Real Hub MIB

Jeff Johnson
cisco Systems
jjohnson@cisco.com

19July95

Agenda:

- What have we learned this week?
- What do we really want?
- What do we currently have?
- How do we get there?
- Cross Reference to 1516

What have we learned?

- There is a lot of overlap
  - You are in a maze of twisty little passages, all alike
- There is a lot of inconsistency
  - You are in a twisty maze of little passages, all different
- Tend to design for now instead of the future
- If it ain't broke, don't fix it, but if it is broke...
- xyzzy

What do we really want?

- Inventory
- Monitoring
  - By Port
  - By Field Replaceable Unit
  - By Repeater
- Configuration
- Notification

What do we currently have?

- Inventory
  - Groups
- Monitoring
  - Repeater
  - Groups
  - Ports
- Configuration
  - This Space Left Blank
  - Was This Intentional?
- Notification
  - Health
  - Group Change
  - Reset

How do we get there?

- Inventory
- Monitoring
- Configuration
- Notification

Inventory

- This space intentionally left blank
- Can you say “Entity MIB” -- sure, I knew you could!

Monitoring

- Physical Ports
- Physical FRUs
- Logical Repeaters

Port Monitoring

- Forget about repeater id
- Forget about group id
- What we really, really want to monitor is the physical port
- How a physical port is indexed is an implementation-specific matter
- Ports should be indexed in an extensible manner
- Ports should be indexed in an intuitive manner

Port Indexing

- Fixed configuration box
  - port #
- Dynamic configuration box
  - card #
  - port #
- Stack
  - box #
  - card #
  - port #
- Generic
  - containment
  - port #

Port Indexing

- There are two extensible methods of indexing
  - OBJECT IDENTIFIER
  - OCTET STRING
- I’m not attached to either one
- Possible examples:
  - hubPortId.2.1.4
  - hubPortId.b.o.x.2.c.a.r.d.1.p.o.r.t.4
- Genericially: hubPortId.<containment>.port#

Port Monitoring (indexed by hubPortId)

- hubPortEntity
- hubPortLastRestart
- hubPortAdminStatus
- hubPortOperStatus
- hubPortLastStatusChange
- hubPortGoodFrames
- hubPortErrorFrames
- hubPortGoodOctets
- hubPortErrorOctets

FRU Monitoring

- Is this useful?
- If so, note that hubFruId is just like a hubPortId without the port
- Can recursify for containment
  - hubFruId.3.2: card 2 in unit 3
  - hubFruId.3: unit 3
- Take port table and s/Port/Fru/g
- I'm open to suggestions on what to name "fru"
- Maybe group ain't such a bad term after all

Repeater Monitoring

- Indexed by a single integer that is unique within a managed entity (repeaterId)
- hubRptrOperStatus
- hubRptrLastStatusChange
- hubRptrHealthText (?)
- hubRptrReset
- hubRptrNonDisruptiveTest (?)

Configuration

- Port Address Tracking
  - hubPortLastAddress
  - hubPortAddressChanges
  - hubPortLastAddressChange
- Assignment of Ports to Repeaters
  - hubPortRepeater
- Port Assignment Capability
  - New Table
  - Indexed by repeaterId, portId
  - An instance exists if the port can be mapped to the repeater
- Anything Else?

Notification

- repeaterHealth
- resetEvent
- No groupChange notification [entity MIB issue]

Cross Reference to 1516

- rptrRptrInfo => hubRptrTable
  - rptrGroupCapacity => noSuchName
  - rptrOperStatus => hubRptrOperStatus
  - rptrHealthText => hubRptrHealthText
  - rptrReset => hubRptrReset
  - rptrNonDisruptTest => hubRptrNonDisruptTest
  - **rptrTotalPartitionedPorts**
- rptrGroupInfo => entPhysicalTable
  - rptrGroupDescr => entPhysicalDescr
  - rptrGroupObjectID => entPhysicalType
  - rptrGroupOperStatus => noSuchName
  - rptrGroupLastOperStatusChange => noSuchName
  - rptrGroupPortCapacity => noSuchName

Factoring Effect on the 802.3 MIB:

- rptrPortInfo => hubRptrPortTable
  - rptrPortAdminStatus => hubRptrPortAdminStatus
  - **rptrPortAutoPartitionState**
  - rptrPortOperStatus => hubRepaterPortOperStatus
- rptrMonitorRptrInfo
  - **rptrMonitorTransmitCollisions**
- rptrMonitorGroupInfo => hubRptrGroupTable
  - rptrMonitorGroupTotalFrames =>hubRptrGroupReadableFrames
  - rptrMonitorGroupTotalOctets => hubRptrGroupReadableOctets
  - rptrMonitorGroupTotalErrors => hubRptrGroupErrorFrames

Factoring Effect on the 802.3 MIB:

- rptrMonitorPortInfo => hubRptrPortTable
  - rptrMonitorPortReadableFrames => hubRptrPortReadableFrames
  - rptrMonitorPortReadableOctets => hubRptrPortReadableOctets
  - **rptrMonitorPortFCSErrors**
  - **rptrMonitorPortAlignmentErrors**
  - **rptrMonitorPortFrameTooLongs**
  - **rptrMonitorPortShortEvents**
  - **rptrMonitorPortRunts**
  - **rptrMonitorPortCollisions**
  - **rptrMonitorPortLateEvents**
  - **rptrMonitorPortVeryLongEvents**
  - **rptrMonitorPortDataRateMismatches**
  - **rptrMonitorPortAutoPartitions**
  - rptrMonitorPortTotalErrors => hubRptrPortErrorFrames

Factoring Effect on the 802.3 MIB:

- rptrAddrTrackPortInfo => hubRptrPortTable
  - rptrAddrTrackLastSourceAddress (deprecated)
  - rptrAddrTrackSourceAddrChanges => hubRptrPortAddrChanges
  - rptrAddrTrackNewLastSrcAddress => hubRptrPortLastAddress
- Notifications
  - rptrHealth => hubRptrHealth
  - rptrGroupChange => entity mib tbd ???
  - rptrResetEvent => hubRptrResetEvent