

RIFT Key-Value Registry

draft-ietf-rift-kv-registry-07

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What's new in version 7?

- **Key Targets**

- Key Targets optionally identify group(s) of node(s) that are intended to receive specific KV-TIEs.
- We do this by using 64-bit Bloom filters.
 - We also defined the hashing algorithm for deriving Key Target values.
- They are optional and fully backwards compatible.
 - Default behavior is to always flood.

How do Key Targets work?

- **Key Target values and flooding**
 - All 0s: Flood to all nodes.
 - All 1s: Flood to all leaf nodes.
 - Other values will be derived by using the normative hashing algorithm.
- **Processing Key Targets only applies to South KV-TIEs.**
 - Northbound LSDB needs to maintain full view of everything south.
 - Key Target **MUST NOT** be present on North KV-TIEs.
 - Key Target values **MUST** be preserved when re-originating southbound.

How do Key Targets work?

- **Purging and rollover**

- Several scenarios may cause a node to select a new KV-TIE.
 - The sequence number increments.
 - There was a change in the original tie-breaking result.
 - There was a loss of northbound connectivity to the node holding the previously selected KV-TIE.
- This makes for interesting considerations when nodes are no longer included in a given Key Target. Especially in the case of leaf nodes.

How do Key Targets work?

- **Purging and Rollover**

- Consider a case where KT1 includes Node-1, Node-2, and Node-3 all of which hold KV-TIE-1 in their LSDB.
- If Node-2 is no longer included in KT1 then in cases where KV-TIE-1 needs to be updated, Node-2 will be stuck holding the older instance of it until the lifetime expires.
- This could lead to suboptimal behavior.

How do Key Targets work?

- **Purging and Rollover**

- How do we address this?

- “If the new KV-TIE being flooded *does not* include the previous Key Target value, then implementations SHOULD flood the newer instance of the KV-TIE with a very short lifetime to nodes that belonged to the *previous* Key Target *but not* the new Key Target.”

What's next?

- Field any comments/questions related to Key Targets.
- IANA housekeeping, specifically that they want things like unreserved ranges to be explicitly defined as “available”.
- This document is dependent upon the RIFT base spec.
 - The RIFT Base Spec creates the top-level IANA registry that will be used for the normative RIFT schema.
 - The RIFT Key-Value draft will then be able to make reservations under that.

Thanks