What is Flood Reflection?

• We all know that **flat single area** IGPs can come with some pitfalls.
  
  • **Flooding** – every node needs to know.
  
  • **State** – every node needs to remember.
  
  • **Convergence** – every node needs to compute.

• Major scaling improvements to these with IS-IS Flood Reflection.

What is Flood Reflection

- Flood Reflection, like RIFT is well suited to Clos topologies.

- RIFT builds the “underlay”.

- Auto-Flood Reflection will use RIFT ZTP / LIE FSM to build the Flood Reflection topology.
Where does RIFT come in?

• Loopback Address

• ISO System ID

• Network Entity Title

• Flood Reflector Cluster ID
Let’s visualize the whole solution.

1. RIFT’s ZTP process derives each node’s level.
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2. RIFT FSM helps to derive Flood Reflection roles and variables.
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1. RIFT’s ZTP process derives each node’s level.

2. RIFT FSM helps to derive Flood Reflection roles and variables.

3. IS-IS adjacencies come up and form the final Flood Reflection topology.
What’s new in this version?

• **New sections clarifying ISO address derivation:**
  - IS-IS System ID derivation.
  - IS-IS NET derivation.

• **New section describing Auto-Flood Reflection extensions to RIFT:**
  - FSM / LIE validation clause.
  - Node-TIE advertisements.
  - Applicable schema updates.
What’s new in this version?

• **New section describing ToF Flood Reflector preference value.**
  • Updated Flood Reflector Election procedures to factor in preference.

• **Auto-Flood Reflection Telemetry / Key-Value TIEs**
  • Clarified normative language.
  • Aligned ”IANA Considerations” section to conform to RIFT Key-Value Registry requirements.
ISO Address Derivation

- Flood Reflection Cluster ID
- RIFT System ID
RIFT Extensions

• A new structure that better organizes the required RIFT extensions:
  • Auto-Flood Reflection Version
  • Auto-Flood Reflection Cluster ID
  • Auto-Flood Reflection Preference Value

• ...and any correlated functional changes:
  • FSM / LIE validation for interoperability purposes.
  • Flood Reflector election procedures.
  • Node-TIE advertisement requirements.
Single Plane Flood Reflector Election

• **Previous Election Procedures:**
  1. Highest SID
  2. Lowest SID
  3. 2\textsuperscript{nd} highest SID
  4. 2\textsuperscript{nd} lowest SID

• **New Election Procedures:**
  1. Highest SID w/ highest Preference
  2. Lowest SID w/ highest Preference
  3. 2\textsuperscript{nd} highest SID w/ highest Preference
  4. 2\textsuperscript{nd} lowest SID w/ highest Preference
Key/Value TIEs

• Lots of normative language clarifications. Basically, it says that you don’t have to carry everything if you don’t want to.

• IANA Considerations section now properly aligns with requirements for Key/Value registry requests.
What’s next?

• We’re requesting working group adoption.

• Multiplane considerations.
Thanks