

i2rs Requirements for NETCONF

IETF 93

Requirement Documents

- <https://tools.ietf.org/html/draft-ietf-i2rs-ephemeral-state-00>
- <http://datatracker.ietf.org/doc/draft-ietf-i2rs-pub-sub-requirements/>
- <http://datatracker.ietf.org/doc/draft-ietf-i2rs-traceability/>
- <https://tools.ietf.org/html/draft-hares-i2rs-auth-trans-04>

Summary

- Assessment of i2rs requirements
- Have clarifications/questions
- Some potential solutions are mentioned
- Goal is to agree on the requirements

Ephemeral State

Ephemeral State

- Requirement: Ephemeral state does not persist across reboots
- **Comment:**
 - Ephemeral state is not a i2rs specific requirement.

Ephemeral State

- Ephemeral state MAY refer to non-ephemeral state for purposes of implementing constraints.
 - **Comment: This is potentially a problem. What happens if a must statement refers to a ephemeral node and the ephemeral state goes away. Semantics of constraints on ephemeral data and how they interact with constraints on config data are unclear.**
- Non-ephemeral state MUST NOT refer to ephemeral state for constraint purposes
- Ephemeral state is not permitted to be configured underneath nodes that are "config false"
- Configuration of ephemeral state underneath "config true" is permitted.
- Configuration of "config true" state underneath ephemeral state MUST NOT be done.
- State data, "config false", is permitted underneath ephemeral state.
- **Comments:**
 - **The last four assume a certain solution, so shall be viewed as solution specific requirements.**
 - **One possible solution is to have a separate datastore for ephemeral. No need to have to change 'config true' or 'config false'.**
 - **The other solution is to have operations such as <edit-config> have special meaning for 'config true' and 'config false' for ephemeral state.**

YANG changes

- config ephemeral
- Assumes a certain solution

NETCONF Changes

- Based on the solution chosen may or may not require NETCONF changes to read and write ephemeral data

Ephemeral Config

- Should be removed on session disconnect.
- **Comment:**
 - There is no “session” in case of RESTCONF

Identity Requirements

Identity Requirement

- Clients shall have identities
- Clients can have secondary identities
 - Carried as part of each RPC
 - **Comment: What happens in case of RESTCONF? HTTP header? Alternate solutions?**
 - **Why can't secondary identity be carried as meta-data?**
 - Solution shows an attribute that can be different in every edit node?
 - **Comment: The requirement is not clear. How is the identity returned if it is not saved? Section 6.3: meta-data is returned read-only, while Section 2, item 8 talks about recording the identity**
 - Goes in as part of the notification/trace log??

Priority Requirements

Priority Requirements

- Support multi-headed control
 - Comment: Is this a separate requirement from ephemeral??
- Priority as an attribute for NACM
 - Comment: Why does it need to be an extension of NACM?
- I2rs attributes may be modeled as meta-data

Pub/Sub Requirements

Pub/Sub

- The I2RS interface should support user subscriptions to data with the following parameters: push of data synchronously or asynchronously via registered subscriptions...
 - **Comment:**
 - **Need clarification.**
 - **It is a security hole exposing the data. WG decided not to expose the data.**
- The I2RS interface (protocol and IMs) should allow a subscribe to select portions of the data model.
- Real time notification of events e.g. route installation and removal
 - **Comment: What is real time?**

Pub/Sub (cont.)

- The I2RS agent should be able to notify the client via publish or subscribe mechanism a BGP route change on a specific IP ...
 - **Comment: Notification/Subscription based on an event type??**
- Can subscribe to the I2RS Agent's notification of critical node IGP events.
 - **Comment: What makes a notification critical?**
- I2rs must be able to collect large data set from the network with high frequency and resolution with minimal impact to the device's CPU and memory
 - **Comment:**
 - **What is high frequency/resolution?**
 - **What is minimal impact to CPU and memory?**

Pub/Sub (cont.)

- I2RS Agents should support publishing I2RS trace log information to that feed

Security Requirements

I2rs Security Requirements

- Requirements 1, 02, 5, 6, 7, 9, 11, 13, 14, 15, 16, 18, 19, 20
 - no problem noted
- Editorial
 - Editorial: Req. 3 /4 – need clarification on words,
 - Req. 8 – not a security requirement
 - Req 10 – is ambiguous
- Concerns:
 - Req. 8 – not a security requirement
 - REQ 12 – Why is DDoS a protocol functions?
 - Multiple message sequences – Why is this a security issue
 - Why support an insecure protocol?
- **Comment:**
 - **What next?**