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Jeff Parker, Editor  
Axiowave Networks  
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Management Information Base for IS-IS  
<[draft-ietf-isis-wg-mib-26.txt](#)>

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## Abstract

This document describes a management information base for the IS-IS Routing protocol when it is used to construct routing tables for IP networks.

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community.

This memo is based on an IETF draft by Chris Gunner. This version has been modified to include MIB-II syntax, to exclude portions of the protocol that are not relevant to IP, such as the ES-IS protocol, and to add management support for current practice.

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## [1.](#) The Internet-Standard Management Framework

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

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB

module that is compliant to the SMIV2, which is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)]

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## [2](#). Overview

This document describes a management information base for the IS-IS Routing protocol as described in ISO 10589 [[ISO10589](#)], when it is used to construct routing tables for IP networks, as described in [RFC 1195](#) [[RFC1195](#)]. The objects are mainly derived from the GDMO definitions in ISO 10589 and from the GDMO definitions in ISO 10733 [[ISO10733](#)]. There are also additional objects to manage the IP-specific functionality of Integrated IS-IS operation.

This MIB imports definitions from SNMPv2-TC [[RFC2579](#)], SNMPv2-SMI [[RFC2578](#)], SNMPv2-CONF [[RFC2580](#)], SNMP-FRAMEWORK-MIB [[RFC3411](#)], DIFFSERV-MIB [[RFC3289](#)], IF-MIB [[RFC2863](#)], and INET-ADDRESS-MIB [[RFC4001](#)]. See the imports section of the MIB for the specific items imported.

This MIB defines some objects to manage Mesh Groups, described in [[RFC2973](#)] and a three-way handshake for point-to-point adjacencies described in [[RFC3373](#)].

The IS-IS MIB defines the following objects:

### System-wide Attributes

#### - isisSystem

This table contains information specific to a single instance of the IS-IS protocol running on a router.

#### - isisManAreaAddr

This table includes area addresses manually configured which are used to control the associations formed between Level 1 Intermediate Systems.

- isisAreaAddr

This table includes area addresses reported in relevant L1 LSPs.

- isisSummAddr

This table holds summary addresses configured for each Level 2 instance of the IS-IS protocol running on a router.

- isisRedistributeAddr

This table provides criteria to decide if a route should be

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leaked from L2 to L1 when Domain Wide Prefix leaking is enabled.

- isisRouter

This table holds the hostname and router ID for Intermediate Systems in the network.

- isisSysLevel

This table contains information specific to a domain (Level 2) or an area (Level 1) of the IS-IS protocol.

- isisNextCircIndex

This scalar is used to provide a unique circuit index.

## Circuit-specific Attributes

- isisCirc

This table contains information specific to a point-to-point or a broadcast interface in the system.

- isisCircLevel

This table contains information specific to a one Level 1 or

Level 2 of an interface.

## Counters

- isisSystemCounter

Counters in the System table, such as times we have wrapped a sequence counter on one of our Link State PDUs.

- isisCircuitCounter

Counters of events particular to a circuit, such as PDUs with an illegal value of the System ID field length.

- isisPacketCounter

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Counts of ISIS Protocol PDUs broken down into packet type.

## Attributes associated with an Adjacency

- isisISAdj

This table contains information about adjacencies to routers maintained by the protocol. Entries in this table cannot be created by management action: they are established through the Hello protocol.

- isisISAdjAreaAddr

This table contains the set of Area Addresses of neighboring Intermediate Systems as reported in IIH PDUs.

- isisISAdjIPAddr

This table contains the set of IP Addresses of neighboring Intermediate Systems as reported in received IIH PDUs.

- isisISAdjProtSupp

This table contains the set of protocols supported by neighboring Intermediate Systems as reported in received IIH PDUs.

#### Attributes associated with addresses

- isisRA

The Reachable Address Table.

This table contains information about an address prefix manually configured on the system or learned through another protocol.

- isisIPRA

The IP Reachable Address Table.

This table contains information about IP reachable address manually configured on this system or learned from another protocol.

#### Attributes associated with Link State PDU Table

- isisLSPSummaryTable

The Link State PDU Summary Table

This table contains information contained in the headers of Link State PDUs stored by the system.

- isisLSPTLVTable

The Link State PDU TLV Table

This table holds the sequence of TLVs that make up an LSP fragment.

#### Attributes associated with a Notification

##### - isisNotification

This table defines attributes that will be included when reporting IS-IS notifications.

### [3. Conventions](#)

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

### [4. Definition of IS-IS MIB](#)

```
ISIS-MIB DEFINITIONS ::= BEGIN
    IMPORTS
        TEXTUAL-CONVENTION, RowStatus, TruthValue, TimeStamp
            FROM SNMPv2-TC                      -- RFC2579
        MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE,
```

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```
        Unsigned32, Counter32, mib-2
            FROM SNMPv2-SMI                      -- RFC2578
        MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
            FROM SNMPv2-CONF                      -- RFC2580
        SnmpAdminString
            FROM SNMP-FRAMEWORK-MIB              -- RFC2571
        IndexInteger, IndexIntegerNextFree
            FROM DIFFSERV-MIB                    -- RFC3289
```

InterfaceIndex  
FROM IF-MIB -- [RFC2863](#)  
InetAddressType, InetAddress, InetAddressPrefixLength  
FROM INET-ADDRESS-MIB; -- [RFC3291](#)

isisMIB MODULE-IDENTITY

LAST-UPDATED "200512261200Z" -- December 26, 2005, noon  
ORGANIZATION "IETF IS-IS for IP Internets Working Group"  
CONTACT-INFO

"IS-IS for IP Internets working Group  
<http://www.ietf.org/html.charters/isis-charter.html>  
[isis-wg@ietf.org](mailto:isis-wg@ietf.org)

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DESCRIPTION

"This document describes a management information base for the IS-IS Routing protocol, as described in ISO 10589, when it is used to construct routing tables for IP networks, as described in [RFC 1195](#).

This document is based on a 1994 IETF draft by Chris Gunner. This version has been modified to include current syntax, to exclude portions of the protocol that are not relevant to IP, and to add management support for current practice.

Copyright (C) The Internet Society (2005). This version of this MIB module is part of RFC 0DDD; see the RFC itself for full legal notices."

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DESCRIPTION

"Initial version, published as RFC 0DDD."

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```

-- RFC Editor - please Replace with proper IANA Value

-- Top-level structure of the MIB

isisNotifications      OBJECT IDENTIFIER ::= { isisMIB 0 }
isisObjects            OBJECT IDENTIFIER ::= { isisMIB 1 }
isisConformance        OBJECT IDENTIFIER ::= { isisMIB 2 }

-- OBJECT IDENTIFIER definitions

-- System wide attributes.
isisSystem OBJECT IDENTIFIER ::= { isisObjects 1 }

-- Attributes associated with the domain or with the area.
isisSysLevel OBJECT IDENTIFIER ::= { isisObjects 2 }

-- Attributes associated with one Circuit
isisCirc OBJECT IDENTIFIER ::= { isisObjects 3 }

-- Attributes associated with area or domain relevant within a Circuit.
isisCircLevelValues OBJECT IDENTIFIER ::= { isisObjects 4 }

-- System and circuit counters.
isisCounters OBJECT IDENTIFIER ::= { isisObjects 5 }

-- Attributes associated with an adjacent Protocol Peer.
isisISAdj OBJECT IDENTIFIER ::= { isisObjects 6 }

-- Attributes associated with a configured address.
isisReachAddr OBJECT IDENTIFIER ::= { isisObjects 7 }

-- Attributes associated with IP routes learned by
-- configuration or through another protocol.
isisIPReachAddr OBJECT IDENTIFIER ::= { isisObjects 8 }

-- The collection of Link State PDUs known to the Intermediate System
isisLSPDataBase OBJECT IDENTIFIER ::= { isisObjects 9 }

-- Objects included in Notifications.
isisNotification OBJECT IDENTIFIER ::= { isisObjects 10 }

-- Type definitions

    IsisOSINSAddress ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION

```

"OSI Network Service Address, e.g. NSAP, SNPA, or Network Entity Title"

SYNTAX OCTET STRING (SIZE(0..20))

IsisSystemID ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The ID for an Intermediate System. This should be unique within a network, and is included in all PDUs originated by an Intermediate System. The protocol does not place any meanings upon the bits, other than using ordering to break ties in electing a Designated IS on a LAN."

REFERENCE "{ISIS.aoi systemId (119)}"

SYNTAX OCTET STRING (SIZE(6))

IsisLinkStatePDUID ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The 8 byte Link State PDU (LSP) ID, consisting of the 6 byte SystemID of the originating IS, a one byte PseudoNode ID which is 0 unless the LSP represents the topology of a LAN, and one byte LSP fragment number that are issued in sequence, starting with 0. Non zero PseudoNode IDs need to be unique to the IS, but need not match the IfIndex."

REFERENCE "{See [section 9.8](#) of ISO 10589}"

SYNTAX OCTET STRING (SIZE(8))

IsisAdminState ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Type used in enabling and disabling a row."

SYNTAX INTEGER

```
{
    on(1),
    off(2)
}
```

IsisLSPBuffSize ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"Integer sub range for maximum LSP size."

```
IsisLevelState ::= TEXTUAL-CONVENTION
    STATUS current
    DESCRIPTION
        "States of the IS-IS protocol."
    SYNTAX INTEGER
        {
            off (1),
            on (2),
            waiting (3),
            overloaded(4)
        }
```

```
IsisSupportedProtocol ::= TEXTUAL-CONVENTION
    STATUS current
    DESCRIPTION
        "Types of network protocol supported by Integrated IS-IS.
        The values for ISO8473 and IP are those registered for
        these protocols in ISO TR9577."
    REFERENCE "{See section 5.3.1 of RFC 1195}"
    SYNTAX INTEGER
        {
            iso8473(129),
            ipV6(142),
            ip(204)
        }
```

```
IsisDefaultMetric ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS current
    DESCRIPTION
        "Integer sub-range for default metric for single hop.
        ISO 10589 provides for 4 types of metric. Only the
        'default' metric is used in practice."
    REFERENCE "{See section 7.2.2 of ISO 10589}"
    SYNTAX Unsigned32 (0..63)
```

```
IsisWideMetric ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS current
```

DESCRIPTION

"Wide Metric for IS Neighbors. ISO 10589 provides a 6 bit metric. Traffic Engineering extensions provide 24 bit metrics."

REFERENCE "{See [section 3 of RFC 3784](#)}"

SYNTAX Unsigned32 (0..16777215)

IsisFullMetric ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

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STATUS current

DESCRIPTION

"Full Metric for IP Routes. Traffic Engineering extensions provide 32 bit metrics."

REFERENCE "{See [section 4 of RFC 3784](#)}"

SYNTAX Unsigned32

IsisMetricType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Is this an Internal or External Metric?"

REFERENCE "{See [section 7.2.2](#) of ISO 10589}"

SYNTAX INTEGER

```
{
    internal(1),
    external(2)
}
```

IsisMetricStyle ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Do we use [RFC 1195](#) style metrics or wide metrics?"

REFERENCE "{See [section 5 of RFC 3787](#)}"

SYNTAX INTEGER

```
{
    narrow(1),
    wide(2),
    both(3)
}
```

IsisISLevel ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Identifies a level."

REFERENCE "{See definitions 3.6.1 and 3.6.11 of ISO 10589}"

SYNTAX INTEGER

```
{
    area(1),          -- L1
    domain(2)         -- L2
}
```

IsisLevel ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Identifies one or more levels."

REFERENCE "{See definitions 3.6.1 and 3.6.11 of ISO 10589}"

SYNTAX INTEGER

```
{
```

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```
    level1(1),
    level2(2),
    level1and2(3)
}
```

IsisPDUHeader ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A block to contain the header from a PDU."

SYNTAX OCTET STRING (SIZE(0..64))

IsisCircuitID ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"ID for a circuit."

REFERENCE "{See [section 7.2.7](#) of ISO 10589}"

SYNTAX OCTET STRING (SIZE(0|7))

IsisISPriority ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"Integer sub-range for IS-IS priority."

REFERENCE "{See [section 9.5](#) of ISO 10589}"

SYNTAX Unsigned32 (0..127)

IsisUnsigned16TC ::= TEXTUAL-CONVENTION  
    DISPLAY-HINT "d"  
    STATUS current  
    DESCRIPTION  
        "An Unsigned32 further restricted to 16 Bits. Note that  
        the ASN.1 BER encoding may still require 24 Bits for  
        some values."  
    SYNTAX Unsigned32 (0..65535)

IsisUnsigned8TC ::= TEXTUAL-CONVENTION  
    DISPLAY-HINT "d"  
    STATUS current  
    DESCRIPTION  
        "An Unsigned32 further restricted to 8 Bits. Note that  
        the ASN.1 BER encoding may still require 16 Bits for  
        some values."  
    SYNTAX Unsigned32 (0..255)

-- Behavior Definitions

-- ResettingTimer behavior definition

--

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-- "This behavior applies to objects that specify the interval  
-- between events in the operation of the protocol state machine.  
-- If the value of such an object is set to a new value while  
-- the protocol state machine is in operation, the implementation  
-- shall take the necessary steps to ensure that for any time  
-- interval which was in progress when the value of the  
-- corresponding object was changed, the next expiration of that  
-- interval takes place the specified time after the original  
-- start of that interval, or immediately, whichever is later.  
-- The precision with which this time shall be implemented shall  
-- be the same as that associated with the basic operation of  
-- the timer object."

-- ReplaceOnlyWhileDisabled behavior definition

-- "This behavior applies to objects that may not be modified  
-- while the corresponding table row's variable of type  
-- IsisAdminState is in state on."

```

-- ManualOrAutomatic behavior definition
-- "This behavior applies to objects that are read-write
-- if the object was created manually.  Objects that were
-- created automatically that have this behavior are
-- read-only.

isisSysObject OBJECT IDENTIFIER ::= { isisSystem 1 }

isisSysVersion OBJECT-TYPE
    SYNTAX INTEGER
        {
            unknown(0),
            one(1)
        }
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The version number of the IS-IS protocol that
        is implemented."
    REFERENCE "{ISIS.aoi version (1)}"
    DEFVAL { one }
    ::= { isisSysObject 1 }

isisSysLevelType OBJECT-TYPE
    SYNTAX IsisLevel
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "At which levels is the Intermediate System
        running? This object may not be modified when

```

the isisSysAdminState variable is in state 'on'  
for this Intermediate System.

```

    Configured values MUST survive an agent reboot."
    REFERENCE "{ISIS.aoi iSType (2)}"
    DEFVAL { level1and2 }
    ::= { isisSysObject 2 }

isisSysID OBJECT-TYPE
    SYNTAX IsisSystemID
    MAX-ACCESS read-write

```

STATUS current  
DESCRIPTION  
    "The ID for this Intermediate System.  
    This value is appended to each of the  
    area addresses to form the Network Entity Titles.  
    The derivation of a value for this object is  
    implementation-specific. Some implementations may  
    automatically assign values and not permit an  
    SNMP write, while others may require the value  
    to be set manually.

    Configured values MUST survive an agent reboot."  
REFERENCE "{ISIS.aoi systemId (119)}"  
::= { isisSysObject 3 }

isisSysMaxPathSplits OBJECT-TYPE  
SYNTAX Unsigned32 (1..32)  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "Maximum number of paths with equal routing metric value  
    which it is permitted to split between. This object  
    may not be modified when the isisSysAdminState variable  
    is in state 'on' for this Intermediate System.

    Configured values MUST survive an agent reboot."  
REFERENCE "{ISIS.aoi maximumPathSplits (3)}"  
DEFVAL { 2 }  
::= { isisSysObject 4 }

isisSysMaxLSPGenInt OBJECT-TYPE  
SYNTAX Unsigned32 (1..65235)  
UNITS "seconds"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "Maximum interval, in seconds, between generated LSPs

by this Intermediate System. This object follows  
the ResettingTimer behavior. The value must be  
greater than any value configured for  
isisSysLevelMinLSPGenInt, and should be at least 300



seconds less than isisSysMaxAge.

Configured values MUST survive an agent reboot."  
REFERENCE "{ISIS.aoi maximumLSPGenerationInterval (6)}"  
DEFVAL { 900 }  
::= { isisSysObject 5 }

isisSysPolleSHelloRate OBJECT-TYPE  
SYNTAX IsisUnsigned16TC (1..65535)  
UNITS "seconds"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "The value, in seconds, to be used for the suggested ES  
    configuration timer in ISH PDUs when soliciting the ES  
    configuration.

Configured values MUST survive an agent reboot."  
REFERENCE "{ISIS.aoi polleSHelloRate (13)}"  
DEFVAL { 50 }  
::= { isisSysObject 6 }

isisSysWaitTime OBJECT-TYPE  
SYNTAX IsisUnsigned16TC (1..65535)  
UNITS "seconds"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "Number of seconds to delay in state 'waiting' before  
    entering the state 'on'. This object follows the  
    ResettingTimer behavior.

Configured values MUST survive an agent reboot."  
REFERENCE "{ISIS.aoi waitingTime (15)}"  
DEFVAL { 60 }  
::= { isisSysObject 7 }

isisSysAdminState OBJECT-TYPE  
SYNTAX IsisAdminState  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "The administrative state of this Intermediate  
    System. Setting this object to the value 'on'

when its current value is 'off' enables  
the Intermediate System.

Configured values MUST survive an agent reboot."  
DEFVAL { off }  
::= { isisSysObject 8 }

isisSysL2toL1Leaking OBJECT-TYPE  
SYNTAX TruthValue  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "If true, allow the router to leak L2 routes into L1.  
  
    Configured values MUST survive an agent reboot."  
DEFVAL { false }  
::= { isisSysObject 9 }

isisSysMaxAge OBJECT-TYPE  
SYNTAX IsisUnsigned16TC (350..65535)  
UNITS "seconds"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "Value to place in RemainingLifeTime field of  
    the LSPs we generate.  
    This should be at least 300 seconds greater than  
    isisSysMaxLSPGenInt.  
  
    Configured values MUST survive an agent reboot."  
DEFVAL { 1200 }  
::= { isisSysObject 10 }

isisSysReceiveLSPBufferSize OBJECT-TYPE  
SYNTAX IsisUnsigned16TC (1492..16000)  
UNITS "bytes"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
    "Size of the largest Buffer we are designed or  
    configured to store. This should be at least  
    as big as the maximum isisSysLevelOrigLSPBuffSize  
    supported by the system.  
  
    If resources allow, we will store and flood LSPs  
    larger than isisSysReceiveLSPBufferSize, as this  
    can help avoid problems in networks with different

values for isisSysLevelOrigLSPBuffSize.

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```
        Configured values MUST survive an agent reboot."
    DEFVAL { 1492 }
    ::= { isisSysObject 11 }

isisSysProtSupported OBJECT-TYPE
    SYNTAX BITS {
        iso8473 (0),
        ipv4 (1),
        ipv6 (2)
    }
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This attribute contains the set of protocols
        supported by this Intermediate System."
    ::= { isisSysObject 12 }

isisSysNotificationEnable OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "If this object is set to true(1), then it enables
        the emission of IS-IS Notifications.  If it is
        set to false(2), these notifications are not sent.

        Configured values MUST survive an agent reboot."
    DEFVAL { true }
    ::= { isisSysObject 13 }
```

-- The Level 1 Manual Area Address Table

```
isisManAreaAddrTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisManAreaAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The set of manual area addresses configured on this
        Intermediate System."
```

At least one row in which the value of  
isisManAreaAddrExistState is active must be present.  
The maximum number of rows in this table for for  
which the object isisManAreaAddrExistState has the  
value active is 3.

An attempt to create more 3 rows of isisManAreaAddrEntry  
with state 'active' in one instance of the IS-IS protocol

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```
        should return inconsistentValue."
REFERENCE "{ISIS.aoi manualAreaAddresses (10)}"
 ::= { isisSystem 2 }

isisManAreaAddrEntry OBJECT-TYPE
    SYNTAX IsisManAreaAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry contains one area address manually configured
        on this system.
```

```
        Dynamically created rows MUST survive an agent reboot."
    INDEX { isisManAreaAddr }
 ::= { isisManAreaAddrTable 1 }
```

```
IsisManAreaAddrEntry ::=
    SEQUENCE {
        isisManAreaAddr
            IsisOSINSAddress,
        isisManAreaAddrExistState
            RowStatus
    }
```

```
isisManAreaAddr OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "A manually configured area address for this system.
```

Note: an index for the entry {1, {49.0001} active} in  
this table would be the ordered pair

(1, (0x03 0x49 0x00 0x01)), as the length of an Octet string is part of the OID."  
 ::= { isisManAreaAddrEntry 1 }

isisManAreaAddrExistState OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The state of the isisManAreaAddrEntry. If the isisSysAdminState for this Intermediate System is 'on', and an attempt is made to set this object to the value 'destroy' or 'notInService' when this is the only isisManAreaAddrEntry in state 'active' for this Intermediate System should return inconsistentValue.

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A row entry cannot be modified when the value of this object is 'active'.  
 ::= { isisManAreaAddrEntry 2 }

-- The Level 1 Area Address Table

-- The Level 1 Area Address Table contains the  
-- union of the sets of relevant area addresses configured  
-- or learned from Level 1 LSPs received by this Intermediate System.

isisAreaAddrTable OBJECT-TYPE

SYNTAX SEQUENCE OF IsisAreaAddrEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The union of the sets of area addresses reported in all Level 1 LSPs with fragment number zero generated by this Intermediate System, or received from other Intermediate Systems which are reachable via Level 1 routing."

REFERENCE "{ISIS.aoi areaAddresses (18)}"

::= { isisSystem 3 }

isisAreaAddrEntry OBJECT-TYPE

SYNTAX IsisAreaAddrEntry

MAX-ACCESS not-accessible

STATUS current

```

DESCRIPTION
    "Each entry contains one area address reported in a
    Level 1 LSP generated or received by this Intermediate
    System.

    Dynamically learned rows do not survive an agent reboot."
INDEX { isisAreaAddr }
 ::= { isisAreaAddrTable 1 }

IsisAreaAddrEntry ::=
    SEQUENCE {
        isisAreaAddr
        IsisOSINSAddress
    }

isisAreaAddr OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "An area address reported in a Level 1 LSP."
 ::= { isisAreaAddrEntry 1 }

```

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-- The Summary Address Table

-- The Summary Address Table contains the set of summary  
 -- addresses manually configured for the Intermediate System.

--

-- This is used to control leaking L1 routes into L2.

```

isisSummAddrTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisSummAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The set of IP summary addresses to use in forming
        summary TLVs originated by this Intermediate System.

```

An administrator may use a summary address to combine and modify IP Reachability announcements. If the Intermediate system can reach any subset of the summary address, the summary address MUST be announced instead,

```
        at the configured metric."
 ::= { isisSystem 4 }
```

isisSummAddrEntry OBJECT-TYPE

SYNTAX IsisSummAddrEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry contains one IP summary address.

Dynamically created rows MUST survive an agent reboot.

Implementers need to be aware that if the total number of elements (octets or sub-identifiers) in isisSummAddress and isisSummAddrPrefixLen is too great then OIDs of column instances in this table will have more than 128 subidentifiers and cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3."

INDEX { isisSummAddressType,  
 isisSummAddress,  
 isisSummAddrPrefixLen }

```
 ::= { isisSummAddrTable 1 }
```

IsisSummAddrEntry ::=

SEQUENCE {

isisSummAddressType

InetAddressType,

isisSummAddress

InetAddress,

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```
        isisSummAddrPrefixLen
            InetAddressPrefixLength,
        isisSummAddrExistState
            RowStatus,
        isisSummAddrMetric
            IsisDefaultMetric,
        isisSummAddrFullMetric
            IsisFullMetric
    }
```

isisSummAddressType OBJECT-TYPE

SYNTAX InetAddressType

```

MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
    "The Type of IP address for this summary address."
 ::= { isisSummAddrEntry 1 }

isisSummAddress OBJECT-TYPE
    SYNTAX InetAddress
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The IP Address value for this summary address.
         The address must not contain any set host bits
         (bits set after the address prefix determined by
         isisSummAddrPrefixLen).

         The type of this address is determined by the value of
         the isisSummAddressType object."

```

```

 ::= { isisSummAddrEntry 2 }

```

```

isisSummAddrPrefixLen OBJECT-TYPE
    SYNTAX InetAddressPrefixLength
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The Length of the IP NetMask for this summary address.

        The values for the index objects isisSummAddress and
        isisSummAddrPrefixLen must be consistent.  When the value
        of isisSummAddress (excluding the zone index, if one
        is present) is x, then the bitwise logical-AND
        of x with the value of the mask formed from the
        corresponding index object isisSummAddrPrefixLen MUST be
        equal to x.  If not, then the index pair is not
        consistent and an inconsistentName error must be

```

```

        returned on SET or CREATE requests."

```

```

 ::= { isisSummAddrEntry 3 }

```

```

isisSummAddrExistState OBJECT-TYPE

```



```

SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "The existence state of this summary address. Support
    for 'createAndWait' and 'notInService' is not required.

    A row entry cannot be modified when the value of this
    object is 'active'."
::= { isisSummAddrEntry 4 }

isisSummAddrMetric OBJECT-TYPE
    SYNTAX IsisDefaultMetric
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The metric value to announce this summary
        address within LSPs generated by this system."
    DEFVAL { 20 }
    ::= { isisSummAddrEntry 5 }

isisSummAddrFullMetric OBJECT-TYPE
    SYNTAX IsisFullMetric
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The wide metric value to announce this summary
        address within LSPs generated by this system."
    DEFVAL { 20 }
    ::= { isisSummAddrEntry 6 }

-- The Redistribution table defines addresses that should be
-- leaked from L2 to L1 if isisSysL2toL1Leaking is enabled.

isisRedistributeAddrTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisRedistributeAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "This table provides criteria to decide if a route should
        be leaked from L2 to L1 when Domain Wide Prefix leaking is
        enabled.

```

Addresses that match the summary mask in the table MUST be announced at L1 by routers when isisSysL2toL1Leaking is enabled. Routes that fall into the ranges specified are announced as is, without being summarized. Routes that do not match a summary mask are not announced."

::= { isisSystem 5 }

isisRedistributeAddrEntry OBJECT-TYPE

SYNTAX IsisRedistributeAddrEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry contains one configured IP summary address to manage leaking L2 addresses into L1.

Dynamically created rows MUST survive an agent reboot.

Implementers need to be aware that if the total number of elements (octets or sub-identifiers) in isisRedistributeAddrAddress and isisRedistributeAddrPrefixLen is too great then OIDs of column instances in this table will have more than 128 subidentifiers and cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3."

INDEX { isisRedistributeAddrType,  
isisRedistributeAddrAddress,  
isisRedistributeAddrPrefixLen }

::= { isisRedistributeAddrTable 1 }

IsisRedistributeAddrEntry ::=

SEQUENCE {  
isisRedistributeAddrType  
InetAddressType,  
isisRedistributeAddrAddress  
InetAddress,  
isisRedistributeAddrPrefixLen  
InetAddressPrefixLength,  
isisRedistributeAddrExistState  
RowStatus  
}

isisRedistributeAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Type of IP address for this summary address."

::= { isisRedistributeAddrEntry 1 }

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isisRedistributeAddrAddress OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The IP Address value for this summary address.  
The type of this address is determined by the  
value of the isisRedistributeAddrType object.  
The address must not contain any set host bits -  
bits set after the address prefix determined by  
isisRedistributeAddrPrefixLen."

::= { isisRedistributeAddrEntry 2 }

isisRedistributeAddrPrefixLen OBJECT-TYPE

SYNTAX InetAddressPrefixLength

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Length of the IP NetMask for this summary address.

The values for the index objects  
isisRedistributeAddrAddress and  
isisRedistributeAddrPrefixLen must be consistent.  
When the value of isisRedistributeAddrAddress  
(excluding the zone index, if one is present) is x,  
then the bitwise logical-AND of x with the value of  
the mask formed from the corresponding index object  
isisRedistributeAddrPrefixLen MUST be equal to x.  
If not, then the index pair is not consistent and an  
inconsistentName error must be returned on SET or  
CREATE requests."

::= { isisRedistributeAddrEntry 3 }

isisRedistributeAddrExistState OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The existence state of this summary address. Support  
for createAndWait and notInService is not required."

A row entry cannot be modified when the value of this  
object is 'active'."  
::= { isisRedistributeAddrEntry 4 }

-- The Router Table keeps track of hostnames and router IDs

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-- associated with Intermediate Systems in the area and domain.

isisRouterTable OBJECT-TYPE  
SYNTAX SEQUENCE OF IsisRouterEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
    "The set of hostnames and router ID."  
::= { isisSystem 6 }

isisRouterEntry OBJECT-TYPE  
SYNTAX IsisRouterEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
    "Each entry tracks information about one Intermediate  
    System at one level.

    Dynamically learned rows do not survive an agent reboot."  
INDEX { isisRouterSysID,  
        isisRouterLevel }  
::= { isisRouterTable 1 }

IsisRouterEntry ::=

```
SEQUENCE {
    isisRouterSysID
        IsisSystemID,
    isisRouterLevel
        IsisISLevel,
    isisRouterHostName
        SnmpAdminString,
    isisRouterID
        Unsigned32
}
```

```
isisRouterSysID OBJECT-TYPE
    SYNTAX IsisSystemID
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The System ID of the Intermediate System."
 ::= { isisRouterEntry 1 }
```

```
isisRouterLevel OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
```

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```
        "The level at which the information about this
        Intermediate System was received."
 ::= { isisRouterEntry 2 }
```

```
isisRouterHostName OBJECT-TYPE
    SYNTAX SnmpAdminString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The hostname listed in the LSP, or a zero-length
        string if none."
 ::= { isisRouterEntry 3 }
```

```
isisRouterID OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The Router ID found in the LSP, or zero if none."
 ::= { isisRouterEntry 4 }
```

```
-- The System Level Table
-- This table captures level-specific information about the System
```

```
isisSysLevelTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisSysLevelEntry
    MAX-ACCESS not-accessible
    STATUS current
```

```

DESCRIPTION
    "Level specific information about the System."
 ::= { isisSysLevel 1 }

isisSysLevelEntry OBJECT-TYPE
    SYNTAX IsisSysLevelEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each row describes variables configured for Area or Domain.

        Configured values MUST survive an agent reboot."
    INDEX { isisSysLevelIndex }
 ::= { isisSysLevelTable 1 }

IsisSysLevelEntry ::=
    SEQUENCE {
        isisSysLevelIndex
        IsisISLevel,
        isisSysLevelOrigLSPBuffSize

```

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```

        IsisLSPBuffSize,
    isisSysLevelMinLSPGenInt
        IsisUnsigned16TC,
    isisSysLevelState
        IsisLevelState,
    isisSysLevelSetOverload
        TruthValue,
    isisSysLevelSetOverloadUntil
        Unsigned32,
    isisSysLevelMetricStyle
        IsisMetricStyle,
    isisSysLevelSPFConsiders
        IsisMetricStyle,
    isisSysLevelTEEnabled
        TruthValue
}

isisSysLevelIndex OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current

```

```

DESCRIPTION
    "The level that this entry describes."
::= { isisSysLevelEntry 1 }

isisSysLevelOrigLSPBuffSize OBJECT-TYPE
    SYNTAX IsisLSPBuffSize
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "The maximum size of LSPs and SNPs originated by
        this Intermediate System at this level.  This
        object may not be modified when the isisSysAdminState
        variable is in state 'on' for this Intermediate System."
    REFERENCE "{ISIS.aoi originatingL1LSPBufferSize (9)}"
    DEFVAL { 1492 }
::= { isisSysLevelEntry 2 }

isisSysLevelMinLSPGenInt OBJECT-TYPE
    SYNTAX IsisUnsigned16TC (1..65535)
    UNITS "seconds"
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Minimum interval, in seconds, between successive
        generation of LSPs with the same LSPID at this level
        by this Intermediate System."
    REFERENCE "{ISIS.aoi minimumLSPGenerationInterval (11)}"

```

```

    DEFVAL { 30 }
::= { isisSysLevelEntry 3 }

isisSysLevelState OBJECT-TYPE
    SYNTAX IsisLevelState
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The state of the database at this level.
        The value 'off' indicates that IS-IS is not active at
        this level.
        The value 'on' indicates that IS-IS is active at this
        level, and not overloaded.
        The value 'waiting' indicates a database that is low on

```

an essential resource, such as memory.  
 The administrator may force the state to 'overloaded'  
 by setting the object isisSysLevelSetOverload.  
 If the state is 'waiting' or 'overloaded', we  
 originate LSPs with the Overload bit set."

REFERENCE "{ISIS.aoi l1State (17)}"

::= { isisSysLevelEntry 4 }

isisSysLevelSetOverload OBJECT-TYPE  
 SYNTAX TruthValue  
 MAX-ACCESS read-write  
 STATUS current  
 DESCRIPTION  
 "Administratively set the overload bit for the level.  
 The overload bit MUST continue to be set if the  
 implementation runs out of memory, independent of  
 this variable. It may also be set manually independent  
 of this variable, using the isisSysLevelSetOverloadUntil  
 object."  
 DEFVAL { false }  
 ::= { isisSysLevelEntry 5 }

isisSysLevelSetOverloadUntil OBJECT-TYPE  
 SYNTAX Unsigned32  
 UNITS "Seconds until clearing manually set Overload Bit"  
 MAX-ACCESS read-write  
 STATUS current  
 DESCRIPTION  
 "If this object is non-zero, the overload bit is set at  
 this level when the isisSysAdminState variable goes to  
 state 'on' for this Intermediate System. The overload bit  
 remains set for isisSysLevelSetOverloadUntil seconds.  
 When isisSysLevelSetOverloadUntil seconds have elapsed,  
 the overload flag remains set if the implementation has

run out of memory, or if it is set manually using the  
 isisSysLevelSetOverload object.

If isisSysLevelSetOverload is false, the system clears  
 the overload bit when isisSysLevelSetOverloadUntil seconds  
 have elapsed, if the system has not run out of memory."

::= { isisSysLevelEntry 6 }



```

isisSysLevelMetricStyle OBJECT-TYPE
    SYNTAX IsisMetricStyle
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Which style of Metric do we generate in our LSPs
        at this level?"
    DEFVAL { narrow }
 ::= { isisSysLevelEntry 7 }

```

```

isisSysLevelSPFConsiders OBJECT-TYPE
    SYNTAX IsisMetricStyle
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Which style of Metric do we consider in our
        SPF computation at this level?"
    DEFVAL { narrow }
 ::= { isisSysLevelEntry 8 }

```

```

isisSysLevelTEEnabled OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Do we do Traffic Engineering at this level?"
    DEFVAL { false }
 ::= { isisSysLevelEntry 9 }

```

-- Static to provide next CircIndex

```

isisNextCircIndex OBJECT-TYPE
    SYNTAX IndexIntegerNextFree
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This object is used to assist a management
        application in creating new rows in the
        isisCircTable.  If it is possible to create

```

a new instance of isisCircEntry, then this object will contain a non-zero value that is not in use as the index of any row in the isisCircTable. The network manager reads the value of this object and then (if the value value read is non-zero) attempts to create the corresponding instance of isisCircEntry. If the set request fails with the code 'inconsistentValue', then the process must be repeated; if the set request succeeds, then the agent will change value of this object according to an implementation-specific algorithm."

```
::= { isisCirc 1 }
```

```
-- The Circuit Table
-- Each broadcast or point-to-point interface on the system
-- corresponds to one entry in the Circuit table. However, there
-- may be multiple X.25 DA circuit entries in the Circuit table
-- for a given X.25 interface.
```

```
isisCircTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisCircEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of circuits used by this
        Intermediate System."
 ::= { isisCirc 2 }
```

```
isisCircEntry OBJECT-TYPE
    SYNTAX IsisCircEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "An isisCircEntry exists for each circuit configured
        for Integrated IS-IS on this system.
```

```
        Dynamically created rows MUST survive an agent reboot."
    INDEX { isisCircIndex }
 ::= { isisCircTable 1 }
```

```
IsisCircEntry ::=
    SEQUENCE {
        isisCircIndex
            IndexInteger,
        isisCircIfIndex
            InterfaceIndex,
```

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```
    isisCircAdminState
        IsisAdminState,
    isisCircExistState
        RowStatus,
    isisCircType
        INTEGER,
    isisCircExtDomain
        TruthValue,
    isisCircLevelType
        IsisLevel,
    isisCircPassiveCircuit
        TruthValue,
    isisCircMeshGroupEnabled
        INTEGER,
    isisCircMeshGroup
        Unsigned32,
    isisCircSmallHellos
        TruthValue,
    isisCircLastUpTime
        TimeStamp,
    isisCirc3WayEnabled
        TruthValue,
    isisCircExtendedCircID
        Unsigned32
}
```

isisCircIndex OBJECT-TYPE

SYNTAX IndexInteger

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An index used to uniquely identify this circuit.  
When creating a row in this table, the  
isisNextCircIndex object should be retrieved  
and it's value should be specified as the value  
of this index using a SET operation. A retrieved  
value of zero(0) indicates that no rows can be  
created at this time."

::= { isisCircEntry 1 }

isisCircIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The value of ifIndex for the interface to which this circuit corresponds. This object cannot be modified after creation."

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::= { isisCircEntry 2 }

isisCircAdminState OBJECT-TYPE

SYNTAX IsisAdminState

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The administrative state of the circuit."

DEFVAL { off }

::= { isisCircEntry 3 }

isisCircExistState OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The existence state of this circuit. Setting the state to 'notInService' halts the generation and processing of IS-IS protocol PDUs on this circuit. Setting the state to destroy will also erase any configuration associated with the circuit. Support for 'createAndWait' and 'notInService' is not required.

A row entry cannot be modified when the value of this object is 'active'."

::= { isisCircEntry 4 }

isisCircType OBJECT-TYPE

SYNTAX INTEGER

```
{
    broadcast(1),
    ptToPt(2),
    staticIn(3),
    staticOut(4),
    dA(5)
}
```

MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The type of the circuit. This object follows the  
    ReplaceOnlyWhileDisabled behavior. The type specified  
    must be compatible with the type of the interface defined  
    by the value of isisCircIfIndex."  
REFERENCE "{ISIS.aoi type (33)}"  
::= { isisCircEntry 5 }  
  
isisCircExtDomain OBJECT-TYPE  
    SYNTAX TruthValue

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MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "If true, suppress normal transmission of and  
    interpretation of Intra-domain IS-IS PDUs on this  
    circuit."  
REFERENCE "{ISIS.aoi externalDomain (46)}"  
DEFVAL { false }  
::= { isisCircEntry 6 }  
  
isisCircLevelType OBJECT-TYPE  
    SYNTAX IsisLevel  
    MAX-ACCESS read-create  
    STATUS current  
    DESCRIPTION  
        "Indicates which type of packets will be sent and  
        accepted on this circuit. The values set will be  
        saved, but the values used will be modified by  
        the settings of isisSysLevelType. Thus if the  
        isisSysTpe is level2 and the isisCircLevelType  
        for a circuit is level1, the circuit will not send  
        or receive IS-IS packets. This object follows the  
        ReplaceOnlyWhileDisabled behavior."  
    DEFVAL { level1and2 }  
::= { isisCircEntry 7 }  
  
isisCircPassiveCircuit OBJECT-TYPE  
    SYNTAX TruthValue  
    MAX-ACCESS read-create

```

STATUS current
DESCRIPTION
    "Should we include this interface in LSPs, even if
    it is not running the IS-IS Protocol?"
DEFVAL { false }
::= { isisCircEntry 8 }

isisCircMeshGroupEnabled OBJECT-TYPE
    SYNTAX INTEGER
    {
        inactive(1),
        blocked(2),
        set(3)
    }
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "Is this port a member of a mesh group, or blocked?
        Circuits in the same mesh group act as a virtual

```

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```

        multiaccess network. LSPs seen on one circuit in
        a mesh group will not be flooded to another circuit
        in the same mesh group."
REFERENCE "{ RFC 2973 }"
DEFVAL { inactive }
::= { isisCircEntry 9 }

isisCircMeshGroup OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "Circuits in the same mesh group act as a virtual
        multiaccess network. LSPs seen on one circuit in
        a mesh group will not be flooded to another circuit
        in the same mesh group. If isisCircMeshGroupEnabled
        is inactive or blocked, this value is ignored."
REFERENCE "{ RFC 2973 }"
::= { isisCircEntry 10 }

isisCircSmallHellos OBJECT-TYPE
    SYNTAX TruthValue

```

```

MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "Can we send unpadded hellos on LAN circuits?  False
    means LAN Hellos must be padded.
    Implementations should allow the administrator to read
    this value.  An implementation need not be able to
    support unpadded hellos to be conformant."
    DEFVAL { false }
::= { isisCircEntry 11 }

isisCircLastUpTime OBJECT-TYPE
    SYNTAX TimeStamp
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "How long the circuit has been enabled, measured in
        hundredths of seconds since the last re-initialization
        of the network management subsystem, or 0 if the
        circuit has never been 'on'."
    ::= { isisCircEntry 12 }

isisCirc3WayEnabled OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-create
    STATUS current

```

```

DESCRIPTION
    "Is this circuit enabled to run 3Way handshake?"
    DEFVAL { true }
    ::= { isisCircEntry 13 }

isisCircExtendedCircID OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The value to be used as the extended circuit ID in
        3Way handshake.  This value is only used if
        isisCirc3WayEnabled is true, and must be unique across
        all circuits on this IS."
    ::= { isisCircEntry 14 }

```

```

-- The Circuit Level Table
-- This table captures level-specific information about a circuit

isisCircLevelTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisCircLevelEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Level specific information about circuits used by IS-IS."
 ::= { isisCircLevelValues 1 }

isisCircLevelEntry OBJECT-TYPE
    SYNTAX IsisCircLevelEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "An isisCircLevelEntry exists for each level on
         each circuit configured for Integrated IS-IS on
         this system.

         Configured values MUST survive an agent reboot."
    INDEX { isisCircIndex,
            isisCircLevelIndex }
 ::= { isisCircLevelTable 1 }

IsisCircLevelEntry ::=
    SEQUENCE {
        isisCircLevelIndex
            IsisISLevel,
        isisCircLevelMetric
            IsisDefaultMetric,
        isisCircLevelWideMetric

```

```

        IsisWideMetric,
    isisCircLevelISPriority
        IsisISPriority,
    isisCircLevelIDOctet
        Unsigned32,
    isisCircLevelID
        IsisCircuitID,
    isisCircLevelDesIS

```



```

        IsisCircuitID,
isisCircLevelHelloMultiplier
        Unsigned32,
isisCircLevelHelloTimer
        Unsigned32,
isisCircLevelDRHelloTimer
        Unsigned32,
isisCircLevelLSPThrottle
        IsisUnsigned16TC,
isisCircLevelMinLSPRetransInt
        Unsigned32,
isisCircLevelCSNPInterval
        Unsigned32,
isisCircLevelPartSNPInterval
        Unsigned32
    }

isisCircLevelIndex OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The level that this entry describes."
    ::= { isisCircLevelEntry 1 }

isisCircLevelMetric OBJECT-TYPE
    SYNTAX IsisDefaultMetric
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "The metric value of this circuit for this level."
    REFERENCE "{ISIS.aoi l1DefaultMetric (35)}"
    DEFVAL { 10 }
    ::= { isisCircLevelEntry 2 }

isisCircLevelWideMetric OBJECT-TYPE
    SYNTAX IsisWideMetric
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION

```

"The wide metric value of this circuit for this level."

```
DEFVAL { 10 }  
::= { isisCircLevelEntry 3 }
```

isisCircLevelISPriority OBJECT-TYPE

SYNTAX IsisISPriority

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The priority for becoming LAN Designated  
Intermediate System at this level."

REFERENCE "{ISIS.aoi l2IntermediateSystemPriority (73)}"

DEFVAL { 64 }

```
::= { isisCircLevelEntry 4 }
```

isisCircLevelIDOctet OBJECT-TYPE

SYNTAX Unsigned32(0..255)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"A one byte identifier for the circuit selected by the  
Intermediate System.

On point-to-point circuits, the value is used as the Local  
Circuit ID in point-to-point IIH PDUs transmitted on this  
circuit. In this case, values of isisCircLevelIDOctet do  
not need to be unique.

For broadcast circuits, the value is used to generate the  
LAN ID that will be used if this Intermediate System is  
elected as the Designated IS on this circuit. The value  
is required to differ on LANs where the Intermediate System  
is the Designated Intermediate System."

```
::= { isisCircLevelEntry 5 }
```

isisCircLevelID OBJECT-TYPE

SYNTAX IsisCircuitID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"On a point to point circuit with a fully initialized  
adjacency to a peer IS, the value of this object is  
the circuit ID negotiated during adjacency initialization.  
On a point to point circuit without such an adjacency,  
the value is the concatenation of the local system ID  
and the one byte isisCircLevelIDOctet for this circuit  
i.e. the value that would be proposed for the circuit ID.

On other circuit types, the value returned is the zero length OCTET STRING."

REFERENCE "{ISIS.aoi ptPtCircuitID (51)}"

::= { isisCircLevelEntry 6 }

isisCircLevelDesIS OBJECT-TYPE

SYNTAX IsisCircuitID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The ID of the LAN Designated Intermediate System on this circuit at this level. If, for any reason, this system is not partaking in the relevant Designated Intermediate System election process, then the value returned is the zero length OCTET STRING."

REFERENCE "{ISIS.aoi l2DesignatedIntermediateSystem (75)}"

::= { isisCircLevelEntry 7 }

isisCircLevelHelloMultiplier OBJECT-TYPE

SYNTAX Unsigned32 (2..100)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This value is multiplied by the corresponding HelloTimer and the result in seconds (rounded up) is used as the holding time in transmitted hellos, to be used by receivers of hello packets from this IS"

REFERENCE "{ISIS.aoi iSISHelloTimer (45)}"

DEFVAL { 10 }

::= { isisCircLevelEntry 8 }

isisCircLevelHelloTimer OBJECT-TYPE

SYNTAX Unsigned32 (10..600000)

UNITS "milliseconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Maximum period, in milliseconds, between IIH PDUs on multiaccess networks at this level for LANs. The value at L1 is used as the period between Hellos on L1L2 point to point circuits. Setting this value at level 2 on an L1L2 point to point circuit will result in an error of InconsistentValue.

This object follows the ResettingTimer behavior."

REFERENCE "{ISIS.aoi iSISHelloTimer (45)}"

```
DEFVAL { 3000 }  
::= { isisCircLevelEntry 9 }
```

```
isisCircLevelDRHelloTimer OBJECT-TYPE  
    SYNTAX Unsigned32 (10..120000)  
    UNITS "milliseconds"  
    MAX-ACCESS read-write  
    STATUS current  
    DESCRIPTION  
        "Period, in milliseconds, between Hello PDUs on  
        multiaccess networks when this IS is the Designated  
        Intermediate System. This object follows the  
        ResettingTimer behavior."  
    REFERENCE "{ISIS.aoi iSISHelloTimer (45)}"  
    DEFVAL { 1000 }  
    ::= { isisCircLevelEntry 10 }  
  
isisCircLevelLSPThrottle OBJECT-TYPE  
    SYNTAX IsisUnsigned16TC (1..65535)  
    UNITS "milliseconds"  
    MAX-ACCESS read-write  
    STATUS current  
    DESCRIPTION  
        "Minimal interval of time, in milliseconds, between  
        transmissions of LSPs on an interface at this level."  
    REFERENCE  
        "{ISIS.aoi minimumBroadcastLSPTransmissionInterval (5)}"  
    DEFVAL { 30 }  
    ::= { isisCircLevelEntry 11 }  
  
isisCircLevelMinLSPRetransInt OBJECT-TYPE  
    SYNTAX Unsigned32 (1..300)  
    UNITS "seconds"  
    MAX-ACCESS read-write  
    STATUS current  
    DESCRIPTION  
        "Minimum interval, in seconds, between re-transmission of  
        an LSP at this level. This object follows the  
        ResettingTimer behavior."  
  
        Note that isisCircLevelLSPThrottle controls  
        how fast we send back to back LSPs. This variable
```

```

        controls how fast we re-send the same LSP."
REFERENCE "{ISIS.aoi minimumLSPTransmissionInterval (5)}"
DEFVAL { 5 }
::= { isisCircLevelEntry 12 }

isisCircLevelCSNPInterval OBJECT-TYPE
    SYNTAX Unsigned32 (1..600)
    UNITS "seconds"
    MAX-ACCESS read-write

```

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```

STATUS current
DESCRIPTION
    "Interval of time, in seconds, between periodic
    transmission of a complete set of CSNPs on
    multiaccess networks if this router is the
    designated router at this level.
    This object follows the ResettingTimer behavior."
REFERENCE "{ISIS.aoi completeSNPInterval (8)}"
DEFVAL { 10 }
::= { isisCircLevelEntry 13 }

isisCircLevelPartSNPInterval OBJECT-TYPE
    SYNTAX Unsigned32 (1..120)
    UNITS "seconds"
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Minimum interval in seconds between sending Partial
        Sequence Number PDUs at this level. This object
        follows the ResettingTimer behavior."
    REFERENCE "{ISIS.aoi partialSNPInterval (14)}"
    DEFVAL { 2 }
    ::= { isisCircLevelEntry 14 }

```

-- isisSystemCounterTable keeps track of system-wide events.

```

isisSystemCounterTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisSystemCounterEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "System wide counters for this Intermediate System."

```

```

 ::= { isisCounters 1 }

isisSystemCounterEntry OBJECT-TYPE
    SYNTAX IsisSystemCounterEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "System-wide IS-IS counters."
    INDEX { isisSysStatLevel }
 ::= { isisSystemCounterTable 1 }

IsisSystemCounterEntry ::=
    SEQUENCE {
        isisSysStatLevel
            IsisISLevel,
        isisSysStatCorrLSPs
    }

```

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```

        Counter32,
    isisSysStatAuthTypeFails
        Counter32,
    isisSysStatAuthFails
        Counter32,
    isisSysStatLSPDbase0loads
        Counter32,
    isisSysStatManAddrDropFromAreas
        Counter32,
    isisSysStatAttmptToExMaxSeqNums
        Counter32,
    isisSysStatSeqNumSkips
        Counter32,
    isisSysStatOwnLSPPurges
        Counter32,
    isisSysStatIDFieldLenMismatches
        Counter32,
    isisSysStatPartChanges
        Counter32,
    isisSysStatSPFRuns
        Counter32,
    isisSysStatLSPErrors
        Counter32
}

```

```

isisSysStatLevel OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The level that this entry describes."
 ::= { isisSystemCounterEntry 1 }

isisSysStatCorrLSPs OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of corrupted in-memory frames"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of corrupted in-memory LSPs detected.

        LSPs received from the wire with a bad checksum
        are silently dropped and not counted.

        LSPs received from the wire with parse errors
        are counted by isisSysStatLSPErrors."
    REFERENCE "{ISIS.aoi corruptedLSPsDetected (19)}"
 ::= { isisSystemCounterEntry 2 }

```

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```

isisSysStatAuthTypeFails OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of frames with authentication type mismatches"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of authentication type mismatches recognized
        by this Intermediate System."
 ::= { isisSystemCounterEntry 3 }

isisSysStatAuthFails OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of frames with authentication key failures"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of authentication key failures recognized
        by this Intermediate System."

```

```

 ::= { isisSystemCounterEntry 4 }

isisSysStatLSPDbaseOverloads OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times the LSP database has become
         overloaded."
    REFERENCE "{ISIS.aoi lSPL1DatabaseOverloads (20)}"
 ::= { isisSystemCounterEntry 5 }

isisSysStatManAddrDropFromAreas OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times a manual address has been dropped from
         the area."
    REFERENCE "{ISIS.aoi manualAddressesDroppedFromArea (21)}"
 ::= { isisSystemCounterEntry 6 }

isisSysStatAttmpToExMaxSeqNums OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times the IS has attempted to exceed the
         maximum sequence number."
    REFERENCE

```

```

        "{ISIS.aoi attemptsToExceedmaximumSequenceNumber (22)}"
 ::= { isisSystemCounterEntry 7 }

isisSysStatSeqNumSkips OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times a sequence number skip has occurred."
    REFERENCE "{ISIS.aoi sequenceNumberSkips (23)}"
 ::= { isisSystemCounterEntry 8 }

```



```

isisSysStatOwnLSPPurges OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times a zero-aged copy of the system's own LSP
        is received from some other node."
    REFERENCE "{ISIS.aoi ownLSPPurges (24)}"
 ::= { isisSystemCounterEntry 9 }

isisSysStatIDFieldLenMismatches OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of frames with ID length mismatches"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times a PDU is received with a different value
        for ID field length to that of the receiving system."
    REFERENCE "{ISIS.aoi idFieldLengthMismatches (25)}"
 ::= { isisSystemCounterEntry 10 }

isisSysStatPartChanges OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Partition changes."
 ::= { isisSystemCounterEntry 11 }

isisSysStatSPFRuns OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Number of times we ran SPF at this level."
 ::= { isisSystemCounterEntry 12 }

```

```

isisSysStatLSPErrors OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of frames with errors that we have received"
    MAX-ACCESS read-only

```

```

        STATUS current
        DESCRIPTION
            "Number of LSPs with errors we have received."
        ::= { isisSystemCounterEntry 13 }

-- isisCircuitCounterTable keeps track of events
-- specific to a circuit and a level

isisCircuitCounterTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisCircuitCounterEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Circuit specific counters for this
         Intermediate System."
    ::= { isisCounters 2 }

isisCircuitCounterEntry OBJECT-TYPE
    SYNTAX IsisCircuitCounterEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "An isisCircuitCounterEntry exists for each circuit
         used by Integrated IS-IS on this system."
    INDEX { isisCircIndex,
            isisCircuitType }
    ::= { isisCircuitCounterTable 1 }

IsisCircuitCounterEntry ::= SEQUENCE {
    isisCircuitType
        INTEGER,
    isisCircAdjChanges
        Counter32,
    isisCircNumAdj
        Unsigned32,
    isisCircInitFails
        Counter32,
    isisCircRejAdjs
        Counter32,
    isisCircIDFieldLenMismatches
        Counter32,
    isisCircMaxAreaAddrMismatches
        Counter32,
    isisCircAuthTypeFails

```

```
        Counter32,
        isisCircAuthFails
        Counter32,
        isisCircLANDesISChanges
        Counter32
    }

isisCircuitType OBJECT-TYPE
    SYNTAX INTEGER
    {
        lanlevel1(1),
        lanlevel2(2),
        p2pcircuit(3)
    }
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "What type of circuit saw these counts?

        The point to point Hello PDU includes
        both L1 and L2, and ISs form a single
        adjacency on point to point links.
        Thus we combine counts on
        point to point links into one group."
 ::= { isisCircuitCounterEntry 1 }

isisCircAdjChanges OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of times an adjacency state change has
        occurred on this circuit."
    REFERENCE "{ISIS.aoi changesInAdjacencyState (40)}"
 ::= { isisCircuitCounterEntry 2 }

isisCircNumAdj OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of adjacencies on this circuit."
    REFERENCE "{ISIS.aoi changesInAdjacencyState (40)}"
 ::= { isisCircuitCounterEntry 3 }

isisCircInitFails OBJECT-TYPE
    SYNTAX Counter32
```

```
STATUS current
DESCRIPTION
    "The number of times initialization of this circuit has
    failed. This counts events such as PPP NCP failures.
    Failures to form an adjacency are counted by
    isisCircRejAdjs."
 ::= { isisCircuitCounterEntry 4 }

isisCircRejAdjs OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of times an adjacency has been rejected on
        this circuit."
    REFERENCE "{ISIS.aoi rejectedAdjacencies (42)}"
 ::= { isisCircuitCounterEntry 5 }

isisCircIDFieldLenMismatches OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of frames with ID field length mismatch"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of times an IS-IS control PDU with an ID
        field length different to that for this system has been
        received."
    REFERENCE "{ISIS.aoi idFieldLengthMismatches (25)}"
 ::= { isisCircuitCounterEntry 6 }

isisCircMaxAreaAddrMismatches OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of times an IS-IS control PDU with a
        max area address field different to that for this
        system has been received."
    REFERENCE "{ISIS.aoi idFieldLengthMismatches (25)}"
 ::= { isisCircuitCounterEntry 7 }
```

isisCircAuthTypeFails OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The number of times an IS-IS control PDU with  
        an auth type field different to that for this

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        system has been received."  
 ::= { isisCircuitCounterEntry 8 }  
  
isisCircAuthFails OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The number of times an IS-IS control PDU with  
        the correct auth type has failed to pass authentication  
        validation."  
 ::= { isisCircuitCounterEntry 9 }

isisCircLANDesISChanges OBJECT-TYPE  
SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The number of times the Designated IS has changed  
        on this circuit at this level. If the circuit is  
        point to point, this count is zero."  
 ::= { isisCircuitCounterEntry 10 }

-- isisPacketCounterTable keeps track of the number of IS-IS  
-- control packets sent and received at each level

isisPacketCounterTable OBJECT-TYPE  
SYNTAX SEQUENCE OF IsisPacketCounterEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
    "Information about IS-IS protocol traffic at one level  
        on one circuit in one direction."

```

 ::= { isisCounters 3 }

isisPacketCounterEntry OBJECT-TYPE
    SYNTAX IsisPacketCounterEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Information about IS-IS protocol traffic at one level
         on one circuit in one direction."
    INDEX { isisCircIndex,
            isisPacketCountLevel,
            isisPacketCountDirection }
 ::= { isisPacketCounterTable 1 }

IsisPacketCounterEntry ::=

```

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```

SEQUENCE {
    isisPacketCountLevel
        IsisISLevel,
    isisPacketCountDirection
        INTEGER,
    isisPacketCountIIHello
        Counter32,
    isisPacketCountISHello
        Counter32,
    isisPacketCountESHello
        Counter32,
    isisPacketCountLSP
        Counter32,
    isisPacketCountCSNP
        Counter32,
    isisPacketCountPSNP
        Counter32,
    isisPacketCountUnknown
        Counter32
}

```

```

isisPacketCountLevel OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION

```

"The level at which these PDU counts have been collected."  
 ::= { isisPacketCounterEntry 1 }

isisPacketCountDirection OBJECT-TYPE

SYNTAX INTEGER

{  
 sending(1),  
 receiving(2)  
}

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Were we sending or receiving these PDUs?"

::= { isisPacketCounterEntry 2 }

isisPacketCountIIHello OBJECT-TYPE

SYNTAX Counter32

UNITS "Number of IS-IS Hellos frames seen in this direction  
 at this level"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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"The number of IS-IS Hello PDUs seen in this  
 direction at this level.

Point-to-Point IIH PDUs are counted at  
 the lowest enabled level: at L1 on L1 or L1L2 circuits,  
 and at L2 otherwise."

REFERENCE "{ISIS.aoi iSISControlPDUsSent (43)}"

::= { isisPacketCounterEntry 3 }

isisPacketCountISHello OBJECT-TYPE

SYNTAX Counter32

UNITS "Number of ES-IS frames seen in this direction at  
 this level."

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of ES-IS Hello PDUs seen in this  
 direction. ISH PDUs are counted at the  
 lowest enabled level: at L1 on L1 or L1L2

```

        circuits, and at L2 otherwise."
 ::= { isisPacketCounterEntry 4 }

isisPacketCountESHello OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of ES Hello frames seen in this direction at
        this level"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of ES Hello PDUs seen in this
        direction. ESH PDUs are counted at the
        lowest enabled level: at L1 on L1 or L1L2
        circuits, and at L2 otherwise."
 ::= { isisPacketCounterEntry 5 }

isisPacketCountLSP OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of IS-IS LSP frames seen in this direction at
        this level"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of IS-IS LSPs seen in this
        direction at this level."
    REFERENCE "{ISIS.aoi iSISControlPDUsSent (43)}"
 ::= { isisPacketCounterEntry 6 }

isisPacketCountCSNP OBJECT-TYPE

```

```

    SYNTAX Counter32
    UNITS "Number of IS-IS CSNP frames seen in this direction at
        this level"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of IS-IS CSNPs seen in this
        direction at this level."
    REFERENCE "{ISIS.aoi iSISControlPDUsSent (43)}"
 ::= { isisPacketCounterEntry 7 }

isisPacketCountPSNP OBJECT-TYPE

```



```

SYNTAX Counter32
UNITS "Number of IS-IS PSNP frames seen in this direction at
      this level"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The number of IS-IS PSNPs seen in this
      direction at this level."
REFERENCE "{ISIS.aoi iSISControlPDUsSent (43)}"
 ::= { isisPacketCounterEntry 8 }

```

```

isisPacketCountUnknown OBJECT-TYPE
    SYNTAX Counter32
    UNITS "Number of unknown IS-IS frames seen at this level"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of unknown IS-IS PDUs seen
          at this level."
    REFERENCE "{ISIS.aoi iSISControlPDUsSent (43)}"
 ::= { isisPacketCounterEntry 9 }

```

```

-- The IS Adjacency Table
--
-- Each adjacency to an IS corresponds to one entry in this
-- table.

```

```

isisISAdjTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisISAdjEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of adjacencies to Intermediate Systems."
 ::= { isisISAdj 1 }

```

```

isisISAdjEntry OBJECT-TYPE

```

```

SYNTAX IsisISAdjEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
    "Each entry corresponds to one adjacency to an

```

Intermediate System on this system.

Dynamically learned rows do not survive an agent reboot."

```
INDEX { isisCircIndex,
        isisISAdjIndex }
 ::= { isisISAdjTable 1 }

IsisISAdjEntry ::=
  SEQUENCE {
    isisISAdjIndex
      Unsigned32,
    isisISAdjState
      INTEGER,
    isisISAdj3WayState
      INTEGER,
    isisISAdjNeighSNPAAAddress
      IsisOSINSAddress,
    isisISAdjNeighSysType
      INTEGER,
    isisISAdjNeighSysID
      IsisSystemID,
    isisISAdjNbrExtendedCircID
      Unsigned32,
    isisISAdjUsage
      IsisLevel,
    isisISAdjHoldTimer
      IsisUnsigned16TC,
    isisISAdjNeighPriority
      IsisISPriority,
    isisISAdjLastUpTime
      TimeStamp
  }

isisISAdjIndex OBJECT-TYPE
  SYNTAX Unsigned32(1..4294967295)
  MAX-ACCESS not-accessible
  STATUS current
  DESCRIPTION
    "A unique value identifying the IS adjacency from all
     other such adjacencies on this circuit. This value is
     automatically assigned by the system when the adjacency
     is created."
  ::= { isisISAdjEntry 1 }
```

isisISAdjState OBJECT-TYPE

SYNTAX INTEGER

```
{
    down (1),
    initializing (2),
    up (3),
    failed(4)
}
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The state of the adjacency."

REFERENCE "{ISIS.aoi adjacencyState (78)}"

::= { isisISAdjEntry 2 }

isisISAdj3WayState OBJECT-TYPE

SYNTAX INTEGER

```
{
    up (0),
    initializing (1),
    down (2),
    failed (3)
}
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The 3Way state of the adjacency. These are picked to match the historical on-the-wire representation of the 3Way state, and are not intended to match isisISAdjState."

REFERENCE "{ [RFC 3373](#) }"

::= { isisISAdjEntry 3 }

isisISAdjNeighSNPAAddress OBJECT-TYPE

SYNTAX IsisOSINSAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The SNPA address of the neighboring system."

REFERENCE "{ISIS.aoi neighbourSNPAAddress (79)}"

::= { isisISAdjEntry 4 }

isisISAdjNeighSysType OBJECT-TYPE

SYNTAX INTEGER

```
{
    l1IntermediateSystem(1),
    l2IntermediateSystem(2),
    l1L2IntermediateSystem(3),
}
```

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```
        unknown(4)
    }
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The type of the neighboring system."
    REFERENCE "{ISIS.aoi neighbourSystemType (80)}"
 ::= { isisISAdjEntry 5 }

isisISAdjNeighSysID OBJECT-TYPE
    SYNTAX IsisSystemID
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The system ID of the neighboring Intermediate
        System."
    REFERENCE "{ISIS.aoi neighbourSystemIds (83)}"
 ::= { isisISAdjEntry 6 }

isisISAdjNbrExtendedCircID OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The 4 byte Extended Circuit ID learned from the
        Neighbor during 3-way handshake, or 0."
 ::= { isisISAdjEntry 7 }

isisISAdjUsage OBJECT-TYPE
    SYNTAX IsisLevel
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "How is the adjacency used?  On a point-to-point link,
        this might be level1and2, but on a LAN, the usage will
        be level1 on the adjacency between peers at L1,
        and level2 for the adjacency between peers at L2."
    REFERENCE "{ISIS.aoi adjacencyUsage (82)}"
 ::= { isisISAdjEntry 8 }

isisISAdjHoldTimer OBJECT-TYPE
    SYNTAX IsisUnsigned16TC (1..65535)
```

UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The holding time in seconds for this adjacency.  
    This value is based on received IIH PDUs and

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        the elapsed time since receipt."  
REFERENCE "{ISIS.aoi holdingTimer (85)}"  
::= { isisISAdjEntry 9 }

isisISAdjNeighPriority OBJECT-TYPE  
    SYNTAX IsisISPriority  
    MAX-ACCESS read-only  
    STATUS current  
    DESCRIPTION  
        "Priority of the neighboring Intermediate System for  
        becoming the Designated Intermediate System."  
REFERENCE "{ISIS.aoi LANPriority (86)}"  
::= { isisISAdjEntry 10 }

isisISAdjLastUpTime OBJECT-TYPE  
    SYNTAX TimeStamp  
    MAX-ACCESS read-only  
    STATUS current  
    DESCRIPTION  
        "When the adjacency most recently entered the state 'up',  
        measured in hundredths of a second since the last  
        re-initialization of the network management subsystem.  
        Holds 0 if the adjacency has never been in state 'up'."  
::= { isisISAdjEntry 11 }

-- The IS Adjacency Area Address Table

-- The IS Adjacency Area Address Table contains the set of  
-- Area Addresses of neighboring  
-- Intermediate Systems as reported in IIH PDUs.

isisISAdjAreaAddrTable OBJECT-TYPE  
    SYNTAX SEQUENCE OF IsisISAdjAreaAddrEntry  
    MAX-ACCESS not-accessible  
    STATUS current

```

DESCRIPTION
    "This table contains the set of Area Addresses of
      neighboring Intermediate Systems as reported in received
      IIH PDUs."
REFERENCE "{ISIS.aoi areaAddressesOfNeighbour (84)}"
::= { isisISAdj 2 }

isisISAdjAreaAddrEntry OBJECT-TYPE
    SYNTAX IsisISAdjAreaAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry contains one Area Address reported by a

```

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```

    neighboring Intermediate System in its IIH PDUs.

    Dynamically learned rows do not survive an agent reboot."
INDEX { isisCircIndex,
        isisISAdjIndex,
        isisISAdjAreaAddrIndex }
::= { isisISAdjAreaAddrTable 1 }

IsisISAdjAreaAddrEntry ::=
    SEQUENCE {
        isisISAdjAreaAddrIndex
            Unsigned32,
        isisISAdjAreaAddress
            IsisOSINSAddress
    }

isisISAdjAreaAddrIndex OBJECT-TYPE
    SYNTAX Unsigned32(1..4294967295)
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "An index for the areas associated with one neighbor.
        This provides a simple way to walk the table."
    ::= { isisISAdjAreaAddrEntry 1 }

isisISAdjAreaAddress OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS read-only

```

```

        STATUS current
        DESCRIPTION
            "One Area Address as reported in IIH PDUs received from
            the neighbor."
        ::= { isisISAdjAreaAddrEntry 2 }

-- The IS Adjacency IP Address Table

-- The IS Adjacency IP Address Table contains the
-- set of IP Addresses of neighboring Intermediate Systems
-- as reported in received IIH PDUs.

isisISAdjIPAddrTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisISAdjIPAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "This table contains the set of IP Addresses of
        neighboring Intermediate Systems as reported in received
        IIH PDUs."

```

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```

::= { isisISAdj 3 }

isisISAdjIPAddrEntry OBJECT-TYPE
    SYNTAX IsisISAdjIPAddrEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry contains one IP Address reported by a
        neighboring Intermediate System in its IIH PDUs.

        Dynamically learned rows do not survive an agent reboot."
    INDEX { isisCircIndex,
            isisISAdjIndex,
            isisISAdjIPAddrIndex
          }
::= { isisISAdjIPAddrTable 1 }

IsisISAdjIPAddrEntry ::=
    SEQUENCE {
        isisISAdjIPAddrIndex
        Unsigned32,

```

```

        isisISAdjIPAddrType
            InetAddressType,
        isisISAdjIPAddrAddress
            InetAddress
    }

isisISAdjIPAddrIndex OBJECT-TYPE
    SYNTAX Unsigned32(1..4294967295)
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "An index to this table which identifies the IP addresses
         to which this entry belongs."
    ::= { isisISAdjIPAddrEntry 1 }

isisISAdjIPAddrType OBJECT-TYPE
    SYNTAX InetAddressType
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The type of one IP Address as reported in IIH PDUs
         received from the neighbor."
    ::= { isisISAdjIPAddrEntry 2 }

isisISAdjIPAddrAddress OBJECT-TYPE
    SYNTAX InetAddress
    MAX-ACCESS read-only

```

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```

    STATUS current
    DESCRIPTION
        "One IP Address as reported in IIH PDUs received from the
         neighbor.

        The type of this address is determined by the value of
         the isisISAdjIPAddrType object."
    ::= { isisISAdjIPAddrEntry 3 }

-- The IS Adjacency Protocol Supported Table
--
-- The IS Adjacency Protocol Supported Table contains the set of
-- protocols supported by neighboring
-- Intermediate Systems as reported in received IIH PDUs.

```



```

isisISAdjProtSuppTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisISAdjProtSuppEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "This table contains the set of protocols supported by
        neighboring Intermediate Systems as reported in received
        IIH PDUs."
 ::= { isisISAdj 4 }

isisISAdjProtSuppEntry OBJECT-TYPE
    SYNTAX IsisISAdjProtSuppEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry contains one protocol supported by a
        neighboring Intermediate System as reported in its IIH
        PDUs.

        Dynamically learned rows do not survive an agent reboot."
    INDEX { isisCircIndex,
            isisISAdjIndex,
            isisISAdjProtSuppProtocol }
 ::= { isisISAdjProtSuppTable 1 }

IsisISAdjProtSuppEntry ::=
    SEQUENCE {
        isisISAdjProtSuppProtocol
        IsisSupportedProtocol
    }

isisISAdjProtSuppProtocol OBJECT-TYPE
    SYNTAX IsisSupportedProtocol

```

```

    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "One supported protocol as reported in IIH PDUs received
        from the neighbor."
 ::= { isisISAdjProtSuppEntry 1 }

```

```

-- The Reachable Address Group
--
-- The Reachable Address Table
-- Each entry records information about a reachable address
-- (NSAP or address prefix) manually configured on the system
-- or learned through another protocol.

isisRATable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisRAEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of Reachable Addresses to NSAPs or Address
        Prefixes."
 ::= { isisReachAddr 1 }

isisRAEntry OBJECT-TYPE
    SYNTAX IsisRAEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry defines a configured Reachable Address
        to a NSAP or Address Prefix.

        Dynamically created rows MUST survive an agent reboot."
    INDEX { isisCircIndex,
            isisRAIndex }
 ::= { isisRATable 1 }

IsisRAEntry ::=
    SEQUENCE {
        isisRAIndex
            Unsigned32,
        isisRAExistState
            RowStatus,
        isisRAAdminState
            IsisAdminState,
        isisRAAddrPrefix
            IsisOSINSAddress,
        isisRAMapType
            INTEGER,

```

```

        isisRAMetric
            IsisDefaultMetric,
        isisRAMetricType
            IsisMetricType,
        isisRASNPAAddress
            IsisOSINSAddress,
        isisRASNPMask
            IsisOSINSAddress,
        isisRASNPAPrefix
            IsisOSINSAddress,
        isisRAType
            INTEGER
    }

isisRAIndex OBJECT-TYPE
    SYNTAX Unsigned32(1..4294967295)
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The identifier for this isisRAEntry. This value must be
        unique amongst all Reachable Addresses on the same parent
        Circuit."
 ::= { isisRAEntry 1 }

isisRAExistState OBJECT-TYPE
    SYNTAX RowStatus
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The existence state of this Reachable Address. This
        object follows the ManualOrAutomatic behaviors. Support
        for 'createAndWait' and 'notInService' is not required.

        A row entry cannot be modified when the value of this
        object is 'active'."
 ::= { isisRAEntry 2 }

isisRAAdminState OBJECT-TYPE
    SYNTAX IsisAdminState
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The administrative state of the Reachable Address. This
        object follows the ManualOrAutomatic behaviors."
    DEFVAL { off }
 ::= { isisRAEntry 3 }

isisRAAddrPrefix OBJECT-TYPE

```

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```
SYNTAX IsisOSINSAddress
MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "The destination of this Reachable Address. This is an
    Address Prefix. This object follows the
    ReplaceOnlyWhileDisabled and ManualOrAutomatic
    behaviors."
REFERENCE "{ISIS.aoi addressPrefix (98)}"
::= { isisRAEntry 4 }

isisRAMapType OBJECT-TYPE
    SYNTAX INTEGER
        {
            none (1),
            explicit (2),
            extractIDI (3),
            extractDSP (4)
        }
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The type of mapping to be employed to ascertain the SNPA
        Address which should be used in forwarding PDUs for this
        Reachable Address prefix. This object follows the
        ManualOrAutomatic behavior. The following values of
        mapping type are defined:

            none: The mapping is null because the neighbor SNPA is
                implicit by nature of the subnetwork (e.g. a
                point-to-point linkage).

            explicit: The subnetwork addresses in the object
                isisRASNPAAAddress is to be used.

            extractIDI: The SNPA is embedded in the IDI of
                the destination NSAP Address. The mapping
                algorithm extracts the SNPA to be used
                according to the format and encoding rules of
                ISO8473/Add2. This SNPA extraction algorithm can
                be used in conjunction with Reachable Address
                prefixes from the X.121, F.69, E.163 and E.164
                addressing subdomains.
```

extractDSP: All, or a suffix, of the SNPA is embedded in the DSP of the destination address. This SNPA extraction algorithm extracts the embedded subnetwork addressing information by performing a

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logical AND of the isisRASNPAMask object value with the destination address. The part of the SNPA extracted from the destination NSAP is appended to the isisRASNPAPrefix object value to form the next hop subnetwork addressing information."

REFERENCE "{ISO10589-ISIS.aoi mappingType (107)}"  
::= { isisRAEntry 5 }

isisRAMetric OBJECT-TYPE  
SYNTAX IsisDefaultMetric  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The metric value for reaching the specified  
    prefix over this circuit. This object follows the  
    ManualOrAutomatic behavior."  
REFERENCE "{ISIS.aoi DefaultMetric (99)}"  
DEFVAL { 20 }  
::= { isisRAEntry 6 }

isisRAMetricType OBJECT-TYPE  
SYNTAX IsisMetricType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Indicates whether the metric is internal or  
    external. This object follows the ManualOrAutomatic  
    behavior."  
REFERENCE "{ISIS.aoi DefaultMetricType (103)}"  
DEFVAL { internal }  
::= { isisRAEntry 7 }

isisRASNPAAAddress OBJECT-TYPE  
SYNTAX IsisOSINSAddress

```

MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "The SNPA Address to which a PDU may be forwarded in
    order to reach a destination which matches the address
    prefix of the Reachable Address. This object follows the
    ManualOrAutomatic behavior."
REFERENCE "{ISIS.aoi sNPAAAddresses (109)}"
-- Note only one address may be specified per Reachable Address
-- in the MIB
    DEFVAL { 'H }
    ::= { isisRAEntry 8 }

```

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```

isisRASNPAMask OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "A bit mask with 1 bits indicating the positions in the
        effective destination address from which embedded SNPA
        information is to be extracted. For the extraction the
        first octet of the isisRASNPAMask object value is aligned
        with the first octet (AFI) of the NSAP Address. If the
        isisRASNPAMask object value and NSAP Address are of
        different lengths, the shorter of the two is logically
        padded with zeros before performing the extraction. This
        object follows the ManualOrAutomatic behavior."
    REFERENCE "{ISIS.aoi sNPAMask (122)}"
    DEFVAL { '00'H }
    ::= { isisRAEntry 9 }

```

```

isisRASNPAPrefix OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "A fixed SNPA prefix for use when the isisRAMapType is
        extractDSP. The SNPA Address to use is formed by
        concatenating the fixed SNPA prefix with a variable SNPA
        part that is extracted from the effective destination
        address. For Reachable Address prefixes in which the
        entire SNPA is embedded in the DSP the SNPA Prefix shall

```

```

        be null. This object follows the ManualOrAutomatic
        behavior."
REFERENCE "{ISIS.aoi sNPAPrefix (123)}"
DEFVAL { '00'H }
::= { isisRAEntry 10 }

isisRAType OBJECT-TYPE
    SYNTAX INTEGER
        {
            manual (1),
            automatic (2)
        }
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The type of Reachable address. Those of type
        manual are created by the network manager. Those
        of type automatic are created through propagation
        of routing information from another routing

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```

        protocol (eg. IDRP). "
    DEFVAL {manual}
    ::= { isisRAEntry 11 }

```

-- The IP Reachable Address Table

-- Each entry records information about one IP reachable  
 -- address manually configured on this system or learned from  
 -- another protocol.

```

isisIPRATable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisIPRAEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of IP Reachable Addresses to networks,
        subnetworks or hosts either manually configured or
        learned from another protocol."
    ::= { isisIPReachAddr 1 }

```

```

isisIPRAEntry OBJECT-TYPE

```

SYNTAX IsisIPRAEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"Each entry defines an IP Reachable Address to a network, subnetwork or host.

Each IP Reachable Address may have multiple entries in the table, one for each equal cost path to the reachable address.

Dynamically created rows MUST survive an agent reboot.

Implementers need to be aware that if the total number of elements (octets or sub-identifiers) in isisIPRADestr, isisIPRADestPrefixLen, and isisIPRANextHopIndex is too great then OIDs of column instances in this table will have more than 128 subidentifiers and cannot be accessed using SNMPv1, SNMPv2c, or SNMPv3."

```
INDEX { isisSysLevelIndex,  
        isisIPRADestType,  
        isisIPRADest,  
        isisIPRADestPrefixLen,  
        isisIPRANextHopIndex }  
::= { isisIPRATable 1 }
```

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```
IsisIPRAEntry ::=  
    SEQUENCE {  
        isisIPRADestType  
            InetAddressType,  
        isisIPRADest  
            InetAddress,  
        isisIPRADestPrefixLen  
            InetAddressPrefixLength,  
        isisIPRANextHopIndex  
            Unsigned32,  
        isisIPRANextHopType  
            InetAddressType,  
        isisIPRANextHop  
            InetAddress,  
        isisIPRAType
```



```

        INTEGER,
isisIPRAExistState
        RowStatus,
isisIPRAAdminState
        IsisAdminState,
isisIPRAMetric
        IsisDefaultMetric,
isisIPRAMetricType
        IsisMetricType,
isisIPRAFullMetric
        IsisFullMetric,
isisIPRASNPAAAddress
        IsisOSINSAddress,
isisIPRASourceType
        INTEGER
    }

isisIPRADestType OBJECT-TYPE
    SYNTAX InetAddressType
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The type of this IP Reachable Address."
 ::= { isisIPRAEntry 1 }

isisIPRADest OBJECT-TYPE
    SYNTAX InetAddress
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The destination of this IP Reachable Address. This is
        either a network address, subnetwork address or host
        address."

```

The type of this address is determined by the value of the isisIPRADestType object."

```

 ::= { isisIPRAEntry 2 }

isisIPRADestPrefixLen OBJECT-TYPE
    SYNTAX InetAddressPrefixLength
    MAX-ACCESS not-accessible

```

```

STATUS current
DESCRIPTION
    "The length of the IP Netmask for Reachability Address.

    The values for the index objects isisIPRADest and
    isisIPRADestPrefixLen must be consistent. When the value
    of isisIPRADest (excluding the zone index, if one
    is present) is x, then the bitwise logical-AND
    of x with the value of the mask formed from the
    corresponding index object isisIPRADestPrefixLen MUST be
    equal to x. If not, then the index pair is not
    consistent and an inconsistentName error must be
    returned on SET or CREATE requests."
::= { isisIPRAEntry 3 }

isisIPRANextHopIndex OBJECT-TYPE
    SYNTAX Unsigned32(1..4294967295)
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Index of next hop. Used when there are multiple Equal
        Cost Multipath alternatives for the same destination."
::= { isisIPRAEntry 4 }

isisIPRANextHopType OBJECT-TYPE
    SYNTAX InetAddressType
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The type of the IP next hop address."
::= { isisIPRAEntry 5 }

isisIPRANextHop OBJECT-TYPE
    SYNTAX InetAddress
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The IP next hop to this destination.

```

The type of this address is determined by the value of

the isisIPRANextHopType object."

```

::= { isisIPRAEntry 6 }

isisIPRAType OBJECT-TYPE
    SYNTAX INTEGER
        {
            manual (1),
            automatic (2)
        }
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The type of this IP Reachable Address. Those of type
        manual are created by the network manager. Those of type
        automatic are created through propagation of routing
        information from another routing protocol. This object
        follows the ManualOrAutomatic behavior."
::= { isisIPRAEntry 7 }

isisIPRAExistState OBJECT-TYPE
    SYNTAX RowStatus
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The state of this IP Reachable Address. This object
        follows the ExistenceState and ManualOrAutomatic
        behaviors. Support for 'createAndWait' and
        'notInService' is not required.

        A row entry cannot be modified when the value of this
        object is 'active'."
::= { isisIPRAEntry 8 }

isisIPRAAdminState OBJECT-TYPE
    SYNTAX IsisAdminState
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The administrative state of the IP Reachable Address. This
        object follows the IsisAdminState and ManualOrAutomatic
        behaviors."
    DEFVAL { off }
::= { isisIPRAEntry 9 }

isisIPRAMetric OBJECT-TYPE
    SYNTAX IsisDefaultMetric
    MAX-ACCESS read-create
    STATUS current

```

```
DESCRIPTION
    "The metric value for reaching the specified
    destination over this circuit. This object follows the
    ManualOrAutomatic behavior."
DEFVAL { 10 }
::= { isisIPRAEntry 10 }

isisIPRAMetricType OBJECT-TYPE
    SYNTAX IsisMetricType
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "Indicates whether the metric is internal or
        external. This object follows the ManualOrAutomatic
        behavior."
    DEFVAL { internal }
    ::= { isisIPRAEntry 11 }

isisIPRAFullMetric OBJECT-TYPE
    SYNTAX IsisFullMetric
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The wide metric value for reaching the specified
        destination over this circuit. This object follows the
        ManualOrAutomatic behavior."
    DEFVAL { 10 }
    ::= { isisIPRAEntry 12 }

isisIPRASNPAAAddress OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "The SNPA Address to which a PDU may be forwarded in
        order to reach a destination which matches this IP
        Reachable Address. This object follows the
        ManualOrAutomatic behavior."
    DEFVAL { ''H }
    ::= { isisIPRAEntry 13 }

isisIPRASourceType OBJECT-TYPE
    SYNTAX INTEGER
    {
        static (1),
        direct (2),
```

```
ospfv2 (3),
ospfv3 (4),
```

```
        isis    (5),
        rip     (6),
        igmp    (7),
        eigrp   (8),
        bgp     (9),
        other   (10)
    }
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The origin of this route."
    ::= { isisIPRAEntry 14 }

-- The LSP Database Table
--
-- The first table provides Summary Information about LSPs
-- The next table provides a complete record

isisLSPSummaryTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisLSPSummaryEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of LSP Headers."
    ::= { isisLSPDataBase 1 }

isisLSPSummaryEntry OBJECT-TYPE
    SYNTAX IsisLSPSummaryEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "Each entry provides a summary describing an
        LSP currently stored in the system.

        Dynamically learned rows will not survive an
        agent reboot."
    INDEX { isisLSPLevel,
            isisLSPID }
    ::= { isisLSPSummaryTable 1 }
```

```

IsisLSPSummaryEntry ::=
    SEQUENCE {
        isisLSPLevel
            IsisISLevel,
        isisLSPID
            IsisLinkStatePDUID,
        isisLSPSeq
            Unsigned32,

```

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```

        isisLSPZeroLife
            TruthValue,
        isisLSPChecksum
            IsisUnsigned16TC,
        isisLSPLifetimeRemain
            IsisUnsigned16TC,
        isisLSPPDULength
            IsisUnsigned16TC,
        isisLSPAttributes
            IsisUnsigned8TC
    }

isisLSPLevel OBJECT-TYPE
    SYNTAX IsisISLevel
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "At which level does this LSP appear?"
    ::= { isisLSPSummaryEntry 1 }

isisLSPID OBJECT-TYPE
    SYNTAX IsisLinkStatePDUID
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The 8 byte LSP ID for this Link State PDU."
    ::= { isisLSPSummaryEntry 2 }

isisLSPSeq OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current

```

```

        DESCRIPTION
            "The sequence number for this LSP."
 ::= { isisLSPSummaryEntry 3 }

isisLSPZeroLife OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Is this LSP being purged by this System?"
 ::= { isisLSPSummaryEntry 4 }

isisLSPChecksum OBJECT-TYPE
    SYNTAX IsisUnsigned16TC
    MAX-ACCESS read-only
    STATUS current

```

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```

        DESCRIPTION
            "The 16 bit Fletcher Checksum for this LSP."
 ::= { isisLSPSummaryEntry 5 }

isisLSPLifetimeRemain OBJECT-TYPE
    SYNTAX IsisUnsigned16TC
    UNITS "seconds"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The remaining lifetime in seconds for this LSP."
 ::= { isisLSPSummaryEntry 6 }

isisLSPPDULength OBJECT-TYPE
    SYNTAX IsisUnsigned16TC
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The length of this LSP."
 ::= { isisLSPSummaryEntry 7 }

isisLSPAttributes OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS read-only
    STATUS current

```

```

        DESCRIPTION
            "Flags carried by the LSP."
        ::= { isisLSPSummaryEntry 8 }

-- LSP Table
--
-- The full LSP as a sequence of {Type, Len, Value} tuples
-- Since the underlying LSP may have changed while downloading
-- TLVs, we provide the Sequence number and Checksum for each
-- LSP TLV, so the network manager may verify that they are
-- still working on the same version of the LSP.

isisLSPTLVTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IsisLSPTLVEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The table of LSPs in the database."
    ::= { isisLSPDataBase 2 }

isisLSPTLVEntry OBJECT-TYPE
    SYNTAX IsisLSPTLVEntry
    MAX-ACCESS not-accessible

```

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```

    STATUS current
    DESCRIPTION
        "Each entry describes a TLV within
        an LSP current stored in the system.

        Dynamically learned rows will not survive an
        agent reboot."
    INDEX { isisLSPLevel,
            isisLSPID,
            isisLSPTLVIndex }
    ::= { isisLSPTLVTable 1 }

IsisLSPTLVEntry ::=
    SEQUENCE {
        isisLSPTLVIndex
            Unsigned32,
        isisLSPTLVSeq
            Unsigned32,

```



```

        isisLSPTLVChecksum
            IsisUnsigned16TC,
        isisLSPTLVType
            IsisUnsigned8TC,
        isisLSPTLVLen
            IsisUnsigned8TC,
        isisLSPTLVValue
            OCTET STRING
    }

isisLSPTLVIndex OBJECT-TYPE
    SYNTAX Unsigned32(1..4294967295)
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The index of this TLV in the LSP.  The first TLV has
         index 1 and the Nth TLV has an index of N."
    ::= { isisLSPTLVEntry 1 }

isisLSPTLVSeq OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The sequence number for this LSP."
    ::= { isisLSPTLVEntry 2 }

isisLSPTLVChecksum OBJECT-TYPE
    SYNTAX IsisUnsigned16TC
    MAX-ACCESS read-only

```

```

    STATUS current
    DESCRIPTION
        "The 16 bit Fletcher Checksum for this LSP."
    ::= { isisLSPTLVEntry 3 }

isisLSPTLVType OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The type of this TLV."

```

```

 ::= { isisLSPTLVEntry 4 }

isisLSPTLVLen OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The length of this TLV."
 ::= { isisLSPTLVEntry 5 }

isisLSPTLVValue OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE(0..255))
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The value of this TLV."
 ::= { isisLSPTLVEntry 6 }

-- The IS-IS Notification Table

-- The IS-IS Notification Table records fields that are
-- required for notifications

isisNotificationEntry OBJECT IDENTIFIER
    ::= { isisNotification 1 }

isisNotificationSysLevelIndex OBJECT-TYPE
    SYNTAX IsisLevel
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "The system level for this notification."
 ::= { isisNotificationEntry 1 }

isisNotificationCircIfIndex OBJECT-TYPE
    SYNTAX Unsigned32 (1..2147483647)

```

```

    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "The identifier of this circuit relevant to

```

```

        this Notification."
 ::= { isisNotificationEntry 2 }

isisPduLspId OBJECT-TYPE
    SYNTAX IsisLinkStatePDUID
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "An Octet String that uniquely identifies
         a Link State PDU."
 ::= { isisNotificationEntry 3 }

isisPduFragment OBJECT-TYPE
    SYNTAX IsisPDUHeader
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "Holds up to 64 initial bytes of a PDU that
         triggered the notification."
 ::= { isisNotificationEntry 4 }

isisPduFieldLen OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "Holds the System ID length reported in PDU we received."
 ::= { isisNotificationEntry 5 }

isisPduMaxAreaAddress OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "Holds the Max Area Addresses reported in a PDU
         we received."
 ::= { isisNotificationEntry 6 }

isisPduProtocolVersion OBJECT-TYPE
    SYNTAX IsisUnsigned8TC
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "Holds the Protocol version reported in PDU we received."

```

```
::= { isisNotificationEntry 7 }
```

```
isisPduLspSize OBJECT-TYPE
```

```
    SYNTAX Unsigned32 (0..2147483647)
```

```
    MAX-ACCESS accessible-for-notify
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Holds the size of LSP we received that is too  
        big to forward."
```

```
::= { isisNotificationEntry 8 }
```

```
isisPduOriginatingBufferSize OBJECT-TYPE
```

```
    SYNTAX IsisUnsigned16TC (0..16000)
```

```
    MAX-ACCESS accessible-for-notify
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Holds the size of isisSysLevelOrigLSPBuffSize advertised  
        by the peer in the originatingLSPBufferSize TLV.  
        If the peer does not advertise this TLV, this  
        value is set to 0."
```

```
::= { isisNotificationEntry 9 }
```

```
isisPduBufferSize OBJECT-TYPE
```

```
    SYNTAX IsisUnsigned16TC (0..16000)
```

```
    MAX-ACCESS accessible-for-notify
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Holds the size of LSP received from peer."
```

```
::= { isisNotificationEntry 10 }
```

```
isisPduProtocolsSupported OBJECT-TYPE
```

```
    SYNTAX OCTET STRING (SIZE(0..255))
```

```
    MAX-ACCESS accessible-for-notify
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "The list of protocols supported by an  
        adjacent system. This may be empty."
```

```
::= { isisNotificationEntry 11 }
```

```
isisAdjState OBJECT-TYPE
```

```
    SYNTAX INTEGER
```

```
    {
```

```
        down (1),  
        initializing (2),  
        up (3),  
        failed(4)
```

}

```

    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "The current state of an adjacency."
 ::= { isisNotificationEntry 12 }

isisErrorOffset OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "An offset to a problem in a PDU.  If the problem
         is a malformed TLV, this points to the beginning
         of the TLV.  If the problem is in the header, this
         points to the byte that is suspicious."
 ::= { isisNotificationEntry 13 }

isisErrorTLVType OBJECT-TYPE
    SYNTAX Unsigned32 (0..255)
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "The type for a malformed TLV."
 ::= { isisNotificationEntry 14 }

isisNotificationAreaAddress OBJECT-TYPE
    SYNTAX IsisOSINSAddress
    MAX-ACCESS accessible-for-notify
    STATUS current
    DESCRIPTION
        "An Area Address."
 ::= { isisNotificationEntry 15 }

-- Notification definitions
--
-- Note that notifications can be disabled by setting
--     isisSysNotificationEnable false

isisDatabaseOverload NOTIFICATION-TYPE
    OBJECTS {
```

```

        isisNotificationSysLevelIndex,
        isisSysLevelState
    }
    STATUS current
    DESCRIPTION
        "This notification is generated when the system
        enters or leaves the Overload state. The number
        of times this has be generated and cleared is kept

```

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```

        track of by isisSysStatLSPDbase0loads."
 ::= { isisNotifications 1 }

isisManualAddressDrops NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationAreaAddress
    }
    STATUS current
    DESCRIPTION
        "This notification is generated when one of the
        manual areaAddresses assigned to this system is
        ignored when computing routes. The object
        isisNotificationAreaAddress describes the area that
        has been dropped.

        The number of times this event has been generated
        is counted by isisSysStatManAddrDropFromAreas.

        The agent must throttle the generation of
        consecutive isisManualAddressDrops notifications
        so that there is at least a 5-second gap between
        notifications of this type. When notifications
        are throttled, they are dropped, not queued for
        sending at a future time."
 ::= { isisNotifications 2 }

isisCorruptedLSPDetected NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationSysLevelIndex,
        isisPduLspId
    }
    STATUS current
    DESCRIPTION

```

"This notification is generated when we find that an LSP that was stored in memory has become corrupted. The number of times this has been generated is counted by isisSysCorrLSPs.

We forward an LSP ID. We may have independent knowledge of the ID, but in some implementations there is a chance that the ID itself will be corrupted."

::= { isisNotifications 3 }

isisAttemptToExceedMaxSequence NOTIFICATION-TYPE  
OBJECTS {  
    isisNotificationSysLevelIndex,

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    isisPduLspId  
}

STATUS current

DESCRIPTION

"When the sequence number on an LSP we generate wraps the 32 bit sequence counter, we purge and wait to re-announce this information. This notification describes that event. Since these should not be generated rapidly, we generate an event each time this happens.

While the first 6 bytes of the LSPID are ours, the other two contain useful information."

::= { isisNotifications 4 }

isisIDLenMismatch NOTIFICATION-TYPE  
OBJECTS {  
    isisNotificationSysLevelIndex,  
    isisPduFieldLen,  
    isisNotificationCircIfIndex,  
    isisPduFragment  
}

STATUS current

DESCRIPTION

"A notification sent when we receive a PDU

with a different value of the System ID Length. This notification includes the an index to identify the circuit where we saw the PDU and the header of the PDU which may help a network manager identify the source of the confusion.

The agent must throttle the generation of consecutive isisIDLenMismatch notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

```
::= { isisNotifications 5 }
```

```
isisMaxAreaAddressesMismatch NOTIFICATION-TYPE
  OBJECTS {
    isisNotificationSysLevelIndex,
    isisPduMaxAreaAddress,
    isisNotificationCircIfIndex,
    isisPduFragment
  }
```

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STATUS current  
DESCRIPTION

"A notification sent when we receive a PDU with a different value of the Maximum Area Addresses. This notification includes the header of the packet, which may help a network manager identify the source of the confusion.

The agent must throttle the generation of consecutive isisMaxAreaAddressesMismatch notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

```
::= { isisNotifications 6 }
```

```
isisOwnLSPPurge NOTIFICATION-TYPE
```



```

OBJECTS {
    isisNotificationSysLevelIndex,
    isisNotificationCircIfIndex,
    isisPduLspId
}
STATUS current
DESCRIPTION
    "A notification sent when we receive a PDU
    with our systemID and zero age. This
    notification includes the circuit Index
    and router ID from the LSP, if available,
    which may help a network manager
    identify the source of the confusion."

 ::= { isisNotifications 7 }

isisSequenceNumberSkip NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationSysLevelIndex,
        isisNotificationCircIfIndex,
        isisPduLspId
    }
    STATUS current
    DESCRIPTION
        "When we receive an LSP with our System ID
        and different contents, we may need to reissue
        the LSP with a higher sequence number.

        We send this notification if we need to increase

```

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the sequence number by more than one. If two Intermediate Systems are configured with the same System ID, this notification will fire."

```

 ::= { isisNotifications 8 }

isisAuthenticationTypeFailure NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationSysLevelIndex,
        isisNotificationCircIfIndex,
        isisPduFragment
    }

```

STATUS current

DESCRIPTION

"A notification sent when we receive a PDU with the wrong authentication type field. This notification includes the header of the packet, which may help a network manager identify the source of the confusion.

The agent must throttle the generation of consecutive isisAuthenticationTypeFailure notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

::= { isisNotifications 9 }

isisAuthenticationFailure NOTIFICATION-TYPE

OBJECTS {

isisNotificationSysLevelIndex,  
isisNotificationCircIfIndex,  
isisPduFragment

}

STATUS current

DESCRIPTION

"A notification sent when we receive a PDU with incorrect authentication information field. This notification includes the header of the packet, which may help a network manager identify the source of the confusion.

The agent must throttle the generation of consecutive isisAuthenticationFailure notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not

queued for sending at a future time."

::= { isisNotifications 10 }

isisVersionSkew NOTIFICATION-TYPE

```

OBJECTS {
    isisNotificationSysLevelIndex,
    isisNotificationCircIfIndex,
    isisPduProtocolVersion,
    isisPduFragment
}
STATUS current
DESCRIPTION
    "A notification sent when we receive a Hello
    PDU from an IS running a different version
    of the protocol. This notification includes
    the header of the packet, which may help a
    network manager identify the source of the
    confusion.

    The agent must throttle the generation of
    consecutive isisVersionSkew notifications
    so that there is at least a 5-second gap
    between notifications of this type. When
    notifications are throttled, they are dropped, not
    queued for sending at a future time."

 ::= { isisNotifications 11 }

isisAreaMismatch NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationCircIfIndex,
        isisPduFragment
    }
    STATUS current
    DESCRIPTION
        "A notification sent when we receive a Hello
        PDU from an IS which does not share any
        area address. This notification includes
        the header of the packet, which may help a
        network manager identify the source of the
        confusion.

        The agent must throttle the generation of
        consecutive isisAreaMismatch notifications
        so that there is at least a 5-second gap
        between notifications of this type. When
        notifications are throttled, they are dropped, not

```

queued for sending at a future time."

::= { isisNotifications 12 }

isisRejectedAdjacency NOTIFICATION-TYPE

OBJECTS {  
    isisNotificationSysLevelIndex,  
    isisNotificationCircIfIndex,  
    isisPduFragment  
}

STATUS current

DESCRIPTION

"A notification sent when we receive a Hello PDU from an IS, but do not establish an adjacency for some reason.

The agent must throttle the generation of consecutive isisRejectedAdjacency notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

::= { isisNotifications 13 }

isisLSPTooLargeToPropagate NOTIFICATION-TYPE

OBJECTS {  
    isisNotificationSysLevelIndex,  
    isisNotificationCircIfIndex,  
    isisPduLspSize,  
    isisPduLspId  
}

STATUS current

DESCRIPTION

"A notification sent when we attempt to propagate an LSP which is larger than the dataLinkBlockSize for the circuit.

The agent must throttle the generation of consecutive isisLSPTooLargeToPropagate notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

::= { isisNotifications 14 }

isisOrigLSPBuffSizeMismatch NOTIFICATION-TYPE

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```
OBJECTS {
    isisNotificationSysLevelIndex,
    isisNotificationCircIfIndex,
    isisPduLspId,
    isisPduOriginatingBufferSize,
    isisPduBufferSize
}
STATUS current
DESCRIPTION
    "A notification sent when a Level 1 LSP or Level
    2 LSP is received which is larger than the local
    value for isisSysLevelOrigLSPBuffSize, or when an
    LSP is received containing the supported Buffer Size
    option and the value in the PDU option field does
    not match the local value for isisSysLevelOrigLSPBuffSize.
    We pass up the size from the option field and the
    size of the LSP when one of them exceeds our configuration.

    The agent must throttle the generation of
    consecutive isisOrigLSPBuffSizeMismatch notifications
    so that there is at least a 5-second gap
    between notifications of this type. When
    notifications are throttled, they are dropped, not
    queued for sending at a future time."

 ::= { isisNotifications 15 }

isisProtocolsSupportedMismatch NOTIFICATION-TYPE
    OBJECTS {
        isisNotificationSysLevelIndex,
        isisNotificationCircIfIndex,
        isisPduProtocolsSupported,
        isisPduLspId,
        isisPduFragment
    }
    STATUS current
    DESCRIPTION
        "A notification sent when a non-pseudonode
        segment 0 LSP is received that has no matching
        protocols supported.
        This may be because the system does not generate
        the field, or because there are no common elements."
```

The list of protocols supported should be included in the notification: it may be empty if the TLV is not supported, or if the TLV is empty.

The agent must throttle the generation of consecutive isisProtocolsSupportedMismatch

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notifications so that there is at least a 5-second gap between notifications of this type. When notifications are throttled, they are dropped, not queued for sending at a future time."

::= { isisNotifications 16 }

isisAdjacencyChange NOTIFICATION-TYPE

OBJECTS {  
    isisNotificationSysLevelIndex,  
    isisNotificationCircIfIndex,  
    isisPduLspId,  
    isisAdjState  
}

STATUS current

DESCRIPTION

"A notification sent when an adjacency changes state, entering or leaving state up.  
The first 6 bytes of the isisPduLspId are the SystemID of the adjacent IS.  
The isisAdjState is the new state of the adjacency."

::= { isisNotifications 17 }

isisLSPErrorDetected NOTIFICATION-TYPE

OBJECTS {  
    isisNotificationSysLevelIndex,  
    isisPduLspId,  
    isisNotificationCircIfIndex,  
    isisPduFragment,  
    isisErrorOffset,  
    isisErrorTLVType  
}

STATUS current

DESCRIPTION

"This notification is generated when we receive an LSP with a parse error. The isisCircIfIndex holds in index of the circuit on which the PDU arrived. The isisPduFragment holds start of the LSP, and the isisErrorOffset points to the problem.

If the problem is a malformed TLV, isisErrorOffset points to start of the TLV and isisErrorTLVType holds the value of the type.

If the problem is with the LSP header, isisErrorOffset points to the suspicious byte.

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The number of such LSPs is accumulated in isisSysStatLSPErrors."

::= { isisNotifications 18 }

-- Agent Conformance Definitions

-- We define the objects a conformant agent must define

isisCompliances OBJECT IDENTIFIER ::= { isisConformance 1 }

isisGroups OBJECT IDENTIFIER ::= { isisConformance 2 }

-- compliance statements

isisCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"The compliance statement for agents that support the IS-IS MIB.

There are a number of INDEX objects that cannot be represented in the form of OBJECT clauses in SMIV2, but for which there are compliance requirements. Those requirements, and similar requirements for related objects, are expressed below in pseudo-OBJECT clause form in this description:

-- OBJECT isisSummAddressType

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

```

--
-- DESCRIPTION
--   The MIB requires support for IPv4 Summary
--   Addresses, and anticipates the support of
--   IPv6 addresses.
--
--
-- OBJECT isisRedistributeAddrType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION
--   The MIB requires support for IPv4
--   Redistribution Addresses, and anticipates
--   the support of IPv6 addresses."
--
--
-- OBJECT isisISAdjIPAddrType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION

```

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```

--   The MIB requires support for IPv4
--   Adjacency Addresses, and anticipates the
--   support of IPv6 addresses.
MODULE -- this module
  MANDATORY-GROUPS {
    isisSystemGroup,
    isisCircuitGroup,
    isisISAdjGroup,
    isisNotificationObjectGroup,
    isisNotificationGroup
  }
  ::= { isisCompliances 1 }

-- List of all groups, mandatory and optional
isisAdvancedCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "The compliance statement for agents that fully
    support the IS-IS MIB.

    There are a number of INDEX objects that cannot be

```



represented in the form of OBJECT clauses in SMIV2, but for which there are compliance requirements. Those requirements, and similar requirements for related objects, are expressed below in pseudo-OBJECT clause form in this description:

```
-- OBJECT isisSummAddressType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION
--     The MIB requires support for IPv4 Summary
--     Addresses, and anticipates the support of
--     IPv6 addresses.
--
--
-- OBJECT isisRedistributeAddrType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION
--     The MIB requires support for IPv4
--     Redistribution Addresses, and anticipates
--     the support of IPv6 addresses."
--
--
-- OBJECT isisISAdjIPAddrType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
```

```
-- DESCRIPTION
--     The MIB requires support for IPv4
--     Adjacency Addresses, and anticipates the
--     support of IPv6 addresses.
--
--
-- OBJECT isisIPRADestType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION
--     The MIB requires support for IPv4 RA
--     Addresses, and anticipates the support of
--     IPv6 addresses.
--
```

```

--
-- OBJECT isisIPRANextHopType
-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }
--
-- DESCRIPTION
--     The MIB requires support for IPv4 NextHop
--     Addresses, and anticipates the support of
--     IPv6 addresses.
MODULE -- this module
    MANDATORY-GROUPS {
        isisSystemGroup,
        isisCircuitGroup,
        isisISAdjGroup,
        isisNotificationObjectGroup,
        isisNotificationGroup,
        isisISPDUCounterGroup,
        isisRATableGroup,
        isisISIPRADestGroup,
        isisLSPGroup
    }
::= { isisCompliances 2 }

isisReadOnlyCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "When this MIB is implemented without support for
        read-create (i.e. in read-only mode), the implementation
        can claim read-only compliance.  Such a device can then
        be monitored but can not be configured with this MIB."
MODULE -- this module
    MANDATORY-GROUPS {
        isisSystemGroup,
        isisCircuitGroup,
        isisISAdjGroup

```

```

    }

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

```

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

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

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

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

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

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

OBJECT isisSysL2toL1Leaking  
MIN-ACCESS read-only  
DESCRIPTION  
    "Write access is not required."

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

OBJECT isisManAreaAddrExistState

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

OBJECT isisCircPassiveCircuit  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircMeshGroupEnabled  
MIN-ACCESS read-only  
DESCRIPTION

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"Write access is not required."

OBJECT isisCircMeshGroup  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircSmallHellos  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircExtendedCircID  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircIfIndex  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCirc3WayEnabled  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircLevelMetric  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT isisCircLevelWideMetric  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

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

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

OBJECT isisCircLevelHelloTimer

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

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

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

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

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

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

```
::= { isisCompliances 3 }
```

```
-- MIB Grouping
```

```
isisSystemGroup OBJECT-GROUP
  OBJECTS {
    isisSysVersion,
    isisSysLevelType,
    isisSysID,
    isisSysMaxPathSplits,
    isisSysMaxLSPGenInt,
    isisSysPollESHelloRate,
    isisSysWaitTime,
    isisSysAdminState,
    isisSysL2toL1Leaking,
    isisSysMaxAge,
    isisSysProtSupported,
    isisSysNotificationEnable,
    isisManAreaAddrExistState,
```

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```
    isisSysLevelOrigLSPBuffSize,
    isisSysLevelMinLSPGenInt,
    isisSysLevelState,
    isisSysLevelSetOverload,
    isisSysLevelSetOverloadUntil,
    isisSysLevelMetricStyle,
    isisSysLevelSPFConsiders,
    isisSysLevelTEEnabled,
    isisSysReceiveLSPBufferSize,
    isisSummAddrExistState,
    isisSummAddrMetric,
    isisAreaAddr,
    isisSummAddrFullMetric,
    isisRedistributeAddrExistState,
    isisRouterHostName,
    isisRouterID,
    isisSysStatCorrLSPs,
    isisSysStatLSPDbase0loads,
    isisSysStatManAddrDropFromAreas,
    isisSysStatAttmptToExMaxSeqNums,
    isisSysStatSeqNumSkips,
    isisSysStatOwnLSPPurges,
```



```

isisSysStatIDFieldLenMismatches,
isisSysStatPartChanges,
isisSysStatSPFRuns,
isisSysStatAuthTypeFails,
isisSysStatAuthFails,
isisSysStatLSPErrors
}
STATUS current
DESCRIPTION
    "The collections of objects used to manage an
    IS-IS router."
::= { isisGroups 1 }

isisCircuitGroup OBJECT-GROUP
OBJECTS {
    isisNextCircIndex,
    isisCircAdminState,
    isisCircExistState,
    isisCircType,
    isisCircExtDomain,
    isisCircLevelType,
    isisCircAdjChanges,
    isisCircNumAdj,
    isisCircInitFails,
    isisCircRejAdjs,
    isisCircIDFieldLenMismatches,

```

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```

isisCircMaxAreaAddrMismatches,
isisCircAuthTypeFails,
isisCircAuthFails,
isisCircLANDesISChanges,
isisCircPassiveCircuit,
isisCircMeshGroupEnabled,
isisCircMeshGroup,
isisCircSmallHellos,
isisCircLastUpTime,
isisCirc3WayEnabled,
isisCircExtendedCircID,
isisCircIfIndex,
isisCircLevelMetric,
isisCircLevelWideMetric,
isisCircLevelISPriority,

```

```

isisCircLevelIDOctet,
isisCircLevelID,
isisCircLevelDesIS,
isisCircLevelHelloMultiplier,
isisCircLevelHelloTimer,
isisCircLevelDRHelloTimer,
isisCircLevelLSPThrottle,
isisCircLevelMinLSPRetransInt,
isisCircLevelCSNPInterval,
isisCircLevelPartSNPInterval
}
STATUS current
DESCRIPTION
    "The collection of objects used to describe in
    IS-IS Circuit."
::= { isisGroups 2 }

```

```

isisISAdjGroup OBJECT-GROUP
OBJECTS {
    isisISAdjState,
    isisISAdj3WayState,
    isisISAdjNeighSNPAAAddress,
    isisISAdjNeighSysType,
    isisISAdjNeighSysID,
    isisISAdjNbrExtendedCircID,
    isisISAdjUsage,
    isisISAdjHoldTimer,
    isisISAdjNeighPriority,
    isisISAdjLastUpTime,
    isisISAdjAreaAddress,
    isisISAdjIPAddrType,
    isisISAdjIPAddrAddress,
    isisISAdjProtSuppProtocol
}

```

```

}
STATUS current
DESCRIPTION
    "The collections of objects used to manage an
    IS-IS Adjacency."
::= { isisGroups 3 }

```

```

isisNotificationObjectGroup OBJECT-GROUP

```

```

OBJECTS {
    isisNotificationSysLevelIndex,
    isisNotificationCircIfIndex,
    isisPduLspId,
    isisPduFragment,
    isisPduFieldLen,
    isisPduMaxAreaAddress,
    isisPduProtocolVersion,
    isisPduLspSize,
    isisPduOriginatingBufferSize,
    isisPduBufferSize,
    isisPduProtocolsSupported,
    isisAdjState,
    isisErrorOffset,
    isisErrorTLVType,
    isisNotificationAreaAddress
}
STATUS current
DESCRIPTION
    "The objects used to record notification parameters."
 ::= { isisGroups 4 }

```

```

isisNotificationGroup      NOTIFICATION-GROUP
    NOTIFICATIONS {
        isisDatabaseOverload,
        isisManualAddressDrops,
        isisCorruptedLSPDetected,
        isisAttemptToExceedMaxSequence,
        isisIDLenMismatch,
        isisMaxAreaAddressesMismatch,
        isisOwnLSPPurge,
        isisSequenceNumberSkip,
        isisAuthenticationTypeFailure,
        isisAuthenticationFailure,
        isisVersionSkew,
        isisAreaMismatch,
        isisRejectedAdjacency,
        isisLSPTooLargeToPropagate,
        isisOrigLSPBuffSizeMismatch,

```

isisProtocolsSupportedMismatch,

```

        isisAdjacencyChange,
        isisLSPErrorDetected
    }
    STATUS current
    DESCRIPTION
        "The collections of notifications sent by an IS."
 ::= { isisGroups 5 }

isisISPDUCounterGroup OBJECT-GROUP
    OBJECTS {
        isisPacketCountIIHello,
        isisPacketCountISHello,
        isisPacketCountESHello,
        isisPacketCountLSP,
        isisPacketCountCSNP,
        isisPacketCountPSNP,
        isisPacketCountUnknown
    }
    STATUS current
    DESCRIPTION
        "The collections of objects used to count protocol PDUs."
 ::= { isisGroups 6 }

isisRATableGroup OBJECT-GROUP
    OBJECTS {
        isisRAExistState,
        isisRAAdminState,
        isisRAAddrPrefix,
        isisRAMapType,
        isisRAMetric,
        isisRAMetricType,
        isisRASNPAddress,
        isisRASNPAMask,
        isisRASNPAPrefix,
        isisRAType
    }
    STATUS current
    DESCRIPTION
        "The collections of objects used to manage the
         reachable NSAP prefixes."
 ::= { isisGroups 7 }

isisISIPRADestGroup OBJECT-GROUP
    OBJECTS {

```

```
        isisIPRANextHopType,
        isisIPRANextHop,
        isisIPRAType,
        isisIPRAExistState,
        isisIPRAAdminState,
        isisIPRAMetric,
        isisIPRAFullMetric,
        isisIPRAMetricType,
        isisIPRASNPAAAddress,
        isisIPRASourceType
    }
    STATUS current
    DESCRIPTION
        "The collections of objects used to manage configured
        IP addresses."
 ::= { isisGroups 8 }

isisLSPGroup OBJECT-GROUP
    OBJECTS {
        isisLSPSeq,
        isisLSPZeroLife,
        isisLSPChecksum,
        isisLSPLifetimeRemain,
        isisLSPPDULength,
        isisLSPAttributes,
        isisLSPTLVSeq,
        isisLSPTLVChecksum,
        isisLSPTLVType,
        isisLSPTLVLen,
        isisLSPTLVValue
    }
    STATUS current
    DESCRIPTION
        "The collections of objects used to observe the LSP
        Data Base."
 ::= { isisGroups 9 }
```

END

## [5.](#) IANA Considerations

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

```
-----  
isisMIB          { mib-2 XXX }
```

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

## [6.](#) Acknowledgments

This draft MIB is based on a March 1994 Internet Draft by Chris Gunner, who should be held blameless for the errors introduced since then.

We would like to thank the following individuals for constructive and valuable comments: Mike Bartlett, Neal Castagnoli, Ken Chapman, Joan Cucchiara, Satish Dattatri, Nagi Jonnala, Adrian Farrel, Shamik Ganguly, Les Ginsberg, Don Goodspeed, Jeff Gross, Jim Halpin, Jon Harrison, Dimitri Haskin, C. M. Heard, Peter Higginson, Christian Hopps, Laura Liu, Gavin McPherson, Kay Noguchi, Serge Maskalik, Z. Opalka, Jeff Pickering, Sundar Ramachandran, Swaminatha Ramalingam, Aravind Ravikumar, Juergen Schoenwaelder, Koen Vermeulen, Hans De Vleeschouwer, Bert Wijnen, and Bingzhang Zhao.

## [7.](#) Security Considerations

Management information defined in this MIB may be considered sensitive in some network environments.

### 7.1 Discussion

This MIB may be used to manage an IP router, which is used to direct

network traffic. The control of network traffic allows an attacker to deny service to a region of the network or to forward traffic to adversaries. By raising or lowering metrics, traffic may be directed to insecure portions of the network. By disabling the protocol on an interface, the network may be partitioned. Changes to the network topology will force all routers to recompute their routes. Periodic route changes have brought down networks in the past by subjecting routers to stressful recomputations.

There are a number of management objects defined in this MIB that have 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. Authentication of received SNMP requests and controlled access to management information should be employed in such environments.

We identify a set of threats, and then list attributes that can be used in each form of attack. We discuss the effects that can be obtained by a single change to the variable in each class.

## 7.2 Threats

- Drop an Adjacency
- Drop all Peers
- Drop Subnetwork
- Split the Network
- Intermittent Outages
- Redirect Traffic
- Delay Convergence
- Avoid Detection
- Prevent Updates
- Hijack LAN
- Create problems for CLNS networks

### 7.2.1 Drop an Adjacency

By changing attributes that are used to peer, we can disrupt an adjacency and bring a link down.

isisCirc3WayEnabled  
isisCircAdminState  
isisCircExistState  
isisCircLevelDRHelloTimer  
isisCircLevelHelloTimer  
isisCircLevelType  
isisCircSmallHellos

#### 7.2.2 Drop All Adjacencies

These attributes can be used to break some or all of a router's adjacencies. In the case of System ID, the adjacency may be restored. However, it will subject the network to additional stress.

isisSysLevelType  
isisManAreaAddrExistState

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isisSysAdminState  
isisSysID

#### 7.2.3 Drop Subnetwork

This attribute can be used to stop advertisement of a subnetwork reachable through a single interface.

isisCircPassiveCircuit

#### 7.2.4 Split the Network

If the network design depends upon Wide Metrics or TE, we can use these attributes to prevent traffic from passing through a router.

isisSysLevelMetricStyle  
isisSysLevelOrigLSPBuffSize  
isisSysLevelSPFConsiders  
isisSysLevelTEEnabled  
isisSysReceiveLSPBufferSize

#### 7.2.5 Intermittent Outages

We can use these attributes to subject the network to a series of topology changes, or otherwise force extensive recomputations of



routes.

- isisSysLevelMinLSPGenInt
- isisSysLevelSetOverload
- isisSysLevelSetOverloadUntil
- isisSysMaxAge
- isisSysMaxLSPGenInt
- isisSysL2toL1Leaking
- isisSysID

#### 7.2.6 Redirect Traffic

By changing attributes such as metrics, we can push traffic to different parts of the network. This may allow an intruder to observe data traffic from otherwise remote parts of the network.

We may also use these attributes to deny service to parts of the network.

- isisSysMaxPathSplits
- isisCircLevelMetric
- isisCircLevelWideMetric
- isisIPRAAdminState

- isisIPRAExistState
- isisIPRAFullMetric
- isisIPRAMetric
- isisIPRAMetricType
- isisIPRANextHop
- isisIPRANextHopType
- isisIPRASNPAAAddress
- isisIPRAType
- isisRedistributeAddrExistState
- isisSummAddrExistState
- isisSummAddrFullMetric
- isisSummAddrMetric
- isisSysL2toL1Leaking

#### 7.2.7 Delay Convergence

These attributes can be used to slow convergence by increasing the minimal interval required to update a packet.

isisCircLevelCSNPInterval  
isisCircLevelLSPThrottle  
isisCircLevelMinLSPRetransInt  
isisCircLevelPartSNPInterval  
isisSysWaitTime  
isisCircPassiveCircuit

#### 7.2.8 Avoid Detection

By turning off traps, we can prevent a Network Management station from observing problems in the network caused by other aspects of an attack.

isisSysNotificationEnable

#### 7.2.9 Prevent Updates

Mesh Groups can be used to prevent the transmission of Link State PDUs on certain interfaces, delaying or preventing the propagation of updates.

isisCircMeshGroup  
isisCircMeshGroupEnabled

#### 7.2.10 Hijack LAN

If we have compromised a router, we can use this attribute to become the designated router and lie about the topology of a LAN.

isisCircLevelISPriority

#### 7.2.11 Create problems for CLNS networks

This attribute can be used to modify the handling of CLNS traffic.

isisRAAddrPrefix  
isisRAAdminState  
isisRAExistState  
isisRAMapType  
isisRAMetric

isisRAMetricType  
isisRASNPAddress  
isisRASNPAMask  
isisRASNPAPrefix  
isisRAType  
isisSysPollESHelloRate

#### 7.2.12 Mostly Harmless

The following writable attributes do not pose a known security risk.

isisCircExtDomain  
isisCircExtendedCircID  
isisCircIfIndex  
isisCircLevelHelloMultiplier  
isisCircType

#### 7.2.13 Recommendations

Much of the MIB is used to set or read attributes which are readily visible to any intruder who has access to traffic. None of the security attributes are setable or visible through the MIB. Read access to the MIB does not pose additional risks or vulnerabilities.

If write access is to be provided, it is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [\[RFC3410\], section 8](#)), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

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

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.

## 8. Normative References

- [ISO10589] ISO 10589, "Intermediate system to Intermediate system routing information exchange protocol for use in conjunction with the Protocol for providing the Connectionless-mode Network Service (ISO 8473)," ISO/IEC 10589:2002.
- [ISO10733] ISO 10733, "Information Processing Systems - Open Systems Interconnection - Specification of the elements of Management Information related to OSI Network layer Standards", September 1998.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC1195] Callon, R., "Use of OSI IS-IS for Routing in TCP/IP and Dual Environments", [RFC 1195](#), December 1990.
- [RFC2863] McCloghrie, K., and F. Kastenholz, "The Interfaces Group MIB", [RFC 2863](#), Jun 2000.
- [RFC3289] Baker, F., K. Chan, and A. Smith, "Management Information Base for the Differentiated Services Architecture", [RFC 3289](#), May 2002.
- [RFC3411] Harrington, D., Presuhn, R., and B. Wijnen, "An Architecture for Simple Network Management Protocol Management Frameworks", [RFC 3411](#), December 2002.
- [RFC2578] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M., and S. Waldbusser, "Structure of Management Information Version 2 (SMIv2)", STD 58, [RFC 2578](#), April 1999.
- [RFC2579] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J.,

Rose, M., and S. Waldbusser, "Textual Conventions for SMIV2", STD 58, [RFC 2579](#), April 1999.

[RFC2580] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M., and S. Waldbusser, "Conformance Statements for SMIV2", STD 58, [RFC 2580](#), April 1999.

[RFC4001] Daniele, M., Haberman, B., Routhier, S., and J. Schoenwaelder, "Textual Conventions for Internet Network Addresses", [RFC 4001](#).

## [9.](#) Informative References

[RFC2973] Balay, R., Katz, D., and J. Parker, "IS-IS Mesh Groups", [RFC 2973](#), October 2000.

[RFC3373] Katz, D., and R. Saluja, "Three-Way Handshake for Intermediate System to Intermediate System Point-to-Point Adjacencies", [RFC 3373](#), September 2002.

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

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