

# SNMP Must Die - The Tyranny of OIDs

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# Question

- Who knows what this?
  - .1.3.6.1.2.1.2.1.8

# Answer

- SNMP OID
- Specifically – ifOperStatus from the IF-MIB
- If you knew that, you may want to seek help from a mental health professional.

# Question

- Who can guess what this is?
  - `/interfaces/interface[name='ge-0/0/0']/oper-status`

# Answer

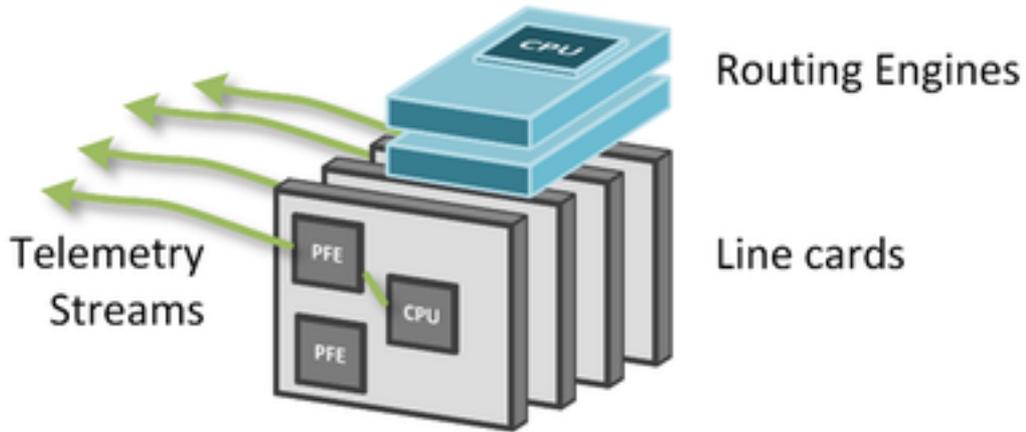
- IETF Streaming Telemetry path for interface status

# What Makes Streaming Telemetry > SNMP?

- Push vs. Pull model
  - <http://blog.sflow.com/2012/08/push-vs-pull.html>
- Not all information is stored in SNMP
  - Reliant on vendors to create an OID to store the data
  - What about data in CLI show commands that is not in a MIB?
- Model driven encoding
  - Standards models (IETF, OpenConfig) and vendor specific models
  - Structured data model makes ingesting data easier for DevOps
- Transport options (TCP or UDP)
- Scalable
  - More on the next slide

# How does it work?

- Data export is push to the line card
- Line cards directly export the packets leaving the control plane processor to manage protocols, route updates, etc.



# Scalability of Streaming Telemetry

- How does it scale?
- Heavily loaded router exporting more than 60 various metrics of about 500 objects every 15 seconds



- This includes:
  - 176 10GE interfaces including error, input and output counters, and queue stats
  - Logical interface statistics including IPv4 and IPv6 family counters
  - Byte and packet counters for 200 ingress label switched paths

# Open or Closed Solution?

- Multivendor support
  - Juniper, Cisco, Arista,
- A lot of work being done by the industry to make it an open, standards based approach
  - GPB (Google Protocol Buffers), JSON, and NetConf export formats
  - UDP or TCP transport of data
  - gRPC definitions for subscribing to data, authenticating the channel, etc.
    - Same RPC being proposed for configuration through OpenConfig
- Still a work in progress
  - Aren't most things in networking?

# How can I get more?

- Juniper Blog:
  - <https://forums.juniper.net/t5/Analytics/Decentralized-Streaming-Telemetry-using-Junos-Telemetry/ba-p/289837>
- Cisco Blog:
  - <http://blogs.cisco.com/sp/streaming-telemetry-with-google-protocol-buffers>
- Talk to your preferred vendor/reseller about how you can get a demo or lab setup to try it out.
- Interest in a future full NANOG talk?
  - Email Justin -> [jryburn@juniper.net](mailto:jryburn@juniper.net)

The image features a blue-tinted background showing a crowd of people, likely at a conference or event. The text "Thank you" is prominently displayed in the center in a large, white, sans-serif font. The overall mood is professional and appreciative.

**Thank you**