

Reserved BGP extended communities

draft-decraene-idr-reserved-extended-communities-00

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The need:

To get a reserved non-transitive BGP community

- [draft-ietf-grow-bgp-gshut](#) (Graceful BGP session shutdown) needs a reserved non-transitive community:
 - Reserved: to use the same community toward & from all ASes. (versus one per AS → many communities to deal with). Also ease its implementation on routers (hard coded value)
 - Non transitive: to limit its propagation within a single AS
 - the neighbor AS sharing the EBGP session
 - (Without the need to add/update BGP policies on all ASBR to remove that specific community)

The issue:

There is no IANA registry to allocate non-transitive communities

- IANA has a registry to allocate a "well know" BGP community
 - But those are transitive only
 - <http://www.iana.org/assignments/bgp-well-known-communities/bgp-well-known-communities.xml>
- IANA has a registry to allocate a non-transitive BGP Extended Communities Type
 - But reserving one type is the equivalent of reserving 2^{56} (regular) or 2^{48} (extended) communities while a single is used → waste of code point resources. ($2^{48} = 2.8 \cdot 10^{14}$)
 - <http://www.iana.org/assignments/bgp-extended-communities>

The proposition:

Create an IANA registry for reserved extended communities.

1. Get one BGP Extended Communities Type:

- From registry: BGP Extended Communities Type - extended, non-transitive
 - "Extended" types is less scarce then "regular" types.
- Either FCFS or IETF Standard.

2. Create a new registry to allocate reserved communities from

Registry Name: BGP Reserved transitive extended communities

Range	Registration Procedures
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0x000000000000-FFFFFFFFFFFF	Reserved
0xFFFFFFFF0000-00FFFFFF8000	First Come First Served
0x00FFFFFF8001-FFFFFFFFFFFF	Standards Action/Early IANA Allocation

Optionally: idem for transitive extended communities

- Optionally, same proposition for *transitive* extended communities.
- Would allow an application to reserve both a transitive & non-transitive community with the same value. (except for their 'T' (Transitive) bit).
 - Expected to be easier to handle (filter, remember...) compared to the use of a BGP community plus a BGP extended community
 - Which would have different values and attribute types.

Summary

- Short draft (4 pages with boiler plate)
- No protocol extension
- Little / no impact on implementation
 - CLI impact if it's restricted to known extended community types
- Only IANA actions:
 - Possibly 1 (2) extended community type(s) (or use of FCFS)
 - 1 (2) new registrie(s) to record reserved communities
- Short term need for [draft-ietf-grow-bgp-gshut](#) but expected to be useful in the long run for other applications.

Comments welcomed

Thank you