Service Advertisement using BGP

draft-keyupate-bgp-services-01.txt

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Service Introduction

- Services are broadly classified into two categories

  - Router based services: Cache, Encryption, Compression, etc

  - End Systems or a Host based services: Printers, Layer 4-7 services, etc.

- Services need a transport for

  - Auto-discovering publishers and the subscribers of the service

  - Announcement of service specific data

- No standardized service distribution available today

BGP Applicability

- BGP uses TCP as a transport
  - Provides reliability and flow control

- BGP distribution supports
  - P2MP distribution
  - Policy allows selective filtering
  - Pub/Sub distribution using RT based filtering mechanism

- BGP sessions provide graceful and incremental session restarts in an event of errors
  - Effective way to resync data

- BGP provides AFI/SAFI data isolation using multi-session

BGP Applicability (Cont'd)

- BGP supports multiple NRLI path announcements

- BGP provides data persistency through the use of GR and NSR

- BGP has been scaled to distribute millions of routes

- BGP supports refresh of the data distributed

All of the above makes BGP a good choice to auto discover and exchange service related information

However, Definition of Pub/Sub APIs for service registration with applications is outside the scope of document
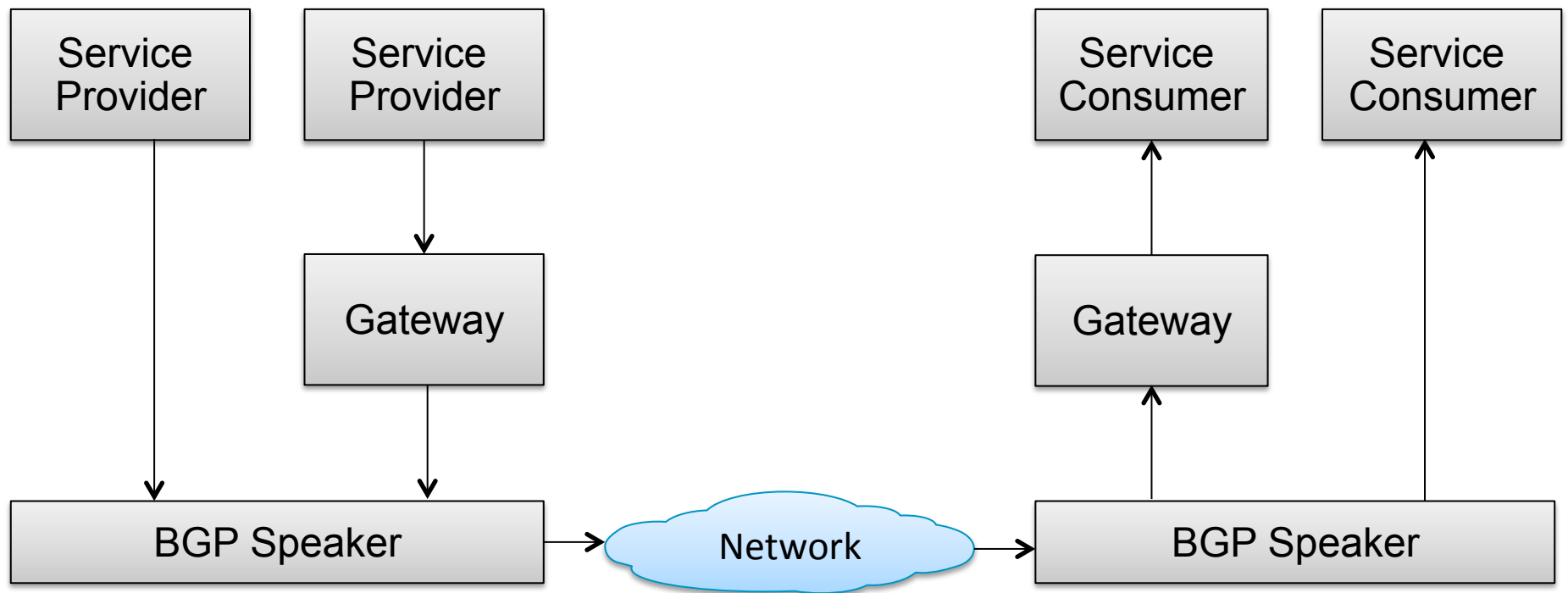
BGP Service Advertisement attribute

- New Optionally transitive attribute

- Can be attached on ANY AFI/SAFI Prefix
  - Facilitates Service Auto discovery

- Aggregation of multiple paths MUST aggregate services advertisement attribute when announcing the bestpath

- Service Advertisement attribute carries one or more Tuples of the following
  - Service Type (8 octets)
  - Originator-ID

BGP Service AFI

- New BGP AFI to carry Service specific information

- New BGP Capability to signal the exchange of new AFI

- Service NLRI is defined as:
  - AS Number (4 octets)
  - Originator ID (16 octets)
  - Service Type (8 octets)
  - Service ID (Variable length)

- New Service Attribute specific to Service AFI and is used to carry service specific information

BGP Service Advertisement (Diagram)

Questions?