Whether to Synchronize the RPKI Data that is not Required by the Network

draft-fu-sidrops-enhanced-slurm-filter-01

draft-geng-sidrops-rtr-selective-sync-03

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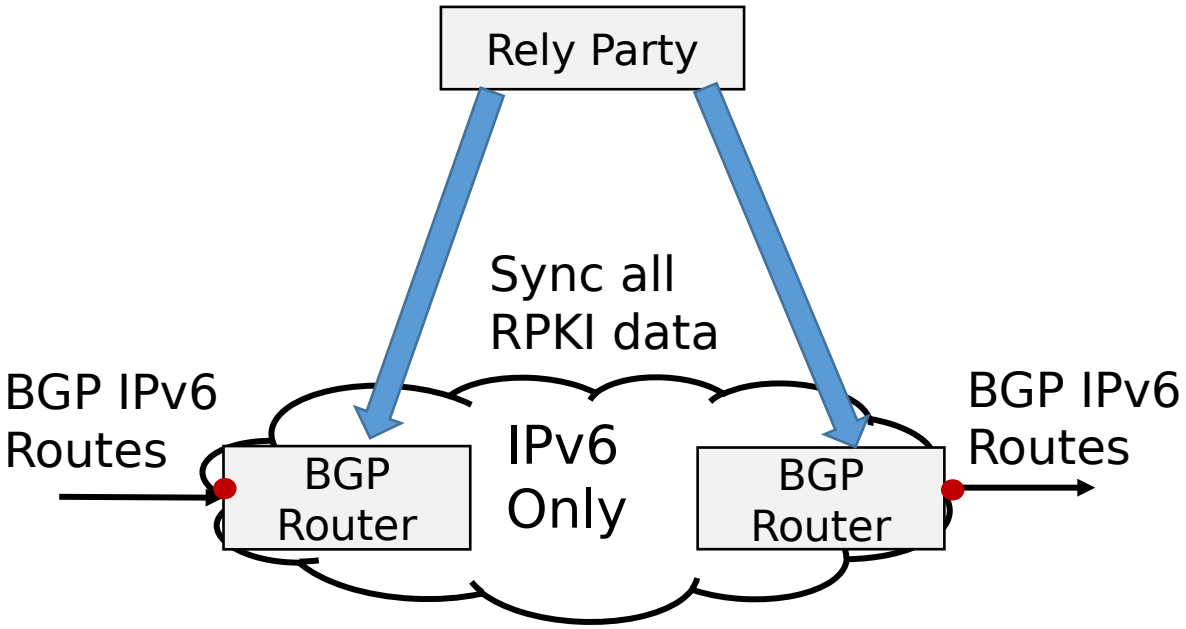
Use Case: Only IPv6 Prefix Data are Required



- IPv6-only network is only interested in IPv6-related BGP validation.
  - New China Education and Research Network (named FITI)

    under construction will be an IPv6-only network.
  - China Unicom is considerting to deploy IPv6-only Network in the future.

Use Case: Only IPv6 Prefix Data are Required

- When a network receives unnecessary RPKI data:
  - Waste of storage on routers (Save 67% storage)
  - Induce some unnecessary transmission overhead.
  - Not energy efficient.

	The number of IP Address Prefix	Memory
Total ROA Cache from global RPKI repository	511,107	35.8M
Only IPv6 ROA Cache	170,448	11.7M

```
[local@localhost rtr_client]$ time ./rtr_client.py -h 192.168.1.31 -p 8082
2024-07-18-024648: CONNECT 192.168.1.31.us-cli
+
2024-07-18-024648: NEW SESSION ID 0
.
2024-07-18-024650: REFRESHED SESSION ID 0->957
.....................................................................................
.....................................................................................
.................
2024-07-18-024657: SESSION 957 NEW SERIAL 0->23
2024-07-18-024701: DUMP ROUTES: session_id=957 serial=23 announce=511107/withdraw=0
```

```
[local@localhost 2024-07]$ ll
总用量 77240
-rw-rw-r-- 1 local local 37541219 7月  19 14:25 2024-07-18-024625.routes.00000957.00000023.json
-rw-rw-r-- 1 local local 12309810 7月  19 14:15 v6-2024-07-18-024657.routes.00000957.00000023.json
[local@localhost 2024-07]$
```

Discussion

- RPKI data types (RTR PDU): IPv4 prefix, IPv6 prefix, router key, ASPA.
- Likely more RPKI data types in the

  - Secured Routing Policy Specification Language (RPSL) [RFC7909]
  - Signed Prefix Lists [I-D.ietf-sidrops-rpki-prefixlist]
  - Autonomous Systems Cones [I-D.ietf-grow-rpki-as-cones]
  - Mapping Origin Authorizations (MOAs) [I-D.xie-sidrops-moa-profile]
  - Signed SAVNET-Peering Information (SiSPI) [I-D.chen-sidrops-sispi]
  - Path validation with RPKI [I-D.van-beijnum-sidrops-pathrpki]
  - Signed Groupings of Autonomous System Numbers [I-D.spaghetti-sidrops-rpki-asgroup]

- Optional solutions to help operators select RPKI data synchronized to it:
  - a) Extend SLURM to support filtering data by RPKI data type
    - Looks simpler than the latter
  - b) Extend RTR to support subscription
  - c) Losing packets by Routers
    - Still induce some unnecessary transmission overhead

- Does a network require all types of RPKI data?
- Whether to synchronize the RPKI data that is not required by the network?
- Which solution is the best?

Thanks!