



# 使用 Kubernetes 打造企業級應用系統

SoftLeader | Gary Lee



# SoftLeader

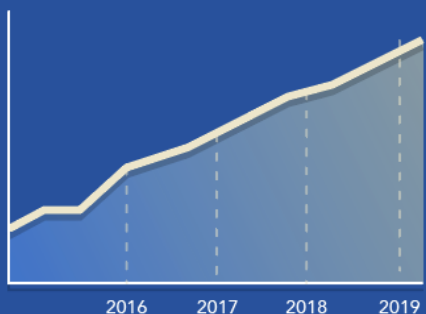
Softleader Technology Corp.



**SoftLeader**  
Softleader Technology Corp.

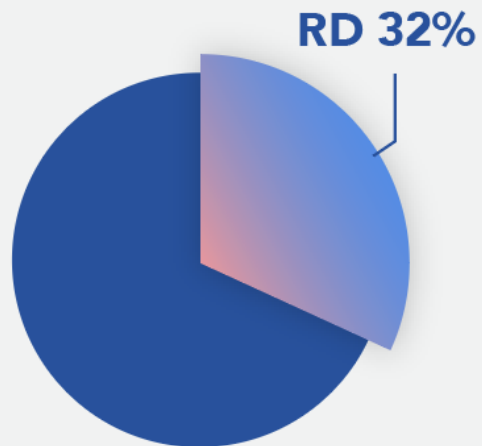
👥 | 公司人數 50+

💰 | 資本額 2,000萬

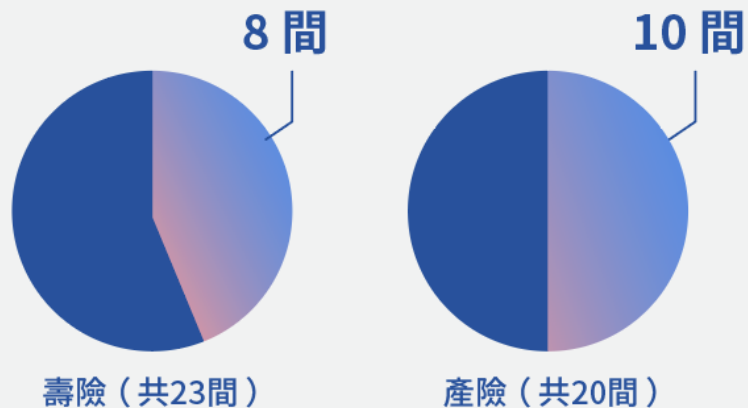


營收

## 32% 研發成本



## 國內產壽險客戶



## 七大產品線

Jasmine

Gardenia

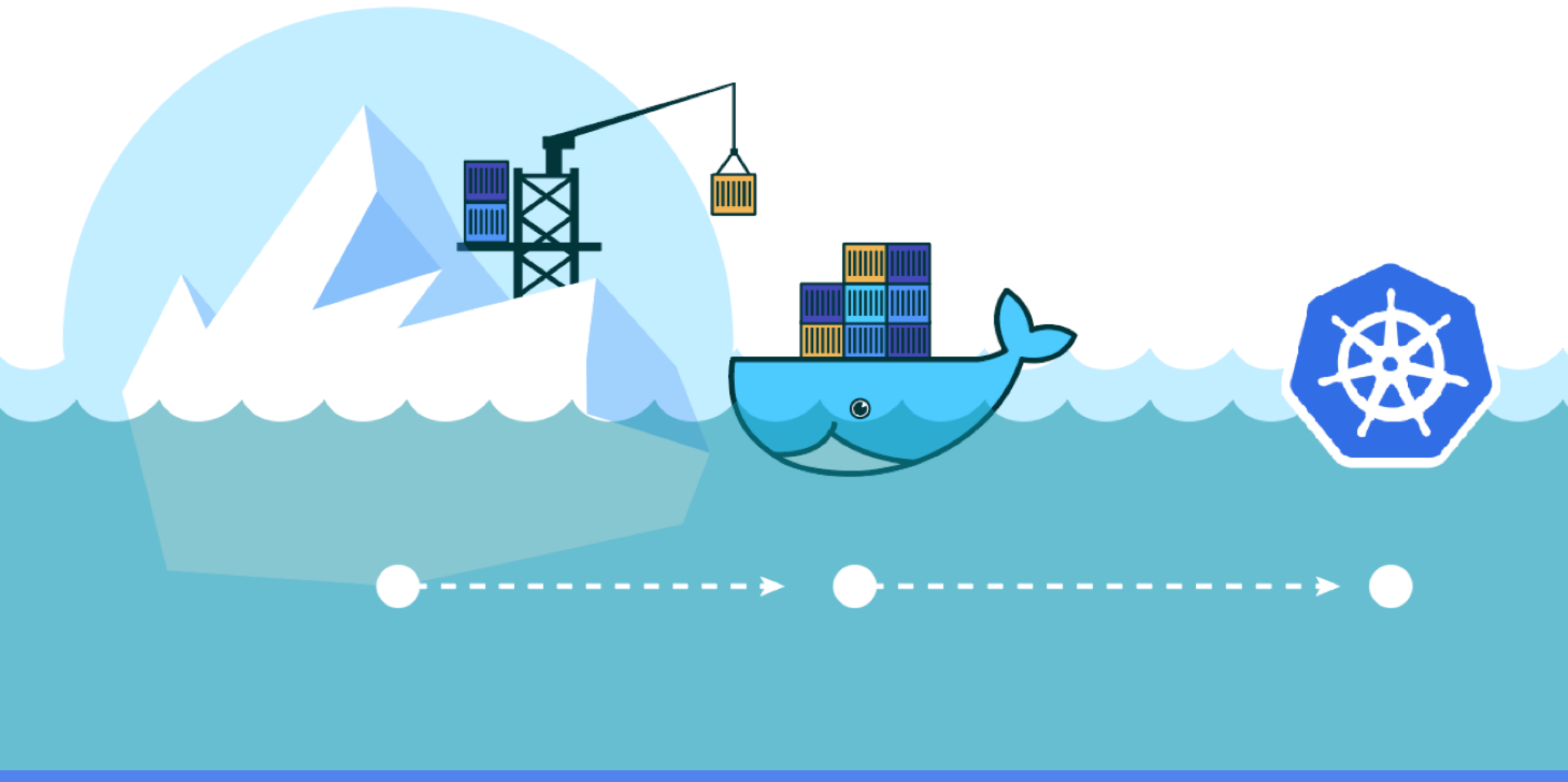
Azalea

Rose

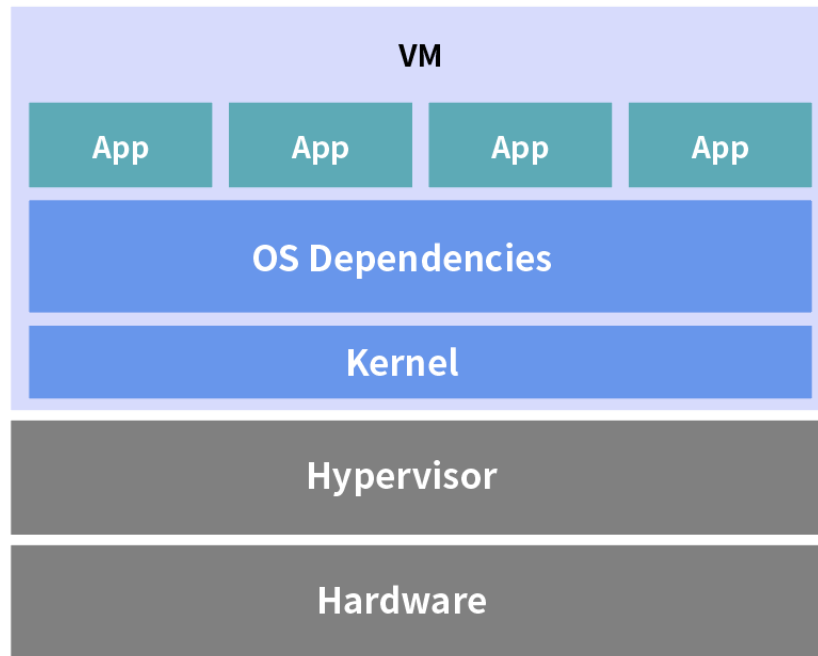
Freesia

Creesia

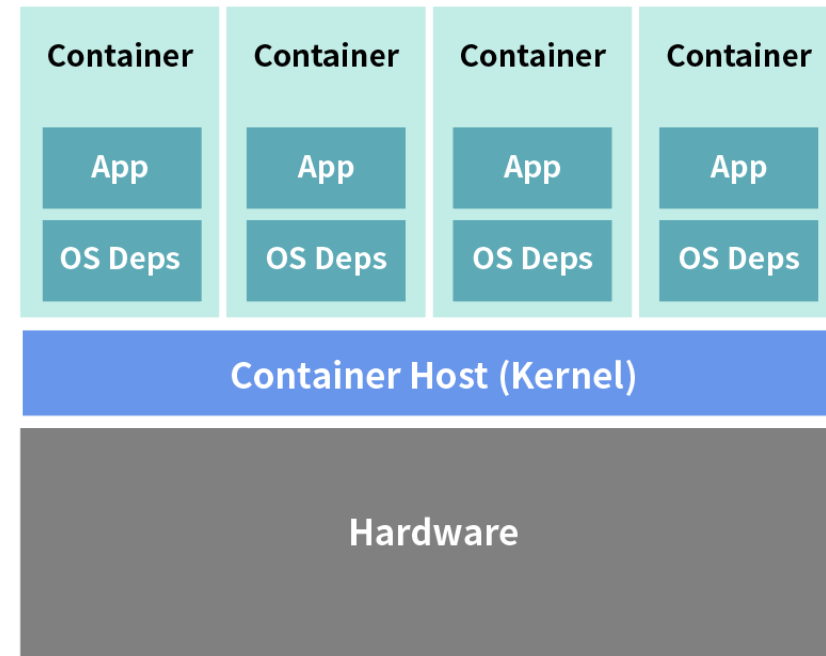
Iris

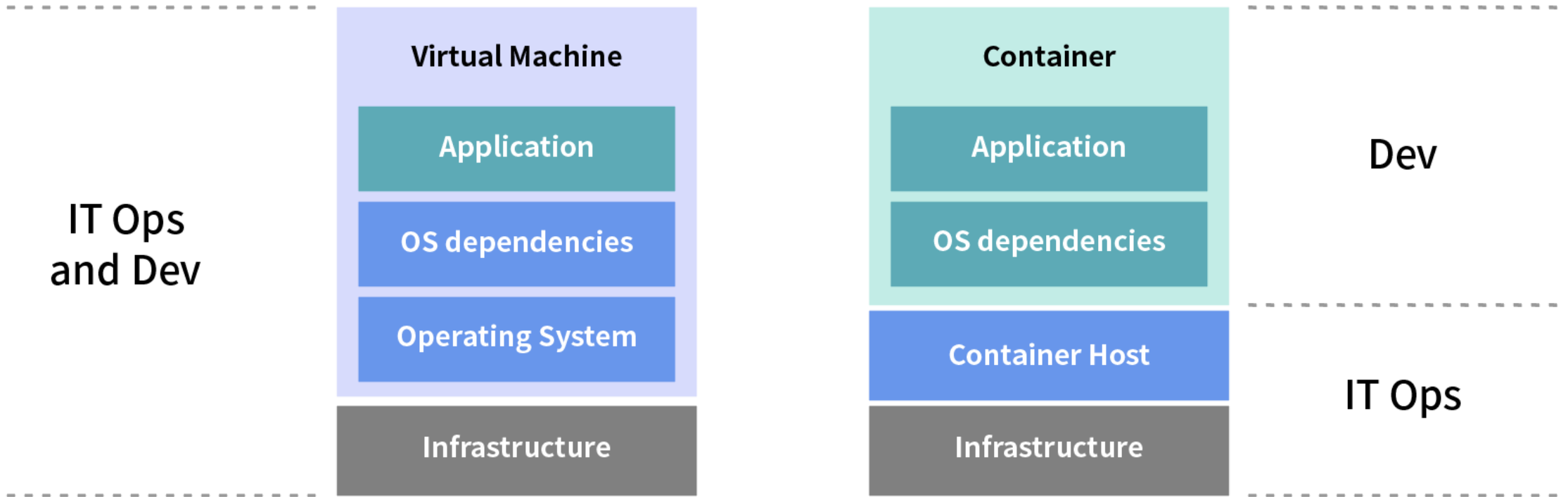


## Virtual Machines



## Containers





**Kubernetes** is an open-source system for automating deployment, scaling, and management of containerized applications.

It groups containers that make up an application into logical units for easy management and discovery. Kubernetes builds upon **15 years of experience of running production workloads at Google**, combined with best-of-breed ideas and practices from the community.



# 2019\_

我們利用 **IBM Cloud Private**

.....→ 在 **3** 家保險公司 ←.....

建立 **Kubernetes** 為基礎的私有雲



# 當初的選擇 \_

Red Hat



IBM



VMWare



Google



TECH

# IBM closes its \$34 billion acquisition of Red Hat

PUBLISHED TUE, JUL 9 2019 • 8:33 AM EDT | UPDATED TUE, JUL 9 2019 • 11:41 AM EDT



**Lauren Feiner**  
@LAUREN\_FEINER

SHARE



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## KEY POINTS

- IBM closed its \$34 billion acquisition of Red Hat, the companies announced Tuesday.
- The acquisition of Red Hat, an open-source, enterprise software maker, marks the close of IBM's largest deal ever.
- The move was originally announced in October, when the companies said IBM would buy all shares in Red Hat at \$190 each in cash.



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Images REFs from

<https://1qaviw33xz6o33zvwkuvvm2z1-wpengine.netdna-ssl.com/wp-content/uploads/2018/10/BlueHat.png>

# Why \_



**API Standardize**

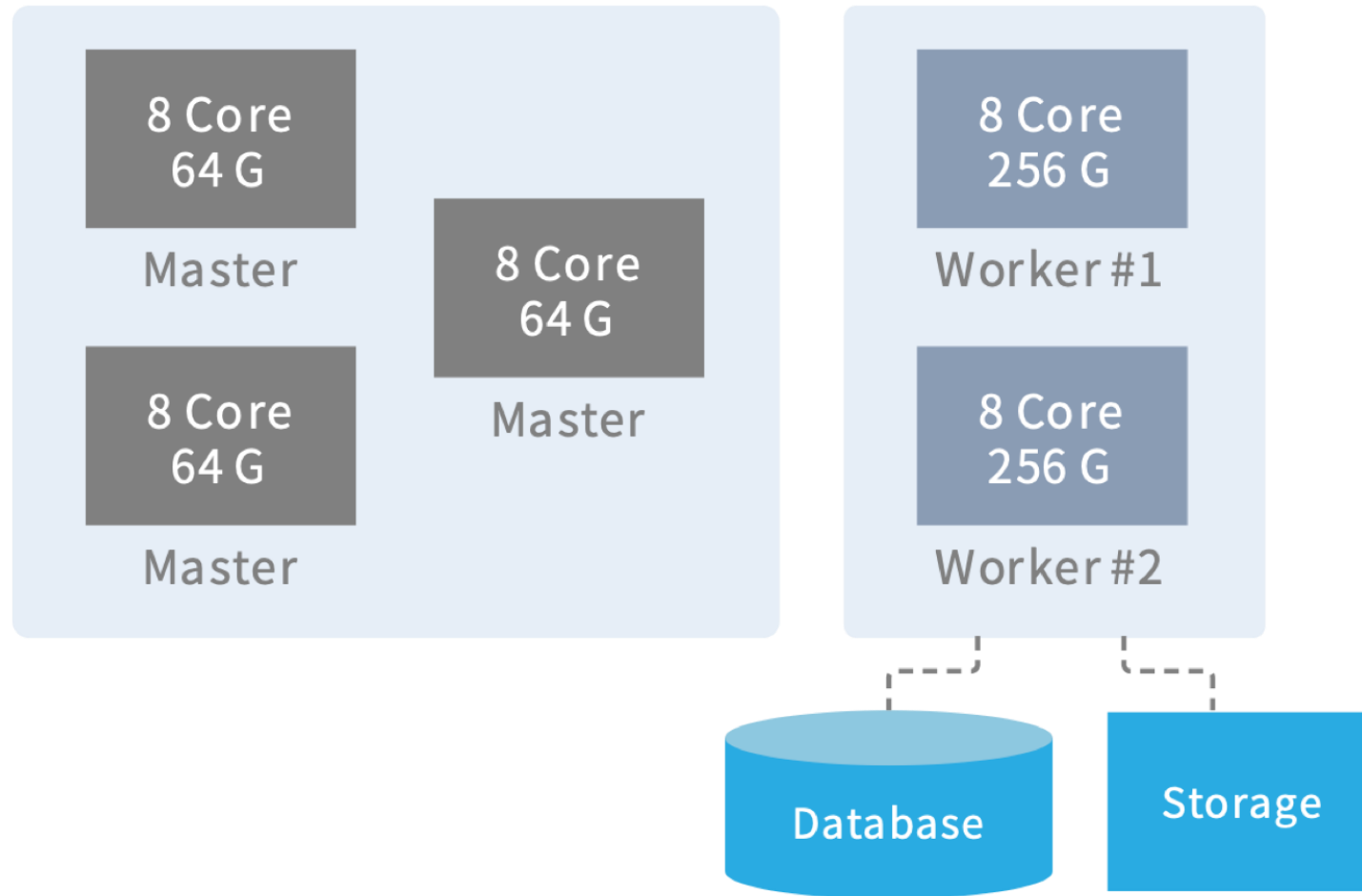


**Scaling**

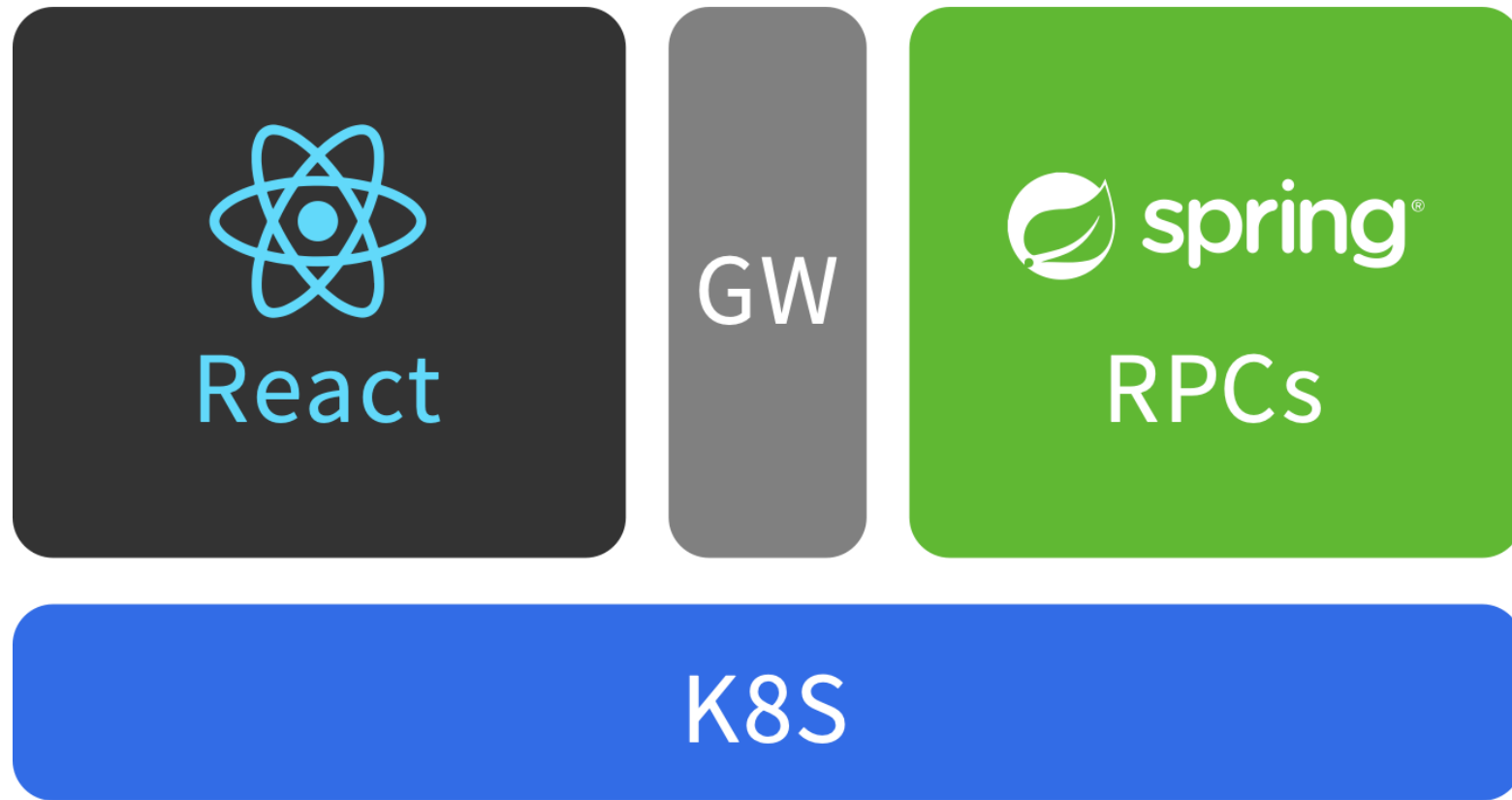


**Zero Downtime**

# Our Architecture \_



# Our Architecture \_



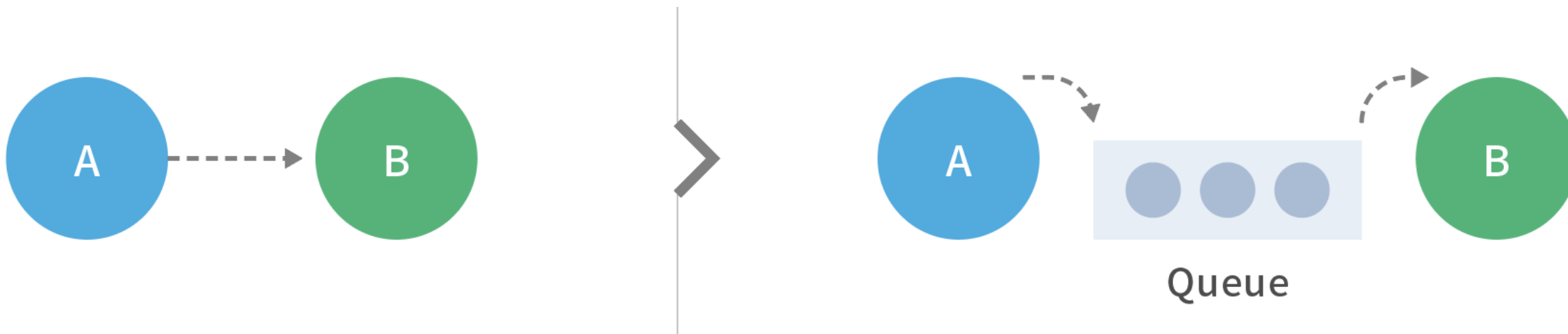
# 挑戰與問題\_

# 太同步\_

Spring Cloud OpenFeign so easy to use...

- Everything go w/ Feign
- Feign timeout 一直放大

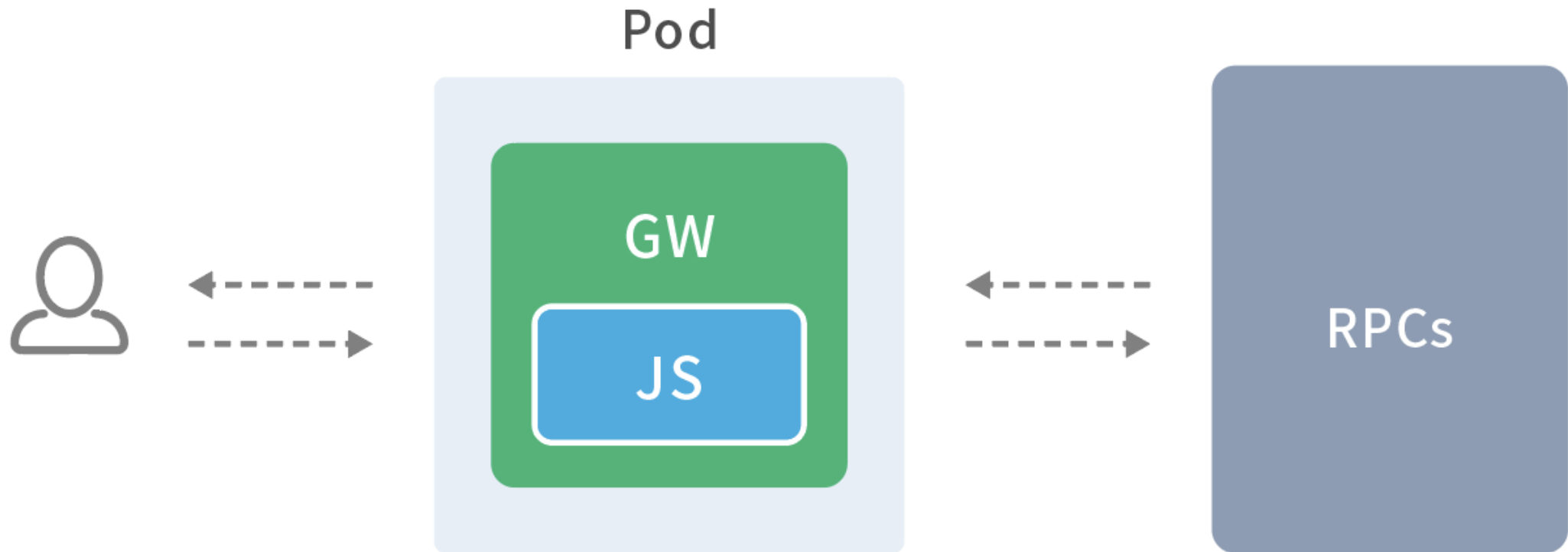
# ✔ 非同步 Queue\_





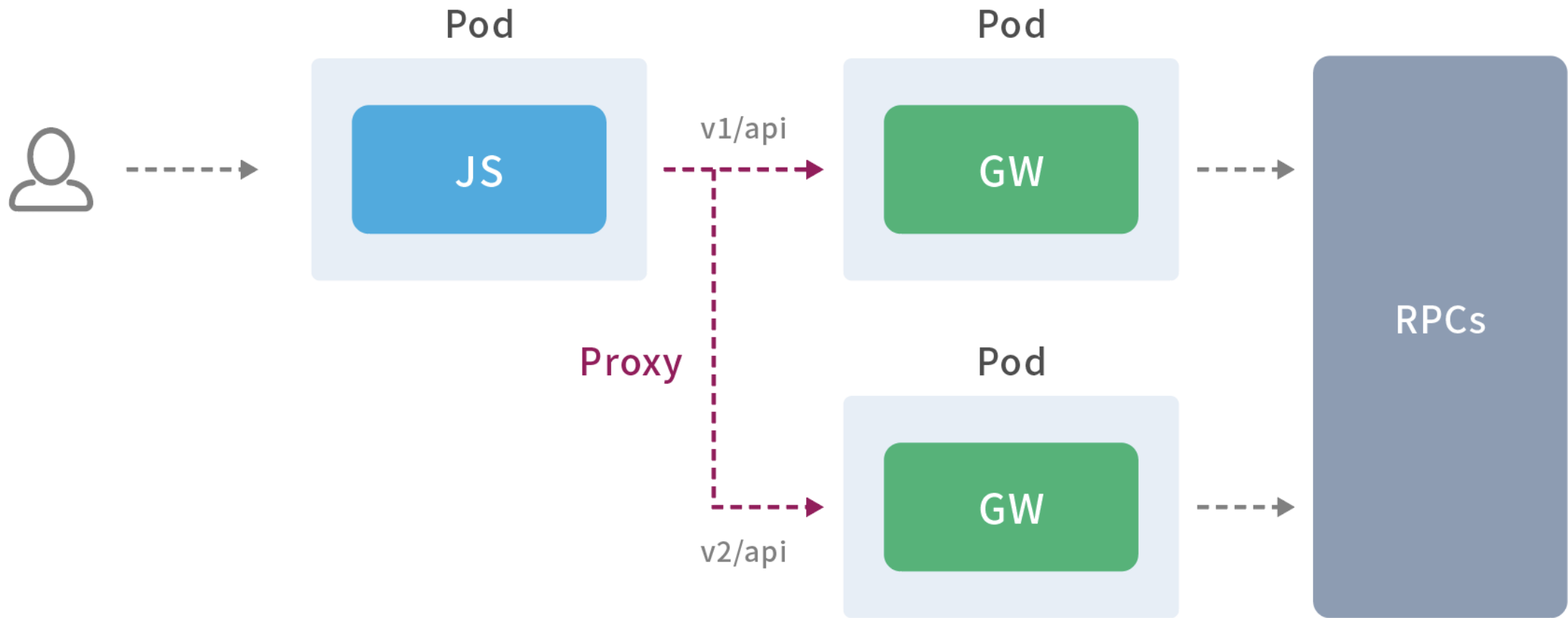


# Frontend / Backend\_



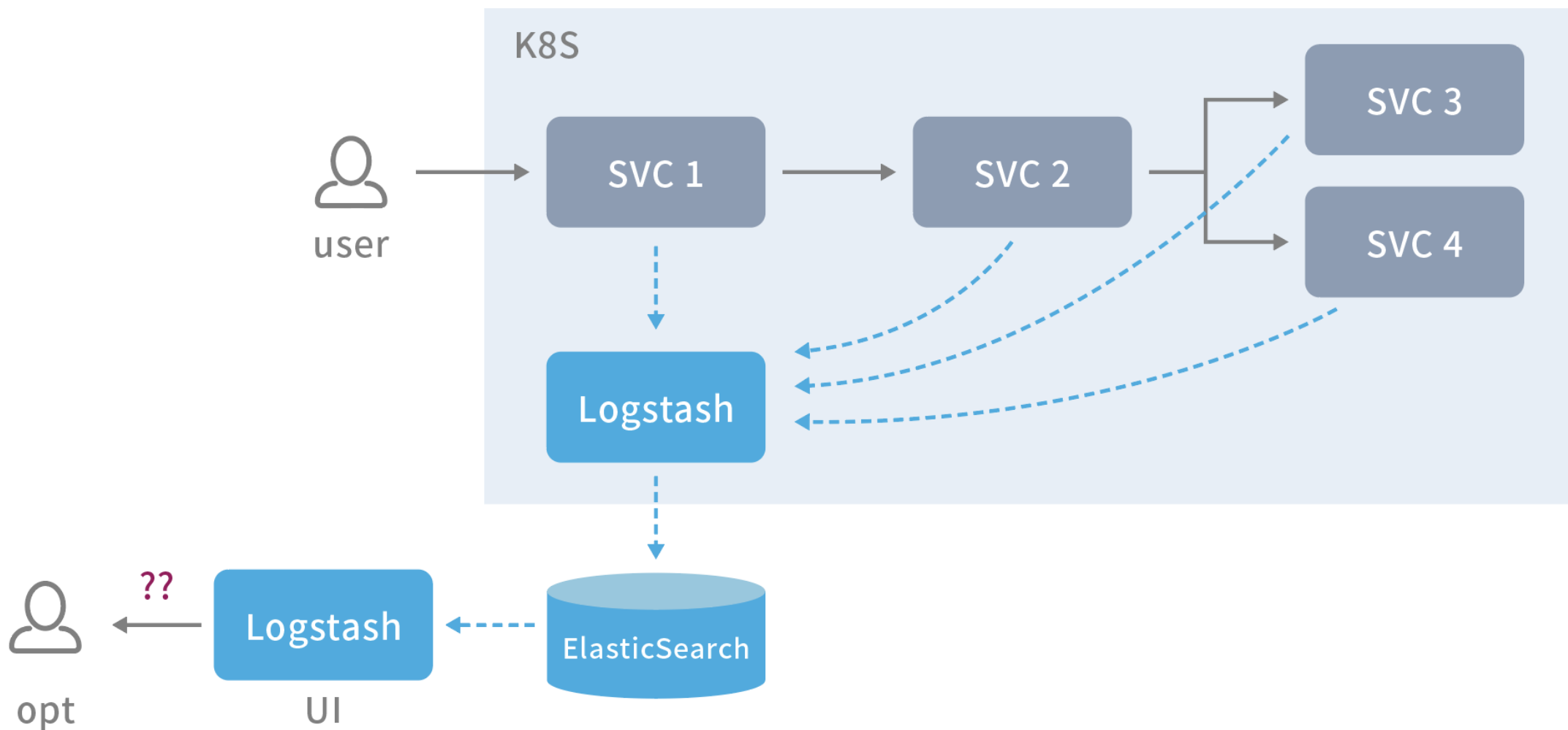


# Frontend / Backend\_



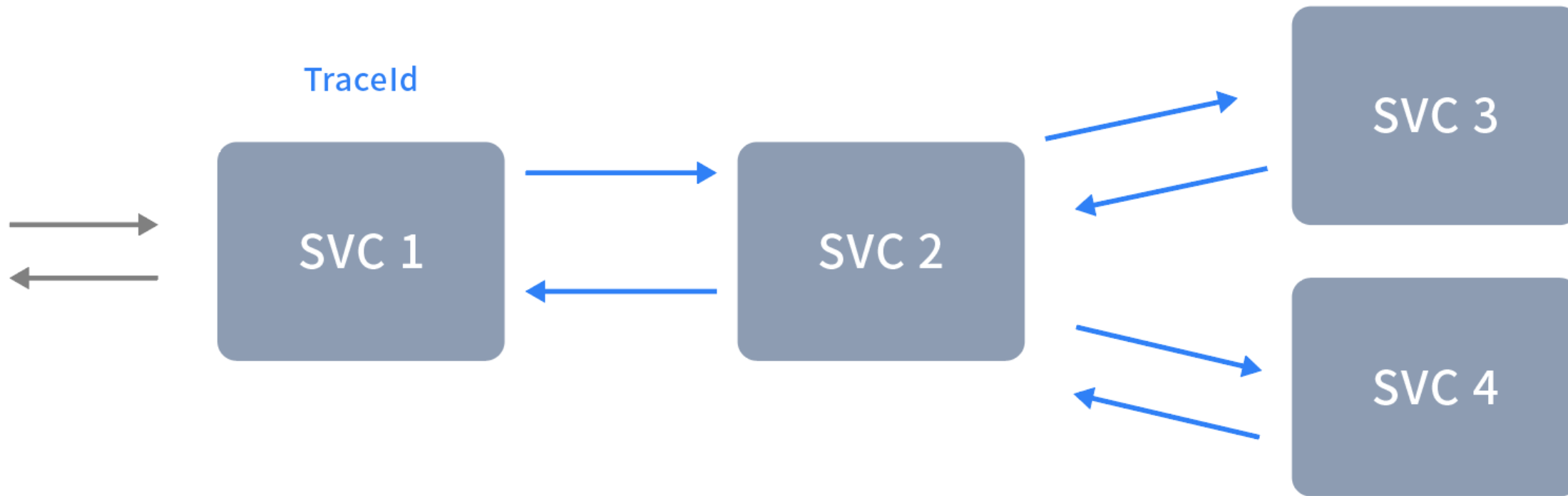


# Hard to trace logs\_



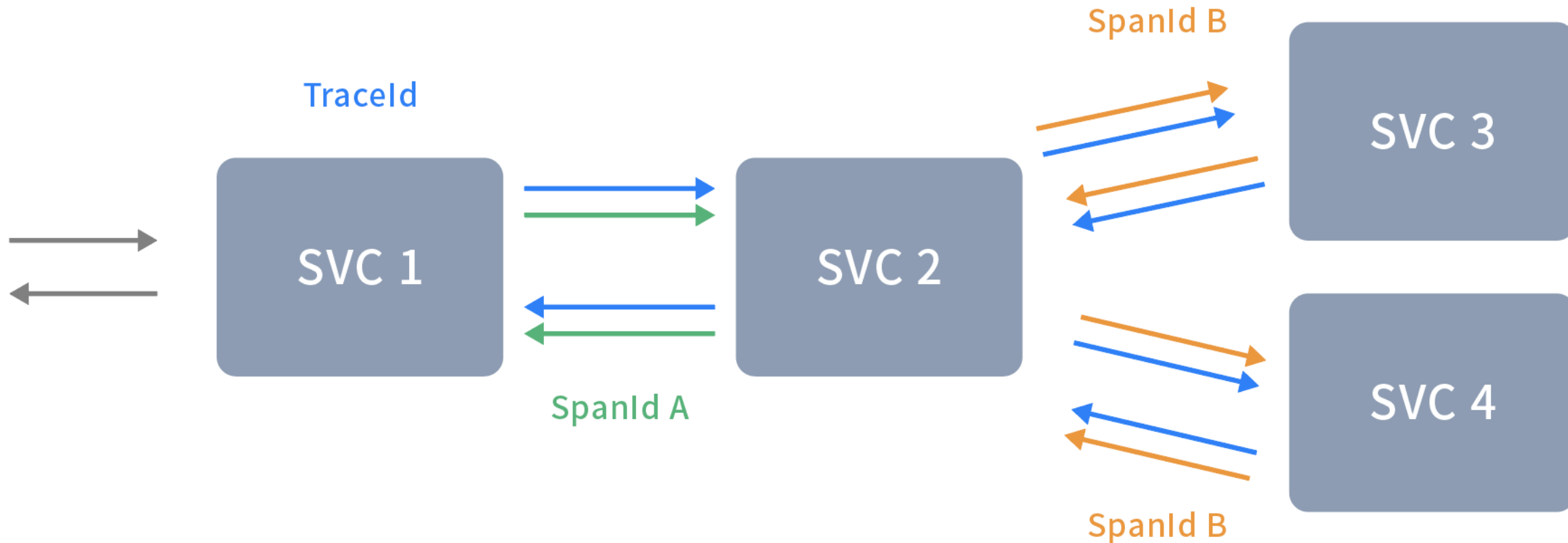


# Spring Sleuth\_



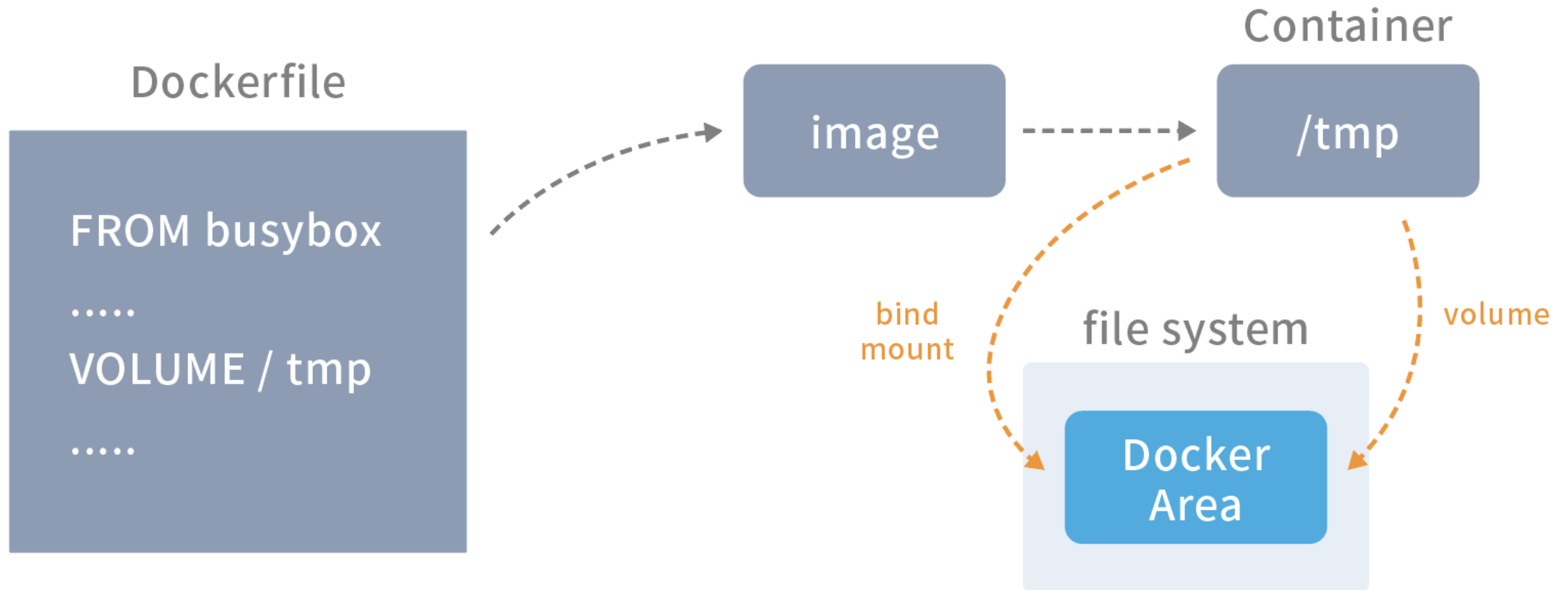


# Spring Sleuth\_



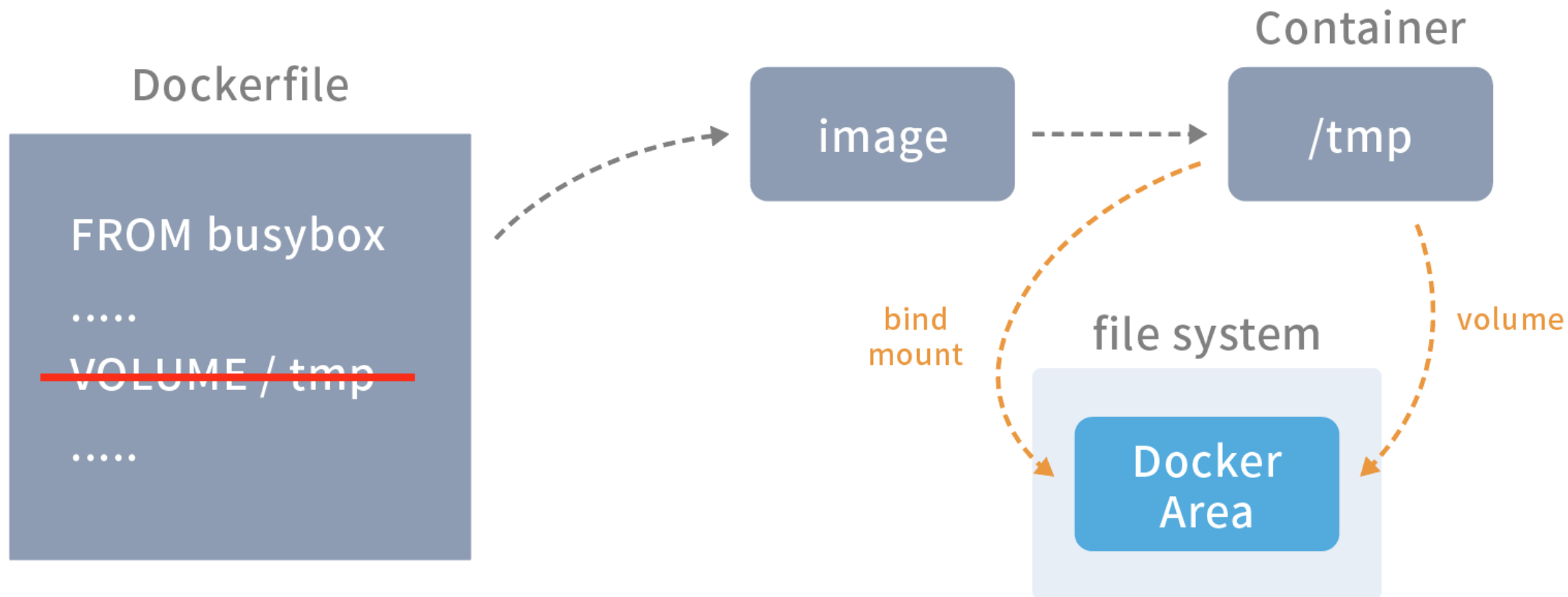


# Limited Resource\_



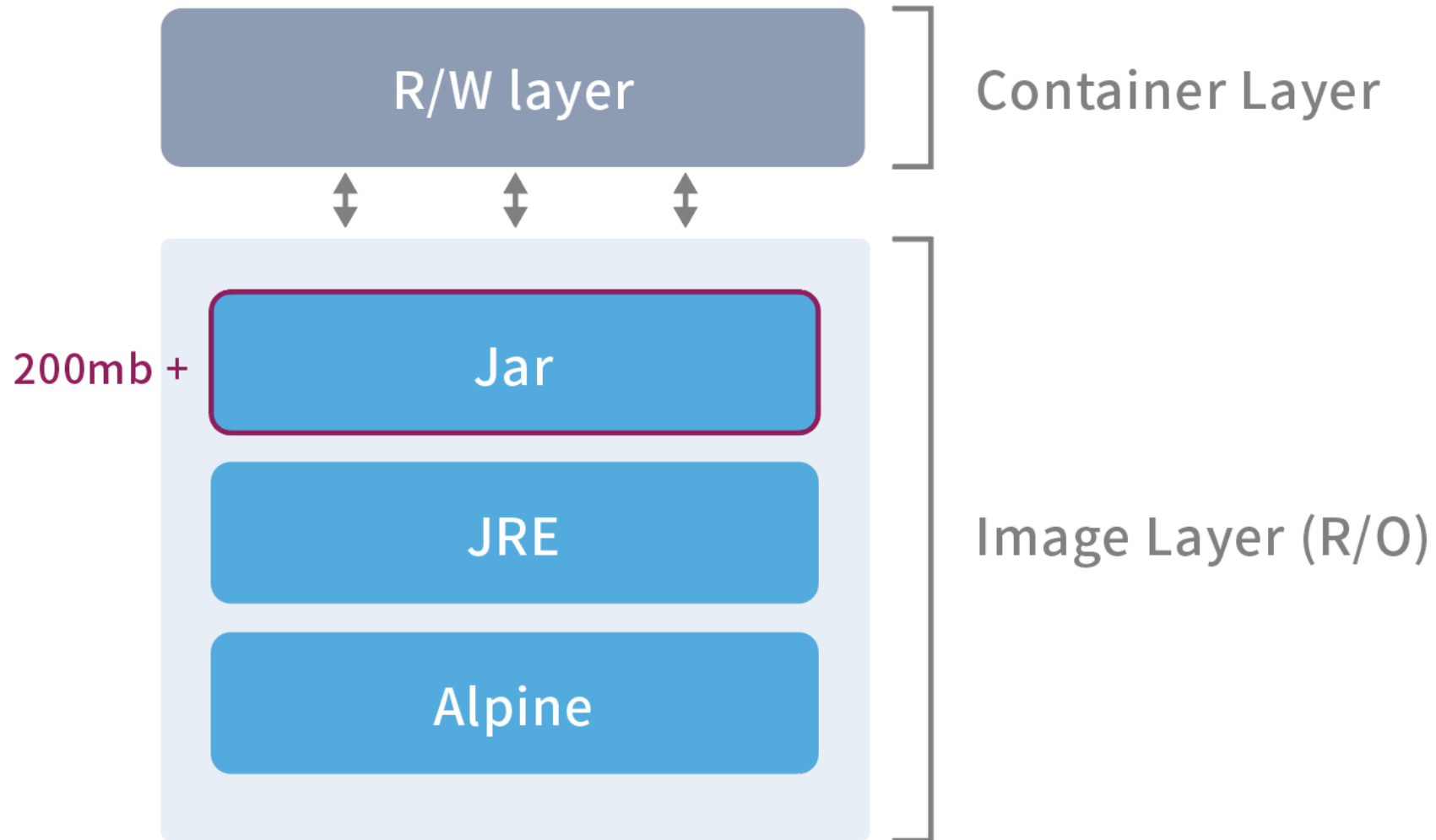


# Limited Resource\_





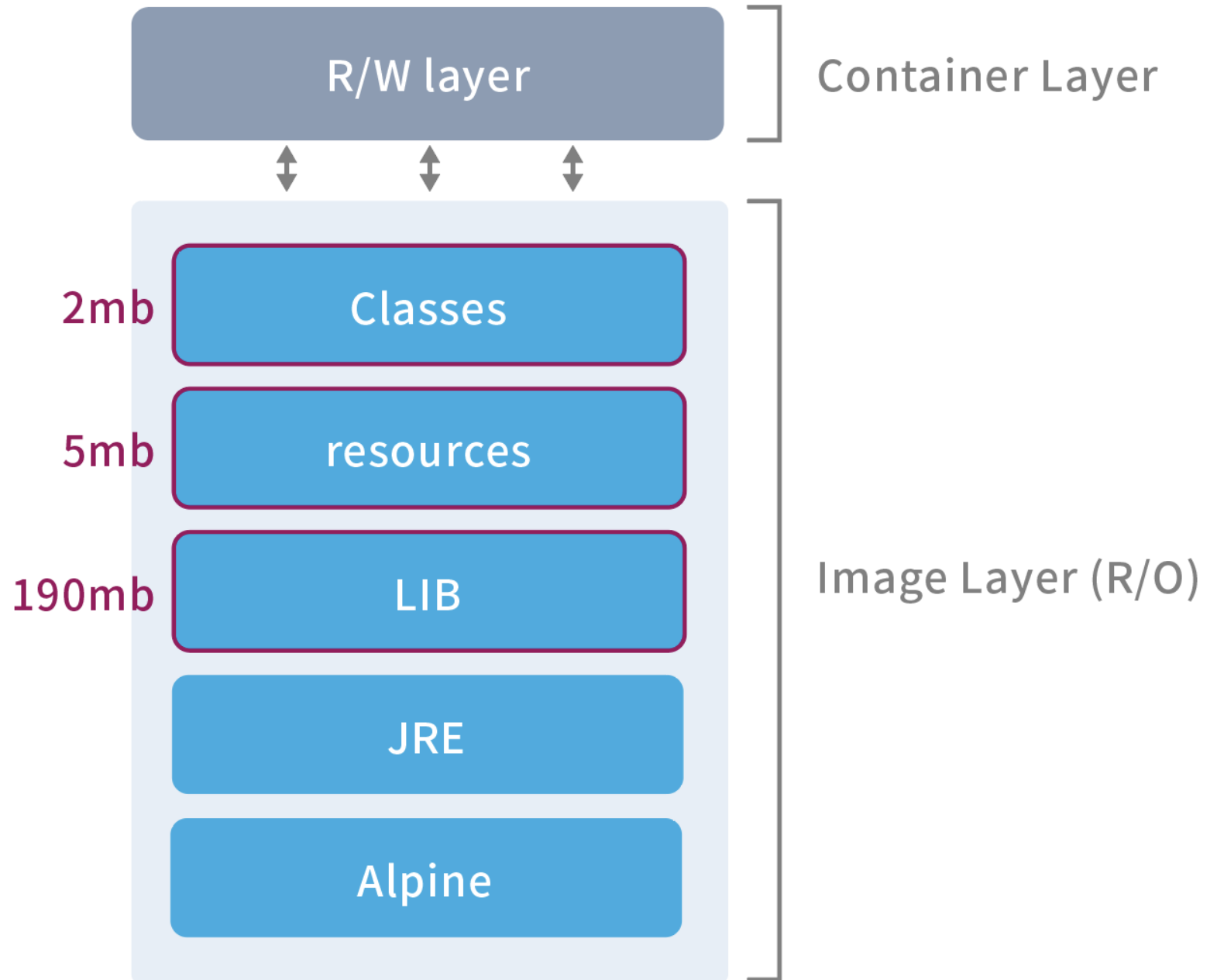
# Big Jar\_







# JIB\_

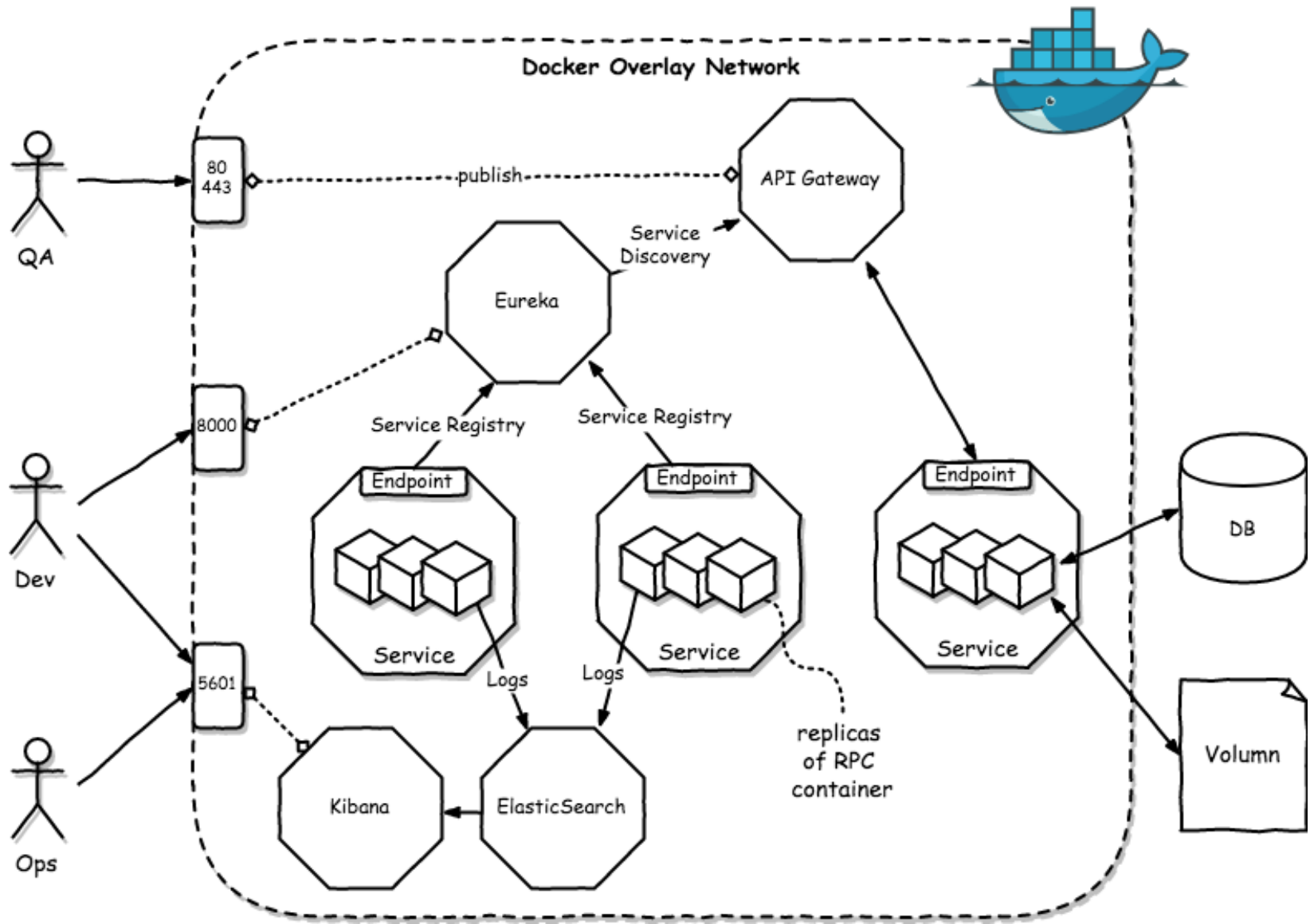


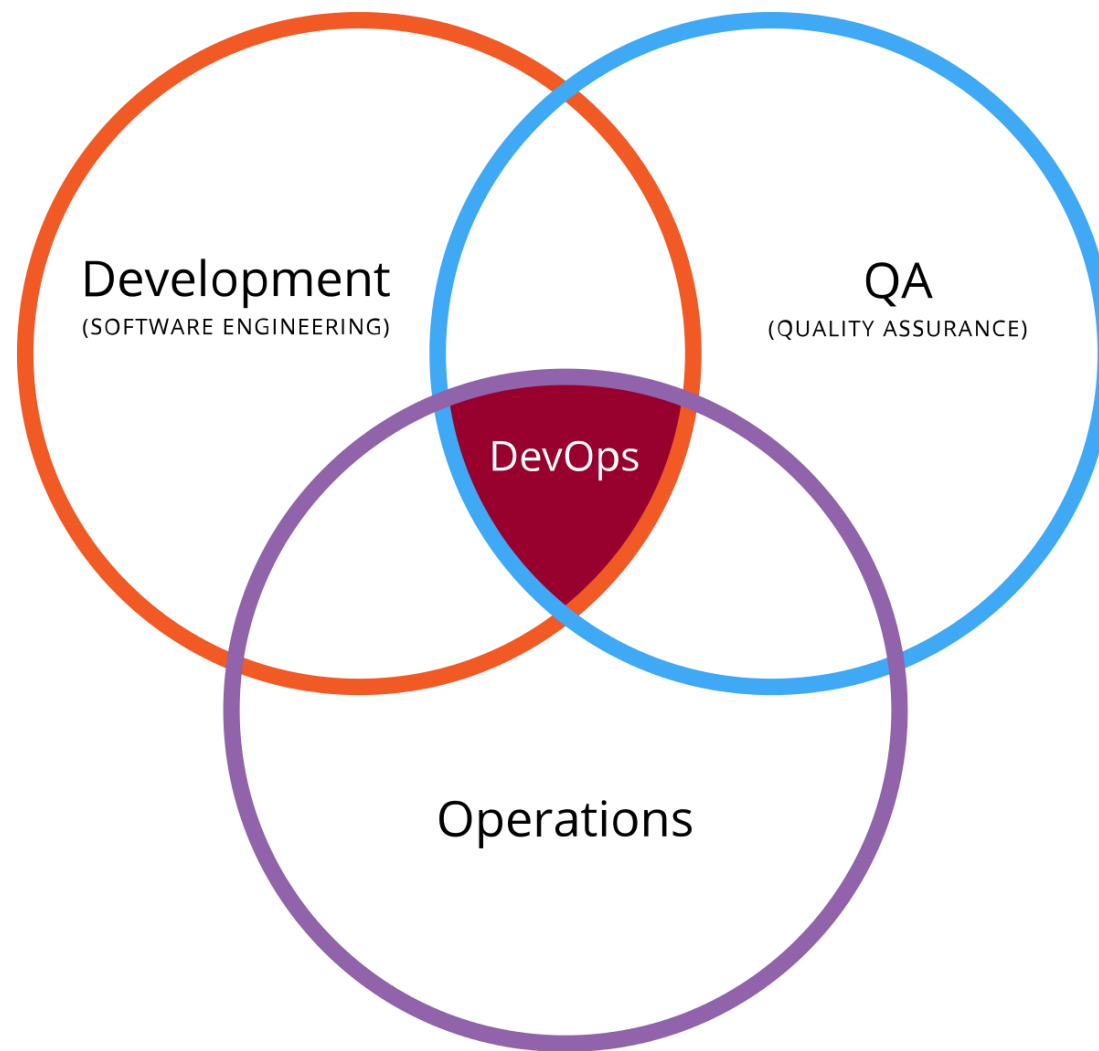
200mb

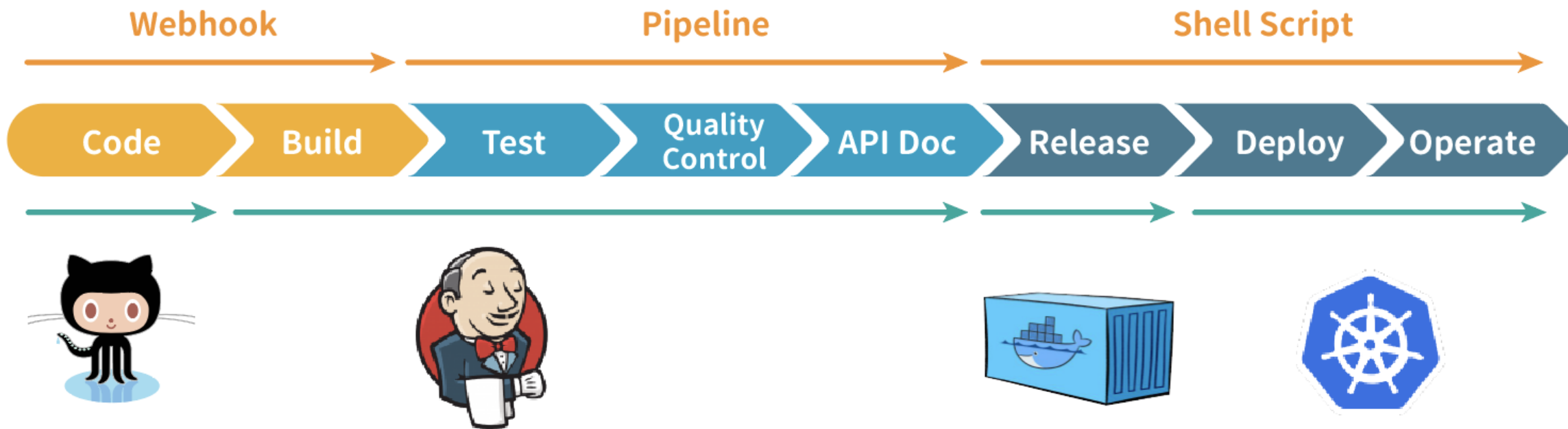


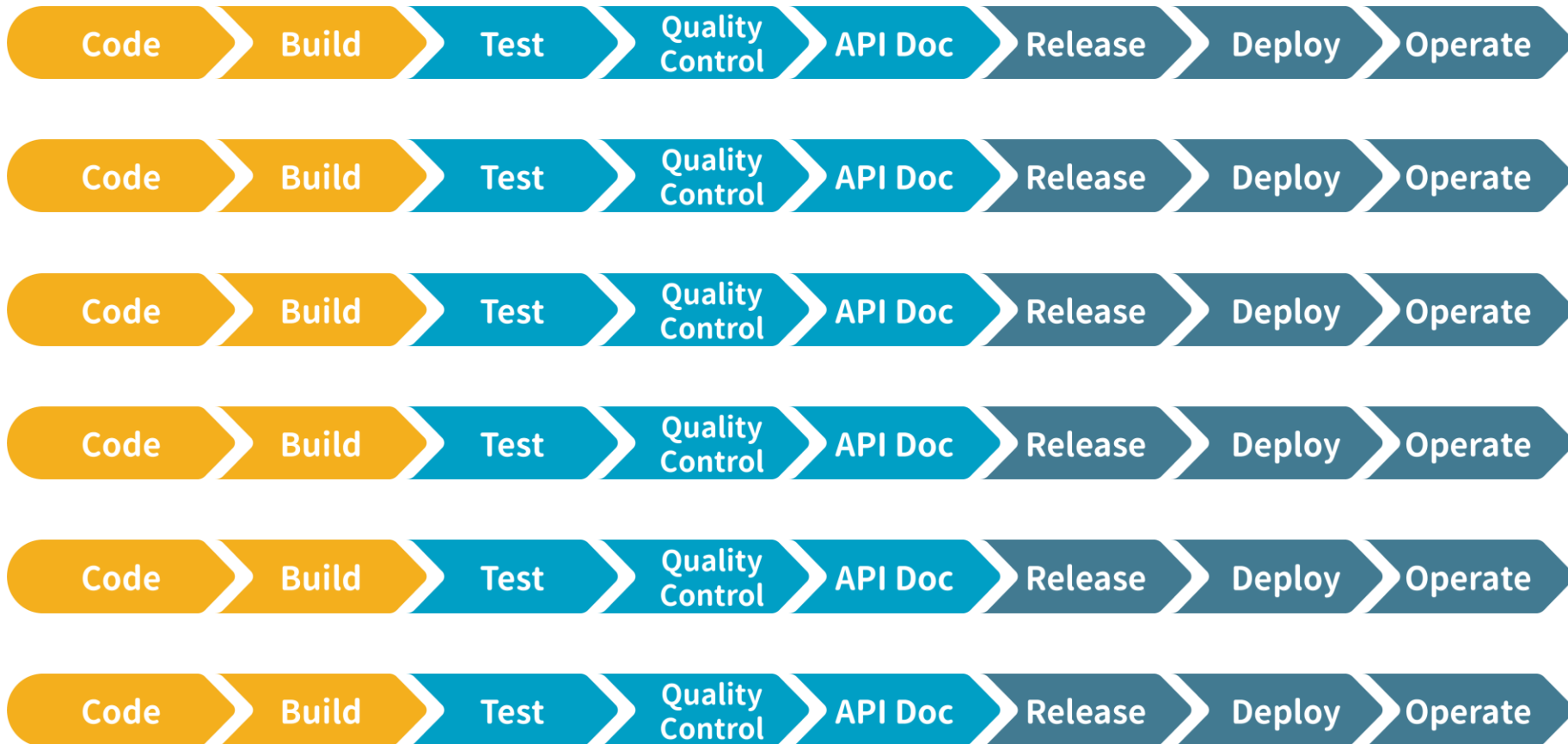
2mb

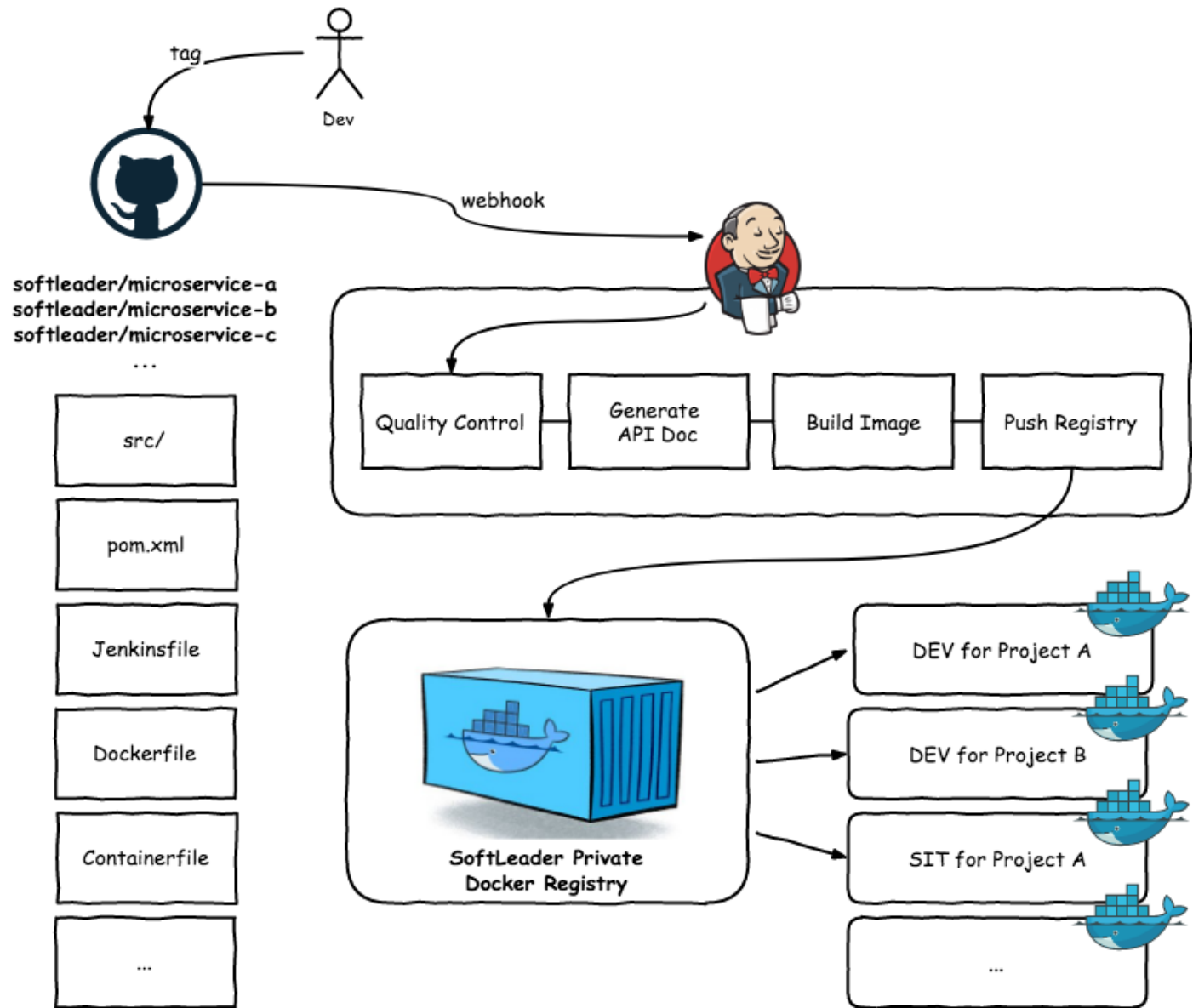
# DevOps

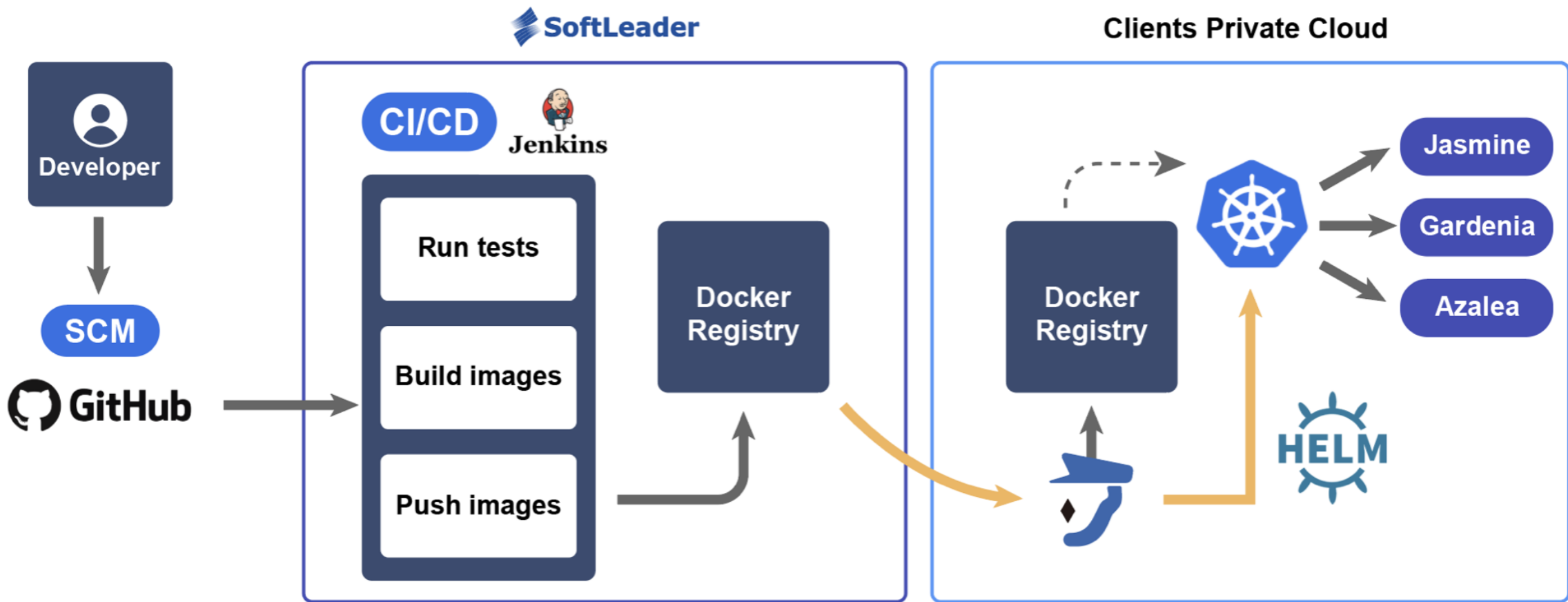














IBM Cloud Private console dashboard showing system and resource overview.

**System Overview**

- Nodes** (2): 100% Active (2), 0 Inactive
- Shared Storage** (42 GiB): 0 B Available, 42 GiB Used, 0 B Released, 0 B Failed
- Deployments** (22): 95% Healthy (21), 1 Unhealthy

**Resource Overview**

- CPU** (8): Utilization 3.5 CPU | 44%, Allocation 0 CPU | 0%
- Memory** (62.57 GiB): Utilization 30.57 GiB | 49%, Allocation 22.5 GiB | 36%
- GPU** (0): Utilization 0 GPU | 0%, Allocation 0 GPU | 0%

> Search... (e.g. status:200 AND extension:PHP)

Options Refresh

Add a filter +

logstash-2019.09.\*

Selected fields

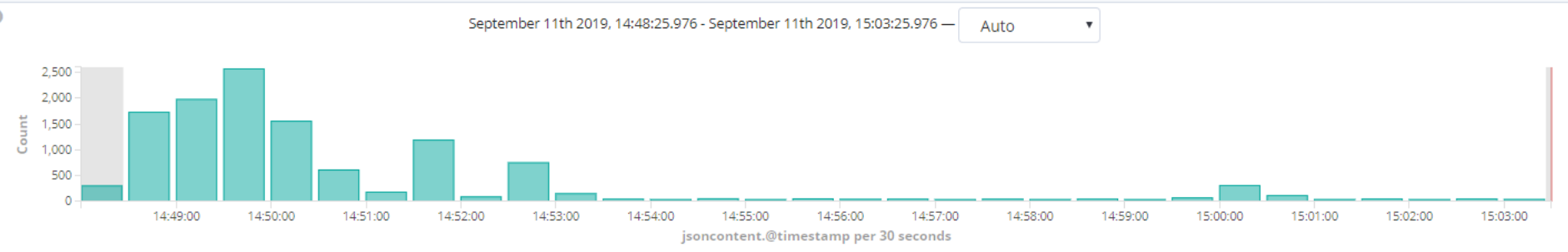
? \_source

Available fields

Popular

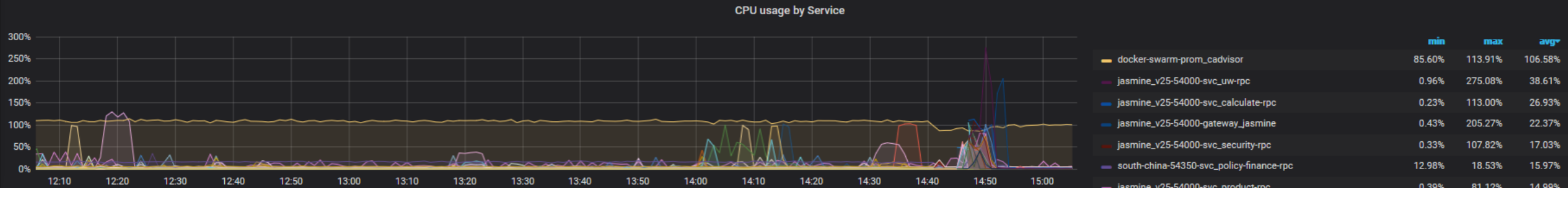
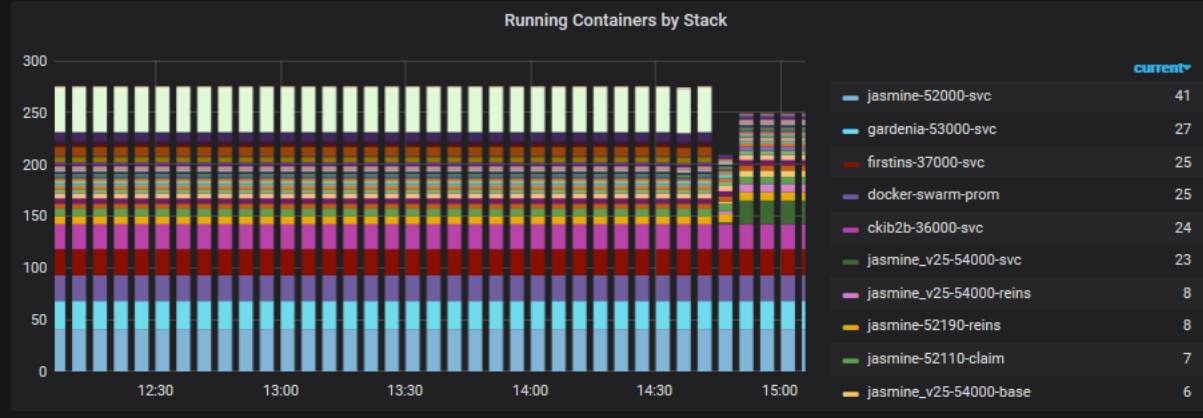
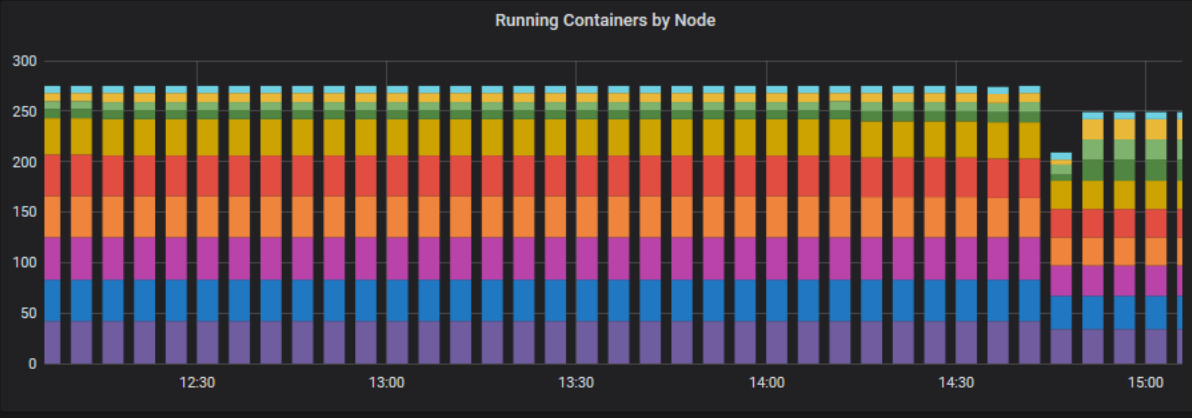
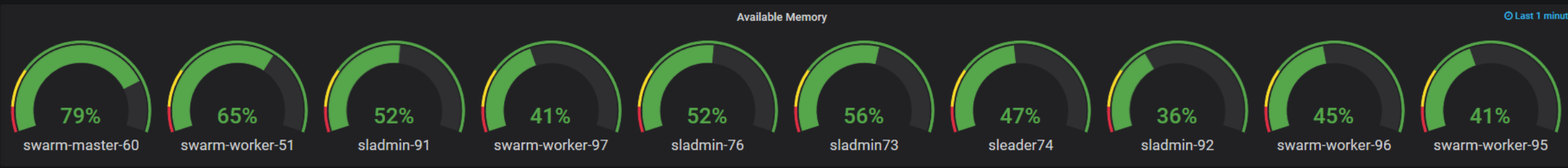
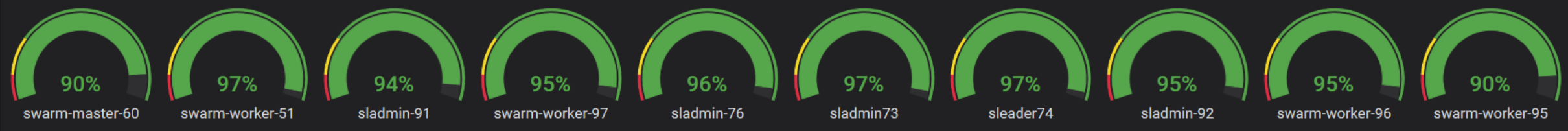
- jsoncontent.@timestamp
- t jsoncontent.appName
- t jsoncontent.message
- @timestamp
- t @version
- t \_id
- t \_index
- # \_score
- t \_type
- t host
- t jsoncontent.class
- t jsoncontent.exportable
- t jsoncontent.level
- t jsoncontent.parent
- t jsoncontent.pid
- t jsoncontent.span
- t jsoncontent.thread
- t jsoncontent.trace
- t message
- # port

- Discover
- Visualize
- Dashboard
- Timelion
- Canvas
- Maps
- Machine Learning
- Infrastructure
- Logs
- APM
- Uptime
- Dev Tools
- Monitoring
- Management
- Default
- Collapse



Time \_source

September 11th 2019, 15:03:21.325	<pre> jsoncontent.appName: azalea-integration-rpc jsoncontent.trace: c53fadeef125c9a0 jsoncontent.thread: taskScheduler-1 jsoncontent.level: DEBUG jsoncontent.parent: jsoncontent.span: c53fadeef125c9a0 jsoncontent.@timestamp: September 11th 2019, 15:03:21.325 jsoncontent.class: org.hibernate.SQL jsoncontent.message: select * from ( select enasyncjob0_ID as ID1_0_, enasyncjob0_CREATED_BY as CREATED_BY2_0_, enasyncjob0_CREATED_TIME as CREATED_TIME3_0_, enasyncjob0_MODIFIED_BY as MODIFIED_BY4_0_, enasyncjob0_MODIFIED_TIME as MODIFIED_TIME5_0_, enasyncjob0_JOB_NAME as JOB_NAME6_0_, enasyncjob0_MESSAGE as MESSAGE7_0_, enasyncjob0_POLICY_NO as POLICY_N08_0_, enasyncjob0_POLICY_STATUS as POLICY_STATUS9_0_, enasyncjob0_PRIORITY as PRIORITY10_0_, enasyncjob0_STATUS as STATUS11_0_ from SL.ASYNC_JOB enasyncjob0_ where </pre>
September 11th 2019, 15:03:17.174	<pre> @version: 1 message: {"@timestamp":"2019-09-11T15:03:17.174+08:00","level":"DEBUG","appName":"setting-public-file-rpc","trace":"","span":"","parent":"","exportable":"","pid":"7","thread":"Eureka-JerseyClient-Conn-Cleaner2","class":"c.n.discovery.shared.NamedConnectionPool","message":"Deleting connection [{}-&gt;http://192.168.1.60:8005][null]" port: 51,462 jsoncontent.trace: jsoncontent.thread: Eureka-JerseyClient-Conn-Cleaner2 jsoncontent.class: c.n.discovery.shared.NamedConnectionPool jsoncontent.appName: setting-public-file-rpc jsoncontent.@timestamp: September 11th 2019, 15:03:17.174 jsoncontent.span: jsoncontent.parent: jsoncontent.message: Deleting connection [{}- </pre>
September 11th 2019, 15:03:17.174	<pre> @version: 1 message: {"@timestamp":"2019-09-11T15:03:17.174+08:00","level":"DEBUG","appName":"setting-public-file-rpc","trace":"","span":"","parent":"","exportable":"","pid":"7","thread":"Eureka-JerseyClient-Conn-Cleaner2","class":"c.n.discovery.shared.NamedConnectionPool","message":"Closing connections idle longer than 0 SECONDS" port: 51,462 jsoncontent.trace: jsoncontent.thread: Eureka-JerseyClient-Conn-Cleaner2 jsoncontent.class: c.n.discovery.shared.NamedConnectionPool jsoncontent.appName: setting-public-file-rpc jsoncontent.@timestamp: September 11th 2019, 15:03:17.174 jsoncontent.span: jsoncontent.parent: jsoncontent.message: Closing connections idle longer than 0 SECONDS </pre>
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# Future

# ~~Spring Cloud~~ (Spring Boot)

~~Feign~~(gRpc)

~~Config Server~~(config map)

~~Eureka~~(Internal DNS)



# Thank you.

SoftLeader | Gary Lee