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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 configuration information, state information, performance information, and notifications. This additional state and performance information is useful to troubleshoot problems and performance issues of the routing protocol. Two levels of compliance allow this MIB module to be deployed on 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 configuration information, state information, performance information, 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 periodically. 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 management applications to monitor the

state and performance of an OLSRV2 router, as well as to change settings of the OLSRV2 instance (e.g., router or interface parameters such as message intervals, etc.).

As OLSRV2 relies on the neighborhood information discovered by the "Mobile Ad Hoc Network (MANET) Neighborhood Discovery Protocol (NHDP)" [[RFC6130](#)], the OLSRV2-MIB module is aligned with the NHDP-MIB [[RFC6779](#)] module and augments several of the tables and objects in the NHDP-MIB. 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:

- o Configuration Objects - switches, tables, objects which are initialized to default settings or set through the management interface defined by this MIB module.
- o State Objects - automatically generated values which define the current operating state of the OLSRV2 protocol instance 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.
- o 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:

- o olsrv2MIBObjects - 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.

- o olsrv2MIBNotifications - objects defining OLSRv2-MIB module notifications.
- o olsrv2MIBConformance - 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 is 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 [\[RFC6779\]](#) module. Use of the AUGMENTS clause is made, when possible, to accomplish these table extensions. Further, the State Group tables defined in this MIB module are aligned with the according tables in the NHDP-MIB [\[RFC6779\]](#) 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 administrator 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 Group contains Control (olsrv2NotificationsControl), Objects (olsrv2NotificationsObjects) and States (olsrv2NotificationsStates), where the Control contains definitions of objects to control the frequency of notifications being generated. The Objects define the supported notifications and the State is used to define additional information to be carried within the notifications.

The olsrv2NotificationsObjects sub-tree 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 \[RFC6779\]](#). The following objects are used to define the thresholds and time windows for specific notifications defined in the NHDP-MIB module: olsrv2RoutingSetRecalculationCountThreshold, olsrv2RoutingSetRecalculationCountWindow, olsrv2MPRSetRecalculationCountThreshold, and olsrv2MPRSetRecalculationCountWindow.

5.5. Tables and Indexing

The OLSRv2-MIB module's tables are indexed by the following constructs:

- o nhdpIfIndex - the ifIndex of the local router on which NHDP is configured. This is defined in the NHDP-MIB.
- o nhdpDiscIfIndex - a locally managed index representing a known interface on a neighboring router. This is defined in the NHDP-MIB.
- o nhdpDiscRouterIndex - a locally managed index representing an ID of a known neighboring router. This is defined in the NHDP-MIB.
- o {olsrv2LibOrigSetIpAddrType, olsrv2LibOrigSetIpAddr} - this index (pair) uniquely identifies recently used originator addresses found within the olsrv2LibOrigSetTable.
- o {olsrv2LibLocAttNetSetIpAddrType, olsrv2LibLocAttNetSetIpAddr, olsrv2LibLocAttNetSetIpAddrPerfixLen} - this index (triplet) uniquely identifies local attached networks reachable through local (non-OLSRv2) interfaces on this router. These are recorded in the olsrv2LibLocAttNetSetTable.

- o {olsrv2TibAdRemoteRouterSetIpAddrType, olsrv2TibAdRemoteRouterSetIpAddr} - this index (pair) uniquely identifies each router in the network that transmits TC messages received by this router. These records are recorded in the olsrv2TibAdRemoteRouterSetIpAddr.
- o {olsrv2TibRouterTopologySetFromOrigIpAddrType, olsrv2TibRouterTopologySetFromOrigIpAddr, olsrv2TibRouterTopologySetToOrigIpAddrType, olsrv2TibRouterTopologySetToOrigIpAddr} - this index (quadruplet) uniquely identifies discovered links within the network recorded by this router. Information associated with each link is stored in the olsrv2TibRouterTopologySetTable.
- o {olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType, olsrv2TibRoutableAddressTopologySetFromOrigIpAddr, olsrv2TibRoutableAddressTopologySetFromDestIpAddrType, olsrv2TibRoutableAddressTopologySetFromDestIpAddr} - this index (quadruplet) uniquely identifies reachable addresses within the network and the router's advertising these addresses. This information is stored in the olsrv2TibRoutableAddressTopologySetTable.
- o {olsrv2TibAttNetworksSetOrigIpAddrType, olsrv2TibAttNetworksSetOrigIpAddr, olsrv2TibAttNetworksSetNetIpAddrType, olsrv2TibAttNetworksSetNetIpAddr, olsrv2TibAttNetworksSetNetIpAddrPrefixLen} - this index (quintuplet) uniquely identifies the networks (which may be outside the MANET) and the routers through which these networks can be reached. This information is stored in the olsrv2TibAttNetworksSetTable.
- o {olsrv2TibRoutingSetDestIpAddrType, olsrv2TibRoutingSetDestIpAddr, olsrv2TibRoutingSetDestIpAddrPrefixLen} - this index (triplet) uniquely identifies the address of a reachable destination in the network. This indexes the olsrv2TibRoutingSetTable which contains the next hop information to reach the indexed addresses.

These tables and their indexing are:

- o olsrv2InterfaceTable - describes the OLSRv2 status on the NHDP interfaces of this router. This table augments nhdpInterfaceEntry and as such it is indexed by the {nhdpIfIndex} from the NHDP-MIB.
- o olsrv2IibLinkSetTable - records all links from other routers which are, or recently were, 1-hop neighbors. This table augments nhdpIibLinkSetEntry and as such it is indexed by nhdpIfIndex and

nhdpDiscIfIndex.

- o olsrv2Iib2HopSetTable - records network addresses of symmetric 2-hop neighbors and the links to the associated 1-hop neighbors. This table augments nhdpIib2HopSetEntry and as such it is indexed by {nhdpIfIndex, nhdpDiscIfIndex, nhdpIib2HopSetIpAddressType, nhdpIib2HopSetIpAddress}.
- o olsrv2LibOrigSetTable - records addresses that were recently used as originator addresses by this router. This table is indexed by {olsrv2LibOrigSetIpAddrType, olsrv2LibOrigSetIpAddr}.
- o olsrv2LibLocAttNetSetTable - records its local non-OLSRv2 interfaces via which it can act as gateways to other networks. This table is indexed by {olsrv2LibLocAttNetSetIpAddrType, olsrv2LibLocAttNetSetIpAddr, olsrv2LibLocAttNetSetIpAddrPrefixLen}.
- o olsrv2NibNeighborSetTable - records all network addresses of each 1-hop neighbor. This table augments nhdpNibNeighborSetEntry and as such it is indexed by the {nhdpDiscRouterIndex}.
- o olsrv2TibAdRemoteRouterSetTable - records information describing each remote router in the network that transmits TC messages. This table is indexed by {olsrv2TibAdRemoteRouterSetIpAddrType, olsrv2TibAdRemoteRouterSetIpAddr}.
- o olsrv2TibRouterTopologySetTable - records topology information about the network. This table is indexed by {olsrv2TibRouterTopologySetFromOrigIpAddrType, olsrv2TibRouterTopologySetFromOrigIpAddr, olsrv2TibRouterTopologySetToOrigIpAddrType, olsrv2TibRouterTopologySetToOrigIpAddr}.
- o olsrv2TibRoutableAddressTopologySetTable - records topology information about the routable addresses within the MANET, and via which routers they may be reached. This table is indexed by {olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType, olsrv2TibRoutableAddressTopologySetFromOrigIpAddr, olsrv2TibRoutableAddressTopologySetFromDestIpAddrType, olsrv2TibRoutableAddressTopologySetFromDestIpAddr}.
- o olsrv2TibAttNetworksSetTable - records information about networks (which may be outside the MANET) attached to other routers and their routable addresses. This table is indexed by {olsrv2TibAttNetworksSetOrigIpAddrType, olsrv2TibAttNetworksSetOrigIpAddr, olsrv2TibAttNetworksSetNetIpAddrType,


```
olsrv2TibAttNetworksSetNetIpAddress,  
olsrv2TibAttNetworksSetNetIpAddressPrefixLen}.
```

- o `olsrv2TibRoutingSetTable` - records the first hop along a selected path to each destination for which any such path is known. This table is indexed by `{olsrv2TibRoutingSetDestIpAddressType, olsrv2TibRoutingSetDestIpAddress, olsrv2TibRoutingSetDestIpAddressPrefixLen}`.
- o `olsrv2InterfacePerfTable` - records performance counters for each active OLSRV2 interface on this device. This table augments `nhdpInterfacePerfEntry` and as such it is indexed by `{nhdpIfIndex}` from the NHDP-MIB.

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. MIB modules and specific definitions imported from 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](#)]. An instance of OLSRV2 MUST have an associated instance of NHDP running on the same device for proper operations of the discovery and routing system. In order for the OLSRV2-MIB module to correctly populate the objects relating to discovered neighbors, the State Group tables of the NHDP-MIB [[RFC6779](#)] module are aligned with the State Group tables of this MIB module. This is accomplished through the use of the AUGMENTS capability of SMIV2 (where appropriate). This will allow for cross referencing of information between the two MIB modules within a given SNMP context.

6.3. MIB modules required for IMPORTS

The following OLSRV2-MIB module IMPORTS objects from NHDP-MIB [[RFC6779](#)], SNMPv2-SMI [[RFC2578](#)], SNMPv2-TC [[RFC2579](#)], SNMPv2-CONF

[[RFC2580](#)], IF-MIB [[RFC2863](#)] and INET-ADDRESS-MIB [[RFC4001](#)]. The OLSRv2-MIB module also IMPORTS objects from the IANAolsrv2LinkMetricType-MIB which is defined in [Appendix A](#) of this document.

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 -- RFC 2578
```

```
    TEXTUAL-CONVENTION, TimeStamp, TruthValue  
        FROM SNMPv2-TC -- RFC 2579
```

```
    MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP  
        FROM SNMPv2-CONF -- STD 58
```

```
    InetAddressType, InetAddress,  
    InetAddressPrefixLength  
        FROM INET-ADDRESS-MIB -- RFC 3291
```

```
    nhdpInterfaceEntry,  
    nhdpIibLinkSetEntry, nhdpIib2HopSetEntry,  
    nhdpNibNeighborSetEntry, nhdpInterfacePerfEntry  
        FROM NHDP-MIB -- RFC 6779
```

```
    IANAolsrv2LinkMetricTypeTC  
        FROM IANAolsrv2LinkMetricType-MIB  
    ;
```

```
manetOlsrv2MIB MODULE-IDENTITY  
    LAST-UPDATED "201306240000Z" --24 June 2013  
    ORGANIZATION "IETF MANET Working Group"  
    CONTACT-INFO  
        "WG E-Mail: manet@ietf.org  
  
        WG Chairs: sratliff@cisco.com  
                  jmacker@nrl.navy.mil
```


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DESCRIPTION

"This OLSRv2-MIB module is applicable to routers implementing the Optimized Link State Routing Protocol version 2 (OLSRv2) defined in RFC XXXX.

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This version of this MIB module is part of RFC YYYY; see the RFC itself for full legal notices."

-- Revision History

REVISION "201306240000Z" -- 24 June 2013
DESCRIPTION

"Initial version of this MIB module,
published as RFC YYYY."

-- RFC-Editor assigns ZZZZ (this comment can be removed)
::= { mib-2 ZZZZ }

--

-- TEXTUAL CONVENTIONS

--

Olsrv2MetricValueCompressedFormTC ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"OLSRv2 Metrics are expressed in terms of a Link Metric Compressed Form within the OLSRv2 protocol. This textual convention defines the syntax of the metric objects consistent with the definitions of the OLSRv2 Link Metric Compressed Form in [Section 6.2](#) of RFC XXXX.

The 12-bit compressed form of a link metric uses a modified form of a representation with an 8-bit mantissa (denoted a) and a 4-bit exponent (denoted b). Note that if represented as the 12 bit value $256b+a$ then the ordering of those 12 bit values is identical to the ordering of the represented values.

The value so represented is $(257+a)2^b - 256$, where \wedge denotes exponentiation. This has a minimum value (when $a = 0$ and $b = 0$) of `MINIMUM_METRIC = 1` and a maximum value (when $a = 255$ and $b = 15$) of `MAXIMUM_METRIC = $2^{24} - 256$.`

Hence the compressed form metric values range from 1 to 16776960. The special value of 0 is reserved for the `UNKNOWN_METRIC` value.

If a network manager sets the metric value 'm' through the MIB-module, then the OLSRv2 code can derive 'compressed_m' = $M(a,b)$ according to the algorithm in [RFC 5497](#) and 'compressed_m' is the value represented in the OLSRv2 messages. But the value 'm' is persistently stored by the MIB-module. If the MIB-module is pulling this time parameter from some other source, i.e., the protocol instance, then this value is stored as is."

SYNTAX Unsigned32 (0..16776960)

Olsrv2TimeValueCompressedForm32TC ::= TEXTUAL-CONVENTION

DISPLAY-HINT "x"

STATUS current

DESCRIPTION

"OLSRv2 time values may be expressed in terms of a compressed form within the OLSRv2 protocol. This textual convention defines the syntax of the time objects defined in terms of an interger number of millisceonds, consistent with the definitions of the 8-bit exponent-mantissa compressed form defined in [Section 5 of RFC 5497](#). Time values with this representation are defined in terms of a constant C which is represented in terms of seconds. The constant C (time granularity) is used as specified in [RFC 5497](#). It MUST be the same as is used by the NHDP protocol [RFC 6130](#).

The 8-bit compressed form of a time value uses a modified form of a representation with an 3-bit mantissa (denoted a) and a 5-bit exponent (denoted b). Note that if represented as the 8 bit value 8b+a then the ordering of those 8 bit values is identical to the ordering of the represented values.

The minimum time-value that can be represented in this manner is C. The maximum time-value that can be represented in this manner is $15 * 2^{28} * C$, $15 * 268,435,456 * C$, $4,026,531,840 * C$ or about 45 days if, for example, $C = 1/1024$ second.

This TEXTUAL-CONVENTION limits the maximum value of the time granularity constant C to be no greater than 1/1024 seconds due to its use of the Unsigned32 syntax limiting the maximum number of milliseconds to no more than 3932160000.

When OLSRv2 uses this 8-bit exponent-mantissa compressed form, this object value MUST be translated from the integer form represented in this MIB-module into the exponent-mantissa form for the OLSRv2 protocol to use according to the algorithm defined in [Section 5 of RFC 5497](#) for finding the next larger time value within the exponent-mantissa format.

If a network manager sets the time value 't' through the MIB-module, then the OLSRv2 code can derive 'compressed_t' = T(a,b) according to the algorithm in [RFC 5497](#) and 'compressed_t' is the value represented in the OLSRv2 messages. But the value 't' is persistently stored by the MIB-module. If the MIB-module is pulling this time parameter from some other source which is using the compressed form, i.e., the protocol instance, then

this value is stored as is, after converting from
 number of time constants C into number of milliseconds."
SYNTAX Unsigned32 (1..3932160000)

Olsrv2StatusTC ::= TEXTUAL-CONVENTION

 STATUS current

 DESCRIPTION

 "Controls the operation of the OLSRv2
 protocol on the device or a specific interface.
 For example, for an interface: 'enabled' indicates
 that OLSRv2 is permitted to operate,
 and 'disabled' indicates that it is not."

SYNTAX INTEGER {
 enabled (1),
 disabled (2)
}

WillingnessTC ::= TEXTUAL-CONVENTION

 DISPLAY-HINT "x"

 STATUS current

 DESCRIPTION

 "A willingness value which evaluates to the
 device's interest in participating in
 a particular function, process or behavior.

 The williness ranges from a low value of
 WILL_NEVER(0) to a high value of
 WILL_ALWAYS(15). For each parameter x,
 there is an associated willingness value
 W(x) such that WILL_NEVER < W(x) <= WILL_ALWAYS."

SYNTAX Unsigned32 (0..15)

--

-- 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}

olsrv2AdminStatus OBJECT-TYPE

SYNTAX Olsrv2StatusTC

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The configured status of the OLSRv2 process on this device. 'enabled(1)' means that OLSRv2 is configured to run on this device. 'disabled(2)' mean that the OLSRv2 process is configured off.

Operation of the OLSRv2 routing protocol requires the operation of the Neighborhood Discovery Protocol ([RFC 6130](#)). Hence, this object cannot have a status of 'enabled' unless at least one interface on the device is a MANET interface with NHDP enabled on that interface. If a network manager attempts to set this object to 'enabled' when no interfaces on this device have NHDP enabled, the device MUST fail the set with inconsistentValue. If all device interfaces running NHDP become disabled or removed, then the olsrv2AdminStatus MUST be 'disabled'.

If the network manager, or other means, sets this object to 'disabled', then the associated interface specific objects, i.e., the olsrv2InterfaceAdminStatus objects MUST all be 'disabled'.

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

DEFVAL { 2 }

::= { olsrv2ConfigurationGroup 1 }

olsrv2InterfaceTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2InterfaceEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The olsrv2InterfaceTable describes the OLSRv2 status on the NHDP interfaces of this router. As such, this table augments the nhdpInterfaceTable

defined in the NHDP-MIB ([RFC 6779](#)). NHDP interfaces are explicitly defined by network management, CLI, or other means for interfaces on the device that are intended to run MANET protocols. The `olsrv2InterfaceTable` contains a single object, the `olsrv2InterfaceAdminStatus` object. This object is set by network management, or by other means, e.g., CLI.

A conceptual row in this table exists if and only if a corresponding entry in the `nhdpInterfaceTable` exists. If the corresponding entry with `nhdpIfIndex` value is deleted from the `nhdpInterfaceTable`, then the entry in this table is automatically deleted and OLSRv2 is disabled on this interface, and all configuration and state information related to this interface is to be removed from memory.

The `olsrv2InterfaceAdminStatus` can only be 'enabled' if the corresponding `olsrv2AdminStatus` object is also set to 'enabled'."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { `olsrv2ConfigurationGroup 2` }

`olsrv2InterfaceEntry` OBJECT-TYPE

SYNTAX `olsrv2InterfaceEntry`

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The `olsrv2InterfaceEntry` describes one OLSRv2 local interface configuration as indexed by its `nhdpIfIndex` as defined in the NHDP-MIB ([RFC 6779](#)).

The objects in this table are persistent and when written the device SHOULD save the change to non-volatile storage. For further information on the storage behavior for these objects, refer to the description for the `nhdpIfRowStatus` object in the NHDP-MIB ([RFC6779](#))."

REFERENCE

"[RFC 6779](#) - The Neighborhood Discovery Protocol MIB, Herberg, U., Cole, R.G. and I. Chakeres, October 2012"


```
    AUGMENTS { nhdpInterfaceEntry }
 ::= { olsrv2InterfaceTable 1 }

Olsrv2InterfaceEntry ::=
    SEQUENCE {
        olsrv2InterfaceAdminStatus
        Olsrv2StatusTC
    }

olsrv2InterfaceAdminStatus OBJECT-TYPE
    SYNTAX      Olsrv2StatusTC
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The OLSRV2 interface's administrative status.
        The value 'enabled(1)' denotes that the interface
        is permitted to participate in the OLSRV2 routing
        process. The value 'disabled(2)' denotes that
        the interface is not permitted to participate
        in the OLSRV2 routing process.

        The configuration objects for the OLSRV2 routing
        process, other than the administrative status objects,
        are common to all interfaces on this device.
        As such, the OLSRV2 configuration objects are globally
        defined for the device and are not contained within
        the olsrv2InterfaceTable."
    DEFVAL { 2 }
 ::= { olsrv2InterfaceEntry 1 }

olsrv2OrigIpAddrType OBJECT-TYPE
    SYNTAX      InetAddressType { ipv4(1) , ipv6(2) }
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
        "The type of the olsrv2OrigIpAddr, as defined
        in the InetAddress MIB module (RFC 4001).

        Only the values 'ipv4(1)' and
        'ipv6(2)' are supported."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2ConfigurationGroup 3 }

olsrv2OrigIpAddr OBJECT-TYPE
    SYNTAX      InetAddress (SIZE(4|16))
```



```
MAX-ACCESS    read-write
STATUS        current
DESCRIPTION
    "The router's originator address. An address that
     is unique (within the MANET) to this router.

    This object is persistent and when written
    the entity SHOULD save the change to
    non-volatile storage."
REFERENCE
    "RFC XXXX - The Optimized Link State Routing Protocol
     version 2, Clausen, T., Dearlove, C., Jacquet, P.
     and U. Herberg, March 2013."
::= { olsrv2ConfigurationGroup 4 }

--
-- Local History Times
--

olsrv20HoldTime  OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "olsrv20HoldTime 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.

        Guidance for setting this object may be found
        in Section 5 of the OLSRv2 specification (RFC XXXX),
        which indicates that:
            o  olsrv20HoldTime > 0

        This object is persistent and when written
        the entity SHOULD save the change to
        non-volatile storage."
    REFERENCE
        "Section 5 on Protocol Parameters.
         RFC XXXX - The Optimized Link State Routing Protocol
         version 2, Clausen, T., Dearlove, C., Jacquet, P.
         and U. Herberg, March 2013."
    DEFVAL { 30000 }
::= { olsrv2ConfigurationGroup 5 }
```


--
-- Message intervals
--

olsrv2TcInterval OBJECT-TYPE

SYNTAX Olsrv2TimeValueCompressedForm32TC
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.

Guidance for setting this object may be found
in [Section 5](#) of the OLSRV2 specification (RFC XXXX),
which indicates that:

- o olsrv2TcInterval > 0
- o olsrv2TcInterval >= olsrv2TcMinInterval

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

REFERENCE

"[Section 5](#) on Representing Time.
[RFC 5497](#) - Representing Multi-Value Time in
Mobile Ad Hoc Networks (MANETs),
Clausen, T. and C. Dearlove, March 2009.

and

[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

DEFVAL { 5000 }

::= { olsrv2ConfigurationGroup 6 }

olsrv2TcMinInterval OBJECT-TYPE

SYNTAX Olsrv2TimeValueCompressedForm32TC
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.

Guidance for setting this object may be found in [Section 5](#) of the OLSRv2 specification (RFC XXXX), which indicates that:

o olsrv2TcInterval >= olsrv2TcMinInterval

The OLSRv2 protocol may choose to represent this time interval in terms of the 8-bit exponent-mantissa form defined in [Section 5 of RFC 5497](#). When this is the case, this object value MUST be translated from the integer form represented in this MIB-module into the exponent-mantissa form for the OLSRv2 protocol to use according to the algorithm defined in [Section 5 of RFC 5497](#) for finding the next larger time value within the exponent-mantissa format.

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

REFERENCE

"[Section 5](#) on Representing Time.
[RFC 5497](#) - Representing Multi-Value Time in Mobile Ad Hoc Networks (MANETs),
 Clausen, T. and C. Dearlove, March 2009.

and

[Section 5](#) on Protocol Parameters.
 RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

DEFVAL { 1250 }

::= { olsrv2ConfigurationGroup 7 }

--

-- Advertised information validity times

--

olsrv2THoldTime OBJECT-TYPE

SYNTAX Olsrv2TimeValueCompressedForm32TC

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.

Guidance for setting this object may be found in [Section 5](#) of the OLSRv2 specification (RFC XXXX), which indicates that:

- o olsrv2THoldTime >= olsrv2TcInterval
- o If TC messages can be lost, then olsrv2THoldTime SHOULD be significantly greater than olsrv2TcInterval; a value >= 3 x olsrv2TcInterval is RECOMMENDED.

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

REFERENCE

"[Section 5](#) on Representing Time.
[RFC 5497](#) - Representing Multi-Value Time in Mobile Ad Hoc Networks (MANETs), Clausen, T. and C. Dearlove, March 2009.

and

[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

DEFVAL { 15000 }

::= { olsrv2ConfigurationGroup 8 }

olsrv2AHoldTime OBJECT-TYPE

SYNTAX Olsrv2TimeValueCompressedForm32TC

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.

Guidance for setting this object may be found

in [Section 5](#) of the OLSRv2 specification (RFC XXXX), which indicates that:

- o If TC messages can be lost, then
olsrv2AHoldTime SHOULD be
significantly greater than olsrv2TcInterval;
a value $\geq 3 \times \text{olsrv2TcInterval}$ is
RECOMMENDED.

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

REFERENCE

"[Section 5](#) on Representing Time.
[RFC 5497](#) - Representing Multi-Value Time in
Mobile Ad Hoc Networks (MANETs),
Clausen, T. and C. Dearlove, March 2009.

and

[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

DEFVAL { 15000 }

::= { olsrv2ConfigurationGroup 9 }

--

-- 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.

Guidance for setting this object may be found
in [Section 5](#) of the OLSRv2 specification (RFC XXXX),
which indicates that:

- o olsrv2RxHoldTime > 0

- o 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

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

DEFVAL { 30000 }

::= { olsrv2ConfigurationGroup 10 }

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.

Guidance for setting this object may be found in [Section 5](#) of the OLSRV2 specification (RFC XXXX), which indicates that:

- o olsrv2PHoldTime > 0
- o 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

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol

version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."
DEFVAL { 30000 }
::= { olsrv2ConfigurationGroup 11 }

olsrv2FHoldTime OBJECT-TYPE
SYNTAX Unsigned32
UNITS "milliseconds"
MAX-ACCESS read-write
STATUS current
DESCRIPTION
"olsrv2FHoldTime corresponds to
F_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.

Guidance for setting this object may be found
in [Section 5](#) of the OLSRv2 specification (RFC XXXX),
which indicates that:
o olsrv2FHoldTime > 0
o 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 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
"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."
DEFVAL { 30000 }
::= { olsrv2ConfigurationGroup 12 }

-- 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.

For constraints on these parameters see [RFC 5148](#).

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

REFERENCE

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

DEFVAL { 500 }

::= { olsrv2ConfigurationGroup 13 }

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.

For constraints on these parameters see [RFC 5148](#).

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

REFERENCE

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."


```
    DEFVAL { 500 }  
 ::= { olsrv2ConfigurationGroup 14 }
```

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 [RFC 5148](#) for
messages forwarded by this router.

For constraints on these parameters see [RFC 5148](#).

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

REFERENCE

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

```
    DEFVAL { 500 }  
 ::= { olsrv2ConfigurationGroup 15 }
```

```
--  
-- 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.

Guidance for setting this object may be found
in [Section 5](#) of the OLSRv2 specification (RFC XXXX),
which indicates that:

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

- o All values of `olsrv2TcHopLimit` ≥ 2 .

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

REFERENCE

"[Section 5](#) on Protocol Parameters.

RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

DEFVAL { 255 }

::= { `olsrv2ConfigurationGroup` 16 }

--

-- Willingness

--

`olsrv2WillRouting` OBJECT-TYPE

SYNTAX WillingnessTC

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"`olsrv2WillRouting` corresponds to `WILL_ROUTING` of OLSRV2.

Guidance for setting this object may be found in [Section 5](#) of the OLSRV2 specification (RFC XXXX), which indicates that:

- o `WILL_NEVER` (0) \leq `olsrv2WillRouting` \leq `WILL_ALWAYS` (15)

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

REFERENCE

"[Section 5](#) on Protocol Parameters.

RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

DEFVAL { 7 }

::= { `olsrv2ConfigurationGroup` 17 }

`olsrv2WillFlooding` OBJECT-TYPE

SYNTAX WillingnessTC

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"olsrv2WillFlooding corresponds to
WILL_FLOODING of OLSRv2.

Guidance for setting this object may be found
in [Section 5](#) of the OLSRv2 specification (RFC XXXX),
which indicates that:

- o WILL_NEVER (0) <= olsrv2WillFlooding <=
WILL_ALWAYS (15)

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

REFERENCE

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

DEFVAL { 7 }

::= { olsrv2ConfigurationGroup 18 }

olsrv2LinkMetricType OBJECT-TYPE

SYNTAX IANAolsrv2LinkMetricTypeTC

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"olsrv2LinkMetricType corresponds to
LINK_METRIC_TYPE of OLSRv2.

If olsrv2LinkMetricType changes, then all
link metric information recorded by this router
is invalid. The router MUST take the
actions described in [Section 5.5](#).

'Parameter Change Constraints' and
[Section 17](#) 'Information Base Changes'
in RFC XXXX.

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

REFERENCE

"[Section 5](#) on Protocol Parameters.
RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

DEFVAL { 0 }

::= { olsrv2ConfigurationGroup 19 }


```
--
-- olsrv2StateGroup
--

--
-- Contains information describing the current state of
-- the OLSRV2 process.
--

olsrv2StateGroup OBJECT IDENTIFIER ::= { olsrv2MIBObjects 2 }

--
-- Interface Information Base (IIB)
--

--
-- Link Set from RFC 6130, 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
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
    ::= { olsrv2StateGroup 1 }

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. Each Link Set
        from NHDP is extended by OLSRV2 by the following
        fields:

        (L_in_metric (olsrv2IibLinkSetInMetricValue),
         L_out_metric (olsrv2IibLinkSetOutMetricValue),
         L_mpr_selector (olsrv2IibLinkSetMprSelector))"
```


REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

AUGMENTS { nhdpIibLinkSetEntry }
::= { olsrv2IibLinkSetTable 1 }

Olsrv2IibLinkSetEntry ::=

SEQUENCE {
 olsrv2IibLinkSetInMetricValue
 Olsrv2MetricValueCompressedFormTC,
 olsrv2IibLinkSetOutMetricValue
 Olsrv2MetricValueCompressedFormTC,
 olsrv2IibLinkSetMprSelector
 TruthValue
}

olsrv2IibLinkSetInMetricValue OBJECT-TYPE

SYNTAX Olsrv2MetricValueCompressedFormTC

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"olsrv2IibLinkSetInMetricValue is the metric of the link
from the OLSRV2 interface with addresses
L_neighbor_iface_addr_list to this OLSRV2 interface.
The L_neighbor_iface_addr_list is identified by
the nhdpDiscIfIndex which is an index to the
nhdpIibLinkSetTable which this table augments."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2IibLinkSetEntry 1 }

olsrv2IibLinkSetOutMetricValue OBJECT-TYPE

SYNTAX Olsrv2MetricValueCompressedFormTC

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"olsrv2IibLinkSetOutMetricValue is the metric of the
link to the OLSRV2 interface with addresses
L_neighbor_iface_addr_list from this OLSRV2 interface.
The L_neighbor_iface_addr_list is identified by
the nhdpDiscIfIndex which is an index to the
nhdpIibLinkSetTable which this table augments."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P."

and U. Herberg, March 2013."
 ::= { olsrv2IibLinkSetEntry 2 }

olsrv2IibLinkSetMprSelector OBJECT-TYPE
 SYNTAX TruthValue
 MAX-ACCESS read-only
 STATUS current
 DESCRIPTION
 "olsrv2IibLinkSetMprSelector is a boolean flag,
 recording whether this neighbor has selected this router
 as a flooding MPR, i.e., is a flooding MPR selector
 of this router."
 REFERENCE
 "RFC XXXX - The Optimized Link State Routing Protocol
 version 2, Clausen, T., Dearlove, C., Jacquet, P.
 and U. Herberg, March 2013."
 ::= { olsrv2IibLinkSetEntry 3 }

--
 -- 2-Hop Set; from [RFC 6130](#), 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."
 REFERENCE
 "RFC XXXX - The Optimized Link State Routing Protocol
 version 2, Clausen, T., Dearlove, C., Jacquet, P.
 and U. Herberg, March 2013."
 ::= { olsrv2StateGroup 2 }

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.

Each 2-Hop Set from NHDP is extended by OLSRv2 by the following fields:

```
(N2_in_metric (olsrv2Iib2HopSetInMetricValue),  
  N2_out_metric (olsrv2Iib2HopSetOutMetricValue))"
```

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

AUGMENTS { nhdpIib2HopSetEntry }

::= { olsrv2Iib2HopSetTable 1 }

Olsrv2Iib2HopSetEntry ::=

```
SEQUENCE {  
  olsrv2Iib2HopSetInMetricValue  
    Olsrv2MetricValueCompressedFormTC,  
  olsrv2Iib2HopSetOutMetricValue  
    Olsrv2MetricValueCompressedFormTC  
}
```

olsrv2Iib2HopSetInMetricValue OBJECT-TYPE

SYNTAX Olsrv2MetricValueCompressedFormTC

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"olsrv2Iib2HopSetInMetricValue 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.

The N2_2hop_iface_addr is identified by the
(nhdpIib2HopSetIpAddressType,
nhdpIib2HopSetIpAddress) pair from the
nhdpIibLinkSetTable which this table augments.

The N2_neighbor_iface_addr_list is defined by
the nhdpDiscIfIndex which is an index of the
nhdpIibLinkSetTable which this table augments."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013.

and

[RFC 6779](#) - Definition of Managed Objects for the
Neighborhood Discovery Process, Herberg, U.,

Cole, R. and I. Chakeres, October 2012."
::= { olsrv2Iib2HopSetEntry 1 }

olsrv2Iib2HopSetOutMetricValue OBJECT-TYPE
SYNTAX Olsrv2MetricValueCompressedFormTC
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"olsrv2Iib2HopSetOutMetricValue 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.

The N2_2hop_iface_addr is identified by the
(nhdpIib2HopSetIpAddressType,
nhdpIib2HopSetIpAddress) pair from the
nhdpIibLinkSetTable which this table augments.

The N2_neighbor_iface_addr_list is defined by
the nhdpDiscIfIndex which is an index of the
nhdpIibLinkSetTable which this table augments."
REFERENCE
"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013.

and

[RFC 6779](#) - Definition of Managed Objects for the
Neighborhood Discovery Process, Herberg, U.,
Cole, R. and I. Chakeres, October 2012."
::= { olsrv2Iib2HopSetEntry 2 }

--
-- Local Information Base - as defined in [RFC 6130](#),
-- 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 current

DESCRIPTION

"A router's Originator Set records addresses that were recently used as originator addresses by this router."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2StateGroup 3 }

olsrv2LibOrigSetEntry OBJECT-TYPE

SYNTAX Olsrv2LibOrigSetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A router's Originator Set consists of Originator Tuples:

(O_orig_addr (olsrv2LibOrigSetIpAddrType and olsrv2LibOrigSetIpAddr),
O_time (olsrv2LibOrigSetExpireTime))."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

INDEX { olsrv2LibOrigSetIpAddrType,
olsrv2LibOrigSetIpAddr }

::= { olsrv2LibOrigSetTable 1 }

Olsrv2LibOrigSetEntry ::=

SEQUENCE {

olsrv2LibOrigSetIpAddrType

InetAddressType,

olsrv2LibOrigSetIpAddr

InetAddress,

olsrv2LibOrigSetExpireTime

TimeStamp

}

olsrv2LibOrigSetIpAddrType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2LibOrigSetEntry 1 }

olsrv2LibOrigSetIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An originator address recently employed by this router."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2LibOrigSetEntry 2 }

olsrv2LibOrigSetExpireTime OBJECT-TYPE

SYNTAX TimeStamp

UNITS "centiseconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"olsrv2LibOrigSetExpireTime specifies the value of sysUpTime when this entry SHOULD expire and be removed from the olsrv2LibOrigSetTable. This time is determined at the time the entry is added, derived from the following expression:

O_time := current time + O_HOLD_TIME

where O_time is olsrv2LibOrigSetExpireTime, current_time is current sysUpTime and O_HOLD_TIME is a parameter of the OLSRv2 protocol. In the event that the O_HOLD_TIME is changed, then the olsrv2LibOrigSetExpireTime needs to be recomputed for each of the entries in this Table."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2LibOrigSetEntry 3 }


```
--
-- Local Attached Network Set
--

olsrv2LibLocAttNetSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2LibLocAttNetSetEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    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
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2StateGroup 4 }

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

        (AL_net_addr (olsrv2LibLocAttNetSetIpAddress),
         AL_dist (olsrv2LibLocAttNetSetDistance),
         AL_metric (olsrv2LibLocAttNetSetMetricValue)
        )

        where:

        AL_net_addr is the network address
        of an attached network which can
        be reached via this router.  The
        AL_net_addr is defined in this MIB
        module by the tuple
        (olsrv2LibLocAttNetSetIpAddressType,
         olsrv2LibLocAttNetSetIpAddress,
         olsrv2LibLocAttNetSetIpAddressPrefixLen).

        AL_dist is the number of hops to
        the network with address AL_net_addr
        from this router.  The AL_dist is
        defined in this MIB module by the
        olsrv2LibLocAttNetSetDistance object.
```


AL_metric is the metric of the link to the attached network with address AL_net_addr from this router. The AL_metric is defined in this MIB module by the olsrv2LibLocAttNetSetMetricValue object.

OLSRv2 (RFC XXXX) defines the rules for managing entries within this table, e.g., populating and purging entries. Specific instructions for the olsrv2LibLocAttNetSetEntry(s) are found in [Section 7.2](#) and [Section 17](#) of OLSRv2 (RFC XXXX)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

INDEX { olsrv2LibLocAttNetSetIpAddressType,
 olsrv2LibLocAttNetSetIpAddress,
 olsrv2LibLocAttNetSetIpAddressPrefixLen }

::= { olsrv2LibLocAttNetSetTable 1 }

Olsrv2LibLocAttNetSetEntry ::=

SEQUENCE {
 olsrv2LibLocAttNetSetIpAddressType
 InetAddressType,
 olsrv2LibLocAttNetSetIpAddress
 InetAddress,
 olsrv2LibLocAttNetSetIpAddressPrefixLen
 InetAddressPrefixLength,
 olsrv2LibLocAttNetSetDistance
 Unsigned32,
 olsrv2LibLocAttNetSetMetricValue
 Olsrv2MetricValueCompressedFormTC
}

olsrv2LibLocAttNetSetIpAddressType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the olsrv2LibLocAttNetSetIpAddress, as defined in the InetAddress MIB ([RFC 4001](#)).

Only the values 'ipv4(1)' and 'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P.


```
        and U. Herberg, March 2013."
 ::= { olsrv2LibLocAttNetSetEntry 1 }

olsrv2LibLocAttNetSetIpAddress OBJECT-TYPE
    SYNTAX      InetAddress (SIZE(4|16))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is the network address of an attached
        network which can be reached via this router."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2LibLocAttNetSetEntry 2 }

olsrv2LibLocAttNetSetIpAddressPrefixLen OBJECT-TYPE
    SYNTAX      InetAddressPrefixLength
    UNITS       "bits"
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Indicates the number of leading one bits that form the
        mask to be logically ANDed with the destination address
        before being compared to the value in the
        olsrv2LibLocAttNetSetIpAddress field."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { 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
        olsrv2LibLocAttNetSetIpAddress from this router."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2LibLocAttNetSetEntry 4 }

olsrv2LibLocAttNetSetMetricValue OBJECT-TYPE
```



```
SYNTAX      Olsrv2MetricValueCompressedFormTC
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. The
    AL_net_addr is defined by the tuple
    (olsrv2LibLocAttNetSetIpAddressType,
     olsrv2LibLocAttNetSetIpAddress,
     olsrv2LibLocAttNetSetIpAddressPrefixLen)."
```

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

```
::= { olsrv2LibLocAttNetSetEntry 5 }
```

```
--
-- Neighbor Information Base - as defined in RFC 6130,
-- extended by OLSRv2 by the addition of the following
-- elements to each Neighbor Tuple
--
```

```
--
-- Neighbor Set
--
```

```
olsrv2NibNeighborSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2NibNeighborSetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

```
::= { olsrv2StateGroup 5 }
```

```
olsrv2NibNeighborSetEntry OBJECT-TYPE
    SYNTAX      Olsrv2NibNeighborSetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
```


"Each Neighbor Tuple in the Neighbor Set, defined in [RFC 6130](#), has these additional elements:

```

    N_orig_addr (olsrv2NibNeighborSetNOrigIpAddrType,
                  olsrv2NibNeighborSetNOrigIpAddr)
    N_in_metric (olsrv2NibNeighborSetNInMetricValue)
    N_out_metric (olsrv2NibNeighborSetNOutMetricValue)
    N_will_flooding (olsrv2NibNeighborSetNWillFlooding)
    N_will_routing (olsrv2NibNeighborSetNWillRouting)
    N_flooding_mpr (olsrv2NibNeighborSetNFloodingMpr)
    N_routing_mpr (olsrv2NibNeighborSetNRoutingMpr)
    N_mpr_selector (olsrv2NibNeighborSetNMprSelector)
    N_advertised (olsrv2NibNeighborSetNAdvertised)

```

defined here as extensions."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

```

AUGMENTS { nhdpNibNeighborSetEntry }
::= { olsrv2NibNeighborSetTable 1 }

```

olsrv2NibNeighborSetEntry ::=

```

SEQUENCE {
    olsrv2NibNeighborSetNOrigIpAddrType
        InetAddressType,
    olsrv2NibNeighborSetNOrigIpAddr
        InetAddress,
    olsrv2NibNeighborSetNInMetricValue
        Olsrv2MetricValueCompressedFormTC,
    olsrv2NibNeighborSetNOutMetricValue
        Olsrv2MetricValueCompressedFormTC,
    olsrv2NibNeighborSetNWillFlooding
        WillingnessTC,
    olsrv2NibNeighborSetNWillRouting
        WillingnessTC,
    olsrv2NibNeighborSetNFloodingMpr
        TruthValue,
    olsrv2NibNeighborSetNRoutingMpr
        TruthValue,
    olsrv2NibNeighborSetNMprSelector
        TruthValue,
    olsrv2NibNeighborSetNAdvertised
        TruthValue
}

```

olsrv2NibNeighborSetNOrigIpAddrType OBJECT-TYPE

```

SYNTAX      InetAddressType { ipv4(1) , ipv6(2) }
MAX-ACCESS  read-only
STATUS      current

```


DESCRIPTION

"The type of the `olsrv2NibNeighborSetNOrigIpAddress`, as defined in the `InetAddress` MIB module ([RFC4001](#)).

Only the values 'ipv4(1)' and 'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { `olsrv2NibNeighborSetEntry` 1 }

`olsrv2NibNeighborSetNOrigIpAddress` OBJECT-TYPE

SYNTAX `InetAddress (SIZE(4|16))`

MAX-ACCESS `read-only`

STATUS `current`

DESCRIPTION

"This is the originator IP address of the neighbor represented by this table entry."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { `olsrv2NibNeighborSetEntry` 2 }

`olsrv2NibNeighborSetNInMetricValue` OBJECT-TYPE

SYNTAX `Olsrv2MetricValueCompressedFormTC`

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` (`olsrv2IibLinkSetInMetricValue`) with `L_status` = `SYMMETRIC` and `L_in_metric` (`olsrv2IibLinkSetInMetricValue`) != `UNKNOWN_METRIC`, `UNKNOWN_METRIC` if there are no such Link Tuples. `UNKNOWN_METRIC` has a value of 0."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { `olsrv2NibNeighborSetEntry` 3 }

`olsrv2NibNeighborSetNOutMetricValue` OBJECT-TYPE

SYNTAX `Olsrv2MetricValueCompressedFormTC`

MAX-ACCESS `read-only`

STATUS `current`

DESCRIPTION

"This object 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 (olsrv2IibLinkSetOutMetricValue) with L_status = SYMMETRIC and L_out_metric (olsrv2IibLinkSetOutMetricValue) != UNKNOWN_METRIC, UNKNOWN_METRIC if there are no such Link Tuples. UNKNOWN_METRIC has a value of 0."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 4 }

olsrv2NibNeighborSetNWillFlooding OBJECT-TYPE

SYNTAX WillingnessTC

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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 5 }

olsrv2NibNeighborSetNWillRouting OBJECT-TYPE

SYNTAX WillingnessTC

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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 6 }

olsrv2NibNeighborSetNFloodingMpr OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is a boolean flag, recording whether this neighbor is selected as a flooding MPR by this router."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 7 }

olsrv2NibNeighborSetNRoutingMpr OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is a boolean flag, recording whether this neighbor is selected as a routing MPR by this router."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 8 }

olsrv2NibNeighborSetNMprSelector OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is a boolean flag, recording whether 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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 9 }

olsrv2NibNeighborSetNAdvertised OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object, N_mpr_selector
(olsrv2NibNeighborSetNMprSelector), is a boolean flag,
recording whether this router has elected to
advertise a link to this neighbor in its TC messages."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2NibNeighborSetEntry 10 }

olsrv2NibNeighborSetTableAnsn OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2StateGroup 6 }

--
-- Topology Information Base - this Information
-- Base is specific to OLSRv2, and is defined in
-- [Section 10](#) of RFC XXXX.
--

--
-- Advertising Remote Router Set
--

olsrv2TibAdRemoteRouterSetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2TibAdRemoteRouterSetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A router's Advertising Remote Router Set records
information describing each remote router in the

network that transmits TC messages."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2StateGroup 7 }

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 (olsrv2TibAdRemoteRouterSetIpAddressType,
olsrv2TibAdRemoteRouterSetIpAddress),
AR_seq_number (olsrv2TibAdRemoteRouterSetMaxSeqNo),
AR_time (olsrv2TibAdRemoteRouterSetExpireTime).

Addresses associated with this router are
found in the NHDP-MIB module's nhdpDiscIfSetTable.

OLSRv2 (RFC XXXX) defines the rules for managing
entries within this table, e.g., populating
and purging entries. Specific instructions for the
olsrv2TibAdRemoteRouterSetEntry(s) are found in
[Section 10.1](#) and [Section 17](#) of OLSRv2 (RFC XXXX)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

INDEX { olsrv2TibAdRemoteRouterSetIpAddressType,
olsrv2TibAdRemoteRouterSetIpAddress }

::= { olsrv2TibAdRemoteRouterSetTable 1 }

Olsrv2TibAdRemoteRouterSetEntry ::=

SEQUENCE {

olsrv2TibAdRemoteRouterSetIpAddressType
InetAddressType,

olsrv2TibAdRemoteRouterSetIpAddress
InetAddress,

olsrv2TibAdRemoteRouterSetMaxSeqNo
Unsigned32,

olsrv2TibAdRemoteRouterSetExpireTime
TimeStamp

}

olsrv2TibAdRemoteRouterSetIpAddressType OBJECT-TYPE
SYNTAX InetAddressType { ipv4(1) , ipv6(2) }
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The type of the olsrv2TibAdRemoteRouterSetIpAddress,
as defined in the InetAddress MIB module ([RFC4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."
REFERENCE
"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."
::= { olsrv2TibAdRemoteRouterSetEntry 1 }

olsrv2TibAdRemoteRouterSetIpAddress OBJECT-TYPE
SYNTAX InetAddress (SIZE(4|16))
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This is the originator address of a received
TC message."
REFERENCE
"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."
::= { olsrv2TibAdRemoteRouterSetEntry 2 }

olsrv2TibAdRemoteRouterSetMaxSeqNo OBJECT-TYPE
SYNTAX Unsigned32 (0..65535)
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is the greatest Assigned Neighbor Sequence
Number (ANSN) in any TC message
received which originated from the router
with originator address
olsrv2TibAdRemoteRouterSetIpAddress.

Sequence numbers are used in the OLSRv2 protocol
for the purpose of discarding 'old' information,
i.e., messages received out of order. However
with a limited number of bits for representing
sequence numbers, wrap-around (that the sequence
number is incremented from the maximum possible
value to zero) will occur. To prevent this from
interfering with the operation of this protocol,

OLSRv2 implementations observe the following when determining the ordering of sequence numbers.

In OLSRv2, MAXVALUE designates one more than the largest possible value for a sequence number. For a 16 bit sequence number MAXVALUE is 65536.

The sequence number S1 is said to be 'greater than' the sequence number S2 if:

- o S1 > S2 AND S1 - S2 < MAXVALUE/2 OR
- o S2 > S1 AND S2 - S1 < MAXVALUE/2

When sequence numbers S1 and S2 differ by MAXVALUE/2 their ordering cannot be determined. In this case, which should not occur, either ordering may be assumed.

Thus when comparing two messages, it is possible - even in the presence of wrap-around - to determine which message contains the most recent information."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibAdRemoteRouterSetEntry 3 }

olsrv2TibAdRemoteRouterSetExpireTime OBJECT-TYPE

SYNTAX TimeStamp
UNITS "centiseconds"
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION

"olsrv2TibAdRemoteRouterSetExpireTime specifies the value of sysUptime when this entry SHOULD expire and be removed from the olsrv2TibAdRemoteRouterSetTable."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibAdRemoteRouterSetEntry 4 }

--
-- Router Topology Set
--

olsrv2TibRouterTopologySetTable OBJECT-TYPE

SYNTAX SEQUENCE OF Olsrv2TibTopologySetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2StateGroup 8 }

olsrv2TibRouterTopologySetEntry OBJECT-TYPE

SYNTAX Olsrv2TibTopologySetEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"It consists of Router Topology Tuples:

(TR_from_orig_addr
 (olsrv2TibRouterTopologySetFromOrigIpAddrType,
 olsrv2TibRouterTopologySetFromOrigIpAddr),
 TR_to_orig_addr
 (olsrv2TibRouterTopologySetToOrigIpAddrType,
 olsrv2TibRouterTopologySetToOrigIpAddr),
 TR_seq_number (olsrv2TibRouterTopologySetSeqNo),
 TR_metric (olsrv2TibRouterTopologySetMetricValue),
 TR_time (olsrv2TibRouterTopologySetExpireTime)).

OLSRv2 (RFC XXXX) defines the rules for managing entries within this table, e.g., populating and purging entries. Specific instructions for the olsrv2TibRouterTopologySetEntry(s) are found in [Section 10.2](#) and [Section 17](#) of OLSRv2 (RFC XXXX)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

INDEX { olsrv2TibRouterTopologySetFromOrigIpAddrType,
 olsrv2TibRouterTopologySetFromOrigIpAddr,
 olsrv2TibRouterTopologySetToOrigIpAddrType,
 olsrv2TibRouterTopologySetToOrigIpAddr }

::= { olsrv2TibRouterTopologySetTable 1 }

Olsrv2TibTopologySetEntry ::=

SEQUENCE {

olsrv2TibRouterTopologySetFromOrigIpAddrType


```
    InetAddressType,
    olsrv2TibRouterTopologySetFromOrigIpAddress
    InetAddress,
    olsrv2TibRouterTopologySetToOrigIpAddressType
    InetAddressType,
    olsrv2TibRouterTopologySetToOrigIpAddress
    InetAddress,
    olsrv2TibRouterTopologySetSeqNo
    Unsigned32,
    olsrv2TibRouterTopologySetMetricValue
    Olsrv2MetricValueCompressedFormTC,
    olsrv2TibRouterTopologySetExpireTime
    TimeStamp
}
```

olsrv2TibRouterTopologySetFromOrigIpAddressType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the olsrv2TibRouterTopologySetFromOrigIpAddress,
as defined in the InetAddress MIB module ([RFC4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 1 }

olsrv2TibRouterTopologySetFromOrigIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 2 }

olsrv2TibRouterTopologySetToOrigIpAddressType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the olsrv2TibRouterTopologySetToOrigIpAddress, as defined in the InetAddress MIB module ([RFC4001](#)).

Only the values 'ipv4(1)' and 'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 3 }

olsrv2TibRouterTopologySetToOrigIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 4 }

olsrv2TibRouterTopologySetSeqNo OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is the greatest Assigned Neighbor Sequence Number (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 and is defined by the objects:

(olsrv2TibRouterTopologySetFromOrigIpAddressType, olsrv2TibRouterTopologySetFromOrigIpAddress).

Sequence numbers are used in the OLSRv2 protocol for the purpose of discarding 'old' information, i.e., messages received out of order. However with a limited number of bits for representing sequence numbers, wrap-around (that the sequence number is incremented from the maximum possible

value to zero) will occur. To prevent this from interfering with the operation of this protocol, OLSRv2 implementations observe the following when determining the ordering of sequence numbers.

In OLSRv2, MAXVALUE designates one more than the largest possible value for a sequence number. For a 16 bit sequence number MAXVALUE is 65536.

The sequence number S1 is said to be 'greater than' the sequence number S2 if:

- o S1 > S2 AND S1 - S2 < MAXVALUE/2 OR
- o S2 > S1 AND S2 - S1 > MAXVALUE/2

When sequence numbers S1 and S2 differ by MAXVALUE/2 their ordering cannot be determined. In this case, which should not occur, either ordering may be assumed.

Thus when comparing two messages, it is possible - even in the presence of wrap-around - to determine which message contains the most recent information."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 5 }

olsrv2TibRouterTopologySetMetricValue OBJECT-TYPE

SYNTAX Olsrv2MetricValueCompressedFormTC

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is the neighbor metric from the router with originator address TR_from_orig_addr (olsrv2TibRouterTopologySetFromOrigIpAddressType, olsrv2TibRouterTopologySetFromOrigIpAddress) to the router with originator address TR_to_orig_addr (olsrv2TibRouterTopologySetToOrigIpAddressType, olsrv2TibRouterTopologySetToOrigIpAddress)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibRouterTopologySetEntry 6 }


```
olsrv2TibRouterTopologySetExpireTime OBJECT-TYPE
    SYNTAX      TimeStamp
    UNITS       "centiseconds"
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "olsrv2TibRouterTopologySetExpireTime specifies the value
         of sysUptime when this entry SHOULD expire and be
         removed from the olsrv2TibRouterTopologySetTable."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
         version 2, Clausen, T., Dearlove, C., Jacquet, P.
         and U. Herberg, March 2013."
 ::= { olsrv2TibRouterTopologySetEntry 7 }

--
-- Routable Address Topology Set
--

olsrv2TibRoutableAddressTopologySetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2TibRoutableAddressTopologySetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    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
        "RFC XXXX - The Optimized Link State Routing Protocol
         version 2, Clausen, T., Dearlove, C., Jacquet, P.
         and U. Herberg, March 2013."
 ::= { olsrv2StateGroup 9 }

olsrv2TibRoutableAddressTopologySetEntry OBJECT-TYPE
    SYNTAX      Olsrv2TibRoutableAddressTopologySetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "It consists of Router Topology Tuples:

        (TA_from_orig_addr
         (olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType
          olsrv2TibRoutableAddressTopologySetFromOrigIpAddr),
         TA_dest_addr
         (olsrv2TibRoutableAddressTopologySetFromDestIpAddrType
          olsrv2TibRoutableAddressTopologySetFromDestIpAddr),
         TA_seq_number (olsrv2TibRoutableAddressTopologySetSeqNo)
```



```

    TA_metric (olsrv2TibRoutableAddressTopologySetMetricValue)
    TA_time (olsrv2TibRoutableAddressTopologySetExpireTime)
)

```

OLSRv2 (RFC XXXX) defines the rules for managing entries within this table, e.g., populating and purging entries. Specific instructions for the olsrv2TibRoutableAddressTopologySetEntry(s) are found in [Section 10.3](#) and [Section 17](#) of OLSRV2 (RFC XXXX)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

```

INDEX { olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType,
        olsrv2TibRoutableAddressTopologySetFromOrigIpAddr,
        olsrv2TibRoutableAddressTopologySetDestIpAddrType,
        olsrv2TibRoutableAddressTopologySetDestIpAddr }
 ::= { olsrv2TibRoutableAddressTopologySetTable 1 }

```

olsrv2TibRoutableAddressTopologySetEntry ::=

```

SEQUENCE {
    olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType
        InetAddressType,
    olsrv2TibRoutableAddressTopologySetFromOrigIpAddr
        InetAddress,
    olsrv2TibRoutableAddressTopologySetDestIpAddrType
        InetAddressType,
    olsrv2TibRoutableAddressTopologySetDestIpAddr
        InetAddress,
    olsrv2TibRoutableAddressTopologySetSeqNo
        Unsigned32,
    olsrv2TibRoutableAddressTopologySetMetricValue
        Olsrv2MetricValueCompressedFormTC,
    olsrv2TibRoutableAddressTopologySetExpireTime
        TimeStamp
}

```

olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the
olsrv2TibRoutableAddressTopologySetFromOrigIpAddr,
as defined in the InetAddress MIB module ([RFC 4001](#))."

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutableAddressTopologySetEntry 1 }

olsrv2TibRoutableAddressTopologySetFromOrigIpAddr OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutableAddressTopologySetEntry 2 }

olsrv2TibRoutableAddressTopologySetDestIpAddrType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the olsrv2TibRouterTopologySetToOrigIpAddr,
as defined in the InetAddress MIB module ([RFC 4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutableAddressTopologySetEntry 3 }

olsrv2TibRoutableAddressTopologySetDestIpAddr OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

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. The TA_from_orig_addr
is defined by the tuple
(olsrv2TibRoutableAddressTopologySetFromOrigIpAddrType
olsrv2TibRoutableAddressTopologySetFromOrigIpAddr)."

REFERENCE


```
"RFC XXXX - The Optimized Link State Routing Protocol
  version 2, Clausen, T., Dearlove, C., Jacquet, P.
  and U. Herberg, March 2013."
 ::= { 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. The TA_from_orig_addr
        is defined by the tuple
        (olsrv2TibRoutableAddressTopologySetFromOrigIpAddressType
         olsrv2TibRoutableAddressTopologySetFromOrigIpAddress)."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2TibRoutableAddressTopologySetEntry 5 }

olsrv2TibRoutableAddressTopologySetMetricValue  OBJECT-TYPE
    SYNTAX      Olsrv2MetricValueCompressedFormTC
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the neighbor metric from the router
        with originator address TA_from_orig_addr (defined
        by the tuple
        (olsrv2TibRoutableAddressTopologySetFromOrigIpAddressType
         olsrv2TibRoutableAddressTopologySetFromOrigIpAddress))
        to the router with OLSRv2 interface address TA_dest_addr
        (defined by the tuple
        (olsrv2TibRoutableAddressTopologySetFromDestIpAddressType
         olsrv2TibRoutableAddressTopologySetFromDestIpAddress))."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2TibRoutableAddressTopologySetEntry 6 }

olsrv2TibRoutableAddressTopologySetExpireTime  OBJECT-TYPE
    SYNTAX      TimeStamp
    UNITS        "centiseconds"
    MAX-ACCESS  read-only
```



```
STATUS      current
DESCRIPTION
    "olsrv2TibRoutableAddressTopologySetExpireTime
    specifies the value of sysUptime when this entry
    SHOULD expire and be removed from the
    olsrv2TibRoutableAddressTopologySetTable."
REFERENCE
    "RFC XXXX - The Optimized Link State Routing Protocol
    version 2, Clausen, T., Dearlove, C., Jacquet, P.
    and U. Herberg, March 2013."
::= { olsrv2TibRoutableAddressTopologySetEntry 7 }

--
-- Attached Network Set
--

olsrv2TibAttNetworksSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2TibAttNetworksSetEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    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
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
    ::= { olsrv2StateGroup 10 }

olsrv2TibAttNetworksSetEntry OBJECT-TYPE
    SYNTAX      Olsrv2TibAttNetworksSetEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "It consists of Attached Network Tuples:

        (AN_orig_addr
         (olsrv2TibAttNetworksSetOrigIpAddrType,
          olsrv2TibAttNetworksSetOrigIpAddr),
         AN_net_addr
         (olsrv2TibAttNetworksSetNetIpAddrType,
          olsrv2TibAttNetworksSetNetIpAddr,
          olsrv2TibAttNetworksSetNetIpAddrPrefixLen),
         AN_seq_number (olsrv2TibAttNetworksSetSeqNo),
         AN_dist (olsrv2TibAttNetworksSetDist),
         AN_metric (olsrv2TibAttNetworksSetMetricValue),
```



```

    AN_time (olsrv2TibAttNetworksSetExpireTime)
)

```

OLSRv2 (RFC XXXX) defines the rules for managing entries within this table, e.g., populating and purging entries. Specific instructions for the `olsrv2TibRoutableAddressTopologySetEntry(s)` are found in [Section 10.4](#) and [Section 17](#) of OLSRv2 (RFC XXXX)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

```

INDEX { olsrv2TibAttNetworksSetOrigIpAddrType,
        olsrv2TibAttNetworksSetOrigIpAddr,
        olsrv2TibAttNetworksSetNetIpAddrType,
        olsrv2TibAttNetworksSetNetIpAddr,
        olsrv2TibAttNetworksSetNetIpAddrPrefixLen }
 ::= { olsrv2TibAttNetworksSetTable 1 }

```

`olsrv2TibAttNetworksSetEntry` ::=

```

SEQUENCE {
    olsrv2TibAttNetworksSetOrigIpAddrType
        InetAddressType,
    olsrv2TibAttNetworksSetOrigIpAddr
        InetAddress,
    olsrv2TibAttNetworksSetNetIpAddrType
        InetAddressType,
    olsrv2TibAttNetworksSetNetIpAddr
        InetAddress,
    olsrv2TibAttNetworksSetNetIpAddrPrefixLen
        InetAddressPrefixLength,
    olsrv2TibAttNetworksSetSeqNo
        Unsigned32,
    olsrv2TibAttNetworksSetDist
        Unsigned32,
    olsrv2TibAttNetworksSetMetricValue
        Olsrv2MetricValueCompressedFormTC,
    olsrv2TibAttNetworksSetExpireTime
        TimeStamp
}

```

`olsrv2TibAttNetworksSetOrigIpAddrType` OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 1 }

olsrv2TibAttNetworksSetOrigIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This is the originator address, of type
olsrv2TibAttNetworksSetOrigIpAddressType, of a
router which can act as gateway to the
network with address AN_net_addr. The
AN_net_addr is defined by the tuple
(olsrv2TibAttNetworksSetNetIpAddressType,
olsrv2TibAttNetworksSetNetIpAddress,
olsrv2TibAttNetworksSetNetIpAddressPrefixLen)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 2 }

olsrv2TibAttNetworksSetNetIpAddressType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of the olsrv2TibAttNetworksSetNetIpAddress,
as defined in the InetAddress MIB module ([RFC 4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 3 }

olsrv2TibAttNetworksSetNetIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This is is the network address, of type
olsrv2TibAttNetworksSetNetIpAddressType, of an
attached network, which may be reached via
the router with originator address AN_orig_addr.
The AN_orig_addr is defined by the tuple
(olsrv2TibAttNetworksSetOrigIpAddressType,
olsrv2TibAttNetworksSetOrigIpAddress)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 4 }

olsrv2TibAttNetworksSetNetIpAddressPrefixLen OBJECT-TYPE

SYNTAX InetAddressPrefixLength

UNITS "bits"

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Indicates the number of leading one bits that form the
mask to be logically ANDed with the destination address
before being compared to the value in the
olsrv2TibAttNetworksSetNetIpAddress field."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 5 }

olsrv2TibAttNetworksSetSeqNo OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is the greatest Assigned Neighbor Sequence
Number (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). The AN_orig_addr
is defined by the tuple
(olsrv2TibAttNetworksSetOrigIpAddressType,
olsrv2TibAttNetworksSetOrigIpAddress)."

Sequence numbers are used in the OLSRv2 protocol
for the purpose of discarding 'old' information,
i.e., messages received out of order. However

with a limited number of bits for representing sequence numbers, wrap-around (that the sequence number is incremented from the maximum possible value to zero) will occur. To prevent this from interfering with the operation of this protocol, the following MUST be observed when determining the ordering of sequence numbers.

The term MAXVALUE designates in the following one more than the largest possible value for a sequence number. For a 16 bit sequence number (as are those defined in this specification) MAXVALUE is 65536.

The sequence number S1 is said to be 'greater than' the sequence number S2 if:

- o S1 > S2 AND S1 - S2 < MAXVALUE/2 OR
- o S2 > S1 AND S2 - S1 > MAXVALUE/2

When sequence numbers S1 and S2 differ by MAXVALUE/2 their ordering cannot be determined. In this case, which should not occur, either ordering may be assumed.

Thus when comparing two messages, it is possible - even in the presence of wrap-around - to determine which message contains the most recent information."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

::= { olsrv2TibAttNetworksSetEntry 6 }

olsrv2TibAttNetworksSetDist OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "hops"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of hops to the network with address AN_net_addr from the router with originator address AN_orig_addr.

The AN_orig_addr is defined by the tuple (olsrv2TibAttNetworksSetOrigIpAddressType, olsrv2TibAttNetworksSetOrigIpAddress)."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol


```
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2TibAttNetworksSetEntry 7 }

olsrv2TibAttNetworksSetMetricValue OBJECT-TYPE
    SYNTAX      Olsrv2MetricValueCompressedFormTC
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The metric of the link from the router with
        originator address AN_orig_addr to the attached
        network with address AN_net_addr.
        The AN_net_addr is defined by the tuple
        (olsrv2TibAttNetworksSetNetIpAddressType,
         olsrv2TibAttNetworksSetNetIpAddress,
         olsrv2TibAttNetworksSetNetIpAddressPrefixLen)."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2TibAttNetworksSetEntry 9 }

olsrv2TibAttNetworksSetExpireTime OBJECT-TYPE
    SYNTAX      TimeStamp
    UNITS        "centiseconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "olsrv2TibAttNetworksSetExpireTime
        specifies the value of sysUptime when this
        entry SHOULD expire and be removed from the
        olsrv2TibAttNetworksSetTable."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
 ::= { olsrv2TibAttNetworksSetEntry 10 }

--
-- Routing Set
--

olsrv2TibRoutingSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Olsrv2TibRoutingSetEntry
    MAX-ACCESS   not-accessible
    STATUS       current
```


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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

```
::= { olsrv2StateGroup 11 }
```

```
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

"RFC XXXX - The Optimized Link State Routing Protocol version 2, Clausen, T., Dearlove, C., Jacquet, P. and U. Herberg, March 2013."

```
INDEX { olsrv2TibRoutingSetDestIpAddressType,
         olsrv2TibRoutingSetDestIpAddress,
         olsrv2TibRoutingSetDestIpAddressPrefixLen }
```

```
::= { olsrv2TibRoutingSetTable 1 }
```

```
Olsrv2TibRoutingSetEntry ::=
```

```
SEQUENCE {
```

```
    olsrv2TibRoutingSetDestIpAddressType
```

```
        InetAddressType,
```

```
    olsrv2TibRoutingSetDestIpAddress
```

```
        InetAddress,
```

```
    olsrv2TibRoutingSetDestIpAddressPrefixLen
```

```
        InetAddressPrefixLength,
```

```
    olsrv2TibRoutingSetNextIfIpAddressType
```

```
        InetAddressType,
```

```
    olsrv2TibRoutingSetNextIfIpAddress
```

```
        InetAddress,
```

```
    olsrv2TibRoutingSetLocalIfIpAddressType
```

```
        InetAddressType,
```

```
    olsrv2TibRoutingSetLocalIfIpAddress
```

```
        InetAddress,
```

```
    olsrv2TibRoutingSetDist
```

```
        Unsigned32,
```

```
    olsrv2TibRoutingSetMetricValue
```

```
        Olsrv2MetricValueCompressedFormTC
```



```
}
```

```
olsrv2TibRoutingSetDestIpAddressType OBJECT-TYPE
    SYNTAX      InetAddressType { ipv4(1) , ipv6(2) }
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The type of the olsrv2TibRoutingSetDestIpAddress,
        as defined in the InetAddress MIB module (RFC 4001).

        Only the values 'ipv4(1)' and 'ipv6(2)' are
        supported."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
::= { olsrv2TibRoutingSetEntry 1 }
```

```
olsrv2TibRoutingSetDestIpAddress OBJECT-TYPE
    SYNTAX      InetAddress (SIZE(4|16))
    MAX-ACCESS  not-accessible
    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
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
::= { olsrv2TibRoutingSetEntry 2 }
```

```
olsrv2TibRoutingSetDestIpAddressPrefixLen OBJECT-TYPE
    SYNTAX      InetAddressPrefixLength
    UNITS        "bits"
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Indicates the number of leading one bits that form the
        mask to be logically ANDed with the destination address
        before being compared to the value in the
        olsrv2TibRoutingSetDestIpAddress 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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutingSetEntry 3 }

olsrv2TibRoutingSetNextIfIpAddress OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The type of the olsrv2TibRoutingSetNextIfIpAddress,
as defined in the InetAddress MIB module ([RFC 4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutingSetEntry 4 }

olsrv2TibRoutingSetNextIfIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutingSetEntry 5 }

olsrv2TibRoutingSetLocalIfIpAddress OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The type of the olsrv2TibRoutingSetLocalIfIpAddress
and olsrv2TibRoutingSetNextIfIpAddress,
as defined in the InetAddress MIB module ([RFC 4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."
::= { olsrv2TibRoutingSetEntry 6 }

olsrv2TibRoutingSetLocalIfIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { 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

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2TibRoutingSetEntry 8 }

olsrv2TibRoutingSetMetricValue OBJECT-TYPE

SYNTAX Olsrv2MetricValueCompressedFormTC

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is the metric of the route
to the destination with address R_dest_addr."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { 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 each active local OLSRv2 interface.
        If the olsrv2InterfaceAdminStatus of the interface
        changes to 'disabled' then the row associated with this
        interface SHOULD be removed from this table."
    REFERENCE
        "RFC XXXX - The Optimized Link State Routing Protocol
        version 2, Clausen, T., Dearlove, C., Jacquet, P.
        and U. Herberg, March 2013."
    ::= { olsrv2PerformanceObjGrp 1 }

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

Olsrv2InterfacePerfEntry ::=
    SEQUENCE {
        olsrv2IfTcMessageXmits
            Counter32,
        olsrv2IfTcMessageRecvd
            Counter32,
        olsrv2IfTcMessageXmitAccumulatedSize
```



```
        Counter64,
    olsrv2IfTcMessageRecvdAccumulatedSize
        Counter64,
    olsrv2IfTcMessageTriggeredXmits
        Counter32,
    olsrv2IfTcMessagePeriodicXmits
        Counter32,
    olsrv2IfTcMessageForwardedXmits
        Counter32,
    olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount
        Counter32
}

olsrv2IfTcMessageXmits OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter is incremented each time a TC
         message has been transmitted on that interface."
 ::= { olsrv2InterfacePerfEntry 1 }

olsrv2IfTcMessageRecvd OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter is incremented each time a
         TC message has been received on that interface.
         This excludes all messages that are ignored due to
         OLSRv2 protocol procedures."
 ::= { olsrv2InterfacePerfEntry 2 }

olsrv2IfTcMessageXmitAccumulatedSize OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "octets"
    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 3 }

olsrv2IfTcMessageRecvdAccumulatedSize OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "octets"
```



```
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.
    This excludes all messages that are ignored due to
    OLSRv2 protocol procedures."
::= { olsrv2InterfacePerfEntry 4 }
```

```
olsrv2IfTcMessageTriggeredXmits  OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter is incremented each time a triggered
        TC message has been sent."
::= { olsrv2InterfacePerfEntry 5 }
```

```
olsrv2IfTcMessagePeriodicXmits  OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter is incremented each time a periodic
        TC message has been sent."
::= { olsrv2InterfacePerfEntry 6 }
```

```
olsrv2IfTcMessageForwardedXmits  OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter is incremented each time a
        TC message has been forwarded."
::= { olsrv2InterfacePerfEntry 7 }
```

```
olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount  OBJECT-TYPE
    SYNTAX      Counter32
    UNITS       "advertised MPR selectors"
    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 8 }
```

```
--
```

```
-- Objects concerning the Routing set
```

```
--
```

```
olsrv2RoutingSetRecalculationCount OBJECT-TYPE
```

```
    SYNTAX      Counter32
```

```
    UNITS        "recalculations"
```

```
    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
```

```
    UNITS        "recalculations"
```

```
    MAX-ACCESS   read-only
```

```
    STATUS       current
```

```
    DESCRIPTION
```

```
        "This counter increments each time the MPRs  
        of this router have been recalculated for  
        any of its interfaces."
```

```
::= { olsrv2PerformanceObjGrp 3 }
```

```
--
```

```
-- Notifications
```

```
--
```

```
olsrv2NotificationsObjects OBJECT IDENTIFIER ::=
```

```
    { olsrv2MIBNotifications 0 }
```

```
olsrv2NotificationsControl OBJECT IDENTIFIER ::=
```

```
    { olsrv2MIBNotifications 1 }
```

```
olsrv2NotificationsStates OBJECT IDENTIFIER ::=
```

```
    { olsrv2MIBNotifications 2 }
```


[illegible]


```
        olsrv2RoutingSetRecalculationCount -- Number
                                         -- of the
                                         -- routing set
                                         -- recalculations.
    }
    STATUS          current
    DESCRIPTION
        "The olsrv2RoutingSetRecalculationCountChange
        notification is generated when a significant number of
        routing set recalculations have occurred in a short time.
        This notification SHOULD be generated no more than once
        per olsrv2RoutingSetRecalculationCountWindow.
        The network administrator SHOULD select
        appropriate values for 'significant number of
        routing set recalculations' and 'short time' through
        the settings of the
        olsrv2RoutingSetRecalculationCountThreshold
        and olsrv2RoutingSetRecalculationCountWindow objects."
    ::= { olsrv2NotificationsObjects 3 }

olsrv2MPRSetRecalculationCountChange NOTIFICATION-TYPE
    OBJECTS { olsrv2OrigIpAddress, -- The address type of
                                         -- the originator of
                                         -- the notification.
        olsrv2OrigIpAddress,      -- The originator of
                                         -- the notification.
        olsrv2MPRSetRecalculationCount -- Number of
                                         -- MPR set
                                         -- recalculations.
    }
    STATUS          current
    DESCRIPTION
        "The olsrv2MPRSetRecalculationCountChange
        notification is generated when a significant
        number of MPR set recalculations occur in
        a short period of time. This notification
        SHOULD be generated no more than once
        per olsrv2MPRSetRecalculationCountWindow.
        The network administrator SHOULD select
        appropriate values for 'significant number of
        MPR set recalculations' and 'short period of
        time' through the settings of the
        olsrv2MPRSetRecalculationCountThreshold and
        olsrv2MPRSetRecalculationCountWindow objects."
    ::= { olsrv2NotificationsObjects 4 }

-- olsrv2NotificationsControl
```


olsrv2RoutingSetRecalculationCountThreshold OBJECT-TYPE

SYNTAX Integer32 (0..255)

UNITS "recalculations"

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
olsrv2RoutingSetRecalculationCountWindow,
then the olsrv2RoutingSetRecalculationCountChange
notification is to be generated.

It is RECOMMENDED that the value of this
threshold be set to at least 20 and higher
in dense topologies with frequent expected
topology changes."

DEFVAL { 20 }

::= { olsrv2NotificationsControl 1 }

olsrv2RoutingSetRecalculationCountWindow OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This object is used to determine whether to generate
an olsrv2RoutingSetRecalculationCountChange notification.
This object represents an interval from the present moment,
extending into the past, expressed in hundredths of
a second. If the change in the value of the
olsrv2RoutingSetRecalculationCount object during
this interval has exceeded the value of
olsrv2RoutingSetRecalculationCountThreshold, then
an olsrv2RoutingSetRecalculationCountChange notification
is generated.

It is RECOMMENDED that the value for this
window be set to at least 5 times the
nhdpHelloInterval (whose default value is
2 seconds."

DEFVAL { 1000 }

::= { olsrv2NotificationsControl 2 }

olsrv2MPRSetRecalculationCountThreshold OBJECT-TYPE

SYNTAX Integer32 (0..255)

UNITS "recalculations"

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
olsrv2MPRSetRecalculationCountWindow,
then the
olsrv2MPRSetRecalculationCountChange
notification is to be generated.

It is RECOMMENDED that the value of this
threshold be set to at least 20 and higher
in dense topologies with frequent expected
topology changes."

DEFVAL { 20 }

::= { olsrv2NotificationsControl 3 }

olsrv2MPRSetRecalculationCountWindow OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This object is used to determine whether to generate
an olsrv2MPRSetRecalculationCountChange notification.
This object represents an interval from the present moment,
extending into the past, expressed in hundredths of
a second. If the change in the value of the
olsrv2MPRSetRecalculationCount object during
that interval has exceeded the value of
olsrv2MPRSetRecalculationCountThreshold, then the
an olsrv2MPRSetRecalculationCountChange notification
is generated.

It is RECOMMENDED that the value for this
window be set to at least 5 times the
nhdpHelloInterval."

DEFVAL { 1000 }

::= { olsrv2NotificationsControl 4 }

olsrv2PreviousOrigIpAddressType OBJECT-TYPE

SYNTAX InetAddressType { ipv4(1) , ipv6(2) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The type of the olsrv2PreviousOrigIpAddress,
as defined in the InetAddress MIB module ([RFC 4001](#)).

Only the values 'ipv4(1)' and
'ipv6(2)' are supported.

This object MUST have the same persistence
characteristics as olsrv2PreviousOrigIpAddress."

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { olsrv2NotificationsStates 1 }

olsrv2PreviousOrigIpAddress OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The previous origination IP address
of this OLSRv2 router.

This object SHOULD be updated each time
the olsrv2OrigIpAddress is modified.

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

REFERENCE

"RFC XXXX - The Optimized Link State Routing Protocol
version 2, Clausen, T., Dearlove, C., Jacquet, P.
and U. Herberg, March 2013."

::= { 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 }
```

```
::= { olsrv2Compliances 2 }
```

```
--
```

```
-- Units of Conformance
```

```
--
```

```
olsrv2ConfigObjectsGroup OBJECT-GROUP
```

```
    OBJECTS {
```

```
        olsrv2AdminStatus,
        olsrv2InterfaceAdminStatus,
        olsrv2OrigIpAddrType,
        olsrv2OrigIpAddr,
        olsrv2OHoldTime,
        olsrv2TcInterval,
        olsrv2TcMinInterval,
        olsrv2THoldTime,
        olsrv2AHoldTime,
        olsrv2RxHoldTime,
        olsrv2PHoldTime,
        olsrv2FHoldTime,
        olsrv2TpMaxJitter,
        olsrv2TtMaxJitter,
        olsrv2FMaxJitter,
        olsrv2TcHopLimit,
        olsrv2WillFlooding,
        olsrv2WillRouting,
        olsrv2LinkMetricType
```

```
    }
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Objects to permit configuration of OLSRv2.
        All of these SHOULD be backed by non-volatile
        storage."
```

```
::= { olsrv2MIBGroups 1 }
```



```
olsrv2StateObjectsGroup  OBJECT-GROUP
    OBJECTS {
        olsrv2LibOrigSetExpireTime,
        olsrv2LibLocAttNetSetDistance,
        olsrv2LibLocAttNetSetMetricValue,
        olsrv2IibLinkSetInMetricValue,
        olsrv2IibLinkSetOutMetricValue,
        olsrv2IibLinkSetMprSelector,
        olsrv2Iib2HopSetInMetricValue,
        olsrv2Iib2HopSetOutMetricValue,
        olsrv2NibNeighborSetNOrigIpAddrType,
        olsrv2NibNeighborSetNOrigIpAddr,
        olsrv2NibNeighborSetNInMetricValue,
        olsrv2NibNeighborSetNOutMetricValue,
        olsrv2NibNeighborSetNWillFlooding,
        olsrv2NibNeighborSetNWillRouting,
        olsrv2NibNeighborSetNFloodingMpr,
        olsrv2NibNeighborSetNRoutingMpr,
        olsrv2NibNeighborSetNMprSelector,
        olsrv2NibNeighborSetNAdvertised,
        olsrv2NibNeighborSetTableAnsn,
        olsrv2TibAdRemoteRouterSetMaxSeqNo,
        olsrv2TibRouterTopologySetSeqNo,
        olsrv2TibRouterTopologySetMetricValue,
        olsrv2TibRoutableAddressTopologySetExpireTime,
        olsrv2TibRoutableAddressTopologySetSeqNo,
        olsrv2TibRoutableAddressTopologySetMetricValue,
        olsrv2TibAttNetworksSetSeqNo,
        olsrv2TibAttNetworksSetDist,
        olsrv2TibAttNetworksSetMetricValue,
        olsrv2TibAttNetworksSetExpireTime,
        olsrv2TibRoutingSetNextIfIpAddrType,
        olsrv2TibRoutingSetNextIfIpAddr,
        olsrv2TibRoutingSetLocalIfIpAddrType,
        olsrv2TibRoutingSetLocalIfIpAddr,
        olsrv2TibRoutingSetDist,
        olsrv2TibRoutingSetMetricValue
    }
    STATUS      current
    DESCRIPTION
        "Objects to permit monitoring of OLSRv2 state."
 ::= { olsrv2MIBGroups 2 }
```

```
olsrv2PerfObjectsGroup  OBJECT-GROUP
    OBJECTS {
        olsrv2IfTcMessageXmits,
        olsrv2IfTcMessageRecvd,
        olsrv2IfTcMessageXmitAccumulatedSize,
```



```
    olsrv2IfTcMessageRecvdAccumulatedSize,
    olsrv2IfTcMessageTriggeredXmits,
    olsrv2IfTcMessagePeriodicXmits,
    olsrv2IfTcMessageForwardedXmits,
    olsrv2IfTcMessageXmitAccumulatedMPRSelectorCount,
    olsrv2RoutingSetRecalculationCount,
    olsrv2MPRSetRecalculationCount
}
STATUS      current
DESCRIPTION
    "Objects to support monitoring of OLSRv2 performance."
::= { olsrv2MIBGroups 3 }

olsrv2NotificationsObjectsGroup OBJECT-GROUP
OBJECTS {
    olsrv2RoutingSetRecalculationCountThreshold,
    olsrv2RoutingSetRecalculationCountWindow,
    olsrv2MPRSetRecalculationCountThreshold,
    olsrv2MPRSetRecalculationCountWindow,
    olsrv2PreviousOrigIpAddrType,
    olsrv2PreviousOrigIpAddr
}
STATUS      current
DESCRIPTION
    "Objects to support the notification types in the
    olsrv2NotificationsGroup. Some of these appear in
    notification payloads, others serve to control
    notification generation."
::= { olsrv2MIBGroups 4 }

olsrv2NotificationsGroup NOTIFICATION-GROUP
NOTIFICATIONS {
    olsrv2RouterStatusChange,
    olsrv2OrigIpAddrChange,
    olsrv2RoutingSetRecalculationCountChange,
    olsrv2MPRSetRecalculationCountChange
}
STATUS current
DESCRIPTION
    "Notification types to support management of OLSRv2."
::= { 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:

- o `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.
- o `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.
- o `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.
- o `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.
- o `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.
- o `olsrv2LinkMetricType` - defines the type of the link metric that a router uses (e.g., ETX or hop-count). Whenever this value

changes, all link metric information recorded by the router is invalid, causing a reset of information acquired from other routers in the MANET. Moreover, if `olsrv2LinkMetricType` on a router is set to a value that is not known to other routers in the MANET, these routers will not be able to establish routes to that router or transiting that router. Existing routes to the router with a `olsrv2LinkMetricType` unknown to other routers in the MANET will be removed.

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 `olsrv2TibRouterTopologySetTable` - The contains information on the topology of the MANET, specifically the IP address of the routers in the MANET (as identified by `olsrv2TibRouterTopologySetFromOrigIpAddress` and `olsrv2TibRouterTopologySetToOrigIpAddress` objects). This information provides an adversary broad information on the members of the MANET, located within this single table. This information can be used to expedite attacks on the other members of the MANET without having to go through a laborious discovery process on their own.

Some of the Tables in this MIB AUGMENT Tables defined in NHDP-MIB [[RFC6779](#)]. Hence, care must be taken in configuring access control here in order make sure that the permitted permissions granted for the AUGMENT-ing Tables here are consistent with the access controls permitted within the NHDP-MIB. The below list identifies the AUGMENT-ing Tables and their NHDP-MIB counterparts. It is recommend that access control policies for these Table pairs are consistently set.

- o The `olsrv2InterfaceTable` AUGMENTS the `nhdpInterfaceTable`.
- o The `olsrv2IibLinkSetTable` AUGMENTS the `nhdpIibLinkSetTable`.
- o The `olsrv2Iib2HopSetTable` AUGMENTS the `nhdpIib2HopSetTable`.
- o The `olsrv2NibNeighborSetTable` AUGMENTS the `nhdpNibNeighborSetTable`.
- o The `olsrv2InterfacePerfTable` AUGMENTS the `nhdpInterfacePerfTable`.

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.

Implementations SHOULD provide the security features described by the SNMPv3 framework (see [[RFC3410](#)]), and implementations claiming compliance to the SNMPv3 standard MUST include full support for authentication and privacy via the User-based Security Model (USM) [[RFC3414](#)] with the AES cipher algorithm [[RFC3826](#)]. Implementations MAY also provide support for the Transport Security Model (TSM) [[RFC5591](#)] in combination with a secure transport such as SSH [[RFC5592](#)] or TLS/DTLS [[RFC6353](#)].

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. Applicability Statement

This document describes objects for configuring parameters of the Optimized Link State Routing version 2 (OLSRv2) Protocol [[OLSRv2](#)] process on a router. This MIB module, denoted OLSRv2-MIB, also reports state, performance information and notifications. The OLSRv2 protocol relies upon information gathered via the Neighborhood Discovery Protocol [[RFC6130](#)] in order to perform its operations. The NHDP protocol is managed via the NHDP-MIB [[RFC6779](#)].

MANET deployments can greatly differ in aspects of dynamics of the topology, capacity and loss rates of underlying channels, traffic flow directions, memory and CPU capacity of routers etc. SNMP and therefore this MIB module are only applicable for a subset of MANET deployments, in particular deployments:

- o In which routers have enough memory and CPU resources to run SNMP and expose the MIB module.

- o Where a network management station (NMS) is defined to which notifications are generated, and from which routers can be managed.
- o Where this NMS is reachable from routers in the MANET most of the time (as notifications to the NMS and management information from the NMS to the router will be lost when connectivity is temporarily lost). This requires that the topology of the MANET is only moderately dynamic.
- o Where the underlying wireless channel supports enough bandwidth to run SNMP, and where loss rates of the channel are not exhaustive.

Certain MANET deployments, such as community networks with non-mobile routers, dynamic topology because of changing link quality, and a pre-defined gateway (that could also serve as NMS), are examples of networks applicable for this MIB module. Other, more constrained deployments of MANETs may not be able to run SNMP and require different management protocols.

Some level of configuration, i.e., read-write objects, is desirable for OLSRv2 deployments. Topology related configuration such as the ability to enable OLSRv2 on new interfaces or initially configure OLSRv2 on a router's interfaces through the `olsrv2InterfaceAdminStatus` object is critical to initial system startup. The OLSRv2 protocol allows for some level of performance tuning through various protocol parameters and this MIB module allows for configuration of those protocol parameters through read-write objects such as the `olsrv2TcHopLimit` or the `olsrv2FMaxJitter`. Other read-write objects allow for the control of Notification behavior through this MIB module, e.g., the `olsrv2RoutingSetRecalculationCountThreshold` object. A fuller discussion of MANET network management applicability is to be provided elsewhere [[USE-CASES](#)].

10. IANA Considerations

The RFC editor should remove the specification of the `IANAolsrv2LinkMetricType`-MIB found in [Appendix A](#) upon publication of the OLSRv2-MIB. Further, IANA should take over the `IANAolsrv2LinkMetricType`-MIB and keep it synchronized with the registry identified below within the `IANAolsrv2LinkMetricType` TEXTUAL-CONVENTION.

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

Descriptor	OBJECT IDENTIFIER value
-----	-----
OLSRv2-MIB	{ mib-2 ZZZZ }
IANA EDITOR NOTE: please assign ZZZZ	

11. Acknowledgements

The authors would like to thank Randy Presuhn, Benoit Claise, Adrian Farrel, as well as the entire MANET WG for reviews of this document.

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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[Appendix A.](#) [Appendix A:](#)

This appendix contains the IANAolsrv2LinkMetricType-MIB module defined by this specification below. The RFC editor should remove this specification of the IANAolsrv2LinkMetricType-MIB upon publication of the OLSRv2-MIB. Further, IANA should take over the IANAolsrv2LinkMetricType-MIB and to keep it synchronized with the registry identified below within the IANAolsrv2LinkMetricType TEXTUAL-CONVENTION.

```
IANAolsrv2LinkMetricType-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    MODULE-IDENTITY, mib-2
        FROM SNMPv2-SMI
    TEXTUAL-CONVENTION
        FROM SNMPv2-TC;
```

```
ianaolsrv2LinkMetricType MODULE-IDENTITY
```

```
    LAST-UPDATED "201306240000Z" -- June 24, 2013
```

```
    ORGANIZATION "IANA"
```

```
    CONTACT-INFO "Internet Assigned Numbers Authority
```

```
        Postal: ICANN
```

```
                4676 Admiralty Way, Suite 330
```

```
                Marina del Rey, CA 90292
```

```
        Tel:    +1 310 823 9358
```

```
        E-Mail: iana@iana.org"
```

```
DESCRIPTION "This MIB module defines the
    IANAolsrv2LinkMetricType Textual
    Convention, and thus the enumerated values of
    the olsrv2LinkMetricType object defined in
    the OLSRv2-MIB."
```

```
REVISION    "201306240000Z" -- June 24, 2013
```

```
DESCRIPTION "Initial version of this MIB as published in
    RFC KKKK."
```

```
::= { mib-2 kkkk }
```

```
IANAolsrv2LinkMetricTypeTC ::= TEXTUAL-CONVENTION
```

```
    STATUS      current
```

```
DESCRIPTION
```

```
    "This data type is used as the syntax of the
    olsrv2LinkMetricType object in the definition
    of the OLSRv2-MIB module."
```


The olsrv2LinkMetricType corresponds to LINK_METRIC_TYPE of OLSRV2 (RFC XXXX). OLSRV2 uses bidirectional additive link metrics to determine shortest distance routes (i.e., routes with smallest total of link metric values).

OLSRv2 has established a registry for the LINK_METRIC_TYPES (denoted 'LINK_METRIC Address Block TLV Type Extensions'):

[http://www.iana.org/assignments/manet-parameters/
manet-parameters.xml#
link-metric-address-block-tlv-type-extension](http://www.iana.org/assignments/manet-parameters/manet-parameters.xml#link-metric-address-block-tlv-type-extension)

This is done in [Section 24.5](#) in OLSRV2 (RFC XXXX). The LINK_METRIC_TYPE (which has as corresponding object in the MIB module olsrv2LinkMetricType) corresponds to the type extension of the LINK_METRIC TLV that is set up in the 'LINK_METRIC Address Block TLV Type Extensions' registry. Whenever new link metric types are added to that registry, IANA MUST update this textual convention accordingly.

The definition of this textual convention with the addition of newly assigned values is published periodically by the IANA, in either the Assigned Numbers RFC, or some derivative of it specific to Internet Network Management number assignments. (The latest arrangements can be obtained by contacting the IANA.)

Requests for new values should be made to IANA via email (iana@iana.org).

```
SYNTAX  INTEGER {  
    unknown(0)      -- Link metric meaning assigned  
                    --      by administrative action  
                    -- 1-223 Unassigned  
                    -- 224-255 Reserved for  
                    --      Experimental Use  
}
```

END

Appendix B. Note to the RFC Editor

```
*****
* Note to the RFC Editor (to be removed prior to publication) *
*                                                                 *
* 1) The reference to RFCYYYY 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 RFCXXXX throughout this document point *
* to the current draft-ietf-manet-olsrv2-xx.txt. This *
* needs to be replaced with the XXXX RFC number for the *
* OLSRV2 publication.                                         *
*                                                                 *
* 3) Appendix A contains the IANAolsrv2LinkMetricType-MIB *
* module which is defined by this specification in the *
* appendix. The RFC editor should remove this specification *
* of the IANAolsrv2LinkMetricType-MIB upon publication of *
* the OLSRV2-MIB. Further, IANA should take over the *
* IANAolsrv2LinkMetricType-MIB and keep it synchronized *
* with the registry identified within the contained *
* IANAolsrv2LinkMetricType TEXTUAL-CONVENTION. *
*                                                                 *
*****
```

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