

CGTF BGP RIS Platform

1. Introduction

Routing Information Service (RIS) employs a globally distributed set of Remote Route Collectors (RRCs), typically located at Internet Exchange Points, to collect and store Internet routing data.

RIS is a very important service for Internet, which provides data support for Internet routing research community. For example, network operators can observe their networks from different locations with RIS, get a better understanding of their network. Moreover, routing archive data can also help network operators and researchers review historical Internet events.

There are some well-known routing information collection sharing projects such as Route Views and RIPE RIS , PCH etc . However, most of their vantage points are in Europe and the United States, lacking routing information from Asia. Our project mainly collects routing data of several major research and education backbones in our Asian region for administrators and researchers to observe and study the Internet. Moreover we will follow up with a real-time one like BGPmon and will do some hijacking detection work.

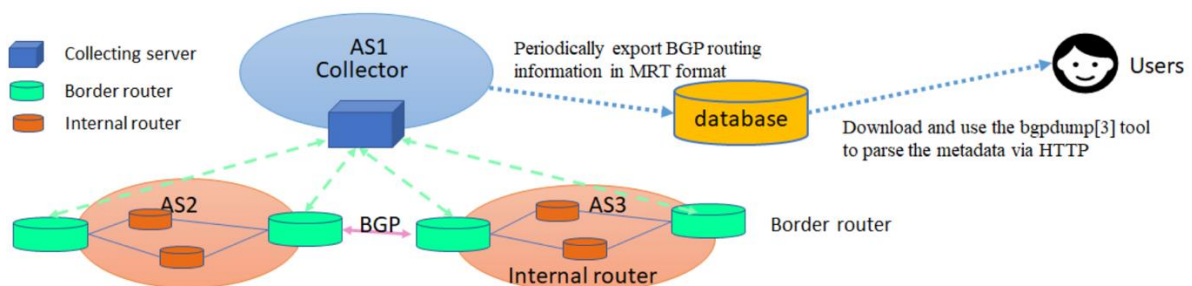
2. Architecture

The collector establishes a connection with the border router to collect routing information, while periodically exporting data for archiving and providing an interface to the outside world for users to use. The connection can be achieved in two ways: BMP protocol and normal BGP sessions.

- Collector: A host running Quagga or FRR , which is emulated as a BGP router and can establish connections and exchange routing information with other BGP routers.

Collector only collects BGP routes, does not send any routes to BGP peers, and never forward traffic.

- Storage Server: A server for storing routing data that runs a timed task to export routing data from Collector at regular intervals.
- Vantage Point: Vantage Point are those routers that establish BGP sessions with the Collector.



3. Our collector

We have deployed two Collectors which installed FRR.

- Our Collector ASN: 65534
- Our Collector1 IPv4 address: 47.241.43.108
- Our Collector1 IPv6 address: 240b:4000:b:db00:8106:7413:738f:e9ed
- Our Collector2 IPv4 address: 203.91.121.227
- Our Collector2 IPv6 address: 2001:da8:217:1213::227

We export routing data periodically, and user can get our route data on: <http://bgp.cgtf.net>

If you have any technical issue , please feel free to contact sec@cgtf.net.

4. Router Configuration

Just have your border router to establish a multi-hop eBGP session with our Collector.

Specifically, you need to:

1. **Choose a border gateway router** in you AS to establish an eBGP session with our Collector(47.241.43.108).
2. Provide us with your **router information , including ASN, IPv4 address,and IPv6 address.**
3. Conducting **both IPv4 and IPv6 multi-hop eBGP session** configuration with our Collector.

Notes:

- Here is the configuration example:

FRR or Cisco:

```
router bgp <your ASN>
bgp router-id <your Router IP>
bgp log-neighbor-changes
no bgp default ipv4-unicast
timers bgp 15 45
neighbor remote-as 65534
neighbor 47.241.43.108 description CGTF Collector
neighbor 47.241.43.108 ebgp-multihop 255
!neighbor 2607:8400:2880:4::80df:9d28 remote-as 65534
!neighbor 2607:8400:2880:4::80df:9d28 description CGTF Collector
!neighbor 2607:8400:2880:4::80df:9d28 ebgp-multihop 255
!
address-family ipv4 unicast
neighbor 47.241.43.108 activate
neighbor 47.241.43.108 prefix-list DENY-ALL in
neighbor 47.241.43.108 route-map RNE-out out
neighbor 47.241.43.108 update-source <your-ip>
exit-address-family
!
address-family ipv6 unicast
neighbor 47.241.43.108 activate
neighbor 47.241.43.108 DENY-ALLv6 in
neighbor 240b:4000:b:db00:8106:7413:738f:e9ed activate
neighbor 240b:4000:b:db00:8106:7413:738f:e9ed DENY-ALLv6 in
neighbor 240b:4000:b:db00:8106:7413:738f:e9ed RNE-out out
neighbor 240b:4000:b:db00:8106:7413:738f:e9ed update-source <your-
ip>
exit-address-family
!
ip prefix-list DENY-ALL seq 5 deny 0.0.0.0/0 le 32
!
ipv6 prefix-list DENY-ALLv6 seq 5 deny ::/0 le 128
```

```
!  
route-map RNE-out permit 10  
description Match R&E networks  
match community rne  
!  
route-map RNE-out deny 20  
description Deny everything else  
!
```

Juniper:

```
top edit policy-options  
set policy-statement DENY-ALL term END then reject  
  
set policy-statement ANNOUNCE-RNE term RNE from family inet  
set policy-statement ANNOUNCE-RNE term RNE from protocol bgp  
set policy-statement ANNOUNCE-RNE term RNE from community RNE  
set policy-statement ANNOUNCE-RNE term RNE from route-type external  
set policy-statement ANNOUNCE-RNE term RNE then accept  
set policy-statement ANNOUNCE-RNE term END then reject  
  
set policy-statement ANNOUNCE-RNEv6 term RNE from family inet6  
set policy-statement ANNOUNCE-RNEv6 term RNE from protocol bgp  
set policy-statement ANNOUNCE-RNEv6 term RNE from community RNE  
set policy-statement ANNOUNCE-RNEv6 term RNE from route-type  
external  
set policy-statement ANNOUNCE-RNEv6 term RNE then accept  
set policy-statement ANNOUNCE-RNEv6 term END then reject  
  
top edit protocols bgp  
set group CGTF-View type external  
set group CGTF-View local-address LOCAL_ADDRESS  
set group CGTF-View import DENY-ALL  
set group CGTF-View family inet unicast  
set group CGTF-View export ANNOUNCE-RNE  
set group CGTF-View neighbor 47.241.43.108 description "CGTF  
Collector"  
set group CGTF-View neighbor 47.241.43.108 multihop ttl 255  
set group CGTF-View neighbor 47.241.43.108 peer-as 65534  
  
set group CGTF-Viewv6 type external  
set group CGTF-Viewv6 local-address LOCAL_V6_ADDRESS  
set group CGTF-Viewv6 import DENY-ALL
```

```
set group CGTF-Viewv6 family inet6 unicast
set group CGTF-Viewv6 export ANNOUNCE-RNEv6
set group CGTF-Viewv6 neighbor 240b:4000:b:db00:8106:7413:738f:e9ed
description "CGTF Collector"
set group CGTF-Viewv6 neighbor 240b:4000:b:db00:8106:7413:738f:e9ed
multihop ttl 255
set group CGTF-Viewv6 neighbor 240b:4000:b:db00:8106:7413:738f:e9ed
peer-as 65534
```

5. Benefit you can get

- Contribute data to the Internet routing research community that will help your own network administrators and researchers **gain a better understanding of your network** and help to **identify problems in your network**.
- You can check the historical routing data of your network to help you **review the historical anomaly events in your network**
- Route data is publicly available, partners can **download data** from <http://bgp.cgtf.net/> anywhere and anytime