MSTP MIB – mstpVlanTable

SNMP get-next

- snmp get-next returns the next MIB object and its value in the OID tree of the agent.
- Mostly used when all instance indices are not known to SNMP Manager
- #get-next sysUpTime
- system. sysUpTime.0 = Timeticks: (1199126817)

Closer look at OID tree

→ system.sysObjectID.0 = OID: enterprises.Cisco.5.45
→ system.sysUpTime.0 = Timeticks: (1199126817) 138 days, 18:54:28
→ system.sysContact.0 = "admin"

- Where is OID for "sysUpTime" in the above tree ?
- Inference – Non existent OID can be used with get-next to fetch the next object in the OID tree in lexicographical order.

Proposed MIB structure

```
+--mstpVlanTable (<tbd>)
|  |
|  +--mstpVlanEntry(1)
|     |  Index: mstpMaxVlan,mstpMinVlan
|     |
|     +-- ---- INTEGER mstpMaxVlan(1)
|     |        Textual Convention: VlanId
|     |        Range: 1..4094
|     +-- ---- INTEGER mstpMinVlan(2)
|     |        Textual Convention: VlanId
|     |        Range: 1..4094
|     +-- -R-- Integer32 mstpVlanInstance(3)
|     |        Textual Convention: MstiOrCistInstanceIndex
|     |        Range: 0..64
```

Sample MSTP mappings

Instance	VLAN mappings
0	5-10,21
1	15-20
2	1-4
3	11-14

mstpVlanTable

INDEX (max-vlan,min-vlan)

Instance	VLAN mappings	Max-VLANs	Min-VLANs
0	5-10,21	10 and 21	5 and 21
1	15-20	20	15
2	1-4	4	1
3	11-14	14	11

Ordering by INDEX ie max-vlan, min-vlan :
4.1,10.5,14.11,20.15 and 21.21

OID sub-tree

→ mstpVlanEntry.mstpVlanInstance.4.1 =2
→ mstpVlanEntry.mstpVlanInstance.10.5 =0
→ mstpVlanEntry.mstpVlanInstance.14.11 =3
→ mstpVlanEntry.mstpVlanInstance.20.15 =1
→ mstpVlanEntry.mstpVlanInstance.21.21 =0

where mstpVlanInstance provides VLAN range to MSTI mapping

- Suitable only for continuous ranges
- More entries for discontinuous VLAN ranges – not compact and more tree elements
- Suitable for finding MSTI given VLAN id

get-next on mstpVlanTable –(1)

→ mstpVlanEntry.mstpVlanInstance.4.1 =2

→ mstpVlanEntry.mstpVlanInstance.10.5 =0

→ mstpVlanEntry.mstpVlanInstance.14.11 =3

→ mstpVlanEntry.mstpVlanInstance.20.15 =1

→ mstpVlanEntry.mstpVlanInstance.21.21 =0

- Task : Given VLAN 15 find mstpVlanTable

#get-next mstpVlanEntry.mstpVlanInstance.15

get-next on mstpVlanTable –(2)

→ mstpVlanEntry.mstpVlanInstance.4.1 =2
→ mstpVlanEntry.mstpVlanInstance.10.5 =0
→ mstpVlanEntry.mstpVlanInstance.14.11 =3
←←----mstpVlanEntry.mstpVlanInstance.15
→ mstpVlanEntry.mstpVlanInstance.20.15 =1
→ mstpVlanEntry.mstpVlanInstance.21.21 =0

- get-next retrieves the following entry mstpVlanEntry.mstpVlanInstance.20.15 =1
- The result entry provides info about the VLAN range ie 15-20 and the corresponding MSTI ie 1