

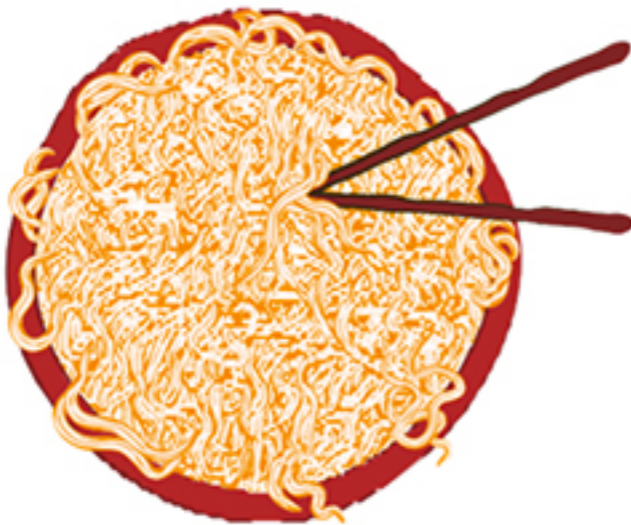
基于Docker架构的

微服务性能监控与日志收集

微服务架构

1990s and earlier

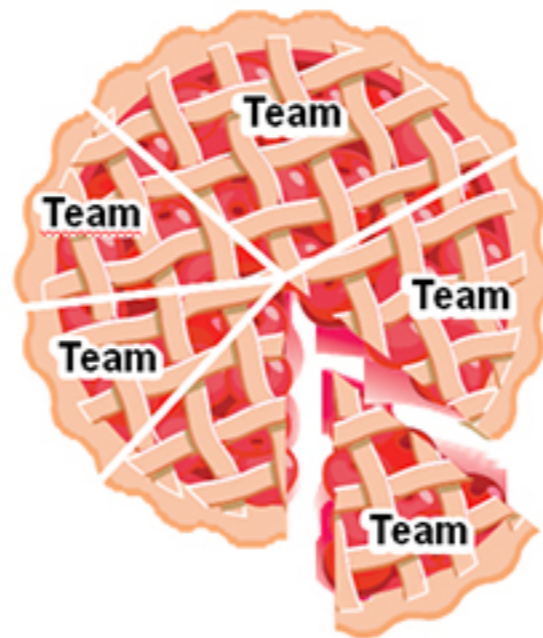
Pre-SOA (monolithic)
Tight coupling



For a monolith to change, all must agree on each change. Each change has unanticipated effects requiring careful testing beforehand.

2000s

Traditional SOA
Looser coupling



Elements in SOA are developed more autonomously but must be coordinated with others to fit into the overall design.

2010s

Microservices
Decoupled



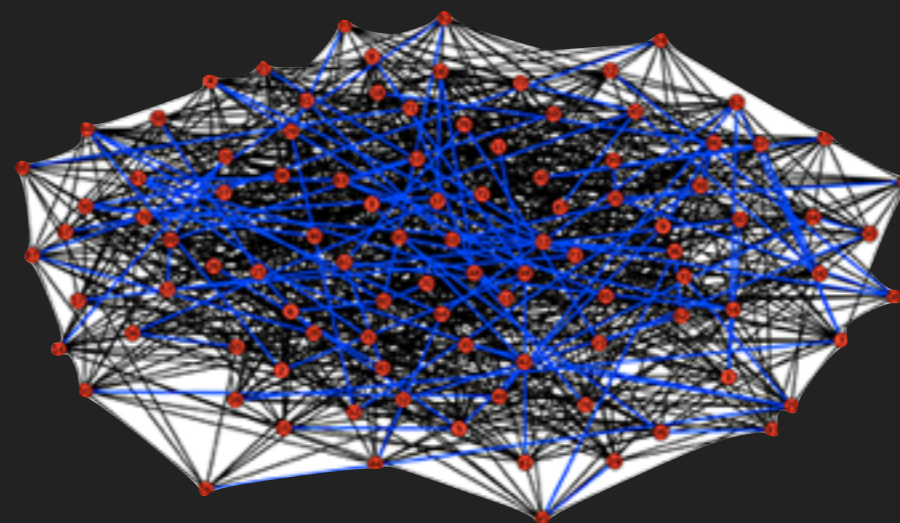
Developers can create and activate new microservices without prior coordination with others. Their adherence to MSA principles makes continuous delivery of new or modified services possible.

微服务的负担

- ▶ 分布式的基础设施
 - ▶ 不确定的服务运行数量
 - ▶ 不确定的计算资源需求量
 - ▶ 不确定的服务启动时间
 - ▶ 不确定的服务运行位置
 - ▶ 部署、管理、控制、维护成本和复杂性成倍增长

分布式的基础设施

- ▶ 故障隔离
- ▶ 状态监控
- ▶ 性能监控
- ▶ 分布式部署
- ▶ 数据存储
- ▶ 日志管理
- ▶ 服务发现



MICROSERVICES

容器和CAAS平台

- ▶ 打包发布标准规范化
- ▶ 部署和配置流程自动化
- ▶ 系统状态和故障可视化
- ▶ 运维和管控方式规模化



容器化的基础设施差异

- ▶ 服务监控告警
- ▶ 日志收集汇总
- ▶

服务的监控

- ▶ 黑盒监控

- ▶ 服务运行状态
- ▶ 故障恢复
- ▶ 服务发现

- ▶ 白盒监控

- ▶ 性能瓶颈分析
- ▶ 资源用量告警

白盒监控：SAAS解决方案（云监控）

- ▶ Datadog

- ▶ <https://www.datadoghq.com>

- ▶ OneAPM

- ▶ <https://www.oneapm.com>

- ▶ Sysdig

- ▶ <http://www.sysdig.org>

展示告警



数据收集

白盒监控：开源解决方案

- ▶ cAdvisor/CollectD/StatsD
- ▶ InfluxDB/OpenTSDB/ATSD
- ▶ Grafana/Graphite
- ▶ Zabbix/Nagios/OpenFalcon
- ▶ Hawkular/Prometheus/Riemann
- ▶

预测告警



监控展示



数据存储



数据收集

cAdvisor+InfluxDB+Grafana+Kapacitor



InfluxDB



Kapacitor



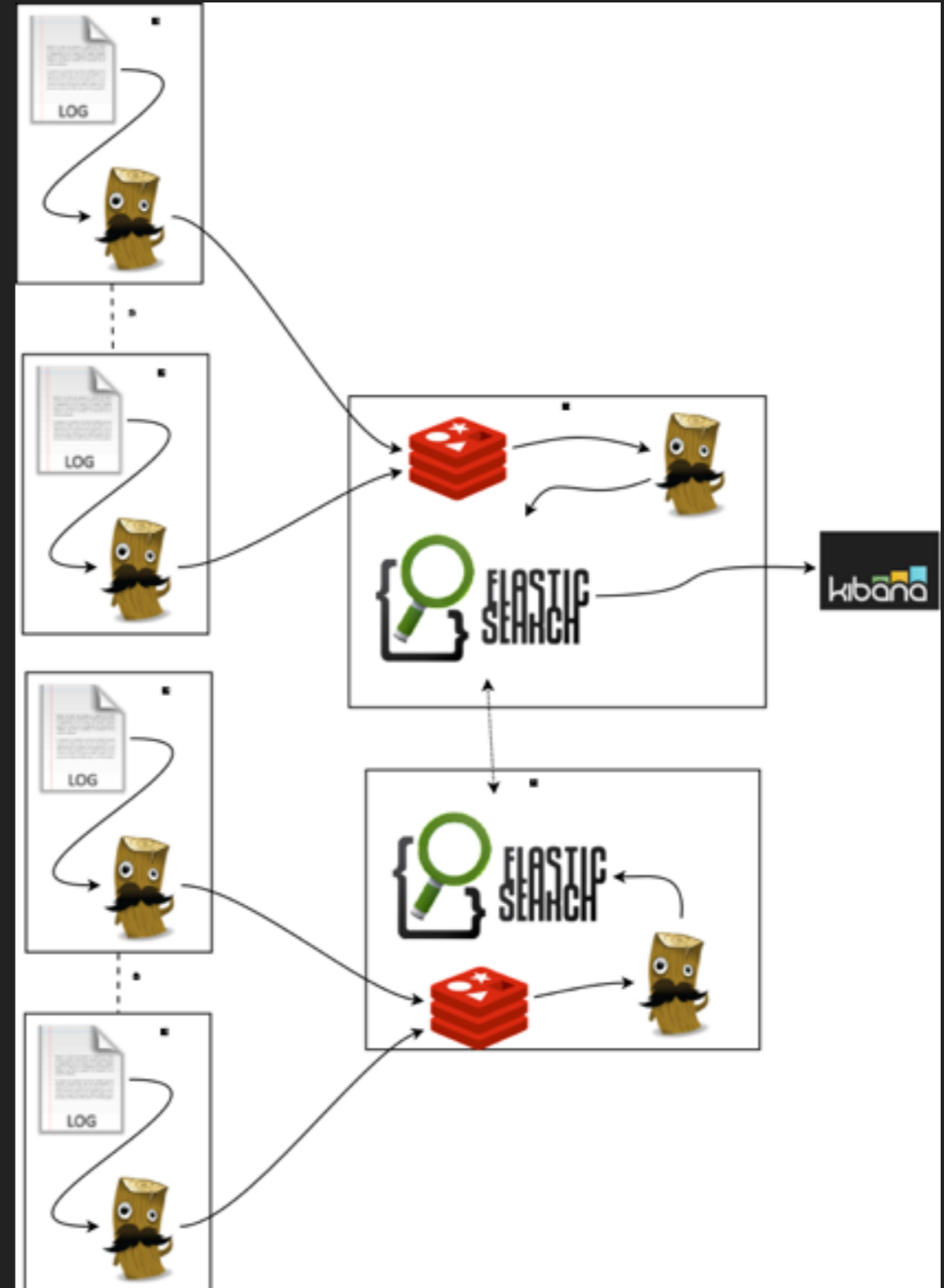
三分钟搭建容器集群性能监控系统



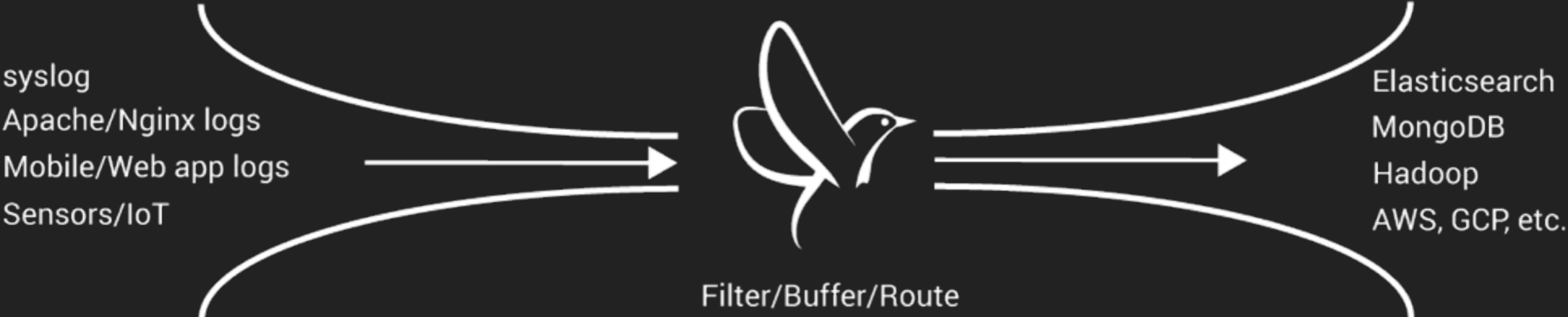
日志收集

- ▶ Splunk
- ▶ Logstash
- ▶ Flume
- ▶ Fluentd
- ▶

Logstash



Fluentd



三分钟搭建容器集群日志收集系统



THE END

A person wearing a blue suit jacket and a white shirt is holding a white rectangular sign with both hands. The sign has the word "QUESTIONS?" written on it in a large, bold, dark blue font. The background is a plain, light-colored wall.

QUESTIONS?