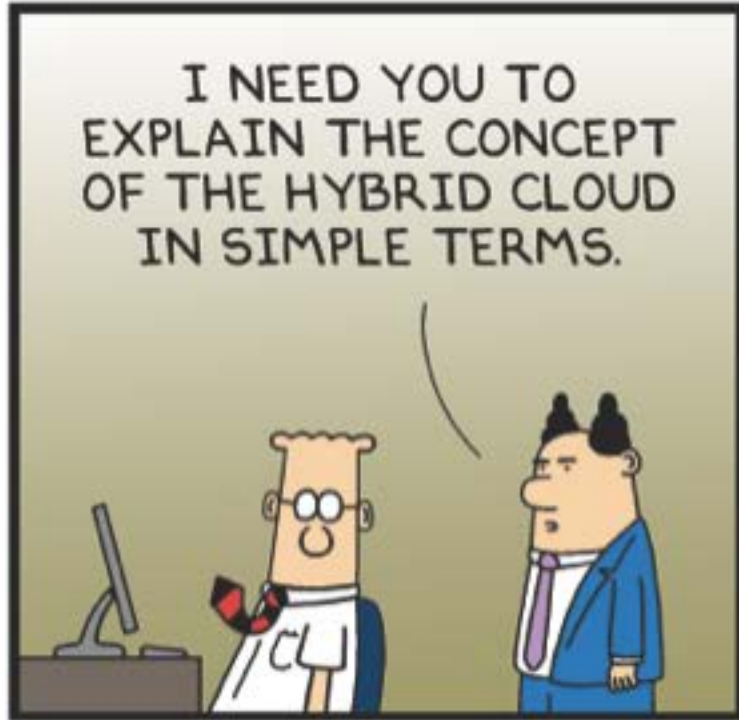




# Big Data – Any Lake needs a River

- Volume
  - Up to 26 M / sec
- Velocity
  - $\mu$ Sec Latency
- Variety
  - All API/Protocol
- Veracity
  - Integrity

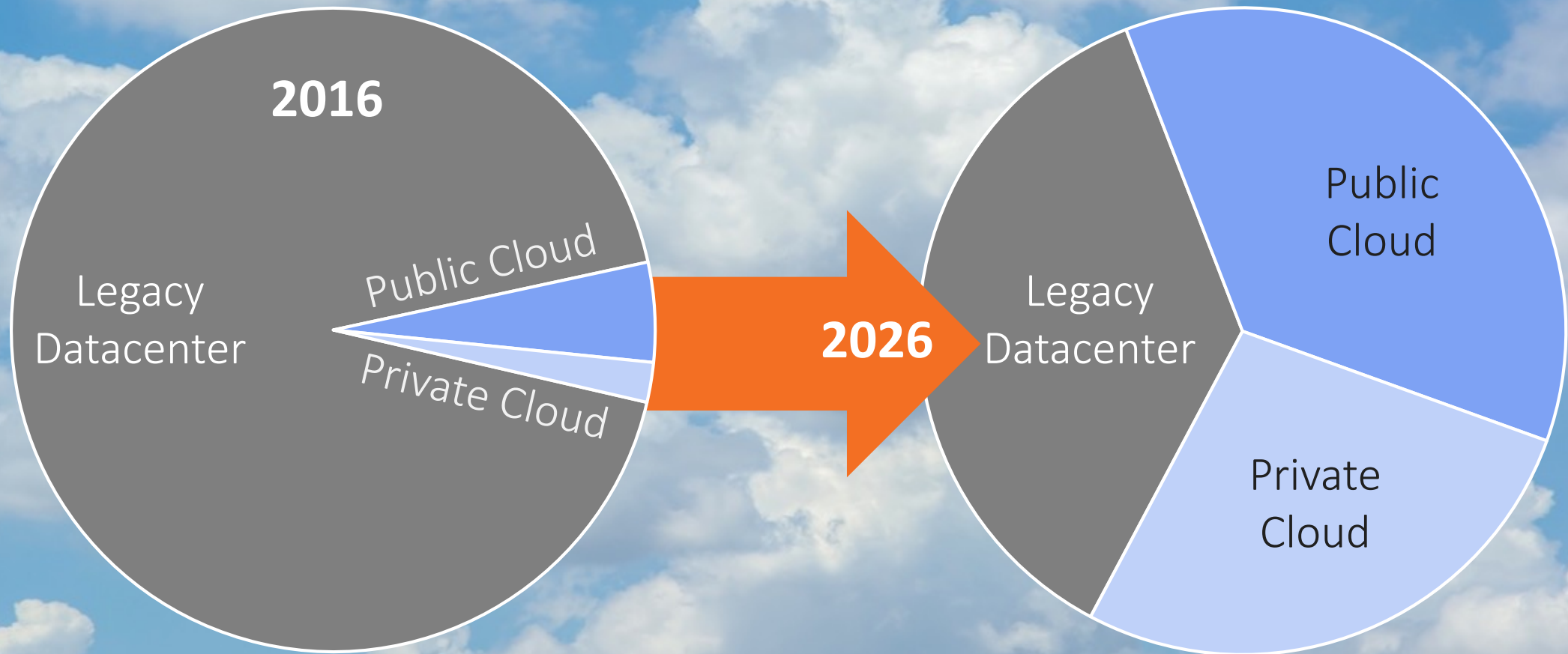




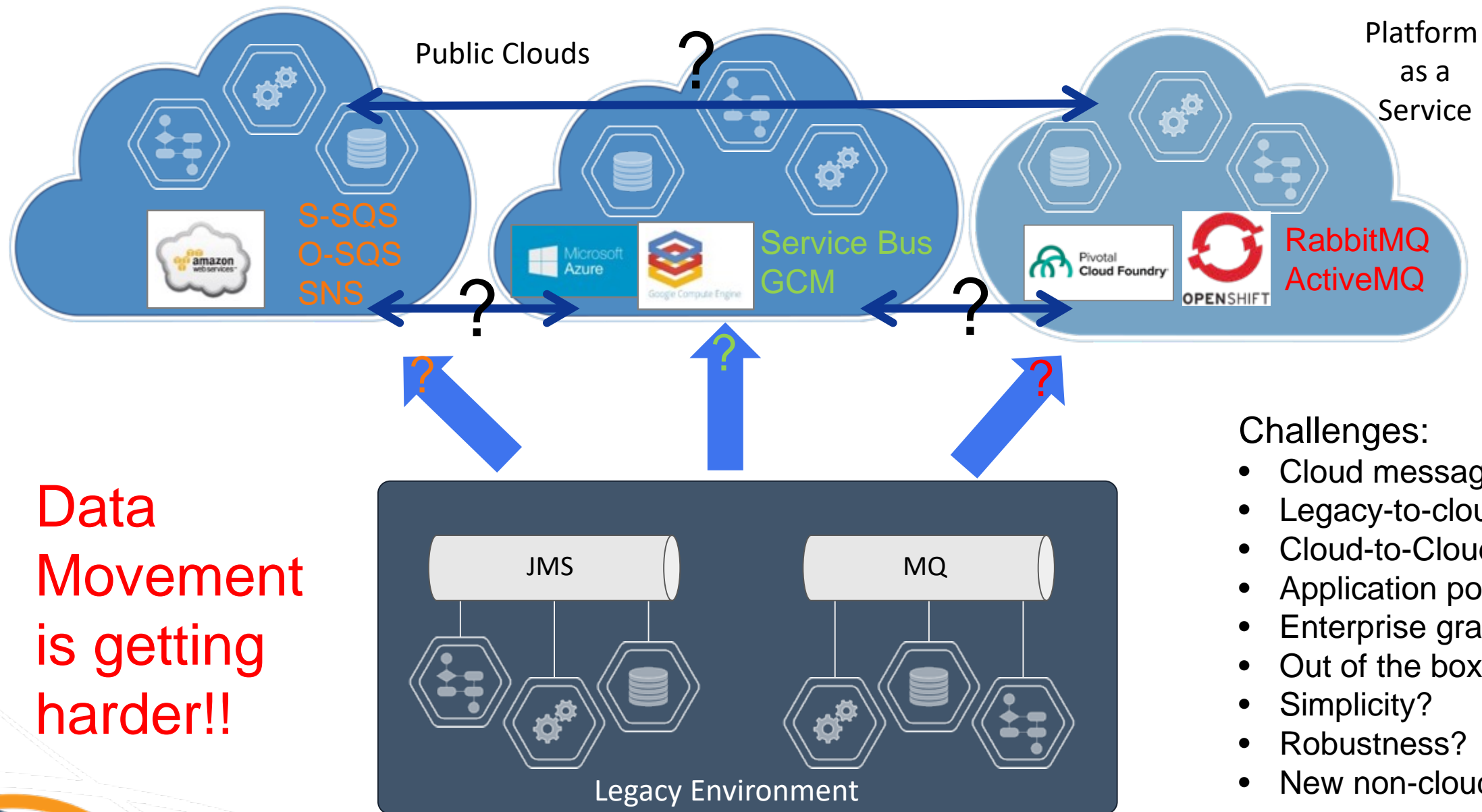
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# The shift to the cloud is on...



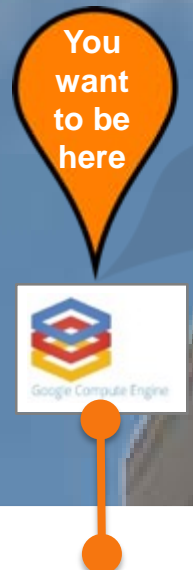
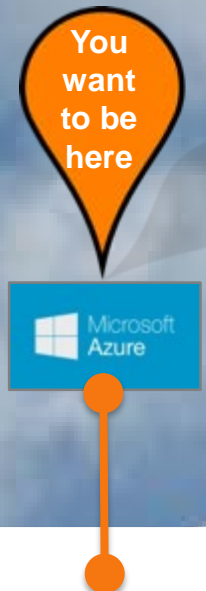




**Data  
Movement  
is getting  
harder!!**

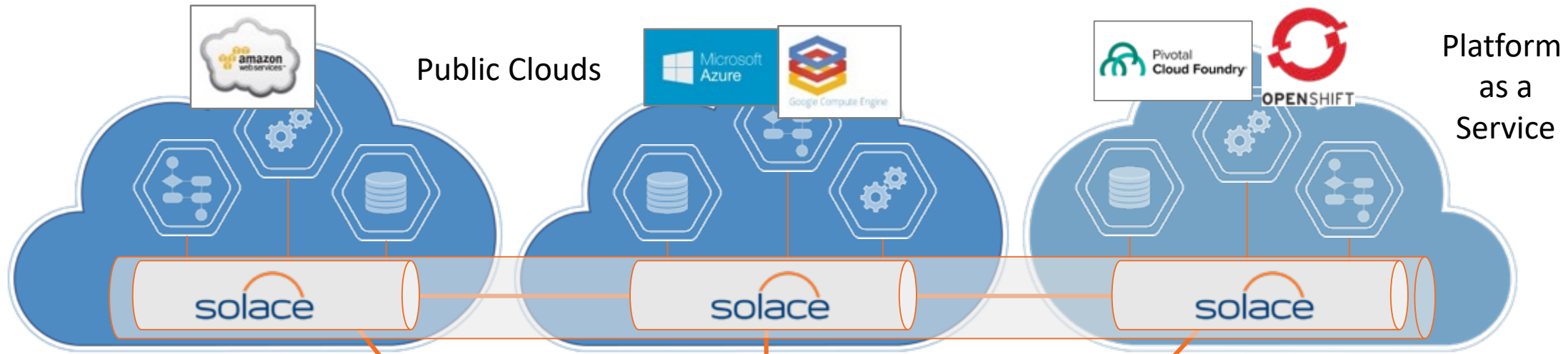
### Challenges:

- Cloud messaging?
- Legacy-to-cloud?
- Cloud-to-Cloud?
- Application portability?
- Enterprise grade features?
- Out of the box?
- Simplicity?
- Robustness?
- New non-cloud apps?



On Ramp to the Cloud –  
*a Cloud Migration Digital Data River*

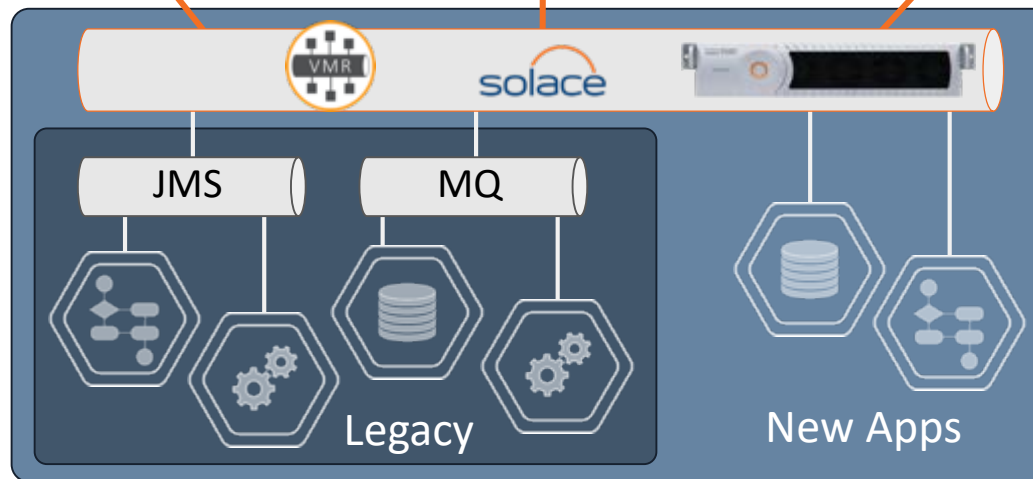
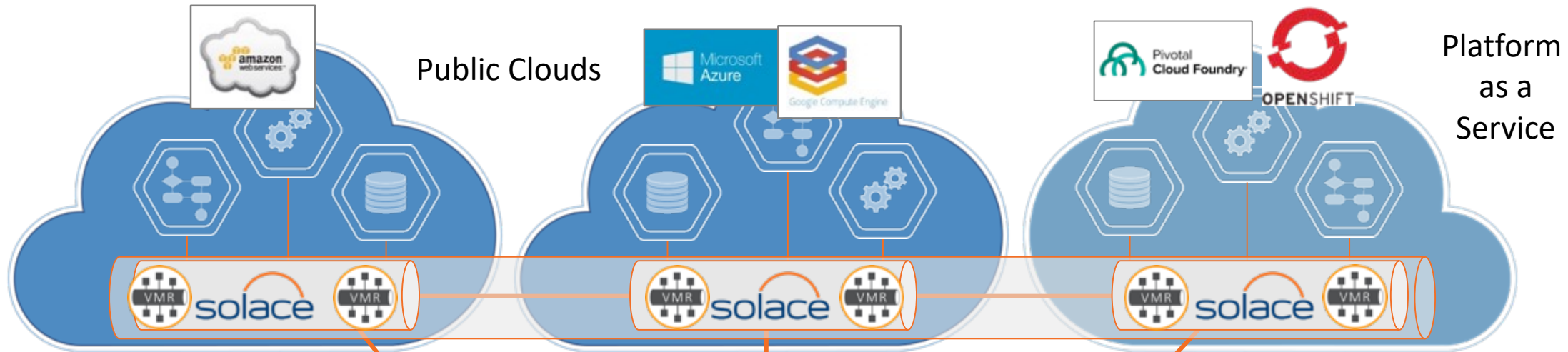




### Benefits:

- ✓ Cloud messaging
- ✓ Hybrid-cloud
- ✓ Cloud-to-Cloud
- ✓ New non-cloud apps
- ✓ Application portability
- ✓ Enterprise grade features
- ✓ Out of the box
- ✓ Simplicity
- ✓ Robustness



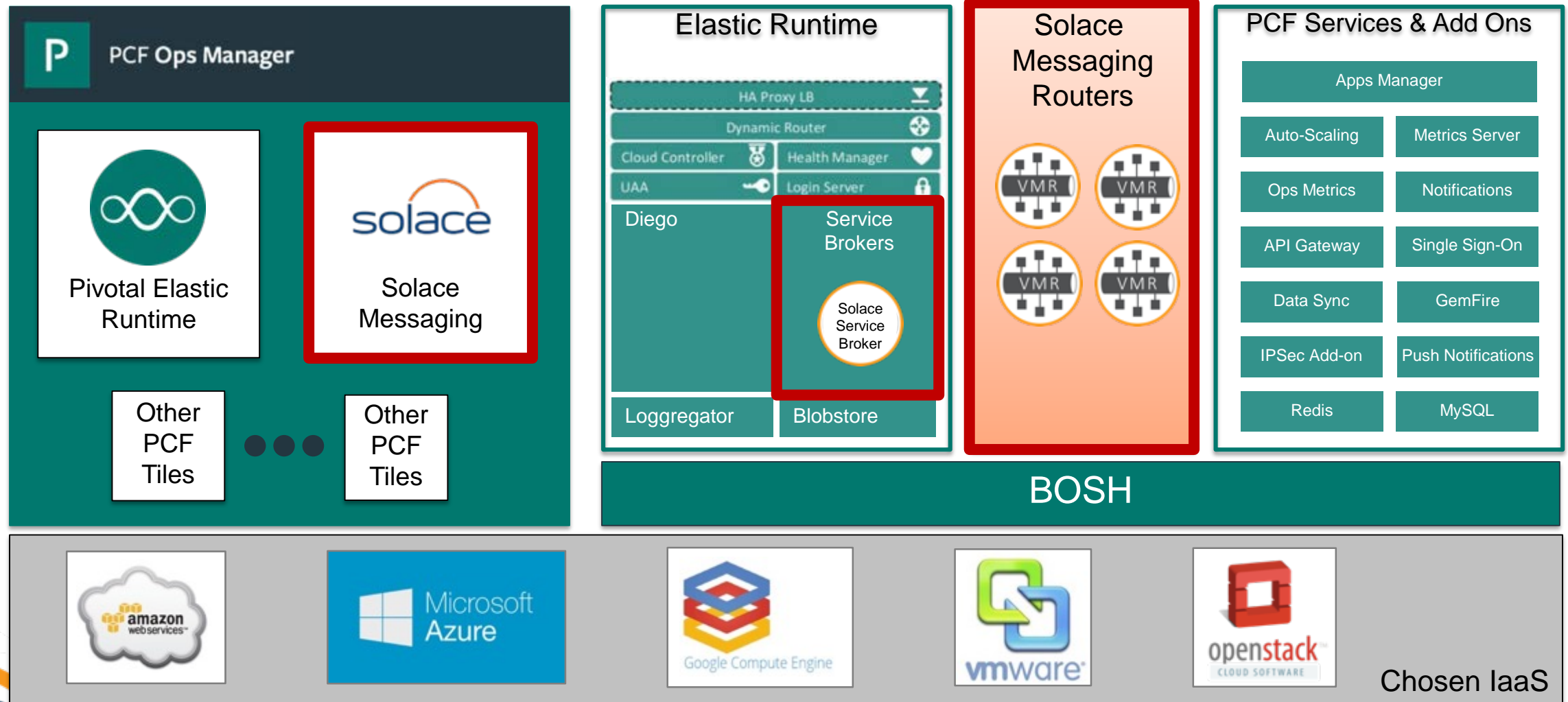


Datacenter

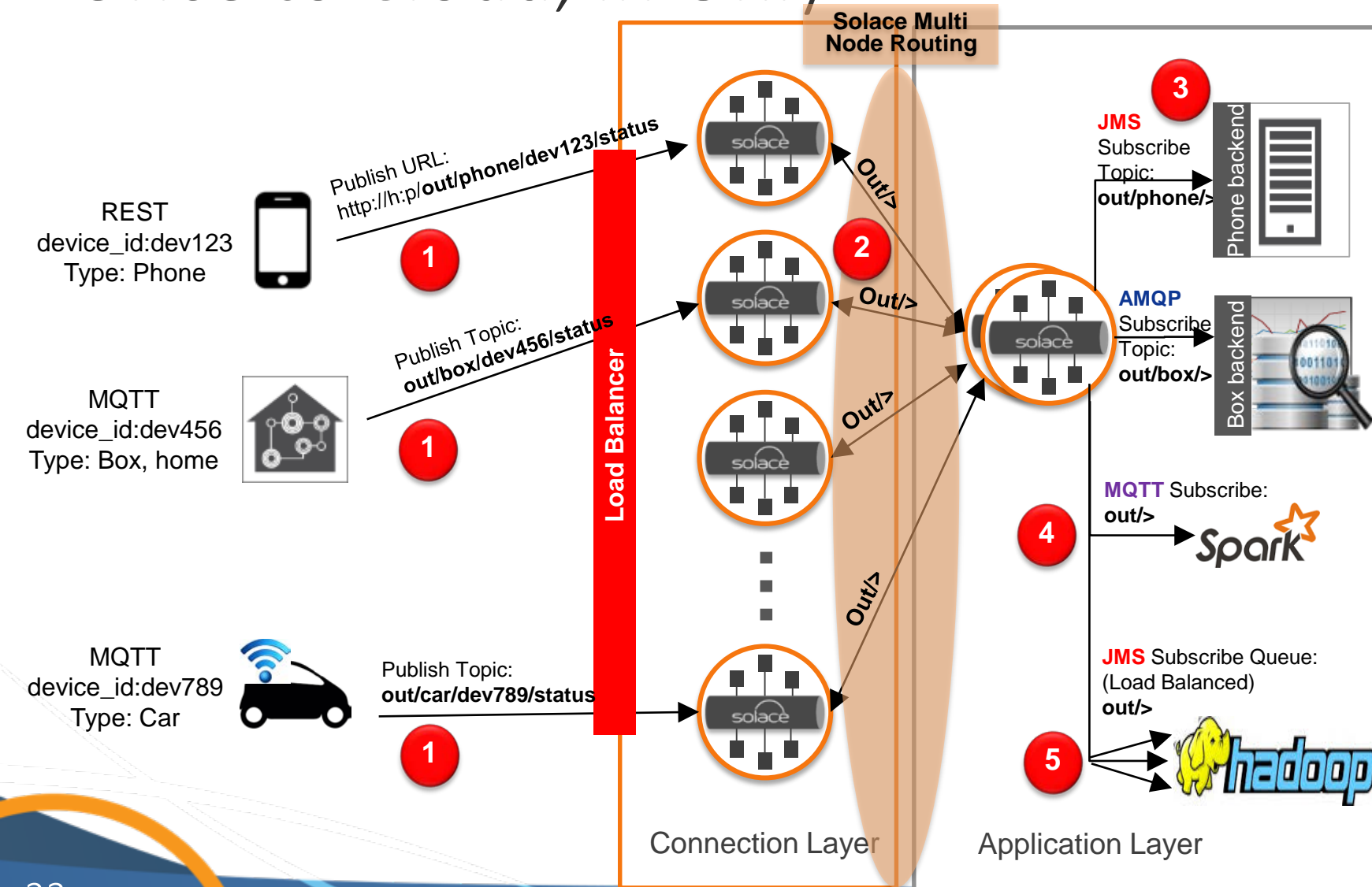
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# Pivotal Cloud Foundry Architecture



# Message Exchange Pattern Device to Cloud, In Only

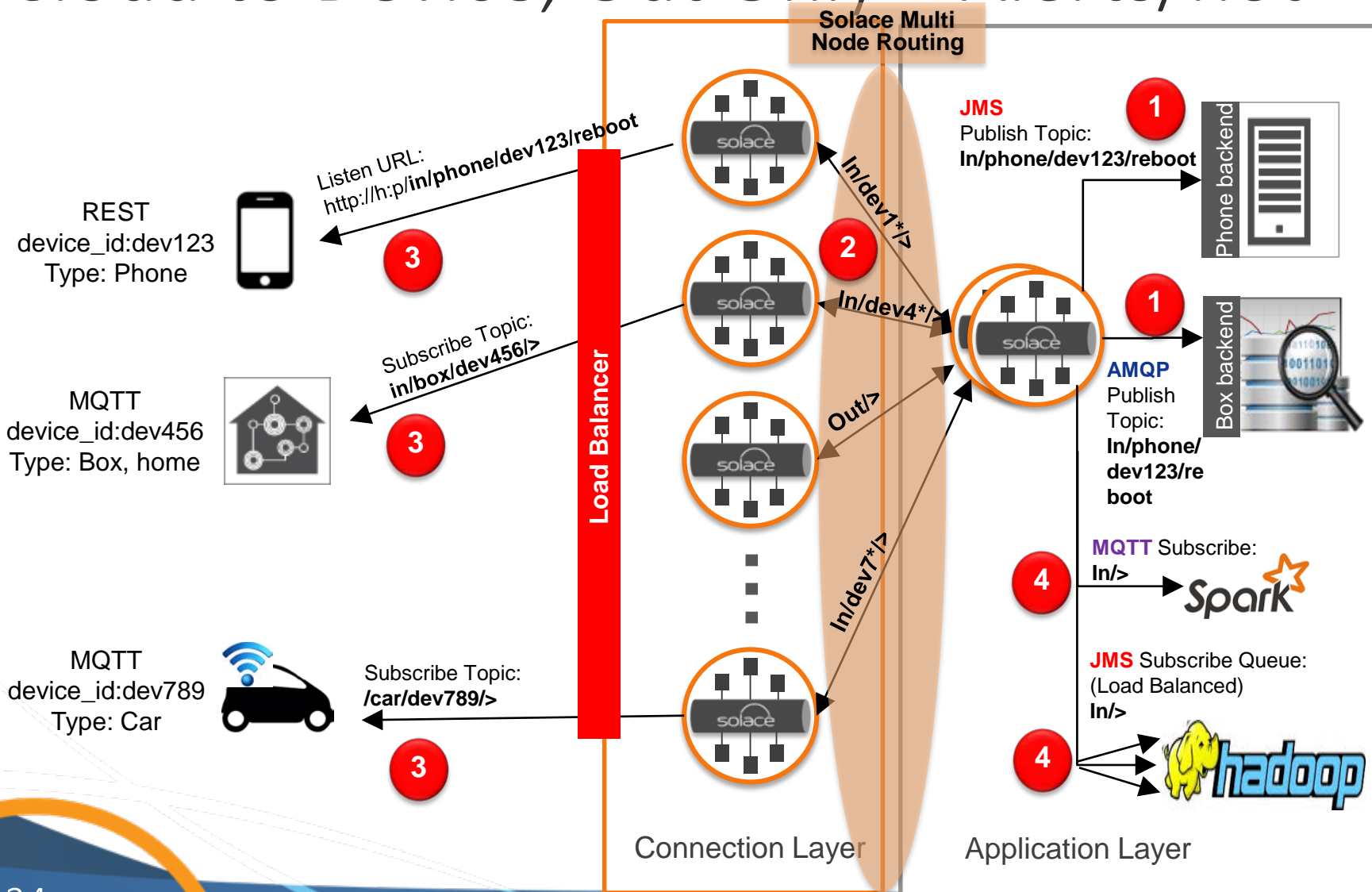


- 1 Publish topics/URLs should have the chosen namespace for "out" for out from devices, "in" as in to devices, or other similar/multiple verbs
  - Messages land at the connection layer Solace router
- 2 The connection layer Solace router is "wireline bridged" to the application layer Solace router
  - "Out/>" or any other relevant topics are mapped to bridges for the data to flow from connection tier to application tier. Any other verbs/with more levels, wildcards, static subscriptions can be used for more sophisticated routing/filtering
- 3 The Core Application Solace routers deliver messages to backend systems based on their subscriptions (note the phone and box wildcards). MQTT, JMS, AMQP.. Any protocols work interoperably
- 4
- 5 For disconnected or slow consumer, Solace queues the data at the Application routers. Load Balancing is also supported/recommended



# Message Exchange Pattern

## Cloud to Device, Out Only – Alerts/notifications



## Applications

- 1** Publish topics/URLs should have the chosen namespace for "out" for out from devices, "in" as in to devices, or other similar/multiple verbs
  - Messages land at the connection layer Solace router
- 2** The connection layer Solace router is "wireline bridged" to the application layer Solace router
  - "In/dev wildcard/>" is used to route the messages to the connectivity Solace VMR based on the device range connected to it. The device range connectivity is done using the load balancer configuration.
- 3** The Core Application Solace routers deliver messages to backend systems based on their subscriptions (note the phone and box wildcards)
- 4** The same information, which is going to the devices, can also be captured for analytics and audit by passive listeners such as Hadoop and Spark over various protocols

# Data River Endgame

# Thank You

