Appendix B

TAL Proprietary Management Information Base (MIB)

The TALnet software supports the standard MIB-II as specified in RFC 1213, “Management Information Base for Network Management of TCP/IP-based internets: MIB-II.” TALnet also includes a proprietary TAL MIB. This chapter contains a sample proprietary MIB. Contact TAL to obtain a copy of the latest proprietary MIB.

The TAL proprietary MIB describes the variables that are implemented for TALnet. The MIB relies on RFC 1155, “Structure and Identification of Management Information for TCP/IP-based Internets,” and uses the format described in RFC 1212, “Concise MIB Definitions.”

Note Some network management tools might require modifications before they can compile this MIB properly.

B.1 General Definitions

This section includes general MIB definitions.

```
TAL-MIB DEFINITIONS ::= BEGIN

    IMPORTS
        MODULE-IDENTITY, OBJECT-TYPE, TimeTicks, enterprises
            FROM SNMPv2-SMI
        DisplayString, PhysAddress
            FROM SNMPv2-TC
        MODULE-COMPLIANCE
            FROM SNMPv2-CONF;

    tal MODULE-IDENTITY
        LAST-UPDATED    "9512130017Z"
        ORGANIZATION    "Tetherless Access Ltd."
        CONTACT-INFO    "Thorsten Lockert
                         Tetherless Access Ltd.
                         930 East Arques Avenue
                         Sunnyvale, CA 94086-4552

                         Phone: (408) 523 8000
```

```
                          Fax  : (408) 523 8001

                          Email: tholo@tetherless.com"
        DESCRIPTION     "The MIB module for TAL equipment"
        ::= { enterprises 1110 }

    products            OBJECT IDENTIFIER ::= { tal 1 }
    local               OBJECT IDENTIFIER ::= { tal 2 }

    talk                OBJECT IDENTIFIER ::= { local 1 }
```

Some network management tools such as HP OpenView cannot read the previous MODULE-IDENTITY section. If you are using such a tool, replace that section (beginning with the line `tal MODULE-IDENTITY` and ending with the line `::= { enterprises 1110 }`) with the following text:

```
    tal OBJECT IDENTIFIER ::== { enterprises 1110}
```

B.2 TAL Products

The following is the product section of the TAL-proprietary MIB. The product section contains the different product's object identifiers. Each product has a unique object identifier allocated from this section which is referenced by the *sysObjectID* variable from RFC 1156, "Management Information Base for Network management of TCP/IP-based internets." New products will be added at the end of this list.

```
subspace-2001       OBJECT IDENTIFIER ::= { products 1 }
```

B.3 TAL Local Variables

The following is the variable section of the TAL-proprietary MIB. The variable section describes the local variables within the TAL product line. Groups might or might not be present depending on the software options present in the managed device.

```
talkNumber OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of TALK interfaces configured."
    ::= { talk 1 }
```

B.4 TALtalk Radio Table

The following is the TALtalk radio table:

```
talkRadioTable OBJECT-TYPE
    SYNTAX  SEQUENCE OF TalkRadioEntry
    ACCESS  not-accessible
    STATUS  mandatory
    DESCRIPTION
            "List of TALK interfaces on the system."
    ::= { talk 2 }

talkRadioEntry OBJECT-TYPE
    SYNTAX  TalkRadioEntry
    ACCESS  not-accessible
    STATUS  mandatory
    DESCRIPTION
            "Collection of objects specific to a TALK interface."
    INDEX { talkRadioIndex }
    ::= { talkRadioTable 1 }

TalkRadioEntry ::=
    SEQUENCE {
        talkRadioIndex
            INTEGER,
        talkRadioName
            DisplayString,
        talkRadioAddr
            PhysAddress,
        talkRadioDataRate
            Gauge,
        talkRadioMaxDialog
            INTEGER,
        talkRadioMaxLatency
            INTEGER,
        talkRadioSlotTime
            INTEGER,
        talkRadioCrowd
            Gauge,
        talkRadioInputHellos
            Counter,
        talkRadioOutputHellos
            Counter,
        talkRadioRssSwitch
            INTEGER
    }

talkRadioIndex OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Interface index of this TALK interface."
    ::= { talkRadioEntry 1 }
```

```
talkRadioName OBJECT-TYPE
    SYNTAX  DisplayString
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Symbolic name of the radio interface"
    ::= { talkRadioEntry 2 }

talkRadioAddr OBJECT-TYPE
    SYNTAX  PhysAddress
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Link-level address of this TALK interface."
    ::= { talkRadioEntry 3 }

talkRadioDataRate OBJECT-TYPE
    SYNTAX  Gauge
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Data rate of this TALK interface in bps"
    ::= { talkRadioEntry 4 }
talkRadioMaxDialog OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Maximum time this TALK interface will attempt to send
            a packet."
    ::= { talkRadioEntry 5 }

talkRadioMaxLatency OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Maximum processing delay for a packet to enter and leave
            the router."
    ::= { talkRadioEntry 6 }

talkRadioSlotTime OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Interval to wait before attempting radio transmission."
    ::= { talkRadioEntry 7 }

talkRadioCrowd OBJECT-TYPE
    SYNTAX  Gauge
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of adjacent radios that have sent data in the
            last 10 second sampling period."
    ::= { talkRadioEntry 8 }

talkRadioInputHellos OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of HELLO messages received from nearby stations."
    ::= { talkRadioEntry 9 }

talkRadioOutputHellos OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of HELLO messages broadcast from this TALK radio
            interface."
    ::= { talkRadioEntry 10 }

talkRadioRssSwitch OBJECT-TYPE
    SYNTAX INTEGER {
            true(1),
            false(2)
    }
    ACCESS read-write
    STATUS mandatory
    DESCRIPTION
            "TRUE if RSS sampling feature for this TALK Radio
            interface is enabled"
    ::= [ talkRadioEntry 11 ]
```

B.5 TALtalk Neighbor Table

The following is the TALtalk neighbor table:

```
talkNeighborTable OBJECT-TYPE
    SYNTAX  SEQUENCE OF TalkNeighborEntry
    ACCESS  not-accessible
    STATUS  mandatory
    DESCRIPTION
            "List of adjacent TALK neighbors."
     ::= { talk 3 }

talkNeighborEntry OBJECT-TYPE
    SYNTAX  TalkNeighborEntry
    ACCESS  not-accessible
    STATUS  mandatory
    DESCRIPTION
            "Collection of objects specific to TALK neighbors."
    INDEX { talkNeighborAddress, talkNeighborRadioIndex }
    ::= { talkNeighborTable 1 }
```

```
TalkNeighborEntry ::=
    SEQUENCE {
        talkNeighborAddress
            PhysAddress,
        talkNeighborRadioIndex
            INTEGER,
        talkNeighborStatus
            INTEGER,
        talkNeighborLastChange
            TimeTicks,
        talkNeighborLastDialog
            TimeTicks,
        talkNeighborOutOctets
            Counter,
        talkNeighborOutDialogRequests
            Counter,
        talkNeighborOutDialogFails
            Counter,
        talkNeighborOutConfirmTimeout
            Counter,
        talkNeighborOutAckTimeout
            Counter,
        talkNeighborInOctets
            Counter,
        talkNeighborInDialogRequests
            Counter,
        talkNeighborInDialogOKs
            Counter,
        talkNeighborInDataTimeouts
            Counter,
        talkNeighborSuspectCount
            Counter
        talkNeighborRssResult
            INTEGER,
        talkNeighborRssData
            INTEGER
    }

talkNeighborAddress OBJECT-TYPE
    SYNTAX  PhysAddress
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Link-level TALK address of this neighbor."
    ::= { talkNeighborEntry 1 }

talkNeighborRadioIndex OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Neighbor index of this neighbor entry."
    ::= { talkNeighborEntry 2 }
```

```
talkNeighborStatus OBJECT-TYPE
    SYNTAX  INTEGER {
            candidate(1),   -- Possible adjacency
            good(2),        -- Adjacent
            suspect(3),     -- Unstable
            dead(4)         -- Declared dead
    }
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Enumeration:

                1 - Candidate: Possible adjacency detected; verifying
                2 - Good:      Adjacency established
                3 - Suspect:   Adjacency unstable
                4 - Dead:      Adjacency declared dead"
    ::= { talkNeighborEntry 3 }

talkNeighborLastChange OBJECT-TYPE
    SYNTAX  TimeTicks
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Time elapsed since last neighbor status change."
    ::= { talkNeighborEntry 4 }

talkNeighborLastDialog OBJECT-TYPE
    SYNTAX  TimeTicks
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Time elapsed since last completed TALK dialog with this
neighbor."
    ::= { talkNeighborEntry 5 }

talkNeighborOutOctets OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of octets sent to this neighbor."
   ::= { talkNeighborEntry 6 }

talkNeighborOutDialogRequests OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of packets sent to this neighbor."
    ::= { talkNeighborEntry 7 }

talkNeighborOutDialogFails OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of TALK dialogs with this neighbor that failed
            to complete."
    ::= { talkNeighborEntry 8 }

talkNeighborOutConfirmTimeout OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of TALK bandwidth reservation requests that
            went unanswered."
    ::= { talkNeighborEntry 9 }

talkNeighborOutAckTimeout OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of TALK data transmissions that went un-
            acknowledged."
    ::= { talkNeighborEntry 10 }

talkNeighborInOctets OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
           "Number of octets received from this neighbor, directed to us."
    ::= { talkNeighborEntry 11 }

talkNeighborInDialogRequests OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of bandwidth reservation requests received from this
            neighbor, directed to us."
    ::= { talkNeighborEntry 12 }

talkNeighborInDialogOKs OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of packets received from this neighbor, directed
            to us."
    ::= { talkNeighborEntry 13 }

talkNeighborInDataTimeouts OBJECT-TYPE
    SYNTAX  Counter
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Number of reservation requests that were not followed by
```

```
                valid data packets."
        ::= { talkNeighborEntry 14 }

    talkNeighborSuspectCount OBJECT-TYPE
        SYNTAX  Counter
        ACCESS  read-only
        STATUS  mandatory
        DESCRIPTION
                "Number of times this neighbor's status has been marked
                'suspect'."
        ::= { talkNeighborEntry 15 }

    talkNeighborRssResult OBJECT-TYPE
         SYNTAX  INTEGER {
                  data_ok(0),     -- Last test ok
                  turned_off(1),  -- Rss sampling is turned off
                  too_old(2),     -- Data is expired
                  no_data(3)   --Not enough data collected
     }
         ACCESS  read-only
         STATUS  mandatory
         DESCRIPTION
                 "The return value of a RSS sample query.  Values are:
                   DATA_OK: Everything is fine;
                   TURNED_OFF: Sampling is turned off;
                   TOO_OLD: Data is too old to calculate;
                   NO_DATA: Not enough samples collected;"
         ::= { talkNeighborEntry 16 }

     talkNeighborRssData OBJECT-TYPE
         SYNTAX  INTEGER
         ACCESS  read-only
         STATUS  mandatory
         DESCRIPTION
                 "Receive Signal Strength of this neighbor."
         ::= { talkNeighborEntry 17 }
```

B.6 TALtalk Channel Table

The following is the TALtalk channel table:

```
    talkChannelTable OBJECT-TYPE
        SYNTAX  SEQUENCE OF TalkChannelEntry
        ACCESS  not-accessible
        STATUS  mandatory
        DESCRIPTION
                "List of radio channels which may be used by TALK."
        ::= { talk 4 }

    talkChannelEntry OBJECT-TYPE
        SYNTAX  TalkChannelEntry
        ACCESS  not-accessible
        STATUS  mandatory
        DESCRIPTION
```

```
            "Collection of objects specific to a TALK radio channel."
    INDEX { talkChannelIndex, talkChannelRadioIndex }
    ::= { talkChannelTable 1 }

TalkChannelEntry ::=
    SEQUENCE {
        talkChannelIndex
            INTEGER,
        talkChannelRadioIndex
            INTEGER,
        talkChannelName
            DisplayString,
        talkChannelPower
            INTEGER,
        talkChannelFixed
            TruthValue,
        talkChannelNumber
            INTEGER,
        talkChannelPNCode
            INTEGER
    }

talkChannelIndex OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Index of this channel"
    ::= { talkChannelEntry 1 }

talkChannelRadioIndex OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Index of associated radio table entry"
    ::= { talkChannelEntry 2 }

talkChannelName OBJECT-TYPE
    SYNTAX  DisplayString
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Symbolic name assigned to this channel."
    ::= { talkChannelEntry 3 }

talkChannelPower OBJECT-TYPE
    SYNTAX  INTEGER (0..100)
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Power output of this channel, expressed as a whole
            percentage of maximum power."
    ::= { talkChannelEntry 4 }
```

```
     talkChannelFixed OBJECT-TYPE
     SYNTAX  INTEGER {
            true(1),
            false(2)
     }
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "TRUE if the power output of this channel is fixed."
    ::= { talkChannelEntry 5 }

talkChannelNumber OBJECT-TYPE
    SYNTAX  INTEGER
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Channel number (radio specific) used for transmitting
            on this channel."
    ::= { talkChannelEntry 6 }

talkChannelPNCode OBJECT-TYPE
    SYNTAX  INTEGER (1..8)
    ACCESS  read-only
    STATUS  mandatory
    DESCRIPTION
            "Pseudo-Noise code used for transmitting on this channel."
    ::= { talkChannelEntry 7 }
```