Softwire mesh MIB
draft-cui-softwire-mesh-mib

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Outline

- Background
- Structure of softwire mesh MIB
  - Subtree
  - swmInfo
  - swmVIfInfo
  - swmNLRINHInfo
  - swmBGPNeighInfo
- Discussion

Background

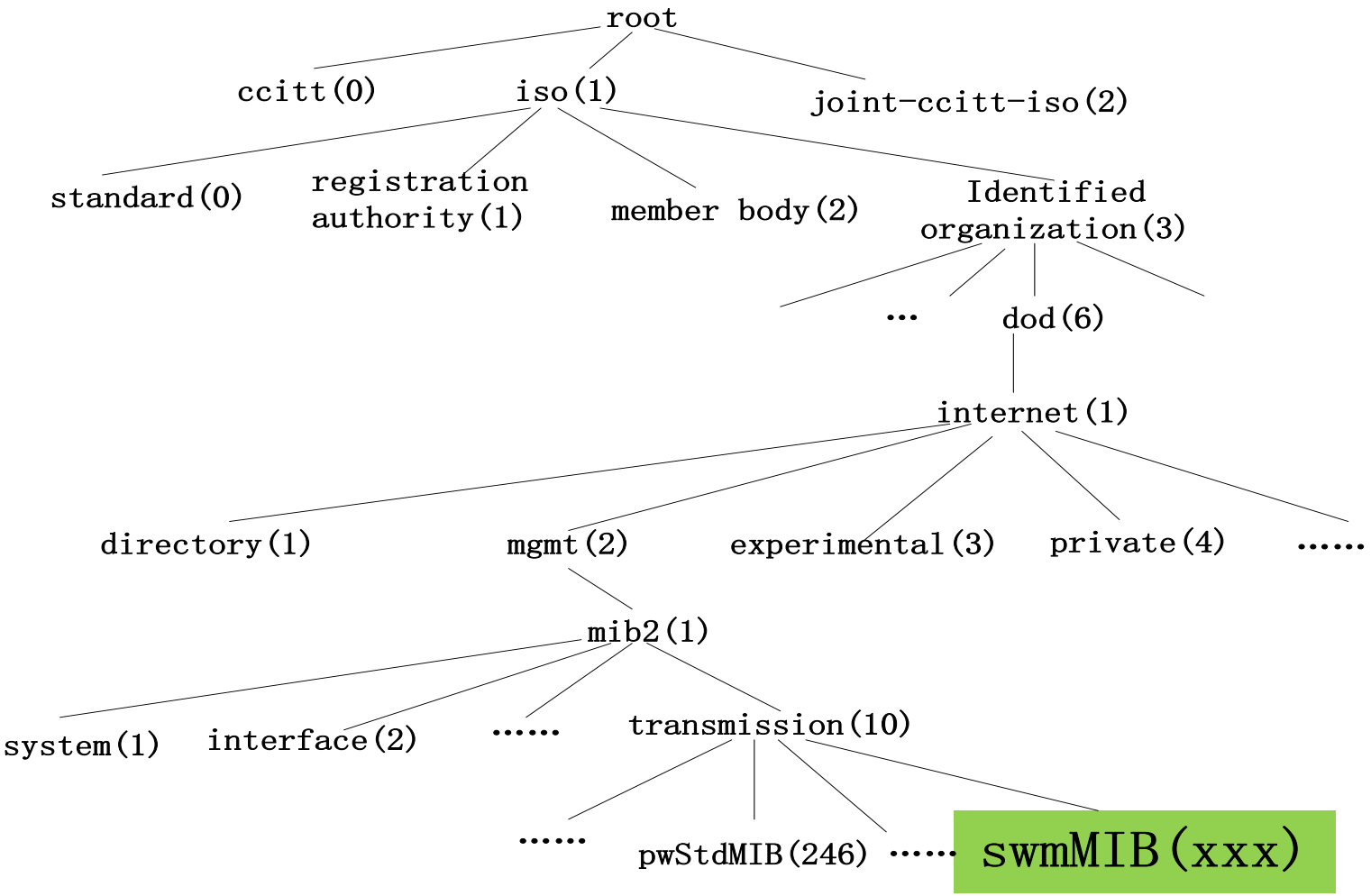
- The WG completes RFC4925/ RFC5565 for softwire mesh
- Supported by Huawei,Bitway…
- IPv6 transition requirement in China
- China's Next Generation Internet(CNGI): 4over6 mesh deployment in CERNET2
  - A large number of PEs/client networks
  - Management requirement

Management requirement

- The experience of CNGI mesh deployment
  - Monitor the status of PEs' mesh functions
    - Keep track of availability of the mesh
    - When broken, analyze information like BGP connectivity, NLRI-NH to find what & where is the problem
  - Collect each PE's traffic information
    - See the usage statistics, find the bottleneck, etc.
  - Manage a large number of PEs
    - Produced by different manufacturers
    - Configured & managed by different campus networks
    - Unified management is indeed necessary

Position of softwire mesh MIB

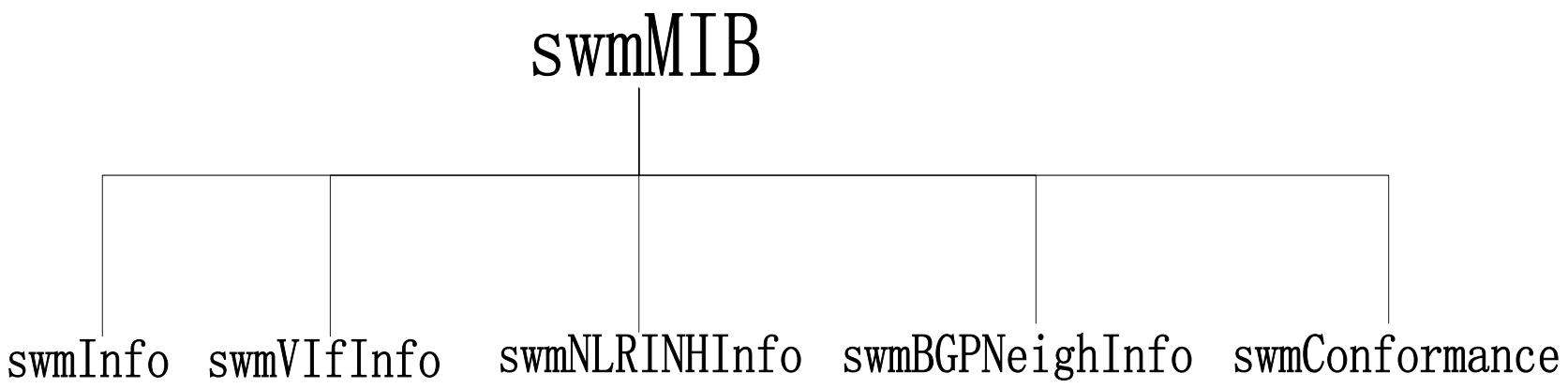
- swmMIB ::= {transmission xxx}



Subtree of swmMIB

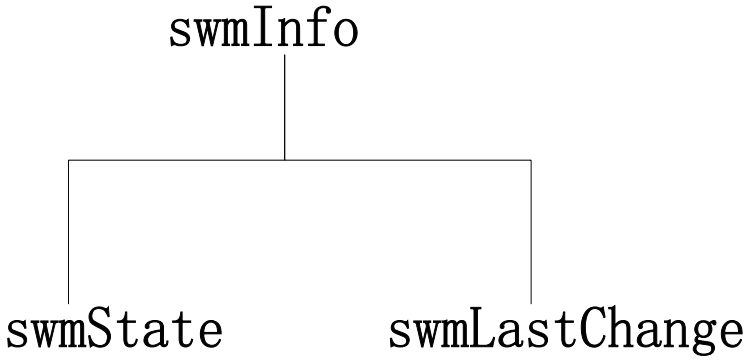
- swmInfo: Basic information about softwire
- swmVIfInfo: Information about tunnel
- swmNLRINHInfo: Information about (E-IP NLRI,I-IP NH) routes

- swmInfo: Basic information about softwire



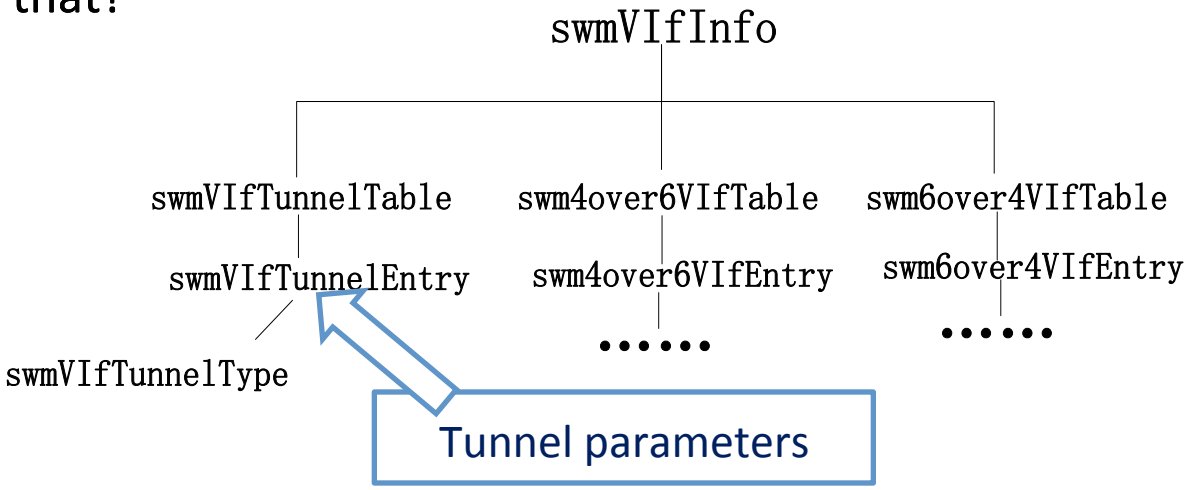
swmInfo ::= {swmMIB 1}

- Softwire mesh basic information
  - swmState
    - Whether the mesh function has been triggered or not
    - Judged by both BGP function status(MP capability negotiation & routes advertising) and tunnel function status.
    - Softwire mesh basic information
  - swmState



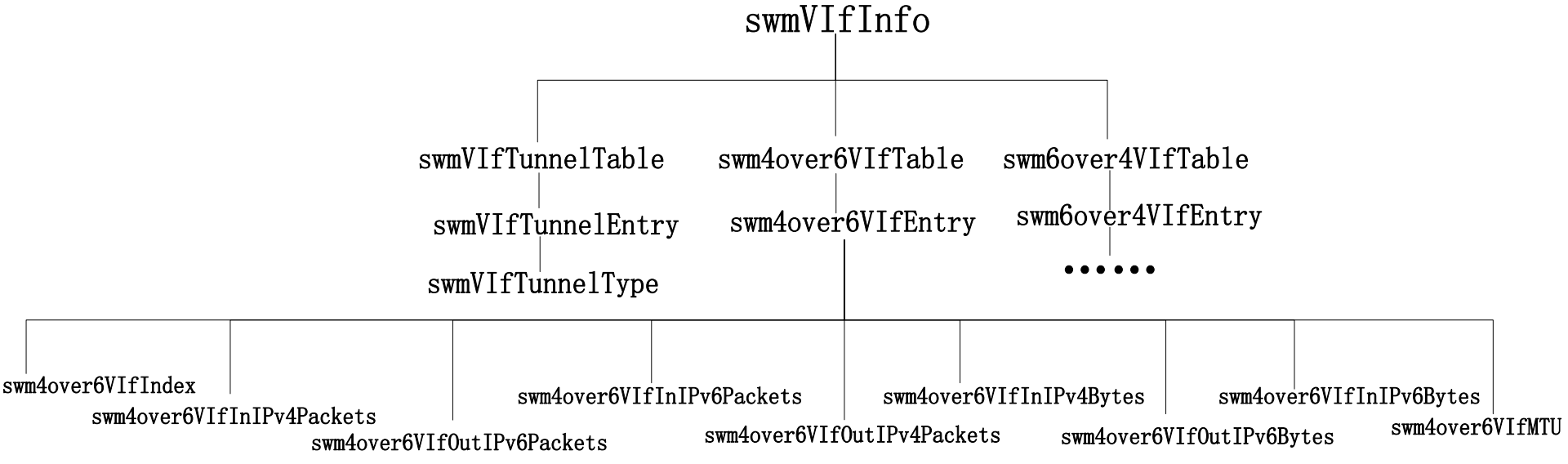
swmVIfInfo ::= {swmMIB 2}

  - swmVIfTunnelTable, swm4over6VIfTable, swm6over4VIfTable
- swmVIfTunnelTable
  - Display **supported** tunnels(& configure tunnel parameters)
  - How do we manage parameters of different types of tunnels in one table?
    - IP-IP(none), GRE(key), L2TPv3(session id & cookie) , MPLS, IPsec…
    - RFC 5512 defines a TLV format for only GRE & L2TPv3, should we follow that?



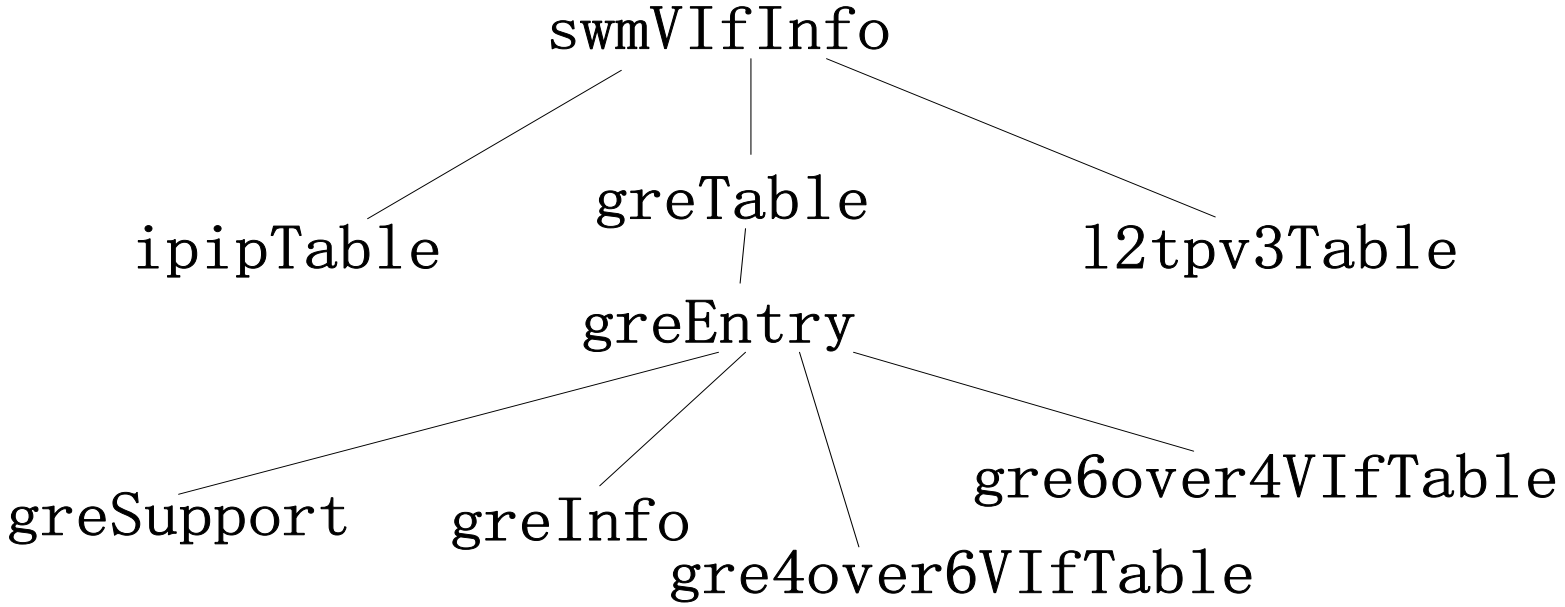
swmVIfInfo ::= {swmMIB 2} Cont.1

- swm4over6VIfTable(one entry per **established** tunnel)
  - Display information on IPv4-over-IPv6 traffic statistics
  - Configure & display MTU size (path MTU discovery?)
- swm6over4VIfTable



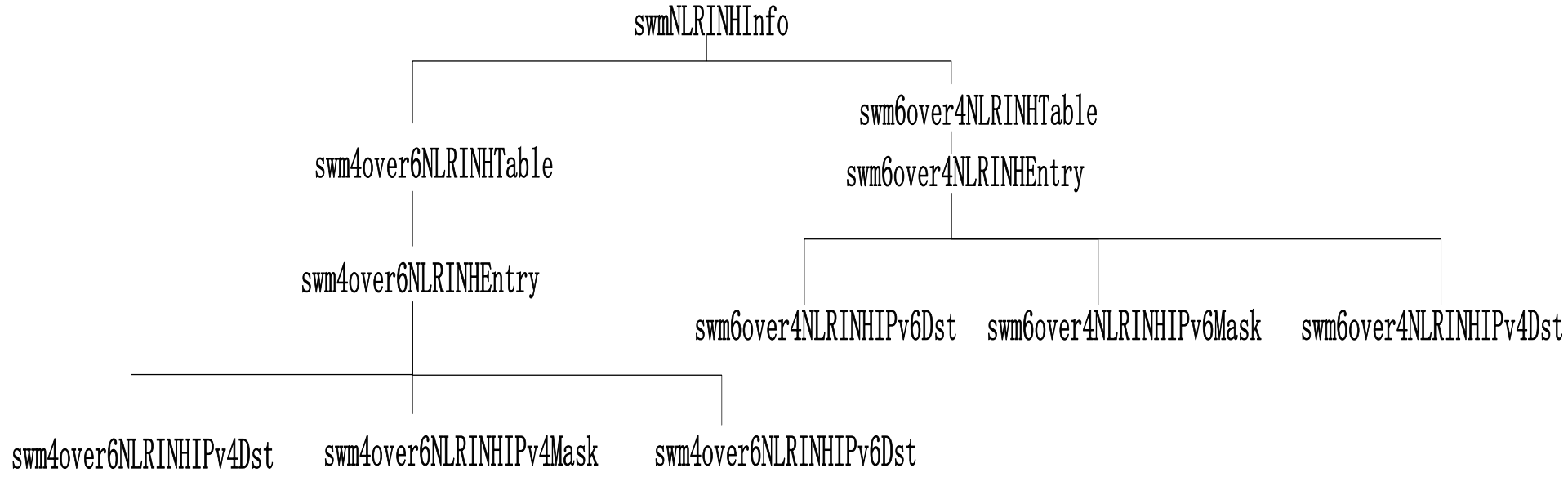
swmVIfInfo ::= {swmMIB 2} Cont.2 Another method to organize

- Sort by different tunnel type(take GRE as an example)
  - greSupport: whether the router support GRE encapsulation way
  - greInfo: parameter about GRE
  - gre4over6VIfTable: information about IPv4-over-IPv6 traffic statistics
  - gre6over4VIfTable: information about IPv6-over-IPv4 traffic statistics



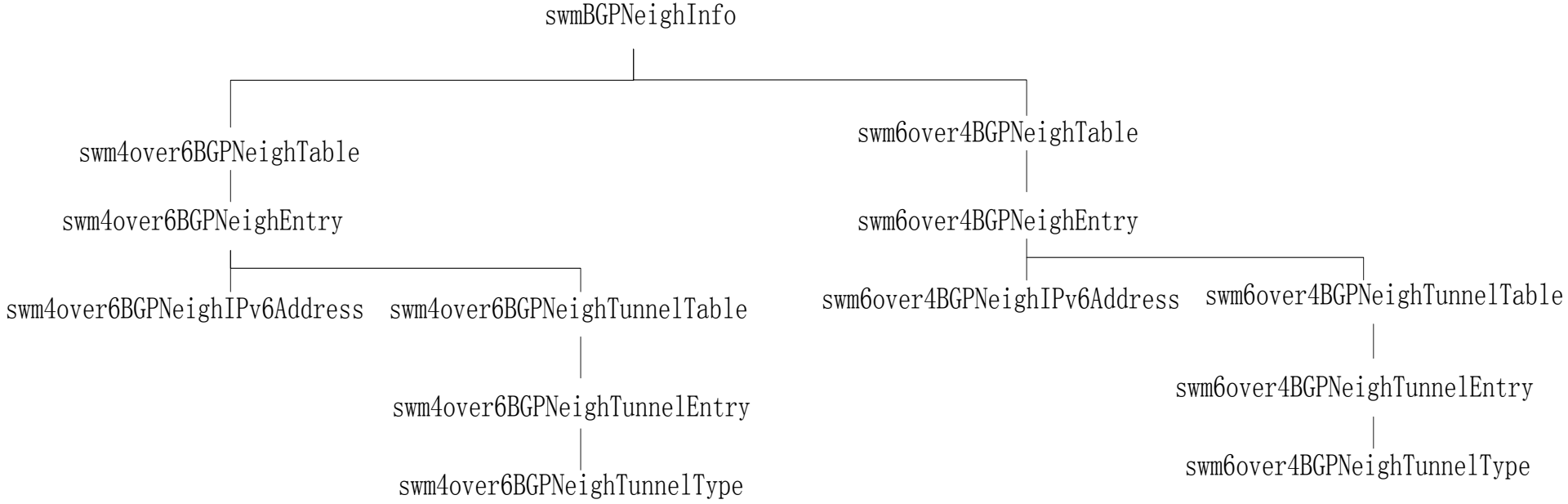
swmNLRINHInfo ::= {swmMIB 3}

- swm4over6NLRINHTable
  - Display the NLRI4-NH6 information
  - Refer to RFC 5549
  - Configurable?
- swm6over4NLRINHTable
  - Display (and configure?) the NLRI6-NH4 information



swmBGPNeighInfo ::= {swmMIB 4}

- Softwire mesh BGP neighbor information
- swm4over6BGPNeighTable
  - 4over6 BGP neighbor address
  - Information of negotiated tunnels(type & parameters) with each neighbor
- swm6over4BGPNeighTable
  - 6over4 BGP neighbor address
  - Information of negotiated tunnels with each neighbor



Discussion

- Collaboration welcomed. Please jump in if you're interested.
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