Multisession Refresher

• Facilitates establishment of multiple BGP sessions between a pair of speakers
  – Based on AFI/SAFI or other criteria

• Why
  – Finer-grained fault management and isolation
  – Management of control plane resource contention between services

• Mechanism
  – Revise rules for exchanging OPEN messages
  – Backward-compatible with 4271
Problems With Version -03

• draft-ietf-idr-bgp-multisession-03 has no means of telling peer an alternate port number to use
  – This severely hampers ability to use multiple BGP daemons since handing off an open TCP session is not straightforward
Proposed Solution

• Active speaker has no problem — the appropriate BGP process initiates the connection

• Allow passive speaker to request a redirect to a new port number
Operation in -03

• BGP process on active speaker sends an OPEN including Multisession capability and other capabilities such as MP-BGP
• Passive speaker analyzes OPEN, replies with its own
  – Any handoff between BGP processes on passive speaker must be done “under the covers”
Example of -03 Operation

- OPEN 1/1
  (Session for AFI/SAFI 1/1 is established)

- OPEN 2/1
  (Session for AFI/SAFI 2/1 is established)

- Hand off connection somehow

- OPEN 2/1
Changes

• Update Multisession Capability to add the “(R)edirect” bit
  – If R bit is set, a port number follows
• Only passive speaker may send R bit
  – Because active speaker has no problem
• Active speaker the drops the connection, reconnects to the specified port
Example of -04 Operation

Active (1)
OPEN 1/1
(Session for AFI/SAFI 1/1 is established)

Active (2)
OPEN 2/1
OPEN 2/1

Passive (1)
OPEN 1/1
Redirect (2)

Passive (2)
OPEN 2/1
(Session for AFI/SAFI 2/1 is established)
Other Changes

• Two new error codes
  – “Redirecting Now” for active speaker to orderly close session before opening the new one
  – “Redirect Required” for passive speaker to complain if active speaker failed to redirect

• Plus editorial improvements
Backward Compatibility

- Redirection is optional — encoding is not changed if it’s not used
- Current deployment is restricted anyway
  - Likely due in part to issue mentioned in problem statement
Comparison to Transport Instance BGP (TI-BGP) Proposal

• Both: different sessions over different port numbers between different BGP daemons

• TI-BGP divides BGP into two classes
  – Or some a priori fixed number

• Multisession allows any number of classes

• In computing, the answer is usually 0, 1, or N. Usually not 2.
Next Steps

• Implementation experience with -04
• Then iterate or advance spec