draft-xu-idr-neighbour-autodiscovery-10

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Update

• Draft was presented at IETF 102 and actively discussed/debated at the mike and on the mailers

• Chairs express the need to have requirements documented before work can be progressed

• Draft now updated to include
  • Applicability
  • Requirements

• Scale improvements introduced

• Adjacency FSM and Procedures specified in further details
Applicability

- Where BGP is used as a hop-by-hop routing protocol e.g. in DCs based on RFC7938 design (or its variations)
- Not applicable for generic BGP deployments
Key Requirements

• Discovery of directly connected BGP neighbors over IPv4 and/or IPv6; agnostic to link layer

• Automatic bootstrapping of BGP TCP session by learning peering addresses; no change to BGP TCP FSM or BGP routing procedures

• Automatically setup reachability to neighbors peering address (e.g. loopback) when necessary

• Exchange link attributes & parameters between neighbors for topology discovery/advertisement and validation of link & peering policy

• Leverage existing fast-detection mechanisms (e.g. BFD, FEF, etc.)

• Security

Simplicity = do only what is needed & missing; leverage what exists
Updated Hello Message

• Periodic Hello: skip most TLVs (except security) for better scalability and simplified processing

• State Change Hello: carry TLVs and used only during initial discovery and subsequently when there is any change in state
Updated Adjacency State Machine

• Down
  • Transient terminal state after which adjacency is deleted

• Initial
  • Transient initial state when adjacency is created for new neighbor

• 1-way
  • When router detects a neighbor and includes it in its own hello message, but the neighbor has not yet detected it

• 2-way
  • When the router and its neighbor have both detected each other’s hello messages

• Adj-Reject
  • When the router rejects its neighbour due to failure of some validation checks based on local policy

• Adj-OK
  • When the router has accepted its neighbour after validation against local policy

• Accepted
  • When both router and its neighbour have accepted each other; and the BGP TCP Peering is initiated
Procedures

• Draft specifies the Adjacency FSM state transitions and events/triggers in detail
• Also specifies the procedures for handling of hello messages (both state change and periodic)
• Includes clarifications and details on interactions with the BGP TCP peering session
• Updated text to describe the handling of the Adjacency Route (i.e. the locally installed route for reachability to neighbor’s loopback)
Next Steps ...

- Active interest for implementation
- Solicit WG review and comments/inputs/feedback for the updated revision
- Re-do WG adoption call?