Doing Better Than SNMP

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What we have today

- SNMP
- CLI scraping
- ...and that’s about it.
S is a lie!

- Impossible use for large data set retrieval.
- Performance bound.
- Tree structure and linear indexing do not line up well with OS data structures, leading to excessive memory and CPU consumption.
THIS CAKE IS A LIE!
CLI scraping

- White space change, anyone?
- Or typos
- Or corrections
- Or unit changes
- Do I need to go on?
What do we need?

- Retrieve large data sets
- With high resolution
- Without hammering CPU or memory
What would we like?

- A flexible framework
- Data-model driven
- Capability negotiation
- Format agnostic
- Transport options
- Query/filtering
- Introspection
- Timestamps
- Pub/sub
What would we like?

● Keep complexity out of this
  ○ Availability
  ○ Reliability
  ○ Security
  ○ All solved better by specific implementation of NMS

● Get data off the box, then figure out what to do with it
How would we use it?

- Asynchronous and Synchronous data
  - Events
  - Subscriptions
- Streaming and one-offs
  - RIB snapshot
  - Stream RIB updates
- Push and pull
Leverage existing protocols

- Use this framework to dynamically request monitoring data
- IPFIX
- SFLOW
- NetFLOW
- BMP
Use the same framework for everything

- For example, interface data
  - Billing
  - Traffic Engineering
Let’s not invent much

- Netconf + extensions
- YANG
- Pub/sub
- Command and control
- I2RS WG