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1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it describes managed objects used for managing subnetworks which use the IEEE 802.5 Token Ring technology described in 802.5 Token Ring Access Method and Physical Layer Specifications, IEEE Standard 802.5-1989 [7]. This memo is a replacement for RFC 1231.
2. The SNMPv2 Network Management Framework

The SNMPv2 Network Management Framework consists of four major components. They are:

- RFC 1442 [1] which defines the SMI, the mechanisms used for describing and naming objects for the purpose of management.
- STD 17, RFC 1213 [2] defines MIB-II, the core set of managed objects for the Internet suite of protocols.
- RFC 1445 [3] which defines the administrative and other architectural aspects of the framework.
- RFC 1448 [4] which defines the protocol used for network access to managed objects.

The Framework permits new objects to be defined for the purpose of experimentation and evaluation.

2.1. Object Definitions

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the subset of Abstract Syntax Notation One (ASN.1) defined in the SMI. In particular, each object type is named by an OBJECT IDENTIFIER, an administratively assigned name. The object type together with an object instance serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the descriptor, to refer to the object type.

3. Overview

This memo defines three tables: the 802.5 Interface Table, which contains state and parameter information which is specific to 802.5 interfaces, the 802.5 Statistics Table, which contains 802.5 interface statistics, and the 802.5 Timer Table, which contains the values of 802.5-defined timers. A managed system will have one entry in the 802.5 Interface Table and one entry in the 802.5 Statistics Table for each of its 802.5 interfaces. The 802.5 Timer Table is obsolete, but its definition has been retained in this memo for backward compatibility.

This memo also defines OBJECT IDENTIFIERs, some to identify interface tests for use with the ifTestTable [6], and some to identify Token Ring interface Chip Sets.
3.1. MAC Addresses

All representations of MAC addresses in this MIB Module use the MacAddress textual convention [5] for which the address is in the "canonical" order defined by IEEE 802.1a, i.e., as if it were transmitted least significant bit first, even though 802.5 requires MAC addresses to be transmitted most significant bit first.

16-bit addresses, if needed, are represented by setting their upper 4 octets to all zeros, i.e., AAFF would be represented as 00000000AAFF.

3.2. Relationship to RFC 1213

When this MIB module is used in conjunction with the "old" (i.e., pre-RFC 1573) interfaces group, the relationship between an 802.5 interface and an interface in the context of the RFC 1213 is one-to-one. That is, the value of an ifIndex object instance for an 802.5 interface can be directly used to identify corresponding instances of the objects defined in this memo.

3.3. Relationship to RFC 1573

RFC 1573, the Interface MIB Evolution, requires that any MIB module which is an adjunct of the Interface MIB, clarify specific areas within the Interface MIB. These areas were intentionally left vague in RFC 1573 to avoid over constraining the MIB module, thereby precluding management of certain media-types.

Section 3.3 of RFC 1573 enumerates several areas which a media-specific MIB module must clarify. Each of these areas is addressed in a following subsection. The implementor is referred to RFC 1573 in order to understand the general intent of these areas.

3.3.1. Layering Model

For the typical usage of this IEEE 802.5 MIB module, there will be no sub-layers "above" or "below" the 802.5 interface. However, this MIB module does not preclude such layering.

3.3.2. Virtual Circuits

802.5 does not support virtual circuits.

3.3.3. ifTestTable

This MIB module defines two tests for 802.5 interfaces: Insertion and Loopback. Implementation of these tests is not required.
3.3.4. ifRcvAddressTable

The ifRcvAddressTable is defined to contain all MAC addresses, unicast, multicast (group) and broadcast, for which an interface will receive packets. For 802.5 interfaces, its use includes functional addresses. The format of the address, contained in ifRcvAddressAddress, is the same as for ifPhysAddress.

For functional addresses on a particular 802.5 interface, only one ifRcvAddressTable entry is required. That entry is the one for the address which has the functional address bit ANDed with the bit mask of all functional addresses for which the interface will accept frames.

3.3.5. ifPhysAddress

For an 802.5 interface, ifPhysAddress contains the interface’s IEEE MAC address, stored as an octet string of length 6, in IEEE 802.1a "canonical" order, i.e., the Group Bit is positioned as the low-order bit (0x01) of the first octet.

3.3.6. ifType

The objects defined in this memo apply to each interface for which the ifType has the value:

iso88025-tokenRing(9)

4. Definitions

TOKENRING-MIB DEFINITIONS ::= BEGIN

IMPORTS
MODULE-IDENTITY, OBJECT-TYPE, OBJECT-IDENTITY,
Counter32, Integer32 FROM SNMPv2-SMI
transmission FROM RFC1213-MIB
MacAddress,TimeStamp FROM SNMPv2-TC
MODULE-COMPLIANCE, OBJECT-GROUP FROM SNMPv2-CONF;

dot5 MODULE-IDENTITY
LAST-UPDATED "9410231150Z"
ORGANIZATION "IETF Interfaces MIB Working Group"
CONTACT-INFO
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  San Jose, CA 95134-1706
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DESCRIPTION
"The MIB module for IEEE Token Ring entities."
::= { transmission 9 }

-- The 802.5 Interface Table

-- This table contains state and parameter information which
-- is specific to 802.5 interfaces. It is mandatory that
-- systems having 802.5 interfaces implement this table in
-- addition to the ifTable (see RFCs 1213 and 1573).

dot5Table OBJECT-TYPE
SYNTAX SEQUENCE OF Dot5Entry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table contains Token Ring interface
parameters and state variables, one entry
per 802.5 interface."
::= { dot5 1 }

dot5Entry OBJECT-TYPE
SYNTAX Dot5Entry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A list of Token Ring status and parameter
values for an 802.5 interface."
INDEX { dot5IfIndex }
::= { dot5Table 1 }

Dot5Entry ::= SEQUENCE {
  dot5IfIndex Integer32,
  dot5Commands INTEGER,
  dot5RingStatus INTEGER,
  dot5RingState INTEGER,
  dot5RingOpenStatus INTEGER,
  dot5RingSpeed INTEGER,
  dot5UpStream MacAddress,
  dot5ActMonParticipate INTEGER,
  dot5Functional MacAddress,
  dot5LastBeaconSent TimeStamp
}
dot5IfIndex OBJECT-TYPE
SYNTAX     Integer32
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
"The value of this object identifies the
802.5 interface for which this entry
contains management information. The
value of this object for a particular
interface has the same value as the
ifIndex object, defined in MIB-II for
the same interface."
::= { dot5Entry 1 }

dot5Commands OBJECT-TYPE
SYNTAX      INTEGER {
    noop(1),
    open(2),
    reset(3),
    close(4)
}
MAX-ACCESS read-write
STATUS      current
DESCRIPTION
"When this object is set to the value
of open(2), the station should go into the
open state. The progress and success of
the open is given by the values of the
objects dot5RingState and
dot5RingOpenStatus.

When this object is set to the value
of reset(3), then the station should do
a reset. On a reset, all MIB counters
should retain their values, if possible.
Other side affects are dependent on the
hardware chip set.

When this object is set to the value
of close(4), the station should go into
the stopped state by removing itself
from the ring.

Setting this object to a value of
noop(1) has no effect.

When read, this object always has a
value of noop(1).

The open(2) and close(4) values
correspond to the up(1) and down(2) values
of MIB-II’s ifAdminStatus and ifOperStatus,
i.e., the setting of ifAdminStatus and
dot5Commands affects the values of both
dot5Commands and ifOperStatus.
::= { dot5Entry 2 }

dot5RingStatus OBJECT-TYPE
SYNTAX     INTEGER (0..262143)
MAX-ACCESS read-only
STATUS      current
DESCRIPTION
"The current interface status which can
be used to diagnose fluctuating problems
that can occur on token rings, after a
station has successfully been added to
the ring.

Before an open is completed, this
object has the value for the 'no status'
condition. The dot5RingState and
dot5RingOpenStatus objects provide for
debugging problems when the station
can not even enter the ring.
The object’s value is a sum of
values, one for each currently applicable
condition. The following values are
defined for various conditions:

0 = No Problems detected
32 = Ring Recovery
64 = Single Station
256 = Remove Received
512 = reserved
1024 = Auto-Removal Error
2048 = Lobe Wire Fault
4096 = Transmit Beacon
8192 = Soft Error
16384 = Hard Error
32768 = Signal Loss
131072 = no status, open not completed."
::= { dot5Entry 3 }

dot5RingState OBJECT-TYPE
SYNTAX     INTEGER {
      opened(1),
      closed(2),
      opening(3),
      closing(4),
      openFailure(5),
      ringFailure(6)
    }
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The current interface state with respect
to entering or leaving the ring."
 ::= { dot5Entry 4 }

dot5RingOpenStatus OBJECT-TYPE
SYNTAX      INTEGER {
    noOpen(1),     -- no open attempted
    badParam(2),
    lobeFailed(3),
    signalLoss(4),
    insertionTimeout(5),
    ringFailed(6),
    beaconing(7),
    duplicateMAC(8),
    requestFailed(9),
    removeReceived(10),
    open(11)      -- last open successful
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This object indicates the success, or the
reason for failure, of the station’s most
recent attempt to enter the ring."
 ::= { dot5Entry 5 }

dot5RingSpeed OBJECT-TYPE
SYNTAX      INTEGER {
    unknown(1),
    oneMegabit(2),
    fourMegabit(3),
    sixteenMegabit(4)
}
MAX-ACCESS read-write
STATUS current
DESCRIPTION
"The ring-speed at the next insertion into
the ring. Note that this may or may not be
different to the current ring-speed which is
given by MIB-II’s ifSpeed. For interfaces
which do not support changing ring-speed,
dot5RingSpeed can only be set to its current
value. When dot5RingSpeed has the value
unknown(1), the ring’s actual ring-speed is
to be used."
::= { dot5Entry 6 }

dot5UpStream OBJECT-TYPE
SYNTAX   MacAddress
MAX-ACCESS read-only
STATUS   current
DESCRIPTION
"The MAC-address of the up stream neighbor station in the ring."
::= { dot5Entry 7 }

dot5ActMonParticipate OBJECT-TYPE
SYNTAX   INTEGER {
          true(1),
          false(2)
        }
MAX-ACCESS read-write
STATUS   current
DESCRIPTION
"If this object has a value of true(1) then this interface will participate in the active monitor selection process. If the value is false(2) then it will not. Setting this object does not take effect until the next Active Monitor election, and might not take effect until the next time the interface is opened."
::= { dot5Entry 8 }

dot5Functional OBJECT-TYPE
SYNTAX   MacAddress
MAX-ACCESS read-write
STATUS   current
DESCRIPTION
"The bit mask of all Token Ring functional addresses for which this interface will accept frames."
::= { dot5Entry 9 }

dot5LastBeaconSent OBJECT-TYPE
SYNTAX   TimeStamp
MAX-ACCESS read-only
STATUS   current
DESCRIPTION
"The value of MIB-II’s sysUpTime object at which the local system last transmitted a Beacon frame on this interface."
::= { dot5Entry 10 }
-- The 802.5 Statistics Table

-- This table contains statistics and error counter which are
-- specific to 802.5 interfaces. It is mandatory that systems
-- having 802.5 interfaces implement this table.

dot5StatsTable OBJECT-TYPE
SYNTAX      SEQUENCE OF Dot5StatsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A table containing Token Ring statistics,
     one entry per 802.5 interface.
     All the statistics are defined using
     the syntax Counter32 as 32-bit wrap around
     counters. Thus, if an interface’s
     hardware maintains these statistics in
     16-bit counters, then the agent must read
     the hardware’s counters frequently enough
     to prevent loss of significance, in order
     to maintain 32-bit counters in software."
 ::= { dot5 2 }

dot5StatsEntry OBJECT-TYPE
SYNTAX      Dot5StatsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "An entry contains the 802.5 statistics
     for a particular interface."
INDEX       { dot5StatsIfIndex }
 ::= { dot5StatsTable 1 }

Dot5StatsEntry ::= SEQUENCE {
    dot5StatsIfIndex              Integer32,
    dot5StatsLineErrors           Counter32,
    dot5StatsBurstErrors          Counter32,
    dot5StatsACErrors             Counter32,
    dot5StatsAbortTransErrors     Counter32,
    dot5StatsInternalErrors       Counter32,
    dot5StatsLostFrameErrors      Counter32,
    dot5StatsReceiveCongestions   Counter32,
    dot5StatsFrameCopiedErrors    Counter32,
    dot5StatsTokenErrors          Counter32,
    dot5StatsSoftErrors           Counter32,
    dot5StatsHardErrors           Counter32,
    dot5StatsSignalLoss           Counter32,
}
dot5StatsTransmitBeacons       Counter32,
dot5StatsRecoverys             Counter32,
dot5StatsLobeWires             Counter32,
dot5StatsRemoves               Counter32,
dot5StatsSingles               Counter32,
dot5StatsFreqErrors            Counter32

dot5StatsIfIndex  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "The value of this object identifies the
 802.5 interface for which this entry
contains management information. The
value of this object for a particular
interface has the same value as MIB-II’s
ifIndex object for the same interface."
 ::= { dot5StatsEntry 1 }

dot5StatsLineErrors OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This counter is incremented when a frame
or token is copied or repeated by a
station, the E bit is zero in the frame
or token and one of the following
conditions exists: 1) there is a
non-data bit (J or K bit) between the SD
and the ED of the frame or token, or
2) there is an FCS error in the frame."
 ::= { dot5StatsEntry 2 }

dot5StatsBurstErrors OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This counter is incremented when a station
detects the absence of transitions for five
half-bit timers (burst-five error)."
 ::= { dot5StatsEntry 3 }
dot5StatsACErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "This counter is incremented when a station receives an AMP or SMP frame in which A is equal to C is equal to 0, and then receives another SMP frame with A is equal to C is equal to 0 without first receiving an AMP frame. It denotes a station that cannot set the AC bits properly."
::= { dot5StatsEntry 4 }

dot5StatsAbortTransErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "This counter is incremented when a station transmits an abort delimiter while transmitting."
::= { dot5StatsEntry 5 }

dot5StatsInternalErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "This counter is incremented when a station recognizes an internal error."
::= { dot5StatsEntry 6 }

dot5StatsLostFrameErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "This counter is incremented when a station is transmitting and its TRR timer expires. This condition denotes a condition where a transmitting station in strip mode does not receive the trailer of the frame before the TRR timer goes off."
::= { dot5StatsEntry 7 }
dot5StatsReceiveCongestions OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This counter is incremented when a station
 recognizes a frame addressed to its
 specific address, but has no available
 buffer space indicating that the station
 is congested."
 ::= { dot5StatsEntry 8 }

dot5StatsFrameCopiedErrors OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This counter is incremented when a station
 recognizes a frame addressed to its
 specific address and detects that the FS
 field A bits are set to 1 indicating a
 possible line hit or duplicate address."
 ::= { dot5StatsEntry 9 }

dot5StatsTokenErrors OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This counter is incremented when a station
 acting as the active monitor recognizes an
 error condition that needs a token
 transmitted."
 ::= { dot5StatsEntry 10 }

dot5StatsSoftErrors OBJECT-TYPE
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "The number of Soft Errors the interface
 has detected. It directly corresponds to
 the number of Report Error MAC frames
 that this interface has transmitted.
 Soft Errors are those which are
 recoverable by the MAC layer protocols."
 ::= { dot5StatsEntry 11 }
dot5StatsHardErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times this interface has detected an immediately recoverable fatal error. It denotes the number of times this interface is either transmitting or receiving beacon MAC frames."
::= { dot5StatsEntry 12 }

dot5StatsSignalLoss OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times this interface has detected the loss of signal condition from the ring."
::= { dot5StatsEntry 13 }

dot5StatsTransmitBeacons OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times this interface has transmitted a beacon frame."
::= { dot5StatsEntry 14 }

dot5StatsRecoverys OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of Claim Token MAC frames received or transmitted after the interface has received a Ring Purge MAC frame. This counter signifies the number of times the ring has been purged and is being recovered back into a normal operating state."
::= { dot5StatsEntry 15 }

dot5StatsLobeWires OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times the interface has detected an open or short circuit in the lobe data path. The adapter will be closed and dot5RingState will signify this condition."
::= { dot5StatsEntry 16 }

dot5StatsRemoves OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times the interface has received a Remove Ring Station MAC frame request. When this frame is received the interface will enter the close state and dot5RingState will signify this condition."
::= { dot5StatsEntry 17 }

dot5StatsSingles OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times the interface has sensed that it is the only station on the ring. This will happen if the interface is the first one up on a ring, or if there is a hardware problem."
::= { dot5StatsEntry 18 }

dot5StatsFreqErrors OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The number of times the interface has detected that the frequency of the incoming signal differs from the expected frequency by more than that specified by the IEEE 802.5 standard."
::= { dot5StatsEntry 19 }
-- The Timer Table

-- This group contains the values of timers for 802.5
-- interfaces. This table is obsolete, but its definition
-- is retained here for backwards compatibility.

dot5TimerTable OBJECT-TYPE
SYNTAX SEQUENCE OF Dot5TimerEntry
MAX-ACCESS not-accessible
STATUS obsolete
DESCRIPTION
"This table contains Token Ring interface
timer values, one entry per 802.5
interface."
 ::= { dot5 5 }

dot5TimerEntry OBJECT-TYPE
SYNTAX Dot5TimerEntry
MAX-ACCESS not-accessible
STATUS obsolete
DESCRIPTION
"A list of Token Ring timer values for an
802.5 interface."
INDEX { dot5TimerIfIndex }
 ::= { dot5TimerTable 1 }

Dot5TimerEntry ::= SEQUENCE {
  dot5TimerIfIndex Integer32,
dot5TimerReturnRepeat Integer32,
dot5TimerHolding Integer32,
dot5TimerQueuePDU Integer32,
dot5TimerValidTransmit Integer32,
dot5TimerNoToken Integer32,
dot5TimerActiveMon Integer32,
dot5TimerStandbyMon Integer32,
dot5TimerErrorReport Integer32,
dot5TimerBeaconTransmit Integer32,
dot5TimerBeaconReceive Integer32
}

dot5TimerIfIndex OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION
"The value of this object identifies the
802.5 interface for which this entry
contains timer values. The value of
this object for a particular interface
has the same value as MIB-II’s ifIndex
object for the same interface.
 ::= { dot5TimerEntry 1 }

dot5TimerReturnRepeat OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION
"The time-out value used to ensure the
interface will return to Repeat State, in
units of 100 micro-seconds. The value
should be greater than the maximum ring
latency."
 ::= { dot5TimerEntry 2 }

dot5TimerHolding OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION
"Maximum period of time a station is
permitted to transmit frames after capturing
a token, in units of 100 micro-seconds."
 ::= { dot5TimerEntry 3 }

dot5TimerQueuePDU OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION
"The time-out value for enqueuing of an SMP
PDU after reception of an AMP or SMP
frame in which the A and C bits were
equal to 0, in units of 100
micro-seconds."
 ::= { dot5TimerEntry 4 }

dot5TimerValidTransmit OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION
"The time-out value used by the active
monitor to detect the absence of valid
transmissions, in units of 100
micro-seconds."
dot5TimerNoToken  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
"The time-out value used to recover from
various-related error situations.
If N is the maximum number of stations on
the ring, the value of this timer is
normally:
dot5TimerReturnRepeat + N*dot5TimerHolding."
::= { dot5TimerEntry 5 }

dot5TimerActiveMon  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
"The time-out value used by the active
monitor to stimulate the enqueuing of an
AMP PDU for transmission, in units of
100 micro-seconds."
::= { dot5TimerEntry 6 }

dot5TimerStandbyMon  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
"The time-out value used by the stand-by
monitors to ensure that there is an active
monitor on the ring and to detect a
continuous stream of tokens, in units of
100 micro-seconds."
::= { dot5TimerEntry 7 }

dot5TimerErrorReport  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
"The time-out value which determines how
often a station shall send a Report Error
MAC frame to report its error counters,
in units of 100 micro-seconds."
::= { dot5TimerEntry 8 }
dot5TimerBeaconTransmit  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
  "The time-out value which determines how long a station shall remain in the state of transmitting Beacon frames before entering the Bypass state, in units of 100 micro-seconds."
::= { dot5TimerEntry 10 }

dot5TimerBeaconReceive  OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
  "The time-out value which determines how long a station shall receive Beacon frames from its downstream neighbor before entering the Bypass state, in units of 100 micro-seconds."
::= { dot5TimerEntry 11 }

-- 802.5 Interface Tests

dot5Tests   OBJECT IDENTIFIER ::= { dot5 3 }

-- RFC 1573 defines the ifTestTable, through which a network manager can instruct an agent to test an interface for various faults. A test to be performed is identified as an OBJECT IDENTIFIER.

-- The Insert Function test

dot5TestInsertFunc  OBJECT-IDENTITY
STATUS    current
DESCRIPTION
  "Invoking this test causes the station to test the insert ring logic of the hardware if the station’s lobe media cable is connected to a wiring concentrator. Note that this command inserts the station into the network, and thus, could cause problems if the station is connected to a operational network."
::= { dot5Tests 1 }
-- The Full-Duplex Loop Back test

dot5TestFullDuplexLoopBack OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "Invoking this test on a 802.5 interface causes the
    interface to check the path from memory through the
    chip set’s internal logic and back to memory, thus
    checking the proper functioning of the system’s
    interface to the chip set."
  ::= { dot5Tests 2 }

-- 802.5 Hardware Chip Sets

-- RFC 1229 specified an object, ifExtensChipSet, with the
-- syntax of OBJECT IDENTIFIER, to identify the hardware
-- chip set in use by an interface.  RFC 1573 obsoletes
-- the use of ifExtnsChipSet.  However, the following
-- definitions are retained for backwards compatibility.

dot5ChipSets   OBJECT IDENTIFIER ::= { dot5 4 }

dot5ChipSetIBM16   OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "IBM’s 16/4 Mbs chip set."
  ::= { dot5ChipSets 1 }

dot5ChipSetTItms380 OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "Texas Instruments’ TMS 380 4Mbs chip-set"
  ::= { dot5ChipSets 2 }

dot5ChipSetTItms380c16 OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "Texas Instruments’ TMS 380C16 16/4 Mbs chip-set"
  ::= { dot5ChipSets 3 }

McCloghrie & Decker
-- conformance information

dot5Conformance OBJECT IDENTIFIER ::= { dot5 6 }
dot5Groups OBJECT IDENTIFIER ::= { dot5Conformance 1 }
dot5Compliances OBJECT IDENTIFIER ::= { dot5Conformance 2 }

-- compliance statements

dot5Compliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "The compliance statement for SNMPv2 entities
    which implement the IEEE 802.5 MIB."

  MODULE -- this module
    MANDATORY-GROUPS { dot5StateGroup, dot5StatsGroup }

    OBJECT    dot5ActMonParticipate
    MIN-ACCESS read-only
    DESCRIPTION
      "Write access is not required."

    OBJECT    dot5Functional
    MIN-ACCESS read-only
    DESCRIPTION
      "Write access is not required."

    ::= { dot5Compliances 1 }

-- units of conformance

dot5StateGroup OBJECT-GROUP
  OBJECTS   { dot5Commands, dot5RingStatus, dot5RingState,
    dot5RingOpenStatus, dot5RingSpeed, dot5UpStream,
    dot5ActMonParticipate, dot5Functional,
    dot5LastBeaconSent }
  STATUS    current
  DESCRIPTION
    "A collection of objects providing state information
    and parameters for IEEE 802.5 interfaces."
  ::= { dot5Groups 1 }

dot5StatsGroup OBJECT-GROUP
  OBJECTS   { dot5StatsLineErrors, dot5StatsBurstErrors,
dot5StatsACErrors, dot5StatsAbortTransErrors,
dot5StatsInternalErrors, dot5StatsLostFrameErrors,
dot5StatsReceiveCongestions,
dot5StatsFrameCopiedErrors, dot5StatsTokenErrors,
dot5StatsSoftErrors, dot5StatsHardErrors,
dot5StatsSignalLoss, dot5StatsTransmitBeacons,
dot5StatsRecoverys, dot5StatsLobeWires,
dot5StatsRemoves, dot5StatsSingles,
dot5StatsFreqErrors

}  
STATUS    current 

DESCRIPTION 
   "A collection of objects providing statistics for 
   IEEE 802.5 interfaces."

 ::= { dot5Groups 2 }

END
5. Acknowledgements

The changes from RFC 1231 are the result of discussions on the IETF’s snmp mailing-list and in the Interfaces MIB Working Group.

6. References


APPENDIX A - Changes from RFC 1231

This memo has the following differences from RFC 1231:

(1) This memo is formatted using the SNMPv2 SMI.

(2) The relationship of the "open" and "close" states of dot5Commands to the value of ifAdminStatus has been clarified. In particular, the setting of one affects the value of the other.

(3) The relationship dot5RingSpeed and ifSpeed has been clarified. In particular, ifSpeed indicates the current ring-speed; dot5RingSpeed indicates the ring-speed at the next insertion into the ring. If the interface doesn’t support changing ring-speed, then dot5RingSpeed can only be set to its current value. When dot5RingSpeed has the value ‘unknown(1)’, the ring-speed is to be set to the ring’s actual ring-speed.

(4) Write-access to dot5ActMonParticipate is not required, and a change to the value of dot5ActMonParticipate does not take effect until the next Active Monitor election.

(5) Write-access to dot5Functional is not required.

(6) A new object, dot5LastBeaconSent has been defined to contain the timestamp of the last beacon frame sent.

(7) The dot5TimerTable has been designated as obsolete.

(8) Text has been added describing the applicability of RFC 1573 [6] to 802.5 interfaces.

(9) Other minor editorial changes.

Security Considerations

Security issues are not discussed in this memo.
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