• We will split the draft into two separate documents
  – One for FSM Error Subcode
  – One for Session Information Capability

• This presentation is mainly about FSM Error Subcode
Problem Statement

- Subcodes for Cease have been defined in RFC 4486
- Currently there is no subcode for BGP Finite State Machine Error
- Different problems can be notified as FSM Error
  - Receive unexpected message in particular FSM state
  - Some problem of underlying TCP connection
  - ...
- Introduce FSM Error Subcodes will provide more detailed information and help fault diagnosing
BGP FSM Subcode

• Receive unexpected message
  – Subcode 1: Receive unexpected message (Keepalive/Update/Route-Refresh) in OpenSent State
  – Subcode 2: Receive unexpected message (Open/Update/Route-Refresh) in OpenConfirm State
  – Subcode 3: Receive unexpected message (Open) in Established State
  – Type of received unexpected message is carried in the Data field of Notification
BGP FSM Subcode (Cont.)

• **Subcode 4: TCP Related Error**

  - Some problem in R1’s TCP: connection closed without sending a FIN
  - R2 will experience “Holdtimer Expires” event, but does not know the root cause
    - Problem of BGP session? Or,
    - Problem of underlying connection?
  - It is helpful for R2/operator to know this is a TCP related fault
    - Fault diagnosing
    - Improve performance of BGP
Part 2 - Session Information Capability

Is this a problem?

• Information about TCP related error cannot be sent to peer, because the connection is already down
Q&A
Next Steps

• Split current draft into two drafts
• Comments & feedbacks from IDR
• Improve the drafts
BGP Session Information Capability

• One possible way to notify TCP related error
  – Capability Code: TBA
  – Length: variable
  – Value: one or more informational entries
    • A generic tool to carry session information

• Currently defined information type
  – BGP Session Last FSM Flap Cause
    • Mainly for error notification that cannot be advertised before underlying connection down
  – BGP Peer/Speaker Description
    • Can be used for BGP peer address - description mapping
    • Less manual configuration