

Use Cases for Bulk Data Collection

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SNMP Review

- Highly structured tables
- ASN.1
- Request/response
- Traps

Bulk Data?

- Ok, its 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!