Core Routing Data Model

draft-ietf-netmod-routing-cfg-05

Ladislav Lhotka

{lhotka@nic.cz}

6 November 2012
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.
```plaintext
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.