Data Flow Requirements

Draft-hares-i2rs-dataflow-req-02.txt

Susan Hares

I2RS Session 1 on Data Flow

- DF-REQ-01/10: (need more on list)
  - Choices: minimum, no-referential, full (full required)
- DF-REQ-02/03/09:
  - format: XML/JSON, transport selectable (in yang, by user)

- DF-REQ-06/08 I2RS should have resource constraints (memory, data flow), and OAM related to resource constraints in v1,

Not now
- DF-REQ-07 OAM to protocols OAM Later (v2++)
- DF-REQ-04/05: No IPFIX in v1, IPFIX possible in v2

DF-REQ-01: 3 levels of Checking for RIB

- DF-REQ-01: Support writing to the ephemeral copy of the Local RIB with three different types of checks: (v1)
  - minimal data reception checks (TLVs of data valid),
  - all non-referential checks (e.g. do not do leafref, MUST, instance identifiers), and
  - Full checks
- Version notes: v1, v2, or fv (future version)
- Session 1:
  - **Minimum to implement: full**

DF-REQ-02/DF-REQ-03

- DF-REQ-02: The support of large data transfers in a data format agnostic format.
  - The NETCONF protocol now supports XML and JSON. I2RS protocol should also support other data formats (MTL [fv], raw ascii stream [fv])
  - [L-Data-REQ-05 Use Case]

- DF-REQ-03: I2RS Support of I2RS Agent and I2RS Client negotiating specific transport and transport options out the options that are available (v1),
  - L-DATA-REQ-06: i2RS Transports must be able to be chose by I2RS Client-I2RS Agent pair. An I2RS Client-I2RS Agent should be allowed to negotiate transport

- **Session 1:**
  - XML and JSON data format – allowed
  - BBF – IP Proto-BUFs

DF-REQ-04/DF-REQ-05
IPFIX Protocol + Templates

- DF-REQ-04: Support for the ability to send traffic monitoring information using IPFIX protocol and IPFIX templates (fv)

- DF-REQ-05: Support of transmitting traffic statistics for filter-based policies (BGP-FS, I2RS FB-RIB, policy routing), IPPM, SFLOW, and others in yang data model format or IPFIX templates formats over XML or JSON. (fv)

- Summary: Not in V1

DF-REQ-06: Resources Monitored

- DF-REQ-06: I2RS should be able to support an action which allocates internal resources for the I2RS agent (memory, processing time, interrupts) and outbound data flow bandwidth. (v1)
  - Controlled action(s) would be included in a data model in an "rpc"-like format in yang.

- Session 1: V1 – ok to handle processing

DF-REQ-07: OAM interaction

- DF-REQ-07: The I2RS should be able to support an action that interacts with routing OAM functions. (v1 or v2??)

- Session 1: Not in V1

DF-REQ-08: Adjusts to Network Outages

- DF-REQ-08: The I2RS Agent must be able signals that it will be using different protocol with different constraints (security, priority of data, or transport) or different constraints on the existing protocol (smaller message sizes, different priorities on data carried, or different security levels).

- Session 1: Adjust to outage: with constraints

Yang changes

- DF-REQ-09: Yang MUST have a way to indicate in a data model has actions which allow:
  - different transports, resource constraints, security
  - Session 1: In v1

- DF-REQ-10: Yang MUST have a way to indicate a data model has different levels of checking where:
  - (Syntax only) lowest level is message form only,
  - (non-referential) non-referential checks + data synax
  - (full) – All checks
  The default level for I2RS is message format plus data syntax.

  Session 1: Minimal full checks, but list discussion

Summary

- V1: DF-REQ-01/10: (need more on list)
  - Choices: minimum, no-referential, full (full required)
- DF-REQ-02/03/09:
  - format: XML/JSON, transport selectable (in yang, by user)
- DF-REQ-06/08 I2RS should have resource constraints (memory, data flow), and OAM related to resource constraints in v1,
- Yang:
  - Supports different transports, different resource constraints, different security (DF-REQ-09)
  - Supports different validation (DF-REQ-10)