Upcoming BGP Changes
in response to Operator requests

IDR-chairs

IETF 82

Types of Errors

- Do you desire to change basic Error processing?
  - Question: Poor service or No service
  - RFC 4271: No service on error: "Drop" if error"
  - New: Poor service rather than "No Service"
    - Keep going with Error in Ribs
    - Add Monitoring, Route Refresh of peers , Add 1-Time RR filters

- IETF Operational Docs
  - Requirements for BGP error handling

    Grow-ops-reqs-bgp-error-handling-01

Problems with Poor instead of "No Service"

- BGP
  - Junk can hang on
  - Clear reset and flush avoids long-term errors

- Restoring health
  - Limit to affected NLRIs
  - Limit to RIB
  - If nothing else, session reset

Errors with "Treat as withdraw"

- e-bgp – two cases
  - Prefix in Adj-Rib-In of neighbor is use in Global RIB that forwards
  - Not in use
  - Potential issues with e-bgp treat as withdrawn are: Inconsistent BGP tables, L3 VPNs (BGP), L2 VPN end-points, BGP MAC VPNS

- i-BGP case
  - Use of "treat-as-withdraw" may cause routing loops
  - Operators state: Better than AFI shutdown

How to Recovering RIBs

- Ways
  - Refresh RIB in IBGP/EBGP
  - Partial one-time-filters
    - Zeng-one-time-prefix-orf
    - Enhanced RR
    - Timer based GR with no DROP
    - EOR flags
  - Thread RIB by "this was withdraw/ AS" but I kept it

Existing and ready

New & complex

Call to Operators

- Final Call for operators for input on requirements for Error/Monitoring

- IDR will open work on Error / Monitoring specification
  - Grow-ops-reqs-bgp-error-handling-01
  - Draft-ietf-grow-bmp-01

- Catch your window for change now

Future

- IDR will take on Graceful Restart / Graceful Shutdown next

- Requirements
  - Requirements for Graceful Shutdown [RFC 6198]
  - MED considerations [RFC 4451]

Q&A

Operational Toolset

- Message to replace notification
  - I got broken prefixes [prefix, number, what?]
  - I over my broken prefix limit – hit me with a RR
  - It's so broken I'm going to drop AFI
- Diagnostic
  - Razuk-bgp-diangositc
  - Idr-advisory
  - Grow-BMP
- Comments on Queueing
  - Are we requiring separate queue for messages
  - Do we augment keepalive
  - In-band/snmp/other

grow-ops-reqs-for-bgp-error-handling

- Error handling
  - Syntax check: error length check
  - Valid parsing NLRIs
    - NLRI, MP-REACH, MP-UNREACH OK
  - Validate Path Attributes
    - Bad Flags
    - Opt/Transitive Broken
      - Use Neighbor Complete Flags
    - Well Known broken

Need picture here