

Border Gateway Protocol with MikroTik



BGP Best Path Selection Algorithm in RouterOS

Order	Attribute	Description	Default Value	iBGP	eBGP
1	Next Hop Validation	The route is evaluated by the algorithm only if it is valid. In general, the route is considered valid if: *NEXT_HOP of the route is valid and reachable *AS_PATH received from external peers does not contain the local AS *The route is not rejected by routing filters	The 1st Valid route is accepted. Other valid routes are then compared to the 1st one.	X	X
2	Weight	This parameter is not a part of the BGP standard, it is invented to quickly and locally select the best route. This parameter is local to the router (assigned with routing filters in the BGP input) and cannot be advertised.	0	X	X
3	Local preference	Only within an AS	100	X	N/A
4	Shortest AS Path	Skipped if ignore-as-path is set Each AS set counts as 1	N/A	X	X
5	Locally Originated	Prefer the path that was locally originated via aggregate or BGP network	N/A	X	X
6	Origin	Lowest (IGP < EGP < INCOMPLETE)	N/A	X	X
7	MED	Prefer the path with the lowest multi-exit discriminator (MED). The router compares the MED attribute only for paths that have the same neighboring (leftmost) AS. Paths without explicit MED value are treated with MED of 0.	0	N/A	X
8	eBGP or iBGP	Evaluate IGP metrics (Prefer eBGP over iBGP)	N/A	X	X
9	Router ID	Use lowest; if route carries Originator ID, use that instead.	Lowest IP address or Router ID, if set	X	X
10	Route Reflector Cluster List	Prefer the route with the shortest route reflection cluster list. Routes without a cluster list are considered to have a cluster list of length 0.	0	X	N/A
11	Neighbor Address	Prefer the path from the lowest neighbor address	N/A	X	X

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Default Scope & Target Scope		
Scope	Route Type	Target Scope
	Connected	
10	Active	N/A
	OSPF, RIP	
20	MME	10
30	Static	10
40	eBGP	10
40	iBGP	30
	Connected	
20	inactive	N/A

Default Route Distances	
Connected	0
Static	1
eBGP	20
OSPF	110
RIP	120
MME	130
iBGP	200

Routing Protocol	RIPv1	RIPv2	RIP-NG	OSPFv2	OSPFv3	BGP
Type	Distance Vector	Distance Vector	Distance Vector	Link State	Link State	Path Vector
Protocols Supported	IPv4	IPv4	IPv6	IPv4	IPv6	IPv4&6
Metric	Metric	Metric	Metric	Cost & Metric	Cost & Metric	Multiple metrics
Protocol Used	UDP Port 520	UDP Port 520	UDP Port 521	IP Protocol #89	IP Protocol #89	TCP Port 179
Multicast Address	255.255.255.255	224.0.0.9	FF02::9	224.0.0.5 224.0.0.6	FF02::5	N/A
Classful or Classless Routing	Classful Routing	CIDR	CIDR	CIDR	CIDR	CIDR