When the Command Line is Not Enough

Why Your OSS Project Needs a GUI

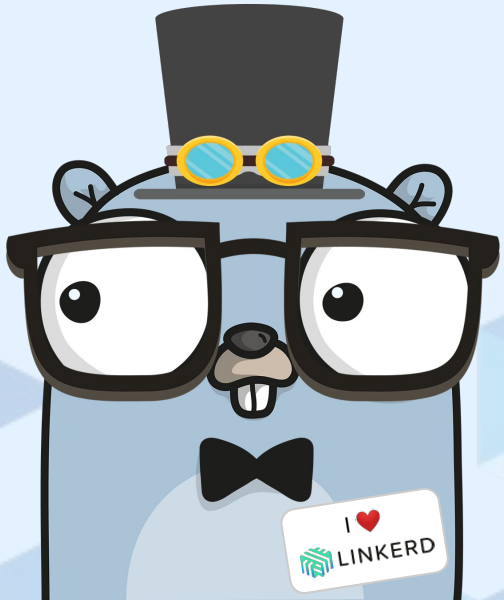
Risha Mars

Software Engineer + Linkerd Maintainer

@marzipan

@rmars

@marzipan

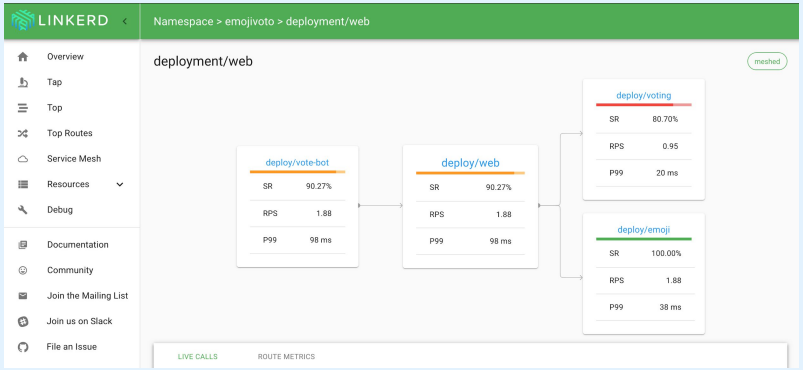


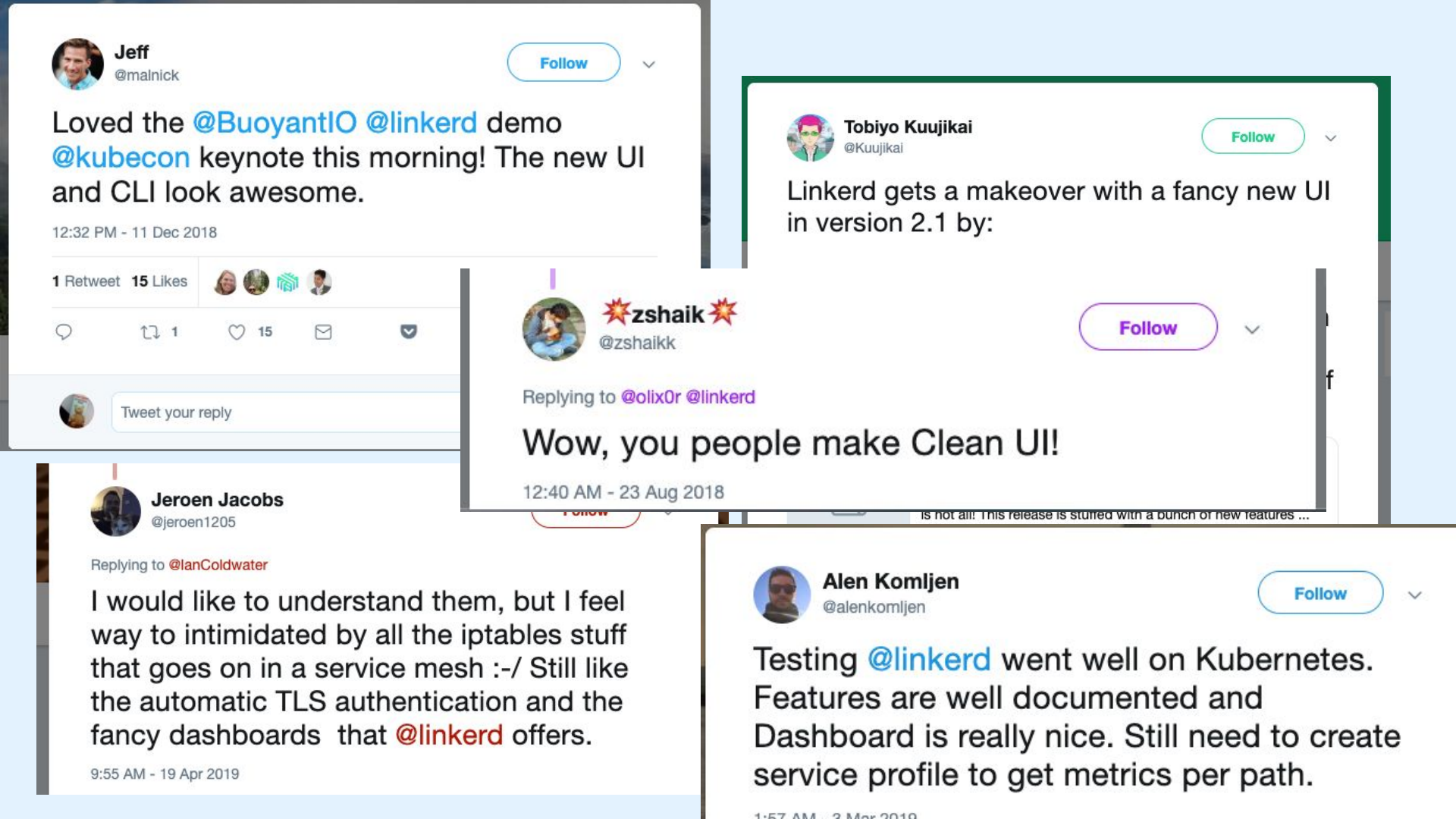
Benefits of a GUI

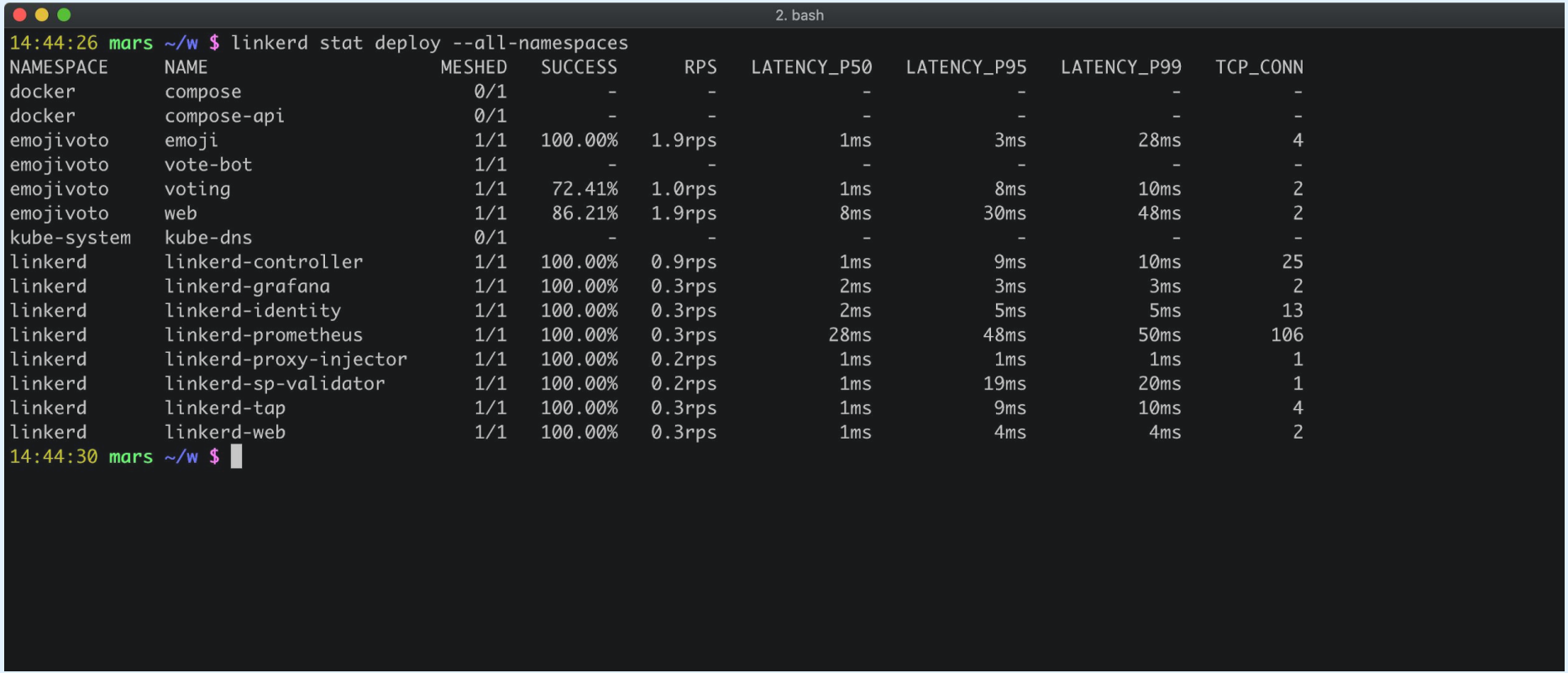
- ⚡ Tell the user a useful story!
- ⚡ Improve your users' experience!
- ⚡ Get more OSS contributors!
- ⚡ *Complements* your CLI!

LINKERD

```
14:27:40 marc ~/w $ linkerd
linkerd manages the Linkerd service mesh.

Usage:
  linkerd [command]

Available Commands:
  check       Check the Linkerd installation for potential problems
  completion  Output shell completion code for the specified shell (bash or zsh)
  dashboard   Open the Linkerd dashboard in a web browser
  edges       Display connections between resources, and linkerd proxy identities
  endpoints   Introspect Linkerd's service discovery state
  get         Display one or many mesh resources
  help        Help about any command
  inject      Add the Linkerd proxy to a Kubernetes config
  install     Output Kubernetes configs to install Linkerd
  install-cni Output Kubernetes configs to install Linkerd CNI (experimental)
  install-sp  Output Kubernetes configs to install Linkerd Service Profiles
  logs        Tail logs from containers in the linkerd control plane
  metrics     Fetch metrics directly from Linkerd proxies
  profile     Output service profile config for Kubernetes
  routes      Display route stats
  stat        Display traffic stats about one or many resources
  tap         Listen to a traffic stream
  top         Display sorted information about live traffic
  uninject    Remove the Linkerd proxy from a Kubernetes config
  upgrade     Output Kubernetes configs to upgrade an existing Linkerd control plane
  version     Print the client and server version information

Flags:
      --api-addr string            Override kubeconfig and communicate directly with the control plane at host:port (mostly for testing)
      --context string             Name of the kubeconfig context to use
  -h, --help                       help for linkerd
      --kubeconfig string          Path to the kubeconfig file to use for CLI requests
  -l, --linkerd-namespace string   Namespace in which Linkerd is installed [$LINKERD_NAMESPACE] (default "linkerd")
      --verbose                    Turn on debug logging

Use "linkerd [command] --help" for more information about a command.
```




Jeff
@malnick
Follow
Loved the @BuoyantIO @linkerd demo @kubecon keynote this morning! The new UI and CLI look awesome.
12:32 PM - 11 Dec 2018
1 Retweet 15 Likes
Tweet your reply
Tobiyo Kuujikai
@Kuujikai
Follow
Linkerd gets a makeover with a fancy new UI in version 2.1 by:
zshaik
@zshaikk
Follow
Replying to @olix0r @linkerd
Wow, you people make Clean UI!
12:40 AM - 23 Aug 2018
Jeroen Jacobs
@jeroen1205
Replying to @IanColdwater
I would like to understand them, but I feel way to intimidated by all the iptables stuff that goes on in a service mesh :-/ Still like the automatic TLS authentication and the fancy dashboards that @linkerd offers.
9:55 AM - 19 Apr 2019
Alen Komljen
@alenkomljen
Follow
Testing @linkerd went well on Kubernetes. Features are well documented and Dashboard is really nice. Still need to create service profile to get metrics per path.


2. bash
14:44:26 mars ~/w $ linkerd stat deploy --all-namespaces
NAMESPACE   NAME   MESHED   SUCCESS   RPS   LATENCY_P50   LATENCY_P95   LATENCY_P99   TCP_CONN
docker   compose   0/1   -   -   -   -   -   -
docker   compose-api   0/1   -   -   -   -   -   -
emojivoto   emoji   1/1   100.00%   1.9rps   1ms   3ms   28ms   4
emojivoto   vote-bot   1/1   -   -   -   -   -   -
emojivoto   voting   1/1   72.41%   1.0rps   1ms   8ms   10ms   2
emojivoto   web   1/1   86.21%   1.9rps   8ms   30ms   48ms   2
kube-system   kube-dns   0/1   -   -   -   -   -   -
linkerd   linkerd-controller   1/1   100.00%   0.9rps   1ms   9ms   10ms   25
linkerd   linkerd-grafana   1/1   100.00%   0.3rps   2ms   3ms   3ms   2
linkerd   linkerd-identity   1/1   100.00%   0.3rps   2ms   5ms   5ms   13
linkerd   linkerd-prometheus   1/1   100.00%   0.3rps   28ms   48ms   50ms   106
linkerd   linkerd-proxy-injector   1/1   100.00%   0.2rps   1ms   1ms   1ms   1
linkerd   linkerd-sp-validator   1/1   100.00%   0.2rps   1ms   19ms   20ms   1
linkerd   linkerd-tap   1/1   100.00%   0.3rps   1ms   9ms   10ms   4
linkerd   linkerd-web   1/1   100.00%   0.3rps   1ms   4ms   4ms   2
14:44:30 mars ~/w $

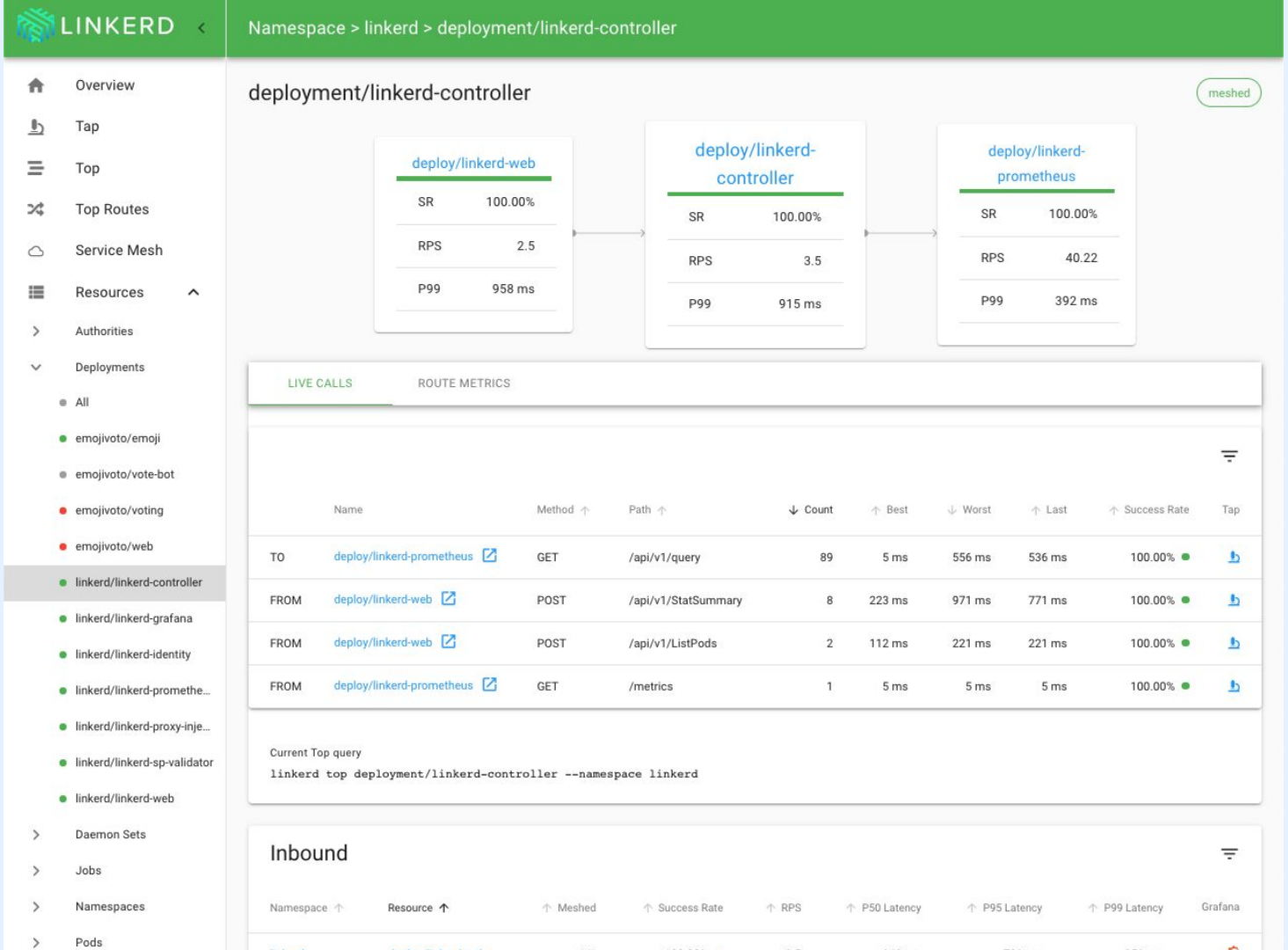
Overview
Tap
Top
Top Routes
Service Mesh
Resources
Authorities
Deployments
All
emojivoto/emoji
emojivoto/vote-bot
emojivoto/voting
emojivoto/web
linkerd/linkerd-controller
linkerd/linkerd-grafana
linkerd/linkerd-identity
linkerd/linkerd-prometheus

HTTP metrics

Namespace	Deployment	Meshed	Success Rate	RPS	P50 Latency	P95 Latency	P99 Latency	Grafana
emojivoto	web	1/1	93.64%	1.83	20 ms	85 ms	97 ms	
emojivoto	voting	1/1	87.27%	0.92	1 ms	15 ms	19 ms	
emojivoto	vote-bot	1/1	---	---	---	---	---	
linkerd	linkerd-web	1/1	100.00%	0.3	1 ms	3 ms	3 ms	
linkerd	linkerd-sp-validator	1/1	100.00%	0.2	2 ms	4 ms	4 ms	
linkerd	linkerd-proxy-injector	1/1	100.00%	0.2	4 ms	10 ms	10 ms	
linkerd	linkerd-prometheus	1/1	100.00%	28.17	27 ms	238 ms	288 ms	
linkerd	linkerd-identity	1/1	100.00%	0.3	1 ms	2 ms	2 ms	
linkerd	linkerd-grafana	1/1	100.00%	0.3	2 ms	3 ms	3 ms	
linkerd	linkerd-controller	1/1	100.00%	3.17	3 ms	230 ms	286 ms	
kube-system	kube-dns	0/1	---	---	---	---	---	
emojivoto	emoji	1/1	100.00%	1.88	1 ms	25 ms	29 ms	

Getting data for a Deployment page

```
$ linkerd stat deploy/linkerd-controller -n linkerd
$
$ linkerd top deploy/linkerd-controller -n linkerd
$
$ linkerd routes deployment/linkerd-controller --namespace linkerd
$
$ linkerd stat deploy --to deploy/linkerd-controller -n linkerd
$
$ linkerd stat deploy --from deploy/linkerd-controller -n linkerd
$
$ linkerd stat po -n linkerd -o wide
$
```


LINKERD
Namespace > linkerd > deployment/linkerd-controller
Overview
Tap
Top
Top Routes
Service Mesh
Resources
Authorities
Deployments
All
emojivoto/emoji
emojivoto/vote-bot
emojivoto/voting
emojivoto/web
linkerd/linkerd-controller
linkerd/linkerd-grafana
linkerd/linkerd-identity
linkerd/linkerd-promethe...
linkerd/linkerd-proxy-inje...
linkerd/linkerd-sp-validator
linkerd/linkerd-web
Daemon Sets
Jobs
Namespaces
Pods
deployment/linkerd-controller
meshed
deploy/linkerd-web
SR 100.00%
RPS 2.5
P99 958 ms
deploy/linkerd-controller
SR 100.00%
RPS 3.5
P99 915 ms
deploy/linkerd-prometheus
SR 100.00%
RPS 40.22
P99 392 ms
LIVE CALLS
ROUTE METRICS
Name
Method
Path
Count
Best
Worst
Last
Success Rate
Tap
TO deploy/linkerd-prometheus GET /api/v1/query 89 5 ms 556 ms 536 ms 100.00%
FROM deploy/linkerd-web POST /api/v1/StatSummary 8 223 ms 971 ms 771 ms 100.00%
FROM deploy/linkerd-web POST /api/v1/ListPods 2 112 ms 221 ms 221 ms 100.00%
FROM deploy/linkerd-prometheus GET /metrics 1 5 ms 5 ms 5 ms 100.00%
Current Top query
linkerd top deployment/linkerd-controller --namespace linkerd
Inbound
Namespace
Resource
Meshed
Success Rate
RPS
P50 Latency
P95 Latency
P99 Latency
Grafana

Current Tap query

```
linkerd tap deployment/linkerd-controller --namespace linkerd
```

Show more filters

	Direction	Name	Method	Path	Latency	HTTP status	GRPC status
	TO	deploy/linkerd-prometheus	GET	/api/v1/query	246 ms	200	—
	TO	deploy/linkerd-prometheus	GET	/api/v1/query	185 ms	200	—
	TO	deploy/linkerd-prometheus	GET	/api/v1/query	140 ms	200	—
	TO	deploy/linkerd-prometheus					—
	TO	deploy/linkerd-prometheus					—
	TO	deploy/linkerd-prometheus					—
	TO	deploy/linkerd-prometheus					—
	TO	deploy/linkerd-prometheus					—
	TO	deploy/linkerd-prometheus	GET	/api/v1/query	23 ms	200	—

Source		Destination
deploy/linkerd-controller	→	deploy/linkerd-prometheus
po/linkerd-controller-5dc5958dbc-s4w2d	→	po/linkerd-prometheus-7c6d8fd47b-jhz8v
10.1.6.59	→	10.1.6.61

Destination	1	
Grafana	1	
Identity		
Prometheus	1	
Public API	1	

linkerd/linkerd-prometheus-7c4ddb6b8f-4wzd6
is up and running
Uptime: about 2 hours (8066s)

linkerd / linkerd2

Unwatch 163 | Star 3,780 | Fork 304

Code | Issues 243 | Pull requests 23 | Projects 3 | Wiki | Insights

- Pulse
- Contributors
- Community
- Traffic
- Commits
- Code frequency
- Dependency graph
- Network
- Forks

Dec 3, 2017 – May 6, 2019

Contributions: Commits

Contributions to master, excluding merge commits

#1 **rmars**
217 commits 39,401 ++ 21,958 --

#2 **siggy**
208 commits 58,302 ++ 28,345 --

#3 **klingerf**
182 commits 30,844 ++ 30,734 --

#4 **olix0r**
151 commits 73,036 ++ 50,165 --

#5 **briansmith**
122 commits 9,931 ++ 5,614 --

#6 **hawkw**
113 commits 16,897 ++ 17,254 --

#7 **adleong**
55 commits 16,120 ++ 8,265 --

#8 **dadjeibaah**
39 commits 4,057 ++ 919 --

#9 **alpeb**
36 commits 11,704 ++ 6,733 --

#10 **seanmonstar**
31 commits 6,153 ++ 1,309 --

Benefits of a GUI

Tell the user a useful story!

Improve your users' experience!

Get more OSS contributors!

Complements your CLI!

Why don't we have both?

Join our community!

github.com/linkerd

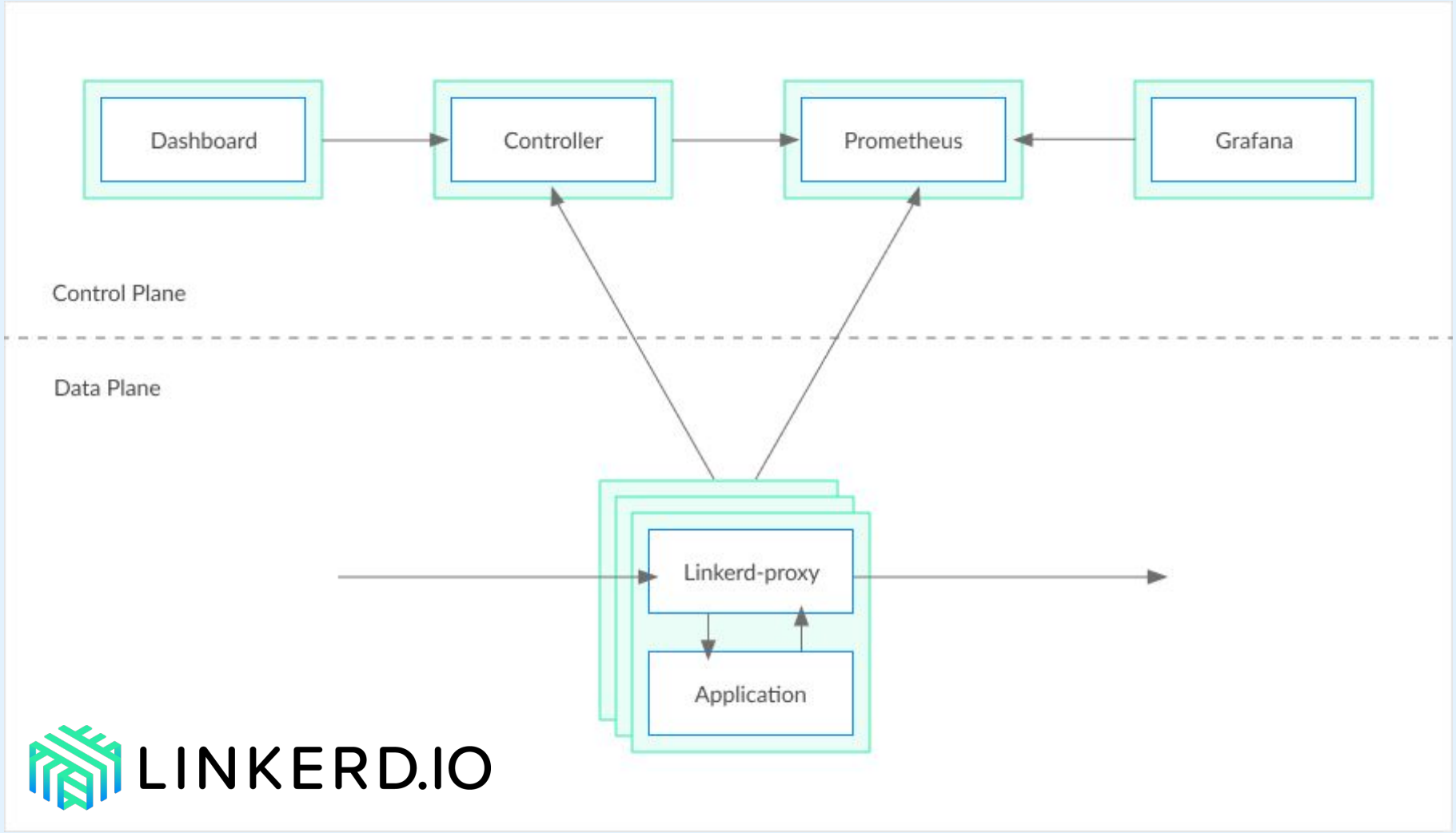
slack.linkerd.io

@linkerd

FROM YOUR FRIENDS AT

An open source *service mesh* and CNCF member project.

- 🔥 24+ months in production
- 🔥 3,000+ Slack channel members
- 🔥 10,000+ GitHub stars
- 🔥 100+ contributors


Dashboard
Controller
Prometheus
Grafana
Control Plane
Data Plane
Linkerd-proxy
Application
LINKERD.IO