

RIB Yang Model

Lixing (Vivienne) Wang

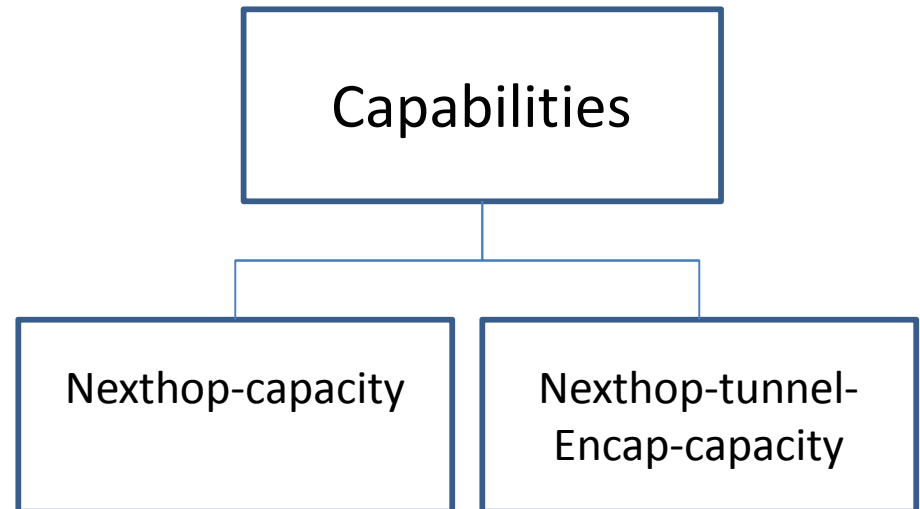
Amit dass

Sections covered in Yang module

- ” 3.1 Capabilities
 - nexthop-capacity, nexthop-tunnel-encap-capacity
- ” 3.2 routing instance list
 - INSTANCE_NAME, rib-list, interface-list, router-id
- ” 3.3 Route
- ” 3.4 Notifications
- ” 3.5 Nexthops

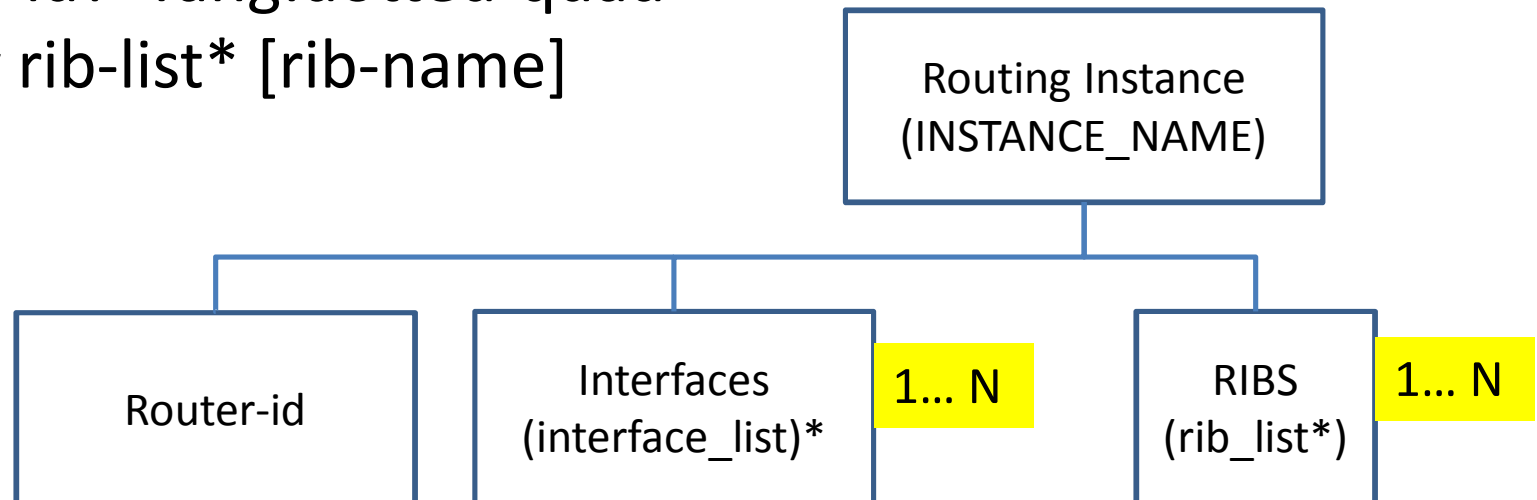
3.1 Capabilities

- +--rw nexthop-capacity
 - | +--rw support-tunnel? boolean
 - | +--rw support-chains? boolean
 - | +--rw support-list-of-list? boolean
 - | +--rw support-replication? boolean
 - | +--rw support-weighted? boolean
 - | +--rw support-protection? boolean
 - | +--rw lookup-limit? Uint8
- +--rw nexthop-tunnel-encap-capacity
 - | +--rw support-ipv4? boolean
 - | +--rw support-ipv6? boolean
 - | +--rw support-mpls? boolean
 - | +--rw support-gre? boolean
 - | +--rw support-vxlan? boolean
 - | +--rw support-nvgre? boolean



3.2 Routing Instance

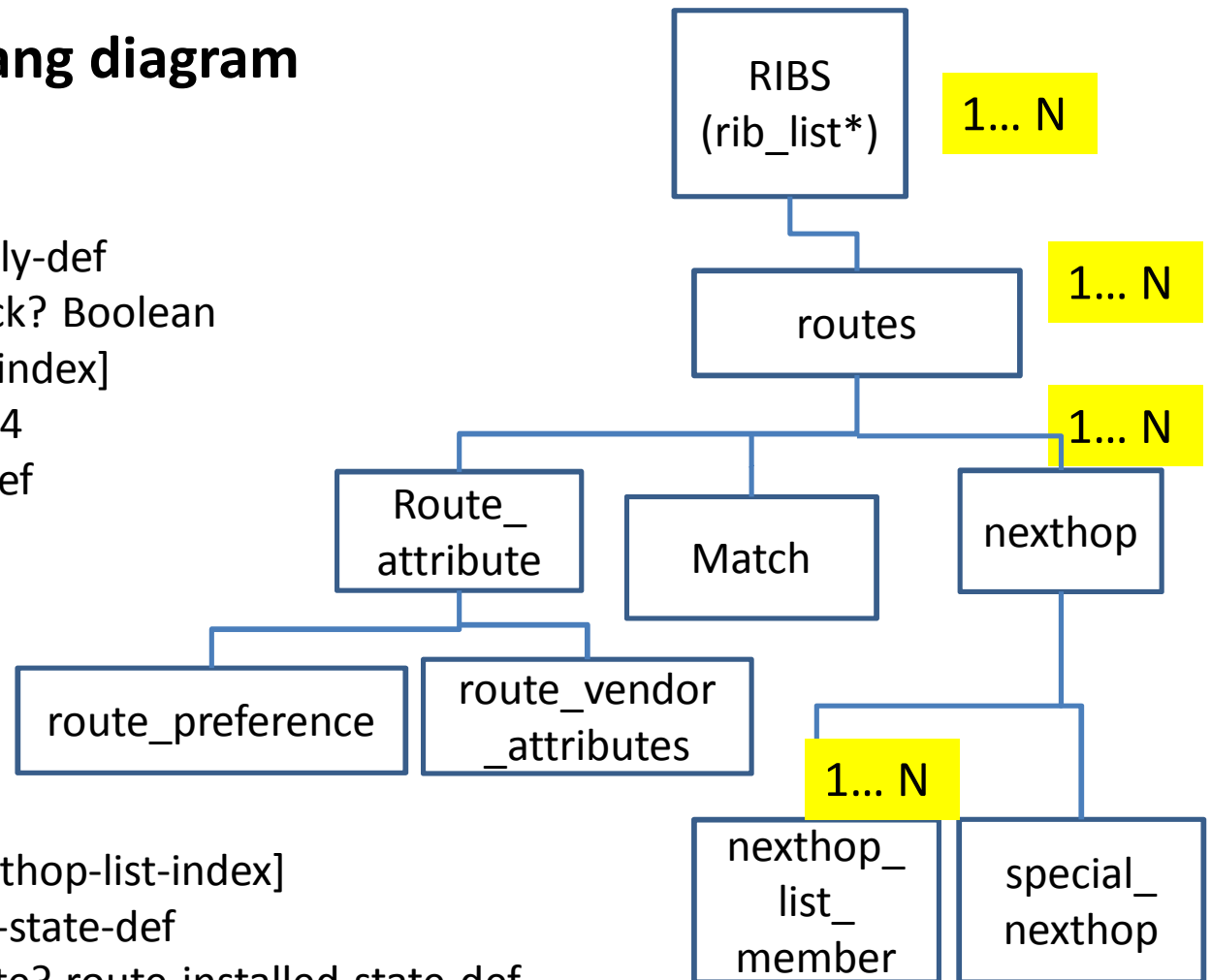
```
+--rw routing-instance-list* [instance-name]
  +--rw instance-name string
  +--rw interface-list* [name]
  | +--rw name if:interface-ref
  +--rw-id? Yang:dotted-quad
  +--rw rib-list* [rib-name]
```



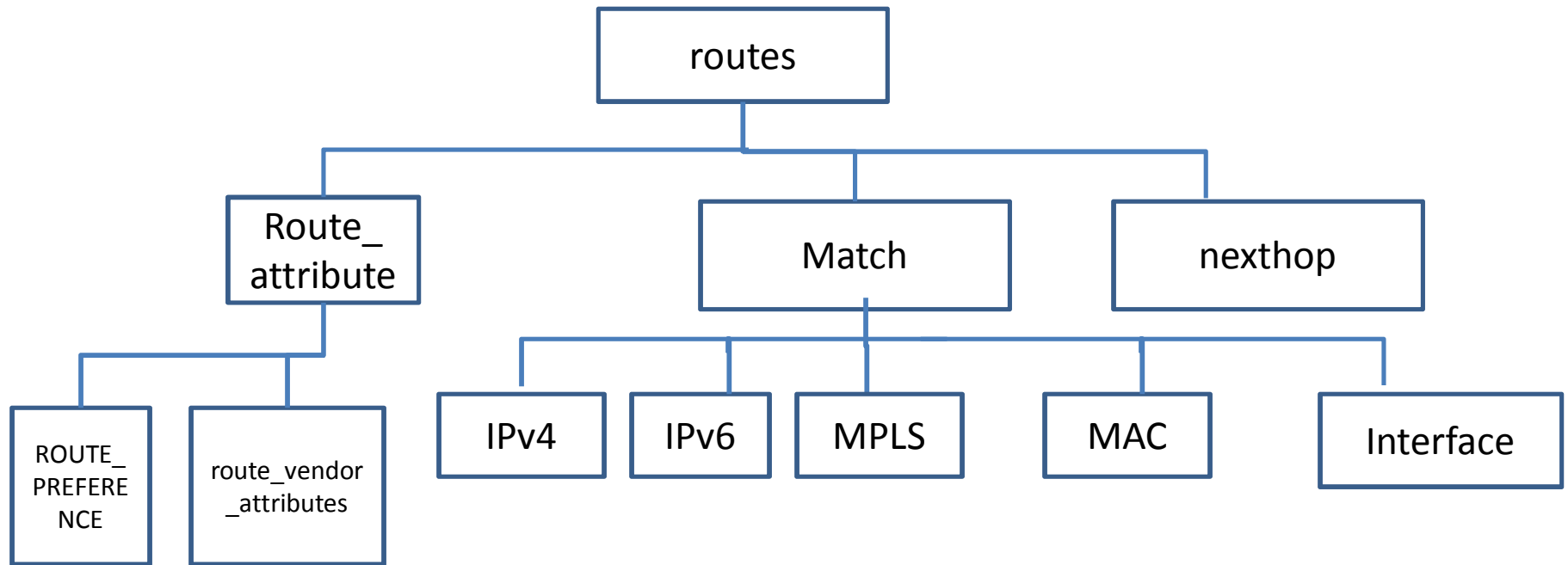
RIB – top level yang diagram

```

+--rw rib-list* [rib-name]
  +--rw rib-name string
  +--rw rib-family rib-family-def
  +--rw enable-ip-rpf-check? Boolean
  +--rw route-list* [route-index]
  +--rw route-index unit 64
  +--rw-type route-type-def
  +--rw (rib-route-type)?
  | +--:(ipv4)
  | +--:(ipv6)
  | +--:(mpls-route)
  | +--:(mac-route)
  | +--:(interface-route)
  +--rw nexthop-list* [nexthop-list-index]
  +--ro route-state? route-state-def
  +--ro route-installed-state? route-installed-state-def
  +--ro route-reason ? route-reason-def
  +--rw route-preference uint32
  +--rw local-only Boolean
  +--rw address-family-route-attributes
  
```



3.3 Route



3.3 Route

```
+--rw route-list* [route-index]
  +--rw route-index          uint64
  +--rw route-type           route-type-def
  +--rw (rib-route-type)?
    | +--:(ipv4)
    | | +--rw ipv4
    | |   +--rw ipv4-route-type          ip-route-type-def
    | |   +--rw (ip-route-type)?
    | |     +--:(destination-ipv4-address)
    | |       | +--rw destination-ipv4-prefix          inet:ipv4-prefix
    | |       +--:(source-ipv4-address)
    | |         | +--rw source-ipv4-prefix          inet:ipv4-prefix
    | |         +--:(destination-source-ipv4-address)
    | |           +--rw destination-source-ipv4-address
    | |             +--rw destination-ipv4-prefix  inet:ipv4-prefix
    | |             +--rw source-ipv4-prefix      inet:ipv4-prefix
    | +--:(ipv6)
    | | +--rw ipv6
    | |   +--rw ipv6-route-type          ip-route-type-def
    | |   +--rw (ip-route-type)?
    | |     +--:(destination-ipv6-address)
    | |       | +--rw destination-ipv6-prefix          inet:ipv6-prefix
    | |       +--:(source-ipv6-address)
    | |         | +--rw source-ipv6-prefix          inet:ipv6-prefix
    | |         +--:(destination-source-ipv6-address)
    | |           +--rw destination-source-ipv6-address
    | |             +--rw destination-ipv6-prefix  inet:ipv6-prefix
    | |             +--rw source-ipv6-prefix      inet:ipv6-prefix
```

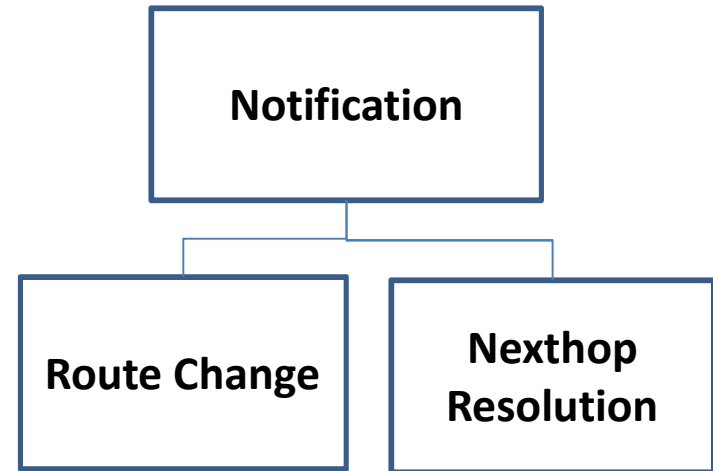
3.3 Route

```
+--rw route-list* [route-index]
  +--rw route-index          uint64
  +--rw route-type          route-type-def
  +--rw (rib-route-type)?
  | +--:(mpls-route)
  | | +--rw mpls-label-in    uint32
  | | +--rw mpls-action     mpls-action-def
  | | +--rw mpls-label-out?  uint32
  | +--:(mac-route)
  | | +--rw mac-address      uint32
  | +--:(interface-route)
  |   +--rw interface-identifier  uint32
  +--rw nexthop-list* [nexthop-list-index]
  +--ro route-state?        route-state-def
  +--ro route-installed-state?  route-installed-state-def
  +--ro route-reason?       route-reason-def
  +--rw route-preference    uint32
  +--rw local-only          boolean
  +--rw address-family-route-attributes
    +--rw (route-type)?
      +--:(ip-route-attributes)
      +--:(mpls-route-attributes)
      +--:(eThernet-route-attributes)
```


3.4 notifications

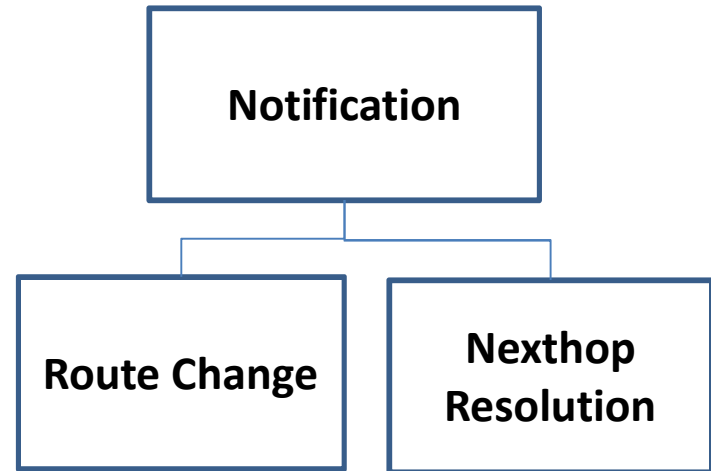
+---n route-change

- | +--ro instance-name string
- | +--ro rib-name
- | +--ro rib-family rib-family-def
- | +--ro route-index unit64
- | +--ro route-type route-type-def
- | +--ro (rib-route-type)?
 - | | +--:(ipv4)
 - | | +--:(ipv6)
 - | | +--:(mpls-route)
 - | | +--:(mac-route)
 - | | +--:(interface-route)
- +--ro route-installed-stateu route-installed-state-def
- +--ro route-state route-state-def
- +--ro route-reason route-reason-def



3.4 notifications

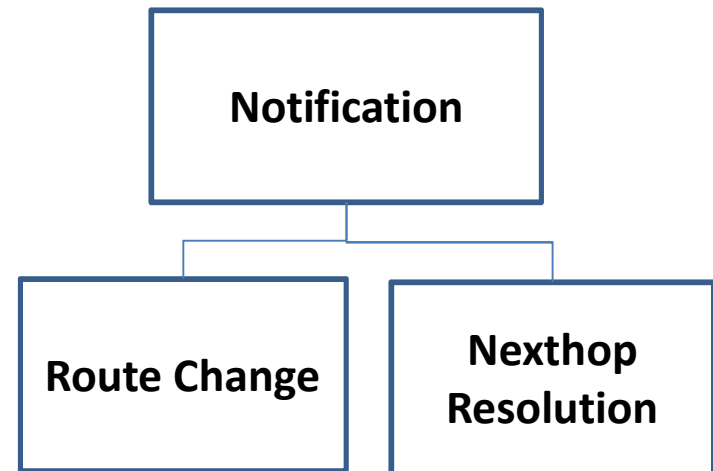
```
+---n nexthop-resolution-status-change
|   +--ro nexthop-chain-identifier
|   |   +---ro (nexthop-identifier-type)?
|   |   +---:(nexthop-name)
|   |   +---:(nexthop-id)
|   +--ro nexthop* [nexthop-index]
|   |   +--ro nexthop-index uint32
|   |   +--ro (next-hop-options)?
|   |   .....
|   +--ro nexthop-state nexthop-state def
```



```

+---n nexthop-resolution-status-change
|  +--ro nexthop-chain-identifier
|  |  +--ro (nexthop-identifier-type)?
|  |  +--:(nexthop-name)
|  |  +--:(nexthop-id)
|  +--ro nexthop* [nexthop-index]
|  |  +--ro nexthop-index uint32
|  |  +--ro (next-hop-options)?
|  |  +--:(nexthop-identifier-next-hop)
|  |  +--:(nexthop-identifier-next-hop)
|  |  +--:(egress-interface-next-hop)
|  |  +--:(ipv4-address-next-hop)
|  |  +--:(ipv6-address-next-hop)
|  |  +--:(egress-interface-ipv4-next-hop)
|  |  +--:(egress-itnerface-ipv6-next-hop)
|  |  +--:(egress-interface-mac-next-hop)
|  |  +--:(logical-tunnel-next-hop)
|  |  +--:(tunnel-encap-next-hop)
|  +--ro nexthop-state nexthop-state def

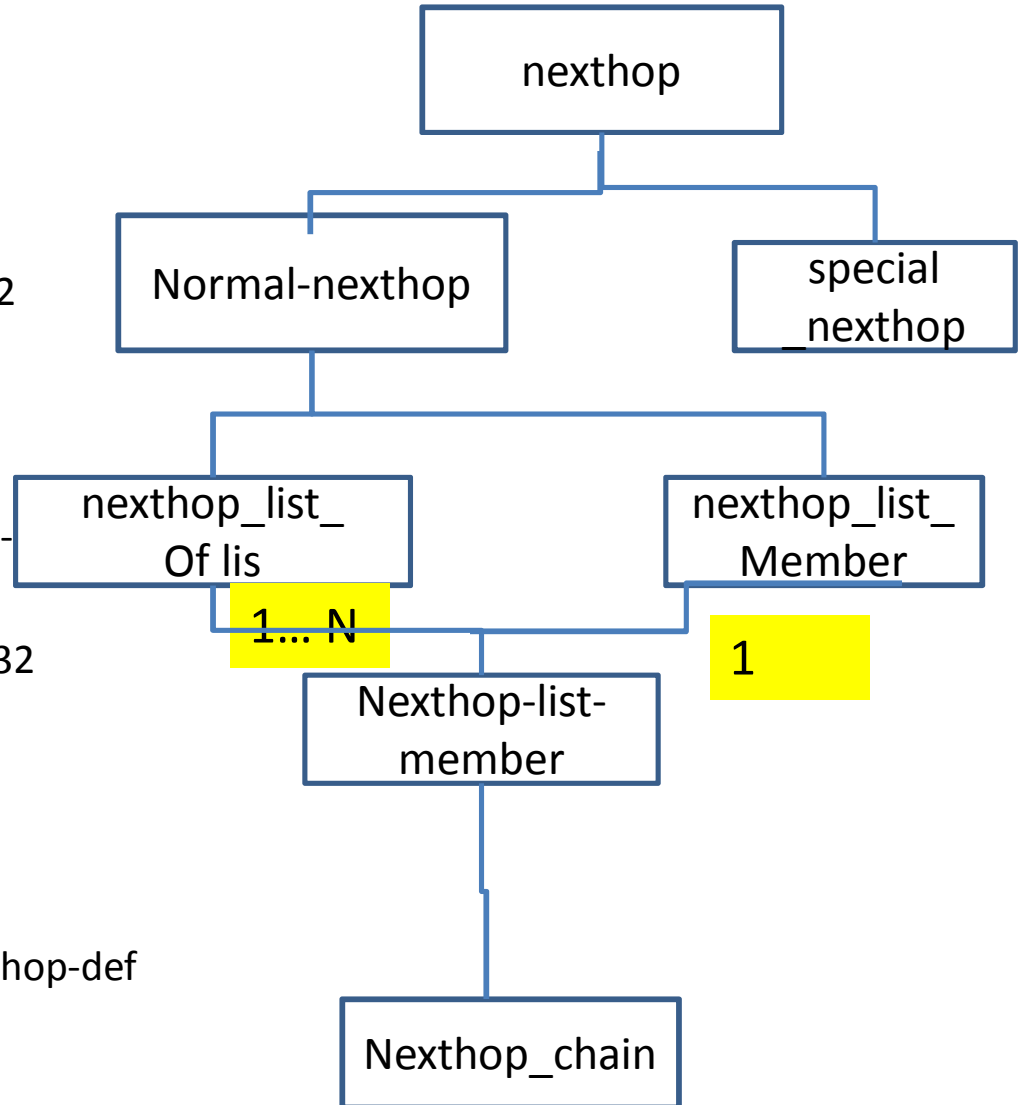
```



3.5 nexthop

```
+---:(normal-nexthop)
  +---rw (nexthop-member-or-list-of-list)?
    +---:(one-nexthop-list-member)
      | +---rw nexthop-list-member-index  uint32
      | +---rw (nexthop-chain-or-identifier)?
      | +---:(nexthop-chain)
    +---:(nexthop-list-of-list)
      +---rw nexthop-list-member* [nexthop-list-
        +---rw nexthop-list-index?      uint32
        +---rw nexthop-list-member-index  uint32
        +---rw (nexthop-chain-or-identifier)?
        | +---:(nexthop-chain)

+---:(special-nexthop)
  | +---rw special-nexthop?      special-nexthop-def
```

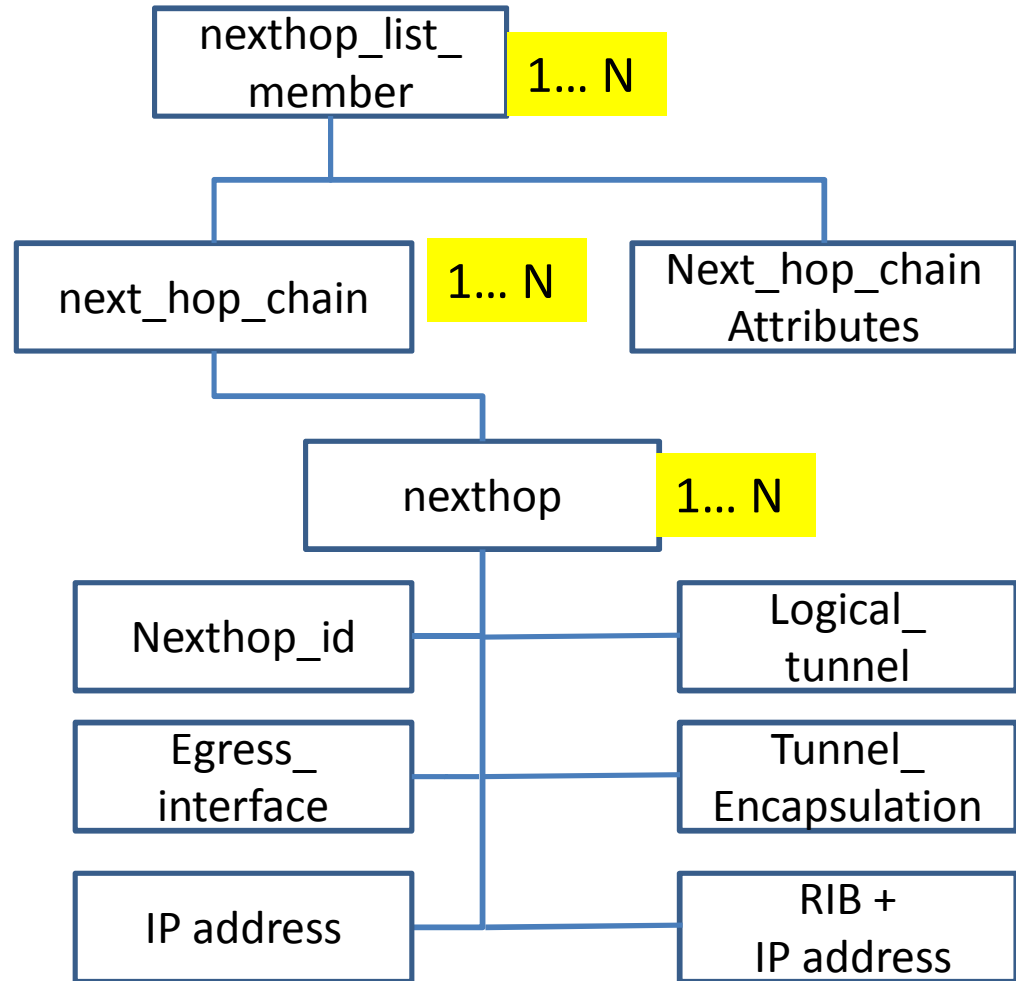


3.5 nexthop

```

+--rw nexthop-list-member-index uint32
+--rw (nexthop-chain-or-identifier)?
| +--:(nexthop-chain)
| | +--rw nexthop-chain
| |   +--rw nexthop-chain-identifier
| |   +--rw nexthop* [nexthop-index]
| |     +--rw nexthop-index          uint32
| |     +--rw (next-hop-options)?
| |       +--:(nexthop-identifier-next-hop)
| |       +--:(egress-interface-next-hop)
| |         | +--rw outgoing-interface      string
| |         +--:(ipv4-address-next-hop)
| |         | +--rw next-hop-ipv4-address    inet:ipv4-address
| |         | +--rw ipv4-rib-name?          string
| |         +--:(ipv6-address-next-hop)
| |         | +--rw next-hop-ipv6-address    inet:ipv6-address
| |         | +--rw ipv6-rib-name?          string
| |         +--:(egress-interface-ipv4-next-hop)
| |         | +--rw next-hop-egress-interface-ipv4-address
| |         |   +--rw outgoing-interface      string
| |         |   +--rw next-hop-egress-ipv4-address  inet:ipv4-address
| |         +--:(egress-interface-ipv6-next-hop)
| |         | +--rw next-hop-egress-interface-ipv6-address
| |         |   +--rw outgoing-interface      string
| |         |   +--rw next-hop-egress-ipv6-address  inet:ipv6-address
| |         +--:(egress-interface-mac-next-hop)
| |         | +--rw next-hop-egress-interface-mac-address
| |         |   +--rw outgoing-interface      string
| |         |   +--rw ieee-mac-address        uint32

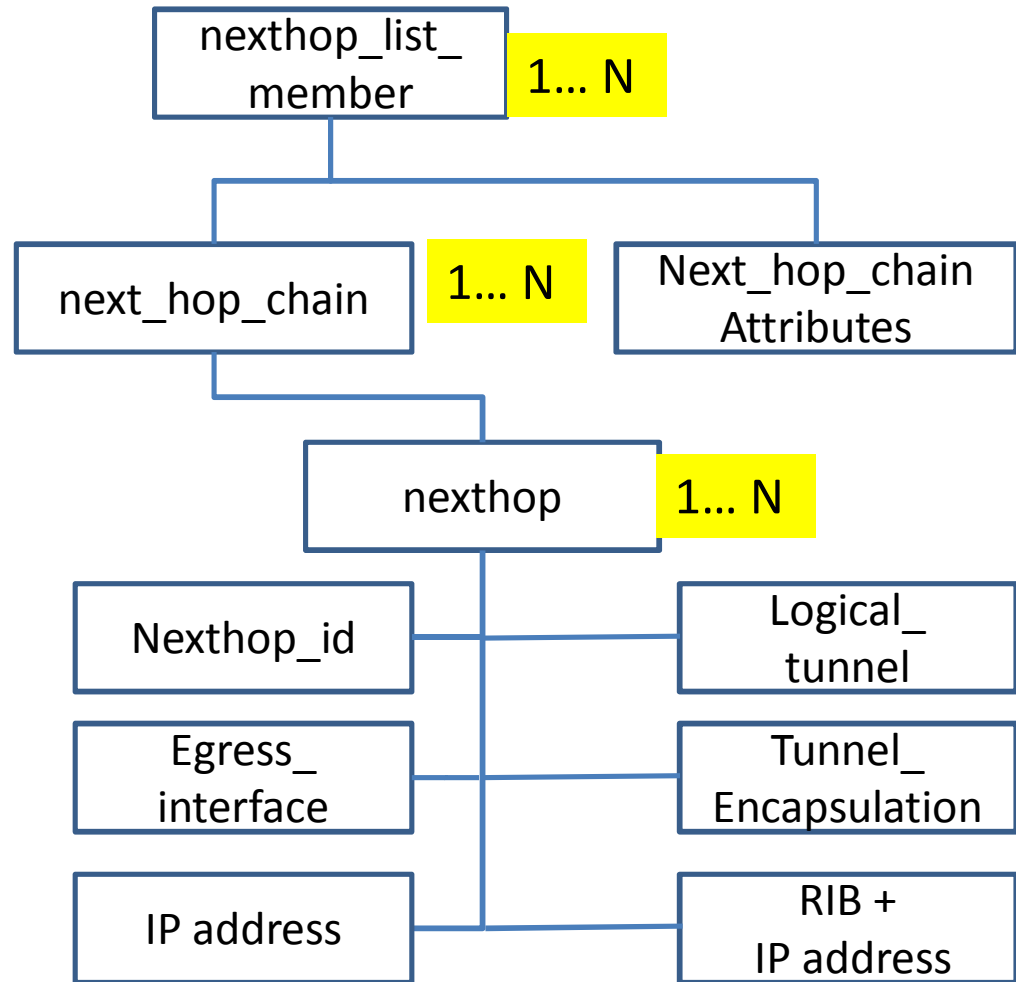
```



3.5 nexthop

```

+--rw nexthop-list-member-index uint32
+--rw (nexthop-chain-or-identifier)?
| +--:(nexthop-chain)
| | +--rw nexthop-chain
| |   +--rw nexthop-chain-identifier
| |   +--rw nexthop* [nexthop-index]
| |     +--rw nexthop-index          uint32
| |     +--rw (next-hop-options)?
| |       +--:(logical-tunnel-next-hop)
| |         | +--rw logical-tunnel
| |         |   +--rw tunnel-type tunnel-type-def
| |         |   +--rw tunnel-name string
| |       +--:(tunnel-encap-next-hop)
| |         +--rw tunnel-encap
| |         +--rw (tunnel-type)?
| |           | +--:(ipv4)
| |           | +--:(ipv6)
| |           | +--:(mpls)
| |           | +--:(gre)
| |           | +--:(nvgre)
| |           +--rw (nexthop-second-encap-or-not)?
| |             | +--rw (nexthop-third-encap-or-not)?
| |             |   +--rw (nexthop-forth-encap-or-not)?
| |             |     +--rw (nexthop-fifth-encap-or-not)?
| |             |       +--:(nexthop-fifth-encap)
| |           +--rw outgoing-interface? string
| +--:(nexthop-chain-identifier)
+--rw nexthop-chain-identifier
+--ro nexthop-state          nexthop-state-def
+--rw priority?             enumeration
+--rw weight?               uint8
  
```



Q & A