

# BGP adv Features

- ECMP
  - equal-cost multi-path
  - (router) maximum-paths #nr eBGP
  - (router) maximum-paths ibgp #nr iBGP
  - (router) maximum-paths eibgp #nr eiBGP
  - unequal igp costs [unequal-cost] (router) maximum-paths (ebgp|ibgp) #nr XR
  - AS\_Path relax
    - (router) bgp bestpath as-path multipath-relax
    - lenght must be the same use multipath with different AS\_Paths

- bgp confederations
  - IGP
    - span
    - split
    - need bgp next-hop-self on boundaries
    - dont change attributes on boundaries
  - split AS into subAS
    - ttl=1 inter confed eBGP
    - next hop unchanged
  - config
    - (bgp) bgp confederation identifier #nr
    - lists confederation AS (bgp) bgp confederation-peers #AS

- scailing
  - Route reflectors
    - possible to use dedicated routers
    - normally disabled on iBGP
    - no fill iBGP mesh required
    - route selection on reflector
    - (bgp) neighbor #IP route-reflector-client
    - rr-gorups
      - uses ORF
      - (bgp) bgp rr-gorup #com-list
      - may need partitioning
    - can create routing-info loops
      - (bgp) bgp cluster-id #id use cluser-id
      - added to CLUSTER\_LIST PA
      - ORIGINATOR\_ID PA
        - router wo advertised it to iBGP
        - drop if own id
    - backup paths
      - on clusters
      - (router) bgp additional-paths select backup
      - (router) neighbor #ip advertise diverse-path backup

## Route Dampening

- (bgp) bgp dampening #half-time #reuse #suppress #max
  - half-time
    - 15min
    - halve penalty counter
  - reuse-limit 750
  - suppress-limit 2000
  - max-suppress-limit 60
  - penalty
    - 1000
    - added for every route flap
    - not changeable

## Adv-Features

- AllowAS
  - allow on as to be in AS\_PATH #max times
  - (bgp) neighbor #IP allowas-in #max
- local-as
  - appear to belong to a different as
  - (bgp) neighbor #IP local-as #AS
- deterministic-med
  - (bgp) bgp deterministic-med
  - group routes by AS
  - select best of each group by MED
- always-compare-med
  - (bgp) bgp always-compare-med
  - comparison MED for routes in different AS
  - (XR-bgp) bgp bestpath med always
- bestpath med confed
  - (bgp) bgp bestpath med confed
  - enable MED comparison for confederation peers
- backdor routes
  - use higher AD 200 for eBGP routes
  - not advertised to eBGP neighbors
  - (router) network #net mask #mask backdoor
- remove private as
  - removes private as from sent routes
  - (router) neighbor #ip remove-private-as

## Communities

- well known
  - no-export
    - don't advertise to eBGP
    - FFFF:FF01
  - no-advertise
    - don't advertise at all
    - FFFF:FF02
  - local-as
    - only local convederation
    - FFFF:FF03
  - internet
    - advertise to all
- set
  - (map)set community #com [additive] replace by default
  - (map)set extcommunity rt #com none remove all comunities
  - (map)set comm-list # list delete remove communitis
- 32bit Number
  - new format 16bit:16bit
- conf
  - (bgp) neigh #ip send-community [standard|ext|both]
  - (bgp-xr) send-community-ebgp enabled on iBGP by default
  - (bgp-xr) send-extended-community-ebgp
- lists
  - (ip) community-list #nr (permit | deny) 1-99 std
  - #com 100-199 ext regex
- sets
  - (conf) community-set #name
  - (set) #comm:unity
  - (set) #well-known
- route policy
  - if community matches-any (#comms)
  - if community matches-any #comlist
  - if community is-empty
  - if community matches-all #comlist
  - (pol) set community #com [additive]
- route-map
  - (map) match community #listnr
  - (map) set community #com [additive]