



GOTC 2023

全球开源技术峰会

THE GLOBAL OPENSOURCE TECHNOLOGY CONFERENCE

OPEN SOURCE, INTO THE FUTURE

「大前端新趋势」专场

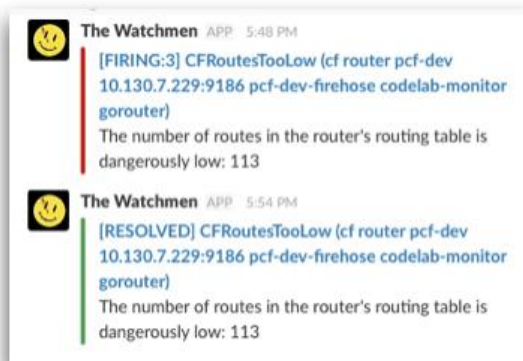
本期议题：基于OTel的前端全链路追踪思考和实践

王涛（灵亦） 阿里云 2023年05月28日

- 问题和挑战
- 链路追踪设计方案
- 链路追踪案例分析

问题和挑战

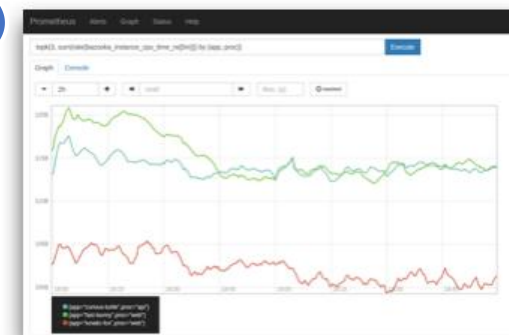
1. Alert



2. Dashboard

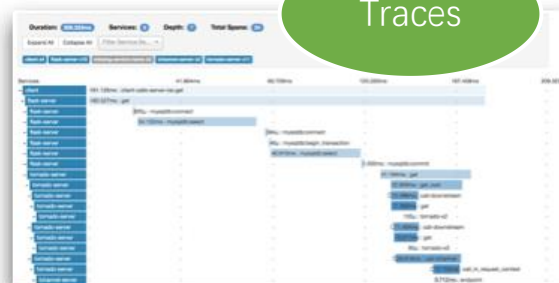


3. Adhoc Query



Fix!

Traces



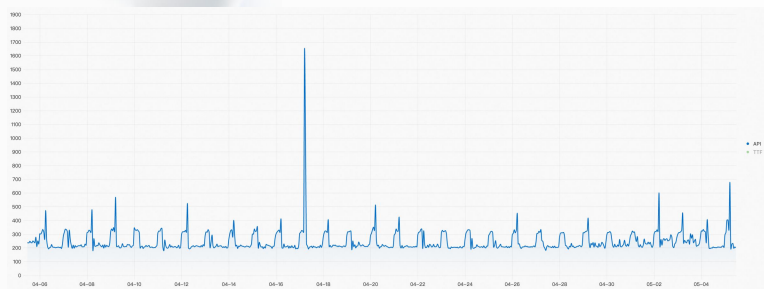
Logs



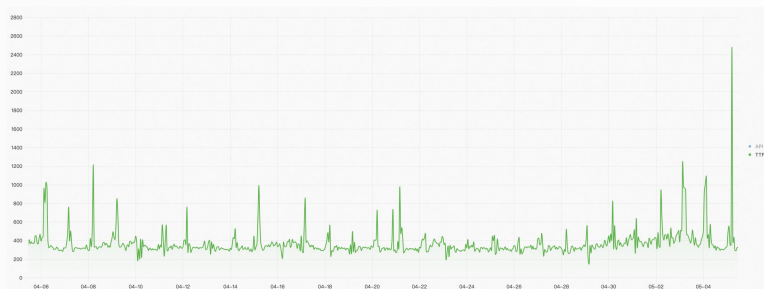
5. Distributed Tracing

4. Log Aggregation

前端为什么要接入链路追踪

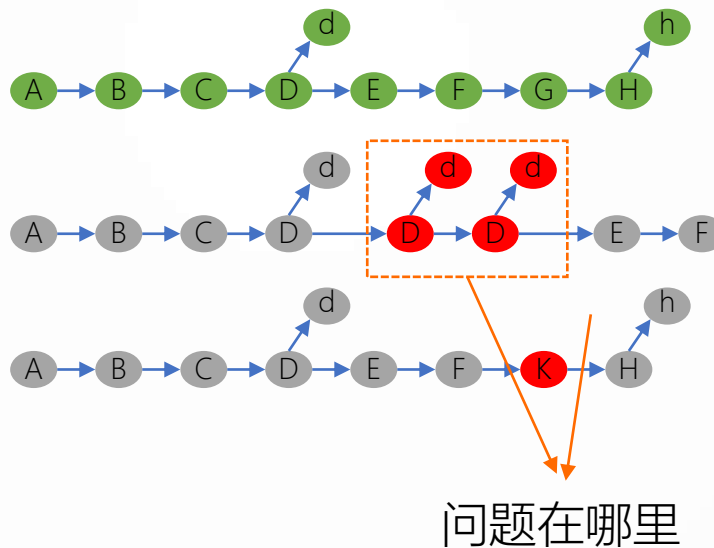


API VS TTF



单点监控

前端后数据不统一，难以自证



根因分析

问题在哪里

性能数据

接口报错

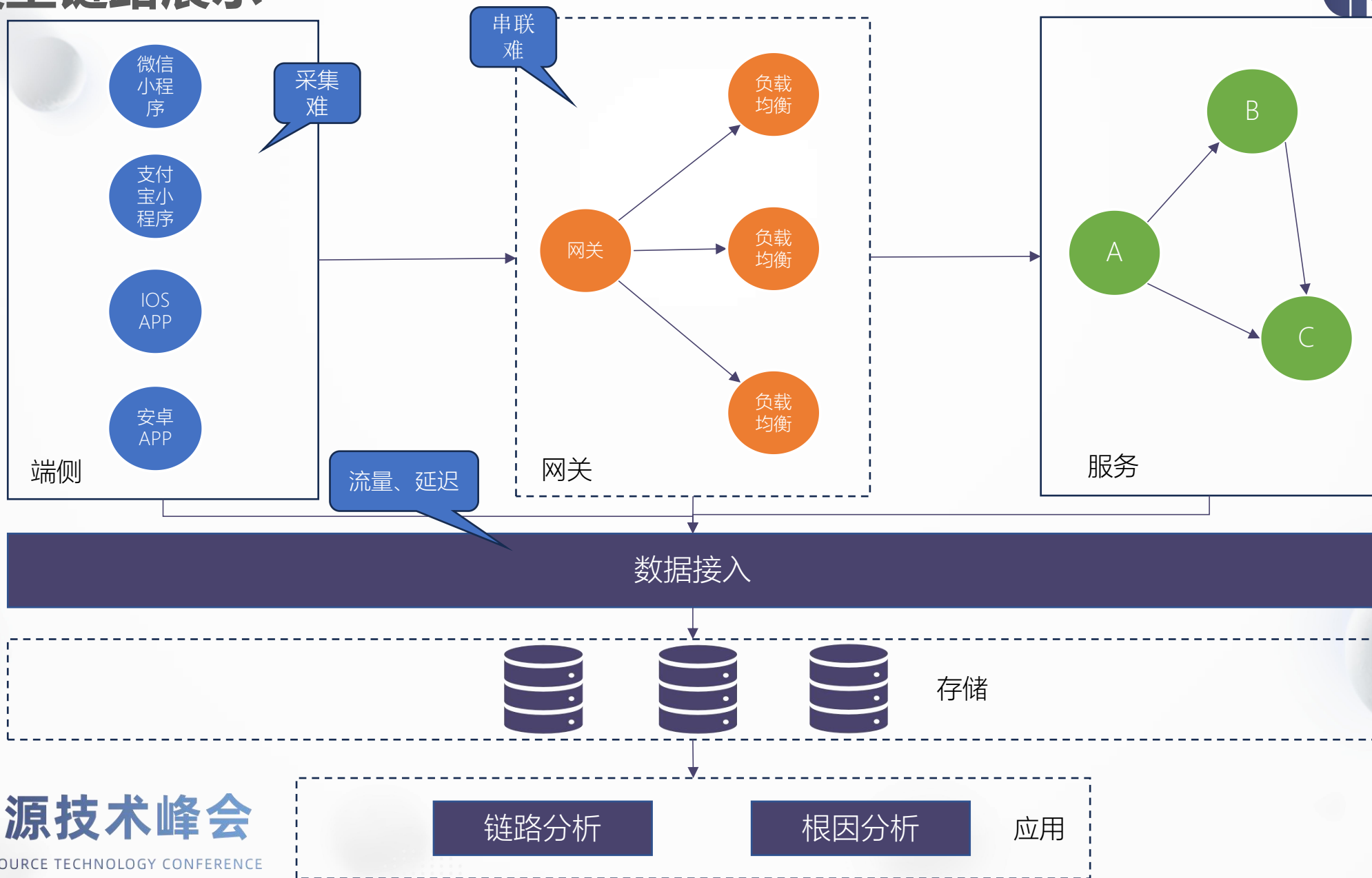
用户行为

地理信息

数据价值

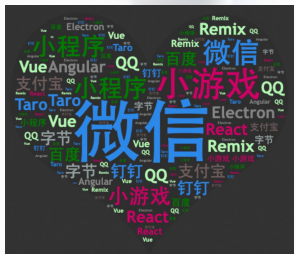
数据孤岛

一条典型链路展示



痛点一：多端采集问题

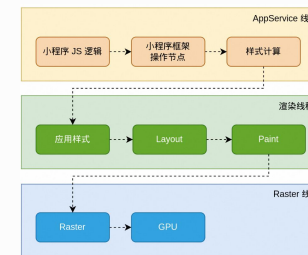
平台众多



兼容难度大



上下文获取难



桌面平台 (Electron、Tauri)
小程序、全栈框架 (Taro、uniapp)
Web平台 (React、Vue)

路由 (pushState、navigateTo)
请求 (xhr、fetch、request)
缓存 (localStorage、setStorage)

浏览器模型
双线程模型
三线程模型

高QPS性能



日志丢错问题

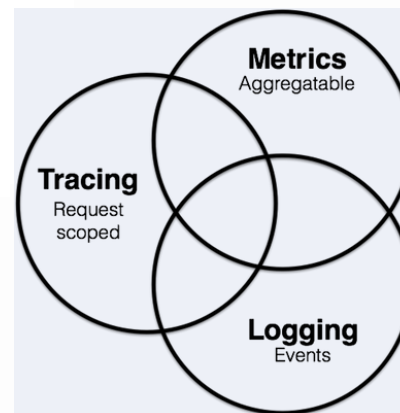


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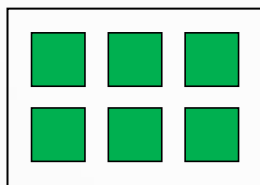
痛点二：统一协议问题

业界方案



- ☐ 不满足国内Web端现状
- ☐ 多套方案
- ☐ 数据不互通
- ☐ 厂商绑定

用户终端



采集协议

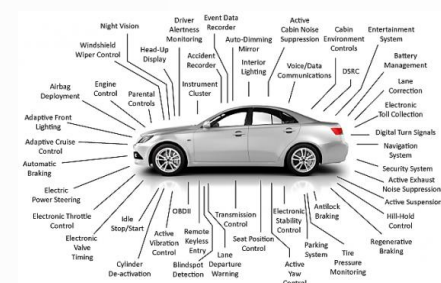


统一存储



流批计算

- 



-
- A black and white silhouette of a blacksmith. The blacksmith is standing and facing left, holding a hammer high in the air with their right hand, ready to strike an anvil. The anvil is positioned in front of them. The background is plain white.

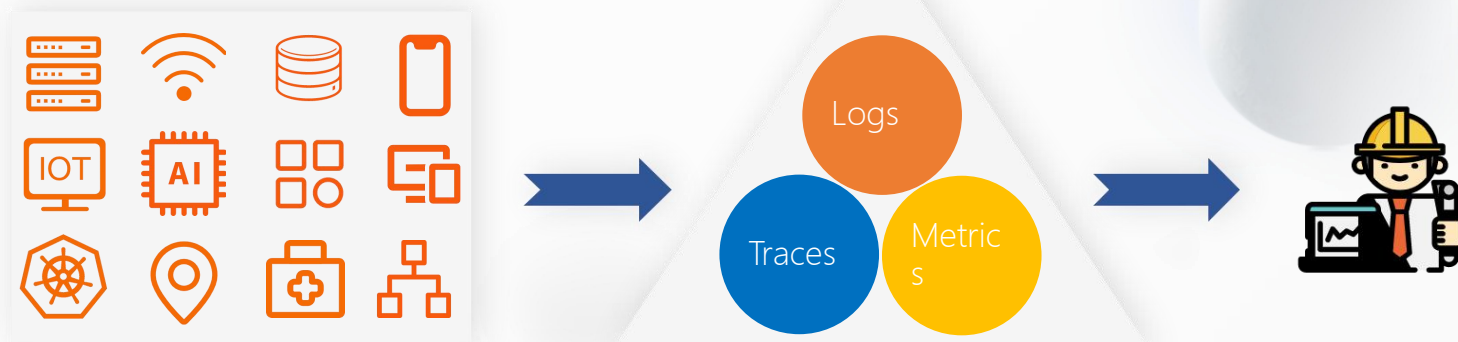
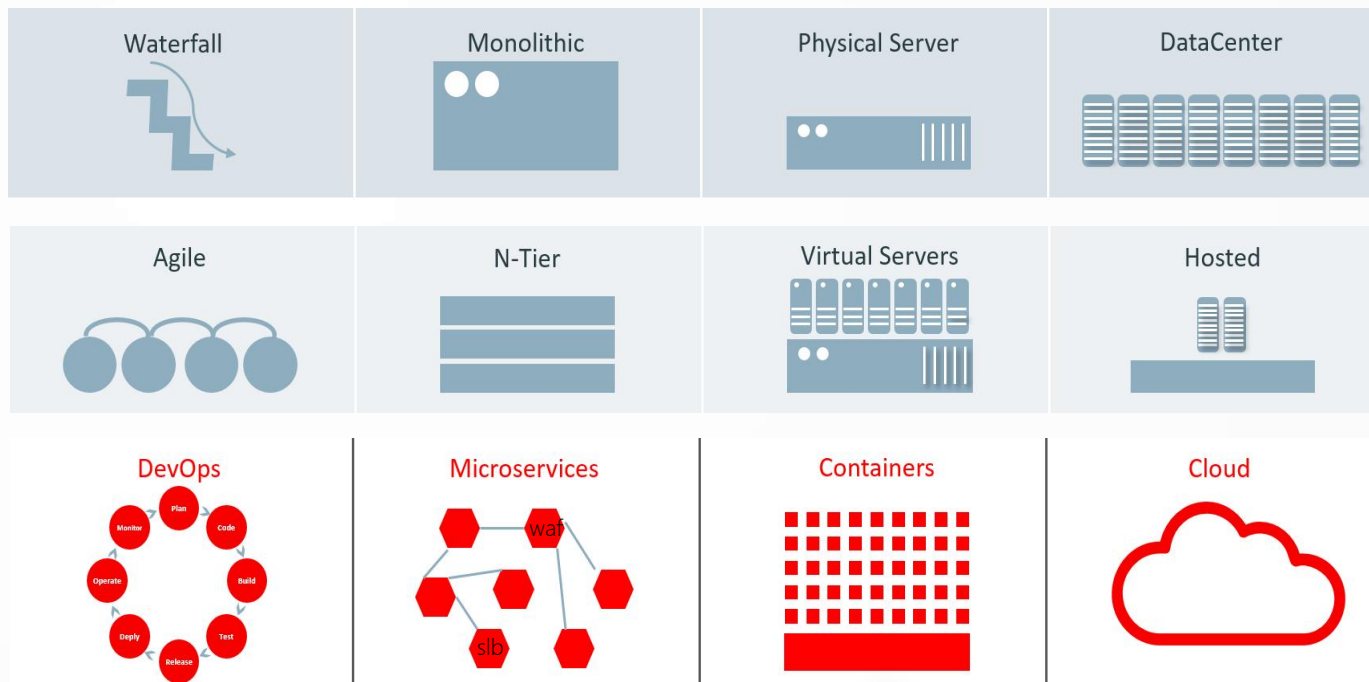


-
- A perspective view of a railway track curving into the distance. The tracks are made of metal rails and wooden sleepers, and they curve gently to the right as they recede into the background. The sky is a clear, pale blue.

支
CHN

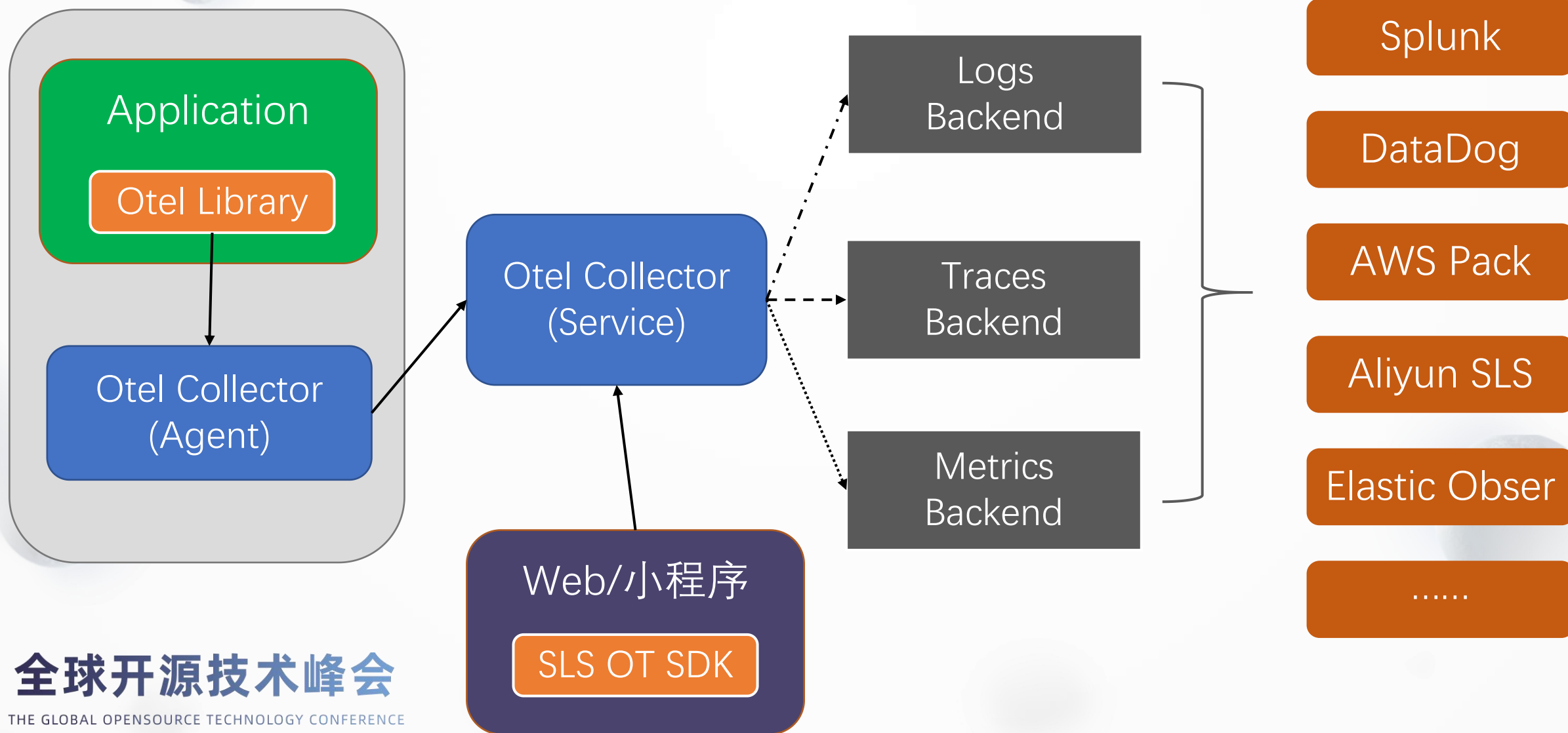
TH

基础设施

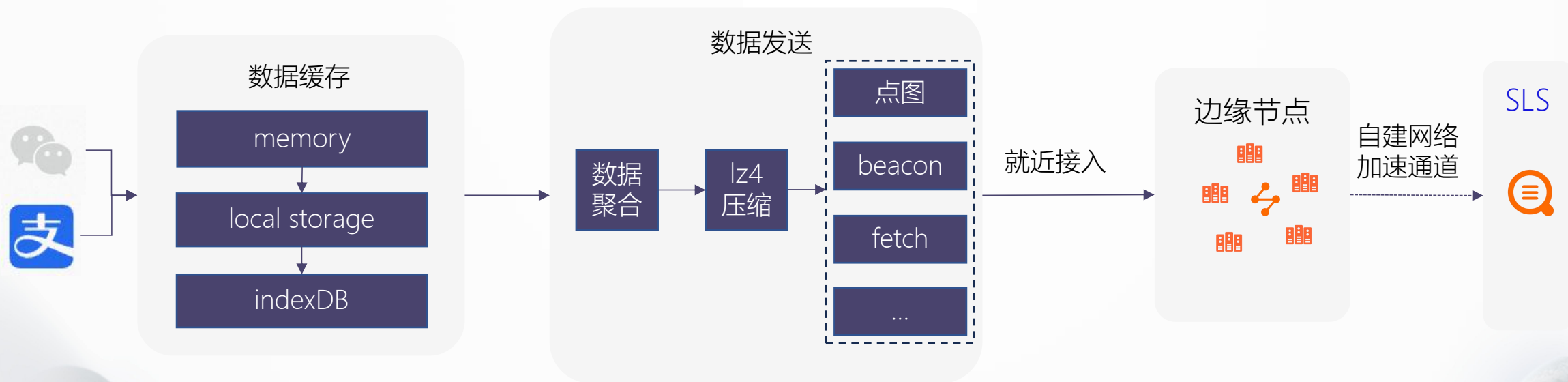


链路追踪设计方案

痛点解决：统一协议OpenTelemetry



痛点解决：确保日志不丢失



效果



数据包体积下降2.1倍



发送成功率99.9%



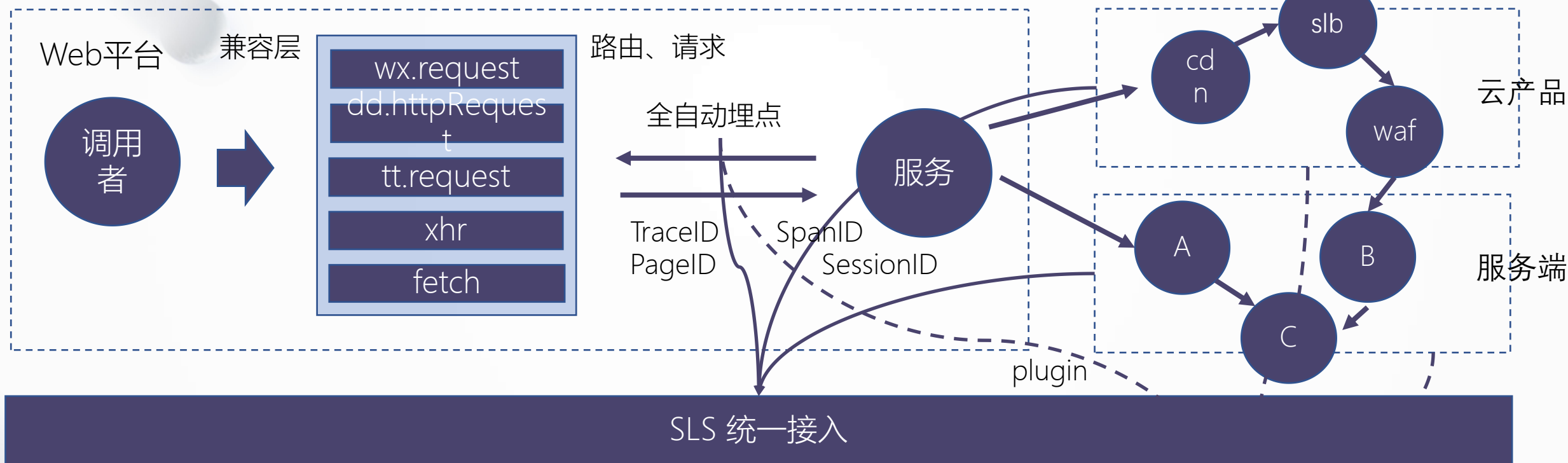
QPS提升13倍



网络延时下降50%

统一Otel协议的全端 SDK

GOTC



统一协议

一套系统、数据关联



统一Agent

资源占用、架构



云原生

云厂商、Kubernetes



厂商无关

不倾向与任何厂商



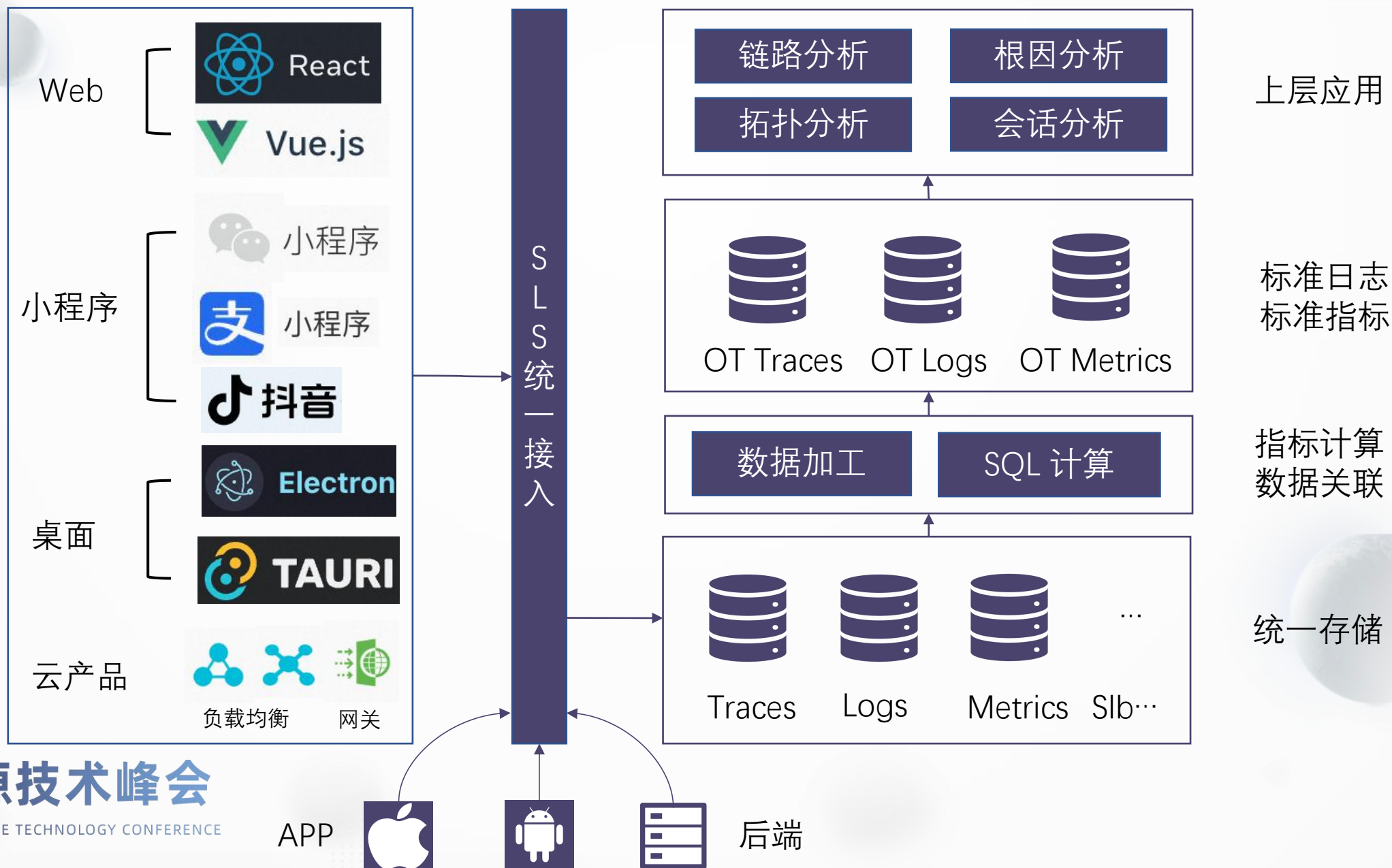
其他支持OT厂商

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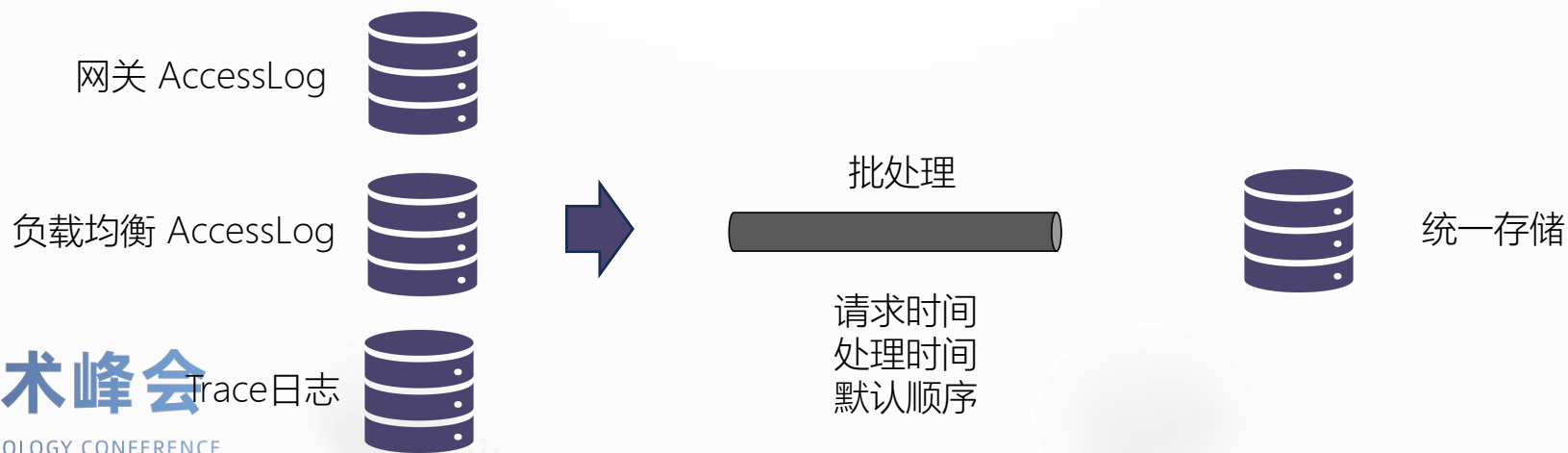
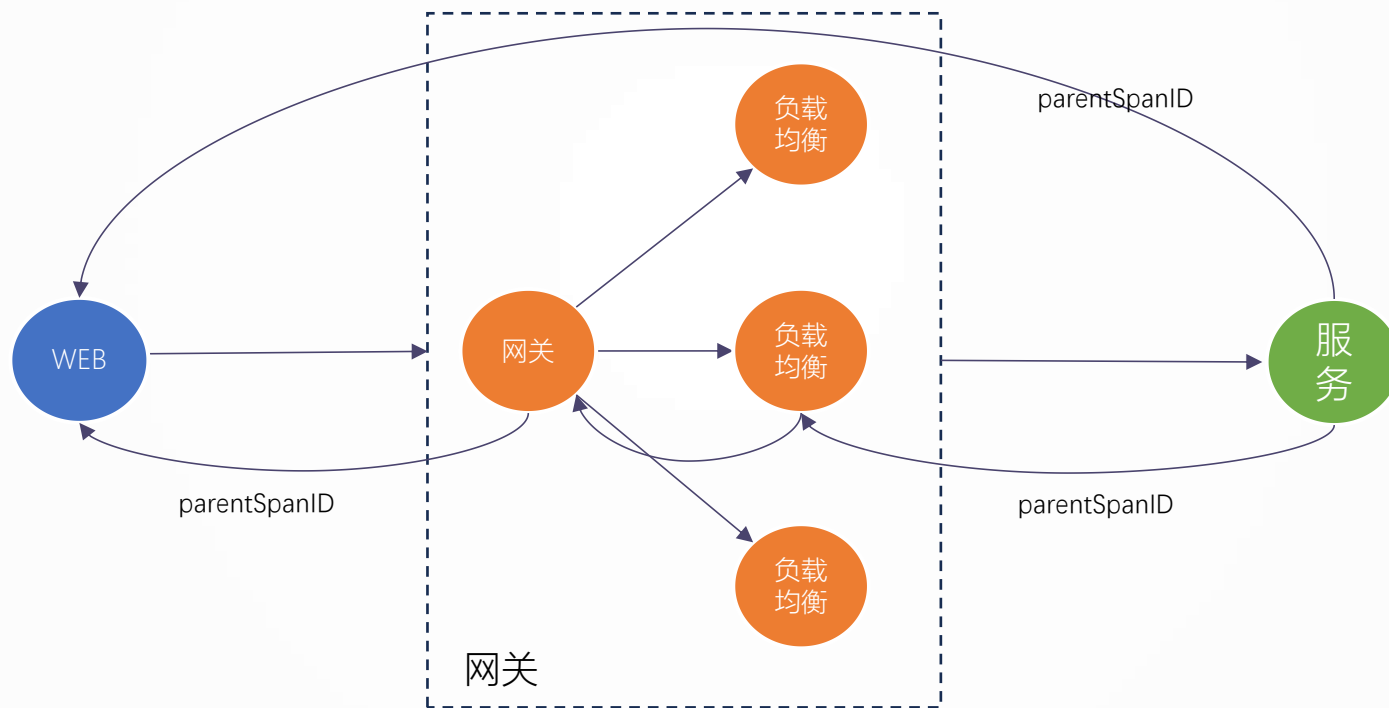


全平台链路追踪架构



前端链路追踪分析案例

案例一：打通网关、负载均衡



案例二：融合分析-前端视角

会话分析



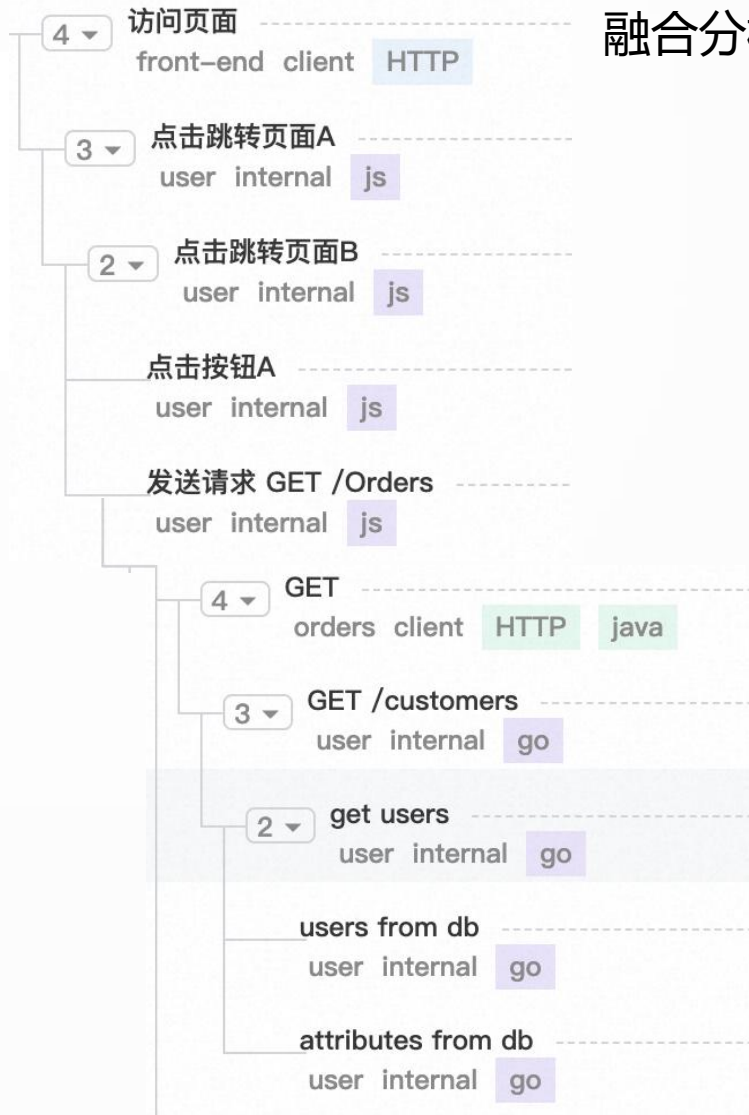
链路分析



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融合分析



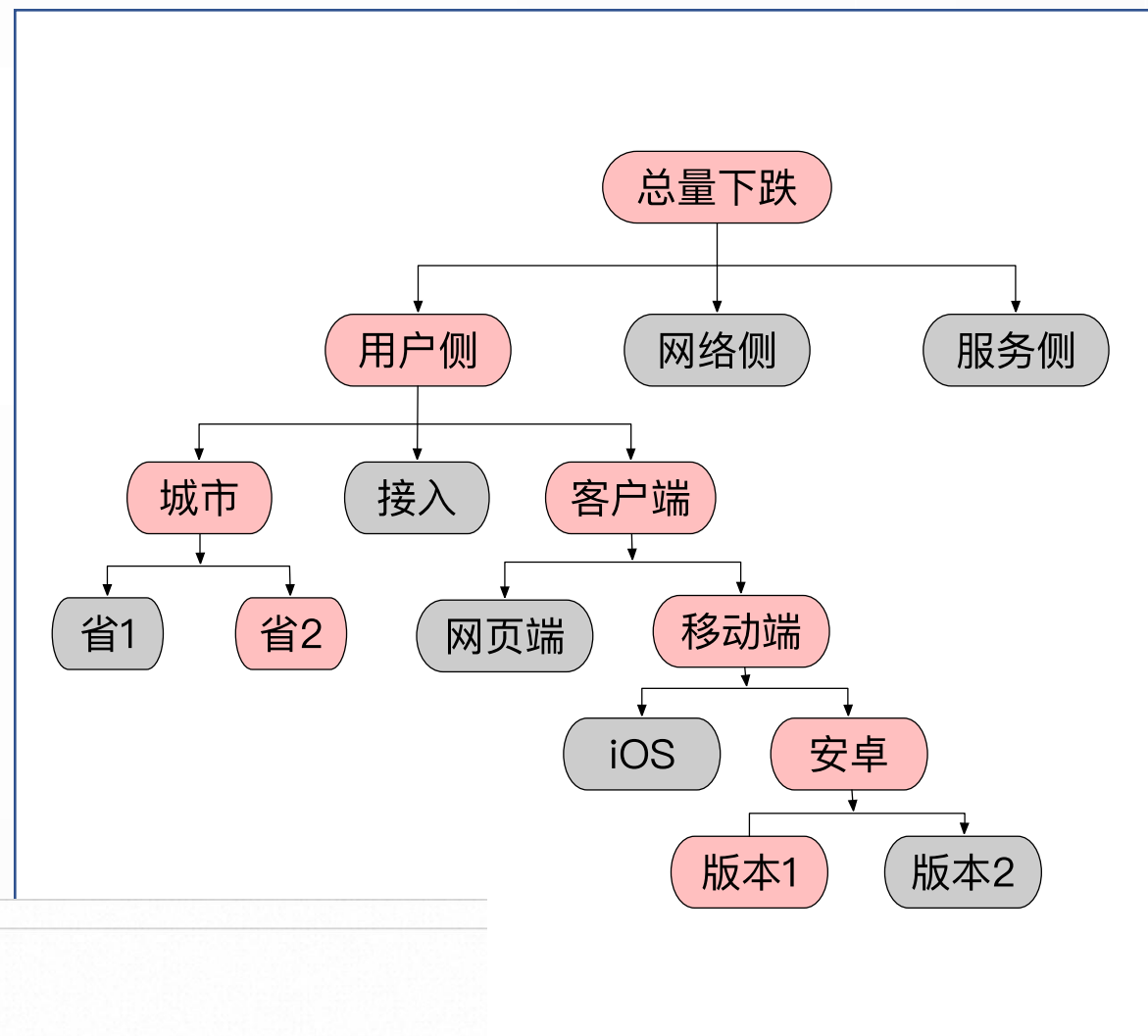
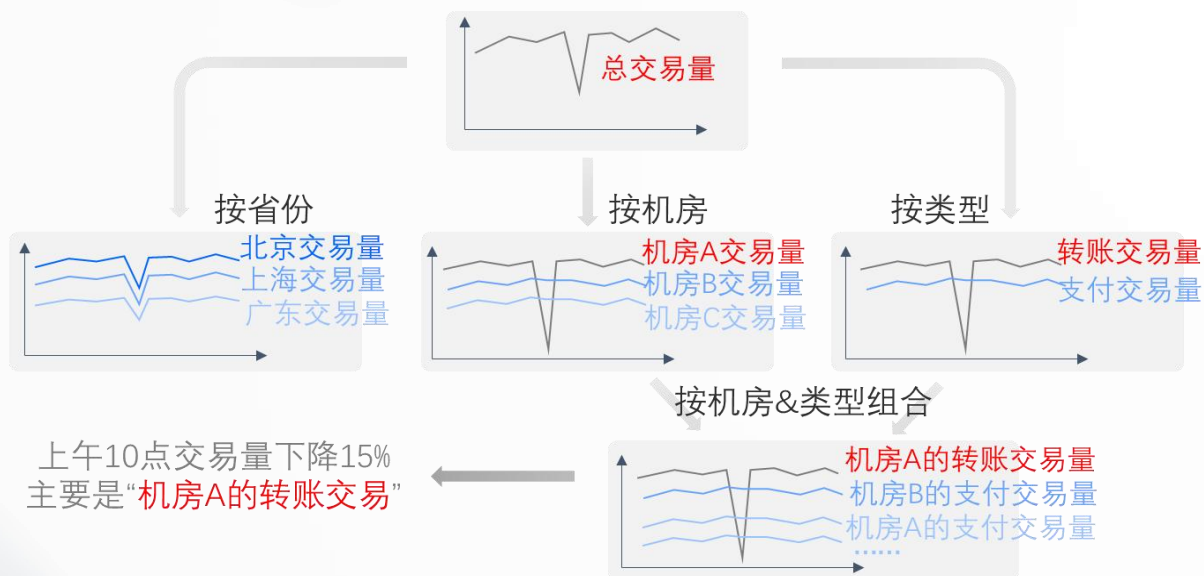
某接口会话调用率

某接口会话报错率

某接口会话延迟

某接口会话调用次数

案例三：多维度智能异常分析



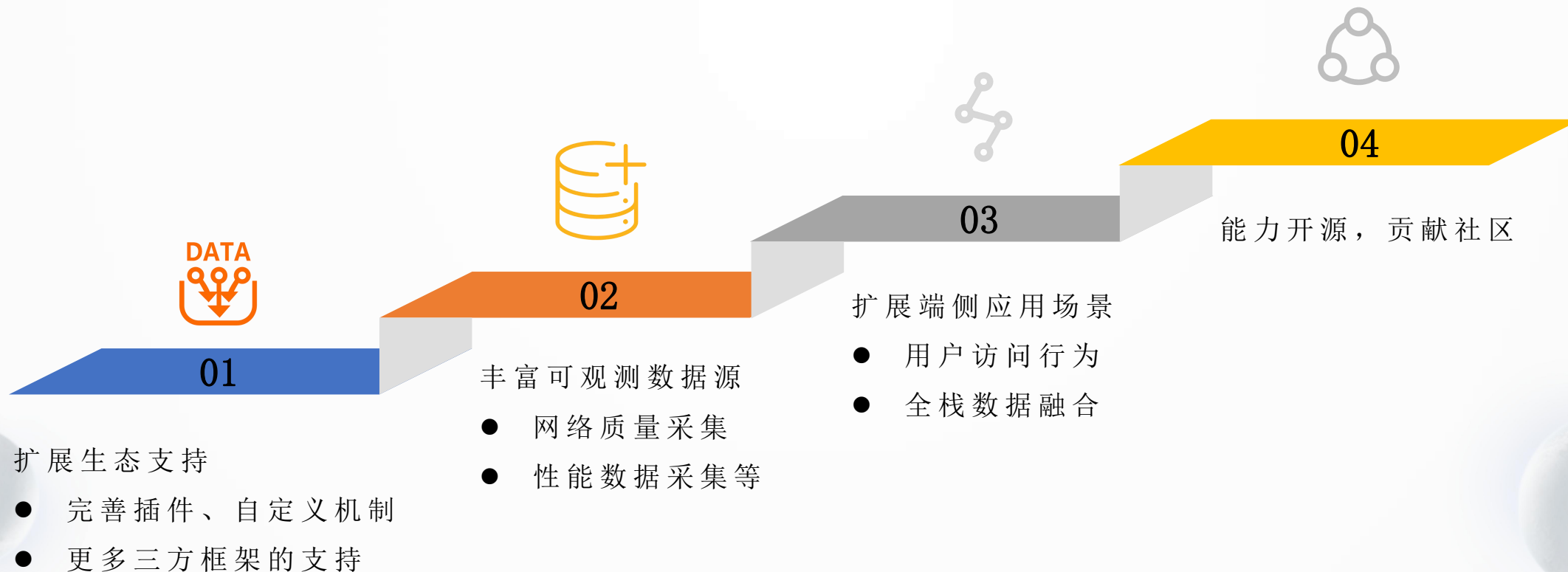
单维归因

组合归因

正向显示

反向显示

☐ (client_loc=河北省) : 9 samples☐ (api=/catalogue) : 1 samples



THANKS