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Definition of Managed Objects for the MANET Optimized Link State Routing
Protocol version 2
draft-ietf-manet-olsrv2-mib-00

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Abstract

This memo defines a portion of the Management Information Base (MIB)

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for use with network management protocols in the Internet community. In particular, it describes objects for configuring and managing aspects of the Optimized Link State Routing protocol version 2. The Optimized Link State Routing MIB also reports state information, performance metrics, and notifications. In addition to configuration, this additional state and performance information is useful to management stations troubleshooting Mobile Ad-Hoc Networks routing problems.

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1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it describes objects for configuring aspects of a process implementing the Optimized Link State Routing Protocol version 2 (OLSRv2) [I-D.ietf-manet-olsrv2]. OLSRv2 provides ...

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 RFC 3410 [RFC3410].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580 [RFC2580].

3. Conventions

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

4. Overview

Optimized Link State Routing (OLSR) protocol version 2 (OLSRv2) provides ...

4.1. OLSRv2 Management Model

This section describes the management model for the OLSRv2 node routing process. Specifically, ...

4.2. Terms

The following definitions apply throughout this document:

- o Configuration Objects - switches, tables, objects which are initialized to default settings or set through the management interface defined by this MIB.

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- o Tunable Configuration Objects - objects whose values affect timing or attempt bounds on the OLSRv2 routing process.
- o State Objects - automatically generated values which define the current operating state of the OLSRv2 routing process in the router.
- o Performance Objects - automatically generated values which help an administrator or automated tool to assess the performance of the OLSRv2 routing process on the router and the overall packet forwarding performance within the MANET routing domain.

5. Structure of the MIB Module

This section presents the structure of the Optimized Link State Routing version 2 Management Information Base (OLSRv2-MIB) module. The objects are arranged into the following groups:

- o olsrMIBNotifications - defines the notifications associated with the OLSRv2-MIB.
- o olsrMIBObjects - defines the objects forming the basis for the OLSRv2-MIB. These objects are divided up by function into the following groups:
 - o
 - * Configuration Group - This group contains the OLSRv2 objects that configure specific options that determine the overall operation of the OLSRv2 routing process and the unicast packet forwarding performance.
 - * State Group - Contains information describing the current state of the OLSRv2 routing process such as the ...
 - * Performance Group - Contains objects which help to characterize the performance of the OLSRv2 routing process, typically statistics counters.
- o olsrMIBConformance - defines minimal and full conformance of implementations to this OLSRv2-MIB.

5.1. Textual Conventions

The textual conventions used in the OLSRv2-MIB are as follows. The RowStatus textual convention is imported from RFC 2579 [RFC2579]. Further, ...

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5.2. The Configuration Group

The OLSRv2 device is configured with a set of controls. The list of configuration controls for the OLSRv2 device follow.

- o ...

5.3. The State Group

The State Subtree reports current state information. Specifically,
...

- o ...

5.4. The Performance Group

The Performance subtree reports primarily counters that relate to OLSRv2 routing performance. Specifically, ...

- o ...

5.5. The Notifications Group

The Notifications Subtree contains the list of notifications supported within the OLSRv2-MIB and their intended purpose or utility. This group is currently empty.

6. Relationship to Other MIB Modules

[TODO]: The text of 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] 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 does not duplicate those objects.

6.2. Relationship to the IF-MIB

[TODO] This section is included as an example; If the MIB module is not an adjunct of the Interface MIB, then this section should be

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removed.

6.3. MIB modules required for IMPORTS

[TODO]: Citations are not permitted within a MIB module, but any module mentioned in an IMPORTS clause or document mentioned in a REFERENCE clause is a Normative reference, and must be cited someplace within the narrative sections. If there are imported items in the MIB module, such as Textual Conventions, that are not already cited, they can be cited in text here. Since relationships to other MIB modules should be described in the narrative text, this section is typically used to cite modules from which Textual Conventions are imported.

The following OLSRV2-MIB module IMPORTS objects from SNMPv2-SMI [RFC2578], SNMPv2-TC [RFC2579], SNMPv2-CONF [RFC2580], and IF-MIB [RFC2863]

7. Definitions

```
MANET-OLSRV2-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
  MODULE-IDENTITY, OBJECT-TYPE,  
  Counter32, Unsigned32, mib-2  
    FROM SNMPv2-SMI -- [RFC2578]  
  TruthValue, RowStatus  
    FROM SNMPv2-TC -- [RFC2579]  
  MODULE-COMPLIANCE, OBJECT-GROUP  
    FROM SNMPv2-CONF -- [RFC2580]  
  InetAddress, InetAddressType,  
  InetAddressPrefixLength  
    FROM INET-ADDRESS-MIB -- [RFC4001]  
  NeighborNodeId  
    FROM NHDP-MIB -- [draft nhdp-mib]  
  ;
```

```
manetOlsrv2MIB MODULE-IDENTITY
```

```
  LAST-UPDATED "200905031300Z" -- May 3, 2009  
  ORGANIZATION "IETF MANET Working Group"  
  CONTACT-INFO  
    "WG E-Mail: manet@ietf.org
```

```
    WG Chairs: ian.chakeres@gmail.com  
              jmacker@nrl.navy.mil
```

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DESCRIPTION

"This MIB module contains managed object definitions for the Manet OLSRv2 routing process defined in: Clausen, T. et.al., Optimized Link State Routing version 2 draft-ietf-manet-olsrv2-07, July 10, 2008.

Copyright (C) The IETF Trust (2009). This version of this MIB module is part of RFC xxxx; see the RFC itself for full legal notices."

-- Revision History

REVISION "200905031300Z" -- May 3, 2009

DESCRIPTION

"Third draft of this MIB module published as draft-ietf-manet-olsrv2-mib-00.txt. Rev'd as a new MANET WG document. Cleaned up SYNTAX errors and other typos found by 'smilint'."

REVISION "200902151300Z" -- February 15, 2009

DESCRIPTION

"Second draft of this MIB module published as draft-cole-manet-olsrv2-mib-01.txt. Cleaned up table indexing and aligned with the NHDP-MIB draft (draft-cole-manet-nhdp-mib-01.txt)."

REVISION "200810241300Z" -- October 24, 2008

DESCRIPTION

"Initial draft of this MIB module published as draft-cole-manet-olsrv2-mib-00.txt."

-- RFC-Editor assigns XXXX

::= { mib-2 998 } -- to be assigned by IANA

--

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-- TEXTUAL CONVENTIONS

--

-- none

--

-- Top-Level Object Identifier Assignments

--

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

--

-- olsrv2ConfigurationGroup

--

-- This group contains the OLSRv2 objects that configure specific
-- options that determine the overall performance and operation
-- of the unicast routing process for the router device
-- and its interfaces.

--

olsrv2ConfigurationGroup OBJECT IDENTIFIER ::= {olsrv2MIBObjects 1}

olsrv2OperationalMode OBJECT-TYPE

SYNTAX INTEGER {
withNHDP(1)
}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The OLSRv2 node operational mode.

The value withNHDP(1) indicates ..."

DEFVAL { 1 }

::= { olsrv2ConfigurationGroup 1 }

-- Protocol Parameters for the OLSRv2 routing process.
-- These are categorized following Section 5 of the
-- OLSRv2 draft.

-- Local history times

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```
olsrv2OHoldTime OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The O_HOLD_TIME is used to define the time
         for which a recently used and replaced
         originator address is used to recognize
         the node's own messages.

         The following constraint applies to this
         parameter: olsrv2OHoldTime >= 0"
    REFERENCE
        "The OLSR version 2 draft.
         Section 5 on Protocol Parameters."
    DEFVAL { 10 }
 ::= { olsrv2ConfigurationGroup 2 }
```

-- Message intervals

```
olsrv2TcInterval OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The TC_INTERVAL - is the maximum time
         between the transmission of two successive
         TC messages by this node.  When no TC
         messages are sent in response to local
         network changes (by design, or because the
         local network is not changing) then TC
         messages SHOULD be sent at a regular
         interval TC_INTERVAL, possibly modified
         by jitter as specified in [RFC5148].

         The following constraint applies to this
         parameter:

             olsrv2TcInterval > 0
             olsrv2TcInterval >= olsrv2TcMinInterval"
    REFERENCE
        "The OLSR version 2 draft.
         Section 5 on Protocol Parameters."
    DEFVAL { 10 }
```

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```
::= { olsrv2ConfigurationGroup 3 }
```

```
olsrv2TcMinInterval OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (0..255)
```

```
UNITS       "seconds"
```

```
MAX-ACCESS  read-write
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The TC_MIN_INTERVAL is the minimum interval between transmission of two successive TC messages by this node. (This minimum interval MAY be modified by jitter, as specified in [RFC5148].)"
```

```
The following constraint applies to this parameter:
```

```
TC_MIN_INTERVAL >= 0
```

```
TC_INTERVAL >= TC_MIN_INTERVAL"
```

```
REFERENCE
```

```
"The OLSR version 2 draft. Section 5 on Protocol Parameters."
```

```
DEFVAL { 10 }
```

```
::= { olsrv2ConfigurationGroup 4 }
```

```
-- Advertised information validity times
```

```
olsrv2THoldTime OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (0..255)
```

```
UNITS       "seconds"
```

```
MAX-ACCESS  read-write
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The olsrv2THoldTime is used to define the minimum value in the VALIDITY_TIME TLV included in all TC messages sent by this node. If a single value of parameter TC_HOP_LIMIT (see Section 5.6) is used then this will be the only value in that TLV."
```

```
The following constraint applies to this parameter:
```

```
T_HOLD_TIME > 0
```

```
A_HOLD_TIME >= 0
```

```
T_HOLD_TIME >= TC_INTERVAL
```

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If TC messages can be lost, then both
T_HOLD_TIME and A_HOLD_TIME SHOULD be
significantly greater than TC_INTERVAL;
a value $\geq 3 \times$ TC_INTERVAL is RECOMMENDED.

T_HOLD_TIME MUST be representable as
described in [timetlv]."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 5 }

olsrv2AHoldTime OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "seconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The olsrv2AHoldTime is 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 nodes.

The following constraint applies to this
parameter:

T_HOLD_TIME > 0
A_HOLD_TIME \geq 0
T_HOLD_TIME \geq TC_INTERVAL

If TC messages can be lost, then both
T_HOLD_TIME and A_HOLD_TIME SHOULD be
significantly greater than TC_INTERVAL;
a value $\geq 3 \times$ TC_INTERVAL is RECOMMENDED.

T_HOLD_TIME MUST be representable as
described in [timetlv]."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 6 }

-- Received message validity times

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olsrv2RxHoldTime OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "seconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The olsrv2RxHoldTime is an interface parameter, and is the period after receipt of a message by the appropriate OLSRv2 interface of this node 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:

RX_HOLD_TIME > 0

All of these parameters 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."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 7 }

olsrv2PHoldTime OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "seconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The olsrv2PHoldTime is the period after receipt of a message which is processed by this node 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:

P_HOLD_TIME > 0

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All of these parameters 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."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 8 }

olsrv2FHoldTime OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "seconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The olsrv2FHoldTime is the period after receipt of a message which is forwarded by this node 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:

F_HOLD_TIME > 0

All of these parameters 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."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 9 }

-- Jitter times

olsrv2TpMaxJitter OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

UNITS "milliseconds"

MAX-ACCESS read-write

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```
STATUS      current
DESCRIPTION
  "If jitter, as defined in [RFC5148], is used
  then the jitter parameters are as follows:

  olsrv2TpMaxJitter represents the value of
  MAXJITTER used in [RFC5148] for periodically
  generated TC messages sent by this node.

  For constraints on these parameters,
  see [RFC5148]."
```

REFERENCE

```
"The OLSR version 2 draft.
Section 5 on Protocol Parameters."
DEFVAL { 10 }
 ::= { olsrv2ConfigurationGroup 10 }
```

olsrv2TtMaxJitter OBJECT-TYPE

```
SYNTAX      Unsigned32 (0..65535)
UNITS       "milliseconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
  "If jitter, as defined in [RFC5148], is used
  then the jitter parameters are as follows:

  olsrv2TtMaxJitter represents the value of
  MAXJITTER used in [RFC5148] for externally
  triggered TC messages sent by this node.

  For constraints on these parameters,
  see [RFC5148]."
```

REFERENCE

```
"The OLSR version 2 draft.
Section 5 on Protocol Parameters."
DEFVAL { 10 }
 ::= { olsrv2ConfigurationGroup 11 }
```

olsrv2FMaxJitter OBJECT-TYPE

```
SYNTAX      Unsigned32 (0..65535)
UNITS       "milliseconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
  "If jitter, as defined in [RFC5148], is used
  then the jitter parameters are as follows:

  olsrv2FMaxJitter represents the default
```

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value of MAXJITTER used in [RFC5148] for messages forwarded by this node. However before using F_MAXJITTER a node MAY attempt to deduce a more appropriate value of MAXJITTER, for example based on any INTERVAL_TIME or VALIDITY_TIME TLVs contained in the message to be forwarded.

For constraints on these parameters, see [RFC5148]."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 12 }

-- Hop limits

olsrv2TcHopLimit OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "hops"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The parameter olsrv2TcHopLimit is the hop limit set in each TC message. TC_HOP_LIMIT MAY be a single fixed value, or MAY be different in TC messages sent by the same node.

The following constraint applies to this parameter:

The maximum value of
olsrv2TcHopLimit >= the network diameter
in hops, a value of 255 is RECOMMENDED.

All values of olsrv2TcHopLimit >= 2."

REFERENCE

"The OLSR version 2 draft.
Section 5 on Protocol Parameters."

DEFVAL { 10 }

::= { olsrv2ConfigurationGroup 13 }

-- Willingness

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```
olsrv2Williness OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The olsrv2Williness MUST be in the range
        WILL_NEVER (0) to WILL_ALWAYS (255), inclusive,
        and represents its willingness to be an MPR,
        and hence its willingness to forward messages
        and be an intermediate node on routes.

        Note: Need to rethink the range and units for
        this parameter."
    REFERENCE
        "The OLSR version 2 draft.
        Section 5 on Protocol Parameters."
    DEFVAL { 10 }
 ::= { olsrv2ConfigurationGroup 14 }

-- Local Attached Network Set

-- This table is part of the OLSR/NHDP
-- Local Information Base (LIB).  It is
-- placed in the Configuration Group because
-- this table contains configured information.

olsrv2LibLocAttNetSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2LibLocAttNetSetEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        " A node's Local Attached Network Set records
        its local non-OLSRv2 interfaces that can act
        as gateways to other networks.  The Local
        Attached Network Set is not modified by this
        protocol.  This protocol MAY respond to changes
        to the Local Attached Network Set, which MUST
        reflect corresponding changes in the node's status.

        Note: Need clarification on the above claim that
        this set records interface information.  The
        tuple included in this set is only network
        address information."
    REFERENCE
        "The OLSRv2 draft."
 ::= { olsrv2ConfigurationGroup 15 }
```

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```
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)

        where:

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

            AL_dist is the number of hops to
            the network with address AL_net_addr
            from this node."
    REFERENCE
        "The OLSRv2 draft."
    INDEX { olsrv2LibLocAttNetSetIpAddress,
            olsrv2LibLocAttNetSetIpAddressPrefixLen }
    ::= { olsrv2LibLocAttNetSetTable 1 }

Olsrv2LibLocAttNetSetEntry ::=
    SEQUENCE {
        olsrv2LibLocAttNetSetIpAddressType
            InetAddressType,
        olsrv2LibLocAttNetSetIpAddress
            InetAddress,
        olsrv2LibLocAttNetSetIpAddressPrefixLen
            InetAddressPrefixLength,
        olsrv2LibLocAttNetSetDistance
            Unsigned32,
        olsrv2LibLocAttNetSetRowStatus
            RowStatus
    }

olsrv2LibLocAttNetSetIpAddressType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The type of the olsrv2LibLocAttNetSetIpAddress, as defined
        in the InetAddress MIB [RFC 4001]."
    REFERENCE
        "The OLSRv2 draft."
```

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```
::= { olsrv2LibLocAttNetSetEntry 1 }
```

```
olsrv2LibLocAttNetSetIpAddress OBJECT-TYPE
```

```
SYNTAX      InetAddress  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION
```

```
"This is the network address of an attached  
network which can be reached via this node.  
This node will act as a gateway for this  
address for the OLSR MANET."
```

```
REFERENCE
```

```
"The OLSRv2 draft."
```

```
::= { olsrv2LibLocAttNetSetEntry 2 }
```

```
olsrv2LibLocAttNetSetIpAddressPrefixLen OBJECT-TYPE
```

```
SYNTAX      InetAddressPrefixLength  
MAX-ACCESS  not-accessible  
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  
olsrv2LibLocAttNetSetIpAddress field."
```

```
REFERENCE
```

```
"The OLSRv2 draft."
```

```
::= { olsrv2LibLocAttNetSetEntry 3 }
```

```
olsrv2LibLocAttNetSetDistance OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (1..255)  
UNITS       "hops"  
MAX-ACCESS  read-write  
STATUS      current  
DESCRIPTION
```

```
"This object specifies the number of hops  
to the network with address AL_net_addr  
from this node."
```

```
REFERENCE
```

```
"The OLSRv2 draft."
```

```
::= { olsrv2LibLocAttNetSetEntry 4 }
```

```
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,
```

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```

    construction, and destruction. The value of
    this object has no effect on whether other
    objects in this conceptual row can be
    modified."
 ::= { olsrv2LibLocAttNetSetEntry 5 }

--
-- olsrv2StateGroup
--
--   Contains information describing the current state of the
--   OLSRv2 routing process such as the ...
--
--
-- Note: the OLSRv2 draft discusses the option for dynamically
-- changing the values of the configuration parameters
-- identified above. In this case we would want to include
-- a set of state objects (potentially) which track the current
-- values or the range of values that these dynamic objects
-- have.
--
olsrv2StateGroup OBJECT IDENTIFIER ::= { olsrv2MIBObjects 2 }

olsrv2NodeStatus OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The current status of the OLSRv2 node
        routing process ..."
 ::= { olsrv2StateGroup 1 }

--
-- The OLSRv2 draft defines several information bases
-- to be maintained by the OLSRv2 compliant nodes.
-- We list these in the order defined in the OLSRv2
-- draft.
--
--
-- Local Information Base - as defined in [nhdp],
-- extended by the addition of an Originator Set,
-- defined in Section 6.1.1 and a Local Attached
-- Network Set, defined in Section 6.1.2.
```

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--

-- Originator Set

olsrv2LibOrigSetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2LibOrigSetEntry

MAX-ACCESS not-accessible

STATUS obsolete

DESCRIPTION

" A node's Originator Set records addresses that were recently originator addresses. If a node's originator address is immutable then this set is always empty and MAY be omitted. It consists of Originator Tuples: (O_orig_addr, O_time)."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2StateGroup 2 }

olsrv2LibOrigSetEntry OBJECT-TYPE

SYNTAX Olsrv2LibOrigSetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

" A node's Originator Set records addresses that were recently originator addresses. If a node's originator address is immutable then this set is always empty and MAY be omitted. It consists of Originator Tuples: (O_orig_addr, O_time)."

REFERENCE

"The OLSRv2 draft."

INDEX { olsrv2LibOrigSetIpAddr }

::= { olsrv2LibOrigSetTable 1 }

Olsrv2LibOrigSetEntry ::=

```
SEQUENCE {
    olsrv2LibOrigSetIpAddrType
        InetAddressType,
    olsrv2LibOrigSetIpAddr
        InetAddress,
    olsrv2LibOrigSetExpireTime
        Unsigned32
}
```

olsrv2LibOrigSetIpAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS read-only

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```
STATUS      current
DESCRIPTION
  "The type of the olsrv2LibOrigSetIpAddress, as defined
  in the InetAddress MIB [RFC 4001]."
```

```
REFERENCE
  "The OLSRv2 draft."
 ::= { olsrv2LibOrigSetEntry 1 }
```

```
olsrv2LibOrigSetIpAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "A recently used originator address
  by this node."
REFERENCE
  "The OLSRv2 draft."
 ::= { olsrv2LibOrigSetEntry 2 }
```

```
olsrv2LibOrigSetExpireTime OBJECT-TYPE
SYNTAX      Unsigned32 (0..65535)
UNITS       "milliseconds"
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "This object specifies the time at which this
  entry expires and MUST be removed.

  Note: need to change the type here to a time/date type,
  not a time in seconds left to expire."
REFERENCE
  "The OLSRv2 draft."
 ::= { olsrv2LibOrigSetEntry 3 }
```

```
--
-- Interface Information Bases - as defined in
-- [nhdp], one Interface Information Base for
-- each OLSRv2 interface.
--
-- Note: The IIB is fully defined in the NHRP
-- and its associated MIB.
```

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```
--
-- Node Information Base - as defined in [nhdp],
-- extended by the addition of three elements to
-- each Neighbor Tuple, as defined in Section 6.2.
--

-- Neighbor Set

olsrv2NibNeighborSetTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Olsrv2NibNeighborSetEntry
    MAX-ACCESS      not-accessible
    STATUS          obsolete
    DESCRIPTION
        "Each Neighbor Tuple in the Neighbor Set, defined
        in [nhdp], has these additional elements:
            N_willingness
            N_mpr
            N_mpr_selector
        defined here as extensions."
    REFERENCE
        "The OLSRv2 draft."
 ::= { olsrv2StateGroup 4 }

olsrv2NibNeighborSetEntry OBJECT-TYPE
    SYNTAX          Olsrv2NibNeighborSetEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "Each Neighbor Tuple in the Neighbor Set, defined
        in [nhdp], has these additional elements:
            N_willingness
            N_mpr
            N_mpr_selector
        defined here as extensions."
    REFERENCE
        "The OLSRv2 draft."
    INDEX { olsrv2NibNeighborSetNodeId }
 ::= { olsrv2NibNeighborSetTable 1 }

Olsrv2NibNeighborSetEntry ::=
    SEQUENCE {
        olsrv2NibNeighborSetNodeId
        NeighborNodeId,
        olsrv2NibNeighborSetNWilliness
        Unsigned32,
        olsrv2NibNeighborSetNMpr
        TruthValue,
        olsrv2NibNeighborSetNMprSelector
```

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```
    TruthValue
  }
```

olsrv2NibNeighborSetNodeId OBJECT-TYPE

SYNTAX NeighborNodeId

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The object olsrv2NibNeighborSetNodeId is the locally assigned ID of the remote node referenced in this row. The IP address associated with this node is contained in the NHDP-MIB's 'nhdpDiscIfSetTable'.

"

REFERENCE

"The OLSRv2 draft."

::= { olsrv2NibNeighborSetEntry 1 }

olsrv2NibNeighborSetNWilliness OBJECT-TYPE

SYNTAX Unsigned32 (1..255)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object, N_willingness, is the neighbor node's willingness to be selected as an MPR, in the range from WILL_NEVER (0) to WILL_ALWAYS (255), both inclusive."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2NibNeighborSetEntry 2 }

olsrv2NibNeighborSetNMpr OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object, N_mpr, is a boolean flag, describing if this neighbor is selected as an MPR by this node.

When set to 'true', this neighbor is selected as an MPR by this node. When set to 'false', it is not selected by this node as an MPR."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2NibNeighborSetEntry 3 }

olsrv2NibNeighborSetNMprSelector OBJECT-TYPE

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SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object, N_mpr_selector, is a boolean flag, describing if this neighbor has selected this node as an MPR, i.e. is an MPR selector of this node.

When set to 'true', then this node is selected as an MPR by the neighbor node. When set to 'false', then this node is not selected by the neighbor as an MPR"

REFERENCE

"The OLSRv2 draft."

::= { olsrv2NibNeighborSetEntry 4 }

--
-- Topology Information Base - this Information
-- Base is specific to OLSRv2, and is defined in
-- Section 6.3.
--

-- Advertised Neighbor Set

olsrv2TibAdNeighborSetSeqNo OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The Advertised Neighbor Set Sequence Number (ANSN) is maintained associated with the olsrv2TibAdNeighborSetTable. Each time the Advertised Neighbor Set Table is updated, the ANSN MUST be incremented. The ANSN MUST also be incremented if there is a change to the set of Local Attached Network Tuples that are to be advertised in the node's TC messages."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2StateGroup 5 }

olsrv2TibAdNeighborSetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2TibAdNeighborSetEntry

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```
MAX-ACCESS    not-accessible
STATUS        obsolete
DESCRIPTION
  "A node's Advertised Neighbor Set Table contains
  interface addresses of symmetric 1-hop neighbors
  which are to be advertised through TC messages."
REFERENCE
  "The OLSRv2 draft."
 ::= { olsrv2StateGroup 6 }

olsrv2TibAdNeighborSetEntry OBJECT-TYPE
SYNTAX        Olsrv2TibAdNeighborSetEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
  "A node's Advertised Neighbor Set Table contains
  interface addresses of symmetric 1-hop neighbors
  which are to be advertised through TC messages."
REFERENCE
  "The OLSRv2 draft."
INDEX { olsrv2TibAdNeighborSetIpAddress }
 ::= { olsrv2TibAdNeighborSetTable 1 }

Olsrv2TibAdNeighborSetEntry ::=
SEQUENCE {
  olsrv2TibAdNeighborSetIpAddressType
    InetAddressType,
  olsrv2TibAdNeighborSetIpAddress
    InetAddress
}

olsrv2TibAdNeighborSetIpAddressType OBJECT-TYPE
SYNTAX        InetAddressType
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
  "The type of the olsrv2TibAdNeighborSetIpAddress, as defined
  in the InetAddress MIB [RFC 4001]."
REFERENCE
  "The OLSRv2 draft."
 ::= { olsrv2TibAdNeighborSetEntry 1 }

olsrv2TibAdNeighborSetIpAddress OBJECT-TYPE
SYNTAX        InetAddress
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
  "This is the interface address of a
```

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```
        symmetric 1-hop neighbor which is to be
        advertised through TC messages."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibAdNeighborSetEntry 2 }

-- Advertised Remote Node Set

-- Note: Need to think more about the structure of this table
-- due to the existence of multiple IfAddrs per Remote Node

olsrv2TibAdRemoteNodeSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2TibAdRemoteNodeSetEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        "A node's Advertising Remote Node Set records
        information describing each remote node in the
        network that transmits TC messages."
    REFERENCE
        "The OLSRv2 draft."
 ::= { olsrv2StateGroup 7 }

olsrv2TibAdRemoteNodeSetEntry OBJECT-TYPE
    SYNTAX      Olsrv2TibAdRemoteNodeSetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A node's Advertised Neighbor Set Table entry
        It consists of Advertising Remote Node Tuples:

            (AR_orig_addr, AR_seq_number,
             AR_iface_addr_list, AR_time)

        Addresses associated with this node are
        found in the NHDP-MIB's 'nhdpDiscIfSetTable'.
        "
    REFERENCE
        "The OLSRv2 draft."
    INDEX { olsrv2TibAdRemoteNodeSetNodeId }
 ::= { olsrv2TibAdRemoteNodeSetTable 1 }

Olsrv2TibAdRemoteNodeSetEntry ::=
    SEQUENCE {
        olsrv2TibAdRemoteNodeSetIpAddrType
        InetAddressType,
```

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```
    olsrv2TibAdRemoteNodeSetIpAddress
      InetAddress,
    olsrv2TibAdRemoteNodeSetNodeId
      NeighborNodeId,
    olsrv2TibAdRemoteNodeSetMaxSeqNo
      Unsigned32,
    olsrv2TibAdRemoteNodeSetExpireTime
      Unsigned32
  }
```

```
olsrv2TibAdRemoteNodeSetIpAddressType OBJECT-TYPE
  SYNTAX      InetAddressType
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION
    "The type of the olsrv2TibAdRemoteNodeSetIpAddress,
     as defined in the InetAddress MIB [RFC 4001]."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibAdRemoteNodeSetEntry 1 }
```

```
olsrv2TibAdRemoteNodeSetIpAddress 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."
 ::= { olsrv2TibAdRemoteNodeSetEntry 2 }
```

```
olsrv2TibAdRemoteNodeSetNodeId OBJECT-TYPE
  SYNTAX      NeighborNodeId
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION
    "This object is an additional index for each
     Remote Node's IfAddr associated with the
     olsrv2TibAdRemoteNodeSetIpAddress."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibAdRemoteNodeSetEntry 3 }
```

```
olsrv2TibAdRemoteNodeSetMaxSeqNo OBJECT-TYPE
  SYNTAX      Unsigned32 (0..65535)
  MAX-ACCESS  read-only
  STATUS      current
```

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DESCRIPTION

"The is the greatest ANSN in any TC message received which originated from the node with originator address AR_orig_addr (i.e. which contributed to the information contained in this Tuple)."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibAdRemoteNodeSetEntry 4 }

-- Need to change this type to a time syntax.

olsrv2TibAdRemoteNodeSetExpireTime OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The AR_time is the time at which this Tuple expires and MUST be removed."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibAdRemoteNodeSetEntry 5 }

-- Topology Set

-- Note: Need to think more about the structure of this table

-- due to the existence of multiple DestAddrs per Orig Addr

olsrv2TibTopologySetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2TibTopologySetEntry

MAX-ACCESS not-accessible

STATUS obsolete

DESCRIPTION

"A node's Topology Set records topology information about the network."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2StateGroup 8 }

olsrv2TibTopologySetEntry OBJECT-TYPE

SYNTAX Olsrv2TibTopologySetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"It consists of Topology Tuples:

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```
        (T_dest_iface_addr, T_orig_addr,
         T_seq_number, T_time)"
REFERENCE
    "The OLSRv2 draft."
INDEX { olsrv2TibTopologySetDestIfIpAddress }
 ::= { olsrv2TibTopologySetTable 1 }

Olsrv2TibTopologySetEntry ::=
SEQUENCE {
    olsrv2TibTopologySetDestIfIpAddressType
        InetAddressType,
    olsrv2TibTopologySetDestIfIpAddress
        InetAddress,
    olsrv2TibTopologySetOrigIpAddressType
        InetAddressType,
    olsrv2TibTopologySetOrigIpAddress
        InetAddress,
    olsrv2TibTopologySetSeqNo
        Unsigned32,
    olsrv2TibTopologySetExpireTime
        Unsigned32
}

olsrv2TibTopologySetDestIfIpAddressType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The type of the olsrv2TibTopologySetDestIfIpAddress
    and olsrv2TibTopologySetDestIfIpAddress,
    as defined in the InetAddress MIB [RFC 4001]."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibTopologySetEntry 1 }

olsrv2TibTopologySetDestIfIpAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This is an interface address of a
    destination node, which may be reached
    in one hop from the node with originator
    address T_orig_addr."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibTopologySetEntry 2 }
```

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```
olsrv2TibTopologySetOrigIpAddressType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The type of the olsrv2TibTopologySetOrigIpAddress
        and olsrv2TibTopologySetDestIfIpAddress,
        as defined in the InetAddress MIB [RFC 4001]."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibTopologySetEntry 3 }
```

```
olsrv2TibTopologySetOrigIpAddress OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the originator address of a node
        which is the last hop on a path towards
        the node with interface address
        T_dest_iface_addr."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibTopologySetEntry 4 }
```

```
olsrv2TibTopologySetSeqNo 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 node with originator address T_orig_addr
        (i.e. which contributed to the information
        contained in this Tuple)."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibTopologySetEntry 5 }
```

-- Need to change this type to a time syntax.

```
olsrv2TibTopologySetExpireTime OBJECT-TYPE
    SYNTAX      Unsigned32 (0..65535)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the time at which this
        Tuple expires and MUST be removed."
```

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REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibTopologySetEntry 6 }

-- Attached Network Set

olsrv2TibAttNetworksSetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2TibAttNetworksSetEntry

MAX-ACCESS not-accessible

STATUS obsolete

DESCRIPTION

"A node's Attached Network Set records information about networks attached to other nodes."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2StateGroup 9 }

olsrv2TibAttNetworksSetEntry OBJECT-TYPE

SYNTAX Olsrv2TibAttNetworksSetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"It consists of Attached Network Tuples:

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

REFERENCE

"The OLSRv2 draft."

INDEX { olsrv2TibAttNetworksSetNetIpAddressType,
olsrv2TibAttNetworksSetNetIpAddress,
olsrv2TibAttNetworksSetNetIpAddressPrefixLen }

::= { olsrv2TibAttNetworksSetTable 1 }

Olsrv2TibAttNetworksSetEntry ::=

SEQUENCE {

olsrv2TibAttNetworksSetNetIpAddressType

InetAddressType,

olsrv2TibAttNetworksSetNetIpAddress

InetAddress,

olsrv2TibAttNetworksSetNetIpAddressPrefixLen

InetAddressPrefixLength,

olsrv2TibAttNetworksSetOrigIpAddress

InetAddress,

olsrv2TibAttNetworksSetSeqNo

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```
    Unsigned32,  
    olsrv2TibAttNetworksSetDist  
    Unsigned32,  
    olsrv2TibAttNetworksSetExpireTime  
    Unsigned32  
}
```

```
olsrv2TibAttNetworksSetNetIpAddressType OBJECT-TYPE  
SYNTAX      InetAddressType  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION  
    "The type of the olsrv2TibAttNetworksSetNetIpAddress,  
    as defined in the InetAddress MIB [RFC 4001]."  
REFERENCE  
    "The OLSRv2 draft."  
 ::= { olsrv2TibAttNetworksSetEntry 1 }
```

```
olsrv2TibAttNetworksSetNetIpAddress OBJECT-TYPE  
SYNTAX      InetAddress  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION  
    "This is is the network address of an  
    attached network, which may be reached via  
    the node with originator address AN_orig_addr."  
REFERENCE  
    "The OLSRv2 draft."  
 ::= { olsrv2TibAttNetworksSetEntry 2 }
```

```
olsrv2TibAttNetworksSetNetIpAddressPrefixLen OBJECT-TYPE  
SYNTAX      InetAddressPrefixLength  
MAX-ACCESS  not-accessible  
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  
    olsrv2TibAttNetworksSetNetIpAddress field."  
REFERENCE  
    "The OLSRv2 draft."  
 ::= { olsrv2TibAttNetworksSetEntry 3 }
```

```
olsrv2TibAttNetworksSetOrigIpAddress OBJECT-TYPE  
SYNTAX      InetAddress  
MAX-ACCESS  not-accessible  
STATUS      current
```

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DESCRIPTION

"This is the originator address of a node which can act as gateway to the network with address AN_net_addr, note that this does not include a prefix length."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibAttNetworksSetEntry 4 }

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 node with originator address AN_orig_addr (i.e. which contributed to the information contained in this Tuple)."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibAttNetworksSetEntry 5 }

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 node with originator address AN_orig_addr."

REFERENCE

"The OLSRv2 draft."

::= { olsrv2TibAttNetworksSetEntry 6 }

-- Need to change this type to a time syntax.

olsrv2TibAttNetworksSetExpireTime OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is the time at which this Tuple expires and MUST be removed."

REFERENCE

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```
"The OLSRV2 draft."
 ::= { olsrv2TibAttNetworksSetEntry 7 }

-- Routing Set

-- Note: Does this RoutingSetTable overlap too much with the
-- information already available in the latest standard MIB
-- forwarding table?

-- Note: Do all of these addresses contained in a single
-- entry in the Routing Set have to have the same addrType?

olsrv2TibRoutingSetTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Olsrv2TibRoutingSetEntry
    MAX-ACCESS      not-accessible
    STATUS          obsolete
    DESCRIPTION     "A node's Routing Set records the selected path to
                    each destination for which a route is known."
    REFERENCE       "The OLSRV2 draft."
 ::= { olsrv2StateGroup 10 }

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_dist, R_local_iface_addr)."
    REFERENCE       "The OLSRV2 draft."
    INDEX { olsrv2TibRoutingSetDestIpAddressType,
            olsrv2TibRoutingSetDestIpAddress,
            olsrv2TibRoutingSetDestIpAddressPrefLen }
 ::= { olsrv2TibRoutingSetTable 1 }

Olsrv2TibRoutingSetEntry ::=
    SEQUENCE {
        olsrv2TibRoutingSetDestIpAddressType
            InetAddressType,
        olsrv2TibRoutingSetDestIpAddress
            InetAddress,
```

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```
    olsrv2TibRoutingSetDestIpAddressPrefLen
        InetAddressPrefixLength,
    olsrv2TibRoutingSetNextIfIpAddress
        InetAddress,
    olsrv2TibRoutingSetDist
        Unsigned32,
    olsrv2TibRoutingSetLocalIfIpAddress
        InetAddress
}
```

```
olsrv2TibRoutingSetDestIpAddressType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The type of the olsrv2TibRoutingSetDestIpAddress
        and olsrv2TibRoutingSetNextIfIpAddress,
        as defined in the InetAddress MIB [RFC 4001]."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibRoutingSetEntry 1 }
```

```
olsrv2TibRoutingSetDestIpAddress OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is the address of the destination,
        either the address of an interface of
        a destination node, or the network
        address of an attached network."
```

REFERENCE

```
    "The OLSRv2 draft."
 ::= { olsrv2TibRoutingSetEntry 2 }
```

```
olsrv2TibRoutingSetDestIpAddressPrefLen OBJECT-TYPE
    SYNTAX      InetAddressPrefixLength
    MAX-ACCESS  not-accessible
    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
        olsrv2TibRoutingSetDestNetIpAddress field.
```

Note: This definition needs to be consistent with the current forwarding table MIB description. Specifically, it should allow for longest prefix

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```
        matching of network addresses."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibRoutingSetEntry 3 }

olsrv2TibRoutingSetNextIfIpAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This is the OLSRv2 interface address of the
    'next hop' on the selected path to the
    destination."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibRoutingSetEntry 4 }

olsrv2TibRoutingSetDist OBJECT-TYPE
SYNTAX      Unsigned32 (0..255)
UNITS       "hops"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The is the number of hops on the selected
    path to the destination."
REFERENCE
    "The OLSRv2 draft."
 ::= { olsrv2TibRoutingSetEntry 5 }

olsrv2TibRoutingSetLocalIfIpAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This 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 6 }

--
-- Processing and Forwarding Information Base - this
-- Information Base is specific to OLSRv2, and
-- is defined in Section 6.4.
```

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--

-- Note: Is it appropriate or necessary to put the
-- level of detail found in the Processing and
-- Forwarding Information Base into the OLSRv2-MIB?

-- Received Set

-- Processed Set

-- Forwarded Set

-- Relayed Set

--

-- OLSRv2 Performance Group

--

-- Contains objects which help to characterize the
-- performance of the OLSRv2 routing process, such as ...

--

olsrv2PerformanceGroup OBJECT IDENTIFIER ::= { olsrv2MIBObjects 3 }

olsrv2G1PerfGroup OBJECT IDENTIFIER ::= {olsrv2PerformanceGroup 1}

-- Note: Objects to be defined.

--

-- Per OLSRv2 Interface Performance Table

--

olsrv2IfPerfGroup OBJECT IDENTIFIER ::= {olsrv2PerformanceGroup 2}

-- Note: Objects to be defined.

--

-- Notifications

--

-- Note: What notifications do we want for this MIB?

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```
--
-- Compliance Statements
--

-- Note: need to update the Compliance section once the mib
--       objects stabilize.

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 }
  MANDATORY-GROUPS { olsrv2ConfigObjectsGroup,
                    olsrv2StateObjectsGroup }
 ::= { olsrv2Compliances 2 }

--
-- Units of Conformance
--

olsrv2ConfigObjectsGroup OBJECT-GROUP
  OBJECTS {
    olsrv2OperationalMode,
    olsrv2OHoldTime,
    olsrv2TcInterval,
    olsrv2TcMinInterval,
    olsrv2THoldTime,
    olsrv2AHoldTime,
    olsrv2RxHoldTime,
    olsrv2PHoldTime,
    olsrv2FHoldTime,
```

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```
        olsrv2TpMaxJitter,  
        olsrv2TtMaxJitter,  
        olsrv2FMaxJitter,  
        olsrv2TcHopLimit,  
        olsrv2Williness,  
        olsrv2LibLocAttNetSetDistance,  
        olsrv2LibLocAttNetSetRowStatus  
    }  
    STATUS current  
    DESCRIPTION  
        "Set of OLSRV2 configuration objects implemented  
        in this module."  
 ::= { olsrv2MIBGroups 1 }
```

```
olsrv2StateObjectsGroup OBJECT-GROUP  
    OBJECTS {  
        olsrv2NodeStatus,  
        olsrv2LibLocAttNetSetIpAddressType,  
        olsrv2LibOrigSetIpAddressType,  
        olsrv2NibNeighborSetNWilliness,  
        olsrv2NibNeighborSetNMpr,  
        olsrv2NibNeighborSetNMprSelector,  
        olsrv2TibAdNeighborSetSeqNo,  
        olsrv2TibAdNeighborSetIpAddressType,  
        olsrv2TibAdRemoteNodeSetIpAddressType,  
        olsrv2TibAdRemoteNodeSetIpAddress,  
        olsrv2TibAdRemoteNodeSetMaxSeqNo,  
        olsrv2TibAdRemoteNodeSetExpireTime,  
        olsrv2TibTopologySetDestIfIpAddressType,  
        olsrv2TibTopologySetOrigIpAddressType,  
        olsrv2TibTopologySetOrigIpAddress,  
        olsrv2TibTopologySetSeqNo,  
        olsrv2TibTopologySetExpireTime,  
        olsrv2TibAttNetworksSetSeqNo,  
        olsrv2TibAttNetworksSetDist,  
        olsrv2TibAttNetworksSetExpireTime,  
        olsrv2TibRoutingSetNextIfIpAddress,  
        olsrv2TibRoutingSetDist,  
        olsrv2TibRoutingSetLocalIfIpAddress  
    }  
    STATUS current  
    DESCRIPTION  
        "Set of OLSRV2 state objects implemented  
        in this module."  
 ::= { olsrv2MIBGroups 2 }
```

```
-- olsrv2PerfObjectsGroup OBJECT-GROUP  
--     OBJECTS {
```

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```
--  
--  
--      }  
--      STATUS    current  
--      DESCRIPTION  
--          "Set of OLSRV2 performance objects implemented  
--          in this module by total and per interface."  
--      ::= { olsrv2MIBGroups 3 }
```

END

8. Security Considerations

[TODO] Each specification that defines one or more MIB modules MUST contain a section that discusses security considerations relevant to those modules. This section MUST be patterned after the latest approved template (available at <http://www.ops.ietf.org/mib-security.html>). Remember that the objective is not to blindly copy text from the template, but rather to think and evaluate the risks/vulnerabilities and then state/document the result of this evaluation.

[TODO] if you have any read-write and/or read-create objects, please include the following boilerplate paragraph.

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:

- o [TODO] writable MIB objects that could be especially disruptive if abused MUST be explicitly listed by name and the associated security risks MUST be spelled out; RFC 2669 has a very good example.
- o [TODO] list the writable tables and objects and state why they are sensitive.

[TODO] else if there are no read-write objects in your MIB module, use the following boilerplate paragraph.

There are no management objects defined in this MIB module that have a MAX-ACCESS clause of read-write and/or read-create. So, if this MIB module is implemented correctly, then there is no risk that an

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intruder can alter or create any management objects of this MIB module via direct SNMP SET operations.

[TODO] if you have any sensitive readable objects, please include the following boilerplate paragraph.

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:

- o [TODO] you must explicitly list by name any readable objects that are sensitive or vulnerable and the associated security risks MUST be spelled out (for instance, if they might reveal customer information or violate personal privacy laws such as those of the European Union if exposed to unauthorized parties)
- o [TODO] list the tables and objects and state why they are sensitive.

[TODO] discuss what security the protocol used to carry the information should have. The following three boilerplate paragraphs should not be changed without very good reason. Changes will almost certainly require justification during IESG review.

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

It is RECOMMENDED that 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.

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9. IANA Considerations

[TODO] In order to comply with IESG policy as set forth in <http://www.ietf.org/ID-Checklist.html>, every Internet-Draft that is submitted to the IESG for publication MUST contain an IANA Considerations section. The requirements for this section vary depending what actions are required of the IANA. see RFC4181 section 3.5 for more information on writing an IANA clause for a MIB module document.

[TODO] select an option and provide the necessary details.

Option #1:

The MIB module in this document uses the following IANA-assigned OBJECT IDENTIFIER values recorded in the SMI Numbers registry:

Descriptor	OBJECT IDENTIFIER value
-----	-----
sampleMIB	{ mib-2 XXX }

Option #2:

Editor's Note (to be removed prior to publication): the IANA is requested to assign a value for "XXX" under the 'mib-2' subtree and to record the assignment in the SMI Numbers registry. When the assignment has been made, the RFC Editor is asked to replace "XXX" (here and in the MIB module) with the assigned value and to remove this note.

Note well: prior to official assignment by the IANA, a draft document MUST use place holders (such as "XXX" above) rather than actual numbers. See RFC4181 Section 4.5 for an example of how this is done in a draft MIB module.

Option #3:

This memo includes no request to IANA.

10. Contributors

This MIB document uses the template authored by D. Harrington which is based on contributions from the MIB Doctors, especially Juergen Schoenwaelder, Dave Perkins, C.M.Heard and Randy Presuhn.

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11. Acknowledgements

12. References

12.1. Normative References

- [RFC2863] McCloghrie, K. and F. Kastenholz, "The Interfaces Group MIB", RFC 2863, June 2000.
- [RFC3418] Presuhn, R., "Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)", STD 62, RFC 3418, December 2002.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.
- [RFC2578] McCloghrie, K., Ed., Perkins, D., Ed., and J. Schoenwaelder, Ed., "Structure of Management Information Version 2 (SMIV2)", STD 58, RFC 2578, April 1999.
- [RFC2579] McCloghrie, K., Ed., Perkins, D., Ed., and J. Schoenwaelder, Ed., "Textual Conventions for SMIV2", STD 58, RFC 2579, April 1999.
- [RFC2580] McCloghrie, K., Perkins, D., and J. Schoenwaelder, "Conformance Statements for SMIV2", STD 58, RFC 2580, April 1999.
- [I-D.ietf-manet-olsrv2] Clausen, T., Dearlove, C., and P. Jacquet, "The Optimized Link State Routing Protocol version 2", draft-ietf-manet-olsrv2-08 (work in progress), March 2009.

12.2. Informative References

- [RFC3410] Case, J., Mundy, R., Partain, D., and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", RFC 3410, December 2002.

Appendix A. Change Log

This section identifies the changes made during the development of this MIB.

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Here we list the changes made in developing draft-ietf-manet-olsrv2-mib-00.

1. Rev'd the draft as a new working group document.
2. Ran 'smilint' against the module and cleaned up syntax errors and other issues discovered by the checker.

Here we list the changes made in developing draft-cole-manet-olsr-mib-01.

1. Completely reworked the entire Configuration Objects group in order to align with the newly developed NHDP-MIB draft.

Appendix B. Open Issues

This section contains the set of open issues related to the development and design of the OLSRv2-MIB. This section will not be present in the final version of the MIB and will be removed once all the open issues have been resolved.

1. Look into possible redundancy between the TIB Routing Set and the latest standard MIB forwarding table.
2. Fill out the performance objects group.
3. Complete notification group.
4. Complete conformance group.
5. Work on the relationship to other MIBs, IF-MIB, NHDP-MIB.
6. Identify all objects requiring non-volatile storage in their DESCRIPTION clauses.
7. Incorporate parameter relationship conditions into their DESCRIPTION clauses.
8. Also, specify specific SNMP response to the snmp set request, i.e., 'generic error', 'bad value', etc.
9. Fill in all of the DEFVAL within the configuration group objects with their correct values.
10. Run through the MIB checker.
11. Complete the security analysis and section.

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12. Clean up all of the 'Note:' statements within the body of the MIB.
13. Cleanup all the [TODOs] from the MIB template.

Appendix C.

```
*****  
* 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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