

YANG Module for BGP Communities

draft-pels-grow-yang-bgp-communities-00

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Goals

- **Publishing**
- **Parsing**
- **Configuring**

```

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```

```

+-----+
Communities (soo:AS:Site-ID / AS:Site-ID:Peer-AS):
Node      Location          Extended         Large
----      -
nl-ams    NL, Amsterdam     soo:197000:1     197000:1:*
gb-lon    UK, London        soo:197000:2     197000:2:*
se-sto    SE, Stockholm     soo:197000:3     197000:3:*
am-evn    AM, Yerevan       soo:197000:1194  197000:1194:*
at-szg    AT, Salzburg      soo:197000:1209  197000:1209:*
at-vie    AT, Vienna        soo:197000:1176  197000:1176:*
ba-sjj    BA, Sarajevo      soo:197000:1192  197000:1192:*
bh-amh    BH, Manama, Seef  soo:197000:1188  197000:1188:*
br-pgz    BR, Ponta Grossa, soo:197000:1182  197000:1182:*
ch-zrh    CH, Zurich        soo:197000:1217  197000:1217:*
in-del    IN, DELHI         soo:197000:1220  197000:1220:*
it-rom    IT, Rome          soo:197000:1177  197000:1177:*
no-osl    NO, Oslo          soo:197000:1178  197000:1178:*
ro-buh    RO, Bucharest     soo:197000:1210  197000:1210:*
us-mkc    US, Kansas City   soo:197000:1231  197000:1231:*
+-----+

```

Goals

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1 ALARIG1-v4	
AS-Path	<code>208627</code> <code>43350</code> <code>197000</code> via next-hop <code>45.91.126.248</code>
Origin validation state	<code>valid</code>
ASPA validation state	<code>unknown</code>
Only To Customer (OTC)	yes, ASN: <code>43350</code>
Origin	IGP
MED	0
Last update	2023-07-06 05:44:23 UTC (5d01h30m ago)
Large communities	<code>197000:1:34307</code> (authdns core site nl-ams ...) <code>208627:0:43350</code> <code>208627:100:100</code>

Goals

- Publishing
- Parsing
- **Configuring**

```
router> AS65001:<tab>
```

```
20 - PREPEND-EU
```

```
21 - NOANNOUNCE-EU
```

```
...
```

```
router> AS65001:20<tab>
```

```
00 - ALL-EU
```

```
02 - AS64497
```

```
03 - AS64498
```

Inventarisation

- Display communities
 - Per country (ISO3166 , M49, self-defined)
 - Per Peer-ASN
 - Various self-defined values (city, origin type, ...)

Inventarisation

- Action communities
 - Actions using Private ASNs
 - Statically defined
 - Action based on user-supplied value
 - Per peer-AS action

Inventarisisation - Summary

- Fields defined based on decimal representation
- Private ASNs must be supported
- Patterns/wildcards are required, e.g. for
 - ASN:SOMEVAL:MS - Prepend latency in 5ms increment from 5ms to 200ms
 - ASN:SOMEVAL:PEERAS - Some information/action based on a Peer ASN



YANG tree (subset)

```
module: draft-pels-grow-yang-bgp-communities
```

```
  +--rw bgp-communities
```

```
    +--rw serial          uint32
```

```
    +--rw uri?           string
```

```
    +--rw description?  string
```

```
    +--rw contacturl?   string
```

```
    +--rw contacts* [emailaddress]
```

```
      | +--rw emailaddress  string
```

```
      | +--rw name?        string
```

```
      | +--rw role?        string
```

```
      | +--rw organization? string
```

```
      | +--rw organizationalunit? string
```

```
    +--rw large* [name]
```

```
      +--rw name          string
```

```
      +--rw description?  string
```

```
      +--rw globaladmin   uint32
```

```
      +--rw localdatapart1
```

```
        | +--rw format?  string
```

```
        | +--rw fields* [name]
```

```
          | +--rw name      string
```

```
          | +--rw length?  uint8
```

```
          | +--rw pattern   string
```

```
          | +--rw description? string
```

```
      +--rw localdatapart2
```

```
        +--rw format?  string
```

```
        +--rw fields* [name]
```

```
          +--rw name      string
```

```
          +--rw length?  uint8
```

```
          +--rw pattern   string
```

```
          +--rw description? string
```


Example JSON

```
"large": [  
  {  
    "name": "RFC8195-NOEXPORT-ASN",  
    "description": "Do not export route to ASN",  
    "globaladmin": 65539,  
    "localdatapart1": {  
      "fields": [  
        {  
          "name": "Function",  
          "pattern": "4",  
          "description": "ASN-No-Export"  
        }  
      ]  
    },  
    "localdatapart2": {  
      "fields": [  
        {  
          "name": "ASN",  
          "pattern": ".*"  
        }  
      ]  
    }  
  }  
]
```

Parser output:

Community: 65539:4:64498

Name: RFC8195-NOEXPORT-ASN

Fields: Function=ASN-No-Export, ASN=64498

More examples and code:

<https://tinyurl.com/yang-bgp-communities>