

RFC8212

External BGP Route Propagation Behaviour without Policies



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Acknowledgements

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Background

- Since the first implementation of BGP, there has been no standard for the default behaviour of eBGP in the absence of configured policies

- Each vendor did something different
 - Accept everything, announce everything
 - Accept everything, announce nothing
 - Accept nothing, announce nothing
 - ...?

Background

- ❑ Configuring EBGP without any filters is potentially disastrous:
- ❑ Example:
 - Customer multihomed to two ISPs
 - Has no EBGP filters (using their vendor default)
 - Accepts everything from upstream 1
 - Sends everything to upstream 2
 - Accepts everything from upstream 2
 - Sends everything to upstream 1
 - => Becomes inadvertent transit between two upstreams

Problems

- There has been a long history of Internet outages caused by “missing” EBGP filters:
 - By accident
 - Lack of knowledge of vendor defaults
 - Lack of training
 - Because of complexity
 - Configuration language
 - BGP attribute manipulation
 - Because of other vendor defaults
 - To automatically route-refresh or not

Solution

- Industry standard
 - In the absence of configured policy, EBGP implementations must implement a deny-all on inbound and outbound announcements
 - This does NOT touch IBGP

- Full text is described in RFC8212
 - <https://tools.ietf.org/html/rfc8212>
 - External BGP (EBGP) Route Propagation Behaviour without Policies

Discussion

- Does your vendor support RFC8212?
 - If not:
 - What are their plans to implement?
 - And which software release?
 - Put it in RFP requirements (and make it mandatory)
- Do you have any EBGP configuration which is missing any inbound or outbound policy?
 - Check across whole AS to check that EBGP configuration has inbound and outbound policy implemented