BMP in MRT

draft-petrie-grow-mrt-bmp

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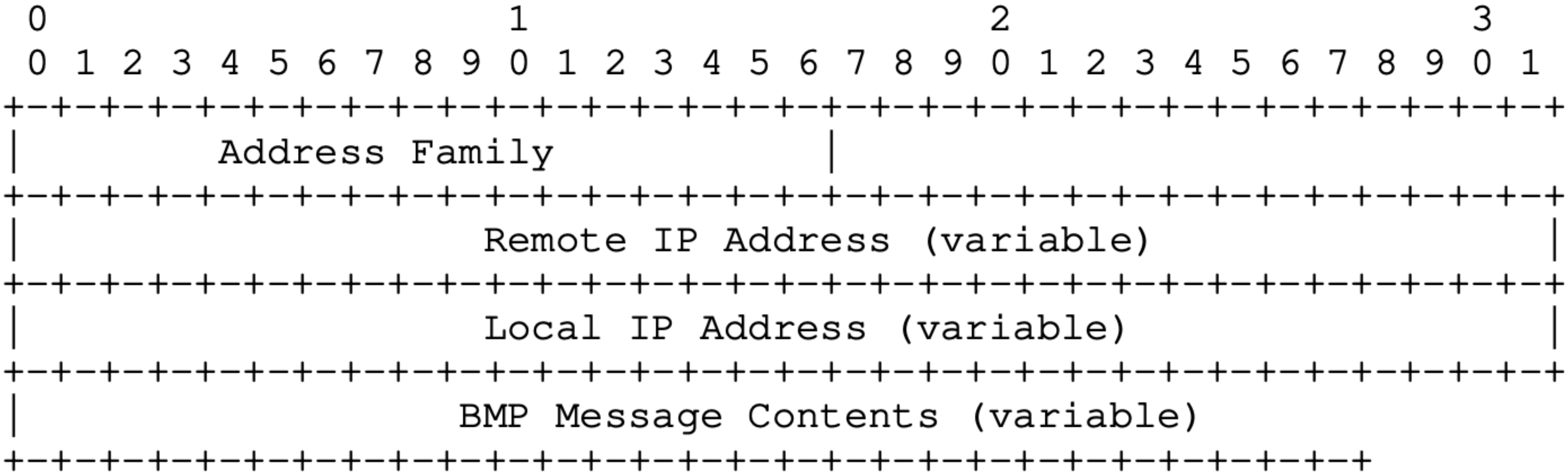
AKA: there is no spec for capturing/storing BMP messages

- Can we re-use?
- MRT (RFC6396) – existing standard for storing routing protocol transactions
  - Well supported, lots of BGP archive data (public and private)
- MRT supports Type codes, define new type codes for BMP?

First draft: draft-petrie-grow-mrt-bmp

- Simply encapsulate the BMP message in an MRT header



```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|        Address Family           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                   Remote IP Address (variable)                |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                   Local IP Address (variable)                 |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                  BMP Message Contents (variable)
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Figure 1

Stateless parsing

- MRT files are usually stateless, and split into files per time-interval
  - E.g. start a new file every 5 mins
- This means each message must contain enough information about the encoding of the BGP update PDUs
- Examples:
  - AS4
  - Add-path

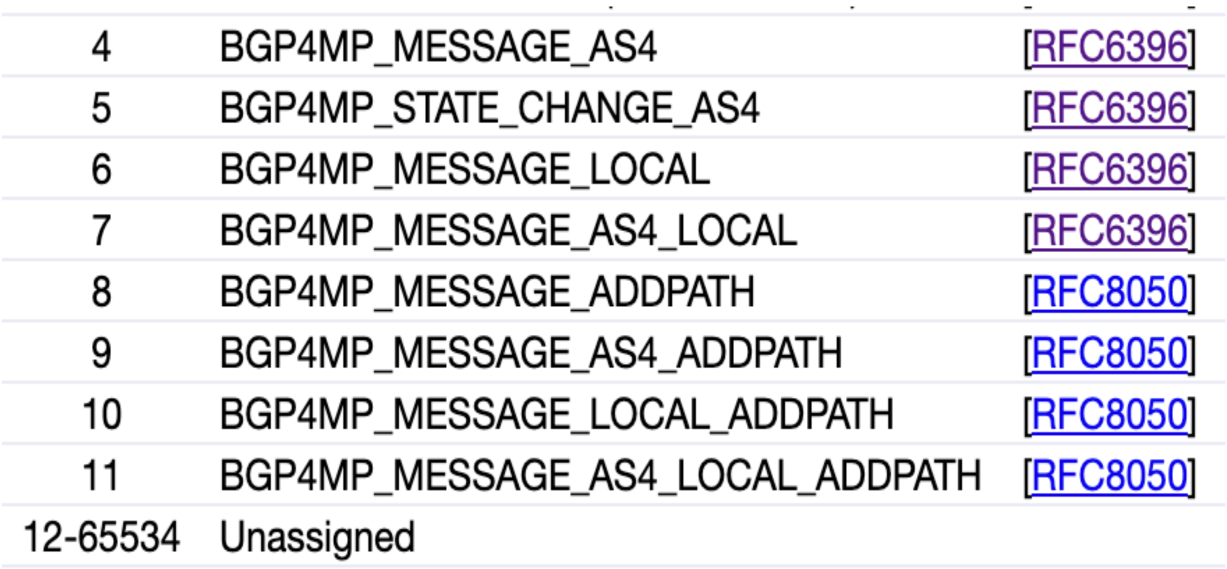
Which entity would be responsible for ensuring the messages can be independently parsed?

- The BMP sender?
  - Needs full TLV support - draft-ietf-grow-bmp-tlv
  - TLVs are currently still optional
  - Should they be mandatory in BMPv4?
  - Should this draft specify only for BMPv4?
  - Then the BMP receiver can just record the incoming message, MRT type is simple.

- The BMP monitoring station?
  - Needs to add additional MRT header information, for the MRT parser
  - MRT header needs extra encoding information

Existing MRT BGP4MP type example

- MRT Type: BGP4MP
- MRT Subtype:
  - Listing all permutations of encoding types
  - 2, 4, 8 (current number)
  - 16 bit subtype space
    - 12 more permutations left
  - GROW needs to play catch-up with IDR BGP capabilities that change the wire encoding



4	BGP4MP_MESSAGE_AS4	[RFC6396]
5	BGP4MP_STATE_CHANGE_AS4	[RFC6396]
6	BGP4MP_MESSAGE_LOCAL	[RFC6396]
7	BGP4MP_MESSAGE_AS4_LOCAL	[RFC6396]
8	BGP4MP_MESSAGE_ADDPATH	[RFC8050]
9	BGP4MP_MESSAGE_AS4_ADDPATH	[RFC8050]
10	BGP4MP_MESSAGE_LOCAL_ADDPATH	[RFC8050]
11	BGP4MP_MESSAGE_AS4_LOCAL_ADDPATH	[RFC8050]
12-65534	Unassigned	

New MRT type for BMP – BGP encoding options

- If information about BGP encoding needs to be in MRT:
  - do we use the same mechanism as BGP4MP and use subtypes permutations?
  - Ignore subtype field, add some new extra header fields in this type, to represent encoding methods or capabilities per-message?
    - Ideas? How would this look? Like BMP TLVs but in the MRT header?

- What if the encapsulated BMP message contains a TLV that doesn’t match the MRT-indicated encoding? ☺

Thoughts/Ideas

- Trying to avoid potential future issues
- But we haven’t run out of permutations yet (3 out of 15)
    - Stop trying to overengineer the problem?

- Define the entity with responsibility for ensuring correct encoding information
- Avoid altering received message where possible – capture as-is

Questions? Rotten Tomatoes? Adopt? Co-authors?

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