BGP Route Policy and Attribute Trace Using BMP

draft-xu-grow-bmp-route-policy-attr-trace-00

Feng Xu, Tencent
Yunan Gu, Shunwan Zhuang, Zhenbin Li, Huawei

Mar. 24, 2019
Motivations

- Route monitoring
  - BMP, RouteViews, RIPE RIS...
- Policy monitoring
  - Netconf, gRPC, CLI...
- Correlated route and policy monitoring?
  - Coming soon...
- In a nutshell
  - Each route policy processing is recorded as an event
- Use cases
  - Route policy validation
  - Root cause analysis
BMP Extensions

• Why using BMP?
  • BGP routes and policy

• Why not extending BMP local rib?
  • A prefix is not necessarily added to the local-rib
  • One prefix maps to multiple events, the record is event based

• How?
  • BMP Common header
    • A new BMP message type
      • Type = TBD: Route Policy and Attribute Trace Message
  • No Per Peer Header
  • Message format
Route Footprint Recovery Example

- **PE1**
  - Event 1: 10.1.1.1/24 inbound from CE2
  - Event 2: 10.1.1.1/24 inbound from CE3
  - Event 3: 10.1.1.1/24 from CE2 outbound to RR

- **PE2**
  - Event 4: 10.1.1.1/24 inbound from CE1
  - Event 5: 10.1.1.1/24 from CE1 outbound to RR

- **RR**
  - Event 6: 10.1.1.1/24 inbound from PE2
  - Event 7: 10.1.1.1/24 inbound from PE1
  - Event 8: 10.1.1.1/24 from PE1 outbound to PE3

- **PE3**
  - Event 9: 10.1.1.1/24 inbound from RR
  - Event 10: 10.1.1.1/24 from RR outbound to CE4
  - Event 11: 10.1.1.1/24 from RR outbound to CE5