BGP QoS SLA Attribute

http://www.ietf.org/id/draft-svshah-bgp-qos-sla-attribute-00.txt

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IETF 83, Mar 2012, Paris, France
Topics

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- PE-CE Use case (In today’s deployment)
- Why BGP a choice of protocol
- Proposed Solution
- PE-CE Use case (leveraging draft proposal)
- CE-CE Use case
- Possible changes in next revision
- Questions
Motivation (but not limited to)

- To address out of band QoS SLA exchange between administrative (or inter-domain) boundaries
- Provide In band method for QoS SLA exchange
- Open a door for opportunities including cutting-down provisioning complexities and cost
PE to CE Use case (Today)

Unmanaged:
- Get on paper PE contract
- Define QoS policies aligned with PE

Managed:
- Manual or intelligent system overhead to get QoS policies to CE

In both cases:
- Provision QoS policies based on Vendor’s provisioning language

One of pre-defined templates provisioned on link facing CE

service contract
Why BGP a choice of protocol

- It is a widely used Inter-domain Protocol
- Aligns with the purpose of advertising SLA across administrative boundaries
- Cost effective to extend BGP to support such application (instead of defining any new protocol)
Proposed Solution in the Draft

- A new attribute defined in BGP to encompass QoS related parameters
  - It is an optional transitive attribute
  - QoS attribute scope generic to hold any future QoS related applications

- SLA is defined as a sub-type within QoS attribute
  - Detailed parameters of SLA are defined in the draft
  - Traffic-classes and Service-types for each traffic class in each direction

- Advertised SLA is from source AS to destination AS in the context of prefix

- Example: In the case of SLA for a point to point connection. i.e. for
  Physical link between BGP peers or
  Logical link like tunnels

  prefix is an ip address of the source end-point
PE to CE Use case (leveraging draft proposal)

One of pre-defined templates provisioned on link facing CE

Vendor implementation to react to signaling

In-band signaling

service contract
CE to CE Use case

- Hub and Spoke

QoS SLA between Hub and Spokes thru BGP updates
Possible changes in the next revision

- Add drop probability parameters for a Traffic Class
- Add percent/time based unit along with rate based for some of the service types
- Investigate re-use of existing IANA types (eg. IPFIX Information Element ids for Traffic Class Element types)
Questions?