Monitoring BGP Parameters Using BMP

draft-zhuang-grow-monitoring-bgp-parameters-00

Shunwan Zhuang, Yunan Gu, Zhenbin (Robin) Li
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Motivation

- **BGP optional parameters**
  - The BGP Open Message reported to BMS contains only the currently enabled capabilities at the monitored device.
  - If all the supported capabilities of the monitored devices, both the enabled and not yet enabled ones, are informed to the BMS, the BMS can use the more comprehensive and valid inputs to make decisions about the whole network optimization.

- **BGP default behaviors**
  - As one of the concerns from the operators, that in multi-vendor environment, some default configurations or behaviors of devices are vendor-specific, and may cause various issues during the interoperation test or any time after.
  - Take the protocol preferences (distance) of different BGP routes for example:
    - Vendor A assigns value 255 to eBGP, iBGP and BGP local routes by default,
    - Vendor B assigns 20 to eBGP, 200 to iBGP and 200 to BGP local routes by default.
    - In addition, value 255 is not recognized by vendor B, and routes assigned such distance would be ignored.
The initiation message provides a means for the monitored router to inform the monitoring station of its vendor, software version, and so on.

The initiation message consists of the common BMP header followed by two or more Information TLVs containing information about the monitored router. Currently defined types are:

- Type = 0: String.
- Type = 1: sysDescr.
- Type = 2: sysName.

This document defines two new categories of TLV types:

- Type = TBD1: BGP Optional Parameters.
- Type = TBD2: Default Behavior Parameters.
BGP Optional Parameters TLV

- The Information field is used to specify all the BGP Optional Parameters that have been enabled or not yet enabled at the monitored device.
- Each optional parameter is encoded as a <Parameter Type, Parameter Length, Parameter Value> triplet, as defined in RFC 4271 [RFC4271].

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
| Parm. Type   | Parm. Length   | Parameter Value (variable) |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
```

Figure 1 BGP Optional Parameters Information TLV
BGP Default Behavior Parameters TLV

- The Information field contains **a list of default behavior parameters**, in which each parameter is encoded as a Default Behavior sub TLV `<Default Behavior Type, Default Behavior Length, Default Behavior Value>`, which is defined as follows:

```
+-----------------+-----------------+-----------------+
| 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 |
| Default Beh. Type   | Def Beh. Length   |
| +-----------------+-----------------+
| Default Beh. Value (variable) |
+-----------------+-----------------+
```

**Figure 2 Default Behavior sub TLV**

- Type = TBD3, (32-bit integer) Value of default Protocol Preference for Local route
- Type = TBD4, (32-bit integer) Value of default Protocol Preference for EBGP route
- Type = TBD5, (32-bit integer) Value of default Protocol Preference for IBGP route
- Type = TBD6, (32-bit integer) Value of default BGP connect-retry timer time
- Type = TBD7, (32-bit integer) Value of default BGP Keepalive time
- Type = TBD8, (32-bit integer) Value of default BGP hold time
- Type = TBD9, (32-bit integer) Value of EBGP route-update-interval
- Type = TBD10, (32-bit integer) Value of IBGP route-update-interval
- Type = TBD11, (32-bit integer) Value of Default local-preference
- Type = TBD12, (32-bit integer) Value of Default MED
Next Steps

- Close the existing comments
- Solicit more comments, feedback from WG
Thank you !