

# Release H: Linkerd

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## Introduction

Linkerd adds security, reliability and performance monitoring to your Kubernetes applications.

Security is enforced using sidecar injection similar to Istio. This ensures communication between your service is done using mutual TLS.

The sidecar also provides reliability/resilience to your services by adding features like retries, timeouts and traffic splitting.

The sidecar also collects metrics as request/responses are routed to/from the pods.

## Setup (minikube)

Run the following commands to install Linkerd on your minikube cluster

1. `curl --proto 'https' --tlsv1.2 -sSfL https://run.linkerd.io/install | sh`
2. `export PATH=$PATH:/home/ktimoney/.linkerd2/bin`
3. `linkerd check --pre`
4. `linkerd version`
5. `linkerd install --crds | kubectl apply -f -`
6. `linkerd install --set proxyInit.runAsRoot=true | kubectl apply -f -`
7. `linkerd version`
8. `linkerd check`

### Linkerd get pods

```
kubectl get pods -n linkerd
```

NAME	READY	STATUS	RESTARTS	AGE
linkerd-destination-b7798bdfc-4gcq2	4/4	Running	0	15m
linkerd-identity-54b8c6855d-bmg2n	2/2	Running	0	15m
linkerd-proxy-injector-696bb7bc8b-kcgrl	2/2	Running	0	15m

Install Linkerd visualizations:

1. `linkerd viz install | kubectl apply -f -`
2. `linkerd viz check`

### Linkerd Viz

```
kubectl get pods -n linkerd-viz
```

NAME	READY	STATUS	RESTARTS	AGE
metrics-api-7c999ddc94-lddgg	2/2	Running	0	67m
prometheus-6d5fb86b8f-t8q8t	2/2	Running	0	67m
tap-595fc4f9dd-sgl67	2/2	Running	0	67m
tap-injector-f86ffb747-j9l26	2/2	Running	0	67m
web-57f649c5f6-t6bcz	2/2	Running	0	67m

To view the dashboard run: `linkerd viz dashboard &`

Install the sample app:

1. `url --proto='https' --tlsv1.2 -sSfL https://run.linkerd.io/emojivoto.yml | kubectl apply -f -`

#### emojivoto pods

```
kubectl get pods -n emojivoto
```

NAME	READY	STATUS	RESTARTS	AGE
emoji-5dbdd567bd-n5mkp	1/1	Running	0	2m2s
vote-bot-58b4f5fdb7-m77mn	1/1	Running	0	2m2s
voting-5fdcdcdcf7-712d6	1/1	Running	0	2m2s
web-67c857998c-jm7bx	1/1	Running	0	2m2s

Inject the pods with the Linkerd sidecar


1. `kubectl get -n emojivoto deploy -o yaml | linkerd inject - | kubectl apply -f -`

#### emojivoto pods with sidecars

```
kubectl get pods -n emojivoto
```

NAME	READY	STATUS	RESTARTS	AGE
emoji-55c59cf485-fs29j	2/2	Running	0	48s
vote-bot-57d4c898bb-lmlhx	2/2	Running	0	49s
voting-87469d4bb-sbcbf	2/2	Running	0	48s
web-847cbcb586-f5mt5	2/2	Running	0	48s

View you the demo app in the Linkerd dashboard: <http://localhost:50750>

**LINKERD**

CLUSTER

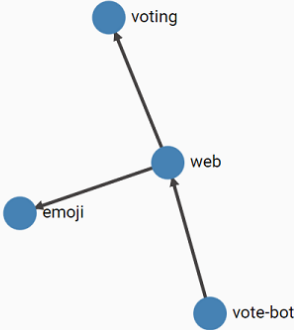
- Namespaces
- Control Plane

EMOJIVOTO

WORKLOADS

- Cron Jobs
- Daemon Sets
- Deployments
- Services
- Jobs
- Pods
- Replica Sets

Namespace > emojivoto



```
graph TD; emoji((emoji)) --> web((web)); web --> voting((voting)); web --> vote-bot((vote-bot))
```

### Deployments

Deployment ↑	↑ Meshed	↑ Success Rate	↑ RPS	↑ P50 Latency	↑ P95 Latency	↑ P99 Latency
emoji	1/1	100.00% ●	2.27	1 ms	3 ms	9 ms

## Links

[Linkerd](#)

[Getting Started](#)

[Linkerd and Ingress Controllers: Bringing the Outside World In](#)

[Authorization Policy](#)