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? ;)

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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
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?)

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First commitments, too many for full list

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

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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/#
1667em\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.