BGP Extensions for Routing Policy Distribution (RPD)

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Overview

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Updates to Previous Versions

• Updated Introduction
• Added Operations: use case, failure
• More Details on some fields in NLRI

Address:

• Why RPD for dynamic traffic adjustment?
• P2P or P2MP?
• Issues on Failure
Why RPD for dynamic traffic adjustment

Dynamic configurations for adjusting traffic

• Complex and Error Prone
• Hard to maintain

Lots of relative stable configurations for security, management, etc.

Using configurations, whenever traffic is not expected, change/add/delete some configurations on some routers
• Complex and Error Prone
• Hard to maintain
P2P or P2MP?

Typical Application Scenario

➢ Controller sends RPD route to RR
➢ RR reflects it to A, B, C, etc. **This is P2MP.**
➢ A, B, C extract policy from RPD route
  • apply policy to all remote peers if peer IP in NLRI of RPD is 0;
  • otherwise, apply policy to the peer indicated by peer IP

Peer IP in NLRI does not change P2MP behavior
Issues on Failure

➢ Failure for router to install route: Bug, need to be fixed

➢ Failure of Controller or Session to Controller
  ▪ Existing mechanisms such as
    BGP GR to keep route for some time
    BGP Long-lived Graceful Restart (LLGR)

  ▪ Worst case: RPD routes for adjusting traffic are withdrawn
    The traffic takes its old path. Acceptable
Next Step

Comments