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