

Begin

Does the local AS belong to the route AS_PATH ?

YES

NO

When soft-reconfiguration inbound is configured The route is kept to reevaluate inbound policy

Is it a received only path?

YES

NO

Not eligible for best path selection

Is the path dampened?

YES

NO

Is synchronization enabled?

YES

NO

By default IOS > 12.2(B)T

Route exist on IGP routing table?

NO

YES

The route is unreachable and marked as « not synchronized »

Is NEXT-HOP reachable ? (from the routing table)

NO

YES

The router is rejected, not to be chosen as best path

Make sure there is an IGP route to the NEXT-HOP IP

Best path selection

Only locally considered where the decision will be made locally generated routes -> weight = 31768 Learned from other peers -> weight = 0

Are weight Attributes equals ?

NO

YES

Choose the highest weight

Transitive inside local AS. By default LOCAL-PREFERENCE = 100 Or explicitly « bgp default local-preference »

Are local preference attributes equals ?

NO

YES

Choose the highest LOCAL -PREFERENCE

Local path sourced by « network » / « redistribute » / « aggregate-address » commands

Is one of the routes injected by local router (originated by the router itself)

NO

YES

Choose the one injected by local routers. « network » & « redistribute » take precedence over « aggregate-address »

Skip AS-PATH check?

NO

YES

Using the command: « bgp best path as-path ignore »

Are all AS_PATH equals ? (length)

NO

YES

1st most common attribute

Choose the shortest AS_PATH

- AS_SET counted as 1 - not including: AS_CONFED_SEQUENCE & AS_CONFED_SET

Are ORIGIN equals ?

NO

YES

Order of preference IGP -> EGP -> « Incomplete »

The same neighbor AS from which the routes are received use MED?

NO

YES

Routes coming from the same neighbor AS with MED not equals

NO

YES

Choose the route with the lowest MED

Default MED = 0 Except with the command: « Bgp bestpath med missing-as-worst » MED = 4,294,967,294

One route is from external AS?

NO

YES

Prefer update received from BGP peer on another AS (Prefer eBGP path over iBGP)

Are IGP metrics to BGP NEXT-HOP equal?

NO

YES

Choose the route one with the closest exit point, the lowest IGP cost to NEXT-HOP on the routing table (Choose the best IGP metric)

Is « BGP multipath » configured?

NO

YES

Use all paths that has survived until now as multipath to the destination

With updates from external AS (eBGP neighbors) Is there a more stable path?

NO

YES

Choose the oldest path, the most stable (prevent route flapping)

Are routes Received from different routers?

NO

YES

The LOWEST ROUTER_ID is chosen

From BGP sessions on which the updates are received.

Router-ID is: 1) bgp router-id else 2) highest loopback else 3) highest physical interface.

Route Reflectors deployed?

NO

YES

The paths have different cluster_IDs

NO

YES

The SHORTEST Cluster_ID is chosen

Cluster_list used to avoid loops between clusters. - Cluster_list = sequence of RR's cluster_ID (RR router_ID) - Each RR add its cluster_ID before sending.

The path with the LOWEST neighbor IP is used.

End