

OpenMetrics

Standing on the shoulders of Titans

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‘whoami’

- Richard "RichiH" Hartmann
- Swiss army chainsaw at SpaceNet
 - Currently responsible for building one of the most modern datacenters in Europe
 - ...and always looking for nice co-workers in the Munich area
- FOSDEM, DebConf, DENOGx, PromCon staff
- Author of <https://github.com/RichiH/vcsh>
- Debian Developer
- Prometheus team member

What's Prometheus?

Show of hands: Who has heard of Prometheus? ;)

Before Prometheus

- Historically, the monitoring landscape has been highly fragmented
- Many solutions based on ancient technology
- Most data formats are proprietary, hard to implement, or both
- ..and most with hierarchical data models
- Almost none with a focus on metrics

Before Prometheus

- Only thing approaching a standard: SNMP
- Who has heard of SNMP?
- Who likes SNMP?
- XKCD 927 applies

After Prometheus

- Prometheus has become a de-facto standard in cloud-native metric monitoring
- Ease of exposition data has lead to an explosion in compatible metrics endpoints
- Prometheus' exposition format is based on a lot of operational experience, but has been designed between few people
- Some other projects & vendors are torn about adopting something from a “competing” product
- Especially traditional vendor prefer to support official standards

Solution

- Spin out Prometheus exposition format into its own standard
 - Neutral brand
 - Umbrella for wider cooperation in FLOSS and industry
- Broadening designer base ensures covering of many/all use cases
- Official standard (work in progress)
 - IETF RFC
 - Registered content-type/MIME-type
 - Maybe IANA port assignment

Current status

- We finished the discussion phase and moved into implementation
- Brian is working on a reference parser
- Google and Uber will also create another reference parser

Next steps, already ongoing

- Enhance Prometheus client libraries to support OpenMetrics
- Full OpenMetrics support in Prometheus, OpenCensus, M3DB, Uber

Beyond

- OpenMetrics is intended to go beyond "just" cloud-native fields
- Want to get more traditional projects and vendors on board

Beyond metrics

- OpenMetrics supports more than just metrics
- Every single data point in a time series can point to one single event
- Especially useful if you emit one trace id per histogram bucket, this is what JDB meant with exemplars
- Some integrations already support this concept, e.g. OpenCensus
- Ingestors are free to discard this optional data, e.g. Prometheus

Bringing observability back together

- IT architectures breathe
- Out/Insourcing, Mainframe/client-server/containers, etc
- You solve the current problem, and then face another
- By focussing on Metrics, Prometheus breathed in
- OpenMetrics intends to breathe out by creating one consistent user story encompassing all events in the next version
- (do you happen to remember something about Grafana planning to support event logging?)

First commitments, too many for full list

- Cloudflare
- CNCF at large
- GitLab
- Google
- Grafana
- InfluxData
- Prometheus ;)
- RobustPerception
- SpaceNet
- Uber

Acknowledgements

- Main work has been done by
 - Prometheus team
 - Google
 - Uber

Further reading

- Prometheus 2017 Dev Summit:
<https://docs.google.com/document/d/1DaHFao0saZ3MDt9yuuxLaCQg8WGad08s44i3cxSARcM/edit>
- OpenMetrics:
<https://github.com/OpenObservability/OpenMetrics>
- OpenMetrics mailing list:
<https://groups.google.com/forum/#\protect\kern-.1667em\relaxforum/openmetrics>
- WIP branch for Python library https://github.com/prometheus/client_python/tree/openmetrics
- This and other talks:
<https://github.com/RichiH/talks/>

Thanks!

Thanks for listening!

Questions?

Email me if you want a job in Munich.

See slide footer for contact info.