Linkerd Observability

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Sonja Hiltunen

Linkerd

- Service mesh for Kubernetes. Fully open source, CNCF graduated project

- Makes running services easier and safer by giving you runtime debugging, observability, reliability, and security

- Works by installing a proxy next to each service instance. These proxies automatically handle all traffic to and from the service.

- A linkerd-init container is added to each pod as an init container that runs before any other containers are started

Observability

- **Observability:** a measure of how well internal states of a system can be inferred from knowledge of its external outputs.

- The more observable, the faster you can move from an identified problem to a solution, without extra testing/coding.

- Increasingly important since systems are becoming more and more complex and dependencies are not always known.

What do we observe?

- **Logs**: Granular, timestamped, complete and immutable records of application events.

- **Metrics**: Counts or measures over a given period of time.

  E.g. CPU load, latency

- **Traces**: end-to-end 'journey' of a request.

  E.g. from the UI to backend (distributed) and back to the user.

- **Dependencies**: How components are dependent on other components or resources.

Golden metrics 🏆

- Error rate (50p, 95p, 99p)
- Traffic (Requests per second)
- Latency
- Saturation

Demo (github.com/sohnya/linkerd-observability)

- Start a GKE Cluster
- Install Linkerd
- Install a demo application & *inject* Linkerd to it

```
kubectl get -n emojivoto deploy -o yaml | linkerd inject \

| kubectl apply -f -
```

- Install IngressController (ingress-nginx)
- Install Ingress resources for demo app and Linkerd dashboard
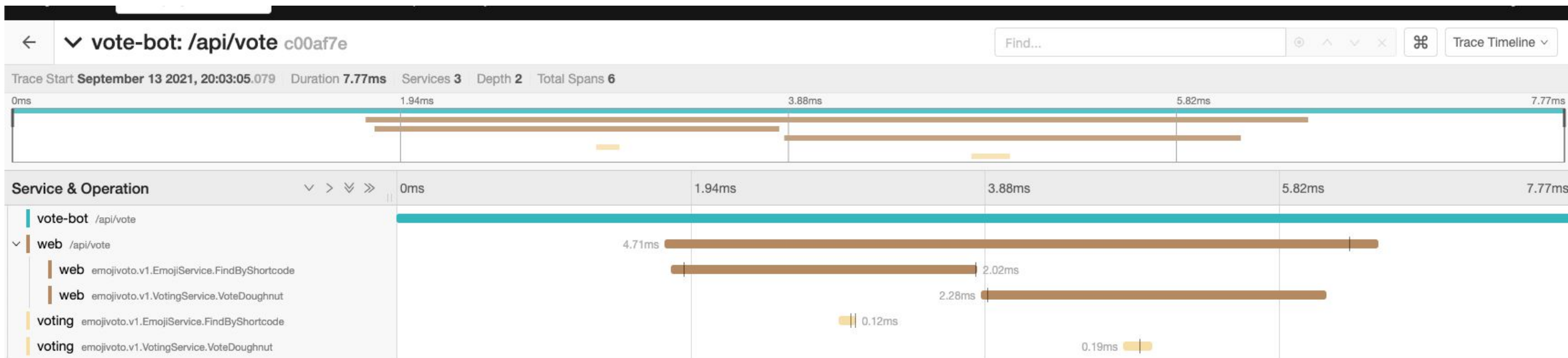
Demo: Dependencies

Demo: Service metrics

deployment/web

Route ↑	Service ↑	↑ Success Rate	↑ RPS	↑ P50 Latency	↑ P95 Latency	↑ P99 Latency
[DEFAULT]	web-svc	94.02% ●	1.95	3 ms	10 ms	18 ms

Demo: Distributed tracing with jaeger

- Install the Linkerd-Jaeger extension
- Modify your application to emit spans

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Questions?

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