Mobile IPv6 Management Information Base

Status of This Memo

   This document specifies an Internet standards track protocol for the
   Internet community, and requests discussion and suggestions for
   improvements. Please refer to the current edition of the "Internet
   Official Protocol Standards" (STD 1) for the standardization state
   and status of this protocol. Distribution of this memo is unlimited.

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Abstract

   This memo defines a portion of the Management Information Base (MIB),
   the Mobile-IPv6 MIB, for use with network management protocols in the
   Internet community. In particular, the Mobile-IPv6 MIB will be used
   to monitor and control the mobile node, home agent, and correspondent
   node functions of a Mobile IPv6 (MIPv6) entity.

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1. The Internet-Standard Management Framework

   For a detailed overview of the documents that describe the current
   Internet-Standard Management Framework, please refer to section 7 of
   RFC 3410 [RFC3410].

   Managed objects are accessed via a virtual information store, termed
   the Management Information Base or MIB. MIB objects are generally
   accessed through the Simple Network Management Protocol (SNMP).

   Objects in the MIB are defined using the mechanisms defined in the
   Structure of Management Information (SMI). This memo specifies a MIB
   module that is compliant to the SMIv2, which is described in STD 58,
   RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580
   [RFC2580].

2. Overview

2.1. The Mobile IPv6 Protocol Entities

   Mobile IPv6 (MIPv6) [RFC3775] specifies a protocol that allows nodes
   to remain reachable while moving around in the IPv6 Internet. An
   entity that implements the MIPv6 protocol is a MIPv6 entity. There
   are three types of entities envisaged by the MIPv6 protocol.

      mobile node (MN): A node that can change its point of attachment
      from one link to another, while still being reachable via its home
      address.

      correspondent node (CN): A peer node with which a mobile node is
      communicating. The correspondent node may be either mobile or
      stationary. (Note that a correspondent node does not necessarily
      require MIPv6 support.)

      home agent (HA): A router on a mobile node's home link with which
      the mobile node has registered its current care-of address. While
      the mobile node is away from home, the home agent intercepts
      packets on the home link destined to the mobile node's home
      address, encapsulates them, and routes them to the mobile node's
      registered care-of address.

   This document defines a set of managed objects (MOs) that can be used
   to monitor and control MIPv6 entities.

2.2. Terminology

   The terminology used in this document is consistent with the
   definitions used in Mobile IPv6 protocol specification [RFC3775].

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and
   "OPTIONAL" in this document are to be interpreted as described in
   BCP 14, RFC 2119 [RFC2119].

3. Mobile IPv6 Monitoring and Control Requirements

   For managing a MIPv6 entity it is necessary to monitor
   the following:

      o capabilities of MIPv6 entities
      o traffic due to MIPv6
      o binding-related statistics (at home agent, correspondent
        node, and mobile node)
      o binding details (at home agent and correspondent node)
      o history of Binding Updates (at home agent, correspondent
        node, and mobile node)

   The MIPv6 protocol document stipulates that several MIPv6-related
   parameters should be manually configurable. The MIPv6 MIB should
   define managed objects that can be used to configure the related
   parameters, for example:

      o the preference value the home agent will use in Router
        Advertisements;
      o the lifetime value the home agent will use in Router
        Advertisements;
      o whether a home agent will send ICMP Mobile Prefix
        Advertisements to mobile nodes;
      o whether a home agent will respond to ICMP Mobile Prefix
        Solicitation messages from mobile nodes; and
      o whether a home agent will process multicast group membership
        control messages from mobile nodes.

4. MIB Design

   The basic principle has been to keep the MIB as simple as possible
   and at the same time to make it effective enough so that the
   essential needs of monitoring and control are met. It is envisaged
   that wherever possible existing MIBs will be used (e.g., IPSec MIB,
   Neighbor Discovery MIB, Tunnel MIB [RFC4087]) for monitor and control
   of MIPv6 entities.

   It is assumed that the Mobile IPv6 Management Information Base
   (MOBILEIPV6-MIB) will always be implemented in conjunction with the
   IPv6-capable version of the IP-MIB [RFC4293]. The MOBILEIPV6-MIB
   uses the textual conventions defined in the INET-ADDRESS-MIB
   [RFC4001].

   The Mobile-IPv6 MIB is composed of the following groups of
   definitions:

        - mip6Core: a generic group containing objects that are
          common to all the Mobile IPv6 entities.
        - mip6Ha: this group models the home agent service. It is
          composed of objects specific to the services and associated
          advertisement parameters offered by the home agent on each
          of its links. It also contains objects pertaining to the
          maintenance of the home agent list on each of the links on
          which the service is offered.
        - mip6Mn: this group models the mobile node service. It is
          composed of objects specific to the Dynamic Home Agent
          discovery function and related parameters. It also contains
          objects that record the movement of the mobile node.
        - mip6Cn: models the correspondent node and is primarily
          scoped to its participation in the Return Routability
          procedure for achieving Route Optimization triggered by
          the mobile node.
        - mip6Notifications: defines the set of notifications that
          will be used to asynchronously monitor the Mobile IPv6
          entities.

   The tables contained in the above groups are as follows:

        mip6BindingCacheTable   : models the binding cache on the home
                                  agent and correspondent node. It
                                  contains details of the Binding Update
                                  requests that have been received and
                                  accepted.
        mip6BindingHistoryTable : tracks the history of the binding
                                  cache.
        mip6NodeTrafficTable   : the mobile node-wise traffic counters.

```
      mip6MnHomeAddressTable  : contains all the home addresses
                                pertaining to the mobile node and
                                the corresponding registration status.
      mip6MnBLTable           : models the Binding Update List on the
                                mobile node.  It contains information
                                about the registration requests sent
                                by the mobile node and the
                                corresponding results.
      mip6CnCounterTable      : contains the mobile node-wise
                                registration statistics.
      mip6HaConfTable         : contains the configurable
                                advertisement parameters for all the
                                interfaces on which the home agent
                                service is advertised.
      mip6HaCounterTable      : contains registration statistics
                                for all mobile nodes registered
                                with the home agent.
      mip6HaListTable         : contains the list of all routers
                                that are acting as home agents on
                                each of the interfaces on which
                                the home agent service is offered
                                by this router.
      mip6HaGlAddrTable       : contains the global addresses of
                                the home agents.
```

5.   The Mobile-IPv6 MIB.

```
   MOBILEIPV6-MIB DEFINITIONS ::= BEGIN
    IMPORTS
      MODULE-IDENTITY, mib-2, Unsigned32, Integer32, Counter32,
      Gauge32, Counter64,
      OBJECT-TYPE, NOTIFICATION-TYPE
               FROM SNMPv2-SMI
      TEXTUAL-CONVENTION,
      TruthValue, DateAndTime, TimeStamp
               FROM SNMPv2-TC
      MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
               FROM SNMPv2-CONF
      InetAddressType, InetAddress
               FROM INET-ADDRESS-MIB
      ipv6InterfaceIfIndex
               FROM IP-MIB
      ;

   mip6MIB MODULE-IDENTITY
       LAST-UPDATED "200602010000Z"          --  1st February 2006
       ORGANIZATION "IETF mip6 Working Group"
       CONTACT-INFO
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                             San Jose, CA 95134
                             USA

                        Tel: +1-408-527-6109
                     E-mail: sgundave@cisco.com

             Support Group E-mail: mip6@ietf.org"

             DESCRIPTION
                     "The MIB module for monitoring Mobile-IPv6
                      entities.

                      Copyright (C) The Internet Society 2006. This
                      version of this MIB module is part of RFC 4295;
                      see the RFC itself for full legal notices.
                      "

             REVISION   "200602010000Z"   -- 1st February 2006
             DESCRIPTION "Initial version, published as RFC 4295."

                 ::= { mib-2 133 }

        -- The major groups

        mip6Notifications   OBJECT IDENTIFIER ::= { mip6MIB 0 }
        mip6Objects   OBJECT IDENTIFIER ::= { mip6MIB 1 }
        mip6Conformance   OBJECT IDENTIFIER ::= { mip6MIB 2 }
        mip6Core   OBJECT IDENTIFIER ::= { mip6Objects 1 }
        mip6Mn   OBJECT IDENTIFIER ::= { mip6Objects 2 }
        mip6Cn   OBJECT IDENTIFIER ::= { mip6Objects 3 }
        mip6Ha   OBJECT IDENTIFIER ::= { mip6Objects 4 }

        -- The sub groups

        mip6System   OBJECT IDENTIFIER ::= { mip6Core 1 }
        mip6Bindings   OBJECT IDENTIFIER ::= { mip6Core 2 }
        mip6Stats   OBJECT IDENTIFIER ::= { mip6Core 3 }

        mip6MnSystem   OBJECT IDENTIFIER ::= { mip6Mn 1 }
        mip6MnConf   OBJECT IDENTIFIER ::= { mip6Mn 2 }
        mip6MnRegistration   OBJECT IDENTIFIER ::= { mip6Mn 3 }

        mip6CnSystem   OBJECT IDENTIFIER ::= { mip6Cn 1 }

```
    mip6CnStats               OBJECT IDENTIFIER ::= { mip6Cn 2 }

    mip6HaAdvertisement       OBJECT IDENTIFIER ::= { mip6Ha 1 }
    mip6HaStats               OBJECT IDENTIFIER ::= { mip6Ha 2 }



  -- Textual Conventions
   Mip6BURequestRejectionCode ::= TEXTUAL-CONVENTION
         STATUS        current
         DESCRIPTION
                "The value of the status field in the Binding
                 Acknowledgment message when the Binding Update
                 was rejected.
                "
         REFERENCE
                "RFC 3775 : Section 6.1.8"
         SYNTAX   INTEGER {
                reasonUnspecified            (1),  --(Code 128)
                admProhibited                (2),  --(Code 129)
                insufficientResource         (3),  --(Code 130)
                homeRegistrationNotSupported (4),  --(Code 131)
                notHomeSubnet                (5),  --(Code 132)
                notHomeAgentForThisMobileNode (6),  --(Code 133)
                duplicateAddressDetectionFailed (7), --(Code 134)
                sequenceNumberOutOfWindow    (8),  --(Code 135)
                expiredHomeNonceIndex        (9),  --(Code 136)
                expiredCareofNonceIndex      (10), --(Code 137)
                expiredNonces                (11), --(Code 138)
                registrationTypeChangeDisallowed(12)  --(Code 139)
                }
```

```
      mip6Capabilities OBJECT-TYPE
          SYNTAX       BITS {
                            mobileNode         (0),
                            homeAgent          (1),
                            correspondentNode  (2)
                      }
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "This object indicates the Mobile IPv6 functions that
                   are supported by this managed entity.  Multiple
                   Mobile IPv6 functions may be supported by a single
                   entity.
                  "
          REFERENCE
                  "RFC 3775 : Section 3.2, 4.1"
          ::= { mip6System 1 }

      mip6Status OBJECT-TYPE
          SYNTAX       INTEGER { enabled(1), disabled(2) }
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
                  "This object indicates whether the Mobile IPv6
                   function is enabled for the managed entity.  If it
                   is enabled, the agent discovery and registration
                   functions will be operational.
                   Changing the status from enabled(1) to disabled(2)
                   will terminate the agent discovery and registration
                   functions.  On the other hand, changing the status
                   from disabled(2) to enabled(1) will start the agent
                   discovery and registration functions.

                   The value of this object SHOULD remain unchanged
                   across reboots of the managed entity.
                  "
          ::= { mip6System 2 }


      -- mip6BindingCache
```

```
        mip6BindingCacheTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Mip6BindingCacheEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "This table models the Binding Cache on the
                     managed entity.  The cache is maintained by home
                     agents and correspondent nodes.  It contains
                     both correspondent registration entries and home
                     registration entries.

                     Entries in this table are not required to survive
                     a reboot of the managed entity.
                    "
            REFERENCE
                    "RFC 3775 : Section 4.5, 9.1, 10.1"
            ::= { mip6Bindings 1 }

        mip6BindingCacheEntry OBJECT-TYPE
            SYNTAX      Mip6BindingCacheEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "This entry represents a conceptual row in the
                     binding cache table.  It represents a single Binding
                     Update.

                     Implementors need to be aware that if the total
                     number of octets in mip6BindingHomeAddress
                     exceeds 113, then OIDs of column
                     instances in this row will have more than 128
                     sub-identifiers and cannot be accessed using
                     SNMPv1, SNMPv2c, or SNMPv3.
                    "
            INDEX  { mip6BindingHomeAddressType, mip6BindingHomeAddress }
            ::= { mip6BindingCacheTable 1 }
```

```
      Mip6BindingCacheEntry ::=
          SEQUENCE {
           mip6BindingHomeAddressType   InetAddressType,
           mip6BindingHomeAddress       InetAddress,
           mip6BindingCOAType           InetAddressType,
           mip6BindingCOA               InetAddress,
           mip6BindingTimeRegistered    DateAndTime,
           mip6BindingTimeGranted       Gauge32,
           mip6BindingTimeRemaining     Gauge32,
           mip6BindingHomeRegn          TruthValue,
           mip6BindingMaxSeq            Unsigned32,
           mip6BindingUsageTS           DateAndTime,
           mip6BindingUsageCount        Gauge32,
           mip6BindingAdminStatus       INTEGER
          }

     mip6BindingHomeAddressType OBJECT-TYPE
         SYNTAX      InetAddressType
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
                 "The InetAddressType of the mip6BindingHomeAddress
                  that follows.
                 "
         ::= { mip6BindingCacheEntry 1 }

     mip6BindingHomeAddress OBJECT-TYPE
         SYNTAX      InetAddress
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
                 "The home address of the mobile node corresponding
                  to the Binding Cache entry.  This field is used as
                  the key for searching the mobile node's current
                  care-of address in the Binding Cache.

                  The type of the address represented by this object
                  is specified by the corresponding
                  mip6BindingHomeAddressType object.
                 "
         REFERENCE
                 "RFC 3775 : Section 9.1"
         ::= { mip6BindingCacheEntry 2 }
```

```
      mip6BindingCOAType   OBJECT-TYPE
          SYNTAX       InetAddressType
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The InetAddressType of the mip6BindingCOA that
                   follows.
                  "
          ::= { mip6BindingCacheEntry 3 }

      mip6BindingCOA   OBJECT-TYPE
          SYNTAX       InetAddress
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The care-of address of the mobile node indicated by
                   the home address field (mip6BindingHomeAddress) in
                   this Binding Cache entry.

                   The type of the address represented by this object
                   is specified by the corresponding mip6BindingCOAType
                   object.
                  "
          REFERENCE
                  "RFC 3775 : Section 9.1"
          ::= { mip6BindingCacheEntry 4 }

       mip6BindingTimeRegistered OBJECT-TYPE
          SYNTAX       DateAndTime
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The timestamp when this Binding Cache entry was
                   created.
                  "
          ::= { mip6BindingCacheEntry 5 }

       mip6BindingTimeGranted OBJECT-TYPE
          SYNTAX       Gauge32
          UNITS        "seconds"
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The lifetime in seconds granted to the mobile node
                   for this registration.
                  "
          ::= { mip6BindingCacheEntry 6 }
```

```
    mip6BindingTimeRemaining OBJECT-TYPE
        SYNTAX       Gauge32
        UNITS        "seconds"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "The lifetime in seconds remaining for this
                 registration.
                "
        REFERENCE
                "RFC 3775 : Section 9.1"
        ::= { mip6BindingCacheEntry 7 }

    mip6BindingHomeRegn OBJECT-TYPE
        SYNTAX       TruthValue
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "This object indicates whether or not this Binding
                 Cache entry is a home registration entry (applicable
                 only on nodes that support home agent
                 functionality).
                "
        REFERENCE
                "RFC 3775 : Section 9.1"
        ::= { mip6BindingCacheEntry 8 }

    mip6BindingMaxSeq OBJECT-TYPE
        SYNTAX       Unsigned32 (0..65536)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "The maximum value of the Sequence Number field
                 received in previous Binding Updates for this home
                 address (mip6BindingHomeAddress).
                "
        REFERENCE
                "RFC 3775 : Section 9.1, 9.5.1"
        ::= { mip6BindingCacheEntry 9 }
```

          mip6BindingUsageTS OBJECT-TYPE
             SYNTAX   DateAndTime
             MAX-ACCESS read-only
             STATUS   current
             DESCRIPTION
                    "The timestamp when this entry was last looked up.
                    "
             REFERENCE
                    "RFC 3775 : Section 9.1"
             ::= { mip6BindingCacheEntry 10 }

          mip6BindingUsageCount OBJECT-TYPE
             SYNTAX   Gauge32
             MAX-ACCESS read-only
             STATUS   current
             DESCRIPTION
                    "The number of times this entry was looked up.
                    "
             REFERENCE
                    "RFC 3775 : Section 9.1"
             ::= { mip6BindingCacheEntry 11 }

          mip6BindingAdminStatus OBJECT-TYPE
             SYNTAX   INTEGER {
                         active   (1),
                         inactive (2)
                     }
             MAX-ACCESS read-write
             STATUS   current
             DESCRIPTION
                    "This is an administrative object used to control
                     the status of a binding cache entry. By default
                     the value will be 'active'(1).
                     A value of 'inactive'(2) will indicate that the
                     validity of the entry is suspended. It does not
                     exist in the binding cache for all practical
                     purposes.
                     The state can be changed from 'active' to
                     'inactive' by operator intervention.
                     Causing the state to change to 'inactive' results
                     in the entry being deleted from the cache.
                     Attempts to change the status from 'inactive'
                     to 'active' will be rejected.
                    "
             REFERENCE
                    "RFC 3775 : Section 9.1"
             ::= { mip6BindingCacheEntry 12 }

```
     -- mip6BindingHistory
     -- Once the lifetime expires an entry will be removed from the
     -- Binding Cache.
     -- For monitoring purposes it will be useful to have access to
     -- the history of the Binding Cache.  BindingHistoryTable serves
     -- this purpose.  It records the history of the Bindings.
     -- The size of the table will be left to implementors.

      mip6BindingHistoryTable OBJECT-TYPE
         SYNTAX       SEQUENCE OF Mip6BindingHistoryEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
                 "A table containing a record of the bindings.
                 "
         ::= { mip6Bindings 2 }

      mip6BindingHistoryEntry OBJECT-TYPE
         SYNTAX       Mip6BindingHistoryEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
                 "The record of a binding.

                  Implementors need to be aware that if the total
                  number of octets in mip6BindingHstHomeAddress
                  exceeds 112, then OIDs of column
                  instances in this row will have more than 128
                  sub-identifiers and cannot be accessed using
                  SNMPv1, SNMPv2c, or SNMPv3.
                 "
         INDEX   { mip6BindingHstHomeAddressType,
                   mip6BindingHstHomeAddress ,
                   mip6BindingHstIndex}
         ::= { mip6BindingHistoryTable 1 }
```

```
        Mip6BindingHistoryEntry ::=
           SEQUENCE {
            mip6BindingHstHomeAddressType    InetAddressType,
            mip6BindingHstHomeAddress        InetAddress,
            mip6BindingHstIndex              Unsigned32,
            mip6BindingHstCOAType            InetAddressType,
            mip6BindingHstCOA                InetAddress,
            mip6BindingHstTimeRegistered     DateAndTime,
            mip6BindingHstTimeExpired        DateAndTime,
            mip6BindingHstHomeRegn           TruthValue,
            mip6BindingHstUsageTS            DateAndTime,
            mip6BindingHstUsageCount         Gauge32
           }

      mip6BindingHstHomeAddressType OBJECT-TYPE
          SYNTAX       InetAddressType
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "The InetAddressType of the
                   mip6BindingHstHomeAddress that follows.
                  "
          ::= { mip6BindingHistoryEntry 1 }

      mip6BindingHstHomeAddress OBJECT-TYPE
          SYNTAX       InetAddress
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "Mobile node's home address.

                   The type of the address represented by this object
                   is specified by the corresponding
                   mip6BindingHstHomeAddressType object.
                  "
          ::= { mip6BindingHistoryEntry 2 }

      mip6BindingHstIndex OBJECT-TYPE
          SYNTAX       Unsigned32 (1..4294967295)
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "The index to uniquely identify this record along
                   with the mobile node's HomeAddress type and
                   HomeAddress.  It should be monotonically increasing.
                   It may wrap after reaching its max value."
          ::= { mip6BindingHistoryEntry 3 }
```

```
      mip6BindingHstCOAType    OBJECT-TYPE
          SYNTAX       InetAddressType
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The InetAddressType of the mip6BindingHstCOA that
                   follows.
                  "
          ::= { mip6BindingHistoryEntry 4 }

      mip6BindingHstCOA    OBJECT-TYPE
          SYNTAX       InetAddress
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "Mobile node's care-of address.  One mobile node can
                   have multiple bindings with different
                   care-of addresses.
                   The type of the address represented by this object
                   is specified by the corresponding
                   mip6BindingHstCOAType object.
                  "
          ::= { mip6BindingHistoryEntry 5 }

       mip6BindingHstTimeRegistered OBJECT-TYPE
          SYNTAX       DateAndTime
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The timestamp when this Binding Cache entry was
                   created.
                  "
          ::= { mip6BindingHistoryEntry 6 }

       mip6BindingHstTimeExpired OBJECT-TYPE
          SYNTAX       DateAndTime
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The timestamp when this Binding Cache entry expired.
                  "
          ::= { mip6BindingHistoryEntry 7 }
```

```
        mip6BindingHstHomeRegn OBJECT-TYPE
            SYNTAX      TruthValue
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "This object indicates whether or not this Binding
                     Cache entry is a home registration entry (applicable
                     only on nodes that support home agent
                     functionality).
                    "
            ::= { mip6BindingHistoryEntry 8 }

         mip6BindingHstUsageTS OBJECT-TYPE
            SYNTAX      DateAndTime
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The timestamp when this entry was last looked up.
                    "
            ::= { mip6BindingHistoryEntry 9 }

         mip6BindingHstUsageCount OBJECT-TYPE
            SYNTAX      Gauge32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The number of times this entry was looked up.
                    "
            ::= { mip6BindingHistoryEntry 10 }

      -- mip6TrafficCounters

      -- MIPv6 Traffic will be characterized by
      -- IPv6 datagrams which satisfy at least one of the following
      -- conditions
      --    - the datagrams are tunneled to the mobile node by the HA
      --    - the datagrams are reverse tunneled by the MN to the HA
      --    - the datagrams have the Routing header type 2 set.
      --    - the datagrams have the Home Address option set in the
      --      Destination Option extension header
      --    - the datagrams have the mobility header

       mip6TotalTraffic OBJECT IDENTIFIER ::= { mip6Stats 1 }
      -- REFERENCE
      --             "RFC 3775 : Section 4.1, 6.3, 6.4"
```

```
        mip6InOctets  OBJECT-TYPE
           SYNTAX      Counter32
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    received by the MIPv6 entity.  This will include
                    datagrams with the Mobility Header, the Home Address
                    option in the Destination Option extension header
                    (Next Header value = 60), or the type 2 Routing
                    Header.  It will also include the IPv6 datagrams that
                    are reverse tunneled to a home agent from a mobile
                    node's home address.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 1 }

       mip6HCInOctets  OBJECT-TYPE
          SYNTAX      Counter64
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "The total number of octets in the MIPv6 datagrams
                   received by the MIPv6 entity.  This will include
                   datagrams with the Mobility Header, the Home Address
                   option in the Destination Option extension header
                   (Next Header value = 60), or the type 2 Routing
                   Header.  It will also include the IPv6 datagrams that
                   are reverse tunneled to a home agent from a mobile
                   node's home address.
                   This object is a 64-bit version of mip6InOctets.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
          REFERENCE
                  "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 2 }
```

```
          mip6InPkts    OBJECT-TYPE
             SYNTAX      Counter32
             MAX-ACCESS  read-only
             STATUS      current
             DESCRIPTION
                     "The number of MIPv6 datagrams received by the MIPv6
                      entity.  This will include datagrams with the
                      Mobility Header, the Home Address option in the
                      Destination Option extension header (Next Header
                      value = 60), or the type 2 Routing Header.
                      It will also include the IPv6 datagrams that are
                      reverse tunneled to a home agent from a mobile
                      node's home address.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
             REFERENCE
                     "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
             ::= { mip6TotalTraffic 3 }

         mip6HCInPkts    OBJECT-TYPE
             SYNTAX      Counter64
             MAX-ACCESS  read-only
             STATUS      current
             DESCRIPTION
                     "The number of MIPv6 datagrams received by the MIPv6
                      entity.  This will include datagrams with the
                      Mobility Header, the Home Address option in the
                      Destination Option extension header (Next Header
                      value = 60), or the type 2 Routing Header.  It will
                      also include the IPv6 datagrams that are reverse
                      tunneled to a home agent from a mobile node's home
                      address.
                      This object is a 64-bit version of mip6InPkts.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
             REFERENCE
                     "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
             ::= { mip6TotalTraffic 4 }
```

```
        mip6OutOctets  OBJECT-TYPE
           SYNTAX      Counter32
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    sent by the MIPv6 entity.  This will include
                    datagrams with the Mobility Header, the Home Address
                    option in the Destination Option extension header
                    (Next Header value = 60), or the type 2 Routing
                    Header.  It will also include the IPv6 datagrams that
                    are reverse tunneled to a home agent from a mobile
                    node's home address.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                   "
           REFERENCE
                     "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 5 }

       mip6HCOutOctets  OBJECT-TYPE
           SYNTAX      Counter64
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    sent by the MIPv6 entity.  This will include
                    datagrams with the Mobility Header, the Home Address
                    option in the Destination Option extension header
                    (Next Header value = 60), or the type 2 Routing
                    Header.  It will also include the IPv6 datagrams that
                    are reverse tunneled to a home agent from a mobile
                    node's home address.
                    This object is a 64-bit version of mip6OutOctets.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                   "
           REFERENCE
                     "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 6 }
```

```
        mip6OutPkts     OBJECT-TYPE
           SYNTAX       Counter32
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The number of MIPv6 datagrams sent by the MIPv6
                    entity.  This will include the datagrams with
                    Mobility Header, the Home Address option in the
                    Destination Option extension header (Next Header
                    value = 60), or the type 2 Routing Header.  It will
                    also include the IPv6 datagrams that are reverse
                    tunneled to a home agent from a mobile node's home
                    address.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 7 }

        mip6HCOutPkts   OBJECT-TYPE
           SYNTAX       Counter64
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The number of MIPv6 datagrams sent by the MIPv6
                    entity.  This will include datagrams with the
                    Mobility Header, the Home Address option in the
                    Destination Option extension header (Next Header
                    value = 60), or the type 2 Routing Header.  It will
                    also include the IPv6 datagrams that are reverse
                    tunneled to a home agent from a mobile node's home
                    address.
                    This object is a 64-bit version of mip6OutPkts.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6TotalTraffic 8 }
```

```
        mip6CounterDiscontinuityTime OBJECT-TYPE
            SYNTAX      TimeStamp
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The value of sysUpTime on the most recent occasion
                     at which any one or more of this MIPv6 entities
                     global counters, viz., counters with OID prefix
                     'mip6TotalTraffic' or 'mip6CnGlobalStats' or
                     'mip6HaGlobalStats' suffered a discontinuity.
                     If no such discontinuities have occurred since the
                     last re-initialization of the local management
                     subsystem, then this object will have a zero value.
                    "
            ::= { mip6TotalTraffic 9 }


        -- mip6NodeTrafficCounters

         mip6NodeTrafficTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Mip6NodeTrafficEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "A table containing MIPv6 traffic counters per mobile
                     node.
                    "
            ::= { mip6Stats 2 }

         mip6NodeTrafficEntry OBJECT-TYPE
            SYNTAX      Mip6NodeTrafficEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "The MIPv6 traffic statistics for a mobile node.

                     Implementors need to be aware that if the total
                     number of octets in mip6BindingHomeAddress
                     exceeds 113, then OIDs of column
                     instances in this row will have more than 128
                     sub-identifiers and cannot be accessed using
                     SNMPv1, SNMPv2c, or SNMPv3.
                    "
            INDEX  { mip6BindingHomeAddressType, mip6BindingHomeAddress }
            ::= { mip6NodeTrafficTable 1 }
```

```
        Mip6NodeTrafficEntry ::=
           SEQUENCE {
                mip6NodeInOctets            Counter32,
                mip6HCNodeInOctets         Counter64,
                mip6NodeInPkts             Counter32,
                mip6HCNodeInPkts           Counter64,
                mip6NodeOutOctets          Counter32,
                mip6HCNodeOutOctets        Counter64,
                mip6NodeOutPkts            Counter32,
                mip6HCNodeOutPkts          Counter64,
                mip6NodeCtrDiscontinuityTime TimeStamp
           }

        mip6NodeInOctets  OBJECT-TYPE
           SYNTAX       Counter32
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    received from the mobile node by the MIPv6 entity.
                    This will include datagrams with the Mobility
                    Header or the Home Address option in the Destination
                    Option extension header (Next Header value = 60).
                    It will also include the IPv6 datagrams that are
                    reverse tunneled to a home agent from the mobile
                    node's home address.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                    "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 1 }
```

```
        mip6HCNodeInOctets  OBJECT-TYPE
           SYNTAX       Counter64
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    received from the mobile node by the MIPv6 entity.
                    This will include datagrams with the Mobility
                    Header or the Home Address option in the Destination
                    Option extension header (Next Header value = 60).
                    It will also include the IPv6 datagrams that are
                    reverse tunneled to a home agent from the mobile
                    node's home address.
                    This object is a 64-bit version of mip6NodeInOctets.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 2 }

       mip6NodeInPkts    OBJECT-TYPE
           SYNTAX       Counter32
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The number of MIPv6 datagrams received from the
                    mobile node by the MIPv6 entity.  This will include
                    the datagrams with the Mobility Header or
                    the Home Address option in the Destination
                    Option extension header (Next Header value = 60).
                    It will also include the IPv6 datagrams that are
                    reverse tunneled to a home agent from the mobile
                    node's home address.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 3 }
```

```
        mip6HCNodeInPkts    OBJECT-TYPE
           SYNTAX      Counter64
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                   "The number of MIPv6 datagrams received from the
                    mobile node by the MIPv6 entity.  This will include
                    datagrams with the Mobility Header or the Home
                    Address option in the Destination Option extension
                    header (Next Header value = 60).  It will also
                    include the IPv6 datagrams that are reverse tunneled
                    to a home agent from the mobile node's home address.
                    This object is a 64-bit version of mip6NodeInPkts.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 4 }

       mip6NodeOutOctets  OBJECT-TYPE
           SYNTAX      Counter32
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                   "The total number of octets in the MIPv6 datagrams
                    sent to the mobile node by the MIPv6 entity.  This
                    will include datagrams with the Mobility Header
                    or the type 2 Routing Header.  It will also include
                    the IPv6 datagrams that are tunneled by a home agent
                    to the mobile node.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 5 }
```

```
        mip6HCNodeOutOctets  OBJECT-TYPE
           SYNTAX      Counter64
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                  "The total number of octets in the MIPv6 datagrams
                   sent to the mobile node by the MIPv6 entity.  This
                   will include datagrams with the Mobility Header
                   or the type 2 Routing Header.  It will also include
                   the IPv6 datagrams that are tunneled by a home agent
                   to the mobile node.
                   This object is a 64-bit version of mip6NodeOutOctets.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6NodeCtrDiscontinuityTime.
                  "
           REFERENCE
                  "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 6 }

       mip6NodeOutPkts    OBJECT-TYPE
           SYNTAX      Counter32
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                  "The number of MIPv6 datagrams sent to the mobile
                   node by the MIPv6 entity.  This will include
                   datagrams with the Mobility Header or the type 2
                   Routing Header.  It will also include the IPv6
                   datagrams that are tunneled by a home agent to the
                   mobile node.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6NodeCtrDiscontinuityTime.
                  "
           REFERENCE
                  "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 7 }
```

```
        mip6HCNodeOutPkts    OBJECT-TYPE
           SYNTAX       Counter64
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The number of MIPv6 datagrams sent to the mobile
                    node by the MIPv6 entity.  This will include
                    datagrams with the Mobility Header or the type 2
                    Routing Header.  It will also include the IPv6
                    datagrams that are tunneled by a home agent to the
                    mobile node.
                    This object is a 64-bit version of mip6NodeOutOctets.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6NodeCtrDiscontinuityTime.
                   "
           REFERENCE
                   "RFC 3775 : Section 6.1, 6.3, 6.4, 10.4.5"
           ::= { mip6NodeTrafficEntry 8 }

       mip6NodeCtrDiscontinuityTime OBJECT-TYPE
           SYNTAX       TimeStamp
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The value of sysUpTime on the most recent occasion
                    at which any one or more of the counters in this row
                    suffered a discontinuity.  The relevant counters are
                    the specific instances of any Counter32 or Counter64
                    objects in this row.
                    If no such discontinuities have occurred since the
                    last re-initialization of the local management
                    subsystem, then this object contains a zero value.
                   "
           ::= { mip6NodeTrafficEntry 9 }

      -- mip6MnSystem Group

      mip6MnHomeAddressTable OBJECT-TYPE
          SYNTAX       SEQUENCE OF Mip6MnHomeAddressEntry
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "A table containing registration status for all the
                   home addresses pertaining to the mobile node.
                  "
          ::= { mip6MnSystem 1 }
```

```
         mip6MnHomeAddressEntry OBJECT-TYPE
            SYNTAX      Mip6MnHomeAddressEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "The registration status for a home address.

                     Implementors need to be aware that if the total
                     number of octets in mip6MnHomeAddress
                     exceeds 113, then OIDs of column instances in
                     this row will have more than 128 sub-identifiers and
                     cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
                    "
            INDEX   { mip6MnHomeAddressType, mip6MnHomeAddress }
            ::= { mip6MnHomeAddressTable 1 }

        Mip6MnHomeAddressEntry ::=
            SEQUENCE {
                    mip6MnHomeAddressType            InetAddressType,
                    mip6MnHomeAddress                InetAddress,
                    mip6MnHomeAddressState           INTEGER
            }

        mip6MnHomeAddressType OBJECT-TYPE
            SYNTAX      InetAddressType
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "The InetAddressType of the mip6MnHomeAddress that
                     follows.
                    "
            ::= { mip6MnHomeAddressEntry 1 }
```

```
        mip6MnHomeAddress OBJECT-TYPE
            SYNTAX       InetAddress
            MAX-ACCESS   not-accessible
            STATUS       current
            DESCRIPTION
                    "A unicast routable address assigned to the mobile
                     node.  This is used as the 'permanent address' of the
                     mobile node in the sense that it remains unchanged
                     regardless of the mobile node's current point of
                     attachment.  If mobile node doesn't have a home
                     address assigned yet, then this object will take the
                     default 'unspecified' value ::0.

                     The type of the address represented by this object
                     is specified by the corresponding
                     mip6MnHomeAddressType object.
                    "
            REFERENCE
                    "RFC 3775 : Section 3.2"
            ::= { mip6MnHomeAddressEntry 2 }

        mip6MnHomeAddressState OBJECT-TYPE
            SYNTAX       INTEGER {
                                unknown(1),
                                home(2),
                                registered(3),
                                pending(4),
                                isolated(5)
                        }
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "This object indicates the state of the mobile node:
                     unknown      -- The state of the mobile node
                                     cannot be determined.
                     home         -- mobile node is on the home network.
                     registered   -- mobile node is on a foreign network
                                     and is registered with the home
                                     agent.
                     pending      -- mobile node has sent registration
                                     request to the home agent and is
                                     waiting for the reply.
                     isolated     -- mobile node is isolated from network,
                                     i.e., it is not in its home network,
                                     it is not registered, and no
                                     registration ack is pending.
                    "
            ::= { mip6MnHomeAddressEntry 3 }
```

        -- Mobile Node Discovery and Advertisement Group Counters

    mip6MnDiscoveryRequests OBJECT-TYPE
        SYNTAX   Counter32
        MAX-ACCESS read-only
        STATUS   current
        DESCRIPTION
                "Total number of ICMP Dynamic Home Agent Address
                 Discovery Requests sent by the mobile node.
                 Discontinuities in the value of this counter can
                 occur at re-initialization of the management system,
                 and at other times as indicated by the value of
                 mip6CounterDiscontinuityTime.
                "
        REFERENCE
                "RFC 3775 : Section 10.5, 11.4.1"
           ::= { mip6MnConf 1 }

    mip6MnDiscoveryReplies OBJECT-TYPE
        SYNTAX   Counter32
        MAX-ACCESS read-only
        STATUS   current
        DESCRIPTION
                "Total number of ICMP Dynamic Home Agent Address
                 Discovery Replies received by the mobile node.
                 Discontinuities in the value of this counter can
                 occur at re-initialization of the management system,
                 and at other times as indicated by the value of
                 mip6CounterDiscontinuityTime.
                "
        REFERENCE
                "RFC 3775 : Section 10.5, 11.4.1"
           ::= { mip6MnConf 2 }

```
        mip6MnDiscoveryTimeouts OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of ICMP Dynamic Home Agent Address
                     Discovery Requests that timed out.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.5, 11.4.1, 12"
              ::= { mip6MnConf 3 }

        mip6MnPrefixSolicitationsSent OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of ICMP Mobile Prefix Solicitations
                     sent by the mobile node.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.5, 11.4.2"
              ::= { mip6MnConf 4 }
```

```
        mip6MnPrefixAdvsRecd OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of ICMP Mobile Prefix Advertisements
                     received by the mobile node.  This will include the
                     ICMP Mobile Prefix Advertisements that failed the
                     validity checks.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.6, 11.4.3"
            ::= { mip6MnConf 5 }

        mip6MnPrefixAdvsIgnored OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Mobile Prefix Advertisements
                     discarded by the validity check.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.6, 11.4.3"
            ::= { mip6MnConf 6 }
```

```
        mip6MnMovedToFN OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Number of times the mobile node has detected
                     movement to a foreign network from another
                     foreign network or from the home network, has
                     reconstructed its care-of address and has initiated
                     the care-of address registration process.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.5.1"
            ::= { mip6MnConf 7 }

        mip6MnMovedToHN OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Number of times the mobile node has detected
                     movement from a foreign network to its home
                     network.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.5.4"
            ::= { mip6MnConf 8 }

        -- Mobile Node Registration Group

        -- Registration table of mobile node
```

```
        mip6MnBLTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Mip6MnBLEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "This table corresponds to the Binding Update List
                     (BL) that is maintained by the mobile node.  The list
                     holds an item for every binding that the mobile node
                     has established or is trying to establish.  Both
                     correspondent and home registrations are included in
                     this table.  Entries from the table are deleted as
                     the lifetime of the binding expires.
                    "
            REFERENCE
                    "RFC 3775 : Section 4.5, 11.1"
            ::= { mip6MnRegistration 1 }

        mip6MnBLEntry OBJECT-TYPE
            SYNTAX      Mip6MnBLEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "Information about a Binding Update sent by the
                     mobile node either to its home agent or to one of
                     its correspondent nodes.

                     Implementors need to be aware that if the total
                     number of octets in mip6MnHomeAddress and
                     mip6MnBLNodeAddress exceeds 111, then OIDs of column
                     instances in this row will have more than 128
                     sub-identifiers and cannot be accessed using
                     SNMPv1, SNMPv2c, or SNMPv3.
                    "
            INDEX { mip6MnHomeAddressType,
                    mip6MnHomeAddress,
                    mip6MnBLNodeAddressType,
                    mip6MnBLNodeAddress
                  }
            ::= { mip6MnBLTable 1 }
```

```
      Mip6MnBLEntry ::= SEQUENCE {
          mip6MnBLNodeAddressType    InetAddressType,
          mip6MnBLNodeAddress        InetAddress,
          mip6MnBLCOAType            InetAddressType,
          mip6MnBLCOA                InetAddress,
          mip6MnBLLifeTimeRequested  Unsigned32,
          mip6MnBLLifeTimeGranted    Unsigned32,
          mip6MnBLMaxSeq             Unsigned32,
          mip6MnBLTimeSent           DateAndTime,
          mip6MnBLAccepted           TruthValue,
          mip6MnBLAcceptedTime       DateAndTime,
          mip6MnBLRetransmissions    Gauge32,
          mip6MnBLDontSendBUFlag     TruthValue
          }

      mip6MnBLNodeAddressType OBJECT-TYPE
          SYNTAX       InetAddressType
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "The InetAddressType of the mip6MnBLNodeAddress
                   that follows.
                  "
          ::= { mip6MnBLEntry 1 }

      mip6MnBLNodeAddress OBJECT-TYPE
          SYNTAX       InetAddress
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "The address of the agent as used in the destination
                   address of the Binding Update.  The agent
                   may be a home agent or a correspondent node.

                   The type of the address represented by this object
                   is specified by the corresponding
                   mip6MnBLNodeAddressType object.

                  "
          REFERENCE
                  "RFC 3775 : Section 11.1"
          ::= { mip6MnBLEntry 2 }
```

```
        mip6MnBLCOAType OBJECT-TYPE
            SYNTAX       InetAddressType
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The InetAddressType of the mip6MnBLCOA that follows.
                    "
            ::= { mip6MnBLEntry 3 }

        mip6MnBLCOA OBJECT-TYPE
            SYNTAX       InetAddress
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Care-of address that the mobile node intends to
                     register in the Binding Update request.

                     The type of the address represented by this object
                     is specified by the corresponding mip6MnBLCOAType
                     object.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.1"
            ::= { mip6MnBLEntry 4 }

        mip6MnBLLifeTimeRequested OBJECT-TYPE
            SYNTAX       Unsigned32
            UNITS        "seconds"
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The lifetime requested by the mobile node (in
                     seconds) in the Binding Update.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.1"
            ::= { mip6MnBLEntry 5 }
```

```
     mip6MnBLLifeTimeGranted OBJECT-TYPE
         SYNTAX       Unsigned32
         UNITS        "seconds"
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "The lifetime granted to the mobile node for this
                  binding.  This field will be inaccessible if the
                  Binding Update request has not been accepted.
                  The lifetime remaining (lR) can be calculated using
                  the current time (cT), mip6MnBLAcceptedTime (aT) and
                  mip6MnBLLifeTimeGranted (lG) as follows:
                         lR  = lG - (cT - aT).
                  When lR is zero, this entry will be deleted from the
                  Binding Update List and consequently from this
                  table.
                 "
         ::= { mip6MnBLEntry 6 }

     mip6MnBLMaxSeq OBJECT-TYPE
         SYNTAX       Unsigned32 (0..65536)
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "The maximum value of the Sequence Number field sent
                  in previous Binding Updates to this destination.
                 "
         REFERENCE
                 "RFC 3775 : Section 11.1"
         ::= { mip6MnBLEntry 7 }

     mip6MnBLTimeSent OBJECT-TYPE
         SYNTAX       DateAndTime
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "The time when the last (re-)transmission occurred."
         REFERENCE
                 "RFC 3775 : Section 11.1"
         ::= { mip6MnBLEntry 8 }
```

```
        mip6MnBLAccepted OBJECT-TYPE
            SYNTAX      TruthValue
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "true(1) if the mobile node has received a
                     binding acknowledgment indicating that service has
                     been accepted (status code 0 or 1); false(2)
                     otherwise.  false(2) implies that the registration
                     is still pending.
                    "
            ::= { mip6MnBLEntry 9 }

        mip6MnBLAcceptedTime OBJECT-TYPE
            SYNTAX      DateAndTime
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The time at which the mobile node receives a binding
                     acknowledgment indicating that Binding Update has
                     been accepted (status code 0 or 1);
                     This object will be inaccessible if the Binding
                     Update request is still pending.
                    "
            ::= { mip6MnBLEntry 10 }


        mip6MnBLRetransmissions  OBJECT-TYPE
            SYNTAX      Gauge32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The number of Binding Update retransmissions.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.1"
            ::= { mip6MnBLEntry 11 }
```

```
     mip6MnBLDontSendBUFlag OBJECT-TYPE
         SYNTAX      TruthValue
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
                 "true(1) indicates that future binding updates
                  will not be sent to mip6MnBLNodeAddress.
                  false(2) implies that binding updates will be
                  sent to mip6MnBLNodeAddress.
                  The mobile node sets this flag in the when it
                  receives an ICMP Parameter Problem, Code 1,
                  error message in response to a return
                  routability message or Binding Update sent to
                  mip6MnBLNodeAddress.
                 "
         REFERENCE
                 "RFC 3775 : Section 11.1"
         ::= { mip6MnBLEntry 12 }


     -- Mobile Node Registration Group Counters

     mip6MnRegnCounters OBJECT IDENTIFIER ::= { mip6MnRegistration 2 }

     mip6MnMobilityMessagesSent OBJECT-TYPE
         SYNTAX      Counter32
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
                 "The total number of mobility messages, i.e., IPv6
                  datagrams with Mobility Header, sent by the mobile
                  node.  There are 3 types of mobility messages, viz.,
                  Home Test Init, Care-of Test Init, and Binding
                  Updates, that are sent by mobile nodes.
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
         REFERENCE
                 "RFC 3775 : Section 4.2, 6.1"
         ::= {  mip6MnRegnCounters 1 }
```

```
        mip6MnMobilityMessagesRecd OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The total number of mobility messages, i.e., IPv6
                     datagrams with Mobility Header, received by the
                     mobile node.  There are 5 types of mobility
                     messages, viz., Home Test, Care-of Test, Binding
                     Acknowledgment, Binding Refresh Request, and Binding
                     Error, that are sent to mobile nodes.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 4.2, 6.1"
            ::= {  mip6MnRegnCounters 2 }

       mip6MnBUsToHA  OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Updates sent to the mobile
                     node's home agent(s).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.7.1"
            ::= {  mip6MnRegnCounters 3 }
```

```
        mip6MnBUAcksFromHA  OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of valid binding acknowledgments
                     received from the mobile node's home agent(s).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.7.3"
            ::= {  mip6MnRegnCounters 4 }

        mip6MnBUsToCN OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Updates sent to
                     correspondent nodes by the mobile node.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.7.2"
            ::= {  mip6MnRegnCounters 5 }

        mip6MnBUAcksFromCN OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of valid Binding Update acks
                     received from all the correspondent nodes.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.7.3"
            ::= {  mip6MnRegnCounters 6 }
```

```
      mip6MnBindingErrorsFromCN OBJECT-TYPE
          SYNTAX        Counter32
          MAX-ACCESS    read-only
          STATUS        current
          DESCRIPTION
                  "Total number of Binding Error messages received
                   by mobile node from CN.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
          ::= {  mip6MnRegnCounters 7 }

      mip6MnICMPErrorsRecd OBJECT-TYPE
          SYNTAX        Counter32
          MAX-ACCESS    read-only
          STATUS        current
          DESCRIPTION
                  "Total number of ICMP Error messages of type ICMP
                   Parameter Problem, Code 1 or Code 2, received by
                   the mobile node from a correspondent node in
                   response to a return routability procedure, a
                   Binding Update, or a packet with the Home Address
                   option.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
          REFERENCE
                  "RFC 3775 : Section 11.3.5"
          ::= {  mip6MnRegnCounters 8 }
```

```
        mip6MnBRRequestsRecd OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The total number of Binding Refresh requests
                     received by the mobile node from correspondent
                     nodes.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 11.7.4"
            ::= {  mip6MnRegnCounters 9 }

        -- Registration Group counters used for Correspondent Node
        mip6CnGlobalStats OBJECT IDENTIFIER ::= { mip6CnStats 1 }


        mip6CnHomeTestInitsRecd     OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Home Test Init messages received.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.4.1"
            ::= { mip6CnGlobalStats 1 }
```

```
        mip6CnHomeTestsSent       OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of Home Test messages sent.  If a Home
                     Test Init message is found to be valid, a Home Test
                     message will be generated and sent.  Otherwise the
                     Home Test message is silently discarded.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.4.3"
            ::= { mip6CnGlobalStats 2 }

        mip6CnCareOfTestInitsRecd      OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of Care-of Test Init messages received.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.4.2"
            ::= { mip6CnGlobalStats 3 }

        mip6CnCareOfTestsSent            OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of Care-of Test messages sent.  If a
                     Care-of Test Init message is found to be valid, a
                     Care-of Test message will be generated and sent.
                     Otherwise the Care-of Test message is silently
                     discarded.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.4.4"
            ::= { mip6CnGlobalStats 4 }
```

         mip6CnBUsRecd   OBJECT-TYPE
             SYNTAX   Counter32
             MAX-ACCESS read-only
             STATUS   current
             DESCRIPTION
                     "Total number of Binding Updates received by the
                      correspondent node from mobile nodes.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
             REFERENCE
                     "RFC 3775 : Section 9.5.1"
             ::= { mip6CnGlobalStats 5 }

         mip6CnBUAcksSent   OBJECT-TYPE
             SYNTAX   Counter32
             MAX-ACCESS read-only
             STATUS   current
             DESCRIPTION
                     "Total number of acknowledgments sent by the
                      correspondent node for the Binding Updates received.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
             REFERENCE
                     "RFC 3775 : Section 9.5.4"
             ::= { mip6CnGlobalStats 6 }

         mip6CnBRsSent   OBJECT-TYPE
             SYNTAX   Counter32
             MAX-ACCESS read-only
             STATUS   current
             DESCRIPTION
                     "Total number of Binding Refresh Request messages
                      sent by the correspondent node.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
             REFERENCE
                     "RFC 3775 : Section 9.5.5"
             ::= { mip6CnGlobalStats 7 }

```
        mip6CnBindingErrors OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Error messages sent by the
                     correspondent node to the mobile node.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.3.3"
            ::= { mip6CnGlobalStats 8 }

     mip6CnBUsAccepted   OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Updates accepted by the
                     correspondent node.  If a Binding Acknowledgment
                     message is sent for the Binding Update request,
                     the Status code field in the message will have
                     a value less than 128.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.5.1, 9.5.4"
            ::= { mip6CnGlobalStats 9 }
```

```
        mip6CnBUsRejected   OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Update requests rejected
                     by the correspondent node.  If a Binding
                     Acknowledgment message has been sent for the Binding
                     Update request, the Status code field in the
                     message will have a value greater than or equal to
                     128.  Otherwise the Binding Update request will be
                     silently discarded.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 9.5.1, 9.5.4"
            ::= { mip6CnGlobalStats 10 }

    mip6CnReasonUnspecified OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Update requests rejected by
                     the correspondent node with status code in the
                     Binding Acknowledgment message indicating 'reason
                     unspecified' (Code 128).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 6.1.8"
            ::= { mip6CnGlobalStats 11 }
```

```
        mip6CnInsufficientResource OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Update requests rejected by
                     the correspondent node with status code in the
                     Binding Acknowledgment message indicating
                     'insufficient resources' (Code 130).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 6.1.8"
            ::= { mip6CnGlobalStats 12 }

        mip6CnHomeRegnNotSupported OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of Binding Update requests rejected by
                     correspondent node with status code in the Binding
                     Acknowledgment message indicating 'home registration
                     not supported' (Code 131).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.3.1"
            ::= { mip6CnGlobalStats 13 }
```

```
      mip6CnSeqNumberOutOfWindow OBJECT-TYPE
          SYNTAX       Counter32
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "Total number of Binding Updates rejected by
                   correspondent node with status code in the Binding
                   Acknowledgment message indicating 'sequence number
                   out of window' (Code 135).
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
          REFERENCE
                  "RFC 3775 : Section 6.1.8, 9.5.1"
          ::= { mip6CnGlobalStats 14 }

     mip6CnExpiredHomeNonceIndex OBJECT-TYPE
          SYNTAX       Counter32
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The total number of Binding Updates rejected by
                   correspondent node with status code in the Binding
                   Acknowledgment message indicating 'expired home
                   nonce index' (Code 136).
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
          REFERENCE
                  "RFC 3775 : Section 6.1.8, 9.5.1"
          ::= { mip6CnGlobalStats 15 }
```

```
        mip6CnExpiredCareOfNonceIndex OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The total number of Binding Updates rejected by
                     correspondent node with status code in the Binding
                     Acknowledgment message indicating 'expired
                     care-of nonce index' (Code 137).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 6.1.8, 9.5.1"
            ::= { mip6CnGlobalStats 16 }

       mip6CnExpiredNonce OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The total number of Binding Updates rejected by
                     correspondent node with status code in the Binding
                     Acknowledgment message indicating 'expired nonces'
                     (Code 138), i.e., the correspondent node no longer
                     recognizes the Home Nonce Index value and the
                     Care-of Nonce Index value.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 6.1.8, 9.5.1"
            ::= { mip6CnGlobalStats 17 }
```

```
        mip6CnRegTypeChangeDisallowed OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                   "The total number of Binding Updates rejected by
                    correspondent node with status code in the Binding
                    Acknowledgment message indicating 'registration
                    type change disallowed' (Code 139), i.e., a binding
                    already exists for the given home address and the
                    home registration flag has a different value than
                    the Home Registration (H) bit in the Binding Update.
                    Discontinuities in the value of this counter can
                    occur at re-initialization of the management system,
                    and at other times as indicated by the value of
                    mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                   "RFC 3775 : Section 6.1.8, 9.5.1"
            ::= { mip6CnGlobalStats 18 }



        -- The Correspondent Node statistics by mobile node

        mip6CnCounterTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Mip6CnCounterEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                   "A table containing each mobile ."
            ::= { mip6CnStats 2 }
```

```
      mip6CnCounterEntry OBJECT-TYPE
          SYNTAX       Mip6CnCounterEntry
          MAX-ACCESS   not-accessible
          STATUS       current
          DESCRIPTION
                  "The set of correspondent node counters for a mobile
                   node.

                   Implementors need to be aware that if the total
                   number of octets in mip6BindingHomeAddress
                   exceeds 113, then OIDs of column instances in
                   this row will have more than 128 sub-identifiers and
                   cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
                  "
          INDEX    {    mip6BindingHomeAddressType,
                        mip6BindingHomeAddress
                   }
          ::= { mip6CnCounterTable 1 }

      Mip6CnCounterEntry ::=
          SEQUENCE {
             mip6CnBURequestsAccepted       Counter32,
             mip6CnBURequestsRejected       Counter32,
             mip6CnBCEntryCreationTime      DateAndTime,
             mip6CnBUAcceptedTime           DateAndTime,
             mip6CnBURejectionTime          DateAndTime,
             mip6CnBURejectionCode          Mip6BURequestRejectionCode,
             mip6CnCtrDiscontinuityTime     TimeStamp
          }

      mip6CnBURequestsAccepted OBJECT-TYPE   --(Code 0,1)
          SYNTAX       Counter32
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "Total number of Binding Update requests from the
                   mobile node accepted by the correspondent node.
                   If Binding Acknowledgment messages are sent, then
                   the status code in the message will have a value
                   less than 128.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CnCtrDiscontinuityTime.
                  "
          ::= { mip6CnCounterEntry 1 }
```

```
      mip6CnBURequestsRejected      OBJECT-TYPE
                                       -- (Code 128 through Code 159)
          SYNTAX       Counter32
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "Total number of Binding Update requests from the
                   mobile node that have been rejected by the
                   correspondent node.  This includes the Binding Update
                   requests for which a Binding Acknowledgment message
                   has been sent with status code value greater than or
                   equal to 128 and the Binding Acknowledgment requests
                   that have been silently discarded.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CnCtrDiscontinuityTime.
                  "
          ::= { mip6CnCounterEntry 2 }

      mip6CnBCEntryCreationTime        OBJECT-TYPE
          SYNTAX       DateAndTime
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The time when the current Binding Cache entry was
                   created for the mobile node.
                  "
          ::= { mip6CnCounterEntry 3 }

      mip6CnBUAcceptedTime OBJECT-TYPE
          SYNTAX       DateAndTime
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
                  "The time at which the last Binding Update was
                   accepted by the correspondent node and the
                   corresponding Binding Cache entry was updated.
                  "
          ::= { mip6CnCounterEntry 4 }
```

```
        mip6CnBURejectionTime    OBJECT-TYPE
            SYNTAX       DateAndTime
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The time at which the last Binding Update message
                     was rejected by the correspondent node.
                     If there have been no rejections, then this object
                     will be inaccessible.
                    "
            ::= { mip6CnCounterEntry 5 }

        mip6CnBURejectionCode   OBJECT-TYPE
                SYNTAX       Mip6BURequestRejectionCode
                MAX-ACCESS   read-only
                STATUS       current
                DESCRIPTION
                        "If a Binding Acknowledgment is sent to the mobile
                         node, this is the status code (> 128) that is
                         returned in the Binding Acknowledgment.
                         In case a Binding Acknowledgment is not sent to
                         the mobile node, then this will be the value
                         of the Status code that corresponds to the reason
                         of the rejection.  If there have been no
                         rejections, then this object will be inaccessible.
                        "
            REFERENCE
                    "RFC 3775 : Section 6.1.8"

                ::= { mip6CnCounterEntry 6 }

         mip6CnCtrDiscontinuityTime OBJECT-TYPE
            SYNTAX       TimeStamp
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The value of sysUpTime on the most recent occasion
                     at which any one or more of counters in this row,
                     viz., instances of 'mip6CnBURequestsAccepted' and
                     'mip6CnBURequestsRejected', suffered a discontinuity.
                     If no such discontinuities have occurred since the
                     last re-initialization of the local management
                     subsystem, then this object will have a zero value.
                    "
            ::= { mip6CnCounterEntry 7 }

        -- Home agent group
```

```
        mip6HaAdvsRecd OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of valid Router Advertisements
                     received with the Home Agent (H) bit set, on
                     all the links on which it is serving as a Home
                     Agent.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 7"
            ::= { mip6HaAdvertisement 1 }


        mip6HaAdvsSent OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "Total number of unsolicited multicast Router
                     Advertisements sent with the Home Agent (H) bit set,
                     on all the links on which the router is serving as
                     a Home Agent.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
            REFERENCE
                    "RFC 3775 : Section 7"
            ::= { mip6HaAdvertisement 2 }


        mip6HaConfTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Mip6HaConfEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "A table containing configurable advertisement
                     parameters for all interfaces on which the
                     home agent service is advertised.
                     It is RECOMMENDED that the last written values
                     of the objects in the conceptual rows of this
```

```
                     table will remain unchanged across reboots of
                     the managed entity provided that the interfaces
                     have not been renumbered after the reboot.
                    "
              ::= { mip6HaAdvertisement 3 }

         mip6HaConfEntry OBJECT-TYPE
              SYNTAX      Mip6HaConfEntry
              MAX-ACCESS  not-accessible
              STATUS      current
              DESCRIPTION
                    "Advertisement parameters for an interface.
                     The instances of the columnar objects in this entry
                     pertain to the interface that is uniquely identified
                     by the ipv6InterfaceIfIndex of the interface.  The
                     same ipv6InterfaceIfIndex object is used to uniquely
                     identify instances of the columnar objects of this
                     conceptual row.
                    "
              INDEX   { ipv6InterfaceIfIndex }
              ::= { mip6HaConfTable 1 }

         Mip6HaConfEntry     ::= SEQUENCE {
              mip6HaAdvPreference             Integer32,
              mip6HaAdvLifetime               Integer32,
              mip6HaPrefixAdv                 INTEGER,
              mip6HaPrefixSolicitation        INTEGER,
              mip6HaMCastCtlMsgSupport        INTEGER
            }

         mip6HaAdvPreference OBJECT-TYPE
              SYNTAX      Integer32 (0..65536)
              MAX-ACCESS  read-write
              STATUS      current
              DESCRIPTION
                    "The preference value for the home agent to
                     be used in the Router Advertisements.  Higher
                     value denotes greater preference.
                    "
              REFERENCE
                    "RFC 3775 : Section 7.4, 8.4"
              ::= { mip6HaConfEntry 1 }
```

```
      mip6HaAdvLifetime   OBJECT-TYPE
          SYNTAX       Integer32 (1..65535)
          UNITS        "seconds"
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
                  "The lifetime value for the home agent to be
                   used in the Router Advertisements.
                  "
          REFERENCE
                  "RFC 3775 : Section 7.4"
          ::= { mip6HaConfEntry 2 }

      mip6HaPrefixAdv     OBJECT-TYPE
          SYNTAX       INTEGER { enabled(1), disabled(2) }
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
                  "Indicates whether the home agent should support
                   sending of the ICMP Mobile Prefix Advertisements.
                   If it is disabled(2), the home agent will not
                   send ICMP Mobile Prefix Advertisements to the
                   mobile nodes.
                   The state can be changed from enabled(1) to
                   disabled(2) and vice versa by operator
                   intervention.
                   Causing the state to change from enabled(1) to
                   disabled(2) will result in the home agent
                   disabling the Prefix advertisement function.
                   On the other hand, changing the status from
                   disabled(2) to enabled(1) will start the prefix
                   advertisement function.
                  "
          REFERENCE
                  "RFC 3775 : Section 8.4"
          ::= { mip6HaConfEntry 3}
```

```
      mip6HaPrefixSolicitation   OBJECT-TYPE
          SYNTAX      INTEGER { enabled(1), disabled(2) }
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
                  "Indicates whether the home agent should respond
                   to ICMP Mobile Prefix Solicitation messages it
                   receives from the mobile nodes.  By default, the
                   value will be set to enabled(1).  If it is
                   disabled(2), the home agent will not respond to
                   any ICMP Mobile Prefix Solicitation messages.
                   The state can be changed from enabled(1) to
                   disabled(2), by operator intervention.  Causing
                   the state to change from enabled(1) to
                   disabled(2) will result in the home agent not
                   responding to any ICMP Mobile Prefix
                   Solicitation messages it receives from the
                   mobile nodes.
                  "
          REFERENCE
                  "RFC 3775 : Section 8.4"
          ::= { mip6HaConfEntry 4}


    mip6HaMCastCtlMsgSupport OBJECT-TYPE
          SYNTAX      INTEGER { enabled(1), disabled(2) }
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
                  "Indicates whether the home agent should enable
                   support for the processing of the multicast
                   group membership control messages it receives
                   from the mobile nodes.  By default, the value
                   will be set to enabled(1).  If it is
                   disabled(2), the home agent will not process
                   any multicast group control messages it receives
                   from the mobile nodes.
                   The state can be changed from enabled(1) to
                   disabled(2), by operator intervention.  Causing
                   the state to change from enabled(1) to
                   disabled(2) will result in the home agent
                   disabling the processing of the multicast group
                   control messages it received from the mobile
                   nodes.
                  "
          REFERENCE
                  "RFC 3775 : Section 10.4.3"
          ::= { mip6HaConfEntry 5}
```

         -- Registration Group counters HA

         mip6HaGlobalStats OBJECT IDENTIFIER ::= { mip6HaStats 1 }

         mip6HaHomeTestInitsRecd   OBJECT-TYPE
             SYNTAX   Counter32
             MAX-ACCESS   read-only
             STATUS   current
             DESCRIPTION
                     "Total number of Home Test Init messages received by
                      the home agent. This will include Home Test Init
                      messages that failed the validity checks.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
              REFERENCE
                      "RFC 3775 : Section 5.2.5"
             ::= { mip6HaGlobalStats 1 }

         mip6HaHomeTestsSent   OBJECT-TYPE
             SYNTAX   Counter32
             MAX-ACCESS   read-only
             STATUS   current
             DESCRIPTION
                     "Total number of Home Test messages sent by the
                      home agent.
                      Discontinuities in the value of this counter can
                      occur at re-initialization of the management system,
                      and at other times as indicated by the value of
                      mip6CounterDiscontinuityTime.
                     "
              REFERENCE
                      "RFC 3775 : Section 5.2.5"
             ::= { mip6HaGlobalStats 2 }

```
      mip6HaBUsRecd     OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "Total number of Binding Updates received by the
                   home agent.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
            REFERENCE
                   "RFC 3775 : Section 10.3.1"
          ::= { mip6HaGlobalStats 3 }

      mip6HaBUAcksSent    OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "Total number of Binding Acknowledgments sent
                   by the home agent.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
            REFERENCE
                   "RFC 3775 : Section 10.3.1"
          ::= { mip6HaGlobalStats 4 }

      mip6HaBRAdviceSent OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "Total number of Binding Acknowledgments sent
                   by the home agent with Binding Refresh Advice
                   mobility option included.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
            REFERENCE
                   "RFC 3775 : Section 10.3.1"
          ::= { mip6HaGlobalStats 5 }
```

```
     mip6HaBUsAccepted   OBJECT-TYPE
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "Total number of Binding Updates accepted by this HA.
                  Binding Acknowledgment with status code of 0 or 1.
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
            REFERENCE
                  "RFC 3775 : Section 10.3.1"
         ::= { mip6HaGlobalStats 6 }

     mip6HaPrefDiscoverReqd OBJECT-TYPE        -- (Code 1)
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "The total number of Binding Acknowledgments sent by
                  the home agent with status code indicating 'accepted
                  but prefix discovery necessary'  (Code 1).
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
            REFERENCE
                  "RFC 3775 : Section 10.3.1"
         ::= { mip6HaGlobalStats 7 }
```

```
     mip6HaReasonUnspecified OBJECT-TYPE              -- (Code 128)
         SYNTAX      Counter32
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
                 "Total number of Binding Update requests rejected by
                  the home agent with status code in the Binding
                  Acknowledgment message indicating 'reason
                  unspecified' (Code 128).
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
             REFERENCE
                   "RFC 3775 : Section 10.3.1"
         ::= { mip6HaGlobalStats 8 }

     mip6HaAdmProhibited OBJECT-TYPE
         SYNTAX      Counter32
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
                 "Total number of Binding Update requests rejected by
                  the home agent with status code in the Binding
                  Acknowledgment message indicating 'administratively
                  prohibited' (Code 129).
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
             REFERENCE
                   "RFC 3775 : Section 10.3.1"
         ::= { mip6HaGlobalStats 9 }
```

```
     mip6HaInsufficientResource OBJECT-TYPE          -- (Code 130)
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "Total number of Binding Update requests rejected by
                  the home agent with status code in the Binding
                  Acknowledgment message indicating 'insufficient
                  resources' (Code 130).
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
            REFERENCE
                  "RFC 3775 : Section 9.5.2"
         ::= { mip6HaGlobalStats 10 }

    mip6HaHomeRegnNotSupported OBJECT-TYPE     -- (Code 131)
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
                 "Total number of Binding Update requests rejected by
                  the home agent with status code in the Binding
                  Acknowledgment message indicating 'home
                  registration not supported' (Code 131).
                  Discontinuities in the value of this counter can
                  occur at re-initialization of the management system,
                  and at other times as indicated by the value of
                  mip6CounterDiscontinuityTime.
                 "
            REFERENCE
                  "RFC 3775 : Section 10.3.1"
         ::= { mip6HaGlobalStats 11 }
```

```
        mip6HaNotHomeSubnet OBJECT-TYPE                    -- (Code 132)
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of Binding Update requests rejected by
                     the home agent with status code in the Binding
                     Acknowledgment message indicating 'not home subnet'
                     (Code 132).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
               REFERENCE
                    "RFC 3775 : Section 10.3.1"
            ::= { mip6HaGlobalStats 12 }

        mip6HaNotHomeAgentForThisMN OBJECT-TYPE        -- (Code 133)
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of Binding Update requests rejected by
                     the home agent with status code in the Binding
                     Acknowledgment message indicating 'not home agent
                     for this mobile node' (Code 133).
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6CounterDiscontinuityTime.
                    "
               REFERENCE
                    "RFC 3775 : Section 10.3.2"
            ::= { mip6HaGlobalStats 13 }
```

```
    mip6HaDupAddrDetectionFailed OBJECT-TYPE        -- (Code 134)
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Total number of Binding Update requests rejected by
                 the home agent with status code in the Binding
                 Acknowledgment message indicating 'Duplicate
                 Address Detection failed' (Code 134).
                 Discontinuities in the value of this counter can
                 occur at re-initialization of the management system,
                 and at other times as indicated by the value of
                 mip6CounterDiscontinuityTime.
                "
           REFERENCE
                 "RFC 3775 : Section 10.3.1"
        ::= { mip6HaGlobalStats 14 }

    mip6HaSeqNumberOutOfWindow OBJECT-TYPE            -- (Code 135)
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Total number of Binding Update requests rejected by
                 the home agent with status code in the Binding
                 Acknowledgment message indicating 'sequence number
                 out of window' (Code 135).
                 Discontinuities in the value of this counter can
                 occur at re-initialization of the management system,
                 and at other times as indicated by the value of
                 mip6CounterDiscontinuityTime.
                "
           REFERENCE
                 "RFC 3775 : Section 9.5.1"
        ::= { mip6HaGlobalStats 15 }
```

```
      mip6HaExpiredHomeNonceIndex OBJECT-TYPE        -- (Code 136)
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "Total number of Binding Update requests rejected by
                   the home agent with status code in the Binding
                   Acknowledgment message indicating 'expired home
                   nonce index' (Code 136).
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
             REFERENCE
                  "RFC 3775 : Section 9.5.1"
          ::= { mip6HaGlobalStats 16 }

      mip6HaRegTypeChangeDisallowed OBJECT-TYPE      -- (Code 139)
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                  "Total number of Binding Update requests rejected by
                   the home agent with status code in the Binding
                   Acknowledgment message indicating 'registration
                   type change disallowed' (Code 139), i.e., a binding
                   already exists for the given home address and the
                   home registration flag has a different value than
                   the Home Registration (H) bit in the Binding Update.
                   Discontinuities in the value of this counter can
                   occur at re-initialization of the management system,
                   and at other times as indicated by the value of
                   mip6CounterDiscontinuityTime.
                  "
             REFERENCE
                  "RFC 3775 : Section 9.5.1"
          ::= { mip6HaGlobalStats 17 }

      -- Home agent registration Counters per node
```

```
     mip6HaCounterTable OBJECT-TYPE
         SYNTAX       SEQUENCE OF Mip6HaCounterEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
                 "A table containing registration statistics for all
                  mobile nodes registered with the home agent.
                 "
         ::= { mip6HaStats 2 }

     mip6HaCounterEntry  OBJECT-TYPE
         SYNTAX       Mip6HaCounterEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
                 "Home agent registration statistics for a mobile
                  node.

                  Implementors need to be aware that if the total
                  number of octets in mip6BindingHomeAddress
                  exceeds 113, then OIDs of column instances in
                  this row will have more than 128 sub-identifiers and
                  cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
                 "
         INDEX   { mip6BindingHomeAddressType,
                   mip6BindingHomeAddress
                 }
         ::= { mip6HaCounterTable 1 }

     Mip6HaCounterEntry       ::= SEQUENCE {
         mip6HaBURequestsAccepted      Counter32,
         mip6HaBURequestsDenied        Counter32,
         mip6HaBCEntryCreationTime     DateAndTime,
         mip6HaBUAcceptedTime          DateAndTime,
         mip6HaBURejectionTime         DateAndTime,
         mip6HaRecentBURejectionCode   Mip6BURequestRejectionCode,
         mip6HaCtrDiscontinuityTime    TimeStamp
         }
```

```
        mip6HaBURequestsAccepted OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of service requests for the mobile node
                     accepted by the home agent.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6HaCtrDiscontinuityTime.
                    "
            ::= { mip6HaCounterEntry 1 }

        mip6HaBURequestsDenied   OBJECT-TYPE
            SYNTAX       Counter32
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "Total number of service requests for the mobile node
                     rejected by the home agent.
                     Discontinuities in the value of this counter can
                     occur at re-initialization of the management system,
                     and at other times as indicated by the value of
                     mip6HaCtrDiscontinuityTime.
                    "
            ::= { mip6HaCounterEntry 2 }

        mip6HaBCEntryCreationTime   OBJECT-TYPE
            SYNTAX       DateAndTime
            UNITS        "seconds"
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The time when the current Binding Cache entry was
                     created for the mobile node.
                    "
            ::= { mip6HaCounterEntry 3 }

        mip6HaBUAcceptedTime  OBJECT-TYPE
            SYNTAX       DateAndTime
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The time at which the last Binding Update was
                     accepted by the home agent for this mobile node.
                    "
            ::= { mip6HaCounterEntry 4 }
```

```
        mip6HaBURejectionTime  OBJECT-TYPE
            SYNTAX       DateAndTime
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The time at which the last Binding Update was
                     rejected by the home agent for this mobile node.
                     If there have been no rejections, then this object
                     will be inaccessible.
                    "
            ::= { mip6HaCounterEntry 5 }

        mip6HaRecentBURejectionCode  OBJECT-TYPE
            SYNTAX       Mip6BURequestRejectionCode
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "If a Binding Acknowledgment is sent to the mobile
                     node, this is the status code (> 128) that is
                     returned in the Binding Acknowledgment.
                     In case a Binding Acknowledgment is not sent to the
                     mobile node, then this will be the value of the
                     status code that corresponds to the reason of the
                     rejection.
                     If there have been no rejections, then this object
                     will be inaccessible.
                    "
            ::= { mip6HaCounterEntry 6 }

         mip6HaCtrDiscontinuityTime OBJECT-TYPE
            SYNTAX       TimeStamp
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The value of sysUpTime on the most recent occasion
                     at which any one or more of counters in this row,
                     viz., instances of 'mip6HaBURequestsAccepted' and
                     'mip6HaBURequestsRejected', suffered a discontinuity.
                     If no such discontinuities have occurred since the
                     last re-initialization of the local management
                     subsystem, then this object will have a zero value.
                    "
            ::= { mip6HaCounterEntry 7 }

        -- Home Agent List Table
```

```
mip6HaListTable OBJECT-TYPE
    SYNTAX       SEQUENCE OF Mip6HaListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
            "This table models the Home Agents List that contains
             the list of all routers that are acting as home
             agents on each of the interfaces on which the home
             agent service is offered by this router.
            "
       REFERENCE
             "RFC 3775 : Section 10.1"
    ::= { mip6HaAdvertisement 4 }

mip6HaListEntry  OBJECT-TYPE
    SYNTAX       Mip6HaListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
            "Information about a router that is offering home
             agent service.
             The instances of the columnar objects in this entry
             pertain to an interface for a particular value of
             mip6HaLinkLocalAddressType and
             mip6HaLinkLocalAddress.  The interface is uniquely
             identified by its ipv6InterfaceIfIndex.  The same
             ipv6InterfaceIfIndex object is used in conjunction
             with the mip6HaLinkLocalAddressType and
             mip6HaLinkLocalAddress to uniquely identify
             instances of the columnar objects of this row.

             Implementors need to be aware that if the total
             number of octets in mip6HaLinkLocalAddress
             exceeds 112, then OIDs of column instances in
             this row will have more than 128 sub-identifiers and
             cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
            "
    INDEX   { ipv6InterfaceIfIndex, mip6HaLinkLocalAddressType,
                                    mip6HaLinkLocalAddress }
    ::= { mip6HaListTable 1 }

Mip6HaListEntry       ::= SEQUENCE {
    mip6HaLinkLocalAddressType      InetAddressType,
    mip6HaLinkLocalAddress          InetAddress,
    mip6HaPreference                Integer32,
    mip6HaRecvLifeTime              Gauge32,
    mip6HaRecvTimeStamp             DateAndTime
    }
```

```
        mip6HaLinkLocalAddressType  OBJECT-TYPE
            SYNTAX      InetAddressType
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "The address type for the link-local address
                     of the home agent that follows.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.1"
            ::= { mip6HaListEntry 1 }

        mip6HaLinkLocalAddress  OBJECT-TYPE
            SYNTAX      InetAddress
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "The link local address of the home agent.

                     The type of the address represented by this object
                     is specified by the corresponding
                     mip6HaLinkLocalAddressType object.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.1"
            ::= { mip6HaListEntry 2 }

        mip6HaPreference      OBJECT-TYPE
            SYNTAX      Integer32
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                    "The preference value of this home agent.
                     Higher values indicate a more preferable home
                     agent.  The preference value is obtained from
                     the preference field of the received Router
                     Advertisement.
                    "
            REFERENCE
                    "RFC 3775 : Section 10.1"
            ::= { mip6HaListEntry 3 }
```

```
      mip6HaRecvLifeTime       OBJECT-TYPE
           SYNTAX       Gauge32
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The lifetime for this home agent.
                   "
           REFERENCE
                   "RFC 3775 : Section 10.1"
           ::= { mip6HaListEntry 4 }

      mip6HaRecvTimeStamp  OBJECT-TYPE
           SYNTAX       DateAndTime
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                   "The time when the home agent advertisement was
                    received.
                   "
           ::= { mip6HaListEntry 5 }

      --
      -- The list of global addresses of a home agent in the
      -- home agent list
      --

      mip6HaGlAddrTable OBJECT-TYPE
           SYNTAX       SEQUENCE OF Mip6HaGlAddrEntry
           MAX-ACCESS   not-accessible
           STATUS       current
           DESCRIPTION
                   "This table contains the global addresses of the home
                    agents in the Home Agents List.
                   "
             REFERENCE
                     "RFC 3775 : Section 10.1"
           ::= { mip6HaAdvertisement 5 }
```

```
        mip6HaGlAddrEntry  OBJECT-TYPE
            SYNTAX      Mip6HaGlAddrEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                    "A global address for a home agent in the Home Agents
                     List.
                     The instances of the columnar objects in this entry
                     pertain to an interface for a particular value of
                     mip6HaLinkLocalAddressType, mip6HaLinkLocalAddress
                     and mip6HaGaAddrSeqNo.
                     The mip6HaGaAddrSeqNo object is used to distinguish
                     between multiple instances of the home agent global
                     addresses on the same interface for the same set of
                     mip6HaLinkLocalAddressType, mip6HaLinkLocalAddress,
                     values.
                     There is no upper-bound on the maximum number of
                     global addresses on an interface but, for practical
                     purposes, the upper-bound of the value
                     mip6HaGaAddrSeqNo is set to 1024.
                     The interface is uniquely identified by its
                     ipv6InterfaceIfIndex.  The same ipv6InterfaceIfIndex
                     object is used in conjunction with the
                     mip6HaLinkLocalAddressType, mip6HaLinkLocalAddress,
                     and mip6HaGaAddrSeqNo to uniquely identify instances
                     of the columnar objects of this row.

                     Implementors need to be aware that if the total
                     number of octets in mip6HaLinkLocalAddress
                     exceeds 111, then OIDs of column instances in
                     this row will have more than 128 sub-identifiers and
                     cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3.
                    "
            INDEX   { ipv6InterfaceIfIndex,   mip6HaLinkLocalAddressType,
                      mip6HaLinkLocalAddress, mip6HaGaAddrSeqNo }
            ::= { mip6HaGlAddrTable 1 }

        Mip6HaGlAddrEntry       ::= SEQUENCE {
            mip6HaGaAddrSeqNo            Integer32,
            mip6HaGaGlobalAddressType   InetAddressType,
            mip6HaGaGlobalAddress       InetAddress
        }
```

```
        mip6HaGaAddrSeqNo  OBJECT-TYPE
            SYNTAX       Integer32 (1..1024)
            MAX-ACCESS   not-accessible
            STATUS       current
            DESCRIPTION
                    "The index that along with ipv6InterfaceIfIndex,
                     mip6HaLinkLocalAddressType, and
                     mip6HaLinkLocalAddress uniquely identifies this row.
                    "
              REFERENCE
                       "RFC 3775 : Section 10.1"
            ::= { mip6HaGlAddrEntry 1 }

        mip6HaGaGlobalAddressType  OBJECT-TYPE
            SYNTAX       InetAddressType
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "The address type for the global address of the
                     home agent that follows.
                    "
            ::= { mip6HaGlAddrEntry 2 }

        mip6HaGaGlobalAddress  OBJECT-TYPE
            SYNTAX       InetAddress
            MAX-ACCESS   read-only
            STATUS       current
            DESCRIPTION
                    "A global address of the home agent.

                     The type of the address represented by this object
                     is specified by the corresponding
                     mip6HaGaGlobalAddressType object.
                    "
            ::= { mip6HaGlAddrEntry 3 }

    --
    -- Notifications
    --
```

```
     mip6MnRegistered NOTIFICATION-TYPE
         OBJECTS   {
                     mip6BindingTimeRegistered,
                    mip6BindingCOAType,
                    mip6BindingCOA
                   }
         STATUS    current
         DESCRIPTION
                 "This notification is sent by a home agent when
                  a mobile node registers with the home agent
                  for the first time.
                  Notifications will not be sent for subsequent
                  updates and/or refreshes.
                  The MO instances in the notifications will be
                  identified by the mip6BindingHomeAddressType
                  and mip6BindingHomeAddress for the mobile node
                  in the mip6BindingCacheTable.
                 "
            REFERENCE
                   "RFC 3775 : Section 10.3.1"
         ::= { mip6Notifications 1 }

     mip6MnDeRegistered NOTIFICATION-TYPE
         OBJECTS   {
                     mip6BindingTimeRegistered,
                    mip6BindingCOAType,
                    mip6BindingCOA
                   }
         STATUS    current
         DESCRIPTION
                 "This notification is sent by a home agent every
                  time a mobile node de-registers with the home
                  agent by sending a Binding Update that requests
                  the home agent to delete a binding.
                  The MO instances in the notifications will be
                  identified by the mip6BindingHomeAddressType
                  and mip6BindingHomeAddress for the mobile node
                  in the mip6BindingCacheTable.
                 "
            REFERENCE
                   "RFC 3775 : Section 10.3.2"
         ::= { mip6Notifications 2 }
```

        mip6MnCOAChanged NOTIFICATION-TYPE
            OBJECTS   {
                        mip6BindingTimeRegistered,
                        mip6BindingCOAType,
                        mip6BindingCOA
                       }
            STATUS   current
            DESCRIPTION
                    "This notification is sent by a home agent every
                     time a mobile node sends a Binding Update with
                     a new care-of address (for an existing Binding
                     Cache entry).
                     Notifications will not be sent for subsequent
                     updates and/or refreshes for the same Care-of
                     address.
                     The registration of a new care-of address may
                     indicate that the mobile node has moved or that
                     the primary care-of address of the mobile node
                     has become deprecated.
                     The MO instances in the notifications will be
                     identified by the mip6BindingHomeAddressType
                     and mip6BindingHomeAddress for the mobile node
                     in the mip6BindingCacheTable.
                    "
               REFERENCE
                    "RFC 3775 : Section 11.5.2, 11.7.1"
            ::= { mip6Notifications 3 }

        mip6MnBindingExpiredAtHA NOTIFICATION-TYPE
            OBJECTS   {
                        mip6BindingTimeRegistered,
                        mip6BindingCOAType,
                        mip6BindingCOA
                       }
            STATUS   current
            DESCRIPTION
                    "This notification is sent by a home agent when a
                     binding for the mobile node at the home agent
                     expired (no timely Binding Updates were received).
                     The MO instances in the notifications will be
                     identified by the mip6BindingHomeAddressType
                     and mip6BindingHomeAddress for the mobile node
                     in the mip6BindingCacheTable.
                    "
               REFERENCE
                    "RFC 3775 : Section 10.3.2"
            ::= { mip6Notifications 4 }

```
mip6MnBindingExpiredAtCN NOTIFICATION-TYPE
    OBJECTS    {
                  mip6BindingTimeRegistered,
                  mip6BindingCOAType,
                  mip6BindingCOA
               }
    STATUS     current
    DESCRIPTION
               "This notification is sent by a correspondent node
                when a binding for the mobile node at the
                correspondent node expired (no timely Binding
                Updates were received).
                The MO instances in the notifications will be
                identified by the mip6BindingHomeAddressType
                and mip6BindingHomeAddress for the mobile node
                in the mip6BindingCacheTable.
               "
    ::= { mip6Notifications 5 }
```

         -- Conformance information
        mip6Groups   OBJECT IDENTIFIER ::= { mip6Conformance 1 }
        mip6Compliances OBJECT IDENTIFIER ::= { mip6Conformance 2 }

         -- Units of conformance
        mip6SystemGroup   OBJECT-GROUP
            OBJECTS {
                      mip6Capabilities,
                      mip6Status
            }
            STATUS current
            DESCRIPTION
                     " A collection of objects for basic MIPv6
                       monitoring."
            ::= { mip6Groups 1 }

        mip6BindingCacheGroup   OBJECT-GROUP
            OBJECTS {
                      mip6BindingCOAType,
                      mip6BindingCOA,
                      mip6BindingTimeRegistered,
                      mip6BindingTimeGranted,
                      mip6BindingTimeRemaining,
                      mip6BindingMaxSeq,
                      mip6BindingHomeRegn,
                      mip6BindingUsageTS,
                      mip6BindingUsageCount,
                      mip6BindingAdminStatus
            }
            STATUS current
            DESCRIPTION
                     " A collection of objects for monitoring the
                       Binding Cache.
                     "
            ::= { mip6Groups 2 }

```
      mip6BindingHstGroup     OBJECT-GROUP
          OBJECTS {
                  mip6BindingHstCOAType,
                  mip6BindingHstCOA,
                  mip6BindingHstTimeRegistered,
                  mip6BindingHstTimeExpired,
                  mip6BindingHstHomeRegn,
                  mip6BindingHstUsageTS,
                  mip6BindingHstUsageCount
          }
           STATUS  current
           DESCRIPTION
                  " A collection of objects for monitoring the
                    Binding History.  This can be used to monitor
                    the movement of the mobile node.
                  "
           ::= { mip6Groups 3 }

      mip6TotalTrafficGroup    OBJECT-GROUP
          OBJECTS {
                  mip6InOctets,
                  mip6HCInOctets,
                  mip6InPkts,
                  mip6HCInPkts,
                  mip6OutOctets,
                  mip6HCOutOctets,
                  mip6OutPkts,
                  mip6HCOutPkts,
                  mip6CounterDiscontinuityTime
          }
           STATUS  current
           DESCRIPTION
                  " A collection of objects for monitoring the
                    total MIPv6 traffic.
                  "
           ::= { mip6Groups 4 }
```

      mip6NodeTrafficGroup   OBJECT-GROUP
          OBJECTS {
                  mip6NodeInOctets,
                  mip6HCNodeInOctets,
                  mip6NodeInPkts,
                  mip6HCNodeInPkts,
                  mip6NodeOutOctets,
                  mip6HCNodeOutOctets,
                  mip6NodeOutPkts,
                  mip6HCNodeOutPkts,
                  mip6NodeCtrDiscontinuityTime
          }
           STATUS current
           DESCRIPTION
                  " A collection of objects for monitoring the
                    MIPv6 traffic due to a mobile node.
                  "
           ::= { mip6Groups 5 }

      mip6MnSystemGroup   OBJECT-GROUP
          OBJECTS {
                  mip6MnHomeAddressState
          }
           STATUS current
           DESCRIPTION
                  " A collection of objects for basic monitoring
                    of the mobile node.
                  "
           ::= { mip6Groups 6 }

      mip6MnConfGroup   OBJECT-GROUP
          OBJECTS {
                  mip6MnDiscoveryRequests,
                  mip6MnDiscoveryReplies,
                  mip6MnDiscoveryTimeouts,
                  mip6MnPrefixSolicitationsSent,
                  mip6MnPrefixAdvsRecd,
                  mip6MnPrefixAdvsIgnored,
                  mip6MnMovedToFN,
                  mip6MnMovedToHN
          }
           STATUS current
           DESCRIPTION
                  " A collection of objects for monitoring
                    the advertisement-related info on the
                    mobile node.
                  "
           ::= { mip6Groups 7 }

       mip6MnRegistrationGroup OBJECT-GROUP
           OBJECTS {
                    mip6MnBLCOAType,
                    mip6MnBLCOA,
                    mip6MnBLLifeTimeRequested,
                    mip6MnBLLifeTimeGranted,
                    mip6MnBLMaxSeq,
                    mip6MnBLTimeSent,
                    mip6MnBLAccepted,
                    mip6MnBLAcceptedTime,
                    mip6MnBLRetransmissions,
                    mip6MnBLDontSendBUFlag,
                 --
                 -- Binding Update List
                 --
                    mip6MnMobilityMessagesSent,
                    mip6MnMobilityMessagesRecd,
                    mip6MnBUsToHA,
                    mip6MnBUAcksFromHA,
                    mip6MnBUsToCN,
                    mip6MnBUAcksFromCN,
                    mip6MnBindingErrorsFromCN,
                    mip6MnICMPErrorsRecd,
                    mip6MnBRRequestsRecd
           }
           STATUS current
           DESCRIPTION
                   " A collection of objects for monitoring
                     the registration statistics for the mobile node.
                   "
           ::= { mip6Groups 8 }

        mip6CnStatsGroup   OBJECT-GROUP
            OBJECTS {
                    mip6CnBURequestsAccepted,
                    mip6CnBURequestsRejected,
                    mip6CnBCEntryCreationTime,
                    mip6CnBUAcceptedTime,
                    mip6CnBURejectionTime,
                    mip6CnBURejectionCode,
                    mip6CnCtrDiscontinuityTime
            }
             STATUS current
             DESCRIPTION
                    " A collection of objects for monitoring
                      the control messages and corresponding
                      statistics for each mobile node
                      communicating with the correspondent
                      node.
                    "
             ::= { mip6Groups 9 }

      mip6HaSystemGroup   OBJECT-GROUP
            OBJECTS {
                    mip6HaAdvsRecd,
                    mip6HaAdvsSent,
                    mip6HaAdvPreference,
                    mip6HaAdvLifetime,
                    mip6HaPrefixAdv,
                    mip6HaPrefixSolicitation,
                    mip6HaMCastCtlMsgSupport
            }
             STATUS current
             DESCRIPTION
                    " A collection of objects for monitoring
                      the advertisement-related parameters and
                      statistics for the home agent.
                    "
             ::= { mip6Groups 10 }

```
      mip6HaListGroup   OBJECT-GROUP
          OBJECTS {
                  mip6HaPreference,
                  mip6HaRecvLifeTime,
                  mip6HaRecvTimeStamp,
                  mip6HaGaGlobalAddressType,
                  mip6HaGaGlobalAddress
          }
           STATUS   current
           DESCRIPTION
                  " A collection of objects for monitoring
                    the Home Agent List on the home agent.
                  "
           ::= { mip6Groups 11 }

      mip6HaStatsGroup   OBJECT-GROUP
          OBJECTS {
                  mip6HaBURequestsAccepted,
                  mip6HaBURequestsDenied,
                  mip6HaBCEntryCreationTime,
                  mip6HaBUAcceptedTime,
                  mip6HaBURejectionTime,
                  mip6HaRecentBURejectionCode,
                  mip6HaCtrDiscontinuityTime

          }
           STATUS   current
           DESCRIPTION
                  " A collection of objects for monitoring
                    registration-related statistics on the home agent.
                  "
           ::= { mip6Groups 12 }
```

```
      mip6CnGlobalStatsGroup   OBJECT-GROUP
          OBJECTS {
                    mip6CnHomeTestInitsRecd,
                    mip6CnHomeTestsSent,
                    mip6CnCareOfTestInitsRecd,
                    mip6CnCareOfTestsSent,
                    mip6CnBUsRecd,
                    mip6CnBUAcksSent,
                    mip6CnBRsSent,
                    mip6CnBindingErrors,
                    mip6CnBUsAccepted,
                    mip6CnBUsRejected,
                    mip6CnReasonUnspecified,
                    mip6CnInsufficientResource,
                    mip6CnHomeRegnNotSupported,
                    mip6CnSeqNumberOutOfWindow,
                    mip6CnExpiredHomeNonceIndex,
                    mip6CnExpiredCareOfNonceIndex,
                    mip6CnExpiredNonce,
                    mip6CnRegTypeChangeDisallowed
          }
          STATUS   current
          DESCRIPTION
                  " A collection of objects for monitoring
                    advertisement and registration statistics on
                    a correspondent node.
                  "
          ::= { mip6Groups 13 }
```

```
         mip6HaGlobalStatsGroup   OBJECT-GROUP
             OBJECTS {
                         mip6HaHomeTestInitsRecd,
                         mip6HaHomeTestsSent,
                         mip6HaBUsRecd,
                         mip6HaBUAcksSent,
                         mip6HaBRAdviceSent,
                         mip6HaBUsAccepted,
                         mip6HaPrefDiscoverReqd,
                         mip6HaReasonUnspecified,
                         mip6HaAdmProhibited,
                         mip6HaInsufficientResource,
                         mip6HaHomeRegnNotSupported,
                         mip6HaNotHomeSubnet,
                         mip6HaNotHomeAgentForThisMN,
                         mip6HaDupAddrDetectionFailed,
                         mip6HaSeqNumberOutOfWindow,
                         mip6HaExpiredHomeNonceIndex,
                         mip6HaRegTypeChangeDisallowed

             }
              STATUS  current
              DESCRIPTION
                      " A collection of objects for monitoring
                        advertisement and registration statistics on
                        a home agent.
                      "
              ::= { mip6Groups 14 }

         mip6BindingCacheCtlGroup    OBJECT-GROUP
             OBJECTS {
                         mip6BindingAdminStatus
             }
              STATUS  current
              DESCRIPTION
                      "A collection of objects for controlling the
                       Binding Cache.
                      "
              ::= { mip6Groups 15 }
```

```
     mip6NotificationGroup   NOTIFICATION-GROUP
         NOTIFICATIONS {
                 mip6MnRegistered,
                 mip6MnDeRegistered,
                 mip6MnCOAChanged,
                 mip6MnBindingExpiredAtHA,
                 mip6MnBindingExpiredAtCN
         }
          STATUS   current
          DESCRIPTION
                 "A collection of notifications from a home agent
                  or correspondent node to the Manager about the
                  status of a mobile node.
                  "
          ::= { mip6Groups 16 }


     -- Compliance statements
```

```
     mip6CoreCompliance MODULE-COMPLIANCE
          STATUS   current
          DESCRIPTION
                "The compliance statement for SNMP entities
                 that implement the MOBILEIPV6-MIB.
                 "
          MODULE  -- this module
              MANDATORY-GROUPS { mip6SystemGroup }

          ::= { mip6Compliances 1 }

     mip6Compliance2 MODULE-COMPLIANCE
          STATUS   current
          DESCRIPTION
                "The compliance statement for SNMP entities
                 that implement the MOBILEIPV6-MIB and support
                 monitoring of the Binding Cache and the Total
                 Traffic.
                 There are a number of INDEX objects that cannot be
                 represented in the form of OBJECT clauses in SMIv2,
                 but for which there are compliance requirements,
                 expressed in OBJECT clause form in this description:
                 -- OBJECT       mip6BindingHomeAddressType
                 -- SYNTAX       InetAddressType { ipv6(2) }
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                 -- OBJECT       mip6BindingHomeAddress
                 -- SYNTAX       InetAddress (SIZE(16))
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                 "
          MODULE  -- this module
              MANDATORY-GROUPS { mip6SystemGroup,
                                 mip6BindingCacheGroup,
                                 mip6TotalTrafficGroup
                                 }
          ::= { mip6Compliances 2 }
```

```
     mip6Compliance3 MODULE-COMPLIANCE
         STATUS  current
         DESCRIPTION
                "The compliance statement for SNMP entities
                 that implement the MOBILEIPV6-MIB and
                 support monitoring of the Binding Cache,
                 the Binding History, the total traffic, and
                 the mobile node-wide traffic.
                 There are a number of INDEX objects that cannot be
                 represented in the form of OBJECT clauses in SMIv2,
                 but for which there are compliance requirements,
                 expressed in OBJECT clause form in this description:
                 -- OBJECT       mip6BindingHomeAddressType
                 -- SYNTAX       InetAddressType { ipv6(2) }
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                 -- OBJECT       mip6BindingHomeAddress
                 -- SYNTAX       InetAddress (SIZE(16))
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                 -- OBJECT       mip6BindingHstHomeAddressType
                 -- SYNTAX       InetAddressType { ipv6(2) }
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the
                 --     mip6BindingHstHomeAddress object.
                 --
                 -- OBJECT       mip6BindingHstHomeAddress
                 -- SYNTAX       InetAddress (SIZE(16))
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the
                 --     mip6BindingHstHomeAddress object.
                 --
                "
         MODULE  -- this module
             MANDATORY-GROUPS { mip6SystemGroup,
                                mip6BindingCacheGroup,
                                mip6BindingHstGroup,
                                mip6TotalTrafficGroup,
                                mip6NodeTrafficGroup
                               }
```

```
            ::= { mip6Compliances 3 }


    mip6CoreReadOnlyCompliance MODULE-COMPLIANCE
         STATUS  current
         DESCRIPTION
                "The compliance statement for SNMP entities
                 that implement the MOBILEIPV6-MIB without support
                 for read-write (i.e., in read-only mode).
                "
         MODULE  -- this module
             MANDATORY-GROUPS { mip6SystemGroup }

         OBJECT      mip6Status
         MIN-ACCESS  read-only
         DESCRIPTION
                "Write access is not required."

         ::= { mip6Compliances 4 }

    mip6ReadOnlyCompliance2 MODULE-COMPLIANCE
         STATUS  current
         DESCRIPTION
                "The compliance statement for SNMP entities
                 that implement the MOBILEIPV6-MIB without support
                 for read-write (i.e., in read-only mode) and
                 support monitoring of the Binding Cache and Total
                 Traffic.
                 There are a number of INDEX objects that cannot be
                 represented in the form of OBJECT clauses in SMIv2,
                 but for which there are compliance requirements,
                 expressed in OBJECT clause form in this description:
                 -- OBJECT      mip6BindingHomeAddressType
                 -- SYNTAX      InetAddressType { ipv6(2) }
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                 -- OBJECT      mip6BindingHomeAddress
                 -- SYNTAX      InetAddress (SIZE(16))
                 -- DESCRIPTION
                 --     This MIB module requires support for global
                 --     ipv6 addresses for the mip6BindingHomeAddress
                 --     object.
                 --
                "
         MODULE  -- this module
```

```
            MANDATORY-GROUPS { mip6SystemGroup,
                               mip6BindingCacheGroup,
                               mip6TotalTrafficGroup
                                }
        OBJECT      mip6Status
        MIN-ACCESS  read-only
        DESCRIPTION
               "Write access is not required."

        OBJECT      mip6BindingAdminStatus
        MIN-ACCESS  read-only
        DESCRIPTION
               "Write access is not required."
        ::= { mip6Compliances 5 }

    mip6ReadOnlyCompliance3 MODULE-COMPLIANCE
        STATUS  current
        DESCRIPTION
               "The compliance statement for SNMP entities
                that implement the MOBILEIPV6-MIB without support
                for read-write (i.e., in read-only mode) and support
                monitoring of the Binding Cache, the Binding History,
                the total traffic, and the mobile node-wide traffic.
                There are a number of INDEX objects that cannot be
                represented in the form of OBJECT clauses in SMIv2,
                but for which there are compliance requirements,
                expressed in OBJECT clause form in this description:
                -- OBJECT      mip6BindingHomeAddressType
                -- SYNTAX      InetAddressType { ipv6(2) }
                -- DESCRIPTION
                --    This MIB module requires support for global
                --    ipv6 addresses for the mip6BindingHomeAddress
                --    object.
                --
                -- OBJECT      mip6BindingHomeAddress
                -- SYNTAX      InetAddress (SIZE(16))
                -- DESCRIPTION
                --    This MIB module requires support for global
                --    ipv6 addresses for the mip6BindingHomeAddress
                --    object.
                --
                -- OBJECT      mip6BindingHstHomeAddressType
                -- SYNTAX      InetAddressType { ipv6(2) }
                -- DESCRIPTION
                --    This MIB module requires support for global
                --    ipv6 addresses for the
                --    mip6BindingHstHomeAddress object.
                --
```

```
                    -- OBJECT       mip6BindingHstHomeAddress
                    -- SYNTAX       InetAddress (SIZE(16))
                    -- DESCRIPTION
                    --     This MIB module requires support for global
                    --     ipv6 addresses for the
                    --     mip6BindingHstHomeAddress object.
                    --
                    "
           MODULE  -- this module
               MANDATORY-GROUPS { mip6SystemGroup,
                                  mip6BindingCacheGroup,
                                  mip6BindingHstGroup,
                                  mip6TotalTrafficGroup,
                                  mip6NodeTrafficGroup
                                 }
           OBJECT      mip6Status
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."

           OBJECT      mip6BindingAdminStatus
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."
           ::= { mip6Compliances 6 }

       mip6MnCoreCompliance MODULE-COMPLIANCE
           STATUS  current
           DESCRIPTION
                   "The compliance statement for SNMP entities
                    that implement the MOBILEIPV6-MIB and
                    support monitoring of the basic mobile node
                    functionality.
                    There are a number of INDEX objects that cannot be
                    represented in the form of OBJECT clauses in SMIv2,
                    but for which there are compliance requirements,
                    expressed in OBJECT clause form in this description:
                    -- OBJECT       mip6MnHomeAddressType
                    -- SYNTAX       InetAddressType { ipv6(2) }
                    -- DESCRIPTION
                    --     This MIB module requires support for global
                    --     ipv6 addresses for the mip6MnHomeAddress
                    --     object.
                    --
                    -- OBJECT       mip6MnHomeAddress
                    -- SYNTAX       InetAddress (SIZE(16))
                    -- DESCRIPTION
                    --     This MIB module requires support for global
```

```
                   --       ipv6 addresses for the mip6MnHomeAddress
                   --       object.
                   --
                 "
            MODULE  -- this module
                MANDATORY-GROUPS { mip6MnSystemGroup
                                 }
            ::= { mip6Compliances 7 }

       mip6MnCompliance2 MODULE-COMPLIANCE
            STATUS  current
            DESCRIPTION
                 "The compliance statement for SNMP entities
                  that implement the MOBILEIPV6-MIB and
                  support monitoring of the mobile node
                  functionality specifically the Discovery- and
                  Registration-related statistics,
                  There are a number of INDEX objects that cannot be
                  represented in the form of OBJECT clauses in SMIv2,
                  but for which there are compliance requirements,
                  expressed in OBJECT clause form in this description:
                  -- OBJECT       mip6MnHomeAddressType
                  -- SYNTAX       InetAddressType { ipv6(2) }
                  -- DESCRIPTION
                  --     This MIB module requires support for global
                  --     ipv6 addresses for the mip6MnHomeAddress
                  --     object.
                  --
                  -- OBJECT       mip6MnHomeAddress
                  -- SYNTAX       InetAddress (SIZE(16))
                  -- DESCRIPTION
                  --     This MIB module requires support for global
                  --     ipv6 addresses for the mip6MnHomeAddress
                  --     object.
                  --
                  -- OBJECT       mip6MnBLNodeAddressType
                  -- SYNTAX       InetAddressType { ipv6(2) }
                  -- DESCRIPTION
                  --     This MIB module requires support for global
                  --     ipv6 addresses for the mip6MnBLNodeAddress
                  --     object.
                  --
                  -- OBJECT       mip6MnBLNodeAddress
                  -- SYNTAX       InetAddress (SIZE(16))
                  -- DESCRIPTION
                  --     This MIB module requires support for global
                  --     ipv6 addresses for the mip6MnBLNodeAddress
                  --     object.
```

```
                        --
                "
            MODULE  -- this module
                MANDATORY-GROUPS { mip6MnSystemGroup,
                                   mip6MnConfGroup,
                                   mip6MnRegistrationGroup,
                                   mip6TotalTrafficGroup
                                 }
            ::= { mip6Compliances 8 }

     mip6CnCoreCompliance MODULE-COMPLIANCE
            STATUS  current
            DESCRIPTION
                    "The compliance statement for SNMP entities
                     that implement the MOBILEIPV6-MIB and
                     support monitoring of the basic correspondent node
                     functionality.
                    "
            MODULE  -- this module
                MANDATORY-GROUPS { mip6CnGlobalStatsGroup,
                                   mip6TotalTrafficGroup
                                 }
            ::= { mip6Compliances 9 }

     mip6CnCompliance MODULE-COMPLIANCE
            STATUS  current
            DESCRIPTION
                    "The compliance statement for SNMP entities
                     that implement the MOBILEIPV6-MIB and
                     support monitoring of the basic correspondent node
                     functionality.
                     There are a number of INDEX objects that cannot be
                     represented in the form of OBJECT clauses in SMIv2,
                     but for which there are compliance requirements,
                     expressed in OBJECT clause form in this description:
                     -- OBJECT      mip6BindingHomeAddressType
                     -- SYNTAX      InetAddressType { ipv6(2) }
                     -- DESCRIPTION
                     --     This MIB module requires support for global
                     --     ipv6 addresses for the mip6BindingHomeAddress
                     --     object.
                     --
                     -- OBJECT      mip6BindingHomeAddress
                     -- SYNTAX      InetAddress (SIZE(16))
                     -- DESCRIPTION
                     --     This MIB module requires support for global
                     --     ipv6 addresses for the mip6BindingHomeAddress
                     --     object.
```

```
                      "
              MODULE  -- this module
                  MANDATORY-GROUPS { mip6CnGlobalStatsGroup,
                                     mip6CnStatsGroup,
                                     mip6TotalTrafficGroup
                                   }
              ::= { mip6Compliances 10 }

     mip6HaCoreCompliance MODULE-COMPLIANCE
             STATUS  current
             DESCRIPTION
                     "The compliance statement for SNMP entities
                      that implement the MOBILEIPV6-MIB and
                      support monitoring of the basic home agent
                      functionality.
                     "
             MODULE  -- this module
                 MANDATORY-GROUPS { mip6HaSystemGroup
                                  }
             ::= { mip6Compliances 11 }

     mip6HaCompliance2 MODULE-COMPLIANCE
             STATUS  current
             DESCRIPTION
                     "The compliance statement for SNMP entities
                      that implement the MOBILEIPV6-MIB and
                      support monitoring of the home agent
                      functionality specifically the Home Agent List
                      and the home-agent-registration-related statistics,
                      There are a number of INDEX objects that cannot be
                      represented in the form of OBJECT clauses in SMIv2,
                      but for which there are compliance requirements,
                      expressed in OBJECT clause form in this description:
                      -- OBJECT       mip6BindingHomeAddressType
                      -- SYNTAX       InetAddressType { ipv6(2) }
                      -- DESCRIPTION
                      --     This MIB module requires support for global
                      --     ipv6 addresses for the mip6BindingHomeAddress
                      --     object.
                      --
                      -- OBJECT       mip6BindingHomeAddress
                      -- SYNTAX       InetAddress (SIZE(16))
                      -- DESCRIPTION
                      --     This MIB module requires support for global
                      --     ipv6 addresses for the mip6BindingHomeAddress
                      --     object.
                      --
                      -- OBJECT       mip6HaLinkLocalAddressType
```

```
                -- SYNTAX       InetAddressType { ipv6z(4) }
                -- DESCRIPTION
                --     This MIB module requires support for local
                --     ipv6 addresses for the mip6HaLinkLocalAddress
                --     object.
                --
                -- OBJECT       mip6HaLinkLocalAddress
                -- SYNTAX       InetAddress (SIZE(20))
                -- DESCRIPTION
                --     This MIB module requires support for local
                --     ipv6 addresses for the mip6HaLinkLocalAddress
                --     object.
                --
                "
        MODULE  -- this module
            MANDATORY-GROUPS { mip6HaSystemGroup,
                               mip6HaListGroup,
                               mip6HaStatsGroup,
                               mip6HaGlobalStatsGroup,
                               mip6TotalTrafficGroup
                             }
        ::= { mip6Compliances 12 }

    mip6HaCompliance3 MODULE-COMPLIANCE
        STATUS  current
        DESCRIPTION
               "The compliance statement for SNMP entities
                that implement the MOBILEIPV6-MIB and
                support monitoring and control of the home agent
                functionality specifically the Home Agent List
                and the home-agent-registration-related statistics,

                There are a number of INDEX objects that cannot be
                represented in the form of OBJECT clauses in SMIv2,
                but for which there are compliance requirements,
                expressed in OBJECT clause form in this description:
                -- OBJECT       mip6BindingHomeAddressType
                -- SYNTAX       InetAddressType { ipv6(2) }
                -- DESCRIPTION
                --     This MIB module requires support for global
                --     ipv6 addresses for the mip6BindingHomeAddress
                --     object.
                --
                -- OBJECT       mip6BindingHomeAddress
                -- SYNTAX       InetAddress (SIZE(16))
                -- DESCRIPTION
                --     This MIB module requires support for global
                --     ipv6 addresses for the mip6BindingHomeAddress
```

```
                    --      object.
                    --
                    -- OBJECT      mip6HaLinkLocalAddressType
                    -- SYNTAX      InetAddressType { ipv6z(4) }
                    -- DESCRIPTION
                    --      This MIB module requires support for local
                    --      ipv6 addresses for the mip6HaLinkLocalAddress
                    --      object.
                    --
                    -- OBJECT      mip6HaLinkLocalAddress
                    -- SYNTAX      InetAddress (SIZE(20))
                    -- DESCRIPTION
                    --      This MIB module requires support for local
                    --      ipv6 addresses for the mip6HaLinkLocalAddress
                    --      object.
                    --
                    "
              MODULE  -- this module
                  MANDATORY-GROUPS { mip6HaSystemGroup,
                                     mip6HaListGroup,
                                     mip6HaStatsGroup,
                                     mip6HaGlobalStatsGroup,
                                     mip6BindingCacheCtlGroup,
                                     mip6TotalTrafficGroup
                                    }
              ::= { mip6Compliances 13 }
```

```
      mip6HaCoreReadOnlyCompliance MODULE-COMPLIANCE
           STATUS   current
           DESCRIPTION
                   "The compliance statement for SNMP entities
                    that implement the MOBILEIPV6-MIB without support
                    for read-write (i.e., in read-only mode) and
                    support monitoring of the basic home agent
                    functionality.
                   "
           MODULE  -- this module
              MANDATORY-GROUPS { mip6HaSystemGroup
                                }
           OBJECT      mip6HaAdvPreference
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."


           OBJECT      mip6HaAdvLifetime
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."


           OBJECT      mip6HaPrefixAdv
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."


           OBJECT      mip6HaPrefixSolicitation
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."


           OBJECT      mip6HaMCastCtlMsgSupport
           MIN-ACCESS  read-only
           DESCRIPTION
                   "Write access is not required."

           ::= { mip6Compliances 14 }
```

```
        mip6HaReadOnlyCompliance2 MODULE-COMPLIANCE
            STATUS   current
            DESCRIPTION
                    "The compliance statement for SNMP entities
                     that implement the MOBILEIPV6-MIB without support
                     for read-write (i.e., in read-only mode) and
                     support monitoring of the home agent
                     functionality specifically the Home Agent List
                     and the home-agent-registration-related statistics.

                     There are a number of INDEX objects that cannot be
                     represented in the form of OBJECT clauses in SMIv2,
                     but for which there are compliance requirements,
                     expressed in OBJECT clause form in this description:
                     -- OBJECT      mip6BindingHomeAddressType
                     -- SYNTAX      InetAddressType { ipv6(2) }
                     -- DESCRIPTION
                     --     This MIB module requires support for global
                     --     ipv6 addresses for the mip6BindingHomeAddress
                     --     object.
                     --
                     -- OBJECT      mip6BindingHomeAddress
                     -- SYNTAX      InetAddress (SIZE(16))
                     -- DESCRIPTION
                     --     This MIB module requires support for global
                     --     ipv6 addresses for the mip6BindingHomeAddress
                     --     object.
                     --
                     -- OBJECT      mip6HaLinkLocalAddressType
                     -- SYNTAX      InetAddressType { ipv6z(4) }
                     -- DESCRIPTION
                     --     This MIB module requires support for local
                     --     ipv6 addresses for the mip6HaLinkLocalAddress
                     --     object.
                     --
                     -- OBJECT      mip6HaLinkLocalAddress
                     -- SYNTAX      InetAddress (SIZE(20))
                     -- DESCRIPTION
                     --     This MIB module requires support for local
                     --     ipv6 addresses for the mip6HaLinkLocalAddress
                     --     object.
                     --
                    "
            MODULE  -- this module
                MANDATORY-GROUPS { mip6HaSystemGroup,
                                   mip6HaListGroup,
                                   mip6HaStatsGroup,
                                   mip6HaGlobalStatsGroup,
```

```
                            mip6TotalTrafficGroup
                           }

        OBJECT       mip6HaAdvPreference
        MIN-ACCESS   read-only
        DESCRIPTION
              "Write access is not required."

        OBJECT       mip6HaAdvLifetime
        MIN-ACCESS   read-only
        DESCRIPTION
              "Write access is not required."

        OBJECT       mip6HaPrefixAdv
        MIN-ACCESS   read-only
        DESCRIPTION
              "Write access is not required."

        OBJECT       mip6HaPrefixSolicitation
        MIN-ACCESS   read-only
        DESCRIPTION
              "Write access is not required."

        OBJECT       mip6HaMCastCtlMsgSupport
        MIN-ACCESS   read-only
        DESCRIPTION
              "Write access is not required."

        ::= { mip6Compliances 15 }
```

```
mip6HaReadOnlyCompliance3 MODULE-COMPLIANCE
    STATUS  current
    DESCRIPTION
            "The compliance statement for SNMP entities
             that implement the MOBILEIPV6-MIB without support
             for read-write (i.e., in read-only mode) and
             support monitoring and control of the home agent
             functionality specifically the Home Agent List
             and the home-agent-registration-related statistics,

             There are a number of INDEX objects that cannot be
             represented in the form of OBJECT clauses in SMIv2,
             but for which there are compliance requirements,
             expressed in OBJECT clause form in this description:
             -- OBJECT      mip6BindingHomeAddressType
             -- SYNTAX      InetAddressType { ipv6(2) }
             -- DESCRIPTION
             --     This MIB module requires support for global
             --     ipv6 addresses for the mip6BindingHomeAddress
             --     object.
             --
             -- OBJECT      mip6BindingHomeAddress
             -- SYNTAX      InetAddress (SIZE(16))
             -- DESCRIPTION
             --     This MIB module requires support for global
             --     ipv6 addresses for the mip6BindingHomeAddress
             --     object.
             --
             -- OBJECT      mip6HaLinkLocalAddressType
             -- SYNTAX      InetAddressType { ipv6z(4) }
             -- DESCRIPTION
             --     This MIB module requires support for local
             --     ipv6 addresses for the mip6HaLinkLocalAddress
             --     object.
             --
             -- OBJECT      mip6HaLinkLocalAddress
             -- SYNTAX      InetAddress (SIZE(20))
             -- DESCRIPTION
             --     This MIB module requires support for local
             --     ipv6 addresses for the mip6HaLinkLocalAddress
             --     object.
             --
            "
    MODULE  -- this module
        MANDATORY-GROUPS { mip6HaSystemGroup,
                           mip6HaListGroup,
                           mip6HaStatsGroup,
                           mip6HaGlobalStatsGroup,
```

```
                                    mip6BindingCacheCtlGroup,
                                    mip6TotalTrafficGroup
                                    }

          OBJECT      mip6HaAdvPreference
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          OBJECT      mip6HaAdvLifetime
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          OBJECT      mip6HaPrefixAdv
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          OBJECT      mip6HaPrefixSolicitation
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          OBJECT      mip6HaMCastCtlMsgSupport
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          OBJECT      mip6BindingAdminStatus
          MIN-ACCESS  read-only
          DESCRIPTION
                 "Write access is not required."

          ::= { mip6Compliances 16 }

      mip6NotificationCompliance MODULE-COMPLIANCE
          STATUS  current
          DESCRIPTION
                 "The compliance statement for SNMP entities
                  that implement the MOBILEIPV6-MIB and
                  support Notification from home agent or
                  correspondent node to management stations
                  about the mobile node status.
                  There are a number of INDEX objects that cannot be
                  represented in the form of OBJECT clauses in SMIv2,
                  but for which there are compliance requirements,
                  expressed in OBJECT clause form in this description:
```

```
                -- OBJECT       mip6BindingHomeAddressType
                -- SYNTAX       InetAddressType { ipv6(2) }
                -- DESCRIPTION
                --     This MIB module requires support for global
                --     ipv6 addresses for the mip6BindingHomeAddress
                --     object.
                --
                -- OBJECT       mip6BindingHomeAddress
                -- SYNTAX       InetAddress (SIZE(16))
                -- DESCRIPTION
                --     This MIB module requires support for global
                --     ipv6 addresses for the mip6BindingHomeAddress
                --     object.
                "
        MODULE  -- this module
            MANDATORY-GROUPS { mip6NotificationGroup
                             }
        ::= { mip6Compliances 17 }

    END
```

6. Security Considerations

   There are a number of management objects defined in this MIB module
   with a MAX-ACCESS clause of read-write. Such objects may be
   considered sensitive or vulnerable in some network environments. The
   support for SET operations in a non-secure environment without proper
   protection can have a negative effect on network operations. These
   are the tables and objects and the corresponding
   sensitivity/vulnerability:

       mip6Status: The value of this object is used to enable or
                    disable the MIPv6 functionality on a MIPv6 entity.
                    Access to this MO may be abused to disrupt the
                    MIPv6 communication.
       mip6HaAdvPreference: Access to this object may be abused to
                    force MNs into selecting the wrong HA.
       mip6HaAdvLifetime: Access to this object may be abused to set
                    the advertised lifetime to incorrect values. That
                    will have an adverse impact on the MIPv6
                    communication.
       mip6BindingAdminStatus: The value of this object is used to
                    control the status of a Binding Cache entry.
                    Access to this object may be abused to deny Mobile
                    IPv6 connectivity to a legitimate user or to
                    grant Mobile IPv6 connectivity to an illegal user.
       mip6HaPrefixAdv: The value of this object indicates whether
                    the home agent will send ICMP Mobile Prefix
                    Advertisements to the mobile node.
                    Access to this object may be abused to send
                    unwanted/wrong prefix information or to deny the
                    mobile node from receiving information about the
                    changes in the home prefixes.
                    This may result in disruption of the Mobile IPv6
                    connectivity.
       mip6HaPrefixSolicitation: The value of this object indicates
                    whether the home agent should respond to ICMP
                    Mobile Prefix Solicitation messages from a mobile
                    node. Access to this object may be abused to deny
                    the mobile node information about its home prefix.
                    This may result in disruption of the Mobile IPv6
                    connectivity.
       mip6HaMCastCtlMsgSupport: The value of this object decides
                    whether the home agent should process the
                    multicast group membership control messages it
                    receives from mobile nodes. Access to this object
                    may be used to subvert administrate policy on
                    multicasting or to disrupt the multicast
                    communication with the mobile node.

   Some of the readable objects in this MIB module (i.e., objects with a
   MAX-ACCESS other than not-accessible) may be considered sensitive or
   vulnerable in some network environments. It is thus important to
   control even GET and/or NOTIFY access to these objects and possibly
   to even encrypt the values of these objects when sending them over
   the network via SNMP. These are the tables and objects and their
   sensitivity/vulnerability:

    The address-related objects in this MIB may be considered to be
    particularly sensitive and/or private. The care-of-address-related
    objects reveal the location and movement of the mobile node. This
    information may be considered to be private and sensitive and must
    be carefully handled.
        mip6BindingHstCOAType
        mip6BindingHstCOA
        mip6MnBLCOAType
        mip6MnBLCOA

    The mobile node's home-address- and home-agent-related information
    may be considered to be sensitive too as these may provide clues to
    a malicious party on ways to disrupt the mobile nodes communication
    channels.
        mip6BindingHstHomeAddressType,
        mip6BindingHstHomeAddress,
        mip6MnHomeAddressType,
        mip6MnHomeAddress

    The correspondent node's address-related MOs will reveal the nodes
    with whom the mobile node is corresponding. This information may be
    considered private and sensitive.
        mip6MnBLNodeAddressType,
        mip6MnBLNodeAddress

   SNMP versions prior to SNMPv3 did not include adequate security.
   Even if the network itself is secure (for example by using IPSec),
   even then, there is no control as to who on the secure network is
   allowed to access and GET/SET (read/change/create/delete) the objects
   in this MIB module.

   It is RECOMMENDED that implementors consider the security features as
   provided by the SNMPv3 framework (see [RFC3410], section 8),
   including full support for the SNMPv3 cryptographic mechanisms (for
   authentication and privacy).

   Further, deployment of SNMP versions prior to SNMPv3 is NOT
   RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to
   enable cryptographic security. It is then a customer/operator

   responsibility to ensure that the SNMP entity giving access to an
   instance of this MIB module is properly configured to give access to
   the objects only to those principals (users) that have legitimate
   rights to indeed GET or SET (change/create/delete) them.

7. IANA Considerations

   IANA has assigned a base arc in the 'mib-2' (standards track) OID
   tree for the 'mip6MIB' MODULE-IDENTITY defined in the Mobile-IPv6
   MIB. The mib-2 number is 133 for mip6MIB.

8. References

8.1. Normative References

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