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Definition of Managed Objects for the Optimized Link State Routing Protocol version 2
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Abstract

This document defines the Management Information Base (MIB) module for configuring and managing the Optimized Link State Routing protocol version 2 (OLSRv2). The OLSRv2-MIB module is structured into state information, performance metrics, and notifications. This additional state and performance information is useful to troubleshoot problems and performance issues of the routing protocol. Different levels of compliance allow implementers to use smaller subsets of all defined objects, allowing for this MIB module to be deployed on more constrained routers.

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1. Introduction

This document defines the Management Information Base (MIB) module for configuring and managing the Optimized Link State Routing protocol version 2 (OLSRv2). The OLSRv2-MIB module is structured into state information, performance metrics, and notifications. In addition to configuration, this additional state and performance information is useful to troubleshoot problems and performance issues of the routing protocol. Different levels of compliance allow implementers to use smaller subsets of all defined objects, allowing for this MIB module to be deployed on more constrained routers.

2. 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 [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 module are defined using the mechanisms defined in the Structure of Management Information (SMI). This document specifies a MIB module that is compliant to the SMIv2, which is described in [RFC2578], [RFC2579], and [RFC2580].

3. Conventions

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 [RFC2119].

4. Overview

The Optimized Link State Routing Protocol version 2 (OLSRv2) [OLSRv2] is a table driven, proactive routing protocol, i.e. it exchanges topology information with other routers in the network regularly. OLSRv2 is an optimization of the classical link state routing protocol. Its key concept is that of MultiPoint Relays (MPRs). Each router selects a set of its neighbor routers (which "cover" all of its symmetrically connected 2-hop neighbor routers) as MPRs. MPRs are then used to achieve both flooding reduction and topology reduction.

This document provides management and control capabilities of an OLSRv2 instance, allowing to monitor the state and performance of an OLSRV2 router, as well as to change settings of the deployment.

As OLSRv2 relies on the neighborhood information discovered by NHDP [RFC6130], the OLSRv2-MIB module is aligned with the NHDP-MIB [NHDP-MIB] module. In particular, common indexes for router interfaces and discovered neighbors are used, as described in Section 5.2.

4.1. Terms

The following definitions apply throughout this document:

- Configuration Objects - switches, tables, objects which are initialized to default settings or set through the management interface defined by this MIB module.
- State Objects - automatically generated values which define the current operating state of the OLSRv2 protocol process in the router.
- Performance Objects - automatically generated values which help an administrator or automated tool to assess the performance of the OLSRv2 routing process on the router.
- Notification Objects - define triggers and associated notification messages allowing for asynchronous tracking of pre-defined events on the managed router.

5. Structure of the MIB Module

This section presents the structure of the OLSRv2-MIB module. The objects are arranged into the following structure:

- olsrv2Objects - defines objects forming the basis for the OLSRv2-MIB module. These objects are divided up by function into the following groups:
  - Configuration Group - defining objects related to the configuration of the OLSRv2 instance on the router.
  - State Group - defining objects which reflect the current state of the OLSRv2 instance running on the router.
  - Performance Group -defining objects which are useful to a management station when characterizing the performance of OLSRv2 on the router and in the MANET.
- olsrv2Notifications - objects defining OLSRv2-MIB module notifications.

- olsrv2Conformance - defining the minimal and maximal conformance requirements for implementations of this MIB module.

5.1. The Configuration Group

The OLSRv2 router is configured with a set of controls. The authoritative list of configuration controls within the OLSRv2-MIB module are found within the MIB module itself. Generally, an attempt was made in developing the OLSRv2-MIB module to support all configuration objects defined in [OLSRv2]. For all of the configuration parameters, the same constraints and default values of these parameters as defined in [OLSRv2] are followed.

5.2. The State Group

The State Group reports current state information of a router running [OLSRv2]. The OLSRv2-MIB module State Group tables were designed to contain the complete set of state information defined within the information bases in [OLSRv2].

The OLSRv2-MIB module State Group tables are constructed as extensions to the corresponding tables within the State Group of the NHDP-MIB [NHDP-MIB] module. Further, the State Group tables defined in this MIB module are aligned with the according tables in the NHDP-MIB [NHDP-MIB] module, as described in Section 6.2.

5.3. The Performance Group

The Performance Group reports values relevant to system performance. Frequent changes of sets or frequent recalculation of the routing set or the MPRs can have a negative influence on the performance of OLSRv2. This MIB module defines several objects that can be polled in order to, e.g., calculate histories or monitor frequencies of changes. This may help the network admministrator to determine unusual topology changes or other changes that affect stability and reliability of the MANET. One such framework is specified in REPORT-MIB [REPORT-MIB].

5.4. The Notifications Group

The Notifications Subtree contains the list of notifications supported within the OLSRv2-MIB module and their intended purpose or utility.

The same mechanisms for improving the network performance by reducing the number of notifications apply as defined in Section 5.1 of [NHDP-MIB]. The Notifications Group contains Control, Objects and States, where the Control contains definitions of objects to control

the frequency of notifications being sent. The Objects define the supported notifications and the State is used to define additional information to be carried within the notifications.

6. Relationship to Other MIB Modules

This section specifies the relationship of the MIB modules contained in this document to other standards, particularly to standards containing other MIB modules. Definitions imported from other MIB modules and other MIB modules that SHOULD be implemented in conjunction with the MIB module contained within this document are identified in this section.

6.1. Relationship to the SNMPv2-MIB

The 'system' group in the SNMPv2-MIB [RFC3418] module is defined as being mandatory for all systems, and the objects apply to the entity as a whole. The 'system' group provides identification of the management entity and certain other system-wide data. The OLSRv2-MIB module does not duplicate those objects.

6.2. Relationship to the NHDP-MIB

OLSRv2 depends on the neighborhood information that is discovered by [RFC6130]. In order access the Objects relating to discovered neighbors, the State Group tables of the NHDP-MIB [NHDP-MIB] module are aligned with this MIB module. This is accomplished through the definition of two TEXTUAL-CONVENTIONS in the NHDP-MIB module: the NeighborInterfaceId and the NeighborRouterId. These object types are used to develop indexes into common NHDP-MIB module and routing protocol State Group tables. These objects are locally significant but should be locally common to the NHDP-MIB module and the OLSRv2-MIB module implemented on a common networked router. This will allow for improved cross referencing of information across the two MIB modules.

6.3. MIB modules required for IMPORTS

The following OLSRv2-MIB module IMPORTS objects from NHDP-MIB [NHDP-MIB], SNMPv2-SMI [RFC2578], SNMPv2-TC [RFC2579], SNMPv2-CONF [RFC2580], IF-MIB [RFC2863], INET-ADDRESS-MIB [RFC4001], SMIng [RFC3781], and FLOAT-TC-MIB [RFC6340].

7. Definitions

This section contains the OLSRv2-MIB module defined by the specification.

```
   OLSRv2-MIB DEFINITIONS ::= BEGIN

   IMPORTS

      MODULE-IDENTITY, OBJECT-TYPE, Counter32, Counter64,
      Integer32, Unsigned32, mib-2, TimeTicks,
      NOTIFICATION-TYPE
               FROM SNMPv2-SMI -- RFC2578

      TimeStamp, TruthValue, RowStatus
               FROM SNMPv2-TC -- RFC2579

      MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
               FROM SNMPv2-CONF -- STD58

      InetAddressType, InetAddress,
      InetAddressPrefixLength
               FROM INET-ADDRESS-MIB -- RFC3291

      InterfaceIndexOrZero
               FROM IF-MIB -- RFC2863

      Float32TC
               FROM FLOAT-TC-MIB  -- RFC6340

      NeighborRouterId, NeighborIfIndex
               FROM NHDP-MIB -- draft-ietf-manet-nhdp-mib
      ;

   manetOlsrv2MIB MODULE-IDENTITY
      LAST-UPDATED "201205111000Z"   -- May 11, 2012
      ORGANIZATION "IETF MANET Working Group"
      CONTACT-INFO
         "WG E-Mail: manet@ietf.org

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```
      DESCRIPTION
         "This MIB module contains managed object definitions
          for the Manet OLSRv2 routing process defined in the
          Optimized Link State Routing Protocol version 2
          defined in RFCXXXX.

          Copyright (C) The IETF Trust (2012). This version
          of this MIB module is part of RFC xxxx; see the RFC
          itself for full legal notices."

        -- Revision History
        REVISION    "201205111000Z"   -- May 11, 2012
        DESCRIPTION
         "The first version of this MIB module,
          published as RFCXXXX."

        -- RFC-Editor assigns XXXX
        ::= { mib-2 1234 }   -- 1234 is just an example
                             -- and to be assigned by IANA


   --
   -- Top-Level Object Identifier Assignments
   --

   olsrv2MIBNotifications OBJECT IDENTIFIER ::= { manetOlsrv2MIB 0 }
   olsrv2MIBObjects       OBJECT IDENTIFIER ::= { manetOlsrv2MIB 1 }
   olsrv2MIBConformance   OBJECT IDENTIFIER ::= { manetOlsrv2MIB 2 }

   --
   -- olsrv2ConfigurationGroup
```

```
   --
   --    Contains the OLSRv2 objects that configure specific
   --    options that determine the overall performance and operation
   --    of the OLSRv2 routing process.
   --

   olsrv2ConfigurationGroup OBJECT IDENTIFIER ::= {olsrv2MIBObjects 1}

    olsrv2OrigIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-write
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2OrigIpAddr, as defined
           in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported.
          "
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2ConfigurationGroup 1 }

    olsrv2OrigIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-write
       STATUS      current
       DESCRIPTION
          "An address which is unique (within the MANET)
           to a router.

           This object is persistent and when written
           the entity SHOULD save the change to
           non-volatile storage."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2ConfigurationGroup 2 }

   --
   -- Local history times
   --

   olsrv2OHoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
```

```
         "olsrv2OHoldTime corresponds to
         O_HOLD_TIME of OLSRv2 and represents the
         time for which a recently used and replaced
         originator address is used to recognize the router's
         own messages.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 30000 }
   ::= { olsrv2ConfigurationGroup 3 }


   --
   -- Message intervals
   --

   olsrv2TcInterval  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2TcInterval corresponds to
         TC_INTERVAL of OLSRv2 and represents the
         maximum time between the transmission of
         two successive TC messages by this router.

         The following constraints apply to this
         parameter:

             o olsrv2TcInterval &gt; 0
             o olsrv2TcInterval &gt;= olsrv2TcMinInterval

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 5000 }
   ::= { olsrv2ConfigurationGroup 4 }

   olsrv2TcMinInterval  OBJECT-TYPE
      SYNTAX      Unsigned32
```

```
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2TcMinInterval corresponds to
         TC_MIN_INTERVAL of OLSRv2 and represents
         the minimum interval between transmission of
         two successive TC messages by this router.

         The following constraint applies to this
         parameter:

             o olsrv2TcInterval &gt;= olsrv2TcMinInterval


         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 1250 }
   ::= { olsrv2ConfigurationGroup 5 }


   --
   -- Advertised information validity times
   --

   olsrv2THoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2THoldTime corresponds to
         T_HOLD_TIME of OLSRv2 and is used as the
         minimum value in the TLV with
         Type = VALIDITY_TIME included in all
         TC messages sent by this router.

         The following constraint applies to this
         parameter:

             o olsrv2THoldTime &gt;= olsrv2TcInterval

         If TC messages can be lost, then
         olsrv2THoldTime SHOULD be
```

```
         significantly greater than olsrv2TcInterval;
         a value &gt;= 3 x olsrv2TcInterval is RECOMMENDED.

         olsrv2THoldTime MUST be representable as
         described in RFC5497.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 15000 }
   ::= { olsrv2ConfigurationGroup 6 }

   olsrv2AHoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2AHoldTime corresponds to
         A_HOLD_TIME of OLSRv2 and represents
         the period during which TC messages are sent
         after they no longer have any advertised
         information to report, but are sent in order
         to accelerate outdated information removal by other routers.

         If TC messages can be lost, then
         olsrv2AHoldTime SHOULD be
         significantly greater than olsrv2TcInterval;
         a value &gt;= 3 x olsrv2TcInterval is
         RECOMMENDED.

         olsrv2AHoldTime MUST be representable as
         described in RFC5497.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 15000 }
   ::= { olsrv2ConfigurationGroup 7 }

   --
   -- Received message validity times
```

```
   --

   olsrv2RxHoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2RxHoldTime corresponds to
         RX_HOLD_TIME of OLSRv2 and represents the period
         after receipt of a message by the appropriate OLSRv2
         interface of this router for which that information
         is recorded, in order that the message is recognized
         as having been previously received on this OLSRv2
         interface.

         The following constraint applies to this
         parameter:

             o olsrv2RxHoldTime > 0

         This parameter SHOULD be greater
         than the maximum difference in time that a
         message may take to traverse the MANET,
         taking into account any message forwarding
         jitter as well as propagation, queuing,
         and processing delays.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 30000 }
   ::= { olsrv2ConfigurationGroup 8 }

   olsrv2PHoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2PHoldTime corresponds to
         P_HOLD_TIME of OLSRv2 and represents the period
         after receipt of a message that is processed by
         this router for which that information is recorded,
         in order that the message is not processed again
```

```
         if received again.

         The following constraint applies to this
         parameter:

             o olsrv2PHoldTime > 0

         This parameter SHOULD be greater
         than the maximum difference in time that a
         message may take to traverse the MANET,
         taking into account any message forwarding
         jitter as well as propagation, queuing,
         and processing delays.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 30000 }
   ::= { olsrv2ConfigurationGroup 9 }

   olsrv2FHoldTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2RxHoldTime corresponds to
         RX_HOLD_TIME of OLSRv2 and represents the period
         after receipt of a message that is forwarded by this
         router for which that information is recorded, in order
         that the message is not forwarded again if received again.

         The following constraint applies to this
         parameter:

             o olsrv2FHoldTime > 0

         This parameter SHOULD be greater
         than the maximum difference in time that a
         message may take to traverse the MANET,
         taking into account any message forwarding
         jitter as well as propagation, queuing,
         and processing delays.

         This object is persistent and when written
```

```
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 30000 }
   ::= { olsrv2ConfigurationGroup 10 }


   --
   -- Jitter times
   --

   olsrv2TpMaxJitter  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2TpMaxJitter corresponds to
         TP_MAXJITTER of OLSRv2 and represents the value
         of MAXJITTER used in RFC5148 for periodically
         generated TC messages sent by this router.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 500 }
   ::= { olsrv2ConfigurationGroup 11 }

   olsrv2TtMaxJitter  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2TtMaxJitter corresponds to
         TT_MAXJITTER of OLSRv2 and represents the value
         of MAXJITTER used in RFC5148 for externally
         triggered TC messages sent by this router.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
```

```
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 500 }
   ::= { olsrv2ConfigurationGroup 12 }


   olsrv2FMaxJitter  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "milliseconds"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2FMaxJitter corresponds to
         F_MAXJITTER of OLSRv2 and represents the
         default value of MAXJITTER used in RFC5148 for
         messages forwarded by this router.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 500 }
   ::= { olsrv2ConfigurationGroup 13 }


   --
   -- Hop limits
   --

   olsrv2TcHopLimit  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..255)
      UNITS       "hops"
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2TcHopLimit corresponds to
         TC_HOP_LIMIT of OLSRv2.

         The following constraint applies to this
         parameter:

             o The maximum value of
               olsrv2TcHopLimit &gt;= the network diameter
              in hops, a value of 255 is RECOMMENDED.

             o All values of olsrv2TcHopLimit &gt;= 2.
```

```
        This object is persistent and when written
        the entity SHOULD save the change to
        non-volatile storage."
      REFERENCE
        "The OLSRv2 draft.
         Section 5 on Protocol Parameters."
      DEFVAL { 255 }
   ::= { olsrv2ConfigurationGroup 14 }


   --
   -- Willingness
   --

   olsrv2WillRouting  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..15)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2WillRouting corresponds to
         WILL_ROUTING of OLSRv2.

         The following constraint applies to this
         parameter:

             o WILL_NEVER (0) &lt;= olsrv2WillRouting &lt;=
                                  WILL_ALWAYS (15)

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 7 }
   ::= { olsrv2ConfigurationGroup 15 }


   olsrv2WillFlooding     OBJECT-TYPE
      SYNTAX      Unsigned32 (0..15)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2WillFlooding corresponds to
         WILL_FLOODING of OLSRv2.

         The following constraint applies to this
         parameter:
```

```
            o WILL_NEVER (0) &lt;= olsrv2WillFlooding &lt;=
                                  WILL_ALWAYS (15)

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
      REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
      DEFVAL { 7 }
   ::= { olsrv2ConfigurationGroup 16 }


   olsrv2LinkMetricType  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..255)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "olsrv2LinkMetricType corresponds to
         LINK_METRIC_TYPE of OLSRv2.

         This object is persistent and when written
         the entity SHOULD save the change to
         non-volatile storage."
       REFERENCE
         "The OLSRv2 draft.
          Section 5 on Protocol Parameters."
       DEFVAL { 255 }
   ::= { olsrv2ConfigurationGroup 17 }




   --
   -- olsrv2StateGroup
   --

   -- Contains information describing the current state of
   -- the OLSRv2 process.


   olsrv2StateGroup  OBJECT IDENTIFIER ::= { olsrv2MIBObjects 2 }

   olsrv2RouterStatus  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
```

```
         "The current status of the OLSRv2
          routing process."
   ::= { olsrv2StateGroup 1 }


    -- Interface Information Base (IIB)

   --
   -- Link Set from RFC6130, extended by L_in_metric,
   -- L_out_metric, and L_mpr_selector entries for each tuple
   --

   olsrv2IibLinkSetTable OBJECT-TYPE
      SYNTAX       SEQUENCE OF Olsrv2IibLinkSetEntry
      MAX-ACCESS   not-accessible
      STATUS       current
      DESCRIPTION
          "A Link Set of an interface records all links
           from other routers which are, or recently
           were, 1-hop neighbors."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2StateGroup 2 }

    olsrv2IibLinkSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2IibLinkSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "A Link Set consists of Link Tuples, each
           representing a single link indexed by the
           local and remote interface pair. The Link Set
           from NHDP is extended by OLSRv2 by the following
           fields:

           (L_in_metric, L_out_metric, L_mpr_selector)."
       REFERENCE
          "The OLSRv2 draft."
       INDEX { nhdpIfIndex,
               nhdpDiscIfIndex }
    ::= { olsrv2IibLinkSetTable 1 }

    Olsrv2IibLinkSetEntry ::=
       SEQUENCE {
          olsrv2IibLinkSetInMetric
            Float32,
          olsrv2IibLinkSetOutMetric
            Float32,
```

```
          olsrv2IibLinkSetMprSelector
            TruthValue
          }

    olsrv2IibLinkSetInMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2IibLinkSetInMetric is the metric of the link
         from the OLSRv2 interface with addresses
         L_neighbor_iface_addr_list to this OLSRv2 interface."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2IibLinkSetEntry 1 }

   olsrv2IibLinkSetOutMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2IibLinkSetInMetric is the metric of the
         link to the OLSRv2 interface with addresses
         L_neighbor_iface_addr_list from this OLSRv2 interface."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2IibLinkSetEntry 2 }

   olsrv2IibLinkSetMprSelector  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2IibLinkSetMprSelector is a boolean flag,
         describing if this neighbor has selected this router
         zs a flooding MPR, i.e., is a flooding MPR selector
         of this router."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2IibLinkSetEntry 3 }

  --
  -- 2-Hop Set; from RFC6130, extended by OLSRv2 by the
  -- following fields: N2_in_metric, N2_out_metric
  --
    olsrv2Iib2HopSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2Iib2HopSetEntry
       MAX-ACCESS   not-accessible
```

```
       STATUS       current
       DESCRIPTION
           "A 2-Hop Set of an interface records network
           addresses of symmetric 2-hop neighbors, and
           the symmetric links to symmetric 1-hop neighbors
           through which these symmetric 2-hop neighbors
           can be reached.  It consists of 2-Hop Tuples.
           The Set is extended by OLSRv2 by the following
           fields: N2_in_metric, N2_out_metric."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 3 }

    olsrv2Iib2HopSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2Iib2HopSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "olsrv2Iib2HopSetTable consists of 2-Hop Tuples,
           each representing a single network address of
           a symmetric 2-hop neighbor, and a single MANET
           interface of a symmetric 1-hop neighbor. The RFC6130
           tuples are extended by:

           (N2_in_metric, N2_out_metric)."
       REFERENCE
          "The OLSRv2 draft."
       INDEX { nhdpIfIndex,
               olsrv2Iib2HopSetIpAddressType,
               olsrv2Iib2HopSetIpAddress }
    ::= { olsrv2Iib2HopSetTable 1 }

    Olsrv2Iib2HopSetEntry ::=
       SEQUENCE {
          olsrv2Iib2HopSetIpAddressType
            InetAddressType,
          olsrv2Iib2HopSetIpAddress
            InetAddress,
          olsrv2Iib2HopSet1HopIfIndex
            NeighborIfIndex,
          olsrv2Iib2HopSetInMetric
            Float32,
          olsrv2Iib2HopSetOutMetric
            Float32
         }

   olsrv2Iib2HopSetIpAddressType  OBJECT-TYPE
      SYNTAX      InetAddressType
```

```
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2Iib2HopSetIpAddress
          in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2Iib2HopSetEntry 1 }

   olsrv2Iib2HopSetIpAddress  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2Iib2HopSetIpAddr corresponds
         to N2_2hop_addr of NHDP and is a network
         address of a symmetric 2-hop neighbor that
         has a symmetric link (using any MANET
         interface) to the indicated symmetric
         1-hop neighbor."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2Iib2HopSetEntry 2 }

   olsrv2Iib2HopSet1HopIfIndex  OBJECT-TYPE
      SYNTAX      NeighborIfIndex
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2Iib2HopSet1HopIfIndex is
          nhdpDiscIfIndex of the 1-hop
          neighbor which communicated the ipAddress
          of the 2-hop neighbor in this row entry."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2Iib2HopSetEntry 3 }

   olsrv2Iib2HopSetInMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2Iib2HopSetInMetric is the neighbor metric
         from the router with address N2_2hop_iface_addr
         to the router with OLSRv2 interface addresses
```

```
         N2_neighbor_iface_addr_list."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2Iib2HopSetEntry 4 }

   olsrv2Iib2HopSetOutMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2Iib2HopSetN2Time is the neighbor metric
         to the router with address N2_2hop_iface_addr
         from the router with OLSRv2 interface addresses
         N2_neighbor_iface_addr_list."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2Iib2HopSetEntry 5 }




    --
    -- Local Information Base  - as defined in RFC6130,
    -- extended by the addition of an Originator Set,
    -- defined in Section 6.1 and a Local Attached
    -- Network Set, defined in Section 6.2.
    --



    --
    -- Originator Set
    --

    olsrv2LibOrigSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2LibOrigSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Originator Set records addresses
          that were recently used as originator addresses
          by this router."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 4 }
```

```
    olsrv2LibOrigSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2LibOrigSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "A router's Originator Set consists of
          Originator Tuples:
            (O_orig_addr, O_time)."
       REFERENCE
          "The OLSRv2 draft."
       INDEX { olsrv2LibOrigSetIpAddrType,
               olsrv2LibOrigSetIpAddr }
    ::= { olsrv2LibOrigSetTable 1 }

    Olsrv2LibOrigSetEntry ::=
       SEQUENCE {
          olsrv2LibOrigSetIpAddrType
            InetAddressType,
          olsrv2LibOrigSetIpAddr
            InetAddress,
          olsrv2LibOrigSetExpireTime
            TimeStamp
        }

    olsrv2LibOrigSetIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2LibOrigSetIpAddr, as defined
           in the InetAddress MIB (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2LibOrigSetEntry 1 }

    olsrv2LibOrigSetIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "A recently used originator address
           by this router."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2LibOrigSetEntry 2 }
```

```
     olsrv2LibOrigSetExpireTime  OBJECT-TYPE
       SYNTAX      TimeStamp
       UNITS      "milliseconds"
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "olsrv2LibOrigSetExpireTime specifies the sysUptime
          when to expire this entry and remove it from the
          'olsrv2LibOrigSetTable'."
       REFERENCE
          "The OLSRv2 draft."
     ::= { olsrv2LibOrigSetEntry 3 }


     --
     -- Local Attached Network Set
     --

     olsrv2LibLocAttNetSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2LibLocAttNetSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Local Attached Network Set records
          its local non-OLSRv2 interfaces via which it
          can act as gateways to other networks."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 5 }

     olsrv2LibLocAttNetSetEntry  OBJECT-TYPE
        SYNTAX      Olsrv2LibLocAttNetSetEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "The entries include the Local Attached
            Network Tuples:

               (AL_net_addr, AL_dist, AL_metric)

            where:

               AL_net_addr is the network address
               of an attached network which can
               be reached via this router.

               AL_dist is the number of hops to
               the network with address AL_net_addr
```

```
              from this router.

              AL_metric is the metric of the link to
              the attached network with address
              AL_net_addr from this router."
      REFERENCE
         "The OLSRv2 draft."
      INDEX { olsrv2LibLocAttNetSetIpAddrType,
              olsrv2LibLocAttNetSetIpAddr,
              olsrv2LibLocAttNetSetIpAddrPrefixLen }
   ::= { olsrv2LibLocAttNetSetTable 1 }

   Olsrv2LibLocAttNetSetEntry ::=
      SEQUENCE {
         olsrv2LibLocAttNetSetIpAddrType
           InetAddressType,
         olsrv2LibLocAttNetSetIpAddr
           InetAddress,
         olsrv2LibLocAttNetSetIpAddrPrefixLen
           InetAddressPrefixLength,
         olsrv2LibLocAttNetSetDistance
           Unsigned32,
         olsrv2LibLocAttNetSetMetric
           Float32,
         olsrv2LibLocAttNetSetRowStatus
           RowStatus
        }

   olsrv2LibLocAttNetSetIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2LibLocAttNetSetIpAddr, as defined
          in the InetAddress MIB (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2LibLocAttNetSetEntry 1 }

   olsrv2LibLocAttNetSetIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the network address of an attached
```

```
            network which can be reached via this router."
        REFERENCE
           "The OLSRv2 draft."
     ::= { olsrv2LibLocAttNetSetEntry 2 }

     olsrv2LibLocAttNetSetIpAddrPrefixLen  OBJECT-TYPE
       SYNTAX      InetAddressPrefixLength
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "Indicates the number of leading one bits that form the
           mask to be logical-ANDed with the destination address
           before being compared to the value in the
           olsrv2LibLocAttNetSetIpAddr field."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2LibLocAttNetSetEntry 3 }

    olsrv2LibLocAttNetSetDistance  OBJECT-TYPE
       SYNTAX      Unsigned32 (1..255)
       UNITS      "hops"
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This object specifies the number of hops
           to the network with address
           olsrv2LibLocAttNetSetIpAddr from this router."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2LibLocAttNetSetEntry 4 }

    olsrv2LibLocAttNetSetMetric  OBJECT-TYPE
       SYNTAX      Float32
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This object specifies the metric of the
          link to the attached network with
          address AL_net_addr from this router."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2LibLocAttNetSetEntry 5 }

    olsrv2LibLocAttNetSetRowStatus  OBJECT-TYPE
       SYNTAX      RowStatus
       MAX-ACCESS  read-create
       STATUS      current
       DESCRIPTION
```

```
         "This object permits management of the table
          by facilitating actions such as row creation,
          construction, and destruction. The value of
          this object has no effect on whether other
          objects in this conceptual row can be
          modified."
   ::= { olsrv2LibLocAttNetSetEntry 6 }



    --
    -- Neighbor Information Base  - as defined in RFC6130,
    -- extended by the addition of five elements to
    -- each Neighbor Tuple, as defined in Section 8.
    --

    --
    -- Neighbor Set
    --

    olsrv2NibNeighborSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2NibNeighborSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Neighbor Set records all network
          addresses of each 1-hop neighbor. It consists
          of Neighbor Tuples, each representing a single
          1-hop neighbor. "
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 6 }

    olsrv2NibNeighborSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2NibNeighborSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "Each Neighbor Tuple in the Neighbor Set, defined
           in RFC6130, has these additional elements:
                N_orig_addr
                N_willingness
                N_mpr
                N_mpr_selector
                N_advertised
           defined here as extensions."
       REFERENCE
          "The OLSRv2 draft."
```

```
      INDEX { olsrv2NibNeighborSetRouterId }
   ::= { olsrv2NibNeighborSetTable 1 }

   Olsrv2NibNeighborSetEntry ::=
      SEQUENCE {
         olsrv2NibNeighborSetRouterId
           NeighborRouterId,
         olsrv2NibNeighborSetNOrigIpAddrType
           InetAddressType,
         olsrv2NibNeighborSetNOrigIpAddr
           InetAddress,
         olsrv2NibNeighborSetNInMetric
           Float32,
         olsrv2NibNeighborSetNOutMetric
           Float32,
         olsrv2NibNeighborSetNWillFlooding
           Unsigned32,
         olsrv2NibNeighborSetNWillRouting
           Unsigned32,
         olsrv2NibNeighborSetNFloodingMpr
           TruthValue,
         olsrv2NibNeighborSetNRoutingMpr
           TruthValue,
         olsrv2NibNeighborSetNMprSelector
           TruthValue,
         olsrv2NibNeighborSetNAdvertised
           TruthValue
        }

   olsrv2NibNeighborSetRouterId  OBJECT-TYPE
      SYNTAX      NeighborRouterId
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "The object olsrv2NibNeighborSetRouterId is
          the locally assigned ID of the remote router
          referenced in this row.  The IP addrs
          associated with this router is contained
          in the NHDP-MIB module's 'nhdpDiscIfSetTable'.
         "
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 1 }

   olsrv2NibNeighborSetNOrigIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
```

```
      DESCRIPTION
         "The type of the olsrv2NibNeighborSetNOrigIpAddr, as defined
          in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 2 }

   olsrv2NibNeighborSetNOrigIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the originator IP address of that
         neighbor."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 3 }

   olsrv2NibNeighborSetNInMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is the neighbor metric of any
         link from this neighbor to an OLSRv2 interface
         of this router, i.e., the minimum of all corresponding
         L_in_metric with L_status = SYMMETRIC and
         L_in_metric != UNKNOWN_METRIC, UNKNOWN_METRIC
         if there are no such Link Tuples."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 4 }

   olsrv2NibNeighborSetNOutMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is is the neighbor metric of any
         link from an OLSRv2 interface of this router
         to this neighbor, i.e., the minimum of
         all corresponding L_out_metric with
         L_status = SYMMETRIC and
         L_out_metric != UNKNOWN_METRIC, UNKNOWN_METRIC
         if there are no such Link Tuples."
```

```
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 5 }

   olsrv2NibNeighborSetNWillFlooding  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..15)
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is the neighbor's willingness to be
         selected as a flooding MPR, in the range from
         WILL_NEVER to WILL_ALWAYS, both inclusive, taking
         the value WILL_NEVER if no OLSRv2 specific
         information is received from this neighbor."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 6 }

   olsrv2NibNeighborSetNWillRouting  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..15)
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is the neighbor's willingness to be
         selected as a routing MPR, in the range from
         WILL_NEVER to WILL_ALWAYS, both inclusive, taking
         the value WILL_NEVER if no OLSRv2 specific
         information is received from this neighbor."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 7 }

   olsrv2NibNeighborSetNFloodingMpr  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is a boolean flag, describing if
         this neighbor is  selected as a flooding MPR
         by this router."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 8 }

   olsrv2NibNeighborSetNRoutingMpr  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
```

```
      DESCRIPTION
         "This object is a boolean flag, describing if
         this neighbor is  selected as a routing MPR
         by this router."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 9 }


   olsrv2NibNeighborSetNMprSelector  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is a boolean flag,
          describing if this neighbor has selected this router
          as a routing MPR, i.e. is a routing MPR
          selector of this router.

          When set to 'true', then this router is selected as
          a routing MPR by the neighbor router.
          When set to 'false',
          then this router is not selected by the neighbor
          as a routing MPR."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 10 }

   olsrv2NibNeighborSetNAdvertised  OBJECT-TYPE
      SYNTAX      TruthValue
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object, N_mpr_selector, is a boolean flag, describing if
         this router has elected to advertise a link to this neighbor
         in its TC messages."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2NibNeighborSetEntry 11 }



   olsrv2NibNeighborSetTableAnsn OBJECT-TYPE
      SYNTAX       Unsigned32
      MAX-ACCESS   read-only
      STATUS       current
      DESCRIPTION
         "Advertised Neighbor Sequence Number (ANSN), is
```

```
          a variable, whose value is included in TC messages to
          indicate the freshness of the information transmitted."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 7 }


    --
    -- Topology Information Base  - this Information
    -- Base is specific to OLSRv2, and is defined in
    -- Section 9.
    --



    --
    -- Advertising Remote Router Set
    --

    olsrv2TibAdRemoteRouterSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2TibAdRemoteRouterSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Advertising Remote Router Set records
           information describing each remote router in the
           network that transmits TC messages."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 8 }

    olsrv2TibAdRemoteRouterSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2TibAdRemoteRouterSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "A router's Advertised Neighbor Set Table entry
           consists of Advertising Remote Router Tuples:

               (AR_orig_addr, AR_seq_number, AR_time)

           Addresses associated with this router are
           found in the NHDP-MIB module's 'nhdpDiscIfSetTable'."
       REFERENCE
          "The OLSRv2 draft."
       INDEX { olsrv2TibAdRemoteRouterSetRouterId }
    ::= { olsrv2TibAdRemoteRouterSetTable 1 }

    Olsrv2TibAdRemoteRouterSetEntry ::=
```

```
      SEQUENCE {
         olsrv2TibAdRemoteRouterSetIpAddrType
           InetAddressType,
         olsrv2TibAdRemoteRouterSetIpAddr
           InetAddress,
         olsrv2TibAdRemoteRouterSetRouterId
           NeighborRouterId,
         olsrv2TibAdRemoteRouterSetMaxSeqNo
           Unsigned32,
         olsrv2TibAdRemoteRouterSetExpireTime
           TimeStamp
       }

   olsrv2TibAdRemoteRouterSetIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2TibAdRemoteRouterSetIpAddr,
          as defined in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAdRemoteRouterSetEntry 1 }

   olsrv2TibAdRemoteRouterSetIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the originator address of a received
          TC message."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAdRemoteRouterSetEntry 2 }

   olsrv2TibAdRemoteRouterSetRouterId  OBJECT-TYPE
      SYNTAX      NeighborRouterId
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "This object is an additional index for each
          Remote Router's IfAddr associated with the
          olsrv2TibAdRemoteRouterSetIpAddr."
      REFERENCE
         "The OLSRv2 draft."
```

```
    ::= { olsrv2TibAdRemoteRouterSetEntry 3 }

     olsrv2TibAdRemoteRouterSetMaxSeqNo  OBJECT-TYPE
        SYNTAX      Unsigned32 (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "This is the greatest ANSN in any TC message
            received which originated from the router
            with originator address
            olsrv2TibAdRemoteRouterSetIpAddr."
        REFERENCE
           "The OLSRv2 draft."
    ::= { olsrv2TibAdRemoteRouterSetEntry 4 }

    olsrv2TibAdRemoteRouterSetExpireTime  OBJECT-TYPE
      SYNTAX      TimeStamp
      UNITS       "milliseconds"
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "olsrv2TibAdRemoteRouterSetExpireTime specifies the sysUptime
          when to expire this entry and remove it from the
          'olsrv2TibAdRemoteRouterSetTable'."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAdRemoteRouterSetEntry 5 }



    --
    -- Router Topology Set
    --

    olsrv2TibRouterTopologySetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2TibTopologySetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Router Topology Set records topology
           information about the network."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 9 }

    olsrv2TibRouterTopologySetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2TibTopologySetEntry
       MAX-ACCESS  not-accessible
```

```
      STATUS      current
      DESCRIPTION
         "It consists of Router Topology Tuples:

              (TR_from_orig_addr, TR_to_orig_addr,
                   TR_seq_number, TR_metric, R_time)"
      REFERENCE
         "The OLSRv2 draft."
      INDEX { olsrv2TibRouterTopologySetFromOrigIpAddrType,
              olsrv2TibRouterTopologySetFromOrigIpAddr }
   ::= { olsrv2TibRouterTopologySetTable 1 }

   Olsrv2TibTopologySetEntry ::=
      SEQUENCE {
         olsrv2TibRouterTopologySetFromOrigIpAddrType
           InetAddressType,
         olsrv2TibRouterTopologySetFromOrigIpAddr
           InetAddress,
         olsrv2TibRouterTopologySetToOrigIpAddrType
           InetAddressType,
         olsrv2TibRouterTopologySetToOrigIpAddr
           InetAddress,
         olsrv2TibRouterTopologySetSeqNo
           Unsigned32,
         olsrv2TibRouterTopologySetMetric
           Float32,
         olsrv2TibRouterTopologySetExpireTime
           TimeStamp
       }

   olsrv2TibRouterTopologySetFromOrigIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2TibRouterTopologySetFromOrigIpAddr,
          as defined in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRouterTopologySetEntry 1 }

   olsrv2TibRouterTopologySetFromOrigIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
```

```
      DESCRIPTION
         "This is the originator address of a router which can
         reach the router with originator address TR_to_orig_addr
         in one hop."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRouterTopologySetEntry 2 }

   olsrv2TibRouterTopologySetToOrigIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2TibRouterTopologySetToOrigIpAddr,
          as defined in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRouterTopologySetEntry 3 }

   olsrv2TibRouterTopologySetToOrigIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the originator address of a router which can be
         reached by the router with originator address
         TR_to_orig_addr in one hop."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRouterTopologySetEntry 4 }

    olsrv2TibRouterTopologySetSeqNo  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..65535)
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the greatest ANSN in any TC message
         received which originated from the router
         with originator address TR_from_orig_addr
         (i.e., which contributed to the information
         contained in this Tuple)."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRouterTopologySetEntry 5 }
```

```
    olsrv2TibRouterTopologySetMetric  OBJECT-TYPE
       SYNTAX      Float32
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This is the neighbor metric from the router
          with originator address TR_from_orig_addr to
          the router with originator address
          TR_to_orig_addr."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRouterTopologySetEntry 6 }

     olsrv2TibRouterTopologySetExpireTime  OBJECT-TYPE
       SYNTAX      TimeStamp
       UNITS       "milliseconds"
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "olsrv2TibRouterTopologySetExpireTime specifies
          the sysUptime
          when to expire this entry and remove it from the
          'olsrv2TibRouterTopologySetTable'."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRouterTopologySetEntry 7 }



    --
    -- Routable Address Topology Set
    --


    olsrv2TibRoutableAddressTopologySetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2TibRoutableAddressTopologySetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Routable Address Topology Set records topology
          information about the routable addresses within the MANET,
          and via which routers they may be reached."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 10 }

    olsrv2TibRoutableAddressTopologySetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2TibRoutableAddressTopologySetEntry
```

```
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
          "It consists of Router Topology Tuples:

               (TA_from_orig_addr, TA_to_orig_addr,
                    TA_seq_number, TA_metric, TA_time)"
       REFERENCE
          "The OLSRv2 draft."
       INDEX { olsrv2TibRouterTopologySetFromOrigIpAddrType,
               olsrv2TibRouterTopologySetFromOrigIpAddr }
    ::= { olsrv2TibRoutableAddressTopologySetTable 1 }

    Olsrv2TibRoutableAddressTopologySetEntry ::=
       SEQUENCE {
          olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType
            InetAddressType,
          olsrv2TibRoutableAddressTopologySetFromOrigIpAddr
            InetAddress,
          olsrv2TibRoutableAddressTopologySetToOrigIpAddrType
            InetAddressType,
          olsrv2TibRoutableAddressTopologySetToOrigIpAddr
            InetAddress,
          olsrv2TibRoutableAddressTopologySetSeqNo
            Unsigned32,
          olsrv2TibRoutableAddressTopologySetMetric
            Float32,
          olsrv2TibRoutableAddressTopologySetExpireTime
            TimeStamp
        }

    olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the
          olsrv2TibRoutableAddressTopologySetFromOrigIpAddr,
          as defined in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutableAddressTopologySetEntry 1 }

   olsrv2TibRoutableAddressTopologySetFromOrigIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
```

```
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the originator address of a router which can
         reach the router with routable address TA_dest_addr
         in one hop."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutableAddressTopologySetEntry 2 }

   olsrv2TibRoutableAddressTopologySetToOrigIpAddrType  OBJECT-TYPE
      SYNTAX      InetAddressType
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The type of the olsrv2TibRouterTopologySetToOrigIpAddr,
          as defined in the InetAddress MIB module (RFC4001).

          Only the values ipv4(1) and
          ipv6(2) are supported."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutableAddressTopologySetEntry 3 }

   olsrv2TibRoutableAddressTopologySetToOrigIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is a routable address of a router which can be
         reached by the router with originator address
         TA_from_orig_addr in one hop."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutableAddressTopologySetEntry 4 }

    olsrv2TibRoutableAddressTopologySetSeqNo  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..65535)
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the greatest ANSN in any TC message
         received which originated from the router
         with originator address TA_from_orig_addr
         (i.e., which contributed to the information
         contained in this Tuple)."
      REFERENCE
         "The OLSRv2 draft."
```

```
    ::= { olsrv2TibRoutableAddressTopologySetEntry 5 }

    olsrv2TibRoutableAddressTopologySetMetric  OBJECT-TYPE
       SYNTAX      Float32
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This is the neighbor metric from the router
          with originator address TA_from_orig_addr to the
          router with OLSRv2 interface address TA_dest_addr."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutableAddressTopologySetEntry 6 }

     olsrv2TibRoutableAddressTopologySetExpireTime  OBJECT-TYPE
       SYNTAX      TimeStamp
       UNITS       "milliseconds"
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "olsrv2TibRoutableAddressTopologySetExpireTime
          specifies the sysUptime
          when to expire this entry and remove it from the
          'olsrv2TibRoutableAddressTopologySetTable'."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutableAddressTopologySetEntry 7 }



    --
    -- Attached Network Set
    --

    olsrv2TibAttNetworksSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2TibAttNetworksSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Attached Network Set records information
          about networks (which may be outside the MANET)
          attached to other routers and their routable addresses."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 11 }

    olsrv2TibAttNetworksSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2TibAttNetworksSetEntry
```

```
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
           "It consists of Attached Network Tuples:

                   (AN_orig_addr, AN_net_addr,
                          AN_seq_number, AN_dist, AN_time)"

       REFERENCE
          "The OLSRv2 draft."
       INDEX { olsrv2TibAttNetworksSetNetIpAddrType,
               olsrv2TibAttNetworksSetNetIpAddr,
               olsrv2TibAttNetworksSetNetIpAddrPrefixLen }
    ::= { olsrv2TibAttNetworksSetTable 1 }

    Olsrv2TibAttNetworksSetEntry ::=
       SEQUENCE {
          olsrv2TibAttNetworksSetOrigIpAddrType
            InetAddressType,
          olsrv2TibAttNetworksSetOrigIpAddr
            InetAddress,
          olsrv2TibAttNetworksSetNetIpAddrType
            InetAddressType,
          olsrv2TibAttNetworksSetNetIpAddr
            InetAddress,
          olsrv2TibAttNetworksSetNetIpAddrPrefixLen
            InetAddressPrefixLength,
          olsrv2TibAttNetworksSetSeqNo
            Unsigned32,
          olsrv2TibAttNetworksSetDist
            Unsigned32,
          olsrv2TibAttNetworksSetExpireTime
            TimeStamp
         }

   olsrv2TibAttNetworksSetOrigIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2TibAttNetworksSetOrigIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibAttNetworksSetEntry 1 }
```

```
   olsrv2TibAttNetworksSetOrigIpAddr  OBJECT-TYPE
      SYNTAX      InetAddress
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This is the originator address of a
          router which can act as gateway to the
          network with address AN_net_addr."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAttNetworksSetEntry 2 }

    olsrv2TibAttNetworksSetNetIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2TibAttNetworksSetNetIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibAttNetworksSetEntry 3 }

    olsrv2TibAttNetworksSetNetIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This is is the network address of an
           attached network, which may be reached via
           the router with originator address AN_orig_addr."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibAttNetworksSetEntry 4 }

    olsrv2TibAttNetworksSetNetIpAddrPrefixLen  OBJECT-TYPE
      SYNTAX      InetAddressPrefixLength
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "Indicates the number of leading one bits that form the
          mask to be logical-ANDed with the destination address
          before being compared to the value in the
          olsrv2TibAttNetworksSetNetIpAddr field."
      REFERENCE
```

```
         "The OLSRv2 draft."
   ::= { olsrv2TibAttNetworksSetEntry 5 }

   olsrv2TibAttNetworksSetSeqNo  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..65535)
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The is the greatest ANSN in any TC
          message received which originated from the
          router with originator address AN_orig_addr
          (i.e. which contributed to the information
          contained in this Tuple)."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAttNetworksSetEntry 6 }

   olsrv2TibAttNetworksSetDist  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..255)
      UNITS       "hops"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "The is the number of hops to the network
          with address AN_net_addr from the router with
          originator address AN_orig_addr."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAttNetworksSetEntry 7 }

   olsrv2TibAttNetworksSetExpireTime  OBJECT-TYPE
      SYNTAX      TimeStamp
      UNITS       "milliseconds"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "olsrv2TibAttNetworksSetExpireTime
          specifies the sysUptime
          when to expire this entry and remove it from the
          'olsrv2TibAttNetworksSetTable'."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibAttNetworksSetEntry 8 }



    --
    -- Routing Set
```

```
    --

    olsrv2TibRoutingSetTable OBJECT-TYPE
       SYNTAX       SEQUENCE OF Olsrv2TibRoutingSetEntry
       MAX-ACCESS   not-accessible
       STATUS       obsolete
       DESCRIPTION
          "A router's Routing Set records the first hop along a
          selected path to each destination for which any such
          path is known."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2StateGroup 12 }

    olsrv2TibRoutingSetEntry  OBJECT-TYPE
       SYNTAX      Olsrv2TibRoutingSetEntry
       MAX-ACCESS  not-accessible
       STATUS      current
       DESCRIPTION
           "It consists of Routing Tuples:

            (R_dest_addr, R_next_iface_addr,
                 R_local_iface_addr, R_dist, R_metric)"
       REFERENCE
          "The OLSRv2 draft."
       INDEX { olsrv2TibRoutingSetDestIpAddrType,
               olsrv2TibRoutingSetDestIpAddr,
               olsrv2TibRoutingSetDestIpAddrPrefLen }
    ::= { olsrv2TibRoutingSetTable 1 }

    Olsrv2TibRoutingSetEntry ::=
       SEQUENCE {
          olsrv2TibRoutingSetDestIpAddrType
            InetAddressType,
          olsrv2TibRoutingSetDestIpAddr
            InetAddress,
          olsrv2TibRoutingSetDestIpAddrPrefLen
            InetAddressPrefixLength,
          olsrv2TibRoutingSetNextIfIpAddrType
            InetAddressType,
          olsrv2TibRoutingSetNextIfIpAddr
            InetAddress,
          olsrv2TibRoutingSetLocalIfIpAddrType
            InetAddressType,
          olsrv2TibRoutingSetLocalIfIpAddr
            InetAddress,
          olsrv2TibRoutingSetDist
            Unsigned32,
```

```
          olsrv2TibRoutingSetMetric
            Float32
         }

    olsrv2TibRoutingSetDestIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2TibRoutingSetDestIpAddr
           and olsrv2TibRoutingSetNextIfIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutingSetEntry 1 }

    olsrv2TibRoutingSetDestIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This is the address of the destination,
           either the address of an interface of
           a destination router, or the network
           address of an attached network."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutingSetEntry 2 }

    olsrv2TibRoutingSetDestIpAddrPrefLen  OBJECT-TYPE
      SYNTAX      InetAddressPrefixLength
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "Indicates the number of leading one bits that form the
          mask to be logical-ANDed with the destination address
          before being compared to the value in the
          olsrv2TibRoutingSetDestNetIpAddr field.

          Note: This definition needs to be consistent
          with the current forwarding table MIB module description.
          Specifically, it should allow for longest prefix
          matching of network addresses."
      REFERENCE
         "The OLSRv2 draft."
```

```
   ::= { olsrv2TibRoutingSetEntry 3 }

    olsrv2TibRoutingSetNextIfIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2TibRoutingSetNextIfIpAddr
           and olsrv2TibRoutingSetNextIfIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutingSetEntry 4 }

    olsrv2TibRoutingSetNextIfIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "This object is the OLSRv2 interface address of the
           'next hop' on the selected path to the
           destination."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutingSetEntry 5 }

    olsrv2TibRoutingSetLocalIfIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2TibRoutingSetLocalIfIpAddr
           and olsrv2TibRoutingSetNextIfIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported."
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2TibRoutingSetEntry 6 }


    olsrv2TibRoutingSetLocalIfIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
```

```
      STATUS      current
      DESCRIPTION
         "This object is the address of the local OLSRv2
          interface over which a packet must be
          sent to reach the destination by the
          selected path."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutingSetEntry 7 }

   olsrv2TibRoutingSetDist  OBJECT-TYPE
      SYNTAX      Unsigned32 (0..255)
      UNITS       "hops"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is the number of hops on the selected
          path to the destination."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutingSetEntry 8 }

   olsrv2TibRoutingSetMetric  OBJECT-TYPE
      SYNTAX      Float32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This object is the metric of the route
         to the destination with address R_dest_addr."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2TibRoutingSetEntry 9 }




   --
   -- OLSRv2 Performance Group
   --
   --    Contains objects which help to characterize the
   --    performance of the OLSRv2 routing process.
   --

   olsrv2PerformanceObjGrp  OBJECT IDENTIFIER ::= { olsrv2MIBObjects 3 }


  --
  -- Objects per local interface
```

```
  --

  olsrv2InterfacePerfTable  OBJECT-TYPE
      SYNTAX      SEQUENCE OF Olsrv2InterfacePerfEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "This table summarizes performance objects that are
          measured per local OLSRv2 interface."
      REFERENCE
         "The OLSRv2 draft."
   ::= { olsrv2PerformanceObjGrp 1 }

   olsrv2InterfacePerfEntry OBJECT-TYPE
      SYNTAX      Olsrv2InterfacePerfEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "A single entry contains performance counters for
          a local OLSRv2 interface."
      INDEX { olsrv2IfPerfIndex }
   ::= { olsrv2InterfacePerfTable 1 }

   Olsrv2InterfacePerfEntry ::=
      SEQUENCE {
         olsrv2IfPerfIndex
            InterfaceIndexOrZero,
         olsrv2IfTcMessageXmits
            Counter32,
         olsrv2IfTcMessageRecvd
            Counter32,
         olsrv2IfTcMessageXmitAccumulatedSize
            Counter64,
         olsrv2IfTcMessageRecvdAccumulatedSize
            Counter64,
         olsrv2IfTcMessageTriggeredXmits
            Counter32,
         olsrv2IfTcMessagePeriodicXmits
            Counter32,
         olsrv2IfTcMessageForwardedXmits
            Counter32,
         olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount
            Counter32
         }

   olsrv2IfPerfIndex  OBJECT-TYPE
      SYNTAX      InterfaceIndexOrZero
      MAX-ACCESS  not-accessible
```

```
      STATUS      current
      DESCRIPTION
         "The ID of an interface.  Used for cross
          indexing into other OLSRv2 tables and other
          MIB modules."
   ::= { olsrv2InterfacePerfEntry 1 }

   olsrv2IfTcMessageXmits  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented each time a TC
         message has been transmitted on that interface."
   ::= { olsrv2InterfacePerfEntry 2 }

   olsrv2IfTcMessageRecvd  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented each time a
         TC message has been received on that interface."
   ::= { olsrv2InterfacePerfEntry 3 }

   olsrv2IfTcMessageXmitAccumulatedSize  OBJECT-TYPE
      SYNTAX      Counter64
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented by the number of octets in
         a TC message each time a
         TC message has been sent."
   ::= { olsrv2InterfacePerfEntry 4 }

   olsrv2IfTcMessageRecvdAccumulatedSize  OBJECT-TYPE
      SYNTAX      Counter64
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented by the number of octets in
         a TC message each time a
         TC message has been received."
   ::= { olsrv2InterfacePerfEntry 5 }

   olsrv2IfTcMessageTriggeredXmits  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
```

```
      STATUS      current
      DESCRIPTION
         "A counter is incremented each time a triggered
         TC message has been sent."
   ::= { olsrv2InterfacePerfEntry 6 }

   olsrv2IfTcMessagePeriodicXmits  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented each time a periodic
         TC message has been sent."
   ::= { olsrv2InterfacePerfEntry 7 }

   olsrv2IfTcMessageForwardedXmits  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented each time a
         TC message has been forwarded."
   ::= { olsrv2InterfacePerfEntry 8 }

   olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "A counter is incremented by the number of advertised
         MPR selectors in a TC each time a TC
         message has been sent."
   ::= { olsrv2InterfacePerfEntry 9 }



   --
   -- Objects concerning the Routing set
   --

   olsrv2RoutingSetRecalculationCount  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This counter increments each time the Routing Set has
         been recalculated."
   ::= { olsrv2PerformanceObjGrp 2 }
```

```
   --
   -- Objects concerning the MPR set
   --

   olsrv2MPRSetRecalculationCount  OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "This counter increments each time the MPRs
         of this router have been recalculated."
   ::= { olsrv2PerformanceObjGrp 3 }




   --
   -- Notifications
   --

olsrv2NotificationsControl OBJECT IDENTIFIER ::=
                                    { olsrv2MIBNotifications 1 }
olsrv2NotificationsObjects OBJECT IDENTIFIER ::=
                                    { olsrv2MIBNotifications 2 }
olsrv2NotificationsStates  OBJECT IDENTIFIER ::=
                                    { olsrv2MIBNotifications 3 }


   -- olsrv2NotificationsControl


   olsrv2RoutingSetRecalculationCountThreshold OBJECT-TYPE
          SYNTAX       Integer32 (0..255)
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
             "A threshold value for the
              olsrv2RoutingSetRecalculationCount object.
              If the number of occurrences exceeds this
              threshold within the previous
              olsrv2RoutingSetReculculationCountWindow,
              then the olsrv2RoutingSetRecalculationCountChange
              notification is to be sent.
             "
           ::= { olsrv2NotificationsControl 1 }

   olsrv2RoutingSetRecalculationCountWindow OBJECT-TYPE
```

```
          SYNTAX       TimeTicks
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
             "A time window for the
              olsrv2RoutingSetRecalculationCount object.
              If the number of occurrences exceeds the
              olsrv2RoutingSetRecalculationCountThreshold
              within the previous
              olsrv2RoutingSetRecalculationCountWindow,
              then the
              olsrv2RoutingSetRecalculationCountChange
              notification is to be sent.

              This object represents the time in hundredths
              of a second.
             "
           ::= { olsrv2NotificationsControl 2 }

   olsrv2MPRSetRecalculationCountThreshold OBJECT-TYPE
          SYNTAX       Integer32 (0..255)
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
             "A threshold value for the
              olsrv2MPRSetRecalculationCount object.
              If the number of occurrences exceeds this
              threshold within the previous
              olsrv2MPRSetReculculationCountWindow,
              then the
              olsrv2MPRSetRecalculationCountChange
              notification is to be sent.
             "
           ::= { olsrv2NotificationsControl 3 }

   olsrv2MPRSetRecalculationCountWindow OBJECT-TYPE
          SYNTAX       TimeTicks
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
             "A time window for the
              olsrv2MPRSetRecalculationCount object.
              If the number of occurrences exceeds the
              olsrv2MPRSetRecalculationCountThreshold
              within the previous
              olsrv2MPRSetRecalculationCountWindow,
              then the
              olsrv2MPRSetRecalculationCountChange
```

```
            notification is to be sent.

            This object represents the time in hundredths
            of a second.
           "
         ::= { olsrv2NotificationsControl 4 }


   -- olsrv2NotificationsObjects

   olsrv2RouterStatusChange NOTIFICATION-TYPE
          OBJECTS { olsrv2OrigIpAddrType, -- The address type of
                                          -- the originator of
                                          --   the notification.
                    olsrv2OrigIpAddr,     -- The originator of
                                          --   the notification.
                    olsrv2RouterStatus    -- The new state.
                  }
          STATUS       current
          DESCRIPTION
             "olsrv2RouterStatusChange is a notification sent
              when a the OLSRv2 router changes it status.
              The router status is maintained in the
              olsrv2RouterStatus object.
             "
          ::= { olsrv2NotificationsObjects 1 }

   olsrv2OrigIpAddrChange NOTIFICATION-TYPE
          OBJECTS { olsrv2OrigIpAddrType, -- The address type of
                                          -- the originator of
                                          --   the notification.
                    olsrv2OrigIpAddr,     -- The originator of
                                          --    the notification.
                    olsrv2PreviousOrigIpAddrType, -- The address
                                          -- type of previous
                                          -- address of
                                          -- the originator of
                                          --   the notification.
                    olsrv2PreviousOrigIpAddr  -- The previous
                                          -- address of the
                                          -- originator of
                                          --    the notification.
                  }
          STATUS       current
          DESCRIPTION
             "olsrv2RouterStatusChange is a notification sent when a
              the OLSRv2 router changes it status.  The router
              status is maintained in the olsrv2RouterStatus
```

```
             object.
            "
          ::= { olsrv2NotificationsObjects 2 }

    olsrv2RoutingSetRecalculationCountChange NOTIFICATION-TYPE
          OBJECTS { olsrv2OrigIpAddrType, -- The address type of
                                          -- the originator of
                                          --   the notification.
                    olsrv2OrigIpAddr,     -- The originator of
                                          --   the notification.
                    olsrv2RoutingSetRecalculationCount  -- The
                                          -- new count of the
                                          -- routing set
                                          -- recalculations.
             }
          STATUS       current
          DESCRIPTION
             "olsrv2RoutingSetRecalculationCountChange is
              a notification sent when a significant number of
              routing set recalculations have occurred.
              The network administrator should select
              appropriate values for 'significant number of
              neighbors' and 'short time' through the settings
              of the olsrv2RoutingSetRecalculationCountThreshold
              and olsrv2RoutingSetRecalculationCountWindow
              objects.
             "
          ::= { olsrv2NotificationsObjects 3 }

   olsrv2MPRSetRecalculationCountChange NOTIFICATION-TYPE
          OBJECTS { olsrv2OrigIpAddrType, -- The address type of
                                          --   the originator of
                                          --   the notification.
                    olsrv2OrigIpAddr,     -- The originator of
                                          --   the notification.
                    olsrv2MPRSetRecalculationCount  -- The new
                                          --   MPR set
                                          --   recalculation
                                          --   count.
                  }
          STATUS       current
          DESCRIPTION
             "olsrv2MPRSetRecalculationCountChange is
              a notification sent when a significant number of
              MPR set recalculations have occurred.
              The network administrator should select
              appropriate values for 'significant number of
              neighbors' and 'short time' through the settings
```

```
              of the olsrv2MPRSetRecalculationCountThreshold
              and olsrv2MPRSetRecalculationCountWindow
              objects.
             "
          ::= { olsrv2NotificationsObjects 4 }



    -- olsrv2NotificationStates

    olsrv2PreviousOrigIpAddrType  OBJECT-TYPE
       SYNTAX      InetAddressType
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The type of the olsrv2PreviousOrigIpAddr,
           as defined in the InetAddress MIB module (RFC4001).

           Only the values ipv4(1) and
           ipv6(2) are supported.
          "
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2NotificationsStates 1 }

    olsrv2PreviousOrigIpAddr  OBJECT-TYPE
       SYNTAX      InetAddress
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "The previous origination IP address
           of this OLSRv2 router.

           This object should be updated each time
           the olsrv2OrigIpAddr is modified.

           This object is persistent and when written
           the entity SHOULD save the change to
           non-volatile storage.
       "
       REFERENCE
          "The OLSRv2 draft."
    ::= { olsrv2NotificationsStates 2 }




   --
```

```
   -- Compliance Statements
   --


   olsrv2Compliances  OBJECT IDENTIFIER ::= { olsrv2MIBConformance 1 }
   olsrv2MIBGroups    OBJECT IDENTIFIER ::= { olsrv2MIBConformance 2 }

   olsrv2BasicCompliance  MODULE-COMPLIANCE
      STATUS current
      DESCRIPTION "The basic implementation requirements for
                   managed network entities that implement
                   the OLSRv2 routing process."
      MODULE  -- this module
      MANDATORY-GROUPS { olsrv2ConfigObjectsGroup }
   ::= { olsrv2Compliances 1 }

   olsrv2FullCompliance MODULE-COMPLIANCE
      STATUS current
      DESCRIPTION "The full implementation requirements for
                   managed network entities that implement
                   the OLSRv2 routing process."
      MODULE  -- this module
      MANDATORY-GROUPS { olsrv2ConfigObjectsGroup,
                         olsrv2StateObjectsGroup,
                         olsrv2PerfObjectsGroup,
                         olsrv2NotificationsObjectsGroup,
                         olsrv2NotificationsGroup }

     -- Configuration Group
  OBJECT  olsrv2OrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2OrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2LibOrigSetIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2LibOrigSetIpAddr
```

```
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2LibLocAttNetSetIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2LibLocAttNetSetIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2NibNeighborSetNOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2NibNeighborSetNOrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibAdRemoteRouterSetIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibAdRemoteRouterSetIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRouterTopologySetFromOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRouterTopologySetFromOrigIpAddr
```

```
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRouterTopologySetToOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRouterTopologySetToOrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutableAddressTopologySetFromOrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutableAddressTopologySetToOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutableAddressTopologySetToOrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutingSetNextIfIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutingSetNextIfIpAddr
```

```
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutingSetLocalIfIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2TibRoutingSetLocalIfIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2PreviousOrigIpAddrType
  SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."

  OBJECT  olsrv2PreviousOrigIpAddr
  SYNTAX  InetAddress (SIZE(4|16))
  DESCRIPTION
      "An implementation is only required to support
       IPv4 and IPv6 addresses."


   ::= { olsrv2Compliances 2 }

   --
   -- Units of Conformance
   --

   olsrv2ConfigObjectsGroup OBJECT-GROUP
      OBJECTS {
              olsrv2OrigIpAddrType,
              olsrv2OrigIpAddr,
              olsrv2OHoldTime,
              olsrv2TcInterval,
              olsrv2TcMinInterval,
              olsrv2THoldTime,
              olsrv2AHoldTime,
              olsrv2RxHoldTime,
              olsrv2PHoldTime,
              olsrv2FHoldTime,
```

```
              olsrv2TpMaxJitter,
              olsrv2TtMaxJitter,
              olsrv2FMaxJitter,
              olsrv2TcHopLimit,
              olsrv2WillFlooding,
              olsrv2WillRouting,
              olsrv2LinkMetricType
      }
      STATUS  current
      DESCRIPTION
         "Set of OLSRv2 configuration objects implemented
          in this module."
   ::= { olsrv2MIBGroups 1 }

   olsrv2StateObjectsGroup  OBJECT-GROUP
      OBJECTS {
              olsrv2RouterStatus,
              olsrv2LibOrigSetIpAddrType,
              olsrv2LibOrigSetIpAddr,
              olsrv2LibLocAttNetSetIpAddrType,
              olsrv2LibLocAttNetSetIpAddr,
              olsrv2LibLocAttNetSetIpAddrPrefixLen,
              olsrv2LibLocAttNetSetDistance,
              olsrv2LibLocAttNetSetMetric,
              olsrv2LibLocAttNetSetRowStatus,
              olsrv2IibLinkSetInMetric,
              olsrv2IibLinkSetOutMetric,
              olsrv2IibLinkSetMprSelector,
              olsrv2Iib2HopSetIpAddressType,
              olsrv2Iib2HopSetIpAddress,
              olsrv2Iib2HopSet1HopIfIndex,
              olsrv2Iib2HopSetInMetric,
              olsrv2Iib2HopSetOutMetric,
              olsrv2NibNeighborSetNOrigIpAddrType,
              olsrv2NibNeighborSetNOrigIpAddr,
              olsrv2NibNeighborSetNInMetric,
              olsrv2NibNeighborSetNOutMetric,
              olsrv2NibNeighborSetNWillFlooding,
              olsrv2NibNeighborSetNWillRouting,
              olsrv2NibNeighborSetNFloodingMpr,
              olsrv2NibNeighborSetNRoutingMpr,
              olsrv2NibNeighborSetNMprSelector,
              olsrv2NibNeighborSetNAdvertised,
              olsrv2NibNeighborSetTableAnsn,
              olsrv2TibAdRemoteRouterSetIpAddrType,
              olsrv2TibAdRemoteRouterSetIpAddr,
              olsrv2TibAdRemoteRouterSetMaxSeqNo,
              olsrv2TibRouterTopologySetFromOrigIpAddrType,
```

```
              olsrv2TibRouterTopologySetFromOrigIpAddr,
              olsrv2TibRouterTopologySetToOrigIpAddrType,
              olsrv2TibRouterTopologySetToOrigIpAddr,
              olsrv2TibRouterTopologySetSeqNo,
              olsrv2TibRouterTopologySetMetric,
              olsrv2TibRoutableAddressTopologySetExpireTime,
              olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType,
              olsrv2TibRoutableAddressTopologySetFromOrigIpAddr,
              olsrv2TibRoutableAddressTopologySetToOrigIpAddrType,
              olsrv2TibRoutableAddressTopologySetToOrigIpAddr,
              olsrv2TibRoutableAddressTopologySetSeqNo,
              olsrv2TibRoutableAddressTopologySetMetric,
              olsrv2TibAttNetworksSetOrigIpAddrType,
              olsrv2TibAttNetworksSetOrigIpAddr,
              olsrv2TibAttNetworksSetNetIpAddr,
              olsrv2TibAttNetworksSetNetIpAddrPrefixLen,
              olsrv2TibAttNetworksSetSeqNo,
              olsrv2TibAttNetworksSetDist,
              olsrv2TibAttNetworksSetExpireTime,
              olsrv2TibRoutingSetDestIpAddrType,
              olsrv2TibRoutingSetDestIpAddr,
              olsrv2TibRoutingSetDestIpAddrPrefLen,
              olsrv2TibRoutingSetNextIfIpAddrType,
              olsrv2TibRoutingSetNextIfIpAddr,
              olsrv2TibRoutingSetLocalIfIpAddrType,
              olsrv2TibRoutingSetLocalIfIpAddr,
              olsrv2TibRoutingSetDist,
              olsrv2TibRoutingSetMetric
      }
      STATUS  current
      DESCRIPTION
         "Set of OLSRv2 state objects implemented
          in this module."
   ::= { olsrv2MIBGroups 2 }

   olsrv2PerfObjectsGroup  OBJECT-GROUP
      OBJECTS {
              olsrv2IfTcMessageXmits,
              olsrv2IfTcMessageRecvd,
              olsrv2IfTcMessageXmitAccumulatedSize,
              olsrv2IfTcMessageRecvdAccumulatedSize,
              olsrv2IfTcMessageTriggeredXmits,
              olsrv2IfTcMessagePeriodicXmits,
              olsrv2IfTcMessageForwardedXmits,
              olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount,
              olsrv2RoutingSetRecalculationCount,
              olsrv2MPRSetRecalculationCount
      }
```

```
      STATUS  current
      DESCRIPTION
         "Set of OLSRv2 performance objects implemented
          in this module by total and per interface."
   ::= { olsrv2MIBGroups 3 }

    olsrv2NotificationsObjectsGroup OBJECT-GROUP
      OBJECTS {
            olsrv2RoutingSetRecalculationCountThreshold,
            olsrv2RoutingSetRecalculationCountWindow,
            olsrv2MPRSetRecalculationCountThreshold,
            olsrv2MPRSetRecalculationCountWindow,
            olsrv2PreviousOrigIpAddrType,
            olsrv2PreviousOrigIpAddr
      }
      STATUS current
      DESCRIPTION
      "Set of OLSRv2 notification objects implemented
      in this module."
   ::= { olsrv2MIBGroups 4 }


    olsrv2NotificationsGroup NOTIFICATION-GROUP
      NOTIFICATIONS {
            olsrv2RouterStatusChange,
            olsrv2OrigIpAddrChange,
            olsrv2RoutingSetRecalculationCountChange,
            olsrv2MPRSetRecalculationCountChange
      }
      STATUS current
      DESCRIPTION
      "Set of OLSRv2 notifications implemented
      in this module."
   ::= { olsrv2MIBGroups 5 }

   END
```

8. Security Considerations

This MIB module defines objects for the configuration, monitoring and notification of the Optimized Link State Routing protocol version 2 [OLSRv2]. OLSRv2 allows routers to acquire topological information of the routing domain by virtue of exchanging TC message, to calculate shortest paths to each destination router in the routing domain, to select relays for network-wide transmissions etc.

There are a number of management objects defined in this MIB module

with a MAX-ACCESS clause of read-write and/or read-create. 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 their sensitivity/vulnerability:

- olsrv2TcInterval, olsrv2TcMinInterval - these writable objects control the rate at which TC messages are sent. If set at too high a rate, this could represent a form of DOS attack by overloading interface resources. If set low, OLSRv2 may not converge fast enough to provide accurate routes to all destinations in the routing domain.

- olsrv2TcHopLimit - defines the hop limit for TC messages. If set too low, messages will not be forwarded beyond the defined scope, and thus routers further away from the message originator will not be able to construct appropriate topology graphs.

- olsrv2OHoldTime, olsrv2THoldTime, olsrv2AHoldTime, olsrv2RxHoldTime, olsrv2PHoldTime, olsrv2FHoldTime - define hold times for tuples of different Information Bases of OLSRv2. If set too low, information will expire quickly, and may this harm a correct operation of the routing protocol.

- olsrv2WillFlooding and olsrv2WillRouting - define the willingness of this router to become MPR. If this is set to WILL_NEVER (0), the managed router will not forward any TC messages, nor accept a selection to become MPR by neighboring routers. If set to WILL_ALWAYS (15), the router will be preferred by neighbors during MPR selection, and may thus attract more traffic.

- olsrv2TpMaxJitter, olsrv2TtMaxJitter, olsrv2FMaxJitter - define jitter values for TC message transmission and forwarding. If set too low, control traffic may get lost if the channel is lossy.

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:

- olsrv2TibRouterTopologySetTable - The contains information on the topology of the MANET, specifically the IP address of the routers in the MANET (as identified by olsrv2TibRouterTopologySetFromOrigIpAddr and

olsrv2TibRouterTopologySetToOrigIpAddr objects). This information provides an adversary broad information on the members of the MANET, located within this single table. This information can be use to expedite attacks on the other members of the MANET without having to go through a laborious discovery process on their own. olsrv2TibRouterTopologySetFromOrigIpAddr is the index into the table, and has a MAX-ACCESS of 'not-accessible'. However, this information can be exposed using SNMP operations.

MANET technology is often deployed to support communications of emergency services or military tactical applications. In these applications, it is imperative to maintain the proper operation of the communications network and to protect sensitive information related to its operation. Therefore, when implementing these capabilities, the full use of SNMPv3 cryptographic mechanisms for authentication and privacy is RECOMMENDED.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPSec), 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 implementers 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.

9. IANA Considerations

This memo does not include any request to IANA.

10. References

10.1. Normative References

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10.2. Informative References

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[REPORT-MIB] Cole, R., Macker, J., and A. Bierman, "Definition of Managed Objects for Performance Reporting", draft-ietf-manet-report-mib-02 (work in progress), January 2012.

Appendix A. Note to the RFC Editor

```
*****************************************************************
* Note to the RFC Editor (to be removed prior to publication) *
*                                                               *
* 1) The reference to RFCXXXX within the DESCRIPTION clauses  *
* of the MIB module point to this draft and are to be         *
* assigned by the RFC Editor.                                   *
*                                                               *
* 2) The reference to RFCXXX2 throughout this document point  *
* to the current draft-ietf-manet-olsrv2-xx.txt.  This        *
* need to be replaced with the XXX RFC number.                  *
*                                                               *
*****************************************************************
```

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