



BUILDING FOR THE ROAD AHEAD

DETROIT 2022

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UNIFIED CHAOS INJECTION & SLO VALIDATION EXPERIMENTS IN KUBERNETES

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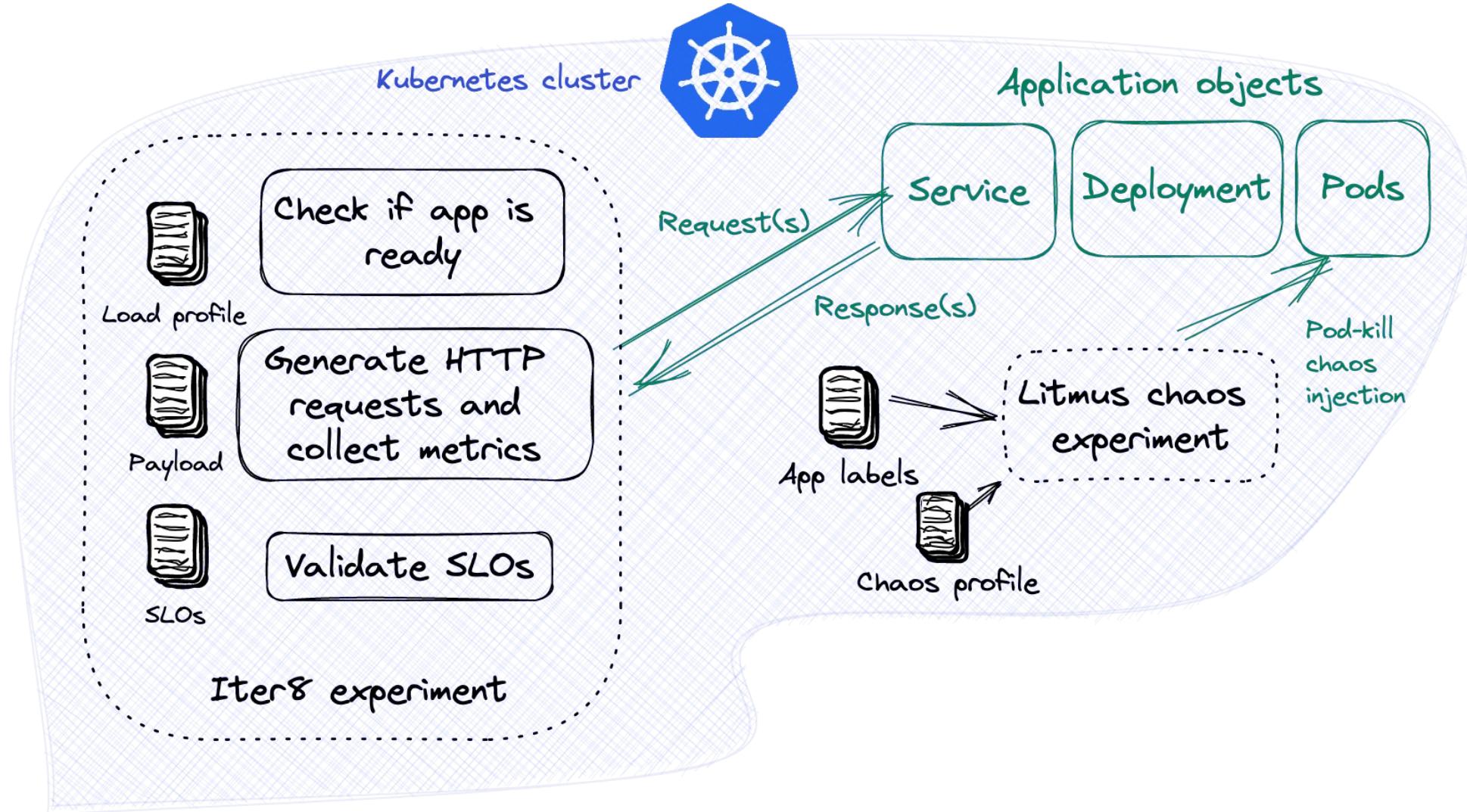


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Harness

Experiment Example

Unified SLO Validation & Chaos Injection



Experiment Example

Unified SLO Validation & Chaos Injection

Iter8 Experiment Report

Experiment Status ✓
Experiment completed. Experiment has no failures. 4 out of 4 tasks are complete.

Service level objectives (SLOs)
Whether or not SLOs are satisfied

SLO Conditions	Satisfied
http/error-count ≤ 0	✓
http/latency-mean (msec) ≤ 50	✓

Metric Histograms

Histogram of http/latency (msec)

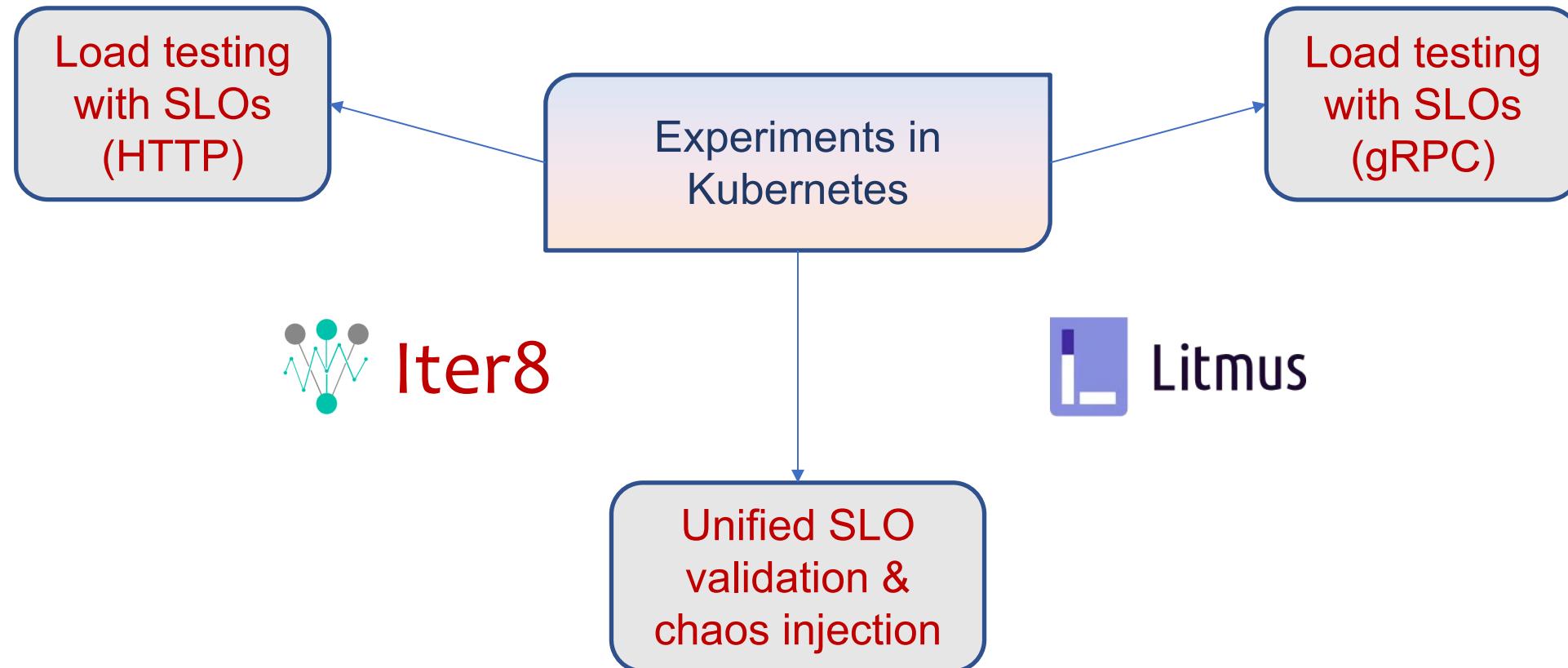
% of observations

http/latency (msec)

Latest observed values for metrics

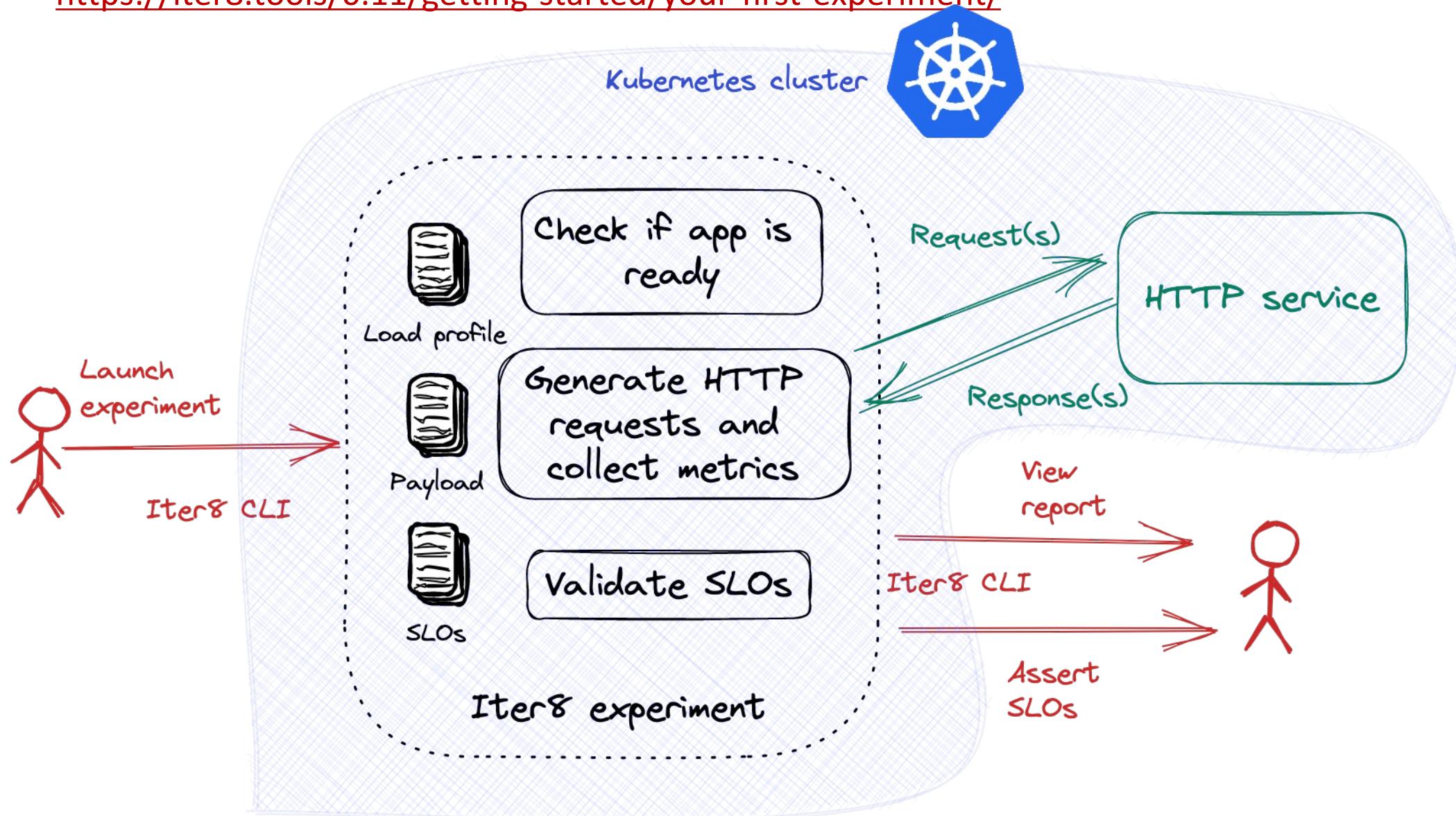
Metric	Value
http/error-count	0.00
http/error-rate	0.00
http/latency-max (msec)	19.74
http/latency-mean (msec)	5.27
http/latency-p50 (msec)	1.16
http/latency-p75 (msec)	4.67
http/latency-p90 (msec)	7.00
http/latency-p95 (msec)	9.50
http/latency-p99 (msec)	11.33
http/latency-p99.9 (msec)	18.00
http/latency-stddev (msec)	19.56
http/request-count	3.28
http/request-rate	100.00

Building up to the unified experiment



Demo: Load Test HTTP with SLOs

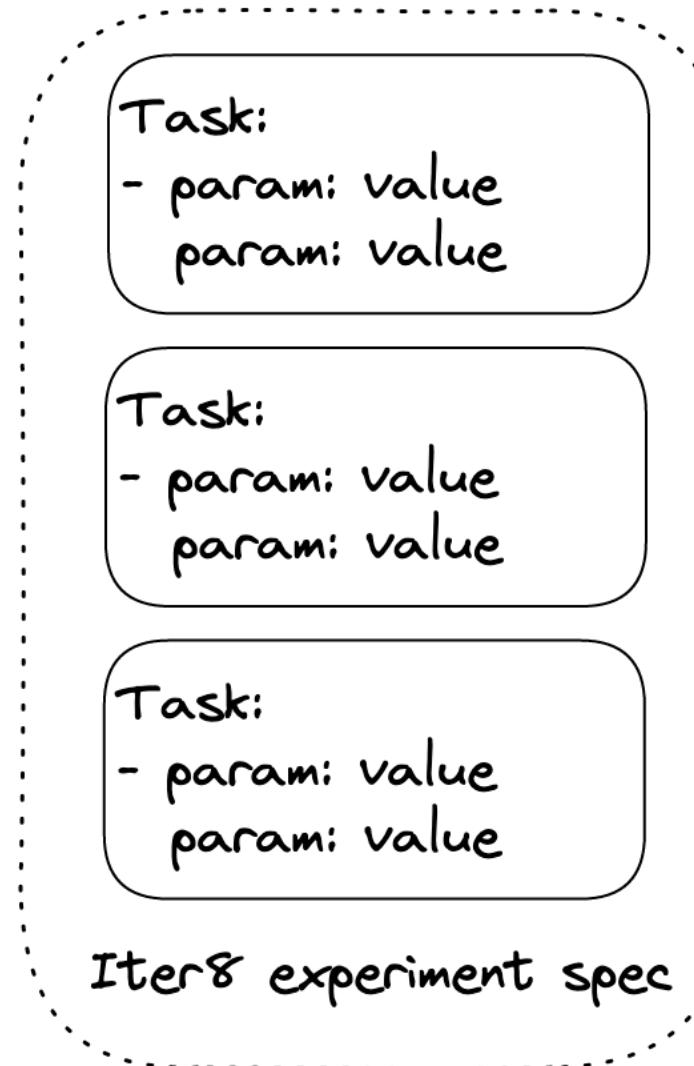
<https://iter8.tools/0.11/getting-started/your-first-experiment/>



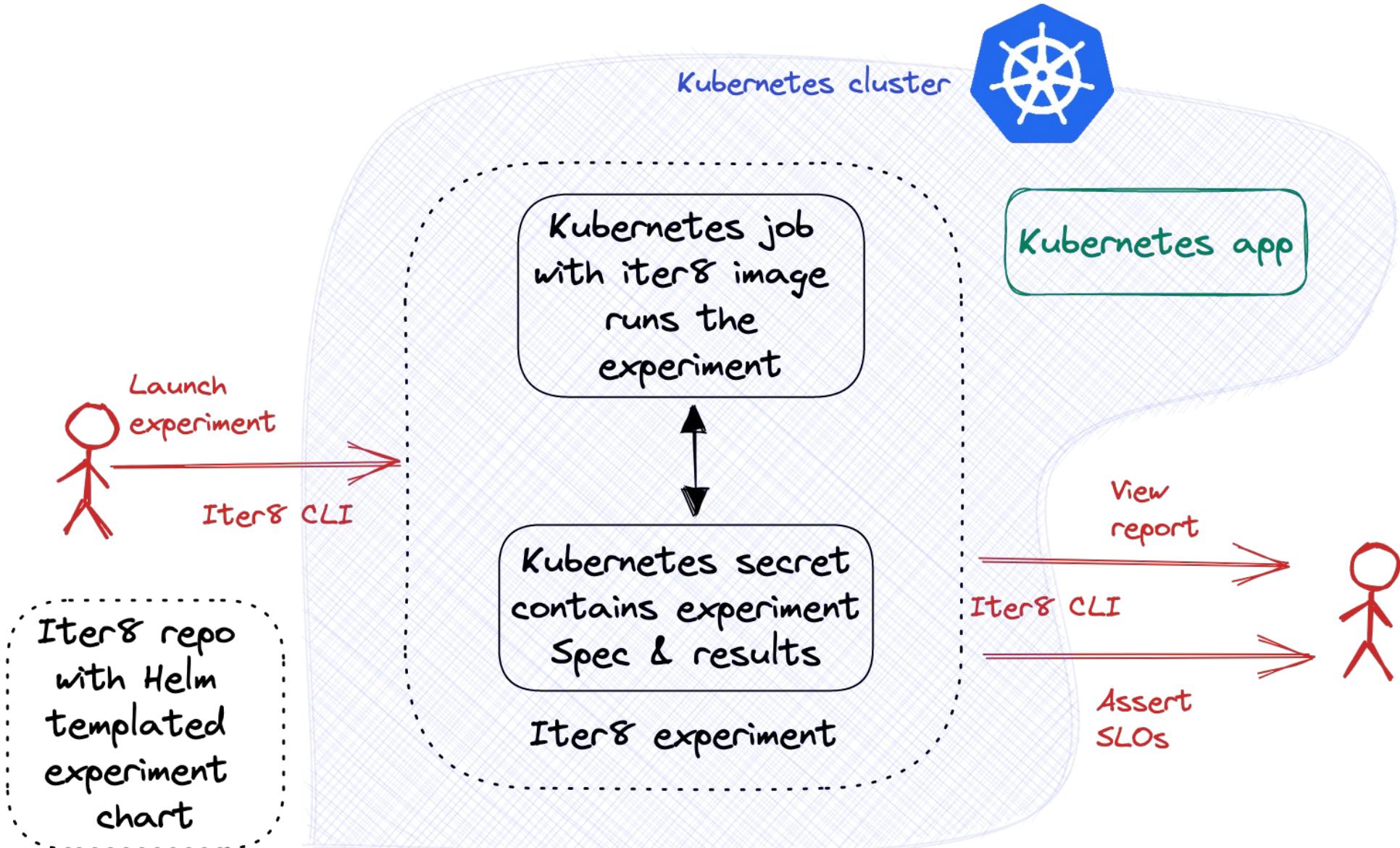
Specifying an Iter8 Experiment

Iter8 provides several pre-defined tasks that can be composed together

Experiment spec = a list of task names with task params

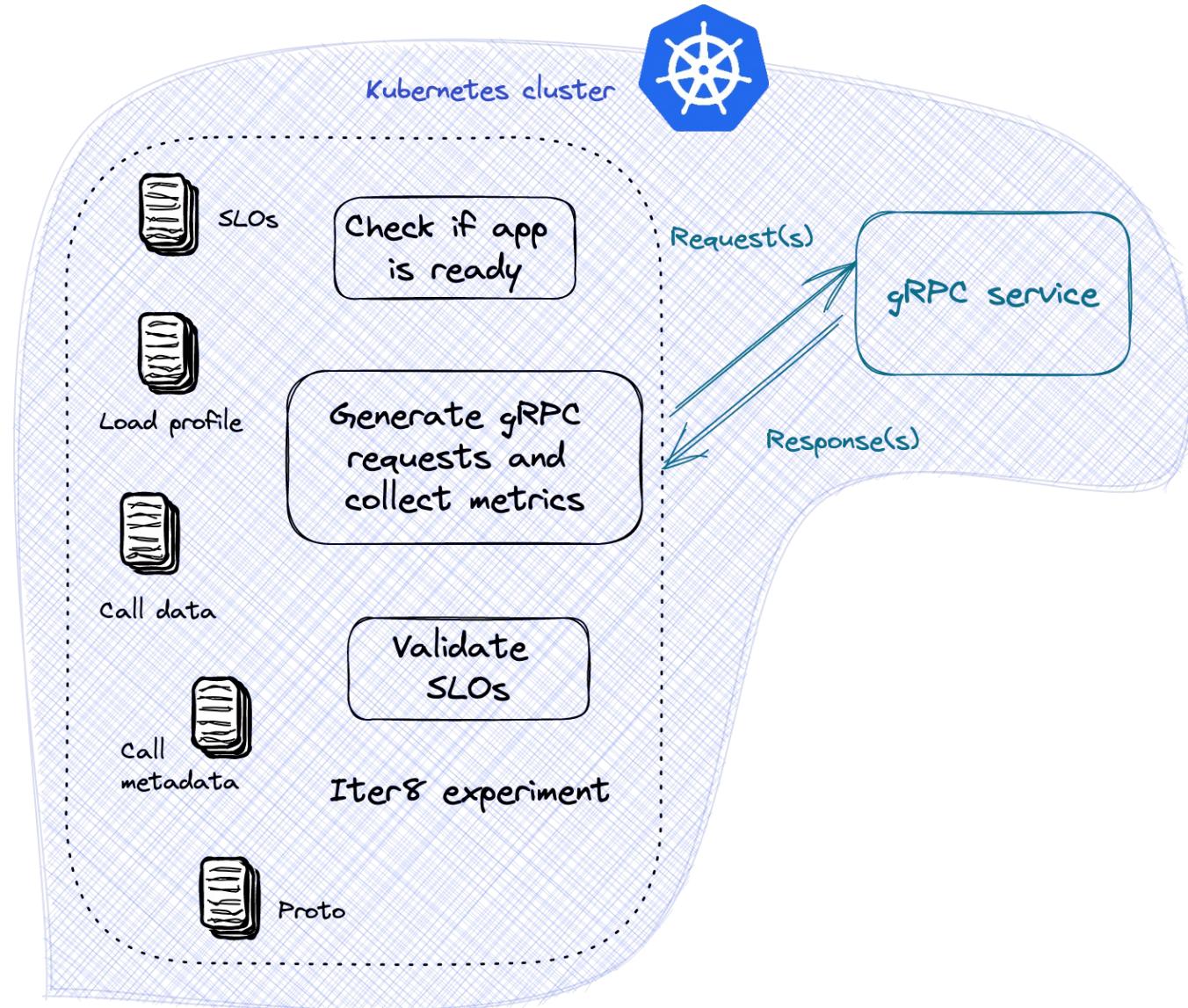


Under the covers of an Iter8 experiment



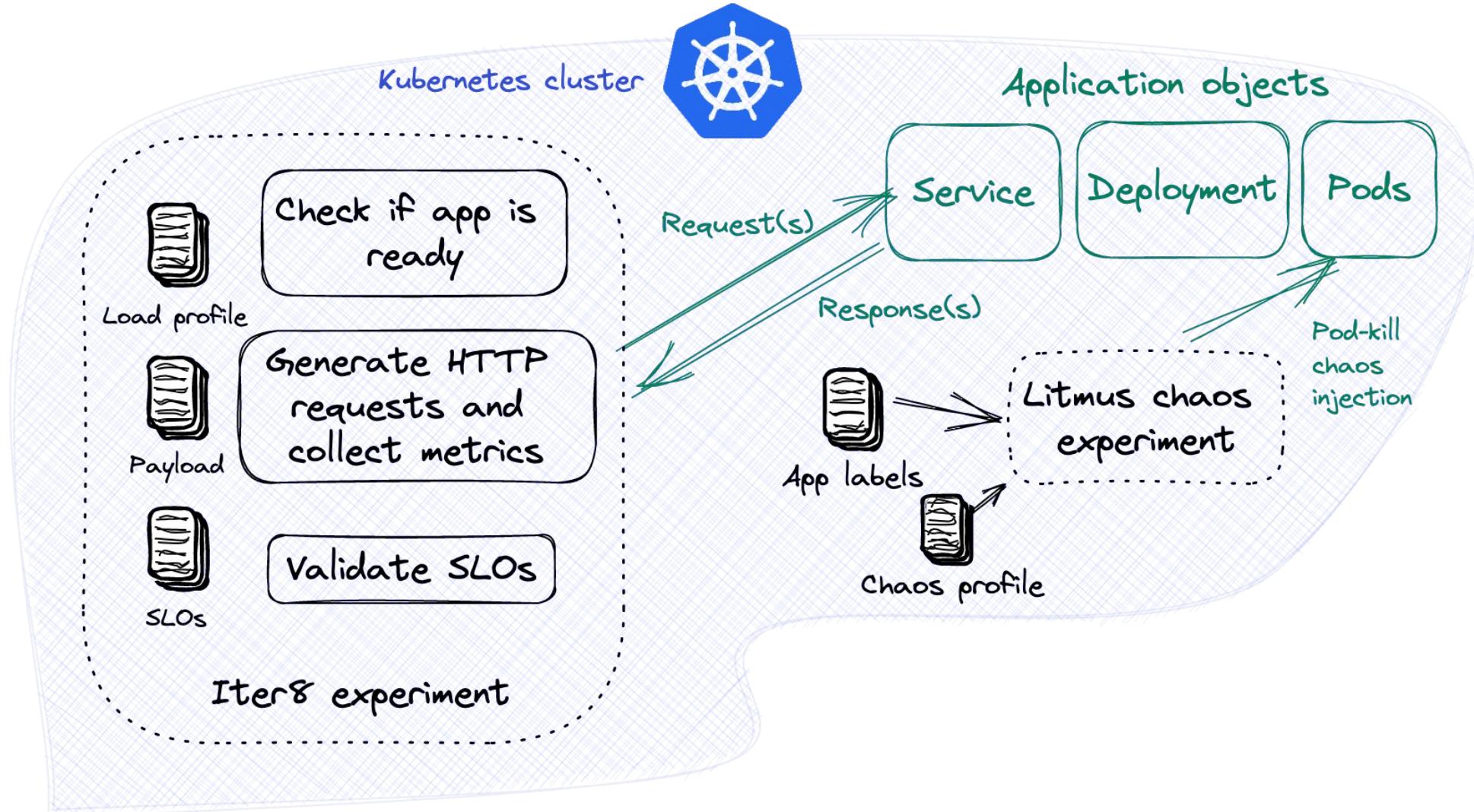
Demo: Load Test gRPC with SLOs

<https://iter8.tools/0.11/tutorials/load-test-grpc/>



Demo: Chaos Injection with SLOs

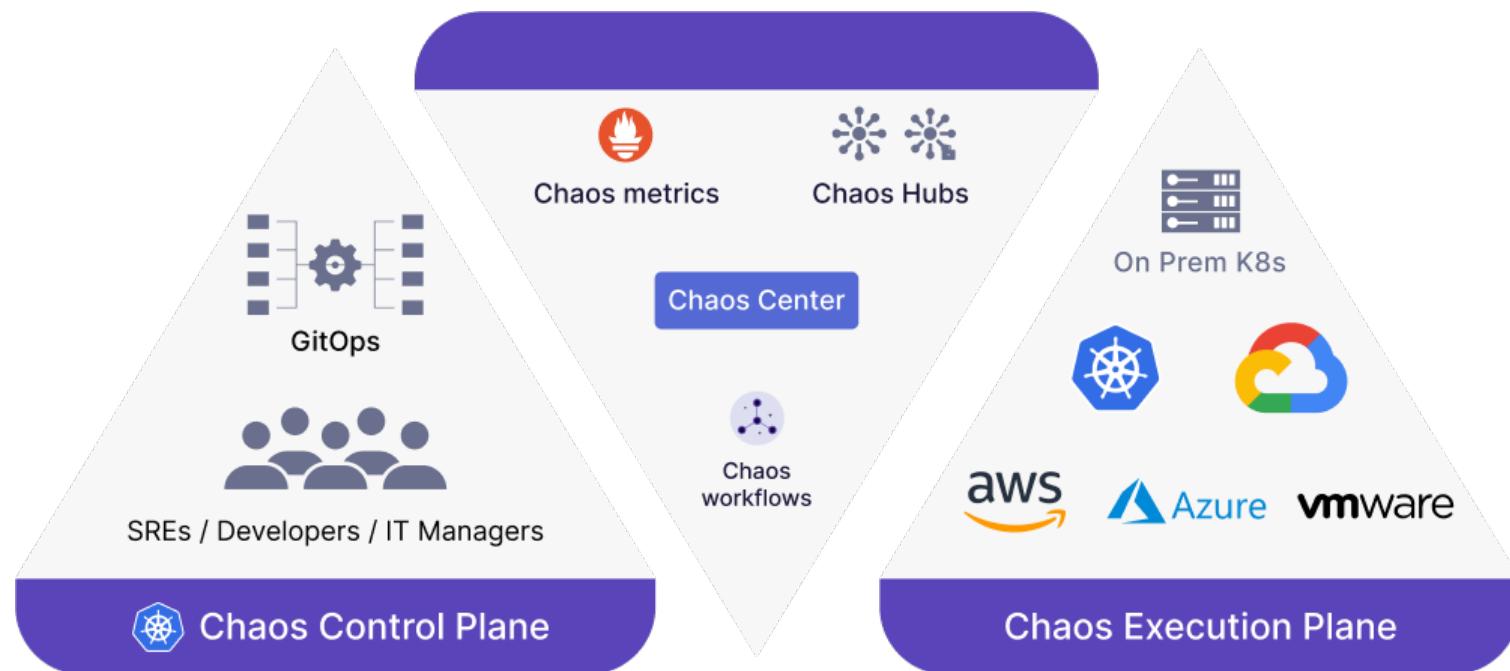
<https://iter8.tools/0.11/tutorials/chaos/slo-validation-chaos/>



Litmus: A CNCF Incubating Project

<https://litmuschaos.io> – Cloud Native Chaos Engineering platform

“identify weaknesses & potential outages in infrastructure by inducing chaos in a controlled way”



More Iter8 Features

<https://iter8.tools>

- Custom metrics from databases
- Slack and GitHub notifications
- Iter8 GitHub Action
- Integrations with serverless/ML frameworks
 - Knative, Kserve, Seldon, ...
- Extensibility
- Coming soon
 - A/B testing with business metrics
 - Automated (GitOps-friendly) experiments

More Litmus Features

<https://litmuschaos.io>

- ChaosHub
- Litmus Workflows
- Litmus Probes
- Chaos Observability
- Multi tenancy
- CLI and GUI
- ...

What Next?

- Try the demos
- Try experiments with your apps
 - Dev, test, staging, prod, ...
- Engage
 - <https://iter8.tools/0.11/community/community/>
 - <https://litmuschaos.io/community>