

BMP Extension for Path Status TLV

draft-ietf-grow-bmp-path-marking-tlv-03

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Overview

- TLV option to convey path status in a BMP update
- An optional reason field is included for extra information.

| Value | Path Type |
|--------------|-----------------------------|
| 0x00000001 | Invalid |
| 0x00000002 | Best |
| 0x00000004 | Nonselected |
| 0x00000008 | Primary |
| 0x00000010 | Backup |
| 0x00000020 | Non-installed |
| 0x00000040 | Best-external |
| 0x00000080 | Add-Path |
| 0x00000100 | Filtered in inbound policy |
| 0x00000200 | Filtered in outbound policy |
| 0x00000400 | Stale |
| 0x00000800 | Suppressed |

Diffs from previous version

- Extended implementation notes
- Added note on churn
- Added security considerations
- Editorial, formatting, and other minor improvements

Use cases for BMP path marking

Use cases for BMP path marking

- Let's explore how differentiating route states can enhance network operation using use cases
- Counters may be available via BMP statistics, YANG models, or CLI, but they are not sufficient for all use cases.
 - See the difference between network monitoring and observability in [draft-ietf-nmop-terminology](#)

Treat-as-withdraw/Malformed routes

- Not within the BMP path marking scope
- For details, we could use route mirroring

BMP Markings at Adj-RIB-In

- “Invalid routes” (e.g. unreachable Next hop, AS-loops):
 - Troubleshooting
 - They can be marked as “invalid”, and a specific reason can be provided via the reason field
 - They should come from Adj-RIB-in-pre

BMP Markings at Adj-RIB-In

- Filtered by inbound policy:
 - Troubleshooting, policy verification, observability
 - They should come from Adj-RIB-In-pre
- Accepted prefixes:
 - Troubleshooting, policy verification, observability
 - They can come from Adj-RIB-In-post, or Adj-RIB-In-pre when markings are available

BMP Markings at Loc-RIB

- Best: Useful for troubleshooting, policy verification, observability. In simple scenarios this is the single path that is used for forwarding
- Primary: Useful for scenario modelling, policy verification and observability, to identify what paths are used for forwarding.
- Backup: Useful for what-if analysis tools
- Best-external: Useful for what-if analysis tools
- Non-installed and nonselected: Troubleshooting
- Stale and suppressed: Troubleshooting

BMP Markings at Adj-RIB-Out

- Filtered by outbound policy:
 - Troubleshooting
 - Adding Reason to these can be complicated
 - They should come from Adj-RIB-Out-pre
- Announced prefixes:
 - Troubleshooting
 - From Adj-RIB-Out-post, or Adj-RIB-Out-pre if markings are available

Comments/Questions