A YANG Data Model for Routing Management

draft-ietf-netmod-routing-cfg-16

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I-D Status

The I-D was submitted to IESG for publication but based on the discussion during IETF 90 it was returned back to the WG.

Major Changes Between -15 and -16

- `type` **was added as the second key component of** `routing-protocol`**.**

- Routing protocol instance may have more than one connected RIBs per address family.

- `id` key of routes in RIBs (state data) was removed. The list now has no key.

- `id` key of static routes (configuration) was removed. The list now has `destination-prefix` as the only key.

- **New attributes of RIB routes:** `route-preference` **and** `active`**.**

- **RPC operation** `active-route` **to** `fib-route`**.**

- `route-preference` **is also a new parameter in routing protocol instances serving as the default for routes generated by the protocol instance.**

- **Identity** `rt:standard-routing-instance` **was renamed to** `rt:default-routing-instance`**.**

- Next-hop lists were adjusted to the current I2RS RIB info model: they can be recursive, and reference to another RIB was added as a new special type of next-hop.

- Next-hop in static routes was reorganized – it does **not** allow for recursive next-hop lists.

- All `if-feature` statements were removed from state data.

Next-Hop

```
+--ro next-hop
   +--ro (next-hop-options)
   |  +--:(next-hop-list)
   |  |  +--ro next-hop-list?       next-hop-list-ref
   |  +--:(use-rib)
   |  |  +--ro use-rib?             rib-state-ref
   |  +--:(simple-next-hop)
   |  |  +--ro outgoing-interface?
   |  |  +--ro v4ur:next-hop-address?
   |  +--:(special-next-hop)
   |  |  +--ro special-next-hop?    enumeration
```

Next-Hop List

```
+--ro routing-state
|  ...
|  +--ro next-hop-lists
|  |   +--ro next-hop-list* [id]
|  |       +--ro id                 uint64
|  |       +--ro address-family     identityref
|  |       +--ro next-hop*
|  |           +--ro (next-hop-options)
|  |           |  +--:(next-hop-list)
|  |           |  |  +--ro next-hop-list?      next-hop-list-ref
|  |           |  +--:(use-rib)
|  |           |  |  +--ro use-rib?            rib-state-ref
|  |           |  +--:(simple-next-hop)
|  |           |  |  +--ro outgoing-interface?
|  |           |  |  +--ro v4ur:next-hop-address?
|  |           |  +--:(special-next-hop)
|  |           |     +--ro special-next-hop?    enumeration
|  |       +--ro priority?
|  |       +--ro weight?
```

Feedback from RTGWG

1. Augment configuration of IP addresses in *ietf-ip* with the option to specify routing instance – otherwise duplicate addresses may be flagged as an error.

2. Move configuration of IPv6 RA parameters from `rt:interface` to `if:interface`.

3. Route filters – Acee Lindem suggested to remove completely from the data model, other people just proposed some modifications.

4. The definition of backup next-hop may be too restrictive and inappropriate for all IP Fast-Reroute strategies.

5. Problems were reported (Dean) with applying the data model to logical routers.