Monitoring in Production with Observability

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Challenges of Observability

Seeing the big picture

Understand the overall system health and performance

Detect problems quickly

Respond rapidly to issues in production

Module Overview

Dapr observability

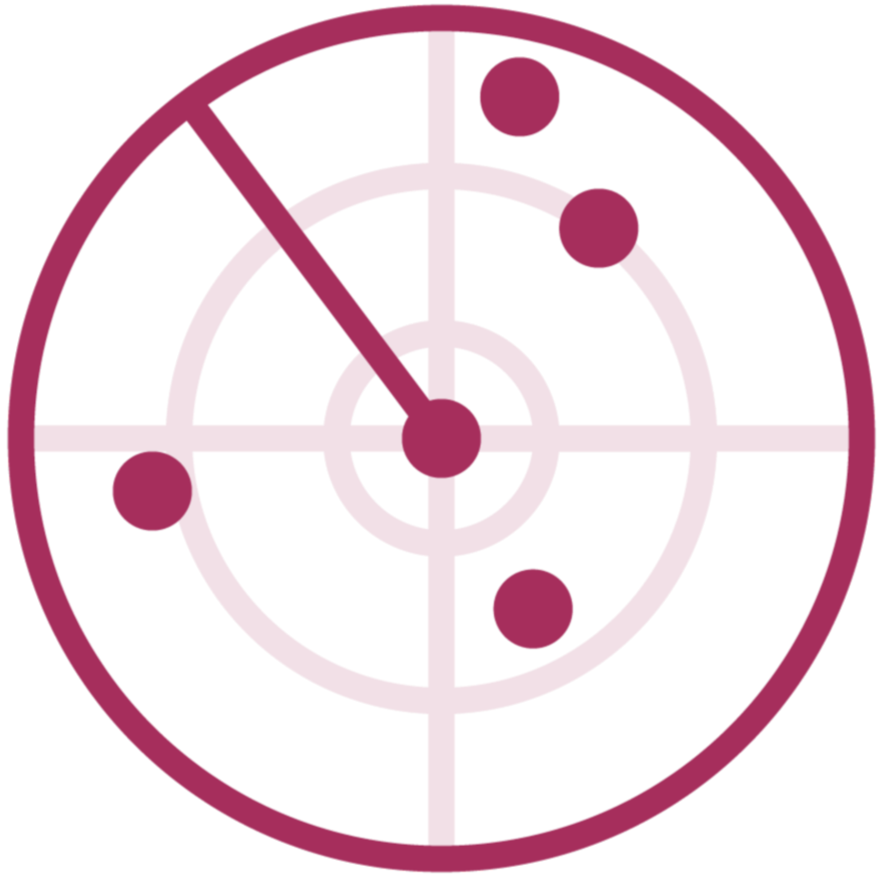
- Distributed tracing
- The Dapr dashboard
- Health checks
- Metrics
- Sidecar logs

Tracing in GloboTicket

Additional Dapr capabilities

Resources for learning more

Distributed Tracing



Correlate logs from different microservices

Zipkin protocol

- Zipkin, Stackdriver, New Relic, etc

OpenTelemetry protocol

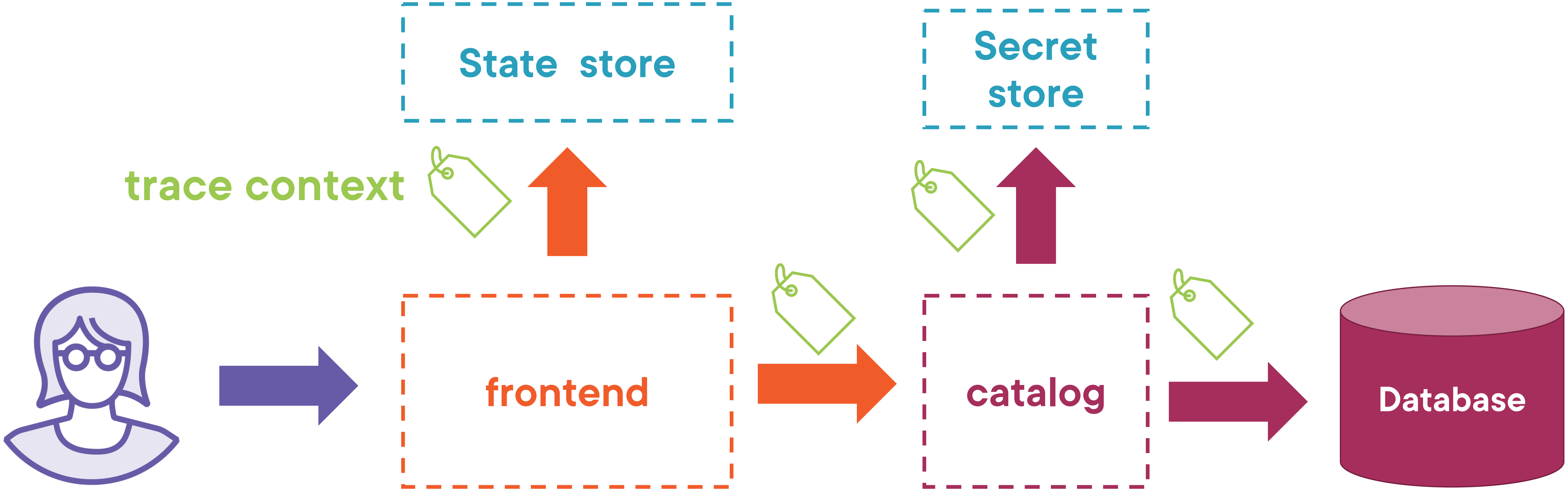
- Azure Monitor, Datadog, SignalFX, etc

Uses middleware in the sidecar

- Collected by default

Enabled with a Dapr configuration file

W3C Trace Context



Dapr can generate and propagate W3C trace context

traceparent header contains unique ID

tracestate header can propagate additional state

Health Checks

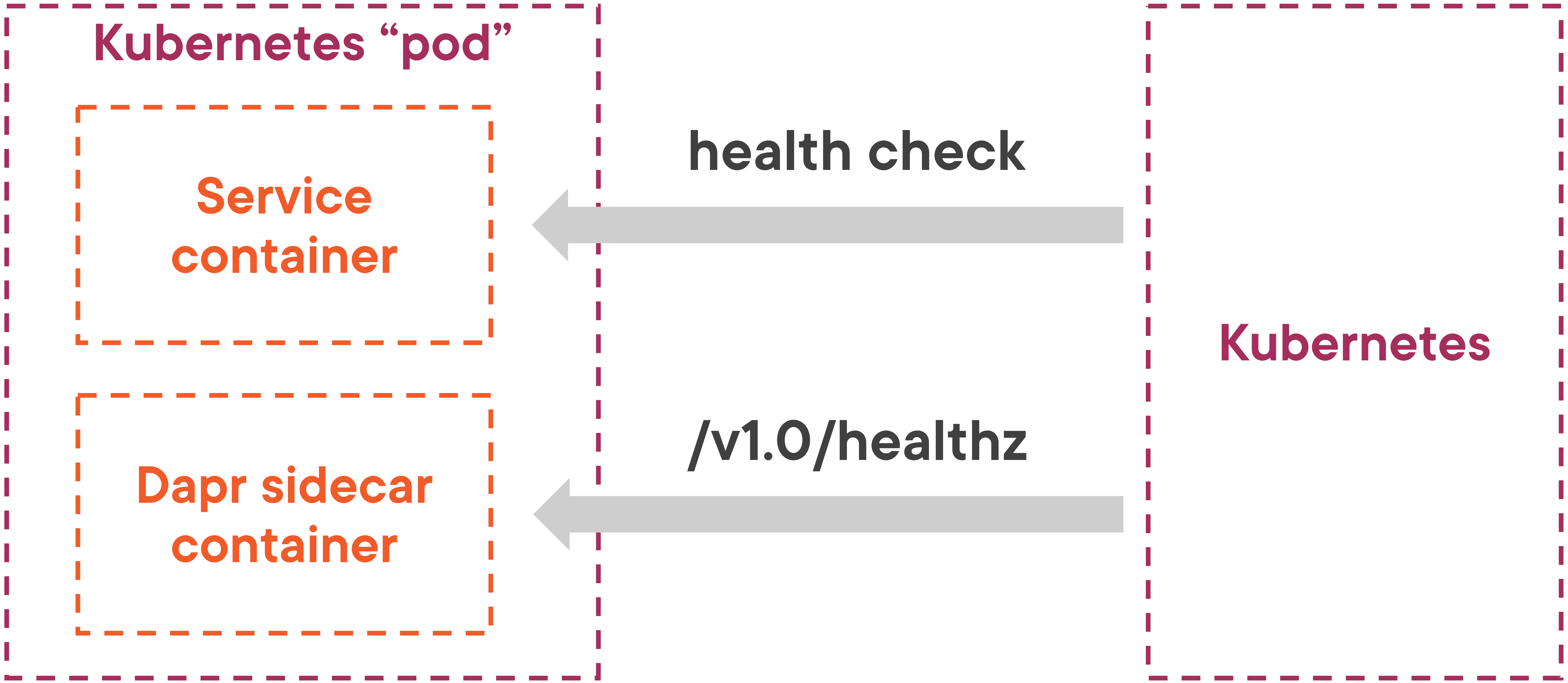
Health check endpoints

- Has it completed startup?
- Can it access dependencies?

Kubernetes can monitor health-check endpoints

- Does it need to be restarted?

Health Checks on Kubernetes



You must create the health check endpoint for your microservice

The pod is healthy if all containers inside are healthy

Metrics

Dapr exposes a Prometheus metrics endpoint

Generate alerts

Port 9090

Sidecar Logging

Dapr sidecars emit logging messages

- What is the sidecar doing?

Troubleshoot component configuration

- e.g. Failure to connect to external service

Log in JSON format

Direct logs to Fluentd or Elasticsearch

Demo

Using the Dapr dashboard

- Web-based user interface

Demo

Dapr distributed tracing with Zipkin

Building Blocks Used in this Course

- State
- Service Invocation
- Messaging
- Secrets
- Bindings
- Observability

Additional Dapr Capabilities

Actors

Process messages sequentially

Communicate with other actors

Configuration

Currently in alpha

Manage config settings

Change notifications

Middleware

Tracing

OAuth 2.0

Rate limiting

Dapr Community Resources

Summary

Dapr observability

- Tracing with Zipkin
- W3C tracing headers
- Metrics
- Sidecar logging
- Health-check endpoints
- Dapr dashboard

Additional Dapr capabilities

- Actors, configuration, middleware

Learning resources

- Community calls, Discord

Thanks for watching!