



BMP: the *pa amb tomàquet* that your BGP monitoring was missing

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Pretty ubiquitous protocol:

- Internet connections
- L2 / L3 VPNs
- DC interconnect
- Battleship! (*)
- ..

(*) <https://blog.benjojo.co.uk/post/bgp-battleships>

“If you run it, it’s good idea to monitor it!”

Anonymous ancient Network Philosopher

Scales great

Hides better

BGP monitoring before BMP

Adj-Rib-In -> Screenscraping

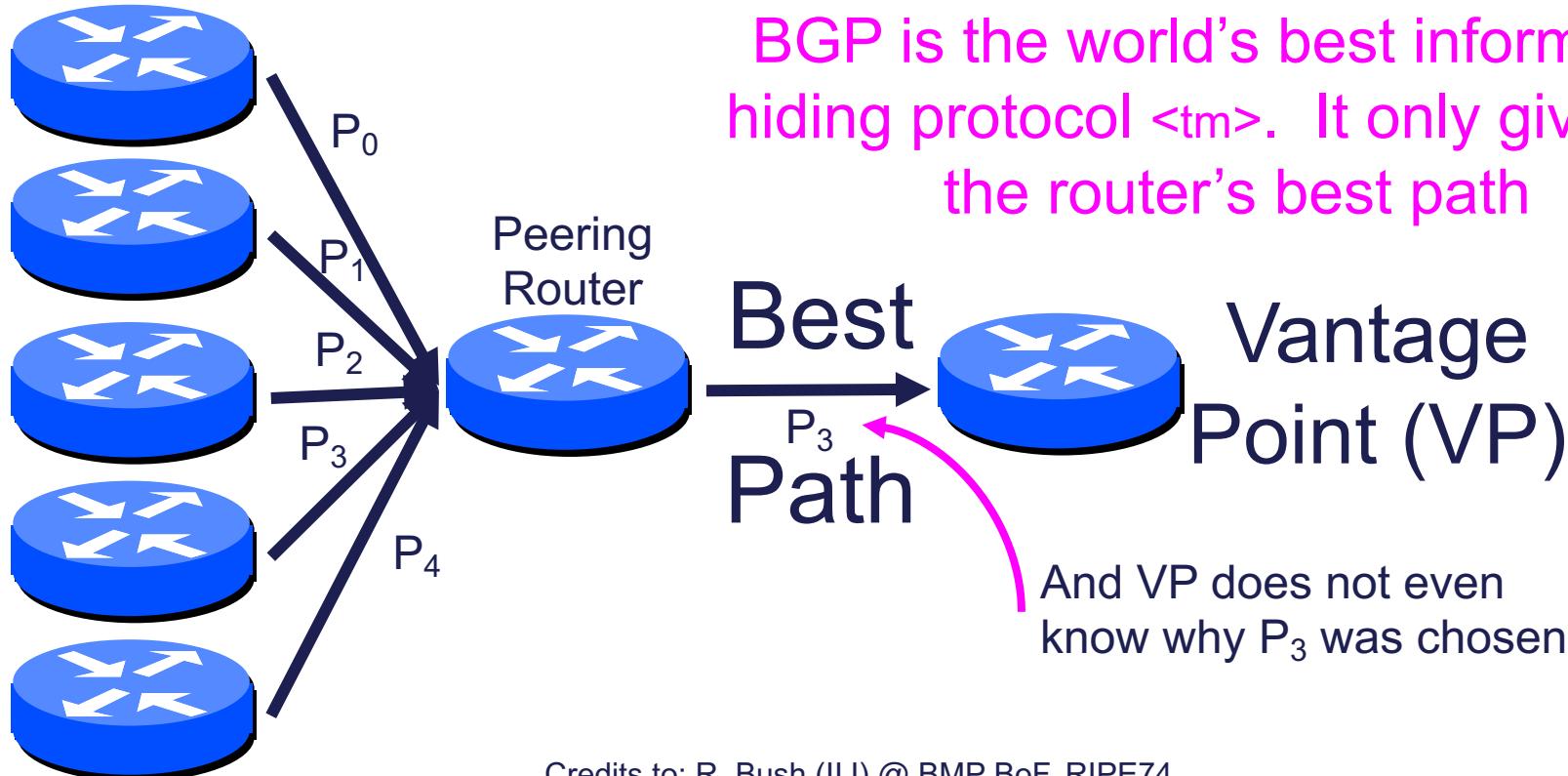
Loc-RIB -> BGP Peering

Adj-Rib-Out -> Screenscraping

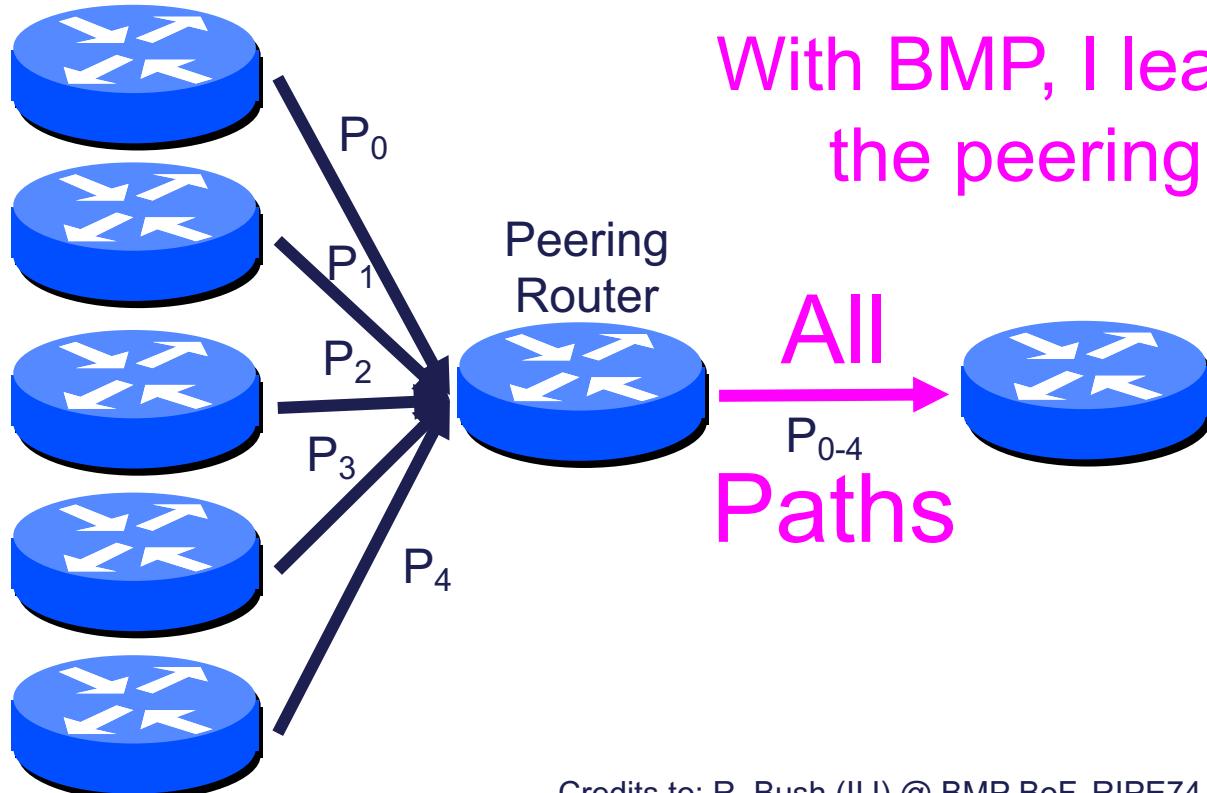
- BGP Monitoring Protocol
- RFC 7854:
 - First draft in 2008, sparse work until 2012
 - Stall between 2012 and 2015
 - Real traction kicks in: 10 drafts between 2015 and 2016
 - Became an RFC in Jun 2016
- Uncomplicated protocol design
- Great effort but:
 - .. Industry evolved in all these years
 - Increased hunger for data



Traditional BGP Monitoring



Traditional BGP Monitoring

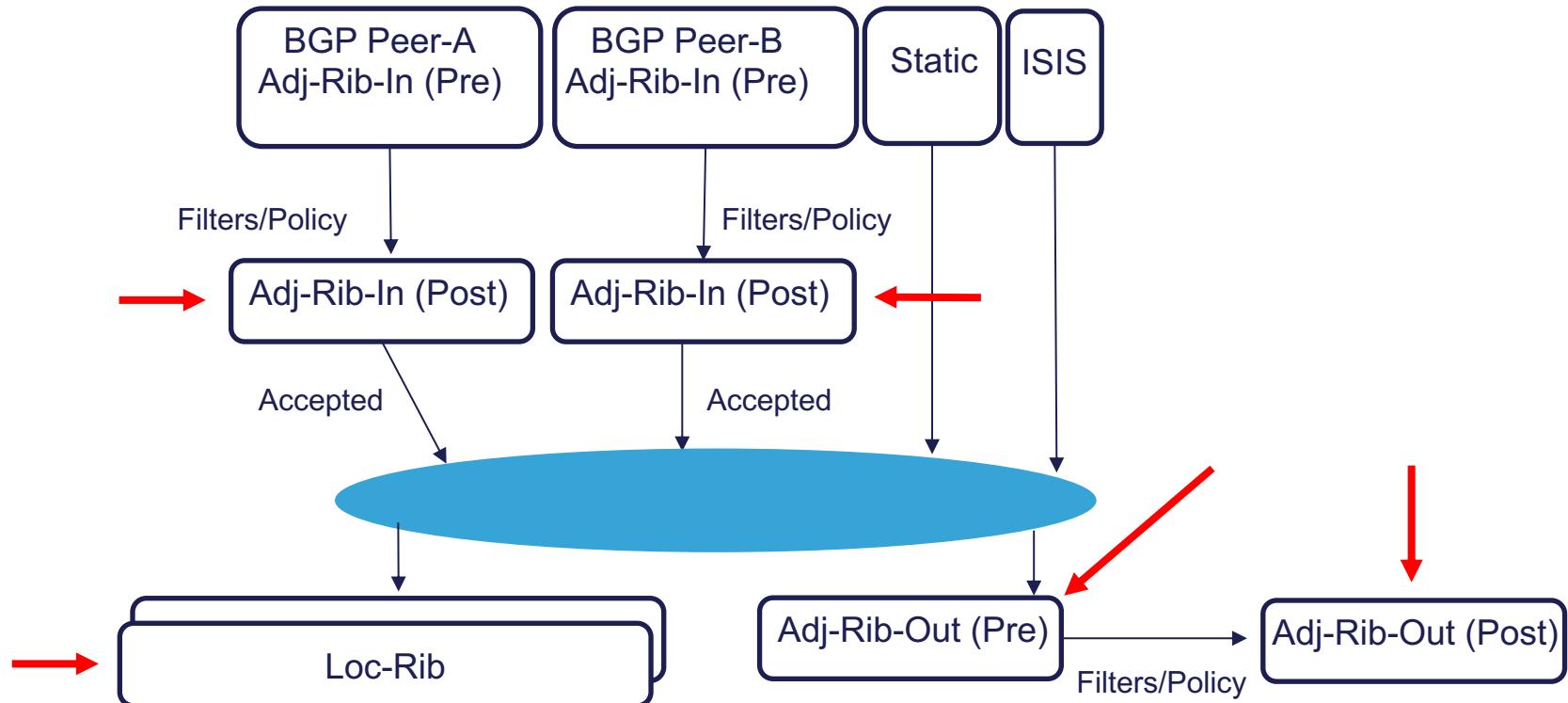


With BMP, I learn all the paths
the peering router heard

All
Paths

Credits to: R. Bush (IIJ) @ BMP BoF, RIPE74

Standardized BMP vantage points in 2023



Credits to: T. Evens (Cisco), S. Bayraktar (Cisco), P. Lucente (NTT) @ GROW WG, IETF 98

Standardized BMP message types in 2023

- Type 0 = Route Monitoring
- Type 1 = Statistics Report
- Type 2 = Peer Down Notification
- Type 3 = Peer Up Notification
- Type 4 = Initiation Message
- Type 5 = Termination Message
- Type 6 = Route Mirroring

BMP: Ongoing work in a nutshell



Include optional TLVs for all BMP messages

Workgroup: Global Routing Operations
Internet-Draft: draft-ietf-grow-bmp-tlv-13
Updates: [7854](#) (if approved)
Published: 23 October 2023
Intended Status: Standards Track
Expires: 25 April 2024

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BMP v4: TLV support for BMP Route Monitoring and Peer Down Messages

Abstract

Most of the message types defined by the BGP Monitoring Protocol (BMP) make provision for data in TLV format. However, Route Monitoring messages (which provide a snapshot of the monitored Routing Information Base) and Peer Down messages (which indicate that a peering session was terminated) do not. Supporting (optional) data in TLV format across all BMP message types allows for a homogeneous and extensible surface that would be useful for the most different use-cases that need to convey additional data to a BMP station. While it is not intended for this document to cover any specific utilization scenario, it defines a simple way to support TLV data in all message types.

Extend BMP to include enterprise bit

Workgroup: Global Routing Operations

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Internet-Draft: draft-ietf-grow-bmp-tlv-ebit-03

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Updates: [7854](#) (if approved)

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Published: 24 July 2023

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Expires: 25 January 2024

Support for Enterprise-specific TLVs in the BGP Monitoring Protocol

Abstract

Message types defined by the BGP Monitoring Protocol (BMP) do provision for data in TLV - Type, Length, Value - format, either in the shape of a TLV message body, ie. Route Mirroring and Stats Reports, or optional TLVs at the end of a BMP message, ie. Peer Up and Peer Down. However the space for Type value is unique and governed by IANA. To allow the usage of vendor-specific TLVs, a mechanism to define per-vendor Type values is required. In this document we introduce an Enterprise Bit, or E-bit, for such purpose.

Path Marking TLV

Workgroup: Network Working Group

Internet-Draft:

[draft-ietf-grow-bmp-path-marking-tlv-00](#)

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BMP Extension for Path Status TLV

Abstract

The BGP Monitoring Protocol (BMP) provides an interface for obtaining BGP Path information. BGP Path Information is conveyed within BMP Route Monitoring (RM) messages. This document proposes an extension to BMP to convey the status of a path after being processed by the BGP process. This extension makes use of the TLV mechanisms described in [draft-ietf-grow-bmp-tlv \[I-D.ietf-grow-bmp-tlv\]](#) and [draft-ietf-grow-bmp-tlv-ebit \[I-D.ietf-grow-bmp-tlv-ebit\]](#).

REL – Route Event Logging in BMP



Workgroup: Global Routing Operations

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Internet-Draft: draft-luente-grow-bmp-rel-03

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Updates: [7854](#) (if approved)

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Expires: 25 April 2024

Logging of routing events in BGP Monitoring Protocol (BMP)

Abstract

The BGP Monitoring Protocol (BMP) does provision for BGP session event logging (Peer Up, Peer Down), state synchronization (Route Monitoring), debugging (Route Mirroring) and Statistics messages, among the others. This document defines a new Route Event Logging (REL) message type for BMP with the aim of covering use-cases with affinity to alerting, reporting and on-change analysis.

BMP Yang Model



Workgroup: GROW

Internet-Draft: draft-ietf-grow-bmp-yang-02

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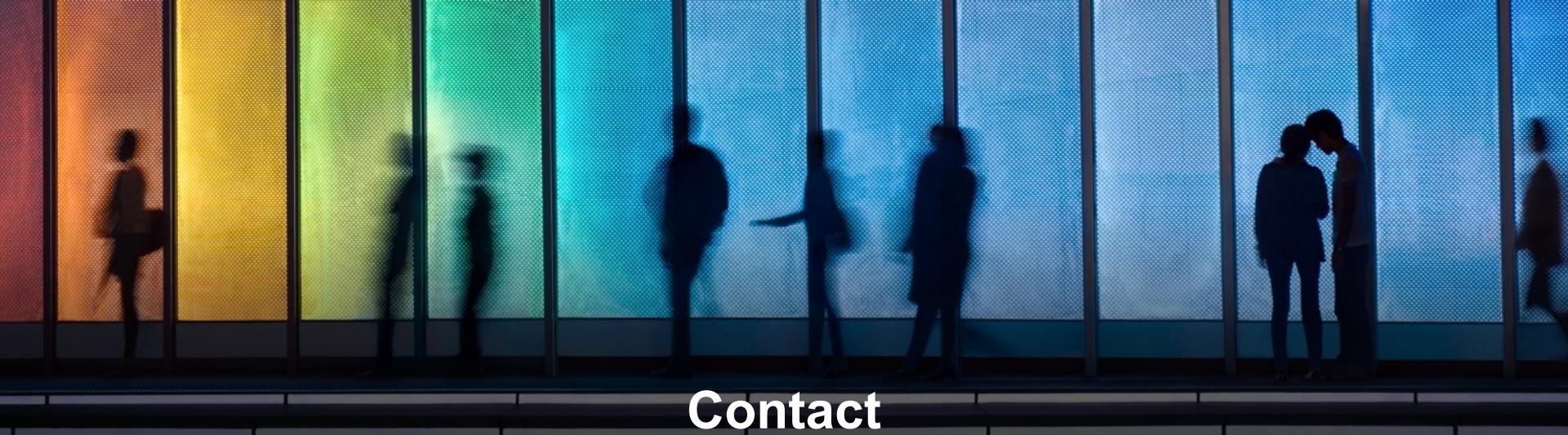
BMP YANG Module

Abstract

This document proposes a YANG module for the configuration and monitoring of the BGP Monitoring Protocol (BMP).

Take aways

- BMP streamlines access to richer BGP data
- All major router vendors support it
- Commercial and open-source collectors exist
- We do use BMP in NTT GIN
- IETF is also you, participate!



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