
Core Routing Data Model

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Main Changes since -04

- Routing tables are now global, i.e., `routing-tables` is a child of `routing` rather than `router`.
- Each `router` instance now has the `type` parameter.
- Each `router` instance now has the `main-routing-tables` container with a reference to the main routing table for each supported address family.
- Direct routes always appear in the main routing table.
- Route attribute `age` changed to `last-updated` (its type is `yang:date-and-time`).
- Each `routing-protocol` instance now has the `enabled` switch.
- RPC method `active-route` returns no output if there is no active route, instead of an error.

Data Tree

```
+--rw routing
  |--rw router [name]
  |   |--rw name
  |   |--rw type?
  |   |--rw enabled?
  |   |--rw router-id?
  |   |--rw description?
  |   |--rw main-routing-tables
  |       |--rw main-routing-table [address-family safi]
  |           |--rw address-family
  |           |--rw safi
  |           |--rw name?
  |--rw interfaces
  |   |--rw interface [name]
  |       ...
  |--rw routing-protocols
  |   |--rw routing-protocol [name]
  |       ...
  |--rw routing-tables
  |   |--rw routing-table [name]
  |       ...
  |--rw route-filters
  |   |--rw route-filter [name]
  |       ...
```

Example: MPLS/BGP VPNs

```
augment "/rt:routing/rt:router" {
  when "rt:type = 'mbv:PE-global'";
  container vrf-instances {
    list vrf-instance {
      key "name";
      leaf name {
        type rt:router-ref;
        must "/rt:routing/rt:router[name=current()]/"
          + "rt:type = 'mbv:PE-VRF'";
      }
      ...
    }
  }
}
```

The main routing table of a “PE-global” router instance contains IPv4-VPN (SAFI=128) BGP routes [RFC 4364].

Conclusions

There are no open issues except requests for new features and knobs.

The deadline is now over, we should finish this work and make it available for the development of other modules (routing protocols, route filters, proprietary data models etc.).

Non-trivial uses of the core routing framework will provide substantial feedback. This may then lead to an update in the core routing data model.

Features missing in the core data models are no show-stoppers – they can be defined ad hoc via augments. Some of them may be later incorporated into the core data models.