

Softwire Mesh MIB

draft-cui-softwire-mesh-mib-04

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Background

- The WG publishes RFC5565 for Software Mesh
- CNGI deployment in China
 - China's Next Generation Internet
 - 4-over-6 mesh in CERNET2
 - 100 PE routers support software mesh AFBR functions
 - Vendor support on AFBR
- Management requirements
 - Status monitoring, traffic statistics, tunnel management, etc.
- Software Mesh MIB for RFC5565



Relationship with Other MIBs

- Leverage IP Tunnel MIB(RFC4087)
 - IP Tunnel MIB includes common tunnel objects

Objects in IP Tunnel MIB	Specialization in software mesh
tunnellfEncapsMethod	a new type, “softwareMesh”
tunnellfRemoteIpAddress	must be 0.0.0.0 or ::
tunnellfAddressType	address type of I-IP

- Further objects required by Software Mesh
 - Supported tunnel types of the AFBR
 - Encapsulation table
- Leverage BGP MIB(RFC4273)
 - Adopt BGP MIB for MP-BGP instance in Software Mesh
 - Further objects required by Software Mesh
 - A List of BGP neighbors which runs Software Mesh
 - Encapsulation method negotiated with these neighbors

Softwire mesh MIB structure

- swmMIB

::= {transmission xxx}

– swmTunnelTypeTable

::= {swmMIB 1}

– swmEncapTable

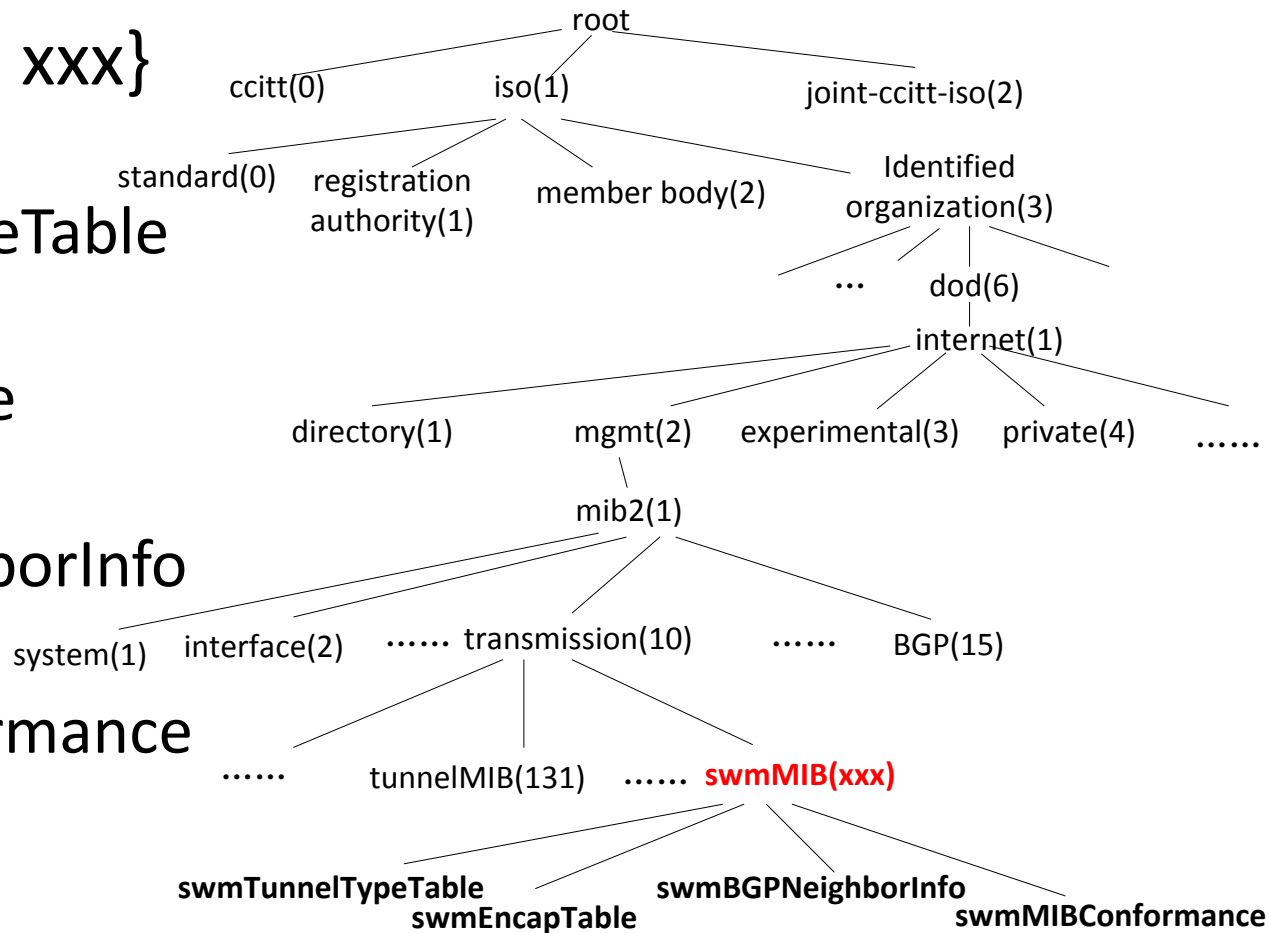
::= {swmMIB 2}

– swmBGPNeighborInfo

::= {swmMIB 3}

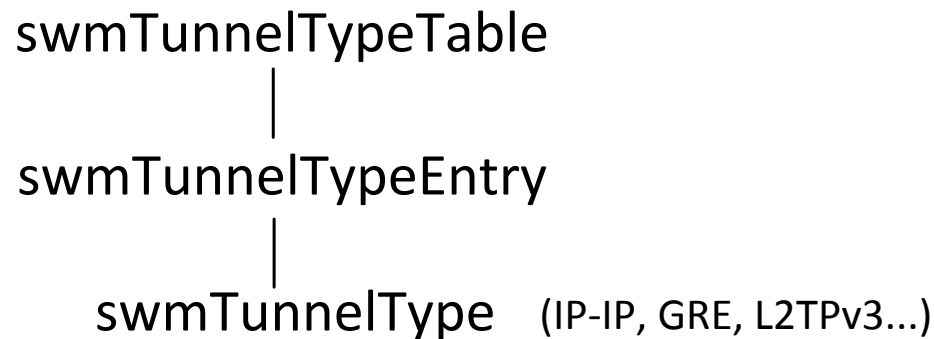
– swmMIBConformance

::= {swmMIB 4}



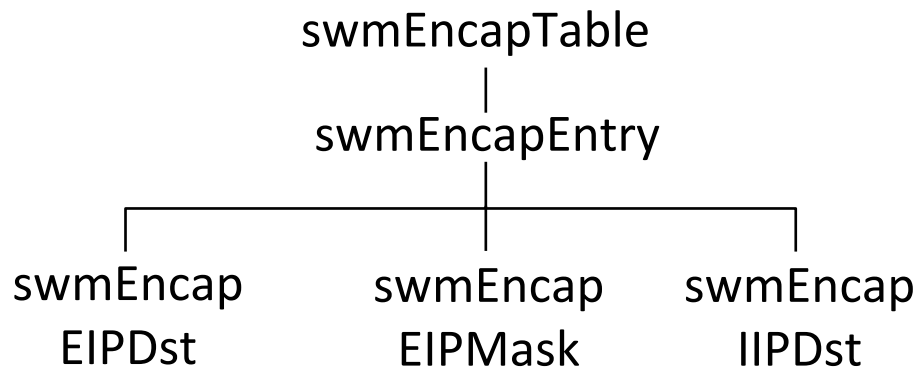
swmTunnelTypeTable ::= {swmMIB 1}

- Software Mesh Tunnel Type Table
 - Encapsulation methods which An AFBR supports
 - Indexed by ifIndex & swmTunnelType
 - RFC5565 encapsulation method set: {IP-IP, GRE, L2TPv3, IPsec}



swmEncapTable ::= {swmMIB 2}

- Software Mesh Encapsulation Table
 - Encapsulation rule: (E-IP prefix, I-IP dst addr) binding
 - Cover both IPv4-over-IPv6 and IPv6-over-IPv4
 - Indexed by ifIndex & swmEncapsEIPDst & swmEncapsEIPMask

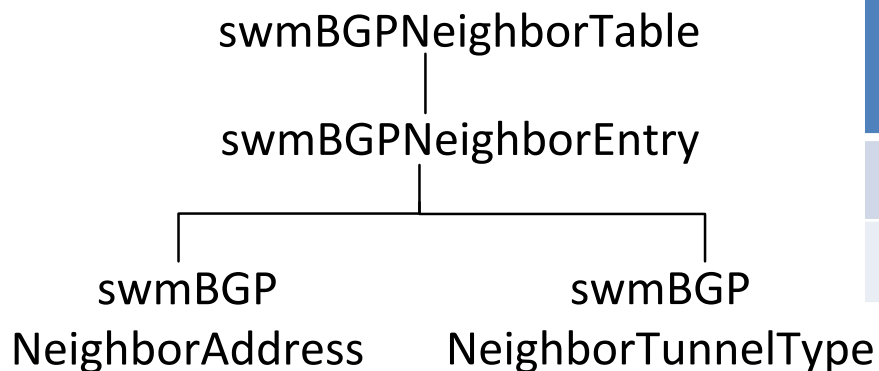


E-IP prefix	I-IP Dst
166.111.0.0/16	2001:da8::5
...	...

An IPv4-over-IPv6 example

swmBGPNNeighborInfo ::= {swmMIB 3}

- Software Mesh BGP Neighbor Information
 - Neighbor I-IP address
 - Encapsulation method(s) negotiated between AFBR and the neighbor
 - Indexed by ifIndex & swmBGPNNeighborAddress



swmBGPNNeighbor-Address	swmBGPNNeighbor-TunnelType
2001:da8::5	GRE
...	...

4over6 BGP neighbor info example

Next step

- This document is in the Softwire Milestone
 - Nov 2011 Adopt Mesh topology MIB module document as a Working Group document
 - Nov 2012 Submit Mesh topology MIB module document for Proposed Standard
- We've addressed the issues raised in past meetings and mailing list
- The MIB structure & content are quite clear now
- So, request for WG adoption?