

Wide BGP Communities (update to ver -01)

draft-raszuk-wide-bgp-communities-01

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Agenda

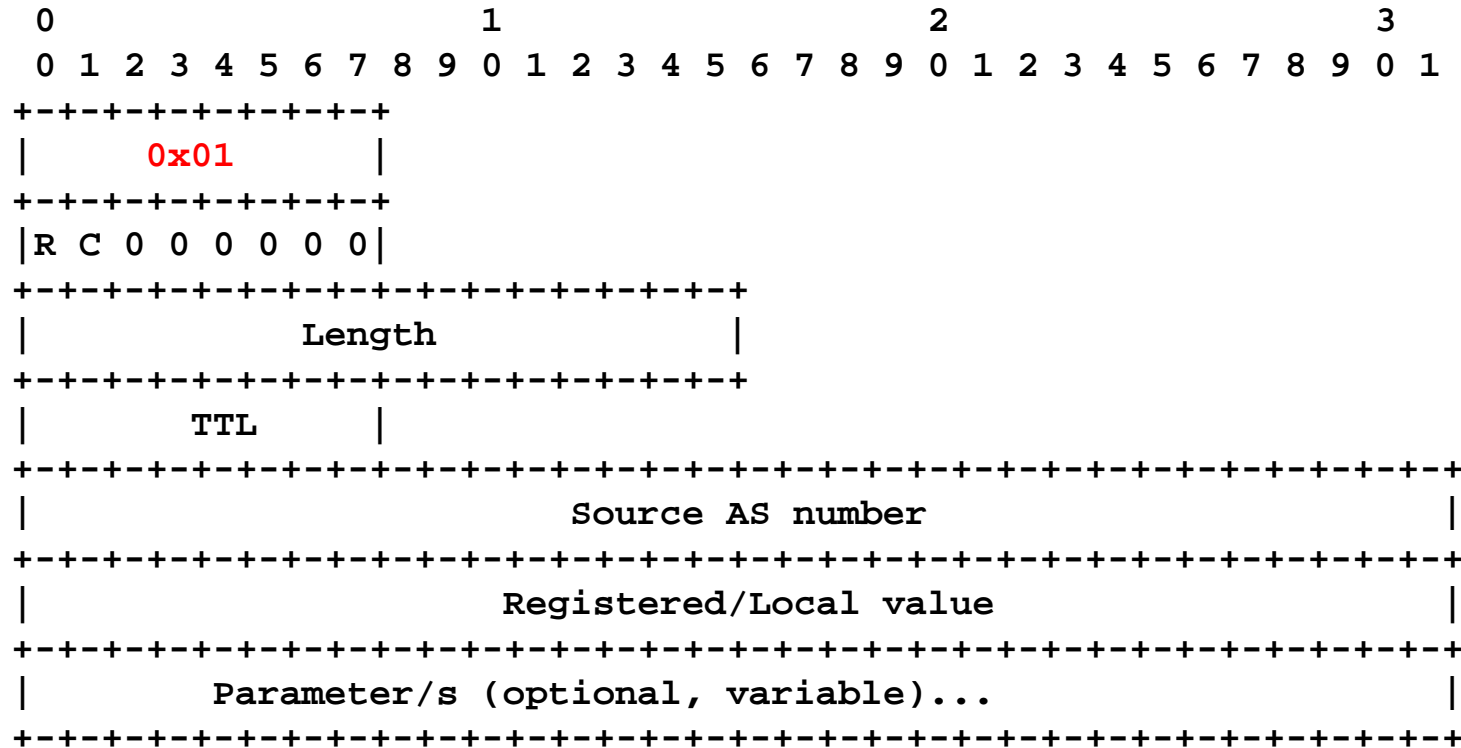
- **Goals**
- **Proposed encoding format**
- **Use example**
- **Sister document – registered wide bgp communities**

Goals

- To define a new tool which will allow operators much more flexible network control while in the same time simplify the amount of required inbound and outbound route policy
- To enable encoding and propagation of arbitrary set of parameters which will be used as conditions during given policy execution
- To provide ability to use customer's own definition of parametrized communities as well as (in separate sister document) provide examples of pre-defined wide bgp communities.

Encoding

- New attribute to allow for any template format fixed or variable size
- Predefined one variable size template/container:



Use example:

- ISP's requirement: Prepend 4 times when advertising to AS2424 or AS8888 or to peers marked as RED

```

0                               1                               2                               3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+
|      0x01      |
+---+---+---+---+---+---+
| 0 0 0 0 0 0 0 0 |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|  Length:      26      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      TTL: 0      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                                     Own ASN                                     |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Community: LOCAL PREPEND ACTION CATEGORY I      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Target ASN# 2424 (0x00000978)      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Target ASN# 8888 (0x000022B8)      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Peer color RED 0x00FF0000      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|  Prepend #: 4  |
+---+---+---+---+---+---+

```

Wide BGP Communities

- Not intended to replace standard or extended BGP communities
- Uses new optional and transitive attribute type (27 pending IANA assignment)
- Two container templates predefined fixed length and variable length
- Defined one variable length container of type 1 – other types if needed to be defined by separate documents and allocated new types by IANA on FCFS basis.

Registered Wide BGP Community Values

draft-raszuk-registered-wide-bgp-community-values-00

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Sister document – registered WBC values:

- As recommended in Maastricht splitted from the main encoding document
- Based on feedback from community removed number of „controversial” definitions
- All use type 1 container as defined in main Wide BGP Communities specification
- Values would not overlap with private uses of Wide BGP Communities as the R-bit will be set to 1
- New values to be defined in separate documents and allocated by IANA on the FCFS basis
- BGP implementations could optimize execution of registered types.

Registered Wide BGP Communities

Type	Name	Parameters
1.	BLACKHOLE	-
2.	SRC_BLACKHOLE	-
3.	SRC_DO_RPF	-
4.	HIGH_PRIORITY_PREFIX	-
5.	ATTACK_TARGET	-
6.	NO_ADVERTISE_TO_AS	AS#
7.	ADVERTISE_TO_AS	AS#
8.	ADVERTISE_AND_SET_NO_EXPORT	AS#
9.	FROM_PEER	-
10.	FROM_CUSTOMER	-
11.	INTERNAL	-
12.	FROM_UPSTREAM	-

Registered Wide BGP Communities

Type	Name	Parameters
13.	FROM_IX	-
14.	LEARNED_FROM_AS	AS#
15.	PATH_HINT	AS#
16.	NEGATIVE_PATH_HINT	AS#
17.	PREPEND_N_TIMES_BY_AS	AS#, N-prepends
18.	PREPEND_N_TIMES_TO_AS	AS#, N-prepends
19.	REPLACE_BY	AS#
20.	LOCAL_PREFERENCE	INC/DEC + 1..127 value
21.	AS_PATH_TTL MAX RADIUS	1 octet radius
22.	Free pool	

Conclusions

- Encapsulation draft aimed to progress as a standard track document
- For registered types specification additional feedback is welcome.