BGP Monitoring Protocol (BMP)

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Draft Information

- Draft-scudder-bmp-01.txt
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What Is It?

- A way for a monitoring station to get a complete dump of the routes received from a peer or peers (including all peers)
- And to get ongoing updates about all routes received from that peer or peers
- Currently, this information is only available by some variation on “show route” and parsing ASCII (“screen scraping”)
- Useful for looking glasses, network analysis, etc.
History

- **Draft-scudder-bmp-00 submitted in 2005**
  - Turned out to be too hard to implement (despite best intentions!)
  - Set aside

- **Renewed interest recently**
  - New approach, provides similar benefits in an implementable fashion
  - Implementation has been done (lab only at present)
Why Not Use Plain BGP?

- BGP only provides *best* paths
- BMP provides *all* paths
Overview of Operation

- Router configured with management station identity, list of peers of interest (could be all peers)
- Connects to management station, sends initial dump of all routes for those peers
  - Formatted as BGP UPDATE messages wrapped in a BMP header
- As peers advertise/withdraw routes, sends additional updates to management station
Information Provided

- In addition to usual BGP UPDATE information, BMP header has
  - Peer identity (address, BGP Identifier, RD if applicable, AS number)
  - Time stamp (when route or route withdrawal was received, microsecond granularity)
Statistics Reporting

- Pro-actively report stats of interest
  - Threshold or timer driven
  - Optional
- Defined counters:
  - Prefixes rejected by inbound policy
  - Duplicate prefix advertisements
  - Duplicate withdraws
  - Updates invalidated due to CLUSTER_LIST loop
  - Updates invalidated due to AS_PATH loop
- Stats message is extensible (TLV) to add new counters
Peer Notification

- Notification message sent when peering session goes down
- Includes BGP NOTIFICATION data, if any
Characteristics

- **BMP messages are not bit-for-bit clones of received UPDATES**
  - Messages are regenerated according to usual BGP UPDATE generation logic
  - However, data is taken from Adj-RIB-In, not Loc-RIB

- **Implications**
  - Not every received UPDATE will necessarily result in a BMP message being sent
    - During busy times, some UPDATEs might be suppressed if obsoleted by newer UPDATEs
  - However, BMP messages will generally be the same as or very close to received UPDATES

- **BMP will converge to the correct set of routes**
Summary

- Allows a management station to track routes received from one or more peers
  - Even routes which are not “best”
- Updates not “cloned” but regenerated
- Also provides some convenience counters
- Not suitable for use as a routing protocol
- Implementation works in lab
Next Steps

- Re-adopt as GROW WG Item?