

Wide BGP Communities

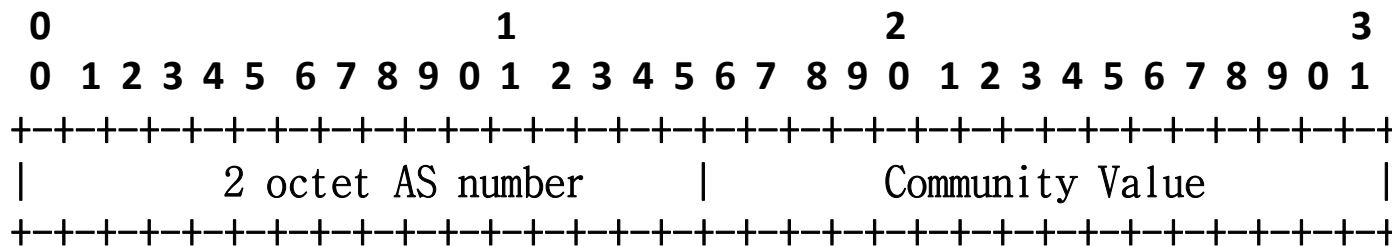
IETF IDR

draft-raszuk-wide-bgp-communities-00
ftp://ftpeng.cisco.com/raszuk/bgp_wide_comms/

Agenda

- Current Standard BGP Communities
- New encoding proposed to accommodate both 2 octet and 4 octet AS numbers in BGP communities
- **Defined new pre defined/registered community values to simplify number of intra-domain and inter-domain operational route tagging and policy communications**

Current Standard BGP Communities



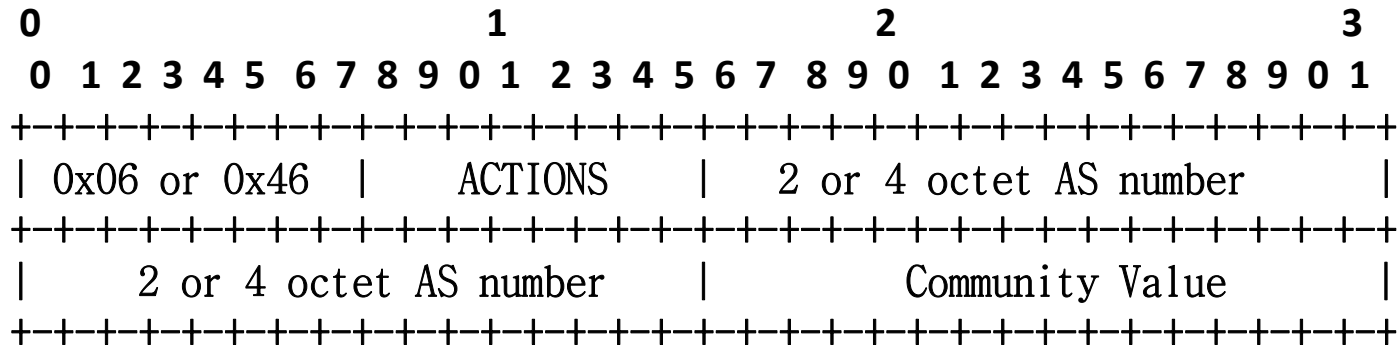
Reserved special values:

- 0x00000000 through 0x0000FFFF
- 0xFFFF0000 through 0xFFFFFFFF

Issues:

- No way to encode 4 octet AS number
- Well known community ranges do not allow for AS specific encoding

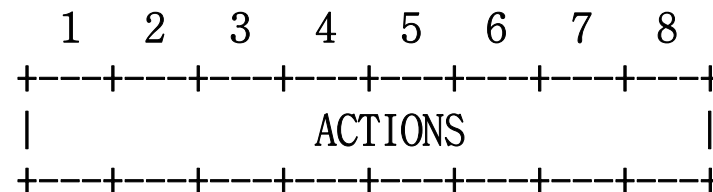
Wide BGP Communities



Features:

- Encoding 2 octet or 4 octet AS numbers
- One octet for ACTIONS applicable to registered and operator's defined communities
- Registered communities allow for flexible AS specific encoding

Wide BGP Communities – Actions



- **0x00** - Default action. No special handling
- **0x01** - Informational Only Support Indicator
- **0x02** - Mandatory
- **0x03..0x7F** - Reserved for future registered action extensions
- **0x80..0xFF** - Open for operator's own use actions

Registered Wide BGP Communities

- Huge credit to network operators for publishing and so far given feedback on most common BGP community applications of today.
- An attempt to document most of them as well as provide a new IANA Wide BGP Community registry to serve as database for new.
- Your feedback / contribution is very welcome at this point.

General Registered Wide BGP Communities

SRC_AS:BLACKHOLE	0xB000
SRC_AS:BLACKHOLE_FROM_PEER	0xB001
SRC_AS:BLACKHOLE_FROM_UPSTREAM	0xB002
SRC_AS:SOURCE_BLACKHOLE	0xB003
SRC_AS:SOURCE_DO_RPF	0xB004
SRC_AS:HIGH_PRIORITY_PREFIX	0xB005
SRC_AS:ATTACK_TARGET	0xB006
General_Free_Pool	0xB006..0xB07F

Registered Wide BGP Communities

Advertisement control Registered Wide BGP Communities

PARAM_AS:NO_ADVERTISE	0xB080
PARAM_AS:ADVERTISE_TO	0xB081
SRC_AS:ADVERTISE_NO_PEER	0xB082
SRC_AS:ADVERTISE_NO_UPSTREAM	0xB083
SRC_AS:ADVERTISE_NO_CUSTOMER	0xB084
PARAM_AS:ADVERTISE_TO_SET_NO_EXPORT	0xB085

AS source marking Registered Wide BGP Communities

SRC_AS:FROM_PEER	0xB100
SRC_AS:FROM_CUSTOMER	0xB101
SRC_AS:INTERNAL	0xB102
SRC_AS:FROM_UPSTREAM	0xB103
SRC_AS:FROM_IX	0xB104
PARAM_AS:LEARNED_FROM	0xB105

Registered Wide BGP Communities

Return Path influencing Registered Wide BGP Communities

PARAM_AS:PATH_HINT	0xB180
<i>(Proposal from Brent Sweeny)</i>	
PARAM_AS:PATH_NEGATIVE_HINT	0xB181

AS PATH modifying Registered Wide BGP Communities

PARAM_AS:REPLACE_BY	0xB200
PARAM_AS:PREPEND_BY	0xB201..0xB20F
PARAM AS:PREPEND TO	0xB211..0xB21F
SRC_AS:PREPEND_UPSTREAM	0xB221..0xB22F
SRC_AS:PREPEND_PEERS	0xB231..0xB23F
SRC_AS:PREPEND_CUSTOMERS	0xB241..0xB24F

Registered Wide BGP Communities

Geographic source marking Registered Wide BGP Communities

<code>SRC_AS:PEER_ROUTE</code>	<code>0xB280..0xB28F</code>
<code>SRC_AS:UPSTREAM_ROUTE</code>	<code>0xB290..0xB29F</code>
<code>SRC_AS:CUSTOMER_ROUTE</code>	<code>0xB2A0..0xB2AF</code>

Each to be marked with predefined global regions:

- `0xB2.0` - North America
- `0xB2.1` - Central America
- `0xB2.2` - South America
- `0xB2.3` - Europe
- `0xB2.4` - Asia
- `0xB2.5` - Japan
- `0xB2.6` - ANZ
- `0xB2.7` - Africa
- `0xB2.8` - Unspecified Region

Registered Wide BGP Communities

Local Preference Registered Wide BGP Communities

SRC AS:LOCAL PREF

0xB300..0xB30F

0xB300	- Unallocated
0xB301	- Decrement Local Pref by 20
0xB302	- Decrement Local Pref by 40
0xB303	- Decrement Local Pref by 60
0xB304	- Decrement Local Pref by 80
0xB305	- Decrement Local Pref by 100
0xB306	- Increment Local Pref by 20
0xB307	- Increment Local Pref by 40
0xB308	- Increment Local Pref by 60
0xB309	- Increment Local Pref by 80
0xB30A	- Increment Local Pref by 100
0xB30B	- Unallocated

Question's are welcome ...

... both on the IDR list as well as off-line to co-authors and contributors of this work.