Apache ServiceComb
Introduction of Microservice Innovation Project
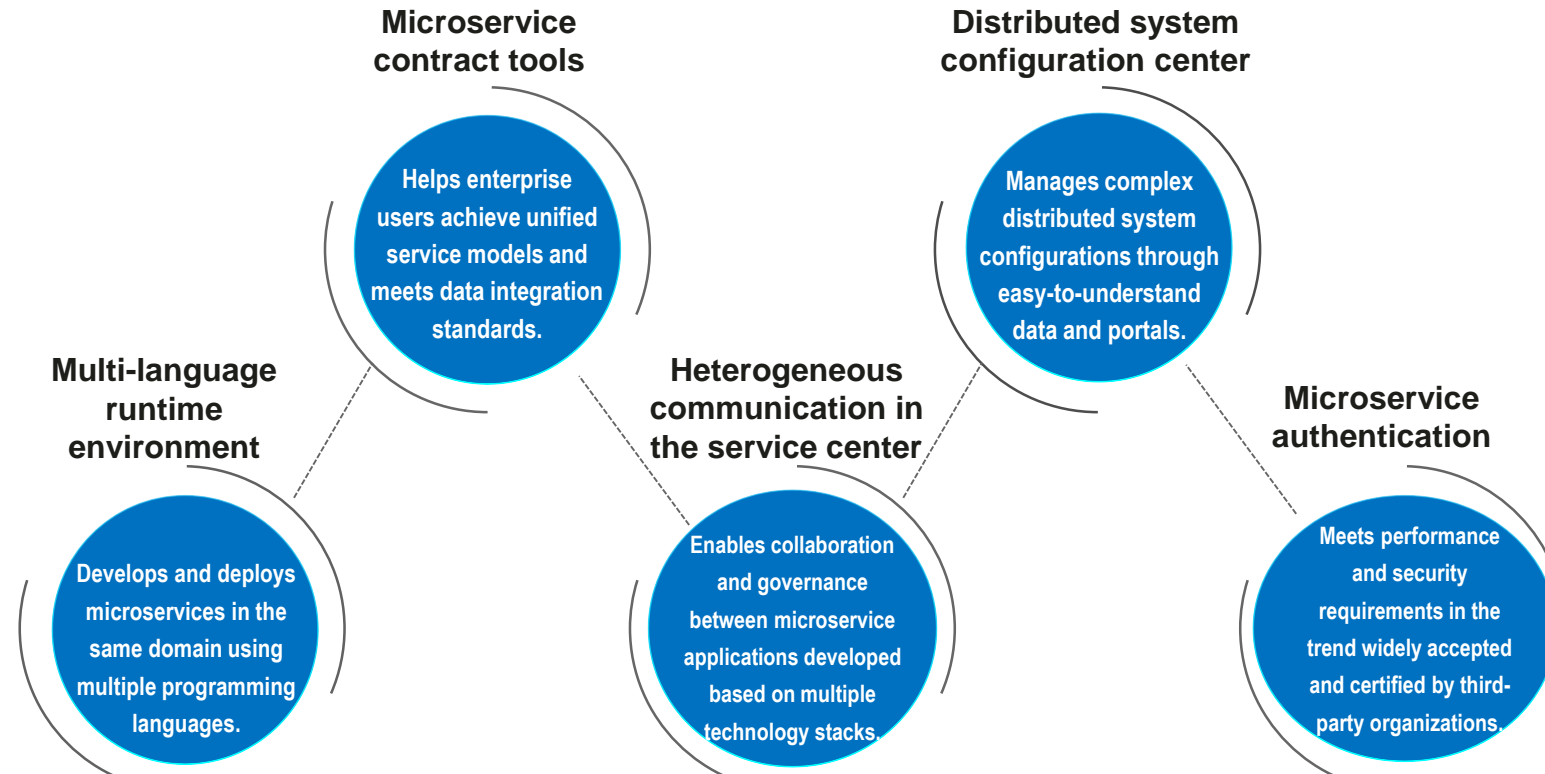
[Website] http://servicecomb.apache.org
[Github] https://github.com/apache?q=servicecomb

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Continuous Innovation to Address User Pain Points

Microservice contract tools

Helps enterprise users achieve unified service models and meets data integration standards.

Distributed system configuration center

Manages complex distributed system configurations through easy-to-understand data and portals.

Multi-language runtime environment

Develops and deploys microservices in the same domain using multiple programming languages.

Heterogeneous communication in the service center

Enables collaboration and governance between microservice applications developed based on multiple technology stacks.

Microservice authentication

Meets performance and security requirements in the trend widely accepted and certified by third-party organizations.

Apache ServiceComb

[Website] http://servicecomb.apache.org
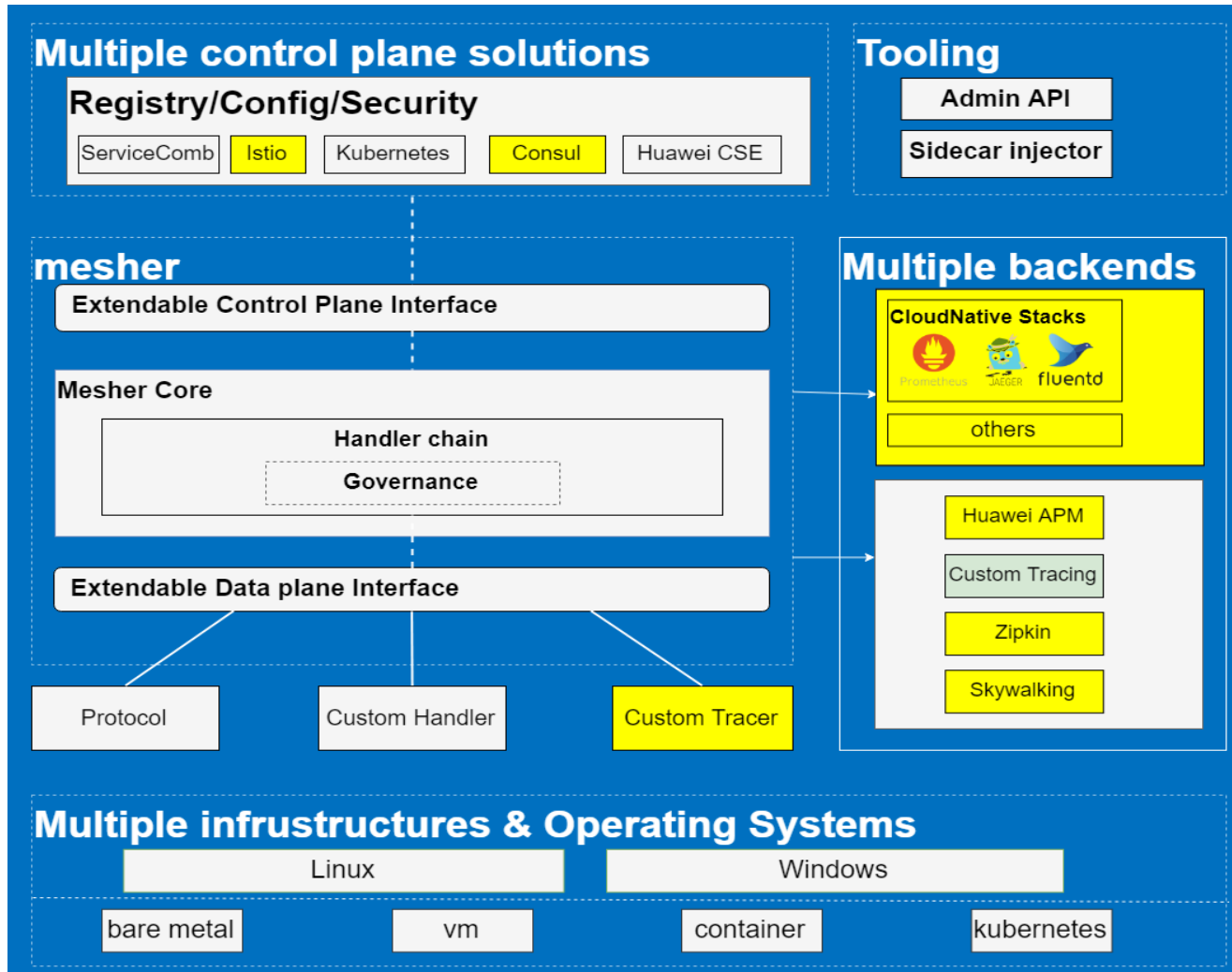[Github] https://github.com/apache?q=servicecomb

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Mesher - Heterogeneous,multilingual,non-intrusive microservice framework

A high-performance service grid framework based on Golang, supporting non-intrusive business code to implement microservice transformation, and interoperating with popular microservice framework governance.

- **Github link**

https://github.com/apache/servicecomb-mesher

- **Next step**
- Gateway capabilities
- Fusion ecology suche as Istio/Promethues/Skywalking/…
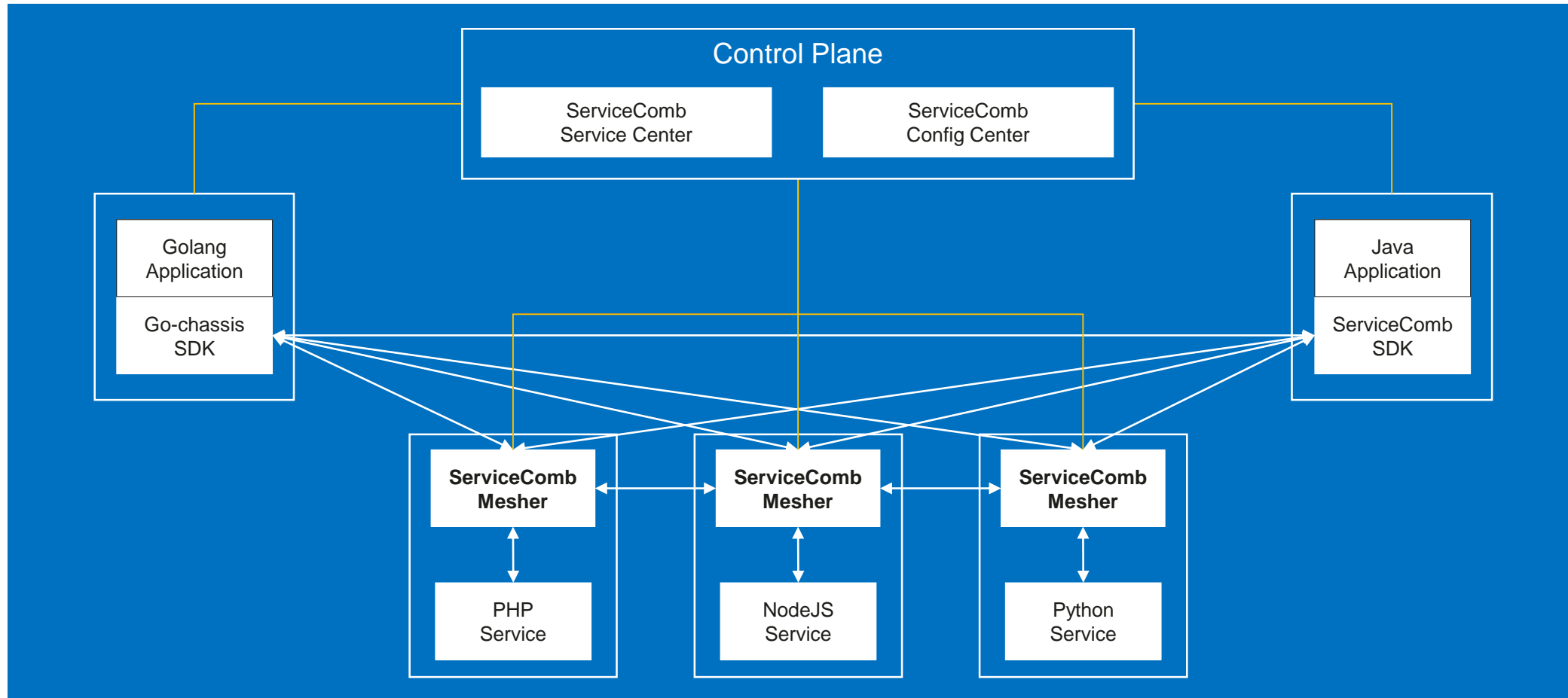- Compatible with heterogeneous infrastructure suche as K8S/BareMetal/docker/VM/…

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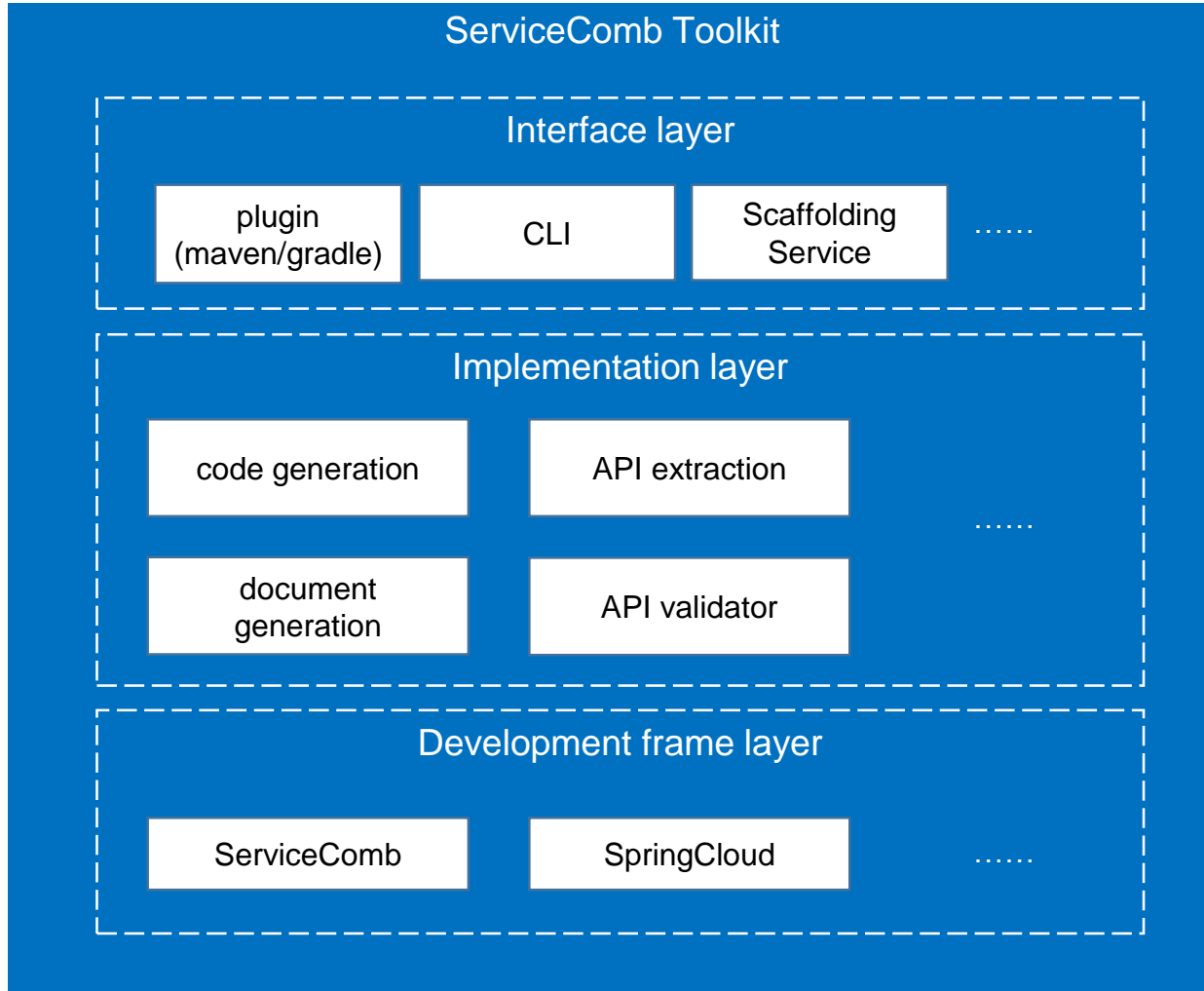# Mesher - Evolution to microservice in multi-language scenarios

- **Quick Start**

http://servicecomb.apache.org/cn/docs/mersher-quick-start/

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Toolkit - Microservice development and transformation tools

ServiceComb Toolkit

Interface layer

| plugin (maven/gradle) | CLI | Scaffolding Service | ...... |

Implementation layer

| code generation | API extraction |
| document generation | API validator |

......

Development frame layer

| ServiceComb | SpringCloud | ...... |

Provides the ability to convert and verify API, code, and documents, helping users quickly build microservice projects based on popular microservices frameworks and popular programming models, reducing the cost of microservices entry, enabling users to focus on business development, enhance refactoring and development efficiency.

- **Github link**

https://github.com/apache/servicecomb-toolkit

- **Next step**

- Support one-click production microservice project based on popular microservice framework such as SpringCloud.
- Support OAI V3
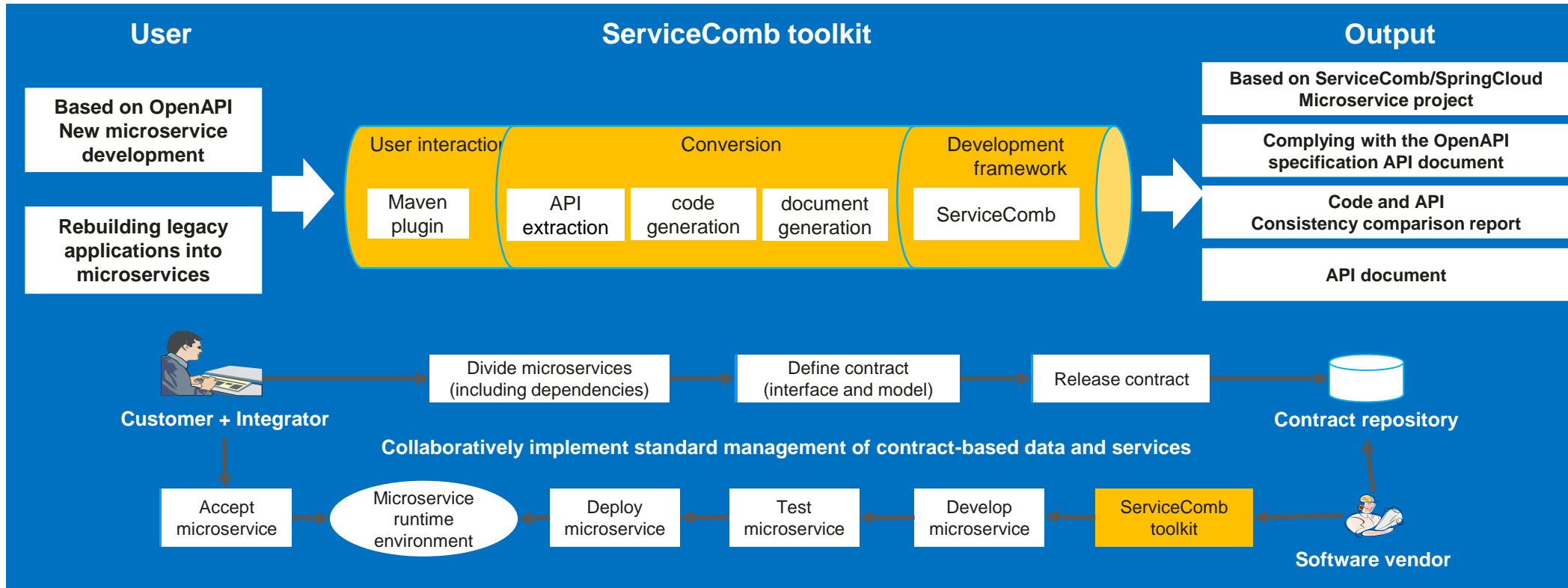- Support for toolkit plugin integration into Eclipse & Intellij

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Toolkit - One-click generation of microservice project

User	ServiceComb toolkit	Output

User

Based on OpenAPI
New microservice
development

Rebuilding legacy
applications into
microservices

ServiceComb toolkit

User interaction
- Maven plugin

Conversion
- API extraction
- code generation
- document generation

Development framework
- ServiceComb

Output

Based on ServiceComb/SpringCloud
Microservice project

Complying with the OpenAPI
specification API document

Code and API
Consistency comparison report

API document

Customer + Integrator

Divide microservices (including dependencies) → Define contract (interface and model) → Release contract → Contract repository

Collaboratively implement standard management of contract-based data and services

Accept microservice ← Microservice runtime environment ← Deploy microservice ← Test microservice ← Develop microservice ← ServiceComb toolkit ← Software vendor

- **Quick Start**

https://github.com/apache/servicecomb-toolkit/blob/master/samples/README-ZH.md

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# Syncer - Multi service center synchronization tool

Syncer is a multi-service-center synchronization tool designed for large microservice architectures, enabling microservices developed on different technology stacks to exchange data with each other. This project will support cross-cloud data connection.

- **Github link:** https://github.com/apache/servicecomb-service-center/tree/master/syncer
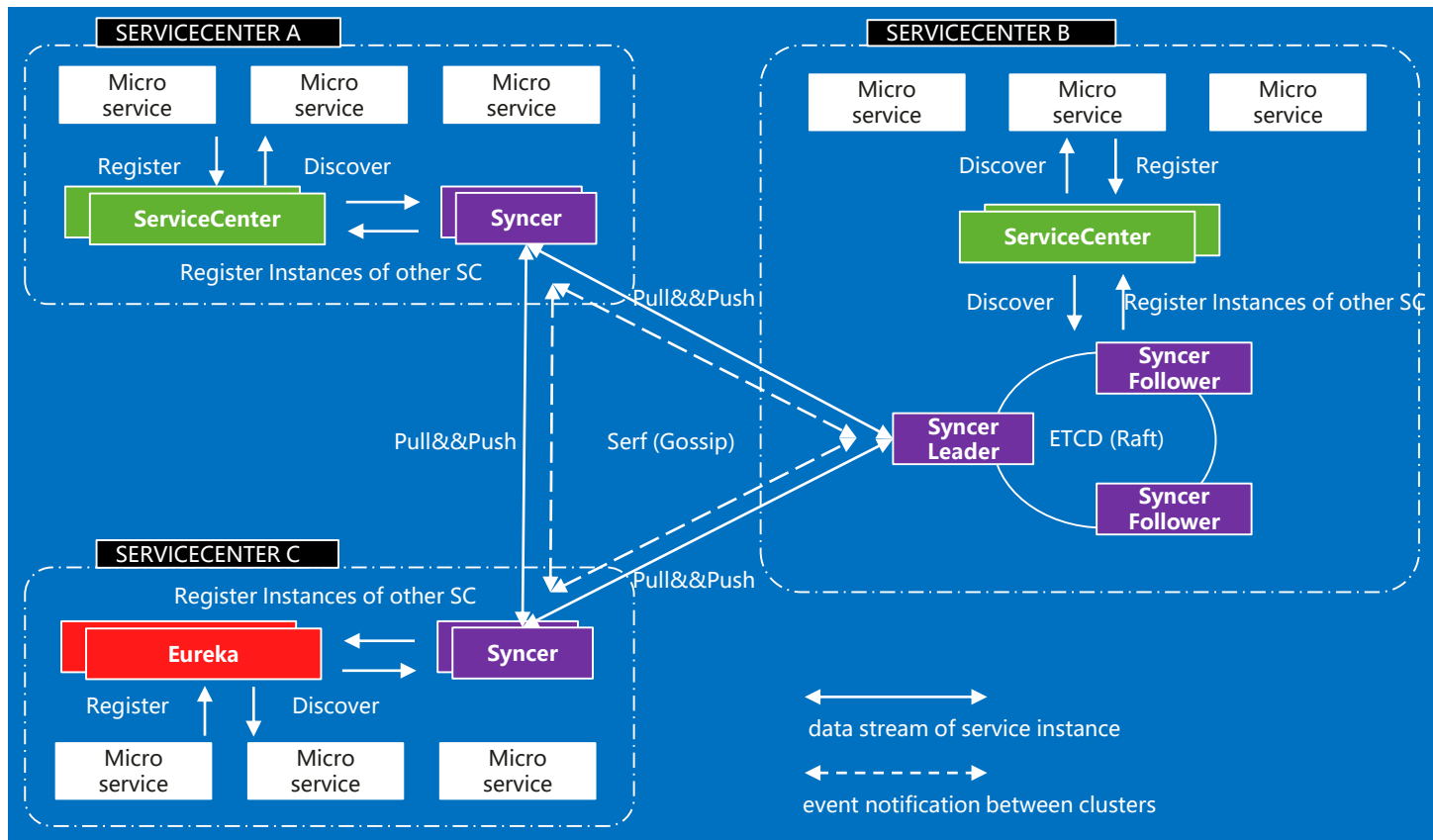
- **Next step**
  - Support for dynamic connection clustering
  - Support cross-data center capabilities
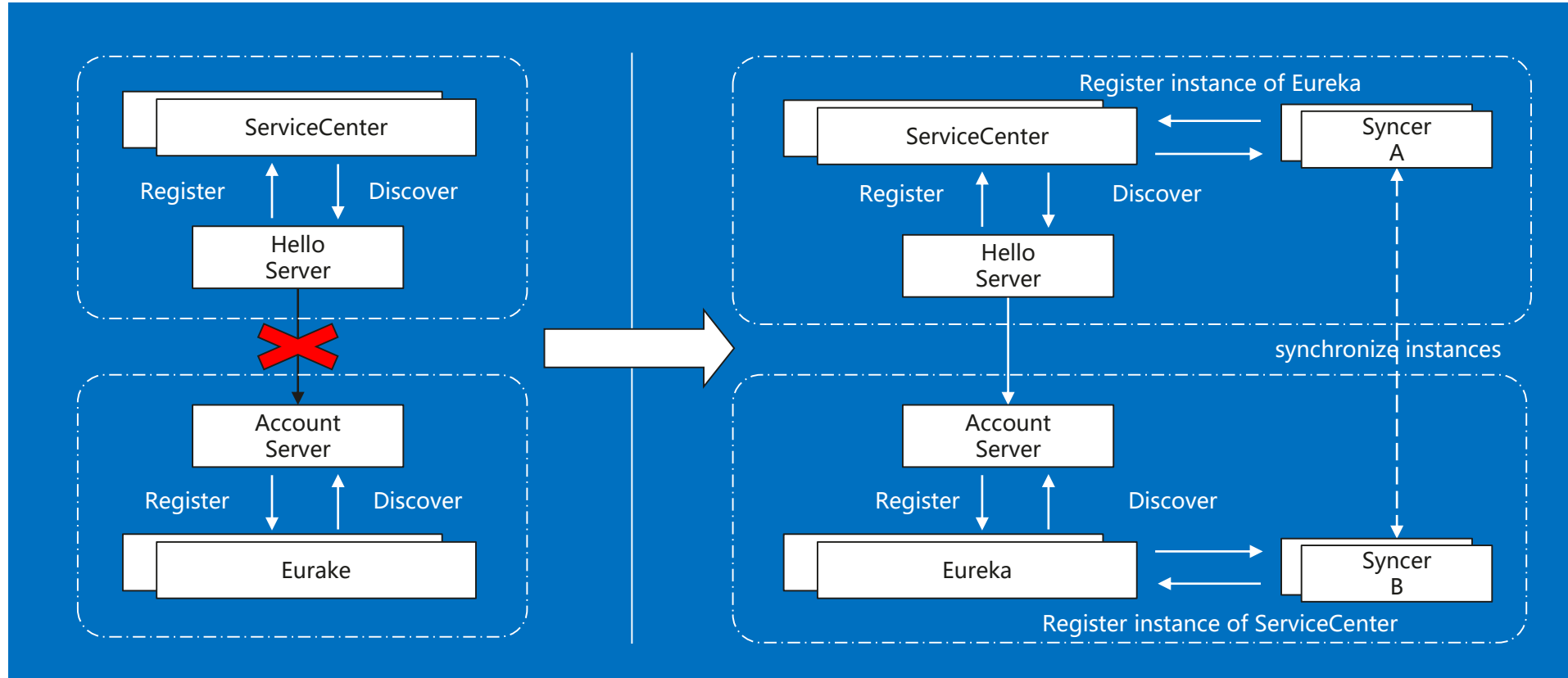 - Support connecting popular authentication framework

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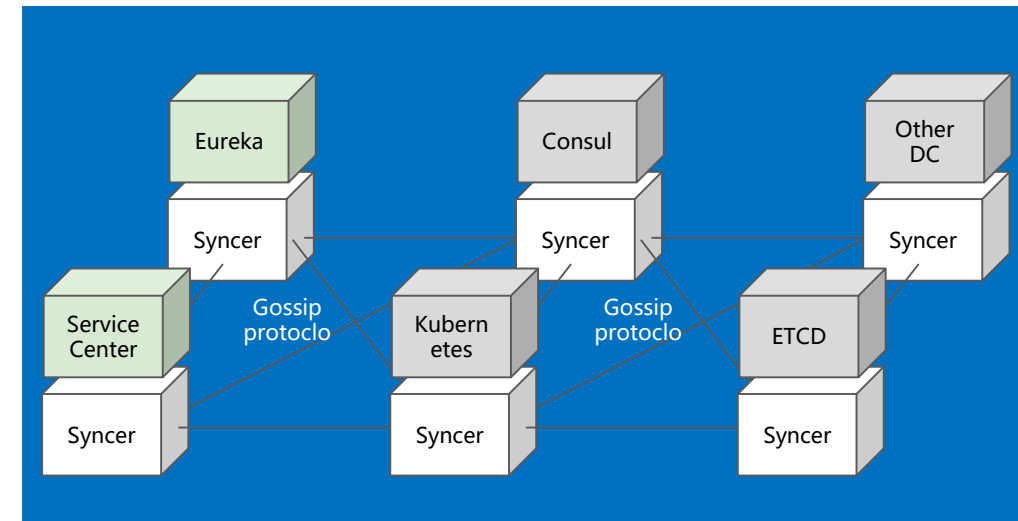
Syncer - Heterogeneous popular service center integration practice

- **Quick Start**

https://github.com/apache/servicecomb-service-center/tree/master/syncer/samples/multi-servicecenters

Fence - Microservice Authentication Framework

servicecomb-fence provides a microservice authentication framework based on Oauth2.0 and OpenID Connect, helping users quickly build high-performance and secure microservice authentication capabilities.

- Out-of-the-box: provides default Authentication Server, Edge Service, and Resource Server, simplifying development.
- Simplified development: allows users to configure permissions using either configuration file or Annotation, and supports separation of permission configuration from code logic.
- Third-party authentication: uses the Open ID protocol to connect to third-party authentication systems such as WeChat and Weibo.
- Secure and efficient: supports hybrid-token authentication and session-based authentication, meeting the performance and security requirements.

- **Github link:** https://github.com/apache/servicecomb-fence
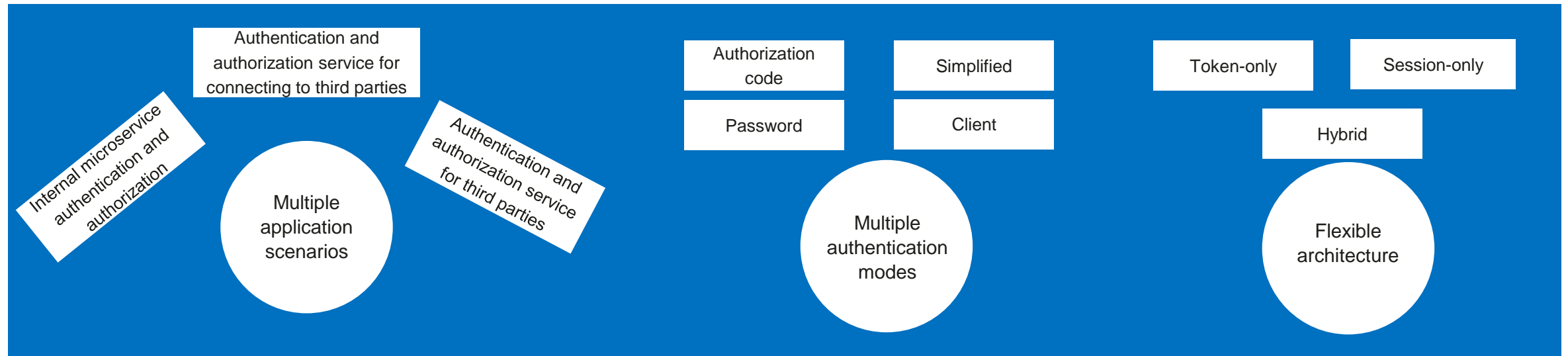
- **Quick Start**

https://github.com/apache/servicecomb-fence/blob/master/docs/zh_CN/developersGuide.md
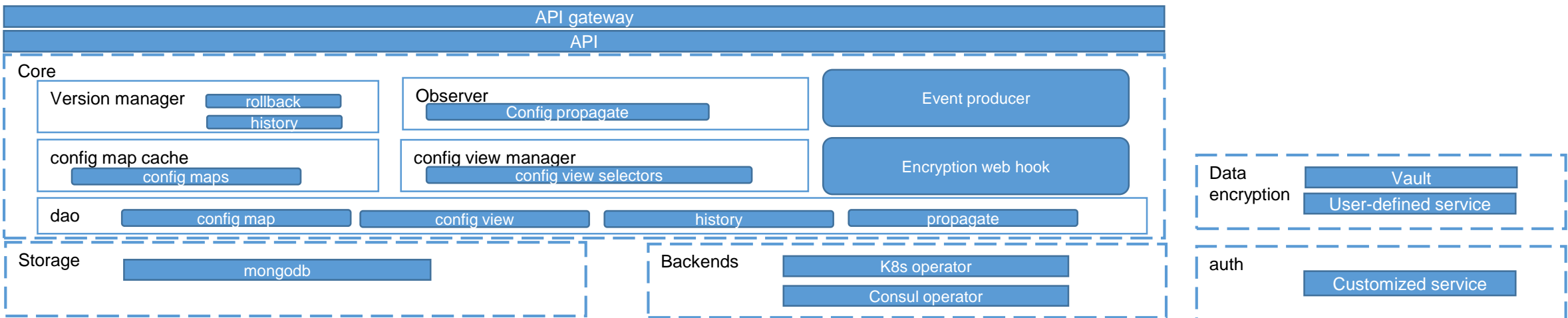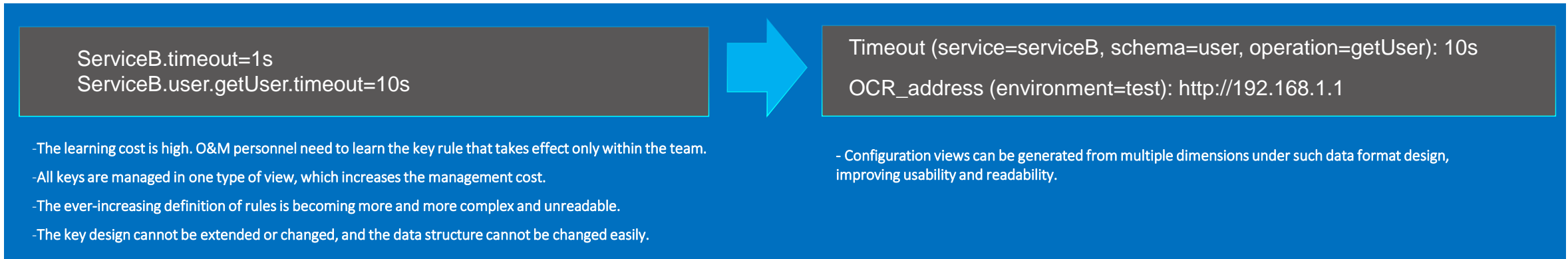
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Kie - Semantic Distributed System Configuration Center

Kie is used to implement the configuration center for a cloud native distributed system, enabling O&M personnel to manage complex distributed system configurations using understandable data and portals.

- **Github link:** https://github.com/apache/servicecomb-kie

ServiceB.timeout=1s
ServiceB.user.getUser.timeout=10s

Timeout (service=serviceB, schema=user, operation=getUser): 10s

OCR_address (environment=test): http://192.168.1.1

-The learning cost is high. O&M personnel need to learn the key rule that takes effect only within the team.

-All keys are managed in one type of view, which increases the management cost.

-The ever-increasing definition of rules is becoming more and more complex and unreadable.

-The key design cannot be extended or changed, and the data structure cannot be changed easily.

- Configuration views can be generated from multiple dimensions under such data format design, improving usability and readability.

API gateway

API

Core

Version manager — rollback / history

Observer — Config propagate

Event producer

config map cache — config maps

config view manager — config view selectors

Encryption web hook

dao — config map | config view | history | propagate

Data encryption — Vault / User-defined service

Storage — mongodb

Backends — K8s operator / Consul operator

auth — Customized service

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Open-Source, One-Stop Microservice Solution

Legacy Application Transformation   New Microservice Development   Ecosystem Compatibility

Open-Source, One-Stop Microservice Solution

Cloud Native
kubernetes
etcd

Microservice framework
Spring Cloud
Spring Boot

OpenTracing
ZIPKIN
Skywalking

Configuration
Apollo

ServiceMesh
Istio
Connect, secure, control, and observe services.

Visualized monitoring
Prometheus
Grafana

Communication specification
OPENAPI INITIATIVE
Swagger
Supported by SMARTBEAR

Fusion ecology

Apache ServiceComb

Quick Start
| Community website | User manual | Samples |

Core
Rest (OpenAPI)/RPC

| Configuration center | Authentication framework | Mesher |
| Service center | Microservice development framework | Distributed transaction framework |

Development toolkit
API extraction	Code generation
API verification	Document generation
Microservice scaffolding	

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Community summoned

For users

Choosing Apache ServiceComb, we will take your approach to **WeChat Group/Github Issue/MailGroup** seriously:

Every question

Every suggestion

We look forward to working with you to build a community and persevere to solve the microservice problem.

For developers

Expert / is already a microservice developer / is about to join the microservice developer / developer who is simply seeking open source contributions / scholar / student /... and so on,

We look forward to your joining and contribution,

If you are ready to contribute code, please **scan the QR code** into the group and **note the "contribution".**

We will work with you **on a one-on-one basis.**

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[Github] https://github.com/apache?q=servicecomb

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Thank you.

把数字世界带入每个人、每个家庭、每个组织，构建万物互联的智能世界。

Bring digital to every person, home and organization for a fully connected, intelligent world.

加入ServiceComb社区群　　微服务微信公众号

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