

# Selective Advertisement of Multiple Paths within BGP

*draft-keyupate-idr-bgp-selective-add-paths-00*

Acee Lindem, Keyur Patel

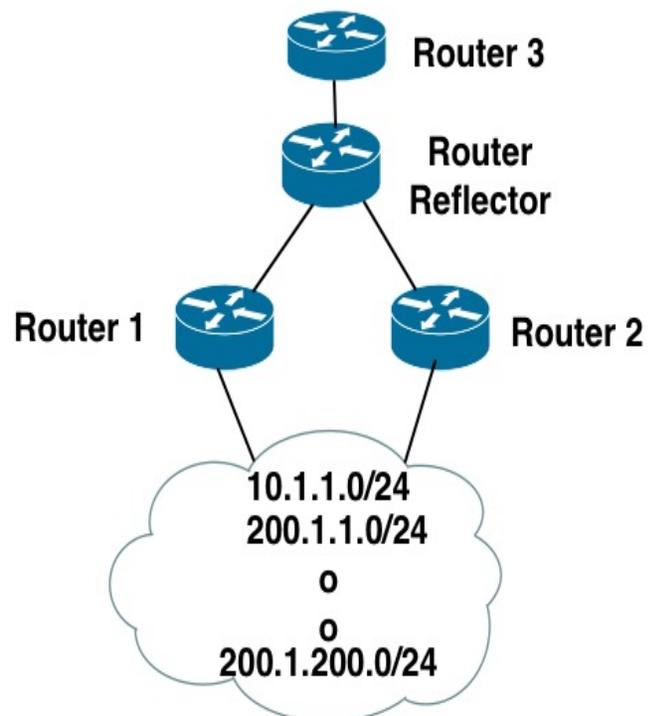
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# Motivation

- RFC4271 allows a BGP speaker to only announce a single path for a given prefix (AKA, the best-path)
  - Any subsequent path announcement would replace the existing path (AKA, an implicit update)
- BGP Add-Paths is a mechanism that allows announcement of multiple paths for a given Prefix
  - Implicit path announcement was replaced with an explicit path withdrawals
- Whether to announce multiple paths for a given prefix or selective number of paths has always been a matter of a local policy of the advertising BGP speaker.
- Currently there is no way to signal announcement of multiple paths for only selected prefixes within a given address family.
- It is desirable to enable the Add-Paths capability and functionality between two BGP speakers for only selected prefixes.
  - Preference to certain customer or a management prefix set
  - Address the scale concerns of existing installed base...

# Use Case

## Selective Add-Path Use Case



Multiple Paths are desired for the underlay 10.1.1.0/24 but not the other subnets

# Proposed Solution

- Define new BGP Selective Add-Path Capability

Capability Code (TBD)
Capability Length (Multiple of 3)
1st Address Family Identifier (2 octets)
1st Subsequent Address Family Identifier (1 octet)

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Nth Address Family Identifier (2 octets)
Nth Subsequent Address Family Identifier (1 octet)

# Proposed Solution (Continued)

- Selective Add-Path Capability mandates exchange of Add-Path Capability as well
  - Received Selective Add-Path Capability is treated as an unsupported Capability without exchange of Add-Path Capability
- Defined a new Transitive Opaque Selective Add-Path Extended Community
  - Community is only enforced if the peering has successfully exchanged the Selective Add-Path Capability
  - Community is advertised with prefixes for which multiple path (aka, Add-Paths) are desired
  - Speakers advertise Additional Paths only for prefixes with the extended community

# Status

- Fairly simple and straightforward draft
- Request WG to provide comments and accept it as a WG document

Questions?