Use Cases for Bulk Data Collection

swhyte@google.com
hines@google.com
wkumari@google.com
SNMP Review

- Highly structured tables
- ASN.1
- Request/response
- Traps
Bulk Data?

- Ok, it's all state
- Not all state is created equal
  - Some is precious and must never be lost
  - Some lives briefly and must never be heard again
  - Resolution ranges from extremely high to extremely low
- In SDNRG terms, both Control and Management Planes need to consume network state
Why i2rs?

- Exploring new routing system methods
- You can’t control what you can’t measure
- Distributing routing system control requires distributing routing system state
- Routing system state includes data plane
Use Cases

- Retrieve large data sets
- With high resolution
- Without consuming excessive CPU or memory
Use Cases cont’d

● Asynchronous and Synchronous data
  ■ Events
  ■ Subscriptions

● Streaming and one-offs
  ■ Datastructure snapshot
  ■ Stream datastructure updates

● Push and pull
Primary Goals

- Keep unnecessary complexity out
  - Availability
  - Reliability
  - Security
  - All solved better by specific implementation of NMS
- Get data off the box, then figure out what to do with it
Functionality Desired

- A flexible framework
- Data-model driven
- Capability negotiation
- Format agnostic
- Transport options
- Query/filtering
- Introspection
- Timestamps
- Pub/sub
Leverage Existing Protocols

- Use this framework to dynamically request monitoring data via existing protocols
  - IPFIX
  - BMP
Thanks!