

Wide BGP Communities

Lightning Talk - Nanog 49

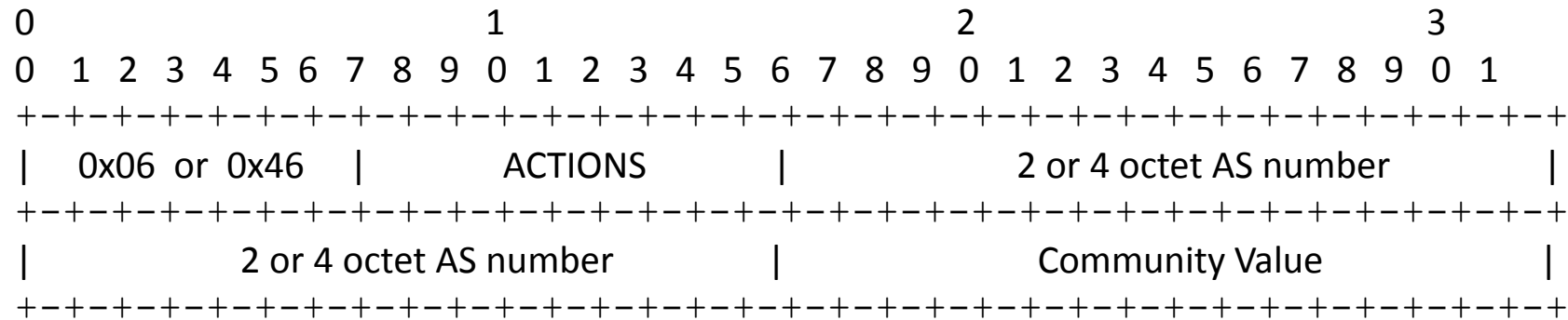
draft-raszuk-wide-bgp-communities-00
ftp://ftpeng.cisco.com/raszuk/bgp_wide_comms/

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Agenda

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

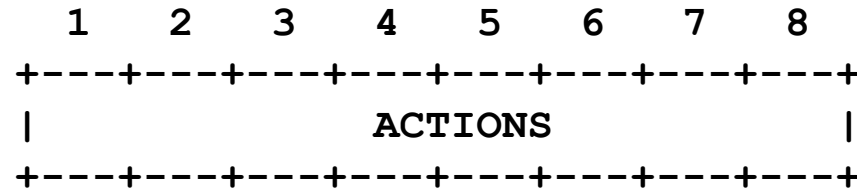
Wide BGP Communities



Features:

- Encoding 2 octet or 4 octet AS numbers
- One octet for ACTIONS applicable to well known and operator's defined communities
- Well known 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 well-known action extensions
- **0x80..0xFF** - Open for operator's own use

Well Known 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 Well Known Wide BGP Communities

SRC_AS:BLACKHOLE	0xB000
SRC_AS:SOURCE_BLACKHOLE	0xB001
SRC_AS:SOURCE_DO_RPF	0xB002
SRC_AS:HIGH_PRIORITY_PREFIX	0xB003
General_Free_Pool	0xB002..0xB07F

Well Known Wide BGP Communities

Advertisement control Well Known 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

AS source marking Well Known 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

Well Known Wide BGP Communities

Return Path influencing Well Known Wide BGP Communities

PARAM_AS:PATH_HINT 0xB180

(Proposal from Brent Sweeny)

PARAM_AS:PATH_NEGATIVE_HINT 0xB181

AS PATH modifying Well Known 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

Well Known Wide BGP Communities

Geographic source marking Well Known 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

Well Known Wide BGP Communities

Local Preference Well Known 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

Well Known Wide BGP Communities

AS_PATH TTL Well Known Wide BGP Communities

SRC_AS:AS_PATH_TTL

0xB310..0xB31F

```
0xB310 - Reserved
0xB311 - Drop if AS_PATH >= 1
0xB312 - Drop if AS_PATH >= 2
0xB313 - Drop if AS_PATH >= 3
0xB314 - Drop if AS_PATH >= 4
0xB315 - Drop if AS_PATH >= 5
0xB316 - Drop if AS_PATH >= 6
0xB317 - Drop if AS_PATH >= 7
0xB318 - Drop if AS_PATH >= 8
.....
0xB31F - Drop if AS_PATH >= 15
```

Question's are welcome ...

... both on-line as well as off-line
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**ftp://ftpeng.cisco.com/raszuk/bgp_wide_comms/
(always the latest version 😊)**