

Routing Policy System WG (RPS)

Chairs:

Cengiz Alaettinoglu
Curtis Villamizar

Agenda

- Villamizar Distributed RPS
- Damas Certificate Objects & PGP experience
- Alaettinoglu Implementation/Deployment Status
- Winters IRRd RPS implementation status
- Kessens RPSL Transition Status

- Mansfield Internet Routing Registry MIB
- Przygienda Routing Policy Configuration Language

Implementation/Deployment Status & Feedback

Compiled by:

Cengiz Alaettinoglu

community Attribute

- Packing syntax
 - {3561, 70} ==> 233373766
- List of communities
 - {internet, no-export, 10, 3561, 70}
 - {3561, 70, {3561, 70}} => {3561, 70, 233373766}
 - {{3561,70}, {3561,80}}
- An alternate integer representation:
 - <high order 16 bits>:<low order 16 bits>
 - 3561:70
 - not just community specific

community . =

- community == { 10, 20, 30 }
- communtiy = { 10, 20, 30 };
- community . = 10;
- community . = {10, 20};
- Suggestion
 - community . = {10, 20, 30}

Dictionary

typedef: <typename> union <list of types>

Suggestion:

1. union as a first class type
2. typedef: <typename> <type>

E.g.

typedef: lofint list of integer

typedef: com_elm union integer, enum[internet, ...]

typedef: lofnum list of union integer, real

RAToolSet

- Version 4.1.0
 - parser: close to 100% RPSL compliant
 - aut-num: 100%
 - as-set: 100%
 - route-set: 100%
 - dictionary: except protocol options
 - ◆ typedef, rp-attribute, protocol
 - route: except aggregate/static routes
 - inet-rtr: not implemented

RAToolSet v 4.1.0

- Structured import and export
 - except and refine
 - arbitrary nesting
- PeerAS
- @RtConfig static2bgp <ASN-1> <rtr-1>
- All community methods
- -cisco_use_prefix_lists
- 169.254.0.0/16^+
- * ^+, ^-, ^n, ^n-m with as nos, rs-set and as-set
 - AS226^+, RS-PRIVATE^19

Example

```
aut-num:      AS2764
as-name:      ASN-CONNECT-NET
descr:        connect.com.au Pty Ltd
import: {
    from AS-ANY action community . = {2764,65408};
    accept ANY AND NOT { 0.0.0.0/0 };
} refine {
    from AS-ANY action community={internet}; pref=0;
    accept community({2764,65280},...,{2764,65412});
    from AS-ANY action pref=25;
    accept community({2764,3})
        AND NOT AS2764:RS-PROVIDER^-;
    ...
    from AS-ANY action pref=0; accept ANY;
} refine {
    from AS2764:AS-GLOBAL accept PeerAS AND <^PeerAS$>;
    from AS2764:AS-DOMESTIC action community . = {2764,1};
    accept PeerAS AND <^PeerAS$>;
    from AS4805
        accept ( AS201 OR ... OR AS7617 )
            AND <^AS4805+ [AS201 ... AS7617]+$>;
}
```

Output

```
route-map foo permit 1
  match as-path 1
  match community 1
  set community 2764:65408 additive
  set community internet
  set local-preference 1000
!
route-map foo permit 2
  match as-path 1
  match community 2
  set community 2764:65408 additive
  set local-preference 975
!
...
router bgp 2764
neighbor 0.0.0.0 route-map foo in
neighbor 0.0.0.0 distribute-list 100 in
```

ISI's RIPE based server

BIRD

- Distributed IRR Server
 - **propagator** (not sync w/ rps-dist)
 - ◆ unicast flooding
 - ◆ multicast flooding (rate controlled)
 - **registrar**
 - ◆ RPSL syntax checking
 - ◆ authorization and authentication checking
 - ◆ distributed consistency checking
 - ◆ transaction semantics
 - **server**
 - ◆ light-weight and fast

Schedule

- Demo available now
 - RAToolSet v 4.1.0 works w/ BIRD
- Beta release in September
- Sync up propagator w/ rps-dist
- Sync up registrar w/ rps-dist & rps-auth
- Create rps query document
- Development release in december