

I2RS Architecture

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Architecture Origins

- Started from draft-ward-i2rs-framework and draft-atlas-i2rs-policy-framework
 - Removed use-cases
 - Simplified the policy details
 - Removed different operation parameters (start-time, persistence, end-time)
 - Structured it into an architecture.

Multiple Writers of Same Data is “an error”

- Different clients SHOULD NOT write the same data.
 - Different items in the same list may be written by different writers
 - Depends upon the particular data-model.
 - Goal is to have stable and known state if this error occurs. Based upon the priority (renamed precedence) of the client for which state wins. Not being time-based avoids oscillations.
 - No need to store state for operations that aren't the best.

Indirect Side-Effects

- Different writers of different state can still cause indirect interactions.
 - NOT detected or avoided by I2RS
 - Dependent on agent and client implementation
 - Really depends on interactions between clients.

Please discuss – now and on list.

Sec 5.2.1: Persistence, Starting & Ending

- Radically simplified
 - ONLY ephemeral state
 - ONLY immediate
 - ONLY lasts until reboot or explicit removal
- Makes the reliability of the communication path from the I2RS client to the I2RS agent critical.
- Moves the complexity of managing time and reacting to all events to the I2RS client.

Please Discuss – NOW and on-list

5.2.2: Reversion

- When I2RS state is removed, the routing element's state goes back to what it would have been without I2RS.
 - No storing or reverting to state from clients
 - Not modeled like the RIB
- Plan to add (per Joe Clarke's email): client can request to be notified when its state is removed (if not requested by the client).

6.9 Transactions

- Single message atomicity – no multi-message
- Simple error-handling for set of operations in message
 - Perform all or none
 - Perform until error
 - Perform all
- Explicit replies for modification operations

I2RS and Routing Components

- Architecture briefly mentions
 - Unicast and Multicast RIB and LFIB
 - IGPs, BGP, and Multicast Protocols
 - MPLS
 - Policy and QoS Mechanisms ([more discussion](#))
- Idea is to give a sense of scope without use-cases or full justification or details.

[Is more detail needed?](#) [Is less?](#)

Next Steps

- In Call for WG Adoption – ends Aug 12
- Some reasonable comments on clarifications and word-smithing
 - Will respond to on-list
- Please discuss other concerns and thoughts about this draft now.
- Would like to see it progress *very very* rapidly
 - WG milestone **July 2013** - Request publication of an Informational document defining the high-level architecture