Break New Ground

Path to Resilient and Observable Microservices

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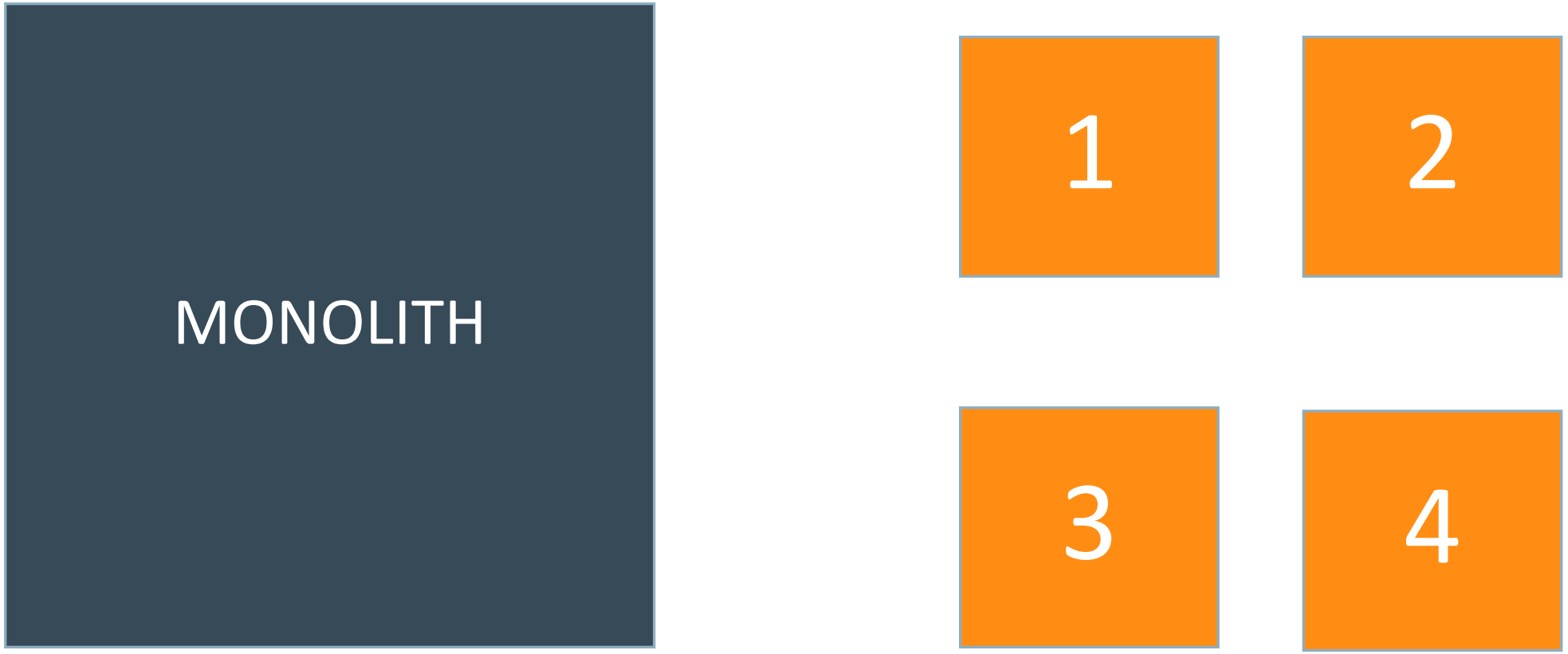
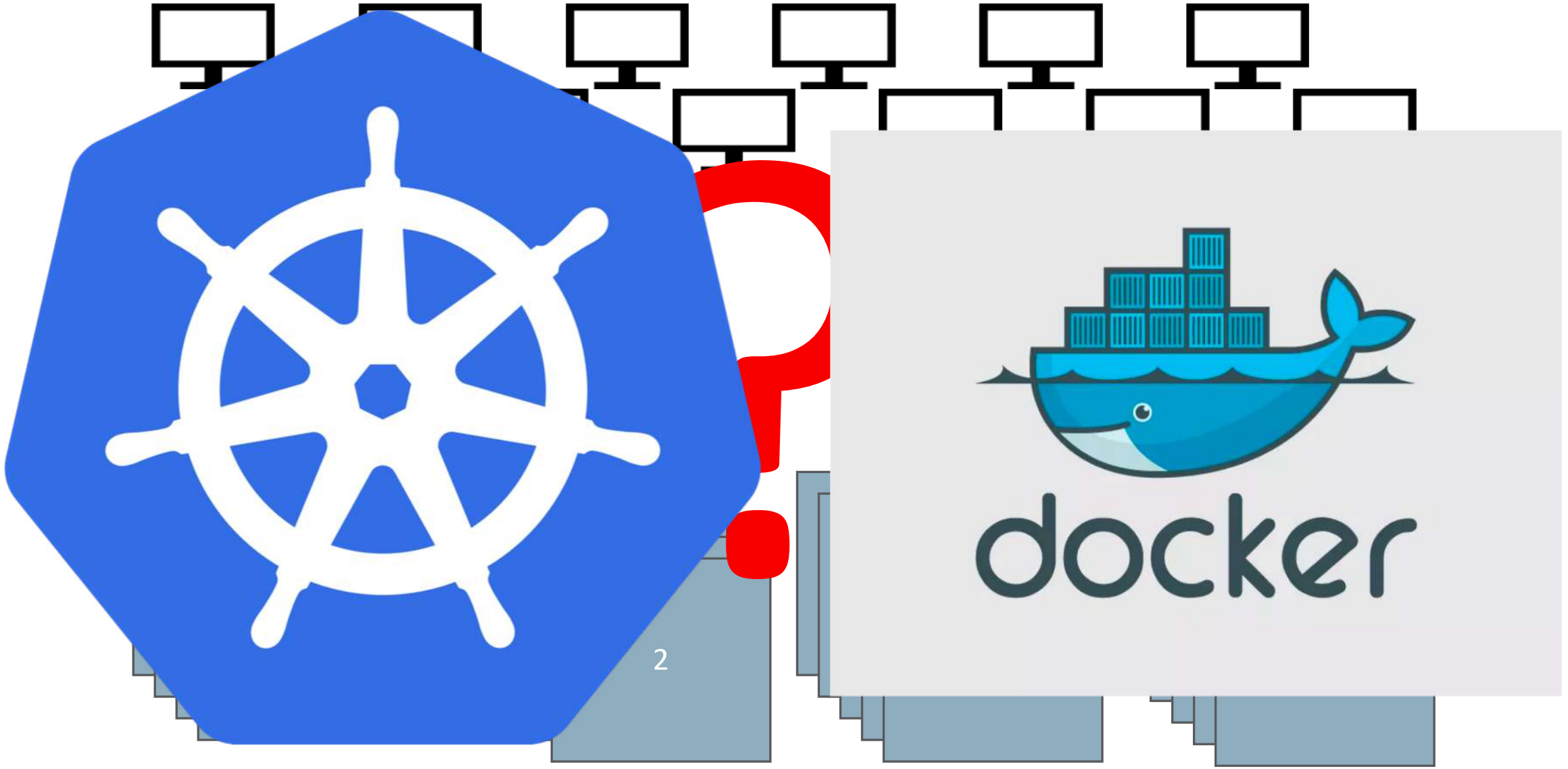
Microservices?





Ability to **provide and maintain** an **acceptable level** of service in the face of **faults and challenges** to normal operation

Ability to **recover from failures** and **continue to function**

After failure occurs, return the service to a fully functioning state

High Availability

Healthy

No (significant) downtime

Responsive

Meeting SLAs

Disaster Recovery

HA design can’t handle impact of faults

- Data backup
- Archiving

Path to resiliency

Understand the requirements

Define service availability

Design for resiliency

Strategies for detection & recovery

Testing, testing, testing

Monitoring

Resiliency Strategies

Load balancing

Timeouts & retries

Circuit breakers & bulkhead pattern

Data replication

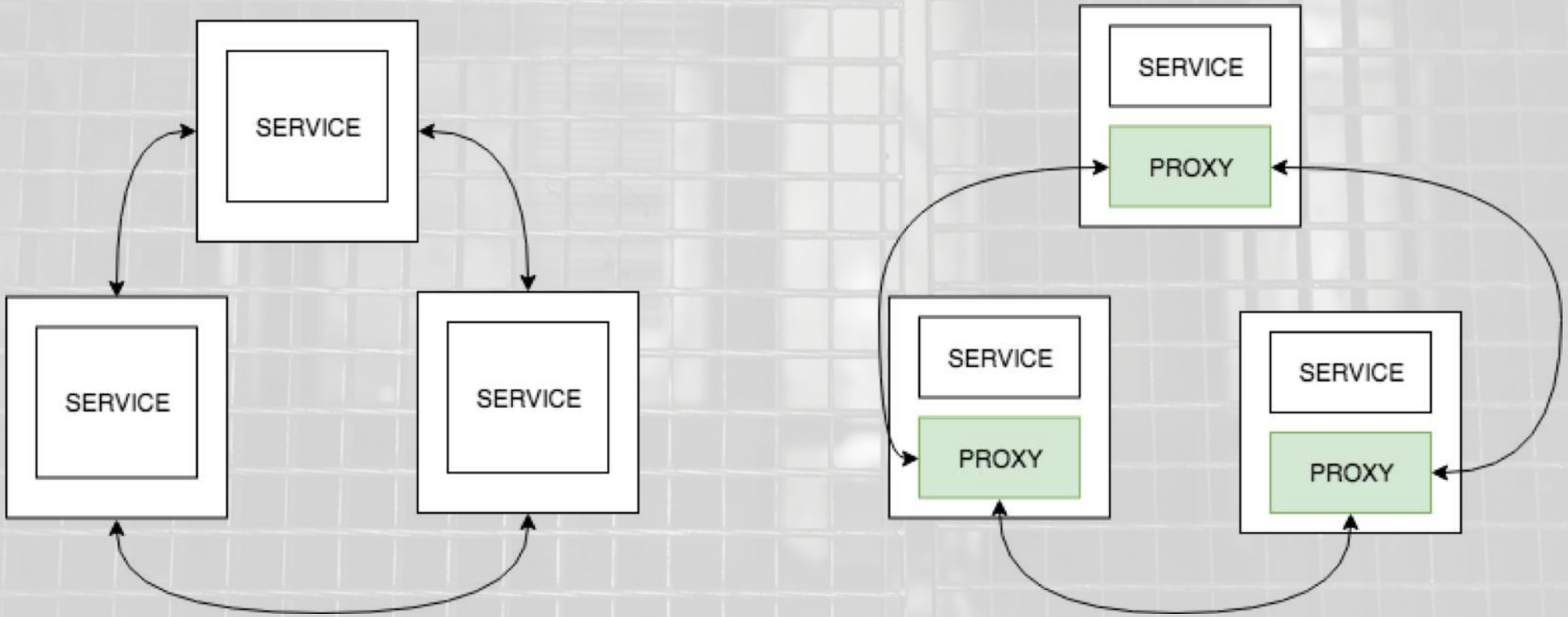
Graceful degradation

Rate limiting

Resiliency Strategies

How to do it?

A dedicated infrastructure layer for managing service-to-service communication to make it manageable, visible and controlled



Resiliency Strategies with Service Mesh

Load balancing

Timeouts & retries

Circuit breakers & bulkhead pattern

Data replication

Graceful degradation

Rate limiting

Testing for Resiliency

Test

Measure

Analyze (fix the issues)

Testing for Resiliency with Service Mesh

Injecting failures:

- Delays
- Faults

Observability is the act of **measuring, collecting and analyzing** metrics, traces, logs, events, … from services

instrument → collect & store → analyze, visualize and alert

Observability – collecting metrics

Use Correlation IDs
Structured logging
No private information!
Unique metrics names
Categorize
Common format
Context matters

Observability – collecting metrics

Prometheus

Counters, gauges, histograms, summaries

Observability – visualizing

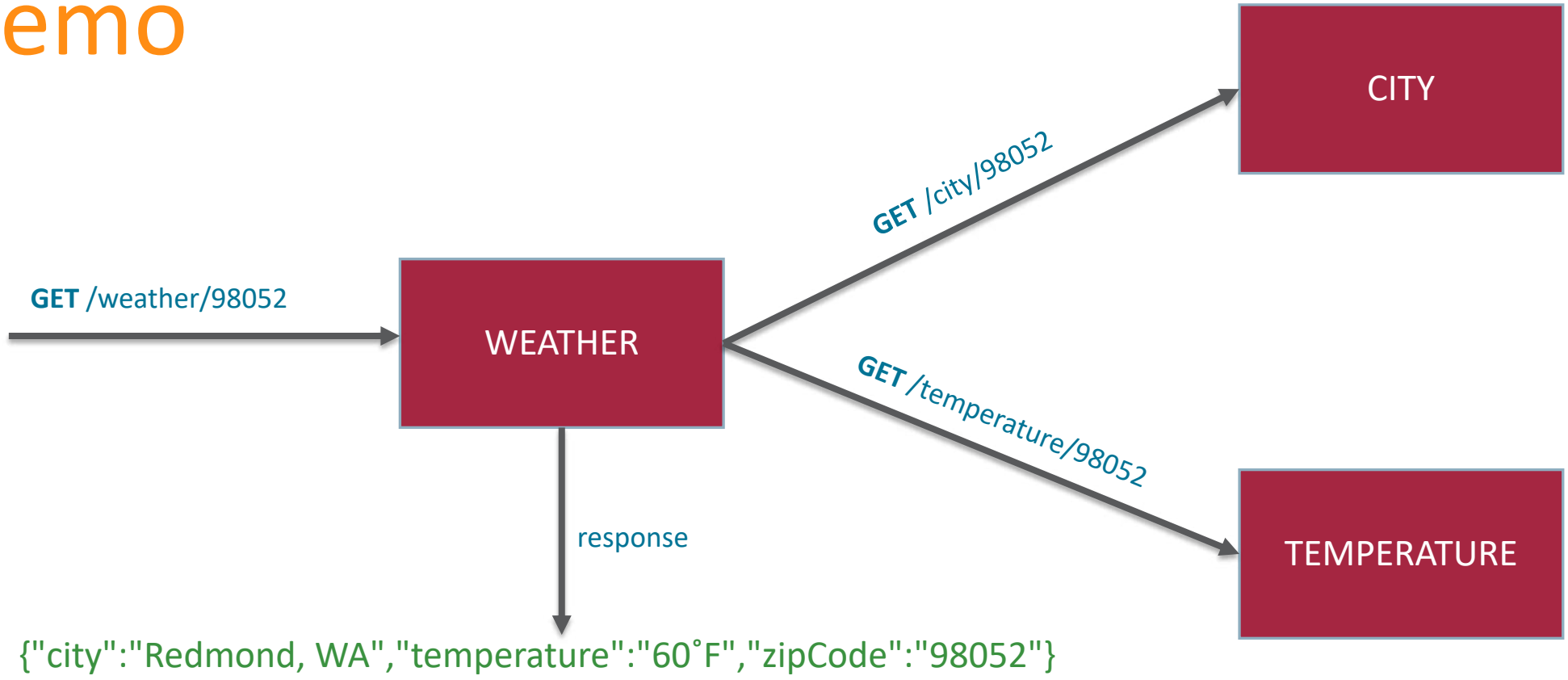
Grafana

Jaeger

EFK (Elasticsearch + Fluentd + Kibana)

PagerDuty

Demo



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Service Resiliency, Observability and Testing

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Thank you!

http://bit.ly/oracle-code-BLR

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